Carrier

AquaForce®
30XV140-500, Series B
Variable Speed Air-Cooled Liquid Chillers
with Greenspeed® Intelligence
and Carrier PIC6.1 Controller and Version 9.x Software

Controls, Start-Up, Operation, Service and Troubleshooting

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CHECKLIST CL-1

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

It is important to recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

This product can expose you to chemicals including lead and lead components, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

⚠ WARNING

DO NOT USE TORCH to remove any component. System contains oil and refrigerant under pressure.

To remove a component, wear protective gloves and goggles and proceed as follows:

a. Shut off electrical power to unit.
b. Recover refrigerant to relieve all pressure from system using both high-pressure and low pressure ports.
c. Traces of vapor should be displaced with nitrogen and the work area should be well ventilated. Refrigerant in contact with an open flame produces toxic gases.
d. Cut component connection tubing with tubing cutter and remove component from unit. Use a pan to catch any oil that may come out of the lines and as a gauge for how much oil to add to the system.
e. Carefully un-sweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

Failure to follow these procedures may result in personal injury or death.

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation and service. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

⚠ WARNING

Electrical shock can cause personal injury and death. After unit power is disconnected, wait at least 20 minutes (if compressor VFDs [variable frequency drives] are mounted external to control panel) or 40 minutes (if compressor VFDs are mounted internal to control panel) for the VFD capacitors to discharge before opening drive.

⚠ WARNING

DO NOT VENT refrigerant relief valves within a building. Outlet from relief valves must be vented in accordance with the latest edition of ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers) 15 (Safety Code for Mechanical Refrigeration). The accumulation of refrigerant in an enclosed space can displace oxygen and cause asphyxiation. Provide adequate ventilation in enclosed or low overhead areas. Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Misuse can be fatal. Vapor is heavier than air and reduces the amount of oxygen available for breathing. Product causes eye and skin irritation. Decomposition products are hazardous.

⚠ WARNING

Units equipped with the permanent magnet motor option will have a strong magnetic field contained inside compressor casing. Voltage potential can be generated at the compressor terminals and at the connect power leads when charging or evacuating refrigerant. Ensure terminal cover is installed prior to charging or evacuating refrigerant or otherwise rotating the motor shaft. Compressor motor is not field serviceable. Do not remove compressor motor cover.

⚠ WARNING

MAGNETIC FIELD HAZARD

Units equipped with the permanent magnet motor option contain rotors with powerful magnetic fields. Permanent magnet motor rotors, when removed from the stator, expose surrounding personnel and equipment to powerful magnetic fields which may cause serious health hazards to persons with pacemakers or defibrillators, hearing aids, metal implants, or other implanted electronic medical devices, and may impact other electronic devices such as mobile phones or smartwatches, watches, credit cards, etc. Persons in a risk group should consult a physician prior to compressor disassembly. Failure to follow these procedures may result in personal injury or death.

⚠ CAUTION

Standard Tier units (units with S in the 10th position of the model number) without VFDs (units with "-", "1", "3", or "5" in the 13th position of the model number) must have the condenser fan(s) rotation verified to ensure proper phasing. Correct rotation is counter-clockwise (reference arrow on fan hub). Swap any two incoming power leads to correct condenser fan rotation before starting chiller. Operating the unit without testing the condenser fan(s) for proper phasing could result in equipment damage.

⚠ CAUTION

DO NOT re-use compressor oil or any oil that has been exposed to the atmosphere. Dispose of oil per local codes and regulations. DO NOT leave refrigerant system open to air any longer than the actual time required to service the equipment. Seal circuits being serviced and charge with dry nitrogen to prevent oil contamination when timely repairs cannot be completed. Failure to follow these procedures may result in damage to equipment.

⚠ CAUTION

To prevent potential damage to heat exchanger tubes, always run fluid through heat exchanger when adding or removing refrigerant charge. Use appropriate antifreeze solutions in evaporator fluid loop to prevent the freezing of heat exchanger or interconnecting piping when the equipment is exposed to temperatures below 32°F (0°C). Proof of flow switch is factory installed on all models. Do NOT remove power from this chiller during winter shut down periods without taking precaution to remove all water from heat exchanger. Failure to properly protect the system from freezing may constitute abuse and may void warranty.

⚠ CAUTION

This unit uses a microprocessor control system. Do not short or jumper between terminations on circuit boards or modules; control or board failure may result.

Be aware of electrostatic discharge (static electricity) when handling or making contact with circuit boards or module connections. Always touch a chassis (grounded) part to dissipate body electrostatic charge before working inside control center.

Use extreme care when handling tools near boards and when connecting or disconnecting terminal plugs. Circuit boards can easily be damaged. Always hold boards by the edges and avoid touching components and connections.

This equipment uses, and can radiate, radio frequency energy. If not installed and used in accordance with the instruction manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to International Standard in North America EN 61000-2/3 which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Always store and transport replacement or defective boards in anti-static shipping bag.

⚠ CAUTION

For units equipped with evaporator heaters, do not apply power, control, or main power if equipped with a control transformer, to the unit unless one of the following two conditions is met:

1. The evaporator has been completely filled with a fluid appropriately protected.
2. Cooler heater fuse has been removed.

Failure to take one of these precautions will result in a cooler heater failure.

If the fuse is removed, it must be re-installed once the system has been filled with water to provide protection.

GENERAL

This publication contains Controls, Operation, Start-Up, Service and Troubleshooting information for the 30XV140-500 air-cooled liquid chillers with Greenspeed® Intelligence and electronic controls. See Table 1. The 30XV chillers are equipped with the Carrier Controller controls, electronic expansion valves, and variable speed fans and compressors.

Conventions Used in This Manual

The following conventions for discussing configuration points for the Carrier Controller display will be used in this manual. The menu items are shown in this document as they appear on the Carrier Controller display. A path name for each item will show the user how to navigate through the Carrier Controller display to reach the desired configuration. The arrow symbol (→) in the path name represents touching the menu item on the screen of the Carrier Controller display. The path will be shown in bold and italics. See Appendix A for a complete list of Carrier Controller menu items and descriptions. The Carrier Comfort Network® (CCN) and Building Automation and Controls Network (BACnet)[1] point names and values are shown in **bold**. See Appendix B for a list of CCN points, and Appendix D for a list of BACnet points.

Table 1 — Unit Sizes

UNIT	NOMINAL CAPACITY (TONS)
30XV140	140
30XV160	160
30XV180	180
30XV200	200
30XV225	225
30XV250	250
30XV275	275
30XV300	300
30XV325	325
30XV350	350
30XV400	400
30XV450	450
30XV500	500

1. Third-party trademarks and logos are the property of their respective owners.

Abbreviations Used in This Manual

The following abbreviations are used in this manual:

ABV	— Actuated Ball Valve
AI	— Analog Input
ANSI	— American National Standards Institute
AO	— Analog Output
ASHRAE	— American Society of Heating, Refrigeration, and Air-Conditioning Engineers
AUX	— Auxiliary (Board)
AV	— Analog Value
AVM	— Asynchronous Vector Modulation
AWG	— American Wire Gage
BACnet	— Building Automation and Controls Network
BMS	— Building Management System
BUS TER	— Bus Termination
BV	— Binary Value
CB	— Circuit Breaker
CCN	— Carrier Comfort Network®
CLR HTR	— Cooler Heater
CMD	— Command
COM	— Communications
COV	— Change of Value
CSR	— Current Sensing Relay
CWFS	— Chilled Water Flow Switch
DC	— Direct Current
DGT	— Discharge Gas Temperature
DI	— Digital Input
DNS	— Domain Name Server
DO	— Digital Output
DP	— Discharge Pressure
DPT	— Discharge Pressure Transducer
DSH	— Discharge Superheat
ECM	— Electronically Commutated Motor
ECO EXV	— Economizer Electronic Expansion Valve
ECO	— Economizer
ECT	— Economizer Temperature
EEPROM	— Electronically Erasable Programmable Read-Only Memory
EMM	— Energy Management Module
EOR	— Enable-Off-Remote
EPT	— Economizer Pressure Transducer
EWT	— Entering Water Temperature
EWTO	— Entering Water Temperature Offset
EXV	— Electronic Expansion Valve
FC	— Fan Contactor
FM	— Fan Motor
ft-lb	— Foot-Pounds
GLCP	— Graphical Local Control Panel
gpm	— Gallons Per Minute
HMI	— Human Machine Interface
HPS	— High Pressure Switch
HVAC	— Heating, Ventilation and Air-Conditioning
IGBT	— Insulated Gate Bipolar Transistor
in.-lb	— Inch-Pounds
IP	— Internet Protocol
IR	— Intrinsic Reporting
kPa	— Kilopascals
L/s	— Liters Per Second
LCD	— Liquid Crystal Display
LCP	— Local Control Panel
LED	— Light-Emitting Diode
LEN	— Local Equipment Network
LIQT	— Liquid Temperature
LPT	— Liquid Pressure Transducer
LWT	— Leaving Water Temperature
MCHX	— Microchannel Heat Exchanger
MOP	— Maximum Operating Temperature
N/A	— Not Applicable
N-m	— Newton-Meter
NPT	— National Pipe Thread
OAT	— Outdoor Air Temperature
OP	— Oil Pressure
OPT	— Oil Pressure Transducer
PC	— Personal Computer
ppm	— Parts Per Million
PSI	— Pounds Per Square Inch
Psig	— Pounds Per Square Inch Gauge
PTC	— Positive Temperature Coefficient
PVC	— Polyvinyl Chloride
RC	— Replacement Components
RFI	— Radio Frequency Interference
RNET	— Communication Protocol
RO	— Read Only
rpm	— Revolutions Per Minute
RTPF	— Round Tube Plate Fin
RW	— Read/Write
SAE	— Society of Automotive Engineers
SCT	— Saturated Condensing Temperature[a]
SDT	— Saturated Discharge Temperature[a]
SGT	— Suction Gas Temperature
SHD	— Shield Wire on Shielded Cable
SIOB	— Standard Input/Output Board
SLT	— Saturated Liquid Temperature
SP	— Suction Pressure
Spt	— Setpoint
SPT	— Suction Pressure Transducer
SST	— Saturated Suction Temperature
SSV	— Suction Service Valve
ST	— Space Temperature
STPR	— Stepper Motor
SW1	— Switch 1
SW2	— Switch 2
TCP/IP	— Transmission Control Protocol/Internet Protocol
TL	— Trend Log
TS	— Time Schedule
UI	— User Interface
USB	— Universal Serial Bus
USDA	— United States Department of Agriculture
VFD	— Variable Frequency Drive
VI	— Volume Index
VPN	— Virtual Private Network

NOTE(S):

a. SCT and SDT are used interchangeably by software points.

CONTROLS

The 30XV Air-Cooled Liquid Chillers contain the Carrier Controller electronic control system that controls and monitors all operations of the chiller. The control system is composed of several components as listed in the following sections. All machines have a Carrier Controller module, Standard Input/Output boards, Emergency On/Off switch, and an Enable-Off-Remote Contact switch. Table 2 lists power schematics by unit size.

Table 2 — Control and Power Drawings

Unit	Description	Location
30XV140	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225
	Power Wiring Schematic (High)	Fig. 112, page 226; Fig. 113, page 227
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV160	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225; Fig. 113, page 227
	Power Wiring Schematic (High)	Fig. 112, page 226; Fig. 113, page 227
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV180	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225; Fig. 113, page 227
	Power Wiring Schematic (High)	Fig. 112, page 226; Fig. 113, page 227
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV200	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225; Fig. 113, page 227
	Power Wiring Schematic (High)	Fig. 112, page 226; Fig. 113, page 227
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV225	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225
	Power Wiring Schematic (High)	Fig. 114, pages 228-229
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV250	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225
	Power Wiring Schematic (High)	Fig. 114, pages 228-229
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV275	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 107, page 219
	Power Wiring Schematic (Mid)	Fig. 111, page 225
	Power Wiring Schematic (High)	Fig. 114, pages 228-229
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV300	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 108, pages 220-221
	Power Wiring Schematic (Mid)	Fig. 114, pages 228-229
	Power Wiring Schematic (High)	Fig. 114, pages 228-229
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238

Table 2 — Control and Power Drawings (cont)

Unit	Description	Location
30XV325	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 108, pages 220-221
	Power Wiring Schematic (Mid)	Fig. 114, pages 228-229
	Power Wiring Schematic (High)	Fig. 114, pages 228-229
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117-118, pages 232-234
	Component Arrangement	Fig. 120, pages 237-238
30XV350	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 109, pages 222-223
	Power Wiring Schematic (Mid)	Fig. 110, page 224
	Power Wiring Schematic (High)	Fig. 110, page 224
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117, 119, pages 232, 235-236
	Component Arrangement	Fig. 121, page 239
30XV400	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 109, pages 222-223
	Power Wiring Schematic (Mid)	Fig. 110, page 224
	Power Wiring Schematic (High)	Fig. 110, page 224
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117, 119, pages 232, 235-236
	Component Arrangement	Fig. 121, page 239
30XV450	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 109, pages 222-223
	Power Wiring Schematic (Mid)	Fig. 110, page 224
	Power Wiring Schematic (High)	Fig. 110, page 224
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117, 119, pages 232, 235-236
	Component Arrangement	Fig. 121, page 239
30XV500	Typical Field Connections Wiring Schematic	Fig. 106, pages 217-218
	Power Wiring Schematic (Std)	Fig. 109, pages 222-223
	Power Wiring Schematic (Mid)	Fig. 110, page 224
	Communication Wiring	Fig. 115, page 230
	Control Wiring Schematics	Fig. 117, 119, pages 232, 235-236
	Component Arrangement	Fig. 121, page 239

Carrier Controller Display

The Carrier Controller module is the HMI (Human Machine Interface) and core of the control system. It contains the major portion of operating software and controls the operation of the machine. See “Web and Network Interface” on page 17.

The Carrier Controller module continuously monitors input/output channel information received from the SIOB (Standard Input/Output Board) and AUX (Auxiliary) board. The Carrier Controller module receives inputs from status and feedback switches, pressure transducers and thermistors. The Carrier Controller module, through the communications bus, also controls outputs on the SIOB and AUX boards. All inputs and outputs that control the chiller are located on other boards. Information is transmitted between modules via a 3-wire communication bus or LEN (Local Equipment Network).

The CCN bus is also supported.

Connections to both LEN and CCN buses are made at terminal board TB3 located within the control box enclosure to the left of the Carrier Controller display. See Fig. 1 and 2 for component layout showing the display with field connections.

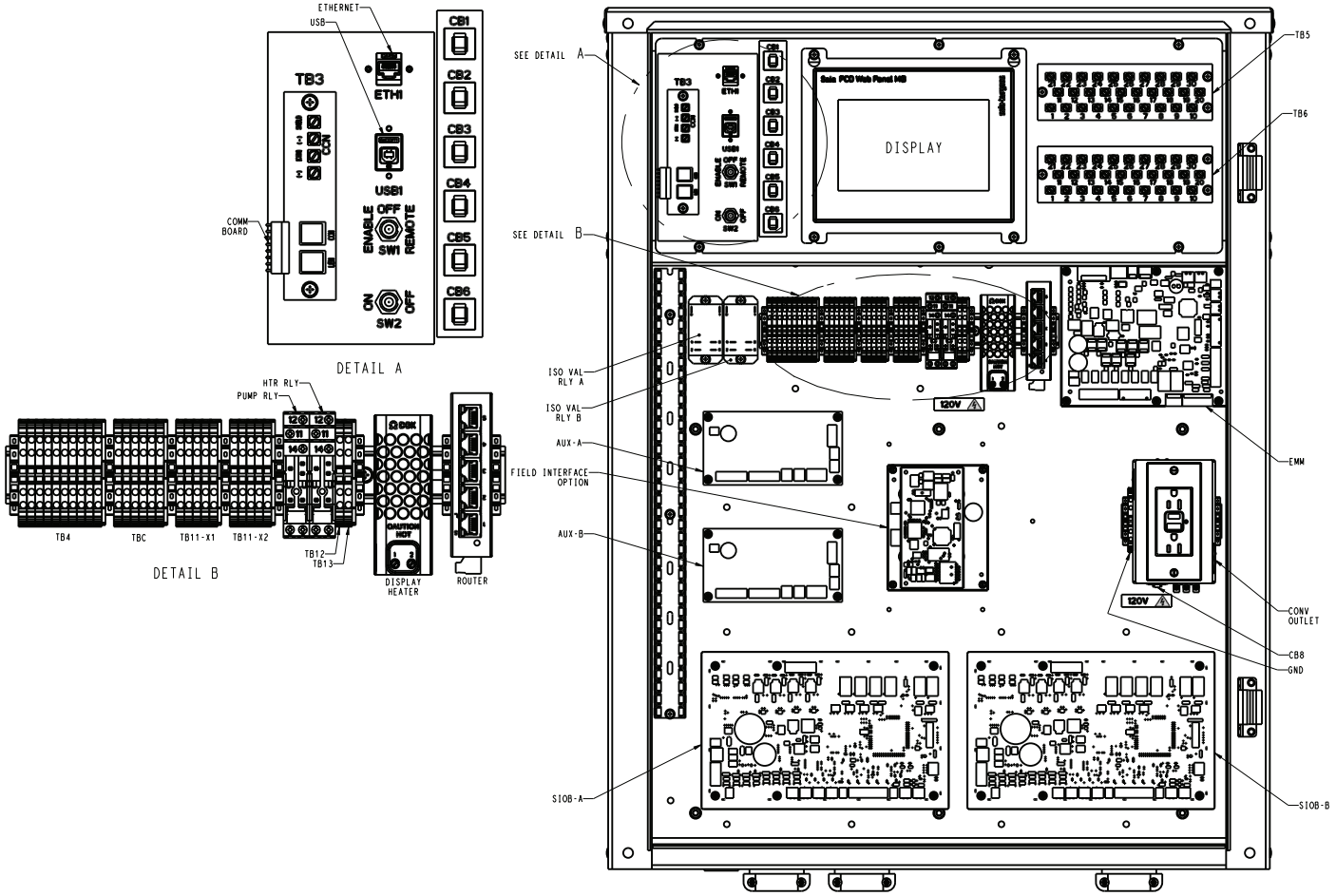


Fig. 1 — Component Layout Drawing (30XVB140-325 Shown)

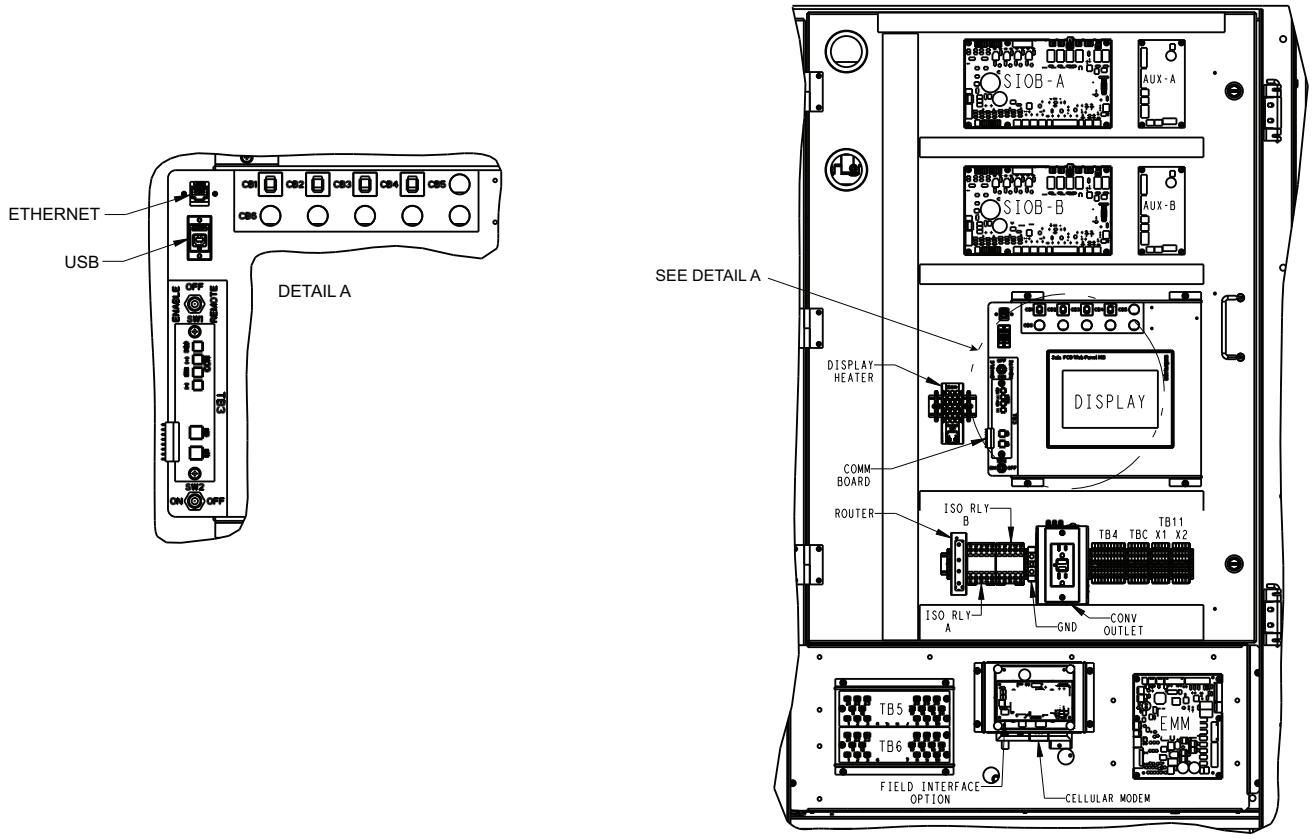


Fig. 2 — Component Layout Drawing (30XVB350-500 Shown)

Carrier Controller Display User Interface

The Carrier Controller display is the standard user interface on all 30XV chillers with Greenspeed® Intelligence. The display includes a large 7-in. LCD (Liquid Crystal Display) touch screen for display and user configuration. A stylus is recommended for use on the touch screen. The stylus is included with the unit.

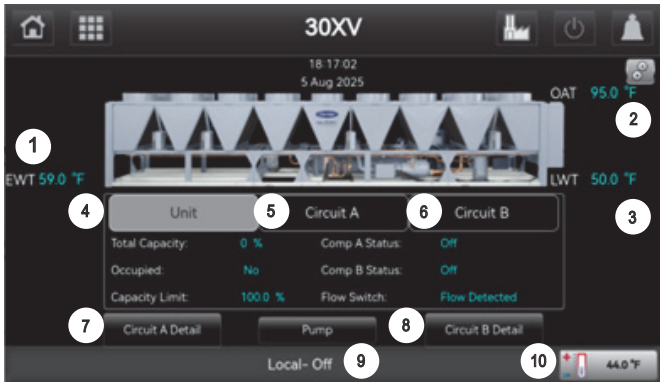
WELCOME SCREEN

The Welcome screen is the first screen shown after Carrier Controller is powered on. A Carrier logo will be shown. The Welcome Screen will automatically change to the Home Screen when the controller has completed initialization.

HOME SCREEN

The Home screen provides an overview of system controls, allowing the user to monitor the vapor-refrigeration cycle. The screen indicates the current status of the unit, giving information on the unit capacity, refrigerant conditions, occupied status, capacity limit, compressor A and B status, the active set point, and other information. See Fig. 3 and 4.

Fig. 3 — Home Screen



LEGEND

1 — Evaporator Entering Fluid Temperature
2 — Outdoor Air Temperature
3 — Evaporator Leaving Fluid Temperature
4 — Unit Status
5 — Circuit A Status
6 — Circuit B Status
7 — Circuit A Refrigeration Details
8 — Circuit B Refrigeration Details
9 — Unit Status Message
10 — Active Setpoint

Fig. 4 — Home Screen Information

The following buttons appear on the top panel of the home screen. See Table 3 for more general screen buttons.

Main Menu — Touch the Main Menu button to access all unit functions. See Main Menu Screen on page 13 for details.

Log In — Touch to enter passwords and select language or change the system of measurement. See page 11 for login details.

Start/Stop — Touch to access the machine control method menu. See page 29 for details on available operating modes.

Alarm — The alarm icon blinks red when a fault is detected. See page 194 for details on system alarms and alerts.

To display circuit specific information select the desired Circuit Button. See Fig. 4.

UNIT STATUS MESSAGE BOX

Messages may be displayed in the status bar at the bottom of the screen relevant to the current user action. See Table 4.

Table 3 — Screen Buttons

BUTTON	FUNCTION
TOP LEFT PANEL — GENERAL NAVIGATION	
	Home button: Goes to the home screen.
	Main Menu button: Goes to the Main Menu screen from the Home screen. Allows access to unit menus and parameters. See page 13.
	Back button: Goes to previous screen.
TOP RIGHT PANEL — SPECIAL NAVIGATION	
	Start / Stop button: Goes to the chiller start / stop screen. The Start/Stop button is gray, green, or blinking green. See the Machine Control Methods section on page 29.
	Alarm button: Goes to the alarm menu screen.The Alarm button is gray, red, or blinking red. See the Alarms and Alerts section on page 194.
BOTTOM LEFT PANEL — ACTIONS SPECIFIC TO CURRENT SCREEN OPERATION	
	Save/Cancel: Save button confirms changes. Cancel discards changes.
BOTTOM RIGHT PANEL — SCROLLING INSIDE CURRENT SCREEN	
	Up and Down arrows: Scroll within screen content. A page indicator shows what page is being viewed, and the total number of pages.
	Troubleshoot Quick Test and Svc Alerts: only appears in Service or Factory Access Level. Touching the icon opens three icons on the side of the screen: Service Alerts . Quick Test . and Troubleshoot

Table 4 — Unit Status Messages

SCREEN	MESSAGE	FUNCTION
LOGIN SCREEN	Current Login Level = Basic	Entered password is 0 or basic login; login is allowed.
	Current Login Level = User	Entered password corresponds to the User Password; login is allowed.
	Current Login Level = Service	Entered password corresponds to the Service User Password; login is allowed.
	Current Login Level = Factory	Entered password corresponds to Factory User Password; login is allowed.
DNS CONFIG	DNS applied successfully	
	DNS IP invalid	
	System call failed	
GATEWAY CONFIGURATION	Gateway applied successfully	
	failed to execute gateway_wrapper script	
	incorrect arguments to gateway_wrapper	
	invalid gateway ip	
	invalid gateway mask	
	Incorrect option passed to gateway_wrapper	
	Invalid argument to route command	
	Network is unreachable	
	Gateway exists	
	bogus netmask	
	netmask and route address conflict	
	No such gateway ip present	
	gateway_wrapper.sh not found	
	cannot execute gateway_wrapper.sh	
	Gateway deleted	
ETH0/1 CONFIG	IP address applied successfully	
	error, IP address is blank	
	IP address is invalid	
	error, IP address is zero	
	error in setting IP address	
	error , netmask is blank	
	netmask is invalid	
	error, netmask is zero	
	error in setting netmask	
NTP TIME SYNC	Time synchronized successfully	
	ntp server address empty	
	Network is unreachable	
	failure in name resolution	
	no response after 1 seconds	
	not in sync, skipping this server	
	system() failed to execute script	
	sntp_wrapper.sh not found	
	cannot execute sntp_wrapper.sh	
SET MANUAL TIME SCREEN	save successfully	
	NO_ERROR	
TIME ZONE CONFIG SCREEN	Time zone set successfully	
	Invalid time zone settings	
	Platform error in setting time zone	
CCN MESSAGES	SUCCESS	CCN Table successfully saved to system.
	internal communication failure	Equipment Controller did not respond while reading table content
	Value outside lower limit	Value was written outside the lower bounds of the data point.
	Value outside higher limit	Value was written outside the upper bounds of the data point.
	higher level force is already in action	Equipment controller rejects Force or Auto command due to a higher level force present.
	ACCESS DENIED	A read-only data point or table was accessed and the request was denied.
CURRENT ALARMS	Log in as User or higher to reset alarms.	
CIRCUIT A/B SCREEN	Compressor Status :	
MAIN EXV A/B	EXV control mode :	
ECO EXV A/B	ECO Mode :	
START/STOP	Factory or BACnet changes have been detected. UI must be rebooted.	
	Reset Alarms Before Starting Chiller	
	Disable Quick Test Before Starting Chiller	
PUMP CONFIG	Unit Must Be OFF Before Modifying Menu	
FACTORY PARAMETERS	Unit Must Be Local OFF Before Modifying Menu	
	UI must be rebooted for changes to take effect.	
HOME	Trip out : Active alarm description	
SERVICE ALERT	If oil filter pressure drop is above:	
	High Oil Filter Pressure Drop Alert	
	High Discharge Pressure Alert	
	High Evaporator Delta T Alert	
	If evaporator delta T is above:	

CARRIER CONTROLLER LOGIN AND DISPLAY SETUP

Certain control functions and navigation menus are password protected. There are multiple levels of user access on the Carrier Controller display, each with independent password protection:

- Basic — At initial start-up and after a timeout period, the access type defaults to All. In this mode the user can view system operating conditions.
- User — The User access level authorizes access to modify the Setpoint Table and some Configuration Menu parameters, as well as access to all menus accessible with the Basic mode. See menu structure on page 15. The default password for User level access is 1111. To change the User access password, go to ***Main Menu → Configuration Menu → HMI Configuration Menu → User Password Change***, then enter the old password and the new password. Confirm the new password, then press the Submit button. After selecting the Submit button, a pop-up window will indicate that the user password was changed successfully. Select OK to continue.
- Service — The Service access level authorizes access to all menus and parameters needed for operation and service of the machine, including Quick Test and Maintenance Menus as well as additional Configuration Menus. See menu structure on page 15. When logged in under Service access, the service icon will appear on the Home Screen. To acquire service or factory access, a rolling password is required. See next section.
- Factory — The Factory access level authorizes access to all menus and parameters for the unit, including factory settings. See menu structure on page 15. When logged in under Factory access, the Factory icon will appear on the Home Screen in the upper right corner. To acquire service or factory access, a rolling password is required. See next section.

Changing the Carrier Controller Display Language

The User Login Screen (Fig. 5) offers 2 language selections for the Carrier Controller Display: English or Spanish. The factory default language is English. The current language is shown between the arrows. To change the display language, select the desired language icon on the User Login screen. The language can be changed without being logged into the controller.

Changing the Units of Measurement

The User Login Screen (Fig. 5) offers 2 choices for units of measurement: US Imperial or Metric. The factory default is US Imperial. The current selection is denoted by a blue button. To change the measurement system, select the appropriate system on the User Login screen, then press any other button or icon on the User Login screen. The units can be changed without being logged into the controller.

Logging in

To log in to the Carrier Controller display, touch the Login button on the Home screen. The Login screen will appear with three options for login level: User, Service, and Factory. See Fig. 5.

Fig. 5 — Login Screen

User Level

When User Level Login is selected from the User Login Screen, the User Level Login screen appears (Fig. 6). Input the required password or touch the Home button to return to the home page. Once logged in to the controller, after 6 minutes of inactivity the controller will revert back to Basic Access Level. To log out of the controller, touch the Access Level icon. In the password box, type 0 and touch the Done button.

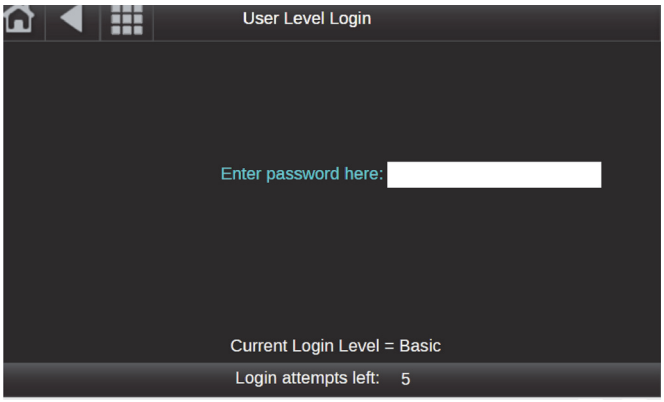


Fig. 6 — User Level Login Screen

Service Level

When Service Level Login is selected from the User Login Screen, the Customer Service Login screen appears (Fig. 7). Input the required password or touch the Home button to return to the home page.

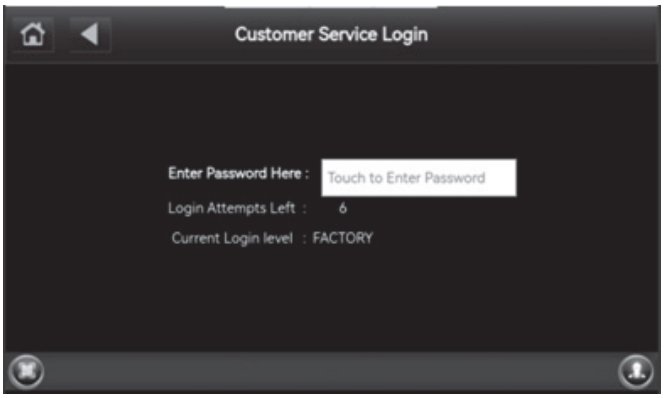


Fig. 7 — Customer Service Login Screen

The Customer Service Login screen displays two icons that enable access to Rolling Password (lower left corner) and Technician Login (lower right corner). A rolling password is required for service or factory level access. Clicking the Technician Login icon (in the lower right corner) will display the Technician Service Login screen (Fig. 8).

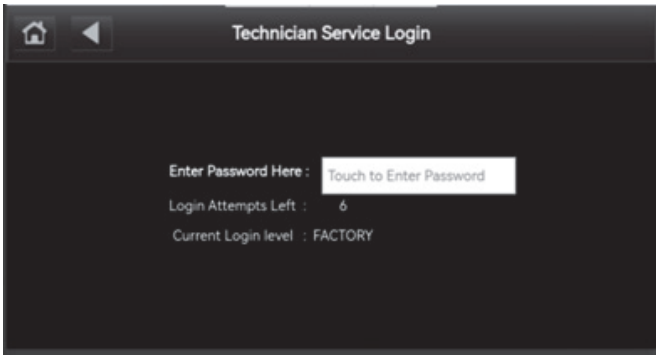


Fig. 8 — Technician Service Login Screen

Service Level Rolling Password

To acquire Service Level access, a rolling password is required. Rolling password authentication is applicable for service and factory login levels only. The Service Level Rolling Password screen is shown in Fig. 9. Scan the QR code or enter the QR code text with the Carrier Smart app to get the password.

Scanning the QR code may result in an error code instead of a generated password; see Table 5.

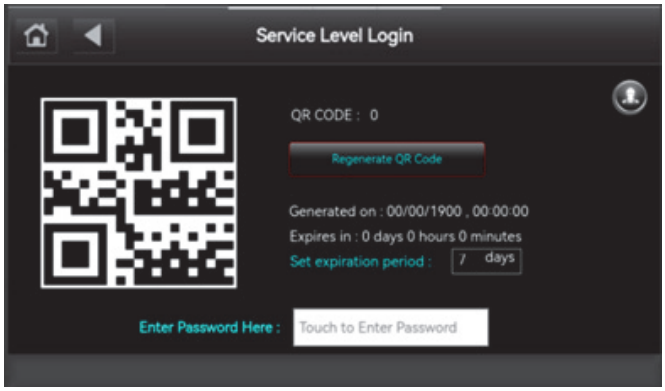


Fig. 9 — Service Level Rolling Password Login

Table 5 — Carrier Smart Service Application Error Codes

ERROR CODE	DESCRIPTION	RESOLUTION
0	Success	N/A
1	InvalidQrCode	Try to renew the QR code. If error still appears, re-onboard the PIC6 system (factory tool)
2	DeviceMacNotFound	Onboard the PIC6 system (factory tool)
3	UserUnauthorized	Add roles to the user on Carrier Smart

Figure 10 shows an example of a Carrier Smart Service Application-generated error code 3.

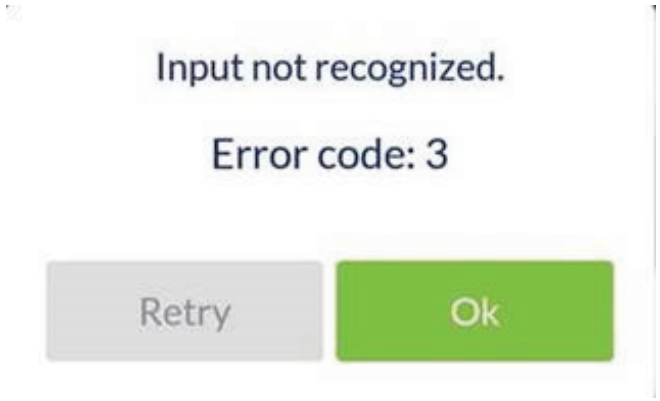


Fig. 10 — Application-Generated Error Code 3 Example

Once a password has been successfully generated, enter the password and select Done. The current level will be shown in the top of the screen.

Factory Level

When Factory Level Login is selected from the User Login Screen, the Customer Factory Login Screen appears (Fig. 11). Input the required password or touch the Home button to return to the home page.

Fig. 11 — Customer Factory Login Screen

The Customer Factory Login screen displays two icons that enable access to Rolling Password (lower left corner) and Technician Login (lower right corner).

A rolling password is required for service or factory level access.

Clicking the Technician Login icon (in the lower right corner) will display the Technician Factory Login screen (Fig. 12).

Fig. 12 — Technician Factory Login Screen

Factory Level Rolling Password

To acquire Factory Level access, a rolling password is required. Rolling password authentication is applicable for service and factory login levels only. The Factory Level Rolling Password screen is shown in Fig. 13. Scan the QR code or enter the QR code text with the Carrier Smart app to get the password. Enter password and select Done. The current level will be shown in the top of the screen.

Fig. 13 — Factory Level Rolling Password Login

MAIN MENU SCREEN

The Main Menu provides access to the main control parameters, including general parameters, temperatures and pressures, inputs and outputs status, and others. Touch the Main Menu button on the Home screen to access the Main Menu. The Main Menu displayed will depend upon what access level the user is logged in as.

Figure 14 shows the Main Menu. To navigate through the pages, touch the arrows at the lower right corner of the screen.

To view or modify system parameters, touch the appropriate icon on the Main Menu. For example, to access the General Parameters table, touch the General Parameters button .

Figure 15 shows the first page of the General Parameters table if logged in with Service Access. Use the arrows at the bottom right corner to navigate the General Parameters table.

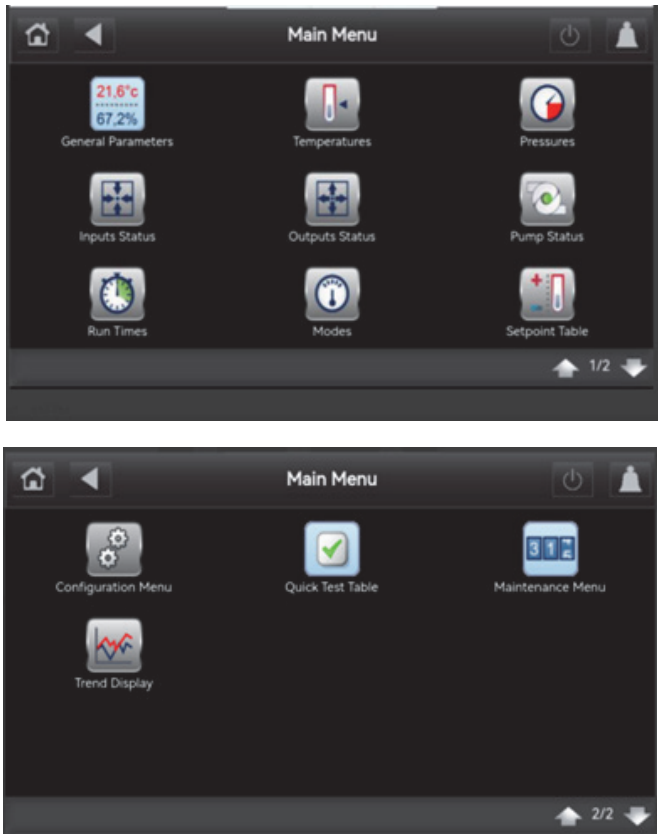


Fig. 14 — Main Menu, Page 1 and Page 2

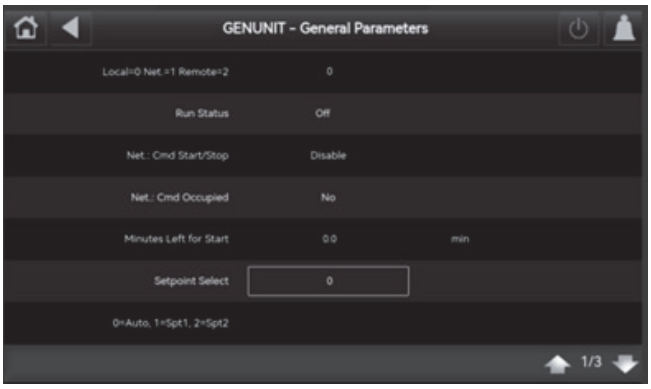


Fig. 15 — General Parameters, Page 1

Points that can be changed with the current level of user access are outlined by a box. For example, to modify the set point select parameter, select the current set point select value as shown in Fig. 15 and enter the desired parameter.

The data entry screen will be displayed (Fig. 16). For alphanumeric responses, such as the password screen, a QWERTY keyboard is displayed (see Fig. 16). In addition to the normal alphanumeric keys, arrow, and symbols, there is a Backspace button, a Cancel button , and an Accept button . Enter the data required and touch the Accept button to accept the change. If required, Save and Cancel icons will appear in the Unit Status Line to confirm the changes.

Fig. 16 — Data Entry Keyboard

If a numeric response is required, a keypad will be displayed along with Backspace button, a Cancel button , and an Accept button . (see Fig. 17). Use the keypad to enter the value and touch the Accept key. Once complete, Cancel and Save buttons will appear in the lower left section of the Unit Status Line. To accept the change, touch the Save button . To cancel, touch the Cancel button .

For menu items, a series of limited choices will be displayed on the screen in a separate window. Select the desired value. Once complete, Cancel and Save buttons will appear in the lower left section of the Unit Status Line. To accept the change, touch the Save button . To cancel, touch the Cancel button .

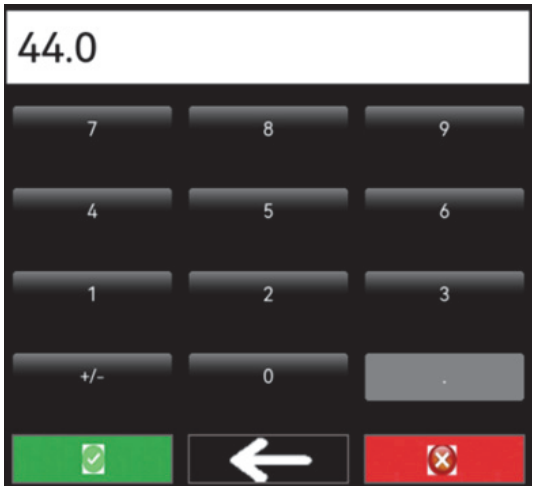


Fig. 17 — Data Entry Keypad

GENERAL CONFIGURATION TABLE

This table contains configuration settings for the unit. Select ***Main Menu→ Configuration Menu→ General Configuration*** to access the table (Fig. 18).

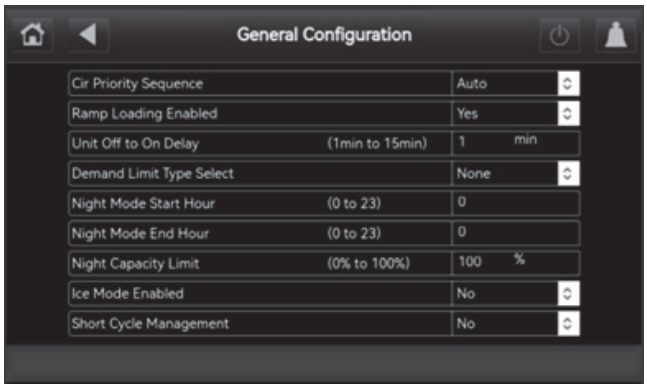


Fig. 18 — General Configuration

Touch the field corresponding to the parameter to be modified and make the necessary changes. When all necessary changes have been made, touch the Save button to confirm or the Cancel button to cancel changes. For a complete list of general parameters, see Appendix A.

TRENDING SCREEN

The Trend Display screen allows for easy monitoring of parameters selected by the user. To access the Trend Display screen, select Trend Display on the Main Menu. The Trend Configuration screen is displayed. See Fig. 19.

Select the parameters to be displayed by selecting the box to the left of the parameter name. The scroll bar on the right of the screen can be used to see all possible selections; to save a selection touch the Save Trend Config button. Once the parameters to be trended are selected and saved, touch the Trend Display button and the trend graph will be displayed. See Fig. 20.

Fig. 19 — Trend Configuration Screen

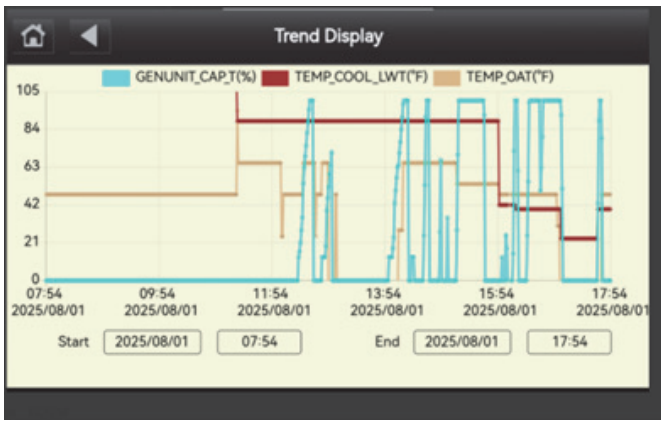


Fig. 20 — Trend Display Screen

Enter the date and times into the Start and End boxes to change scope of the Trend display.

MENU ARCHITECTURE

See Fig. 21-23 for Carrier Controller menu structure. The options displayed depend on the user's access level as shown in the figures. The user can navigate through the Carrier Controller display screens by selecting the buttons that appear on the screen. When a button is selected, either a submenu or a list of parameters and values will be shown. If the list of parameters and values is shown, the top line of the display will show either the menu item name if sub-menu items appear or the table name when points and values are displayed. Selecting an item will cause a Point Data dialog box to appear. For a complete list of tables and points with display names and CCN point names, see Appendixes A and B.

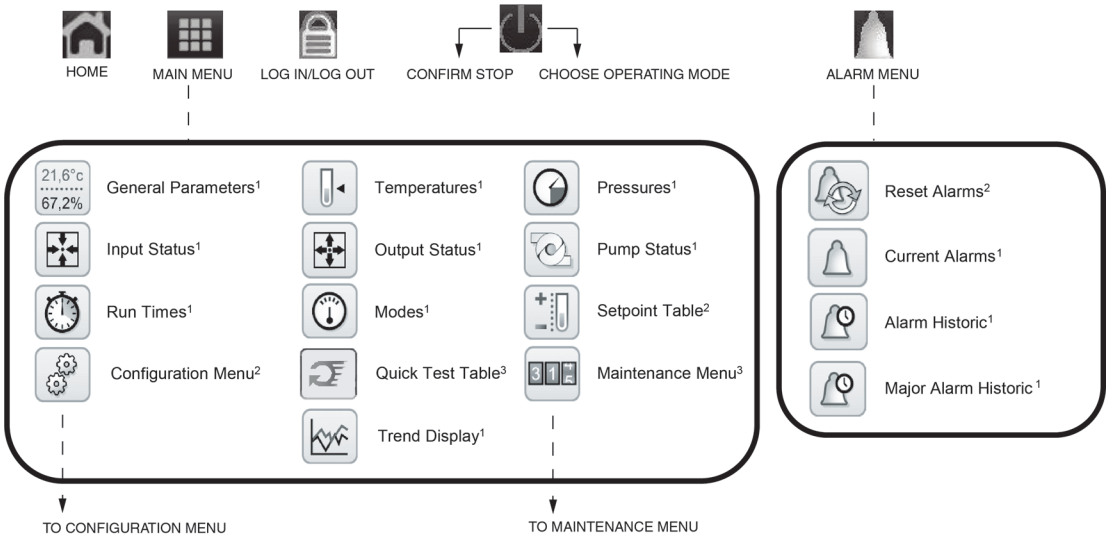


Fig. 21 — Main Menu and Alarm Menu Structure

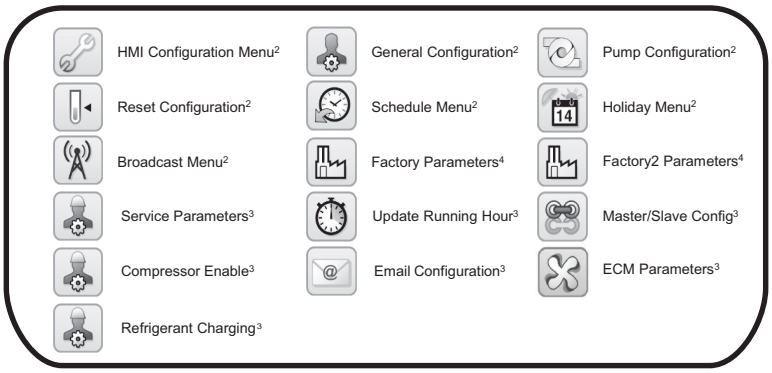


Fig. 22 — Configuration Menu Structure

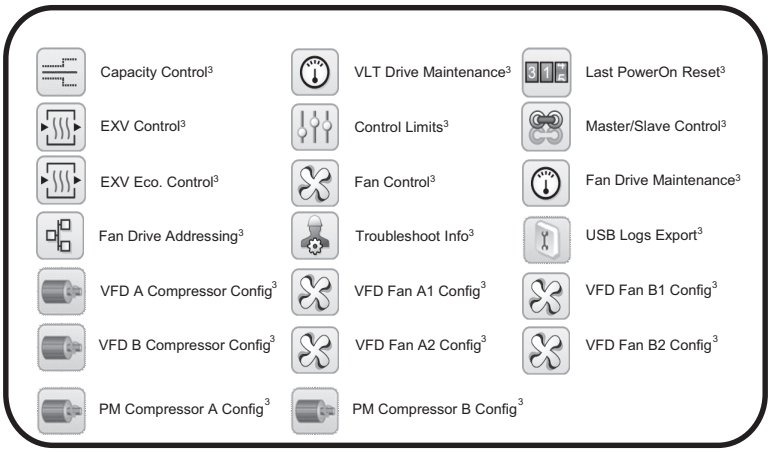


Fig. 23 — Maintenance Menu Structure

LEGEND — FIG. 21-23

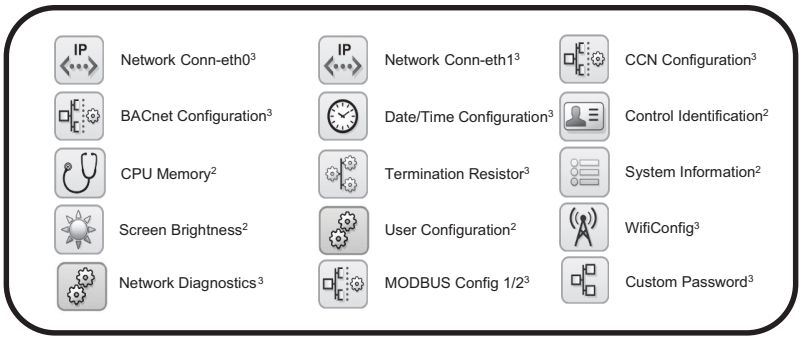
1 — Basic Access (No password required)
2 — User Access (Default password 1111)
3 — Service Access (Provided via QR code with SmartService App)
4 — Factory Access (Provided via QR code with SmartService App)

SETTING TIME AND DATE

The date and time for the controls can be set by opening the ***Main Menu → Configuration Menu → HMI Configuration Menu → Date/Time Configuration***. See Fig. 24 for the HMI Configuration menu structure. See Fig. 25 for the Date/Time Configuration screen.

Select either the NETWORK TIME SYNC button or SET TIME MANUALLY button. Choosing the NETWORK TIME SYNC button will allow the controller to synchronize the time with a network server if the chiller control system is connected to a network.

Selecting the SET TIME MANUALLY button allows the user to configure the Time Zone and set the date, time, daylight saving time, and whether today or tomorrow is a holiday. See Fig. 26 for the Set Time Manually screen.



LEGEND

1 — Basic Access (No password required)
2 — User Access (Default password 1111)
3 — Service Access (Provided via QR code with SmartService App)

Fig. 24 — HMI Configuration Menu Structure

Fig. 25 — Date/Time Configuration Screen

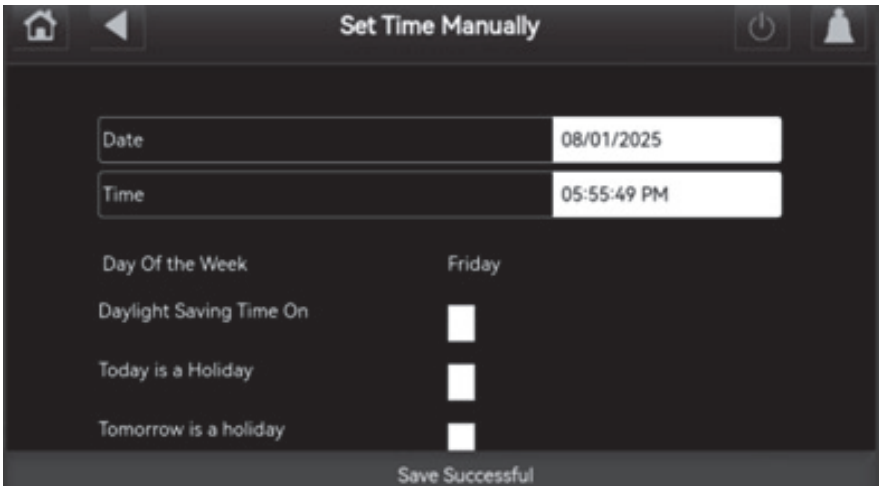


Fig. 26 — Set Time Manually Screen

WEB AND NETWORK INTERFACE

The Carrier Controller control can be configured to allow access via a standard, java-enabled web browser or over a network. See Appendix I for detailed information on setting up and accessing the Carrier Controller via the web or network interface. See Table 6 for port connections. See Fig. 27 for interface and connectors.

Table 6 — Carrier Controller Display Port Connections[a,b]

CONNECTOR	TYPE/PINOUT	FUNCTION
J1	TYPE-A	USB-3: Firmware/Software Upgrade
J5	TYPE-A	USB-1: Firmware/Software Upgrade
J6	+	RS485-1: LEN System Internal I/O Boards
	C	
	-	
J7	+	RS485-2: CCN
	C	
	-	
J8	-	RS485-4: BMS Interface, BACnet MS/TP
	SHD	
	C	
	+	
J9	12V	RNET Port to Support RNET Devices
	-	
	+	
	G	
J10	-	RS485-3: Not used
	SHD	
	C	
	+	
J11	TYPE-A	USB-2: Firmware/Software Upgrade
J14	G	24VAC Power
	+	
J15	RJ45	Ethernet-0: Service Tool, BMS Interface, BACnet IP, WAN (connectivity)
J16	RJ45	Ethernet-1: WAN (connectivity)

NOTE(S):

a. For more information about password access, see Carrier Controller Login and Display Setup on page 11.
b. PINOUT is listed as viewed from back, left to right on connector.

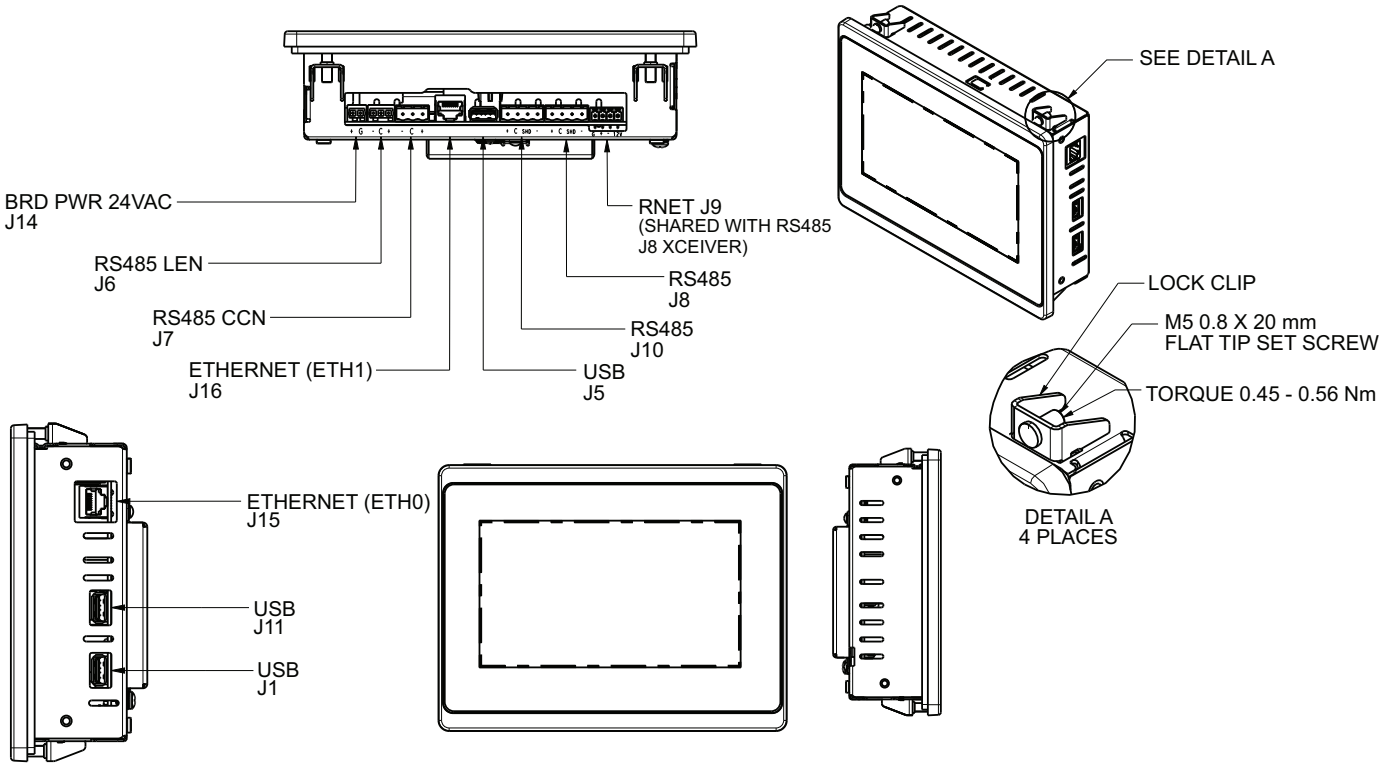


Fig. 27 — Carrier Controller Display Interface and Connectors

Input/Output (SIOB) Boards

There are two SIOBs for each unit, SIOB-A (address 49) for Circuit A and SIOB-B (address 50) for Circuit B. See Fig. 28. These boards receive inputs from thermistors, transducers, demand limit switch, dual set point switch, remote on/off switch, chilled water flow switch, oil level switch, pump interlock contact, compressor VFD enable contact, and evaporator heater current sensing switch, and provide output control to expansion valves, oil and variable load matching solenoids, evaporator heater contactor, isolation valves, oil heater relays, customer supplied pump relays, compressor VFD enable relays, and customer-supplied alarm and running relays. Information is transmitted between the SIOBs and the Carrier Controller module via a 3-wire communication bus or LEN bus. Connections for the LEN bus are J12 and J13. Each SIOB has a 4-position DIP switch bank used for addressing of the board. SIOB-A is at address 49 and SIOB-B is at address 50. See Table 7 for SIOB DIP switch settings. See Tables 8 and 9 for a list of inputs and outputs for the two SIOBs.

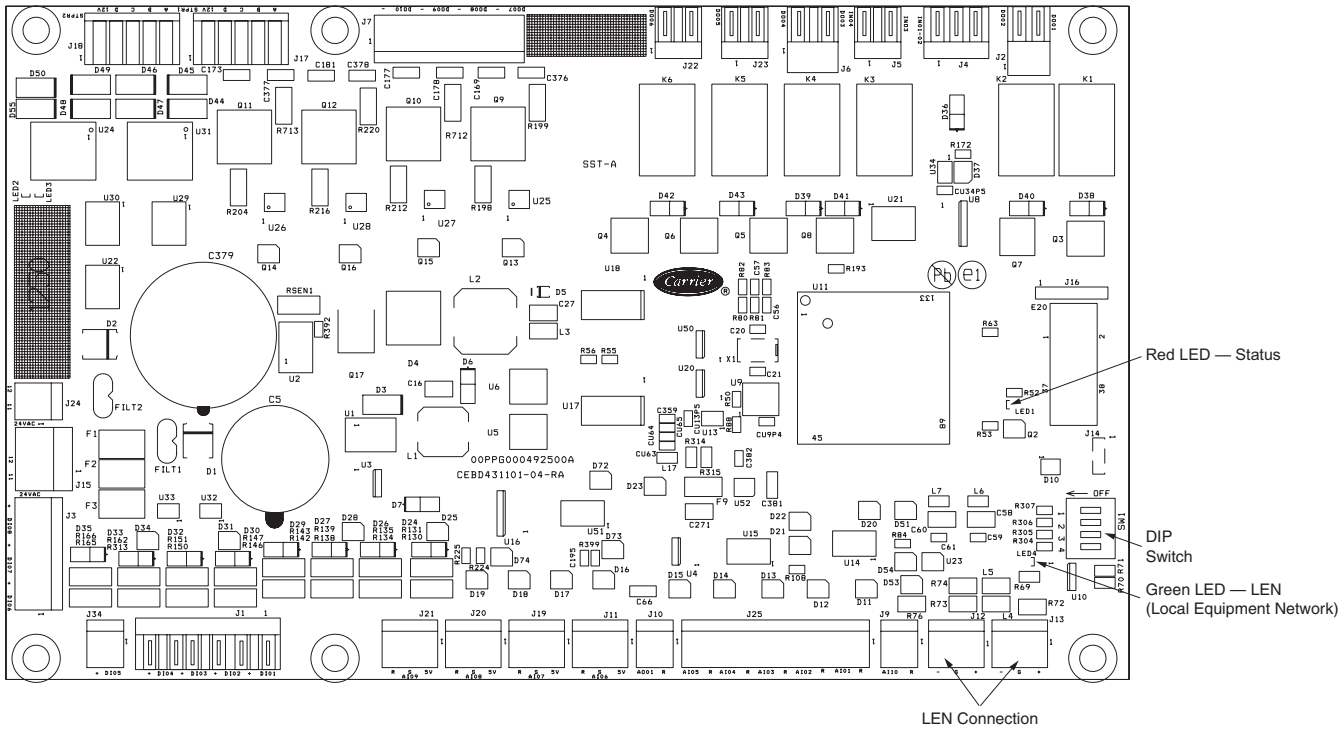


Fig. 28 — SIOB

Table 7 — SIOB A and B DIP Switch Settings

SIOB-A DIP Switch	1	2	3	4
Position	OFF	OFF	OFF	OFF
SIOB-B DIP Switch	**1**	**2**	**3**	**4**
Position	ON	OFF	OFF	OFF

Table 8 — SIOB-A Inputs and Outputs

ITEM	IN/OUT TYPE	BOARD CONNECTOR	CCN POINT	DESCRIPTION
DI-01	Dry contact	J1	ONOFF_ SW	Remote On-Off Switch (SW1)
DI-02	Dry contact		SETP_SW Dual	Setpoint Switch
DI-03	Dry contact		LIM_SW1	Demand Limit Switch 1 OnOff
DI-04	Dry contact		— Not Used —	
DI-05	Dry contact	J34	— Not Used —	
DI-06	Dry contact	J3	OIL_L_A	Oil Level Switch Circuit A
DI-07	Dry contact		FLOW_SW	Chilled Water Flow Switch (CWFS)
DI-08	Dry contact		HEATR_SW	Cooler Heater Current Sensing Rly Feedback
AI-01	Temp (5000 W)	J25	COOL_EWT	Cooler Entering Water Temperature
AI-02	Temp (5000 W)		COOL_LWT	Cooler Leaving Water Temperature
AI-03	Temp (5000 W)		OAT	Outdoor Air Temperature
AI-04	Temp (5000 W)		CP_TMP_A	Compressor A motor temperature
AI-05	Temp (5000 W)		ECO_T_A	Economizer Temperature Circuit A
AI-06	Pressure	J11	DP_A	Discharge Pressure Circuit A
AI-07	Pressure	J19	SP_A	Suction Pressure Circuit A
AI-08	Pressure	J20	ECO_P_A	Economizer Pressure Circuit A
AI-09	Pressure	J21	OP_A	Oil Pressure Circuit A
AI-10	4 to 20 mA	J9	— Not Used —	
DO-01	Relay output	J2	CPUMP_1	Pump Relay #1
DO-02	Relay output		CPUMP_2	Pump Relay #2
DO-03	Relay output	J6	OIL_HT_A	Oil Heater Contactor Circuit A
DO-04	Relay output		VFD_EN_A	VFD Enable Output Circuit A
DO-05	Relay contact	J23	ALARM	Alarm Relay
DO-06	Relay contact	J22	RUNNING	Running Relay
DO-07	Triac	J7	OIL_SL_A	Oil Solenoid Circuit A
DO-08	Triac		C_HEATER	Cooler Heater Contactor
DO-09	Triac		VI_A	VI Solenoid Control Compressor Circuit A
DO-10	Triac		ISO_POS_A	Isolation Valve Relay Circuit A
STPR1	Stepper motor	J17	EXV_A	EXV-A
STPR2	Stepper motor	J18	ECO_A	ECEXV-A
AO-01	0 to 10 VDC	J10	— Not Used —	

Table 9 — SIOB-B Inputs and Outputs

ITEM	IN/OUT TYPE	BOARD CONNECTOR	CCN POINT	DESCRIPTION
DI-01	Dry contact	J1	— Not Used —	
DI-02	Dry contact		— Not Used —	
DI-03	Dry contact		— Not Used —	
DI-04	Dry contact		— Not Used —	
DI-05	Dry contact	J34	— Not Used —	
DI-06	Dry contact	J3	OIL_L_B	Oil level Circuit B
DI-07	Dry contact		FLOW_SWB	Customer Supplied Pump Interlock Relay
DI-08	Dry contact		— Not Used —	
AI-01	Temp (5000 Ω)	J25	— Not Used —	
AI-02	Temp (5000 Ω)		— Not Used —	
AI-03	Temp (5000 Ω)		CHWSTEMP	Dual chiller temperature (accessory)
AI-04	Temp (5000 Ω)		CP_TMP_B	Compressor motor temperature Circuit B
AI-05	Temp (5000 Ω)		ECO_T_B	Economizer temperature Circuit B
AI-06	Pressure	J11	DP_B	Discharge pressure Circuit B
AI-07	Pressure	J19	SP_B	Suction pressure Circuit B
AI-08	Pressure	J20	ECO_P_B	Economizer pressure Circuit B
AI-09	Pressure	J21	OP_B	Oil pressure Circuit B
AI-10	4 to 20 mA	J9	— Not Used —	
DO-01	Relay output	J2	— Not Used —	
DO-02	Relay output		— Not Used —	
DO-03	Relay output	J6	OIL_HT_B	Oil heater contactor Circuit B
DO-04	Relay output		VFD_EN_B	VFD enable output Circuit B
DO-05	Relay contact	J23	— Not Used —	
DO-06	Relay contact	J22	— Not Used —	
DO-07	Triac	J7	OIL_SL_B	Oil solenoid Circuit B
DO-08	Triac		BOX_HTR	Display heater (accessory)
DO-09	Triac		VI_B	Vi solenoid control compressor Circuit B
DO-10	Triac		ISO_POS_B	Isolation valve relay Circuit B
STPR1	Stepper motor	J17	EXV_B	EXV-B
STPR2	Stepper motor	J18	ECO_B	ECEXV-B
AO-01	0 to 10 VDC	J10	— Not Used —	

LEGEND

AI — Analog Input
AO — Analog Output
DI — Discrete Input
DO — Discrete Output
STPR — Stepper Motor Output

Auxiliary Boards

Two AUX boards, AUX Board A (address 84) and AUX Board B (address 85), are installed in each unit. Each of the AUX boards has a set of jumpers, JP1 and JP2, which must be placed on the "P" terminal and as shown in Fig. 29. The AUX boards respond to commands from the Carrier Controller module and send the Carrier Controller module the results of the channels they monitor via the LEN. See Table 10 for AUX board A and B DIP switch settings. See Tables 11 and 12 for a list of inputs and outputs for the AUX boards.

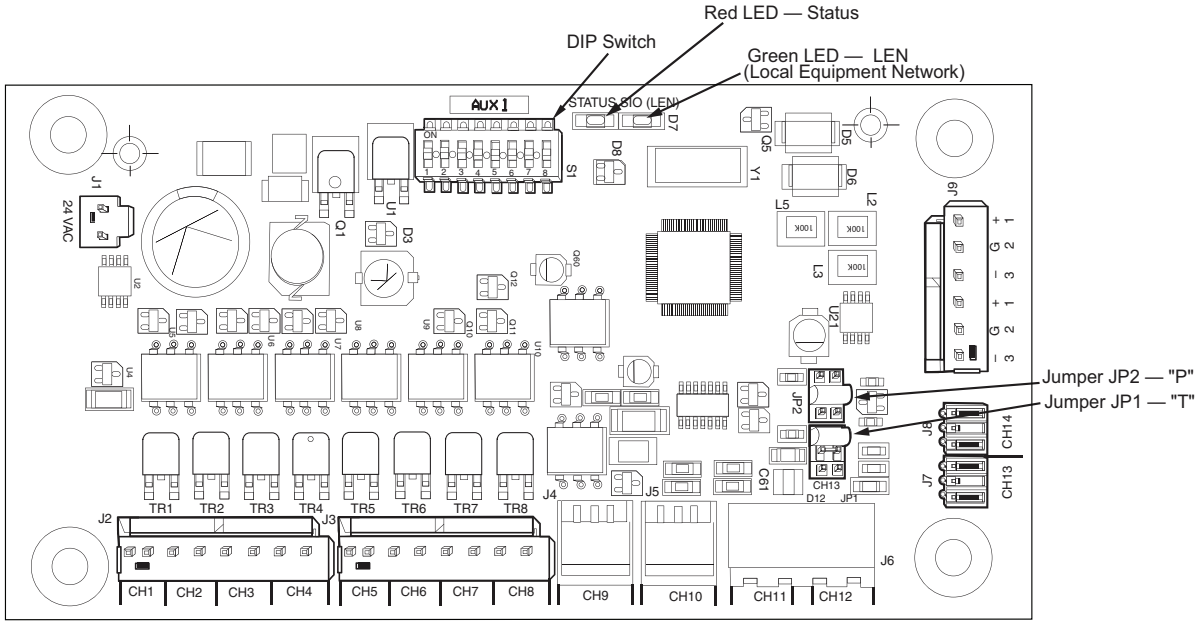


Fig. 29 — AUX Board

Table 10 — AUX Board A and B DIP Switch Settings

AUX BOARD A DIP SWITCH	1	2	3	4	5	6	7	8
Address	ON	ON	OFF	OFF	ON	OFF	ON	OFF
AUX BOARD BDIP SWITCH	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Address	OFF	OFF	ON	OFF	ON	OFF	ON	OFF

Table 11 — AUX Board A Inputs and Outputs

CHANNEL	IN/OUT TYPE	BOARD CONNECTOR	CCN POINT	DESCRIPTION (SEE NOTE)
CH 1	DO	J2	FC1_A	Fan A Stage 1
CH 2	DO		FC2_A	Fan A Stage 2
CH 3	DO		FC3_A	Fan A Stage 3
CH 4	DO		FC4_A	Fan A Stage 4
CH 5	DO	J3	FC5_A	Fan A Stage 5
CH 6	DO		FC6_A	Fan A Stage 6
CH 7	DO		FC7_A	Fan A Stage 7
CH 8	DO		FC8_A	Fan A Stage 8
CH 9	AO	J4	CAPT010A	% Capacity Circuit A (0-10 Vdc)
CH 10	AO	J5	—	Not Used
CH 11	AI	J6	DGT_A	Discharge Gas Temperature Circuit A
CH 12	AI		SUCT_A	Suction Gas Temperature Circuit A
CH 13	AI	J7	LIQ_T_A	Liquid Temperature Circuit A
CH 14	AI	J8	LIQ_P_A	Liquid Pressure Circuit A

Table 12 — AUX Board B Inputs and Outputs[a]

CHANNEL	IN/OUT TYPE	BOARD CONNECTOR	CCN POINT	DESCRIPTION (SEE NOTE)
CH 1	DO	J2	FC1_B	Fan B Stage 1
CH 2	DO		FC2_B	Fan B Stage 2
CH 3	DO		FC3_B	Fan B Stage 3
CH 4	DO		FC4_B	Fan B Stage 4
CH 5	DO	J3	FC5_B	Fan B Stage 5
CH 6	DO		FC6_B	Fan B Stage 6
CH 7	DO		FC7_B	Fan B Stage 7
CH 8	DO		FC8_B	Fan B Stage 8
CH 9	AO	J4	CAPT010B	% Capacity Circuit B (0-10 Vdc)
CH 10	AO	J5	—	Not Used
CH 11	AI	J6	DGT_B	Discharge Gas Temperature Circuit B
CH 12	AI		SUCT_B	Suction Gas Temperature Circuit B
CH 13	AI	J7	LIQ_T_B	Liquid Temperature Circuit B
CH 14	AI	J8	LIQ_P_B	Liquid Pressure Circuit B

NOTE(S):

a. Fan A and B stage outputs are only used on STANDARD TIER units, identified by the 10th position in the model number. Position 10 is S and Position 13 is -, 1, 3, or 5.

Enable-Off-Remote Switch (SW1)

The position of the Enable-Off-Remote switch is ignored except when the Remote control type is selected. Refer to the Machine Control Methods section on page 29 for more details. A selection for Machine Control Method must also be made along with the correct position of the Enable-Off-Remote Switch. This switch is installed in all units. It is a 3-position switch used to control the chiller. When switched to the Enable position, the chiller will ignore the field-supplied Remote Contacts, enabling the unit all of the time. When switched to the Off position, the chiller will shut down if running. This allows for local (at the unit) override of the Remote Contact input. When switched to the Remote position, a field-installed dry contact can be used to start and stop the chiller. The contacts must be capable of handling a 24 VAC, 50 mA load. In the Enable and Remote Contact (dry contacts closed) positions, the chiller is allowed to operate and respond to the scheduling configuration and set point data.

Emergency On/Off Switch (SW2)

This switch is installed in all units. The Emergency On/Off switch should only be used when it is required to shut the chiller off immediately. Power to all modules is interrupted when this switch is off and all outputs from these modules will be turned off.

Energy Management Module (EMM)

The EMM is available as a factory-installed option or as a field-installed accessory. See Fig. 30. When the EMM module is field-installed, the Carrier Controller must be set up to communicate with the EMM module (***Main Menu → Configuration Menu → Factory Parameters →*** **Energy Management Module → Yes**). The Energy Management Module allows the following functions:

- Chilled Water Temperature Reset — Resets the chilled water set point by the following methods:
  a. 4 to 20 mA Input: A field-supplied signal generator and 1/2-watt, 250-ohm resistor are required.
  b. Space Temperature: A field-supplied space temperature sensor is required.
- Demand Limit — Limits the capacity of the machine from unit capacity by the following methods:
  a. 4 to 20 mA Input: A field-supplied signal generator and 1/2-watt, 250-ohm resistor are required.
  b. 2 or 3-Step Switch Control: A field-supplied dry contact switch is required. (One-Step Demand Limit does not require the EMM.)
- Occupancy Override — Extends the occupied period for machine operation. A field-supplied dry contact switch is required.
- Remote Chiller Lockout — Disables the chiller when closed. A field-supplied dry contact switch is required.
- Ice Done Control Switch — Signals the machine to exit the Ice Build mode and enter an unoccupied time period. A field-supplied dry contact switch is required.

The following status functions are available with the EMM board:

- Capacity Output Signal — A 0 to 10 vdc analog output signal indicating chiller capacity is available.
- Shutdown Status Relay — A 24 vac output signal indicating that the machine is shutting down.
- Alert Relay — A 24 vac output signal indicating the unit has an active alert.
- Compressor Run Status — A 24 vac output signal (one for compressor A, one for compressor B), indicating the compressor is on.

The EMM communicates the status of all inputs with the Carrier Controller module, and the controls adjusts the control point, capacity limit, and other functions according to the inputs received. See Table 13 for EMM board inputs and outputs.

⚠ CAUTION

Care should be taken when interfacing with other manufacturer's control systems due to possible power supply differences, full wave bridge versus half wave rectification, which could lead to equipment damage. The two different power supplies cannot be mixed. Carrier Controller controls use half wave rectification. A signal isolation device should be utilized if a full wave bridge rectifier signal generating device is used.

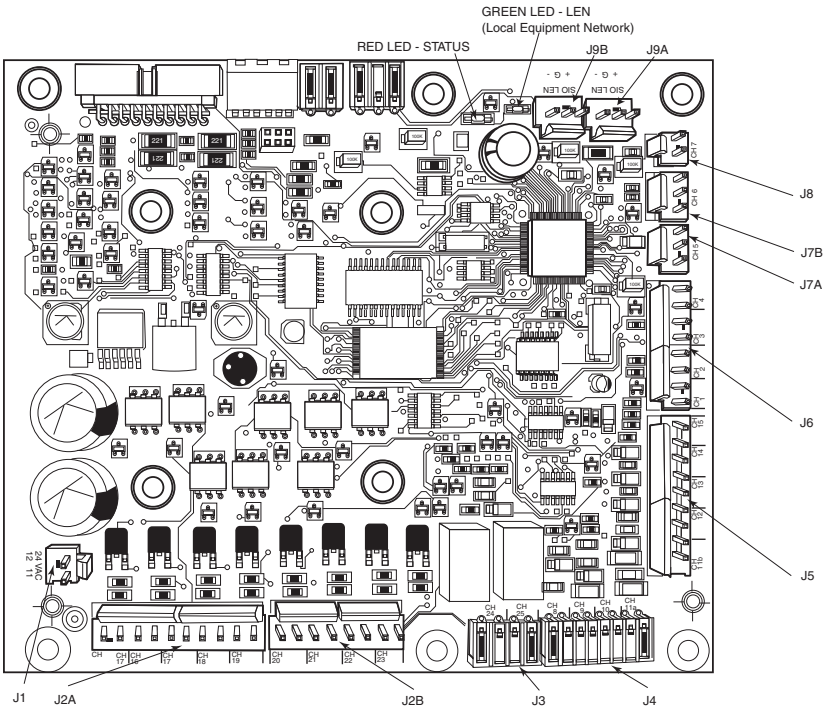


Fig. 30 — Energy Management Module

Table 13 — EMM Board Inputs and Outputs

CHANNEL	IN/OUT TYPE	BOARD CONNECTOR	CCN POINT	POINT DESCRIPTION	I/O POINT NAME	INPUT/OUTPUT TYPE
CH 01	AI	J6	—	—	AI-01	5/10K Thermistor
CH 02	AI		SPACETMP	Space temperature	AI-02	10K Thermistor
CH 03	AI		—	—	AI-03	5/10K Thermistor
CH 04	AI		—	—	AI-04	5/10K Thermistor
CH 05	AI	J7A	SP_RESET	Setpoint reset	AI-06	0-5V
CH 06	AI	J7B	LIM_ANAL	Capacity limit	AI-07	0-5V
CH 07	AO	J8	CAP_T	% Total capacity running	AO-01	0-10 Vdc
CH 08	DI	J4, CH8	OCC_OVSW	Occupancy override	DI-01	—
CH 09	DI	J4, CH9	LIM_SW2	Demand limit SW2	DI-02	—
CH 10	DI	J4, CH10	REM_LOCK	Remote lockout switch	DI-03	—
CH 11a	DI	J4, CH11A	ICE_SW	Ice done	DI-04	—
CH 11b	DI	J4, CH11B	—	—	DI-05	—
CH 12	DI	J5, CH12	—	—	DI-06	—
CH 13	DI	J5, CH13	—	—	DI-07	—
CH 14	DI	J5, CH14	—	—	DI-08	—
CH 15	DI	J5, CH15	—	—	DI-09	—
CH 16	DO	J2A	CP_A	Compressor A run status	DO-01	Triac
CH 17	DO	J2A	CP_B	Compressor B run status	DO-02	Triac
CH 18	DO	J2A	—	—	—	—
CH 19	DO	J2A	—	—	—	—
CH 20	DO	J2B	—	—	—	—
CH 21	DO	J2B	—	—	—	—
CH 22	DO	J2B	—	—	—	—
CH 23	DO	J2B	—	—	—	—
CH 24	DO	J3	SHUTDOWN	Shutdown relay	DO-09	Relay
CH 25	DO	J3	ALERT	Alert relay	DO-10	Relay

Local Equipment Network

Information is transmitted between modules via a 3-wire communication bus or LEN.

Board Addresses

All boards (except the Carrier Controller display and the Energy Management Module) have DIP switches to set the address.

Control Module Communication

RED LED

Proper operation of the control boards can be visually checked by looking at the red status LEDs (Light-Emitting Diodes). When operating correctly, the red status LEDs will blink in unison at a rate of once every 2 seconds. If the red LEDs are not blinking in unison, verify that correct power is being supplied to all modules and that all communication wiring is connected securely. Confirm current version of software installed on Carrier Controller panel by navigating to Control Identification Menu (***Main Menu → Configuration Menu → HMI Configuration Menu → Control Identification Menu →*** **Software Part Number**). If a newer version of the software exists, contact your Carrier service representative service to reload current software. If the problem still persists, replace the Carrier Controller module. A red LED that is lit continuously or blinking at a rate of once per second or faster indicates that the board should be replaced.

GREEN LED

All boards have a green LEN LED which should be blinking whenever power is on. If the LEDs are not blinking as described check LEN connections for potential communication errors at the board connectors. A 3-wire bus accomplishes communication between modules. These 3 wires run in parallel from module to module. They connect to J9 on EMM and AUX boards, and to J12 or J13 on SIOBs. A valid unit configuration must be in the Carrier Controller module for proper LEN communication.

Carrier Comfort Network® Interface

All 30XV units can be connected to the CCN, if desired. The communication bus wiring is RS-485 Communication Wiring, CM or CMP rated consisting of a shielded, 3 conductor cable with drain wire and is field supplied and installed. The system elements are connected to the communication bus in a daisy chain arrangement. The positive pin of each system element communication connector must be wired to the positive pins of the system elements on either side of it. The negative and signal ground pins of each system element must also be wired in the same manner. Wiring connections for CCN should be made at TB3. See Fig. 31. For noise consideration, communication wiring must be separate and not run in parallel with other wiring.

NOTE: Conductors and drain wire must be 20 AWG (American Wire Gage) minimum stranded, tinned copper. Individual conductors must be insulated with PVC (Polyvinyl Chloride), PVC/nylon, vinyl, Teflon[1], or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl, or Teflon with a minimum operating temperature range of –20°C to 60°C is required. High temperature applications may require a higher temperature range. Plenum applications will require plenum rated cable. Cable voltage requirements must match the application.

When connecting to a CCN communication bus, it is important that a color-coding scheme be used for the entire network to simplify the installation. It is recommended that red be used for the signal positive, black for the signal negative, and white for the signal ground. Use a similar scheme for cables containing different colored wires.

At each system element, the shields of its communication bus cables must be tied together. If the communication bus is entirely within one building, the resulting continuous shield must be connected to a ground at one point only. If the communication bus cable exits from one building and enters another, the shields must be connected to grounds at the lightning suppressor in each building where the cable enters or exits the building (one point per building only). To connect the unit to the network:

1. Turn off power to the control box.
2. Cut the CCN wire and strip the ends of the red (+), white (ground), and black (–) conductors. (Substitute appropriate colors for different colored cables.)
3. Connect the red wire to (+) terminal on TB3 of the plug, the white wire to COM terminal, and the black wire to the (–) terminal.
4. The RJ14 CCN connector on TB3 can also be used, but is only intended for temporary connection (for example, a laptop computer running Network Service Tool).

IMPORTANT: A shorted CCN bus cable will prevent some routines from running and may prevent the unit from starting. If abnormal conditions occur, disconnect the CCN bus. If conditions return to normal, check the CCN connector and cable. Run new cable if necessary. A short in one section of the bus can cause problems with all system elements on the bus.

1. Third-party trademarks and logos are the property of their respective owners.

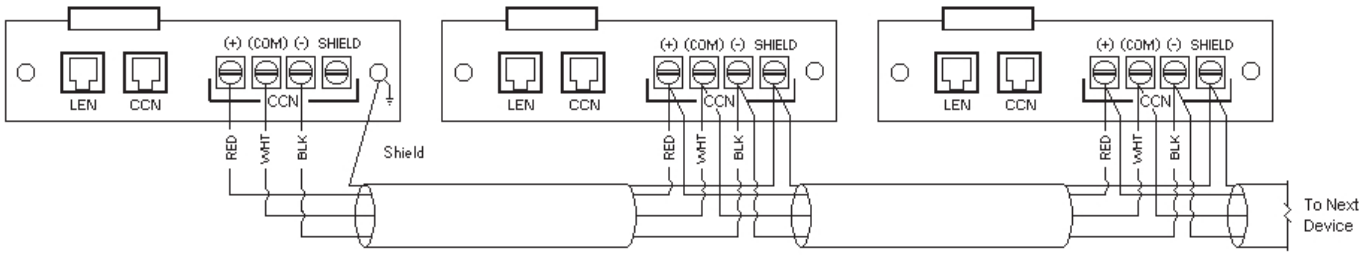


Fig. 31 — Carrier Controller CCN Communication Wiring

External Sensor Wiring

External sensors, such as a Space Temperature Sensor, must be wired to the unit, if values are not communicated. The wiring should be CM or CMP rated depending on the application. Wiring is field supplied and installed. For wiring runs of less than 100 feet (30.5 m), 2-conductor, twisted pair, unshielded wire is acceptable. For wiring runs of 100 feet (30.5 m) or more, 2-conductor, twisted pair, shielded wire is recommended. For noise consideration, sensor wiring must be separate and not run in parallel with other wiring.

NOTE: Conductors and drain wire must be 20 AWG stranded, tinned copper. Individual conductors must be insulated with PVC, PVC/nylon, vinyl, Teflon, or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl, or Teflon with a minimum operating temperature range of –20°C to 60°C is required. High temperature applications may require a higher temperature range. Plenum applications will require plenum rated cable. Cable voltage requirements must match the application.

Remote Alarm and Alert Relays

The 30XV chiller can be equipped with remote alert and remote alarm annunciator contacts. Both relays connected to these contacts must be rated for a maximum power draw of 10 va sealed, 25 va inrush at 24 volts.

The remote alarm annunciator relay, indicating that one circuit or the complete unit has been shut down, can be connected to TB5-12 and TB5-21. Refer to unit wiring diagrams. For the remote alert annunciator relay, indicating that an alert is active but neither circuit is shut down, a field-supplied and installed relay must be connected between TB6-18 and TB6-26. The Energy Management Module is required for this feature. The unit configuration must have the Energy Management Module enabled (***Main Menu → Configuration Menu → Factory Parameter***) set **EMM** to **YES**(1).

CONFIGURATION (SOFTWARE)

Carrier Controller Operation Configuration Tables

The Carrier Controller control system can be configured for a range of operating conditions and equipment arrangements. The following parameters should be configured based on unique system layout and operating requirements.

The system parameters may be configured through the Carrier Controller interface or remotely through the CCN. Table 14 shows the Carrier Controller configuration required to access the unit on the CCN. Figure 32 shows the CCN configuration screen.

Table 14 — Carrier Controller Identification Configuration Table

PATH	DISPLAY NAME	VALUE
Main Menu → ***Configuration Menu →*** ***HMI Configuration Menu →*** ***CCN Configuration Menu***	CCN Address	Default=1
	CCN Bus	Default=0
	Primary Bus Baud Rate	Default=9600

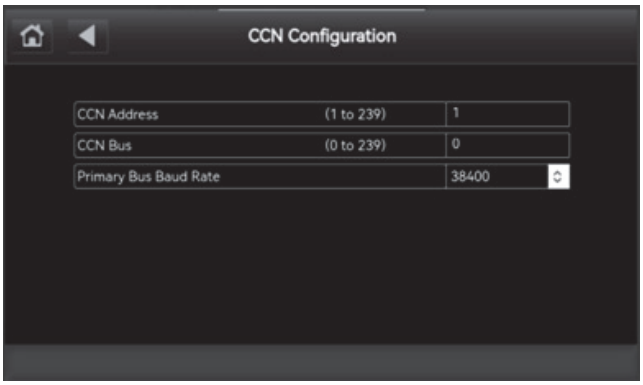


Fig. 32 — CCN Configuration Screen

Carrier Controller Menu Tables

Carrier Controller operation is controlled by configuration information entered in the configuration tables listed in Tables 15-19. Access to different parameters may be available to all users (BASIC) or password-protected (USER, SERVICE, FACTORY). See Appendix A for detailed descriptions of all control tables and parameters.

Table 15 — Main Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	MENU ICON
1	GENUINT	Basic, User, Service, Factory	General Parameters	
2	TEMP	Basic, User, Service, Factory	Temperatures	
3	PRESSURE	Basic, User, Service, Factory	Pressures	
4	INPUTS	Basic, User, Service, Factory	Inputs Status	
5	OUTPUTS	Basic, User, Service, Factory	Outputs Status	
6	PUMPSTAT	Basic, User, Service, Factory	Pump Status	
7	RUNTIME	Basic, User, Service, Factory	Run Times	
8	MODES	Basic, User, Service, Factory	Modes	
9	SETPOINT	User	Setpoint Table	
10	CONFIG	User	Configuration Menu	
11	QCK_TEST	Service	Quick Test Table	
12	MAINTAIN	Service	Maintenance Menu	
13	TRENDING	Basic, User, Service, Factory	Trend Display	

Table 16 — Alarms Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	MENU ICON
1	ALARMRST	USER, SERVICE, FACTORY	Reset Alarms	
2	CUR_ALM	BASIC, USER, SERVICE, FACTORY	Current Alarms	
3	ALMHIST1	BASIC, USER, SERVICE, FACTORY	Alarm Historic	
4	ALMHIST2	BASIC, USER, SERVICE, FACTORY	Major Alarm Historic	

Table 17 — Configuration Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	MENU ICON
1	HMI_CONF	USER, SERVICE, FACTORY	HMI Configuration Menu	
2	GEN_CONF	USER, SERVICE, FACTORY	General Configuration	
3	PUMPCONF	USER, SERVICE, FACTORY	Pump Configuration	
4	RESETCFG	USER, SERVICE, FACTORY	Reset Configuration	
5	SCHEDULE	USER, SERVICE, FACTORY	Schedule Menu	
6	HOLIDAY	USER, SERVICE, FACTORY	Holiday Menu	
7	BRODCAST	USER, SERVICE, FACTORY	Broadcast Menu	
8	FACTORY	FACTORY	Factory Parameters	
9	FACTORY2	FACTORY	Factory2 Parameters	
10	SERVICE	SERVICE, FACTORY	Service Parameters	
11	UPDTHOUR	SERVICE, FACTORY	Update Running Hour	
12	MST_SLV	SERVICE, FACTORY	Master Slave Config	
13	CP_UNABL	SERVICE, FACTORY	Compressor Enable	
14	EMAILCFG	SERVICE, FACTORY	Email Configuration	
15	ECM	SERVICE, FACTORY	ECM Parameters	
16	REFCHG	SERVICE, FACTORY	Refrigerant Charging	

Table 18 — Maintenance Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	ICON
1	CAPACTRL	SERVICE, FACTORY	Capacity Control	
2	VLT_DRV	SERVICE, FACTORY	VLT Drive Maintenance	
3	LAST_POR	SERVICE, FACTORY	Last PowerOn Reset	
4	EXV_CTRL	SERVICE, FACTORY	EXV Control	
5	LIMITS	SERVICE, FACTORY	Control Limits	
6	M_MSTSLV	SERVICE, FACTORY	Master Slave Control	
7	ECO_CTRL	SERVICE, FACTORY	EXV Eco. Control	
8	FAN_CTRL	SERVICE, FACTORY	Fan Control	
9	FAN_DRV	SERVICE, FACTORY	Fan Drive Maintenance	
10	FAN_DRV2	SERVICE, FACTORY	Fan Drive Addressing	
11	TBLSHT	SERVICE, FACTORY	Troubleshoot Info	
12	VFD_CMPA	SERVICE, FACTORY	VFD A Compressor Config	
13	VFD_CMPB	SERVICE, FACTORY	VFD B Compressor Config	
14	FAN_A1	SERVICE, FACTORY	VFD Fan A1 Config	
15	FAN_A2	SERVICE, FACTORY	VFD Fan A2 Config	
16	FAN_B1	SERVICE, FACTORY	VFD Fan B1 Config	
17	FAN_B2	SERVICE, FACTORY	VFD Fan B2 Config	
18	USB_LOG	SERVICE, FACTORY	USB Logs Export	
19	PM_A	SERVICE, FACTORY	PM Compressor A config	
20	PM_B	SERVICE, FACTORY	PM Compressor B config	

Table 19 — HMI Configuration Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	ICON
1	NET_ETH0	NONE	Network Conn - eth0	
2	NET_ETH1	NONE	Network Conn - eth1	
3	CCN_CONF	SERVICE, FACTORY	CCN Configuration	
4	BAC_CONF	SERVICE, FACTORY	BACnet Configuration	
5	DATETIME	SERVICE, FACTORY	Date/Time Configuration	
6	CTRL_ID	USER, SERVICE, FACTORY	Control Identification	
7	CPU_MEM	USER, SERVICE, FACTORY	CPU/Memory	
8	TERM_RES	SERVICE, FACTORY	Termination Resistor	
9	SYS_INFO	USER, SERVICE, FACTORY	System Information	
10	SCRN_BRT	USER, SERVICE, FACTORY	Screen Brightness	
11	CONFIG	USER, SERVICE, FACTORY	User Configuration	
12	WIFI	SERVICE, FACTORY	Wifi Config	
13	NET_DIAG	SERVICE, FACTORY	Network Diagnostics	
14	MODCONF	SERVICE, FACTORY	MODBUS Config 1/2	
15	PASSCUST	SERVICE, FACTORY	Custom Password	
16	NET_WIZ	SERVICE, FACTORY	Network Wizard	

Machine Control Methods

This term refers to how the machine is started and stopped. Several Machine Control Methods are available.

- Local On
- Local Schedule
- Network
- Remote
- Master

The Carrier Controller Start/Stop button is used to select one of the above control types; see Fig. 33. The Carrier Controller Start/Stop button is used to select one of the above control types. Once the Start/Stop button is touched, and assuming the unit is not running, the current start method will be indicated in green; if this is the case, the option to switch to "Local Off" will also be available. See Fig. 33 for details. In addition, when the Local control type is selected, this button can be used to select a particular functional mode: On, Off, or Schedule mode. If the Start/Stop button is green the unit is running. If the Start/Stop button is gray the unit is not running. If the button is flashing green then the unit is preparing to start.

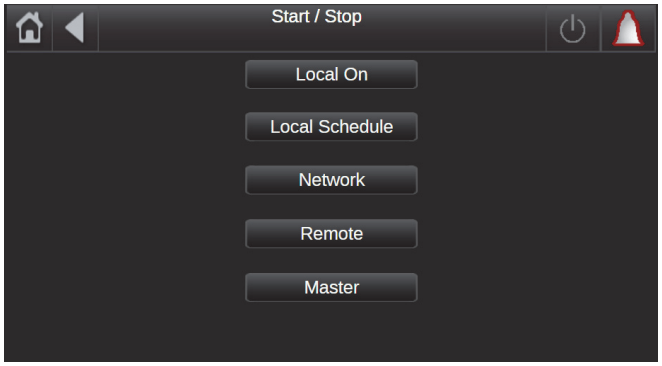


Fig. 33 — Machine Control Methods

See Fig. 34 for Machine Control Methods Local Off.

Fig. 34 — Machine Control Methods Showing Current Start Method and Local Off Option

LOCAL ON

With this mode selected, the unit is under local control and will be allowed to start. The unit will ignore the Remote Control Contacts, as well as the Enable-Off-Remote Switch (SW1) and any network commands except Emergency Stop, as well as the Enable-Off-Remote (SW1) input. Use this method if the unit is to run all the time without direction from a Building Management System or network.

LOCAL SCHEDULE

With this mode selected, the unit is under local control and will be allowed to start if Occupancy Schedule 1 ***Configuration Menu*** → ***Schedule Menu*** → **OCCPC01S** indicates the current time is within an occupied period. Otherwise, the unit will remain off. See "DEFINING OCCUPANCY SCHEDULE" on page 32 for details on configuring a local schedule. The unit will ignore the Remote Control Contacts, as well as the Enable-Off-Remote (SW1) and any network commands except Emergency Stop. Use this method if the unit is to run based on an occupancy schedule without direction from a Building Management System or network.

NETWORK

With this mode selected, the unit is under CCN control and will be controlled by CCN commands. The unit will ignore the Remote Control Contacts, as well as the Enable-Off-Remote (SW1) input. Use this method if the unit is to run based on a Building Management System or network. The Slave unit of a 2-unit Master-Slave Chiller Plant is required to be started in Network mode.

REMOTE

With this mode selected, the unit is under remote control and will be allowed to start if the Enable-Off-Remote Switch (SW1) is in the Remote position and the Remote Contacts (TB5-9 and -10) are closed. Alternatively, if the Enable-Off-Remote Switch (SW1) is in the Enable position, the unit will operate regardless of the Remote Contact status (TB5-9 and -10), since it will be bypassed. The unit will ignore any network commands except Emergency Stop. Use this method if the unit is to operate the chiller via a contact closure from a Building Management System.

MASTER

With this mode selected, the unit is operating as the Master unit of a 2-unit Master-Slave Chiller Plant. The Master unit can be started under Local On, Local Schedule, Network, or Remote. The exceptions noted for each of the control methods will still apply. Use this method if the unit is to run as the Master unit.

Table 20 summarizes the available operating types.

Table 20 — Operating Types

MACHINE CONTROL TYPE	OPERATING TYPE	DESCRIPTION
LOCAL OFF	Local	The unit is under Local control method. It will remain halted and will ignore all CCN network commands and remote switch contacts.
LOCAL ON	Local	The unit is under Local control method and will be allowed to start. The control will ignore all remote control contacts and all CCN network force commands (except the Emergency Stop Command).
LOCAL SCHEDULE	Local	The unit is under Local control method and will be allowed to start if the schedule no. 1 is occupied (**CHIL_OCC**). Otherwise, the unit will remain off. The control will ignore all remote control contacts and all CCN network force commands (except the Emergency Stop Command).
NETWORK	CCN	The unit is under CCN control method and will be controlled by CCN force commands. The control will ignore all remote control contacts.
REMOTE	Remote	The unit is under Remote control method and will be controlled by the start/stop. In this mode, no CCN force command can affect the unit control except the Emergency Stop Command.
MASTER	Master	The unit is configured as the master unit in a two-unit master/slave plant. The master unit control method can be done locally, remotely, or through CCN commands upon the master/slave configuration.

MACHINE CONTROL METHOD SELECTION

The Machine Control Method is selected through the Carrier Controller by touching the Start/Stop button .

Start/Stop Selection Screen

The Carrier Controller Start/Stop button is a hotkey, and when touched, opens the Start/Stop selection screen. and displays the list of Machine Control Methods if the unit is off (Fig. 33), or Confirm Stop if the unit is on (Fig. 35).

Start a Stopped Machine

If the unit is off, the Start/Stop button will be gray. Touch the icon to display the list of operating modes and select the required mode. Once the unit has been started, the display will return to the home screen.

Stop a Running Machine

To stop a running unit, touch the green Start/Stop button . For Machine Control Methods Local On or Master, confirm the unit shutdown by touching Confirm Stop or cancel by touching the Back button (Fig. 35).

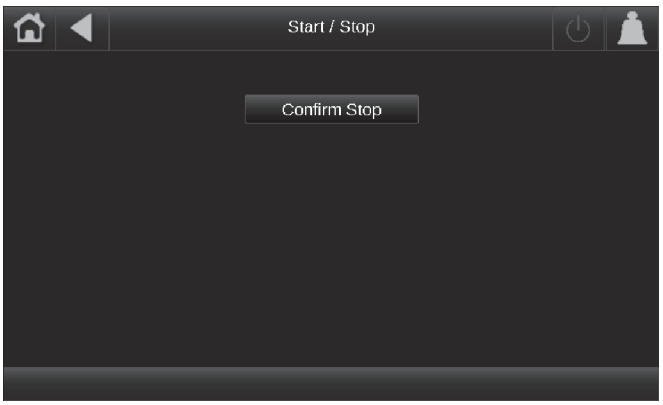


Fig. 35 — Confirm Stop

If the unit was operating when a power failure occurred, the controller initializes when power is restored. When the initialization period is complete, the Warning screen, if the unit is not stopped, or Success screen will clear as the Home Screen is displayed.

Once the unit has been stopped, the Home screen is displayed.

If the unit is running, touching the Start/Stop button displays a screen with a Confirm Stop button (see Fig. 35), which when touched changes the chiller to Local Off mode. If the unit is Off, touching the Start/Stop button shows a list of operating types with the currently selected type corresponding to the last running operating type (Fig. 33).

MACHINE ON/OFF FUNCTION

The machine operating state can be viewed by going to ***Main Menu → General Parameters → Run Status***. Table 21 summarizes possible unit states.

Table 21 — Unit States

STATE	DESCRIPTION
Off	Unit is commanded to be off
Stopping	Unit is currently stopping (after a manual, emergency, or shutdown request). Next state will be Off.
Delay	Unit is in delay at start-up (waiting for the end of the On/Off delay to be reached). Next state will be Running.
Running	Unit compressor capacity is more that 0% (unit has started running)
Ready	Unit compressor capacity is 0%. Unit is ready to start.
Override	The compressor cannot start because of an override (SST, SCT, etc.)
Tripout	Unit is Off due to an alarm
Test	Unit is in Quick Test

Table 22 summarizes the unit control method and stop or go status with regard to the following parameters set in the Carrier Controller module:

- Machine Control Method: Machine Control Method as selected on the unit Start/Stop screen.
- **CHIL_S_S**: Current CCN chiller start/stop force command (enable/disable). ***Main Menu → General Parameters →*** **Net:Cmd Start/Stop**.
- **ONOFF_SW**: Start-stop contact status when unit is under remote operating type. ***Main Menu → Inputs Status →*** **Remote On/Off Switch**.
- **CHIL_OCC**: Chiller occupied state. If the occupancy override input switch is closed, the chiller remains occupied regardless of the set point scheduled selection. ***Main Menu → General Parameters →*** **Net:Cmd Occupied**.
- **MS_CTRL**: Master control type. This parameter status will determine if the master unit is going to be controlled locally, remotely, or through CCN. ***Main Menu → Maintenance Menu →*** **Master Slave Control** (0=disabled, 1=master, 2=slave).
- EMSTOP: CCN emergency stop command (enable/disable). ***Main Menu → General Parameters →*** **Emergency Stop.**
- Alarm shutdown: Unit is totally stopped due to alarm.

The Machine Control Method and Parameter Status combinations listed in Table 22 will determine the actual unit running state.

NOTE: When changing from one Machine Control Method (Local On, Local Schedule, Network, Remote, or Master) to another, the unit will observe a transition through the Off state before being allowed to start again. At this time the on-to-off delay is always applied.

Chilled Water Set Point Configuration

The chilled water set point and fluid type configuration will determine the chiller operating conditions.

FLUID SET POINT CONTROL LOCATION

The factory default for the chilled water fluid set point is to control to the leaving water temperature. An option to configure the machine for entering water control is available. To configure this option go to ***Main Menu → Configuration Menu → Service Parameters***. The default for **Entering Fluid Control** is Off (leaving fluid control is the default condition). To enable Entering Water Control, change **Entering Fluid Control** to **On**. Entering Water Control is recommended for constant flow applications only.

COOLING SET POINT SELECTION

The **Control Point** (shown in the lower right corner of the Home Screen, or ***Main Menu → General Parameters →*** **Control Point**) represents the water temperature that the unit must produce. The unit will vary the capacity depending on the load conditions in order to satisfy the set point. The **Control Point** (CTRL_PNT) is calculated based on the Active Setpoint (***Main Menu→ General Parameters***) [Main Menu and General Parameters in bold italics]. and the reset calculation, where Control Point = Current Setpoint + Temperature Reset. (See "Temperature Reset" on page 42.) **Control Point** can be written to by the Building Management System, instead of the set point calculation only if Network is selected as the Machine Control Method for the unit. See ***Main Menu → General Parameters → Local=0 Net.-1 Remote=2*** to verify operating type.

DEFINING SET POINTS

The cooling set points are set via the Setpoint Table (***Main Menu → Setpoint Table***). **Cooling Setpoint 1, Cooling Setpoint 2,** and **Cooling Ice Setpoint** are temperature set points that are available as the **Current Setpoint** for unit operation. These set points are limited by the type of fluid in the system (see Table 23).

See the Ice Storage Operation section on page 50 for more details about the Cooling Ice Setpoint.

All default set points are based on Leaving Water Control (Entering Fluid Control, EWTO [Entering Water Temperature Offset] set to No). Values must be confirmed for the individual set points. Limits for the set points are listed in Table 23. These values depend on the Evaporator Fluid Type and the Brine Freeze Setpoint (see Chilled Water Fluid Type Selection on page 34).

Table 22 — Start/Stop Control

MACHINE CONTROL METHOD	PARAMETER STATUS						OPERATING TYPE	UNIT STATUS
	CHIL_S_S	ONOFF_SW	MS-CTRL	CHIL_OCC	EMSTOP	Alarm Shutdown		
Local Off	—	—	—	—	—	—	Local	Off
Local On	—	—	—	—	Disable	No	Local	On
Local Schedule	—	—	—	Yes	Disable	No	Local	On
	—	—	—	No	—	—	Local	Off
Remote	—	Open	—	—	—	—	Remote	Off
	—	—	—	No	—	—	Remote	Off
		Closed		Yes	—	—	Remote	On
CCN	Disable	—	—	—	—	—	CCN	Off
	—	—	—	No	—	—	CCN	Off
	Enable	—	—	Yes	Disabled	No	CCN	On
Master	—	—	Local	No	—	—	Local	Off
	—	Open	Remote	—	—	—	Remote	Off
	—	—	Remote	No	—	—	Remote	Off
	Disable	—	CCN	—	—	—	CCN	Off
	—	—	CCN	No	—	—	CCN	Off
	—	—	Local	Yes	Disable	No	Local	On
	—	Closed	Remote	Yes	Disable	No	Remote	On
	Enable		CCN	Yes	Disable	No	CCN	On
—	—	—	—	—	Enable	—	—	Off
					—	Yes	—	Off

LEGEND

CHIL_OCC — Chiller Occupied State
CHIL_S_S — CCN Chiller Start/Stop Command
EMSTOP — Emergency Stop
MA St — Master/Slave Operating Type
MS-CTRL — Master/Slave Control
ONOFF_SW — Remote On/Off Switch

Table 23 — Evaporator Fluid Set Point Limits

SET POINT LIMITS	EVAPORATOR FLUID TYPE (flui_typ)		
	1 = Water	2 = Medium Brine	3 = Low Brine
Minimum[a]	38°F (3.3°C)	30°F (–1.1°C)	15°F (9.4°C)
Maximum	60°F (15.5°C)	60°F (15.5°C)	60°F (15.5°C)

NOTE(S):

a. The minimum set point for brine applications is related to the brine freeze set point. The set point is limited to be no less than the brine freeze set point + 4°F (2.2°C).

CURRENT OPERATING SET POINT

Depending on the current operation type, the active set point can be selected manually in the Main Menu, with the dry user contacts or with network commands (CCN or BACnet), or automatically with the set point time schedule (Occupancy Schedule 2).

Set points can be selected manually through the main interface when the unit is in Local operating type, through contacts when the unit is in Remote operating type, or through the RS485 bus when unit is in CCN mode.

Set points can also be selected automatically through a set point time schedule: when the period is occupied Cooling Setpoint 1 will be activated, and when the period is Unoccupied Cooling Setpoint 2 will be active. When in local operating type, time schedule is available if the Setpoint Select Variable is set to AUTO (see below). In remote operating type, the AUTO mode will be available unless the dual set point control through contacts has already been selected. In CCN mode, the set point selection always depends on the time schedule. The set point can be forced through the **SP_OCC** CCN point (0 = Occupied = Cooling Setpoint 1, 1 = Unoccupied = Cooling Setpoint 2).

Set point selection offers three different control options (***Main Menu → General Parameters → Setpoint Select***): Auto, Setpoint 1, and Setpoint 2.

- 0 = Auto: The active cooling set point will be determined by the configured Occupancy Schedules. See the Defining Occupancy Schedule section for details on setting the schedules. Depending on the Ice Storage configuration and ice contact state, the active set point may alternately be set to the Cooling Ice Setpoint.
- 1 = Setpoint 1: The active cooling set point will be Cooling Setpoint 1 defined in the set point table.
- 2 = Setpoint 2: The active cooling set point will be Cooling Setpoint 2 defined in the set point table. Depending on the Ice Storage configuration and ice contact state, the active set point may alternately be set to the Cooling Ice Setpoint.

SETPOINT OCCUPANCY

Setpoint Occupancy is the default configuration for the Setpoint Select variable. When Setpoint Select (***Main Menu → General Parameters → Setpoint Select***) is configured to 0 (Auto), the unit's active set point is based on the programmed occupancy schedules. Under Time Schedule 1 (OCCPC01S), the unit controls to Cooling Set Point 1 (csp1) during the occupied periods. If the Time Schedule 2 (OCCPC02S) is in use, the unit's active set point is based on Cooling Set Point 1 (csp1) (***Main Menu → Setpoint Table →*** **Cooling Setpoint 1**) during the occupied period and Cooling Set Point 2 (csp2) (***Main Menu → Setpoint Table →*** **Cooling Setpoint 2**) during the unoccupied period. The two schedules are used together to determine periods when the chiller will be controlling to Setpoint 1, Setpoint 2, or Off. See Table 24 for details on how the active cooling set point is determined based on unit operating type and parameter settings.

DEFINING OCCUPANCY SCHEDULE

Two internal Time Schedules are available and must be field programmed. Occupancy Schedule 1 (OCCPC01S) is used for single set point On/Off control. Occupancy Schedule 2 (OCCPC02S) is used in combination with OCCPC01S for dual set point On/Off and Occupied/Unoccupied set point control. To access the Schedule screens, go to ***Main Menu → Configuration Menu → Schedule Menu***.

If the chiller is to be controlled to a single set point, use Schedule 1 (OCCPC01S). This type of schedule will start and stop the machine only. During the unoccupied times, the chiller will be off. The unit start/stop schedule OCCPC01S has a default setting of always occupied. If the chiller is to be controlled to 2 set points, occupied and unoccupied, also use Schedule 2 (OCCPC02S). Cooling Setpoint 1 will be active during occupied periods, and Cooling Setpoint 2 will be active during unoccupied periods.

To set the occupancy schedules, select OCCPC01S or OCCPC02S and select the applicable days for the displayed time schedule period. The selected period will be displayed as a green band on the timeline. Touch the Save button to confirm or the Cancel button to cancel changes. See Fig. 36.

Table 24 — Active Cooling Set Point Parameters

OPERATING TYPE	PARAMETER STATUS					ACTIVE SETPOINT
	Setpoint Selection	Ice Storage Configuration[a]	Ice Done Contact[a]	Setpoint Switch	Schedule 2 Status	
Local	sp-1	Default	Any	Any	Default	Cooling Setpoint 1
	sp-2	No	Any	Any	Default	Cooling Setpoint 2
	sp-2	Yes	Closed	Any	N/A	Cooling Setpoint 2
	sp-2	Yes	Open	Any	N/A	Cooling Ice Setpoint
	automatic	Default	Any	Any	Occupied	Cooling Setpoint 1
	automatic	No	Any	Any	Unoccupied	Cooling Setpoint 2
	automatic	Yes	Closed	Any	Unoccupied	Cooling Setpoint 2
	automatic	Yes	Open	Any	Unoccupied	Cooling Ice Setpoint
Remote	Default	Default	Any	Open	Default	Cooling Setpoint 1
	Default	No	Any	Closed	Default	Cooling Setpoint 2
	N/A	Yes	Closed	Closed	N/A	Cooling Setpoint 2
	Default	Yes	Open	Closed	Default	Cooling Ice Setpoint
Network	Default	Default	Any	Any	Occupied	Cooling Setpoint 1
	Default	Default	Any	Any	Unoccupied	Cooling Setpoint 2

NOTE(S):

a. Ice Storage Configuration and Ice Done Contact apply only to units with EMM.

Fig. 36 — Schedule Menu

The schedules consist of 8 user-configurable occupied time periods. The control supports time schedules for local control, remote control, and ice building. These time periods can be flagged to be in effect or not in effect on each day of the week. The day begins at 00:00 and ends at 24:00. The machine is in unoccupied mode unless a scheduled time period is in effect. If an occupied period is to extend past midnight, the occupied period must end at 24:00 hours (midnight) and a new occupied period must be programmed to begin at 00:00 hours.

In the example in Table 25, an early morning pulldown time period is scheduled for Monday morning from 12:00 AM to 3:00 AM. The occupied period starts at 7:00 AM, Monday through Saturday. The occupied time ends at 6:00 PM on Monday and Tuesday, 9:30 PM on Wednesday, 5:00 PM on Thursday and Friday, and 12:00 PM on Saturday.

NOTE: This example schedule was designed to illustrate the programming of the schedule function and is not intended as a recommended schedule for chiller operation.

Holiday Schedule

The unit control allows up to 16 holiday periods. Each holiday period is defined by three parameters: the month, the start day, and the duration of the holiday period. During the holiday periods, the controller will be in occupied or unoccupied mode, depending on the periods validated as holidays. The Holiday Configuration Table is accessed by ***Main Menu → Configuration Menu → Holiday Menu***. Select one of the 16 available Holiday periods (HOLDY_01 through HOLDY_16) to define the holiday.

CCN Global Time Schedule

In addition to the two onboard occupancy schedules (OCCPC01S and OCCPC02S), the Carrier Controller can also receive a time schedule broadcast from another element in the CCN network.

The 30XV with Greenspeed® Intelligence chillers can be configured to follow a CCN Global Time Schedule broadcast by another system element. The Occupancy Table (OCCPC01S) number must be changed to configure the unit to broadcast a Global Time Schedule. The Schedule Number can be set from 65 to 99 (OCCPC65S to OCCPC99S). When OCC1PxxS is set to a value of 65 or greater and all attached schedules are 00:00 (that is, no occupied time periods), an occupancy flag is broadcast over the CCN every time it transitions from occupied to unoccupied or vice-versa. The ComfortVIEW™ Network Manager's Configure and Modify commands or the Service Tool's Modify/Names function must be used to change the number of the Occupancy Equipment Part Table Name (OCCPC01E) to the Global Schedule Number. The Schedule Number can be set from 65 to 99 (OCCPC65E to OCCPC99E).

When OCC1PxxS is set to a value of 65 or greater and a time schedule is configured for at least one occupancy period, the system will assume that the unit is going to be the master element for this schedule (the system element doing the broadcasting). In that case the unit Equipment and Supervisory part table names will be automatically modified to OCCPCxxE and OCCPCxxS.

By configuring their appropriate Time Schedule decisions to the same number, other devices on the network can follow this same schedule. The Enable-Off-Remote Contact must be in the Enable position or the Remote Contact position with the contacts closed for the unit to operate.

The Unit Run Status (***Main Menu → General Parameters → Run Status***) will indicate the current status of the machine depending on the schedule. The unit Occupied status (***Main Menu → General Parameters → Setpoint Occupied***) will indicate the current occupied schedule according to the schedule, either NO or YES.

The Status Unit Control Type (***Main Menu → General Parameters***) will be 0 when the switch is Off. The Status Unit Control Type will be 2 when the Enable-Off-Remote Contact switch input is On.

Table 25 — Configuring Schedules (Example)

ITEM	PATH	VALUE
Period 1		
Occupied from	***Main Menu → Configuration Menu → Schedule Menu → OCCPC01S*** or ***OCCPC02S →*** Page 1	00:00
Occupied to		03:00
Monday Select		Yes
Tuesday Select		No
Wednesday Select		No
Thursday Select		No
Friday Select		No
Saturday Select		No
Sunday Select		No
Holiday Select		No
Period 2		
Occupied from	***Main Menu → Configuration Menu → Schedule Menu → OCCPC01S or OCCPC02S →*** Page 2	07:00
Occupied to		18:00
Monday Select		Yes
Tuesday Select		Yes
Wednesday Select		No
Thursday Select		No
Friday Select		No
Saturday Select		No
Sunday Select		No
Holiday Select		No
Period 3		
Occupied from	***Main Menu → Configuration Menu → Schedule Menu → OCCPC01S or OCCPC02S →*** Page 3	07:00
Occupied to		21:30
Monday Select		No
Tuesday Select		No
Wednesday Select		Yes
Thursday Select		No
Friday Select		No
Saturday Select		No
Sunday Select		No
Holiday Select		No
Period 4		
Occupied from	***Main Menu → Configuration Menu → Schedule Menu → OCCPC01S or OCCPC02S →*** Page 4	07:00
Occupied to		17:00
Monday Select		No
Tuesday Select		No
Wednesday Select		No
Thursday Select		Yes
Friday Select		Yes
Saturday Select		No
Sunday Select		No
Holiday Select		No
Period 5		
Occupied from	***Main Menu → Configuration Menu → Schedule Menu → OCCPC01S or OCCPC02S →*** Page 5	07:00
Occupied to		12:00
Monday Select		No
Tuesday Select		No
Wednesday Select		No
Thursday Select		No
Friday Select		No
Saturday Select		Yes
Sunday Select		No
Holiday Select		No

CCN Control

To operate under this control, Network must be selected under the Select Machine Mode accessed by touching the Start/Stop button (see "MACHINE CONTROL METHOD SELECTION" on page 30).

An external CCN device such as Chillervisor controls the On/Off state of the machine. Careful evaluation of Chilled Water Plant control is necessary. In the event Local Control is established, be sure that all pumps, valves, and other devices are capable of operating properly. In the event of a loss of communication with the network, the machine will start and be controlled locally. The CCN device forces the variable **CHIL_S_S** to control the chiller. The Unit Run Status (***Main Menu → General Parameters →*** **Run Status**) will indicate the current status of the machine (OFF, RUNNING, STOPPING or DELAY), depending on the CCN command. The unit Occupied status (***Main Menu → General Parameters***) will indicate the current occupied state according to the CCN command and will be displayed as either NO or YES. The Status Unit Control Type (**ctrl_typ**) will be LOCAL OFF when the Start/Stop button is Off. The Status Unit Control Type will be CCN when the Enable-Off-Remote Contact switch input is Closed and the **CHIL_S_S** variable is Stop or Start. For dual chiller control applications, the Lag chiller must be enabled using the CCN CONTROL option.

CHILLED WATER FLUID TYPE SELECTION

The chilled water fluid type must be configured to obtain the proper leaving water set point control range and freeze protection. The Evaporator Fluid Type (**flui_typ**) (***Main Menu → Configuration Menu → Service Parameters →*** **Evaporator Fluid Type**) can be set to water or brine.

To configure this option:

DISPLAY NAME	PATH	VALUE	SETPOINT RANGE
Evaporator Fluid Type	***Main Menu → Configuration Menu → Service Parameters***	1 = Water	38 to 60°F (3.3 to 15.5°C)
		2 = Medium brine	30 to 60°F (–1.1 to 15.5°C)
		3 = Low brine	15° to 60°F (9.4° to 15.5°C)

Fresh Water

Configure the unit Evaporator Fluid Type to Water for units without brine or glycol installed in the chilled water loop. The factory default fluid type is fresh water. This option will allow for a water temperature set point range of 38 to 60°F (3.3 to 15.5°C). With water as the selection, the freeze point is fixed at 34°F (1.1°C).

Brine or Glycol

Configure the unit Evaporator Fluid Type to Medium Brine or Low Brine for units with brine or glycol added to the chilled water loop. The Low Brine option will allow for a set point temperature range of 14 to 36°F (–10 to 2.2°C).

See prior chart for temperature limits for brine options.

Before making this selection, confirm suitable antifreeze has been added and is of sufficient concentration to protect the loop. In addition, the Brine Freeze Setpoint (***Main Menu → Configuration Menu → Service Parameters →*** **Brine Freeze Setpoint**) must be set for proper freeze protection operation. Set the Brine Freeze Setpoint to the freeze protection provided by the antifreeze concentration. This value will be the freeze point of the fluid.

Evaporator Pump Control

Evaporator pump control is required on all units unless the chilled water pump runs continuously or the chilled water system contains a suitable antifreeze solution. For units supplied with the pump option, this is set up from the factory. The 30XV units with Greenspeed® Intelligence can be configured for single or dual external evaporator pump control with the standard controls. In addition to the pumps, all wiring including connections to the pump contactor and a feedback circuit from the contactor must be field supplied. Table 26 summarizes evaporator pump configuration parameters. Figure 37 shows the wiring.

PUMP SELECTION

The Evaporator Pump Sequence mode can be reached by following ***Main Menu → Configuration Menu → Pump Configuration***. The available settings are:

- 0 = No Pump: The evaporator pump will not be controlled by the chiller. This is the default setting.
- 1 = One Pump Only, Factory Supplied Pumps: Use for a single remote pump or for factory supplied pumps. ("1" is used for factory supplied pumps regardless of number of pumps on chiller.)
- 2 = Two Pump Auto: When two pumps are selected in auto mode, only one pump will be allowed to run at a time and the control will determine the On/Off state of each pump. The control will start the pumps and automatically alternate the operation of the pumps to even the wear on the pumps, based on the hours configured under Pump Auto Rotation Delay (***Main Menu → Configuration Menu → Pump Configuration →*** **Pump Auto Rotation Delay**). If the difference between the operating hours of the two pumps exceeds the Pump Auto Rotation Delay, the lead pump will change. If a flow failure is detected, the other pump will attempt to start.
- 3 = Pump #1 Manual: Pump #1 will be the active pump.
- 4 = Pump #2 Manual: Pump #2 will be the active pump.

Table 26 — Evaporator Pump Configuration Parameters

DISPLAY NAME	PATH	VALUE
Evaporator Pumps Sequence	***Main Menu→ Configuration Menu→ Pump Configuration***	0 = No Pump (Default) 1 = One Pump Only ("1" is also used for factory supplied pumps.) 2 = Two Pumps Auto 3 = Pump no. 1 Manual 4 = Pump no. 2 Manual
Pump Auto Rotation Delay		Default: 48 hrs. (Range 24 to 3000 hrs.)
Pump Sticking Protection		Default: No
Flow Checked If Pump Off		Default: Yes

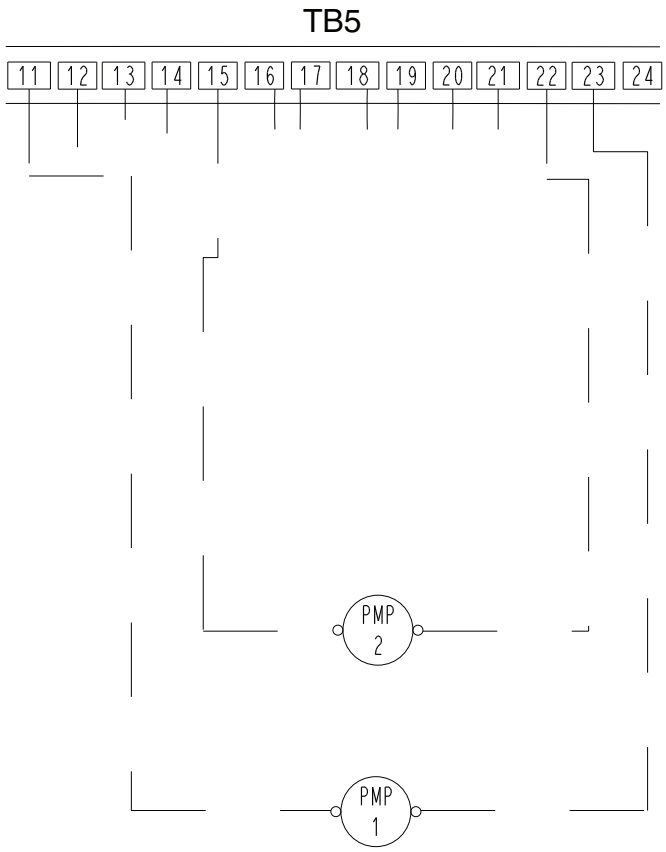


Fig. 37 — Wiring for Evaporator Pump Control

Factory supplied pumps should have this configuration set to 1. There is only one "on" signal to the pumps. The pumps run simultaneously. Speed is controlled in the pump software and communication between the pumps sets the appropriate speed for each pump.When the Evaporator Pumps Sequence is configured, the evaporator pump output will be energized when the chiller enters an On state. Proof of flow from the chilled water flow switch (CWFS) is required for the unit to start mechanical cooling. The evaporator pump output is also energized when certain alarms are generated. The evaporator pump output should be used as an override to the external pump control if evaporator pump control is not utilized. The evaporator pump output is energized if a 10001 Evaporator Freeze Protection alarm is generated, which provides additional freeze protection if the system is not protected with a suitable antifreeze solution.

If the Master/Slave function is not active for the chiller or if the Master/Slave function is active and the unit is the lead, the pump will be turned on when the unit is in On, Stopping, or Delay state. In addition, when the unit is turned off the pump will continue operating for 20 seconds after the last compressor is turned off. The pump will be turned on when requested by the evaporator heater function (see the Evaporator Freeze Protection section on page 78).

FACTORY-SUPPLIED PUMPS

Pumps supplied by the factory are piped in a parallel arrangement. These pumps are driven with ECM variable speed motors. All of the pumps may run simultaneously. Sensorless control based in the pump motor is used to determine the speed of each pump. The chiller control treats the pump assembly as a single pump with regard to starting and stopping the pump system.

PERIODIC PUMP QUICK START

The control system has the ability to start the pumps periodically to maintain bearing lubrication and seal integrity. This function will be used when the unit is stopped for a long time period (e.g., during the winter season). If Pump Sticking Protection (***Main Menu → Configuration Menu → Pump Configuration →*** **Pump Sticking Protection**) is set to YES and if the unit is off at 2:00 PM, a pump will be started once each day for 45 seconds. If the unit has 2 pumps, Pump 1 will be started on even days (such as day 2, 4, or 6 of the month); Pump 2 will be started on odd days (such as day 1, 3 or 5 of the month). The default for this option is NO.

MASTER/SLAVE CHILLER PUMP OPERATION

If the Master/Slave function is active and if the chiller is the lag unit, then the pump will be turned on when the unit is in On mode and if the unit active lag demand limit is greater than 1%. Otherwise, the pump will be stopped 30 seconds after the last compressor is turned off. However, if the lag unit pump has been configured to run even if the unit is commanded to stop (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lag Unit Pump Control = 1 [Run if Unit Stops]**) then the above condition will be ignored and the lag pump will run all the time.

CHILLED WATER FLOW SWITCH STATUS

If Flow Checked if Pump Off (***Main Menu → Configuration Menu → Pump Configuration →*** **Flow Checked if Pump Off**) is set to **YES**, the control will monitor the chilled water flow switch status and will send an alarm if the pump is commanded off and the chilled water flow switch is closed. This can provide the user with information about a faulty evaporator pump contactor or a failed chilled water flow switch. This parameter should be set to NO for series flow machines. The factory default for this item is YES.

MANUAL OPERATION

The evaporator pumps can be forced ON through the CCN when the chiller is off. This allows the unit to run with no delay and for an unlimited length of time for flow rate calculations when the unit is installed on site. Manual operation of the pumps is controlled through CCN points **CPUMP_1** (***Main Menu → Pump Status)*** and **CPUMP_2** ***(Main Menu → Pump Status*** (0 = OFF, 1 = ON).

Circuit/Compressor Staging and Loading

The AquaForce® 30XV chillers with Greenspeed® Intelligence employ one compressor per circuit. As a result, circuit and compressor staging are the same. The control has several control option parameters to load the compressors. The circuit/compressor start can be configured as well as the loading of each circuit/compressor.

CIRCUIT/COMPRESSOR STAGING

The control can be configured to decide which circuit/compressor starts first. Three options for this variable are allowed: Automatic Lead-Lag, Circuit A Leads, or Circuit B Leads. The factory default is Automatic Lead-Lag.

The automatic lead-lag function determines which circuit/compressor starts first to even the wear on the compressors. The control system determines the lead circuit to equalize the operating time of each circuit (value weighted by the number of start-ups of each circuit). As a result, the circuit with the lowest number of operating hours always starts first. The parameter can also be configured to always start a particular circuit/compressor first.

To configure this option:

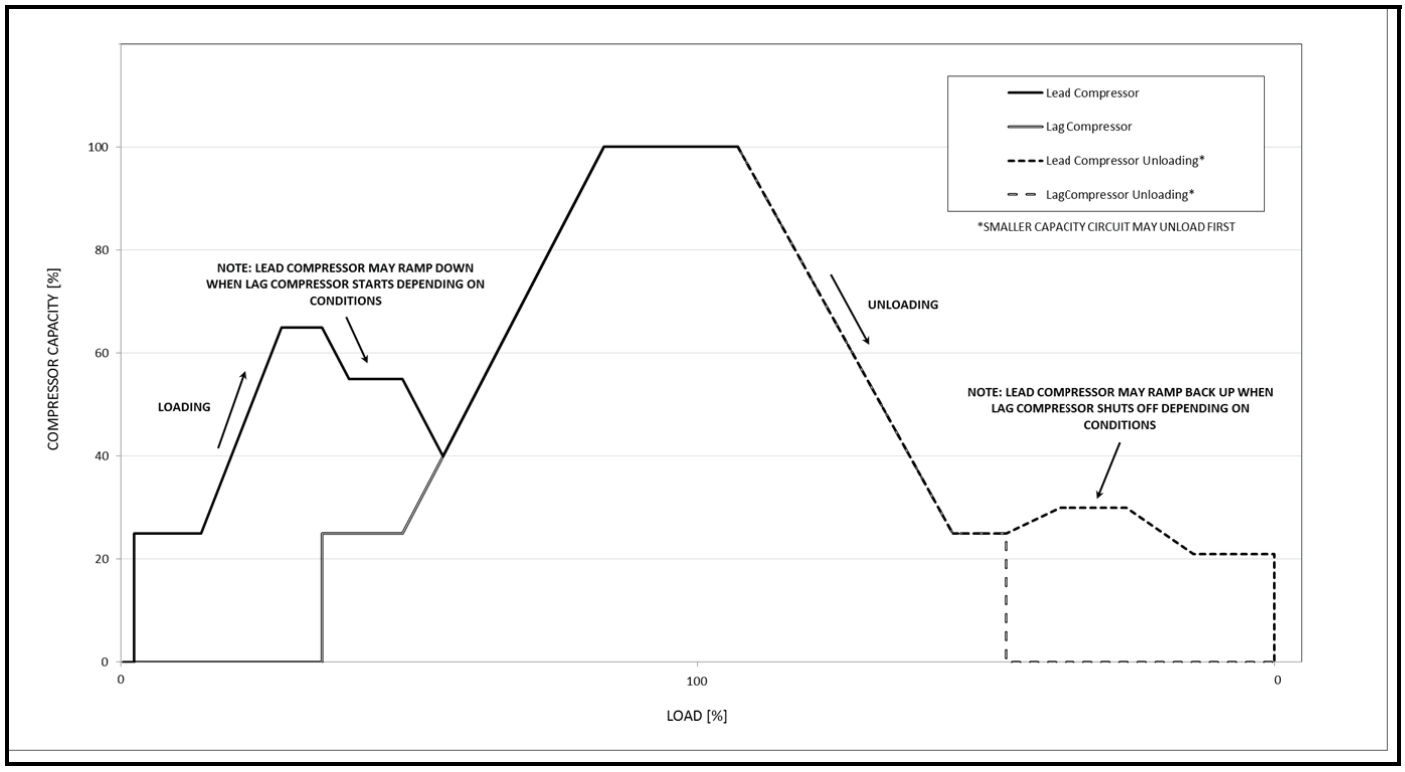
DISPLAY NAME	PATH	LINE NO.	VALUE
Circuit Priority Sequence	***Main Menu → Configuration Menu →General Configuration***	1	0 = Auto 1 = Ckt A Priority 2 = Ckt B Priority

CIRCUIT/COMPRESSOR LOADING/UNLOADING

The control uses an equal compressor loading and unloading scheme as described below to optimize the efficiency of the unit.

At start-up, the control starts the lead compressor at the lowest frequency and then continues to load it up by increasing frequency output of the corresponding VFD. If the load reaches 65% of circuit load, then the control starts the lag compressor at its minimum frequency. While the lag compressor starts to load up, the lead compressor may ramp down to equalize with lag compressor, depending on conditions. When the loading of both compressors match, they continue to load up or load down in unison in response to the capacity demand.

In the process of unloading, if both the compressors reach minimum frequency/load level, any further drop in capacity will cause the lag compressor to switch off and the lead compressor to ramp up until load is met again. Eventually with decrease in load the compressor goes down to minimum frequency/load and then shuts down. See Fig. 38 for a graphical representation of initial system loading and unloading. (Figure 38 shows an example of possible compressor loading for a given scenario. Since the controls are adaptive, actual loading may vary.)



NOTE: After compressors are fully loaded, they will both load and unload equally with the VFDs (variable frequency drives).

Fig. 38 — Initial Compressor Loading/Unloading Method

Dual Chiller Control

The dual chiller function allows for master/slave control of two units installed in parallel or series arrangement supplying chilled fluid on a common loop. The chillers must be linked by the Carrier Comfort Network® network and operate on the same bus.

When the units are installed for parallel operation and chilled water control is done on the outlet side of the units, the dual chiller accessory kit (P/N 00EFN900044000A) is required. The kit includes additional leaving fluid temperature thermistors that must be installed on the common chilled water leaving piping as described in the Installation Instructions for the kit. The leaving fluid temperature sensors will be connected to each chiller as described in the installation instructions. When the chilled water control is done on the inlet side of the parallel units no additional temperature sensor is required. See the Field Wiring section in the 30XV Installation Instructions for dual chiller LWT sensor control wiring. When chillers are configured to operate in series mode no additional chilled water temperature sensor is required.

The master chiller will monitor all external commands such as start/stop, demand limiting, or set point select, and needs to be started in Master operating type. The commands are transmitted automatically to the slave unit, which must operate in CCN (Network) mode. The slave chiller has no action in the master/slave operations; it will only verify that CCN communication with the master chiller is correct. If the master chiller is turned off while the master/slave function is active, then the slave chiller will be stopped. Under certain circumstances, the slave unit may be started first to balance the run times of the two units. In the event of a communication failure between the two units, each unit will return to an autonomous operating mode until the fault is cleared. If the master unit is stopped due to an alarm, the slave unit is authorized to start and therefore the slave unit configurations should be verified with desired set points.

The CCN communication port for the Master and Slave chillers must be joined using a shielded cable in order to avoid communication issues.

The master/slave linkage will not be allowed to operate if any one of the slave chiller **CTRL_PNT**, **DEM_LIM**, **LAG_LIM**, or **LCW_STPT** variables has a force priority higher than a control force. In that case, the master/slave operations will not be allowed or will be disabled.

The control algorithm relies on several parameters that must be field configured for operation. Both chillers must be on the same CCN bus with different addresses. Master/Slave Setup (***Main Menu → Configuration → Factory →*** **Master/Slave Setup**) on both chillers needs to be set to Yes. On both chillers, Master/Slave Select (***Main Menu → Configuration Menu → Master/Slave Config →*** **Master/Slave Select**) must be enabled (set to 1 [Master] or 2 [Slave]). The water piping arrangement must be specified with the Chiller in Series variable (***Main Menu → Configuration Menu → Master/Slave Config →*** **Chiller in Series**). The Master chiller must be programmed with the Slave Address (***Main Menu → Configuration Menu → Master/Slave Config →*** **Slave Address**). Additional optional programming parameters may be configured to meet application requirements.

The Lead Lag Select variable (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lead Lag Select**) determines which chiller is the lead machine. The options are: Always Lead, Lag Once Failed Only, and Lead/Lag Runtime Select. Under Runtime Select control, the lead chiller will change based on the time increment selected in the Lead/Lag Balance Delta configuration (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lead/Lag Balance Delta**). If the run hour difference between the master and the slave remains less than the Lead/Lag Balance Delta, the chiller designated as the lead will remain the lead chiller. The Lead/Lag changeover between the master and the slave chiller due to hour balance will occur during chiller operating odd days, such as day 1, day 3, and day 5 of the month, at 12:00 a.m. If a lead chiller is not designated, the master chiller will always be designated the lead chiller.

The dual chiller control algorithm has the ability to delay the start of the lag chiller in two ways. The Lead Pulldown Time parameter (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lead Pulldown Time**) is a one-time delay initiated after starting the lead chiller, before checking whether to start an additional chiller. This time delay gives the lead chiller a chance to remove the heat that the chilled water loop picked up while inactive during an unoccupied period. The second time delay, Lead/Lag Start Timer (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lead/Lag Start Timer**) is a time delay imposed between the last stage of the lead chiller and the start of the lag chiller. This prevents enabling the lag chiller until the lead/lag delay timer has expired.

A quicker start of the lag chiller can be accomplished by configuring the Lag Unit Pump Control parameter (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lag Unit Pump Control**). If the difference between the common leaving water temperature and the set point is greater than the configured value, then the lag chiller will start.

A minimum on time for the lag chiller can be programmed with the Lag Minimum Running Time configuration (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lag Minimum Running Time**). This parameter causes the control to run the lag chiller for the programmed minimum on time. The Lag Unit Pump Control (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lag Unit Pump Control**) can be configured such that the pump can be on or off while the chiller is off. This parameter is only active in Parallel Chiller Operation.

The lead chiller is started first and the lag chiller will be maintained at zero percent capacity through master forcing the lag demand limit value (**LAG_LIM**) to 0%. The lag water pump will be maintained off. When the lead chiller cannot be loaded anymore (because it is loaded at its full available capacity or at the master demand limit value) then the lag start timer is started. When the lag start time has elapsed, if the error on the master controlled set point is greater than the dead band (**start_di**) and if the pulldown time is elapsed, then the lag chiller water pump will be turned on (if required by configuration) and the lag chiller will be allowed to start through the master chiller forcing the lag chiller demand limit value (**LAG_LIM**) to its own demand limit value. To ensure that the lag chiller will be unloaded first in case of water load decrease, the lead chiller set point error will be reset downwards by 4°F (2.2°C) provided that the lead capacity is not zero.

Each dual chiller application, Parallel and Series, is described separately below.

DUAL CHILLER CONTROL FOR PARALLEL APPLICATIONS

To configure the master chiller for parallel applications, see Table 27. To configure the slave chiller for parallel applications, see Table 28.

Table 27 — Dual Master Chiller Control Parameters for Parallel Applications

DISPLAY NAME	PATH	VALUE
Master/Slave Select	***Main Menu → Configuration Menu → Master/Slave Config***	1 (Master) Default: 0 (Disable)
Master Control Type		1=Local Control 2=Remote Control 3=CCN Control Default: 1(Local) Configure for proper control type.
Slave Address		Must be set to the Slave Chiller's address. The Master and Slave chiller must have different addresses and be on the same Bus Number Default: 2
Lead Lag Select		0 (Master Always Leads) 1 (Lag One Failed Only) 2 (Lead/Lag Runtime Select) Default: 0 (Master Always Leads)
Lead/Lag Balance Delta		Range: 40 to 400 hours Default: 168 hours
Lead/Lag Start Timer		Range: 2 to 30 minutes Default: 10 minutes
Lead Pulldown Time		Range: 0 to 60 minutes Default: 0 minutes
Start If Error Higher		Range: 3.0 to 18°F (1.7 to 10.0°C) Default: 4.0°F (2.2°C)
Lag Minimum Running Time		Range: 0 to 150 minutes Default: 0 minutes
Lag Unit Pump Control		0 (Stop If Unit Stops) 1 (Run If Unit Stops) Default: 0 (Stop If Unit Stops)
Chiller In Series		No (Not in Series) Default: No

Table 28 — Dual Slave Chiller Control Parameters for Parallel Applications[a]

DISPLAY NAME	PATH	VALUE
Master/Slave Select	***Main Menu → Configuration Menu → Master/Slave Config***	2 (Slave) Default: 0 (Disable)
Master Control Type		1=Local Control 2=Remote Control 3=CCN Control Default: 1(Local) Configure for proper control type.
Slave Address		Must be set to the Slave Chiller's address. The Master and Slave chiller must have different addresses and be on the same Bus Number Default: 2
Lead Lag Select		0 (Master Always Leads) 1 (Lag Once Failed Only) 2 (Lead/Lag Runtime Select) Default: 0 (Master Always Leads)
Lead/Lag Balance Delta		Range: 40 to 400 hours Default: 168 hours
Lead/Lag Start Timer		Range: 2 to 30 minutes Default: 10 minutes
Lead Pulldown Time		Range: 0 to 60 minutes Default: 0 minutes
Start If Error Higher		Range: 3.0 to 18°F (1.7 to 10.0°C) Default: 4.0°F (2.2°C)
Lag Minimum Running Time		Range: 0 to 150 minutes Default: 0 minutes
Lag Unit Pump Control		0 (Stop If Unit Stops) 1 (Run If Unit Stops) Default: 0 (Stop If Unit Stops)
Chiller In Series		No (Not in Series) Default: No

NOTE(S):

a. If pump control is configured to OFF (Master), then Lag Unit (Slave) Pump Control = 1. If pump control is set to any other value, then Lag Unit (Slave) Pump Control = 0. This configuration must be set consistently for both master and slave chillers.

DUAL CHILLER PUMP CONTROL FOR PARALLEL CHILLER APPLICATIONS

Parallel chiller control with dedicated pumps is recommended. The chiller must start and stop its own water pump located in its own piping. If pumps are not dedicated for each chiller's piping, chiller isolation valves are required; each chiller must open and close its own isolation valve through the control. Figures 39-42 show typical pump arrangements for dual chiller parallel applications.

Although not recommended, it is possible to configure the system with no individual pump control. In applications where the unit is configured for fresh water (***Main Menu → Configuration Menu → Service Parameters,*** **Evaporator Fluid Type=1 [Fresh Water]**), and Set Point temperature is close to the lower limit of the fresh water range, it is possible for changeable leaving water conditions as the chilled water flow rate drops to an operating unit, causing the leaving chilled water temperature to drop and initiate the evaporator freeze protection override. Constant flow applications may alleviate this issue.

In constant water flow applications, the Master chiller should be the primary control source for the chilled water pump. The slave chiller should have override capability. In the event of a communication failure between the Master and slave chillers, the slave chiller will operate as a standalone machine and therefore must be able to enable the chilled water pump.

DUAL CHILLER CONTROL FOR SERIES CHILLER APPLICATIONS

When chillers are configured to work in series mode no additional chilled water supply sensor is required. The Master chiller will be installed downstream of the slave chiller (the slave chiller outlet fluid is the Master inlet fluid). If pump control is required, it will be controlled by the Master chiller.

To configure the Master chiller for series applications, see Table 29. To configure the slave chiller for series applications, see Table 30.

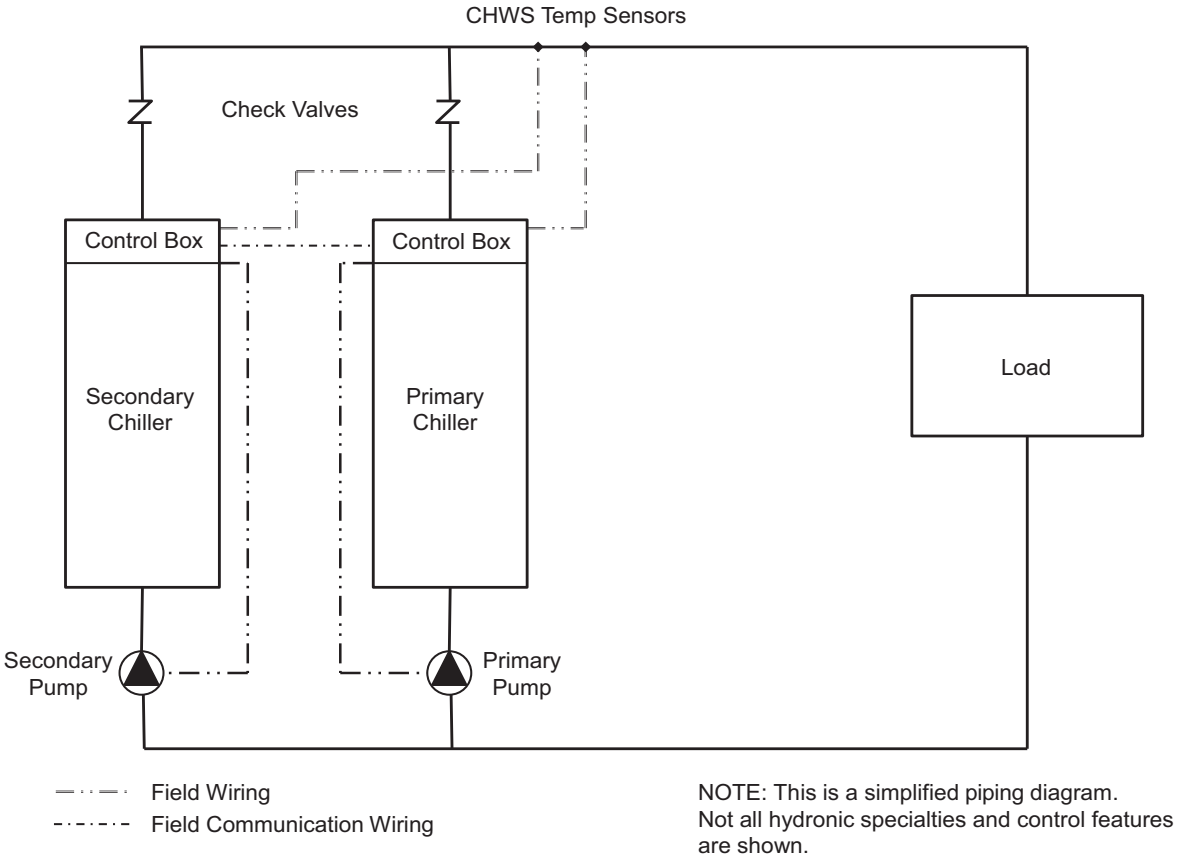


Fig. 39 — Typical Parallel Chillers
Dedicated Primary Pumping, Variable Flow, Leaving Water Control

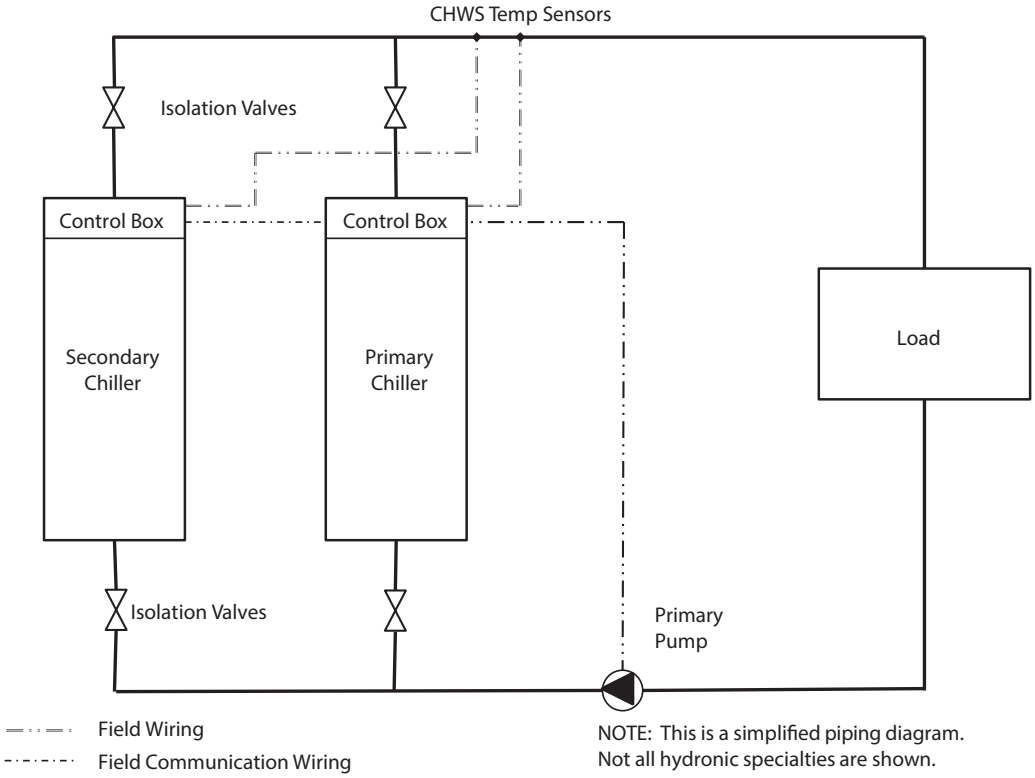


Fig. 40 — Typical Parallel Master/Slave Chillers
Common Primary Pumping, Constant Flow, Leaving Water Control

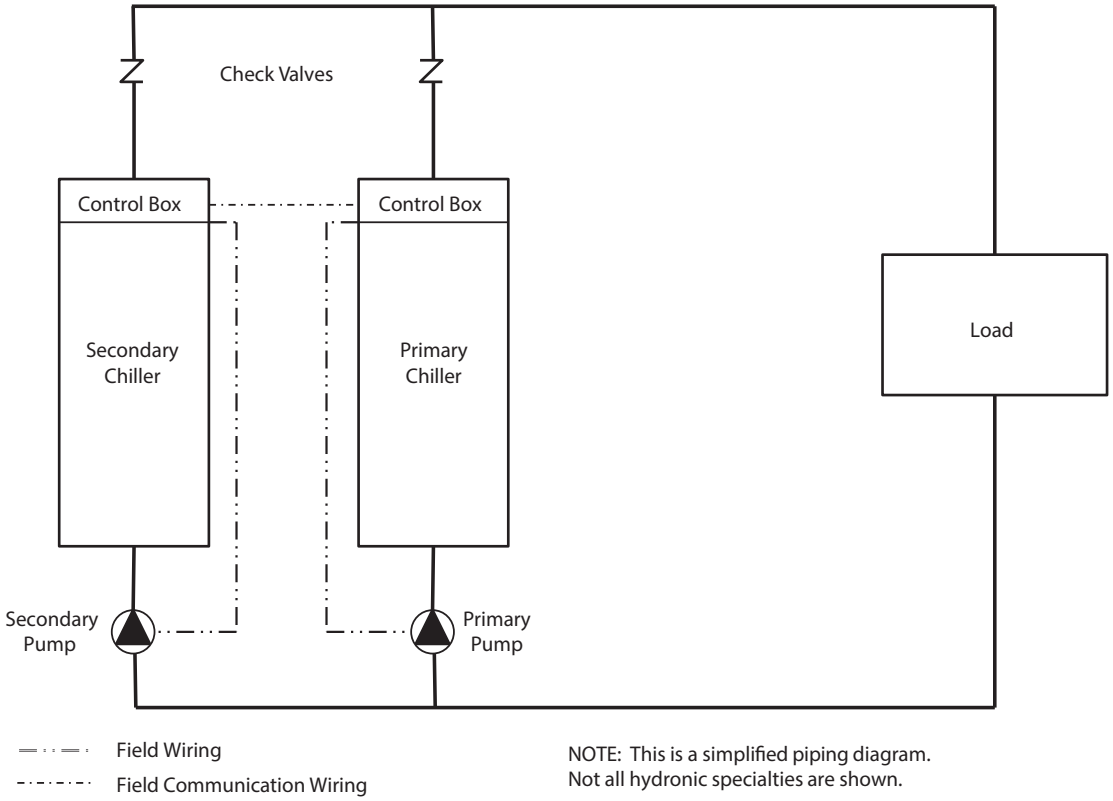


Fig. 41 — Typical Parallel Master/Slave Chillers
Dedicated Primary Pumping, Variable Flow, Entering Water Control

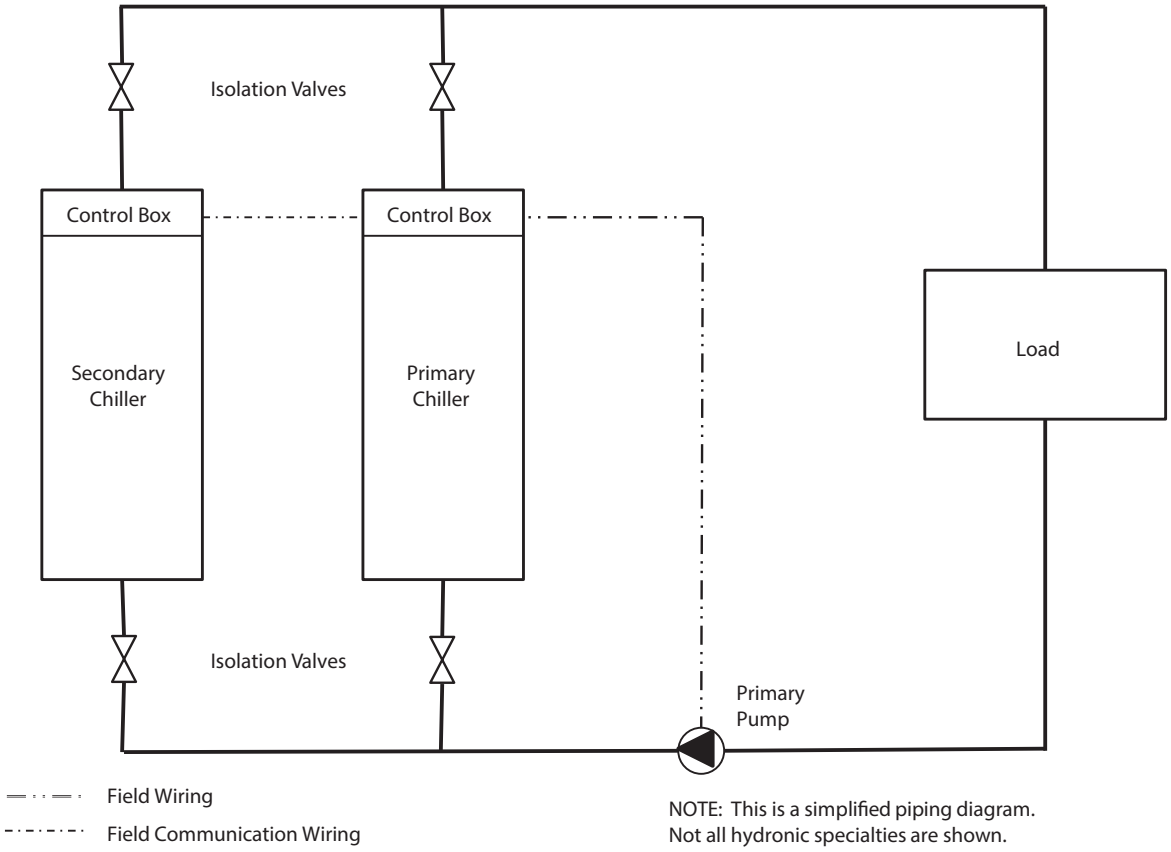


Fig. 42 — Typical Parallel Master/Slave Chillers Common Primary Pumping, Variable Flow, Entering Water Control

Table 29 — Master Chiller Configuration in Series Applications

DISPLAY NAME	PATH	VALUE
Master/Slave Select	***Main Menu → Configuration Menu → Master/Slave Config***	1=Master Default: 0=Disable
Master Control Type		1=Local Control 2=Remote Control 3=CCN Control Default: 1(Local) Configure for proper control type.
Slave Address		Must be set to the Slave Chiller's address. The Master and Slave chiller must have different addresses and be on the same Bus Number. Default: 2
Lead Lag Select		0 (Master Always Leads) 1 (Lag One Failed Only) 2 (Lead/Lag Runtime Select) Default: 0 (Master Always Leads)
Lead/Lag Balance Delta		Range: 40 to 400 hours Default: 168 hours
Lead/Lag Start Timer		Range: 2 to 30 minutes Default: 10 minutes
Lead Pulldown Time		Range: 0 to 60 minutes Default: 0 minutes
Start If Error Higher		Range: 3.0 to 18°F (1.7 to 10.0°C) Default: 4.0°F (2.2°C)
Lag Minimum Running Time		Range: 0 to 150 minutes Default: 0 minutes
Lag Unit Pump Control		0 (Stop If Unit Stops) 1 (Run If Unit Stops) Default: 0 (Stop If Unit Stops)
Chiller In Series		Yes (In Series) Default: No

Table 30 — Slave Chiller Configuration in Series Applications[a,b]

DISPLAY NAME	PATH	VALUE
Master/Slave Select	***Main Menu → Configuration Menu → Master/Slave Config***	2 (Slave) Default: 0 (Disable)
Master Control Type		1=Local Control 2=Remote Control 3=CCN Control Default: 1(Local) Configure for proper control type.
Slave Address		Must be set to the Slave Chiller's address. The Master and Slave chiller must have different addresses and be on the same Bus Number Default: 2
Lead Lag Select		0 (Master Always Leads) 1 (Lag Once Failed Only) 2 (Lead/Lag Runtime Select) Default: 0 (Master Always Leads)
Lead/Lag Balance Delta		Range: 40 to 400 hours Default: 168 hours
Lead/Lag Start Timer		Range: 2 to 30 minutes Default: 10 minutes
Lead Pulldown Time		Range: 0 to 60 minutes Default: 0 minutes
Start If Error Higher		Range: 3.0 to 18°F (1.7 to 10.0°C) Default: 4.0°F (2.2°C)
Lag Minimum Running Time		Range: 0 to 150 minutes Default: 0 minutes
Lag Unit Pump Control		0 (Stop If Unit Stops) 1 (Run If Unit Stops) Default: 0 (Stop If Unit Stops)
Chiller In Series		Yes (In Series) Default: No

NOTE(S):

a. If pump control is configured to OFF (Master), then LAG UNIT (Slave) PUMP SELECT (page 3 of the Master/Slave Config menu) = 1. If pump control is set to any other value, then LAG UNIT (Slave) PUMP SELECT = 0. This configuration must be set consistently for both Master and Slave chillers.
b. For Master/Slave Series Chiller Application, Master Chiller should always be downstream of Slave.

DUAL CHILLER PUMP CONTROL FOR SERIES CHILLER APPLICATIONS

Pump control for series chiller applications is controlled by the Master chiller only. The control of the Slave chiller is directed through commands transmitted by the Master chiller. The Slave chiller has no action in Master/Slave operations. The Slave chiller only verifies that CCN communication with the Master chiller is present. See the Dual Chiller Sequence of Operation section on page 62. Figure 43 shows a typical pump arrangement for dual chiller series applications.

Ramp Loading

The Ramp Loading function limits the rate of change of the leaving fluid temperature. The minimum compressor speed is calculated based on saturated condensing temperature and saturated suction temperature. To enable the Ramp Loading sequence:

DISPLAY NAME	PATH	VALUE
Ramp Loading Enable	***Main Menu → Configuration Menu → General Configuration***	Yes
Cooling Ramp Loading	***Main Menu → Setpoint Table***	Range: 0.2 to 2.0°F/min (0.1 to 1.1°C/min) Default: 1.0°F/min (0.5°C/min)

Temperature Reset

The temperature reset function will determine the cooling control point. This control point is the active set point adjusted with the current reset value:

Control Point = Setpoint + Reset

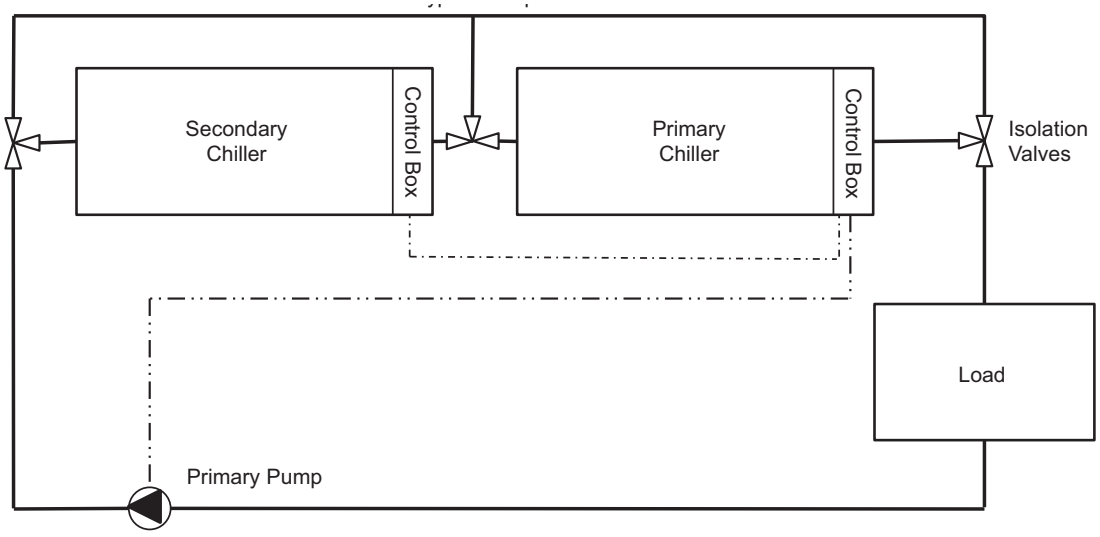
The purpose of this reset value is to decrease the required capacity if it is allowed by unit load operating conditions. When a non-zero temperature reset is applied, the chiller controls to the new control point instead of the set point. The type of temperature reset is configured with the Cooling Reset Select variable. Four types of temperature reset are available: Outdoor Air Temperature, Return Water Reset (Delta T), 4 to 20mA control, and Space Temperature control:

DISPLAY NAME	PATH	VALUE
Cooling Reset Select	***Main Menu → Configuration Menu → Reset Configuration***	0 = None 1 = OAT 2 = Delta T 3 = 4 to 20 mA Control 4 = Space Temp

Under normal operation, the chiller will maintain a constant entering or leaving fluid temperature, based on the configuration, approximately equal to the chilled fluid set point. As the evaporator load varies, the evaporator fluid temperature difference will change in proportion to the load. For example, if the chiller was selected for an entering to leaving water temperature difference of 10°F (5.5°C) at full load, at 50% load the temperature difference would be 5°F (2.2°C). See Fig. 44. Because the change in temperature through the evaporator is a measure of the building load, the temperature difference reset is the average building load. Usually the chiller size and fluid temperature set point are selected based on a full load condition. At part load, the fluid temperature set point may be lower than required. When the fluid temperature is allowed to increase at part load, the efficiency of the machine will increase. The chiller can also be set for return water temperature control. See Fig. 45.

Other indirect means of estimating building load and controlling temperature reset are also available and are discussed below.

To verify that reset is functioning correctly, subtract the Current Setpoint (***Main Menu → General Parameters → Current Setpoint***) from the Control Point (***Main Menu → General Parameters →*** **Control Point**) to determine the degrees reset.

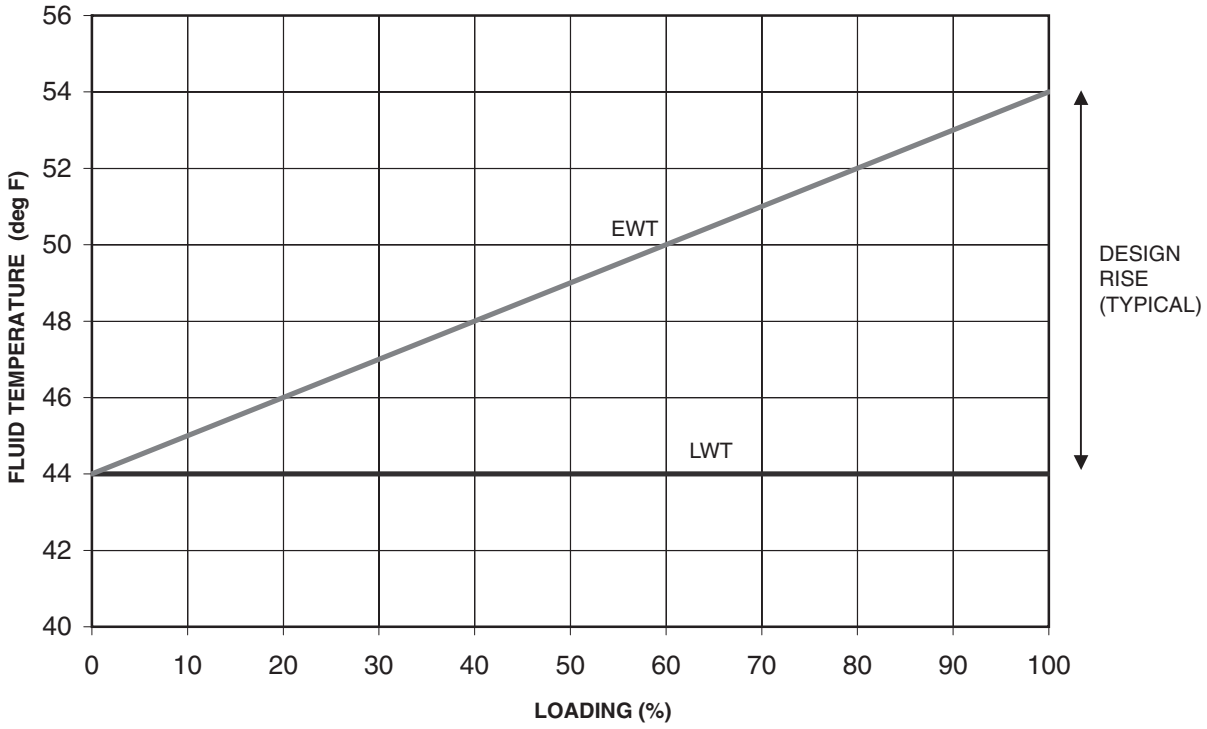


Field Wiring

Field Communication Wiring

NOTE: This is a simplified piping diagram. Not all hydronic specialties and control features are shown.

Fig. 43 — Typical Series Master/Slave Chillers Dedicated Primary Pumping, Constant Flow, Leaving Water Control

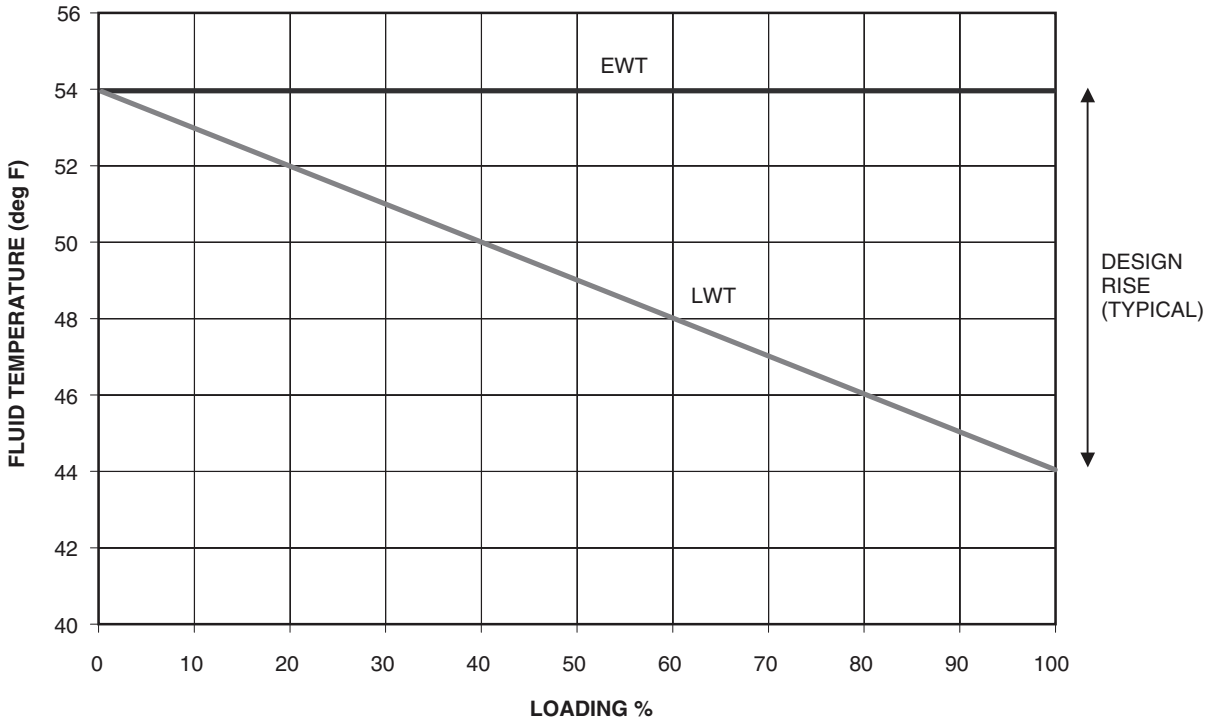


LEGEND

EWT — Entering Water Temperature

LWT — Leaving Water Temperature

Fig. 44 — Leaving Chilled Water Temperature Control



LEGEND

EWT — Entering Water Temperature

LWT — Leaving Water Temperature

Fig. 45 — Return Water Temperature Control Load Profile

OUTSIDE AIR TEMPERATURE RESET

The control system is capable of temperature reset based on OAT. Typically as the outdoor temperature decreases so does building cooling load. The chilled water temperature can be increased to lower energy usage while still meeting load demand.

To use OAT Reset, four variables must be configured: Cooling Reset Select, OAT No Reset Value (outdoor temperature at which no reset is required), OAT Full Reset Value (outdoor temperature at which full reset is required), and Cooling Reset Deg Value (the amount of temperature reset desired).

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Cooling Reset Select	***Main Menu → Configuration Menu → Reset Configuration***	Default = 1 0=None, 1=OAT 2=Delta T, 3=4 to 20mA control 4=Space Temp
OAT No Reset Value		Default = 14°F (7.8°C) Range 14 to 125°F (7.8 to 69.4°C)
OAT Full Reset Value		Default = 14°F (7.8°C) Range 14 to 125°F (7.8 to 69.4°C)
Cooling Reset Deg. Value		Default = 0°F (0°C) Range –30 to 30°F (–16.7 to 16.6°C)

In the example in Fig. 46, the OAT reset provides 0°F (0°C) chilled water set point reset at 85°F (29.4°C) OAT and 15°F (8.3°C) reset at 55°F (12.8°C) OAT.

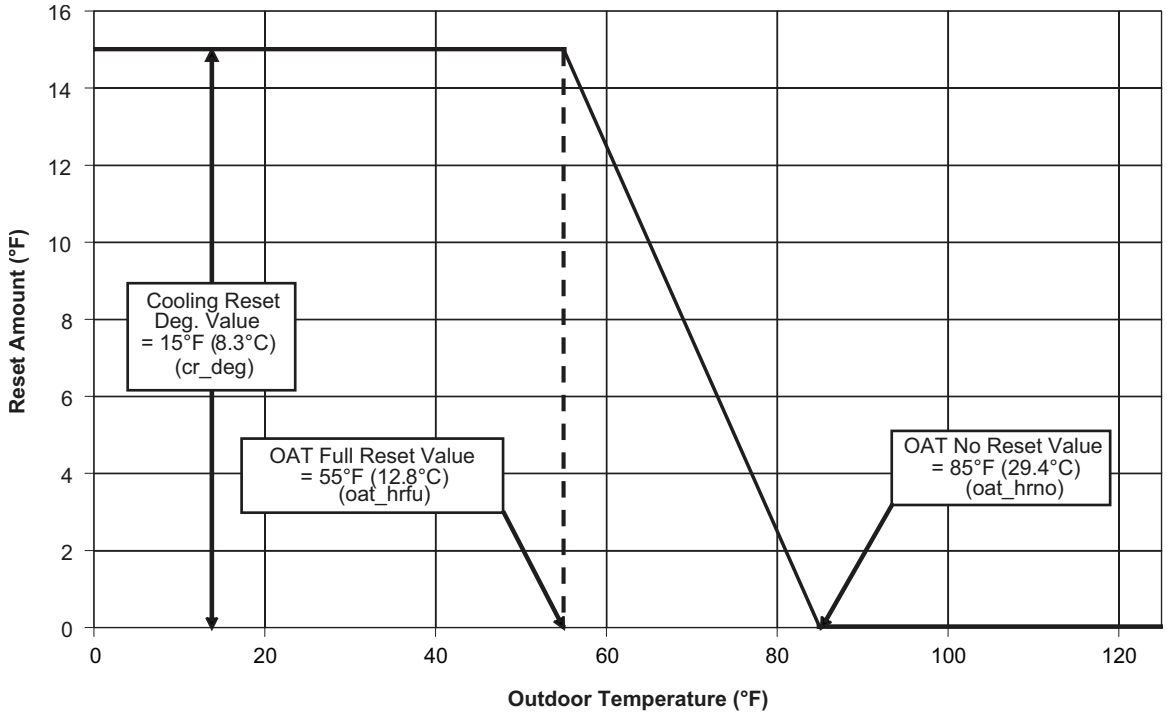


Fig. 46 — Example: OAT Reset

DELTA T RESET (RETURN WATER RESET)

The control system is also capable of performing fluid temperature reset based on evaporator fluid temperature difference (Delta T), sometimes called return water reset. Because the change in temperature through the evaporator is a measure of the building load, the temperature difference reset is, in effect, an average building load reset method.

Delta T Reset allows for the chilled water temperature set point to be reset upward as a function of the fluid temperature difference (building load).

NOTE: Delta T (Return Water) Temperature Reset should not be used with variable evaporator flow rate systems.

To use Delta T Reset, four variables must be configured: Cooling Reset Select, Delta T No Reset Value (evaporator temperature difference at which no chilled water temperature reset should occur), Delta T Full Reset Value (evaporator temperature difference at which the maximum chilled water temperature reset should occur), and Cooling Reset Deg Value (the maximum amount of temperature reset desired).

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Cooling Reset Select	***Main Menu*→ *Configuration Menu*→** Reset Configuration	Default = 2 0=None, 1=OAT 2=Delta T, 3=4 to 20mA control 4=Space Temp
Delta T No Reset Temp		Default = 0°F (0°C) Range 0°F to 25°F (0°C to 13.8°C)
Delta T Full Reset Temp		Default = 0°F (0°C) Range 0°F to 25°F (0°C to 13.8°C)
Cooling Reset Deg Value		Default = 0°F (0°C) Range –30 to 30°F (–16.7 to 16.6°C)

In the example in Fig. 47 using Return Water Temperature Reset, the chilled water temperature will be reset by 5°F (2.8°C) when the Fluid Temperature Difference is 2°F (1.1°C) and 0°F (0°C) reset when the Temperature Difference is 10°F (5.6°C).

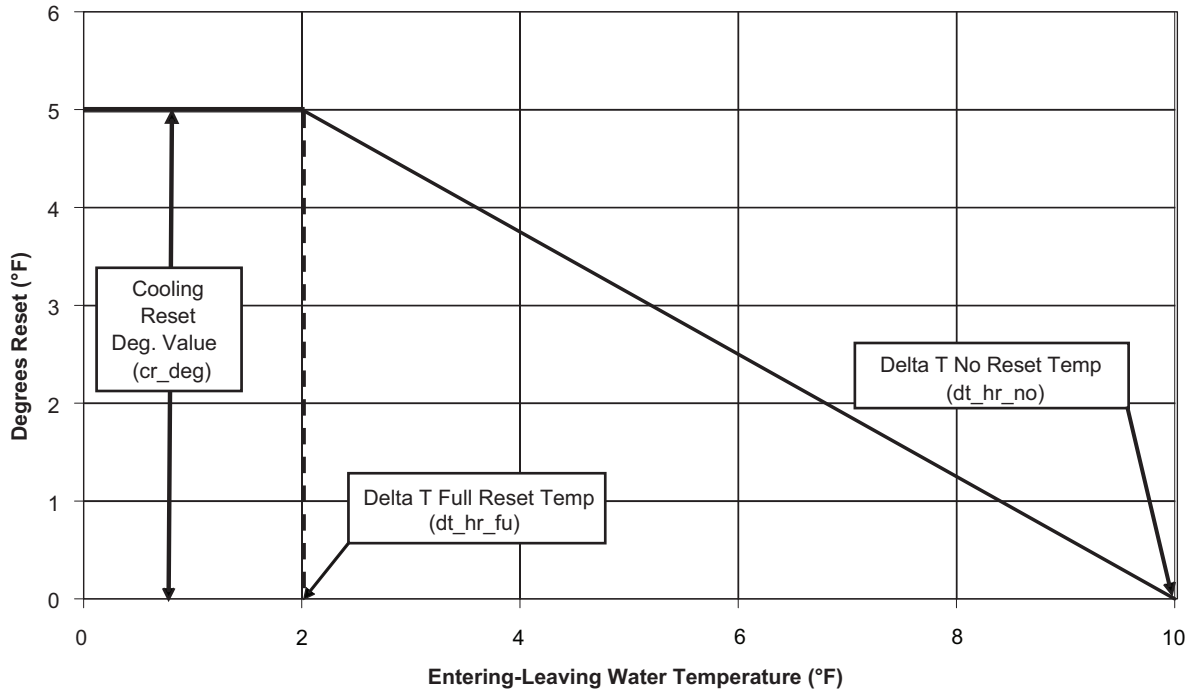


Fig. 47 — Example: Return Water Reset

4 TO 20 MA TEMPERATURE RESET

The control system is also capable of temperature reset based on an externally powered 4 to 20 mA signal. The EMM is required for temperature reset using a 4 to 20 mA signal.

To use 4 to 20 mA Temperature Reset, four variables must be configured: Cooling Reset Select, Current No Reset Value (milliamp signal at which no temperature reset is required), Current Full Reset Value (milliamp signal at which full temperature reset is required), and Cooling Reset Deg Value (the maximum amount of temperature reset desired).

⚠ CAUTION

Care should be taken when interfacing with other control systems due to possible power supply differences such as a full wave bridge versus a half wave rectification. Connection of control devices with different power supplies may result in permanent damage. Carrier Controller controls incorporate power supplies with half wave rectification. A signal isolation device should be utilized if the signal generator incorporates a full wave bridge rectifier.

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Cooling Reset Select	***Main Menu*→ *Configuration Menu*→** Reset Configuration	Default = 3 0=None, 1=OAT 2=Delta T, 3=4 to 20mA control 4=Space Temp
Current No Reset Value		Default = 0mA Range 0 to 20mA
Current Full Reset Value		Default = 0mA Range 0 to 20mA
Cooling Reset Deg Value		Default = 0°F (0°C) Range –30 to 30°F (–16.7 to 16.6°C)

In the example in Fig. 48, at 4 mA no reset takes place and at 20 mA, 5°F (2.8°C) chilled water set point reset is required.

SPACE TEMPERATURE RESET

The control system is also capable of temperature reset based on space temperature. The EMM and accessory sensor (P/N 33ZCT55SPT) are required for temperature reset using space temperature. This sensor measures the space (room) temperature for the purpose of set point reset. Only units with the optional energy management module are fitted with this sensor.

To use Space Temperature Reset, four variables must be configured: Cooling Reset Select, Space T No Reset Value (space temperature at which no temperature reset is required), Space T Full Reset Value (space temperature at which full temperature reset is required), and Cooling Reset Deg Value (the maximum amount of temperature reset desired).

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Cooling Reset Select	***Main Menu*→ *Configuration Menu*→** Reset Configuration	Default = 4 0=None, 1=OAT 2=Delta T, 3=4 to 20mA control 4=Space Temp
Space T No Reset Value		Default = 14°F (7.8°C) Range 14 to 125°F (7.8 to 69.4°C)
Space T Full Reset Value		Default = 14°F (7.8°C) Range 14 to 125°F (7.8 to 69.4°C)
Cooling Reset Deg Value		Default = 0°F (0°C) Range –30 to 30°F (–16.7 to 16.6°C)

In the space temperature reset example in Fig. 49, a reset of 6°F (3.3°C) is applied when the space temperature is 68°F (20.0°C) and no reset takes place when the space temperature is 72°F (22.2°C).

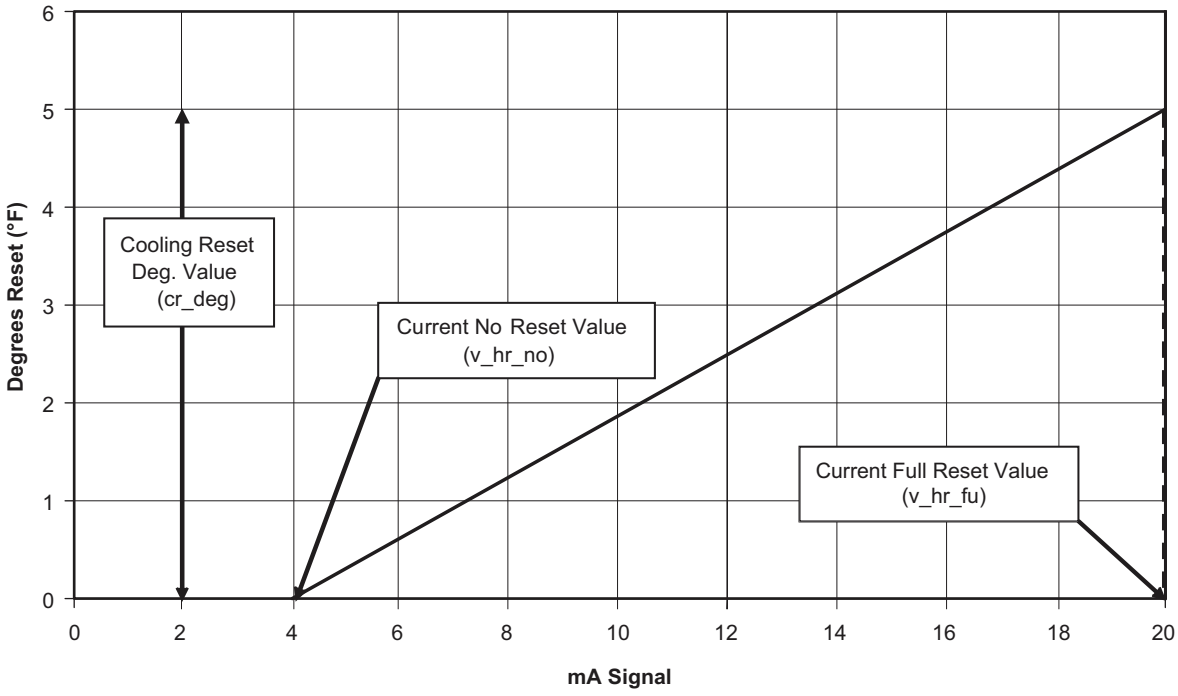


Fig. 48 — Example: 4 to 20 mA Temperature Reset

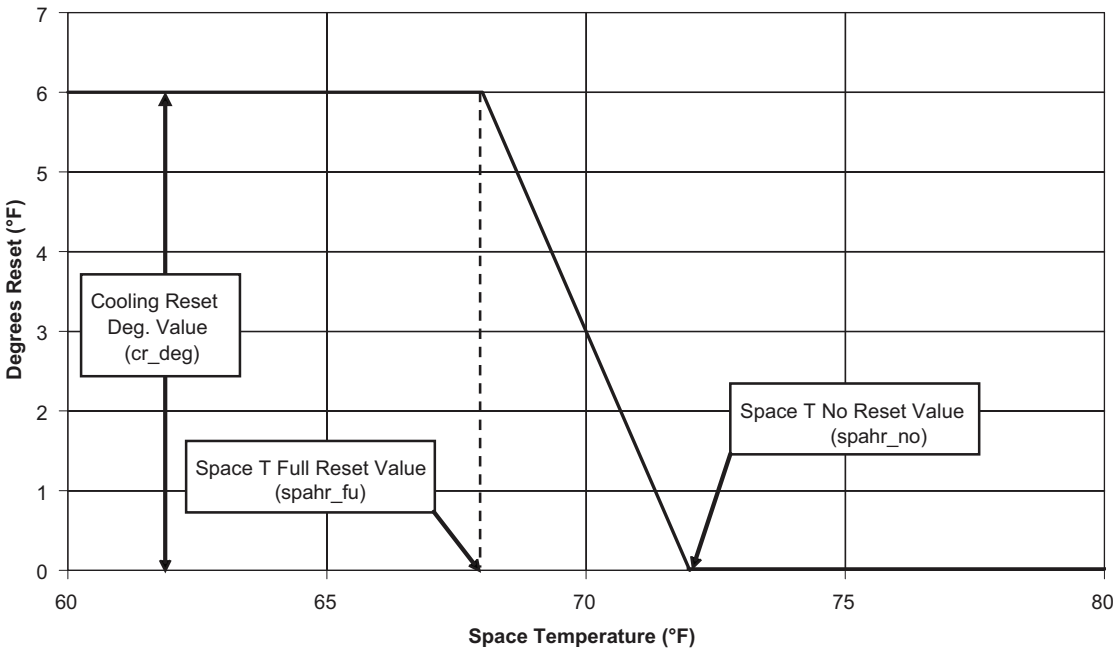


Fig. 49 — Example: Space Temperature Reset

Demand Limit

There are three types of demand limiting that can be configured. The first type is through switch control, which will reduce the maximum capacity to up to 3 user-configurable percentages. The second type is by 4 to 20 mA signal input which will reduce the maximum capacity linearly between 100% at a 4 mA input signal (no reduction) down to the demand limit minimum value at a 20 mA input signal. The third type uses the CCN Loadshed module and has the ability to limit the current operating capacity to maximum and further reduce the capacity if required. Demand limit control can be based on a calculated capacity level. If the Demand Limit is enabled and the current capacity requirement meets or exceeds the current Demand Limit level, the unit will unload and display Override #9: Demand Limit section on page 52.

If the demand limit percentage is set below minimum unit operation, the unit will go into override mode. See Override #91: Demand Limit section on page 53.

SWITCH CONTROLLED DEMAND LIMIT

The control system is capable of demand limit based on a field-supplied switch for 1-step demand limit or 2 switches for 3-step demand limit. One-step demand limit is standard. The 2 or 3-step switch control of demand limiting requires the EMM. Demand limit steps are controlled By two relay switch inputs field wired to TB5-5 and TB5-14 for Switch 1 (**LIM_SW1**) and TB6-14 and TB6-15 for Switch 2 (**LIM_SW2**).

For demand limit by switch control, closing the first demand limit contact (**LIM_SW1**) will put the unit on the first demand limit (LIMIT 1) by capacity. The unit will not exceed the percentage of capacity entered as Demand Limit Switch 1 set point. Closing contacts on the second demand limit switch (**LIM_SW2**) and opening the Demand Limit Switch 1 prevents the unit from exceeding the demand limit (LIMIT 2) entered as Demand Limit Switch 2 set point. If both demand limit switch (**LIM_SW1** and **LIM_SW2**) contacts are closed the unit will not exceed the limit (LIMIT 3) set by the switch limit set point 3. See the table below.

CONTACT	ACTIVE DEMAND LIMIT			
	NONE	LIMIT 1	LIMIT 2	LIMIT 3
LIM_SW1	Open	Close	Open	Close
LIM_SW2	Open	Open	Close	Close

To use demand limit, select the type of demand limiting to use by configuring the Demand Limit Select variable (***Main Menu → Configuration Menu → General Configuration →*** **Demand Limit Type Select**) to Switch. Configure the demand limit set points based on the type selected.

If using 2 or 3-step demand limit control, an energy management module must be installed. The energy management module must be enabled in the controls. To enable the EMM navigate to Factory Parameters menu ***(Main Menu → Configuration Menu →*** **Factory Parameters*)*** and set Energy Management Module to YES (1). One-step demand limit control does not require the energy management module. To configure demand limit for switch control, three parameters for 1-step switch control must be configured. For 2 or 3-step control, additional set point parameters must be configured. The parameters are: the type of Demand Limit Selection, the setting for Switch Limit Setpoint 1, the setting for Switch Limit Setpoint 2 (if required) and the setting for Switch Limit Setpoint 3 (if required).

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Demand Limit Type Select	***Main Menu →*** ***Configuration Menu →*** ***General Configuration***	Default = 0 (None) Range None = 0 Switch = 1 4 to 20mA = 2
Switch Limit Setpoint 1	***Main Menu →*** Setpoint Table	Default = 100% Range 0 to 100%
Switch Limit Setpoint 2	***Main Menu →*** Setpoint Table	Default = 100% Range 0 to 100% (Not required for 1-Step Control)
Switch Limit Setpoint 3	***Main Menu →*** Setpoint Table	Default = 100% Range 0 to 100% (Not required for 1 or 2-Step Control)

In the following example, 2-step demand limit based on capacity is desired with the first switch closure limiting the capacity to 60%. The second switch closure is to limit the capacity to 40%. Demand Limit Switch 1 is 60% and Demand Limit Switch 2 is 40%. Since no third-step demand limit is required, Switch Limit Setpoint 3 is set at 0%.

DISPLAY NAME	VALUE
Demand Limit Type Select	1
Switch Limit Setpoint 1	60%
Switch Limit Setpoint 2	40%
Switch Limit Setpoint 3	0%

EXTERNALLY POWERED (4 TO 20 MA) DEMAND LIMIT

The energy management module is required for 4 to 20 mA demand limit control. An externally powered 4 to 20 mA signal must be connected to TB6-1 and TB6-2. This signal is read by a transducer type (0 to 5 vdc) on the energy management module board via a field-installed 0.5 W 250-ohm resistor.

⚠ CAUTION

Care should be taken when interfacing with other control systems due to possible power supply differences such as a full wave bridge versus a half wave rectification. Connection of control devices with different power supplies may result in permanent damage. Carrier Controller controls incorporate power supplies with half wave rectification. A signal isolation device should be utilized if the signal generator incorporates a full wave bridge rectifier.

To configure demand limit for 4 to 20 mA control based on unit capacity, one parameter must be configured. The parameter is Demand Limit Type Select. The value of the capacity limit will vary linearly for 0% to 100% based on the input signal where 4 mA is 100% and 20 mA is 0% of total unit capacity.

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Demand Limit Type Select	***Main Menu →*** ***Configuration Menu →*** ***General Configuration***	Default = 0 (None) 4 to 20mA Control = 2

In the example in Fig. 50, a 4 mA signal is Demand Limit 100% and a 20 mA Demand Limit signal is 0%. The 4 to 20 mA signal is connected to TB6-1 and TB6-2. The demand limit is a linear interpolation between the two values entered. If the machine receives a 12 mA signal, the machine controls will limit the capacity to 50%.

CCN LOADSHED CONTROLLED DEMAND LIMIT

To configure Demand Limit for CCN Loadshed control, the unit Operating Type Control must be in CCN control. With the Carrier Controller display, the machine must be started in Network Mode. Network control can be executed from the GENUNIT table.

The unit must be controlled by a Chillervisor module. The Chillervisor module can force the demand limit variable and directly control the capacity of the machine. Additionally, the unit's set point will be artificially lowered to force the chiller to load to the demand limit value.

Machine Start Delay

An option to delay the start of the machine is available. This parameter is useful in keeping multiple machines from starting at the same time in case of a power failure. The parameter has a factory default of 1 minute. This parameter also has a role in the timing for a chilled water flow switch alarm. To configure this option with the Carrier Controller display, select ***Main Menu → Configuration Menu → General Configuration*** and select **Unit Off to On Delay**.

Fast Loading

The Fast Capacity Recovery function allows for an accelerated unit start-up. This is especially useful following brief power outages at data centers where rapid restart can keep data center operating. This should not be used on normal comfort cooling applications. To activate the Fast Capacity Recovery, go to ***Main Menu → Configuration Menu → Service Parameters*** and set **Fast Capacity Recovery**. The available options are as follows:

- Disabled (normal loading sequence): Follows the set delays for unit and circuit start up
- Quick start Load - (Quick Start Loading): With Flow established, ignores Capacity Control Override #53 (ON-OFF-ON Delay)
- Fast Capacity Recov (Fast Capacity Recovery): With Flow established, ignores Capacity Control Override #53 (ON-OFF-ON Delay), and allows both compressors to start at the same time (with a 10-second delay between starts)

NOTE: Unit cannot operate with Ramp Loading enabled if Fast Capacity Recovery is set to Quick start Load or Fast Capacity Recov.

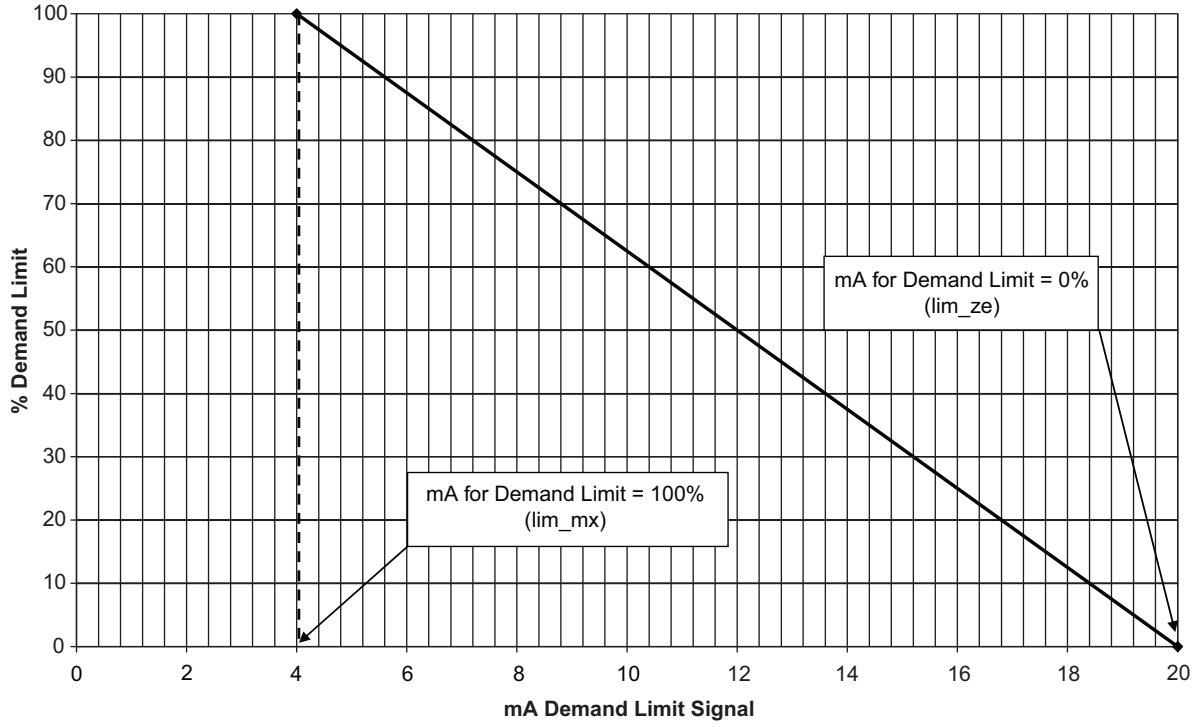


Fig. 50 — Example: 4 to 20 mA Demand Limit

Ice Storage Operation

Chiller operation can be configured to make and store ice. The energy management module and an Ice Done Switch are required for operation in the Ice Mode. In this configuration, the machine can operate with up to three cooling set points: Cooling Setpoint 1 is used during the Occupied period, Cooling Setpoint 2 is used during the Unoccupied period when the ice build is complete (Ice Done Switch is closed), and Cooling Ice Setpoint is used during the unoccupied period while ice is building (Ice Done Switch is open). Refer to the 30XV Typical Field Wiring Schematic figure on page 217 for Ice Done Switch wiring.

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Ice Mode Enable	***Main Menu → Configuration Menu General Configuration***	Drop Down Selection (YES/NO) Default = No
Cooling Ice Setpoint	***Main Menu → Setpoint Table***	Default = 44°F (6.7°C) Range = –20 to 78.8°F (–29 to 26°C)

Broadcast Configuration

The 30XV chiller with Greenspeed® Intelligence is capable of broadcasting OAT, time, date, and holiday status to all elements in the CCN system. In the stand-alone mode, broadcast must be activated to utilize holiday schedules and adjust for daylight saving time. If the chiller is to be connected to a CCN system, determine which system element is to be the network broadcaster and activate broadcast in all other system elements. Broadcast is activated and deactivated in the Carrier Controller Broadcast Menu (***Main Menu → Configuration Menu → Broadcast Menu →*** **Brocasts**).

Only one element should be configured as a broadcaster. If a broadcast is activated by a device that has been designated as a network broadcaster, then broadcast time, date, and holiday status will be updated over the CCN system. If broadcast is enabled, a broadcast acknowledger must also be enabled. The acknowledger cannot be the same machine as the broadcasting machine.

ACTIVATE

The Activate variable enables the broadcast function of the Carrier Controller controls. If this variable is set to 0, this function is not used and holiday schedules and daylight savings compensation are not possible. Setting this variable to 1 allows the machine to broadcast and receive broadcasts on the network. The following information is broadcast: the time with compensation for daylight savings, date, holiday flag, and the Outdoor Air Temperature.

Set this variable to 2 for stand-alone OAT broadcast. With this configuration, daylight saving time and holiday determination will be done without broadcasting through the bus.

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Activate	***Main Menu → Configuration Menu → Broadcast Menu → Brocasts***	0 = Disabled 1 = Broadcast time, date, holiday flag, and OAT 2 = OAT broadcast only (Daylight savings time and holiday determination will be done without broadcasting through the bus)

OAT BROADCAST

To enable the OAT broadcast, the unit broadcasting the temperature must be configured with its own CCN Bus and CCN Address. Leaving the parameters at the factory default of 0 for the CCN Bus and CCN Address disables the OAT Broadcast function. Once configured, the first broadcast of OAT will be within 5 minutes.

To configure this option with the Carrier Controller display:

DISPLAY NAME	PATH	VALUE
Activate	***Main Menu → Configuration Menu → Broadcast Menu → Brocasts***	Range = 0 to 2 Default = 2
OAT Broadcast		
Bus #		Range = 0 to 239 Default = 0
Element #		Range = 0 to 239 Default = 0

BROADCAST ACKNOWLEDGER

This configuration defines if the chiller will be used to acknowledge broadcast messages on the CCN bus. One broadcast acknowledger is required per bus, including secondary buses created by the use of a bridge. The broadcast acknowledger must be configured through the Network Service Tool.

Alarm Control

ALARM ROUTING CONTROL

Alarms recorded on the chiller can be routed through the CCN. To configure this option, the Carrier Controller controls must be configured to determine which CCN elements will receive and process alarms. Input for the decision consists of eight digits, each of which can be set to either 0 or 1. Setting a digit to 1 specifies that alarms will be sent to the system element that corresponds to that digit. Setting all digits to 0 disables alarm processing. The factory default is 00000000. See Fig. 51. The default setting is based on the assumption that the unit will not be connected to a network. If the network does not contain a ComfortVIEW™, ComfortWORKS™, TeLink, DataLINK™, or BACLink module, enabling this feature will only add unnecessary activity to the CCN communication bus.

Typical configuration of the Alarm Routing variable is 11010000. This Alarm Routing status will transmit alarms to ComfortVIEW™ software, TeLink, BACLink, and DataLINK.

This option cannot be configured with the Carrier Controller display. To change the alarm control routing through the Network Service Tool, navigate to point **ALRM_CNT** in table **ALARMDEF**.

ALARM EQUIPMENT PRIORITY

The ComfortVIEW software uses the equipment priority value when sorting alarms by level. The purpose of the equipment priority value is to determine the order in which to sort alarms that have the same level. A priority of 0 is the highest and would appear first when sorted. A priority of 7 would appear last when sorted. For example, if two chillers send out identical alarms, the chiller with the higher priority would be listed first. The default is 4. This variable can only be changed when using the ComfortVIEW software, or Network Service Tool. This variable cannot be changed with the Carrier Controller display. To configure this option with the Network Service Tool, navigate to point **EQP_TYP** in table **ALARMDEF**.

COMMUNICATION FAILURE RETRY TIME

This variable specifies the amount of time that will be allowed to elapse between alarm retries. Retries occur when an alarm is not acknowledged by a network alarm acknowledger, which may use either ComfortVIEW software or TeLink. If acknowledgment is not received, the alarm will be re-transmitted after the number of minutes specified in this decision. This variable can only be changed when using the ComfortVIEW software, or Network Service Tool. This variable cannot be changed with the Carrier Controller display. To configure this option with the Network Service Tool, navigate to point **RETRY_TM** in table **ALARMDEF**.

RE-ALARM TIME

This variable specifies the amount of time that will be allowed to elapse between re-alarms. A re-alarm occurs when the conditions that caused the initial alarm continue to persist for the number of minutes specified in this decision. Re-alarming will continue to occur at the specified interval until the condition causing the alarm is corrected. This variable can only be changed when using the ComfortVIEW software, or Network Service Tool. This variable cannot be changed with the Carrier Controller display. To configure this option with the Network Service Tool, navigate to point **RE_ALARM** in table **ALARMDEF**.

ALARM SYSTEM NAME

This variable specifies the system element name that will appear in the alarms generated by the unit control. The name can be up to 8 alphanumeric characters in length. This variable can only be changed when using the ComfortVIEW™ software or Network Service Tool. This variable cannot be changed with the Carrier Controller display. To configure this option with the Network Service Tool, navigate to point **ALRM_NAM** in table **ALARMDEF**.

Daylight Savings Time Configuration

The 30XV chiller with Greenspeed® Intelligence control contains software which can automatically correct for daylight savings time. This software is accessible from the Carrier Controller display, ComfortVIEW software, or Network Service Tool.

To enable this feature, Daylight Savings Select must be set to 1. The start of daylight saving must be configured by setting the Month, Day of Week, and Week of Month. The end for Daylight Saving must also be configured. To configure this option with the Carrier Controller display, see Table 31.

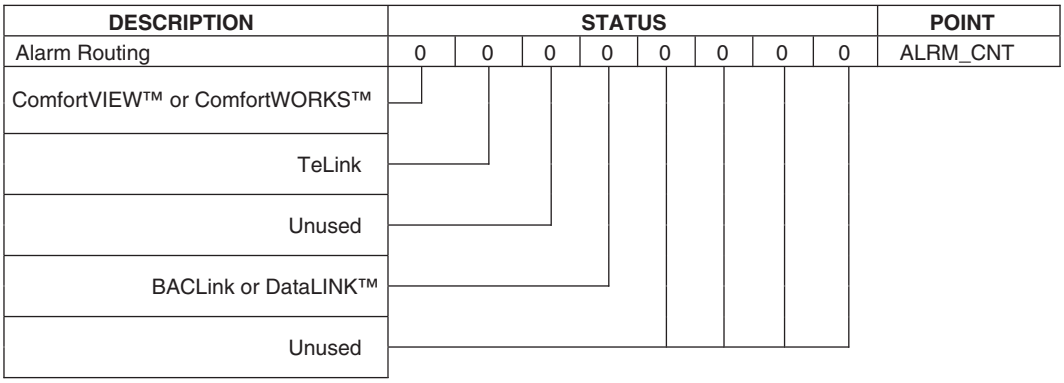


Fig. 51 — Alarm Routing Control

Table 31 — Daylight Savings Time Configuration

PATH	DISPLAY NAME	VALUE
Main Menu → ***Configuration Menu*** → ***Broadcast Menu*** → ***Brocasts***	Activate	1 or 2 Default = 2
	Daylight Savings Select	Enable Default = Disable
	Entering	
	Month	Enter Starting Month for Daylight Saving
	Day of Week (1=Monday)	Enter the Day of the Week Daylight Saving Starts
	Week of Month	Enter Week of the Month Daylight Saving Starts
	Leaving	
	Month	Enter Ending Month for Daylight Saving
	Day of Week (1=Monday)	Enter the Day of the Week Daylight Saving ends
	Week of Month	Enter Week of the Month Daylight Saving ends

Capacity Control Overrides

The following capacity control overrides (***Main Menu → Maintenance Menu → Capacity Control → Override Capacity Nb A, B***) will modify the normal operation routine. If any of the override conditions listed below is satisfied, the override will determine the capacity change instead of the normal control. Overrides are listed by priority order and are often linked to unit operating modes. See Table 32 for a list of capacity control overrides. See the Operating Modes section on page 63 for more information regarding operating modes.

Table 32 — Capacity Control Overrides

NO.	DESCRIPTION
0	Normal Operation
2	Low Suction Pressure
6	EWT < control point
7	Ramp Loading
9	Demand Limit Reached
10	Flow switch is open
11	Customer Interlock is closed
12	Flow Available Delay
14	Low LWT
15	Compressor Disabled
16	High Discharge Pressure
23	Low SP
25	Oil Recovery
34	Low SST
53	ON-OFF-ON Delay
56	Evaporator Heater Isolation Valve Opening Delay
59	Low Oil Level
62	High Compressor Motor Temperature
66	High Discharge Gas Temperature
67	DGT Off Protection
70	Low Refrigerant Protection
71	Low Refrigerant Protection
77	Oil Pressure at Start
78	VFD speed at Start
80	Refrigerant Charging
91	Demand Limit

Override #2: Low Suction Pressure

This override is activated when the Expansion Valve (EXV) is not in DSH (discharge superheat) mode and the Saturated Suction Temperature (SST) goes below 13.25°F (–10.4°C) for water or below (13.25°F – (34°F – Brine Freeze Setpoint)) for units configured with brine. The controller at this point starts to unload the unit until the SST exceeds 34°F (1.1°C).

Override #6: EWT < Control Point

This override stops the compressors without alarms.

Override #7: Ramp Loading

No capacity increase will be made if the unit is configured for ramp loading and the rate of change of the leaving water is greater than Ramp Loading Rate.

Override #9: Demand Limit

This override mode is active when a command to limit the capacity is received and the current capacity requirement meets or exceeds the demand limit value. If the current unit capacity is greater than the active capacity limit value, the unit unloads per unloading scheme. The current capacity will stop increasing when it reaches the capacity limit value minus 3%.

Override #10: Flow Switch is Open

This override prohibits compressor operation until the evaporator flow switch is closed.

Override #11: Customer Interlock is Closed

This override prohibits compressor operation until the customer interlock is opened.

Override #12: Flow Available Delay

This override prohibits chiller operation until flow has started.

Override #14: Low LWT (Leaving Water Temperature)

This override stops the compressors if LWT < freeze + freeze_ov (freeze = ***Main Menu → Configuration Menu → Service Parameters →*** **Brine Freeze Setpoint**; freeze_ov = ***Main Menu → Configuration Menu → Service Parameters →*** **Freeze Override Offset**). The goal is to stop the unit without having an alarm if the LWT goes too low so that the unit can start automatically without the need to reset alarm. For example, freeze is 34°F (1.1°C); the user can decide to add a threshold to force the compressors to stop immediately without alarm at 35°F (1.7°C).

Override #15: Compressor Disabled

This override is shown when either of the compressors are disabled through ***Main Menu → Configuration Menu → Compressor Enable*** menu.

Override #16: High Discharge Pressure

This override attempts to avoid a high pressure failure. If the saturated condensing temperature for the circuit is above the high pressure threshold the compressor is unloaded while the fan is run at maximum frequency.

Override #23: Low SP (Suction Pressure)

When the unit is configured with evaporator fluid as water (***Main Menu → Configuration Menu → Service Parameters →*** **Evaporator Fluid Type = Water**), this override is activated at SP <22.7 psig (156.5 kPa) (6°F SST). In this mode the circuit will not be allowed to load further until the SST goes above 30°F (–1.1°C). When the unit is configured with evaporator fluid as brine (***Main Menu → Configuration Menu → Service Parameters →*** **Evaporator Fluid Type = Med Brine**), this override is activated when SST < Brine Freeze Setpoint (***Main Menu → Configuration Menu → Service Parameters →*** **Brine Freeze Setpoint**) minus 5 psig (34.5 kPa).

Override #25: Oil Recovery

When compressor runs and minimum speed, the speed will increase for short periods of time to assure oil return. Timing is set in ***Main Menu → Configuration Menu → Service Parameters***.

Override #34: Low SST (Saturated Suction Temperature)

The compressor is not allowed to start if the SST is lower than –13°F (–25°C).

Override #53: ON OFF ON Delay

This override is activated when the unit is in off state (recycle, manually stopped, or because of alarm shutdown). The control will remain in this state for the next 3 minutes. This is to reduce short cycling.

Override #56: Isolation Valve Opening Delay

This override mode is activated when the actuated ball valves (if equipped) on the discharge lines are opening (approximately 2-minute delay).

Override #59: Low Oil Level

This override is only effective when the circuit is not running. The override will prevent the circuit from starting up with a low oil level.

Override #62: High Compressor Motor Temperature

This override prevents the compressor motor temperature from rising above the high compressor motor temperature limit, but still allows the chiller to run close to the high temperature limit by unloading the compressor. If the motor temperature is greater than 195.8°F (91°C), the compressor will not load. This override will control the loading to the compressor to maintain a maximum motor temperature of 194°F (90°C). The circuit will come out of this mode if the motor temperature falls below 190.4°F (88°C) or if motor temperature is below 195.8°F (91°C) and water temperature is established.

Override #66: High Discharge Gas Temperature (DGT)

This override avoids high DGT tripout by either increasing compressor capacity or decreasing the capacity and stopping the compressor depending on the conditions. The increase in capacity happens when the DGT > 201°F (93.9°C) to lower DGT. The control seeks to control the DGT at 190°F (87.8°C) and if the DGT goes below 186.4°F (85.8°C) the unit goes to normal control. The decrease in capacity followed by unit stop happens if Override 66 is activated and evaporator leaving water temperature is close to the Brine Freeze Setpoint (***Main Menu → Configuration Menu →Service Parameters***) or lower than the **Control Point** (***Main Menu → General Parameters***). The compressor restarts if the DGT goes below 186.4°F (85.8°C) and more than 5 minutes have passed. This override has priority over almost every other one (including the Demand Limit override).

Override #67: DGT off Protection (Discharge Gas Temperature)

This override is activated before the unit starts and prevents the unit from starting if the DGT is still greater than DGT activation point or if 5 minutes has not passed since the last high DGT shutdown.

Override #70: Low Refrigerant Protection

This override is activated when a low refrigerant condition has been detected. The compressor shuts down.

Override #71: Low Refrigerant Protection

This override is activated when the circuit has shut down on low refrigerant condition and DGT is still greater than or equal to DGT activation point OR unit has not been off for 5 minutes after shutdown from low refrigerant condition.

Override #77: Oil Pressure at Start

This override is activated when the unit has just started passed the start timer and OP<(SP+19.5) AND OP<(0.7*(DP-SP)+SP).

In this override the unit freezes the compressor loading and waits until the oil pressure exceeds the above conditions and then exits to normal mode of operation.

Override #78: VFD Speed at Start

VFD did not match requested speed at 3 minutes after start. The circuit will stop.

Override #80: Refrigerant Charging

Refrigerant charging mode is enabled. Override will clear once mode is disabled or on timeout of mode.

Override #91: Demand Limit

This override is activated when the demand limit is set lower than the minimum possible unit capacity. The unit shuts down and/or is on hold until the demand limit is changed to higher than the minimum unit capacity.

Head Pressure Control (Variable Speed Fans)

The head pressure is controlled through the Carrier Controller display by adjusting fan speed through variable speed drive(s). The command sent to the drive is at a frequency to maintain the lowest condensing temperature possible, and thus, the highest unit efficiency. The frequency command sent is based on a function of compressor capacity, OAT, and leaving fluid temperature. If the capacity is stable and no overrides have occurred recently, an algorithm attempts to optimize fan frequency based on total power feedback. The optimization control can be turned on and off through the Network Service Tool (***Service → Fan_CFG →*** **Optimization Enable On, Off [xt_enable]**).

Fan control continuously monitors all inputs and outputs and the transitions between the modes are defined based on continuous measurements of 2 inputs (Discharge Pressure and Discharge Gas Temperature).

Fan modes of operation include the following:

- STANDARD: Normal mode of operation before using the optimum-seeking algorithm.
- WAITOPT, OPTIMZE: Trying to optimize the fan frequency during the optimum-seeking algorithm.
- FREEZE: Fan frequencies are frozen after completion of the optimum-seeking algorithm cycle. The fan control remains in this mode until the LWT, the compressor load, or the outdoor temperature changes by a defined amount. If the change conditions are met the fan control goes back to the WAITOPT mode followed by the OPTIMZE modes.
- DGT: High Discharge Gas Temperature mode. The VFD increases the speed of the fan to reduce DGT.
- DP_HIGH, DP_LOW: High Discharge Pressure (DP) Mode, Low Discharge Pressure Mode: The VFD controls the speed of the fan to bring SCT (Saturated Condensing Temperature) into normal operating range.
- OFF: Fans are not running.
- START: Start mode. The frequency of the fans is defined based on the OAT.

Head Pressure Control (Fixed Speed Fans)

The head pressure is controlled through the Carrier Controller display by adjusting the number of fans running. The controller determines the minimum number of fans required to support unit operation so the unit can run at the most efficient point. At start up the number of fans on is calculated using OAT. After 60 seconds, an equation is used to determine the number of fan required based on OAT, EWT, and circuit capacity.

There are additional modes used for fixed speed fans:

DP HIGH

Mode decreases the discharge pressure as fast as possible to prevent high pressure trips. This mode turns on all fans.

DP HIGH DISCHARGE PRESSURE

Mode avoids high discharge pressure that would cause the compressor to run outside of the compressor envelope. In this mode, the pressure is controlled to a Discharge Pressure set point.

DGT HIGH

Mode decreases the discharge temperature as fast a possible to prevent high DGT alarms. This mode turns on all fans.

Sound Optimization

This option runs the chiller at a lower sound level by limiting the compressor and fan speed. The factors in Table 33 control this option. The factors are set from the factory and should not be lowered, as this may cause operational issues. The set points for this option are on a label inside the door of the control panel.

The compressor speed for the sound optimization is configured by fMaxOvrA and B. The max setting is limited by the max frequency of the base unit. In addition, fMaxEnA and/or B will be set to “yes” for this option.

The fan speed limitation is enabled by setting fan_fact to any value other than 1.00. The factor will be applied to the fan curve calculation for the fan speed in Hz. If the factor is 0.7, the fan speed will be 70% of the calculated fan speed. If high saturated condensing temperature occurs, the controls will override this feature and increase fan speed to keep the chiller running.

Table 33 — Sound Optimization Factor Settings

PARAMETERS	CCN POINT NAME	IND MOTOR RANGE	MAG MOTOR RANGE	DEFAULT
Enable Max Frequency A	fMaxEnA	no/yes	no/yes	0 (no)
Enable Max Frequency B	fMaxEnB	no/yes	no/yes	0 (no)
Max Frequency Override A	fMaxOvrA	50 to 105	50 to 206	75
Max Frequency Override B	fMaxOvrB	50 to 105	50 to 206	75
Fan Freq Fctor (0.7-1.1)	fan_fact	0.7 to 1.1	0.7 to 1.1	1.00

PRE-START-UP

Complete the Start-Up Checklist for 30XV Liquid Chillers at the end of this publication. The checklist assures proper start-up of a unit, and provides a record of unit condition, application requirements, system information, and operation at initial start-up.

Do not attempt to start the chiller until the following checks have been completed.

System Check

1. Check that auxiliary components, such as the chilled fluid circulating pump, air-handling equipment, or other equipment to which the chiller supplies liquid are operational. Consult manufacturer's instructions. If the unit has field-installed accessories, be sure all are properly installed and wired correctly. Refer to unit wiring diagrams.
2. Open compressor suction service valves (if equipped).
3. Open discharge line, liquid line, oil line, and economizer (if equipped) service valves.
4. Fill the chiller fluid circuit with clean water (with recommended inhibitor added) or other non-corrosive fluid to be cooled. Bleed all air out of high points of system. If outdoor temperatures are expected to be below 32°F (0°C), sufficient inhibited propylene glycol or other suitable corrosion inhibited antifreeze should be added to the chiller water circuit to prevent possible freeze-up.

   The chilled water loop must be cleaned before the unit is connected. It is recommended that the chiller pumps be equipped with a start-up filter screen to remove particulates from the loop. The start-up filter should be replaced after 24 hours of operation
5. Check tightness of all electrical connections.
6. Electrical power source must agree with unit nameplate.
7. Oil separator heaters must be energized for 24 hours prior to start-up.

START-UP

Actual Start-Up

Actual start-up should be done only under supervision of a qualified refrigeration technician.

1. Be sure all oil, suction valves, discharge valves (if equipped) and liquid line service valves are open.
2. Using the Carrier Controller, set leaving-fluid set point (***Main Menu → Setpoint Table →*** **Cooling Setpoint 1**). No cooling range adjustment is necessary.
3. If optional control functions or accessories are being used, the unit must be properly configured. Refer to Configuration Options section for details.
4. Start chilled fluid pump, if unit is not configured for pump control (***Main Menu→Configuration Menu→Pump Configuration→*****Evaporator Pumps Sequence = No Pumps (0)**).
5. Complete the Start-Up Checklist to verify all components are operating properly.
6. Touch the Start/Stop button located in the upper right corner of the Carrier Controller display and then select Local On.
7. Allow unit to operate and confirm that everything is functioning properly. After unit operation stabilizes, enusre that leaving set-point Control Point (***Main Menu → Setpoint Table →*** **Cooling Setpoint 1**) agrees with leaving fluid temperature (***Main Menu → Temperatures →*** **Evap Leaving Fluid**).

Operating Limitations

TEMPERATURES

Unit operating temperature limits are listed in the table below.

TEMPERATURE	F	C
Maximum Ambient Temperature	125	52
Minimum Ambient Temperature[a]	32	0
Maximum Evaporator EWT[b]	95	35
Maximum Evaporator LWT	60	15
Minimum Evaporator LWT	38[c]	3.3
Maximum Evaporator Glycol EWT[b]	95	35
Minimum Evaporator Glycol LWT	30	16.7

NOTE(S):

a. Lowest allowable ambient temperature for the standard unit to start and operate is 32°F (0°C). With the inclusion of wind baffles and variable speed fans (field fabricated and installed), the unit is capable to start as low as 0°F (–17.8°C) and to operate as low as –20°F (–29°C) ambient temperature.
b. For sustained operation, EWT should not exceed 70°F (21.1°C).
c. Unit requires brine fluid for operation below this temperature.

LEGEND

EWT — Entering Fluid (Water) Temperature
LWT — Leaving Fluid (Water) Temperature

Low Ambient Temperature Operation

If unit operating temperatures below 32°F (0°C) are expected, the following measures are recommended:

- Consider higher loop volumes, 6 to 10 gallons per nominal ton.
- Loop freeze protection with glycol is strongly recommended to a minimum of 15°F (8.3°C) below lowest anticipated ambient temperature.
- Chilled water pump control is required.
- If wind velocity is expected to be greater than 5 mph (8 km/h) wind baffles and brackets must be field fabricated and installed. See the 30XV Installation Instructions.

VOLTAGE

Main Power Supply

Minimum and maximum acceptable supply voltages are listed in the Installation Instructions.

Unbalanced 3-Phase Supply Voltage

Never operate a motor where a phase imbalance between phases is greater than 2%.

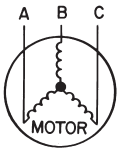
To determine percent voltage imbalance:

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from avg voltage}}{\text{average voltage}}$$

The maximum voltage deviation is the largest difference between a voltage measurement across 2 legs and the average across all 3 legs.

Example: Supply voltage is 240-3-60.

AB = 243v
BC = 236v
AC = 238v



1. Determine average voltage:

$$\text{Average voltage} = \frac{243+236+238}{3} = \frac{717}{3} = 239$$

2. Determine maximum deviation from average voltage:

(AB) 243 – 239 = 4 v

(BC) 239 – 236 = 3 v

(AC) 239 – 238 = 1 v

Maximum deviation is 4 v.

3. Determine percent voltage imbalance:

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{239} = 1.7\%$$

This voltage imbalance is satisfactory as it is below the maximum allowable of 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact the local electric utility company immediately. Do not operate unit until imbalance condition is corrected.

Corner Grounded Delta Supply

The Compressor and Fan VFDs used on 30XV units are automatically compatible with a Corner Grounded Delta Power Supply to the system. No changes are required to be made to the VFDs.

MINIMUM FLUID LOOP VOLUME

To obtain proper temperature control, loop fluid volume must be at least 3 gallons per ton (3.25 L per kW) of chiller nominal capacity for air conditioning and at least 6 gallons per ton (6.5 L per kW) for process applications or systems that must operate at low ambient temperatures (below 32°F [0°C]). Refer to application information in Product Data literature for details.

FLOW RATE REQUIREMENTS

Standard chillers should be applied with nominal flow rates within those listed in the Minimum and Maximum Evaporator Flow Rates table. Higher or lower flow rates are permissible to obtain lower or higher temperature rises. Minimum flow rates must be exceeded to assure turbulent flow and proper heat transfer in the evaporator. See Tables 34-36. See Fig. 52-60 for evaporator pressure drop curves.

⚠ CAUTION

Operation below minimum flow rate could generate alarms, which could result in damage to the evaporator.

Consult application data section in the Product Data literature and job design requirements to determine flow rate requirements for a particular installation.

Table 34 — Min/Max Water Flow, Standard Evaporator

30XV	TIERS	MINIMUM FLOW RATE		MAXIMUM FLOW RATE	
		gpm	L/s	gpm	L/s
140	All	170.4	10.8	681.6	43.0
160	All	193.2	12.2	772.8	48.8
180	All	204.0	12.9	816.0	51.5
200	All	236.4	14.9	945.6	59.7
225	All	266.4	16.8	1065.6	67.2
250	All	308.4	19.5	1233.6	77.8
275	All	327.6	20.7	1310.4	82.7
300	All	349.2	22.0	1396.8	88.1
325	All	379.2	23.9	1516.8	95.7
350	All	419.0	26.4	1676.0	105.7
400	All	483.0	30.5	1932.0	121.9
450	All	543.5	34.3	2174.0	137.2
500	All	600.0	37.9	2400.0	151.4

Table 35 — Min/Max Water Flow, Minus-1-Pass Evaporator

30XV	TIERS	MINIMUM FLOW RATE		MAXIMUM FLOW RATE	
		gpm	L/s	gpm	L/s
140	All	340.8	21.6	1363.2	86.0
160	All	386.4	24.4	1545.6	97.6
180	All	408.0	25.8	1632.0	103.0
200	All	472.8	29.8	1891.2	119.4
225	All	532.8	33.6	2131.2	134.4
250	All	616.8	39.0	2467.2	155.6
275	All	655.2	41.4	2620.8	165.4
300	All	698.4	44.0	2793.6	176.2
325	All	758.4	47.8	3033.6	191.4
350	All	838.0	52.8	3352.0	211.4
400	All	966.0	61.0	3864.0	243.8
450	All	1087.0	68.6	4348.0	274.4
500	All	1200.0	75.8	4800.0	302.8

Table 36 — Min/Max Water Flow, 3-Pass Evaporator

30XV	TIERS	MINIMUM FLOW RATE		MAXIMUM FLOW RATE	
		gpm	L/s	gpm	L/s
140	All	77.0	4.9	360.0	22.7
160	All	121.0	7.6	410.0	25.9
180	All	124.0	7.8	450.0	28.4
200	All	152.0	9.6	495.0	31.2
225	All	155.0	9.8	545.0	34.4
250	All	149.0	9.4	645.0	40.7
275	All	155.0	9.8	685.0	43.2
300	All	177.0	11.2	715.0	45.1
325	All	204.0	12.9	775.0	48.9
350	All	282.0	17.8	860.0	54.3
400	All	294.0	18.5	995.0	62.8
450	All	313.0	19.7	1120.0	70.7
500	All	313.0	19.7	1225.0	77.3

Unit Sizes 30XV140, 160, 180, 200, 225

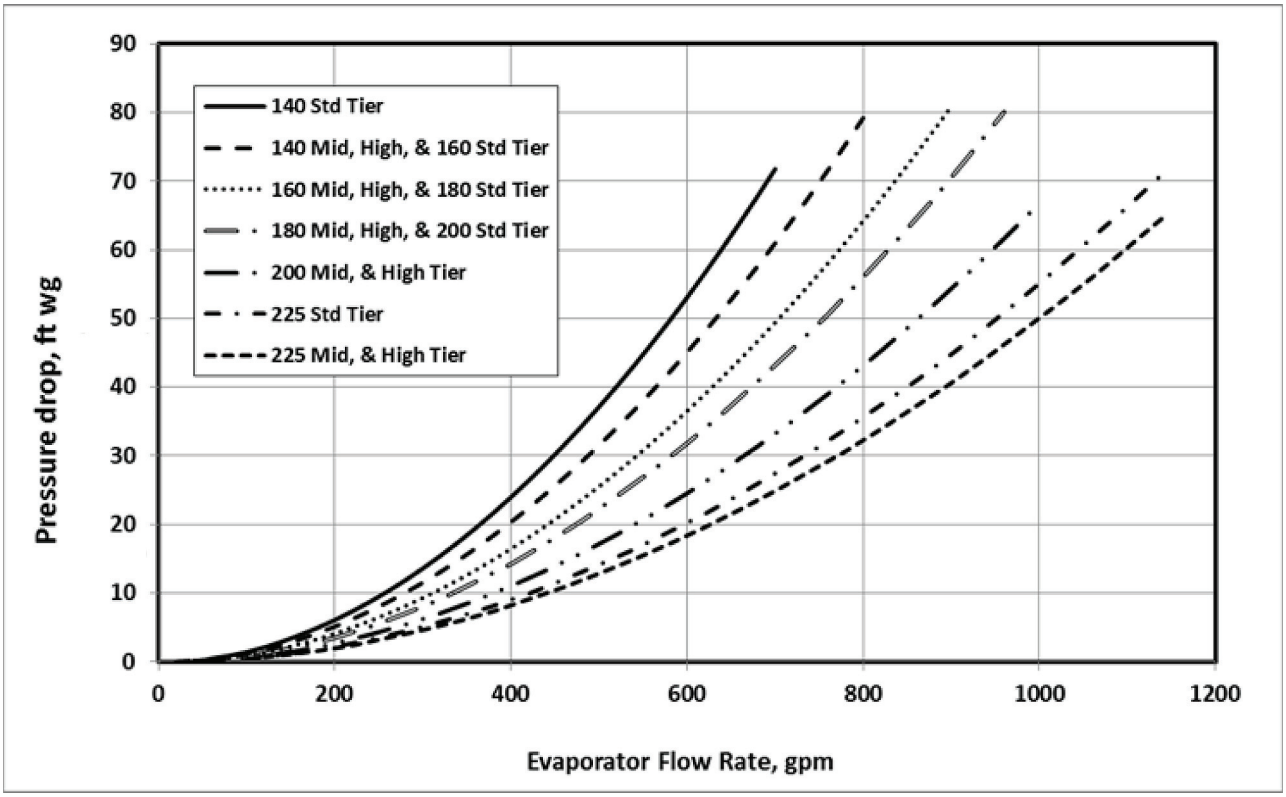


Fig. 52 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV140-225)

Unit Sizes 30XV250, 275, 300, 325

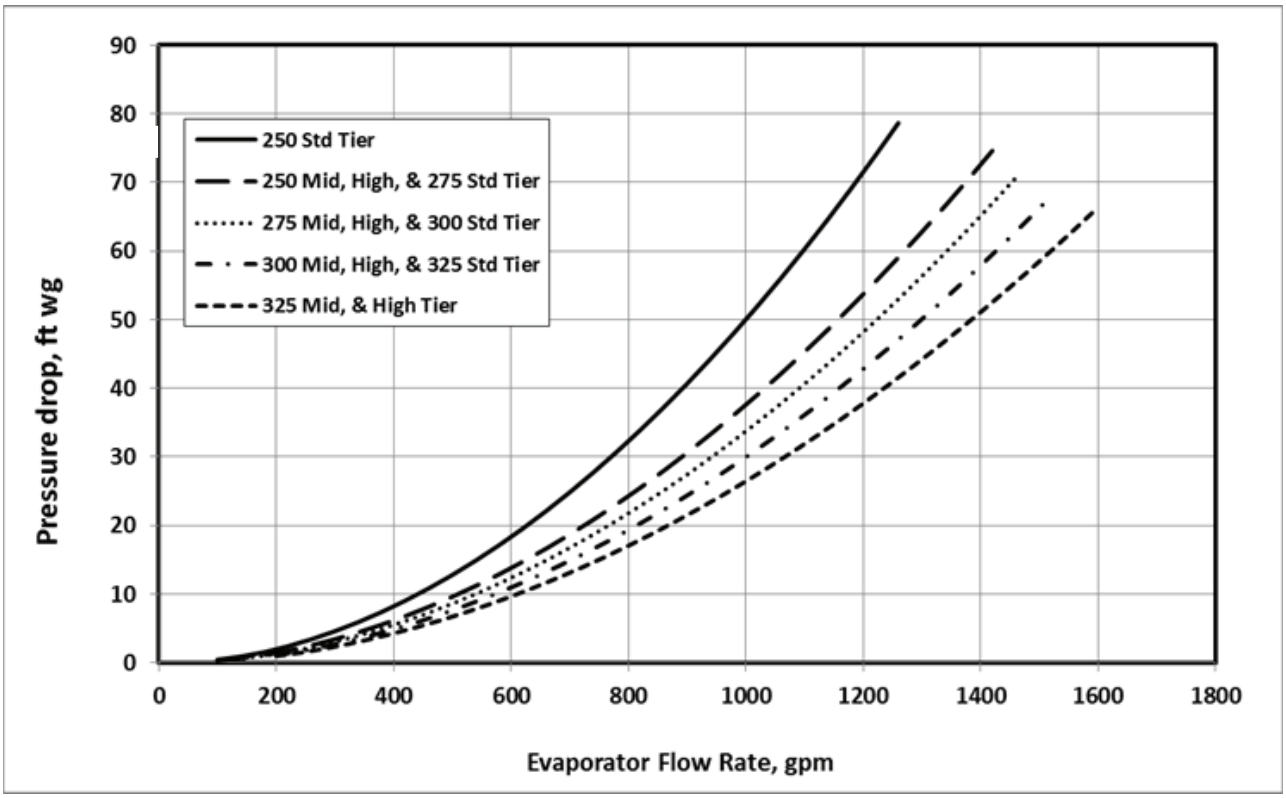


Fig. 53 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV250-325)

Unit Sizes 30XV350, 400, 450, 500

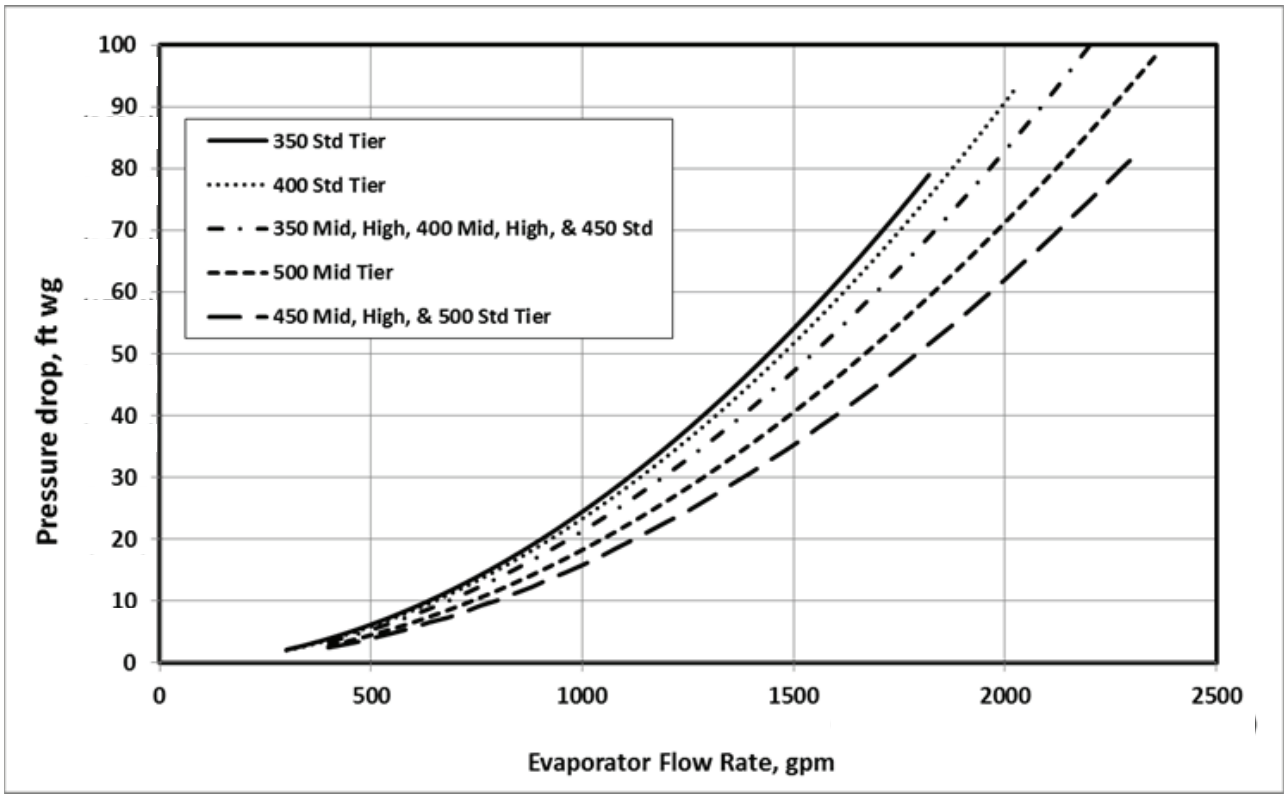


Fig. 54 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV350-500)

Unit Sizes 30XV140, 160, 180, 200, 225

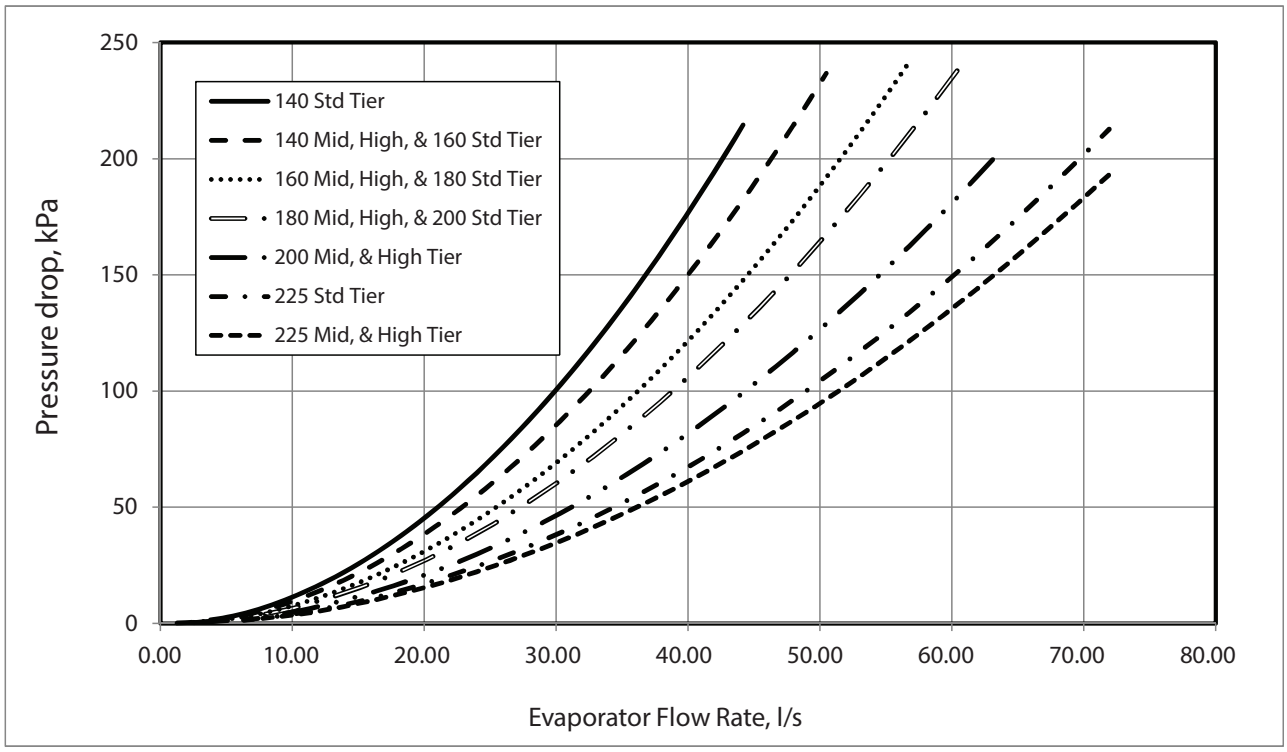


Fig. 55 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV140-225)

Unit Sizes 30XV250, 275, 300, 325

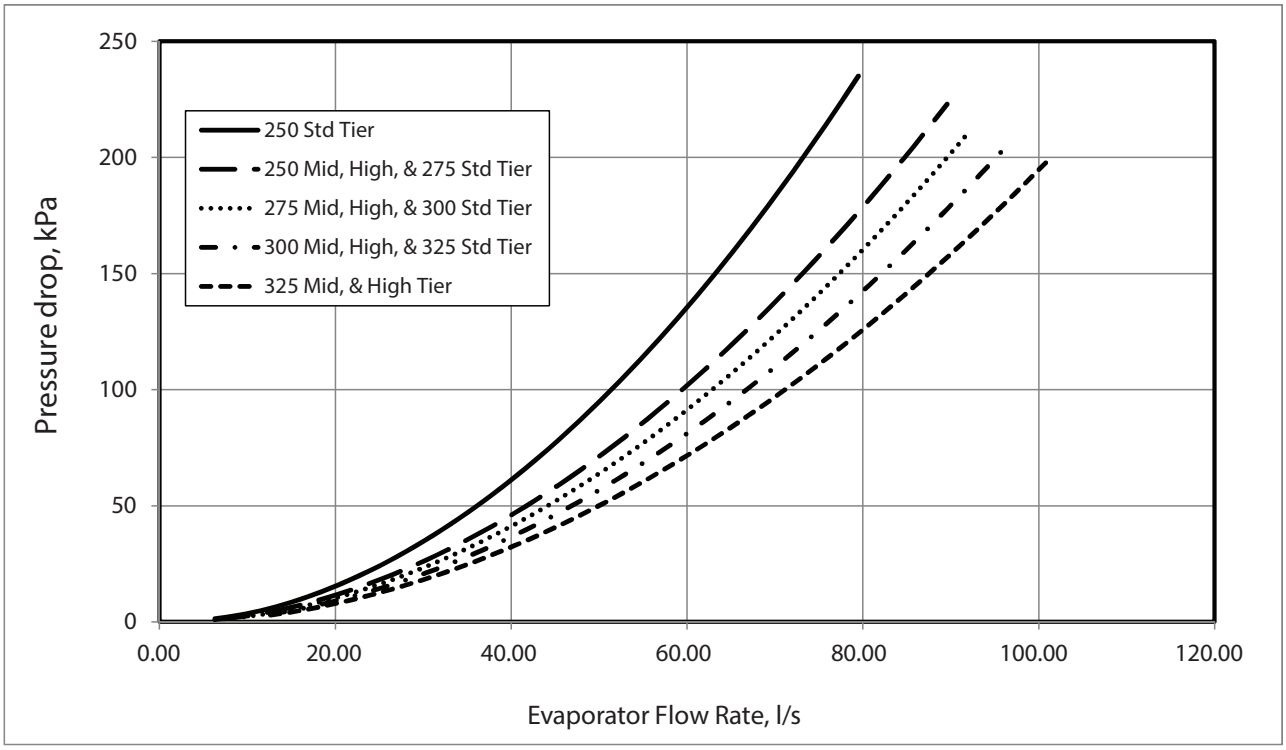


Fig. 56 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV250-325)

Unit Sizes 30XV350, 400, 450, 500

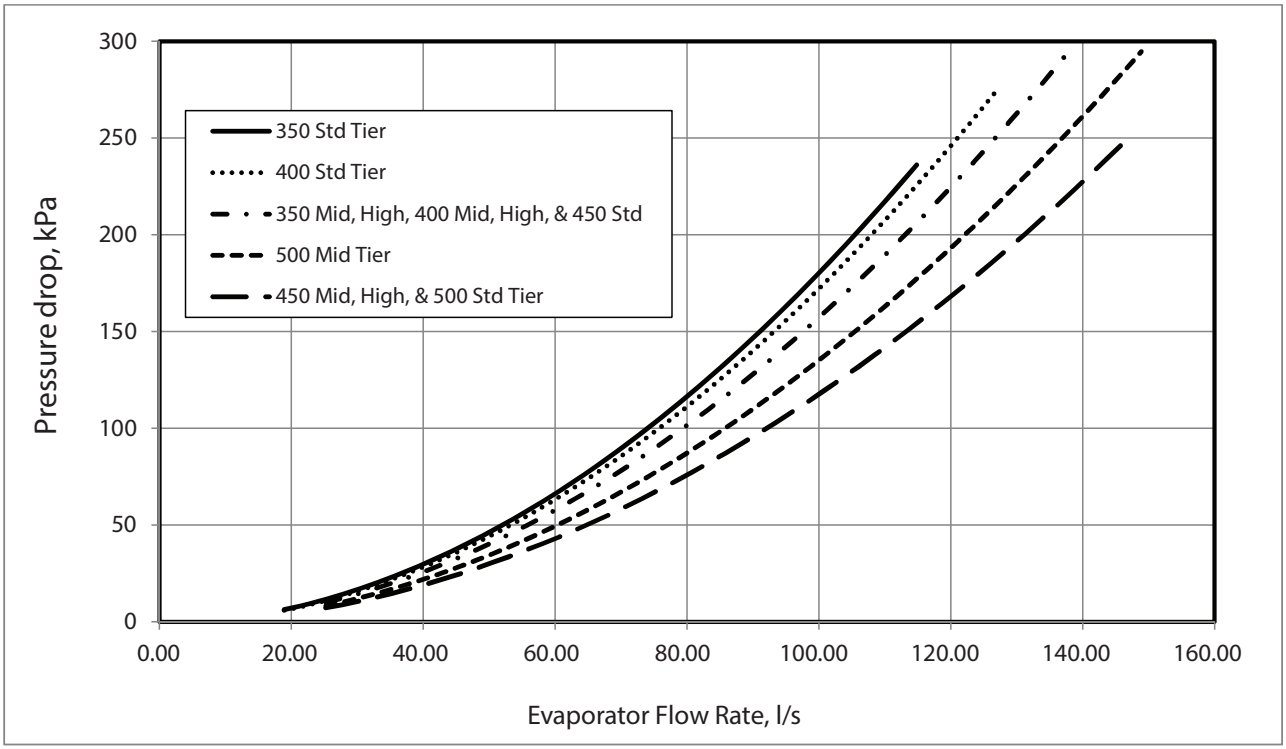


Fig. 57 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV350-500)

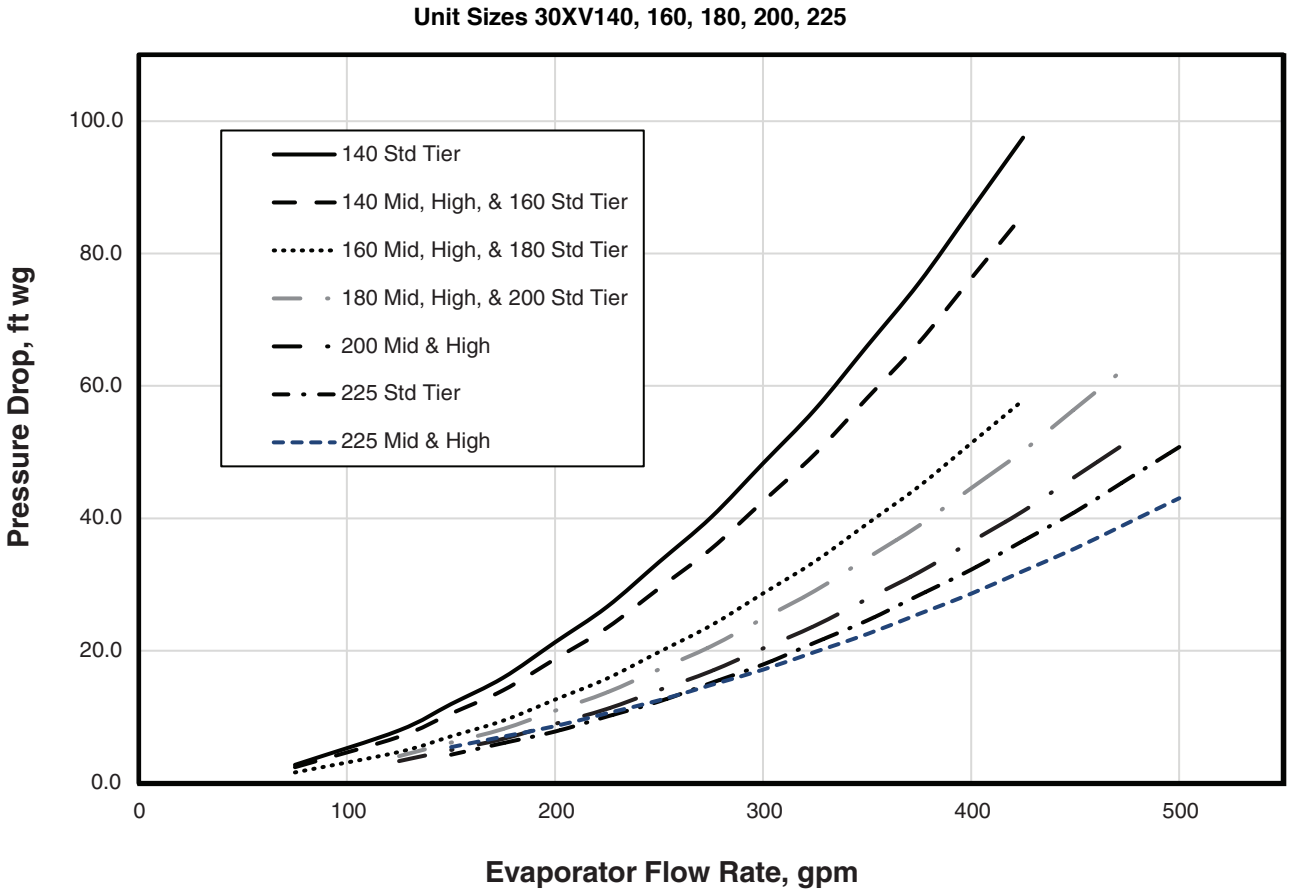


Fig. 58 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV140-225)

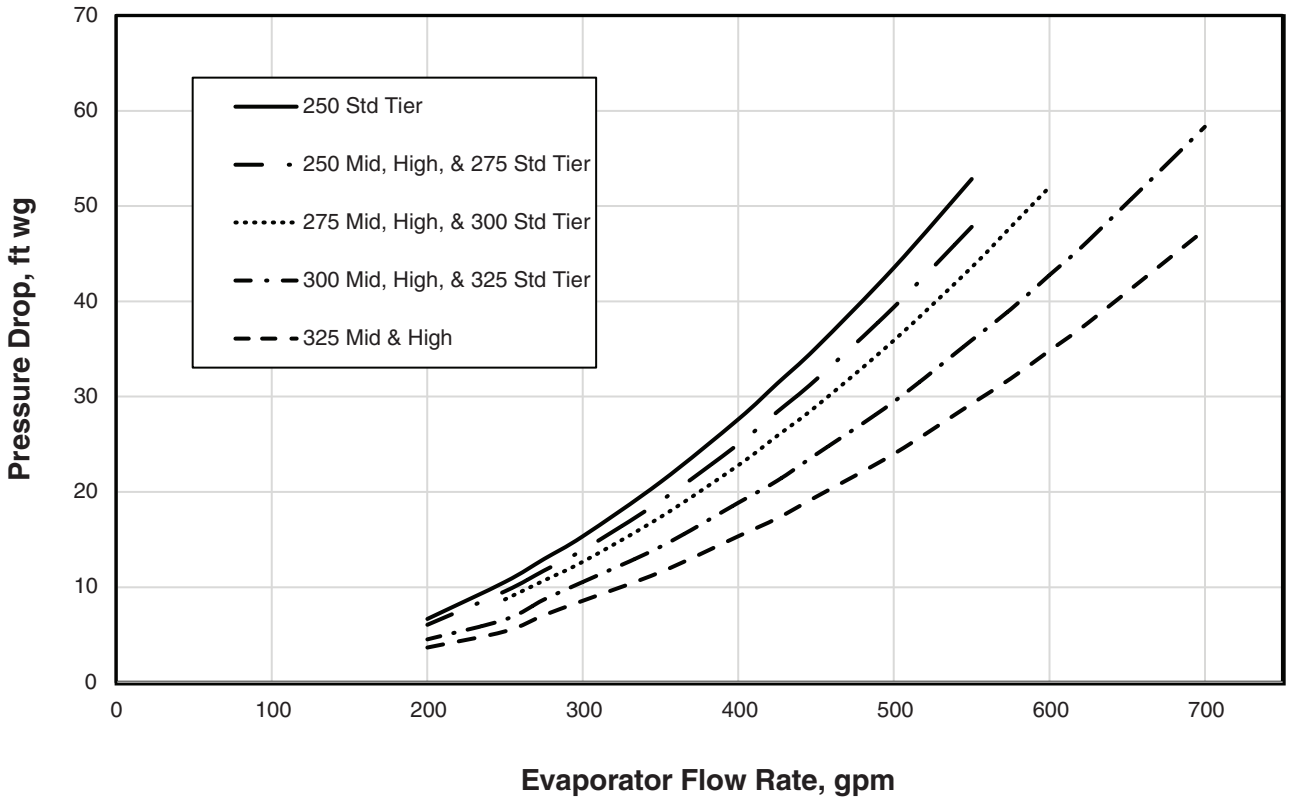


Fig. 59 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV250-325)

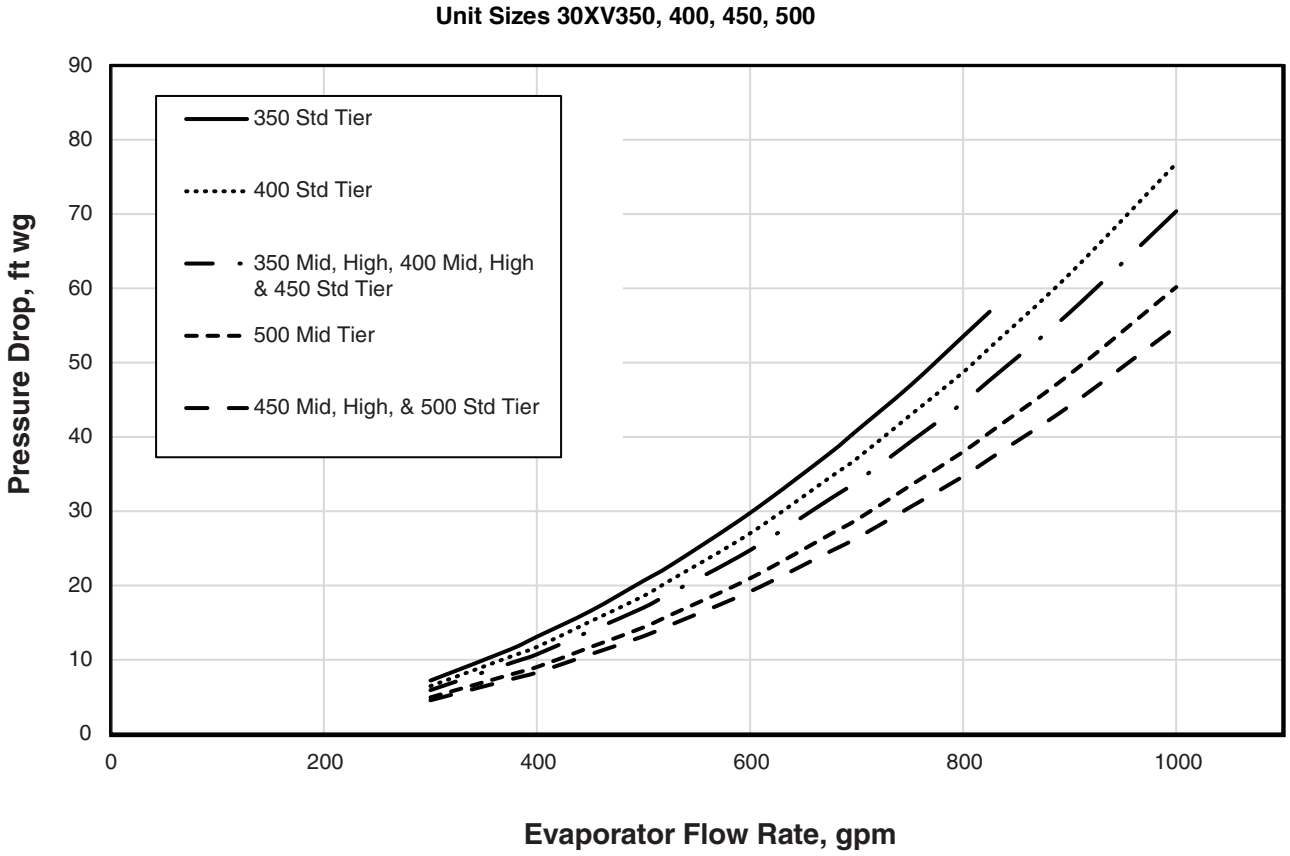


Fig. 60 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV350-500)

OPERATION

Sequence of Operation

With a command to start the chiller, the evaporator pump will start. After verifying water flow, the control will monitor the entering and leaving water temperature. If the need for mechanical cooling is determined, the control decides which circuit and compressor to start. The control will start the required compressor completely unloaded and de-energize the oil separator heater (if already energized). The control will continue to load this circuit by increasing the VFD frequency to satisfy cooling requirements. Once fully loaded, the control will start the second circuit to satisfy load as required. Shutdown of each circuit under normal conditions occurs in the opposite sequence to loading. Once a circuit is fully unloaded the compressor is shut off and the EXV will close completely.

ACTUATED BALL VALVE (ABV)

For chillers equipped with this option (standard in most regions), either one or two discharge ABVs are located in the discharge line of each circuit of the unit. See Fig. 61 for a typical ABV assembly with enclosure. The ABV is a motorized ball valve, which is used to close the discharge line to prevent refrigerant migrating from condenser to the evaporator when the circuit is off. The valve will be opened before the compressor is started and will normally close when pressure equalizes between suction and discharge lines.

The actuated ball valves are linked to the evaporator heater operation in the controls. Evaporator Heater option (***Main Menu*** → ***Configuration Menu*** → ***Factory Parameters*** → **Evaporator Heater Installed = yes**) must be enabled for the actuated ball valve to operate.

See Fig. 62 for a view of a fully open ball valve with the actuator removed. The flat surface at the top of the valve shaft is parallel to the discharge line. The ball valve motor mounting plate should be perpendicular to the discharge line at all times. If not, adjust it by loosening the set screw on the side of the valve, reposition assembly and tighten set screw.

See Fig. 63 for a view of the ball valve motor mounting with a fully open valve. The motor actuator arm should be at a counterclockwise position, with the valve shaft in a parallel position. If not in a parallel position, loosen the clamping screw and push the disengagement button to rotate the actuator arm until it stops. Retighten the clamping screw.

ABV Manual Operation

The ABV can be operated manually as a discharge service valve by completing the following steps:

1. Remove the actuator cover.
2. With the compressor off hold down the Disengagement (Push) button. See Fig. 63.
3. Close the ABV by turning the shaft adapter by hand or with a wrench so that the flats on the end of the shaft are perpendicular to the discharge line.
4. Release the Push button.
5. Disconnect the control power cable to the ABV.

Dual Chiller Sequence of Operation

With a command to start the chiller, the Master chiller determines which chiller will become the lead chiller based on the configuration of Lead Lag Select (**lead_sel**) and Lead/Lag Balance Delta (**ll_bal_d**). The lead chiller is always started first and the lag chiller is held at zero percent capacity by the master chiller forcing the lag demand limit value to 0%. If Lead Pulldown Time (**lead_pul**) has been configured, the lead chiller will continue to operate alone for that specified time. After the Lead Pulldown Time timer has elapsed and when the lead chiller is fully loaded, either all available compression is on or at the master demand limit value, then the lag start timer (**lstr_tim**) is initiated.

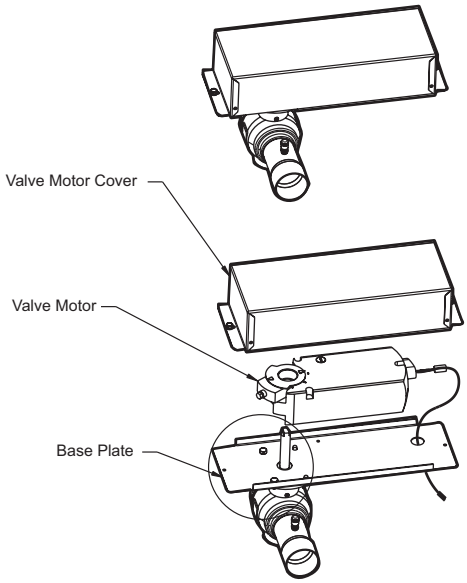


Fig. 61 — Typical ABV Assembly with Enclosure

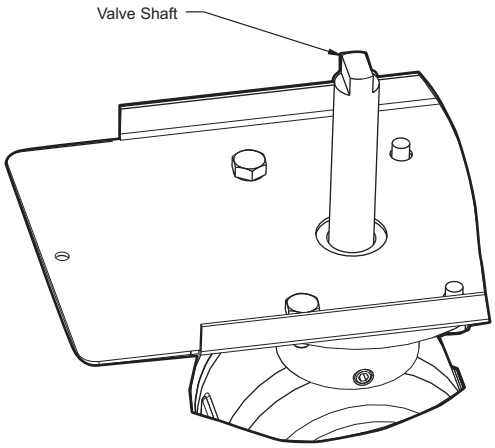


Fig. 62 — Fully Open Ball Valve with Actuator Removed

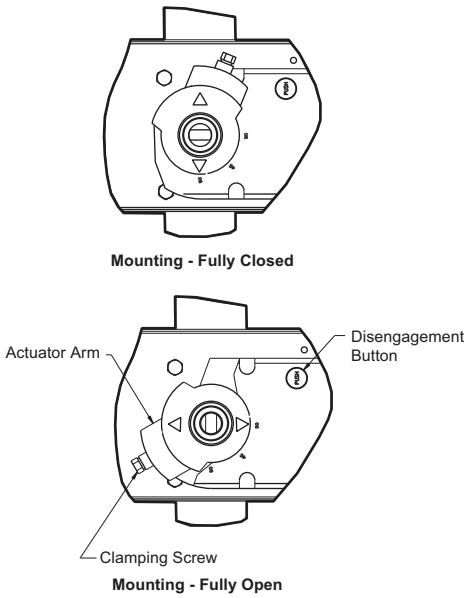


Fig. 63 — Ball Valve Motor

When the pulldown time and lag start time have elapsed and the Combined Leaving Chilled Water Temperature is more than 3°F (1.7°C) above the set point, then the lag chiller is started. If the lag chiller's water pump was not started when the machines went into occupied mode, the lag chiller water pump will be started. The lag chiller will start with the Master chiller forcing the lag chiller demand limit value (**LAG_LIM**) to the Master's demand limit value. The Master will then be responsible for water loop capacity calculation, and will determine which chiller, the lead or lag, will increase or decrease capacity. When the load reduces, the lag chiller will be the first chiller to unload. To accomplish this, the lead chiller set point is decreased by 4°F (–2.2°C) until the lag chiller unloads.

PUMP OPERATION

For parallel chiller pump operation, the lead chiller's water pump will be started. The lag chiller's water pump will be maintained off if Lag Unit Pump Control = 0 (***Main Menu → Configuration Menu → Master/Slave Config →*** **Lag Unit Pump Control**). The internal algorithm of the lead chiller will control capacity of the lead chiller.

Operating Modes

Operating modes are override modes that affect normal operation of the equipment. More than one operating mode can be in effect at the same time. Some operating modes have corresponding capacity control overrides (see the Capacity Control Overrides section on page 52).

For the Carrier Controller display, the status of the operating modes can be found by accessing the Modes Menu (***Main Menu → Modes***). Each operating mode and its status (Yes = active, No = inactive) is listed. See Table 37 for a list of operating modes.

Table 37 — 30XV with Greenspeed® Intelligence Operating Modes

OPERATING MODE NUMBER	DESCRIPTION	STATUS
1	Startup Delay in Effect	Yes/No
2	Second Setpoint in Use	Yes/No
3	Reset in Effect	Yes/No
4	Demand Limit Active	Yes/No
5	Evaporator Pump Rotation	Yes/No
6	Pump Periodic Start	Yes/No
7	Night Mode Active	Yes/No
8	Master Slave Active	Yes/No
12	Ice Mode in Effect	Yes/No

STARTUP DELAY IN EFFECT

This mode is checked for when the unit is started. This mode is active when the Minutes Off Time (***Main Menu → Configuration Menu → General Configuration →*** **Unit Off to On Delay**) timer is active. The unit will not start until the timer has expired. The mode will terminate when the timer expires.

SECOND SETPOINT IN USE

This mode is checked for when the unit is ON. The mode is active when Cooling Setpoint 2 (***Main Menu → Setpoint Table →*** **Cooling Setpoint 2**) or Cooling Ice Setpoint (***Main Menu → Setpoint Table →*** **Cooling Ice Setpoint**) is in use. While in this mode, the Current Setpoint (***Main Menu → General Parameters →*** **Current Setpoint**) will show the Cooling Setpoint 2 or Cooling Ice Setpoint value.

While in this mode the unit will operate to the Cooling Setpoint 2 or Cooling Ice Setpoint. The mode will terminate when the second setpoint is no longer in use.

RESET IN EFFECT

This mode is checked for when the unit is ON. The mode will be active when Cooling Reset Select (***Main Menu → Configuration Menu → Reset Configuration →*** **Cooling Reset Select**) is enabled by setting the value to 1 = Outside Air Temperature, 2 = Fluid Delta T, 3 = 4 to 20 mA Input, 4 = Space Temperature) and reset is active.

While in this mode, the Current Setpoint (***Main Menu → General Parameters →*** **Current Setpoint**) will be modified according to the programmed information and will be displayed as the Control Point (***Main Menu → General Parameters →*** **Control Point**). The mode will terminate when the Temperature Reset is not modifying the active leaving water set point, causing the Current Setpoint to equal the Control Point.

DEMAND LIMIT ACTIVE

This mode is checked for when the unit is ON. The mode is active when Demand Limit Type Select (***Main Menu → Configuration Menu → General Configuration →*** **Demand Limit Type Select**) is enabled either by setting the value to 1 = Switch Control or 2 = 4 to 20mA Control, or setting the Night Capacity Limit (***Main Menu → Configuration Menu → General Configuration →*** **Night Capacity Limit**). The Active Demand Limit Value (***Main Menu → General Parameters →*** **Active Demand Limit Value**) will display the current demand limit according to the programmed information and the unit's capacity will be reduced to the amount shown or lower. The mode will terminate when the Demand Limit command has been removed.

EVAPORATOR PUMP ROTATION

This mode is always checked. The mode is active when the Evaporator Pump Sequence (***Main Menu → Configuration Menu → Pump Configuration →*** **Evaporator Pumps Sequence**) value is set to 2 = Two Pumps Automatic Changeover, and the Pump Auto Rotation Delay (***Main Menu → Configuration Menu → Pump Configuration →*** **Pump Auto Rotation Delay***)* has expired. The control will switch the operation of the pumps. The lead pump will operate normally. The lag pump will be started, becoming the lead, and then the original lead pump will be shut down. This mode will terminate when the pump operation has been completed.

PUMP PERIODIC START

This mode is active when the evaporator pump is started due to the periodic pump start configuration (***Main Menu → Configuration Menu → Pump Configuration →*** **Pump Sticking Protection = YES**). If the pump has not run that day, a pump will be started and will run for 2 seconds at 2:00 PM. If the machine is configured for dual pumps, Pump 1 will run on even days (such as day 2, 4, 6 of the month). Pump 2 will run on odd days (such as day 1, 3, 5 of the month). The mode will terminate when the pump shuts down.

MASTER SLAVE ACTIVE

This mode is checked for if the machine is ON. This mode is active if Master Slave Control has been enabled. This occurs when two machines are programmed, one as the Master (***Main Menu → Configuration Menu → Master/Slave Config → M*****aster/Slave select = Master (1)**) and the other as a Slave (***Main Menu → Configuration Menu → Master/Slave Config →*** **Master/Slave select = Slave (2)**). Both the master and slave machines will respond to the capacity control commands issued by the Master controller. This may include control point changes and demand limit commands. This mode will terminate when Master Slave Control has been disabled (***Main Menu → Configuration Menu → Master Slave Config →*** **Master/Slave Select = Disable (0)**).

ICE MODE IN EFFECT

This mode is checked for when the unit is ON. This mode is active when the Cooling Ice Setpoint (***Main Menu → Setpoint Table →*** **Cooling Ice Setpoint**) is in use. While in this mode, the Current Setpoint (***Main Menu → General Parameters →*** **Current Setpoint**) will show the Cooling Ice Setpoint value and the unit will operate to that value. This mode will terminate when the Ice Cooling Ice Set-point is no longer in use (ICE DONE switch is closed).

OIL RECOVERY

The oil recovery mode is enabled when the compressor speed falls below the threshold (Trigger Speed) for a continuous period of time (Trigger Time). The mode will ramp the compressor speed to an objective speed (Recover Speed) for a period of time (Recover Time) and then return the compressor speed to automatic control. This mode takes precedence over other WATER_T overrides: ramp loading (Override 7), Low SP (Override 23), and Demand Limit (Override 9). See Fig. 64.

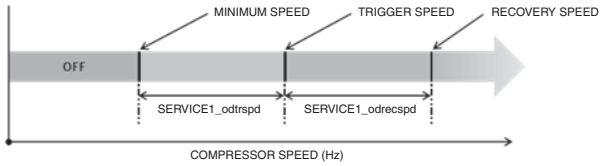


Fig. 64 — Oil Recovery Diagram

Sensors

The electronic control uses up to 15 thermistors to sense temperatures and up to 10 transducers to sense pressure for controlling chiller operation. These sensors are outlined below.

THERMISTORS (TABLES 38-42)

Thermistors that monitor the chiller's operation include: evaporator entering water, evaporator leaving water, dual chiller leaving water, compressor suction gas temperature, compressor discharge gas temperature, economizer temperature, liquid line temperature, compressor motor temperature, and Outdoor Air Temperature thermistors. These thermistors are 5,000 ohms at 77°F (25°C) and are identical in temperature versus resistance. The space temperature thermistor is 10,000 ohms at 77°F (25°C) and has a different temperature vs. resistance. See Fig. 65 for thermistor locations.

Evaporator Leaving Water Sensor (LWT)

On all sizes, this thermistor is installed in a threaded well in the leaving water nozzle of the evaporator. See Fig. 66.

Evaporator Entering Water Sensor (EWT)

On all sizes, this thermistor is factory installed in a threaded well in the entering water nozzle of the evaporator.

Suction Gas Temperature (SGT)

On all sizes, this thermistor is factory installed in a threaded well located on the compressor of each circuit. There is one thermistor for each circuit.

Compressor Discharge Gas Temperature (DGT)

On all sizes, this thermistor is factory installed in a threaded well located in the discharge end of the compressor for the circuit. There is one thermistor for each circuit.

Liquid Line Temperature (LIQT)

This thermistor is factory installed in a threaded well in the liquid line of the circuit. There is one thermistor for each circuit.

Economizer Temperature (ECT)

On all sizes, this thermistor is factory installed in a threaded well located in the economizer line for the circuit. There is one thermistor for each circuit.

Compressor Motor Temperature (Comp Temp)

On all sizes, this thermistor is embedded in the motor windings. There are two thermistors in each compressor. One spare is provided.

Outdoor Air Temperature (OAT)

This sensor is factory installed to the back of the control box.

Space Temperature

This sensor (part no. 33ZCT55SPT) is a field-installed accessory mounted in the indoor space and is used for water temperature reset. The sensor should be installed as a wall-mounted thermostat would be (in the conditioned space where it will not be subjected to either a cooling or heating source or direct exposure to sunlight, and 4 to 5 ft above the floor).

Space temperature sensor wires are to be connected to terminals in the unit main control box. See Fig. 67. The space temperature sensor includes a terminal block (SEN) and a RJ11 female connector. The RJ11 connector is used as access into the Carrier Comfort Network® at the sensor.

To connect the space temperature sensor (see Fig. 67):

1. Using a 20 AWG twisted pair conductor cable rated for the application, connect one wire of the twisted pair to one SEN terminal and connect the other wire to the other SEN terminal located under the cover of the space temperature sensor.
2. Connect the other ends of the wires to terminals 7 and 8 on TB6 located in the unit control box.

Units on the CCN can be monitored from the space at the sensor through the RJ11 connector, if desired. To wire the RJ11 connector into the CCN:

1. Cut the CCN wire and strip ends of the red (+), white (ground), and black (–) conductors. (If another wire color scheme is used, strip ends of appropriate wires.)
2. Insert and secure the red (+) wire to terminal 5 of the space temperature sensor terminal block.
3. Insert and secure the white (ground) wire to terminal 4 of the space temperature sensor.
4. Insert and secure the black (–) wire to terminal 2 of the space temperature sensor.
5. Connect the other end of the communication bus cable to the remainder of the CCN communication bus.

NOTE: The EMM is required for this accessory.

TRANSDUCERS

There are 5 pressure transducers per circuit, and two different types of transducers: low pressure (green connector) and high pressure (black connector).

Low Pressure Type: Suction Pressure Transducer (SPT), Economizer Pressure Transducer (EPT).

High Pressure Type: Discharge Pressure Transducer (DPT), Oil Pressure Transducer (OPT), Liquid Pressure Transducer (LPT). See Fig. 68 for transducer locations.

Table 38 — Thermistor Identification

THERMISTOR ID	DESCRIPTION	RESISTANCE AT 77°F (25°C)	CONNECTION POINT
EWT	Entering Water Temperature Thermistor	5k Ω	SIOBA-J25-AI01
LWT	Leaving Water Temperature Thermistor	5k Ω	SIOBA-J25-AI02
OAT	Outdoor Air Temperature Thermistor	5k Ω	SIOBA-J25-AI03
SGTA	Circuit A Suction Gas Temperature Thermistor	5k Ω	AUXA-J6-CH12
SGTB	Circuit B Suction Gas Temperature Thermistor	5k Ω	AUXB-J6-CH12
DGTA	Circuit A Discharge Gas Temperature Thermistor	5k Ω	AUXA-J6-CH11
DGTB	Circuit B Discharge Gas Temperature Thermistor	5k Ω	AUXB-J6-CH11
LIQT_A	Circuit A Liquid Line Temperature Thermistor	5k Ω	AUXA-J7-CH13
LIQT_B	Circuit B Liquid Line Temperature Thermistor	5k Ω	AUXB-J7-CH13
ECTA	Circuit A Economizer Temperature Thermistor	5k Ω	SIOBA-J25-AI05
ECTB	Circuit B Economizer Temperature Thermistor	5k Ω	SIOBB-J25-AI05
DUAL	Dual Chiller Leaving Water Temperature Thermistor	5k Ω	SIOBB-J25-AI03
Comp A Temp	Circuit A Compressor Motor Temperature Thermistor	5k Ω	SIOBA-J25-AI04
Comp B Temp	Circuit B Compressor Motor Temperature Thermistor	5k Ω	SIOBB-J25-AI04
SPT	Space Temperature Thermistor	10k Ω	EMM-J6-CH2

Table 39 — Compressor Thermistor Temperature vs. Resistance

°F	°C	NOMINAL RESISTANCE, OHMS
–22	–30	88,500
–13	–25	65,210
–4	–20	48,535
5	–15	36,477
14	–10	27,665
23	–5	21,162
32	0	16,325
41	5	12,696
50	10	9,950
59	15	7,854
68	20	6,245
77	25	5,000
86	30	4,029
95	35	3,266
104	40	2,664
113	45	2,185
122	50	1,802
131	55	1,493
140	60	1,244
149	65	1,042
158	70	876
167	75	741
176	80	629
185	85	536
194	90	459
203	95	394
212	100	340
221	105	294
230	110	256
239	115	223
248	120	195
257	125	171
266	130	151
275	135	133
284	140	117
293	145	104
302	150	93

Table 40 — 5K Thermistor Temperature vs. Resistance

°F	°C	RESISTANCE, OHMS
–40	–40	166,781
–38	–39	156,158
–36	–38	146,275
–35	–37	137,078
–33	–36	128,514
–31	–35	120,536
–29	–34	113,101
–27	–33	106,170
–26	–32	99,705
–24	–31	93,672
–22	–30	88,041
–20	–29	82,781
–18	–28	77,868
–17	–27	73,275
–15	–26	68,980
–13	–25	64,963
–11	–24	61,203
–9	–23	57,683
–8	–22	54,387
–6	–21	51,299
–4	–20	48,404
–2	–19	45,689
0	–18	43,143
1	–17	40,754
3	–16	38,511
5	–15	36,404
7	–14	34,426
9	–13	32,566
10	–12	30,818
12	–11	29,173
14	–10	27,626
16	–9	26,171
18	–8	24,800
19	–7	23,509
21	–6	22,292
23	–5	21,146
25	–4	20,065
27	–3	19,045
28	–2	18,084
30	–1	17,177
32	0	16,320
34	1	15,511
36	2	14,746
37	3	14,024
39	4	13,341
41	5	12,695
43	6	12,084
45	7	11,506
46	8	10,959
48	9	10,441
50	10	9,951
52	11	9,486
54	12	9,046
55	13	8,628
57	14	8,232
59	15	7,857
61	16	7,500
63	17	7,152
64	18	6,841
66	19	6,536
68	20	6,247
70	21	5,972
72	22	5,710
73	23	5,461
75	24	5,225
77	25	5,000
79	26	4,786
81	27	4,582
82	28	4,389
84	29	4,204
86	30	4,028
88	31	3,860
90	32	3,701
91	33	3,549
93	34	3,403
95	35	3,265
97	36	3,133
99	37	3,007
100	38	2,887
102	39	2,772
104	40	2,662
106	41	2,558
108	42	2,458
109	43	2,362
111	44	2,271
113	45	2,183
115	46	2,100
117	47	2,020
118	48	1,943
120	49	1,870
122	50	1,800
124	51	1,733
126	52	1,669
127	53	1,608
129	54	1,549
131	55	1,492
133	56	1,438
135	57	1,386
136	58	1,337
138	59	1,289
140	60	1,243
142	61	1,199
144	62	1,157
145	63	1,117
147	64	1,078
149	65	1,041
151	66	1,005
153	67	971
154	68	938
156	69	906
158	70	876
160	71	846
162	72	818
163	73	791
165	74	765
167	75	740
169	76	716
171	77	692
172	78	670
174	79	649
176	80	628
178	81	608
180	82	589
181	83	570
183	84	552
185	85	535
187	86	518
189	87	502
190	88	487
192	89	472
194	90	458
196	91	444
198	92	431
199	93	418
201	94	405
203	95	393
205	96	382
207	97	370
208	98	360
210	99	349
212	100	339
214	101	329
216	102	320
217	103	311
219	104	302
221	105	293
223	106	285
225	107	277
226	108	269
228	109	262
230	110	255
232	111	248
234	112	241
235	113	234
237	114	228
239	115	222
241	116	216
243	117	210
244	118	205
246	119	199
248	120	194
250	121	189
252	122	184
253	123	179
255	124	175
257	125	170
259	126	166
261	127	162
262	128	157
264	129	154
266	130	150
268	131	146
270	132	142
271	133	139
273	134	135
275	135	132
277	136	129
279	137	126
280	138	123
282	139	120
284	140	117
286	141	114
288	142	111
289	143	109
291	144	106
293	145	104
295	146	101
297	147	99
298	148	97
300	149	94
302	150	92

Table 41 — 10K Thermistor Temperature (°F) vs Resistance

TEMP (F)	VOLTAGE DROP (V)	RESISTANCE (Ohms)
–25	4.758	196,453
–24	4.750	189,692
–23	4.741	183,300
–22	4.733	177,000
–21	4.724	171,079
–20	4.715	165,238
–19	4.705	159,717
–18	4.696	154,344
–17	4.686	149,194
–16	4.676	144,250
–15	4.665	139,443
–14	4.655	134,891
–13	4.644	130,402
–12	4.633	126,183
–11	4.621	122,018
–10	4.609	118,076
–9	4.597	114,236
–8	4.585	110,549
–7	4.572	107,006
–6	4.560	103,558
–5	4.546	100,287
–4	4.533	97,060
–3	4.519	94,020
–2	4.505	91,019
–1	4.490	88,171
0	4.476	85,396
1	4.461	82,729
2	4.445	80,162
3	4.429	77,662
4	4.413	75,286
5	4.397	72,940
6	4.380	70,727
7	4.363	68,542
8	4.346	66,465
9	4.328	64,439
10	4.310	62,491
11	4.292	60,612
12	4.273	58,781
13	4.254	57,039
14	4.235	55,319
15	4.215	53,693
16	4.195	52,086
17	4.174	50,557
18	4.153	49,065
19	4.132	47,627
20	4.111	46,240
21	4.089	44,888
22	4.067	43,598
23	4.044	42,324
24	4.021	41,118
25	3.998	39,926
26	3.975	38,790
27	3.951	37,681
28	3.927	36,610
29	3.903	35,577
30	3.878	34,569
31	3.853	33,606
32	3.828	32,654
33	3.802	31,752
34	3.776	30,860
35	3.750	30,009
36	3.723	29,177
37	3.697	28,373
38	3.670	27,597
39	3.654	26,838
40	3.615	26,113
41	3.587	25,396
42	3.559	24,715
43	3.531	24,042
44	3.503	23,399
45	3.474	22,770
46	3.445	22,161
47	3.416	21,573
48	3.387	20,998
49	3.357	20,447
59	3.056	15,714
60	3.025	15,317
61	2.994	14,925
62	2.963	14,549
63	2.932	14,180
64	2.901	13,824
65	2.870	13,478
66	2.839	13,139
67	2.808	12,814
68	2.777	12,493
69	2.746	12,187
70	2.715	11,884
71	2.684	11,593
72	2.653	11,308
73	2.622	11,031
74	2.592	10,764
75	2.561	10,501
76	2.530	10,249
77	2.500	10,000
78	2.470	9,762
79	2.439	9,526
80	2.409	9,300
81	2.379	9,078
82	2.349	8,862
83	2.319	8,653
84	2.290	8,448
85	2.260	8,251
86	2.231	8,056
87	2.202	7,869
88	2.173	7,685
89	2.144	7,507
90	2.115	7,333
91	2.087	7,165
92	2.059	6,999
93	2.030	6,838
94	2.003	6,683
95	1.975	6,530
96	1.948	6,383
97	1.921	6,238
98	1.894	6,098
99	1.867	5,961
100	1.841	5,827
101	1.815	5,698
102	1.789	5,571
103	1.763	5,449
104	1.738	5,327
105	1.713	5,210
106	1.688	5,095
107	1.663	4,984
108	1.639	4,876
109	1.615	4,769
110	1.591	4,666
111	1.567	4,564
112	1.544	4,467
113	1.521	4,370
114	1.498	4,277
115	1.475	4,185
116	1.453	4,096
117	1.431	4,008
118	1.409	3,923
119	1.387	3,840
120	1.366	3,759
121	1.345	3,681
122	1.324	3,603
123	1.304	3,529
124	1.284	3,455
125	1.264	3,383
126	1.244	3,313
127	1.225	3,244
128	1.206	3,178
129	1.187	3,112
130	1.168	3,049
131	1.150	2,986
132	1.132	2,926
133	1.114	2,866
143	0.949	2,343
144	0.934	2,297
145	0.919	2,253
146	0.905	2,209
147	0.890	2,166
148	0.876	2,124
149	0.862	2,083
150	0.848	2,043
151	0.835	2,003
152	0.821	1,966
153	0.808	1,928
154	0.795	1,891
155	0.782	1,855
156	0.770	1,820
157	0.758	1,786
158	0.745	1,752
159	0.733	1,719
160	0.722	1,687
161	0.710	1,656
162	0.699	1,625
163	0.687	1,594
164	0.676	1,565
165	0.666	1,536
166	0.655	1,508
167	0.645	1,480
168	0.634	1,453
169	0.624	1,426
170	0.614	1,400
171	0.604	1,375
172	0.595	1,350
173	0.585	1,326
174	0.576	1,302
175	0.567	1,278
176	0.558	1,255
177	0.549	1,233
178	0.540	1,211
179	0.532	1,190
180	0.523	1,169
181	0.515	1,148
182	0.507	1,128
183	0.499	1,108
184	0.491	1,089
185	0.483	1,070
186	0.476	1,052
187	0.468	1,033
188	0.461	1,016
189	0.454	998
190	0.447	981
191	0.440	964
192	0.433	947
193	0.426	931
194	0.419	915
195	0.413	900
196	0.407	885
197	0.400	870
198	0.394	855
199	0.388	841
200	0.382	827
201	0.376	814
202	0.370	800
203	0.365	787
204	0.359	774
205	0.354	762
206	0.349	749
207	0.343	737
208	0.338	725
209	0.333	714
210	0.328	702
211	0.323	691
212	0.318	680
213	0.314	670
214	0.309	659
215	0.305	649
216	0.300	639
217	0.296	629

Table 41 — 10K Thermistor Temperature (°F) vs Resistance

TEMP (F)	VOLTAGE DROP (V)	RESISTANCE (Ohms)	TEMP (F)	VOLTAGE DROP (V)	RESISTANCE (Ohms)	TEMP (F)	VOLTAGE DROP (V)	RESISTANCE (Ohms)
50	3.328	19,903	**134**	1.096	2,809	**218**	0.292	620
51	3.298	19,386	**135**	1.079	2,752	**219**	0.288	610
52	3.268	18,874	**136**	1.062	2,697	**220**	0.284	601
53	3.238	18,384	**137**	1.045	2,643	**221**	0.279	592
54	3.208	17,904	**138**	1.028	2,590	**222**	0.275	583
55	3.178	17,441	**139**	1.012	2,539	**223**	0.272	574
56	3.147	16,991	**140**	0.996	2,488	**224**	0.268	566
57	3.117	16,552	**141**	0.980	2,439	**225**	0.264	557
58	3.086	16,131	**142**	0.965	2,391			

Table 42 — 10K Thermistor Temperature (°C) vs Resistance

TEMP (C)	VOLTAGE DROP (V)	RESISTANCE (Ohms)	TEMP (C)	VOLTAGE DROP (V)	RESISTANCE (Ohms)	TEMP (C)	VOLTAGE DROP (V)	RESISTANCE (Ohms)
–32	4.762	200,510	**15**	3.056	15,714	**62**	0.940	2,315
–31	4.748	188,340	**16**	3.000	15,000	**63**	0.913	2,235
–30	4.733	177,000	**17**	2.944	14,323	**64**	0.887	2,157
–29	4.716	166,342	**18**	2.889	13,681	**65**	0.862	2,083
–28	4.700	156,404	**19**	2.833	13,071	**66**	0.837	2,011
–27	4.682	147,134	**20**	2.777	12,493	**67**	0.813	1,943
–26	4.663	138,482	**21**	2.721	11,942	**68**	0.790	1,876
–25	4.644	130,402	**22**	2.666	11,418	**69**	0.767	1,813
–24	4.624	122,807	**23**	2.610	10,921	**70**	0.745	1,752
–23	4.602	115,710	**24**	2.555	10,449	**71**	0.724	1,693
–22	4.580	109,075	**25**	2.500	10,000	**72**	0.703	1,637
–21	4.557	102,868	**26**	2.445	9,571	**73**	0.683	1,582
–20	4.533	97,060	**27**	2.391	9,164	**74**	0.663	1,530
–19	4.508	91,588	**28**	2.337	8,776	**75**	0.645	1,480
–18	4.482	86,463	**29**	2.284	8,407	**76**	0.626	1,431
–17	4.455	81,662	**30**	2.231	8,056	**77**	0.608	1,385
–16	4.426	77,162	**31**	2.178	7,720	**78**	0.591	1,340
–15	4.397	72,940	**32**	2.127	7,401	**79**	0.574	1,297
–14	4.367	68,957	**33**	2.075	7,096	**80**	0.558	1,255
–13	4.335	65,219	**34**	2.025	6,806	**81**	0.542	1,215
–12	4.303	61,711	**35**	1.975	6,530	**82**	0.527	1,177
–11	4.269	58,415	**36**	1.926	6,266	**83**	0.512	1,140
–10	4.235	55,319	**37**	1.878	6,014	**84**	0.497	1,104
–9	4.199	52,392	**38**	1.830	5,774	**85**	0.483	1,070
–8	4.162	49,640	**39**	1.784	5,546	**86**	0.470	1,037
–7	4.124	47,052	**40**	1.738	5,327	**87**	0.457	1,005
–6	4.085	44,617	**41**	1.692	5,117	**88**	0.444	974
–5	4.044	42,324	**42**	1.648	4,918	**89**	0.431	944
–4	4.003	40,153	**43**	1.605	4,727	**90**	0.419	915
–3	3.961	38,109	**44**	1.562	4,544	**91**	0.408	889
–2	3.917	36,182	**45**	1.521	4,370	**92**	0.396	861
–1	3.873	34,367	**46**	1.480	4,203	**93**	0.386	836
0	3.828	32,654	**47**	1.439	4,042	**94**	0.375	811
1	3.781	31,030	**48**	1.400	3,889	**95**	0.365	787
2	3.734	29,498	**49**	1.362	3,743	**96**	0.355	764
3	3.686	28,052	**50**	1.324	3,603	**97**	0.345	742
4	3.637	26,686	**51**	1.288	3,469	**98**	0.336	721
5	3.587	25,396	**52**	1.252	3,340	**99**	0.327	700
6	3.537	24,171	**53**	1.217	3,217	**100**	0.318	680
7	3.485	23,013	**54**	1.183	3,099	**101**	0.310	661
8	3.433	21,918	**55**	1.150	2,986	**102**	0.302	643
9	3.381	20,883	**56**	1.117	2,878	**103**	0.294	626
10	3.328	19,903	**57**	1.086	2,774	**104**	0.287	609
11	3.274	18,972	**58**	1.055	2,675	**105**	0.279	592
12	3.220	18,090	**59**	1.025	2,579	**106**	0.272	576
13	3.165	17,255	**60**	0.996	2,488	**107**	0.265	561
14	3.111	16,464	**61**	0.968	2,400			

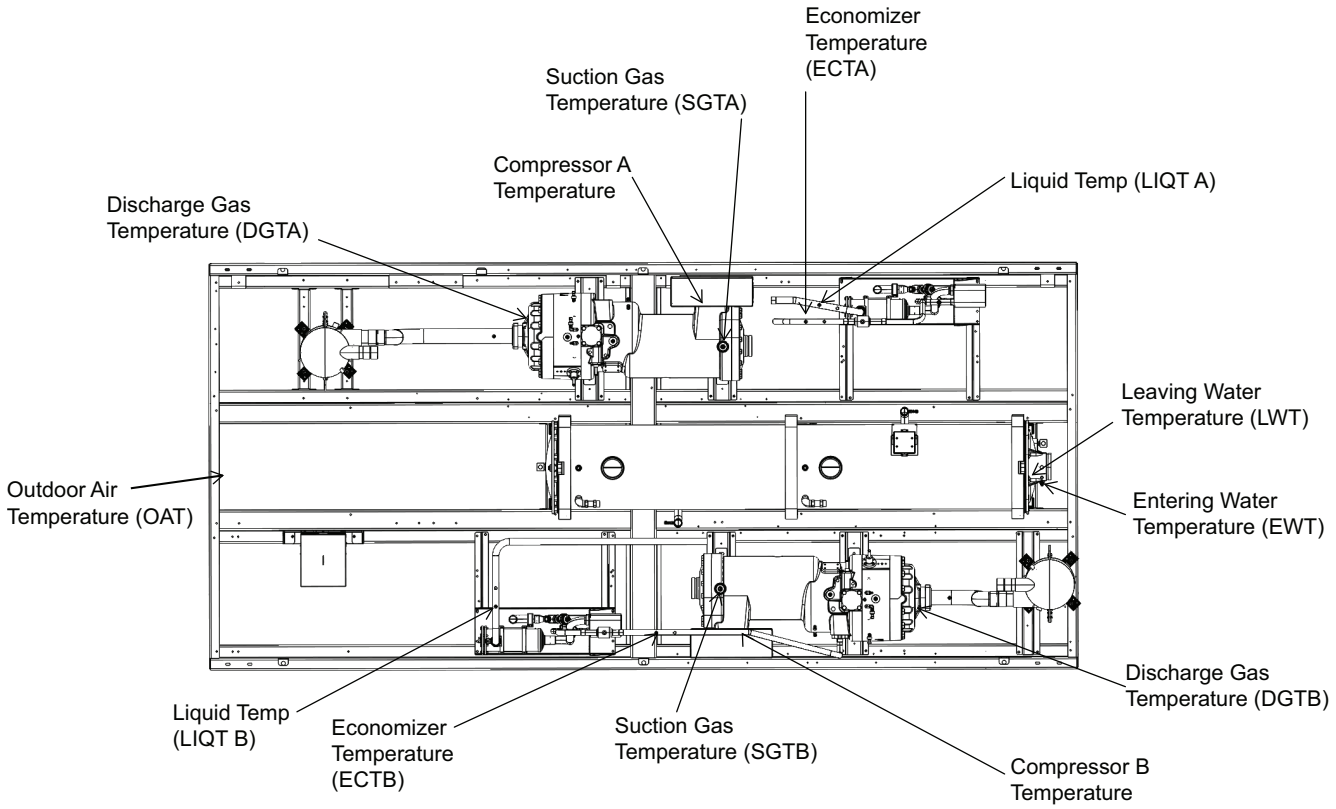


Fig. 65 — Thermistor Locations

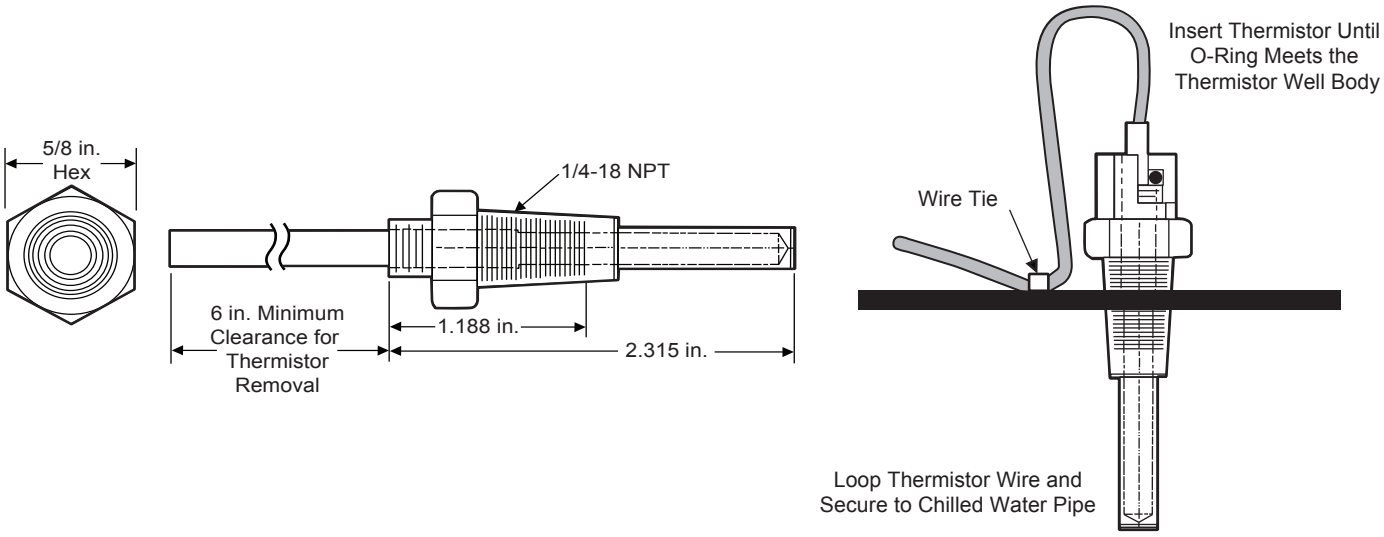


Fig. 66 — Dual Chiller Accessory Kit Leaving Water Thermistor and Well (P/N 00EFN900044000A)

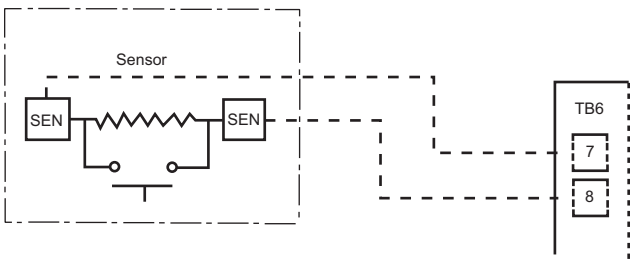


Fig. 67 — Typical Space Temperature Sensor (33ZCT55SPT) Wiring

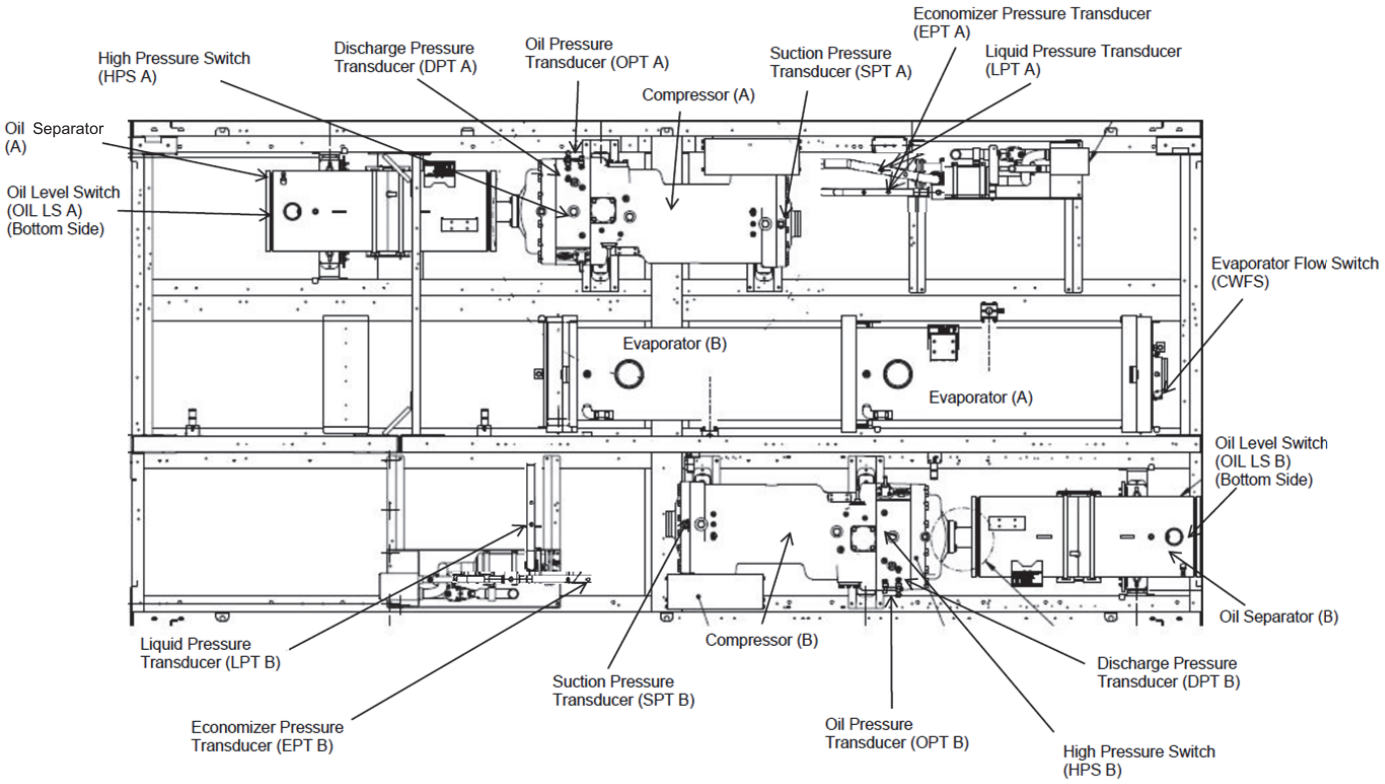


Fig. 68 — Transducer and Switch Locations

SERVICE

Economizer Assembly

Each circuit on the unit has an economizer assembly, which includes a brazed plate heat exchanger, EXVs, and other components. See Fig. 69.

Electronic Expansion Valve

See Fig. 70 for a cutaway view of the EXV. High-pressure liquid refrigerant enters the valve through the top. As refrigerant passes through the orifice, pressure drops and refrigerant changes to a 2-phase condition (liquid and vapor). The electronic expansion valve operates through electronically controlled activation of a stepper motor. The stepper motor stays in position unless power pulses initiate the two discrete sets of motor stator windings for rotation in either direction. The direction depends on the phase relationship of the power pulses. The motor directly operates the spindle, which has rotating movements that are transformed into linear motion by the transmission in the cage assembly. The valve cone is a V-port type which includes a positive shut-off when closed. The large number of steps and long stroke results in very accurate control of the refrigerant flow. The stepper motor has either 3810 (main) or 2625 or 3530 (economizer) steps.

MAIN EXV CONTROL

The main EXV is controlled by the SIOB (J17-STPR1). Each circuit has thermistors located in the compressor discharge (DGT), compressor motor cavity (SGT) and liquid line leaving the condenser (LIQT). Each circuit also has a DPT, SPT, and LPT. All the pressure readings as measured by the transducers are converted to saturated temperatures. Liquid pressure transducer (LPT) is converted to saturated liquid temperature (SLT). The main control logic for the EXV uses liquid line subcooling, which is the difference between the liquid line saturation temperature and the liquid line temperature, to control the position of the EXV. The SIOB module controls the position of the electronic expansion valve stepper motor to maintain the subcooling set point. The EXV control logic has several overrides, which are also used to control the position of the EXV.

- Normal Mode (SUBCOOL)
- Low Discharge Superheat (DSH)
- Low Suction Pressure (SPMIN)
- Maximum Suction Pressure (SPMAX)
- EXV Start (START)

To view EXV overrides: ***Main Menu → Maintenance Menu → EXV Control*** or ***Main Menu → Maintenance Menu →*** **EXVECO Control**.

Normal Mode (SUBCOOL)

This is the normal mode of operation of the EXV. Based on the operating condition and loading of the compressor, the control calculates an optimal subcooling setting to maximize the system efficiency. The controls accordingly adjust the EXV opening to meet this calculated subcooling setting. The range of the subcooling setting can be altered by using the Network Service Tool in the ***Configuration → EXV_CFG*** table.

Low Discharge Superheat (DSH)

This mode is disabled for 100 sec after the start of the circuit. Control enters this mode when DSH is below 12°F (–11.1°C). The control attempts to drive DSH above 15°F (–9.4°C) by closing the EXV. In this mode the setpoint is modified and driven to a value that supports a higher DSH value upon exit of the mode. This prevents mode cycling. Mode is exited when the DSH is greater than 18°F (–7.8°C) or the average DSH is within 1.25°F (0.7°C) of 15°F (–9.4°C) and the subcooling is above the subcooling setpoint.

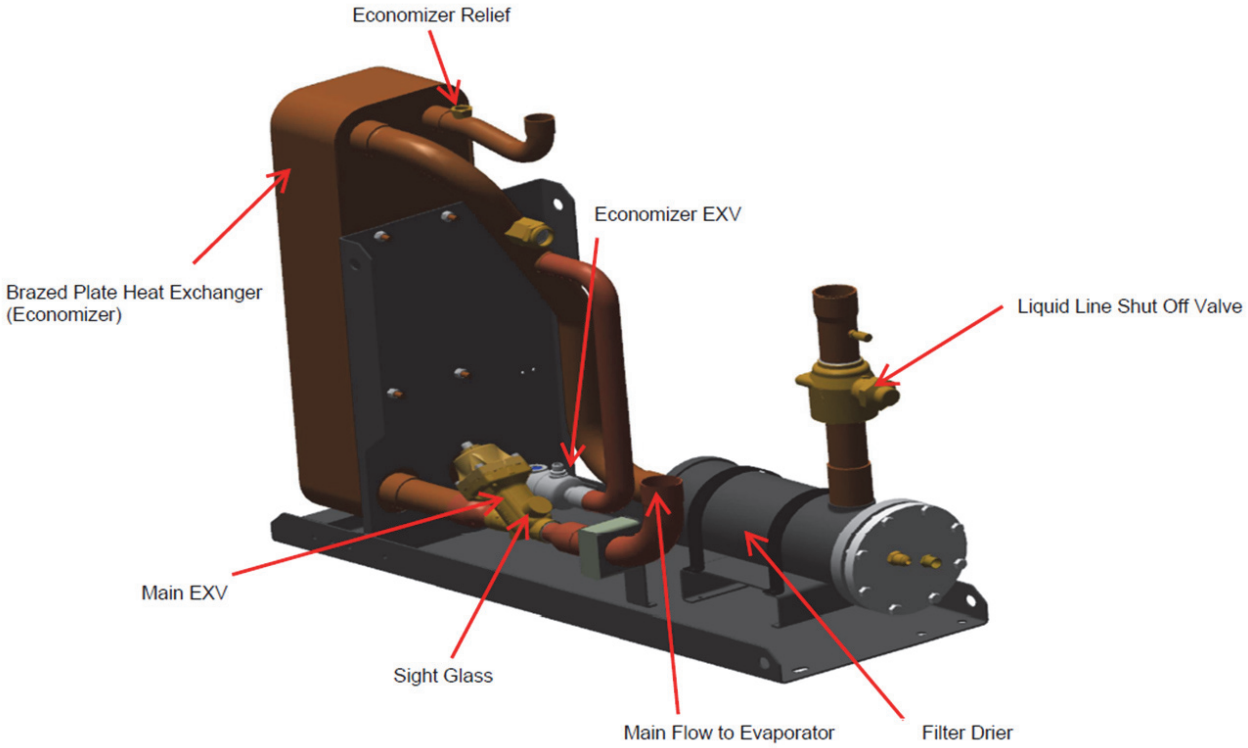
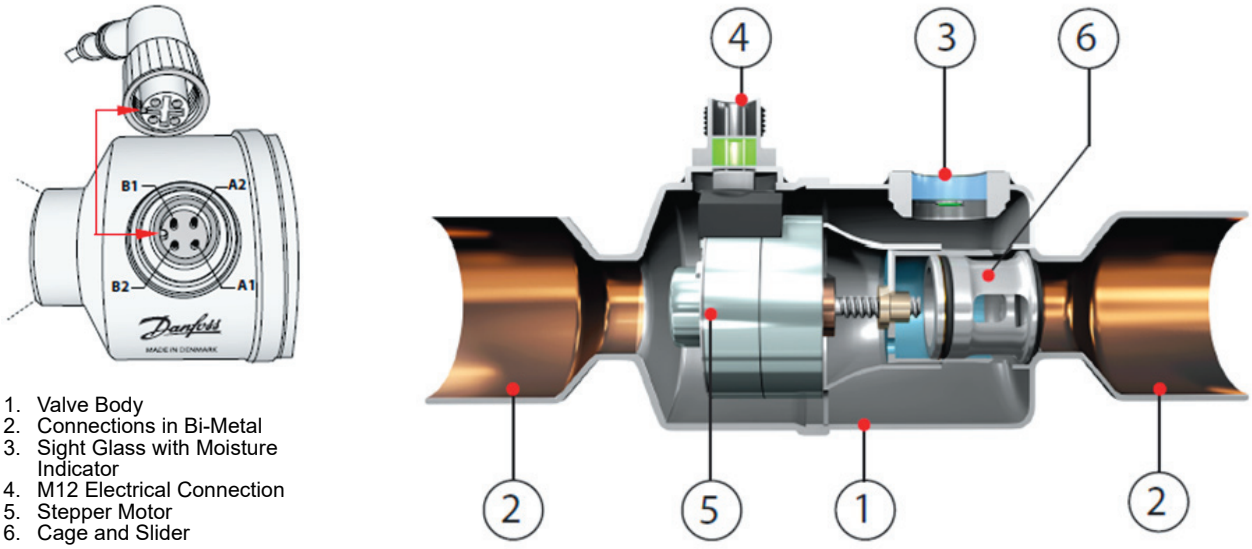


Fig. 69 — Economizer Assembly



1. Valve Body
2. Connections in Bi-Metal
3. Sight Glass with Moisture Indicator
4. M12 Electrical Connection
5. Stepper Motor
6. Cage and Slider

Fig. 70 — Cutaway Views of the Electronic Expansion Valve

Low Suction Pressure (SPMIN)

The EXV control tries to open up the EXV to increase the suction pressure and come out of this mode. The SST setting to enter this mode is dependent on the fluid type. With water the EXV enters this mode if SST is less than **SST_Freeze** – 6.5°F (3.6°C) in normal discharge superheat or less than **SST_Freeze** – 18.75°F (10.4°C) in low DSH condition. It remains in this mode until SST is greater than **SST_Freeze** + 2°F (1.1°C). **SST_Freeze** is 32°F (0°C) for water and freeze set point for brine.

Maximum Suction Pressure (SPMAX)

This mode is disabled for 300 sec after start. The EXV enters this mode if the SST is greater than 55°F (13°C) and the circuit is not in DP mode. The EXV closes down to regulate the SST at about 53.2°F (11.8°C). If the SST is less than 52.3°F (11.3°C) or the circuit is in DP mode, then the EXV returns to the normal mode of operation.

ECONOMIZER EXV CONTROL

The economizer EXV is controlled by the SIOB (J18-STPR2). An economizer gas temperature thermistor (ECT) and an economizer pressure transducer (EPT) are located in the line running from the economizer assembly to the compressor. The economizer pressure is converted to saturated temperature and is used to calculate economizer superheat. Economizer superheat equals economizer temperature minus saturated economizer temperature. The control system controls the economizer EXV to maintain the economizer superheat setpoint, which is approximately 18°F (–7.8°C). The economizer will start operation when circuit capacity is at 55% or above. It will turn off at 45%.

EXV TROUBLESHOOTING PROCEDURE

There are two different economizer EXVs. The A circuit sizes 140-300 are 2625 steps, and sizes 350-500 are 3530 steps. The B circuit sizes 140-350 are 2625 steps, and sizes 400-500 are 3530 steps. There are three different main EXVs, which all are 3810 steps. The EXV motor moves at 150 steps per second. Commanding the valve to either 0% or 100% will add an additional 160 steps to the move, to ensure the valve is open or closed completely.

⚠ CAUTION

Do not remove EXV cables from the SIOB with the power applied to the board. Damage to the board may occur.

Follow the steps below to diagnose and correct EXV problems. Check EXV motor operation first. Switch the Enable-Off-Remote (EOR) Contact switch to the Off position.

Check the appropriate circuit EXV, EXV Position Circuit A % Open (***Main Menu*** → ***Quick Test Table*** → **Circuit A EXV Position**) or EXV Position Circuit B % Open (***Main Menu*** → ***Quick Test Table*** → **Circuit B EXV Position**). Use Quick Test procedure on page 216. The current value of 0 will be displayed. Increase the EXV position to select 100% valve position. The actuator should be felt moving through the EXV. To close the valve, select 0%. The actuator should knock when it reaches the bottom of its stroke.

If the valve is not working properly, continue with the following test procedure:

1. Check the EXV output signals at appropriate terminals on SIOB-A (J17-STPR1) and SIOB-B (J17-STPR1). Refer to Tables 8 and 9 for additional information.
2. Connect positive test lead to SIOB(X)-J17 terminal 12V for EXV(X) and SIOB(X)-J18 terminal 12V for economizer EXV(X). Using the Quick Test procedure on page 216, move the valve output under test to 100%. DO NOT short meter leads together or pin 12V to any other pin, as board damage will occur. During the next several seconds, carefully connect the negative test lead to pins A,B,C and D in succession. Digital voltmeters will average this signal and display approximately 6 vdc. If the output remains at a constant voltage other than 6 vdc or shows 0 volts, remove the connector to the valve and recheck.
3. Select 0% to close the valve.

NOTE: The output is 12 vdc from the SIOB when the valve is stationary.

If a problem still exists, replace the SIOB. If the reading is correct, the expansion valve and EXV wiring should be checked. Check the EXV connector and interconnecting wiring.

1. Check color-coding and wire connections. Make sure they are connected to the correct terminals at the EXV board and EXV plug and that the cables are not crossed.
2. Check for continuity and tight connection at all pin terminals.

Check the resistance of the EXV motor windings. Remove the EXV module plug SIOB(X)-J17 for main EXV and SIOB(X)-J18 for economizer EXV. Check the resistance of the two windings between pins A and C for one winding and pins B and D for the other winding. The resistance should be 52 ohms (± 5.2 ohms). Also check pins A-D for any shorts to ground.

Inspecting/Opening Electronic Expansion Valves

IMPORTANT: Obtain replacement gaskets before opening EXV. Do not re-use gaskets.

To check the physical operation of an EXV, the following steps should be performed. Charge not isolated within the unit must be recovered using proper refrigerant recovery techniques.

1. Isolate refrigerant within the chiller and recover remaining charge. This will allow access to internal EXV components. Closing the valves will minimize the amount of refrigerant that will need to be removed.

   For units without isolation valve option: Close the liquid line ball valve directly above the filter drier as well as the discharge line ball valves (see the Actuated Ball Valve section on page 62 for instructions). Remove any remaining refrigerant from the system low side using proper recovery techniques. The evaporator liquid line inlet has an access port that can be used to remove charge from the evaporator. The economizer assembly has a 1/4-in. access connection which can be used to remove charge from the inlet of the EXVs. Turn off the line voltage power supply to the compressors.

   For units with isolation valve option: Close the ball valves on the liquid line directly above the filter drier, after the main EXV before the evaporator, and on the economizer line to the compressor. Remove any remaining refrigerant from the economizer assembly using proper recovery techniques. The economizer assembly has a 1/4-in. access connection which can be used to remove charge from the inlet of the EXVs. Turn off the line voltage power supply to the compressors.

⚠ CAUTION

Ensure refrigerant is removed from both the inlet and outlet of EXV assemblies. Equipment damage could result.

2. The expansion valve motor is hermetically sealed inside the top portion of the valve. See Fig. 70. Disconnect the EXV plug. Carefully unscrew the motor portion from the body of the valve. The EXV operator will come out with the motor portion of the device. Reconnect the EXV plug.
3. Enter the appropriate EXV test step under the Test mode (***Main Menu*** → ***Quick Test Table***). Locate the desired parameter for the Main EXVs: Circuit A EXV Position, Circuit B EXV Position or Economizer EXVs: EXV Eco Position Cir A, EXV Eco Position Cir B. Change the position to 100%. Observe the operation of the lead screw. See Fig. 70. Motor actuator movement should be smooth and uniform from fully closed to fully open position. Select 0% and check open to closed operation. If the valve is properly connected to the processor and receiving correct signals, yet does not operate as described above, the sealed motor portion of the valve should be replaced.

Installing EXV Motor

IMPORTANT: Obtain replacement gasket before opening EXV. Do not re-use gaskets.

If re-installing the motor, be sure to use a new gasket in the assembly. See Fig. 71. Callout 1 shows the piston. Callout 2 shows the screw locations. It is easier to install the motor assembly with the piston in the fully closed position. Insert the motor into the body of the EXV. Tighten the motor to the body to 36 ft-lb (50 N-m) and then tighten the valve another 30 degrees.

Moisture Liquid Indicator

Clear flow of liquid refrigerant indicates sufficient charge in system. Bubbles in the sight glass indicate undercharged system or presence of noncondensables. Moisture in system, measured in parts per million (ppm), changes color of indicator. See Table 43. Change filter drier at first sign of moisture in system.

IMPORTANT: Unit must be in operation at least 12 hours before moisture indicator can give an accurate reading.

With unit running, indicating element must be in contact with liquid refrigerant to give true reading.

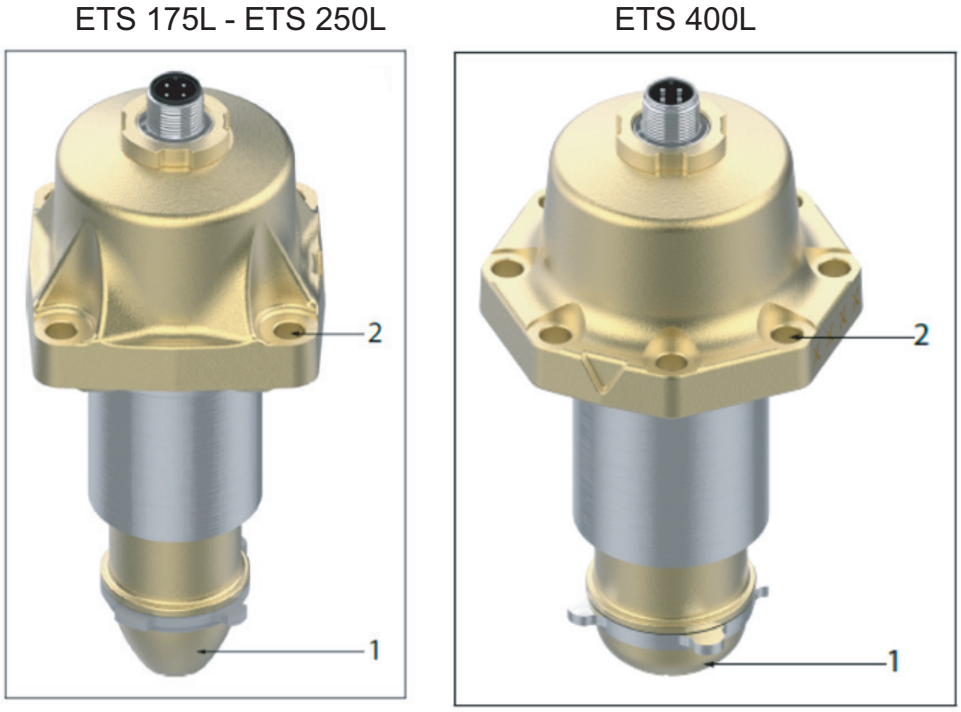


Fig. 71 — Disassembly and Assembly of EXV Motor

Filter Drier

Whenever moisture-liquid indicator shows presence of moisture, replace filter drier(s). There is one filter drier assembly on each circuit with two cores. Refer to the Carrier Standard Service Techniques Manual, Chapter 1, Refrigerants, for details on servicing filter driers.

Table 43 — Color Indicators When Moisture Is Present in Refrigerant

COLOR INDICATOR	R-134a, 75°F (24°C) (ppm)	R-134a, 125°F (52°C) (ppm)
Green — Dry	< 30	< 45
Yellow-green — Caution	30 to 100	45 to 170
Yellow — Wet	>100	>170

Liquid Line Service Valve

This valve is located immediately ahead of filter drier, and has a 1/4-in. access connection for field charging. In combination with compressor discharge service valve, each circuit can be pumped down into the high side for servicing with plate fin coils. Microchannel Heat Exchanger (MCHX) coils have much smaller volume and cannot accommodate the entire circuit charge.

Compressor Assembly

The 30XV units utilize Greenspeed Intelligence for efficient operation. The compressor is controlled by a VFD. See Fig. 72 for a view of a typical 06Z compressor. For optimal efficiency the compressor uses a VI valve to change the inlet area of the lobes at different loading points. The valve is opened or closed by a solenoid on the compressor. The control logic looks at calculated parameters to determine the switch point of the valve.

VI VALVE TROUBLESHOOTING

Use the quick test table (***Main Menu*** → ***Quick Test Table*** → **Circuit X VI**) to enable the VI valve output. Enable the valve output and verify the coil solenoid is energized.

SUCTION VICTAULIC COUPLING INSTALLATION

1. The outside surface of the pipe, between the groove and the pipe end, must be smooth and free from indentations, projections (including weld seams), and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, and dirt must be removed. The Victaulic gasket used for refrigerant system piping will have a yellow mark on one side of the gasket lips.
2. Apply a thin coat of Victaulic lubricant or silicone lubricant to the gasket sealing lips and exterior.

⚠ CAUTION

Always use a compatible lubricant to prevent the gasket from pinching or tearing during installation. Failure to follow this instruction could result in joint leakage.

3. Position the gasket over the pipe end. Make sure the gasket does not overhang the pipe end.
4. Align and bring the two pipe ends together. Slide the gasket into position and center it between the grooves in each pipe end. Make sure no portion of the gasket extends into the groove in either pipe end.
5. Install housings over the gasket. Make sure the housings' keys engage the grooves completely on both pipe ends.

⚠ CAUTION

Make sure the gasket does not become rolled or pinched while installing the housings. Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.

6. Install the bolts, and thread a nut finger-tight onto each bolt. For couplings supplied with stainless steel hardware, apply an anti-seize compound to the bolt threads. Make sure the oval neck of each bolt seats properly in the bolt hole.

7. Tighten the nuts evenly by alternating sides until metal-to-metal contact occurs at the bolt pads. Make sure the housings' keys engage the grooves completely. It is important to tighten the nuts evenly to prevent gasket pinching.
8. Visually inspect the bolt pads at each joint to ensure metal-to-metal contact is achieved.

COMPRESSOR OIL SYSTEM

Each compressor/circuit has its own oil system which includes an oil filter, oil solenoid, check valve, oil level switch, oil separator heater, oil pressure transducer, and an oil shut-off valve. A typical oil system is shown in Fig. 73 and 74. See Table 44 for required oil quantity per circuit, initially included from the factory.

Table 44 — Unit Oil Quantities

30XV UNIT SIZE	OIL CHARGE (gal, [liters])	
	Circuit A	Circuit B
140-200	4.5 [17.0]	4.5 [17.0]
225	5.0 [18.9]	4.5 [17.0]
250-325	5.0 [18.9]	5.0 [18.9]
350	7.0 [26.5]	5.0 [18.9]
450-500	7.0 [26.5]	7.0 [26.5]

Oil Charge

When additional oil or a complete charge is required it must meet the following specifications:

- ManufacturerEmkarate RL220XL
- Oil TypeInhibited polyolester-based synthetic compressor lubricant for use with screw compressors.
- ISO Viscosity Grade220

Do not reuse drained oil or any oil that has been exposed to the atmosphere.

Oil is available in the following quantities from your local Carrier representative:

QUANTITY	TOTALINE PART NO.
1 Quart	P903-2325
1 Gallon	P903-2301
5 Gallon	P903-2305

If unsure whether there is low oil charge in the system, follow the steps below:

1. If the unit shuts off repeatedly from a low oil level alert, it may be an indication of inadequate oil charge: however, it could also indicate the oil is not being reclaimed from the low-side of the system.
2. Run the circuit at full load for 1-1/2 hours.

   NOTE: An adequate load must be available.
3. After running the unit for 1-1/2 hours at full load, stop the unit. Check the oil level switch continuity. If the oil level switch is not making contact, unit is low on oil charge.
4. Add oil until the oil switch makes continuity and there is no error.
5. The factory oil charging stations are programed to add precise amount of oil to the oil separator and if the oil level while inspection shows higher than middle of the top sight glass then it could be due to refrigerant mixed in it. Do not remove any oil.

   Add oil to the oil separator using the 1/4-in. access fitting on the side of the separator.

   NOTE: To facilitate the oil charging process, ensure that the unit is not running when adding oil. The system is under pressure even when the unit is not running, so it is necessary to use a suitable pump to add oil to the system. Using a suitable pump, add 1/2 gal (1.9 L) of oil to the system. Continue adding oil in 1/2 gal (1.9 L) increments until the problem is resolved, up to a maximum of 1.5 gal (5.7 L).
6. Larger units (350 Circuit A and 400-500 ton units) will not have sight glasses for reference. The same procedure should be followed. To check for oil in the evaporator, determine the approach, LWT - SST. This should be less than 10°F for fresh water for a circuit running in steady state condition at full load. If over this amount, there is still oil logged in the evaporator. Continue to run at full load to remove it. If the approach is low (less than 6) and there are low oil level alarms, add 0.5 gal. to the circuit.

Oil Filter Maintenance

Each circuit has one oil filter bolted externally to the compressor. Oil line pressure drop is monitored by the control. Oil line pressure drop is calculated by subtracting oil pressure (OPT) from discharge pressure (DPT). If the oil line pressure drop exceeds 30 psig (206.8 kPa) for 5 minutes the control will generate a High Oil Filter Pressure Drop alert. The High Oil Filter Pressure Drop alert will not shut down the compressor, but instead indicates that the oil filter is dirty. If oil pressure line losses exceed 50 psig (344.7 kPa) for more than 30 seconds then the control will shut down the circuit on Maximum Oil Filter Differential Pressure Failure.

⚠ CAUTION

Compressor oil is pressurized. Use proper safety precautions when relieving pressure.

Replacing the Oil Filter

Close the oil service valves on either side of filter by removing cap and closing the valve. One is connected to the oil filter and the other is mounted on the compressor. Connect a charging hose to the 1/4-in. access fitting port located between the filter and compressor. Bleed off the oil located in this section. A quart of oil is typically removed during this process. Unscrew the nuts on either side of the filter. Remove the filter and install the new one. Make sure to remove the plastic caps from the new filter before installation. Take care not to lose or damage the new O-rings on the new filter. Draw a vacuum at the service port. Remove the charging hose and open the oil service valves. Replace caps on access port and service valves. Check both fittings for leaks.

OIL SET POINT CALCULATION AND LOW OIL PRESSURE

Low oil pressure will trigger the following alerts:

- 10067 – Circuit A Low Oil Pressure
- 10068 – Circuit B Low Oil Pressure

For both circuit A and B, the compressor is considered started once the rotation speed returned by its dedicated drive is greater than 5 rpm. This protection (alert 10067/10068) is disabled when the circuit is stopped or stopping.

Conditions for raising alert 10067 or alert 10068 are tested only while the compressor is running. In each of the following scenarios, the alert is triggered if either Condition 1 or Condition 2 exists.

- Condition 1: Since compressor start, Oil Pressure is less than Oil Setpoint 2 continuously for 15 sec of compressor running.
- Condition 2: Oil Pressure is less than Oil Setpoint 1.

Compressor is starting under low ambient temperature conditions (OAT is < 50°F/10°C).

In low ambient temperature conditions, oil pressure takes a little more time to be established, so a delay of 30 sec of continuous "compressor running" from "compressor start" is used to avoid nuisance alert trigger. After compressor start, compressor must run continuously for at least 30 sec before the Oil Set Point calculation will start and criteria for triggering the alert will get evaluated.

Oil Setpoint 1 = Suction Pressure + 7.2 psi.

Oil Setpoint 1 is calculated when the following condition is met:

Compressor continuous running operation is greater than 30 sec but less than 60 sec from compressor start.

NOTE: If condition 2 is met, then it will take approximately [30 sec (compressor running since compressor start) + 15 sec (debounce) = 45 sec] for alert 10067/10068 to pop up.

Oil Setpoint 1 = Suction Pressure + 14.5 psi.

Oil Setpoint 1 is calculated when the following condition is met:

Compressor continuous running operation is 60 sec or above, from compressor start.

NOTE: If condition 2 is met, then it will take approximately [60 sec (compressor running since compressor start) + 15 sec (debounce) = 75 sec] for alert 10067/10068 to pop up.

Oil Setpoint2 = 0.7 (Discharge Pressure – Suction Pressure) + Suction Pressure

Oil Setpoint 2 is calculated when the following condition is met:

Oil pressure is less than Oil Setpoint 2.

NOTE: If condition 1 is met, then alert 10067/10068 will display after [15 sec (debounce time) + 30 sec (because compressor has been running continuously for 30 sec since it started)] = 45 sec. Debounce time is 15 sec for this alert.

If compressor is starting under non-low ambient temperature conditions (OAT is > 50°F/10°C).

In non-low ambient temperature conditions, oil pressure takes less time to be established, so a delay of 3 sec of continuous compressor running from compressor start is used to avoid nuisance alert trigger. After compressor start, compressor must run continuously for at least 3 sec before the Oil Setpoint calculation will start and criteria for triggering the alert will get evaluated.

Oil Setpoint 1 = Suction Pressure + 7.2 psi.

Oil Setpoint 1 is calculated when the following condition is met:

Compressor continuous running operation is greater than 3 sec but less than 60 sec from compressor start.

NOTE: If condition 2 is met, then alert will display after [3 sec (compressor running since compressor start) + 15 sec (debounce time)] = 18 sec.

Oil Setpoint 1 = Suction Pressure + 14.5 psi.

Oil Setpoint 1 is calculated when following the condition is met:

Compressor continuous running operation is 60 sec or more from compressor start.

NOTE: If condition 2 is met, then it will take approximately [60 sec (compressor running since compressor start) + 15 sec (debounce time)] = 75 sec for alert 10067/10068 to pop up.

Oil Setpoint2 = 0.7 (Discharge Pressure – Suction Pressure) + Suction Pressure

Oil Setpoint 2 is calculated when the following condition is met:

Oil pressure is less than Oil Setpoint 2 for 15 continual sec of compressor running since compressor start.

NOTE: Condition 1 is met if Oil pressure is less than Oil Setpoint 2 for 15 continual sec of compressor running; alert will display after [15 sec (debounce time) + 15 sec (because compressor has been running continuously for 15 sec since it started)] = 30 sec approximately. Debounce time is 15 sec for this alert.

Evaporator Service

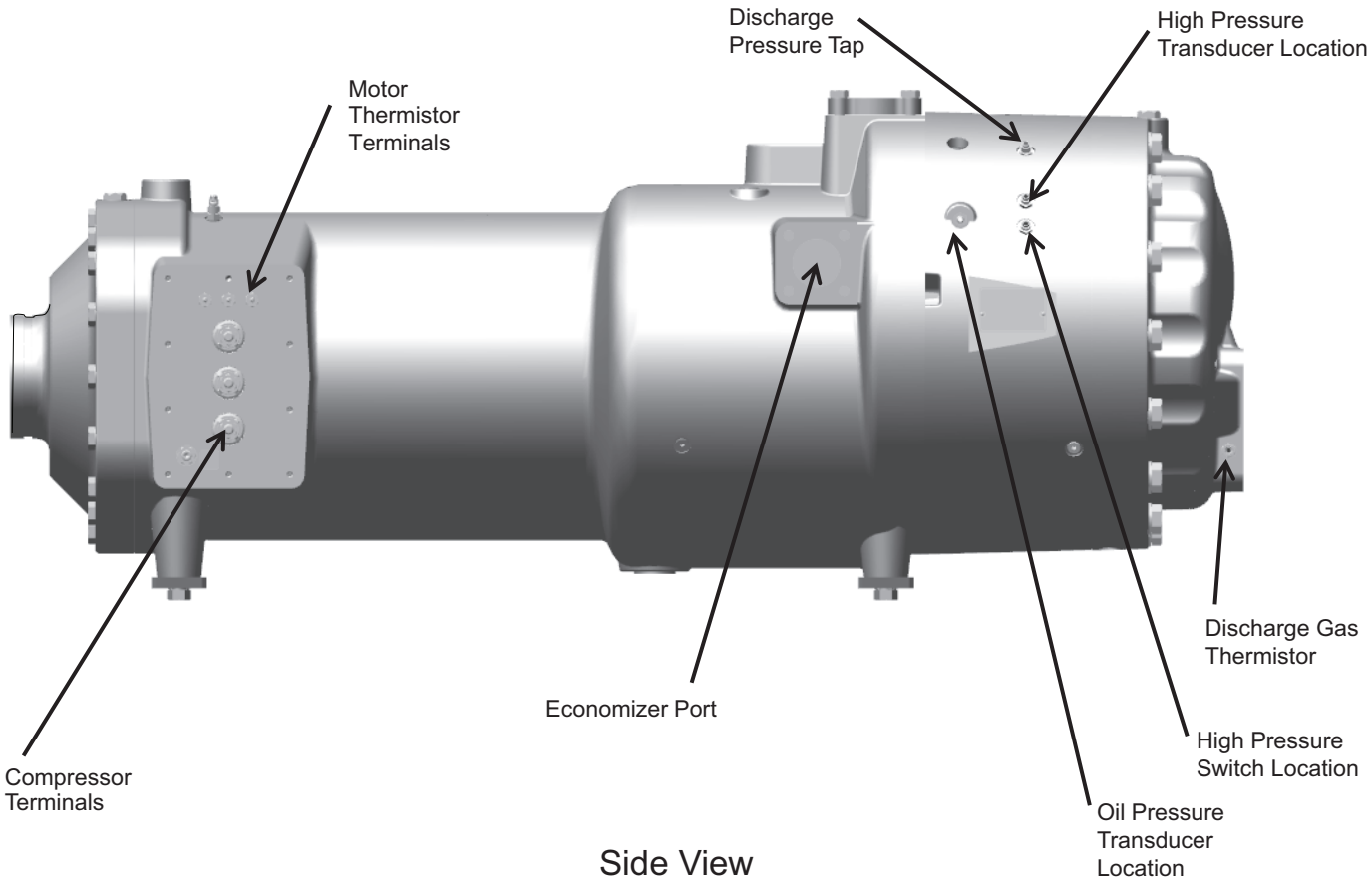
The 30XV units use flooded style evaporators.

ISOLATION VALVE

The isolation valve is a factory-installed option for 30XV units. The option includes a butterfly-style suction service valve on the suction lines, and manual ball valves on discharge, evaporator inlet and economizer lines. The butterfly valve is connected to the suction line by Victaulic connections. See Fig. 75 and 76 for details on the butterfly suction service valve operation. The valve locks into place when fully opened or fully closed. See Table 45 for compressor usage.

Table 45 — Compressor Usage

30XV UNIT SIZE	COMPRESSOR MODELS	
	CKT A	CKT B
140 - 200	06ZCE1	06ZCE1
225	06ZFC2	06ZCE1
250 - 325	06ZFC2	06ZFC2
350	06ZJG3	06ZFC2
400-500	06ZJG3	06ZJG3



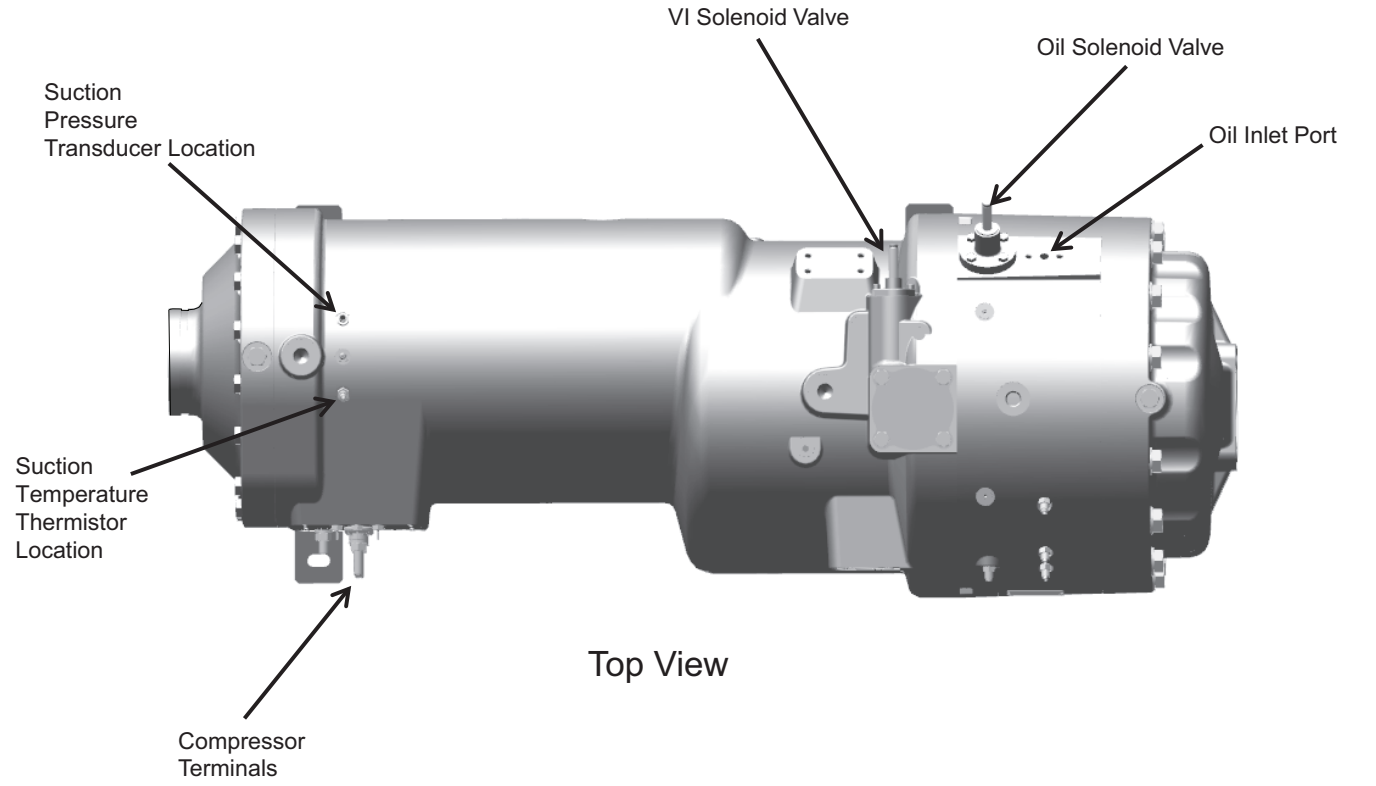


Fig. 72 — Typical 06Z Compressor (All Units)

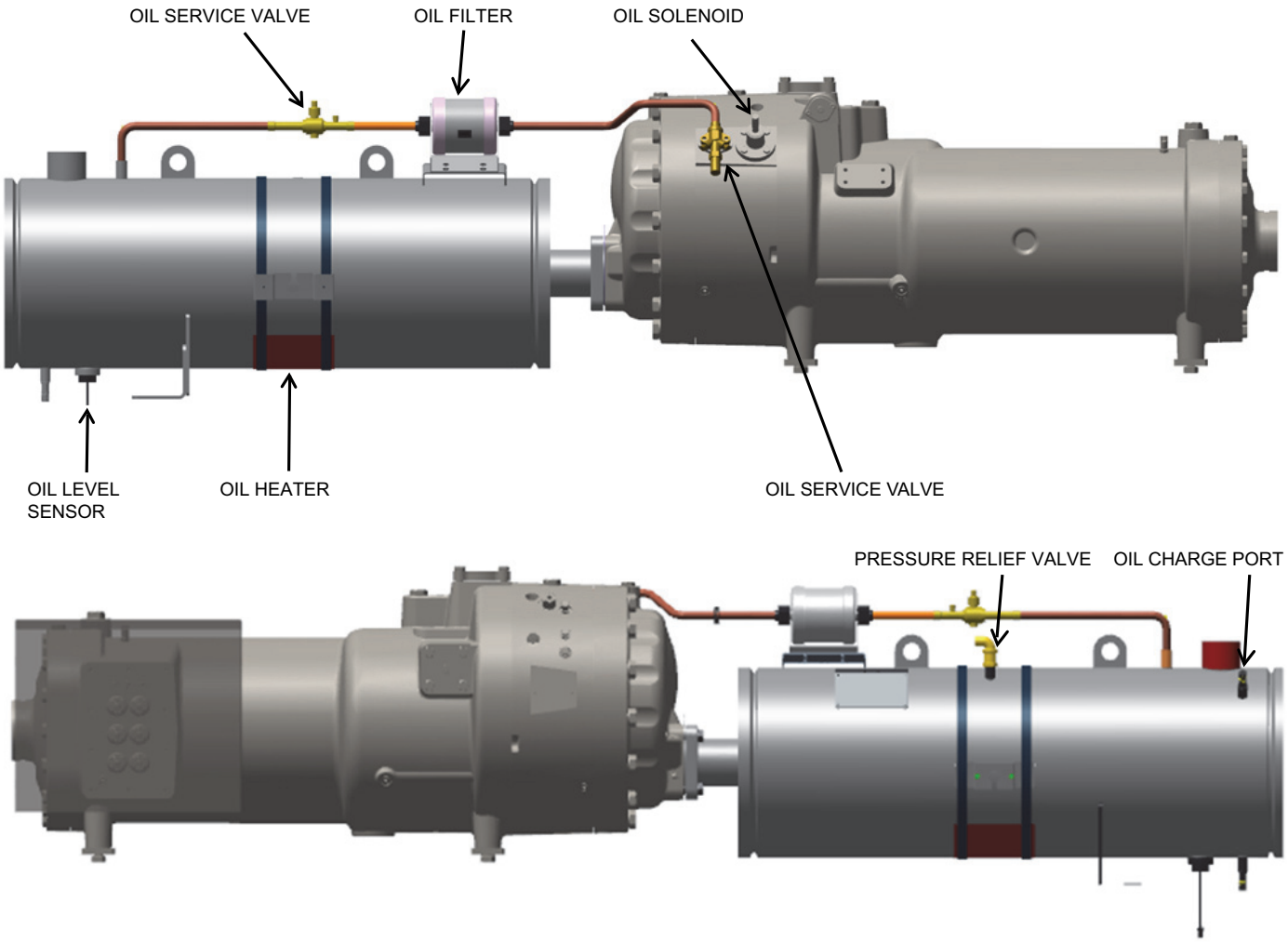


Fig. 73 — Typical Oil System (140-325, 350 Circuit B)

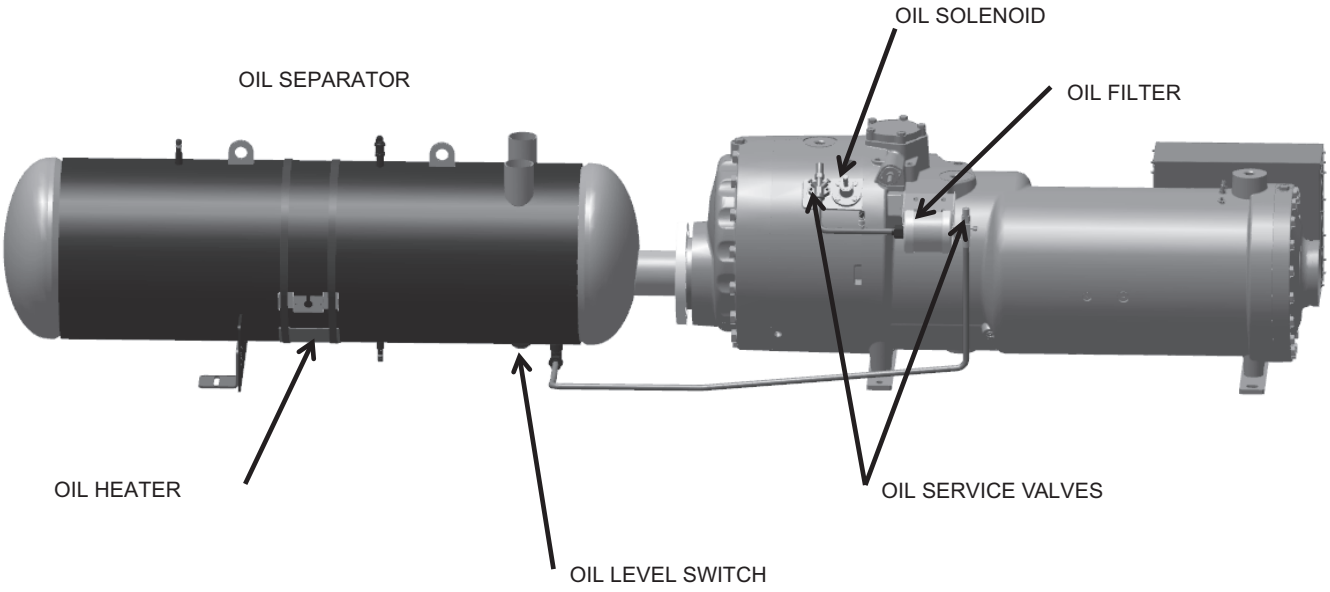


Fig. 74 — Typical Oil System (350 Circuit A, 400-500)

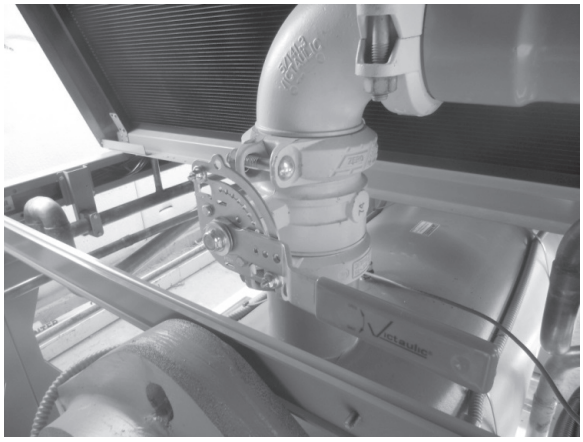


Fig. 75 — Suction Service Valve Butterfly Valve Closed

Fig. 76 — Suction Service Valve Butterfly Valve Open

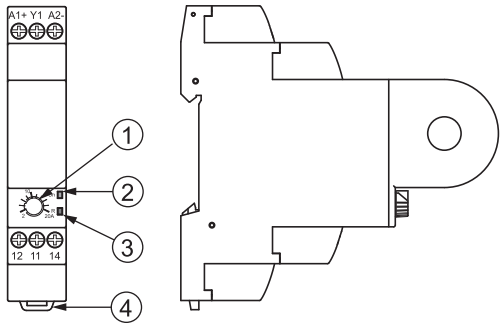
EVAPORATOR FREEZE PROTECTION

All evaporators are equipped with evaporator heaters (unless removed as an option for Middle Eastern regions). The control logic uses the unit status, OAT, and SST for all circuits to decide if the evaporator heater should be energized. The evaporator heaters can only be energized when the state of the unit is OFF. The evaporator heaters will be energized according to the following logic:

1. The Evaporator Heater Setpoint is the Brine Freeze Setpoint + Evaporator Heater Delta Setpoint.
2. If the OAT is below the Evaporator Heater Setpoint *or* if the SST of any one circuit is lower than the Evaporator Heater Setpoint + 6°F (3.3°C), the evaporator heater is activated, or if already activated, will remain on.
3. If the SST of all circuits is higher than the Evaporator Heater Setpoint + 10°F (5.5°C), *and* if OAT is higher than the Evaporator Heater Setpoint +2°F, the evaporator heater will be turned off, or if already off, will remain off.
4. If either condition 2 or condition 3 above is not met, the heater mode remains unchanged.

If the entering or leaving water temperature is less than the Brine Freeze Setpoint (***Main Menu → Configuration Menu → Service Parameters →*** **Brine Freeze Setpoint**) +1.0°F (0.5°C), then the heater will be turned on along with the pump.

A current sensing relay monitors the current to the evaporator heaters. If a heater fails, the reduction in current will switch the relay and produce a Evaporator Freezer Alarm (EVAPORATOR_FREEZE, 10001). In addition, the pump signal will energize. See Appendix H for relay set points. See Fig. 77 for evaporator heater current sensing relay set point adjustment location. If cooler heater is On, and current sensing relay is open for 10 min, the heater is considered failed. "Alarm 59000 – Cooler Heater Failure" shall be generated and Unit will go into TRIPOUT (i.e., Alarm) state.



LEGEND

1 — Overcurrent Adjusting Potentiometer
2 — Power Supply Status LED (green)
3 — Relay Output Supply Status LED (yellow)
4 — 35 mm Rail Clip-in Spring

Fig. 77 — Evaporator Heater Set Point Adjustment

To configure this option with the Carrier Controller controls:

DISPLAY NAME	PATH	VALUE
Evaporator Heater Installed	***Main Menu →*** ***Configuration Menu →*** ***Factory Parameters***	Evap Heater Installed YES/NO DEFAULT= NO

NOTE: Evaporator Heater must be configured to YES for the ABVs to operate.

IMPORTANT: If unit is installed in an area where ambient temperatures fall below 32°F (0°C), a suitable corrosion-inhibited antifreeze solution or evaporator heater must be used in the chilled water circuit.

LOW FLUID TEMPERATURE

The Carrier Controller control is programmed to shut chiller down if leaving fluid temperature drops below 34°F (1.1°C) for evaporator fluid type water or below the Brine Freeze Setpoint (***Main Menu → Configuration Menu → Service Parameters →*** **Brine Freeze Setpoint**) for the evaporator fluid type brine. When fluid temperature rises to 6°F (3.3°C) above the leaving fluid set point, the alarm will reset and the chiller restarts. Reset is automatic as long as this is the first occurrence. For repeat occurrences within 24 hours the alarm must be manually reset.

LOSS OF FLUID FLOW PROTECTION

All 30XV machines include an integral flow switch that protects the evaporator against loss of evaporator flow.

TUBE PLUGGING

A leaky tube can be plugged until retubing can be done. The number of tubes plugged determines how soon the evaporator must be retubed. All tubes in the evaporator may be removed. Loss of unit capacity and efficiency as well as increased pump power will result from plugging tubes. Failed tubes should be replaced as soon as possible. Up to 10% of the total number of tubes or 10% per pass may be plugged without a noticeable loss of capacity. Retubing will be necessary once this value is exceeded. Figure 78 shows an Elliott tube plug and a cross-sectional view of a plug in place. See Tables 46 and 47 for plug components. If the tube failure occurs in both circuits using tube plugs will not correct the problem. Contact your local Carrier representative for assistance.

⚠ CAUTION

Use extreme care when installing plugs to prevent damage to the tube sheet section between the holes.

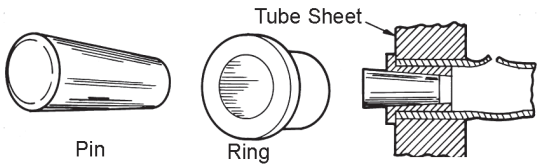


Fig. 78 — Elliott Tube Plug

Table 46 — Plug Component Parts (Evaporator Units Only)

COMPONENT	PART NUMBER
For Tubes	
Brass Pin	853103-1[a]
Brass Ring	853002-640 or 657[a] (measure tube ID before ordering)
Loctite	No. 675[b]
Locquic	"N"[b]
Roller Extension	S82-112/11

NOTE(S):

a. Order directly from Elliot Tool Technologies, Dayton, OH or RC.
b. Can be obtained locally.

Table 47 — Evaporator Tube Components[a]

COMPONENT	SIZE	
	in.	mm
Tube sheet hole diameter	0.756	19.20
Tube OD	0.750	19.05
Tube ID after rolling (includes expansion due to clearance.)	0.650 to 0.667	16.51 to 16.94

NOTE(S):

a. Tubes replaced along heat exchanger head partitions must be flush with tube sheet (both ends).

EVAPORATOR RETUBING

When retubing is required, obtain the service of qualified personnel experienced in boiler maintenance and repair. Most standard procedures can be followed when retubing the evaporators. An 8% crush is recommended when rolling replacement tubes into the tube sheet. Place one drop of Loctite No. 675 or equivalent on top of tube prior to rolling. This material is intended to "wick" into the area of the tube that is not rolled into the tube sheet, and prevent fluid from accumulating between the tube and the tube sheet. New tubes must also be rolled into the center tube sheet to prevent circuit to circuit leaks.

TIGHTENING EVAPORATOR HEAD BOLTS

Preparation

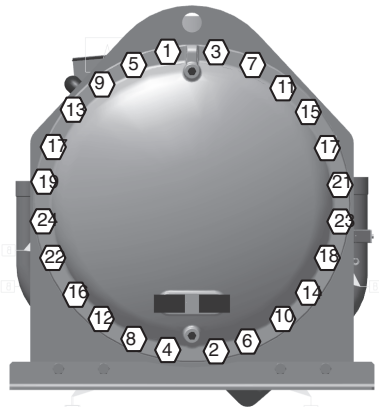
When reassembling evaporator heads, always check the condition of the O-rings first. The O-ring should be replaced if there are visible signs of deterioration, cuts or damage. Apply a thin film of grease to the O-ring before installation. This will aid in holding the O-ring in the groove while the head is installed.

Torque all bolts to the following specification and in sequence:

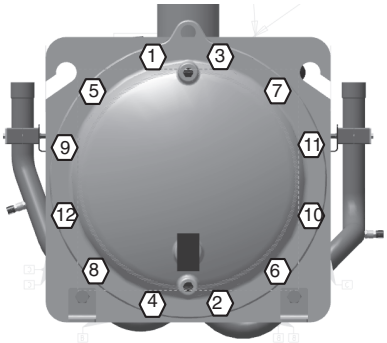
5/8-in. Diameter Perimeter Bolts (Grade 5) 150 to 170 ft-lb (203 to 230 N-m)

3/4-in. Diameter Perimeter Bolts (Grade 5) 200 to 225 ft-lb (271 to 305 N-m)

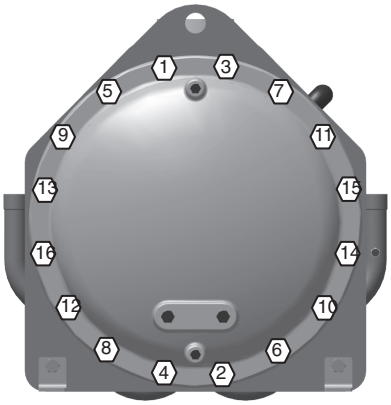
1. Install all bolts finger tight.
2. Bolt tightening sequence is outlined in Fig. 79. Follow the numbering or lettering sequence so that pressure is evenly applied to O-ring.
3. Apply torque in one-third steps until required torque is reached. Load *all* bolts to each one-third step before proceeding to next one-third step.
4. No less than one hour later, retighten all bolts to required torque values.
5. After refrigerant is restored to system, check for refrigerant leaks using recommended industry practices.
6. Replace evaporator insulation.



24" EVAPORATOR – 5/8" BOLTS
(30XA350M THRU 30XA500M)



16" EVAPORATOR – 3/4" BOLTS
(30XA160M THRU 30XA200S)



20" & 18" EVAPORATOR – 3/4" BOLTS
(30XA200M THRU 30XA350S)

14" EVAPORATOR – 3/4" BOLTS
(30XA140S THRU 30XA160S)

Fig. 79 — Flooded Evaporator Unit Head Recommended Bolt Torque Sequence

INSPECTING/CLEANING HEAT EXCHANGERS

Inspect and clean evaporator tubes at the end of the first operating season. Because these tubes have internal ridges, a rotary-type tube cleaning system is necessary to fully clean the tubes. Tube condition in the evaporator will determine the scheduled frequency for cleaning, and will indicate whether water treatment is adequate in the chilled water/brine circuit. Inspect the entering and leaving water thermistor wells for signs of corrosion or scale. Replace the well if corroded or remove any scale if found.

⚠ CAUTION

Hard scale may require chemical treatment for its prevention or removal. Consult a water treatment specialist for proper treatment procedures.

EVAPORATOR CHILLED WATER FLOW SWITCH

A thermal-dispersion flow switch is factory installed in the entering water nozzle for all machines. See Fig. 80 and 81. Figure 81 shows typical installation. If nuisance trips of the sensor are occurring, follow the steps below to correct:

1. Check to confirm that all strainers are clean, valves are open and pumps are running. For the case of VFD-controlled pumps, ensure the minimum speed setting has not been changed.
2. Measure the pressure drop across the evaporator. Use the evaporator pressure drop curves on page 57 to calculate the flow and compare this to system requirements. The pressure drop curves are for water only.

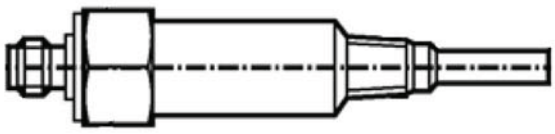


Fig. 80 — Chilled Water Flow Switch

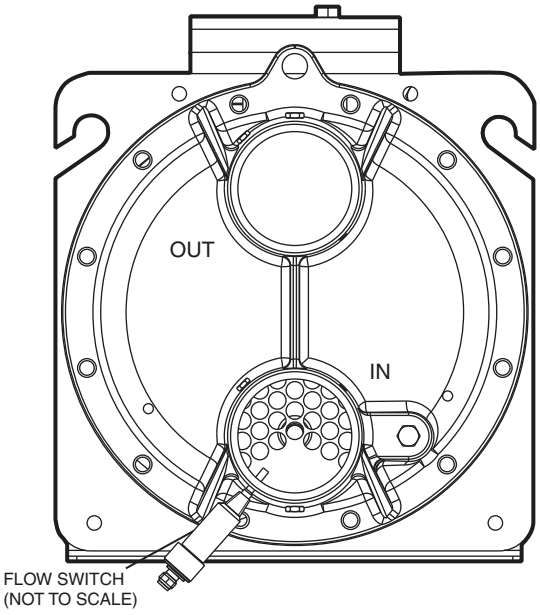


Fig. 81 — Flow Switch Location

All Units

EVAPORATOR WATER TREATMENT

Untreated or improperly treated water may result in corrosion, scaling, erosion or algae. The services of a qualified water treatment specialist should be obtained to develop and monitor a treatment program.

⚠ CAUTION

Water must be within design flow limits, clean and treated to ensure proper machine performance and reduce the potential of tubing damage due to corrosion, scaling, and algae. Carrier assumes no responsibility for evaporator damage resulting from untreated or improperly treated water.

PREPARATION FOR WINTER SHUTDOWN

If the unit is not operational during the winter months, at the end of the cooling season complete the following steps.

⚠ CAUTION

Failure to remove power before draining heater equipped evaporators can result in heater damage.

Evaporator to be drained for winter shutdown

1. To prepare the system for winter shutdown, draining the fluid from the system is highly recommended. Isolate the evaporator from the rest of the system with water shutoff valves. Be sure to deenergize heaters (if installed) by opening circuit breaker (CB-7) or shut off power to the chiller to prevent damage if the evaporator is drained.
2. Remove the evaporator drain plug. Follow all local codes and regulations regarding the fluid disposal.
3. Once fully drained, replace the drain plug(s) and completely fill the evaporator, and hydronic package if equipped, with suitable corrosion-inhibited antifreeze solution such as propylene glycol. The concentration should be adequate to provide freeze protection to 15°F (8.3°C) below the expected low ambient temperature conditions. Antifreeze can be added through the vent on top of the evaporator head. Evaporator fluid volumes can be found in the Installation Instructions for the unit.
4. Leave the evaporator filled with the antifreeze solution for the winter to provide corrosion protection during the off season. The evaporator may be drained if desired. Follow all local codes and regulations regarding the fluid disposal.
5. At the beginning of the next cooling season, ensure there is refrigerant pressure in each circuit before refilling evaporator, add recommended inhibitor, and reset the circuit breaker for the heater (CB-7) if opened or restore power.

Evaporator to remain filled for winter shutdown

1. If the evaporator will not be drained, do not shut off power disconnect during off-season shutdown.

⚠ CAUTION

Operation or winter shutdown with fresh water is not fail-safe should there be a loss of power to the chiller or to the circulating pump. Freeze damage due to power loss or disabling chiller pump control in fresh water systems will impair or otherwise negatively affect the warranty.

2. If the chilled water loop is not protected with a suitable corrosion-inhibited antifreeze solution such as propylene glycol, the unit must have evaporator pump control. In the event of a power failure with sub-freezing temperatures,

the unit will not have any evaporator freeze protection and may be subject to damage.

3. It is recommended that the loop be protected with a suitable corrosion-inhibited antifreeze solution such as propylene glycol. The concentration should be adequate to provide freeze protection to 15°F (8.3°C) below the expected low ambient temperature conditions. Evaporator heaters will not protect the evaporator from freeze-up in the event of power loss.

WINTERIZING FAN PROCESS AND OPERATION

The winterizing fan process applies to both circuits independently and in any chiller state (OFF/ON/TRIPOUT, etc.).

The winterizing process is initiated when the outside air temperature is less than **wint_freezing_temp** setpoint and the condenser fan is OFF simultaneously for a period of 1 hour. The control will set the condenser fans to run for 15 seconds and then stop.

The winterizing process ends once the outside air temperature is greater than or equal to **wint_freezing_temp** + hysteresis; at this point the control exits out of the winterizing fan processing phase. Once the exit criterion is met, the condenser fan will follow normal controls.

When hysteresis = 1.8°F, if winterizing fan processing is active and OAT has increased so that [(**wint_freezing_temp**) < OAT < (**wint_freezing_temp** + hysteresis)], then winterizing fan processing will set the condenser fans to run for 15 seconds and then stop. Once the exit criterion is met, the condenser fan will follow normal controls.

Condenser Coil Maintenance and Cleaning

Routine cleaning of coil surfaces is essential to maintain proper operation of the unit. Elimination of contamination and removal of harmful residues will greatly increase the life of the coil and extend the life of the unit. The following maintenance and cleaning procedures are recommended as part of the routine maintenance activities to extend the life of the RTPF (round tube plate fin) coil and MCHX (microchannel heat exchanger) coil.

REMOVE SURFACE LOADED FIBERS

Surface loaded fibers or dirt should be removed with a vacuum cleaner. If a vacuum cleaner is not available, a soft non-metallic bristle brush may be used. In either case, the tool should be applied in the direction of the fins. Coil surfaces can be easily damaged (fin edges can be easily bent over and damage to the coating of a protected coil) if the tool is applied across the fins.

NOTE: Use of a water stream, such as a garden hose, against a surface loaded coil will drive the fibers and dirt into the coil. This will make cleaning efforts more difficult. Surface loaded fibers must be completely removed prior to using low velocity clean water rinse.

PERIODIC CLEAN WATER RINSE

A periodic clean water rinse is very beneficial for coils that are applied in coastal or industrial environments. However, it is very important that the water rinse is made with very low velocity water stream to avoid damaging the fin edges. Monthly cleaning is recommended.

ROUTINE CLEANING OF COIL SURFACE

Routine cleaning with Totaline® Indoor and Outdoor coil cleaner is essential to extend the life of coils. This cleaner is available from Carrier Replacement Components as part number P902-0301 for a one gallon container, and part number P902-0305 for a five gallon container. It is recommended that all coils, including MCHX, e-coated MCHX, the standard copper tube aluminum fin, precoated fin, copper fin, or e-coated coils be cleaned with the Totaline Indoor and Outdoor coil cleaner as described below. Coil cleaning should be part of the unit's regularly scheduled maintenance procedures to ensure long life of the coil. Failure to clean the coils may result in reduced durability in the environment. Avoid the use of:

- coil brighteners
- acid cleaning prior to painting
- high pressure washers
- poor quality water for cleaning

Totaline Indoor and Outdoor Coil Cleaner is non-flammable, hypoallergenic, nonbacterial, and a USDA accepted biodegradable agent that will not harm the coil or surrounding components such as electrical wiring, painted metal surfaces, or insulation. Use of non-recommended coil cleaners is strongly discouraged since coil and unit durability could be affected.

Totaline Indoor and Outdoor Coil Cleaner Application Equipment

- 2-1/2 gallon garden sprayer
- Water rinse with low velocity spray nozzle

⚠ CAUTION

Harsh chemicals, household bleach or acid or basic cleaners should not be used to clean outdoor or indoor coils of any kind. These cleaners can be very difficult to rinse out of the coil and can accelerate corrosion at the fin/tube interface where dissimilar materials are in contact. If there is dirt below the surface of the coil, use the Totaline environmentally balanced coil cleaner as described above.

⚠ CAUTION

High velocity water from a pressure washer, garden hose, or compressed air should never be used to clean a Round Tube/Plate Fin (RTPF) coil. The force of the water or air jet will bend the fin edges and increase airside pressure drop.

High velocity water from a pressure washer, garden hose, or compressed air should never be used to clean a MicroChannel Heat Exchanger (MCHX) coil as it may fracture the tube/fin bond.

Reduced unit performance or nuisance unit shutdown may occur.

Totaline Indoor and Outdoor Coil Cleaner Application Instructions

1. Proper eye protection such as safety glasses is recommended during mixing and application.
2. Remove all surface loaded fibers and dirt with a vacuum cleaner as described above.
3. Thoroughly wet finned surfaces with clean water and a low velocity garden hose, being careful not to bend fins.
4. Mix Totaline Indoor and Outdoor coil cleaner in a 2-1/2 gallon garden sprayer according to the instructions included with the cleaner. The optimum solution temperature is 100°F (37.8°C).

NOTE: DO NOT USE water in excess of 130°F (54.4°C), as the enzymatic activity will be destroyed.

5. Thoroughly apply coil cleaner solution to all coil surfaces including finned area, tube sheets and coil headers.
6. Hold garden sprayer nozzle close to finned areas and apply cleaner with a vertical, up-and-down motion. Avoid spraying in horizontal pattern to minimize potential for fin damage.
7. Ensure cleaner thoroughly penetrates deep into finned areas.
8. Interior and exterior finned areas must be thoroughly cleaned.
9. Finned surfaces should remain wet with cleaning solution for 10 minutes.

10. Ensure surfaces are not allowed to dry before rinsing. Reapply cleaner as needed to ensure 10-minute saturation is achieved.
11. Thoroughly rinse all surfaces with low velocity clean water using downward rinsing motion of water spray nozzle. Protect fins from damage from the spray nozzle.

Condenser Fans

A formed metal mount bolted to the coil caps supports each fan and motor assembly. A shroud and a wire grille provide protection from the rotating fan. See Fig. 82. To remove the fan a special puller (Carrier Replacement Components part no. 30RB680082) can be used. The fan utilizes a set screw and does not require the use of retaining compound in the keyway. The fan can be removed without the puller, but its use eases disassembly. The fan needs to be positioned fully down against the step on the motor shaft. Apply blue thread locker (Loctite 243) to the threads of both the axial bolt and the set screw. Install the thick washer and M8 axial bolt; do not fully tighten. Install set screw and tighten to 16 ±2 ft-lb (21.7 ±2.7 Nm). Torque the axial bolt to 24 ±2 ft-lb (32.5 ±2.7 Nm). Reinstall shroud and wire grille.

High Static Fan Option

A different fan blade is used for the high static fan option. It does not have the set screw to retain the key, so retaining compound must be used. The same puller is required to remove this fan blade. Use Loctite 603 retaining compound on the shaft and keyway during re-assembly. Remove any grease or contaminates from the fan motor shaft before installation.

Refrigerant Circuit

LEAK TESTING

Units are shipped with complete operating charge of refrigerant R-134a (see Physical Data tables supplied in the 30XV installation instructions) and should be under sufficient pressure to conduct a leak test. If there is no pressure in the system, introduce enough nitrogen to search for the leak. Repair the leak using good refrigeration practices. After leaks are repaired, system must be evacuated and dehydrated.

REFRIGERANT CHARGE

Refer to Physical Data tables supplied in the 30XV installation instructions. Immediately ahead of filter drier in each circuit is a factory-installed liquid line service valve. Each valve has a 1/4-in. access connection for charging liquid refrigerant.

Charging with Unit Off and Evacuated

Close liquid line service valve before charging. Weigh in charge shown on unit nameplate. Open liquid line service valve; start unit and allow it to run several minutes fully loaded. Check for a clear sight glass. Be sure clear condition is liquid and not vapor.

Charging with Unit Running

If charge is to be added while unit is operating, all condenser fans and compressors must be operating. It may be necessary to block condenser coils at low ambient temperatures to raise condensing pressure to approximately 198 psig (1365 kPa) to turn all condenser fans on. Do not totally block a coil to do this. Partially block all coils in uniform pattern. Charge each circuit until sight glass shows clear liquid, and has a liquid line temperature of 103°F (39°C).

REFRIGERANT CHARGING

Add 3 to 5 lb (1.36 to 2.27 kg), depending on unit size and coil type, of liquid charge into the fitting located on the tube entering the evaporator. This fitting is located between the electronic EXV and the evaporator.

Allow the system to stabilize and then recheck the liquid temperature. If needed, add additional liquid charge, 3 to 5 lb at a time, allowing the system to stabilize between each charge addition. Slowly add charge as the sight glass begins to clear to avoid overcharging.

IMPORTANT: When adjusting refrigerant charge, circulate fluid through evaporator continuously to prevent freezing and possible damage to the evaporator. Do not overcharge, and never charge liquid into the low-pressure side of system.

Safety Devices

The 30XV chillers contain many safety devices and protection logic built into the electronic control. Following is a description of the major safeties.

COMPRESSOR PROTECTION

Motor Overload

The compressor VFD fuses and drive logic protect each compressor against overcurrent.

High Pressure Switch

All compressors have factory-installed high-pressure switches. See Table 48. Each high-pressure switch is connected directly to its associated VFD (terminals 12 and 37). If the switch opens during operation, the compressor will be shut down. Manual reset of the high pressure switch, VFD, and the control is required to restart the compressor.

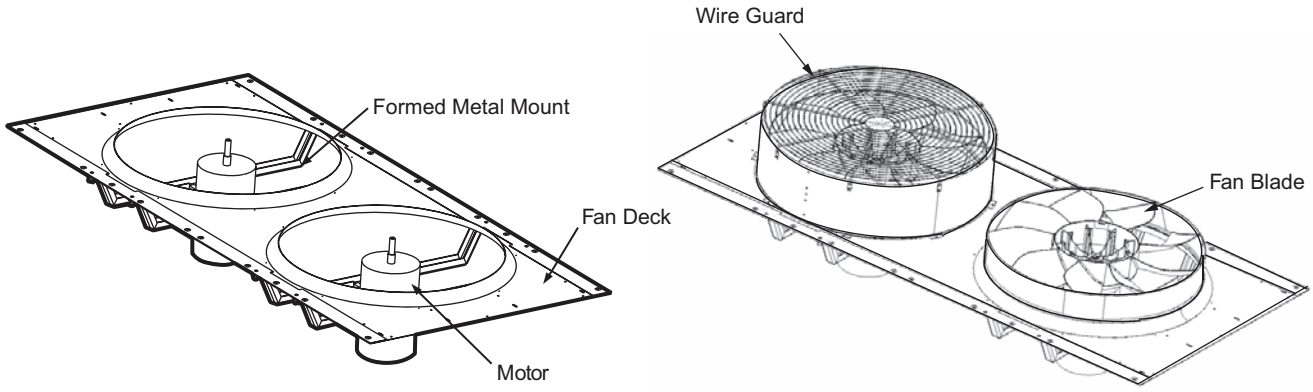


Fig. 82 — Fan Mounting

Table 48 — High-Pressure Switch Settings

UNIT	SWITCH SETTING	
	psig	kPa
30XV	323.5 + 0.0 –14.0	2230 + 0.0 –14.0

OIL SEPARATOR HEATERS

Each oil separator circuit has a heater mounted on the side of the vessel. Oil heater operation uses the following criteria:

1. The circuit's Oil Heater (Oil Heater Output A or Oil Heater Output B) will be ON if the circuit's compressor status (Compressor A or Compressor B) is OFF and the Oil Level Switch (Oil Level Input A or Oil Level Input B) is CLOSED.
2. The circuit's Oil Heater (Oil Heater Output A or Oil Heater Output B) will be ON if the OAT is less than 99°F (37.2°C) and either of the following conditions is true:
   a. The OAT minus the circuit's SST (SST A or SST B) is less than 30°F (16.6°C) and the circuit's Discharge Pressure Temperature (Discharge Pressure A or Discharge Pressure B) is less than 203 psig (1400 kPa).
   b. The OAT minus the LWT is less than 30°F (16.6°C) and the circuit's Discharge Pressure Temperature (Discharge Pressure A or Discharge Pressure B) is less than 203 psig (1400 kPa).
3. The circuit's Oil Heater (Oil Heater Output A or Oil Heater Output B) will be OFF if the OAT is less than 99°F (37.2°C) and either of the following conditions is true:
   a. The OAT minus the circuit's SST (SST A or SST B) is less than 30°F (16.6°C) and the circuit's Discharge Pressure Temperature (Discharge Pressure A or Discharge Pressure B) is less than 275.5 psig (1900 kPa).
   b. The OAT minus the LWT is less than 30°F (16.6°C) and the circuit's Discharge Pressure Temperature (Discharge Pressure A or Discharge Pressure B) is less than 275.5 psig (1900 kPa).
4. The circuit's Oil Heater (Oil Heater Output A or Oil Heater Output B) will be OFF if the OAT is greater than 100°F (37.8°C) and either of the following conditions is true:
   a. The OAT minus the circuit's Saturated Suction Temperature (Saturated Suction Temp A or Saturated Suction Temp B) is greater than 32°F (17.7°C).
   b. The OAT minus the LWT is less than 32°F (17.7°C).

Relief Devices

Fusible plugs are located in each circuit between the condenser and the liquid line shutoff valve.

PRESSURE RELIEF VALVES

Valves are installed in each circuit and are located on the evaporators and oil separators. These valves are designed to relieve if an abnormal pressure condition arises. Relief valves on all evaporators relieve at 220 psig (1517 kPa). Relief valves on oil separators relieve at 350 psig (2413 kPa). These valves should not be capped. If a valve relieves, it should be replaced. If the valve is not replaced, it may relieve at a lower pressure, or leak due to trapped dirt from the system which may prevent resealing. See Table 49. Some local building codes require that relieved gases be exhausted to a specific location. This connection allows conformance to this requirement.

Table 49 — Relief Valve Connection Specifications

LOCATION	CONNECTION SIZES
Oil Separator	3/8 SAE Flare
Evaporator	3/4 in. NPT Female

Inspection and Maintenance

The relief valves on this chiller protect the system against the potentially dangerous effects of overpressure. To ensure against damage to the equipment and possible injury to personnel, these devices must be kept in peak operating condition. As a minimum, the following maintenance is required:

1. At least once a year, disconnect the vent piping at the valve outlet if equipped. Inspect the vent piping for corrosion, a restriction or blockage. If any is found, clean or replace the affected vent piping.
2. Carefully inspect the valve body and mechanism for any evidence of internal corrosion or rust, dirt, scale, leakage, etc. If corrosion or foreign material is found, do not attempt to repair or recondition; replace the valve.
3. If the chiller is installed in a corrosive atmosphere or the relief valves are vented into a corrosive atmosphere, inspect relief valves and piping at more frequent intervals.

Variable Frequency Drives

The 30XV units with Greenspeed® Intelligence are equipped with VFDs to control the compressors and condenser fans. The Danfoss VLT[1] HVAC drives each include an LCD user interface display. However, all necessary functions and statuses can be accessed from within the Carrier Controller menus. The VFDs are configured through the Carrier Controller controls, and parameters should not be changed manually.

ADDRESSING

The 30XV units with Greenspeed Intelligence use Danfoss VFDs that operate by communicating commands to the drive. As a result, each drive must have a unique address as shown in Table 50. Addresses must be set in VFD Parameter 8-31.

Table 50 — VFD Addresses

VFD	Address
Compressor A	181
Compressor B	182
Circuit A Fan Drive 1	184
Circuit A Fan Drive 2	185
Circuit B Fan Drive 1	187
Circuit B Fan Drive 2	188

COMMUNICATION

The 30XV units use Danfoss VFDs that operate by communicating commands to the drive over the LEN bus. As a result, each drive must have a unique address.

COMMUNICATION WIRING

LEN wiring is connected to each drive at VFD Terminals 61 (Ground), 68 (+) and 69 (–). See Fig. 83.

VFDs should be arranged in a daisy-chain pattern, meaning the communication wiring is connected to one drive, exits and is connected to the next. This pattern repeats until the last drive on the communication bus is reached. See Table 51 to determine correct Communications Wiring in Fig. 84-89.

1. Third-party trademarks and logos are the property of their respective owners.

Fig. 83 — VFD LEN Wiring Termination

Table 51 — 30XV VFD Communication Wiring

30XV	VOLTAGE	TIER (POSITION 10)			
		S	S WITH LOW AMBIENT OPTION	M	H
140	208/230-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	380-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	400-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 85
160	208/230-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	380-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 85
180	208/230-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	380-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 85
200	208/230-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	380-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 85
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 85
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 85
225	380-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 86

Table 51 — 30XV VFD Communication Wiring (cont)

30XV	VOLTAGE	TIER (POSITION 10)			
		S	S WITH LOW AMBIENT OPTION	M	H
250	380-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 86
275	380-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	460-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	575-3-60	Figure 84	Figure 85	Figure 85	Figure 86
	380-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	400-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	415-3-50	Figure 84	Figure 85	Figure 85	Figure 86
	440-3-50	Figure 84	Figure 85	Figure 85	Figure 86
300	380-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	460-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	575-3-60	Figure 84	Figure 85	Figure 86	Figure 86
	380-3-50	Figure 84	Figure 85	Figure 86	Figure 86
	400-3-50	Figure 84	Figure 85	Figure 86	Figure 86
	415-3-50	Figure 84	Figure 85	Figure 86	Figure 86
	440-3-50	Figure 84	Figure 85	Figure 86	Figure 86
325	380-3-60	Figure 84	Figure 86	Figure 86	Figure 86
	460-3-60	Figure 84	Figure 86	Figure 86	Figure 86
	575-3-60	Figure 84	Figure 86	Figure 86	Figure 86
	380-3-50	Figure 84	Figure 86	Figure 86	Figure 86
	400-3-50	Figure 84	Figure 86	Figure 86	Figure 86
	415-3-50	Figure 84	Figure 86	Figure 86	Figure 86
	440-3-50	Figure 84	Figure 86	Figure 86	Figure 86
350	380-3-60	Figure 84	Figure 87	Figure 88	Figure 88
	460-3-60	Figure 84	Figure 87	Figure 88	Figure 88
	575-3-60	Figure 84	Figure 87	Figure 88	Figure 88
	380-3-50	Figure 84	Figure 87	Figure 88	Figure 88
	400-3-50	Figure 84	Figure 87	Figure 88	Figure 88
	415-3-50	Figure 84	Figure 87	Figure 88	Figure 88
	440-3-50	Figure 84	Figure 87	Figure 88	Figure 88
400	380-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	460-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	575-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	380-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	400-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	415-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	440-3-50	Figure 84	Figure 88	Figure 88	Figure 88
450	380-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	460-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	575-3-60	Figure 84	Figure 88	Figure 88	Figure 88
	380-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	400-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	415-3-50	Figure 84	Figure 88	Figure 88	Figure 88
	440-3-50	Figure 84	Figure 88	Figure 88	Figure 88
500	380-3-60	Figure 84	Figure 88	Figure 88	—
	460-3-60	Figure 84	Figure 88	Figure 88	—
	575-3-60	Figure 84	Figure 88	Figure 88	—
	380-3-50	Figure 84	Figure 88	Figure 88	—
	400-3-50	Figure 84	Figure 88	Figure 88	—
	415-3-50	Figure 84	Figure 88	Figure 88	—
	440-3-50	Figure 84	Figure 88	Figure 88	—

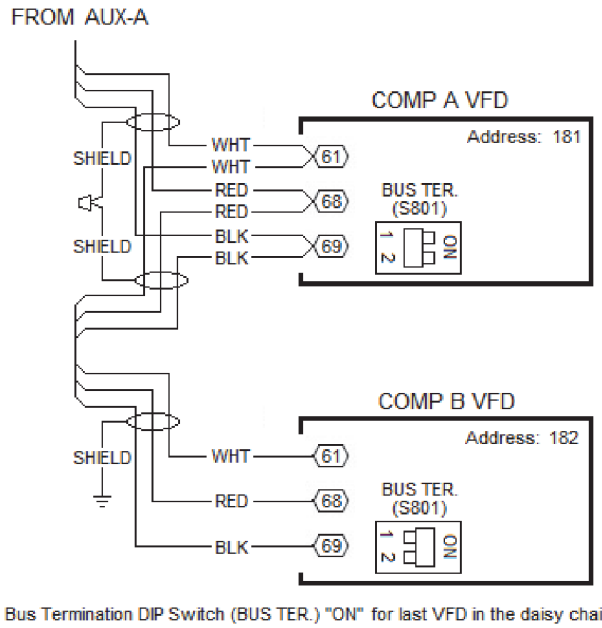


Fig. 84 — VFD Communication Wiring (Compressor A-B) For All Standard Tier Units without Low Ambient Option

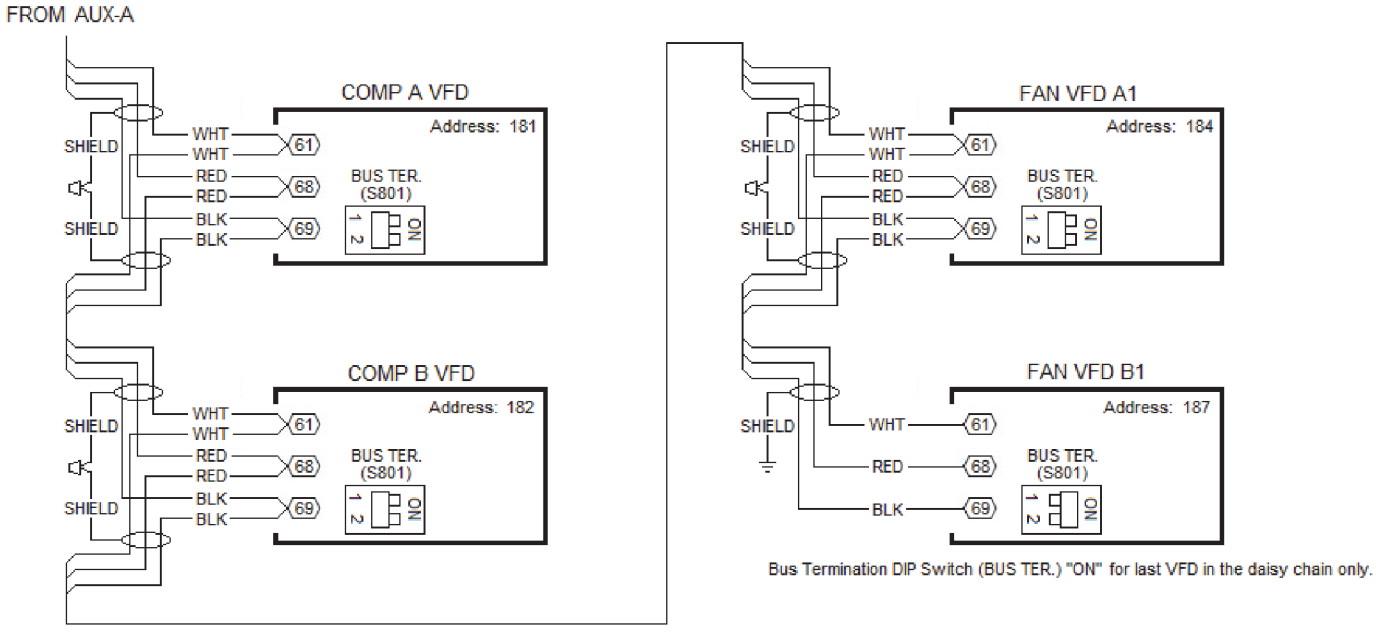


Fig. 85 — VFD Communication Wiring (Compressor A-B-Fan VFD A1-B1)

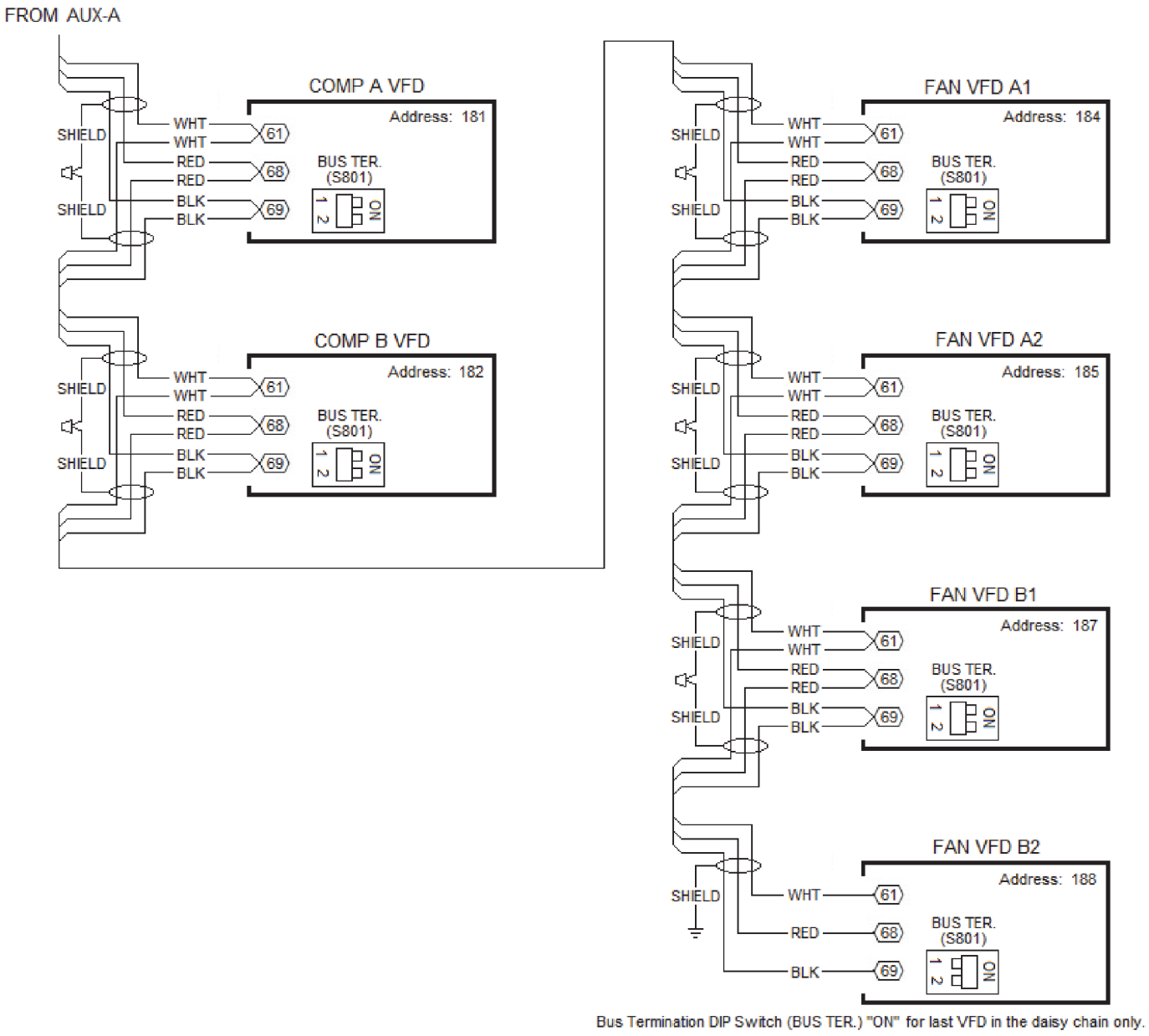


Fig. 86 — VFD Communication Wiring (Compressor A-B-Fan VFD A1-A2-B1-B2)

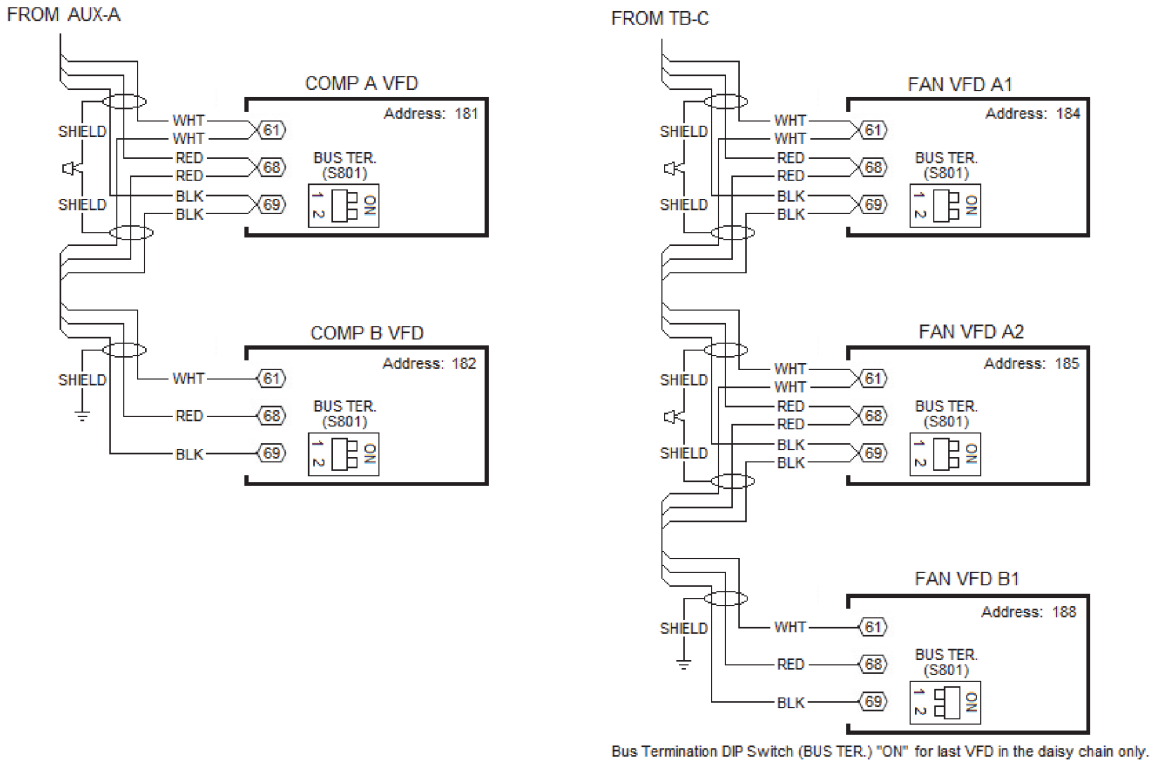


Fig. 87 — VFD Communication Wiring (Compressor A-B, Fan VFD A1-A2-B1)

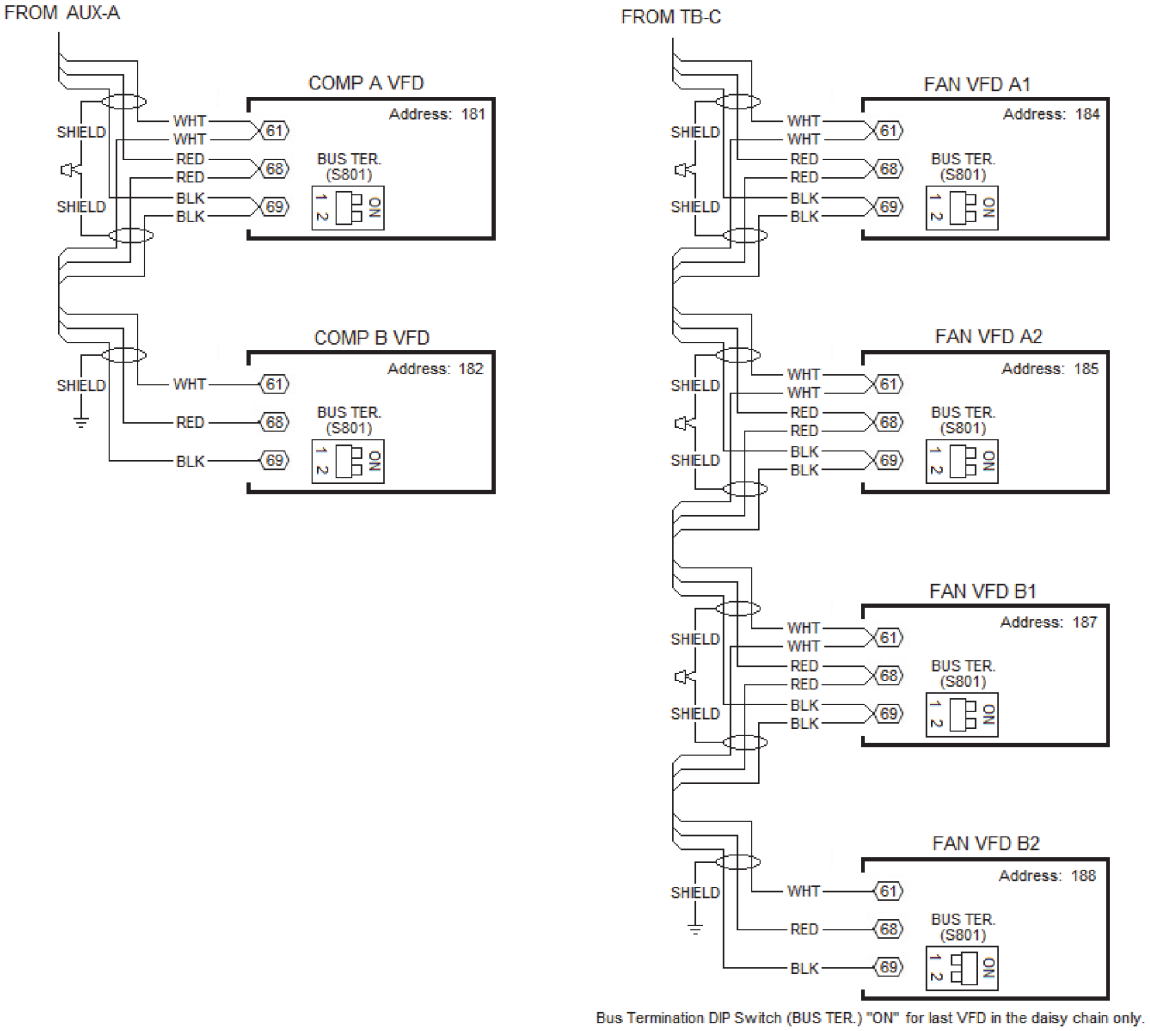


Fig. 88 — VFD Communication Wiring (Compressor A-B, Fan VFD A1-A2-B1-B2)

At each drive where the LEN wiring enters, connects, and exits to the next drive, the LEN shield must be connected together to form a continuous ground, but not grounded in the drive itself. At the last VFD of the daisy chain, the LEN shield must be grounded at the drive. To do this, strip the LEN wire cable to expose the shield under the jacket and pinch LEN wire cable within the clamp as shown in Fig. 89.

Additionally, it is recommended that the BUS TER (Bus Termination) DIP Switch be turned ON at the last VFD in the daisy chain. This switch is located behind the Local Control Panel (LCP). See Fig. 90.

COMPRESSOR DRIVES

Each unit is equipped with two VFDs to control the compressor operation, one for each circuit. The VFDs vary the operating speed of the compressors by changing the input power frequency over a programmed range. The compressor VFDs should not be operated below minimum programmed frequency, to ensure adequate oil return on the unit. See Fig. 91 for compressor VFD locations.

For all chillers, the VFDs are inside the control panel. The right and left doors allow access to the drives and displays.

CONDENSER FAN DRIVES

Chillers with M or H in the 10th position of the model number or with the Low Ambient option will have condenser fans on each circuit which are controlled by one or two VFDs. The fans on each circuit all operate together at the same preprogrammed frequency. Table 52 shows the standard tier fan sequences. Tables 53-55 show which condenser fans are controlled by each drive. See Tables 53-55 for typical fan VFD arrangement. See Fig. 92 for typical fan VFD location.

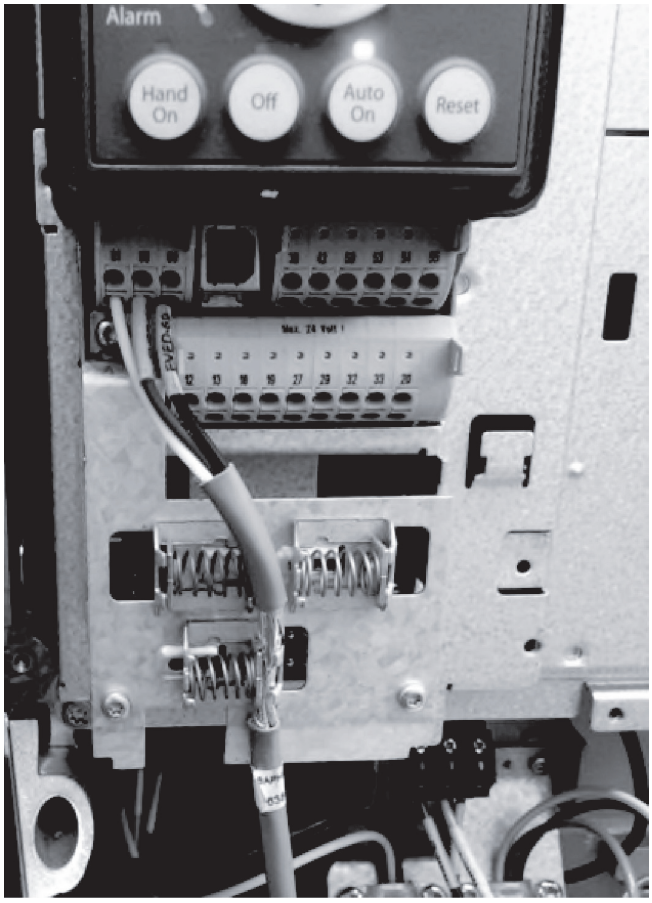


Fig. 89 — LEN Shield Grounding

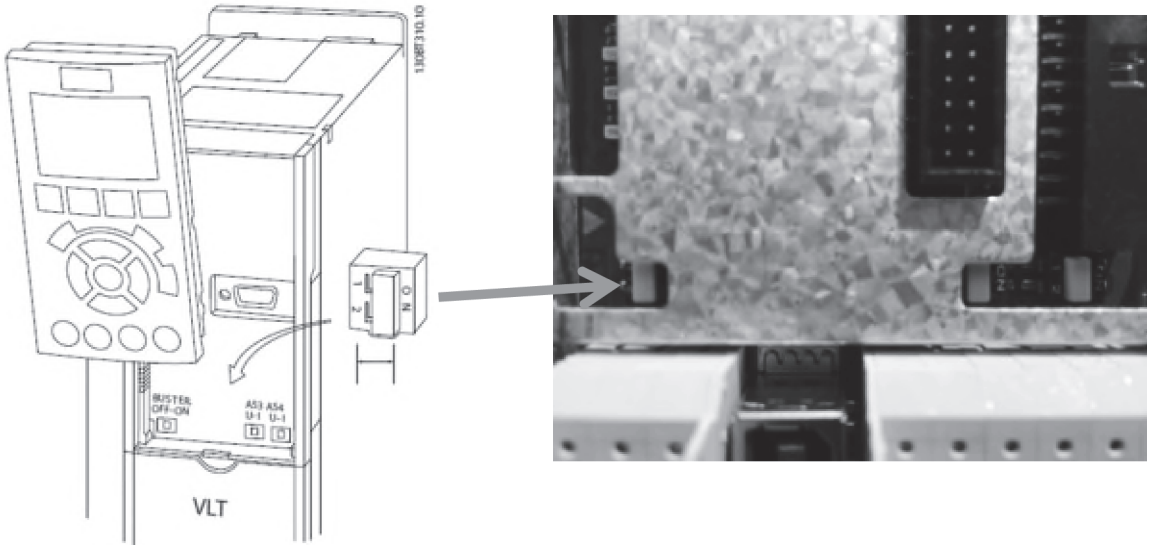


Fig. 90 — BUS TER Location

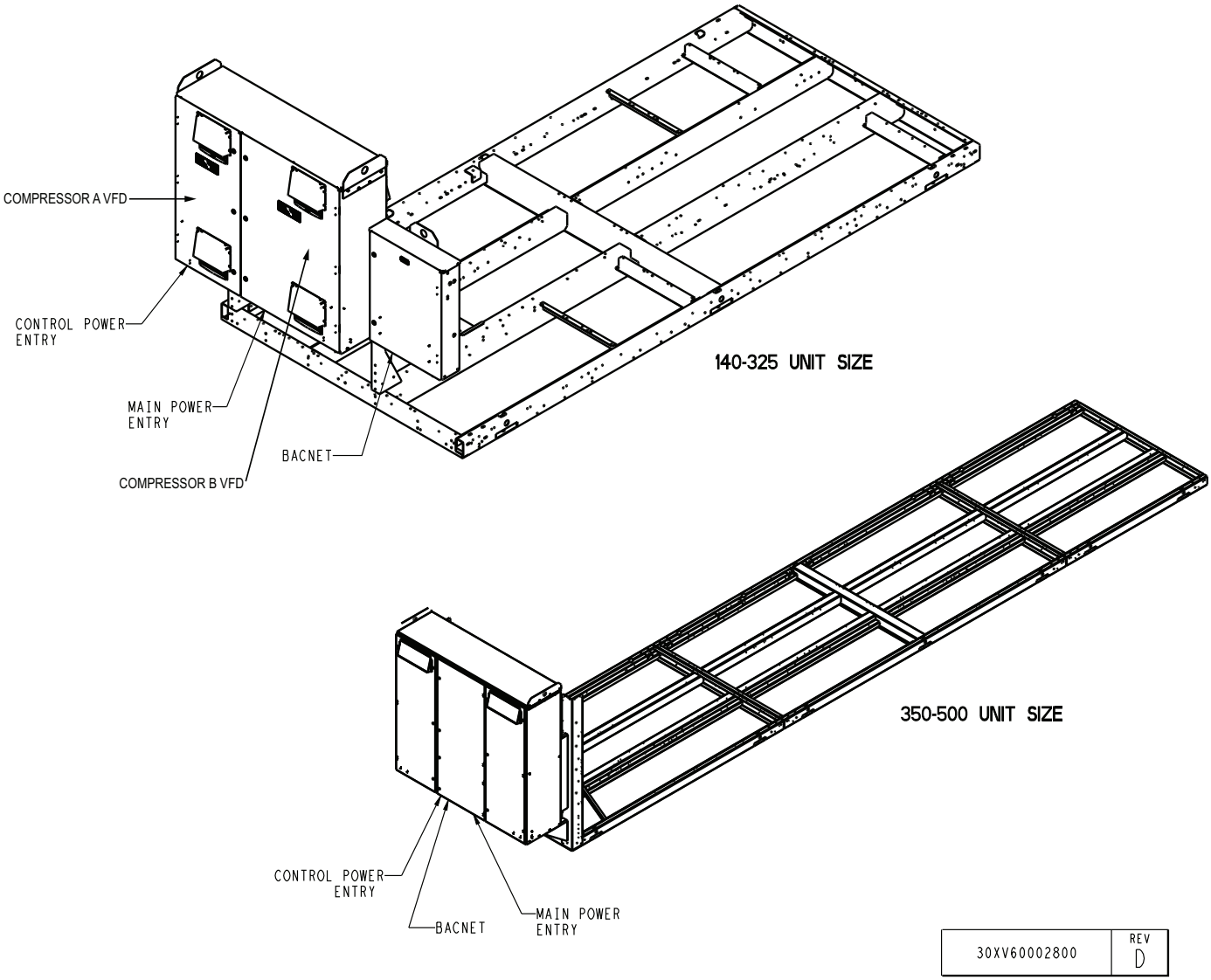
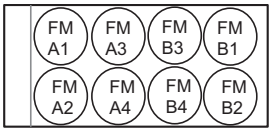


Fig. 91 — VFD Compressor Locations

Table 52 — Standard Tier Fan Sequence

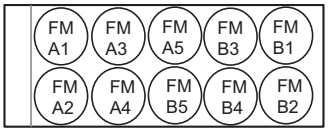
FANS

Control Box End



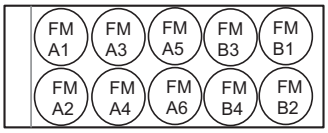
CKT	140-180						
A	FAN STAGE A	1	2	3	4		
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4		
	FAN POSITION	FMA1	FMA2	FMA3	FMA4		
B	FAN STAGE B	1	2	3	4		
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4		
	FAN POSITION	FMB1	FMB2	FMB3	FMB4		

Control Box End



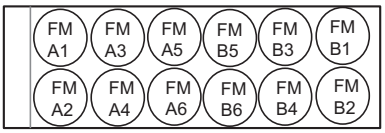
CKT	200						
A	FAN STAGE A	1	2	3	4	5	
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	
B	FAN STAGE B	1	2	3	4	5	
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	
	FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	

Control Box End



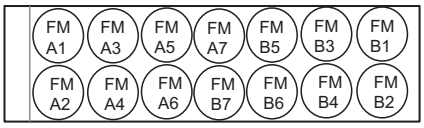
CKT	225						
A	FAN STAGE A	1	2	3	4	5	6
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	FAN STAGE B	1	2	3	4		
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4		
	FAN POSITION	FMB1	FMB2	FMB3	FMB4		

Control Box End



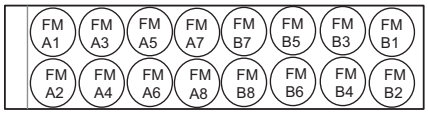
CKT	250-275						
A	FAN STAGE A	1	2	3	4	5	6
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	FAN STAGE B	1	2	3	4	5	6
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6
	FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6

Control Box End



CKT	300							
A	FAN STAGE A	1	2	3	4	5	6	7
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
B	FAN STAGE B	1	2	3	4	5	6	7
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7
	FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7

Control Box End



CKT	325							
A	FAN STAGE A	1	2	3	4	5	6	7
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7 | FMA8
B	FAN STAGE B	1	2	3	4	5	6	7
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7
	FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7 | FMB8

Table 52 — Standard Tier Fan Sequence (cont)

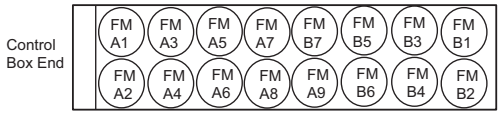
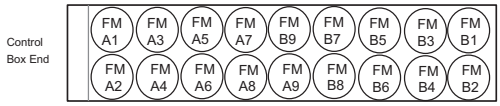
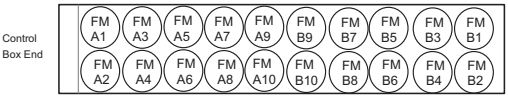
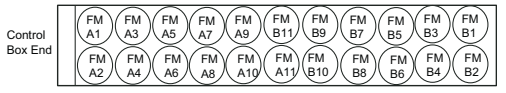
FANS	CKT											
		350										
	A	FAN STAGE A	1	2	3	4	5	6	7	8		
		CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7	FC A8		
		FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	
	B	FAN STAGE B	1	2	3	4	5	6	7			
		CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7			
		FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7			
		400										
	A	FAN STAGE A	1	2	3	4	5	6	7	8		
		CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7	FC A8		
		FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	
	B	FAN STAGE B	1	2	3	4	5	6	7	8		
		CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7	FC B8		
		FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	
		450										
	A	FAN STAGE A	1	2	3	4	5	6	7	8		
		CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7	FC A8		
		FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	FAN STAGE B	1	2	3	4	5	6	7	8		
		CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7	FC B8		
		FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
		500										
	A	FAN STAGE A	1	2	3	4	5	6		7		8
		CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6		FC A7		FC A8
		FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
	B	FAN STAGE B	1	2	3	4	5	6		7		8
		CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6		FC B7		FC B8
		FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10	FMB11

Table 53 — Condenser Fan Drive Arrangement, Standard Tier with Low Ambient Option

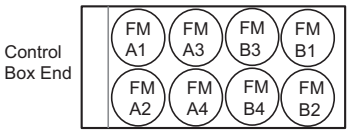
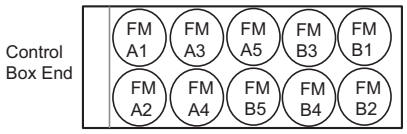
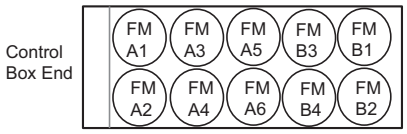
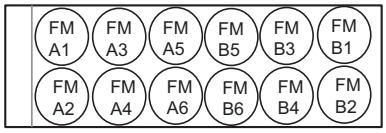
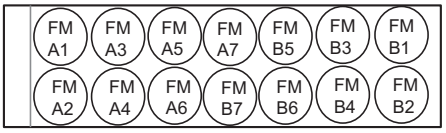
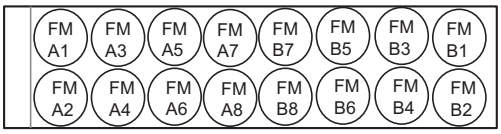
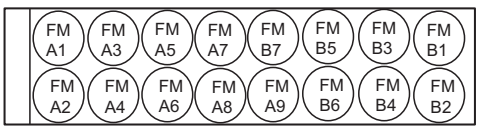
FANS	CKT								
		**30XV140, 160, 180 (ALL VOLTAGES)**							
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4			
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4			
		**30XV200 (208/230V)**							
	A	VFD Designation	A2		A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5		
	B	VFD Designation	B2		B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5		
		30XV200 (380-575V)							
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5		
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5		
		**30XV 225 (380-575V)**							
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4			
		**30XV 250,275 (380-575V)**							
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	
		**30XV300 (380-575V)**							
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7
		**30XV325 (380V-575V)**							
	A	VFD Designation	A2				A1		
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
	B	VFD Designation	B2				B1		
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8
		**30XV350 (380-575V)**							
	A	VFD Designation	A2				A1		
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7		

Table 53 — Condenser Fan Drive Arrangement, Standard Tier with Low Ambient Option (cont)

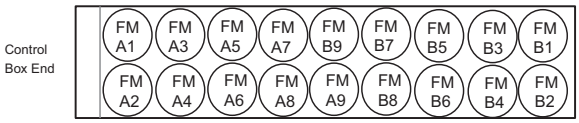
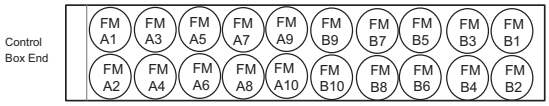
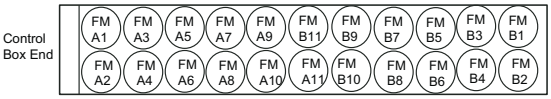
FANS	CKT		30XV400 (380-575V)									
	A	VFD Designation	A2				A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9
	B	VFD Designation	B2				B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9
			30XV450 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
			30XV500 (380-575V)									
	A	VFD Designation	A2					A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
	B	VFD Designation	B2					B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10	FMB11

Table 54 — Condenser Fan Drive Arrangement, Mid Tier

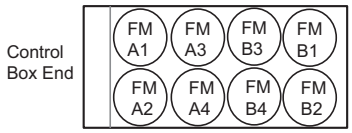
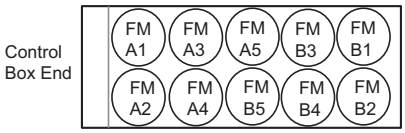
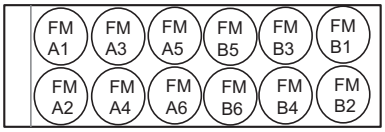
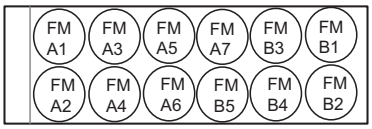
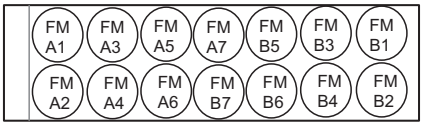
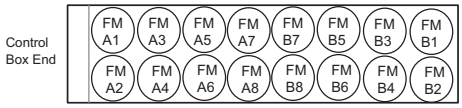
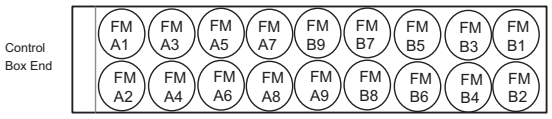
FANS	CKT		30XV 140 (ALL VOLTAGES)						
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4			
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4			
			30XV 160,180 (208/230V)						
	A	VFD Designation	A2		A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5		
	B	VFD Designation	B2		B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5		
			30XV 160,180 (380-575V)						
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5		
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5		
			30XV200 (208/230V)						
	A	VFD Designation	A2			A1			
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	
	B	VFD Designation	B2			B1			
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	
			30XV200 (380-575V)						
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	
			30XV225 (380V-575V)						
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5		
			30XV250,275 (380-575V)						
	A	VFD Designation	A1						
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7

Table 54 — Condenser Fan Drive Arrangement, Mid Tier (cont)

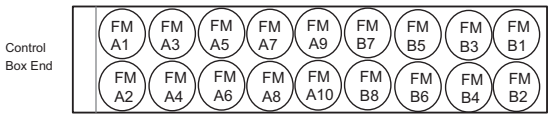
30XV300 (380V-575V)

FANS	CKT									
	A	VFD Designation	A2				A1			
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
	B	VFD Designation	B2				B1			
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8

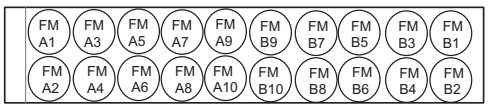
30XV325 (380-575V)

FANS	CKT									
	A	VFD Designation	A2				A1			
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9
	B	VFD Designation	B2				B1			
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9

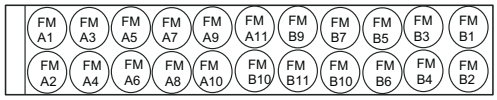
30XV350 (380V-575V)

FANS	CKT										
	A	VFD Designation	A2				A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8		

30XV400 (380-575V)

FANS	CKT										
	A	VFD Designation	A2				A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10

30XV450 (380V-575V)

FANS	CKT											
	A	VFD Designation	A2					A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
	B	VFD Designation	B2					B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10	FMB11

30XV500 (380-575V)

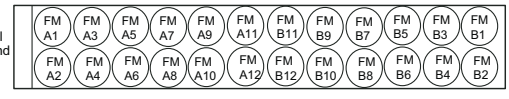
FANS	CKT												
	A	VFD Designation	A2						A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11	FMA12
	B	VFD Designation	B2						B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10	FMB11	FMB12

Table 55 — Condenser Fan Drive Arrangement, High Tier

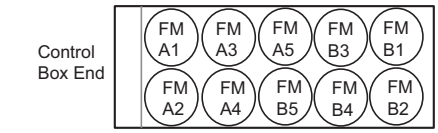
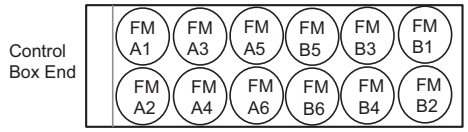
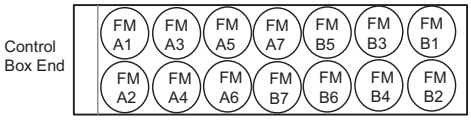
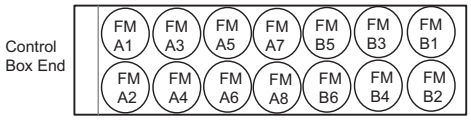
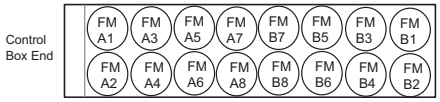
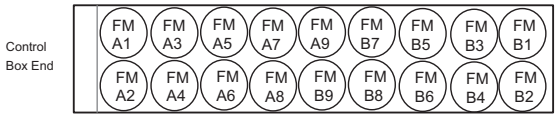
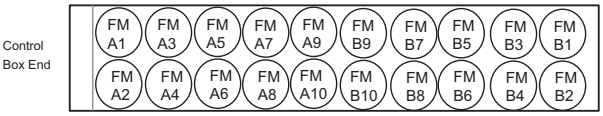
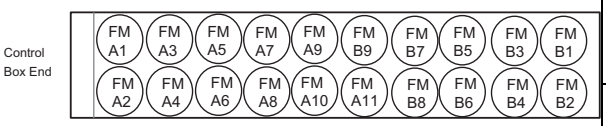
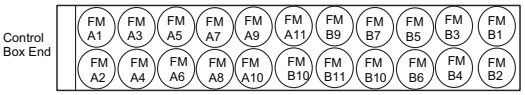
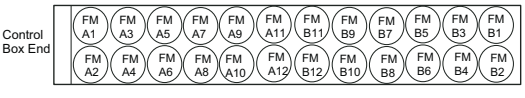
FANS	CKT							
		**30XV140 (208/230V)**						
	A	VFD Designation	A2		A1			
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	
	B	VFD Designation	B2		B1			
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	
		30XV140 (380-575V)						
	A	VFD Designation	A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	
	B	VFD Designation	B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	
		**30XV160,180 (208/230V)**						
	A	VFD Designation	A2			A1		
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
	B	VFD Designation	B2			B1		
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6
		30XV160,180 (380-575V)						
	A	VFD Designation	A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
	B	VFD Designation	B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6
		**30XV200 (208/230V)**						
	A	VFD Designation	A2			A1		
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
	B	VFD Designation	B2			B1		
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7
		30XV200 (380-575V)						
	A	VFD Designation	A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
	B	VFD Designation	B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7
		**30XV225 (380-575V)**							
	A	VFD Designation	A2				A1		
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
	B	VFD Designation	B1						
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6		

Table 55 — Condenser Fan Drive Arrangement, High Tier (cont)

FANS	CKT		30XV250, 275 (380V-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8		
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8		
			30XV300 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	
			30XV325 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
			30XV350 (380V-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMA11
			30XV400 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
			30XV450 (380-575V)									
	A	VFD Designation	A2					A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2					B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10

FANS	CKT		30XV250, 275 (380V-575V)									
			30XV300 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	
			30XV325 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
			30XV350 (380V-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMA11
			30XV400 (380-575V)									
	A	VFD Designation	A2				A1					
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2				B1					
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10
			30XV450 (380-575V)									
	A	VFD Designation	A2					A1				
		Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
	B	VFD Designation	B2					B1				
		Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10

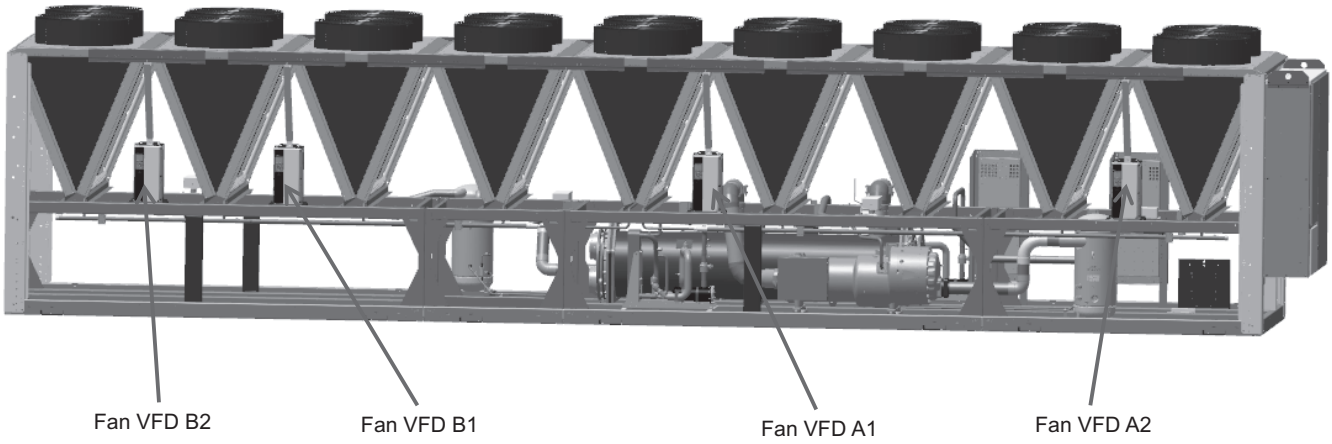


Fig. 92 — Typical Fan VFD Location

VFD DISPLAY NAVIGATION

IMPORTANT: The VFDs are configured through the Carrier Controller controls, and parameters should not be changed manually. This section is included for information and troubleshooting purposes only.

NOTE: The following instructions apply to the Danfoss VLT VFD.

The VFD can be operated in 2 ways:

- Graphical Local Control Panel (GLCP)
- RS-485 serial communication for PC connection

Graphical Local Control Panel

The LCD display is divided into 4 functional groups:

1. Graphical display with Status lines
2. Menu keys and indicator lights (LEDs) — selecting mode, changing parameters and switching between display functions
3. Navigation keys and indicator lights (LEDs)
4. Operation keys and indicator lights (LEDs)

See Fig. 93. The display is backlit with a total of 6 alpha-numeric lines. All data is displayed on the GLCP, which can show up to 5 operating variables while in Status mode.

The display lines (see items a-c in Fig. 93) function as follows:

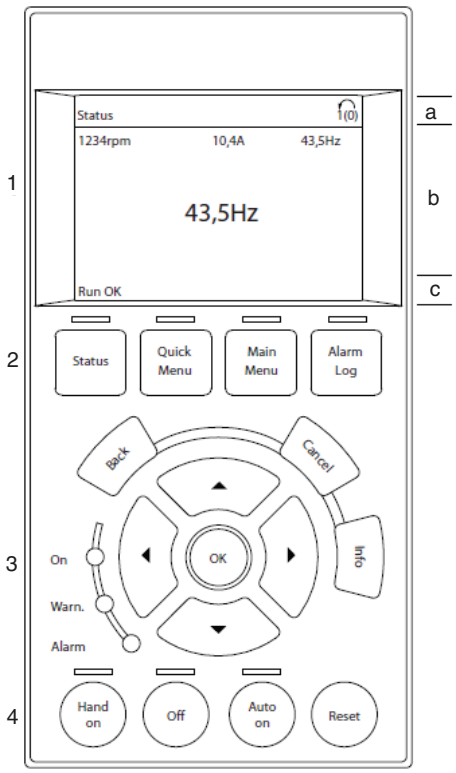
a. The status line at the top of the display shows VFD status when in [Status] mode or up to 2 variables when not in [Status] mode, or in case of an alarm or warning (alert).

b. The operator data line in the middle section shows up to 5 variables with their related units, regardless of status. In the case of an alarm or warning, the warning is shown instead of the variables.

c. The status line in the bottom section always shows the state of the VFD in Status mode.

The operator can toggle among 3 status read-out screens by touching the Status key. Several values or measurements can be linked to each of the displayed operating variables. The values/measurements to be displayed can be defined via parameter 0-20 Display Line 1.1 Small, 0-21 Display Line 1.2 Small, 0-22 Display Line 1.3 Small, 0-23 Display Line 2 Large and 0-24 Display Line 3 Large. The settings are accessed by selecting ***QUICK MENU → Q3 Function Setups → Q3-1 General Settings → Q3-13 Display Settings***. Each value/measurement readout parameter selected in 0-20 Display Line 1.1 Small to 0-24 Display Line 3 Large has its own scale and number of digits after a possible decimal point. Larger numeric values are displayed with fewer digits after the decimal point. For example, a current readout might be 5.25 A,15.2 A, or 105 A.

Status Display I is standard after start-up or initialization. Touch [INFO] to obtain information about the value/measurement linked to the displayed operating variables 1.1, 1.2, 1.3, 2, and 3. See the operating variables shown in the display in Fig. 94. Variables 1.1, 1.2, and 1.3 are shown in small size. Variables 2 and 3 are shown in medium size.



LEGEND

1 — Graphical display with status lines
2 — Menu keys and indicator lights
3 — Navigation keys and indicator lights
4 — Operation keys and indicator lights
a — Status line
b — Operator data lines
c — Status messages

Fig. 93 — VFD Graphical Local Control Panel

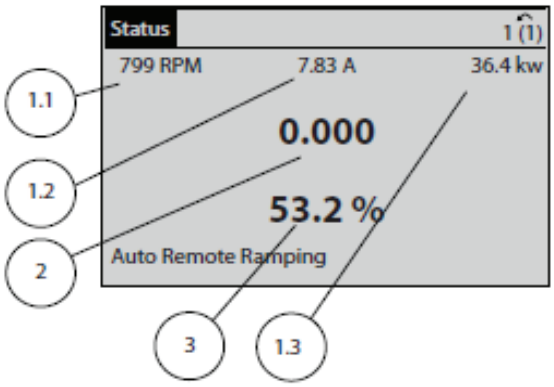


Fig. 94 — Status Display I

Status Display II shows the operating variables 1.1, 1.2, 1.3 and 2. In the example shown in Fig. 95, Speed, Motor Current, Motor Power, and Frequency are selected as variables in the first and second lines. Variables 1.1, 1.2, and 1.3 are shown in small size. Variable 2 is shown in large size.

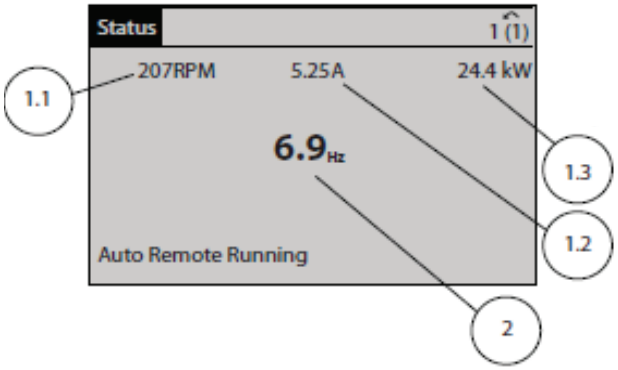


Fig. 95 — Status Display II

Status Display III shows events and actions of the Smart Logic Control. Figure 96 shows an example.

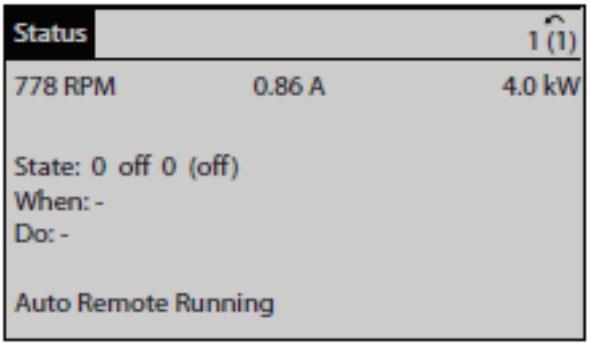


Fig. 96 — Status Display III

The operator can adjust the display brightness by touching Status and ▲ to darken the display or ▼ to lighten it.

Indicator lights (LEDs) indicate whether the unit is on and if there are any warning or alarm conditions:

- Green LED (On): Control section is working. The On LED is activated when the VFD receives power from mains voltage, a DC bus terminal, or an external 24 V supply. At the same time, the back light is on.
- Yellow LED (Warn.): Indicates a warning.
- Flashing Red LED (Alarm): Indicates an alarm.

The warning and/or alarm LEDs light up if certain threshold values are exceeded. A status message and alarm text also appear on the control panel. See Fig. 97.

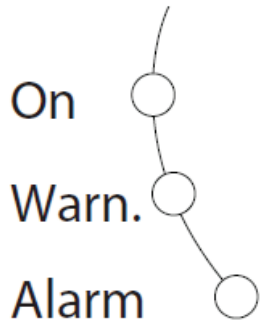


Fig. 97 — Indicator Lights

The menu keys below the display and indicator lights include Status, Quick Menu, Main Menu, and Alarm Log. The Status menu indicates the status of the frequency converter and/or the motor. Three display modes are available (see Fig. 94-96). Use the Status key for selecting mode of display or for changing back to display mode from the Quick Menu Mode, the Main Menu Mode, or the Alarm Log mode. The operator can also use the Status key to toggle between single or double read-out mode.

The Quick Menu key allows quick set-up of the frequency converter. The most common HVAC functions can be programmed here. Menu options include:

- My Personal Menu
- Quick Set-up
- Function Set-up
- Changes Made
- Loggings

The Function Set-up option provides quick and easy access to all parameters required for most HVAC applications. Among other features it also includes parameters for selecting which variables to display on the local control panel, digital preset speeds, scaling of analog references, closed loop single-zone and multi-zone applications, and specific functions related to fans, pumps and compressors.

The Quick Menu parameters can be accessed immediately unless a password has been created via 0-60 Main Menu Password, 0-61 Access to Main Menu without Password, 0-65 Personal Menu Password, or 0-66 Access to Personal Menu without Password. It is possible to switch directly between Quick Menu mode and Main Menu mode.

The Main Menu key is used for programming all parameters. These can be accessed immediately unless a password has been created via 0-60 Main Menu Password, 0-61 Access to Main Menu without Password, 0-65 Personal Menu Password, or 0-66 Access to Personal Menu without Password. For most HVAC applications it is not necessary to access the Main Menu parameters but instead use the Quick Menu. Quick Set-up and Function Set-up provides the simplest and quickest access to the typical required parameters.

It is possible to switch directly between Main Menu mode and Quick Menu mode. The parameter shortcut can be carried out by touching the Main Menu key for 3 seconds. The parameter shortcut allows direct access to any parameter.

Touch Alarm Log to display a list of the 10 latest alarms (numbered A1-A10). To obtain additional details about an alarm, touch the navigation keys to reach the alarm number and touch OK. Information is displayed about the condition of the frequency converter before it enters the alarm mode. The Alarm Log key also provides access to a Maintenance log.

At the middle part of the local control panel, the Back key reverts to the previous step or layer in the navigation structure. The Cancel key cancels the last change or command as long as the display has not changed. The Info Key displays information about a command, parameter, or function in any display window, providing detailed information when needed. The four arrow keys are used among menu options by moving the cursor in the direction indicated. Touch OK to select a parameter marked by the cursor or to enable a parameter change.

Operation keys for local control are found at the bottom of the control panel (see Fig. 93). Hand On enables control of the frequency converter via the local control panel. Hand On also starts the motor, and it is possible to enter the motor speed data by means of the navigation keys. The key can be selected as [1] Enable or [0] Disable via 0-40 Hand On Key on the local control panel.

NOTE: External stop signals activated by means of control signals or a serial bus override a start command via the local control panel.

The Off key stops the connected motor. If no external stop function is selected and Off key is inactive, the motor can only be stopped by disconnecting the mains supply.

Auto On enables the frequency converter to be controlled via the control terminals and/or serial communication. When a start signal is applied on the control terminals and/or the bus, the frequency converter starts.

NOTE: An active HAND-OFF-AUTO signal via digital inputs has higher priority than the local control keys Hand On –Auto On.

The Reset key resets the frequency converter after an alarm (trip).

VFD STATUS

The current operating status and conditions of the VFDs can be viewed with the Carrier Controller controls.

Compressor VFD Status

To view the operating status of the compressor VFDs, follow the Carrier Controller path: ***Main Menu → Maintenance Menu → VLT Drive Maintenance***. This menu shows current operating conditions for both drives: Drive Power, Amps, Voltage, Speed, Frequency, Torque, DC Link Voltage, Heat Sink Temperature, Control Card Temperature, Heater Status, and Communication Status.

Fan VFD Status

To view the operating status of the fan VFDs, follow the Carrier Controller path: ***Main Menu → Maintenance Menu → Fan Drive Maintenance***. This menu shows current operating conditions for both drives: Drive Power, Amps, Voltage, Speed, Frequency, Torque, DC Link Voltage, Heat Sink Temperature and Control Card Temperature. To view the communication status of the fan VFDs, use the Carrier Controller (***Main Menu → Maintenance Menu → Fan Drive Addressing***).

VFD CONFIGURATION TABLES

The configuration parameters for the VFDs are stored in the control system and are automatically sent to the drives when addressed. The parameters should not need to be changed, but are included as a reference for verification and troubleshooting. See Tables 56-138 for compressor and fan VFD parameters.

Table 56 — VFD Parameters, Standard Plus Tier, for 208/230 V/60 Hz Units, 30XV160-200

PARAMETER		SETTING DESCRIPTION	30XV160				30XV180				30XV200			
NO.	DESCRIPTION		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	9.2	—	9.2	—	6.9	4.6	6.9	4.6
1-22	Motor Volts	Motor Dependent	208	—	208	—	208	—	208	—	208	208	208	208
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	47.6	—	47.6	—	47.6	—	47.6	—	35.7	23.8	35.7	23.8
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40[36]	Relay 1	Control Word Bit 11	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40[5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port=RS485	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 57 — VFD Parameters, Medium Tier, for 208/230 V/60 Hz Units, 30XV140-200

PARAMETER		SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
NO.	DESCRIPTION		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	6.9	4.6	6.9	4.6	6.9	4.6	6.9	4.6	6.9	6.9	6.9	6.9
1-22	Motor Volts	Motor Dependent	208	—	208	—	208	208	208	208	208	208	208	208	208	208	208	208
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	47.6	—	47.6	—	35.7	23.8	35.7	23.8	35.7	23.8	35.7	23.8	35.7	35.7	35.7	35.7
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40[36]	Relay 1	Control Word Bit 11	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40[5]	Relay 2	Running	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	—	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2		2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0		0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6		6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 58 — VFD Parameters, High Tier, for 208/230 V/60 Hz Units, 30XV140-200

PARAMETER		SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
NO.	DESCRIPTION		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	6.9	4.6	6.9	4.6	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	9.2	6.9	9.2	6.9
1-22	Motor Volts	Motor Dependent	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	35.7	23.8	35.7	23.8	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	47.6	35.7	47.6	35.7
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40[36]	Relay 1	Control Word Bit 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40[5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 59 — VFD Parameters, Standard Plus Tier, for 380 V/60 Hz Units, 30XV140-200

PARAMETER		SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
NO.	DESCRIPTION		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	30.4	—	30.4	—	30.4	—	30.4	—	38	—	38	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40[36]	Relay 1	Control Word Bit 11	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40[5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 60 — VFD Parameters, Standard Plus Tier, for 380 V/60 Hz Units, 30XV225-300

PARAMETER		SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
NO.	DESCRIPTION		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	1
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	13.8
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	60
1-24	Motor Amperage	Size Dependent	45.6	—	30.4	—	45.6	—	45.6	—	45.6	—	45.6	—	53.2	—	53.2	45.6
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	1
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	1
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
5-40[36]	Relay 1	Control Word Bit 11	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
5-40[5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
8-02	Control Source	FC port=RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA

Table 61 — VFD Parameters, Standard Plus Tier, for 380 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	30.4	30.4	30.4	30.4	38	30.4	53.2	—	38	30.4	38	30.4	45.6	30.4	45.6	30.4	45.6	38	45.6	38
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 62 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	30.4	—	30.4	—	38	—	38	—	38	—	38	—	45.6	—	45.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 63 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	53.2	—	38	—	53.2	—	53.2	—	53.2	—	53.2	—	30.4	30.4	30.4	30.4
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 64 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	38	30.4	38	30.4	45.6	30.4	30.4	30.4	45.6	30.4	45.6	30.4	45.6	38	45.6	38	45.6	45.6	45.6	45.6
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 65 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	38	—	38	—	45.6	—	45.6	—	45.6	—	45.6	—	53.2	—	53.2	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 66 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	30.4	30.4	45.6	—	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	38	30.4	38	30.4
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 67 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	45.6	30.4	45.6	30.4	45.6	38	38	30.4	45.6	38	45.6	38	45.6	45.6	45.6	45.6	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 68 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	30.4	—	30.4	—	30.4	—	30.4	—	38	—	38	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 69 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	45.6	—	30.4	—	45.6	—	45.6	—	45.6	—	45.6	—	53.2	—	53.2	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 70 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	30.4	30.4	30.4	30.4	38	30.4	53.2	—	38	30.4	38	30.4	45.6	30.4	45.6	30.4	45.6	38	45.6	38
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 71 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	30.4	—	30.4	—	38	—	38	—	38	—	38	—	45.6	—	45.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 72 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	53.2	—	38	—	53.2	—	53.2	—	53.2	—	53.2	—	30.4	30.4	30.4	30.4
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA	NA	NA	NA	NA

Table 73 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	38	30.4	38	30.4	45.6	30.4	30.4	30.4	45.6	30.4	45.6	30.4	45.6	38	45.6	38	45.6	45.6	45.6	45.6
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 74 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	38	—	38	—	45.6	—	45.6	—	45.6	—	45.6	—	53.2	—	53.2	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 75 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	30.4	30.4	45.6	—	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	38	30.4	38	30.4
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 76 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	45.6	30.4	45.6	30.4	45.6	38	38	30.4	45.6	38	45.6	38	45.6	45.6	45.6	45.6	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 77 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	460	—	460	—	460	—	460	—	460	—	460	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	24.4	—	24.4	—	24.4	—	24.4	—	30.5	—	30.5	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 78 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	460	—	460	—	460	—	460	—	460	—	460	—	460	—	460	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	36.6	—	24.4	—	36.6	—	36.6	—	36.6	—	36.6	—	42.7	—	42.7	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 79 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	460	460	460	460	460	460	460	—	460	460	460	460	460	460	460	460	460	460	460	460
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	24.4	24.4	24.4	24.4	30.5	24.4	42.7	—	30.5	24.4	30.5	24.4	36.6	24.4	36.6	24.4	36.6	30.5	36.6	30.5
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 80 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	460	—	460	—	460	—	460	—	460	—	460	—	460	—	460	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	24.4	—	24.4	—	30.5	—	30.5	—	30.5	—	30.5	—	36.6	—	36.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 81 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	460	—	460	—	460	—	460	—	460	—	460	—	460	460	460	460
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	42.7	—	30.5	—	42.7	—	42.7	—	42.7	—	42.7	—	24.4	24.4	24.4	24.4
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 82 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	30.5	24.4	30.5	24.4	36.6	24.4	24.4	24.4	36.6	24.4	36.6	24.4	36.6	30.5	36.6	30.5	36.6	36.6	36.6	36.6
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 83 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	460	—	460	—	460	—	460	—	460	—	460	—	460	—	460	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	30.5	—	30.5	—	36.6	—	36.6	—	36.6	—	36.6	—	42.7	—	42.7	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 84 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	460	460	460	—	460	460	460	460	460	460	460	460	460	460	460	460
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	24.4	24.4	36.6	—	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	30.5	24.4	30.5	24.4
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 85 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	36.6	24.4	36.6	24.4	36.6	30.5	30.5	24.4	36.6	30.5	36.6	30.5	36.6	36.6	36.6	36.6	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 86 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	575	—	575	—	575	—	575	—	575	—	575	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	20.8	—	20.8	—	20.8	—	20.8	—	26	—	26	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 87 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	575	—	575	—	575	—	575	—	575	—	575	—	575	—	575	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	31.2	—	20.8	—	31.2	—	31.2	—	31.2	—	31.2	—	36.4	—	36.4	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 88 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	575	575	575	575	575	575	575	—	575	575	575	575	575	575	575	575	575	575	575	575
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	20.8	20.8	20.8	20.8	26	20.8	36.4	—	26	20.8	26	20.8	31.2	20.8	31.2	20.8	31.2	26	31.2	26
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 89 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	575	—	575	—	575	—	575	—	575	—	575	—	575	—	575	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	20.8	—	20.8	—	26	—	26	—	26	—	26	—	31.2	—	31.2	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 90 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	575	—	575	—	575	—	575	—	575	—	575	—	575	575	575	575
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	36.4	—	26	—	36.4	—	36.4	—	36.4	—	36.4	—	20.8	20.8	20.8	20.8
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 91 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	26	20.8	26	20.8	31.2	20.8	20.8	20.8	31.2	20.8	31.2	20.8	31.2	26	31.2	26	31.2	31.2	31.2	31.2
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 92 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	575	—	575	—	575	—	575	—	575	—	575	—	575	—	575	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	26	—	26	—	31.2	—	31.2	—	31.2	—	31.2	—	36.4	—	36.4	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 93 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	575	575	575	—	575	575	575	575	575	575	575	575	575	575	575	575
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	20.8	20.8	31.2	—	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	26	20.8	26	20.8
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 94 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	31.2	20.8	31.2	20.8	31.2	26	26	20.8	31.2	26	31.2	26	31.2	31.2	31.2	31.2	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 95 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 96 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	46.8	—	31.2	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 97 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	31.2	31.2	39	31.2	54.6	—	39	31.2	39	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 98 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	31.2	—	31.2	—	39	—	39	—	39	—	39	—	46.8	—	46.8	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 99 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	54.6	—	39	—	54.6	—	54.6	—	54.6	—	54.6	—	31.2	31.2	31.2	31.2
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 100 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	39	31.2	39	31.2	46.8	31.2	31.2	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 101 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	39	—	39	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 102 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	46.8	—	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	39	31.2	39	31.2
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 103 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	46.8	31.2	46.8	31.2	46.8	39	39	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 104 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 105 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	46.8	—	31.2	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 106 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	31.2	31.2	39	31.2	54.6	—	39	31.2	39	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 107 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	31.2	—	31.2	—	39	—	39	—	39	—	39	—	46.8	—	46.8	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 108 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	54.6	—	39	—	54.6	—	54.6	—	54.6	—	54.6	—	31.2	31.2	31.2	31.2
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 109 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	39	31.2	39	31.2	46.8	31.2	31.2	31.2	46.8	31.2	46.8	31.2	46.8	39	47	39	46.8	46.8	46.8	46.8
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 110 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	39	—	39	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 111 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	46.8	—	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	39	31.2	39	31.2
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 112 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	46.8	31.2	46.8	31.2	46.8	39	39	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 113 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 114 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	46.8	—	31.2	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 115 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	31.2	31.2	39	31.2	54.6	—	39	31.2	39	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 116 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	31.2	—	31.2	—	39	—	39	—	39	—	39	—	46.8	—	46.8	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 117 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	54.6	—	39	—	54.6	—	54.6	—	54.6	—	54.6	—	31.2	31.2	31.2	31.2
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 118 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	39	31.2	39	31.2	46.8	31.2	31.2	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 119 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	39	—	39	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 120 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	46.8	—	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	39	31.2	39	31.2
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 121 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	46.8	31.2	46.8	31.2	46.8	39	39	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 122 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	NA	NA	NA	NA	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	NA	NA	NA	NA	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	NA	NA	NA	NA	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	NA	NA	NA	NA	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	NA	NA	NA	NA	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	NA	NA	NA	NA	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	NA	NA	NA	NA	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	NA	NA	NA	NA	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	NA	NA	NA	NA	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	NA	NA	NA	NA	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	NA	NA	NA	NA	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	NA	NA	NA	NA	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	NA	NA	NA	NA	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 123 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	13.8	—	9.2	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	46.8	—	31.2	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 124 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	9.2	9.2	11.5	9.2	16.1	—	11.5	9.2	11.5	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	31.2	31.2	39	31.2	54.6	—	39	31.2	39	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 125 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	9.2	—	9.2	—	11.5	—	11.5	—	11.5	—	11.5	—	13.8	—	13.8	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	31.2	—	31.2	—	39	—	39	—	39	—	39	—	46.8	—	46.8	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 126 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
1-20	Motor kW	Size Dependent	16.1	—	11.5	—	16.1	—	16.1	—	16.1	—	16.1	—	9.2	9.2	9.2	9.2
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
1-24	Motor Amperage	Size Dependent	54.6	—	39	—	54.6	—	54.6	—	54.6	—	54.6	—	31.2	31.2	31.2	31.2
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	20	20	20
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	60	60	60
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	150	150	150
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	1	1	1
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	6	6	6
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	NA	NA	NA

Table 127 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	11.5	9.2	11.5	9.2	13.8	9.2	9.2	9.2	13.8	9.2	13.8	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	39	31.2	39	31.2	46.8	31.2	31.2	31.2	46.8	31.2	46.8	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 128 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV140-200

Parameter		Setting Description	30XV140				30XV160				30XV180				30XV200			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-03	Torque Characteristics	Variable Torque	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	11.5	—	11.5	—	13.8	—	13.8	—	13.8	—	13.8	—	16.1	—	16.1	—
1-22	Motor Volts	Motor Dependent	380	—	380	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	39	—	39	—	46.8	—	46.8	—	46.8	—	46.8	—	54.6	—	54.6	—
1-25	Motor rpm	Size Dependent	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-79	Comp Start Max Time To Trip	5s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
1-80	Function At Stop	Coast	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
3-03	Max Reference	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	20	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
4-10	Motor Speed Direct	Clockwise	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	60	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	150	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	110	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [36]	Relay 1	Control Word Bit 1	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
5-40 [5]	Relay 2	Running	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
8-01	Control Site	Digital & Control Word	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port= RS485	1	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	10	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	2	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	6	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-10	Main Failure	Alarm	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-11	Mains Voltage at Mains Fault	Voltage	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-50	RFI Filter	On	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-60	Function at Overtemp	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—
14-61	Inverter Overload	Derate	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—	NA	—

Table 129 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV225-300

Parameter		Setting Description	30XV225				30XV250				30XV275				30XV300			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-20	Motor kW	Size Dependent	9.2	9.2	13.8	—	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	11.5	9.2	11.5	9.2
1-22	Motor Volts	Motor Dependent	380	380	380	—	380	380	380	380	380	380	380	380	380	380	380	380
1-23	Motor Frequency	Motor Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-24	Motor Amperage	Size Dependent	31.2	31.2	46.8	—	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	39	31.2	39	31.2
1-25	Motor rpm	Size Dependent	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-71	Compressor Start Delay	0s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
3-13	Type Reference	Remote	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-15	SRC ref#1	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-42	Ramp Down	100s	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
3-82	Starting Ramp Time	3s	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-14	Motor Speed High Limit	Size Dependent	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-16	Torque Limit	Size Dependent	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port= RS485	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-00	Pattern [AVM]	60AVM	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-01	Switching Frequency	3kHz	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 130 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV325-500

Parameter		Setting Description	30XV325				30XV350				30XV400				30XV450				30XV500			
No.	Description		Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2	Fan A1	Fan A2	Fan B1	Fan B2
0-40	Hand On Button	Disabled	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-03	Torque Characteristics	Variable Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
1-20	Motor kW	Size Dependent	13.8	9.2	13.8	9.2	13.8	11.5	11.5	9.2	13.8	11.5	13.8	11.5	13.8	13.8	13.8	13.8	NA	NA	NA	NA
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	NA	NA	NA	NA
1-23	Motor Frequency	Motor Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
1-24	Motor Amperage	Size Dependent	46.8	31.2	46.8	31.2	46.8	39	39	31.2	46.8	39	46.8	39	46.8	46.8	46.8	46.8	NA	NA	NA	NA
1-25	Motor rpm	Size Dependent	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	NA	NA	NA	NA
1-71	Compressor Start Delay	0s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-73	Flying Restart	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-78	Starting Frequency	Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-79	Comp Start Max Time To Trip	5s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-80	Function At Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-02	Min Ref	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-03	Max Reference	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
3-13	Type Reference	Remote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
3-41	Ramp Up	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-42	Ramp Down	100s	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	NA	NA	NA	NA
3-82	Starting Ramp Time	3s	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-12	Motor Speed Low Limit	Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
4-14	Motor Speed High Limit	Size Dependent	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	NA	NA	NA	NA
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	NA	NA	NA	NA
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	NA	NA	NA	NA
4-19	Max Output Frequency	Size Dependent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-12	DI #27	Coast Inverse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
5-19	DI#37 Safe Stop	Safe Stop Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [36]	Relay 1	Control Word Bit 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5-40 [5]	Relay 2	Running	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
8-02	Control Source	FC port= RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	NA	NA	NA	NA
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	NA	NA	NA	NA
8-04	Time Out Function	Stop And Trip	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	NA	NA	NA	NA
14-00	Pattern [AVM]	60AVM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	NA	NA	NA	NA
14-03	Overmodulation	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-10	Main Failure	Alarm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-11	Mains Voltage at Mains Fault	Voltage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-50	RFI Filter	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-60	Function at Overtemp	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-61	Inverter Overload	Derate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 131 — 30XV IM Compressor Common VFD Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
0-40	Hand On Button	Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-03	Torque Characteristics	Compressor Torque	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-20	Motor kW	Size Dependent	97	97	97	97	160	97	160	160	160	160	242	160	242	242	242
1-22	Motor Volts	Motor Dependent	Refer to Table 132 for specific voltage														
1-23	Motor Frequency	Motor Dependent	105	105	105	105	98	105	98	98	98	98	95	98	95	95	95
1-24	Motor Amperage	Size Dependent	Refer to Table 132 for specific voltage														
1-25	Motor rpm	Size Dependent	6240	6240	6240	6240	5830	6240	5830	5830	5830	5830	5650	5830	5650	5650	5650
1-71	Compressor Start Delay	0s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
1-79	Comp Start Max Time to Trip	5s	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1-80	Function at Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-03	Max Reference	Size Dependent	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
3-13	Type Reference	Remote	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-42	Ramp Down	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-82	Starting Ramp Time	3s	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
4-14	Motor Speed High Limit	Size Dependent	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	76	86	96	106	84	94	81	86	91	99	76	91	76	85	95
5-12	DI #27	Coast Inverse	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5-19	DI#37 Safe Stop	Safe Stop Alarm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5-40[36]	Relay 1	Control Word Bit 11	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5-40[5]	Relay 2	Running	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
14-01	Switching Frequency	3kHz	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14-03	Overmodulation	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-10	Main Failure	Alarm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-11	Mains Voltage at Mains Fault	Voltage	Refer to Table 132 for specific voltage														
14-50	RFI Filter	On	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-60	Function at Overtemp	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-61	Inverter Overload	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 132 — 30XV IM Compressor Tier and Voltage Specific Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
208/230V-60Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	323	387	451	460	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	373	436	443	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
High Tier																	
1-24	Motor Amperage	Size Dependent	313	337	390	429	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Tiers																	
1-24	Motor Amperage	Size Dependent	285	327	458	411	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14-11	Mains Voltage at Mains Fault	Voltage	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Voltage: 380V-60Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	177	211	246	252	354	225	333	360	365	399	548	397	516	599	629
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	204	239	243	338	217	327	340	358	394	534	387	493	592	638
High Tier																	
1-24	Motor Amperage	Size Dependent	171	184	214	235	320	205	303	329	338	367	483	350	482	582	611
All Tiers																	
1-24	Motor Amperage	Size Dependent	156	180	251	225	307	197	293	316	329	360	459	333	482	521	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-60HZ																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	177	211	246	252	354	226	333	360	365	399	548	397	516	599	629
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	204	239	243	338	217	327	340	358	394	534	387	493	592	638
High Tier																	
1-24	Motor Amperage	Size Dependent	171	184	214	235	320	205	303	329	338	367	483	350	482	582	611
All Tiers																	
1-24	Motor Amperage	Size Dependent	156	180	251	225	307	197	293	316	329	360	459	333	482	521	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 460V-60Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	146	174	204	208	292	187	273	296	302	330	452	327	425	494	519
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	168	197	200	279	178	269	280	296	324	441	319	407	489	526
High Tier																	
1-24	Motor Amperage	Size Dependent	141	151	175	194	263	168	251	270	279	303	398	289	397	480	504
All Tiers																	
1-24	Motor Amperage	Size Dependent	129	147	171	185	253	163	242	260	270	297	405	275	398	431	N/A
14-11	Mains Voltage at Mains Fault	Voltage	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345
Voltage: 575V-60Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	146	174	204	208	292	187	273	296	302	330	452	327	425	494	519
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	168	197	200	279	178	269	280	296	324	441	319	407	489	526
High Tier																	
1-24	Motor Amperage	Size Dependent	141	151	175	194	263	168	251	270	279	303	398	289	397	480	504
All Tiers																	
1-24	Motor Amperage	Size Dependent	129	147	171	185	253	163	242	260	270	297	380	275	398	431	N/A
14-11	Mains Voltage at Mains Fault	Voltage	489	489	489	489	489	489	489	489	489	489	489	489	489	489	489

Table 132 — 30XV IM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 380V-50Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	208	245	249	346	322	334	347	367	402	546	395	503	605	650
High Tier																	
1-24	Motor Amperage	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
All Tiers																	
1-24	Motor Amperage	Size Dependent	160	184	256	231	314	201	300	323	336	368	469	340	492	533	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-50Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
High Tier																	
1-24	Motor Amperage	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
All Tiers																	
1-24	Motor Amperage	Size Dependent	160	184	256	231	314	201	300	323	336	368	469	340	492	533	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 415V-50Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
High Tier																	
1-24	Motor Amperage	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
All Tiers																	
1-24	Motor Amperage	Size Dependent	160	184	256	231	314	201	300	323	336	368	469	340	492	533	N/A
14-11	Mains Voltage at Mains Fault	Voltage	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Voltage: 440V-50Hz																	
Standard Tier																	
1-22	Motor Volts	Motor Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Standard Plus Tier																	
1-24	Motor Amperage	Size Dependent	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
High Tier																	
1-24	Motor Amperage	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
All Tiers																	
1-24	Motor Amperage	Size Dependent	160	184	256	231	314	201	300	323	336	368	469	340	492	533	N/A
14-11	Mains Voltage at Mains Fault	Voltage	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352

Table 133 — 30XV Data Center IM Compressor Common VFD Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
0-40	Hand On Button	Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-03	Torque Characteristics	Compressor Torque	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-20	Motor kW	Size Dependent	97	97	97	97	160	97	160	160	160	160	242	160	242	242	242
1-22	Motor Volts	Motor Dependent	Refer to Table 134 for specific voltage														
1-23	Motor Frequency	Motor Dependent	105	105	105	105	98	105	98	98	98	98	95	98	95	95	95
1-24	Motor Amperage	Size Dependent	Refer to Table 134 for specific voltage														
1-25	Motor rpm	Size Dependent	6240	6240	6240	6240	5830	6240	5830	5830	5830	5830	5650	5830	5650	5650	5650
1-71	Compressor Start Delay	0s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	30	30	30	30	30	30	26	26	26	26	26	26	26	26	26
1-79	Comp Start Max Time to Trip	5s	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1-80	Function at Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-03	Max Reference	Size Dependent	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
3-13	Type Reference	Remote	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-42	Ramp Down	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-82	Starting Ramp Time	3s	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4-10	Motor Speed Direct	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	30	30	30	30	30	30	26	26	26	26	26	26	26	26	26
4-14	Motor Speed High Limit	Size Dependent	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
4-16	Torque Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-18	Current Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-19	Max Output Frequency	Size Dependent	76	86	96	106	84	94	81	86	91	99	76	91	76	85	95
5-12	DI #27	Coast Inverse	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5-19	DI#37 Safe Stop	Safe Stop Alarm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5-40[36]	Relay 1	Control Word Bit 11	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5-40[5]	Relay 2	Running	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop And Trip	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
14-01	Switching Frequency	3kHz	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14-03	Overmodulation	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-10	Main Failure	Alarm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-11	Mains Voltage at Mains Fault	Voltage	Refer to Table 134 for specific voltage														
14-50	RFI Filter	On	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14-60	Function at Overtemp	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14-61	Inverter Overload	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Table 134 — 30XV Data Center IM Compressor Tier and Voltage Specific Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
208/230V-60Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	433	479	512	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
High Tier																	
1-24	Motor Amperage	Size Dependent	353	401	447	488	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Tiers																	
1-24	Motor Amperage	Size Dependent	308	352	458	420	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14-11	Mains Voltage at Mains Fault	Voltage	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Voltage: 380V-60Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	230	254	278	373	250	360	380	401	435	577	401	577	648	726
High Tier																	
1-24	Motor Amperage	Size Dependent	187	211	235	260	345	231	333	353	364	407	540	364	540	610	685
All Tiers																	
1-24	Motor Amperage	Size Dependent	163	186	207	228	311	203	299	318	338	367	496	338	496	560	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-60HZ																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	218	241	264	355	237	342	362	381	414	549	381	549	615	689
High Tier																	
1-24	Motor Amperage	Size Dependent	177	201	224	247	328	220	316	336	346	386	513	346	513	579	651
All Tiers																	
1-24	Motor Amperage	Size Dependent	155	176	199	217	295	193	284	302	321	349	472	321	472	532	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 460V-60Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	190	211	230	311	207	301	318	335	360	474	335	474	530	594
High Tier																	
1-24	Motor Amperage	Size Dependent	155	174	196	214	286	191	277	294	311	336	442	311	442	499	560
All Tiers																	
1-24	Motor Amperage	Size Dependent	136	155	173	190	261	169	251	267	282	305	408	282	408	458	N/A
14-11	Mains Voltage at Mains Fault	Voltage	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345
Voltage: 575V-60Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	152	169	184	248	166	240	254	268	288	379	268	379	424	475
High Tier																	
1-24	Motor Amperage	Size Dependent	123	140	156	172	230	153	211	235	248	269	353	248	353	399	448
All Tiers																	
1-24	Motor Amperage	Size Dependent	109	123	138	152	208	135	201	213	225	244	326	225	326	367	N/A
14-11	Mains Voltage at Mains Fault	Voltage	489	489	489	489	489	489	489	489	489	489	489	489	489	489	489
Voltage: 380V-50Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	234	260	282	380	254	367	389	410	444	589	410	589	661	727
High Tier																	
1-24	Motor Amperage	Size Dependent	190	216	241	264	352	235	339	360	372	414	552	372	552	626	699
All Tiers																	
1-24	Motor Amperage	Size Dependent	166	189	211	234	316	207	305	325	345	374	506	345	506	572	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300

Table 134 — 30XV Data Center IM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 400V-50Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	223	247	269	362	241	349	369	389	421	559	389	559	627	703
High Tier																	
1-24	Motor Amperage	Size Dependent	182	206	228	251	335	224	322	342	353	394	525	353	525	591	664
All Tiers																	
1-24	Motor Amperage	Size Dependent	157	179	244	221	301	197	289	308	326	356	481	326	481	543	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 415V-50Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	214	237	260	347	233	336	356	374	407	539	374	539	604	678
High Tier																	
1-24	Motor Amperage	Size Dependent	174	197	220	243	322	216	311	330	340	380	505	340	505	570	640
All Tiers																	
1-24	Motor Amperage	Size Dependent	152	173	235	214	289	190	279	298	315	343	464	315	464	523	N/A
14-11	Mains Voltage at Mains Fault	Voltage	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332
Voltage: 440V-50Hz																	
Standard Plus Tier																	
1-22	Motor Volts	Size Dependent	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Medium Tier																	
1-24	Motor Amperage	Size Dependent	N/A	203	224	244	328	220	318	336	353	383	509	353	509	570	640
High Tier																	
1-24	Motor Amperage	Size Dependent	165	186	207	228	303	203	294	311	321	359	477	321	477	537	604
All Tiers																	
1-24	Motor Amperage	Size Dependent	143	163	223	201	274	179	264	281	296	323	437	296	437	494	N/A
14-11	Mains Voltage at Mains Fault	Voltage	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352

Table 135 — 30XV PM Compressor Common VFD Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
0-40	Hand On Button	Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-10	Motor Construction	PM, Salient IPM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1-14	Damping Gain	%	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
1-15	Low Speed Filter Time Cons	s	**Refer to Table 136 for specific voltage**														
1-16	High Speed Filter Time Cons	s	**Refer to Table 136 for specific voltage**														
1-17	Voltage Speed Filter Time Cons	s	**Refer to Table 136 for specific voltage**														
1-23	Motor Frequency	Hz	206	206	206	206	192	206	192	192	192	192	188	192	188	188	188
1-24	Motor Amperage	Size Dependent	Refer to Table 136 for specific voltage														
1-25	Motor rpm	Size Dependent	6180	6180	6180	6180	5760	6180	5760	5760	5760	5760	5640	5760	5640	5640	5640
1-26	Motor Rated Torque	Nm	211	211	211	211	365	211	365	365	365	365	450	365	450	450	450
1-29	Auto Motor Adaptation	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-30	Stator Phase Resistance	ohm	**Refer to Table 136 for specific voltage**														
1-37	d-Axis Inductance	mH	**Refer to Table 136 for specific voltage**														
1-38	q-Axis Inductance	mH	**Refer to Table 136 for specific voltage**														
1-39	# of Poles	4 Pole Motor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1-40	Back EMF	Voltage	**Refer to Table 136 for specific voltage**														
1-45	q-Axis Inductance Sat (LqSat)	mH	**Refer to Table 136 for specific voltage**														
1-49	q-Axis Inductance Sat Point	%	**Refer to Table 136 for specific voltage**														
1-66	Min Current at Low Speed	%	39	39	39	39	30	39	30	30	30	30	30	30	30	30	30
1-71	Compressor Start Delay	0s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-73	Flying Restart	Enabled	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-78	Starting Frequency	Hz	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1-79	Comp Start Max Time to Trip	5s	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1-80	Function at Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-03	Max Reference Hz	Size Dependent	146	166	186	206	162	182	156	166	176	192	146	176	146	170	188
3-13	Type Reference	Remote	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-42	Ramp Down	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-82	Starting Ramp Time	3s	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4-10	Motor Speed Direction	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
4-19	Max Output Frequency	Hz	154	174	194	208	170	190	164	174	184	194	154	184	154	178	196
4-14	Motor Speed High Limit	Hz	150	170	190	207	166	186	160	170	180	193	150	180	150	174	192
4-16	Torque Limit in Motor Mode	%	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
4-17	Torque Limit in Generator Mode		250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
4-18	Current Limit	%	**Refer to Table 136 for specific voltage**														
5-12	DI #27	Coast Inverse	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5-19	DI#37 Safe Stop	Safe Stop Alarm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5-40[36]	Relay 1	Control Word bit 11	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5-40[5]	Relay 2	Running	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop and Trip	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
14-00	Pattern [AVM]	SFAVM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-01	Switching Frequency	3kHz	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14-03	Overmodulation	Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-10	Main Failure	Alarm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-11	Mains Voltage at Mains Fault	Voltage	**Refer to Table 136 for specific voltage**														
14-50	RFI Filter	On	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-60	Function at Overtemp	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-61	Inverter Overload	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 136 — 30XV PM Compressor Tier and Voltage Specific Parameters

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 380V-60Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	96	113	115	127	102	123	128	135	148	108	145	100	120	129
High Tier																	
4-18	Current Limit	%	81	87	101	111	120	97	114	123	127	138	98	131	97	118	123
All Tiers																	
4-18	Current Limit	%	73	85	98	106	116	93	110	119	123	135	99	125	97	105	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-60HZ																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	91	107	109	121	97	117	121	128	141	103	139	95	114	122
High Tier																	
4-18	Current Limit	%	76	83	95	105	114	91	108	117	121	131	93	125	92	112	117
All Tiers																	
4-18	Current Limit	%	70	80	93	101	110	88	105	113	117	129	94	119	92	100	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 460V-60Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.07	0.07	0.07	0.07	0.11	0.07	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.08	0.05	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.075	0.075	0.075	0.075	0.128	0.075	0.128	0.128	0.128	0.128	0.091	0.128	0.091	0.091	0.091
1-24	Motor Amperage	size dependent	179	179	179	179	261	179	261	261	261	261	393	261	393	393	393
1-30	Stator Phase Resistance	ohm	0.0235	0.0235	0.0235	0.0235	0.0102	0.0235	0.0102	0.0102	0.0102	0.0102	0.0050	0.0102	0.0050	0.0050	0.0050
1-37	d-Axis Inductance	mH	0.876	0.876	0.876	0.876	0.653	0.876	0.653	0.653	0.653	0.653	0.227	0.653	0.227	0.227	0.227
1-38	q-Axis Inductance	mH	3.178	3.178	3.178	3.178	2.082	3.178	2.082	2.082	2.082	2.082	0.893	2.082	0.893	0.893	0.893
1-40	Back EMF	Voltage	82	82	82	77	82	82	82	82	82	82	52	82	52	52	52
1-45	q-Axis Inductance Sat (LqSat)	mH	1.724	1.724	1.724	1.724	1.005	1.724	1.005	1.005	1.005	1.005	0.483	1.005	0.483	0.483	0.483
1-49	q-Axis Inductance Sat Point	%	52	52	52	52	60	52	60	60	60	60	60	60	60	60	60
Medium Tier																	
4-18	Current Limit	%	N/A	98	114	116	111	103	107	112	118	129	117	127	108	130	139
High Tier																	
4-18	Current Limit	%	82	88	102	113	105	98	99	108	111	121	105	115	105	127	134
All Tiers																	
4-18	Current Limit	%	75	86	100	108	101	94	96	104	108	118	107	110	105	114	N/A
14-11	Mains Voltage at Mains Fault	Voltage	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345

Table 136 — 30XV PM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 380V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	98	116	118	130	105	126	131	138	151	110	148	102	122	132
High Tier																	
4-18	Current Limit	%	83	89	103	114	123	99	117	126	130	141	100	134	99	120	126
All Tiers																	
4-18	Current Limit	%	75	87	101	109	118	95	113	121	126	139	101	128	99	108	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	93	110	112	123	100	120	124	131	144	105	142	97	116	125
High Tier																	
4-18	Current Limit	%	79	85	99	108	117	94	111	120	123	134	95	128	94	114	120
All Tiers																	
4-18	Current Limit	%	72	83	95	103	112	90	108	116	120	131	97	121	94	103	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 415V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	90	106	108	119	96	116	120	127	139	101	136	93	112	121
High Tier																	
4-18	Current Limit	%	76	81	95	104	113	91	107	116	119	129	91	123	91	110	116
All Tiers																	
4-18	Current Limit	%	69	80	92	100	108	87	104	111	116	127	93	117	91	99	N/A
14-11	Mains Voltage at Mains Fault	Voltage	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332

Table 136 — 30XV PM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 440V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	85	100	101	112	91	108	113	119	131	95	128	88	106	114
High Tier																	
4-18	Current Limit	%	72	76	89	98	106	85	101	109	112	122	86	116	86	104	109
All Tiers																	
4-18	Current Limit	%	65	75	87	94	102	82	98	105	109	120	88	111	86	93	N/A
14-11	Mains Voltage at Mains Fault	Voltage	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352

Table 137 — 30XV Data Center PM Compressor Common VFD Parameters

PARAMETER		SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
0-40	Hand On Button	Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-10	Motor Construction	PM, Salient IPM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1-14	Damping Gain	%	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
1-15	Low Speed Filter Time Cons	s	**Refer to Table 138 for specific voltage**														
1-16	High Speed Filter Time Cons	s	**Refer to Table 138 for specific voltage**														
1-17	Voltage Speed Filter Time Cons	s	**Refer to Table 138 for specific voltage**														
1-23	Motor Frequency	Hz	206	206	206	206	192	206	192	192	192	192	188	192	188	188	188
1-24	Motor Amperage	Size Dependent	Refer to Table 136 for specific voltage														
1-25	Motor rpm	Size Dependent	6180	6180	6180	6180	5760	6180	5760	5760	5760	5760	5640	5760	5640	5640	5640
1-26	Motor Rated Torque	Nm	211	211	211	211	365	211	365	365	365	365	450	365	450	450	450
1-29	Auto Motor Adaptation	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-30	Stator Phase Resistance	ohm	**Refer to Table 138 for specific voltage**														
1-37	d-Axis Inductance	mH	**Refer to Table 138 for specific voltage**														
1-38	q-Axis Inductance	mH	**Refer to Table 138 for specific voltage**														
1-39	# of Poles	4 Pole Motor	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1-40	Back EMF	Voltage	**Refer to Table 138 for specific voltage**														
1-45	q-Axis Inductance Sat (LqSat)	mH	**Refer to Table 138 for specific voltage**														
1-49	q-Axis Inductance Sat Point	%	**Refer to Table 138 for specific voltage**														
1-66	Min Current at Low Speed	%	39	39	39	39	30	39	30	30	30	30	30	30	30	30	30
1-71	Compressor Start Delay	0s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-73	Flying Restart	Enabled	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1-78	Starting Frequency	Hz	60	60	60	60	60	60	50	50	50	50	50	50	50	50	50
1-79	Comp Start Max Time to Trip	5s	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1-80	Function at Stop	Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-90	Motor Thermal Protection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-02	Min Ref	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-03	Max Reference Hz	Size Dependent	146	166	186	206	162	182	156	166	176	192	146	176	146	170	188
3-13	Type Reference	Remote	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3-15	SRC ref#1	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-16	SRC ref#2	No Function	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-41	Ramp Up	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-42	Ramp Down	100s	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3-82	Starting Ramp Time	3s	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4-10	Motor Speed Direction	Clockwise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-12	Motor Speed Low Limit	Hz	60	60	60	60	60	60	50	50	50	50	50	50	50	50	50
4-19	Max Output Frequency	Hz	154	174	194	208	170	190	164	174	184	194	154	184	154	178	196
4-14	Motor Speed High Limit	Hz	150	170	190	207	166	186	160	170	180	193	150	180	150	174	192
4-16	Torque Limit in Motor Mode	%	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
4-17	Torque Limit in Generator Mode		250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
4-18	Current Limit	%	**Refer to Table 138 for specific voltage**														
5-12	DI #27	Coast Inverse	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5-19	DI#37 Safe Stop	Safe Stop Alarm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5-40[36]	Relay 1	Control Word bit 11	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5-40[5]	Relay 2	Running	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8-01	Control Site	Digital & Control Word	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-02	Control Source	FC port=RS485	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-03	Time Out Time	10s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-04	Time Out Function	Stop and Trip	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
14-00	Pattern [AVM]	SFAVM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-01	Switching Frequency	3kHz	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14-03	Overmodulation	Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-10	Main Failure	Alarm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-11	Mains Voltage at Mains Fault	Voltage	**Refer to Table 138 for specific voltage**														
14-50	RFI Filter	On	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-60	Function at Overtemp	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-61	Inverter Overload	Derate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 138 — 30XV Data Center PM Compressor Tier and Voltage Specific Parameters

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 380V-60Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	108	120	131	140	118	135	143	151	164	117	151	117	131	147
High Tier																	
4-18	Current Limit	%	88	99	111	122	130	109	125	133	137	153	109	137	109	123	139
All Tiers																	
4-18	Current Limit	%	77	88	97	107	117	96	112	120	127	138	100	127	100	113	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-60HZ																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	103	114	124	133	112	129	136	143	156	111	143	111	124	139
High Tier																	
4-18	Current Limit	%	83	95	105	116	123	104	119	126	130	145	104	130	104	117	132
All Tiers																	
4-18	Current Limit	%	73	83	94	102	111	91	107	113	121	131	95	121	95	107	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 460V-60Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.07	0.07	0.07	0.07	0.11	0.07	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.08	0.05	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.075	0.075	0.075	0.075	0.128	0.075	0.128	0.128	0.128	0.128	0.091	0.128	0.091	0.091	0.091
1-24	Motor Amperage	size dependent	179	179	179	179	261	179	261	261	261	261	393	261	393	393	393
1-30	Stator Phase Resistance	ohm	0.0235	0.0235	0.0235	0.0235	0.0102	0.0235	0.0102	0.0102	0.0102	0.0102	0.0050	0.0102	0.0050	0.0050	0.0050
1-37	d-Axis Inductance	mH	0.876	0.876	0.876	0.876	0.653	0.876	0.653	0.653	0.653	0.653	0.227	0.653	0.227	0.227	0.227
1-38	q-Axis Inductance	mH	3.178	3.178	3.178	3.178	2.082	3.178	2.082	2.082	2.082	2.082	0.893	2.082	0.893	0.893	0.893
1-40	Back EMF	Voltage	82	82	82	77	82	82	82	82	82	82	52	82	52	52	52
1-45	q-Axis Inductance Sat (LqSat)	mH	1.724	1.724	1.724	1.724	1.005	1.724	1.005	1.005	1.005	1.005	0.483	1.005	0.483	0.483	0.483
1-49	q-Axis Inductance Sat Point	%	52	52	52	52	60	52	60	60	60	60	60	60	60	60	60
Medium Tier																	
4-18	Current Limit	%	N/A	110	123	134	124	120	120	127	134	144	126	134	126	140	157
High Tier																	
4-18	Current Limit	%	90	101	114	124	114	111	110	117	124	134	117	124	117	132	148
All Tiers																	
4-18	Current Limit	%	79	90	101	110	104	98	100	106	112	122	108	112	108	121	N/A
14-11	Mains Voltage at Mains Fault	Voltage	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345

Table 138 — 30XV Data Center PM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 380V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	110	122	133	143	120	138	146	157	167	119	154	119	134	167
High Tier																	
4-18	Current Limit	%	90	102	114	124	132	111	127	135	140	156	112	140	112	127	141
All Tiers																	
4-18	Current Limit	%	78	89	101	109	119	97	115	122	130	141	102	130	102	116	N/A
14-11	Mains Voltage at Mains Fault	Voltage	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Voltage: 400V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	105	116	127	136	114	131	139	146	158	113	146	113	127	125
High Tier																	
4-18	Current Limit	%	86	97	107	118	126	105	121	129	133	148	106	133	106	119	120
All Tiers																	
4-18	Current Limit	%	74	84	115	104	113	93	109	116	123	134	97	123	97	110	N/A
14-11	Mains Voltage at Mains Fault	Voltage	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Voltage: 415V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	101	112	122	130	110	126	134	141	153	109	141	109	122	137
High Tier																	
4-18	Current Limit	%	82	93	104	114	121	102	117	124	128	143	102	128	102	115	129
All Tiers																	
4-18	Current Limit	%	71	81	111	101	109	89	105	112	118	129	94	118	94	106	N/A
14-11	Mains Voltage at Mains Fault	Voltage	332	332	332	332	332	332	332	332	332	332	332	332	332	332	332

Table 138 — 30XV Data Center PM Compressor Tier and Voltage Specific Parameters (cont)

PARAMETER		SETTING DESC.	140	160	180	200	225		250	275	300	325	350		400	450	500
NO.	DESCRIPTION		Compressor														
			A,B				A	B	A,B				A	B	A,B		
Voltage: 440V-50Hz																	
Standard Plus Tier																	
1-15	Low Speed Filter Time Cons	s	0.05	0.05	0.05	0.05	0.11	0.05	0.11	0.11	0.11	0.11	0.08	0.11	0.08	0.08	0.08
1-16	High Speed Filter Time Cons	s	0.03	0.03	0.03	0.03	0.08	0.03	0.08	0.08	0.08	0.08	0.06	0.08	0.06	0.06	0.06
1-17	Voltage Speed Filter Time Cons	s	0.056	0.056	0.056	0.056	0.121	0.056	0.121	0.121	0.121	0.121	0.089	0.121	0.089	0.089	0.089
1-24	Motor Amperage	size dependent	221	221	221	221	277	221	277	277	277	277	515	277	515	515	515
1-30	Stator Phase Resistance	ohm	0.0228	0.0228	0.0228	0.0228	0.0081	0.0228	0.0081	0.0081	0.0081	0.0081	0.0030	0.0081	0.0030	0.0030	0.0030
1-37	d-Axis Inductance	mH	0.637	0.637	0.637	0.637	0.489	0.637	0.489	0.489	0.489	0.489	0.132	0.489	0.132	0.132	0.132
1-38	q-Axis Inductance	mH	2.336	2.336	2.336	2.336	1.529	2.336	1.529	1.529	1.529	1.529	0.497	1.529	0.497	0.497	0.497
1-40	Back EMF	Voltage	72	72	72	72	70	72	70	70	70	70	39	70	39	39	39
1-45	q-Axis Inductance Sat (LqSat)	mH	1.266	1.266	1.266	1.266	0.756	1.266	0.756	0.756	0.756	0.756	0.266	0.756	0.266	0.266	0.266
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Medium Tier																	
4-18	Current Limit	%	N/A	96	105	115	123	104	120	126	133	144	103	133	103	115	129
High Tier																	
4-18	Current Limit	%	78	88	97	107	114	96	110	117	121	135	96	121	96	109	122
All Tiers																	
4-18	Current Limit	%	67	77	105	95	103	84	99	106	111	121	88	111	88	100	N/A
14-11	Mains Voltage at Mains Fault	Voltage	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352

VFD ALARM RESET

As long as communication is established between the Carrier Controller controls and the VFD, most alarms can be reset directly through the chiller control system.

VFD REPLACEMENT PROCEDURE

If required, VFDs can be replaced and programmed with the following procedures:

1. Disconnect power from unit. Wait a minimum of 20 minutes before continuing (30XV140-325) or 40 minutes (30XV350-500).

⚠ WARNING

After unit power is disconnected, wait at least 20 minutes (30XV140-325) or 40 minutes (30XV350-500) for the VFD capacitors to discharge before opening drive. Failure to do so presents an electrical shock hazard and may result in personal injury.

2. Disconnect electrical power and communication connections from drive.
3. Unbolt and remove drive from inside the powerbox, taking care to support drive at all times during the procedure. Larger drives are equipped with lifting lugs which must be used to support the load.

⚠ CAUTION

Use all proper rigging procedures and precautions when moving VFDs to avoid damage to the equipment.

4. Lift, position, and fasten replacement drive to powerbox. Tighten all bolts securely.
5. Connect power, control, VFD enable, and high pressure switch wiring to drive. For wiring details for fan drives, see Fig 98. Use the same knockout openings on new drive as on drive being replaced. For compressor drives, the high-pressure switch, VFD enable, and heater wiring also need to be connected. See Fig. 99 for wiring details for compressor drives. Torque connections are shown in Table 139.

IMPORTANT: Ensure high pressure switch (HPS) and VFD enable wiring are connected to compressor VFD. Compressor will not run without HPS and VFD enable wiring connection.

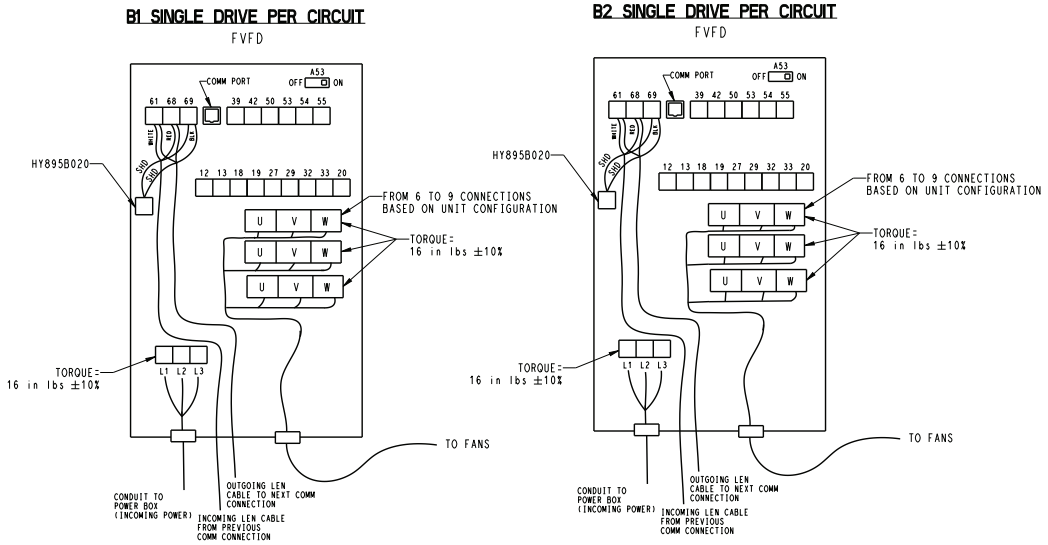
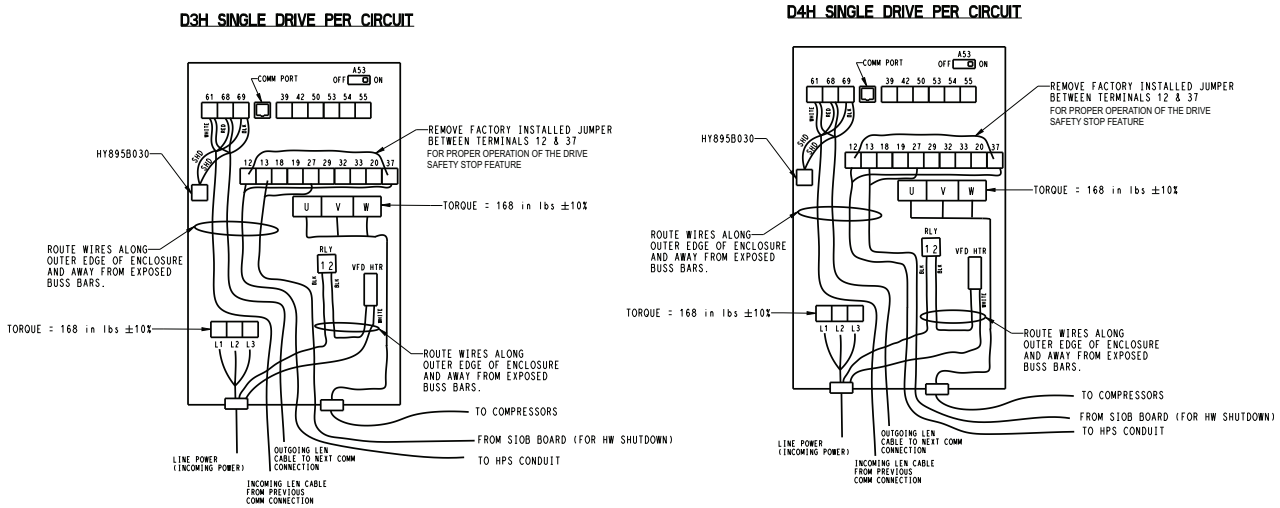


Fig. 98 — Fan Drive Wiring



LEGEND

HW Shutdown — Hard-wired Shutdown

NOTE: For 30XV140-500 ton units, the VFD heater shown is physically located on bottom of enclosure but is wired as shown.

Fig. 99 — Compressor Drive Wiring

Table 139 — Power Connection Torque Values

CARRIER PART NO.	LINE/MOTOR POWER (in.-lb)	GROUND (in.-lb)
COMPRESSOR DRIVES		
HR46ZY001/HR46ZY023	89	27
HR46ZY002/HR46ZY024	89	27
HR46ZY003/HR46ZY025	124	27
HR46ZY004/HR46ZY026	124	27
HR46ZY005/HR46ZY027	168	75
HR46ZY006/HR46ZY028	168	75
HR46ZY007/HR46ZY029	168	75
HR46ZY008/HR46ZY031	168	75
HR46ZY009/HR46ZY032	168	75
HR46ZY010	168	75
HR46ZY011	168	75
HR46ZY012/HR46ZY034	168	75
HR46ZY013	168	75
HR46ZY014/HR46ZY030	168	75
HR46ZY015/HR46ZY033	168	75
HR46ZY016/HR46ZY035	168	75
HR46ZY017/HR46ZY036	168	75
HR46ZY018/HR46ZY037	168	75
HR46ZY019	168	75
HR46ZY020	168	75
HR46ZY021	168	75
HR46ZY022	168	75
FAN DRIVES		
HR46ZQ003	16	27
HR46ZS003	16	27
HR46ZS004	16	27
HR46ZT002	16	27
HR46ZT003	16	27
HR46ZT004	22	27
HR46ZT005	16	27
HR46ZT006	16	27
HR46ZU002	16	27
HR46ZU003	16	27
HR46ZU004	16	27
HR46ZU005	16	27
HR46ZU006	16	27
HR46ZV001	22	27
HR46ZV002	22	27
HR46ZV003	22	27
HR46ZV004	22	27
HR46ZW001	22	27
HR46ZW002	22	27
HR46ZW003	22	27
HR46ZW004	22	27

6. Turn on power to the unit and allow the drive screen to become active. The drive will need to be manually addressed for the control system to export the correct parameters. Use this procedure to address the VFDs:
   a. Using the display interface on the VFD drive, touch the Main Menu button twice. Navigate to menu item 8-30 and confirm that the LEN option is selected: Using the UP/DOWN arrows and OK button, follow the path: ***8-** (Command Options) → 8-3* (FC Port Settings) → 8-30 (Protocol)***. If LEN is not selected, touch the OK button and use the arrow keys to scroll through the options and select it. If no LEN option appears, LEN communication is not enabled on the drive. Follow the process described in the next section, Enable LEN Communication, then complete the following addressing procedure.
   b. Navigate to menu item 8-31 on the VFD display and enter the address for the drive being configured: Follow the path: ***8-** (Command Options) → 8-3* (FC Port Settings) → 8-31 (Address)***. Touch the OK button and use the UP/DOWN arrow keys to select the drive address. See Table 50 to determine the correct address. For fan drives, see Fig. 98 for typical arrangement. For compressor drives, see Fig. 99 for typical location.
   c. Turn the chiller power off and then on again. Cycling the power will cause the control system to send the correct configuration data files to the new drive.
   d. Verify that communication with the new drive has been established. For fan drives follow the Carrier Controller path: ***Main Menu → Maintenance Menu → Fan Drive Addressing*** and confirm that the relevant Comm Fan Drive Xn status is Yes. For compressor drives follow the path: ***Main Menu → Maintenance Menu → VLT Drive Maintenance*** and confirm that the relevant Comm with Drive X status is Yes.

Enable LEN Communication

If the replacement drive received does not have LEN as an option under menu item 8-30 on the VFD display, LEN will need to be manually enabled before the drive can be addressed. To enable the LEN communication option:

1. Enable access to the hidden Typecode Parameter by navigating to menu item 14-29 on the VFD display: touch the Main Menu button and then follow the path ***14-** (Special Functions) → 14-2* (Reset Functions) → 14-29 (Service Code)***. Set the 14-29 parameter to 00006100. Setting this parameter will enable access to hidden parameter 14-23 (Typecode Setting). Touch OK.
2. Navigate to menu item 14-23: Touch the BACK button and use the UP arrow to reach 14-23 (Typecode Setting). Touch the OK button once. A cursor will appear on the value [00] just below the parameter number and name. Increase this value by touching the UP key until the parameter has a value of [12] and the display shows "[nnn] SXXX {std. sw)." Touch OK and use the UP/DOWN buttons to change the value to "[231] S009 {Special sw)." Touch OK again. Touch the UP button until the value is [20]. Touch the OK button once, and change the displayed value to [1] (Save to EEPROM) using the arrow key. Touch OK again.
3. The drive should display an alarm A251 New Type Code. Power down the drive by touching the OFF button. Restart the drive with the AUTO ON button.
4. Proceed with the Addressing VFD instruction above to complete the configuration process.

LONG TERM STORAGE

If the unit is stored for long periods of time without use, special procedures must be performed to ensure the safe and efficient operation of the VFD capacitor banks. If the unit has been stored for more than 3 years without power applied to the drives, contact Carrier Service to obtain information and instructions for reforming the capacitor banks.

Variable Speed Fan – ECM Fan Motor

ECM fan motors are an option in place of VFD-controlled fan motors. This option offers higher efficiency of the chiller. The motors are controlled via Modbus[1] communication with the chiller controller. The controller will also re-set the address of a motor if replacement is required. Control logic is identical to the VFD-controlled fans.

Auto addressing of ECM fan motors is used when a motor is replaced. The process is initiated from the configuration menu; navigate to the ECM Parameter screen, then the ECM_AUTO-ECM Auto addressing screen. See Fig. 100-102.

1. Third-party trademarks and logos are the property of their respective owners.

Fig. 100 — ECM Parameters Icon on Configuration Menu Screen

Fig. 101 — ECM Parameter Screen

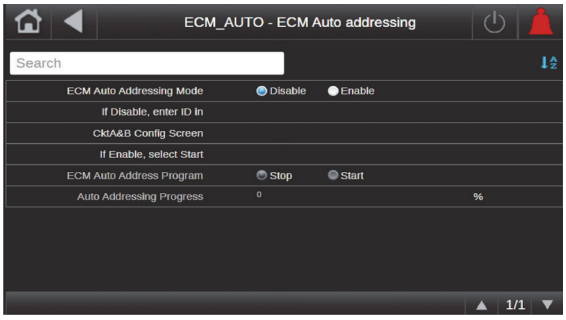


Fig. 102 — ECM_AUTO-ECM Auto Addressing Screen

Enable the ECM Auto Addressing mode. Select Start. Once the auto address programming has started and is in progress, or if machine is already running, then the auto address programming option is automatically grayed out (not selectable). This may take some time. A percent complete bar will show on the screen during the addressing.

As an alternative, the motor can be addressed manually. When replacing a motor, record the serial number of the motor. Once it is installed, go to the ECM Parameter screen and select the ECM CirA Configuration icon. The ECM CirA Configuration screen will display (Fig. 103). Enter the fan serial number on the ECM CirA Configuration screen.

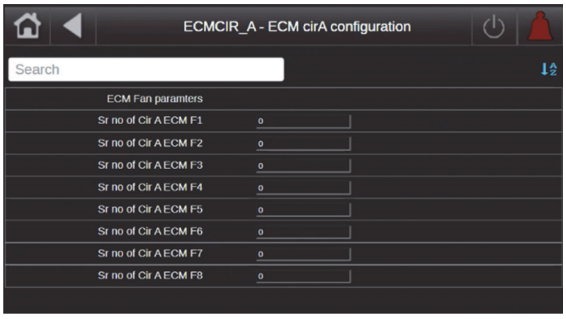


Fig. 103 — ECM CirA Configuration Screen

Field Refrigerant Charging Mode

Field refrigerant charging mode controls the SCT to the values shown in Table 140 for charging with refrigerant while chiller is running at full load. This mode is applicable only for VFD and ECM based condenser fans. It does not function with fixed speed fans. This new field refrigerant charging mode overcomes the issue of manually blocking the condenser coils to raise the discharge pressure to the desired level for refrigerant charging. Chiller capacity must be at 100%.

Table 140 — Field Refrigerant Charging Values

TIER OPTION	10°F ≤ CHILLED WATER SETPOINT ≤ 20°F	CHILLED WATER SETPOINT > 20°F	
	All Coils	MCHX Coils	RTPF Coils
Standard Tier with Low Ambient Option	115°F (46.1°C)	130°F 54.4°C)	135°F (57.2°C)
Mid Tier		130°F (54.4°C)	130°F (54.4°C)
High Tier		125°F 51.7°C)	125°F (51.7°C)

To enable refrigerant charging mode, navigate to the Configuration Menu. Select Refrigerant Charging. Select the circuit to be charged and select Enable. See Fig. 104-105.

Fig. 104 — Refrigerant Charging Icon on Configuration Menu Screen

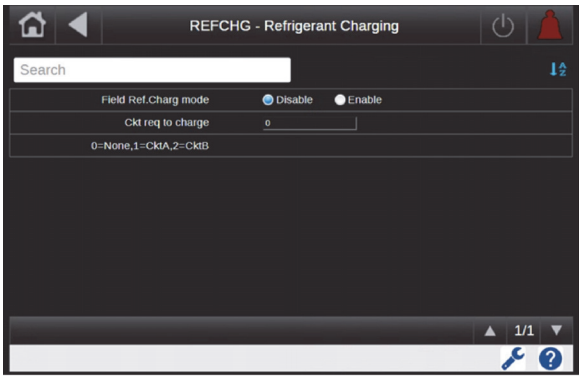


Fig. 105 — Refrigerant Charging Screen

When Field Refrigerant Charging Mode is enabled, if it is not manually disabled within 4 hours, controls will automatically disable the "refrigerant charging mode" and allow the chiller to operate normally.

MAINTENANCE

Recommended Maintenance Schedule

The following are only recommended guidelines. Jobsite conditions may dictate that maintenance tasks be performed more often than recommended.

Routine for machines with e-coat condenser coils:

- Check condenser coils for debris; clean as necessary with Carrier approved coil cleaner.
- Periodic clean water rinse, especially in coastal and industrial applications.

Every month:

- Check condenser coils for debris; clean as necessary with Carrier approved coil cleaner.
- Check moisture indicating sight glass for possible refrigerant loss and presence of moisture.
- Record water pressure differential.
- Record system superheat.

Every 3 months:

- Check all refrigerant joints and valves for refrigerant leaks; repair as necessary.
- Check chilled water flow switch operation.
- Check all condenser fans for proper operation.
- Check oil filter pressure drop.
- Check oil separator heater operation.
- Check air filters located on front panel of compressor VFD drives by opening the plastic grilles; replace clogged filters. Filters may be cleaned with mild detergent soap and water.
- Check back of all compressor and fan drives for any debris. If present, clean it by blowing air from top to bottom.
- Check compressor VFD drain tubes if present (30XV350-500).

Every 12 months:

- Check refrigerant charge.
- Check all electrical connections; tighten as necessary.
- Inspect all contactors and relays; replace as necessary.
- Change oil filters year 1, then as needed.
- Check accuracy of thermistors; replace if greater than ±2°F (1.2°C) variance from calibrated thermometer.
- Check accuracy of transducers; replace if greater than ±5 psig (34.47 kPa) variance.
- Check to be sure that the proper concentration of antifreeze is present in the chilled water loop, if applicable.
- Verify that the chilled water loop is properly treated.
- Check refrigerant filter driers for excessive pressure drop; replace as necessary.
- Check chilled water strainers, clean as necessary.
- Check evaporator heater operation.
- Check oil heater operation.
- Check condition of condenser fan blades and that they are securely fastened to the motor shaft.
- Perform Service Test to confirm operation of all components.
- Check for excessive evaporator approach (Leaving Chilled Water Temperature – Saturated Suction Temperature) which may indicate fouling. Clean evaporator vessel if necessary.
- Obtain oil analysis; change as necessary.

Every 3-5 years:

- Inspect and clean evaporator tubes.
- Inspect relief valves.

TROUBLESHOOTING

Alarms and Alerts

The integral control system constantly monitors the unit and generates warnings when abnormal or fault conditions occur. Alarms may cause either a circuit (Alert) or the whole machine (Alarm) to shut down. Alarms and Alerts are assigned codes as described in Table 141.

To view information about current and past alarms or to reset alarms, touch the Alarm bell button in the top right corner of the Carrier Controller display. A solid gray icon is present during normal operation. The bell icon is red if there is an alarm or alert. A blinking red bell icon indicates that there is an alarm, but the unit is still running. A solid red highlighted bell icon indicates that the unit is shut down due to a detected fault.

CURRENT ALARMS

To access the current alarms view, touch the Alarm bell button in the top right corner of the Carrier Controller display, and then select Current Alarms. This screen displays up to 10 current alarms with the time and date as well as a one line description of each alarm. See Table 141 for a list of possible alarms sorted alphabetically by description.

RESETTING ALARMS

The alarms can be reset without stopping the machine. The controller generates two types of alarms. Automatic reset alarms will reset without any intervention if the condition that caused the alarm corrects itself. Manual reset alarms require the service technician to check for the alarm cause and reset the alarm.

To reset any active alarms, touch the Alarm button and then touch the Reset Alarms icon. For Alarm Reset select the YES Radio Button and select SET in the pop-up window. When resetting the alarm manually, the reset can be performed through the Carrier Controller display or remotely through the web interface (Reset Alarms menu).

Only logged-in users can access the Reset Alarms menu. The menu displays up to five alarm codes which are currently active on the unit, corresponding to the first five items displayed in the Current Alarms menu. Each alarm is also described by a numeric code. See Tables 141-144 for lists of alarms by code. See Table 145 for Master/Slave alarm codes.

In the event of a power supply interrupt, the unit restarts automatically without the need for an external command. However, any faults active when the supply is interrupted are saved and may in certain cases prevent a circuit or a unit from restarting.

Before resetting any alarm, first determine the cause of the alarm and correct it. Do not reset the chiller at random without first investigating and correcting the cause(s) of the failure.

ALARM HISTORY

Once the cause of the alarm has been identified and corrected, it will be displayed in the alarm history. Information regarding resolved alarms is stored in the Alarm history menu, which is divided into 50 recent alarms and 50 recent major alarms. General alarms indicate pumps failure, transducers faults, network connection problems, etc. Major alarms indicate process failure.

To access the Alarm history menu, touch the Alarm button and select Alarm Historic or Major Alarm Historic. The 50 most recent alarms of each type are stored in memory, and are replaced on a first-in first-out basis.

Table 141 — Alarm Reference Lists by Name[a,b]

ALARM NAME	CODE
Circ A - High condensing temperature out of map compressor	10037
Circ A - Loss of Refrigerant Flow	10087
Circ B - High condensing temperature out of map compressor	10038
Circ B - Loss of Refrigerant Flow	10088
Circuit A Compressor Motor Thermistor	15033
Circuit A Compressor VFD Failure	17nnn
Circuit A Compressor VFD Warning	35nnn
Circuit A Condenser Subcooling Liquid Pressure Transducer	12031
Circuit A Condenser Subcooling Liquid Thermistor Failure	15018
Circuit A Discharge Gas Thermistor	15015
Circuit A Discharge Transducer	12001
Circuit A Economizer Gas Thermistor Failure	15024
Circuit A Economizer Pressure Transducer	12013
Circuit A Fan VFD 1 Failure	20nnn
Circuit A Fan VFD 1 Warning	38nnn
Circuit A Fan VFD 2 Failure	21nnn
Circuit A Fan VFD 2 Warning	39nnn
Circuit A Fan VFD 3 Failure	22001
Circuit A Fan VFD 3 Warning	40001
Circuit A High Discharge Gas Temperature	10078
Circuit A High Oil Filter Pressure Drop	10084
Circuit A Low economizer pressure or suction valve closed	10081
Circuit A Low Oil level	10075
Circuit A Low Oil Pressure	10067
Circuit A Low Suction Temperature	10005
Circuit A Max Oil Filter Differential Pressure	10070
Circuit A Oil Pressure Transducer	12010
Circuit A saturated suction Temperature out of MAP compressor	10101
Circuit A Suction Gas Thermistor	15012
Circuit A Suction Transducer	12004
Circuit B compressor Motor Thermistor	15034
Circuit B Compressor VFD Failure	18nnn
Circuit B Compressor VFD Warning	36nnn
Circuit B Condenser Subcooling Liquid Pressure Transducer	12032
Circuit B Condenser Subcooling Liquid Thermistor Failure	15019
Circuit B Discharge Gas Thermistor	15016
Circuit B Discharge Transducer	12002
Circuit B Economizer Gas Thermistor Failure	15025
Circuit B Economizer Pressure Transducer	12014
Circuit B Fan VFD 1 Failure	23nnn
Circuit B Fan VFD 1 Warning	41nnn
Circuit B Fan VFD 2 Failure	24nnn
Circuit B Fan VFD 2 Warning	42nnn
Circuit B Fan VFD 3 Failure	25001
Circuit B Fan VFD 3 Warning	43001
Circuit B High Discharge Gas Temperature	10079
Circuit B High Oil Filter Pressure Drop	10085
Circuit B Low economizer pressure or suction valve closed	10082
Circuit B Low Oil level	10076
Circuit B Low Oil Pressure	10068
Circuit B Low Suction Temperature	10006
Circuit B Max Oil Filter Differential Pressure	10071
Circuit B Oil Pressure Transducer	12011
Circuit B saturated suction Temperature out of MAP compressor	10102
Circuit B Suction Gas Thermistor	15013
Circuit B Suction Transducer	12005
Compressor A High Pressure Switch protection	1103
Compressor A Motor temperature too high	1101
Compressor B High Pressure Switch protection	2103
Compressor B Motor temperature too high	2101
Cooler Heater Failure	59000
Customer Interlock Failure	10014
Database module Failure	55001
ECM circuit A fail	28900
ECM circuit B fail	29000

Table 141 — Alarm Reference Lists by Name[a,b] (cont)

ALARM NAME	CODE
ECM ERROR Cir A from Fan 1 to Fan 10	26znn
ECM ERROR Cir A from Fan 11 to Fan 14 and Cir B from Fan 1 to Fan 6	27znn
ECM ERROR Cir B from Fan 7 to Fan 14	28znn
Evaporator Entering Fluid Thermistor	15001
Evaporator Flow Switch Failure	10091
Evaporator Freeze Protection	10001
Evaporator Leaving Fluid Thermistor	15002
Evaporator Pump #1 Fault	10032
Evaporator Pump #2 Fault	10033
EXV eco stepper motor Failure - cir A	57023
EXV eco stepper motor Failure - cir B	57024
FAN drive 1 turned off from LCP - Cir A	61007
FAN drive 1 turned off from LCP - Cir B	61010
FAN drive 2 turned off from LCP - Cir A	61008
FAN drive 2 turned off from LCP - Cir B	61011
FAN drive 3 turned off from LCP - Cir A	61009
FAN drive 3 turned off from LCP - Cir B	61012
Illegal factory configuration	7001
IM PM motor mismatch Cir A	10123
IM PM motor mismatch Cir B	10124
Lenscan module Failure	56001
Loss of communication with Aux Board Number 1	4501
Loss of communication with Aux Board Number 2	4502
Loss of communication with Aux Board Number 3	4503
Loss of communication with Aux Board Number 4	4504
Loss of communication with Circuit A Compressor VFD	4701
Loss of communication with Circuit A Fan VFD 1	4704
Loss of communication with Circuit A Fan VFD 2	4705
Loss of communication with Circuit A Fan VFD 3	4706
Loss of communication with Circuit B Compressor VFD	4702
Loss of communication with Circuit B Fan VFD 1	4707
Loss of communication with Circuit B Fan VFD 2	4708
Loss of communication with Circuit B Fan VFD 3	4709
Loss of communication with Energy Management NRCP2 Board	4603
Loss of communication with SIOB Board Number 1	4901
Loss of communication with SIOB Board Number 2	4902
Main EXV stepper motor Failure - cir A	57020
Main EXV stepper motor Failure - cir B	57021
Master/Slave Common Fluid Thermistor	15011
Master/Slave communication Failure	10030
Master/Slaves Alarm	90nn
No factory configuration	8001
OAT Thermistor	15010
Refrigerant Leakage Detection	10050
Sensor Swap Alarm CktA	61003
Sensor Swap Alarm CktB	61004
Space Temperature Thermistor	15021
System clock desynchronized	61002
Unit fail	28800
Unit is in CCN emergency stop	10031
VI Solenoid Diagnostic Test Failure - cir A	60001
VI Solenoid Diagnostic Test Failure - cir B	61001
VLT drive turned off from LCP - cir A	61005
VLT drive turned off from LCP - cir B	61006
Water Exchanger Temperature Sensors Swapped	10097

NOTE(S):

a. For VFD alarms, “nnn” corresponds to alarm code in Table 146.
b. For ECM alarms, “znn” corresponds to alarm code in Table 144.

LEGEND

ECM — Electronically Commutated Motor
ECO — Economizer
EXV — Electronic Expansion Valve
IM — Induction Magnet
OAT — Outdoor Air Temperature
PM — Permanent Magnet
SIOB — Standard Input Output Board
VFD — Variable Frequency Drive

Table 142 — Alarm Reference Lists by Code[a,b]

CODE	ALARM NAME
1101	Compressor A Motor temperature too high
1103	Compressor A High Pressure Switch protection
2101	Compressor B Motor temperature too high
2103	Compressor B High Pressure Switch protection
4501	Loss of communication with Aux Board Number 1
4502	Loss of communication with Aux Board Number 2
4503	Loss of communication with Aux Board Number 3
4504	Loss of communication with Aux Board Number 4
4603	Loss of communication with Energy Management NRCP2 Board
4701	Loss of communication with Circuit A Compressor VFD
4702	Loss of communication with Circuit B Compressor VFD
4704	Loss of communication with Circuit A Fan VFD 1
4705	Loss of communication with Circuit A Fan VFD 2
4706	Loss of communication with Circuit A Fan VFD 3
4707	Loss of communication with Circuit B Fan VFD 1
4708	Loss of communication with Circuit B Fan VFD 2
4709	Loss of communication with Circuit B Fan VFD 3
4901	Loss of communication with SIOB Board Number 1
4902	Loss of communication with SIOB Board Number 2
7001	Illegal factory configuration
8001	No factory configuration
10001	Evaporator Freeze Protection
10005	Circuit A Low Suction Temperature
10006	Circuit B Low Suction Temperature
10014	Customer Interlock Failure
10030	Master/Slave communication Failure
10031	Unit is in CCN emergency stop
10032	Evaporator Pump #1 Fault
10033	Evaporator Pump #2 Fault
10037	Circ A - High condensing temperature out of map compressor
10038	Circ B - High condensing temperature out of map compressor
10050	Refrigerant Leakage Detection
10067	Circuit A Low Oil Pressure
10068	Circuit B Low Oil Pressure
10070	Circuit A Max Oil Filter Differential Pressure
10071	Circuit B Max Oil Filter Differential Pressure
10075	Circuit A Low Oil level
10076	Circuit B Low Oil level
10078	Circuit A High Discharge Gas Temperature
10079	Circuit B High Discharge Gas Temperature
10081	Circuit A Low economizer pressure or suction valve closed
10082	Circuit B Low economizer pressure or suction valve closed
10084	Circuit A High Oil Filter Pressure Drop
10085	Circuit B High Oil Filter Pressure Drop
10087	Circ A - Loss of Refrigerant Flow
10088	Circ B - Loss of Refrigerant Flow
10091	Evaporator Flow Switch Failure
10097	Water Exchanger Temperature Sensors Swapped
10101	Circuit A - saturated suction Temperature out of MAP compressor
10102	Circuit B - saturated suction Temperature out of MAP compressor
10123	IM PM motor mismatch Cir A
10124	IM PM motor mismatch Cir B
12001	Circuit A Discharge Transducer
12002	Circuit B Discharge Transducer
12004	Circuit A Suction Transducer
12005	Circuit B Suction Transducer
12010	Circuit A Oil Pressure Transducer
12011	Circuit B Oil Pressure Transducer
12013	Circuit A Economizer Pressure Transducer
12014	Circuit B Economizer Pressure Transducer
12031	Circuit A Condenser Subcooling Liquid Pressure Transducer
12032	Circuit B Condenser Subcooling Liquid Pressure Transducer
15001	Evaporator Entering Fluid Thermistor
15002	Evaporator Leaving Fluid Thermistor
15010	OAT Thermistor
15011	Master/Slave Common Fluid Thermistor

Table 142 — Alarm Reference Lists by Code[a,b] (cont)

CODE	ALARM NAME
15012	Circuit A Suction Gas Thermistor
15013	Circuit B Suction Gas Thermistor
15015	Circuit A Discharge Gas Thermistor
15016	Circuit B Discharge Gas Thermistor
15018	Circuit A Condenser Subcooling Liquid Thermistor Failure
15019	Circuit B Condenser Subcooling Liquid Thermistor Failure
15021	Space Temperature Thermistor
15024	Circuit A Economizer Gas Thermistor Failure
15025	Circuit B Economizer Gas Thermistor Failure
15033	Circuit A compressor Motor Thermistor
15034	Circuit B compressor Motor Thermistor
22001	Circuit A Fan VFD 3 Failure
25001	Circuit B Fan VFD 3 Failure
28800	Unit fail
28900	ECM circuit A fail
29000	ECM circuit B fail
40001	Circuit A Fan VFD 3 Warning
43001	Circuit B Fan VFD 3 Warning
55001	Database module Failure
56001	Lenscan module Failure
57020	Main EXV stepper motor Failure - cir A
57021	Main EXV stepper motor Failure - cir B
57023	EXV eco stepper motor Failure - cir A
57024	EXV eco stepper motor Failure - cir B
59000	Cooler Heater Failure
60001	VI Solenoid Diagnostic Test Failure - cir A
61001	VI Solenoid Diagnostic Test Failure - cir B
61002	System clock desynchronized
61003	Sensor Swap Alarm CktA
61004	Sensor Swap Alarm CktB
61005	VLT drive turned off from LCP - cir A
61006	VLT drive turned off from LCP - cir B
61007	FAN drive 1 turned off from LCP - Cir A
61008	FAN drive 2 turned off from LCP - Cir A
61009	FAN drive 3 turned off from LCP - Cir A
61010	FAN drive 1 turned off from LCP - Cir B
61011	FAN drive 2 turned off from LCP - Cir B
61012	FAN drive 3 turned off from LCP - Cir B
17nnn	Circuit A Compressor VFD Failure
18nnn	Circuit B Compressor VFD Failure
20nnn	Circuit A Fan VFD 1 Failure
21nnn	Circuit A Fan VFD 2 Failure
23nnn	Circuit B Fan VFD 1 Failure
24nnn	Circuit B Fan VFD 2 Failure
26znn	ECM ERROR Cir A from Fan 1 to Fan 10
27znn	ECM ERROR Cir A from Fan 11 to Fan 14 and Cir B from Fan 1 to Fan 6
28znn	ECM ERROR Cir B from Fan 7 to Fan 14)
35nnn	Circuit A Compressor VFD Warning
36nnn	Circuit B Compressor VFD Warning
38nnn	Circuit A Fan VFD 1 Warning
39nnn	Circuit A Fan VFD 2 Warning
41nnn	Circuit B Fan VFD 1 Warning
42nnn	Circuit B Fan VFD 2 Warning
90nn	Master/Slaves Alarm

NOTE(S):

a. For VFD alarms, “nnn” corresponds to alarm code in Table 146.
b. For ECM alarms, “znn” corresponds to alarm code in Table 144.

LEGEND

ECM — Electronically Commutated Motor
ECO — Economizer
EXV — Electronic Expansion Valve
IM — Induction Magnet
OAT — Outdoor Air Temperature
PM — Permanent Magnet
SIOB — Standard Input Output Board
VFD — Variable Frequency Drive

Table 143 — Alarm Details by Code

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
01101	Compressor A Motor temperature too high	Tested when the compressor is ON or OFF. Set if compressor motor temperature CP_TMP_A > 275°F (135°C).	Circuit A will be shut down	Manual	If this condition is encountered, check the following items for faults: • check refrigerant charge • faulty wiring and loose plugs • faulty SIOB • faulty compressor temperature thermistor
01103	Compressor A High Pressure Switch protection	Tested when the compressor is ON or OFF. Set when the Safe Stop DI-37 of the compressor drive is opened (terminal 37 on the compressor VFD).	Circuit A will be shut down	Manual	If this condition is encountered, check the following items for faults: • condenser fans and motors for proper rotation and operation • compressor operating beyond the limits of the operating envelope • faulty high pressure switch or wiring (terminals 12 and 37 in VFD) • plugged/fouled condenser coil • excessive charge
02101	Compressor B Motor temperature too high	Tested when the compressor is ON or OFF. Set if compressor motor temperature CP_TMP_B > 275°F (135°C).	Circuit B will be shut down	Manual	If this condition is encountered, check the following items for faults: • check refrigerant charge • faulty wiring and loose plugs • faulty SIOB • faulty compressor temperature thermistor
02103	Compressor B High Pressure Switch protection	Tested when the compressor is ON or OFF. Set when the Safe Stop DI-37 of the compressor drive is opened (terminal 37 on the compressor VFD).	Circuit B will be shut down	Manual	If this condition is encountered, check the following items for faults: • condenser fans and motors for proper rotation and operation • compressor operating beyond the limits of the operating envelope • faulty high pressure switch or wiring (terminals 12 and 37 in VFD) • plugged/fouled condenser coil • excessive charge
04502	Loss of Communication with Auxiliary Board A	Communication with AUX Board A is lost	Circuit A will be shut down immediately	Automatic when the communication is reestablished	If this condition is encountered, check the following items for faults: • power supply to the Aux board • local equipment network (LEN) wiring
04503	Loss of Communication with Auxiliary Board B	Communication with AUX Board B is lost	Circuit B will be shut down immediately	Automatic when the communication is reestablished	
04603	Loss of communication with Energy Management Board	Communication with Energy Management Module (EMM) Board is lost	No action on the unit, EMM functions will not operate	Automatic when the communication is reestablished	If this condition is encountered, check the following items for faults: • EMM is installed (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters*** ⟶ ***Energy Management Module*** = Yes) • power supply to EMM • address of the EMM • local equipment network (LEN) wiring • If no EMM board is installed: • confirm unit configuration to be sure that no options requiring EMM are selected
04701	Loss of Communication with VLT Drive Board #1	Alarm will trip if communication with Circuit A Compressor VFD is lost	Circuit A will be shut down immediately	Automatic when the communication is reestablished	If this condition is encountered, check the following items for faults: • power supply to the compressor or fan drive board • local equipment network (LEN) wiring • check VFD parameters against list • check VFD address • check unit configuration for correct unit size, low ambient selection, voltage, frequency and tier
04702	Loss of Communication with VLT Drive Board #2	Alarm will trip if communication with Circuit B Compressor VFD is lost	Circuit B will be shut down immediately	Automatic when the communication is reestablished	
04704	Loss of Communication with Fan Drive Board #4	Alarm will trip if communication with Circuit A Fan A1 VFD is lost	Circuit A will be shut down immediately	Automatic when the communication is reestablished	
04705	Loss of Communication with Fan Drive Board #5	Alarm will trip if communication with Circuit A Fan A2 VFD is lost	Circuit A will be shut down immediately	Automatic when the communication is reestablished	
04707	Loss of Communication with Fan Drive Board #7	Alarm will trip if communication with Circuit B Fan B1 VFD is lost	Circuit B will be shut down immediately	Automatic when the communication is reestablished	
04708	Loss of Communication with Fan Drive Board #8	Alarm will trip if communication with Circuit B Fan B2 VFD is lost	Circuit B will be shut down immediately	Automatic when the communication is reestablished	
04901	Loss of Communication with SIOB Board A	Alarm will trip if communication with SIOB-A Board is lost	Unit will be stopped immediately	Automatic when the communication is reestablished	If this condition is encountered, check the following items for faults: power supply to the SIOB local equipment network (LEN) wiring confirm unit configuration check board addressing DIP switches
04902	Loss of Communication with SIOB Board B	Alarm will trip if communication with SIOB-B Board is lost	Circuit B will be shut down immediately	Automatic when the communication is reestablished	

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
07001	Illegal configuration	If one of these conditions is met: 1. Unit Capacity (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is set to 0 or something other than 140, 160, 180, 200, 225, 250, 275, 300, 325, 350, 400, 450, or 500. 2. Power Supply Voltage (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is set to something other than 200, 208/230, 380, 400, 415, 440, 460, or 575. 3. Low Ambient Option (STD) (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is 1 (YES) on a mid or high tier unit (10th position of model number is “M” or “H”). 4. Low Ambient Option (STD) (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is 1 (YES) on a 30XV140 standard tier unit (10th position of model number is “S”). 5. DX Evaporator Installed (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is 1 (YES) for 30XV350, 30XV400, 30XV450, or 30XV500.	Unit is not allowed to start	Automatic when configured correctly	Confirm unit configuration
08001	No Factory Configuration	If the Unit Capacity (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Factory Parameters***) is missing.	Unit is not allowed to start	Automatic when configured correctly	Confirm unit configuration
090nn	Master/Slave Alarms	Tested when the unit is On and Off. If the unit is master (ms_sel = master) and is in Master operating type and a master/slave configuration error (ms_error) from 1 to 13 is detected then the alert shall be tripped. If the unit is slave (ms_sel = slave) and is in CCN operating type and a master/slave configuration error (ms_error, see master/slave error code description) shall be tripped.	Master/Slave functions are deactivated. Both chillers will operate as standalone units. ALARM_LED shall be forced in blinking.	Automatic when the Master/Slave configuration returns to normal or if the unit is no longer in Master operating type	If this condition is encountered, check the following items for faults: • CCN wiring • control power to each SIOB, master and slave • confirm correct configuration
10001	Evaporator Freeze Protection	There are several criteria for this alarm. 1. Tested whether the unit is ON or OFF and all of the following conditions have been met: a. One of these conditions is true: i. Entering Water Temperature is less than the fluid freeze point ii. Leaving Water Temperature is less than the fluid freeze point b. All of these conditions are true: i. No communication alarms with the SIOB ii. The one (1) minute timer following power up has elapsed. 2. The unit state is Delay, Off, or Stopping and all of the following conditions have been met: a. Circuit A or Circuit B Saturated Suction Temperature is less than fluid freeze point b. One of these conditions is true: i. The evaporator heater has been on for 10 minutes or more ii. All of the following conditions must be true: 1. Evaporator heater is not installed or not configured 2. The evaporator flow switch is open 3. Entering Water Temperature is less than 46.4°F (8°C) or Leaving Water Temperature is less than 46.4°F (8°C). 3. If the evaporator heaters are commanded ON and the Cooler Heater Current Sensing Relay does not detect the appropriate current draw indicating an Evaporator Heater has failed. Brine Freeze is 34°F (1.1°C) if Evaporator Fluid Type [***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Service Parameters***] is 1 (Water). If Evaporator Fluid Type is 2 (Medium Brine) or (Low Brine), Brine Freeze is a field configured under Brine Freeze Setpoint [***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Service Parameters***]	The unit is shut down if it is running or is not allowed to start. The command for the cooler pump will remain ON.	Automatic for the first time within a 24 hours or manual if the alarm has occurred more than once in the previous 24 hours, if the following conditions are met: 1. Entering Water Temperature is greater than the fluid freeze point 2. Leaving Water Temperature is 6°F (-14°C) above the fluid set point 3. Circuit A Saturated Suction Temperature is greater than fluid freeze point 4. Circuit B Saturated Suction Temperature is greater than fluid freeze point Manual reset is required if: Leaving fluid temperature is less than fluid set point + 6°F	If this condition is encountered, check the following items: • Confirm solution and concentration and compare the value with Brine Freeze Setpoint [***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Service Parameters***] • Check for a water flow issue, short circuit or low water flow • Check to be sure there is refrigerant in each circuit • Check the accuracy of the entering and leaving water sensors • Check the accuracy of the Suction Pressure Transducer • Check Evaporator heater operation • Check Evaporator Heater Current Sensing Relay. Confirm proper settings (see Appendix H) and operation. • Check for a wiring issue for the Cooler Heater, Cooler Heater Relay (CLR HTR), and Cooler Heater Current Sensing Relay (CLR HTR CSR) Refer to Alarm 59000 for Cooler Heater Failure Alarm

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
10005	Circuit A Low Suction Temperature	Tested only when the circuit is ON. The alarm will trip if one of these conditions is met: 1. If the circuit is running and SST < –22°F (–30°C) for more than 10 seconds 2. If SST < –13°F (–25°C) for 30 seconds 3. If SST < Brine Freeze Setpoint – 6°F for more than 10 minutes 4. If SST < Brine Freeze Setpoint – 6°F, if capacity is =20%(minimum load), set a timer to 3 minutes, else set it to 90 seconds. At the end of timer, if capacity is at 20% (min_load), set the alarm.	Circuit A shuts down	Automatic, first occurrence in 24 hours OR Manual, if the alarm has occurred in the previous 24 hours In order for the unit controls to reset, the circuit's Saturated Suction Temperature must be greater than the Brine Freeze Setpoint minus 6°F (3.3°C).	If this condition is encountered, check the following items for faults: • sensor wiring to SIOB • board for faulty channel • faulty suction transducer • evaporator water flow switch • loop volume • EXV operation / blocked • liquid line refrigerant restriction, filter drier, service valve, etc. • refrigerant charge If the Leaving Water Set Point is above 40°F (4.4°C) and there is glycol in the loop, consider using the Medium Temperature Brine option to utilize the brine freeze setpoint instead of 34°F (1.1°C) for fresh water (***Main Menu*** ⟶ ***Configuration Menu*** ⟶ ***Service Parameters*** ⟶ ***Line 1 Evaporator Fluid Type and Line 3 Brine Freeze Setpoint***)
10006	Circuit B Low Suction Temperature		Circuit B shuts down		
10014	Customer Interlock Failure	Tested only if EMM option is configured. The alarm will trip if CCN variable **REM_LOCK** is closed, and the unit is running	Unit shuts down	Automatic, first occurrence in 24 hours OR Manual, if the alarm has occurred in the previous 24 hours	If this condition is encountered, check the following item for faults: • remote lockout switch is closed (Connection EMM-J4-CH10)
10031	Unit is in emergency stop	Tested when the unit is On and Off The alarm will trip when the CCN command for an Emergency Stop is sent across the network	Unit shuts down	Automatic after the CCN variable EMSTOP returns to normal. The unit will be normally restarted.	If this condition is encountered, check the following item for faults: • CCN Emergency Stop command
10032	Evaporator pump #1 fault	Tested only when the unit is On If the evaporator flow switch is failed after the Off to On Delay period (m_delay = Yes) while the pump is commanded to be on then, the alarm will be tripped.	The pump and the unit will be stopped.	Manual	If this condition is encountered, check the following items for faults: • interlock wiring circuit (SIOB-B J3) • control signal to pump controller (SIOB-A J2) • evaporator pump contactor for proper operation • control voltage for proper voltage • open chilled water flow switch (SIOB-A J3)
10033	Evaporator pump #2 fault				
10037	Circ A - High Condensing temperature out of map compressor	The alarm will trip if discharge pressure (DP_A) > 304.2 psi (2097 kPa). If discharge pressure exceeds compressor envelope for more than 60 seconds, trip alarm. If SCT > 161°F (71.7°C), trip alarm.	Circuit A will be shut down immediately.	Manual	If this condition is encountered, check the following items for faults: • noncondensables in the refrigerant circuit • condenser air recirculation • proper refrigerant charge (undercharged) • EXV operation • operation beyond the limits of the machine • condenser coils for debris or restriction • condenser fans and motors for proper rotation and operation • discharge service valves to ensure they are open • discharge pressure transducer for accuracy • unit configuration
10038	Circ B - High Condensing temperature out of map compressor	The alarm will trip if discharge pressure (DP_B) > 304.2 psi (2097 kPa). If discharge pressure exceeds compressor envelope for more than 60 seconds, trip alarm. If SCT > 161°F (71.7°C), trip alarm.	Circuit B will be shut down immediately.	Manual	
10067	Circuit A Low Oil Pressure	Tested only when the compressor is ON The alarm will trip if the compressor has been running for more than 60s and oil pressure is lower than the required level for more than 15s OR The alarm will trip if the oil transducer out of range for 5s (see oil transducer alarms 12010 and 12011)	Circuit A will be shut down.	Reset shall be manual if it has occurred more than 3 times during last 24 hours. Automatic otherwise.	If this condition is encountered, check the following items for faults: • sensor wiring to SIOB • board for faulty channel • faulty transducer • plugged oil filter • faulty oil solenoid valve coil • stuck oil solenoid valve • confirm manual service valves are fully open • circuit refrigerant charge • head pressure control • oil level switch to be sure that there is oil in the separator
10068	Circuit B Low Oil Pressure		Circuit B will be shut down.	Reset shall be manual if it has occurred more than 3 times during last 24 hours. Automatic otherwise.	
10070	Circuit A Max Oil Filter Differential Pressure	Tested when compressor is running: The alarm will trip if the differential oil pressure is greater than 50 psig for more than 30s	Circuit A will be shut down.	Manual	If this condition is encountered, check the following items for faults: • discharge and oil sensor wiring to SIOB • boards for a faulty channel • faulty transducer • plugged oil filter • faulty oil solenoid valve • stuck oil solenoid valve • confirm manual service valve is fully open
10071	Circuit B Max Oil Filter Differential Pressure		Circuit B will be shut down.	Manual	

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
10075	Circuit A Low Oil Level	This alarm will be monitored after the START command, once the DELAY state has elapsed. The following conditions will trigger this alarm under compressor running or non-running conditions. If capacity override 59 is active, then the alarm shall be tripped after 45 seconds. This override asserts if the oil level switch is open when the circuit attempts to start. NOTE: In this case, the compressor is not running. If the compressor is running and the oil level switch is opened, the alarm shall be tripped after 45 seconds.	Circuit A will be shut down.	Automatic, first or second occurrence in 24 hours OR Manual, if the alarm has occurred more than 3 times in the previous 24 hours	If this condition is encountered, check the following items for faults: • oil level in the oil separator • oil level switch wiring to the SIOB • board for a faulty channel • faulty oil level switch • oil solenoid valve stuck open
10076	Circuit B Low Oil Level		Circuit B will be shut down.		
10078	Circuit A High Discharge Gas Temperature	Tested when compressor is running: The alarm will trip if the discharge gas temperature is higher than 210°F (98.89°C) for more than 90s OR higher than 215°F (101.6°C) for any period of time	Circuit A will be shut down	Manual	If this condition is encountered, check the following items for faults: • noncondensables in the refrigerant circuit • condenser air recirculation • proper refrigerant charge (undercharged) • EXV operation • operation beyond the limits of the machine • condenser coils for debris or restriction • condenser fans and motors for proper rotation and operation • the discharge service valves to be sure that they are open • check the discharge pressure transducer for accuracy • confirm unit configuration
10079	Circuit B High Discharge Gas Temperature		Circuit B will be shut down	Manual	
10081	Circuit A Suction Valve closed	Tested when compressor is running. The alarm will trip if economizer pressure < suction pressure -14 psi (96.52 kPa) during startup	Circuit A will be shut down	Manual	If this condition is encountered, check the following items for faults: • confirm suction service valve is fully open (if equipped) • compressor strainer for debris • sensor wiring (economizer pressure transducer and suction pressure transducer)
10082	Circuit B Suction Valve closed		Circuit B will be shut down	Manual	
10084	Circuit A High Oil Filter Drop Pressure	Tested when compressor is running. The alarm will trip if the difference between the Circuit Discharge Pressure and the Compressor Oil Pressure is greater than 30 psi (206.8 kPa) for more than 5 minutes	No action on the unit	Manual	If this condition is encountered, check the following items for faults: • sensor wiring to SIOB (discharge pressure transducer and oil pressure transducer) • board for faulty channel • faulty transducer • plugged oil filter • faulty oil solenoid valve coil • stuck oil solenoid valve • confirm manual service valves are fully open
10085	Circuit B High Oil Filter Drop Pressure				
10087	Loss of Refrigerant Flow - Circuit A	Alarm is triggered by either of the following conditions occurring 3 times within 24 hrs: Condition 1: (Approach > Approach High Threshold OR SST < Freeze – SST Low Offset) AND DGT Rate > DGT Rate Threshold AND Startup Timer Elapsed Condition 2: (DGT > DGT High Threshold AND SST Rate < SST Rate Threshold)	The circuit will be shut down and not allowed to start for 5 minutes.	Automatic	Override 66 is activated.
10088	Loss of Refrigerant Flow - Circuit B	Alarm is triggered by either of the following conditions occurring 3 times within 24 hrs: Condition 1: (Approach > Approach High Threshold OR SST < Freeze – SST Low Offset) AND DGT Rate > DGT Rate Threshold AND Startup Timer Elapsed Condition 2: (DGT > DGT High Threshold AND SST Rate < SST Rate Threshold)	The circuit will be shut down and not allowed to start for 5 minutes.	Automatic	Override 66 is activated.
10091	Evaporator Flow Switch Failure	Tested when the unit is ON: The alarm will trip if the evaporator flow switch fails to close within the Off to On Delay (m_state = On) OR if the evaporator flow switch is opened during normal operation Tested when the unit is OFF: The alarm will trip if the evaporator pump control (cpumpseq > 0) and evaporator pump_loc (PUMPCONF table) are enabled and the evaporator flow switch is closed after the evaporator pump command is OFF for more than 2 minutes OR if the evaporator flow switch fails to close within the Off to On Delay	The unit and evaporator pump will be stopped immediately.	Automatic, first occurrence in 24 hours OR Manual, if the alarm has occurred in the previous 24 hours	If this condition is encountered, check the following items for faults: • low evaporator flow • fouled flow switch sensor tip • a faulty flow switch • flow switch wiring (SIOB-A-J3) • SIOB for a faulty channel

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
10097	Water Exchanger Temperature Sensors Swap	Tested only when the unit is running. The alarm will trip if the leaving water temperature is higher than the entering water temperature for more than 1 minute.	The unit will be stopped	Manual	If this condition is encountered, check the following items for faults: • check LWT (SIOB-A-J25) and EWT (SIOB-A-J25) wiring at SIOB • check for faulty entering or leaving water temperature sensors • check evaporator nozzles for proper water temperature sensor locations
10101	Circ A - High saturated temperature out of map compressor	The alarm is tripped when saturated suction temperature exceeds a certain value for an extended period of time per the following logic: A timer tallies the elapsed minutes that saturated suction temperature is higher than MOP (62.6°F=17°C). If SST is higher than MOP + 9°F, then the timer is increased by 2 x the elapsed minutes. When saturated suction temperature is lower than MOP or the circuit is OFF, the timer is decreased by the elapsed minutes. The alarm is tripped when the timer reached a value higher than 90 minutes.	Circuit A will be shut down	Manual	If this condition is encountered, check the following items for faults: • wiring of suction temperature thermistor • accuracy of thermistor
10102	Circ B - High saturated temperature out of map compressor		Circuit B will be shut down	Manual	
10123	IM PM Motor Mismatch Cir A	Condition 1: 10Hz < wished Compressor Freq (CAPACTRL_drvcmda) < 35Hz AND Cir A Drive actual power consumed is greater than estimated power by 1.6 Condition 2: 35Hz < wished Compressor Freq (CAPACTRL_drvcmda) < 50Hz AND Cir A Drive actual power factor is less than estimated power by 0.55 where power Factor = (VLT_DRV_drv_pwra *1000.0) / ((VLT_DRV_drv_Ia) *(VLT_DRV_drv_Va)) If either condition 1 or condition 2 is true, alarm will be raised for the corresponding circuit A.	Unit will stop	Manual	Check unit configuration matches type of compressor motor: standard IM (induction motor) vs. PM (permanent magnet motor).
10124	IM PM Motor Mismatch Cir B	Condition 1: 10Hz < wished Compressor Freq (CAPACTRL_drvcmda) < 35Hz AND Cir B Drive actual power consumed is greater than estimated power by 1.6 Condition 2: 35Hz < wished Compressor Freq (CAPACTRL_drvcmda) < 50Hz AND Cir B Drive actual power factor is less than estimated power by 0.55 where power Factor = (VLT_DRV_drv_pwra *1000.0) / ((VLT_DRV_drv_Ia) *(VLT_DRV_drv_Va)) If either condition 1 or condition 2 is true, alarm will be raised for the corresponding circuit B.	Unit will stop	Manual	Check unit configuration matches type of compressor motor: standard IM (induction motor) vs. PM (permanent magnet motor).
12001	Circuit A Discharge Transducer	Tested when the unit is On or Off Alarm will trip if the pressure transducer reads below –7 psi (–48 kPa)	Circuit will be shut down immediately	Automatic, if transducer reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • Sensor accuracy See the Transducer section on page 64 for sensor description and connections.
12002	Circuit B Discharge Transducer				
12004	Circuit A Suction Transducer	Tested when compressor is Off or On Alarm will trip if the pressure transducer reading is below –7 psi (–48 kPa) or SST-EWT > 0 and unit is in cooling mode and EXV opening <40% for 60 seconds and drive speed >5 (compressor On)	Circuit will be shut down immediately	Automatic, if transducer reading returns to normal OR Manual, if the alarm has occurred 3 times within the last 24 hours.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • Sensor accuracy See the Transducer section on page 64 for sensor description and connections.
12005	Circuit B Suction Transducer				
12010	Circuit A Oil Pressure Transducer	Tested when the unit is On or Off Alarm will trip if pressure transducer reading is below –7 psi (–48 kPa)	Circuit will be shut down immediately	Automatic, if transducer reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • Sensor accuracy See the Transducer section on page 64 for sensor description and connections.
12011	Circuit B Oil Pressure Transducer				

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
12013	Circuit A Economizer Pressure Transducer	Tested when the unit is On or Off Alarm will trip if pressure transducer reading is below –7 psi (–48 kPa)	Circuit will be shut down immediately	Automatic, if transducer reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • Sensor accuracy See the Transducer section on page 64 for sensor description and connections.
12014	Circuit B Economizer Pressure Transducer				
12031	Circuit A Condenser Subcooling Liquid Pressure Transducer	Tested when the unit is On or Off Alarm will trip if pressure transducer reading is below –7 psi (-48 kPa)	Circuit will be shut down immediately	Automatic, if transducer reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • Sensor accuracy See the Transducer section on page 64 for sensor description and connections.
12032	Circuit B Condenser Subcooling Liquid Pressure Transducer				
15001	Evaporator Entering Fluid Thermistor	Tested when the unit is On or Off Alarm will trip if the temperature measured by the evaporator entering fluid sensor is outside the range of –40 to 302°F (–40 to 150°C)	Unit is shut down normally or not allowed to start	Automatic, if thermistor reading is inside the range of –40 to 302°F (–40 to 150°C)	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15002	Evaporator Leaving Fluid Thermistor	Tested when the unit is On or Off Alarm will trip if the temperature measured by the evaporator leaving fluid sensor is outside the range of –40 to 302°F (–40 to 150°C)	Unit is shut down normally or not allowed to start	Automatic, if thermistor reading is inside the range of –40 to 302°F (–40 to 150°C)	
15010	OAT Thermistor Failure	Tested when the unit is On or Off Alarm will trip if the temperature measured by the OAT sensor is outside the range of –40 to 302°F (–40 to 150°C)	Unit is shut down normally or not allowed to start	Automatic, if thermistor reading is inside the range of –40 to 302°F (–40 to 150°C)	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15011	Master/Slave Common Fluid Thermistor Failure	Tested when the unit is On or Off Alarm will trip if the temperature measured by the evaporator entering fluid sensor is outside the range of –40 to 302°F (–40 to 150°C)	Unit is shut down normally or not allowed to start	Automatic, if thermistor reading returns to normal	
15012	Circuit A Suction Gas Thermistor	Tested when the circuit is On or Off Alarm will trip if the circuit suction gas sensor reading is outside the range of –40 to 245°F (–40 to 118°C)	Circuit will be shut down immediately	Automatic, if thermistor reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15013	Circuit B Suction Gas Thermistor				
15015	Circuit A Discharge Gas Thermistor	Tested when the circuit is On or Off Alarm will trip if the discharge gas sensor reading is outside the range of –40 to 245°F (–40 to 118°C)	Circuit will be shut down immediately	Automatic, if thermistor reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15016	Circuit B Discharge Gas Thermistor				
15018	Circuit A Condenser Subcooling Liquid Thermistor	Tested when the circuit is On or Off Alarm will trip if the condenser subcooling liquid sensor reading is outside the range of –40 to 245°F (–40 to 118°C)	Circuit will be shut down immediately	Automatic, if thermistor reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15019	Circuit B Condenser Subcooling Liquid Thermistor				
15021	Space Temperature Thermistor	Tested when the circuit is On or Off Alarm will trip if the space temperature sensor reading is outside the range of –40 to 245°F (–40 to 118°C)	No action on the unit	Automatic, if thermistor reading returns to normal	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15024	Circuit A Economizer Gas Thermistor	Tested when the circuit is On or Off Alarm will trip if the sensor reading is outside the range of –40 to 302°F (–40 to 150°C)	Circuit will be shut down immediately	Automatic, if thermistor reading returns to normal	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15025	Circuit B Economizer Gas Thermistor				
15033	Circuit A Compressor Motor Thermistor	Tested when the circuit is On or Off Alarm will trip if the motor temperature sensor reading is outside the range of –40 to 302°F (–40 to 150°C)	Circuit will be shut down immediately	Automatic, if thermistor reading returns to normal. Affected circuit will be restarted normally.	If this condition is encountered, check the following items for faults: • sensor wiring to the SIOB • faulty channel on the board • sensor accuracy See the Thermistors section on page 64 for thermistor description and connections.
15034	Circuit B Compressor Motor Thermistor				

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
17nnn	Compressor VFD Error, Circuit A	Compressor VFD Circuit A fault (see VFD Alarms and Alerts section)	Circuit A will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
18nnn	Compressor VFD Error, Circuit B	Compressor VFD Circuit B fault (see VFD Alarms and Alerts section)	Circuit B will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
20nnn	Fan A1 VFD Error, Circuit A	Fan A1 VFD Circuit A fault (see VFD Alarms and Alerts section)	Circuit A will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
21nnn	Fan A2 VFD Error, Circuit A	Fan A2 VFD Circuit A fault (see VFD Alarms and Alerts section)	Circuit A will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
23nnn	Fan B1 VFD Error, Circuit B	Fan B1 VFD Circuit B fault (see VFD Alarms and Alerts section on page 208)	Circuit B will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
24nnn	Fan B2 VFD Error, Circuit B	Fan B2 VFD Circuit B fault (see VFD Alarms and Alerts section on page 208)	Circuit B will be shut down	Manual	See Table 147 for VFD Alarm/Alert Codes
26znn	ECM ERROR Cir A from Fan 1 to Fan 10	Tested when the unit is On and Off and ECM drives are configured. Alarm sub-codes “nn” are described on page 208.	Circuit A will be shut down	Manual	See Table 144 for ECM Fan Number Alarm Codes
27znn	ECM ERROR Cir A from Fan 11 to Fan 14 and Cir B Fan 1 to Fan 6	Tested when the unit is On and Off and ECM drives are configured. Alarm sub-codes “nn” are described on page 208.	Circuit A or Circuit B will be shut down	Manual	See Table 144 for ECM Fan Number Alarm Codes
28znn	ECM ERROR Cir B from Fan 7 to Fan 14	Tested when the unit is On and Off and ECM drives are configured. Alarm sub-codes “nn” are described on page 208.	Circuit B will be shut down	Manual	See Table 144 for ECM Fan Number Alarm Codes
28800	Unit Fail	More than 50% of the ECM fans have alerts in both circuit A and circuit B	Unit shall be tripped	Reset shall be automatic.	
28900	ECM CIR-A FAIL	More than 50% of the ECM fans in circuit A have alerts	Circuit shall be tripped	Reset shall be automatic.	
29000	ECM CIR-B FAIL	More than 50% of the ECM fans in circuit B have alerts	Circuit shall be tripped	Reset shall be automatic.	
35nnn	Compressor VFD Error, Circuit A	Compressor VFD Circuit A fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes
36nnn	Compressor VFD Error, Circuit B	Compressor VFD Circuit B fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes
38nnn	Fan A1 VFD Error, Circuit A	Fan A1 VFD Circuit A fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes
38203	Fan A1 VFD Error, Circuit A	The Variable Frequency Drive (VFD) has detected a missing motor and generated a W203 Missing Motor Warning. Motor curve parameters are loaded to the fan VFD from the unit controls so that a motor current can be determined. If the current measured does not correspond to the motor curve amp draw for the given speed. The unit controls will not generate the alert until one of the following conditions is met: 1. The Outdoor Ambient Temperature is equal to or greater than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 30 seconds 2. The Outdoor Ambient Temperature is less than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 5 minutes	None; warning only	Automatic	Check motor connections to the VFD; check harness connections to the motor; confirm unit configuration.
39nnn	Fan A2 VFD Error, Circuit A	Fan A2 VFD Circuit A fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
39203	Fan A2 VFD Error, Circuit A	The Variable Frequency Drive (VFD) has detected a missing motor and generated a W203 Missing Motor Warning. Motor curve parameters are loaded to the fan VFD from the unit controls so that a motor current can be determined. If the current measured does not correspond to the motor curve amp draw for the given speed. The unit controls will not generate the alert until one of the following conditions is met: 1. The Outdoor Ambient Temperature is equal to or greater than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 30 seconds 2. The Outdoor Ambient Temperature is less than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 5 minutes	None; warning only	Automatic	Check motor connections to the VFD; check harness connections to the motor; confirm unit configuration.
41nnn	Fan B1 VFD Error, Circuit B	Fan B1 VFD Circuit B fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes
41203	Fan B1 VFD Error, Circuit B	The Variable Frequency Drive (VFD) has detected a missing motor and generated a W203 Missing Motor Warning. Motor curve parameters are loaded to the fan VFD from the unit controls so that a motor current can be determined. If the current measured does not correspond to the motor curve amp draw for the given speed. The unit controls will not generate the alert until one of the following conditions is met: 1. The Outdoor Ambient Temperature is equal to or greater than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 30 seconds 2. The Outdoor Ambient Temperature is less than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 5 minutes	None; warning only	Automatic	Check motor connections to the VFD; check harness connections to the motor; confirm unit configuration.
42nnn	Fan B2 VFD Error, Circuit B	Fan B2 VFD Circuit B fault (see VFD Alarms and Alerts section on page 208)	No action unless subcode = 013: over current 204: locked rotor in which case circuit will shut down	Automatic; reset is manual for subcode 013 and 204	See Table 147 for VFD Alarm/Alert Codes
42203	Fan B2 VFD Error, Circuit B	The Variable Frequency Drive (VFD) has detected a missing motor and generated a W203 Missing Motor Warning. Motor curve parameters are loaded to the fan VFD from the unit controls so that a motor current can be determined. If the current measured does not correspond to the motor curve amp draw for the given speed. The unit controls will not generate the alert until one of the following conditions is met: 1. The Outdoor Ambient Temperature is equal to or greater than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 30 seconds 2. The Outdoor Ambient Temperature is less than 50°F (10°C) and the VFD reports the W203 Missing Motor Warning for at least 5 minutes	None; warning only	Automatic	Check motor connections to the VFD; check harness connections to the motor; confirm unit configuration.
55001	Database module failure	Tested when the unit is ON or OFF. If database module returns an error alarm will be tripped	Unit will be stopped	Automatic	Software malfunction. Power cycle the display.
56001	Lenscan module failure	Tested when the unit is ON or OFF. If lenscan module returns an error alarm will be tripped	Unit will be stopped	Automatic	Software malfunction. Power cycle the display.
57020	Main EXV stepper motor failure - Circuit A	Criteria For Trip Tested when unit is ON or OFF. If the SIOB detects an EXV motor is not in the commanded position, the alarm is set	Circuit A shall be stopped	Manual	Check EXV connections on SIOB. Check connection on EXV.
57021	Main EXV stepper motor failure - Circuit B	Criteria For Trip Tested when unit is ON or OFF. If the SIOB detects an EXV motor is not in the commanded position, the alarm is set	Circuit B shall be stopped	Manual	Check EXV connections on SIOB. Check connection on EXV.

Table 143 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
57023	Main ECO stepper motor failure - Circuit A	Criteria For Trip Tested when unit is ON or OFF. If the SIOB detects an ECO EXV motor is not in the commanded position, the alarm is set	Circuit A shall be stopped	Manual	Check ECO EXV connections on SIOB. Check connection on ECO EXV.
57024	Main ECO stepper motor failure - Circuit B	Tested when unit is ON or OFF. If the SIOB detects an ECO EXV motor is not in the commanded position, alarm is set	Circuit B shall be stopped	Manual	Check ECO EXV connections on SIOB. Check connection on ECO EXV.
59000	Cooler Heater Failure	Cooler heater is on and current sensing relay is open for 10 minutes	Unit goes into TRIPOUT	Manual	
60001	VI Solenoid Diagnostic Test Failure - Circuit A	Tested when unit is ON.VI is cycled from ON to OFF and VFD power is measured. If power delta between ON/OFF of the VI solenoid does not exceed the value in SERVICE1_VIPwrChk then this alarm is set.	Alert Only	Manual	Check VI solenoid for proper operation.
61001	VI Solenoid Diagnostic Test Failure - Circuit B	Tested when unit is ON.VI is cycled from ON to OFF and VFD power is measured. If power delta between ON/OFF of the VI solenoid does not exceed the value in SERVICE1_VIPwrChk then this alarm is set.	Alert Only	Manual	Check VI solenoid for proper operation.
61003	Sensor Swap - Circuit A	Oil pressure is greater than discharge pressure for more than 15s. Only checked at compressor start.	Circuit A shall be stopped	Manual	Verify sensor cable for discharge and oil pressure transducers are connected at the correct location.
61004	Sensor Swap - Circuit B	Oil pressure is greater than discharge pressure for more than 15s. Only checked at compressor start.	Circuit B shall be stopped	Manual	Verify sensor cable for discharge and oil pressure transducers are connected at the correct location.

LEGEND

CCN — Carrier Comfort Network®
ECO — Economizer
EMM — Energy Management Module
EWT — Entering Water Temperature
EXV — Electronic Expansion Valve
LEN — Local Equipment Network
LWT — Leaving Water Temperature
MOP — Maximum Operating Pressure
OAT — Outdoor Air Temperature
SIOB — Standard Input Output Board
SST — Saturated Suction Temperature
VFD — Variable Frequency Drive

Table 144 — ECM Fan Number Alarm Codes[a]

SUB-CODE nn	ALARM/ALERT WORD 26znn-28znn	POSITION	ALARM/ALERT KIND	ALARM/ALERT DESCRIPTION	COMMENT
02	Alarm Word	bit 0	Alert	Phase failure	Phase failure (3-phase devices) or line undervoltage (single-phase devices)
04	Alarm Word	bit 2	Alert	Output stage overheating	Check fan operation and for blocked coils.
05	Alarm Word	bit 3	Alert	Communication error	Communication error between master controller and slave controller
06	Alarm Word	bit 4	Alert	Fan Bad	Fan Bad (general error)
07	Alarm Word	bit 5	Alert	Motor overheating	Check fan operation and for blocked coils.
08	Alarm Word	bit 6	Alert	Hall sensor error	
09	Alarm Word	bit 7	Alert	Motor blocked	Check for fan blade interference.
10	Alarm Word	bit 8	Alert	Speed limit exceeded	Incorrect configuration
11	Alarm Word	bit 10	Alert	Rotor sensor calibr. error	Rotor position sensor calibration error
12	Alarm Word	bit 12	Alert	DC-link undervoltage	
13	—	—	Alert	No response	ECM Fan got disconnected
14	—	—	Alert	Serial_ID_Mismatch	
15	—	—	Alarm	Illegal_Factory_config	

ALERT	NAME	CRITERIA FOR TRIP	ACTION TO BE TAKEN	ALERT RESET METHOD
26znn, 27znn, 28znn	ECM ERROR Cir x Fan Number Where For Cir A, Fan Number = z +1 and for Cir B, Fan Number = z-3	Tested when the unit is On and Off and ECM drives are configured. Alarm sub-codes are described above	Circuit X shall be stopped	Reset shall be manual.

NOTE(S):

a. In ECM fan number alarm codes, znn is the alarm subcode, where (z+1) OR (z-3) denotes fan number.

Table 145 — Master/Slave Alarm Codes[a]

ALARM CODE 90nn	ALARM DESCRIPTION Master/Slave Configuration Error
09000	Master/slave alarm present indicator.
09001	LagPump Cfg error: Lag_pump control is selected while pump configuration is disabled.
09002	Same Address error: Master and Slave have the same address.
09003	No Slave error: No Slave Configured.
09004	SlavePump Sequence error: Slave Lag_pump is selected while slave pump configuration is disabled.
09005	EWT OPT CONFLICT: Master and slave shall have same water control type.
09006	LWT OPT CONFLICT: Master and slave shall have same water control type.
09007	SLV NO LAG PUMP: Master lag pump control is configured.
09008	Slv with lag pump: Master lag pump control is not configured.
09009	Slv Local error: If the slave demand_limit or chil_s_s or control point or setpoint is forced with force < 4 (chilstat == 3 updated by fsm_sub(), set M_MSTSLV maintenance table master slave error = 4 and slave_enable to FALSE and UNIT NOT FAILED.
09010	Slv Fault error: If the slave demand_limit or chil_s_s or control point or setpoint is forced with force < 4 (chilstat == 3 updated by fsm_sub(), set M_MSTSLV maintenance table master slave error = 4 and slave_enable to FALSE and UNIT FAILED.
09011	Mstr Oper type error: If unit is not in CCN mode.
09012	Loss of communication: Communication between Master and Slave has been lost for more than 2 minutes.
09013	HC SEL CONFLICT: Master and Slave Heat/Cool selection conflict.
09014	prlel series conflict: Master and Slave Parallel and series selection conflict.
09015	EWTOptseries conflict: Master and Slave Ewt option in conflict with chiller in series.
09016	SlvEWT opt series conflict: Slave Ewt option in conflict with chiller in series.
09017	Heating Error: heating error with chiller in series.

NOTE(S):

a. Master/Slave subcode is a special functionality where the alarms of Master/Slave functionality are displayed with their corresponding subcodes. This functionality is currently supported only for 9000 series of Master/Slave alarms. The unit is tested in both On and Off states. If the unit is Master (ms_sel = master), is in Master operating type, and a Master/Slave configuration error (ms_error) from 1 to 13 is detected, then the alert is tripped. If the unit is Slave (ms_sel = slave), is in CCN operating type, and a Master/Slave configuration error (ms_error, see Master/Slave error code description) is detected, then the alert is tripped. When an alert is tripped, the unit is prevented from starting in Master/Slave operation and ALARM_LED will blink. Reset is automatic when the Master/Slave configuration returns to normal or if unit is not in Master operating type. The alarm shall be displayed as MC-x through the main interface alarm menu, with x providing the illegal configuration number.

LEGEND

CCN — Carrier Comfort Network®
EWT — Entering Water Temperature

VFD ALARMS AND ALERTS

Alarms and alerts associated with the VFD function follow a different naming convention than general unit faults. These alarms and alerts can be viewed and reset following the procedures outlined in the sections Current Alarms and Resetting Alarms on page 194. Table 146 lists the VFD alarm and alert naming conventions, while Table 147 lists the Danfoss codes associated with the alarms and alerts. These represent the most common alarms and alerts associated with VFD malfunction. Refer to the appropriate Danfoss documentation for more information on other alarms.

Table 146 — VFD Alarm/Alert Naming Conventions

CIRCUIT X COMPRESSOR VFD FAILURE CODE			
Circuit		**Alarm Format[a]**	**Alert Format[a]**
A		17nnn	35nnn
B		18nnn	36nnn
CIRCUIT X FAN VFD Y WARNING FAILURE CODE			
Fan Drive	**Circuit**	**Alarm Format[a]**	**Alert Format[a]**
1	**A**	20nnn	38nnn
2		21nnn	39nnn
3		22nnn	40nnn
1	**B**	23nnn	41nnn
2		24nnn	42nnn
3		25nnn	43nnn

NOTE(S):

a. The alarm code is represented by nnn. See Table 147.

Table 147 — Alarms List[a]

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	ACTION TO BE TAKEN	REFERENCE PARAMETER	COMMENTS
001	Warning	10 Volts Low	The control card voltage is <10 V from terminal 50. Remove some of the load from terminal 50, as the 10 V supply is overloaded. Maximum 15 mA or minimum 590 Ω. A short circuit in a connected potentiometer or incorrect wiring of the potentiometer can cause this condition.	Remove the wiring from terminal 50. If the warning clears, the problem is with the wiring. If the warning does not clear, replace the control card.		Noncritical
002	Determined by reference parameter setting.	Live Zero Error	This warning or alarm only appears if programmed in parameter 6-01 Live Zero Timeout Function. The signal on 1 of the analog inputs is less than 50% of the minimum value programmed for that input. Broken wiring or a faulty device sending the signal can cause this condition.	• Check the connections on all the analog mains terminals. - Control card terminals 53 and 54 for signals, terminal 55 common. - MCB 101 terminals 11 and 12 for signals, terminal 10 common. - MCB 109 terminals 1, 3, and 5 for signals, terminals 2, 4, and 6 common. • Check that the frequency converter programming and switch settings match the analog signal type. • Perform an input terminal signal test.	6-01 Live Zero Timeout	Noncritical
003	Warning	No Motor	Motor wiring disconnected. Reference Parameter must be programmed to (2) or (6)	Inspect motor wiring connections at VFD and at motor	1-80 Function at Stop	Noncritical
004	Determined by reference parameter setting.	Mains Phase Loss	A phase is missing on the supply side, or the mains voltage imbalance is too high. This message also appears for a fault in the input rectifier on the frequency converter. Options are programmed in parameter 14-12 Function at Mains Imbalance.	Check the supply voltage and supply currents to the frequency converter	14-12 Function at Mains Imbalance	Noncritical
005	Warning	DC Link Voltage High	The DC-link voltage (DC) is higher than the high-voltage warning limit. The limit depends on the frequency converter voltage rating. The unit is still active.	Check the supply voltage and supply currents to the frequency converter		Noncritical
006	Warning	DC Link Voltage Low	The DC-link voltage (DC) is lower than the low-voltage warning limit. The limit depends on the frequency converter voltage rating. The unit is still active.	Check the supply voltage and supply currents to the frequency converter		Noncritical
007	Determined by reference parameter setting.	DC Overvoltage	If the DC-link voltage exceeds the limit, the frequency converter trips after a time.	• Extend the ramp time. • Change the ramp type.		Noncritical
008	Determined by reference parameter setting.	DC Undervoltage	If the DC-link voltage drops below the undervoltage limit, the frequency converter checks if a 24 V DC back-up supply is connected. If no 24 V DC back-up supply is connected, the frequency converter trips after a fixed time delay. The time delay varies with unit size.	• Check that the supply voltage matches the frequency converter voltage. • Perform an input voltage test. • Perform a soft charge circuit test.		Noncritical
009	Determined by reference parameter setting.	Inverter Overloaded	The frequency converter has run with more than 100% overload for too long and is about to cut-out. The counter for electronic thermal inverter protection issues a warning at 98% and trips at 100%, while giving an alarm. The frequency converter cannot be reset until the counter is below 90%.	• Compare the output current shown on the LCP with the frequency converter rated current. • Compare the output current shown on the LCP with the measured motor current. • Display the thermal frequency converter load on the LCP and monitor the value. When running above the frequency converter continuous current rating, the counter increases. When running below the frequency converter continuous current rating, the counter decreases.		Noncritical
010	Determined by reference parameter setting.	Motor ETR Overtemperature	According to the electronic thermal protection (ETR), the motor is too hot. Select whether the frequency converter issues a warning or an alarm when the counter reaches 100% in parameter 1-90 Motor Thermal Protection. The fault occurs when the motor runs with more than 100% overload for too long.	• Check for motor overheating. • Check if the motor is mechanically over-loaded. • Check that the motor current set in 1-24 Motor Current is correct. • Ensure that the motor data in parameters 1–20 to 1–25 are set correctly.	1-90 Motor Thermal Protection (this parameter should be set to [0])	Noncritical
011	Determined by reference parameter setting.	Motor Thermistor Overtemperature	Check whether the thermistor is disconnected. Select whether the frequency converter issues a warning or an alarm in parameter 1-90 Motor Thermal Protection	• Check for motor overheating. • Check if motor is mechanically overloaded.	1-90 Motor Thermal Protection (this parameter should be set to [0])	Noncritical
012	Determined by reference parameter setting.	Torque Limit	The torque has exceeded the value in parameter 4-16 Torque Limit Motor Mode or the value in parameter 4-17 Torque Limit Generator Mode. Parameter 14-25 Trip Delay at Torque Limit can change this warning from a warning-only condition to a warning followed by an alarm.	• If the motor torque limit is exceeded during ramp-up, extend the ramp-up time. • If the generator torque limit is exceeded during ramp-down, extend the ramp-down time. • If torque limit occurs while running, increase the torque limit. Make sure that the system can operate safely at a higher torque. • Check the application for excessive current draw on the motor		Noncritical
013	Determined by reference parameter setting.	Overcurrent	The inverter peak current limit (approximately 200% of the rated current) is exceeded. The warning lasts approximately 1.5 s, then the frequency converter trips and issues an alarm. Shock loading or quick acceleration with high-inertia loads can cause this fault. If the acceleration during rampup is quick, the fault can also appear after kinetic back-up. If extended mechanical brake control is selected, a trip can be reset externally.	• Remove the power and check if the motor shaft can be turned. • Check that the motor size matches the frequency converter. • Check that the motor data is correct in parameters 1–20 to 1–25.		Noncritical. FOR FAN VFD ONLY: This alarm is managed by Carrier application. The alert is set if this bit is ON and fan drive frequency < 35 Hz. If this alert is set, the circuit is stopped.

Table 147 — Alarms List[a] (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	ACTION TO BE TAKEN	REFERENCE PARAMETER	COMMENTS
014	Determined by reference parameter setting.	Earth (Ground) Fault	There is current from the output phase to ground, either in the cable between the frequency converter and the motor or in the motor itself. This fault is detected during motor operation.	• Remove power to the frequency converter and repair the ground fault. • Check for ground faults in the motor by measuring the resistance to ground of the motor cables and the motor with a megohmmeter.		Noncritical
015	Alarm	Hardware Mismatch	A fitted option is not operational with the present control board hardware or software	Record the value of the following parameters and contact Danfoss: • 15-40 FC Type • 15-41 Power Section • 15-42 Voltage • 15-43 Software Version • 15-45 Actual Typecode String • 15-49 SW ID Control Card • 15-50 SW ID Power Card • 15-60 Option Mounted • 15-61 Option SW Version (for each option slot)		
016	Alarm	Short Circuit	There is short-circuiting in the motor or motor wiring	• Remove the power to the frequency converter and repair the short circuit		Noncritical
017	Determined by reference parameter setting.	Control Word Timeout (Serial Communication Failure)	There is no communication to the frequency converter. The warning is only active when 8-04 Control Word Timeout Function is NOT set to [0] Off. If 8-04 Control Word Timeout Function is set to [5] Stop and Trip, a warning appears and the frequency converter ramps down until it stops, and then it displays an alarm	Check the connections on the serial communications cables including the shields and termination resistors.	8-04 Control Timeout Function	Noncritical. FOR FAN VFD ONLY: This alarm is managed by Carrier application; it is ignored and will not be logged.
023	Warning	Internal Fan Fault	Monitors operation of the internal cooling fan	Check for proper fan operation, cycle power to VFD and confirm that fan operates at startup		Noncritical. Error 24 and 104 possible.
025	Alarm	Brake Resistor Short-circuited				Noncritical. Validated in alarm but described as alert in Danfoss documentation
026	Alarm	Brake Resistor Power Limit				Noncritical
028	Alarm	Brake Check				Noncritical
029	Determined by reference parameter setting.	Drive over temperature	The maximum temperature of the heat sink has been exceeded. The temperature fault does not reset until the temperature drops below a defined heat sink temperature. The trip and reset points are different based on the frequency converter power size	• Ambient temperature too high. • Motor cables too long. • Incorrect airflow clearance above and below the frequency converter. • Blocked airflow around frequency converter. • Damaged heat sink fan. • Dirty heat sink.		Critical
030	Determined by reference parameter setting.	Motor Phase U Missing	Motor phase U between the frequency converter and the motor is missing	Remove the power from the frequency converter and check motor phase U	4-58 Missing Motor Phase Function	Critical
031	Determined by reference parameter setting.	Motor Phase V Missing	Motor phase V between the frequency converter and the motor is missing	Remove the power from the frequency converter and check motor phase V	4-58 Missing Motor Phase Function	Critical
032	Determined by reference parameter setting.	Motor Phase W Missing	Motor phase W between the frequency converter and the motor is missing	Remove the power from the frequency converter and check motor phase W	4-58 Missing Motor Phase Function	Critical
033	Alarm	Inrush fault				Noncritical
034	Determined by reference parameter setting.	Fieldbus Communication Fault	The fieldbus on the communication option card is not working	Check the communication wiring connections, including the shield. Check the termination resistors.		Noncritical
036	Determined by reference parameter setting.	Mains Failure	This warning/alarm is only active if the supply voltage to the frequency converter is lost and parameter 14-10 Mains Failure is not set to option [0] No Function	Check the fuses to the frequency converter, mains supply to the unit and the phase imbalance (±3%)		Noncritical
038	Alarm	Internal fault				Noncritical
039	Alarm	Heat Sink Sensor	No feedback from the heat sink temperature sensor	The signal from the IGBT thermal sensor is not available on the power card. The problem could be on the power card, on the gatedrive card, or the ribbon cable between the power card and gate drive card		
045	Alarm	Ground Fault	Ground fault detected on motor start	• Remove power to the frequency converter and repair the ground fault. • Check for ground faults in the motor by measuring the resistance to ground of the motor cables and the motor with a megohmmeter.		
046	Alarm	Power Card Supply	The supply on the power card is out of range	Contact Carrier Service		
047	Determined by reference parameter setting.	24V Supply Low	The supply on the power card is out of range	Contact Carrier Service		Noncritical
048	Alarm	1.8 V supply low				Noncritical

Table 147 — Alarms List[a] (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	ACTION TO BE TAKEN	REFERENCE PARAMETER	COMMENTS
049	Determined by reference parameter setting.	Speed Limit	When the speed is outside of the specified range in parameter 4-12 Motor Speed Low Limit [Hz] and parameter 4-14 Motor Speed High Limit [Hz], the frequency converter shows a warning. When the speed is below the specified limit in parameter 1-87 Trip Speed Low [Hz] (except when starting or stopping), the frequency converter trips	Contact Carrier Service	1-87 Trip Speed Low [Hz]	Noncritical
057	Alarm	AMA timeout				Noncritical. Error 50 to 58 possible.
059	Warning	Current Limit Exceeded	The current is higher than the value in parameter 4-18 Current Limit.	Ensure that motor data in parameters 1–20 to 1–25 are set correctly. Contact Carrier Service		Noncritical
062	Warning	Output Frequency at Maximum Limit	The output frequency has reached the value set in parameter 4-19 Max Output Frequency	The warning clears when the output drops below the maximum limit		Noncritical
064	Warning	Voltage Limit	Supply Voltage is too low	Check supply voltage to determine if within permissible limits of VFD		Noncritical
065	Warning/ Alarm	Control Card Over-Temperature	The temperature limit of the control card has been exceeded	• Check that the ambient operating temperature is within the limits. • Check for clogged filters. • Check the fan operation. • Check the control card		Noncritical
066	Warning	Heat Sink Temperature Low	The frequency converter is too cold to operate. This warning is based on the temperature sensor in the IGBT module	Confirm that the VFD heater is working properly by checking voltage across the heater terminals, 120V should be present at low temperatures which would trigger this warning		Noncritical
067	Alarm	Option Configuration has Changed				Critical
068	Alarm	DI 37 - Safe stop activated	Safe Stop input has been activated	Check Compressor High Pressure Switch	5-19 Terminal 37 Safe Stop	Noncritical. Machine shuts down. HP Switch alarm 1103 instead of 1768.
069	Alarm	Power Card Temperature	The temperature sensor on the power card is either too hot or too cold	• Check that the ambient operating temperature is within limits. • Check for clogged filters. • Check fan operation. • Check the power card		
071	Alarm	PTC 1 Safe Stop				Noncritical
072	Alarm	Dangerous Failure Emergency Stop	An unexpected combination of failures	Contact Carrier Service		Critical
080	Alarm	Drive Initialized to Default Value				Noncritical
090	Warning	Encoder Loss				Noncritical. NA on drive size 102.
094	Alarm	End of Curve				Noncritical
095	Alarm	Broken Belt				Noncritical
096	Warning	Start Delayed				Noncritical
097	Warning	Stop Delayed				Noncritical
098	Warning	Clock Fault	Time is not set or the RTC clock has failed	Reset the clock in parameter 0-70 Date and Time. Contact Carrier Service	0-7 Clock Settings	Noncritical
203	Warning	Missing Motor				Noncritical. This alarm is managed by Carrier application. The alert is set if this bit is ON for 30s for OAT ≥ 50ºF, 5 min if OAT < 50ºF
204	Warning	Locked Rotor				Noncritical. This alarm is managed by Carrier application. The alert is set if this bit is ON for 45s for OAT ≥ 50ºF, 5 minutes if OAT < 50ºF. If this alert is set, the circuit is stopped.
243	Warning/ Alarm	Brake IGBT Fault	IGBT is defective or not functioning properly	Contact Carrier Service		Noncritical

Table 147 — Alarms List[a] (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	ACTION TO BE TAKEN	REFERENCE PARAMETER	COMMENTS
244	Warning/ Alarm	Heat Sink Temperature	This alarm is generated by the Variable Frequency Drive. The alarm will be generated if the maximum temperature of the heat sink has been exceeded. The temperature fault cannot reset until the temperature drops below a defined heat sink temperature. The trip and reset points are different based on the power size. This alarm is equivalent to A29 - Heat Sink Temp.	Automatic, after heat sink temperature falls below a preset point.		The circuit is shut down or not allowed to start.
246	Alarm	Power Card Supply				
247	Alarm	Power Card Temperature				Noncritical. Validated as alert but described as alarm in Danfoss documentation
251	Alarm	New spare parts				Critical. Error 250 or 70 possible
301**		Error in set of configuration parameters 1				Noncritical. Refer to Danfoss documentation for more information.
302**		Error in set of configuration parameters 2				Noncritical. Refer to Danfoss documentation for more information.
303**		Error in set of configuration parameters 3 (IOMAP)				Noncritical. Refer to Danfoss documentation for more information.
900	Alarm	ServiceTrip, Read/ Write				Noncritical. Refer to Danfoss documentation for more information.
901	Alarm	ServiceTrip				Noncritical. Refer to Danfoss documentation for more information.
902	Alarm	ServiceTrip, Spare part				Noncritical. Refer to Danfoss documentation for more information.
903	Alarm	ServiceTrip				Noncritical. Refer to Danfoss documentation for more information.
904	Alarm	Discharge High				Noncritical. Refer to Danfoss documentation for more information.
905	Alarm	Start Failed				Noncritical. Refer to Danfoss documentation for more information.
906	Alarm	Speed Limit				Noncritical. Refer to Danfoss documentation for more information.
907	Alarm	Illegal Option Combination				Noncritical. Refer to Danfoss documentation for more information.
908	Alarm	No Safety Option				Noncritical. Refer to Danfoss documentation for more information.
910	Alarm	ECB error				Noncritical. Refer to Danfoss documentation for more information.
911	Alarm	Hoist Mechanical Brake (A22)				Noncritical. Refer to Danfoss documentation for more information.

Table 147 — Alarms List[a] (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	ACTION TO BE TAKEN	REFERENCE PARAMETER	COMMENTS
913	Warning	Compressor Interlock				Noncritical. Refer to Danfoss documentation for more information.
914	Warning	Mechanical Brake Sliding				Noncritical. Refer to Danfoss documentation for more information.
915	Warning	Safe Option Warning				Noncritical. Refer to Danfoss documentation for more information.
916	Warning	Auto DC Braking				Noncritical. Refer to Danfoss documentation for more information.
917	Warning	KTY Warn				Noncritical. Refer to Danfoss documentation for more information.
918	Warning	ECB Warn				Noncritical. Refer to Danfoss documentation for more information.
919	Warning	BackEMF too High				Noncritical. Refer to Danfoss documentation for more information.
999	Alert/ Warning word 1 or 2	Error is not referenced by Danfoss documentation				Noncritical. This alert is generated only when the Danfoss VFD asserts any unexpected data.
72	Warning	Reserved				Noncritical. Refer to Danfoss documentation for more information.

NOTE(S):

a. Warning or Alarm is determined by the setting of the reference Parameter.

LEGEND

AMA — Automatic Motor Adaptation
IGBT — Insulated Gate Bipolar Transistor
PTC — Positive Temperature Coefficient
VFD — Variable Frequency Drive

Troubleshooting

The Carrier Controller software offers several tools to assist with troubleshooting unit issues.

BLACK BOX FUNCTION

The control system is equipped with a “black box” function that continuously stores operating parameters in the onboard memory every 5 seconds. For each alarm event that is triggered, the system collects up to 180 records (15 minutes) of data, with approximately 14 minutes of data recorded before the alarm is triggered and 1 minute of data after. The black box function is capable of storing 20 events of data on a rotating basis (first in first out). This file can be accessed by using the Carrier Service Tools; contact your Carrier representative for assistance. See Tables 148 and 149.

TROUBLESHOOTING GUIDE

Table 150 shows potential unit issues and possible solutions. This table is meant only as a guide, and is not exhaustive in issues or solutions.

Table 148 — Black Box Function Recorded Parameters

DESCRIPTION	POINT NAME
TEMP_SCT_A	Saturated Condensing Temperature A
TEMP_SCT_B	Saturated Condensing Temperature B
TEMP_SST_A	Saturated Suction Temperature A
TEMP_SST_B	Saturated Suction Temperature B
TEMP_SLT_A	Saturated Liquid Temperature A
TEMP_SLT_B	Saturated Liquid Temperature B
TEMP_SUCT_A	Suction Temperature A
TEMP_SUCT_B	Suction Temperature B
TEMP_DGT_A	Discharge Gas Temperature A
TEMP_DGT_B	Discharge Gas Temperature B
TEMP_LIQ_T_A	Liquid Temperature A
TEMP_LIQ_T_B	Liquid Temperature B
TEMP_CP_TMP_A	Compressor Temperature A
TEMP_CP_TMP_B	Compressor Temperature B
PRESSURE_OP_A	Oil Pressure A
PRESSURE_OP_B	Oil Pressure B
EXV_CTRL_DSH_A	Discharge Superheat A
EXV_CTRL_DSH_B	Discharge Superheat B
TEMP_COOL_EWT	Entering Water Temperature
TEMP_COOL_LWT	Leaving Water Temperature
TEMP_OAT	Outside Air Temperature
GENUNIT_CTRL_PNT	Control Point
EXV_CTRL_EXV_A	EXV Position A
EXV_CTRL_EXV_B	EXV Position B
VLT_DRV_drv_Fa	Compressor VFD Frequency A
VLT_DRV_drv_Fb	Compressor VFD Frequency B
VLT_DRV_drv_Ia	Compressor VFD Current A
VLT_DRV_drv_Ib	Compressor VFD Current B
VLT_DRV_drv_pwra	Compressor VFD Power A
VLT_DRV_drv_pwrb	Compressor VFD Power B
CAPACTRL_cap_pc_a	Capacity Running Circuit A
CAPACTRL_cap_pc_b	Capacity Running Circuit B
CAPACTRL_capmoda	Capacity Control State A
CAPACTRL_capmodb	Capacity Control State B
CAPACTRL_overrida	Capacity Override A
CAPACTRL_overridb	Capacity Override B
EXV_CTRL_exv_sta	EXV State A
EXV_CTRL_exv_stb	EXV State B
EXV_CTRL_ov_exv_a	EXV Override A
EXV_CTRL_ov_exv_b	EXV Override B
FAN_DRV_fd_Fa1	Fan VFD Frequency A1
FAN_DRV_fd_Fa2	Fan VFD Frequency A2
FAN_DRV_fd_Fb1	Fan VFD Frequency B1
FAN_DRV_fd_Fb2	Fan VFD Frequency B2
FAN_CTRL_wfan_f_a	Fan Frequency A
FAN_CTRL_wfan_f_b	Fan Frequency B
FAN_CTRL_fan_sta	Fan Control State A
FAN_CTRL_fan_stb	Fan Control State B
GENUNIT_DEM_LIM	Demand Limit
PUMPSTAT_FLOW_SW	Flow Switch 1
PUMPSTAT_FLOW_SWB	Flow Switch 2
OUTPUTS_FCA1	Fan Contactor 1, Circuit A
OUTPUTS_FCA2	Fan Contactor 2, Circuit A
OUTPUTS_FCA3	Fan Contactor 3, Circuit A
OUTPUTS_FCA4	Fan Contactor 4, Circuit A
OUTPUTS_FCA5	Fan Contactor 5, Circuit A
OUTPUTS_FCA6	Fan Contactor 6, Circuit A
OUTPUTS_FCA7	Fan Contactor 7, Circuit A
OUTPUTS_FCA8	Fan Contactor 8, Circuit A
OUTPUTS_FCB1	Fan Contactor 1, Circuit B
OUTPUTS_FCB2	Fan Contactor 2, Circuit B
OUTPUTS_FCB3	Fan Contactor 3, Circuit B
OUTPUTS_FCB4	Fan Contactor 4, Circuit B
OUTPUTS_FCB5	Fan Contactor 5, Circuit B
OUTPUTS_FCB6	Fan Contactor 6, Circuit B
OUTPUTS_FCB7	Fan Contactor 7, Circuit B
OUTPUTS_FCB8	Fan Contactor 8, Circuit B
OUTPUTS_VI_A	VI Solenoid Valve A
OUTPUTS_VI_B	VI Solenoid Valve A

LEGEND

A — Circuit A
B — Circuit B
EXV — Electronic Expansion Valve

Table 149 — Black Box Function Alarms Collected

ALARM CODE	ALARM TEXT DESCRIPTION AND CCN MESSAGE
1101	Compressor A Motor temperature too high
1103	Compressor A High Pressure Switch protection
2101	Compressor B Motor temperature too high
2103	Compressor B High Pressure Switch protection
7001	Illegal factory configuration
8001	No factory configuration
10001	Evaporator Freeze Protection
10005	Circuit A Low Suction Temperature
10006	Circuit B Low Suction Temperature
10014	Customer Interlock Failure
10030	Master/Slave communication Failure
10032	Evaporator Pump #1 Fault
10033	Evaporator Pump #2 Fault
10037	Circ A - High condensing temperature out of map compressor
10038	Circ B - High condensing temperature out of map compressor
10050	Refrigerant Leakage Detection
10067	Circuit A Low Oil Pressure
10068	Circuit B Low Oil Pressure
10070	Circuit A Max Oil Filter Differential Pressure
10071	Circuit B Max Oil Filter Differential Pressure
10075	Circuit A Low Oil level
10076	Circuit B Low Oil level
10078	Circuit A High Discharge Gas Temperature
10079	Circuit B High Discharge Gas Temperature
10081	Circuit A Low economizer pressure or suction valve closed
10082	Circuit B Low economizer pressure or suction valve closed
10084	Circuit A High Oil Filter Pressure Drop
10085	Circuit B High Oil Filter Pressure Drop
10087	Circ A - Loss of Refrigerant Flow
10088	Circ B - Loss of Refrigerant Flow
10091	Evaporator Flow Switch Failure
10097	Water Exchanger Temperature Sensors Swapped
10101	Circuit A - saturated suction Temperature out of MAP compressor
10102	Circuit B - saturated suction Temperature out of MAP compressor
17001	Circuit A Compressor VFD Failure
18001	Circuit B Compressor VFD Failure
20001	Circuit A Fan VFD 1 Failure
21001	Circuit A Fan VFD 2 Failure
22001	Circuit A Fan VFD 3 Failure
23001	Circuit B Fan VFD 1 Failure
24001	Circuit B Fan VFD 2 Failure
25001	Circuit B Fan VFD 3 Failure
35001	Circuit A Compressor VFD Warning
36001	Circuit B Compressor VFD Warning
38001	Circuit A Fan VFD 1 Warning
39001	Circuit A Fan VFD 2 Warning
40001	Circuit A Fan VFD 3 Warning
41001	Circuit B Fan VFD 1 Warning
42001	Circuit B Fan VFD 2 Warning
43001	Circuit B Fan VFD 3 Warning
55001	Database module Failure
56001	Lenscan module Failure
57020	Main EXV stepper motor Failure - cir A
57021	Main EXV stepper motor Failure - cir B
57023	EXV eco stepper motor Failure - cir A
57024	EXV eco stepper motor Failure - cir B
60001	VI Solenoid Diagnostic Test Failure - cir A
61001	VI Solenoid Diagnostic Test Failure - cir B

LEGEND

A — Circuit A
B — Circuit B
EXV — Electronic Expansion Valve

Table 150 — Troubleshooting

SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY
Unit Does Not Run	Check for power to unit	• Check overcurrent protection device. • Check non-fused disconnect (if equipped). • Restore power to unit. • Check Active Capacity Override, CAPA_override.
	Wrong or incorrect unit configuration	Check unit configuration.
	Active alarm	Check Alarm status. See Alarms and Alerts section and follow troubleshooting instructions.
	Active operating mode	Check for Operating Modes. See Operating Modes section and follow troubleshooting instructions.
	High pressure switch (HPS) open	• Recheck high pressure switch. • Check HPS wiring in compressor VFD.
	VFD Enable	• Check VFD enable output from SIOB J6-DO04 for 24VAC. • Check wiring in compressor VFD at terminals 13 and 27.
Unit Operates Too Long or Continuously	Low refrigerant charge	Check for leak and add refrigerant.
	Air in chilled water loop	Purge water loop.
	Non-condensables in refrigerant circuit	Remove refrigerant and recharge.
	Inoperative EXV	• Check EXV, clean or replace. • Check EXV cable, replace if necessary. • Check EXV board for output signal.
	Load too high	Unit may be undersized for application.
Circuit Does Not Run	Active alarm	Check Alarm status. See Alarms and Alerts section and follow troubleshooting instructions. Check Active Capacity Override, CAPA_override.
	Active operating mode	Check for Operating Modes. See Operating Modes section and follow troubleshooting instructions. Check Active Capacity Override, CAPA_override.
Circuit Does Not Load	Active alarm	Check Alarm status. See the Alarms and Alerts section and follow troubleshooting instructions.
	Active operating mode	Check for Operating Modes. See Operating Modes section and follow troubleshooting instructions.
	Low saturated suction temperature	See Capacity Control Overrides #23 and #24.
	High circuit suction superheat	The circuit capacity is not allowed to increase if circuit superheat is greater than 36°F (20°C). • Check for faulty suction transducer or wiring. • Check for restriction in liquid line (filter drier, service valve, etc.). • Check EXV operation. • Check for proper refrigerant charge.
	Low suction superheat	The circuit capacity is not allowed to increase if circuit superheat is less than 18°F (10°C). • Check for faulty suction transducer or wiring. • Check for restriction in liquid line (filter drier, service valve, etc.). • Check EXV operation. • Check for proper refrigerant charge.
	Low discharge superheat	The circuit is not allowed to increase if discharge superheat is below 16.2°F (–8.8°C). • Check for faulty suction transducer or wiring. • Check for restriction in liquid line (filter drier, service valve, etc.). • Check EXV operation. • Check for proper refrigerant charge.
Compressor or Fans Do Not Run	Active alarm	Check Alarm status. See the Alarms and Alerts section and follow troubleshooting instructions.
	Active operating mode	Check for Operating Modes. See the Operating Modes section and follow troubleshooting instructions.
	VFD fuses blown	Check compressor and fan VFD fuses and replace if necessary
Chilled Water Pump is ON, but the Machine is OFF	Evaporator freeze protection	Chilled water loop temperature too low. Check evaporator heater.

LEGEND

EXV — Electronic Expansion Valve
HPS — High Pressure Switch
VFD — Variable Frequency Drive

Electrical Schematics

Control and power schematics for 30XV units with Greenspeed® Intelligence are shown in Fig. 106-121.

Quick Test (Service Test)

Main power and control circuit power must be on for Quick Test. The Carrier Controller Quick Test function is used to verify proper operation of various devices within the chiller, such as condenser fans, automated isolation valves, EXVs, and remote alarm relays. This is helpful during the start-up procedure to determine if devices are installed correctly.

To use the Quick Test mode, the unit must be in the local OFF mode. To reach the Quick Test menu, follow the path: ***Main Menu → Quick Test Table***. The unit must be in Local Off mode to adjust parameters in the table. The Quick Test function is not available remotely, and can only be used from the Carrier Controller display. See the Start-Up Checklist at the end of this document, page CL-6, for a list of the parameters in the Quick Test Table.

Example: Test the function of the Ckt A condenser fans

- Power must be applied to the unit. The Enable-Off-Remote Contact switch must be in the OFF position.
- Touch the Start/Stop button and ensure the unit is in Local Off.
- Navigate to the Quick Test table and set line 2 Quick Test Enable to Enable.
- Set line 11, VariFan Speed A, to 100%, then select SET from the pop-up menu to accept the entry. Confirm all fans are running.

Test component function by turning the item values from OFF to ON or adjusting the actuated percentage. These discrete outputs are then turned off if there is no keypad activity for 10 minutes. See Fig. 120 and 121 for component arrangement diagrams.

NOTE: There may be up to a one-minute delay before the selected item is energized.

NOTES:

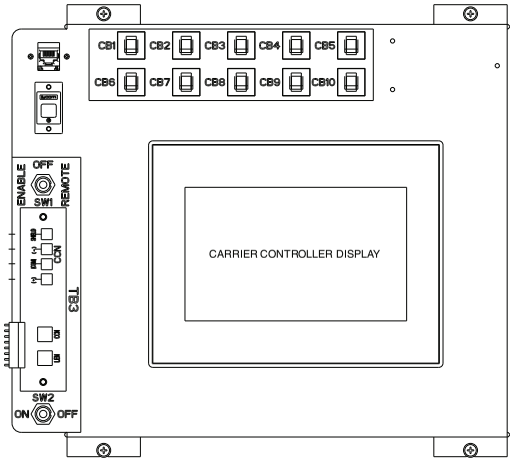
1. FACTORY WIRING IS IN ACCORDANCE WITH UL 1995 STANDARDS. FIELD MODIFICATIONS OR ADDITIONS MUST BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
2. WIRING FOR MAIN FIELD SUPPLY MUST BE RATED 75C MINIMUM. USE COPPER FOR ALL UNITS.

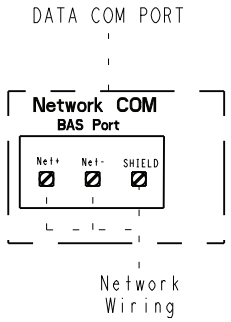
30XV UNIT SIZE	VOLTAGE	DISCONNECT OPTION	NO. OF CONDUCTORS PER PHASE	LUG RANGE
SINGLE POINT POWER				
140-200	208/230V	NO	4	#2AWG - 750 KCMIL
140-325	380-575V	NO	2	#2AWG - 600 KCMIL
140-200	380-575V	NFD	2	2/0 - 500 KCMIL
225-325	380-440V	NFD	4	4/0 - 500 KCMIL
225-325	460-575V	NFD	3 or (2)	3/0 - 400 KCMIL OR (500KCMIL-750KCMIL)
350-500	380-440V	NO	6	#2AWG - 750 KCMIL
350-500	460-575V	NO	4	#2AWG - 750 KCMIL
350-500	380-440V	NFD	6	#2AWG - 600 KCMIL
350-500	460-575V	NFD	4	4/0 - 500 KCMIL
DUAL POINT POWER				
140-200	208/230V	NO	3	3/0 - 400 KCMIL
140-200	380-575V	NO	1 OR (2)	2/0-500 KCMIL OR (2/0-250 KCMIL)
225-325	380-575V	NO	2	#2AWG - 500 KCMIL
140-200	380-575V	NFD	1 OR (2)	2/0-500 KCMIL OR (2/0-250 KCMIL)
225-325	380-575V	NFD	2	#2AWG - 500 KCMIL
350-500	380-440V	NO	4	#2AWG - 750 KCMIL
350-500	460-575V	NO	2	#2AWG - 600 KCMIL
350-500	380-575V (HSCCR)	NO	3	3/0 - 400 KCMIL

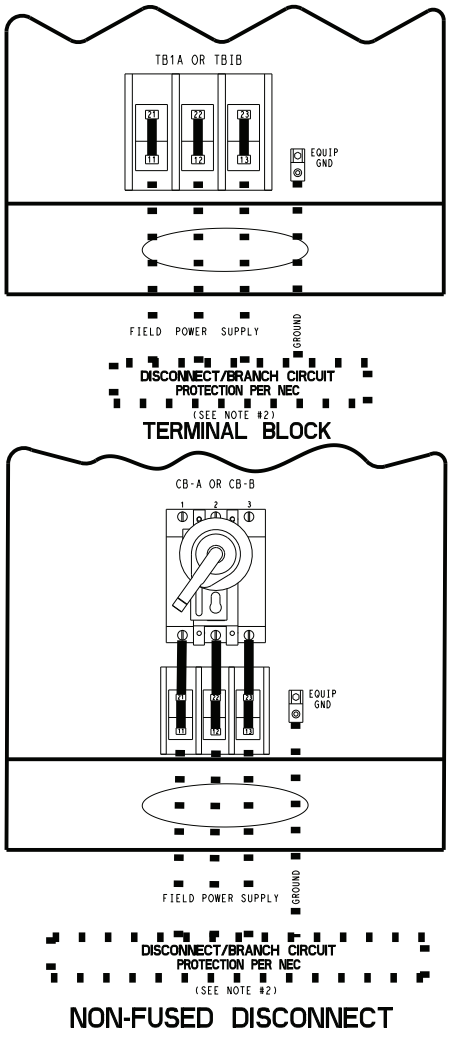
3. TERMINALS 9 AND 10 OF TB5 ARE FOR FIELD EXTERNAL CONNECTIONS FOR REMOTE ON-OFF. THE CONTACTS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA.
4. TERMINALS 11 AND 23 OF TB5 ARE FOR CONTROL OF CHILLED WATER PUMP 1 (PMP 1) STARTER. TERMINALS 15 AND 22 OF TB5 ARE FOR CONTROL OF CHILLED WATER PUMP 2 (PMP 2) STARTER. THE MAXIMUM LOAD ALLOWED FOR THE CHILLED WATER PUMP RELAY IS 5 VA SEALED, 10 VA INRUSH AT 24 V. FIELD POWER SUPPLY IS NOT REQUIRED.
5. TERMINALS 12 AND 21 OF TB5 ARE FOR A ALARM RELAY. THE MAXIMUM LOAD ALLOWED FOR THE ALARM RELAY IS 10 VA SEALED, 25 VA INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED.
6. MAKE APPROPRIATE CONNECTIONS TO TB6 AS SHOWN FOR ENERGY MANAGEMENT BOARD OPTIONS. THE CONTACTS FOR OCCUPANCY OVERRIDE, DEMAND LIMIT AND ICE DONE OPTIONS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA.
7. TERMINAL BLOCKS, TB5 & TB6 ARE LOCATED IN THE LOW VOLTAGE SECTION OF POWERBOX FOR ALL UNITS. REFER TO CERTIFIED DIMENSIONAL DRAWING FOR EACH UNIT TO GET THE EXACT LOCATIONS.
8. REFER TO CERTIFIED DIMENSIONAL DRAWINGS FOR EXACT LOCATIONS OF THE MAIN POWER AND CONTROL POWER ENTRANCE LOCATIONS.
9. TERMINALS 18 & 26 OF TB6 ARE FOR ALERT RELAY AND TERMINALS 20 & 26 OF TB6 ARE FOR SHUTDOWN RELAY. THE MAXIMUM LOAD ALLOWED FOR THE ALERT AND SHUTDOWN RELAY IS 10 VA SEALED, 25 VA INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED.

LEGEND:

A - ALARM
PMP - CHILLED WATER PUMP
EMM - ENERGY MANAGEMENT
TB - TERMINAL BLOCK
MLV - MINIMUM LOAD VALVE
NEC - NATIONAL ELECTRIC CODE
HSCCR - HIGH SHORT CIRCUIT CURRENT RATING
SCCR - SHORT CIRCUIT CURRENT RATING







Carrier
United Technologies
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SUBMISSION OF THESE DRAWINGS OR DOCUMENTS DOES NOT CONSTITUTE PART PERFORMANCE OR ACCEPTANCE OF CONTRACT.

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:EAR99	1 OF 3	04/04/19		30XV 140-500 AIR COOLED	30XV60002800	D

See Legend on page 240.

Fig. 106 — 30XV Typical Field Wiring Schematic

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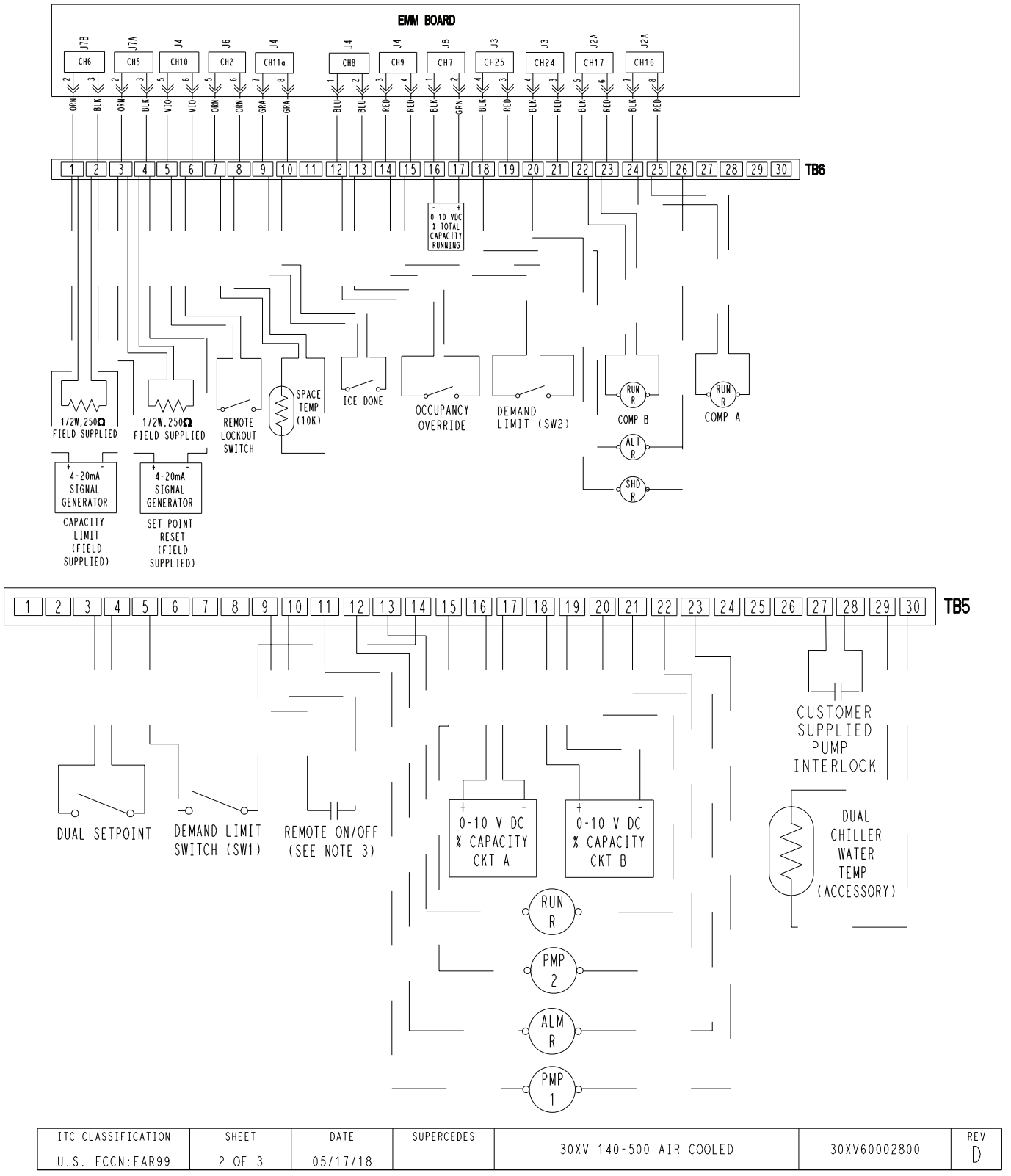
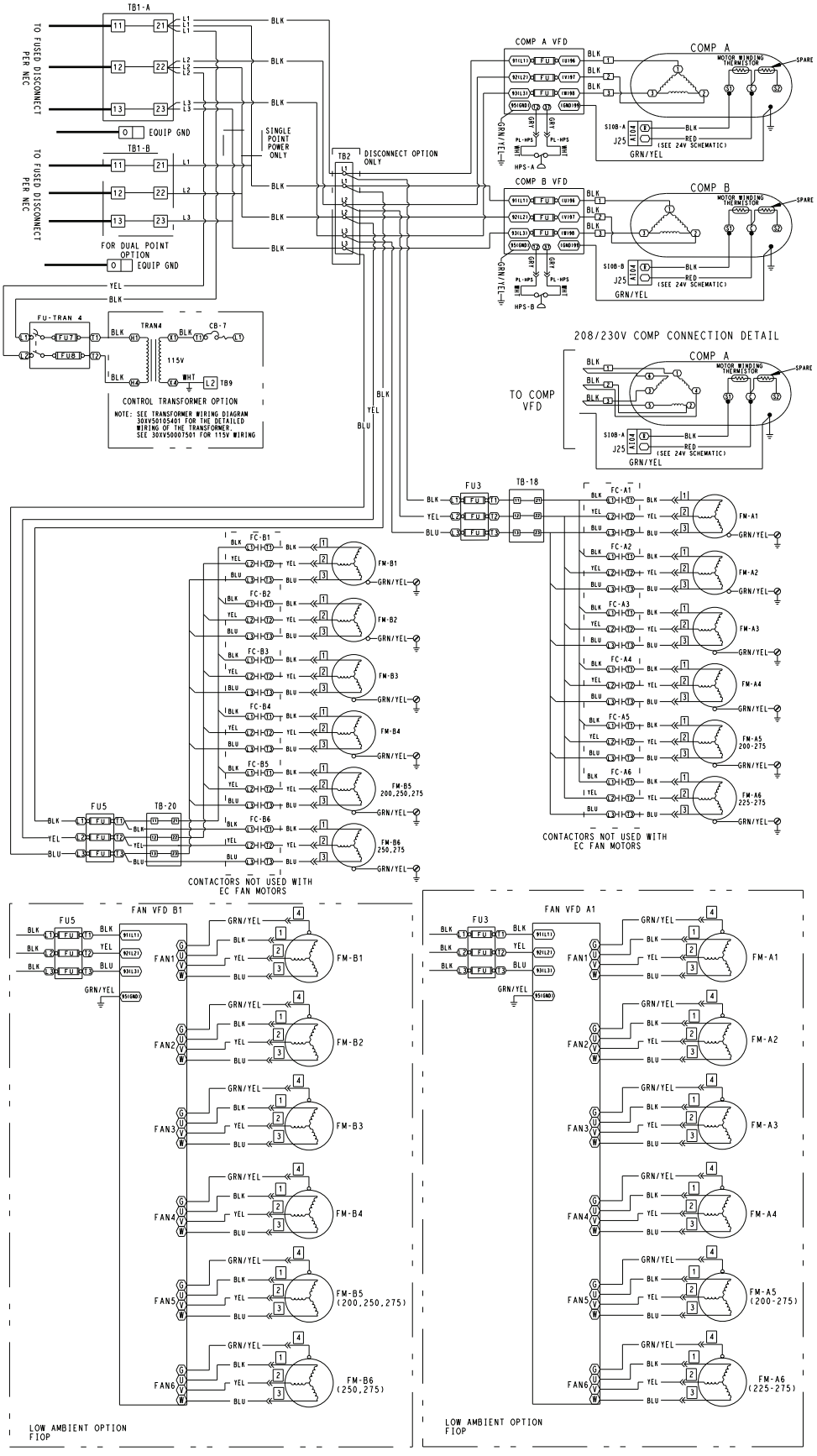
SUBMISSION OF THESE DRAWINGS OR DOCUMENTS DOES NOT CONSTITUTE PART PERFORMANCE OR ACCEPTANCE OF CONTRACT.



ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:EAR99	2 OF 3	05/17/18		30XV 140-500 AIR COOLED	30XV60002800	D

NOTE: See Legend on page 240.

Fig. 106 — 30XV Typical Field Wiring Schematic (cont)



NOTES:

1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.

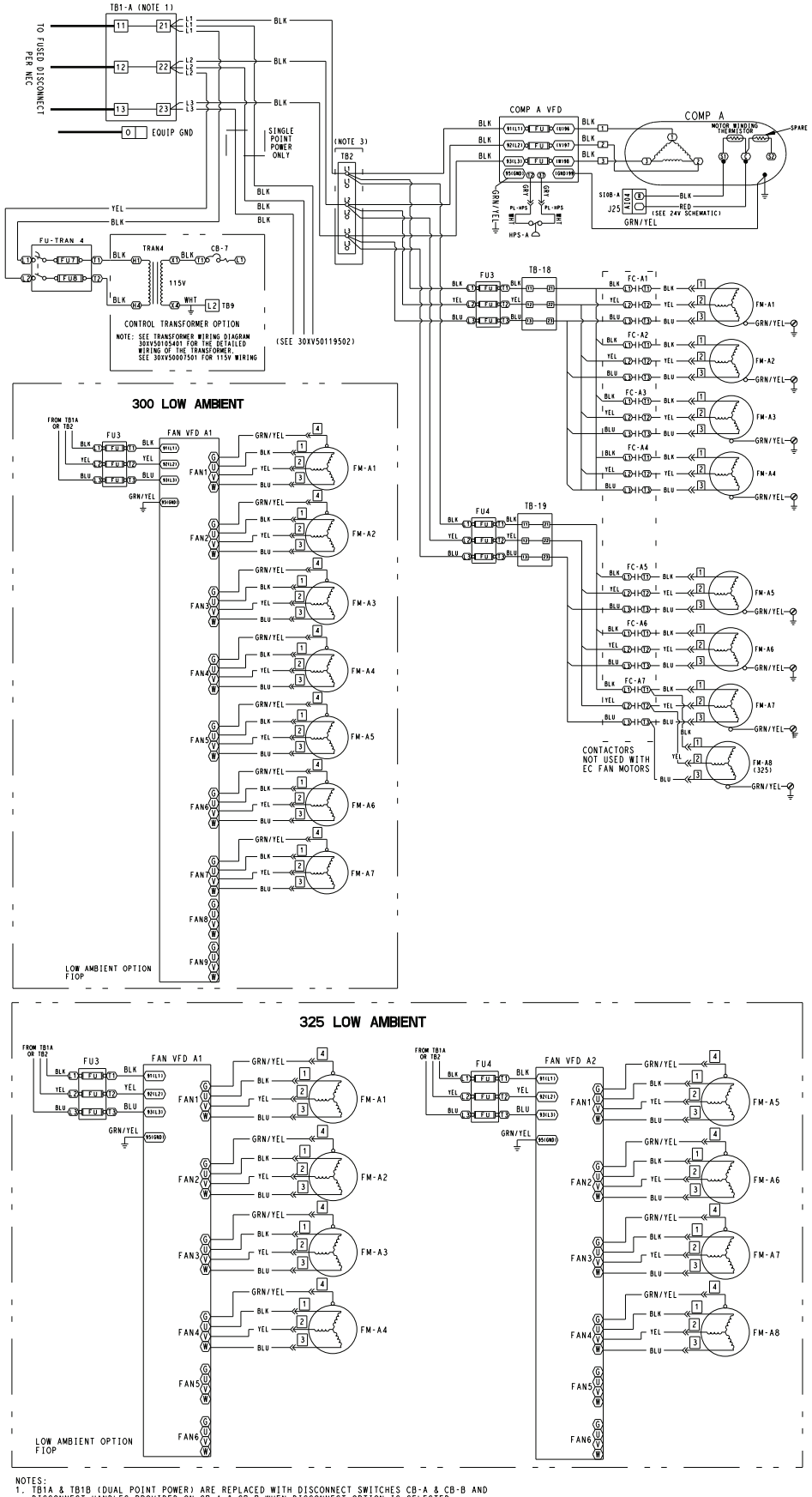
➡ POSITION 10 OF MODEL # DENOTES UNIT TIER

S - STANDARD TIER
M - MID TIER
H - HIGH TIER

See Legend on page 240.

30XV50119101	A

Fig. 107 — 30XV Standard Tier 140-275 (All Voltages) Power Schematic



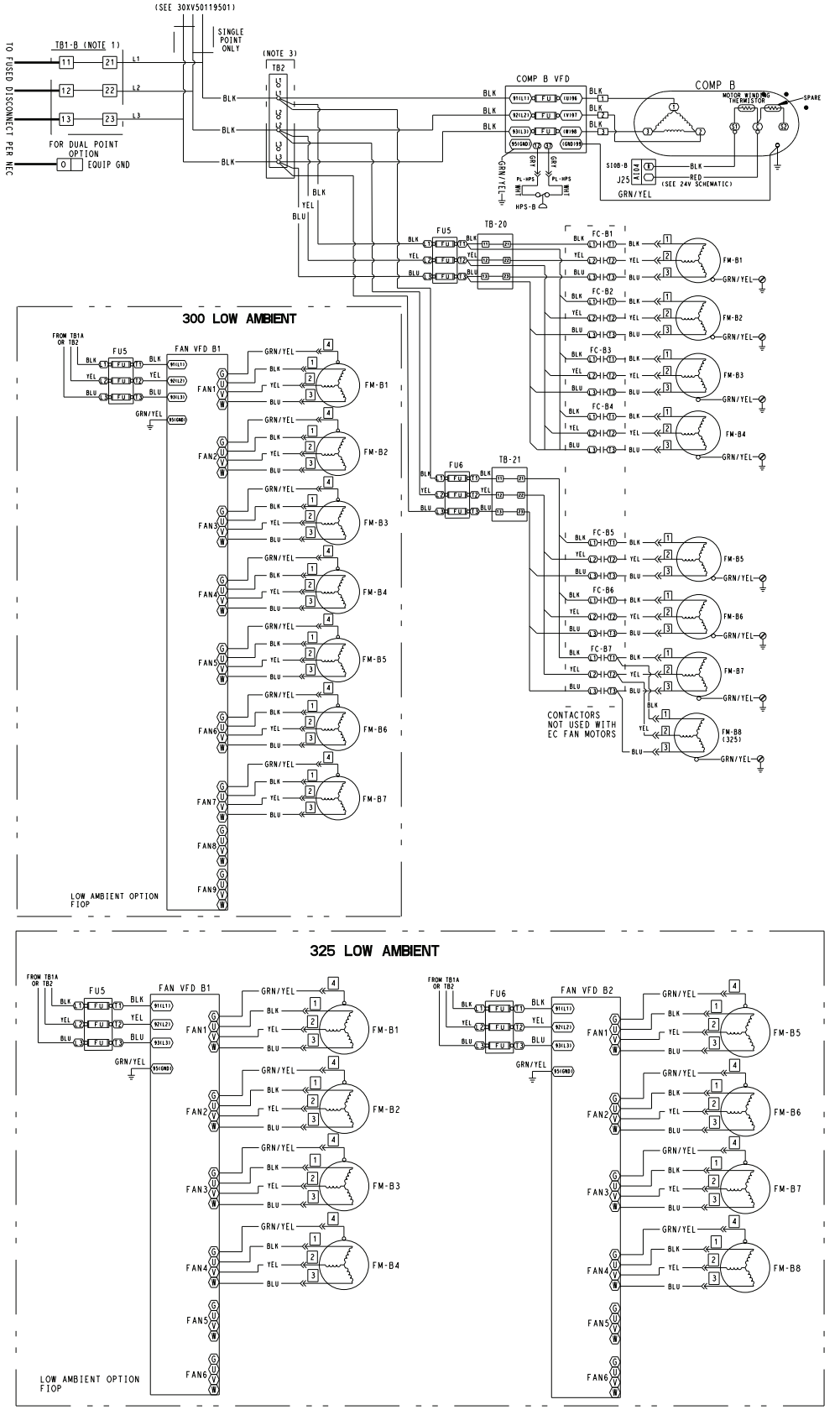
NOTES:
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.
3. TB2 PRESENT ONLY ON UNITS WITH DISCONNECT OPTION.

⬟ POSITION 10 OF MODEL # DENOTES UNIT TIER
S - STANDARD TIER
M - MID TIER
H - HIGH TIER

See Legend on page 240.

30XV50119501 | A

Fig. 108 — 30XV Standard Tier 300, 325 (All Voltages) Power Schematic



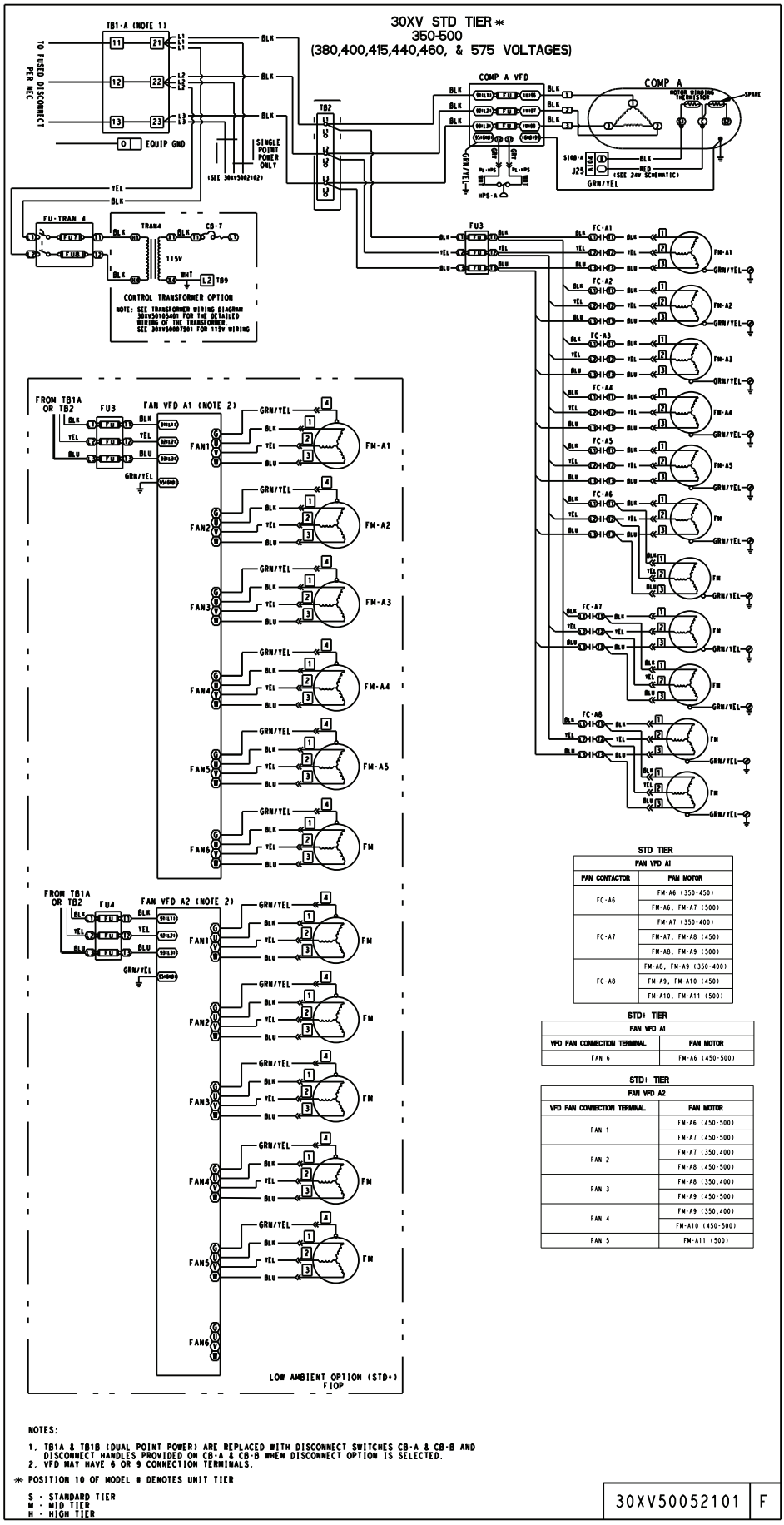
NOTES:
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.
3. TB2 PRESENT ONLY ON UNITS WITH DISCONNECT OPTION.

➡ POSITION 10 OF MODEL # DENOTES UNIT TIER
S - STANDARD TIER
M - MID TIER
H - HIGH TIER

See Legend on page 240.

30XV50119502 | A

Fig. 108 — 30XV Standard Tier 300, 325 (All Voltages) Power Schematic (cont)



STD TIER

FAN VFD A1	
FAN CONTACTOR	FAN MOTOR
FC-A6	FM-A6 (350-450)
	FM-A6, FM-A7 (500)
FC-A7	FM-A7 (350-400)
	FM-A7, FM-A8 (450)
	FM-A8, FM-A9 (500)
FC-A8	FM-A8, FM-A9 (350-400)
	FM-A9, FM-A10 (450)
	FM-A10, FM-A11 (500)

STD+ TIER

FAN VFD A1	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 6	FM-A6 (450-500)

STD+ TIER

FAN VFD A2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-A6 (450-500)
	FM-A7 (450-500)
FAN 2	FM-A7 (350,400)
	FM-A8 (450-500)
FAN 3	FM-A8 (350,400)
	FM-A9 (450-500)
FAN 4	FM-A9 (350,400)
	FM-A10 (450-500)
FAN 5	FM-A11 (500)

IIC CLASSIFICATION			
U.S. ECCN: EAR99			
MATERIAL			
LF31-83B			
ENGINEERING REQUIREMENTS			
-			
Y-002			
-			
MFG LOCATION			
CLT			
WEIGHT			
-			
THIRD ANGLE PROJECTION			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES WITH METRIC CONVERSIONS IN MILLIMETERS] TOLERANCES ON:			
1 DEC ±	2 DEC ±	3 DEC ±	ANG° ±
± [-]	± [-]	± [-]	
NEXT DRAWING			
-			
CAD MODEL			
30XV50028601 B.5			
DRAWING RELEASE LEVEL			
Engineering Released			
SIZE	DRAWING NUMBER	REV	ITR
D	30XV50052100 SHEET 2 OF 3	F	10

Carrier
United Technologies
TITLE
SCHEMATIC
-
POWER
-

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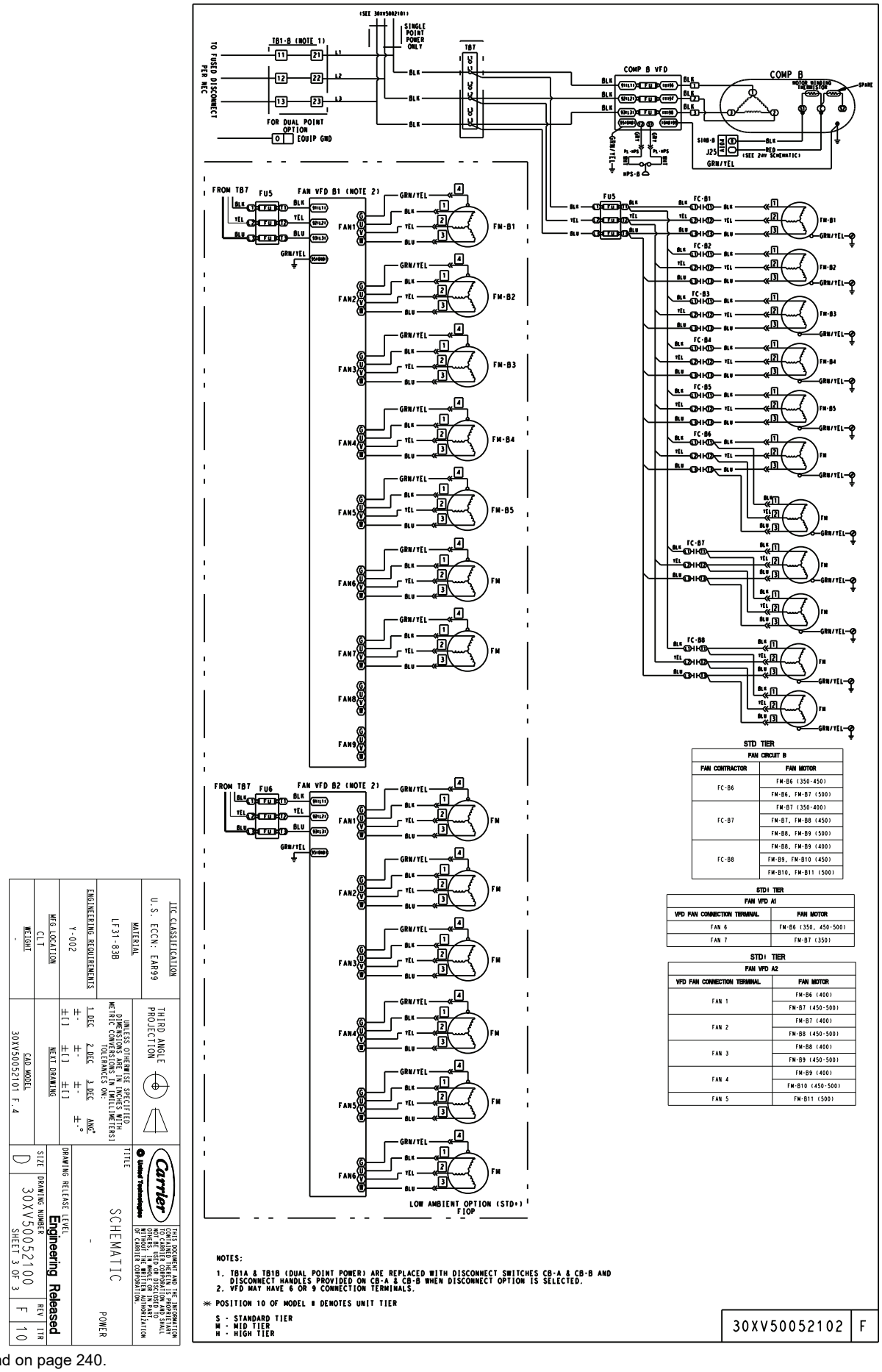
See Legend on page 240.

Fig. 109 — 30XV Standard Tier 350-500 (380/400/415/440/460/575v) Power Schematic



STD TIER	
FAN CIRCUIT B	
FAN CONTRACTOR	FAN MOTOR
FC-B6	FM-B6 (350-450)
	FM-B6, FM-B7 (500)
FC-B7	FM-B7 (350-400)
	FM-B7, FM-B8 (450)
	FM-B8, FM-B9 (500)
FC-B8	FM-B8, FM-B9 (400)
	FM-B9, FM-B10 (450)
	FM-B10, FM-B11 (500)

STD+ TIER	
FAN VFD A1	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 6	FM-B6 (350, 450-500)
FAN 7	FM-B7 (350)

STD+ TIER	
FAN VFD A2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-B6 (400)
	FM-B7 (450-500)
FAN 2	FM-B7 (400)
	FM-B8 (450-500)
FAN 3	FM-B8 (400)
	FM-B9 (450-500)
FAN 4	FM-B9 (400)
	FM-B10 (450-500)
FAN 5	FM-B11 (500)

NOTES:
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. VFD MAY HAVE 6 OR 9 CONNECTION TERMINALS.

* POSITION 10 OF MODEL # DENOTES UNIT TIER
S - STANDARD TIER
M - MID TIER
H - HIGH TIER

30XV50052102 | F

ITC CLASSIFICATION	
U.S. ECCN: EAR99	
MATERIAL	LF31-83B
ENGINEERING REQUIREMENTS	
Y-002	
MFG LOCATION	CLT
WEIGHT	-
THIRD ANGLE PROJECTION	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS METRIC CONVERSIONS IN [MILLIMETERS] TOLERANCES ON:	1 DEC ±. 2 DEC ±. 3 DEC ±. ANG° ±°
NEXT DRAWING	±[] ±[] ±[]
CAD MODEL	30XV50052101 F.4
TITLE	SCHEMATIC - POWER
DRAWING RELEASE LEVEL	Engineering Released
SIZE	D
DRAWING NUMBER	30XV50052100
SHEET	3 OF 3
REV	F
ITR	10

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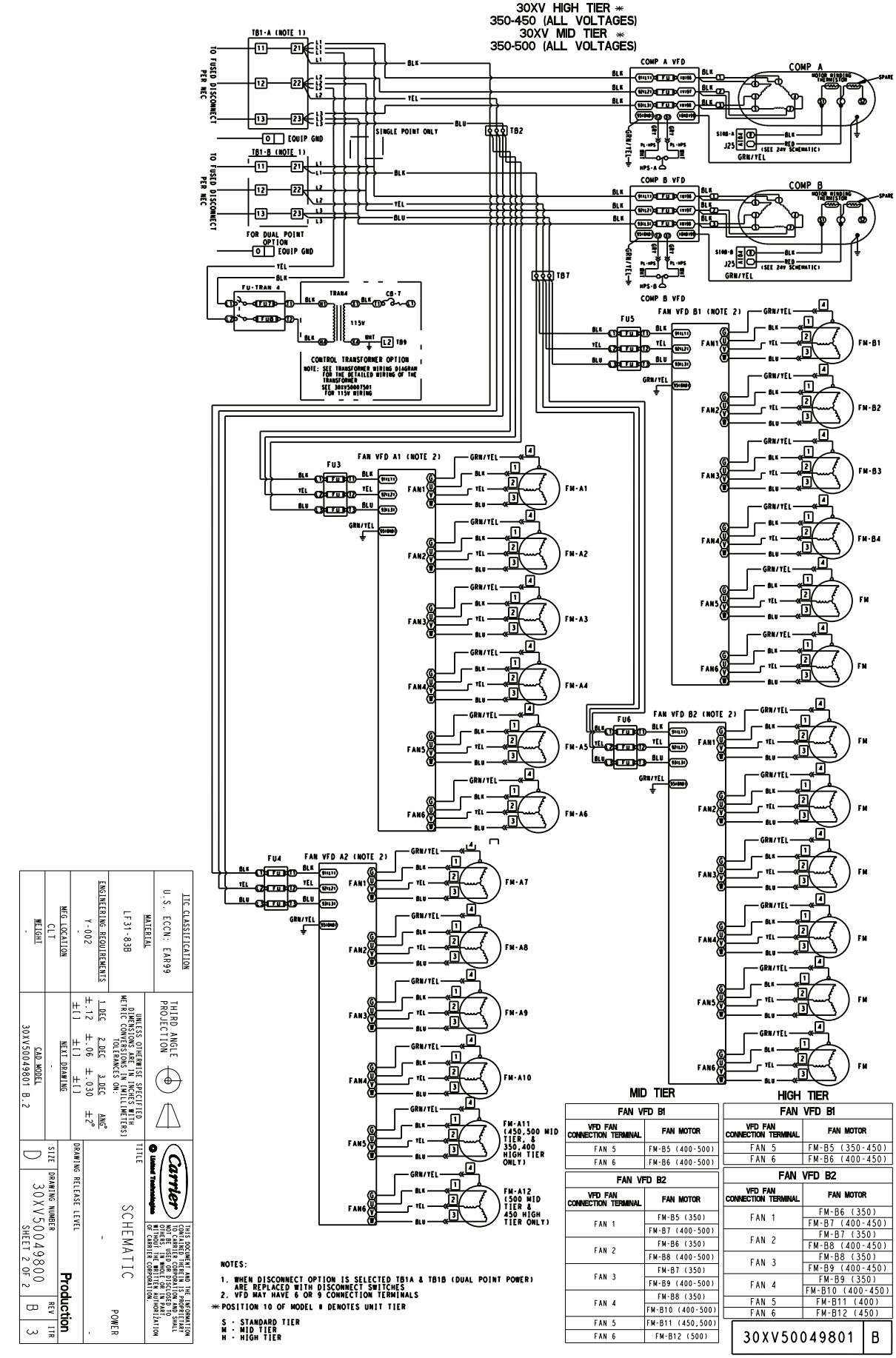
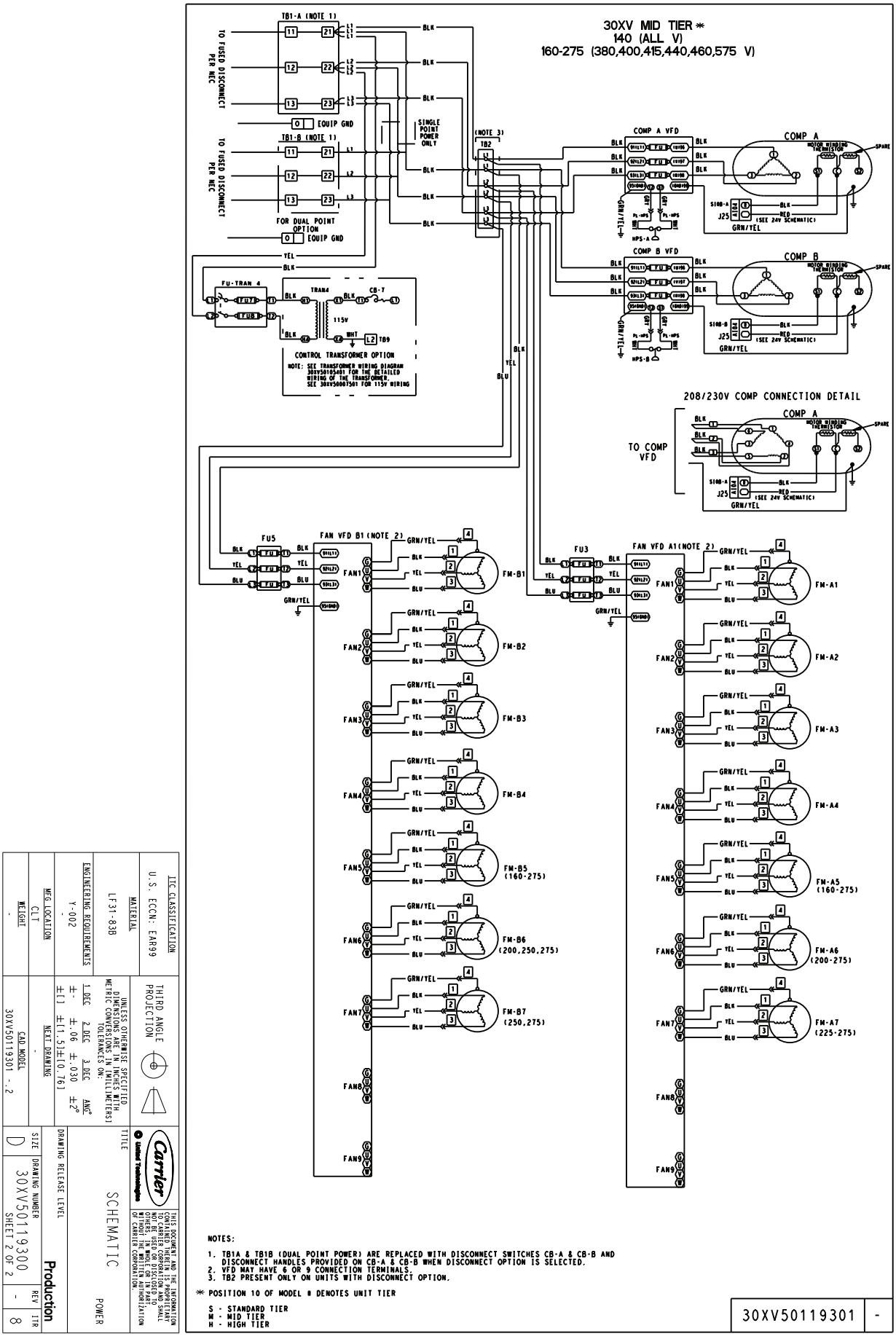
See Legend on page 240.

Fig. 109 — 30XV Standard Tier 350-500 (380/400/415/440/460/575v) Power Schematic (cont)



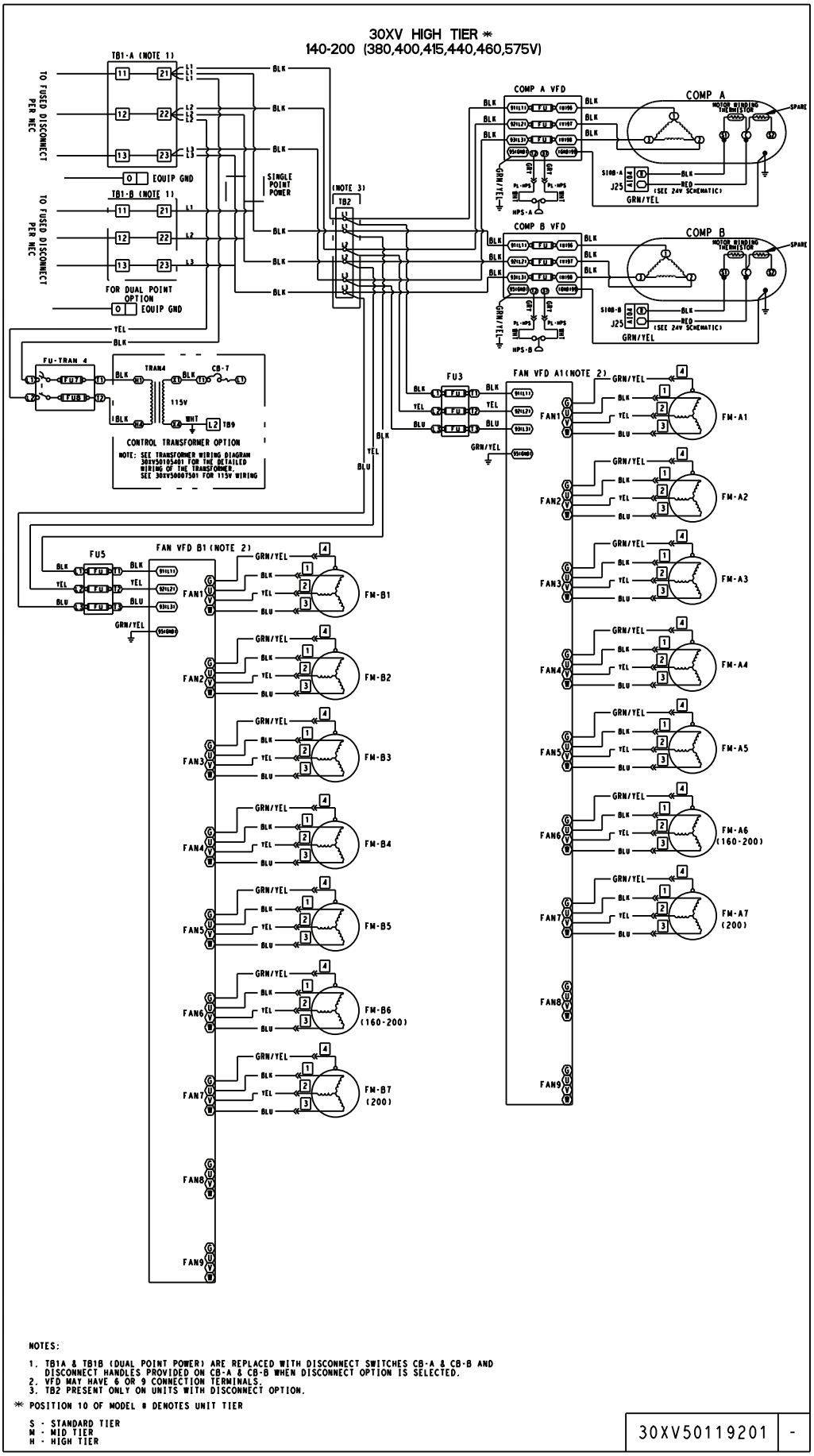
See Legend on page 240.

Fig. 110 — 30XV High Tier 350-450 (All Voltages), Mid Tier 350-500 (All Voltages) Power Schematic



See Legend on page 240.

Fig. 111 — 30XV Mid Tier 140 (All Voltages),160-275 (380/400/415/440/460/575v) Power Schematic



ITC CLASSIFICATION
U.S. ECCN: EAR99

MATERIAL
LF31-83B

ENGINEERING REQUIREMENTS
Y-002

MFG. LOCATION
CLT

WEIGHT
-

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES WITH
METRIC CONVERSIONS IN [MILLIMETERS]

1 DEC	2 DEC	3 DEC	ANG°
±	±	±	±
±[ ]	±[ ]	±[ ]	

CAD MODEL
30XV50119201 - 2

NEXT DRAWING
-

Carrier
United Technologies

TITLE
SCHEMATIC
-
POWER

DRAWING RELEASE LEVEL
Production

SIZE	DRAWING NUMBER	REV	LTR
D	30XV50119200	-	6
	SHEET 2 OF 2		

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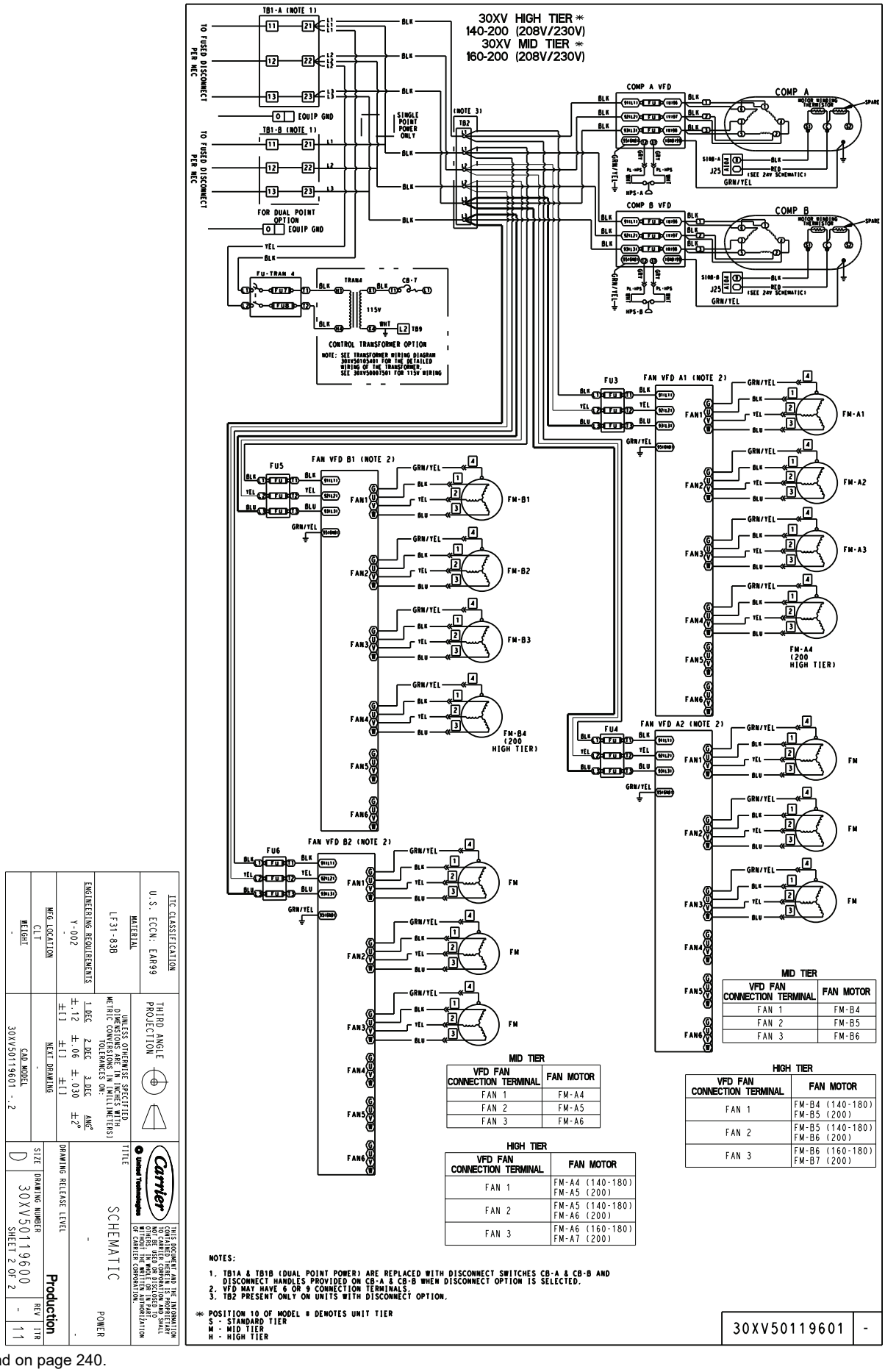
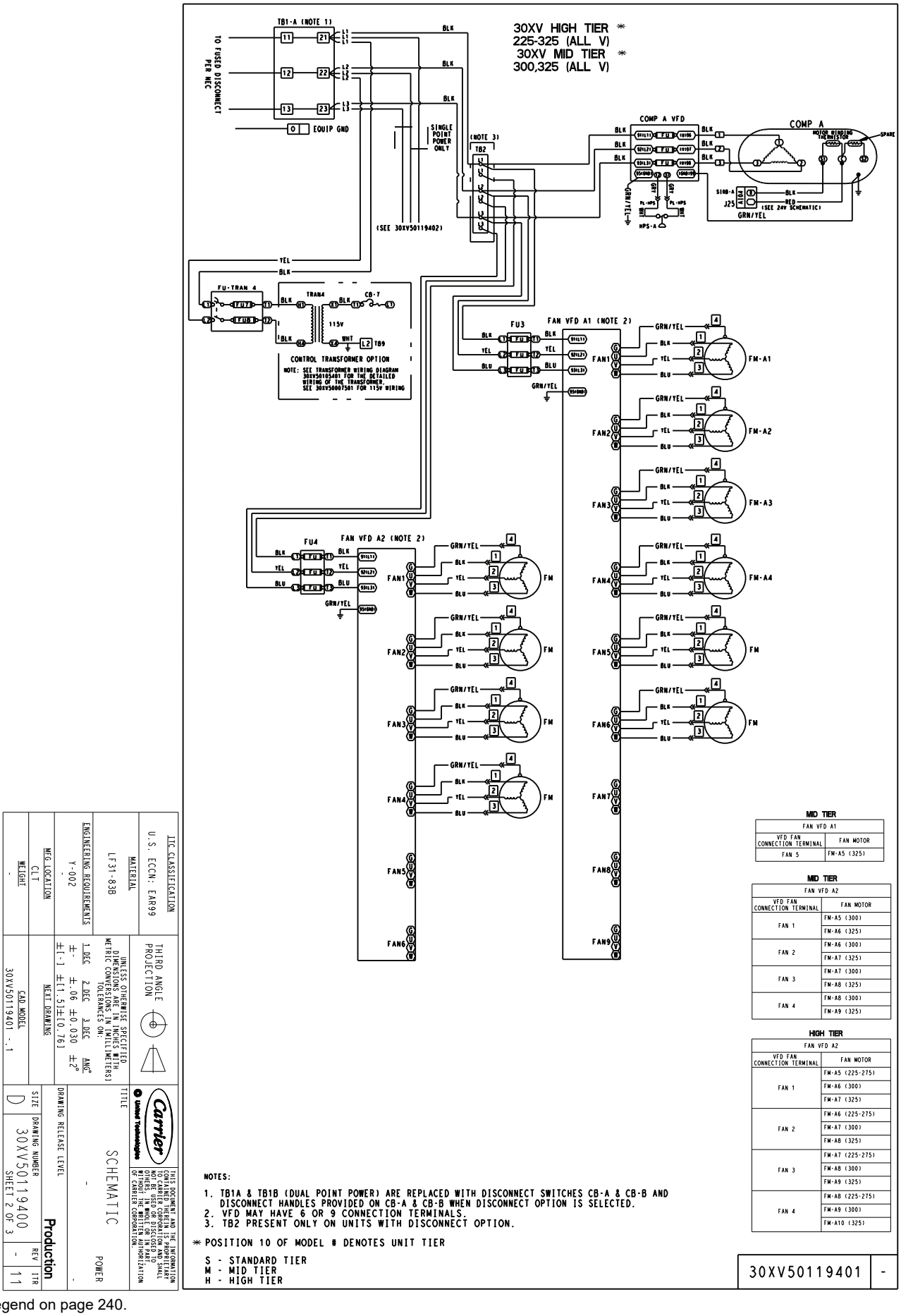
See Legend on page 240.

Fig. 112 — 30XV High Tier 140-200 (380/400/415/440/460/575v) Power Schematic



See Legend on page 240.

Fig. 113 — 30XV High Tier 140-200 (208/230v), Mid Tier 160-200 (208/230v) Power Schematic



MID TIER

FAN VFD A1	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 5	FM-A5 (325)

MID TIER

FAN VFD A2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-A5 (300)
	FM-A6 (325)
FAN 2	FM-A6 (300)
	FM-A7 (325)
FAN 3	FM-A7 (300)
	FM-A8 (325)
FAN 4	FM-A8 (300)
	FM-A9 (325)

HIGH TIER

FAN VFD A2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-A5 (225-275)
	FM-A6 (300)
	FM-A7 (325)
FAN 2	FM-A6 (225-275)
	FM-A7 (300)
	FM-A8 (325)
FAN 3	FM-A7 (225-275)
	FM-A8 (300)
	FM-A9 (325)
FAN 4	FM-A8 (225-275)
	FM-A9 (300)
	FM-A10 (325)

ITC CLASSIFICATION
U.S. ECCN: EAR99
MATERIAL
LF31-83B
ENGINEERING REQUIREMENTS
MFG LOCATION
Y-002
MFG LOCATION
CLT
WEIGHT
-
THIRD ANGLE PROJECTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES WITH METRIC CONVERSIONS IN [MILLIMETERS] TOLERANCES ON:
1 DEC ± .06 [±1.5]
2 DEC ±0.030 [±0.76]
3 DEC
ANG ±2°
NEXT DRAWING
CAD MODEL
30XV50119401 -.1
Carrier
United Technologies
TITLE
SCHEMATIC
POWER
-
DRAWING RELEASE LEVEL
Production
SIZE
D
DRAWING NUMBER
30XV50119400
SHEET 2 OF 3
REV
-
ITR
11
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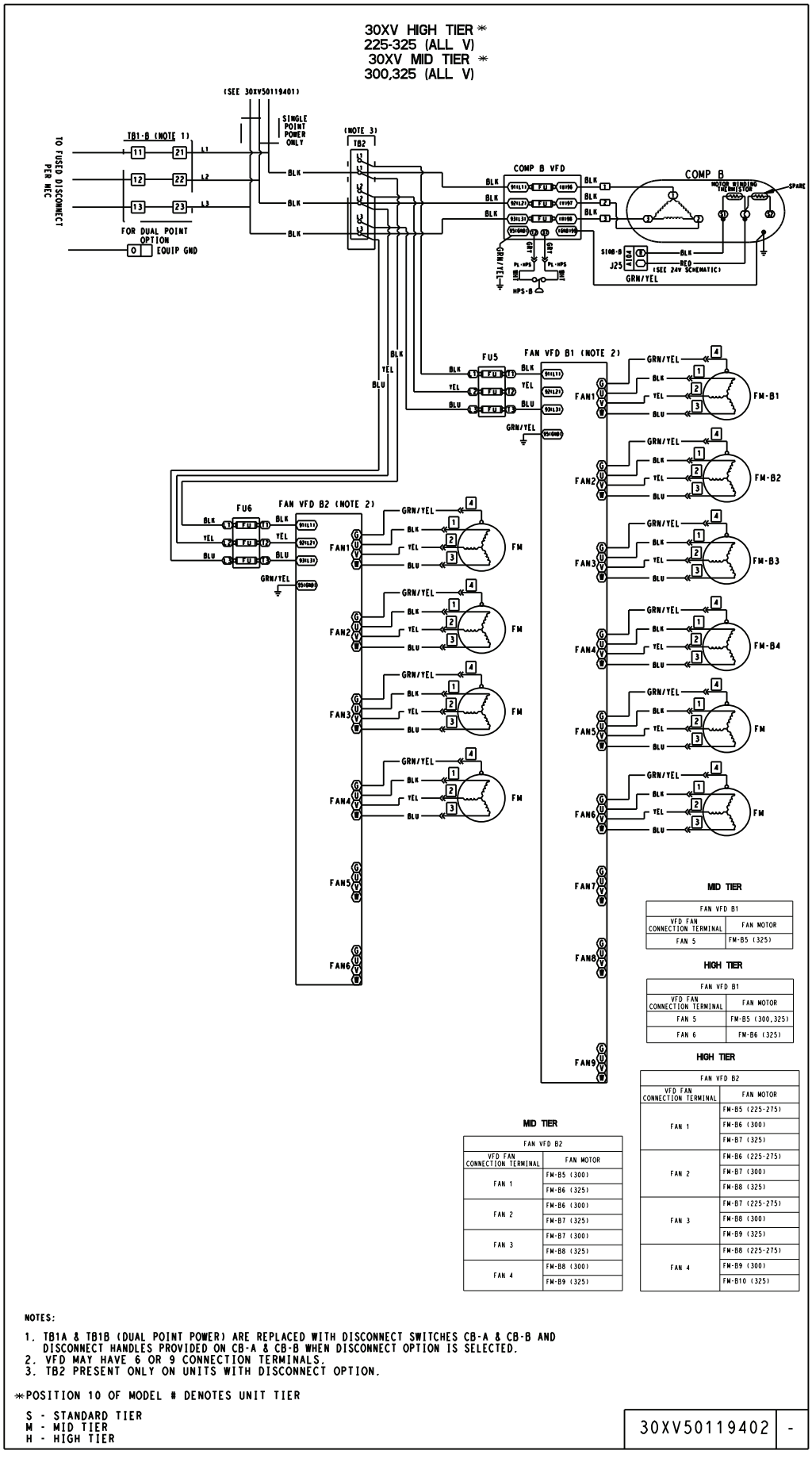
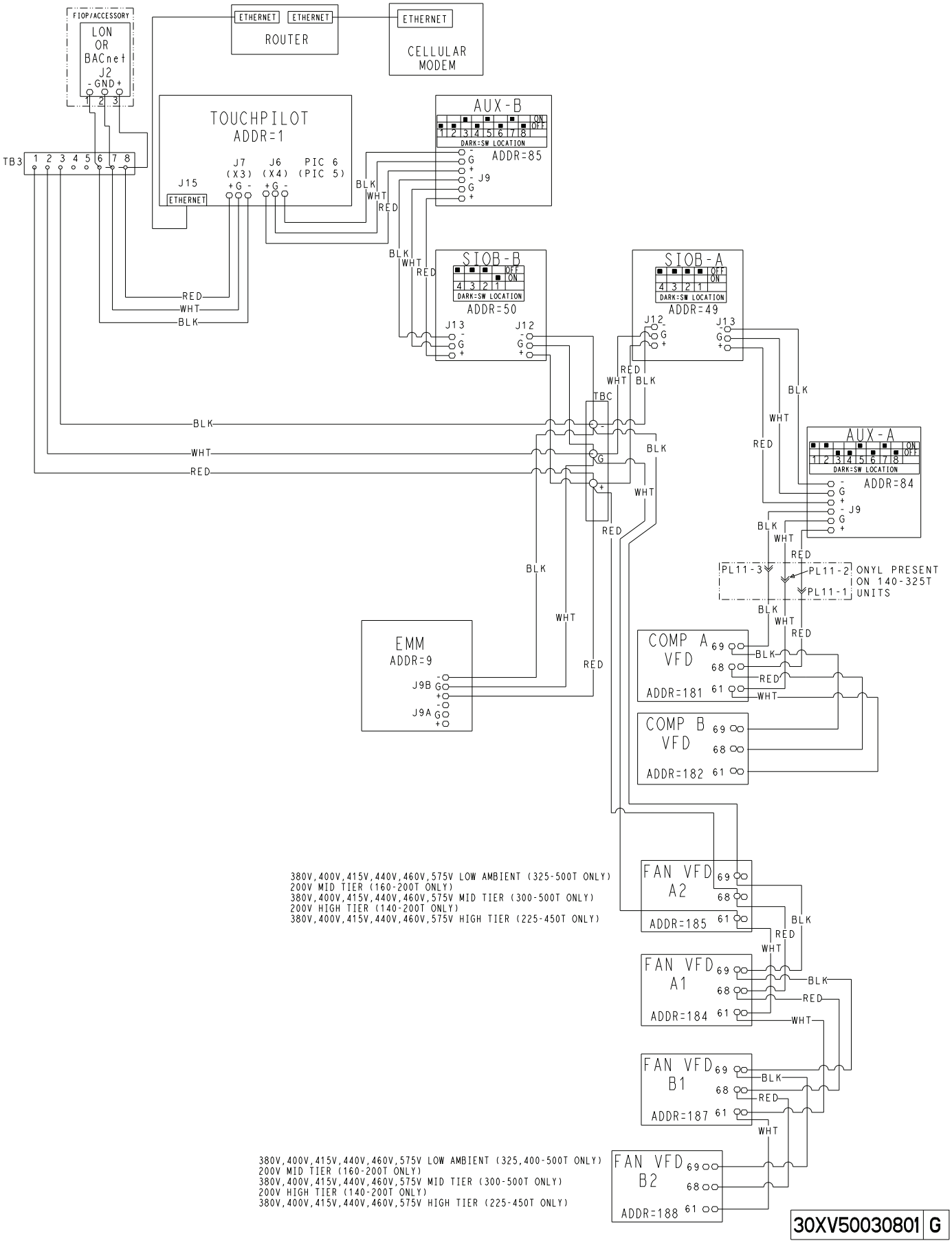
See Legend on page 240.

Fig. 114 — 30XV High Tier 225-325 (All Voltages), Mid Tier 300, 325 (All Voltages) Power Schematic



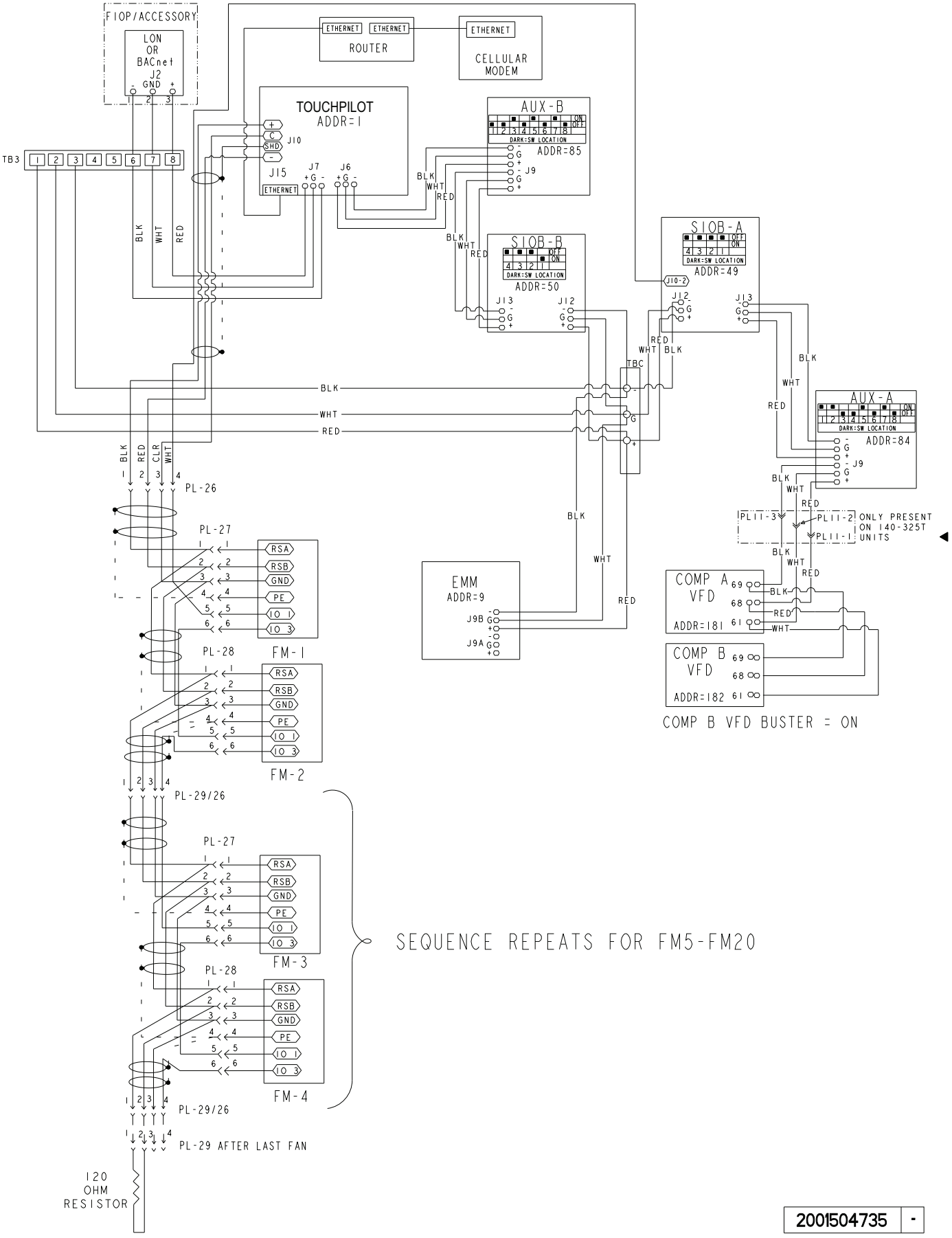
See Legend on page 240.

Fig. 114 — 30XV High Tier 225-325 (All Voltages), Mid Tier 300, 325 (All Voltages) Power Schematic (cont)



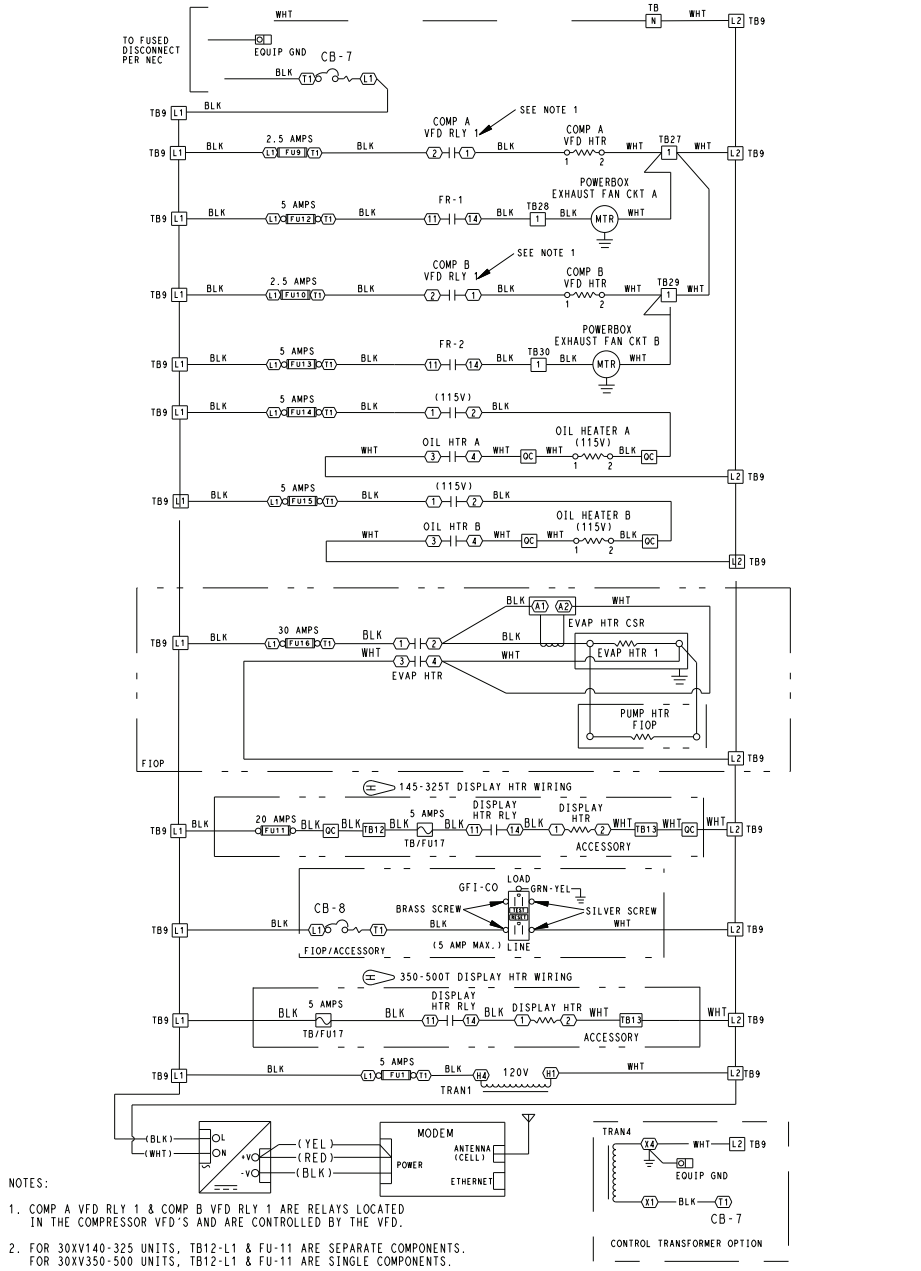
See Legend on page 240.

Fig. 115 — 30XV Communication Wiring



See Legend on page 240.

Fig. 116 — 30XV Communication Wiring, EC Fan Motor Option



NOTES:

1. COMP A VFD RLY 1 & COMP B VFD RLY 1 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S AND ARE CONTROLLED BY THE VFD.
2. FOR 30XV140-325 UNITS, TB12-L1 & FU-11 ARE SEPARATE COMPONENTS. FOR 30XV350-500 UNITS, TB12-L1 & FU-11 ARE SINGLE COMPONENTS.

LEGEND

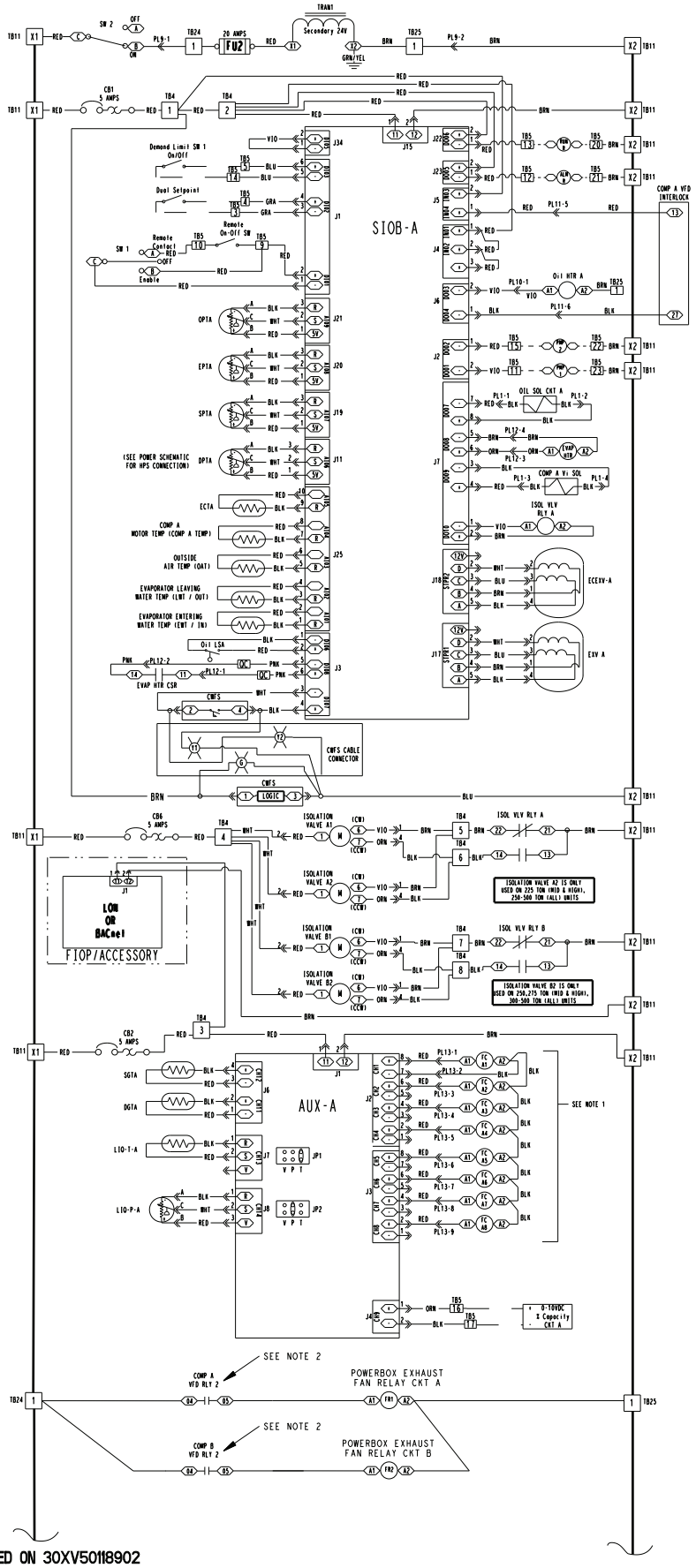
A	- Alarm	FIOP	- Factory Installed Option
ALM R	- Alarm Relay	FM	- Fan Motor
ALT R	- Alert Relay	FN	- Fan
AUX A	- Auxiliary Input-Output Board Circuit A	FU	- Fuse
AUX B	- Auxiliary Input-Output Board Circuit B	GFI-CO	- Ground Fault Interruptor- Convenience Outlet
CB1	- SIOB-A Board, CWFS, PMP1 RLY, PMP2 RLY Power Mini Circuit Breaker	GND	- Ground
CB2	- AUX A Board, UPC Board, LON Board Power Mini Circuit Breaker	HPS	- High Pressure Switch
CB3	- AUX B Board Power Mini Circuit Breaker	HTR	- Heater
CB5	- SIOB-B Power Mini Circuit Breaker	ISO	- Isolation
CB8	- EMM Board Power Mini Circuit Breaker	ISOL VLV	- Relay Isolation Valve
CB12	- Isolation Valve Relays Mini Circuit Breaker	LEN	- Local Equipment Network
CB13	- 115V Power Feed Circuit Breaker	LIQ-P	- Liquid Pressure
CB-A	- Circuit Breaker A Circuit	LIQ-T	- Liquid Temperature
CB-B	- Circuit Breaker B Circuit	LON	- LONWORKS Board
CB-FNA1	- Fan Circuit Breaker A Circuit	LS	- Level Switch
CB-FNB1	- Fan Circuit Breaker B Circuit	LWT	- Leaving Water Temperature
CCN	- Carrier Comfort Network®	NEC	- National Electrical Code (U.S.A.)
CH	- Channel	OAT	- Outdoor Air Temperature
CLR HR	- Cooler Heater Relay	OPT	- Oil Pressure Transducer
CLR HTR	- Cooler Heater	PL	- Plug
COMM	- Communication	PMP	- Chilled Water Pump
COMP	- Compressor	QC	- Quick Connect
CSR	- Current Sensing Relay	RLY	- Relay
CWFS	- Chilled Water Flow Switch	RUN R	- Run Relay
DGT	- Discharge Gas Thermistor	SGT	- Suction Gas Temperature
DPT	- Discharge Pressure Transducer	SHD R	- Shutdown Relay
ECEXV	- Economizer Electronic Expansion Valve	SIOB	- Starfire Input-Output Board
ECT	- Economizer Temperature	SOL	- Solenoid
EMM	- Energy Management Module	SW	- Switch
EPT	- Economizer Pressure Transducer	T	- Thermistor
EQUIP	- Equipment	TB	- Terminal Block
EWT	- Entering Water Temperature	TEMP	- Temperature
EXV	- Electronic Expansion Valve	TRAN	- Transformer
FC	- Fan Contactor	UPC	- Universal Protocol Converter Board
FIOP	- Factory Installed Option	VFD	- Variable Frequency Drive

Terminal Block Connection
Marked Terminal
Unmarked Terminal
Unmarked Splice
Factory Wiring
Optional Wiring
Indicates Common Potential. Does not represent Wiring
FIOP or Assembly
Wire Tag

30XV50007501 | H

See Legend on page 240.

Fig. 117 — 30XV 115V Control Wiring (All Tonnages, All Voltages)



NOTES:

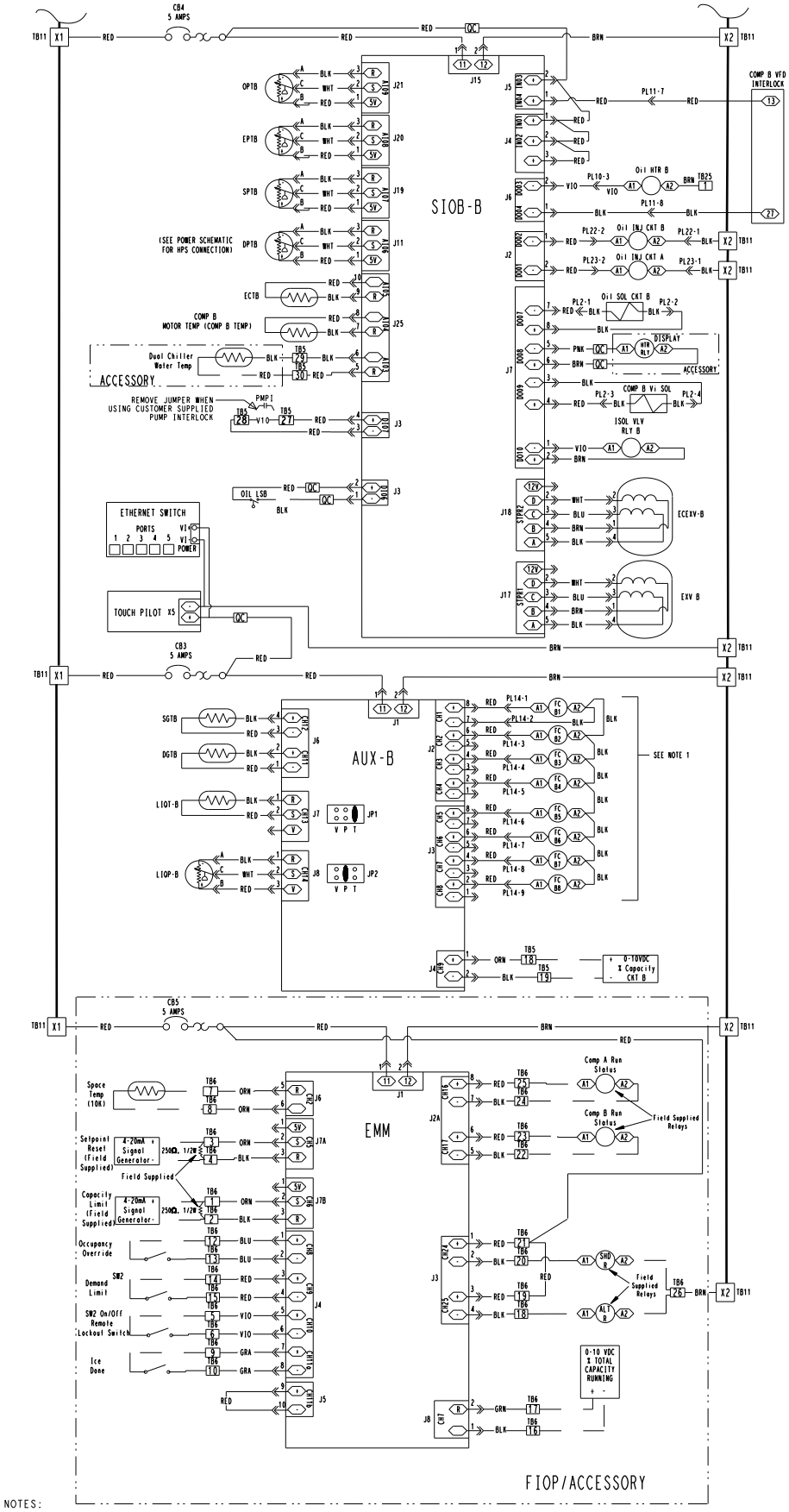
1. FAN CONTACTORS ONLY PRESENT ON STANDARD TIER, NO LOW AMBIENT UNITS.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.

See Legend on page 240.

30XV50118901 | B

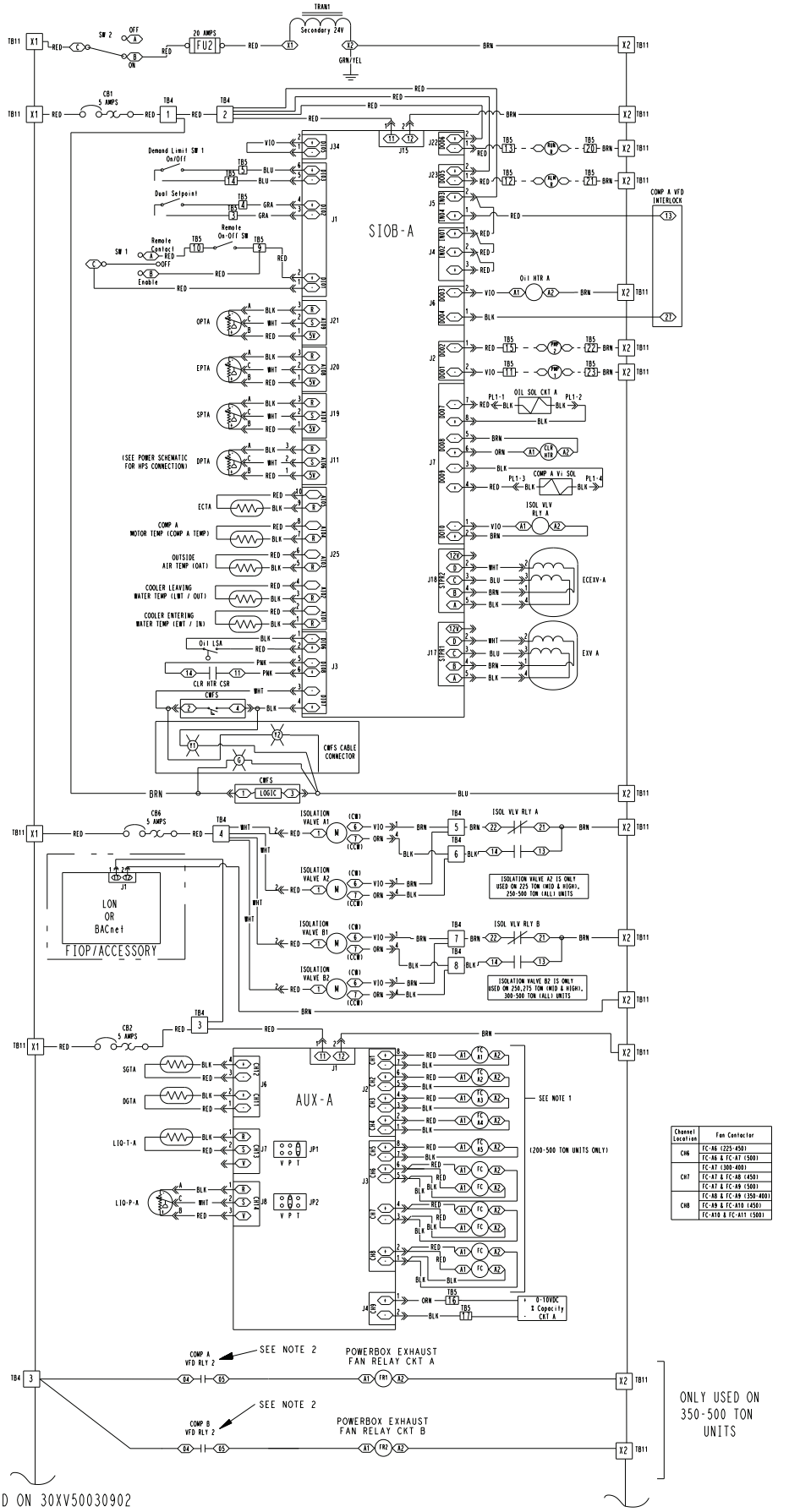
Fig. 118 — 30XV 24V Control Wiring (30XV140-325, All Voltages)

CONTINUED FROM 30XV50118901



See Legend on page 240.

Fig. 118 — 30XV 24V Control Wiring (30XV140-325, All Voltages) (cont)



See Legend on page 240.

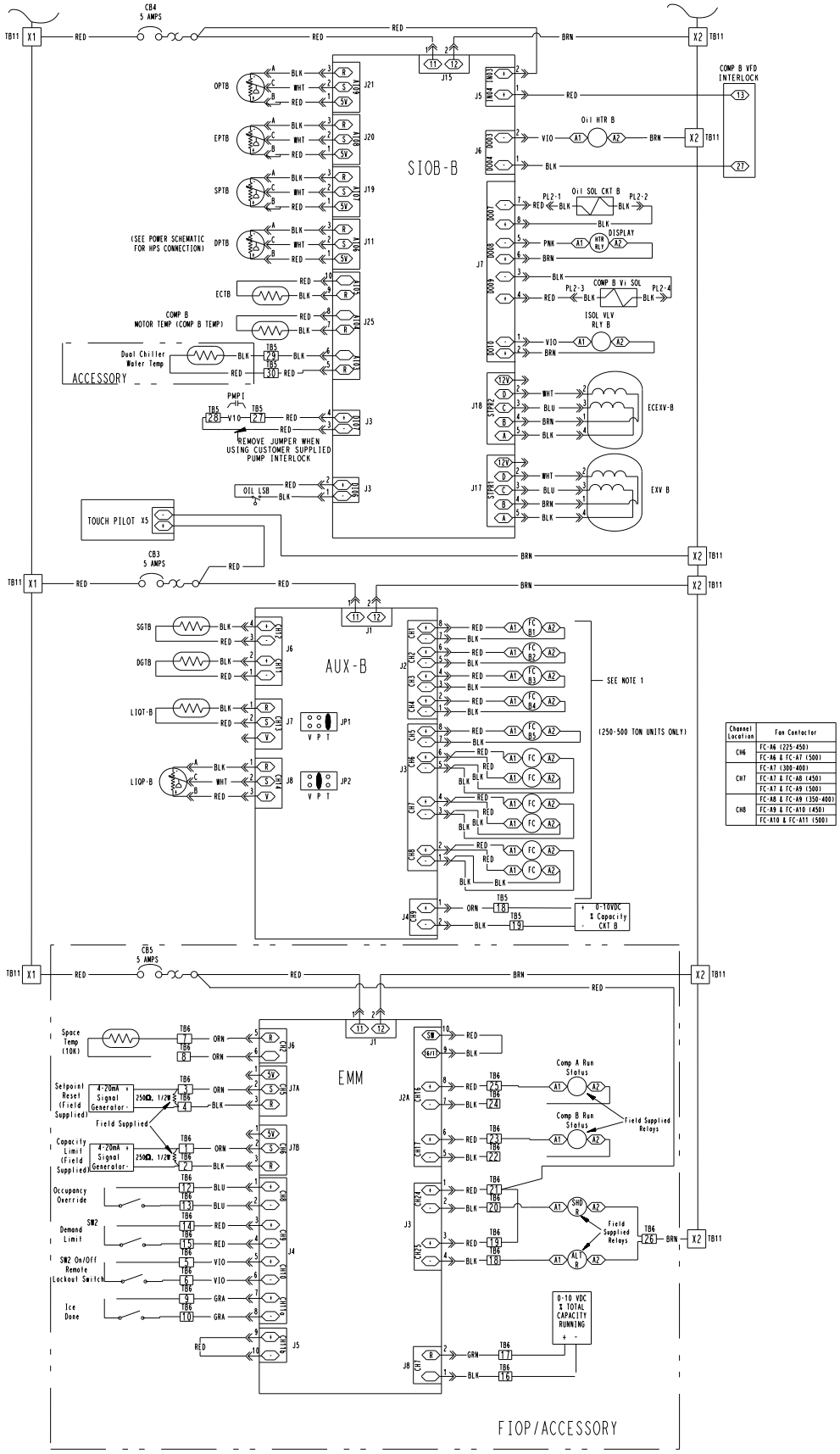
NOTES:

1. FAN CONTACTORS ONLY PRESENT ON STANDARD TIER, NO LOW AMBIENT UNITS.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.

30XV50030901 | I

Fig. 119 — 30XV 24V Control Wiring (30XV350-500, All Voltages)

CONTINUED FROM 30XV50030901



Channel Location	Fan Contactor
CH6	FC-A6 (225-450)
	FC-A6 & FC-A7 (500)
CH7	FC-A7 (300-400)
	FC-A7 & FC-A8 (450)
	FC-A7 & FC-A9 (500)
CH8	FC-A8 & FC-A9 (350-400)
	FC-A9 & FC-A10 (450)
	FC-A10 & FC-A11 (500)

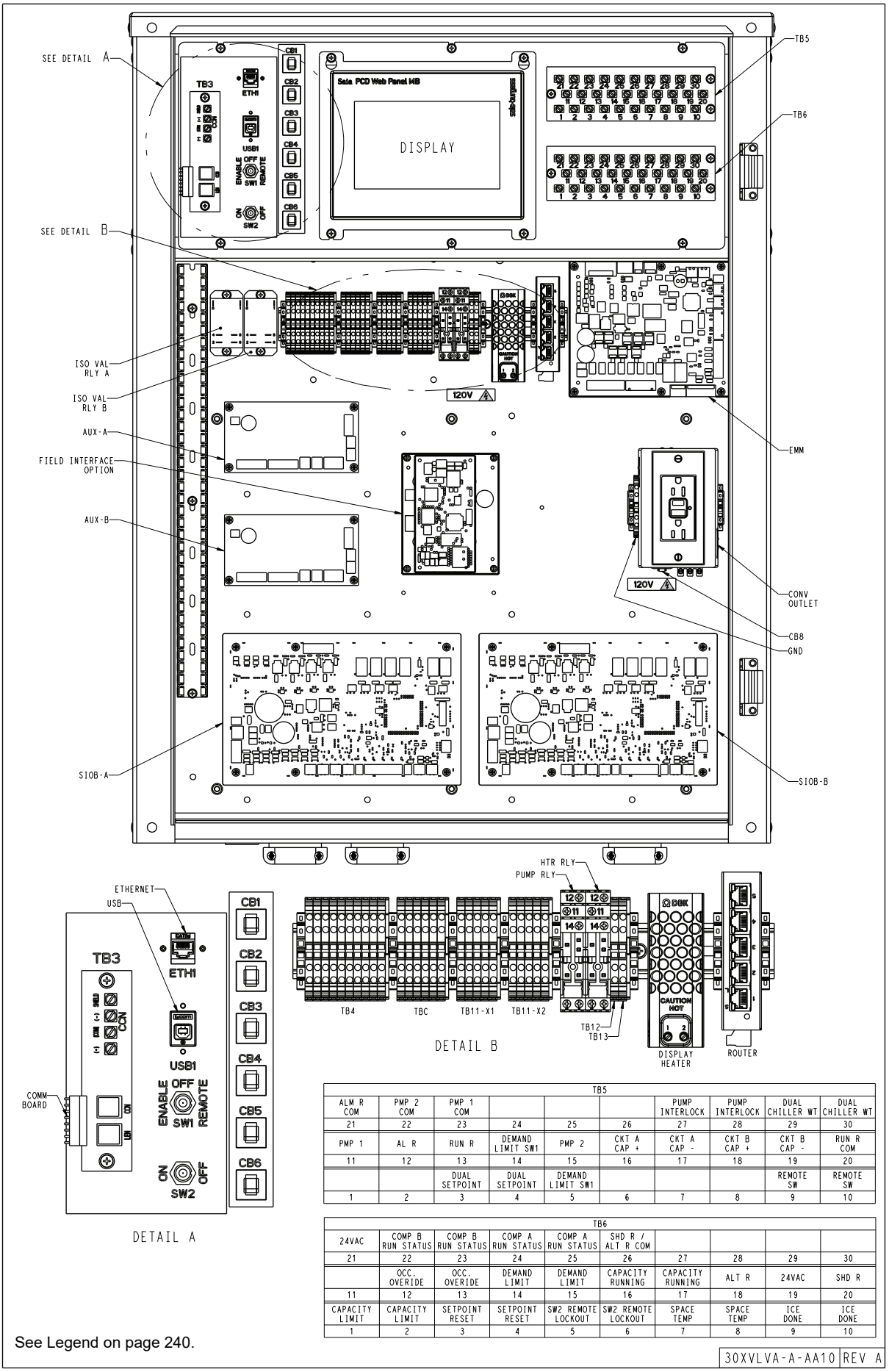
NOTES:

1. FAN CONTACTORS ONLY PRESENT ON STANDARD TIER, NO LOW AMBIENT UNITS.

See Legend on page 240.

30XV50030902 | I

Fig. 119 — 30XV 24V Control Wiring (30XV350-500, All Voltages) (cont)



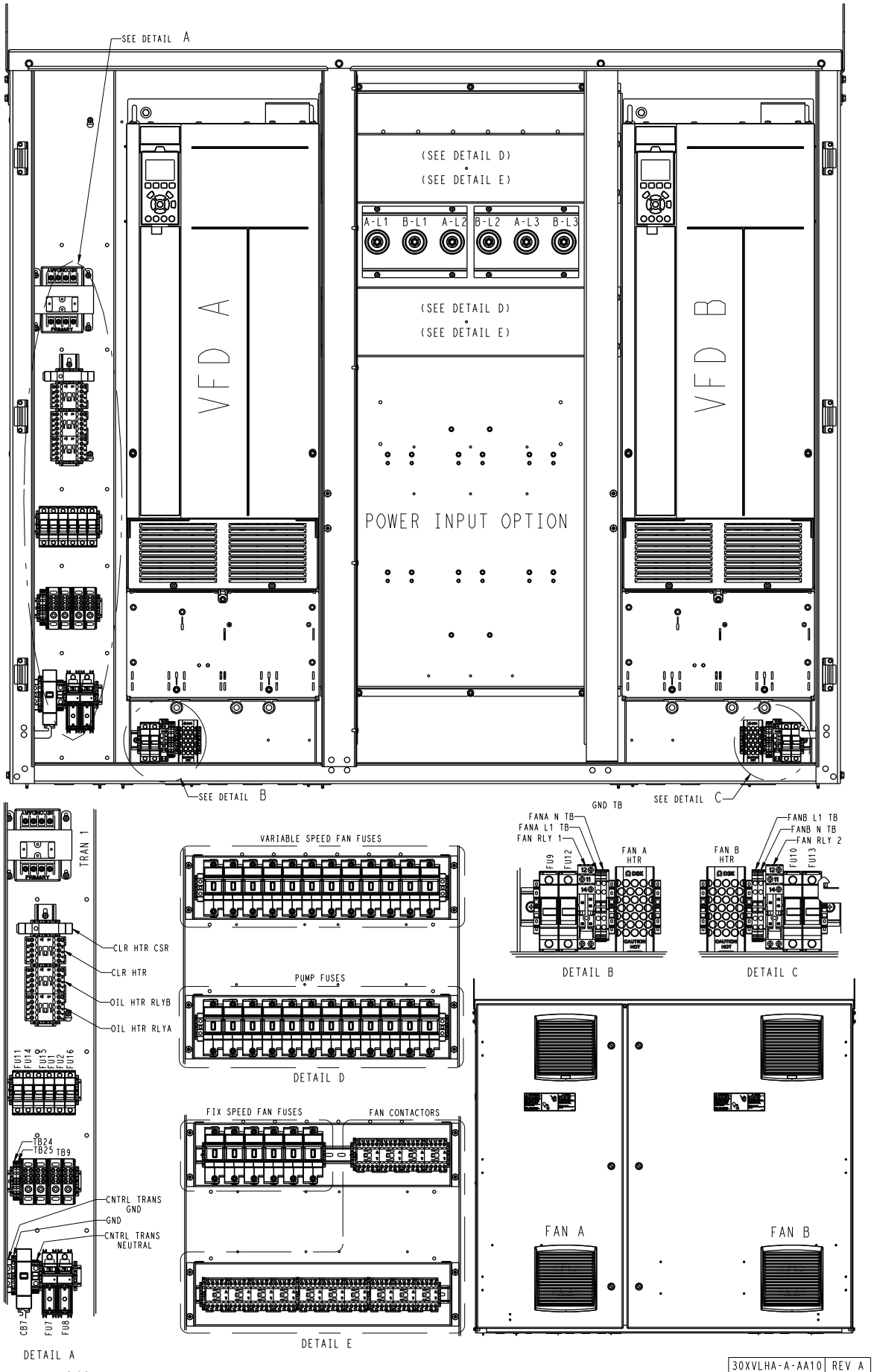
TB5									
ALM R COM	PMP 2 COM	PMP 1 COM				PUMP INTERLOCK	PUMP INTERLOCK	DUAL CHILLER WT	DUAL CHILLER WT
21	22	23	24	25	26	27	28	29	30
PMP 1	AL R	RUN R	DEMAND LIMIT SW1	PMP 2	CKT A CAP +	CKT A CAP -	CKT B CAP +	CKT B CAP -	RUN R COM
11	12	13	14	15	16	17	18	19	20
		DUAL SETPOINT	DUAL SETPOINT	DEMAND LIMIT SW1				REMOTE SW	REMOTE SW
1	2	3	4	5	6	7	8	9	10

TB6									
24VAC	COMP B RUN STATUS	COMP B RUN STATUS	COMP A RUN STATUS	COMP A RUN STATUS	SHD R / ALT R COM				
21	22	23	24	25	26	27	28	29	30
	OCC. OVERIDE	OCC. OVERIDE	DEMAND LIMIT	DEMAND LIMIT	CAPACITY RUNNING	CAPACITY RUNNING	ALT R	24VAC	SHD R
11	12	13	14	15	16	17	18	19	20
CAPACITY LIMIT	CAPACITY LIMIT	SETPOINT RESET	SETPOINT RESET	SW2 REMOTE LOCKOUT	SW2 REMOTE LOCKOUT	SPACE TEMP	SPACE TEMP	ICE DONE	ICE DONE
1	2	3	4	5	6	7	8	9	10

See Legend on page 240.

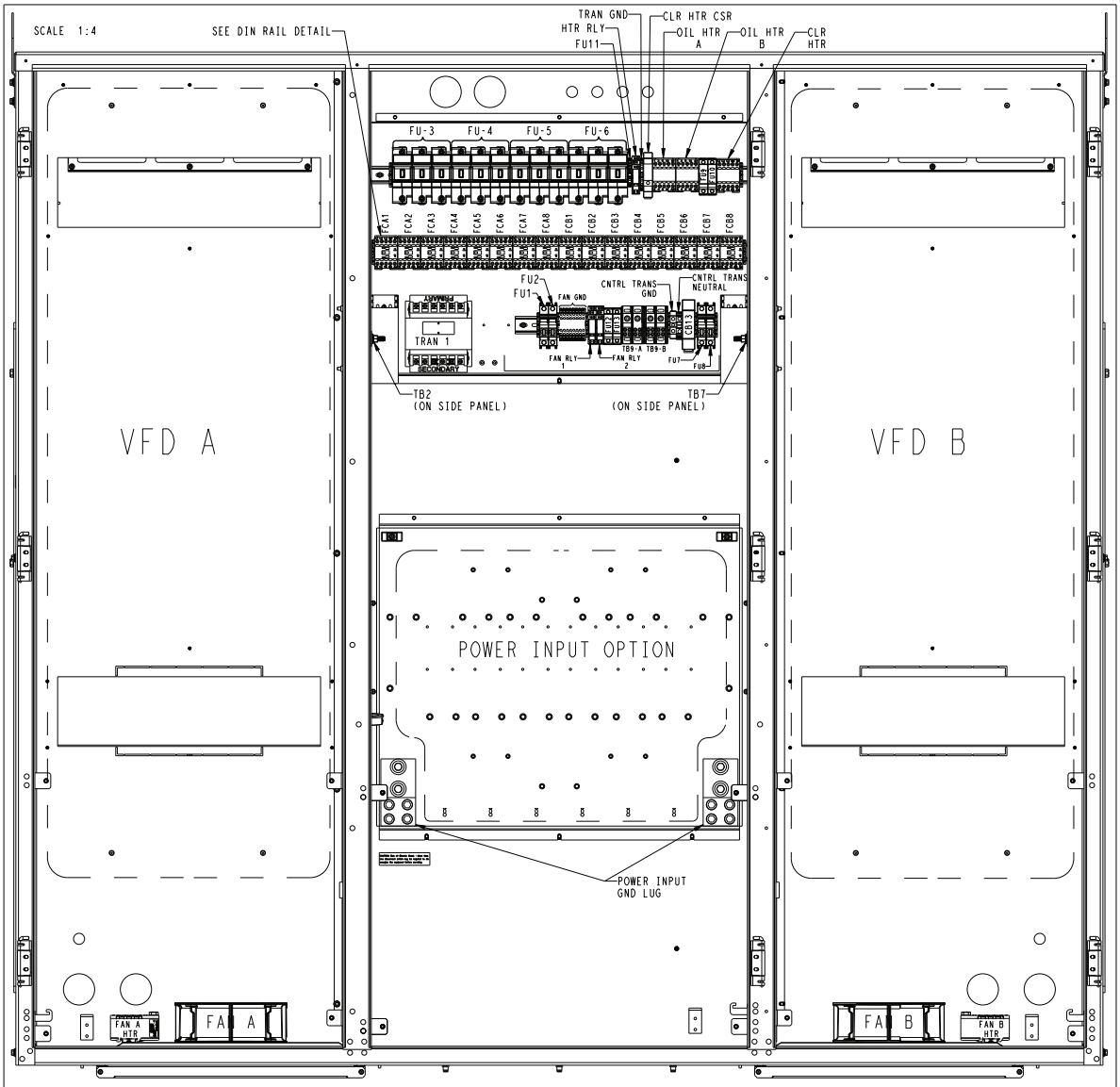
30XVLVA-A-AA10 REV A

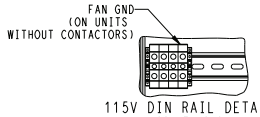
Fig. 120 — Component Arrangement Diagram for 30XV140-325

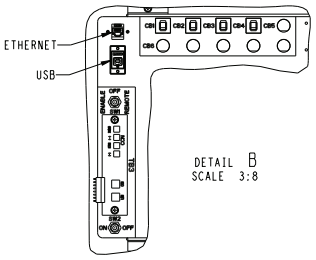


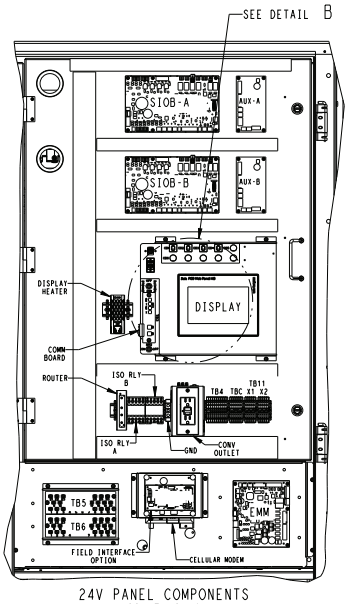
See Legend on page 240.

Fig. 120 — Component Arrangement Diagram for 30XV140-325 (cont)









TB5

ALM R COM	PMP 2 COM	PMP 1 COM				PUMP INTERLOCK	PUMP INTERLOCK	DUAL CHILLER WT	DUAL CHILLER WT
21	22	23	24	25	26	27	28	29	30
PMP 1	ALM R	RUN R	DEMAND LIMIT SW1	PMP 2	CKT A CAP +	CKT A CAP -	CKT B CAP +	CKT B CAP -	RUN R COM
11	12	13	14	15	16	17	18	19	20
		DUAL SETPOINT	DUAL SETPOINT	DEMAND LIMIT SW1				REMOTE SW	REMOTE SW
TB5 1	2	3	4	5	6	7	8	9	10

TB6

24VAC	COMP B RUN STATUS	COMP B RUN STATUS	COMP A RUN STATUS	COMP A RUN STATUS	SHD R / ALT R COM				
21	22	23	24	25	26	27	28	29	30
	OCC. OVERIDE	OCC. OVERIDE	DEMAND LIMIT	DEMAND LIMIT	CAPACITY RUNNING	CAPACITY RUNNING	ALT R	24VAC	SHD R
11	12	13	14	15	16	17	18	19	20
CAPACITY LIMIT	CAPACITY LIMIT	SETPOINT RESET	SETPOINT RERSET	SW2 REMOTE LOCKOUT	SW2 REMOTE LOCKOUT	SPACE TEMP	SPACE TEMP	ICE DONE	ICE DONE
TB6 1	2	3	4	5	6	7	8	9	10

30XVLSA-A-AA10 | REV. -

See Legend on page 240.

Fig. 121 — Component Arrangement Diagram for 30XV350-500

LEGEND FOR FIG. 106-121

ALM	—	Alarm
AUX	—	Auxiliary
ALT	—	Alert
CB	—	Circuit Breaker
CLR	—	Evaporator
COMPR	—	Compressor
CSR	—	Current Sensing Relay
CWFS	—	Chilled Water Flow Switch
DGT	—	Discharge Gas Temperature
DPT	—	Discharge Pressure and Temperature
ECTA	—	Economizer A Temp
ECTB	—	Economizer B Temp
EMM	—	Energy Management Module
EPT	—	Economizer Pressure Transducer
EXV	—	Electronic Expansion Valve
FIOP	—	Factory-Installed Option
FM	—	Fan Motor
FU	—	Fuse
GFI-CO	—	Ground Fault Interrupter - Convenience Outlet
GND	—	Ground
HPS	—	High-Pressure Switch
HTR	—	Heater
LIQ	—	Liquid
NEC	—	National Electrical Code
OPT	—	Oil Pressure Transducer
PMP	—	Pump
SGT	—	Suction Gas Temperature
SIOB	—	Standard Input/Output Board
SPT	—	Space Temperature
TB	—	Terminal Block
TRAN	—	Transformer
VFD	—	Variable Frequency Drive
UPC	—	Universal Protocol Converter
XL	—	Across the Line

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES

MENU DESCRIPTIONS

MAIN MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	General Parameters	ALL	GENUINT
	Temperatures	ALL	TEMP
	Pressures	ALL	PRESSURE
	Inputs Status	ALL	INPUTS
	Outputs Status	ALL	OUTPUTS
	Pump Status	ALL	PUMPSTAT
	Run Times	ALL	RUNTIME
	Modes	ALL	MODES
	Setpoint Table	USER	SETPOINT
	Configuration Menu	USER	CONFIG
	Quick Test Table	SERVICE	QCK_TEST
	Maintenance Menu	SERVICE	MAINTAIN
	Trend Display	ALL	See “TRENDING SCREEN” on page 14.

NOTE(S):

a. Depends on the selected language (English by default).

GENUNIT — GENERAL PARAMETERS

Carrier Controller PATH: Main Menu **→ General Parameters**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	CTRL_TYP	0 to 2	0	—	Local=0, Net.=1, Remote=2	Read only
2	STATUS	Off Running Stopping Delay Tripout Ready Override Test	—	—	Run Status	Read only
3	CHIL_S_S	DSABLE_ENABLE	DSABLE	—	Net.: Cmd Start/Stop	Read only
4	CHIL_OCC	NO_YES	NO	—	Net.: Cmd Occupied	Read only
5	min_left	—	—	min	Minutes Left for Start	Read only
6	SP_SEL	0 to 2	0	—	Setpoint Select 0=Auto, 1=Spt1, 2=Spt2	Read only
7	SP_OCC	NO_YES	YES	—	Setpoint Occupied?	Read only
8	CAP_T	0 to 100	0	%	Percent Total Capacity	Read only
9	SP	—	–17.78 0	°C °F	Current Setpoint	Read only
10	CTRL_PNT	–20.00 to 67.22 –4 to 153	–17.78 0	°C °F	Control Point	Read only
11	EMSTOP	DSABLE_ENABLE	DSABLE	—	Emergency Stop	Read only
12	DEM_LIM	0 to 100	0	%	Active Demand Limit Val	Read only
13	min_lim	0 to 100	100	%	Demand Limit Minimum	Read only
14	VERS_ID	—	0	—	SW Version	Read only
15	N_STATUS	—	0	—	Run Status (Numerical)	Read only

NOTE(S):

a. Depends on the selected language (English by default).

TEMP — Temperatures

Carrier Controller PATH: Main Menu → Temperatures

LINE	CCN NAME	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	COOL_EWT	–17.78 0	°C °F	Evap Entering Fluid	Read only
2	COOL_LWT	–17.78 0	°C °F	Evap Leaving Fluid	Read only
3	COOL_DLT	0 0	^C ^F	Evap Delta T	Read only
4	OAT	–17.78 0	°C °F	Outdoor Air Temperature	Read only
5	SCT_A	–17.78 0	°C °F	Saturated Cond Tmp Cir A	Read only
6	SST_A	–17.78 0	°C °F	Saturated Suction Temp A	Read only
7	SLT_A	–17.78 0	°C °F	Saturated Liquid Temp A	Read only
8	SUCT_A	–17.78 0	°C °F	Compressor Suction Tmp A	Read only
9	DGT_A	–17.78 0	°C °F	Discharge Gas Temp Cir A	Read only
10	CP_TMP_A	–17.78 0	°C °F	Motor Temperature Cir A	Read only
11	ECO_T_A	–17.78 0	°C °F	EXV Eco. Tmp Cir A	Read only
12	ECO_SATA	–17.78 0	°C °F	Eco. Saturated Tmp A	Read only
13	LIQ_T_A	–17.78 0	°C °F	Liquid Temperature A	Read only
14	SCT_B	–17.78 0	°C °F	Saturated Cond Tmp Cir B	Read only
15	SST_B	–17.78 0	°C °F	Saturated Suction Temp B	Read only
16	SLT_B	–17.78 0	°C °F	Saturated Liquid Temp B	Read only
17	SUCT_B	–17.78 0	°C °F	Compressor Suction Tmp B	Read only
18	DGT_B	–17.78 0	°C °F	Discharge Gas Temp Cir B	Read only
19	CP_TMP_B	–17.78 0	°C °F	Motor Temperature Cir B	Read only
20	ECO_T_B	–17.78 0	°C °F	EXV Eco. Tmp Cir B	Read only
21	ECO_SATB	–17.78 0	°C °F	Eco. Saturated Tmp B	Read only
22	LIQ_T_B	–17.78 0	°C °F	Liquid Temperature B	Read only
23	SPACETMP	–17.78 0	°C °F	Space Temp (Opt.)	Read only
24	CHWSTEMP	–17.78 0	°C °F	Chill Water Temp (Opt.)	Read only

NOTE(S):

a. Depends on the selected language (English by default).

PRESSURE — Pressures

Carrier Controller PATH: Main Menu → Pressures

LINE	CCN NAME	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	DP_A	0 0	kPa psi	Discharge Pressure A	Read only
2	SP_A	0 0	kPa psi	Main Suction Pressure A	Read only
3	OP_A	0 0	kPa psi	Oil Pressure A	Read only
4	DOP_A	0 0	kPa psi	Delta Oil Pressure A	Read only
5	OFDP_A	0 0	kPa psi	Oil Filter Press. Drop A	Read only
6	ECO_P_A	0 0	kPa psi	Economizer Pressure A	Read only
7	LIQ_P_A	0 0	kPa psi	Liquid Pressure A	Read only
8	DP_B	0 0	kPa psi	Discharge Pressure B	Read only
9	SP_B	0 0	kPa psi	Main Suction Pressure B	Read only
10	OP_B	0 0	kPa psi	Oil Pressure B	Read only
11	DOP_B	0 0	kPa psi	Delta Oil Pressure B	Read only
12	OFDP_B	0 0	kPa psi	Oil Filter Press. Drop B	Read only
13	ECO_P_B	0 0	kPa psi	Economizer Pressure B	Read only
14	LIQ_P_B	0 0	kPa psi	Liquid Pressure B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

INPUTS — Inputs Status

Carrier Controller PATH: Main Menu → Inputs Status

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	ONOFF_SW	OPEN_CLOSE	OPEN	—	Remote On/Off Switch	Read only
2	SETP_SW	OPEN_CLOSE	OPEN	—	Remote Setpoint Switch	Read only
3	LIM_SW1	OPEN_CLOSE	OPEN	—	Limit Switch 1	Read only
4	LIM_SW2	OPEN_CLOSE	OPEN	—	Limit Switch 2	Read only
5	OIL_L_A	OPEN_CLOSE	OPEN	—	Oil Level Input A	Read only
6	OIL_L_B	OPEN_CLOSE	OPEN	—	Oil Level Input B	Read only
7	SP_RESET	—	—	mA	Remote Reset Setpoint	Read only
8	LIM_ANAL	—	—	mA	Remote Dem. Limit	Read only
9	leak_v	—	—	volts	Leakage Detector 1	Read only
10	leak_2_v	—	—	volts	Leakage Detector 2	Read only
11	REM_LOCK	OPEN_CLOSE	OPEN	—	Customer Interlock	Read only
12	ICE_SW	OPEN_CLOSE	OPEN	—	Ice Done Storage Switch	Read only
13	OCC_OVSW	OPEN_CLOSE	OPEN	—	Occupied Override Switch	Read only
14	HEATR_SW	OPEN_CLOSE	OPEN	—	Evap Heater Detector	Read only

NOTE(S):

a. Depends on the selected language (English by default).

OUTPUTS — Outputs Status

Carrier Controller PATH: Main Menu → Outputs Status

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	LABEL_A[b]	NORMAL_ALARM	NORMAL	—	CIRCUIT A	Read only
2	CP_A	OFF_ON	OFF	—	Compressor A	Read only
3	OIL_SL_A	OFF_ON	OFF	—	Oil Solenoid Output A	Read only
4	VI_A	OFF_ON	OFF	—	VI Solenoid Output A	Read only
5	CAPT010A	—	—	volts	Capacity Signal Cir A	Read only
6	VFAN_A	—	—	%	VariFan Speed A	Read only
7	ISO_OP_A	OFF_ON	OFF	—	Ref Iso Relay Energize A	Read only
8	ISO_POSA	OFF_ON	OFF	—	Ref Iso Valve State A	Read only
9	OIL_HT_A	OFF_ON	OFF	—	Oil Heater Output A	Read only
10	LABEL_B[b]	NORMAL_ALARM	NORMAL	—	CIRCUIT B	Read only
11	CAPT010B	—	—	volts	Capacity Signal Cir B	Read only
12	VFAN_B	—	—	%	VariFan Speed B	Read only
13	CP_B	OFF_ON	OFF	—	Compressor B	Read only
14	OIL_SL_B	OFF_ON	OFF	—	Oil Solenoid Output B	Read only
15	VI_B	OFF_ON	OFF	—	VI Solenoid Output B	Read only
16	ISO_OP_B	OFF_ON	OFF	—	Ref Iso Relay Energize B	Read only
17	ISO_POSB	OFF_ON	OFF	—	Ref Iso Valve State B	Read only
18	OIL_HT_B	OFF_ON	OFF	—	Oil Heater Output B	Read only
19	ALARM	OFF_ON	OFF	—	Alarm Relay Status	Read only
20	RUNNING	OFF_ON	OFF	—	Running Relay Status	Read only
21	CAPT_010	—	—	volts	Chiller Capacity Signal	Read only
22	ALERT	OFF_ON	OFF	—	Alert Relay State	Read only
23	SHUTDOWN	OFF_ON	OFF	—	Shutdown Indicator State	Read only
24	EVP_HTR	OFF_ON	OFF	—	Evaporator heater output	Read only
25	FCA1	OFF_ON	OFF	—	Fan Contactor 1A	Read only
26	FCA2	OFF_ON	OFF	—	Fan Contactor 2A	Read only
27	FCA3	OFF_ON	OFF	—	Fan Contactor 3A	Read only
28	FCA4	OFF_ON	OFF	—	Fan Contactor 4A	Read only
29	FCA5	OFF_ON	OFF	—	Fan Contactor 5A	Read only
30	FCA6	OFF_ON	OFF	—	Fan Contactor 6A	Read only
31	FCA7	OFF_ON	OFF	—	Fan Contactor 7A	Read only
32	FCA8	OFF_ON	OFF	—	Fan Contactor 8A	Read only
33	FCB1	OFF_ON	OFF	—	Fan Contactor 1B	Read only
34	FCB2	OFF_ON	OFF	—	Fan Contactor 2B	Read only
35	FCB3	OFF_ON	OFF	—	Fan Contactor 3B	Read only
36	FCB4	OFF_ON	OFF	—	Fan Contactor 4B	Read only
37	FCB5	OFF_ON	OFF	—	Fan Contactor 5B	Read only
38	FCB6	OFF_ON	OFF	—	Fan Contactor 6B	Read only
39	FCB7	OFF_ON	OFF	—	Fan Contactor 7B	Read only
40	FCB8	OFF_ON	OFF	—	Fan Contactor 8B	Read only
41	VFD_EN_A	OFF_ON	OFF	—	Comp. HW Enable A	Read only
42	VFD_EN_B	OFF_ON	OFF	—	Comp. HW Enable B	Read only
43	BOX_HTR	OFF_ON	OFF	—	Control Box Heater	Read only
44	A_valve	OFF_ON	OFF	—	OIL Inject CirA valve	Read only
45	B_valve	OFF_ON	OFF	—	OIL Inject CirB valve	Read only

NOTE(S):

a. Depends on the selected language (English by default).
b. Dummy point needed to comply with grouping of UCHAR in groups of 4.

PUMPSTAT — Pump Status

Carrier Controller PATH: Main Menu → Pump Status

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	CPUMP_1	OFF_ON	OFF	—	Evap Pump #1 Command	Read/write
2	CPUMP_2	OFF_ON	OFF	—	Evap Pump #2 Command	Read/write
3	ROTCPUMP	NO_YES	NO	—	Rotate Evap Pumps ?	Read/write
4	FLOW_SW	OPEN_CLOSE	OPEN	—	Evap Flow Switch #1	Read only
5	FLOW_SWB	OPEN_CLOSE	OPEN	—	Evap Flow Switch #2	Read only
6	ROTCNTDN	—	0	hours	Countdown to Rotate	Read only

NOTE(S):

a. Depends on the selected language (English by default).

RUNTIME — Run Times

Carrier Controller PATH: Main Menu → Run Times

LINE	CCN NAME	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	HR_MACH	hours	Machine Operating Hours	Read only
2	st_mach	—	Machine Starts	Read only
3	HR_CP_A	hours	Compressor A Hours	Read only
4	st_cp_a	—	Compressor A Starts	Read only
5	HR_CP_B	hours	Compressor B Hours	Read only
6	st_cp_b	—	Compressor B Starts	Read only
7	hr_cpum1	hours	Evap Pump #1 Hours	Read only
8	hr_cpum2	hours	Evap Pump #2 Hours	Read only
9	VIctA	cycles	VI Cycle Count A	Read only
10	VIctB	cycles	VI Cycle Count B	Read only
11	hrfana01	hours	Circuit A Fan #1 Hours	Read only
12	hrfana02	hours	Circuit A Fan #2 Hours	Read only
13	hrfana03	hours	Circuit A Fan #3 Hours	Read only
14	hrfana04	hours	Circuit A Fan #4 Hours	Read only
15	hrfana05	hours	Circuit A Fan #5 Hours	Read only
16	hrfana06	hours	Circuit A Fan #6 Hours	Read only
17	hrfana07	hours	Circuit A Fan #7 Hours	Read only
18	hrfana08	hours	Circuit A Fan #8 Hours	Read only
19	hrfana09	hours	Circuit A Fan #9 Hours	Read only
20	hrfana10	hours	Circuit A Fan #10 Hours	Read only
21	hrfana11	hours	Circuit A Fan #11 Hours	Read only
22	hrfana12	hours	Circuit A Fan #12 Hours	Read only
23	hrfana13	hours	Circuit A Fan #13 Hours	Read only
24	hrfana14	hours	Circuit A Fan #14 Hours	Read only
25	hrfanb01	hours	Circuit B Fan #1 Hours	Read only
26	hrfanb02	hours	Circuit B Fan #2 Hours	Read only
27	hrfanb03	hours	Circuit B Fan #3 Hours	Read only
28	hrfanb04	hours	Circuit B Fan #4 Hours	Read only
29	hrfanb05	hours	Circuit B Fan #5 Hours	Read only
30	hrfanb06	hours	Circuit B Fan #6 Hours	Read only
31	hrfanb07	hours	Circuit B Fan #7 Hours	Read only
32	hrfanb08	hours	Circuit B Fan #8 Hours	Read only
33	hrfanb09	hours	Circuit B Fan #9 Hours	Read only
34	hrfanb10	hours	Circuit B Fan #10 Hours	Read only
35	hrfanb11	hours	Circuit B Fan #11 Hours	Read only
36	hrfanb12	hours	Circuit B Fan #12 Hours	Read only
37	hrfanb13	hours	Circuit B Fan #13 Hours	Read only
38	hrfanb14	hours	Circuit B Fan #14 Hours	Read only

NOTE(S):

a. Depends on the selected language (English by default).

MODES — Modes

Carrier Controller PATH: Main Menu → Modes

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	m_delay	NO_YES	NO	Start Up Delay In Effect	Read only
2	m_2stpt	NO_YES	NO	Second Setpoint In Use	Read only
3	m_reset	NO_YES	NO	Reset In Effect	Read only
4	m_demlim	NO_YES	NO	Demand Limit Active	Read only
5	m_pmprot	NO_YES	NO	Evaporator Pump Rotation	Read only
6	m_pmpper	NO_YES	NO	Pump Periodic Start	Read only
7	m_night	NO_YES	NO	Night Low Noise Active	Read only
8	m_slave	NO_YES	NO	Master Slave Active	Read only
9	m_ice	NO_YES	NO	Ice Mode In Effect	Read only
10	m_oatl	NO_YES	NO	Ambient Lockout Active	Read only
11	m_alarm1	—	—	Current Alarm 1	Read only
12	m_alarm2	—	—	Current Alarm 2	Read only
13	m_alarm3	—	—	Current Alarm 3	Read only
14	m_alarm4	—	—	Current Alarm 4	Read only
15	m_alarm5	—	—	Current Alarm 5	Read only

NOTE(S):

a. Depends on the selected language (English by default).

SETPOINT — Setpoint Table

Carrier Controller PATH: Main Menu → Setpoint Table

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	csp1	–28.89 to 29.44 –20 to 85	6.67 44	°C °F	Cooling Setpoint 1	Read/write
2	csp2	–28.89 to 29.44 –20 to 85	6.67 44	°C °F	Cooling Setpoint 2	Read/write
3	ice_sp	–28.89 to 15.56 –20 to 60	6.67 44	°C °F	Cooling Ice Setpoint	Read/write
4	cramp_sp	0.06 to 11.11 0.1 to 20	0.28 0.5	^C ^F	Cooling Ramp Loading	Read/write
5	lim_sp1	0 to 100	100	%	Switch Limit Setpoint 1	Read/write
6	lim_sp2	0 to 100	100	%	Switch Limit Setpoint 2	Read/write
7	lim_sp3	0 to 100	100	%	Switch Limit Setpoint 3	Read/write
8	oatl	–28.89 to 48.89 –20 to 120	–28.89 –20	°C °F	Ambient Lockout Temp	Read/write
9	wint_freezing_temp	–17.78 to 10.00 0 to 50	–1.11 30	°C °F	WintFanFreezetemp	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

QCK_TEST — Quick Test Table[a]

Main Menu → Quick Test Table

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[b]	READ/WRITE
	Unit must be in L-off					
1	QCK_TEST	DSABLE_ENABLE	DSABLE	—	Quick Test Enable	Read only
2	Q_EXVA	0 to 100	0	%	Circuit A EXV Position	Read only
3	Q_OILS_A	OFF_ON	OFF	—	Circuit A Oil Solenoid	Read only
4	Q_ECO_A	0 to 100	0	%	EXV Eco Position Cir A	Read only
5	Q_OILHTA	OFF_ON	OFF	—	Oil Heater Circuit A	Read only
6	Q_010_A	0 to 100	0	%	Capacity Cir A Output	Read only
7	Q_COMPA	OFF_ON	OFF	—	Comp A Running Output	Read only
8	Q_ISOP_A	CLOSE_OPEN	CLOSE	—	Isolation Valve State A	Read only
9	Q_VI_A	OFF_ON	OFF	—	Circuit A VI	Read only
10	Q_VFAN_A	0 to 100	0	%	VariFan Speed A	Read only
11	Q_EXVB	0 to 100	0	%	Circuit B EXV Position	Read only
12	Q_OILS_B	OFF_ON	OFF	—	Circuit B Oil Solenoid	Read only
13	Q_ECO_B	0 to 100	0	%	EXV Eco Position Cir B	Read only
14	Q_OILHTB	OFF_ON	OFF	—	Oil Heater Circuit B	Read only
15	Q_010_B	0 to 100	0	%	Capacity Cir B Output	Read only
16	Q_COMPB	OFF_ON	OFF	—	Comp B Running Output	Read only
17	Q_ISOP_B	CLOSE_OPEN	CLOSE	—	Isolation Valve State B	Read only
18	Q_VI_B	OFF_ON	OFF	—	Circuit B VI	Read only
19	Q_VFAN_B	0 to 100	0	%	VariFan Speed B	Read only
20	Q_CL_HTR	OFF_ON	OFF	—	Evaporator Heater	Read only
21	Q_CPMP1	0 to 2 0=Off 1=On for 20 Seconds 2=On until turned Off	0	—	Evaporator Pump 1	Read only
22	Q_CPMP2	0 to 2 0=Off 1=On for 20 Seconds 2=On until turned Off	0	—	Evaporator Pump 2	Read only
23	Q_ALARM	OFF_ON	OFF	—	Alarm Relay Status	Read only
24	Q_SHUTD	OFF_ON	OFF	—	Shutdown Relay Status	Read only
25	Q_RUN	OFF_ON	OFF	—	Running Relay Status	Read only
26	Q_ALERT	OFF_ON	OFF	—	Alert Relay Switch	Read only
27	Q_CAP010	0 to 100	0	%	Capacity Total Output	Read only
28	Q_DRVHTA	OFF_ON	OFF	—	Comp drive heater A	Read only
29	Q_DRVHTB	OFF_ON	OFF	—	Comp drive heater B	Read only
30	Q_FCA1	OFF_ON	OFF	—	Fan Contactor 1A	Read only
31	Q_FCA2	OFF_ON	OFF	—	Fan Contactor 2A	Read only
32	Q_FCA3	OFF_ON	OFF	—	Fan Contactor 3A	Read only
33	Q_FCA4	OFF_ON	OFF	—	Fan Contactor 4A	Read only
34	Q_FCA5	OFF_ON	OFF	—	Fan Contactor 5A	Read only
35	Q_FCA6	OFF_ON	OFF	—	Fan Contactor 6A	Read only
36	Q_FCA7	OFF_ON	OFF	—	Fan Contactor 7A	Read only
37	Q_FCA8	OFF_ON	OFF	—	Fan Contactor 8A	Read only
38	Q_FCB1	OFF_ON	OFF	—	Fan Contactor 1B	Read only
39	Q_FCB2	OFF_ON	OFF	—	Fan Contactor 2B	Read only
40	Q_FCB3	OFF_ON	OFF	—	Fan Contactor 3B	Read only
41	Q_FCB4	OFF_ON	OFF	—	Fan Contactor 4B	Read only
42	Q_FCB5	OFF_ON	OFF	—	Fan Contactor 5B	Read only
43	Q_FCB6	OFF_ON	OFF	—	Fan Contactor 6B	Read only
44	Q_FCB7	OFF_ON	OFF	—	Fan Contactor 7B	Read only
45	Q_FCB8	OFF_ON	OFF	—	Fan Contactor 8B	Read only
46	Q_VF_ENA	OFF_ON	OFF	—	Comp. HW Enable A	Read only
47	Q_VF_ENB	OFF_ON	OFF	—	Comp. HW Enable B	Read only
48	Q_BOX_HT	OFF_ON	OFF	—	Control Box Heater	Read only
49	Q_A_F_SP	0 to 100	0	%	ALL ECM Fan spd CIRA	Read only
50	Q_B_F_SP	0 to 100	0	%	ALL ECM Fan spd CIRB	Read only

NOTE(S):

a. Unit must be in Local-Off.
b. Depends on the selected language (English by default).

ALARMS MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Reset Alarms	USER, SERVICE, FACTORY	ALARMRST
	Current Alarms	ALL	CUR_ALM
	Alarm Historic	ALL	ALMHIST1
	Major Alarm Historic	ALL	ALMHIST2

NOTE(S):
a. Depends on the selected language (English by default).

ALARMRST — Reset Alarms

Carrier Controller PATH:

Alarms → **Reset Alarms**

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	RST_ALM	NO_YES	NO	Alarm Reset	Read/write
2	ALM	—	—	Alarm State	Read only
3	alarm_1c	—	—	Current Alarm 1	Read only
4	alarm_2c	—	—	Current Alarm 2	Read only
5	alarm_3c	—	—	Current Alarm 3	Read only
6	alarm_4c	—	—	Current Alarm 4	Read only
7	alarm_5c	—	—	Current Alarm 5	Read only
8	alarm_1	—	—	Jbus Current Alarm 1	Read only
9	alarm_2	—	—	Jbus Current Alarm 2	Read only
10	alarm_3	—	—	Jbus Current Alarm 3	Read only
11	alarm_4	—	—	Jbus Current Alarm 4	Read only
12	alarm_5	—	—	Jbus Current Alarm 5	Read only

NOTE(S):
a. Depends on the selected language (English by default).

CONFIGURATION MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	HMI Configuration Menu	USER, SERVICE, FACTORY	HMI_CONF
	General Configuration	USER, SERVICE, FACTORY	GEN_CONF
	Pump Configuration	USER, SERVICE, FACTORY	PUMPCONF
	Reset Configuration	USER, SERVICE, FACTORY	RESETCFG
	Schedule Menu	USER, SERVICE, FACTORY	SCHEDULE
	Holiday Menu	USER, SERVICE, FACTORY	HOLIDAY
	Broadcast Menu	USER, SERVICE, FACTORY	BRODCAST
	Factory Parameters	FACTORY	FACTORY
	Factory2 Parameters	FACTORY	FACTORY2
	Service Parameters	SERVICE, FACTORY	SERVICE
	Update Running Hour	SERVICE, FACTORY	UPDTHOUR
	Master Slave Config	SERVICE, FACTORY	MST_SLV
	Compressor Enable	SERVICE, FACTORY	CP_UNABL
	Email Configuration	SERVICE, FACTORY	EMAILCFG
	ECM Parameters	SERVICE, FACTORY	ECM
	Refrigerant Charging	SERVICE, FACTORY	REFCHG

NOTE(S):

a. Depends on the selected language (English by default).

GENCONF — General Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → General Configuration Table

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	prio_cir	0 to 2 0 = Auto 1 = A Prio 2 = B Prio	0	—	Cir Priority Sequence	Read/write
2	ramp_sel	NO_YES	YES	—	Ramp Loading Enabled	Read/write
3	off_on_d	1 to 15	1	min	Unit Off to On Delay	Read/write
4	lim_sel	0 to 2 0 = None 1 = Switch Control 2 = 4 to 20mA Control	0	—	Demand Limit Type Select	Read/write Read/write Read/write
5	nh_start	0 to 23	0	—	Night Mode Start Hour	Read/write
6	nh_end	0 to 23	0	—	Night Mode End Hour	Read/write
7	nh_limit	0 to 100	100	%	Night Capacity Limit	Read/write
8	ice_cnfg	NO_YES	NO	—	Ice Mode Enable	Read/write
9	shortcyc	NO_YES	NO	—	Short Cycle Management	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

PUMPCONF — Pump Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → Pump Configuration

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	cpumpseq	0 to 4 0=No Pump 1=One Pump Only 2=Two Pumps Auto 3=Pump#1 Manual 4=Pump#2 Manual	0	—	Evap Pumps Sequence	Read/write
2	pump_del	24 to 3000	48	Hours	Pump Auto Rotation Delay	Read/write
3	pump_per	NO_YES	No (0)	—	Pump Sticking Protection	Read/write
4	pump_loc	NO_YES	Yes (1)	—	Flow Checked If Pump Off	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

RESETCFG — Reset Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → Reset Configuration Table

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	cr_sel	0 to 4 0=None 1=OAT 2=Delta T 3=4 to 20mA 4=Space Temp	0	—	Cooling Reset Select	Read/write
2	oat_crno	14 to 125 (–10 to 51.7)	14 (–10)	°F(°C)	OAT No Reset Value	Read/write
3	oat_crfu	14 to 125 (–10 to 51.7)	14 (–10)	°F(°C)	OAT Full Reset Value	Read/write
4	dt_cr_no	0 to 25 (–17.8 to –3.9)	0 (–17.8)	°F(°C)	Delta T No Reset Value	Read/write
5	dt_cr_fu	0 to 25 (–17.8 to –3.9)	0 (–17.8)	°F(°C)	Delta T Full Reset Value	Read/write
6	v_cr_no	0 to 20	0	mA	Current No Reset Value	Read/write
7	v_cr_fu	0 to 20	0	mA	Current Full Reset Value	Read/write
8	spacr_no	14 to 125 (–10 to 51.7)	14 (–10)	°F(°C)	Space T No Reset Value	Read/write
9	spacr_fu	14 to 125 (–10 to 51.7)	14 (–10)	°F(°C)	Space T Full Reset Value	Read/write
10	cr_deg	–30 to 30 (–34.4 to –1.1)	0 (–17.8)	°F(°C)	Cooling Reset Deg. Value	Read/write

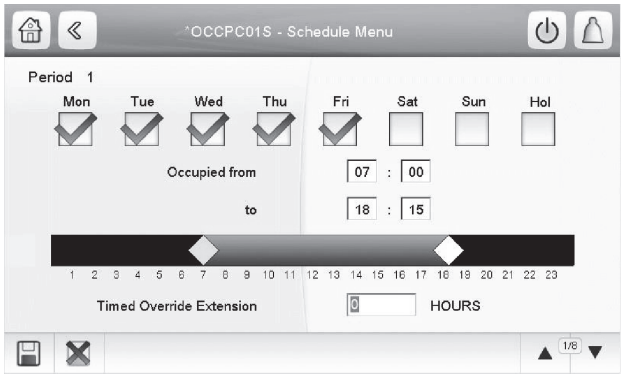
NOTE(S):

a. Depends on the selected language (English by default).

SCHEDULE — OCCPC01S and OCCPC02S

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Schedule Menu**



HOLIDAY — Holiday Menu

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Holiday Menu**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	READ/WRITE
1	Holiday Start Month	HOL_MON	0 to 12	0	Read/write
2	Start Day	HOL_DAY	0 to 31	0	Read/write
3	Duration (days)	HOL_LEN	0 to 99	0	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

BRODEFS — Broadcast Menu

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Broadcast Menu** → **BROCASTS**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	READ/WRITE
1	Activate	ccnbroad	0 to 2 0=Disabled 1=Broadcast time date, Daylight Savings Time and Holiday 2=Standalone OAT Broadcast		Read/write
2	OAT Broadcast				
3	Bus #	oatbusn	0 to 239	0	Read/write
4	Element #	oatlocad	0 to 239	0	Read/write
5	Daylight Savings Select	dayl_sel	Disable/Enable	Disable	Read/write
6	ENTERING				
7	Month	startmon	1 to 12		Read/write
8	Day of Week(1=Monday)	startdow	1 to 7		Read/write
9	Week Number of Month	startwom	1 to 5		Read/write
10	LEAVING				
11	Month	stopmon	1 to 12		Read/write
12	Day of Week(1=Monday)	stopdow	1 to 7		Read/write
13	Week Number of Month	stopwom	1 to 5		Read/write

NOTE(S):

a. Depends on the selected language (English by default).

FACTORY — Factory Parameters

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Factory Parameters**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	unitsize[b]	0 to 2000	0	—	Unit Capacity	Read/write
2	voltage[c]	0 to 700	460	—	Power Supply Voltage	Read/write
3	freq_60H	NO_YES	YES	—	60Hz Sel No=50, Yes=60	Read/write
4	mfg_tier	0 to 2	0	—	Tier 0=STD, 1=MID, 2=HI	Read/write
5	probrine	NO_YES	NO	—	Process Brine Evap	Read/write
6	cpass_nb[d]	1 to 3	2	—	Evap Pass Number	Read/write
7	heat_sel	NO_YES	NO	—	Evap Heater Installed	Read/write
8	mst_slv	NO_YES	NO	—	Master Slave Setup	Read/write
9	emm_nrcp	NO_YES	NO	—	Energy Management Module	Read/write
10	loambopt	NO_YES	NO	—	Low Ambient Option (STD)	Read/write
11	leak_chk	NO_YES	NO	—	Leakage Charge Detection	Read/write
12	fMaxEnA	NO_YES	NO	—	Enable Max Frequency A	Read/write
13	fMaxEnB	NO_YES	NO	—	Enable Max Frequency B	Read/write
14	fMaxOvrA	26 to 206	75	Hz	Max Frequency Override A	Read/write
15	fMaxOvrB	26 to 206	75	Hz	Max Frequency Override B	Read/write
16	fan_fact	0.7 to 1.1	1	—	Fan Freq Factor (0.7-1.1)	Read only
17	fMinOvr	26 to 78	26	Hz	Min Frequency Override	Read only
18	Ref_Type	1 to 6	2	—	Refrigerant Selection	Read/write
19	lastspda	26 to 118	40	Hz	Low Amb. Start Spd A	Read/write
20	lastspdb	26 to 118	40	Hz	Low Amb. Start Spd B	Read/write
21	ECM_fans	OFF_ON	OFF	—	ECM fans sel. swtch	Read/write
22	PM_Motor	OFF_ON	OFF	—	PM motor sel. swtch	Read/write
23	CondCoil	OFF_ON	OFF	—	Cond Coil type option	Read/write
24	DCMap	DSABLE_ENABLE	DSABLE	—	Data Center Map	Read/write
25	DCM_Lri	DSABLE_ENABLE	DSABLE	—	DataCentr Liquid Inject	Read/write

NOTE(S):

a. Depends on the selected language (English by default).
b. 1=Cooling Only; 2= Heatpump (not available)
c. Enable the algorithms defined for 60Hz units (i.e.; max fan frequency)
d. Enable the 3 different design base, and special algorithms country related if needed.

FACTORY2 — Factory2 Parameters

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Factory2 Parameters**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	exvmax_a[b]	0 to 10000	0	—	EXV A Maximum Steps Numb	Read only
2	exvmax_b[b]	0 to 10000	0	—	EXV B Maximum Steps Numb	Read only
3	eco_cnfa[b,c]	0 to 15000	0	^F	Economizer A Steps Numb	Read only
4	eco_cnfb[b,c]	0 to 15000	0	^F	Economizer B Steps Numb	Read only
5	vfd_cmp[b]	0 to 2	0		Nb VFD Compressors	Read only
6	vfd_fana[b]	0 to 3	0		Nb Fan Drives Cir A	Read only
7	vfd_fanb[b]	0 to 3	0		Nb Fan Drives Cir B	Read only

NOTE(S):

a. Depends on the selected language (English by default).
b. Should not be changed; automatically calculated by software depending on unit size selected.
c. If = 0, no EXV economizer is present on the unit.

SERVICE1 — Service Parameters

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Service Parameters**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	flui_typ[b]	1 to 3 1 = Water 2 = Med Brine 3 = Low Brine	1	—	Evaporator Fluid Type	Read/write
2	ewt_opt	NO_YES	NO	—	Entering Fluid Control	Read/write
3	freezesp[c]	–20 to 34	34	°F	Brine Freeze Setpoint	Read/write
4	mini_lwt[c]	–20 to 38	38	°F	Brine Minimum Fluid Temp	Read/write
5	fastcapr[d]	0 to 2	0	—	Fast Capacity Recovery	Read/write
6	ewt_cirA[e]	NO_YES	YES	—	EWT Probe on Cir A Side	Read/write
7	leak_thr	0 to 10	2.5	V	Leakage Charge Threshold	Read/write
8	leak_tmr	0 to 600	60	min	Leakage Charge Timer	Read/write
9	ecodgt	0 to 1	0	—	Enable Eco Exv Dgt Prot.	Read/write
10	RFI_conf	OFF_ON	ON	—	Compressor RFI Filter En	Read/write
11	metric	NO_YES	NO	—	Metric Units? (Blackbox)	Read/write
12	fdrv_cfg[f]	NO_YES	YES	—	Send fan drive config?	Read/write
13	cdrv_cfg[f]	NO_YES	YES	—	Send comp. drive config?	Read/write
14	heatersp	0 to 6	2.0	—	Evap Heater Delta Spt	Read/write
15	freez_ov[g]	0 to 5.8	0.0	^F	Freeze Override Offset	Read/write
16	auto_sm	DSABLE_ENABLE	DSABLE	—	Auto Start When SM Lost	Read/write
17	ViPwrChk	0.5 to 15	1.15	kW	VI Self-Test Threshold	Read/write
18	ViChkEn	OFF_ON	OFF	—	VI Self-Test Enable	Read/write
19	AntiFrz	OFF_ON	ON	—	Pump Rot. AntiFrz Protec	Read/write
20	odtrspd	0 to 15	5	Hz	Oil Delta Trigger Speed	Read/write
21	otrigtim	600 to 7200	3600	sec	Oil Trigger Time	Read/write
22	odrecspd	0 to 15	5	Hz	Oil Delta Recover Speed	Read/write
23	orectim	30 to 120	60	sec	Oil Recover Time	Read/write
24	wateesys	0.9 to 10	0.9	^F	Water Temp Hysteresis	Read/write
25	vistrtdt	0 to 3600	900	sec	High VI Time at Start	Read/write
26	vistrten	NO_YES	YES	—	Enable High VI at Start	Read/write
27	apr_en	NO_YES	YES	—	Approach Ctrl at Start?	Read/write
28	cmpapr	0 to 50	30	^F	C. Prot. APR Limit	Read/write
29	cmpsst	0 to 50	20	^F	C. Prot. SST Frz Offset	Read/write
30	cmpdsst	–30 to 0	–18	^F	C. Prot SST dT Limit	Read/write
31	cmpdgt	0 to 215	185	°F	C. Prot. DGT Limit	Read/write
32	cmpddgt	0 to 50	13.5	^F	C. Prot. DGT dT Limit	Read/write
33	cmptmr	0 to 600	60	sec	C. Prot. Start Time	Read/write
34	SnsrSwp	DSABLE_ENABLE	ENABLE	—	Sensor_Swap_Alarm	Read/write

NOTE(S):

a. Depends on the selected language (English by default).
b. 1=water; 2=Brine; 3=Low Brine
c. For brine units only. Configures the minimum SST allowed and the minimum LWT setpoint. This values depends on the glycol percentage of the water loop. Carrier Service only is responsible for the configuration of this values.
d. 0 = disabled; 1 = Quickstart Load; 2 = Fast Capacity Recovery
e. NA — (for monopass unit only: table FACTORY item cpass_nb=1)
f. Yes: disable the configuration sent to drive at start up.
g. Configures the capacity override 1 (freeze override) offset. Unit stops if LWT or EWT < freeze_sp + freez_ov.

UPDTHOUR — Update Running Hour

Carrier Controller PATH:

Main Menu → Configuration Menu → Update Running Hour

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	hr_mach	0 to 99999999	0	hours	Machine Operating Hours	Read only
2	st_mach	0 to 99999999	0	—	Machine Starts Number	Read only
3	hr_cp_a	0 to 99999999	0	hours	Compressor A Hours	Read only
4	st_cp_a	0 to 99999999	0	—	Compressor A Starts	Read only
5	hr_cp_b	0 to 99999999	0	hours	Compressor B Hours	Read only
6	st_cp_b	0 to 99999999	0	—	Compressor B Starts	Read only
7	hr_cpum1	0 to 99999999	0	hours	Evap Pump #1 Hours	Read only
8	hr_cpum2	0 to 99999999	0	hours	Evap Pump #2 Hours	Read only
9	VlctA	0 to 99999999	0	cycles	VI Cycle Count A	Read only
10	VlctB	0 to 99999999	0	cycles	VI Cycle Count B	Read only
11	hrfana01	0 to 99999999	0	hours	Circuit A Fan #1 Hours	Read only
12	hrfana02	0 to 99999999	0	hours	Circuit A Fan #2 Hours	Read only
13	hrfana03	0 to 99999999	0	hours	Circuit A Fan #3 Hours	Read only
14	hrfana04	0 to 99999999	0	hours	Circuit A Fan #4 Hours	Read only
15	hrfana05	0 to 99999999	0	hours	Circuit A Fan #5 Hours	Read only
16	hrfana06	0 to 99999999	0	hours	Circuit A Fan #6 Hours	Read only
17	hrfana07	0 to 99999999	0	hours	Circuit A Fan #7 Hours	Read only
18	hrfana08	0 to 99999999	0	hours	Circuit A Fan #8 Hours	Read only
19	hrfana09	0 to 99999999	0	hours	Circuit A Fan #9 Hours	Read only
20	hrfana10	0 to 99999999	0	hours	Circuit A Fan #10 Hours	Read only
21	hrfana11	0 to 99999999	0	hours	Circuit A Fan #11 Hours	Read only
22	hrfana12	0 to 99999999	0	hours	Circuit A Fan #12 Hours	Read only
23	hrfana13	0 to 99999999	0	hours	Circuit A Fan #13 Hours	Read only
24	hrfana14	0 to 99999999	0	hours	Circuit A Fan #14 Hours	Read only
25	hrfanb01	0 to 99999999	0	hours	Circuit B Fan #1 Hours	Read only
26	hrfanb02	0 to 99999999	0	hours	Circuit B Fan #2 Hours	Read only
27	hrfanb03	0 to 99999999	0	hours	Circuit B Fan #3 Hours	Read only
28	hrfanb04	0 to 99999999	0	hours	Circuit B Fan #4 Hours	Read only
29	hrfanb05	0 to 99999999	0	hours	Circuit B Fan #5 Hours	Read only
30	hrfanb06	0 to 99999999	0	hours	Circuit B Fan #6 Hours	Read only
31	hrfanb07	0 to 99999999	0	hours	Circuit B Fan #7 Hours	Read only
32	hrfanb08	0 to 99999999	0	hours	Circuit B Fan #8 Hours	Read only
33	hrfanb09	0 to 99999999	0	hours	Circuit B Fan #9 Hours	Read only
34	hrfanb10	0 to 99999999	0	hours	Circuit B Fan #10 Hours	Read only
35	hrfanb11	0 to 99999999	0	hours	Circuit B Fan #11 Hours	Read only
36	hrfanb12	0 to 99999999	0	hours	Circuit B Fan #12 Hours	Read only
37	hrfanb13	0 to 99999999	0	hours	Circuit B Fan #13 Hours	Read only
38	hrfanb14	0 to 99999999	0	hours	Circuit B Fan #14 Hours	Read only

NOTE(S):

a. Depends on the selected language (English by default).

MST_SLV — Master/Slave Configuration

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Master/Slave Configuration**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	ms_sel	0 to 2	0	—	Master/Slave Select 0=Disable, 1=Master, 2=Slave	Read/write
2	ms_ctrl	1 to 3	1	—	Master Control Type 1=Local Control, 2=Remote Control, 3=CCN Control	Read/write
3	slv_addr	1 to 236	2	—	Slave Address	Read/write
4	lead_sel	0 to 2	0	—	Lead/Lag Select 0=Always Lead, 1=Lag Once Failed Only, 2= Lead/Lag Runtime Sel	Read/write
5	ll_bal_d	40 to 400	168	Hours	Lead/Lag Balance Delta	Read/write
6	lstr_tim	2 to 30	10	min	Lead Lag Start Timer	Read/write
7	lead_pul	0 to 60	0	min	Lead Pulldown Time	Read/write
8	start_dt	3 to 18	4	^F	Start if Error Higher	Read/write
9	lag_mini	0 to 150	0	min	Lag Minimum Running Time	Read/write
10	lag_pump	0 to 1	0	—	Lag Unit Pump Control 0=Stop if Unit Stops 1=Run if Unit Stops	Read/write
11	ll_serie	NO_YES	NO	—	Chiller in Series	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

CMP_PI

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	wt_kp_a	–20 to 0	0.0	—	Water Temp PI, Kp, Cir A	Read only
2	wt_ti_a	0 to 1000	0.0	sec	Water Temp PI, Ti Cir A	Read only
3	wt_ni_a	0.1 to 2	0.1	—	Water Temp PI, NI Cir A	Read only
4	dgt_kp_a	0 to 20	0.0	—	DGT PI Kp, Cir A	Read only
5	dgt_ti_a	0 to 1000	0.0	sec	DGT PI, Ti Cir A	Read only
6	dgt_ni_a	0.1 to 2	0.1	—	DGT PI, NI Cir A	Read only
7	cpt_kp_a	–20 to 0	0.0	—	Comp Temp PI, Kp Cir A	Read only
8	cpt_ti_a	0 to 1000	0.0	sec	Comp Temp PI, Ti Cir A	Read only
9	cpt_ni_a	0.1 to 2	0.1	—	Comp Temp PI, NI Cir A	Read only
10	dp_kp_a	0 to 20	0.0	—	Disch Press PI, Kp Cir A	Read only
11	dp_ti_a	0 to 1000	0.0	sec	Disch Press PI, Ti Cir A	Read only
12	dp_ni_a	0.1 to 2	0.1	—	Disch Press PI, NI Cir A	Read only
13	lsp_kp_a	–20 to 0	0.0	—	Low SP PI, Kp Cir A	Read only
14	lsp_ti_a	0 to 1000	0.0	sec	Low SP PI, Ti Cir A	Read only
15	lsp_ni_a	0.1 to 2	0.1	—	Low SP PI, NI Cir A	Read only
16	wt_kp_b	–20 to 0	0.0	—	Water Temp PI, Kp, Cir B	Read only
17	wt_ti_b	0 to 1000	0.0	sec	Water Temp PI, Ti Cir B	Read only
18	wt_ni_b	0.1 to 2	0.1	—	Water Temp PI, NI Cir B	Read only
19	dgt_kp_b	0 to 20	0.0	—	DGT PI Kp, Cir B	Read only
20	dgt_ti_b	0 to 1000	0.0	sec	DGT PI, Ti Cir B	Read only
21	dgt_ni_b	0.1 to 2	0.1	—	DGT PI, NI Cir B	Read only
22	cpt_kp_b	–20 to 0	0.0	—	Comp Temp PI, Kp Cir B	Read only
23	cpt_ti_b	0 to 1000	0.0	sec	Comp Temp PI, Ti Cir B	Read only
24	cpt_ni_b	0.1 to 2	0.1	—	Comp Temp PI, NI Cir B	Read only
25	dp_kp_b	0 to 20	0.0	—	Disch Press PI, Kp Cir B	Read only
26	dp_ti_b	0 to 1000	0.0	sec	Disch Press PI, Ti Cir B	Read only
27	dp_ni_b	0.1 to 2	0.1	—	Disch Press PI, NI Cir B	Read only
28	lsp_kp_b	–20 to 0	0.0	—	Low SP PI, Kp Cir B	Read only
29	lsp_ti_b	0 to 1000	0.0	sec	Low SP PI, Ti Cir B	Read only
30	lsp_ni_b	0.1 to 2	0.1	—	Low SP PI, NI Cir B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

SPARE

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	SPARE_P	–100 to 100	0.0	—	Spare Point	Read only

NOTE(S):

a. Depends on the selected language (English by default).

EXV_CFG

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	fixeddsh	9 to 36	15	^F	Fixed DSH Setpoint	Read only
2	scsp_max	9 to 18	12	^F	Subcooling Setpoint Max	Read only
3	scsp_min	3 to 8	6	^F	Subcooling Setpoint Min	Read only
4	sh_sp_a	7.2 to 44	9.0	—	Superheat Setpoint A	Read only
5	sh_sp_b	7.2 to 44	9.0	—	Superheat Setpoint B	Read only
6	apr_stp	2 to 20	3.0	^F	Approach Setpoint	Read only
7	sbc_kp_a	–5 to 0	0.0	—	Subcool PI, Kp Cir A	Read only
8	sbc_ti_a	0 to 1000	0.0	sec	Subcool PI, Ti Cir A	Read only
9	sbc_ni_a	0.1 to 2	0.1	—	Subcool PI, NI Cir A	Read only
10	dsh_kp_a	–5 to 0	0.0	—	DSH PI, Kp Cir A	Read only
11	dsh_ti_a	0 to 1000	0.0	sec	DSH PI, Ti Cir A	Read only
12	dsh_ni_a	0.1 to 2	0.1	—	DSH PI, NI Cir A	Read only
13	hsp_kp_a	0 to 5	0.0	—	High SP PI, Kp Cir A	Read only
14	hsp_ti_a	0 to 1000	0.0	sec	High SP PI, Ti Cir A	Read only
15	hsp_ni_a	0.1 to 2	0.1	—	High SP PI, NI Cir A	Read only
16	lsp_kp_a	0 to 5	0.0	—	Low SP PI, Kp Cir A	Read only
17	lsp_ti_a	0 to 1000	0.0	sec	Low SP PI, Ti Cir A	Read only
18	lsp_ni_a	0.1 to 2	0.1	—	Low SP PI, NI Cir A	Read only
19	dop_kp_a	–5 to 0	0.0	—	Dop PI, Kp Cir A	Read only
20	dop_ti_a	0 to 1000	0.0	sec	Dop PI, Ti Cir A	Read only
21	dop_ni_a	0.1 to 2	0.1	—	Dop PI, NI Cir A	Read only
22	ssh_kp_a	–5 to 0	0.0	—	Suction SH PI, Kp Cir A	Read only
23	ssh_ti_a	0 to 1000	0.0	sec	Suction SH PI, Ti Cir A	Read only
24	ssh_ni_a	0.1 to 2	0.1	—	Suction SH PI, NI Cir A	Read only
25	sbc_kp_b	–5 to 0	0.0	—	Subcool PI, Kp Cir B	Read only
26	sbc_ti_b	0 to 1000	0.0	sec	Subcool PI, Ti Cir B	Read only
27	sbc_ni_b	0.1 to 2	0.1	—	Subcool PI, NI Cir B	Read only
28	dsh_kp_b	–5 to 0	0.0	—	DSH PI, Kp Cir B	Read only
29	dsh_ti_b	0 to 1000	0.0	sec	DSH PI, Ti Cir B	Read only
30	dsh_ni_b	0.1 to 2	0.1	—	DSH PI, NI Cir B	Read only
31	hsp_kp_b	0 to 5	0.0	—	High SP PI, Kp Cir B	Read only
32	hsp_ti_b	0 to 1000	0.0	sec	High SP PI, Ti Cir B	Read only
33	hsp_ni_b	0.1 to 2	0.1	—	High SP PI, NI Cir B	Read only
34	lsp_kp_b	0 to 5	0.0	—	Low SP PI, Kp Cir B	Read only
35	lsp_ti_b	0 to 1000	0.0	sec	Low SP PI, Ti Cir B	Read only
36	lsp_ni_b	0.1 to 2	0.1	—	Low SP PI, NI Cir B	Read only
37	dop_kp_b	–5 to 0	0.0	—	Dop PI, Kp Cir B	Read only
38	dop_ti_b	0 to 1000	0.0	sec	Dop PI, Ti Cir B	Read only
39	dop_ni_b	0.1 to 2	0.1	—	Dop PI, NI Cir B	Read only
40	ssh_kp_b	–5 to 0	0.0	—	Suction SH PI, Kp Cir B	Read only
41	ssh_ti_b	0 to 1000	0.0	sec	Suction SH PI, Ti Cir B	Read only
42	ssh_ni_b	0.1 to 2	0.1	—	Suction SH PI, NI Cir B	Read only
43	apr_kp_a	–5 to 0	–0.25	—	Appr. PI, Kp Cir A	Read only
44	apr_ti_a	0 to 1000	5.0	sec	Appr. PI, Ti Cir A	Read only
45	apr_ni_a	0.1 to 2	0.8	—	Appr. PI, NI Cir A	Read only
46	apr_kp_b	–5 to 0	–0.25	—	Appr. PI, Kp Cir B	Read only
47	apr_ti_b	0 to 1000	5.0	sec	Appr. PI, Ti Cir B	Read only
48	apr_ni_b	0.1 to 2	0.8	—	Appr. PI, NI Cir B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

DELTA

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	wateesys	0.9 to 10	0.9	^F	water_t_hysteresis	Read only
2	ENVELOPE HIGH DISCHARGE					
3	chdp_hys	0 to 40	10	PSI	cmp high dp hysteresis	Read only
4	chdtdact	–15 to 15	2	^F	cmp high dt act offset	Read only
5	chdtdspt	–15 to 15	3	^F	cmp high dt stp offset	Read only
6	fhdp_hys	0 to 40	10	PSI	fan high dp hysteresis	Read only
7	fhdtdact	–15 to 20	13	^F	fan high dt act off-set	Read only
8	fhdtdstp	–15 to 20	15	^F	fan high dt stp off-set	Read only
9	ENVELOPE LOW DISCHARGE					
10	ldp_hys	0 to 45	35	PSI	low dp hysteresis	Read only
11	ldtdact	–15 to 50	5	^F	low dt act offset	Read only
12	ldtdspt	–15 to 50	10	^F	low dt stp offset	Read only
13	ENVELOPE HIGH SUCTION					
14	hsp_hyst	0 to 40	1	PSI	high sp hysteresis	Read only
15	hstdact	–15 to 15	0.6	^F	high st act offset	Read only
16	hstdspt	–15 to 15	1.6	^F	high st stp offset	Read only
17	ENVELOPE LOW SUCTION					
18	lsp_hyst	0 to 40	0	PSI	low sp hysteresis	Read only
19	lstdact	–25 to 30	–18.75	^F	low st act offset	Read only
20	lstdspt	–25 to 30	2	^F	low st stp offset	Read only
21	lstdcpa	–25 to 30	12.5	^F	deltat lstEXV vs lstCAPA	Read only
22	MOTOR TEMPERATURE					
23	mt_hyst	0 to 10	5	^F	motor temp hysteresis	Read only
24	mt_dact	0 to 35	10	^F	motor temp act offset	Read only
25	mt_dspt	0 to 35	15	^F	motor temp stp offset	Read only
26	DIS. GAS TEMPERATURE					
27	dgt_hyst	0 to 7.2	3.6	^F	dgt hysteresis	Read only
28	sst_hyst	0 to 7.2	3.6	^F	sst hysteresis	Read only
29	dgt_act	0 to 203	10	^F	dgt limit act offset	Read only
30	dgt_spt	0 to 203	11	^F	dgt limit spt offset	Read only
31	DIS. SUPERHEAT					
32	dsh_hyst	0 to 7.2	3	^F	dsh hysteresis	Read only
33	dsh_act	0 to 7.2	3	^F	dsh act offset	Read only
34	dshdelay	0 to 1200	300	sec	exv_no_dsh_delay	Read only
35	mopdelay	0 to 600	300	sec	exv_no_mop_delay	Read only
36	EXV SUBCOOLING (DX)					
37	sbc_hys	0 to 27	9	^F	subcool hysteresis	Read only
38	sbc_act	0 to 18	1.8	^F	subcool act offset	Read only
39	sbc_spt	0 to 18	5.4	°F	Subcooling Setpoint	Read only
40	cramprt	0.1 to 1	0.3	Hz	Compressor Ramp Rate	Read only
41	la_oat	0 to 50	50	°F	DELTA_la_oat	Read only
42	lasctmin	39 to 100	68	°F	DELTA_lasctmin	Read only

NOTE(S):

a. Depends on the selected language (English by default).

LABOONLY

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	f_EXVA	NO_YES	NO	—	Force EXV A	Read only
2	EXVval_A	0 to 100	30	%	EXV Force Value A	Read only
3	f_ECOA	NO_YES	NO	—	Force EXV ECO A	Read only
4	ECOval_A	0 to 100	30	%	EXV ECO Force Value A	Read only
5	f_Hz_A	NO_YES	NO	—	Force Speed A	Read only
6	Hzval_A	0 to 110	30	Hz	Speed Force Value A	Read only
7	f_vfan_A	NO_YES	NO	—	Force Varifan A	Read only
8	vf_val_A	0 to 60	0	Hz	Varifan Value A	Read only
9	f_VI_A	NO_YES	NO	—	Force VI A	Read only
10	VIval_A	0 to 1	0	—	VI Force Value A	Read only
11	f_EXVB	NO_YES	NO	—	Force EXV B	Read only
12	EXVval_B	0 to 100	30	%	EXV Force Value B	Read only
13	f_ECOB	NO_YES	NO	—	Force EXV ECO B	Read only
14	ECOval_B	0 to 100	30	%	EXV ECO Force Value B	Read only
15	f_Hz_B	NO_YES	NO	—	Force Speed B	Read only
16	Hzval_B	0 to 110	30	Hz	Speed Force Value B	Read only
17	f_vfan_B	NO_YES	NO	—	Force Varifan B	Read only
18	vf_val_B	0 to 60	0	—	Varifan Value B	Read only
19	f_VI_B	NO_YES	NO	—	ForceVI B	Read only
20	VIval_B	0 to 1	0	—	VI Force Value B	Read only
21	blank			—	Demand Limit	Read only
22	Fmax_A	30 to 110	95	Hz	Maximum Frequency A	Read only
23	Fmax_B	30 to 110	95	Hz	Maximum Frequency B	Read only
24	SweepTst	NO_YES	NO	—	Sweep test activation	Read only
25	steptime	10 to 1000	20	sec	Sweep Step duration	Read only
26	f_oilhta	OFF_ON	OFF	—	Force Oil Heater A	Read only
27	f_oilhtb	OFF_ON	OFF	—	Force Oil Heater B	Read only
28	v_oilhta	OFF_ON	OFF	—	Oil Heater Output A	Read only
29	v_oilhtb	OFF_ON	OFF	—	Oil Heater Output B	Read only
30	sw_max_f	21 to 95	95	Hz	Sweep Max Freq	Read only
31	sw_min_f	21 to 95	21	Hz	Sweep Min Freq	Read only
32	stepfreq	0.1 to 5	0.5	Hz	Sweep Freq Step	Read only
33	VI_Diag	OFF_ON	OFF	—	Enable VI Diagnostics	Read only

NOTE(S):

a. Depends on the selected language (English by default).

CP_ENABL — Compressor Enable

Carrier Controller PATH:

Main Menu **→ Configuration Menu** **→ Compressor Enable**

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	DISABLE COMPRESSORS				
2	en_cp_a	NO_YES	NO	Compressor A Disable	Read/write
3	en_cp_b	NO_YES	NO	Compressor B Disable	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

EMAILCFG — Email Configuration

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Email Configuration**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	senderP1	—	—	—	Sender Email Part1	Read/write
2	blank	—	—	—	@	
3	senderP2	—	—	—	Sender Email Part2	Read/write
4	recip1P1	—	—	—	Recip1 Email Part1	Read/write
5	blank	—	—	—	@	
6	recip1P2	—	—	—	Recip1 Email Part2	Read/write
7	recip2P1	—	—	—	Recip2 Email Part1	Read/write
8	blank	—	—	—	@	
9	recip2P2	—	—	—	Recip2 Email Part2	Read/write
10	smtpP1	0 to 255	0	—	SMTP IP Addr Part 1	Read/write
11	smtpP2	0 to 255	0	—	SMTP IP Addr Part 2	Read/write
12	smtpP3	0 to 255	0	—	SMTP IP Addr Part 3	Read/write
13	smtpP4	0 to 255	0	—	SMTP IP Addr Part 4	Read/write
14	accP1	—	—	—	Account Email Part1	Read/write
15	blank	—	—	—	@	
16	accP2	—	—	—	Account Email Part2	Read/write
17	accPass	—	—	—	Account Password	Read/write
18	portNbr	0 to 255	25	—	Port Number	Read/write
19	srvTim	0 to 255	30	sec	Server Timeout	Read/write
20	srvAut	0 to 1	0	—	Server Authentication	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

REFCHG — Refrigerant Configuration

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Email Configuration**

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	rchg_req	DSABLE_ENABLE	DSABLE	Field Ref. Charg mode	Read/write
2	rchg_cir	0 to 2 0=None, 1=CktA, 2=CktB	0	Ckt req to charge	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

MAINTENANCE MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Capacity Control	SERVICE, FACTORY	CAPACTRL
	VLT Drive Maintenance	SERVICE, FACTORY	VLT_DRV
	Last PowerOn Reset	SERVICE, FACTORY	LAST_POR
	EXV Control	SERVICE, FACTORY	EXV_CTRL
	Control Limits	SERVICE, FACTORY	LIMITS
	Master Slave Control	SERVICE, FACTORY	M_MSTSLV
	EXV Eco. Control	SERVICE, FACTORY	ECO_CTRL
	Fan Control	SERVICE, FACTORY	FAN_CTRL
	Fan Drive Maintenance	SERVICE, FACTORY	FAN_DRV
	Fan Drive Addressing	SERVICE, FACTORY	FAN_DRV2
	Troubleshoot Info	SERVICE, FACTORY	TBLSHT
	VFD A Compressor Config	SERVICE, FACTORY	VFD_CMPA
	VFD B Compressor Config	SERVICE, FACTORY	VFD_CMPB
	VFD Fan A1 Config	SERVICE, FACTORY	FAN_A1
	VFD Fan A2 Config	SERVICE, FACTORY	FAN_A2
	VFD Fan B1 Config	SERVICE, FACTORY	FAN_B1
	VFD Fan B2 Config	SERVICE, FACTORY	FAN_B2
	USB Logs Export	SERVICE, FACTORY	USB_LOG
	PM Compressor A config	SERVICE, FACTORY	PM_A
	PM Compressor B config	SERVICE, FACTORY	PM_B

NOTE(S):

a. Depends on the selected language (English by default).

CAPACTRL — Capacity Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Capacity Control**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	ctrl_wt	—	–17.78 0	°C °F	Controlled Water Temp	Read only
2	cwt_rate	—	0 0	^C ^F	Ctrl Water Temp, Deg/Min	Read only
3	cap_lim	—	0	%	Current Capacity Limit	Read only
4	drvcmda	—	0	Hz	Wished Comp. Frequency A	Read only
5	capstata	—	0	—	Capa Ctrl State A	Read only
6	captxta	—	0	—	Capa Ctrl State Text A	Read only
7	ovrstata	—	0	—	Override State A	Read only
8	ovrtxta	—	0	—	Override State Text A	Read only
9	capmoda	—	0	—	Capa Ctrl Stat Nb A	Read only
10	lcapmoda	—	0	—	Last Capa Ctrl Stat Nb A	Read only
11	overrida	—	0	—	Override Capacity Nb A	Read only
12	cap_pc_a	—	0	%	Estimated Capacity A	Read only
13	drvcmdb	—	0	Hz	Wished Comp. Frequency B	Read only
14	capstatb	—	0	—	Capa Ctrl State B	Read only
15	captxtb	—	0	—	Capa Ctrl State Text B	Read only
16	ovrstatb	—	0	—	Override State B	Read only
17	ovrtxtb	—	0	—	Override State Text B	Read only
18	capmodb	—	0	—	Capacity Ctrl Stat Nb B	Read only
19	lcapmodb	—	0	—	Last Capa Ctrl Stat Nb B	Read only
20	overridb	—	0	—	Override Capacity Nb B	Read only
21	cap_pc_b	—	0	%	Estimated Capacity B	Read only
22	cMaxFrqA	—	95	Hz	Max Comp. Frequency A	Read only
23	cMaxFrqB	—	95	Hz	Max Comp. Frequency B	Read only
24	viCmdA	—	0	—	Comp. VI Cmd A	Read only
25	viCmdB	—	0	—	Comp. VI Cmd B	Read only
26	reset	—	0 0	^C ^F	Reset Amount	Read only
27	CirRunNb	—	0	—	Circuit Running Number	Read only
28	StatCirA	—	0	—	State of Circuit A	Read only
29	StatCirB	—	0	—	State of Circuit B	Read only
30	DualMast	—	0	—	Dual Circuit Lead	Read only
31	xSpdHigh	—	60	Hz	Transfer Spd, add cir	Read only
32	xSpdLow	—	30	Hz	Transfer Spd, remove cir	Read/write
33	cStrtFrq	—	26	Hz	Compressor Start Freq	Read only
34	cMinFrq	—	26	Hz	Compressor Min Frequency	Read only
35	dgt_dt_a	—	–17.78 0	°C °F	DGT A, Deg/min	Read only
36	sst_dt_a	—	–17.78 0	°C °F	SST A, Deg/min	Read only
37	dgt_dt_b	—	–17.78 0	°C °F	DGT B, Deg/min	Read only
38	sst_dt_b	—	–17.78 0	°C °F	SST B, Deg/min	Read only

NOTE(S):

a. Depends on the selected language (English by default).

VLT_DRV — VLT Drive Maintenance

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VLT Drive Maintenance**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	drv_pwra	—	0	kW	Cir A Drive Power	Read only
2	drv_pwPa	0 to 100	0	%	Cir A Drive Power %	Read only
3	drv_Ia	—	0	amps	Cir A Drive Amps	Read only
4	drv_IPa	0 to 100	0	%	Comp A Amperage %	Read only
5	drv_Va	—	0	volts	Cir A Drive Voltage	Read only
6	drv_VPa	0 to 135	0	%	Comp A Line voltage %	Read only
7	drv_Sa	—	0	rpm	Cir A Drive Speed	Read only
8	drv_SPa	0 to 100	0	%	Comp A Speed%	Read only
9	drv_Fa	—	0	Hz	Cir A Drive Frequency	Read only
10	drv_FPa	0 to 100	0	%	Comp A Frequency %	Read only
11	drv_Ta	—	0	—	Cir A Drive Torque	Read only
12	drv_TPa	0 to 100	0	%	Circ A Drive Torque %	Read only
13	drv_DCVa	—	0	volts	Cir A Drive DC Link Volt	Read only
14	drv_DCPa	0 to 135	0	%	Comp A DC Link Voltage %	Read only
15	drv_HSTa	—	–17.78 0	°C °F	Cir A Drive Heat Sink T	Read only
16	drv_HSPa	0 to 135	0	%	Comp A Heat Sink Temp %	Read only
17	drv_CCTa	—	–17.78 0	°C °F	Cir A Drive Ctrl Card T	Read only
18	drv_HTRa	OFF_ON	OFF	—	Cir A Drive Heater	Read only
19	drv_pwrb	—	0	kW	Cir B Drive Power	Read only
20	drv_pwPb	0 to 100	0	%	Cir B Drive Power %	Read only
21	drv_Ib	—	0	amps	Cir B Drive Amps	Read only
22	drv_IPb	0 to 100	0	%	Comp B Amperage %	Read only
23	drv_Vb	—	0	volts	Cir B Drive Voltage	Read only
24	drv_VPb	0 to 135	0	%	Comp B Line voltage %	Read only
25	drv_Sb	—	0	rpm	Cir B Drive Speed	Read only
26	drv_SPb	0 to 100	0	%	Comp B Speed%	Read only
27	drv_Fb	—	0	Hz	Cir B Drive Frequency	Read only
28	drv_FPb	0 to 100	0	%	Comp B Frequency %	Read only
29	drv_Tb	—	0	—	Cir B Drive Torque	Read only
30	drv_TPb	0 to 100	0	%	Circ B Drive Torque %	Read only
31	drv_DCVb	—	0	volts	Cir B Drive DC Link Volt	Read only
32	drv_pwr	—	0	kW	Total Comp Drive Power	Read only
33	drv_DCPb	0 to 135	0	%	Comp B DC Link Voltage %	Read only
34	drv_HSTb	—	–17.78 0	°C °F	Cir B Drive Heat Sink T	Read only
35	drv_HSPb	0 to 135	0	%	Comp B Heat Sink Temp %	Read only
36	drv_CCTb	—	–17.78 0	°C °F	Cir B Drive Ctrl Card T	Read only
37	drv_HTRb	OFF_ON	OFF	—	Cir B Drive Heater	Read only
38	SET_DRVA	NO_YES	NO	—	Drive A Attach	Read/write
39	SET_DRVB	NO_YES	NO	—	Drive B Attach	Read/write
40	VLT_COMA	NO_YES	NO	—	Comm with Drive A Ok	Read only
41	VLT_COMB	NO_YES	NO	—	Comm with Drive B Ok	Read only
42	CnfgDrva	NO_YES	NO	—	Force Comp Drv A Config	Read only
43	CnfgDrvb	NO_YES	NO	—	Force Comp Drv B Config	Read only

NOTE(S):

a. Depends on the selected language (English by default).

LAST_POR — Last PowerOn Reset

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Last PowerOn Reset**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	date_on1	0	Power On 1 :day-mon-year	Read only
2	time_on1	0	Power On 1 :hour-minute	Read only
3	date_of1	0	PowerDown 1:day-mon-year	Read only
4	time_of1	0	PowerDown 1:hour-minute	Read only
5	date_on2	0	Power On 2 :day-mon-year	Read only
6	time_on2	0	Power On 2 :hour-minute	Read only
7	date_of2	0	PowerDown 2:day-mon-year	Read only
8	time_of2	0	PowerDown 2:hour-minute	Read only
9	date_on3	0	Power On 3 :day-mon-year	Read only
10	time_on3	0	Power On 3 :hour-minute	Read only
11	date_of3	0	PowerDown 3:day-mon-year	Read only
12	time_of3	0	PowerDown 3:hour-minute	Read only
13	date_on4	0	Power On 4 :day-mon-year	Read only
14	time_on4	0	Power On 4 :hour-minute	Read only
15	date_of4	0	PowerDown 4:day-mon-year	Read only
16	time_of4	0	PowerDown 4:hour-minute	Read only
17	date_on5	0	Power On 5 :day-mon-year	Read only
18	time_on5	0	Power On 5 :hour-minute	Read only
19	date_of5	0	PowerDown 5:day-mon-year	Read only
20	time_of5	0	PowerDown 5:hour-minute	Read only

NOTE(S):

a. Depends on the selected language (English by default).

EXV_CTRL — EXV Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **EXV Control**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	Circuit A					
2	ov_exv_a	—	0	—	EXV Override Circuit A	Read only
3	EXV_A	—	0	%	EXV Position (Pct) A	Read only
4	EXV_STPA	0 to 10000	0	—	EXV Position (Steps) A	Read only
5	DSH_A	—	0 0	^C ^F	Discharge Superheat A	Read only
6	dsh_spa	—	0 0	^C ^F	Dis. Superheat Setpnt A	Read only
7	SH_A	—	0 0	^C ^F	Suction Superheat A	Read only
8	sh_sp_a	—	0 0	^C ^F	Suct. Superheat Setpnt A	Read only
9	pinch_a	—	0 0	^C ^F	Evap ExchangeDT Cir A	Read only
10	subcoola	—	0 0	^C ^F	Subcooling Circuit A	Read only
11	subc_spa	—	0 0	^C ^F	Subcooling Setpoint A	Read only
12	exv_sta	—	0	—	EXV State A	Read only
13	exv_lsta	—	0	—	EXV Previous State A	Read only
14	exvwposa	—	0	—	EXV Wished Position A	Read only
15	exv_moda	—	0	—	EXV Mode A	Read only
16	exv_txta	—	0	—	EXV Mode Text A	Read only
17	Circuit B					
18	ov_exv_b	—	0	—	EXV Override Circuit B	Read only
19	EXV_B	—	0	%	EXV Position (Pct) B	Read only
20	EXV_STPB	0 to 10000	0	—	EXV Position (Steps) B	Read only
21	DSH_B	—	0 0	^C ^F	Discharge Superheat B	Read only
22	dsh_spb	—	0 0	^C ^F	Dis. Superheat Setpnt B	Read only
23	SH_B	—	0 0	^C ^F	Suction Superheat B	Read only
24	sh_sp_b	—	0 0	^C ^F	Suct. Superheat Setpnt B	Read only
25	pinch_b	—	0 0	^C ^F	Evap ExchangeDT Cir B	Read only
26	subcoolb	—	0 0	^C ^F	Subcooling Circuit B	Read only
27	subc_spb	—	0 0	^C ^F	Subcooling Setpoint B	Read only
28	exv_stb	—	0	—	EXV State B	Read only
29	exv_lstb	—	0	—	EXV Previous State B	Read only
30	exvwposb	—	0	—	EXV Wished Position B	Read only
31	exv_modb	—	0	—	EXV Mode B	Read only
32	exv_txtb	—	0	—	EXV Mode Text B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

LIMITS — Control Limits

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Control Limits**

LINE	CCN NAME	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	dshacta	0 / 0	^C / ^F	EXV_dsh_act A	Read only
2	dshstpa	0 / 0	^C / ^F	EXV_dsh_stp A	Read only
3	elspacta	0 / 0	kPa / psi	EXV_lsp_act A	Read only
4	elspstpa	0 / 0	kPa / psi	EXV_lsp_stp A	Read only
5	chdpacta	0 / 0	kPa / psi	ENV comp high dp act A	Read only
6	chdpstpa	0 / 0	kPa / psi	ENV comp high dp stp A	Read only
7	fhdpacta	0 / 0	kPa / psi	ENV fan high dp act A	Read only
8	fhdpstpa	0 / 0	kPa / psi	ENV fan high dp stp A	Read only
9	ldpacta	0 / 0	kPa / psi	ENV low dp act A	Read only
10	ldpstpa	0 / 0	kPa / psi	ENV low dp stp A	Read only
11	hspacta	0 / 0	kPa / psi	ENV high sp act A	Read only
12	hspstpa	0 / 0	kPa / psi	ENV high sp stp A	Read only
13	lspacta	0 / 0	kPa / psi	ENV low sp act A	Read only
14	lspstpa	0 / 0	kPa / psi	ENV low sp stp A	Read only
15	lspdcpa	0 / 0	kPa / psi	ENV low sp delta A	Read only
16	dgtacta	–17.78 / 0	°C / °F	dgt act A	Read only
17	dgtstpa	–17.78 / 0	°C / °F	dgt stp A	Read only
18	dshactb	0 / 0	^C / ^F	EXV_dsh_act B	Read only
19	dshstpb	0 / 0	^C / ^F	EXV_dsh_stp B	Read only
20	elspactb	0 / 0	kPa / psi	EXV_lsp_act B	Read only
21	elspstpb	0 / 0	kPa / psi	EXV_lsp_stp B	Read only
22	chdpactb	0 / 0	kPa / psi	ENV comp high dp act B	Read only
23	chdpstpb	0 / 0	kPa / psi	ENV comp high dp stp B	Read only
24	fhdpactb	0 / 0	kPa / psi	ENV fan high dp act B	Read only
25	fhdpstpb	0 / 0	kPa / psi	ENV fan high dp stp B	Read only
26	ldpactb	0 / 0	kPa / psi	ENV low dp act B	Read only
27	ldpstpb	0 / 0	kPa / psi	ENV low dp stp B	Read only
28	hspactb	0 / 0	kPa / psi	ENV high sp act B	Read only
29	hspstpb	0 / 0	kPa / psi	ENV high sp stp B	Read only
30	lspactb	0 / 0	kPa / psi	ENV low sp act B	Read only
31	lspstpb	0 / 0	kPa / psi	ENV low sp stp B	Read only
32	lspdcpb	0 / 0	kPa / psi	ENV low sp delta B	Read only
33	dgtactb	–17.78 / 0	°C / °F	dgt_act B	Read only
34	dgtstpb	–17.78 / 0	°C / °F	dgt_stp B	Read only
35	maxinc	1	—	Max Compressor Rate	Read only
36	rchg_stp	–17.78 / 0	°C / °F	SCT_Stpt for recharge	Read only
37	blank	—	—	Compresor Env. Min/Max	Read only
38	sstEnMnA	–17.78 / 0	°C / °F	Cmp Env. Min SST A	Read only
39	sstEnMxA	–17.78 / 0	°C / °F	Cmp Env. Max SST A	Read only
40	sdtEnMnA	–17.78 / 0	°C / °F	Cmp Env. Min SDT A	Read only
41	sdtEnMxA	–17.78 / 0	°C / °F	Cmp Env. Max SDT A	Read only
42	sstEnMnB	–17.78 / 0	°C / °F	Cmp Env. Min SST B	Read only
43	sstEnMxB	–17.78 / 0	°C / °F	Cmp Env. Max SST B	Read only
44	sdtEnMnB	–17.78 / 0	°C / °F	Cmp Env. Min SDT B	Read only
45	sdtEnMxB	–17.78 / 0	°C / °F	Cmp Env. Max SDT B	Read only
46	blank	—	—	Compressor Abs. Min/Max	Read only
47	sstAbMnA	–17.78 / 0	°C / °F	Cmp Abs. Min SST A	Read only
48	sstAbMxA	–17.78 / 0	°C / °F	Cmp Abs. Max SST A	Read only
49	sdtAbMnA	–17.78 / 0	°C / °F	Cmp Abs. Min SDT A	Read only
50	sdtAbMxA	–17.78 / 0	°C / °F	Cmp Abs. Max SDT A	Read only
51	sstAbMnB	–17.78 / 0	°C / °F	Cmp Abs. Min SST B	Read only
52	sstAbMxB	–17.78 / 0	°C / °F	Cmp Abs. Max SST B	Read only
53	sdtAbMnB	–17.78 / 0	°C / °F	Cmp Abs. Min SDT B	Read only
54	sdtAbMxB	–17.78 / 0	°C / °F	Cmp Abs. Max SDT B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

M_MSTSLV — Master Slave Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Master Slave Control**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
	Master/Slave Control					
1	mstslv	—	0	—	Unit is Master or Slave	Read only
2	ms_ctrl	—	0	—	Master Control Type	Read only
3	ms_activ	FALSE_TRUE	FALSE	—	Master/Slave Ctrl Active	Read only
4	lead_sel	LEAD_LAG	LEAD	—	Lead Unit is the:	Read only
5	slv_stat	—	0	—	Slave Chiller State	Read only
6	slv_capt	—	0	%	Slave Chiller Total Cap	Read only
7	l_strt_d	—	0	min	Lag Start Delay	Read only
8	ll_hr_d	—	0	hours	Lead/Lag Hours Delta	Read only
9	ll_chang	NO_YES	NO	—	Lead/Lag Changeover?	Read only
10	ll_pull	NO_YES	NO	—	Lead Pulldown ?	Read only
11	ms_error	—	0	—	Master/Slave Error	Read only
12	cap_max	NO_YES	NO	—	Max Available Capacity ?	Read only
13	lagstat	—	0	—	Slave lagstat	Read only
14	slav_hr	—	0	hours	Slave Operating Hours	Read only
15	slav_ewt	—	–17.78 / 0	°C / °F	Slave Evap Ent. Fluid	Read only
16	slav_lwt	—	–17.78 / 0	°C / °F	Slave Evap Leav. Fluid	Read only

NOTE(S):

a. Depends on the selected language (English by default).

ECO_CTRL — EXV Eco. Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **EXV Eco. Control**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	eco_a	—	0	%	EXV Eco Pos. (Pct) A	Read only
2	eco_stpa	0 to 10000	0	—	EXV Eco Pos. (Steps) A	Read only
3	eco_sh_a	—	0 0	^C ^F	Eco Suction Superheat A	Read only
4	esh_sp_a	—	0 0	^C ^F	Eco Suction SH Setpt A	Read only
5	eco_sta	—	0	—	EXV Eco State A	Read only
6	eco_lsta	—	0	—	EXV Eco Previous State A	Read only
7	ecowposa	—	0	—	EXV Eco Wished Pos A	Read only
8	eco_moda	—	0	—	EXV Eco Mode A	Read only
9	eco_txta	—	0	—	EXV Eco Mode Txt A	Read only
10	eco_b	—	0	%	EXV Eco Pos. (Pct) B	Read only
11	eco_stpb	0 to 10000	0	—	EXV Eco Pos. (Steps) B	Read only
12	eco_sh_b	—	0 0	^C ^F	Eco Suction Superheat B	Read only
13	esh_sp_b	—	0 0	^C ^F	Eco Suction SH Setpt B	Read only
14	eco_stb	—	0	—	EXV Eco State B	Read only
15	eco_lstb	—	0	—	EXV Eco Previous State B	Read only
16	ecowposb	—	0	—	EXV Eco Wished Pos B	Read only
17	eco_modb	—	0	—	EXV Eco Mode B	Read only
18	eco_txtb	—	0	—	EXV Eco Mode Txt B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_CTRL — Fan Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Fan Control**

LINE	CCN NAME	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	fan_f_a	0	Hz	Fan Freq Cir A	Read only
2	fan_sta	0	—	Fan State A	Read only
3	fan_lsta	0	—	Fan Previous State A	Read only
4	wfan_f_a	0	Hz	Fan Wished Freq A	Read only
5	fan_moda	0	—	Fan Mode A	Read only
6	fan_txta	0	—	Fan Mode Text A	Read only
7	ftotpowa	0	kW	Fan Tot Pwr Filtered A	Read only
8	fcont_a	0	—	Fan Contactors On A	Read only
9	fan_f_b	0	Hz	Fan Freq Cir B	Read only
10	fan_stb	0	—	Fan State B	Read only
11	fan_lstb	0	—	Fan Previous State B	Read only
12	wfan_f_b	0	Hz	Fan Wished Freq B	Read only
13	fan_modb	0	—	Fan Mode B	Read only
14	fan_txtb	0	—	Fan Mode Text B	Read only
15	ftotpowb	0	kW	Fan Tot Pwr Filtered B	Read only
16	fcont_b	0	—	Fan Contactors On B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_DRV — Fan Drive Maintenance

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Fan Drive Maintenance**

LINE	CCN NAME	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	fd_pwra1	—	kW	Fan Drive Power A1	Read only
2	fd_Ia1	—	amps	Fan Drive Amps A1	Read only
3	fd_Va1	—	volts	Fan Drive Voltage A1	Read only
4	fd_Sa1	—	rpm	Fan Drive Speed A1	Read only
5	fd_Fa1	—	Hz	Fan Drive Frequency A1	Read only
6	fd_Ta1	—	—	Fan Drive Torque A1	Read only
7	fd_DCVa1	—	volts	Fan Drv DC Link Volt A1	Read only
8	fd_HSTa1	–17.78 / 0	°C / °F	Fan Drive Heat Sink T A1	Read only
9	fd_CCTa1	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T A1	Read only
10	fd_pwra2	—	kW	Fan Drive Power A2	Read only
11	fd_Ia2	—	amps	Fan Drive Amps A2	Read only
12	fd_Va2	—	volts	Fan Drive Voltage A2	Read only
13	fd_Sa2	—	rpm	Fan Drive Speed A2	Read only
14	fd_Fa2	—	Hz	Fan Drive Frequency A2	Read only
15	fd_Ta2	—	—	Fan Drive Torque A2	Read only
16	fd_DCVa2	—	volts	Fan Drv DC Link Volt A2	Read only
17	fd_HSTa2	–17.78 / 0	°C / °F	Fan Drive Heat Sink T A2	Read only
18	fd_CCTa2	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T A2	Read only
19	fd_pwra3	—	kW	Fan Drive Power A3	Read only
20	fd_Ia3	—	amps	Fan Drive Amps A3	Read only
21	fd_Va3	—	volts	Fan Drive Voltage A3	Read only
22	fd_Sa3	—	rpm	Fan Drive Speed A3	Read only
23	fd_Fa3	—	Hz	Fan Drive Frequency A3	Read only
24	fd_Ta3	—	—	Fan Drive Torque A3	Read only
25	fd_DCVa3	—	volts	Fan Drv DC Link Volt A3	Read only
26	fd_HSTa3	–17.78 / 0	°C / °F	Fan Drive Heat Sink T A3	Read only
27	fd_CCTa3	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T A3	Read only
28	fd_pwrb1	—	kW	Fan Drive Power B1	Read only
29	fd_Ib1	—	amps	Fan Drive Amps B1	Read only
30	fd_Vb1	—	volts	Fan Drive Voltage B1	Read only
31	fd_Sb1	—	rpm	Fan Drive Speed B1	Read only
32	fd_Fb1	—	Hz	Fan Drive Frequency B1	Read only
33	fd_Tb1	—	—	Fan Drive Torque B1	Read only
34	fd_DCVb1	—	volts	Fan Drv DC Link Volt B1	Read only
35	fd_HSTb1	–17.78 / 0	°C / °F	Fan Drive Heat Sink T B1	Read only
36	fd_CCTb1	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T B1	Read only
37	fd_pwrb2	—	kW	Fan Drive Power B2	Read only
38	fd_Ib2	—	amps	Fan Drive Amps B2	Read only
39	fd_Vb2	—	volts	Fan Drive Voltage B2	Read only
40	fd_Sb2	—	rpm	Fan Drive Speed B2	Read only
41	fd_Fb2	—	Hz	Fan Drive Frequency B2	Read only
42	fd_Tb2	—	—	Fan Drive Torque B2	Read only
43	fd_DCVb2	—	volts	Fan Drv DC Link Volt B2	Read only
44	fd_HSTb2	–17.78 / 0	°C / °F	Fan Drive Heat Sink T B2	Read only
45	fd_CCTb2	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T B2	Read only
46	fd_pwrb3	—	kW	Fan Drive Power B3	Read only
47	fd_Ib3	—	amps	Fan Drive Amps B3	Read only
48	fd_Vb3	—	volts	Fan Drive Voltage B3	Read only
49	fd_Sb3	—	rpm	Fan Drive Speed B3	Read only
50	fd_Fb3	—	Hz	Fan Drive Frequency B3	Read only
51	fd_Tb3	—	—	Fan Drive Torque B3	Read only
52	fd_DCVb3	—	volts	Fan Drv DC Link Volt B3	Read only
53	fd_HSTb3	–17.78 / 0	°C / °F	Fan Drive Heat Sink T B3	Read only
54	fd_CCTb3	–17.78 / 0	°C / °F	Fan Drive Ctrl Card T B3	Read only
55	fd_pwr	—	kW	Total Fan Drive Power	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_DRV2 — Fan Drive Addressing

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Fan Drive Addressing**

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	SET_FDA1	NO_YES	NO	Fan Drive A1 Attach	Read/write
2	SET_FDA2	NO_YES	NO	Fan Drive A2 Attach	Read/write
3	SET_FDA3	NO_YES	NO	Fan Drive A3 Attach	Read/write
4	SET_FDB1	NO_YES	NO	Fan Drive B1 Attach	Read/write
5	SET_FDB2	NO_YES	NO	Fan Drive B2 Attach	Read/write
6	SET_FDB3	NO_YES	NO	Fan Drive B3 Attach	Read/write
7	FD_COMA1	NO_YES	NO	Comm Fan Drive A1 Ok	Read only
8	FD_COMA2	NO_YES	NO	Comm Fan Drive A2 Ok	Read only
9	FD_COMA3	NO_YES	NO	Comm Fan Drive A3 Ok	Read only
10	FD_COMB1	NO_YES	NO	Comm Fan Drive B1 Ok	Read only
11	FD_COMB2	NO_YES	NO	Comm Fan Drive B2 Ok	Read only
12	FD_COMB3	NO_YES	NO	Comm Fan Drive B3 Ok	Read only
13	stopfana	NO_YES	NO	Stop Cir A Fan Drive	Read only
14	stopfanb	NO_YES	NO	Stop Cir B Fan Drive	Read only
15	CnfgFDA1	NO_YES	NO	Force Fan Drv A1 Config	Read only
16	CnfgFDA2	NO_YES	NO	Force Fan Drv A2 Config	Read only
17	CnfgFDA3	NO_YES	NO	Force Fan Drv A3 Config	Read only
18	CnfgFDB1	NO_YES	NO	Force Fan Drv B1 Config	Read only
19	CnfgFDB2	NO_YES	NO	Force Fan Drv B2 Config	Read only
20	CnfgFDB3	NO_YES	NO	Force Fan Drv B3 Config	Read only

NOTE(S):

a. Depends on the selected language (English by default).

TBLSHT — Troubleshoot Info

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Troubleshoot Info**

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	COOL_EWT	—	–17.78 / 0	°C / °F	Evap Entering Fluid	Read only
2	COOL_LWT	—	–17.78 / 0	°C / °F	Evap Leaving Fluid	Read only
3	CAPT010A	—	0	volts	Capacity Signal Cir A	Read only
4	drv_Ia	—	0	amps	Cir A Drive Amps	Read only
5	drv_Sa	—	0	rpm	Cir A Drive Speed	Read only
6	SCT_A	—	–17.78 / 0	°C / °F	Saturated Cond Tmp Cir A	Read only
7	SST_A	—	–17.78 / 0	°C / °F	Saturated Suction Temp A	Read only
8	SLT_A	—	–17.78 / 0	°C / °F	Saturated Liquid Temp A	Read only
9	SUCT_A	—	–17.78 / 0	°C / °F	Compressor Suction Tmp A	Read only
10	DGT_A	—	–17.78 / 0	°C / °F	Discharge Gas Temp Cir A	Read only
11	CP_TMP_A	—	–17.78 / 0	°C / °F	Motor Temperature Cir A	Read only
12	ECO_T_A	—	–17.78 / 0	°C / °F	EXV Eco. Tmp Cir A	Read only
13	DSH_A	—	0 / 0	^C / ^F	Discharge Superheat A	Read only
14	SH_A	—	0 / 0	^C / ^F	Suction Superheat A	Read only
15	LIQ_T_A	—	–17.78 / 0	°C / °F	Liquid Temperature A	Read only
16	DP_A	—	0 / 0	kPa / psi	Discharge Pressure A	Read only
17	SP_A	—	0 / 0	kPa / psi	Main Suction Pressure A	Read only
18	OP_A	—	0 / 0	kPa / psi	Oil Pressure A	Read only
19	DOP_A	—	0 / 0	kPa / psi	Oil Pressure DifferenceA	Read only
20	OIL_L_A	OFF_ON	OFF	—	Oil Level Input A	Read only
21	OIL_SL_A	OFF_ON	OFF	—	Oil Solenoid Output A	Read only
22	ECO_P_A	—	0 / 0	kPa / psi	Economizer Pressure A	Read only
23	LIQ_P_A	—	0 / 0	kPa / psi	Liquid Pressure A	Read only
24	CAPT010B	—	0	volts	Capacity Signal Cir B	Read only
25	drv_Ib	—	0	amps	Cir B Drive Amps	Read only
26	drv_Sb	—	0	rpm	Cir B Drive Speed	Read only
27	SCT_B	—	–17.78 / 0	°C / °F	Saturated Cond Tmp Cir B	Read only
28	SST_B	—	–17.78 / 0	°C / °F	Saturated Suction Temp B	Read only
29	SLT_B	—	–17.78 / 0	°C / °F	Saturated Liquid Temp B	Read only
30	SUCT_B	—	–17.78 / 0	°C / °F	Compressor Suction Tmp B	Read only
31	DGT_B	—	–17.78 / 0	°C / °F	Discharge Gas Temp Cir B	Read only
32	CP_TMP_B	—	–17.78 / 0	°C / °F	Motor Temperature Cir B	Read only
33	ECO_T_B	—	–17.78 / 0	°C / °F	EXV Eco. Tmp Cir B	Read only
34	DSH_B	—	0 / 0	^C / ^F	Discharge Superheat B	Read only
35	SH_B	—	0 / 0	^C / ^F	Suction Superheat B	Read only
36	LIQ_T_B	—	–17.78 / 0	°C / °F	Liquid Temperature B	Read only
37	DP_B	—	0 / 0	kPa / psi	Discharge Pressure B	Read only
38	SP_B	—	0 / 0	kPa / psi	Main Suction Pressure B	Read only
39	OP_B	—	0 / 0	kPa / psi	Oil Pressure B	Read only
40	DOP_B	—	0 / 0	kPa / psi	Oil Pressure DifferenceB	Read only
41	OIL_L_B	OFF_ON	OFF	—	Oil Level Input B	Read only
42	OIL_SL_B	OFF_ON	OFF	—	Oil Solenoid Output B	Read only
43	ECO_P_B	—	0 / 0	kPa / psi	Economizer Pressure B	Read only
44	LIQ_P_B	—	0 / 0	kPa / psi	Liquid Pressure B	Read only
45	VLT_COMA	NO_YES	NO	—	Comm with Cmp VFD A Ok	Read only
46	VLT_COMB	NO_YES	NO	—	Comm with Cmp VFD B Ok	Read only
47	FD_COMA1	NO_YES	NO	—	Comm with Fan VFD A1 Ok	Read only
48	FD_COMA2	NO_YES	NO	—	Comm with Fan VFD A2 Ok	Read only
49	FD_COMA3	NO_YES	NO	—	Comm with Fan VFD A3 Ok	Read only
50	FD_COMB1	NO_YES	NO	—	Comm with Fan VFD B1 Ok	Read only
51	FD_COMB2	NO_YES	NO	—	Comm with Fan VFD B2 Ok	Read only
52	FD_COMB3	NO_YES	NO	—	Comm with Fan VFD B3 Ok	Read only

NOTE(S):

a. Depends on the selected language (English by default).

VFD_CMPA — Compressor VFD Parameters, Circuit A

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD A Compressor Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	A_0_40	—	Hand on button	Read only
2	A_1_03	—	Torque profile	Read only
3	A_1_20	—	Motor KW	Read only
4	A_1_22	—	Motor volts	Read only
5	A_1_23	—	Motor frequency	Read only
6	A_1_24	—	Motor amperage	Read only
7	A_1_25	—	Motor RPM	Read only
8	A_1_71	—	Compressor start delay	Read only
9	A_1_78	—	Starting frequency	Read only
10	A_1_79	—	Comp start max trip time	Read only
11	A_1_80	—	Function at stop	Read only
12	A_1_90	—	Motor thermal protection	Read only
13	A_3_02	—	Minimum reference	Read only
14	A_3_03	—	Maximum reference	Read only
15	A_3_13	—	Type reference	Read only
16	A_3_15	—	Src ref#1	Read only
17	A_3_16	—	Src ref#2	Read only
18	A_3_41	—	Ramp up	Read only
19	A_3_42	—	Ramp down	Read only
20	A_3_82	—	Starting ramp time	Read only
21	A_4_10	—	Motor speed direct	Read only
22	A_4_12	—	Motor speed low limit	Read only
23	A_4_14	—	Motor speed high limit	Read only
24	A_4_16	—	Torque limit	Read only
25	A_4_18	—	Current limit	Read only
26	A_4_19	—	Max output frequency	Read only
27	A_5_12	—	DI #27	Read only
28	A_5_19	—	DI #37 safe stop	Read only
29	A_5_40	—	relay 1 or 2	Read only
30	A_8_01	—	Control site	Read only
31	A_8_02	—	Source control	Read only
32	A_8_03	—	Timeout time	Read only
33	A_8_04	—	Timeout function	Read only
34	A_14_01	—	Switching frequency	Read only
35	A_14_03	—	Over modulation	Read only
36	A_14_10	—	Main failure	Read only
37	A_14_11	—	Main voltage	Read only
38	A_14_50	—	RFI filter	Read only
39	A_14_60	—	Function at overtemp	Read only
40	A_14_61	—	inverter overload	Read only

NOTE(S):

a. Depends on the selected language (English by default).

VFD_CMPB — Compressor VFD Parameters, Circuit B

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD B Compressor Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	B_0_40	—	Hand on button	Read only
2	B_1_03	—	Torque profile	Read only
3	B_1_20	—	Motor KW	Read only
4	B_1_22	—	Motor volts	Read only
5	B_1_23	—	Motor frequency	Read only
6	B_1_24	—	Motor amperage	Read only
7	B_1_25	—	Motor RPM	Read only
8	B_1_71	—	Compressor start delay	Read only
9	B_1_78	—	Starting frequency	Read only
10	B_1_79	—	Comp start max trip time	Read only
11	B_1_80	—	Function at stop	Read only
12	B_1_90	—	Motor thermal protection	Read only
13	B_3_02	—	Minimum reference	Read only
14	B_3_03	—	Maximum reference	Read only
15	B_3_13	—	Type reference	Read only
16	B_3_15	—	Src ref#1	Read only
17	B_3_16	—	Src ref#2	Read only
18	B_3_41	—	Ramp up	Read only
19	B_3_42	—	Ramp down	Read only
20	B_3_82	—	Starting ramp time	Read only
21	B_4_10	—	Motor speed direct	Read only
22	B_4_12	—	Motor speed low limit	Read only
23	B_4_14	—	Motor speed high limit	Read only
24	B_4_16	—	Torque limit	Read only
25	B_4_18	—	Current limit	Read only
26	B_4_19	—	Max output frequency	Read only
27	B_5_12	—	DI #27	Read only
28	B_5_19	—	DI #37 safe stop	Read only
29	B_5_40	—	relay 1 or 2	Read only
30	B_8_01	—	Control site	Read only
31	B_8_02	—	Source control	Read only
32	B_8_03	—	Timeout time	Read only
33	B_8_04	—	Timeout function	Read only
34	B_14_01	—	Switching frequency	Read only
35	B_14_03	—	Over modulation	Read only
36	B_14_10	—	Main failure	Read only
37	B_14_11	—	Main voltage	Read only
38	B_14_50	—	RFI filter	Read only
39	B_14_60	—	Function at overtemp	Read only
40	B_14_61	—	Inverter overload	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_A1 — VFD Fan Parameters, Circuit A1

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD Fan A1 Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	A1_1_03	—	Torque profile	Read only
2	A1_1_20	—	Motor KW	Read only
3	A1_1_22	—	Motor volts	Read only
4	A1_1_23	—	Motor frequency	Read only
5	A1_1_24	—	Motor amperage	Read only
6	A1_1_25	—	Motor RPM	Read only
7	A1_1_73	—	Flying restart	Read only
8	A1_1_80	—	Function at stop	Read only
9	A1_1_90	—	Motor thermal protection	Read only
10	A1_3_03	—	Maximum reference	Read only
11	A1_3_13	—	Type reference	Read only
12	A1_3_15	—	Src ref#1	Read only
13	A1_3_16	—	Src ref#2	Read only
14	A1_3_41	—	Ramp up	Read only
15	A1_3_42	—	Ramp down	Read only
16	A1_4_10	—	Motor speed direct	Read only
17	A1_4_12	—	Motor speed low limit	Read only
18	A1_4_14	—	Motor speed high limit	Read only
19	A1_4_16	—	Torque limit	Read only
20	A1_4_18	—	Current limit	Read only
21	A1_5_12	—	DI #27	Read only
22	A1_8_01	—	Control site	Read only
23	A1_8_02	—	Source control	Read only
24	A1_8_03	—	Timeout time	Read only
25	A1_8_04	—	Timeout function	Read only
26	A1_14_00	—	Pattern [AVM]	Read only
27	A1_14_01	—	Switching frequency	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_A2 — VFD Fan Parameters, Circuit A2

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD Fan A2 Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	A2_1_03	—	Torque profile	Read only
2	A2_1_20	—	Motor KW	Read only
3	A2_1_22	—	Motor volts	Read only
4	A2_1_23	—	Motor frequency	Read only
5	A2_1_24	—	Motor amperage	Read only
6	A2_1_25	—	Motor RPM	Read only
7	A2_1_73	—	Flying restart	Read only
8	A2_1_80	—	Function at stop	Read only
9	A2_1_90	—	Motor thermal protection	Read only
10	A2_3_03	—	Maximum reference	Read only
11	A2_3_13	—	Type reference	Read only
12	A2_3_15	—	Src ref#1	Read only
13	A2_3_16	—	Src ref#2	Read only
14	A2_3_41	—	Ramp up	Read only
15	A2_3_42	—	Ramp down	Read only
16	A2_4_10	—	Motor speed direct	Read only
17	A2_4_12	—	Motor speed low limit	Read only
18	A2_4_14	—	Motor speed high limit	Read only
19	A2_4_16	—	Torque limit	Read only
20	A2_4_18	—	Current limit	Read only
21	A2_5_12	—	DI #27	Read only
22	A2_8_01	—	Control site	Read only
23	A2_8_02	—	Source control	Read only
24	A2_8_03	—	Timeout time	Read only
25	A2_8_04	—	Timeout function	Read only
26	A2_14_00	—	Pattern [AVM]	Read only
27	A2_14_01	—	Switching frequency	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_B1 — VFD Fan Parameters, Circuit B1

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD Fan B1 Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	B1_1_03	—	Torque profile	Read only
2	B1_1_20	—	Motor KW	Read only
3	B1_1_22	—	Motor volts	Read only
4	B1_1_23	—	Motor frequency	Read only
5	B1_1_24	—	Motor amperage	Read only
6	B1_1_25	—	Motor RPM	Read only
7	B1_1_73	—	Flying restart	Read only
8	B1_1_80	—	Function at stop	Read only
9	B1_1_90	—	Motor thermal protection	Read only
10	B1_3_03	—	Maximum reference	Read only
11	B1_3_13	—	Type reference	Read only
12	B1_3_15	—	Src ref#1	Read only
13	B1_3_16	—	Src ref#2	Read only
14	B1_3_41	—	Ramp up	Read only
15	B1_3_42	—	Ramp down	Read only
16	B1_4_10	—	Motor speed direct	Read only
17	B1_4_12	—	Motor speed low limit	Read only
18	B1_4_14	—	Motor speed high limit	Read only
19	B1_4_16	—	Torque limit	Read only
20	B1_4_18	—	Current limit	Read only
21	B1_5_12	—	DI #27	Read only
22	B1_8_01	—	Control site	Read only
23	B1_8_02	—	Source control	Read only
24	B1_8_03	—	Timeout time	Read only
25	B1_8_04	—	Timeout function	Read only
26	B1_14_00	—	Pattern [AVM]	Read only
27	B1_14_01	—	Switching frequency	Read only

NOTE(S):

a. Depends on the selected language (English by default).

FAN_B2 — VFD Fan Parameters, Circuit B2

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VFD Fan B2 Config**

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	B2_1_03	—	Torque profile	Read only
2	B2_1_20	—	Motor KW	Read only
3	B2_1_22	—	Motor volts	Read only
4	B2_1_23	—	Motor frequency	Read only
5	B2_1_24	—	Motor amperage	Read only
6	B2_1_25	—	Motor RPM	Read only
7	B2_1_73	—	Flying restart	Read only
8	B2_1_80	—	Function at stop	Read only
9	B2_1_90	—	Motor thermal protection	Read only
10	B2_3_03	—	Maximum reference	Read only
11	B2_3_13	—	Type reference	Read only
12	B2_3_15	—	Src ref#1	Read only
13	B2_3_16	—	Src ref#2	Read only
14	B2_3_41	—	Ramp up	Read only
15	B2_3_42	—	Ramp down	Read only
16	B2_4_10	—	Motor speed direct	Read only
17	B2_4_12	—	Motor speed low limit	Read only
18	B2_4_14	—	Motor speed high limit	Read only
19	B2_4_16	—	Torque limit	Read only
20	B2_4_18	—	Current limit	Read only
21	B2_5_12	—	DI #27	Read only
22	B2_8_01	—	Control site	Read only
23	B2_8_02	—	Source control	Read only
24	B2_8_03	—	Timeout time	Read only
25	B2_8_04	—	Timeout function	Read only
26	B2_14_00	—	Pattern [AVM]	Read only
27	B2_14_01	—	Switching frequency	Read only

NOTE(S):

a. Depends on the selected language (English by default).

USB_LOG — USB Logs Export

Carrier Controller PATH:

Main Menu → Maintenance Menu → USB Logs Export

LINE	DISPLAYED TEXT[a]	CCN NAME	DEFAULT VALUE	READ/ WRITE
1	Export Technical Data	TECHNICAL_DATA	—	Read only
2	Export Developer Data	DEVELOPER_DATA	—	Read only

NOTE(S):

a. Depends on the selected language (English by default).

BACNET MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	BACNet Standard Conf.	SERVICE, FACTORY	BACNET BACCONF
	BACNet BBMD	SERVICE, FACTORY	BACBBMD

NOTE(S):

a. Depends on the selected language (English by default).

HMI CONFIGURATION MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Network Conn - eth0	NONE	NET_ETH0
	Network Conn - eth1	NONE	NET_ETH1
	CCN Configuration	SERVICE	CCN_CONF
	BACnet Configuration	SERVICE	BAC_CONF
	Date/Time Configuration	SERVICE	DATETIME
	Control Identification	USER	CTRL_ID
	CPU/Memory	USER	CPU_MEM
	Termination Resistor	SERVICE	TERM_RES
	System Information	USER	SYS_INFO
	Screen Brightness	USER	SCRN_BRT
	User Configuration	USER	USERCONF
	Wifi Config	NONE	WIFI
	Network diagnostics	NONE	NET_DIAG
	MODBUS Config 1/2	SERVICE	MODCONF
	Custom Password	SERVICE	PASSCUST
	Network Wizard	SERVICE	NET_WIZ

NOTE(S):

a. Depends on the selected language (English by default).

NET_ETH0 — Network Conn-eth0

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → Network Conn-eth0

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1					MAC address	Read only
2					IP address	Read only
3					Subnet Mask	Read only
4					Default Gateway	Read only
5					DNS Server1	Read only
6					DNS Server2	Read only

NOTE(S):

a. Depends on the selected language (English by default).

NET_ETH1 — Network Conn-eth1

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → Network Conn-eth1

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1					MAC address	Read only
2					IP address	Read only
3					Subnet Mask	Read only
4					Default Gateway	Read only
5					DNS Server1	Read only
6					DNS Server2	Read only

NOTE(S):

a. Depends on the selected language (English by default).

CCN_CONF — CCN Configuration

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → CCN Configuration

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	CCN address			1		Read/write
2	CCN Bus			0		Read/write
3	Primary Bus Baud Rate		9600,19200,38400	9600		Read/write

NOTE(S):

a. Depends on the selected language (English by default).

BACNET — BACNet Standard Conf.

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → BACNet Configuration

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
1	bacunit	NO_YES	NO	Metric Unit	Read/write
2	network	1 to 9999	1601	Network	Read/write
3	ident	0 to 9999999	1600001	Identifier	Read/write
4	bbmd	0 to 2	0	BACnet Management Device	Read/write
5	bacdlink	BACnet IP, MS/TP	BACnet IP	BACnet Data Link Layer	Read/write
6	mstpaddr	1 to 127	1	MS/TP Mac address	Read/write
7	mstpbaud	9600,38400,57600,76800, 115200	38400	MS/TP Baud rate	Read/write
8	maxmastr	1 to 127	3	MS/TP Max Master	Read/write
9	maxinfof	1 to 255	5	MS/TP Max Info Frames	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

FAN_CFG

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	fldp_kpa	–20 to 0	0.0	—	Fan Low DP PI, Kp, Cir A	Read only
2	fldp_tia	0 to 1000	0.0	sec	Fan Low DP PI, Ti Cir A	Read only
3	fldp_nia	0.1 to 2	0.1	—	Fan Low DP PI, NI Cir A	Read/write
4	fldp_kpb	–20 to 0	0.0	—	Fan Low DP PI, Kp, Cir B	Read only
5	fldp_tib	0 to 1000	0.0	sec	Fan Low DP PI, Ti Cir B	Read only
6	fldp_nib	0.1 to 2	0.1	—	Fan Low DP PI, NI Cir B	Read/write
7	fan_hlim	20 to 60	60	Hz	Fan Max Frequency	Read/write
8	fan_llim	0 to 30	0.0	Hz	Fan Min Frequency	Read/write
9	sync_Kp	0.01 to 3	0.1	—	Synchronizing Output Kp	Read/write
10	n_coilsA	2 to 16	6	—	Cir Cond Coil Number A	Read/write
11	n_coilsB	2 to 16	6	—	Cir Cond Coil Number B	Read/write
12	cp_factA	0 to 2	1	—	Compressor Factor A	Read/write
13	cp_factB	0 to 2	1	—	Compressor Factor B	Read/write
14	fldtfact	1 to 2	1	—	Fan Low Dis. Factor	Read/write
15	fan_ctrl[b]	0 to 1	1	—	Fan Ctrl Type (Vari,Fix)	Read/write
16	blank			—	Optimization Parameters	
17	xt_enabl	OFF_ON	1	—	Optimization Enable	Read/write
18	xt_s_smp	1 to 300	300	—	Stability Sample Nb	Read/write
19	xt_in_tl	1 to 50	4	%	Opt. Deviation Tolerance	Read/write
20	os_d_amp	1 to 10	5	Hz	Opt. Disturbance Ampl.	Read/write
21	os_d_per	10 to 300	90	sec	Opt. Disturbance Period	Read/write
22	os_f_pow	0 to 100	1	%	Opt. Freeze Power Tol.	Read/write
23	xtos_flt	0.1 to 100	10.0	sec	Opt. Filter Time	Read/write
24	sct_bias	0 to 50	20	^F	SCT bias at start	Read/write
25	sct_tim	0 to 1800	900	sec	Total SCT bias time	Read/write
26	sct_decr	0 to 900	450	sec	Decrement SCT bias time	Read/write

NOTE(S):

a. Depends on the selected language (English by default).
b. fan_ctrl is automatically set to “Vari” (variable) if mfg_tier is 1 or 2 (mid / high). It is set to “Fix” if mfg_tier is 0 and loambopt is 0 (no low ambient option).

ECO_PI

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	ecsh_kpa	–5 to 0	0.0	—	EXV Eco. SH Kp, Cir A	Read only
2	ecsh_tia	0 to 1000	0.0	sec	EXV Eco. SH Ti Cir A	Read only
3	ecsh_nia	0.1 to 2	0.1	—	EXV Eco. SH NI Cir A	Read/write
4	ecsh_kpb	–5 to 0	0.0	—	EXV Eco. SH Kp, Cir B	Read only
5	ecsh_tib	0 to 1000	0.0	sec	EXV Eco. SH Ti Cir B	Read only
6	ecsh_nib	0.1 to 2	0.1	—	EXV Eco. SH NI Cir B	Read/write
7	eco_min	0 to 100	0	%	EXV Eco. Min Position	Read only
8	eco_max	0 to 100	100	%	EXV Eco. Max Position	Read/write
9	capa_lim	50 to 100	50	%	Capacity Lim Disable Eco	Read/write
10	ecoshspa	0 to 36	18.0	°F	Eco Superheat Set-point A	Read/write
11	ecoshspb	0 to 36	18.0	°F	Eco Superheat Set-point B	Read/write

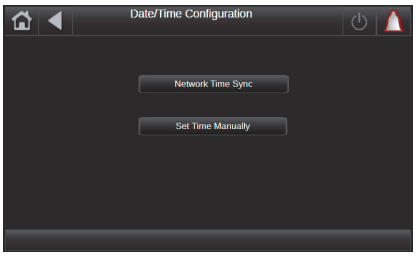
NOTE(S):

a. Depends on the selected language (English by default).

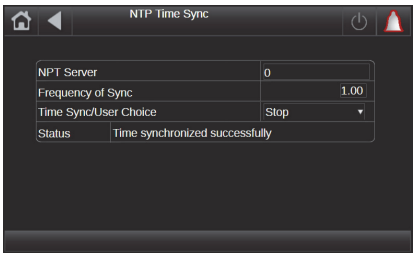
DATETIME — Date/Time Configuration

Carrier Controller PATH:

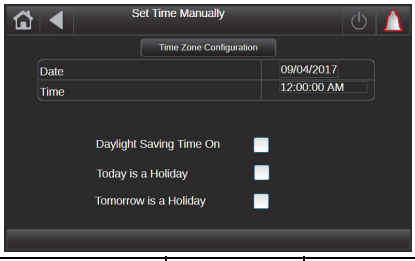
Main Menu → Configuration Menu → HMI Configuration → Date/Time Configuration



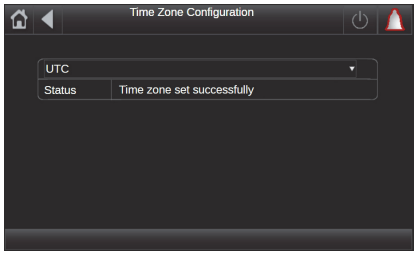
LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	Network Time Sync				—	Read/write
2	Set Time Manually				—	Read/write



LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	NPT Server				—	Read/write
2	Frequency of Sync				—	Read/write
3	Time/Sync User Choice				—	Read/write
4	Status				—	Read/write



LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	Time Zone Configuration				—	Read/write
2	Date				—	Read/write
3	Time				—	Read/write
4	Daylight Savings Time On				—	Read/write
5	Today is a Holiday				—	Read/write
6	Tomorrow is a Holiday				—	Read/write



LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	UTC				—	Read/write
2	Status				—	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

CTRL_ID — Control Identification Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **HMI Configuration** → **Control Identification Table**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	Device READ/WRITE				—	Read only
2	Device Location				—	Read/write
3	Software Part Number				—	Read only
4	Serial Number				—	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

CPU_MEM — CPU Memory Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **HMI Configuration** → **CPU Memory Table**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	Core Board CPU Usage				—	Read only
2	Core Board Total Memory				—	Read only
3	Core Board Free Memory				—	Read only
4	PIC6 controller uptime				—	Read only

NOTE(S):

a. Depends on the selected language (English by default).

TERM_RES — Termination Resistor Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **HMI Configuration** → **Termination Resistor Table**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	Termination Resistor COM1 connector J7		Disable//Enable	Disable	—	Read/write
2	Termination Resistor COM2 connector J10		Disable/Enable	Disable	—	Read/write
3	Termination Resistor COM3 connector J8		Disable/Enable	Disable	—	Read/write
4	Termination Resistor COM4 connector J6		Disable/Enable	Disable	—	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

SYS_INFO — System Information Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **HMI Configuration** → **System Information Table**

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/WRITE
1	SDK Version					Read only
2	UI Version					Read only
3	Core board – OS Version					Read only
4	Core board – OS Build info					Read only
5	Core board – Boot loader Version					Read only
6	Core board – Boot loader Build info					Read only
7	UI board – OS Version					Read only
8	UI board – OS Build info					Read only
9	UI board – Boot loader Version					Read only
10	UI board – Boot loader Build info					Read only

NOTE(S):

a. Depends on the selected language (English by default).

SCRN_BRT — Screen Brightness Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → Screen Brightness Table

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Adjust Display Brightness		Very Low(0) Low(1) Medium(2) High(3) Very High(4)		—	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

USERCONF — User Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → User Configuration

LINE	DISPLAYED TEXT[a]	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	User Password	use_pass	1 to 9999	1111	—	Read/write

NOTE(S):

a. Depends on the selected language (English by default).

ECM MENU

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	ECM cirA configuration	SERVICE	ECMCIR_A
	ECM Fan Status	SERVICE	ECM_FANS
	ECM cirB configuration	SERVICE	ECMCIR_B
	ECM Auto addressing	SERVICE	ECM_AUTO

NOTE(S):

a. Depends on the selected language (English by default).

ECMCIR_A — ECM cirA Configuration

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → ECM cirA Configuration

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
	ECM Fan parameters			
1	ECIRAF1	—	Sr no of Cir A ECM F1	Read only
2	ECIRAF2	—	Sr no of Cir A ECM F2	Read only
3	ECIRAF3	—	Sr no of Cir A ECM F3	Read only
4	ECIRAF4	—	Sr no of Cir A ECM F4	Read only
5	ECIRAF5	—	Sr no of Cir A ECM F5	Read only
6	ECIRAF6	—	Sr no of Cir A ECM F6	Read only
7	ECIRAF7	—	Sr no of Cir A ECM F7	Read only
8	ECIRAF8	—	Sr no of Cir A ECM F8	Read only
9	ECIRAF9	—	Sr no of Cir A ECM F9	Read only
10	ECIRAF10	—	Sr no of Cir A ECM F10	Read only
11	ECIRAF11	—	Sr no of Cir A ECM F11	Read only
12	ECIRAF12	—	Sr no of Cir A ECM F12	Read only
13	ECIRAF13	—	Sr no of Cir A ECM F13	Read only
14	ECIRAF14	—	Sr no of Cir A ECM F14	Read only

NOTE(S):

a. Depends on the selected language (English by default).

ECM_FANS — ECM Fan Status

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → ECM Fan Status

LINE	CCN NAME	RANGE	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
	ECM Fan Status: 0=Normal,1=Alert, 2=Not Connected	0 to 2	—	—	—
1	EF1_SW_A	0 to 2	2	ECM fan 1 Cir A	Read only
2	EF2_SW_A	0 to 2	2	ECM fan 2 Cir A	Read only
3	EF3_SW_A	0 to 2	2	ECM fan 3 Cir A	Read only
4	EF4_SW_A	0 to 2	2	ECM fan 4 Cir A	Read only
5	EF5_SW_A	0 to 2	2	ECM fan 5 Cir A	Read only
6	EF6_SW_A	0 to 2	2	ECM fan 6 Cir A	Read only
7	EF7_SW_A	0 to 2	2	ECM fan 7 Cir A	Read only
8	EF8_SW_A	0 to 2	2	ECM fan 8 Cir A	Read only
9	EF9_SW_A	0 to 2	2	ECM fan 9 Cir A	Read only
10	EF10_SWA	0 to 2	2	ECM fan 10 Cir A	Read only
11	EF11_SWA	0 to 2	2	ECM fan 11 Cir A	Read only
12	EF12_SWA	0 to 2	2	ECM fan 12 Cir A	Read only
13	EF13_SWA	0 to 2	2	ECM fan 13 Cir A	Read only
14	EF14_SWA	0 to 2	2	ECM fan 14 Cir A	Read only
15	EFB1_SW	0 to 2	2	ECM fan 1 Cir B	Read only
16	EFB2_SW	0 to 2	2	ECM fan 2 Cir B	Read only
17	EFB3_SW	0 to 2	2	ECM fan 3 Cir B	Read only
18	EFB4_SW	0 to 2	2	ECM fan 4 Cir B	Read only
19	EFB5_SW	0 to 2	2	ECM fan 5 Cir B	Read only
20	EFB6_SW	0 to 2	2	ECM fan 6 Cir B	Read only
21	EFB7_SW	0 to 2	2	ECM fan 7 Cir B	Read only
22	EFB8_SW	0 to 2	2	ECM fan 8 Cir B	Read only
23	EFB9_SW	0 to 2	2	ECM fan 9 Cir B	Read only
24	EFB10_SW	0 to 2	2	ECM fan 10 Cir B	Read only
25	EFB11_SW	0 to 2	2	ECM fan 11 Cir B	Read only
26	EFB12_SW	0 to 2	2	ECM fan 12 Cir B	Read only
27	EFB13_SW	0 to 2	2	ECM fan 13 Cir B	Read only
28	EFB14_SW	0 to 2	2	ECM fan 14 Cir B	Read only

NOTE(S):

a. Depends on the selected language (English by default).

ECMCIR_B — ECM cirB Configuration

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → ECM cirB Configuration

LINE	CCN NAME	DEFAULT VALUE	DISPLAYED TEXT[a]	READ/WRITE
	ECM Fan parameters			
1	ECIRBF1	—	Sr no of Cir B ECM F1	Read only
2	ECIRBF2	—	Sr no of Cir B ECM F2	Read only
3	ECIRBF3	—	Sr no of Cir B ECM F3	Read only
4	ECIRBF4	—	Sr no of Cir B ECM F4	Read only
5	ECIRBF5	—	Sr no of Cir B ECM F5	Read only
6	ECIRBF6	—	Sr no of Cir B ECM F6	Read only
7	ECIRBF7	—	Sr no of Cir B ECM F7	Read only
8	ECIRBF8	—	Sr no of Cir B ECM F8	Read only
9	ECIRBF9	—	Sr no of Cir B ECM F9	Read only
10	ECIRBF10	—	Sr no of Cir B ECM F10	Read only
11	ECIRBF11	—	Sr no of Cir B ECM F11	Read only
12	ECIRBF12	—	Sr no of Cir B ECM F12	Read only
13	ECIRBF13	—	Sr no of Cir B ECM F13	Read only
14	ECIRBF14	—	Sr no of Cir B ECM F14	Read only

NOTE(S):

a. Depends on the selected language (English by default).

ECM_AUTO — ECM Auto addressing

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → ECM Auto addressing

LINE	CCN NAME	RANGE	DEFAULT VALUE	UNIT	DISPLAYED TEXT[a]	READ/WRITE
1	ECMAUTO	DSABLE_ENABLE	DSABLE	—	ECM Auto Addressing Mode If Disable, enter ID in CktA&B Config Screen If Enable, select Start	Read only
2	ECMPULSE	STOP_START	STOP	—	ECM Auto Address Program	Read only
3	Progress	0 to 100	0	%	Auto Addressing Progress	Read only

NOTE(S):

a. Depends on the selected language (English by default).

NET_WIZ MENU — Network Widget

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Network Interfaces	SERVICE, FACTORY	NETINFCE
	Domain Name System	SERVICE, FACTORY	DNS
	Network Diag	SERVICE, FACTORY	NETDIAG

NOTE(S):
a. Depends on the selected language (English by default).

NETINFCE MENU — Network Interfaces

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Network Wizard - eth0	SERVICE, FACTORY	NW_ETH0
	Network Wizard - eth1	SERVICE, FACTORY	NW_ETH1
	Wi-Fi	SERVICE, FACTORY	WI_FI

NOTE(S):
a. Depends on the selected language (English by default).

DNS MENU — Domain Name System

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	DNS IP	SERVICE, FACTORY	DNS

NOTE(S):
a. Depends on the selected language (English by default).

NETDIAG MENU — Network Diagnostics

ICON	DISPLAYED TEXT[a]	ACCESS	ASSOCIATED TABLE
	Cloud test	SERVICE, FACTORY	CLOUD
	Ping test	SERVICE, FACTORY	PING

NOTE(S):
a. Depends on the selected language (English by default).

APPENDIX B — CCN POINT TABLE

Status/GENUNIT — General Parameters

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Machine Control Methods	0=Local 1=Net 2=Remote		CTRL_TYP	Y	RO
Run Status	Off/Running/Stopping/Delay/Tripout/ Ready/Override/Test		STATUS	Y	RW
CCN Chiller	STOP/START		CHIL_S_S	Y	RW
Occupied	NO/YES		CHIL_OCC	Y	RW
Minutes Left for Start	N.N	min	min_left	Y	RO
Setpoint Select	0=Auto 1=Setpoint 1		SP_SEL	Y	RO, RW, or NA
	2=Setpoint2				RW
Setpoint Occupied	NO/YES		SP_OCC	Y	RW
Percent Total Capacity	0 to 100	%	CAP_T	Y	RW
Current Setpoint		°F (°C)	SP	Y	RO
Control Point	Range: –4 to 153 (–20 to 67.2) Default: 0	°F (°C)	CTRL_PNT	Y	RW
Emergency Stop	Disable/Enable		EMSTOP	Y	RW
Active Demand Limit Val	0 to 100	%	DEM_LIM	Y	RW
Demand Limit Minimum	0 to 100	%	min_lim	Y	RO
SW Version			VERS_ID	N	RO

Status/INPUTS — Inputs Status

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Remote On/Off Switch	Close/Open		ONOFF_SW	Y	RO
Remote Setpoint Switch	Close/Open		SETP_SW	Y	RO
Limit Switch 1	Close/Open		LIM_SW1	Y	RO
Limit Switch 2	Close/Open		LIM_SW2	Y	RO
Oil Level Input A	Close/Open		OIL_L_A	Y	RO
Oil Level Input B	Close/Open		OIL_L_B	Y	RO
Remote Reset Setpoint		mA	SP_RESET	Y	RO
Remote Dem. Limit		mA	LIM_ANAL	Y	RO
Leakage Detector 1		volts	leak_v	Y	RO
Leakage Detector 2		volts	leak_2_v	Y	RO
Customer Interlock	Close/Open		REM_LOCK	Y	RO
Ice Done Storage Switch	Close/Open		ICE_SW	Y	RO
Occupied Override Switch	Close/Open		OCC_OVSW	Y	RO
Evap Heater Detector	Close/Open		HEATR_SW	Y	RO

Status/MODES — Modes

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Start Up Delay In Effect	No/Yes		m_delay	N	NA
Second Setpoint In Use	No/Yes		m_2stpt	N	NA
Reset In Effect	No/Yes		m_reset	N	NA
Demand Limit Active	No/Yes		m_demlim	N	NA
Evaporator Pump Rotation	No/Yes		m_pmprot	N	NA
Pump Periodic Start	No/Yes		m_pmpper	N	NA
Night Low Noise Active	No/Yes		m_night	N	NA
Master Slave Active	No/Yes		m_slave	N	NA
Ice Mode In Effect	No/Yes		m_ice	N	NA
Current Alarm 1	Current Alarm 1	—	m_alarm1	N	NA
Current Alarm 2	Current Alarm 2	—	m_alarm2	N	NA
Current Alarm 3	Current Alarm 3	—	m_alarm3	N	NA
Current Alarm 4	Current Alarm 4	—	m_alarm4	N	NA
Current Alarm 5	Current Alarm 5	—	m_alarm5	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Status/OUTPUTS — Outputs Status

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
CIRCUIT A	Normal/Alarm		LABEL_A	Y	NA
Compressor A	Off/On		CP_A	Y	RO
Oil Solenoid Output A	Off/On		OIL_SL_A	Y	RO
VI Solenoid Output A	Off/On		VI_A	Y	RO
Capacity Signal Cir A	0 to 10	volts	CAPT010A	Y	RO
VariFan Speed A	0 to 100	%	VFAN_A	Y	RO
Ref Iso Relay Energize A	Off/On		ISO_OP_A	Y	RO
Ref Iso Valve State A	Close/Open		ISO_POSA	Y	RO
Oil Heater Output A	Off/On		OIL_HT_A	Y	RO
CIRCUIT B	Normal/Alarm		LABEL_B	Y	NA
Capacity Signal Cir B	0 to 10	volts	CAPT010B	Y	RO
VariFan Speed B	0 to 100	%	VFAN_B	Y	RO
Compressor B	Off/On		CP_B	Y	RO
Oil Solenoid Output B	Off/On		OIL_SL_B	Y	RO
VI Solenoid Output B	Off/On		VI_B	Y	RO
Ref Iso Relay Energize B	Off/On		ISO_OP_B	Y	RO
Ref Iso Valve State B	Close/Open		ISO_POSB	Y	RO
Oil Heater Output B	Off/On		OIL_HT_B	Y	RO
Alarm Relay Status	Off/On		ALARM	Y	RO
Running Relay Status	Off/On		RUNNING	Y	RO
Chiller Capacity Signal	0 to 10	volts	CAPT_010	Y	RO
Alert Relay State	Off/On		ALERT	Y	RO
Shutdown Indicator State	Off/On		SHUTDOWN	Y	RO
Evap Heater Output	Off/On		C_HEATER	Y	RO
Fan Contactor 1A	Off/On		FCA1	Y	RO
Fan Contactor 2A	Off/On		FCA2	Y	RO
Fan Contactor 3A	Off/On		FCA3	Y	RO
Fan Contactor 4A	Off/On		FCA4	Y	RO
Fan Contactor 5A	Off/On		FCA5	Y	RO
Fan Contactor 6A	Off/On		FCA6	Y	RO
Fan Contactor 7A	Off/On		FCA7	Y	RO
Fan Contactor 8A	Off/On		FCA8	Y	RO
Fan Contactor 1B	Off/On		FCB1	Y	RO
Fan Contactor 2B	Off/On		FCB2	Y	RO
Fan Contactor 3B	Off/On		FCB3	Y	RO
Fan Contactor 4B	Off/On		FCB4	Y	RO
Fan Contactor 5B	Off/On		FCB5	Y	RO
Fan Contactor 6B	Off/On		FCB6	Y	RO
Fan Contactor 7B	Off/On		FCB7	Y	RO
Fan Contactor 8B	Off/On		FCB8	Y	RO
Comp. HW Enable A	Off/On		VFD_EN_A	Y	RO
Comp. HW Enable B	Off/On		VFD_EN_B	Y	RO
Control Box Heater	Off/On		BOX_HTR	Y	RO

Status/PRESSURE — Pressures

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Discharge Pressure A	N.N	psi (kPa)	DP_A	Y	RO
Main Suction Pressure A	N.N	psi (kPa)	SP_A	Y	RO
Oil Pressure A	N.N	psi (kPa)	OP_A	Y	RO
Delta Oil Pressure A	N.N	psi (kPa)	DOP_A	Y	RO
Oil Filter Press. Drop A	N.N	psi (kPa)	OFDP_A	Y	RO
Economizer Pressure A	N.N	psi (kPa)	ECO_P_A	Y	RO
Liquid Pressure A	N.N	psi (kPa)	LIQ_P_A	Y	RO
Discharge Pressure B	N.N	psi (kPa)	DP_B	Y	RO
Main Suction Pressure B	N.N	psi (kPa)	SP_B	Y	RO
Oil Pressure B	N.N	psi (kPa)	OP_B	Y	RO
Delta Oil Pressure B	N.N	psi (kPa)	DOP_B	Y	RO
Oil Filter Press. Drop B	N.N	psi (kPa)	OFDP_B	Y	RO

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Status/PUMPSTAT — Pump Status

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Evap Pump #1 Command	Off		CPUMP_1	Y	RW
Evap Pump #2 Command	Off		CPUMP_2	Y	RW
Rotate Evap Pumps ?	No		ROTCPUMP	Y	RW
Evap Flow Switch #1	Open		FLOW_SW	Y	RO
Evap Flow Switch #2	Open		FLOW_SWB	Y	RO
Countdown to Rotate		hours	ROTCNTDN	Y	RO

Status/RUNTIME — Run Times

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Machine Operating Hours		hours	HR_MACH	Y	RO
Machine Starts			st_mach	N	NA
Compressor A Hours		hours	HR_CP_A	Y	RO
Compressor A Starts			st_cp_a	N	NA
Compressor B Hours		hours	HR_CP_B	Y	RO
Compressor B Starts			st_cp_b	N	NA
Evap Pump #1 Hours		hours	hr_cpum1	N	NA
Evap Pump #2 Hours		hours	hr_cpum2	N	NA
VI Cycle Count A		Cycles	VIctA	N	NA
VI Cycle Count B		Cycles	VIctB	N	NA
Circuit A Fan #1 Hours		hours	hrfana01	N	NA
Circuit A Fan #2 Hours		hours	hrfana02	N	NA
Circuit A Fan #3 Hours		hours	hrfana03	N	NA
Circuit A Fan #4 Hours		hours	hrfana04	N	NA
Circuit A Fan #5 Hours		hours	hrfana05	N	NA
Circuit A Fan #6 Hours		hours	hrfana06	N	NA
Circuit A Fan #7 Hours		hours	hrfana07	N	NA
Circuit A Fan #8 Hours		hours	hrfana08	N	NA
Circuit A Fan #9 Hours		hours	hrfana09	N	NA
Circuit A Fan #10 Hours		hours	hrfana10	N	NA
Circuit A Fan #11 Hours		hours	hrfana11	N	NA
Circuit A Fan #12 Hours		hours	hrfana12	N	NA
Circuit A Fan #13 Hours		hours	hrfana13	N	NA
Circuit A Fan #14 Hours		hours	hrfana14	N	NA
Circuit B Fan #1 Hours		hours	hrfanb01	N	NA
Circuit B Fan #2 Hours		hours	hrfanb02	N	NA
Circuit B Fan #3 Hours		hours	hrfanb03	N	NA
Circuit B Fan #4 Hours		hours	hrfanb04	N	NA
Circuit B Fan #5 Hours		hours	hrfanb05	N	NA
Circuit B Fan #6 Hours		hours	hrfanb06	N	NA
Circuit B Fan #7 Hours		hours	hrfanb07	N	NA
Circuit B Fan #8 Hours		hours	hrfanb08	N	NA
Circuit B Fan #9 Hours		hours	hrfanb09	N	NA
Circuit B Fan #10 Hours		hours	hrfanb10	N	NA
Circuit B Fan #11 Hours		hours	hrfanb11	N	NA
Circuit B Fan #12 Hours		hours	hrfanb12	N	NA
Circuit B Fan #13 Hours		hours	hrfanb13	N	NA
Circuit B Fan #14 Hours		hours	hrfanb14	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Status/TEMP — Temperatures

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Evap Entering Fluid		°F (°C)	COOL_EWT	Y	RO
Evap Leaving Fluid		°F (°C)	COOL_LWT	Y	RO
Outdoor Air Temperature		°F (°C)	OAT	Y	RO
Evap Delta T		°F (°C)	COOL_DLT	Y	RO
Saturated Cond Tmp Cir A		°F (°C)	SCT_A	Y	RO
Saturated Suction Temp A		°F (°C)	SST_A	Y	RO
Saturated Liquid Temp A		°F (°C)	SLT_A	Y	RO
Compressor Suction Tmp A		°F (°C)	SUCT_A	Y	RO
Discharge Gas Temp Cir A		°F (°C)	DGT_A	Y	RO
Motor Temperature Cir A		°F (°C)	CP_TMP_A	Y	RO
EXV Eco. Tmp Cir A		°F (°C)	ECO_T_A	Y	RO
Liquid Temperature A		°F (°C)	LIQ_T_A	Y	RO
Saturated Cond Tmp Cir B		°F (°C)	SCT_B	Y	RO
Saturated Suction Temp B		°F (°C)	SST_B	Y	RO
Saturated Liquid Temp B		°F (°C)	SLT_B	Y	RO
Compressor Suction Tmp B		°F (°C)	SUCT_B	Y	RO
Discharge Gas Temp Cir B		°F (°C)	DGT_B	Y	RO
Motor Temperature Cir B		°F (°C)	CP_TMP_B	Y	RO
EXV Eco. Tmp Cir B		°F (°C)	ECO_T_B	Y	RO
Liquid Temperature B		°F (°C)	LIQ_T_B	Y	RO
Space Temp (Opt.)		°F (°C)	SPACETMP	Y	RO
Chill Water Temp (Opt.)		°F (°C)	CHWSTEMP	Y	RO

Maintenance\OCCDEFCM\OCCPC01S

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Current Mode	0=Unoccupied 1=Occupied		MODE	N	NA
Current Occup Period #	1 to 8		PER-NO	N	NA
Timed-Override in Effect	No/Yes		OVERLAST	N	NA
Timed-Override Duration	0 to 4	hours	OVR_HRS	N	NA
Current Occupied Time	00:00 to 23:59		STRTTIME	N	NA
Current Unoccupied Time	00:00 to 23:59		ENDTIME	N	NA
Next Occupied Day	Mon to Sun		NXTOCDAY	N	NA
Next Occupied Time	00:00 to 23:59		NXTOCTIM	N	NA
Next Unoccupied Day	Mon to Sun		NXTUNDAY	N	NA
Next Unoccupied Time	00:00 to 23:59		NXTUNTIM	N	NA
Prev Unoccupied Day	Mon to Sun		PRVUNDAY	N	NA
Prev Unoccupied Time	00:00 to 23:59		PRVUNTIM	N	NA

Maintenance\OCCDEFCM\OCCPC02S

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Current Mode	0=Unoccupied 1=Occupied		MODE	N	NA
Current Occup Period #	1 to 8		PER-NO	N	NA
Timed-Override in Effect	No/Yes		OVERLAST	N	NA
Timed-Override Duration	0 to 4	hours	OVR_HRS	N	NA
Current Occupied Time	00:00 to 23:59		STRTTIME	N	NA
Current Unoccupied Time	00:00 to 23:59		ENDTIME	N	NA
Next Occupied Day	Mon to Sun		NXTOCDAY	N	NA
Next Occupied Time	00:00 to 23:59		NXTOCTIM	N	NA
Next Unoccupied Day	Mon to Sun		NXTUNDAY	N	NA
Next Unoccupied Time	00:00 to 23:59		NXTUNTIM	N	NA
Prev Unoccupied Day	Mon to Sun		PRVUNDAY	N	NA
Prev Unoccupied Time	00:00 to 23:59		PRVUNTIM	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\ALARMRST — Reset Alarms

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Alarm Reset	No/Yes		RST_ALM	Y	NA
Alarm State	Normal/Alarm		ALM	Y	RW
Current Alarm 1			alarm_1c	N	NA
Current Alarm 2			alarm_2c	N	NA
Current Alarm 3			alarm_3c	N	NA
Current Alarm 4			alarm_4c	N	NA
Current Alarm 5			alarm_5c	N	NA
Jbus Current Alarm 1			alarm_1	N	NA
Jbus Current Alarm 2			alarm_2	N	NA
Jbus Current Alarm 3			alarm_3	N	NA
Jbus Current Alarm 4			alarm_4	N	NA
Jbus Current Alarm 5			alarm_5	N	NA

Maintenance\CAPACTRL — Capacity control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Controlled Water Temp		°F (°C)	ctrl_wt	N	NA
Ctrl Water Temp, Deg/Min		°F (°C)	cwt_rate	N	NA
Current Capacity Limit	0 to 100	%	cap_lim	N	NA
Wished Comp. Frequency A		Hz	drvcmda	N	NA
Capa Ctrl State A			capstata	N	NA
Capa Ctrl State Text A			captxta	N	NA
Override State A			ovrstata	N	NA
Override State Text A			ovrtxta	N	NA
Capa Ctrl Stat Nb A			capmoda	N	NA
Last Capa Ctrl Stat Nb A			lcapmoda	N	NA
Override Capacity Nb A			overrida	N	NA
Estimated Capacity A	0 to 100	%	cap_pc_a	N	NA
Wished Comp. Frequency B		Hz	drvcmdb	N	NA
Capa Ctrl State B			capstatb	N	NA
Capa Ctrl State Text B			captxtb	N	NA
Override State B			ovrstatb	N	NA
Override State Text B			ovrtxtb	N	NA
Capacity Ctrl Stat Nb B			capmodb	N	NA
Last Capa Ctrl Stat Nb B			lcapmodb	N	NA
Override Capacity Nb B			overridb	N	NA
Estimated Capacity B	0 to 100	%	cap_pc_b	N	NA
Max Comp. Frequency A		Hz	cMaxFrqA	N	NA
Max Comp. Frequency B		Hz	cMaxFrqB	N	NA
Comp. VI Cmd A			viCmdA	N	NA
Comp. VI Cmd B			viCmdB	N	NA
Reset Amount		°F (°C)	reset	N	NA
Circuit Running Number			CirRunNb	N	NA
State of Circuit A			StatCirA	N	NA
State of Circuit B			StatCirB	N	NA
Dual Circuit Lead			DualMast	Y	RO
Transfer Spd, add cir		Hz	xSpdHigh	N	NA
Transfer Spd, remove cir		Hz	xSpdLow	N	NA
Compressor Start Freq		Hz	cStrtFrq	N	NA
Compressor Min Frequency		Hz	cMinFrq	N	NA
DGT A, Deg/min	DGT A, Deg/min	°F (°C)	dgt_dt_a	N	NA
SST A, Deg/min	SST A, Deg/min	°F (°C)	sst_dt_a	N	NA
DGT B, Deg/min	DGT B, Deg/min	°F (°C)	dgt_dt_b	N	NA
SST B, Deg/min	SST B, Deg/min	°F (°C)	sst_dt_b	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\ECO_CTRL — EXV Eco. Control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
EXV Eco Position Cir A	0 to 100	%	eco_a	N	NA
EXV Eco Pos. (Steps) A		—	eco_stpa	N	NA
Eco Suction Superheat A		°F (°C)	eco_sh_a	N	NA
Eco Suction SH Setpt A		°F (°C)	esh_sp_a	N	NA
EXV Eco State A			eco_sta	N	NA
EXV Eco Previous State A			eco_lsta	N	NA
EXV Eco Wished Pos A			ecowposa	N	NA
EXV Eco Mode A			eco_moda	N	NA
EXV Eco Mode Txt A			eco_txta	N	NA
EXV Eco Position Cir B	0 to 100	%	eco_b	N	NA
EXV Eco Pos. (Steps) B		—	eco_stpb	N	NA
Eco Suction Superheat B		°F (°C)	eco_sh_b	N	NA
Eco Suction SH Setpt B		°F (°C)	esh_sp_b	N	NA
EXV Eco State B			eco_stb	N	NA
EXV Eco Previous State B			eco_lstb	N	NA
EXV Eco Wished Pos B			ecowposb	N	NA
EXV Eco Mode B			eco_modb	N	NA
EXV Eco Mode Txt B			eco_txtb	N	NA

Maintenance\EXV_CTRL — EXV Control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Circuit A					
EXV Override Circuit A			ov_exv_a	N	NA
EXV Position Circuit A	0 to 100	%	EXV_A	Y	RO
EXV Position (Steps) A		—	EXV_STPA	Y	RO
Discharge Superheat A		°F (°C)	DSH_A	Y	RO
Dis. Superheat Setpnt A		°F (°C)	dsh_spa	Y	RO
Suction Superheat A		°F (°C)	SH_A	Y	RO
Suct. Superheat Setpnt A		°F (°C)	sh_sp_a	N	NA
Evap ExchangeDT Cir A		°F (°C)	pinch_a	N	NA
Subcooling Circuit A		°F (°C)	subcoola	N	NA
Subcooling Setpoint A		°F (°C)	subc_spa	N	NA
EXV State A			exv_sta	N	NA
EXV Previous State A			exv_lsta	N	NA
EXV Wished Position A			exvwposa	N	NA
EXV Mode A			exv_moda	N	NA
EXV Mode Text A			exv_txta	N	NA
Circuit B					
EXV Override Circuit B			ov_exv_b	N	NA
EXV Position Circuit B	0 to 100	%	EXV_B	Y	RO
EXV Position (Steps) B		—	EXV_STPB	Y	RO
Discharge Superheat B		°F (°C)	DSH_B	Y	RO
Dis. Superheat Setpnt B		°F (°C)	dsh_spb	Y	RO
Suction Superheat B		°F (°C)	SH_B	Y	RO
Suct. Superheat Setpnt B		°F (°C)	sh_sp_b	N	NA
Evap ExchangeDT Cir B		°F (°C)	pinch_b	N	NA
Subcooling Circuit B		°F (°C)	subcoolb	N	NA
Subcooling Setpoint B		°F (°C)	subc_spb	N	NA
EXV State B			exv_stb	N	NA
EXV Previous State B			exv_lstb	N	NA
EXV Wished Position B			exvwposb	N	NA
EXV Mode B			exv_modb	N	NA
EXV Mode Text B			exv_txtb	N	NA

See Legend on page 305.

Maintenance\FAN_CTRL — Fan control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Freq Cir A		Hz	fan_f_a	N	NA
Fan State A			fan_sta	N	NA
Fan Previous State A			fan_lsta	N	NA
Fan Wished Freq A		Hz	wfan_f_a	N	NA
Fan Mode A			fan_moda	N	NA
Fan Mode Text A			fan_txta	N	NA
Fan Tot Pwr Filtered A		kW	ftotpowa	N	NA
Fan Contactors On A			fcont_a	N	NA
Fan Freq Cir B		Hz	fan_f_b	N	NA
Fan State B			fan_stb	N	NA
Fan Previous State B			fan_lstb	N	NA
Fan Wished Freq B		Hz	wfan_f_b	N	NA
Fan Mode B			fan_modb	N	NA
Fan Mode Text B			fan_txtb	N	NA
Fan Tot Pwr Filtered B		kW	ftotpowb	N	NA
Fan Contactors On B			fcont_b	N	NA

Maintenance\FAN_DRV — Fan Drive Maintenance

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Drive Power A1		kW	fd_pwra1	N	NA
Fan Drive Amps A1		AMPS	fd_Ia1	N	NA
Fan Drive Voltage A1		volts	fd_Va1	N	NA
Fan Drive Speed A1		rpm	fd_Sa1	N	NA
Fan Drive Frequency A1		Hz	fd_Fa1	N	NA
Fan Drive Torque A1			fd_Ta1	N	NA
Fan Drv DC Link Volt A1		volts	fd_DCVa1	N	NA
Fan Drive Heat Sink T A1		°F (°C)	fd_HSTa1	N	NA
Fan Drive Ctrl Card T A1		°F (°C)	fd_CCTa1	N	NA
Fan Drive Power A2		kW	fd_pwra2	N	NA
Fan Drive Amps A2		AMPS	fd_Ia2	N	NA
Fan Drive Voltage A2		volts	fd_Va2	N	NA
Fan Drive Speed A2		rpm	fd_Sa2	N	NA
Fan Drive Frequency A2		Hz	fd_Fa2	N	NA
Fan Drive Torque A2			fd_Ta2	N	NA
Fan Drv DC Link Volt A2		volts	fd_DCVa2	N	NA
Fan Drive Heat Sink T A2		°F (°C)	fd_HSTa2	N	NA
Fan Drive Ctrl Card T A2		°F (°C)	fd_CCTa2	N	NA
Fan Drive Power A3		kW	fd_pwra3	N	NA
Fan Drive Amps A3		AMPS	fd_Ia3	N	NA
Fan Drive Voltage A3		volts	fd_Va3	N	NA
Fan Drive Speed A3		rpm	fd_Sa3	N	NA
Fan Drive Frequency A3		Hz	fd_Fa3	N	NA
Fan Drive Torque A3			fd_Ta3	N	NA
Fan Drv DC Link Volt A3		volts	fd_DCVa3	N	NA
Fan Drive Heat Sink T A3		°F (°C)	fd_HSTa3	N	NA
Fan Drive Ctrl Card T A3		°F (°C)	fd_CCTa3	N	NA
Fan Drive Power B1		kW	fd_pwrb1	N	NA
Fan Drive Amps B1		AMPS	fd_Ib1	N	NA
Fan Drive Voltage B1		volts	fd_Vb1	N	NA
Fan Drive Speed B1		rpm	fd_Sb1	N	NA
Fan Drive Frequency B1		Hz	fd_Fb1	N	NA
Fan Drive Torque B1			fd_Tb1	N	NA
Fan Drv DC Link Volt B1		volts	fd_DCVb1	N	NA
Fan Drive Heat Sink T B1		°F (°C)	fd_HSTb1	N	NA
Fan Drive Ctrl Card T B1		°F (°C)	fd_CCTb1	N	NA
Fan Drive Power B2		kW	fd_pwrb2	N	NA
Fan Drive Amps B2		AMPS	fd_Ib2	N	NA
Fan Drive Voltage B2		volts	fd_Vb2	N	NA
Fan Drive Speed B2		rpm	fd_Sb2	N	NA
Fan Drive Frequency B2		Hz	fd_Fb2	N	NA
Fan Drive Torque B2			fd_Tb2	N	NA
Fan Drv DC Link Volt B2		volts	fd_DCVb2	N	NA
Fan Drive Heat Sink T B2		°F (°C)	fd_HSTb2	N	NA
Fan Drive Ctrl Card T B2		°F (°C)	fd_CCTb2	N	NA
Fan Drive Power B3		kW	fd_pwrb3	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\FAN_DRV — Fan Drive Maintenance (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Drive Amps B3		AMPS	fd_Ib3	N	NA
Fan Drive Voltage B3		volts	fd_Vb3	N	NA
Fan Drive Speed B3		rpm	fd_Sb3	N	NA
Fan Drive Frequency B3		Hz	fd_Fb3	N	NA
Fan Drive Heat Sink T B3		°F (°C)	fd_HSTb3	N	NA
Fan Drive Ctrl Card T B3		°F (°C)	fd_CCTb3	N	NA
Fan Drive Torque B3			fd_Tb3	N	NA
Fan Drv DC Link Volt B3		volts	fd_DCVb3	N	NA
Total Fan Drive Power		kW	fd_pwr	N	NA

Maintenance\FAN_DRV2 — Fan Drive addressing

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Drive A1 Attach	No/Yes		SET_FDA1	Y	RW
Fan Drive A2 Attach	No/Yes		SET_FDA2	Y	RW
Fan Drive A3 Attach	No/Yes		SET_FDA3	Y	RW
Fan Drive B1 Attach	No/Yes		SET_FDB1	Y	RW
Fan Drive B2 Attach	No/Yes		SET_FDB2	Y	RW
Fan Drive B3 Attach	No/Yes		SET_FDB3	Y	RW
Comm Fan Drive A1 Ok	No/Yes		FD_COMA1	N	NA
Comm Fan Drive A2 Ok	No/Yes		FD_COMA2	N	NA
Comm Fan Drive A3 Ok	No/Yes		FD_COMA3	N	NA
Comm Fan Drive B1 Ok	No/Yes		FD_COMB1	N	NA
Comm Fan Drive B2 Ok	No/Yes		FD_COMB2	N	NA
Comm Fan Drive B3 Ok	No/Yes		FD_COMB3	N	NA
Stop Cir A Fan Drive	No/Yes		stopfana	N	NA
Stop Cir B Fan Drive	No/Yes		stopfanb	N	NA
Force Fan Drv A1 Config	No/Yes		CnfgFDA1	N	NA
Force Fan Drv A2 Config	No/Yes		CnfgFDA2	N	NA
Force Fan Drv A3 Config	No/Yes		CnfgFDA3	N	NA
Force Fan Drv B1 Config	No/Yes		CnfgFDB1	N	NA
Force Fan Drv B2 Config	No/Yes		CnfgFDB2	N	NA
Force Fan Drv B3 Config	No/Yes		CnfgFDB3	N	NA

Maintenance\LAST_POR — Last PowerOn reset

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Power On 1 :day-mon-year			date_on1	N	NA
Power On 1 :hour-minute			time_on1	N	NA
PowerDown 1:day-mon-year			date_of1	N	NA
PowerDown 1:hour-minute			time_of1	N	NA
Power On 2 :day-mon-year			date_on2	N	NA
Power On 2 :hour-minute			time_on2	N	NA
PowerDown 2:day-mon-year			date_of2	N	NA
PowerDown 2:hour-minute			time_of2	N	NA
Power On 3 :day-mon-year			date_on3	N	NA
Power On 3 :hour-minute			time_on3	N	NA
PowerDown 3:day-mon-year			date_of3	N	NA
PowerDown 3:hour-minute			time_of3	N	NA
Power On 4 :day-mon-year			date_on4	N	NA
Power On 4 :hour-minute			time_on4	N	NA
PowerDown 4:day-mon-year			date_of4	N	NA
PowerDown 4:hour-minute			time_of4	N	NA
Power On 5 :day-mon-year			date_on5	N	NA
Power On 5 :hour-minute			time_on5	N	NA
PowerDown 5:day-mon-year			date_of5	N	NA
PowerDown 5:hour-minute			time_of5	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\LIMITS — Control Limits

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
EXV_dsh_act A		°F (°C)	dshacta	N	NA
EXV_dsh_stp A		°F (°C)	dshstpa	N	NA
EXV_lsp_act A		psi (kPa)	elspacta	N	NA
EXV_lsp_stp A		psi (kPa)	elspstpa	N	NA
ENV comp high dp act A		psi (kPa)	chdpacta	N	NA
ENV comp high dp stp A		psi (kPa)	chdpstpa	N	NA
ENV fan high dp act A		psi (kPa)	fhdpacta	N	NA
ENV fan high dp stp A		psi (kPa)	fhdpstpa	N	NA
ENV low dp act A		psi (kPa)	ldpacta	N	NA
ENV low dp stp A		psi (kPa)	ldpstpa	N	NA
ENV high sp act A		psi (kPa)	hspacta	N	NA
ENV high sp stp A		psi (kPa)	hspstpa	N	NA
ENV low sp act A		psi (kPa)	lspacta	N	NA
ENV low sp stp A		psi (kPa)	lspstpa	N	NA
ENV low sp delta A		psi (kPa)	lspdcpa	N	NA
dgt act A		°F (°C)	dgtacta	N	NA
dgt stp A		°F (°C)	dgtstpa	N	NA
EXV_dsh_act B		°F (°C)	dshactb	N	NA
EXV_dsh_stp B		°F (°C)	dshstpb	N	NA
EXV_lsp_act B		psi (kPa)	elspactb	N	NA
EXV_lsp_stp B		psi (kPa)	elspstpb	N	NA
ENV comp high dp act B		psi (kPa)	chdpactb	N	NA
ENV comp high dp stp B		psi (kPa)	chdpstpb	N	NA
ENV fan high dp act B		psi (kPa)	fhdpactb	N	NA
ENV fan high dp stp B		psi (kPa)	fhdpstpb	N	NA
ENV low dp act B		psi (kPa)	ldpactb	N	NA
ENV low dp stp B		psi (kPa)	ldpstpb	N	NA
ENV high sp act B		psi (kPa)	hspactb	N	NA
ENV high sp stp B		psi (kPa)	hspstpb	N	NA
ENV low sp act B		psi (kPa)	lspactb	N	NA
ENV low sp stp B		psi (kPa)	lspstpb	N	NA
ENV low sp delta B		kPa	lspdcpb	N	NA
dgt_act B		°F (°C)	dgtactb	N	NA
dgt_stp B		°F (°C)	dgtstpb	N	NA
Cmp Env Min SST A		°F (°C)	sstMinA	N	NA
Cmp Env Max SST A		°F (°C)	sstMaxA	N	NA
Cmp Env Min SDT A		°F (°C)	sdtMinA	N	NA
Cmp Env Max SDT A		°F (°C)	sdtMaxA	N	NA
Cmp Env Min SST B		°F (°C)	sstMinB	N	NA
Cmp Env Max SST B		°F (°C)	sstMaxB	N	NA
Cmp Env Min SDT B		°F (°C)	sdtMinB	N	NA
Cmp Env Max SDT B		°F (°C)	sdtMaxB	N	NA
Max Compressor Rate			maxinc	N	NA

Maintenance\M_MSTSLV — Master Slave Control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
MASTER/SLAVE CONTROL					
Unit is Master or Slave	0=Master 1=Slave		mstslv	N	NA
Master Control Type	1=Local 2=Remote 3=CCN		ms_ctrl	N	NA
Master/Slave Ctrl Active	FALSE/TRUE		ms_activ	N	NA
Lead Unit is the:	Master/Slave		lead_sel	N	NA
Slave Chiller State			slv_stat	N	NA
Slave Chiller Total Cap	0 to 100	%	slv_capt	N	NA
Lag Start Delay		min	l_strt_d	N	NA
Lead/lag Hours Delta		hours	ll_hr_d	N	NA
Lead/lag Changeover	No/Yes		ll_chang	N	NA
Lead Pulldown	No/Yes		ll_pull	N	NA
Master/Slave Error			ms_error	N	NA
Max Available Capacity	No/Yes		cap_max	N	NA
Lag lagstat			lagstat	N	NA
Slave Operating Hours		hours	slav_hr	N	NA
Slave Evap Ent. Fluid		°F (°C)	slav_ewt	N	NA
Slave Evap Leav. Fluid		°F (°C)	slav_lwt	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\QCK_TEST — Quick Test

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Quick Test Enable	Disable/Enable		QCK_TEST	Y	RW
Circuit A EXV Position	0 to 100	%	Q_EXVA	Y	RW
Circuit A Oil Solenoid	Off/On		Q_OILS_A	Y	RW
EXV Eco Position Cir A	0 to 100	%	Q_ECO_A	Y	RW
Oil Heater Circuit A	Off/On		Q_OILHTA	Y	RW
Capacity Cir A Output	0 to 100	%	Q_010_A	Y	RW
Comp A Running Output	Off/On		Q_COMPA	Y	RW
Isolation Valve State A	Close/Open		Q_ISOP_A	Y	RW
Circuit A VI	Off/On		Q_VI_A	Y	RW
VariFan Speed A	0 to 100	%	Q_VFAN_A	Y	RW
Circuit B EXV Position	0 to 100	%	Q_EXVB	Y	RW
Circuit B Oil Solenoid	Off/On		Q_OILS_B	Y	RW
EXV Eco Position Cir B	0 to 100	%	Q_ECO_B	Y	RW
Oil Heater Circuit B	Off/On		Q_OILHTB	Y	RW
Capacity Cir B Output	0 to 100	%	Q_010_B	Y	RW
Comp B Running Output	Off/On		Q_COMPB	Y	RW
Isolation Valve State B	Close/Open		Q_ISOP_B	Y	RW
Circuit B VI	Off/On		Q_VI_B	Y	RW
VariFan Speed B	0 to 100	%	Q_VFAN_B	Y	RW
Evaporator Heater	Off/On		Q_CL_HTR	Y	RW
Evaporator Pump 1			Q_CPMP1	Y	RW
Evaporator Pump 2			Q_CPMP2	Y	RW
Alarm Relay Status	Off/On		Q_ALARM	Y	RW
Shutdown Relay Status	Off/On		Q_SHUTD	Y	RW
Running Relay Status	Off/On		Q_RUN	Y	RW
Alert Relay Switch	Off/On		Q_ALERT	Y	RW
Capacity Total Output	0 to 100	%	Q_CAP010	Y	RW
Comp drive heater A	Off/On		Q_DRVHTA	Y	RW
Comp drive heater B	Off/On		Q_DRVHTB	Y	RW
Fan Contactor 1A	Off/On		Q_FCA1	Y	RW
Fan Contactor 2A	Off/On		Q_FCA2	Y	RW
Fan Contactor 3A	Off/On		Q_FCA3	Y	RW
Fan Contactor 4A	Off/On		Q_FCA4	Y	RW
Fan Contactor 5A	Off/On		Q_FCA5	Y	RW
Fan Contactor 6A	Off/On		Q_FCA6	Y	RW
Fan Contactor 7A	Off/On		Q_FCA7	Y	RW
Fan Contactor 8A	Off/On		Q_FCA8	Y	RW
Fan Contactor 1B	Off/On		Q_FCB1	Y	RW
Fan Contactor 2B	Off/On		Q_FCB2	Y	RW
Fan Contactor 3B	Off/On		Q_FCB3	Y	RW
Fan Contactor 4B	Off/On		Q_FCB4	Y	RW
Fan Contactor 5B	Off/On		Q_FCB5	Y	RW
Fan Contactor 6B	Off/On		Q_FCB6	Y	RW
Fan Contactor 7B	Off/On		Q_FCB7	Y	RW
Fan Contactor 8B	Off/On		Q_FCB8	Y	RW
Comp. HW Enable A	Off/On		Q_VF_ENA	Y	RW
Comp. HW Enable B	Off/On		Q_VF_ENB	Y	RW
Control Box Heater	Off/On		Q_BOX_HT	Y	RW

See Legend on page 305.

Maintenance\TBLSHT — Troubleshoot

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Evap Entering Fluid		°F (°C)	COOL_EWT	Y	RO
Evap Leaving Fluid		°F (°C)	COOL_LWT	Y	RO
Capacity Signal Cir A		volts	CAPT010A	Y	RO
Cir A Drive Amps		AMPS	drv_Ia	N	NA
Cir A Drive Speed		rpm	drv_Sa	N	NA
Saturated Cond Tmp Cir A		°F (°C)	SCT_A	Y	RO
Saturated Suction Temp A		°F (°C)	SST_A	Y	RO
Saturated Liquid Temp A		°F (°C)	SLT_A	Y	RO
Compressor Suction Tmp A		°F (°C)	SUCT_A	Y	RO
Discharge Gas Temp Cir A		°F (°C)	DGT_A	Y	RO
Motor Temperature Cir A		°F (°C)	CP_TMP_A	Y	RO
EXV Eco. Tmp Cir A		°F (°C)	ECO_T_A	Y	RO
Discharge Superheat A		°F (°C)	DSH_A	Y	RO
Suction Superheat A		°F (°C)	SH_A	Y	RO
Liquid Temperature A		°F (°C)	LIQ_T_A	Y	RO
Discharge Pressure A		psi (kPa)	DP_A	Y	RO
Main Suction Pressure A		psi (kPa)	SP_A	Y	RO
Oil Pressure A		psi (kPa)	OP_A	Y	RO
Oil Pressure DifferenceA		psi (kPa)	DOP_A	Y	RO
Oil Level Input A	Off/On		OIL_L_A	Y	RO
Oil Solenoid Output A	Off/On		OIL_SL_A	Y	RO
Economizer Pressure A		psi (kPa)	ECO_P_A	Y	RO
Liquid Pressure A		psi (kPa)	LIQ_P_A	Y	RO
Capacity Signal Cir B		volts	CAPT010B	Y	RO
Cir B Drive Amps		AMPS	drv_Ib	N	NA
Cir B Drive Speed		rpm	drv_Sb	N	NA
Saturated Cond Tmp Cir B		°F (°C)	SCT_B	Y	RO
Saturated Suction Temp B		°F (°C)	SST_B	Y	RO
Saturated Liquid Temp B		°F (°C)	SLT_B	Y	RO
Compressor Suction Tmp B		°F (°C)	SUCT_B	Y	RO
Discharge Gas Temp Cir B		°F (°C)	DGT_B	Y	RO
Motor Temperature Cir B		°F (°C)	CP_TMP_B	Y	RO
EXV Eco. Tmp Cir B		°F (°C)	ECO_T_B	Y	RO
Discharge Superheat B		°F (°C)	DSH_B	Y	RO
Suction Superheat B		°F (°C)	SH_B	Y	RO
Liquid Temperature B		°F (°C)	LIQ_T_B	Y	RO
Discharge Pressure B		psi (kPa)	DP_B	Y	RO
Main Suction Pressure B		psi (kPa)	SP_B	Y	RO
Oil Pressure B		psi (kPa)	OP_B	Y	RO
Oil Pressure DifferenceB		psi (kPa)	DOP_B	Y	RO
Oil Level Input B	Off/On		OIL_L_B	Y	RO
Oil Solenoid Output B	Off/On		OIL_SL_B	Y	RO
Economizer Pressure B		psi (kPa)	ECO_P_B	Y	RO
Liquid Pressure B		psi (kPa)	LIQ_P_B	Y	RO
Comm with Cmp VFD A Ok		—	VLT_COMA	Y	NA
Comm with Cmp VFD B Ok		—	VLT_COMB	Y	NA
Comm with Fan VFD A1 Ok		—	FD_COMA1	Y	RO
Comm with Fan VFD A2 Ok		—	FD_COMA2	Y	RO
Comm with Fan VFD A3 Ok		—	FD_COMA3	Y	RO
Comm with Fan VFD B1 Ok		—	FD_COMB1	Y	RO
Comm with Fan VFD B2 Ok		—	FD_COMB2	Y	RO
Comm with Fan VFD B3 Ok		—	FD_COMB3	Y	RO

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\VLT_DRV — VLT Drive Maintenance

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Cir A Drive Power		kW	drv_pwra	N	NA
Cir A Drive Power %		%	drv_pwPa	N	NA
Cir A Drive Amps		amps	drv_Ia	N	NA
Comp A Amperage %		%	drv_IPa	N	NA
Cir A Drive Voltage		volts	drv_Va	N	NA
Comp A Line voltage %		%	drv_VPa	N	NA
Cir A Drive Speed		rpm	drv_Sa	N	NA
Comp A Speed%		%	drv_SPa	N	NA
Cir A Drive Frequency		Hz	drv_Fa	N	NA
Comp A Frequency %		%	drv_FPa	N	NA
Cir A Drive Torque		—	drv_Ta	N	NA
Circ A Drive Torque %		%	drv_TPa	N	NA
Cir A Drive DC Link Volt		volts	drv_DCVa	N	NA
Comp A DC Link Voltage %		%	drv_DCPa	N	NA
Cir A Drive Heat Sink T		°F (°C)	drv_HSTa	N	NA
Comp A Heat Sink Temp %		%	drv_HSPa	N	NA
Cir A Drive Ctrl Card T		°F (°C)	drv_CCTa	N	NA
Cir A Drive Heater		—	drv_HTRa	N	NA
Cir B Drive Power		kW	drv_pwrb	N	NA
Cir B Drive Power %		%	drv_pwPb	N	NA
Cir B Drive Amps		amps	drv_Ib	N	NA
Comp B Amperage %		%	drv_IPb	N	NA
Cir B Drive Voltage		volts	drv_Vb	N	NA
Comp B Line voltage %		%	drv_VPb	N	NA
Cir B Drive Speed		rpm	drv_Sb	N	NA
Comp B Speed%		%	drv_SPb	N	NA
Cir B Drive Frequency		Hz	drv_Fb	N	NA
Comp B Frequency %		%	drv_FPb	N	NA
Cir B Drive Torque		—	drv_Tb	N	NA
Circ B Drive Torque %		%	drv_TPb	N	NA
Cir B Drive DC Link Volt		volts	drv_DCVb	N	NA
Total Comp Drive Power		kW	drv_pwr	N	NA
Comp B DC Link Voltage %		%	drv_DCPb	N	NA
Cir B Drive Heat Sink T		°F (°C)	drv_HSTb	N	NA
Comp B Heat Sink Temp %		%	drv_HSPb	N	NA
Cir B Drive Ctrl Card T		°F (°C)	drv_CCTb	N	NA
Cir B Drive Heater		—	drv_HTRb	N	NA
Drive A Attach	No/Yes	—	SET_DRVA	Y	RW
Drive B Attach	No/Yes	—	SET_DRVB	Y	RW
Comm with Drive A Ok	No/Yes	—	VLT_COMA	N	NA
Comm with Drive B Ok	No/Yes	—	VLT_COMB	N	NA
Force Comp Drv A Config	No/Yes	—	CnfgDrva	N	NA
Force Comp Drv B Config	No/Yes	—	CnfgDrvb	N	NA

Configuration\ALARMDEF/ALARMS01

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Alarm Routing Control			ALRM_CNT	N	NA
Alarm Equipment Priority			EQP_TYP	N	NA
Comm Failure Retry Time		min	RETRY_TM	N	NA
Realarm Time		min	RE_ALARM	N	NA
Alarm System Name	ALM_30XV		ALRM_NAM	N	NA

See Legend on page 305.

Configuration/BRODEFS/BROCASTS

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Activate	0=Disabled 1=Broadcast time date, Daylight Savings Time and Holiday 2=Stand alone OAT Broadcast		ccnbroad	N	NA
OAT Broadcast				N	NA
Bus #	Range: 0 to 239 Default: 0		oatbusnm	N	NA
Element #	Range: 0 to 239 Default: 0		oatlocad	N	NA
				N	NA
DAYLIGHT SAVINGS SELECT	Disable/Enable		dayl_sel	N	NA
ENTERING				N	NA
Month	Range: 1 to 12 Default: 3		startmon	N	NA
				N	NA
Day of Week (1=Monday)	Range: 1 to 7 Default: 7		startdow	N	NA
				N	NA
Week Number of Month	Range: 1 to 5 Default: 5		startwom	N	NA
				N	NA
LEAVING				N	NA
Month	Range: 1 to 12 Default: 10		stopmon	N	NA
				N	NA
Day of Week (1=Monday)	Range: 1 to 7 Default: 7		stopdow	N	NA
				N	NA
Week Number of Month	Range: 1 to 5 Default: 5		stopwom	N	NA
				N	NA

Configuration/HOLIDAY/HOLDY_nn
(nn = 01 thru 16)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Holiday Start Month	Range: 1 to 12 Default: 0		HOL-MON	N	NA
Start Day	Range: 0 to 31 Default: 0		HOL-DAY	N	NA
Duration (days)	Range: 0 to 99 Default: 0		HOL-LEN	N	NA

Configuration/OCCDEFCS/OCCPC0nS
(n = 1,2)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Timed Override Hours	0 to 4	hours	OVR-EXT	N	NA
Period 1 DOW (MTWTFSSH)			DOW1	N	NA
Occupied from	NN:NN		OCCTOD1	N	NA
Occupied to	NN:NN		UNOCTOD1	N	NA
Period 2 DOW (MTWTFSSH)			DOW2	N	NA
Occupied from	NN:NN		OCCTOD2	N	NA
Occupied to	NN:NN		UNOCTOD2	N	NA
Period 3 DOW (MTWTFSSH)			DOW3	N	NA
Occupied from	NN:NN		OCCTOD3	N	NA
Occupied to	NN:NN		UNOCTOD3	N	NA
Period 4 DOW (MTWTFSSH)			DOW4	N	NA
Occupied from	NN:NN		OCCTOD4	N	NA
Occupied to	NN:NN		UNOCTOD4	N	NA
Period 5 DOW (MTWTFSSH)			DOW5	N	NA
Occupied from	NN:NN		OCCTOD5	N	NA
Occupied to	NN:NN		UNOCTOD5	N	NA
Period 6 DOW (MTWTFSSH)			DOW6	N	NA
Occupied from	NN:NN		OCCTOD6	N	NA
Occupied to	NN:NN		UNOCTOD6	N	NA
Period 7 DOW (MTWTFSSH)			DOW7	N	NA
Occupied from	NN:NN		OCCTOD7	N	NA
Occupied to	NN:NN		UNOCTOD7	N	NA
Period 8 DOW (MTWTFSSH)			DOW8	N	NA
Occupied from	NN:NN		OCCTOD8	N	NA
Occupied to	NN:NN		UNOCTOD8	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Configuration/GENCONF

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Cir Priority Sequence	0=Auto 1=A Priority 2=B Priority		prio_cir	N	NA
				N	NA
				N	NA
Ramp Loading Enable	No/Yes		ramp_sel	N	NA
Unit Off to On Delay		min	off_on_d	N	NA
Demand Limit Type Select	0=None 1=Switch Control 2=4 to 20mA Control		lim_sel	N	NA
				N	NA
				N	NA
Night Mode Start Hour	NN:NN		nh_start	N	NA
Night Mode End Hour	NN:NN		nh_end	N	NA
Night Capacity Limit	0 to 100	%	nh_limit	N	NA
Ice Mode Enable	No/Yes		ice_cnfg	N	NA
Short Cycle Management	No/Yes		shortcyc	N	NA

Configuration/PUMPCONF

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Evap Pumps Sequence	0 = No Pump 1 = One Pump Only 2 = Two Pumps Auto 3 = Pump#1 Manual 4 = Pump#2 Manual		cpumpseq	N	NA
Pump Auto Rotation Delay	Range: 24 to 3000 Default: 48	hours	pump_del	N	NA
				N	NA
Pump Sticking Protection	No/Yes		pump_per	N	NA
Flow Checked If Pump Off	No/Yes		pump_loc	N	NA

Configuration/RESETCFG

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Cooling Reset Select	0=None 1=OAT 2=Delta T 3=4 to 20mA control 4=Space Temp		cr_sel	N	NA
Cooling				N	NA
OAT No Reset Value		°F (°C)	oat_crno	N	NA
OAT Full Reset Value		°F (°C)	oat_crfu	N	NA
Delta T No Reset Value		°F (°C)	dt_cr_no	N	NA
Delta T Full Reset Value		°F (°C)	dt_cr_fu	N	NA
Current No Reset Value		mA	v_cr_no	N	NA
Current Full Reset Value		mA	v_cr_fu	N	NA
Space T No Reset Value		°F (°C)	spacr_no	N	NA
Space T Full Reset Value		°F (°C)	spacr_fu	N	NA
Cooling Reset Deg. Value		°F (°C)	cr_deg	N	NA

Configuration/USER

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
User Password	1111=User		use_pass	N	NA

Service\BACNET

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
BACnet Enable	Disabel/Enable		bacena	N	NA
Metric Unit	No/Yes		bacunit	N	NA
Network	Range: 1 to 9999 Default: 1601		network	N	NA
Identifier	Range: 0 to 9999999 Default: 1600001		ident	N	NA
BACnet Management Device	0=None 1=FD(Foreign Device) 2=BBMD(BACnet Broadcast Management Device)		bbmd	N	NA

See Legend on page 305.

Service\CP_ENABL

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
DISABLE COMPRESSORS					
Compressor A Disable	No/Yes		en_cp_a	N	NA
Compressor B Disable	No/Yes		en_cp_b	N	NA

Service\EMAILCFG

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Sender Email Part1			senderP1	N	NA
@					
Sender Email Part2			senderP2	N	NA
Recip1 Email Part1			recip1P1	N	NA
@					
Recip1 Email Part2			recip1P2	N	NA
Recip2 Email Part1			recip2P1	N	NA
@					
Recip2 Email Part2			recip2P2	N	NA
SMTP IP Addr Part 1			smtpP1	N	NA
SMTP IP Addr Part 2			smtpP2	N	NA
SMTP IP Addr Part 3			smtpP3	N	NA
SMTP IP Addr Part 4			smtpP4	N	NA
Account Email Part1			accP1	N	NA
@					
Account Email Part2			accP2	N	NA
Account Password			accPass	N	NA
Port Number			portNbr	N	NA
Server Timeout		sec	srvTim	N	NA
Server Authentication			srvAut	N	NA

Service\FACTORY

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Unit Capacity			unitsize	N	NA
Power Supply Voltage			voltage	N	NA
60Hz Sel (No=50, Yes=60)	NO_YES	—	freq_60H	N	NA
Tier	0=STD; 1=MID; 2=HI		mfg_tier	N	NA
DX Evaporator Installed	No/Yes		dxcooler	N	NA
Evap Pass Number	1 to 3		cpass_nb	N	NA
Evap Heater Installed	No/Yes		heat_sel	N	NA
Master Slave Setup	No/Yes		mst_slv	N	NA
Energy Management Module	No/Yes		emm_nrcp	N	NA
Low Ambient Option (STD)	No/Yes		loambopt	N	NA
Leakage Charge Detection	No/Yes		leak_chk	N	NA
Factory Password	113		fac_pass	N	NA
Enable Max Frequency A	No/Yes		fMaxEnA	N	NA
Enable Max Frequency B	No/Yes		fMaxEnB	N	NA
Max Frequency Override A		Hz	fMaxOvrA	N	NA
Max Frequency Override B		Hz	fMaxOvrB	N	NA
Fan Freq Factor(0.7-1.1)	Range: 0.7 to 1.1 Default: 1.0		fan_fact	N	NA
Min Frequency Override		Hz	fMinOvr	N	NA
Low Amb. Start Spd A	26 to 60	Hz	lastspda	N	NA
Low Amb. Start Spd B	26 to 60	Hz	lastspdb	N	NA

See Legend on page 305.

Service\FACTORY2

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
EXV A Maximum Steps Numb	Range: 0 to 10000 Default: 0		exvmax_a	N	NA
EXV B Maximum Steps Numb	Range: 0 to 10000 Default: 0		exvmax_b	N	NA
Economizer A Steps Numb	Range: 0 to 15000 Default: 0		eco_cnfa	N	NA
Economizer B Steps Numb	Range: 0 to 15000 Default: 0		eco_cnfb	N	NA
Nb VFD compressor	Range: 0 to 2 Default: 0		vfd_cmp	N	NA
Nb Fan Drive cir A	Range: 0 to 3 Default: 0		vfd_fana	N	NA
Nb Fan Drive cir B	Range: 0 to 3 Default: 0		vfd_fanb	N	NA

Service\MST_SLV

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
MASTER/SLAVE CONTROL					
Master/Slave Select	0=disable 1=Master 2=Slave		ms_sel	N	NA
Master Control Type	1=Local Control 2=Remote Control 3=CCN Control		ms_ctrl	N	NA
Slave Address			slv_addr	N	NA
Lead Lag Select	0=Always Lead 1=Lag Once Failed Only 2=Lead/Lag Runtime Sel		lead_sel	N	NA
Lead/Lag Balance Delta		hours	ll_bal_d	N	NA
Lead/Lag Start Timer		min	lstr_tim	N	NA
Lead Pulldown Time		min	lead_pul	N	NA
Start If Error Higher		°F (°C)	start_dt	N	NA
Lag Minimum Running Time		min	lag_mini	N	NA
Lag Unit Pump Control	0=Stop if Unit Stops 1=Run if unit Stops		lag_pump	N	NA
Chiller In Series	No/Yes		ll_serie	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Service\SERVICE1

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Evaporator Fluid Type	1 = Water 2 = Med Brine 3=Low Brine		flui_typ	N	NA
Entering Fluid Control	No/Yes		ewt_opt	N	NA
Brine Freeze Setpoint	Range: –20 to 34 Default: 34	°F (°C)	freezesp	N	NA
Brine Minimum Fluid Temp	Range: –20 to 38 Default: 38	°F (°C)	mini_lwt	N	NA
Fast Capacity Recovery	0=Disabled 1=Quickstart Load 2=Fast Capacity Recovery		fastcapr	N	NA
EWT Probe on Cir A Side	No/Yes		ewt_cirA	N	NA
Service Password	Range: 0 to 9999 Default: 88		ser_pass	N	NA
Leakage Charge Threshold	Range: 0 to 10 Default: 2.5	volts	leak_thr	N	NA
Leakage Charge Timer	Range: 0 to 600 Default: 60	min	leak_tmr	N	NA
Compressor RFI Filter En	Off/On		RFI_conf	N	NA
Metric Units? (Blackbox)	No/Yes		metric	N	NA
Send fan drive config?	No/Yes		fdrv_cfg	N	NA
Send comp. drive config?	No/Yes		cdrv_cfg	N	NA
Evap Heater Delta Spt	Range: 0 to 6 Default: 2		heatersp	N	NA
Freeze Override Offset	Range: 0 to 5.8 Default: 0	°F (°C)	freez_ov	N	NA
Auto Start When SM Lost	Disable/Enable		auto_sm	N	NA
VI Self-Test Threshold	Range: 0.5 to 15 Default: 1.15	kW	ViPwrChk	N	NA
VI Self-Test Enable	Off/On		ViChkEn	N	NA
Pump Rot. AntiFrz Protec	Off/On		AntiFrz	N	NA
Oil Delta Trigger Speed	Range: 0 to 15 Default: 5	Hz	odtrspd	N	NA
Oil Trigger Time	Range: 1800 to 7200 Default: 3600	sec	otrigtim	N	NA
Oil Delta Recover Speed	Range: 0 to 15 Default: 5	Hz	odrecspd	N	NA
Oil Recover Time	Range: 30 to 120 Default: 60	sec	orectim	N	NA
Water Temp Hysteresis	0.9 to 10 Default: 0.9	volts	wateesys	N	NA
High VI Time at Start	0 to 3600 Default: 900	TONS/H	vistrtdt	N	NA
Enable High VI at Start	NO/YES	TONS/H	vistrten	N	NA
Approach Ctrl at Start?	NO/YES	amps	apr_en	N	NA

See Legend on page 305.

APPENDIX B — CCN POINT TABLE (cont)

Service\UPDTHOUR

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Machine Operating Hours		hours	hr_mach	N	NA
Machine Starts Number			st_mach	N	NA
Compressor A Hours		hours	hr_cp_a	N	NA
Compressor A Starts			st_cp_a	N	NA
Compressor B Hours		hours	hr_cp_b	N	NA
Compressor B Starts			st_cp_b	N	NA
Evap Pump #1 Hours		hours	hr_cpum1	N	NA
Evap Pump #2 Hours		hours	hr_cpum2	N	NA
VI Cycle Count A		Cycles	VIctA	N	NA
VI Cycle Count B		Cycles	VIctB	N	NA
Circuit A Fan #1 Hours		hours	hrfana01	N	NA
Circuit A Fan #2 Hours		hours	hrfana02	N	NA
Circuit A Fan #3 Hours		hours	hrfana03	N	NA
Circuit A Fan #4 Hours		hours	hrfana04	N	NA
Circuit A Fan #5 Hours		hours	hrfana05	N	NA
Circuit A Fan #6 Hours		hours	hrfana06	N	NA
Circuit A Fan #7 Hours		hours	hrfana07	N	NA
Circuit A Fan #8 Hours		hours	hrfana08	N	NA
Circuit A Fan #9 Hours		hours	hrfana09	N	NA
Circuit A Fan #10 Hours		hours	hrfana10	N	NA
Circuit A Fan #11 Hours		hours	hrfana11	N	NA
Circuit A Fan #12 Hours		hours	hrfana12	N	NA
Circuit A Fan #13 Hours		hours	hrfana13	N	NA
Circuit A Fan #14 Hours		hours	hrfana14	N	NA
Circuit B Fan #1 Hours		hours	hrfanb01	N	NA
Circuit B Fan #2 Hours		hours	hrfanb02	N	NA
Circuit B Fan #3 Hours		hours	hrfanb03	N	NA
Circuit B Fan #4 Hours		hours	hrfanb04	N	NA
Circuit B Fan #5 Hours		hours	hrfanb05	N	NA
Circuit B Fan #6 Hours		hours	hrfanb06	N	NA
Circuit B Fan #7 Hours		hours	hrfanb07	N	NA
Circuit B Fan #8 Hours		hours	hrfanb08	N	NA
Circuit B Fan #9 Hours		hours	hrfanb09	N	NA
Circuit B Fan #10 Hours		hours	hrfanb10	N	NA
Circuit B Fan #11 Hours		hours	hrfanb11	N	NA
Circuit B Fan #12 Hours		hours	hrfanb12	N	NA
Circuit B Fan #13 Hours		hours	hrfanb13	N	NA
Circuit B Fan #14 Hours		hours	hrfanb14	N	NA

Setpoint\SETPOINT

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Cooling Setpoint 1	Range: –20 to 78.8 (–28.9 to 26) Default: 44	°F (°C)	csp1	N	NA
Cooling Setpoint 2	Range: –20 to 78.8 (–28.9 to 26) Default: 44	°F (°C)	csp2	N	NA
Cooling Ice Setpoint	Range: –20 to 78.8 (–28.9 to 26) Default: 44	°F (°C)	ice_sp	N	NA
Cooling Ramp Loading	Range: 0.2 to 20 Default: 1	°F (°C)	cramp_sp	N	NA
Switch Limit Setpoint 1	Range: 0 to 100 Default: 100	%	lim_sp1	N	NA
Switch Limit Setpoint 2	Range: 0 to 100 Default: 100	%	lim_sp2	N	NA
Switch Limit Setpoint 3	Range: 0 to 100 Default: 100	%	lim_sp3	N	NA

LEGEND

RO — Read Only

RW — Read/Write

APPENDIX C — LON POINT TABLE

SAMPLE CONFIGURATION

LON POINT	SNVT TYPE	POINT	READ/WRITE	CCN POINT DESCRIPTION	CCN POINT NAME
CHLRMAP1					
nviChillerEnable	SNVT_switch	POINT01	W	CCN Chiller Start/Stop	CHIL_S_S
nviCoolSetpt	SNVT_temp_p	POINT02	W	Control Point	CTRL_PNT
nvoOnOff	SNVT_switch	POINT03	R		
nvoActiveSetpt	SNVT_temp_p	POINT04	R	Control Point	CTRL_PNT
nviCapacityLim	SNVT_lev_percent	POINT05	W	Active Demand Limit	DEM_LIM
nviHeatSetpt	SNVT_temp_p	POINT06	W		
nvoActualCapacity	SNVT_lev_percent	POINT07	R	Percent Total Capacity	CAP_T
nvoCapacityLim	SNVT_lev_percent	POINT08	R	Active Demand Limit	DEM_LIM
nvoLvgCHWTemp	SNVT_temp_p	POINT09	R	Cooler Leaving Fluid	COOL_LWT
nvoEntCHWTemp	SNVT_temp_p	POINT10	R	Cooler Entering Fluid	COOL_EWT
nvoEntCNDWTemp	SNVT_temp_p	POINT11	R		
nvoLvgCNDWTemp	SNVT_temp_p	POINT12	R		
nvoChillerStat.run_mode	SNVT_chlr_status	POINT13	R		
nvoChillerStat.op_mode	SNVT_chlr_status	POINT14	R		
nvoChillerStat.in_alarm	SNVT_chlr_status	POINT15	R		
nvoChillerStat.run_enabl	SNVT_chlr_status	POINT16	R		
nvoChillerStat.Local	SNVT_chlr_status	POINT17	R		
nvoChillerStat.Limited	SNVT_chlr_status	POINT18	R		
nvoChillerStat.chw_flow	SNVT_chlr_status	POINT19	R		
nvoChillerStat.cndw_flow	SNVT_chlr_status	POINT20	R		
nviOccSchedule	SNVT_occupancy	POINT21	W		
CHLRMAP2					
nviTEMP1	SNVT_temp_p	POINT22	W	Outdoor Air Temperature	OAT
nvoTEMP1	SNVT_temp_p	POINT23	R	Saturated Suction Temp A	SST_A
nvoTEMP2	SNVT_temp_p	POINT24	R	Saturated Suction Temp B	SST_B
nvoTEMP3	SNVT_temp_p	POINT25	R		
nvoTEMP4	SNVT_temp_p	POINT26	R	Saturated Cond Temp A	SCT_A
nvoTEMP5	SNVT_temp_p	POINT27	R	Saturated Cond Temp B	SCT_B
nvoTEMP6	SNVT_temp_p	POINT28	R		
nviPRESS1	SNVT_press_p	POINT29	W		
nvoPRESS1	SNVT_press_p	POINT30	R	Discharge Pressure A	DP_A
nvoPRESS2	SNVT_press_p	POINT31	R	Discharge Pressure B	DP_B
nvoPRESS3	SNVT_press_p	POINT32	R		
nvoPRESS4	SNVT_press_p	POINT33	R		
nvIPCT1	SNVT_lev_percent	POINT34	W		
nvIPCT2	SNVT_lev_percent	POINT35	W		
nvoTEMPDIFF1	SNVT_temp_diff_p	POINT36	R		
nvoTEMPDIFF2	SNVT_temp_diff_p	POINT37	R		
nviDISCRETE1	SNVT_switch	POINT38	W		
nviDISCRETE2	SNVT_switch	POINT39	W		
nvoDISCRETE1	SNVT_switch	POINT40	R	CCN Chiller Start/Stop	CHIL_S_S
nvoDISCRETE2	SNVT_switch	POINT41	R		
nvoDISCRETE3	SNVT_switch	POINT42	R		
nvoDISCRETE4	SNVT_switch	POINT43	R		
nvoDISCRETE5	SNVT_switch	POINT44	R		
nvoDISCRETE6	SNVT_switch	POINT45	R		
nviCOUNT1	SNVT_count	POINT46	W		
nvoCOUNT1	SNVT_count	POINT47	R	Run Status	N_STATUS
nvoCOUNT2	SNVT_count	POINT48	R	Alarm State	ALARM
nvoCOUNTinc1	SNVT_count_inc	POINT49	R		
nvoCOUNTinc2	SNVT_count_inc	POINT50	R		

LEGEND

R — Read Only
W — Read Write
SNVT — Standard Network Variable Type
Spt — Set Point

APPENDIX D — BACNET/MODBUS TRANSLATOR POINTS

ITEM NUMBER	CCN POINT NAME	CCN POINT DESCRIPTION	READ/WRITE	BACnet MS/TP OBJECT AND INSTANCE	MODBUS REGISTER
POINT01	CTRL_TYP	Local=0 Net.=1 Remote=2	RO	AV_000	0x4000
POINT02	CHIL_S_S	Net.: Cmd Start/Stop	RW	BV_000	0x4001
POINT03	CHIL_OCC	Net.: Cmd Occupied	RW	BV_001	0x4002
POINT04	min_left	Minutes Left for Start	RO	AV_001	0x4003
POINT05	SP_SEL	Setpoint Select	RW	AV_002	0x4004
POINT06	SP_OCC	Setpoint Occupied?	RW	BV_002	0x4005
POINT07	CAP_T	Percent Total Capacity	RO	AV_003	0x4006
POINT08	SP	Current Setpoint	RO	AV_004	0x4007
POINT09	CTRL_PNT	Control Point	RW	AV_005	0x4008
POINT10	EMSTOP	Emergency Stop	RW	BV_003	0x4009
POINT11	DEM_LIM	Active Demand Limit Val	RW	AV_006	0x400A
POINT12	min_lim	Demand Limit Minimum	RO	AV_007	0x400B
POINT13	N_STATUS	Numerical Unit Status	RO	AV_008	0x400C
POINT14	COOL_EWT	Cooler Entering Fluid	RO	AV_009	0x400D
POINT15	COOL_LWT	Cooler Leaving Fluid	RO	AV_010	0x400E
POINT16	OAT	Outdoor Air Temperature	RO	AV_011	0x400F
POINT17	SCT_A	Saturated Cond Tmp cir A	RO	AV_012	0x4010
POINT18	SST_A	Saturated Suction Temp A	RO	AV_013	0x4011
POINT19	SLT_A	Saturated Liquid Temp A	RO	AV_014	0x4012
POINT20	SUCT_A	Compressor Suction Tmp A	RO	AV_015	0x4013
POINT21	DGT_A	Discharge Gas Temp cir A	RO	AV_016	0x4014
POINT22	CP_TMP_A	Motor Temperature cir A	RO	AV_017	0x4015
POINT23	ECO_T_A	EXV Eco. Tmp cir A	RO	AV_018	0x4016
POINT24	LIQ_T_A	Liquid Temperature A	RO	AV_019	0x4017
POINT25	SCT_B	Saturated Cond Tmp cir B	RO	AV_020	0x4018
POINT26	SST_B	Saturated Suction Temp B	RO	AV_021	0x4019
POINT27	SLT_B	Saturated Liquid Temp B	RO	AV_022	0x401A
POINT28	SUCT_B	Compressor Suction Tmp B	RO	AV_023	0x401B
POINT29	DGT_B	Discharge Gas Temp cir B	RO	AV_024	0x401C
POINT30	CP_TMP_B	Motor Temperature cir B	RO	AV_025	0x401D
POINT31	ECO_T_B	EXV Eco. Tmp cir B	RO	AV_026	0x401E
POINT32	LIQ_T_B	Liquid Temperature B	RO	AV_027	0x401F
POINT33	SPACETMP	Optional Space Temp	RO	AV_028	0x4020
POINT34	CHWSTEMP	CHWS Temperature	RO	AV_029	0x4021
POINT35	DP_A	Discharge Pressure A	RO	AV_030	0x4022
POINT36	SP_A	Main Suction Pressure A	RO	AV_031	0x4023
POINT37	OP_A	Oil Pressure A	RO	AV_032	0x4024
POINT38	DOP_A	Oil Pressure DifferenceA	RO	AV_033	0x4025
POINT39	ECO_P_A	Economizer Pressure A	RO	AV_034	0x4026
POINT40	LIQ_P_A	Liquid Pressure A	RO	AV_035	0x4027
POINT41	DP_B	Discharge Pressure B	RO	AV_036	0x4028
POINT42	SP_B	Main Suction Pressure B	RO	AV_037	0x4029
POINT43	OP_B	Oil Pressure B	RO	AV_038	0x402A
POINT44	DOP_B	Oil Pressure DifferenceB	RO	AV_039	0x402B
POINT45	ECO_P_B	Economizer Pressure B	RO	AV_040	0x402C
POINT46	LIQ_P_B	Liquid Pressure B	RO	AV_041	0x402D
POINT47	ONOFF_SW	Remote On/Off Switch	RO	BV_004	0x402E
POINT48	SETP_SW	Remote Setpoint Switch	RO	BV_005	0x402F
POINT49	LIM_SW1	Limit Switch 1	RO	BV_006	0x4030
POINT50	LIM_SW2	Limit Switch 2	RO	BV_007	0x4031
POINT51	OIL_L_A	Oil Level Input A	RO	BV_008	0x4032
POINT52	OIL_L_B	Oil Level Input B	RO	BV_009	0x4033
POINT53	SP_RESET	Setpoint Reset Control	RO	AV_042	0x4034
POINT54	LIM_ANAL	4 to 20mA Limit signal	RO	AV_043	0x4035
POINT55	leak_v	Leakage Detector 1 val	RO	AV_044	0x4036
POINT56	leak_2_v	Leakage Detector 2 val	RO	AV_045	0x4037
POINT57	REM_LOCK	Customer Interlock	RO	BV_010	0x4038
POINT58	ICE_SW	Ice Done Storage Switch	RO	BV_011	0x4039
POINT59	OCC_OVSW	Occupied Override Switch	RO	BV_012	0x403A
POINT60	HEATR_SW	Cooler Heater Detector	RO	BV_013	0x403B
		Default Setpoint Table			
Setpoint 1	csp1	Cooling Setpoint 1	RW	AV_045	0x8000
Setpoint 2	csp2	Cooling Setpoint 2	RW	AV_046	0x8001
Setpoint 3	ice_sp	Cooling Ice Setpoint	RW	AV_047	0x8002
Setpoint 4	cramp_sp	Cooling Ramp Loading	RW	AV_048	0x8003
Setpoint 5	lim_sp1	Switch Limit Setpoint 1	RW	AV_049	0x8004
Setpoint 6	lim_sp2	Switch Limit Setpoint 2	RW	AV_050	0x8005
Setpoint 7	lim_sp3	Switch Limit Setpoint 3	RW	AV_051	0x8006
Setpoint 8					
Setpoint 9					
Setpoint 10					
		Default Time Schedule Table			
Time Schedule 1	OCC1P01S		RW	TS_000	0x9000
Time Schedule 2	OCC2P02S		RW	TS_001	0x9100
Time Schedule 3					

LEGEND

AV — Analog Value
BV — Binary Value
RO — Read Only
RW — Read Write
TS — Time Schedule

APPENDIX E — BACNET IP AND MS/TP POINTS

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
Alarm_State	MV	109	Type 5	0	RO	Alarm State	–1
ALARMRST_alarm_1	AV	110	Type 6	0	RO	Jbus Current Alarm 1	–1
ALARMRST_alarm_2	AV	111	Type 6	0	RO	Jbus Current Alarm 2	–1
ALARMRST_alarm_3	AV	112	Type 6	0	RO	Jbus Current Alarm 3	–1
ALARMRST_alarm_4	AV	113	Type 6	0	RO	Jbus Current Alarm 4	–1
ALARMRST_alarm_5	AV	114	Type 6	0	RO	Jbus Current Alarm 5	–1
ALARMRST_ALM	AV	109	Type 6	0	RO	Alarm State	–1
ALARMRST_RST_ALM	BV	72	Type 4	0	RO	Alarm Reset	–1
ALM_AUX1_1_COM_F	BV	157	Type 5	0	RO	AUX1_1_COM_F	–1
ALM_AUX1_2_COM_F	BV	158	Type 5	0	RO	AUX1_2_COM_F	–1
ALM_AUX1_3_COM_F	BV	159	Type 5	0	RO	AUX1_3_COM_F	–1
ALM_AUX1_4_COM_F	BV	160	Type 5	0	RO	AUX1_4_COM_F	–1
ALM_CCN_EMSTOP_F	BV	186	Type 5	0	RO	CCN_EMSTOP_F	–1
ALM_CHWSTEMP_F	BV	133	Type 5	0	RO	CHWSTEMP_F	–1
ALM_COOL_EWT_F	BV	130	Type 5	0	RO	COOL_EWT_F	–1
ALM_COOL_LWT_F	BV	131	Type 5	0	RO	COOL_LWT_F	–1
ALM_COOL_PUMP1_F	BV	187	Type 5	0	RO	COOL_PUMP1_F	–1
ALM_COOL_PUMP2_F	BV	188	Type 5	0	RO	COOL_PUMP2_F	–1
ALM_COOLER_FLOW_F	BV	196	Type 5	0	RO	COOLER_FLOW_F	–1
ALM_COOLER_FREEZE_F	BV	170	Type 5	0	RO	COOLER_FREEZE_F	–1
ALM_CP_TMP_A_F	BV	140	Type 5	0	RO	CP_TMP_A_F	–1
ALM_CP_TMP_B_F	BV	141	Type 5	0	RO	CP_TMP_B_F	–1
ALM_DATABASE_F	BV	220	Type 5	0	RO	DATABASE_F	–1
ALM_DGT_A_T_F	BV	136	Type 5	0	RO	DGT_A_T_F	–1
ALM_DGT_B_T_F	BV	137	Type 5	0	RO	DGT_B_T_F	–1
ALM_DP_A_F	BV	145	Type 5	0	RO	DP_A_F	–1
ALM_DP_B_F	BV	146	Type 5	0	RO	DP_B_F	–1
ALM_ECO_P_A_F	BV	151	Type 5	0	RO	ECO_P_A_F	–1
ALM_ECO_P_B_F	BV	152	Type 5	0	RO	ECO_P_B_F	–1
ALM_ECO_T_A_F	BV	142	Type 5	0	RO	ECO_T_A_F	–1
ALM_ECO_T_B_F	BV	143	Type 5	0	RO	ECO_T_B_F	–1
ALM_EMM_BRD_COM_F	BV	161	Type 5	0	RO	EMM_BOARD_COM_F	–1
ALM_FAN_DRIVE_A1_ALERT	BV	210	Type 5	0	RO	FAN_DRIVE_A1_ALERT	–1
ALM_FAN_DRIVE_A1_F	BV	202	Type 5	0	RO	FAN_DRIVE_A1_F	–1
ALM_FAN_DRIVE_A2_ALERT	BV	211	Type 5	0	RO	FAN_DRIVE_A2_ALERT	–1
ALM_FAN_DRIVE_A2_F	BV	203	Type 5	0	RO	FAN_DRIVE_A2_F	–1
ALM_FAN_DRIVE_A3_ALERT	BV	212	Type 5	0	RO	FAN_DRIVE_A3_ALERT	–1
ALM_FAN_DRIVE_A3_F	BV	204	Type 5	0	RO	FAN_DRIVE_A3_F	–1
ALM_FAN_DRIVE_B1_ALERT	BV	213	Type 5	0	RO	FAN_DRIVE_B1_ALERT	–1
ALM_FAN_DRIVE_B1_F	BV	205	Type 5	0	RO	FAN_DRIVE_B1_F	–1
ALM_FAN_DRIVE_B2_ALERT	BV	214	Type 5	0	RO	FAN_DRIVE_B2_ALERT	–1
ALM_FAN_DRIVE_B2_F	BV	206	Type 5	0	RO	FAN_DRIVE_B2_F	–1
ALM_FAN_DRIVE_B3_ALERT	BV	215	Type 5	0	RO	FAN_DRIVE_B3_ALERT	–1
ALM_FAN_DRIVE_B3_F	BV	207	Type 5	0	RO	FAN_DRIVE_B3_F	–1
ALM_FAN_DRIVEA1_COM_F	BV	164	Type 5	0	RO	FAN_DRIVEA1_COM_F	–1
ALM_FAN_DRIVEA2_COM_F	BV	165	Type 5	0	RO	FAN_DRIVEA2_COM_F	–1
ALM_FAN_DRIVEA3_COM_F	BV	166	Type 5	0	RO	FAN_DRIVEA3_COM_F	–1
ALM_FAN_DRIVEB1_COM_F	BV	167	Type 5	0	RO	FAN_DRIVEB1_COM_F	–1
ALM_FAN_DRIVEB2_COM_F	BV	168	Type 5	0	RO	FAN_DRIVEB2_COM_F	–1
ALM_FAN_DRIVEB3_COM_F	BV	169	Type 5	0	RO	FAN_DRIVEB3_COM_F	–1
ALM_HIGH_CP_TMP_A_F	BV	216	Type 5	0	RO	HIGH_CP_TMP_A_F	–1
ALM_HIGH_CP_TMP_B_F	BV	217	Type 5	0	RO	HIGH_CP_TMP_B_F	–1
ALM_HIGH_DGT_A_F	BV	192	Type 5	0	RO	HIGH_DGT_A_F	–1
ALM_HIGH_DGT_B_F	BV	193	Type 5	0	RO	HIGH_DGT_B_F	–1
ALM_HP_SWITCH_A_F	BV	218	Type 5	0	RO	HP_SWITCH_A_F	–1
ALM_HP_SWITCH_B_F	BV	219	Type 5	0	RO	HP_SWITCH_B_F	–1
ALM_ILL_FACT_CONF_F	BV	185	Type 5	0	RO	ILL_FACT_CONF_F	–1
ALM_INI_FACT_CONF_F	BV	184	Type 5	0	RO	INI_FACT_CONF_F	–1
ALM_LENSCAN_F	BV	221	Type 5	0	RO	LENSCAN_F	–1
ALM_LIQUID_P_A_F	BV	153	Type 5	0	RO	LIQUID_P_A_F	–1
ALM_LIQUID_P_B_F	BV	154	Type 5	0	RO	LIQUID_P_B_F	–1
ALM_LIQUID_T_A_F	BV	138	Type 5	0	RO	LIQUID_T_A_F	–1
ALM_LIQUID_T_B_F	BV	139	Type 5	0	RO	LIQUID_T_B_F	–1
ALM_LOCK_F	BV	173	Type 5	0	RO	LOCK_F	–1
ALM_LOSS_COM_MS_F	BV	174	Type 5	0	RO	LOSS_COM_MS_F	–1
ALM_LOSS_REF_FLOW_A_F	BV	228	Type 5	0	RO	LOSS_REF_FLOW_A_F	–1
ALM_LOSS_REF_FLOW_B_F	BV	229	Type 5	0	RO	LOSS_REF_FLOW_B_F	–1
ALM_LOW_OIL_A_P_F	BV	175	Type 5	0	RO	LOW_OIL_A_P_F	–1
ALM_LOW_OIL_B_P_F	BV	176	Type 5	0	RO	LOW_OIL_B_P_F	–1
ALM_LOW_OIL_LEVEL_A_F	BV	181	Type 5	0	RO	LOW_OIL_LEVEL_A_F	–1
ALM_LOW_OIL_LEVEL_B_F	BV	182	Type 5	0	RO	LOW_OIL_LEVEL_B_F	–1
ALM_LOW_SUCTION_A_F	BV	171	Type 5	0	RO	LOW_SUCTION_A_F	–1

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
ALM_LOW_SUCTION_B_F	BV	172	Type 5	0	RO	LOW_SUCTION_B_F	–1
ALM_M_S_CONFIG_F	BV	183	Type 5	0	RO	M_S_CONFIG_F	–1
ALM_OAT_F	BV	132	Type 5	0	RO	OAT_F	–1
ALM_OIL_DROP_A_P_F	BV	179	Type 5	0	RO	OIL_DROP_A_P_F	–1
ALM_OIL_DROP_B_P_F	BV	180	Type 5	0	RO	OIL_DROP_B_P_F	–1
ALM_OIL_FILT_A_P_F	BV	177	Type 5	0	RO	OIL_FILT_A_P_F	–1
ALM_OIL_FILT_B_P_F	BV	178	Type 5	0	RO	OIL_FILT_B_P_F	–1
ALM_OIL_P_A_F	BV	149	Type 5	0	RO	OIL_P_A_F	–1
ALM_OIL_P_B_F	BV	150	Type 5	0	RO	OIL_P_B_F	–1
ALM_REFRIG_ESCAPE_F	BV	191	Type 5	0	RO	REFRIGERANT_ESCAPE_F	–1
ALM_SCT_OUT_OF_CP_M_A_F	BV	189	Type 5	0	RO	SCT_OUT_OF_CP_MAP_A_F	–1
ALM_SCT_OUT_OF_CP_M_B_F	BV	190	Type 5	0	RO	SCT_OUT_OF_CP_MAP_B_F	–1
ALM_SENSORS_SWAP_F	BV	197	Type 5	0	RO	SENSORS_SWAP_F	–1
ALM_SIOB1_COM_F	BV	155	Type 5	0	RO	SIOB1_COM_F	–1
ALM_SIOB2_COM_F	BV	156	Type 5	0	RO	SIOB2_COM_F	–1
ALM_SP_A_F	BV	147	Type 5	0	RO	SP_A_F	–1
ALM_SP_B_F	BV	148	Type 5	0	RO	SP_B_F	–1
ALM_SPACE_TEMP_F	BV	144	Type 5	0	RO	SPACE_TEMP_F	–1
ALM_SST_OUT_OF_CP_M_A_F	BV	198	Type 5	0	RO	SST_OUT_OF_CP_MAP_A_F	–1
ALM_SST_OUT_OF_CP_M_B_F	BV	199	Type 5	0	RO	SST_OUT_OF_CP_MAP_B_F	–1
ALM_STEPPER_ECO_A_F	BV	224	Type 5	0	RO	STEPPER_ECO_A_F	–1
ALM_STEPPER_ECO_B_F	BV	225	Type 5	0	RO	STEPPER_ECO_B_F	–1
ALM_STEPPER_EXV_A_F	BV	222	Type 5	0	RO	STEPPER_EXV_A_F	–1
ALM_STEPPER_EXV_B_F	BV	223	Type 5	0	RO	STEPPER_EXV_B_F	–1
ALM_SUCT_VALV_CLOSD_A_F	BV	194	Type 5	0	RO	SUCT_VALV_CLOSED_A_F	–1
ALM_SUCT_VALV_CLOSD_B_F	BV	195	Type 5	0	RO	SUCT_VALV_CLOSED_B_F	–1
ALM_SUCTION_T_A_F	BV	134	Type 5	0	RO	SUCTION_T_A_F	–1
ALM_SUCTION_T_B_F	BV	135	Type 5	0	RO	SUCTION_T_B_F	–1
ALM_VI_DIAG_A_ALERT	BV	226	Type 5	0	RO	VI_DIAG_A_ALERT	–1
ALM_VI_DIAG_B_ALERT	BV	227	Type 5	0	RO	VI_DIAG_B_ALERT	–1
ALM_VLT_DRIVE_A_ALERT	BV	208	Type 5	0	RO	VLT_DRIVE_A_ALERT	–1
ALM_VLT_DRIVE_A_F	BV	200	Type 5	0	RO	VLT_DRIVE_A_F	–1
ALM_VLT_DRIVE_B_ALERT	BV	209	Type 5	0	RO	VLT_DRIVE_B_ALERT	–1
ALM_VLT_DRIVE_B_F	BV	201	Type 5	0	RO	VLT_DRIVE_B_F	–1
ALM_VLT_DRIVE1_COM_F	BV	162	Type 5	0	RO	VLT_DRIVE1_COM_F	–1
ALM_VLT_DRIVE2_COM_F	BV	163	Type 5	0	RO	VLT_DRIVE2_COM_F	–1
BACNET_bacena	BV	117	Type 4	0	RO	BACnet Enable	–1
BACNET_bacunit	BV	118	Type 4	0	RO	Metric Unit	–1
BACNET_bbmd	AV	510	Type 6	0	RO	BACnet Management Device	–1
BACNET_ident	AV	509	Type 6	0	RO	Identifier	–1
BACNET_network	AV	508	Type 6	0	RO	Network	–1
CAPACTRL_cap_lim	AV	190	Type 6	0	RO	Current Capacity Limit	–1
CAPACTRL_cap_pc_a	AV	195	Type 6	0	RO	Estimated Capacity A	90000
CAPACTRL_cap_pc_b	AV	200	Type 6	0	RO	Estimated Capacity B	90000
CAPACTRL_capmoda	AV	192	Type 6	0	RO	Capa Ctrl Stat Nb A	–1
CAPACTRL_capmodb	AV	197	Type 6	0	RO	Capacity Ctrl Stat Nb B	–1
CAPACTRL_CirRunNb	AV	206	Type 6	0	RO	Circuit Running Number	–1
CAPACTRL_cMaxFrqA	AV	201	Type 6	0	RO	Max Comp. Frequency A	–1
CAPACTRL_cMaxFrqB	AV	202	Type 6	0	RO	Max Comp. Frequency B	–1
CAPACTRL_ctrl_wt	AV	188	Type 6	0	RO	Controled Water Temp	90000
CAPACTRL_cwt_rate	AV	189	Type 6	0	RO	Ctrl Water Temp, Deg/Min	–1
CAPACTRL_drvcmda	AV	191	Type 6	0	RO	Wished Comp. Frequency A	–1
CAPACTRL_drvcmdb	AV	196	Type 6	0	RO	Wished Comp. Frequency B	–1
CAPACTRL_DualMast	AV	209	Type 6	0	RO	Dual Circuit Master	–1
CAPACTRL_lcapmoda	AV	193	Type 6	0	RO	Last Capa Ctrl Stat Nb A	–1
CAPACTRL_lcapmodb	AV	198	Type 6	0	RO	Last Capa Ctrl Stat Nb B	–1
CAPACTRL_overrida	AV	194	Type 6	0	RO	Override Capacity Nb A	30000
CAPACTRL_overridb	AV	199	Type 6	0	RO	Override Capacity Nb B	30000
CAPACTRL_reset	AV	205	Type 6	0	RO	Reset Amount	–1
CAPACTRL_StatCirA	AV	207	Type 6	0	RO	State of Circuit A	–1
CAPACTRL_StatCirB	AV	208	Type 6	0	RO	State of Circuit B	–1
CAPACTRL_viCmdA	AV	203	Type 6	0	RO	Comp. VI Cmd A	–1
CAPACTRL_viCmdB	AV	204	Type 6	0	RO	Comp. VI Cmd B	–1
CAPACTRL_xSpdHigh	AV	210	Type 6	0	RO	Transfer Spd, add cir	–1
CAPACTRL_xSpdLow	AV	211	Type 6	0	RO	Transfer Spd, remove cir	–1
CP_ENABL_en_cp_a	BV	121	Type 4	0	RO	Compressor A Disable	–1
CP_ENABL_en_cp_b	BV	122	Type 4	0	RO	Compressor B Disable	–1
DELTA_chdp_hys	AV	478	Type 6	0	RO	cmp high dp hysteresis	–1
DELTA_chdtdact	AV	479	Type 6	0	RO	cmp high dt act offset	–1
DELTA_chdtdspt	AV	480	Type 6	0	RO	cmp high dt stp offset	–1
DELTA_cramprt	AV	507	Type 6	0	RO	Compressor Ramp Rate	–1
DELTA_dgt_act	AV	498	Type 6	0	RO	dgt limit act offset	–1
DELTA_dgt_hyst	AV	497	Type 6	0	RO	dgt hysteresis	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
DELTA_dgt_spt	AV	499	Type 6	0	RO	dgt limit spt offset	–1
DELTA_dsh_act	AV	501	Type 6	0	RO	dsh act offset	–1
DELTA_dsh_hyst	AV	500	Type 6	0	RO	dsh hysteresis	–1
DELTA_dshdelay	AV	502	Type 6	0	RO	exv_no_dsh_delay	–1
DELTA_fhdp_hys	AV	481	Type 6	0	RO	fan high dp hysteresis	–1
DELTA_fhdtdact	AV	482	Type 6	0	RO	fan high dt act offset	–1
DELTA_fhdtdstp	AV	483	Type 6	0	RO	fan high dt stp offset	–1
DELTA_hsp_hyst	AV	487	Type 6	0	RO	high sp hysteresis	–1
DELTA_hstdact	AV	488	Type 6	0	RO	high st act offset	–1
DELTA_hstdspt	AV	489	Type 6	0	RO	high st stp offset	–1
DELTA_ldp_hys	AV	484	Type 6	0	RO	low dp hysteresis	–1
DELTA_ldtdact	AV	485	Type 6	0	RO	low dt act offset	–1
DELTA_ldtdspt	AV	486	Type 6	0	RO	low dt stp offset	–1
DELTA_lsp_hyst	AV	490	Type 6	0	RO	low sp hysteresis	–1
DELTA_lstdact	AV	491	Type 6	0	RO	low st act offset	–1
DELTA_lstdcpa	AV	493	Type 6	0	RO	deltat lstEXV vs lstCAPA	–1
DELTA_lstdspt	AV	492	Type 6	0	RO	low st stp offset	–1
DELTA_mopdelay	AV	503	Type 6	0	RO	exv_no_mop_delay	–1
DELTA_mt_dact	AV	495	Type 6	0	RO	motor temp act offset	–1
DELTA_mt_dspt	AV	496	Type 6	0	RO	motor temp stp offset	–1
DELTA_mt_hyst	AV	494	Type 6	0	RO	motor temp hysteresis	–1
DELTA_sbc_act	AV	505	Type 6	0	RO	subcool act offset	–1
DELTA_sbc_hys	AV	504	Type 6	0	RO	subcool hysteresis	–1
DELTA_sbc_spt	AV	506	Type 6	0	RO	Subcooling Setpoint	–1
DELTA_wateesys	AV	477	Type 6	0	RO	water_t_hysteresis	–1
ECO_CTRL_eco_a	AV	244	Type 6	0	RO	EXV Eco Pos. (Pct) A	30000
ECO_CTRL_eco_b	AV	245	Type 6	0	RO	EXV Eco Pos. (Pct) B	30000
ECO_PI_capa_lim	AV	542	Type 6	0	RO	Capacity Lim Disable Eco	–1
ECO_PI_eco_max	AV	541	Type 6	0	RO	EXV Eco. Max Position	–1
ECO_PI_eco_min	AV	540	Type 6	0	RO	EXV Eco. Min Position	–1
ECO_PI_ecoshspa	AV	543	Type 6	0	RO	Eco Superheat Setpoint A	–1
ECO_PI_ecoshspb	AV	544	Type 6	0	RO	Eco Superheat Setpoint B	–1
ECO_PI_ecsh_kpa	AV	534	Type 6	0	RO	EXV Eco. SH Kp, Cir A	–1
ECO_PI_ecsh_kpb	AV	537	Type 6	0	RO	EXV Eco. SH Kp, Cir B	–1
ECO_PI_ecsh_nia	AV	536	Type 6	0	RO	EXV Eco. SH NI Cir A	–1
ECO_PI_ecsh_nib	AV	539	Type 6	0	RO	EXV Eco. SH NI Cir B	–1
ECO_PI_ecsh_tia	AV	535	Type 6	0	RO	EXV Eco. SH Ti Cir A	–1
ECO_PI_ecsh_tib	AV	538	Type 6	0	RO	EXV Eco. SH Ti Cir B	–1
EXV_CFG_apr_kp_a	AV	471	Type 6	0	RO	Appr. PI, Kp Cir A	–1
EXV_CFG_apr_kp_b	AV	474	Type 6	0	RO	Appr. PI, Kp Cir B	–1
EXV_CFG_apr_ni_a	AV	473	Type 6	0	RO	Appr. PI, NI Cir A	–1
EXV_CFG_apr_ni_b	AV	476	Type 6	0	RO	Appr. PI, NI Cir B	–1
EXV_CFG_apr_stp	AV	434	Type 6	0	RO	Approach Setpoint	–1
EXV_CFG_apr_ti_a	AV	472	Type 6	0	RO	Appr. PI, Ti Cir A	–1
EXV_CFG_apr_ti_b	AV	475	Type 6	0	RO	Appr. PI, Ti Cir B	–1
EXV_CFG_dop_kp_a	AV	447	Type 6	0	RO	Dop PI, Kp Cir A	–1
EXV_CFG_dop_kp_b	AV	465	Type 6	0	RO	Dop PI, Kp Cir B	–1
EXV_CFG_dop_ni_a	AV	449	Type 6	0	RO	Dop PI, NI Cir A	–1
EXV_CFG_dop_ni_b	AV	467	Type 6	0	RO	Dop PI, NI Cir B	–1
EXV_CFG_dop_ti_a	AV	448	Type 6	0	RO	Dop PI, Ti Cir A	–1
EXV_CFG_dop_ti_b	AV	466	Type 6	0	RO	Dop PI, Ti Cir B	–1
EXV_CFG_dsh_kp_a	AV	438	Type 6	0	RO	DSH PI, Kp Cir A	–1
EXV_CFG_dsh_kp_b	AV	456	Type 6	0	RO	DSH PI, Kp Cir B	–1
EXV_CFG_dsh_ni_a	AV	440	Type 6	0	RO	DSH PI, NI Cir A	–1
EXV_CFG_dsh_ni_b	AV	458	Type 6	0	RO	DSH PI, NI Cir B	–1
EXV_CFG_dsh_ti_a	AV	439	Type 6	0	RO	DSH PI, Ti Cir A	–1
EXV_CFG_dsh_ti_b	AV	457	Type 6	0	RO	DSH PI, Ti Cir B	–1
EXV_CFG_fixeddsh	AV	429	Type 6	0	RO	Fixed DSH Setpoint	–1
EXV_CFG_hsp_kp_a	AV	441	Type 6	0	RO	High SP PI, Kp Cir A	–1
EXV_CFG_hsp_kp_b	AV	459	Type 6	0	RO	High SP PI, Kp Cir B	–1
EXV_CFG_hsp_ni_a	AV	443	Type 6	0	RO	High SP PI, NI Cir A	–1
EXV_CFG_hsp_ni_b	AV	461	Type 6	0	RO	High SP PI, NI Cir B	–1
EXV_CFG_hsp_ti_a	AV	442	Type 6	0	RO	High SP PI, Ti Cir A	–1
EXV_CFG_hsp_ti_b	AV	460	Type 6	0	RO	High SP PI, Ti Cir B	–1
EXV_CFG_lsp_kp_a	AV	444	Type 6	0	RO	Low SP PI, Kp Cir A	–1
EXV_CFG_lsp_kp_b	AV	462	Type 6	0	RO	Low SP PI, Kp Cir B	–1
EXV_CFG_lsp_ni_a	AV	446	Type 6	0	RO	Low SP PI, NI Cir A	–1
EXV_CFG_lsp_ni_b	AV	464	Type 6	0	RO	Low SP PI, NI Cir B	–1
EXV_CFG_lsp_ti_a	AV	445	Type 6	0	RO	Low SP PI, Ti Cir A	–1
EXV_CFG_lsp_ti_b	AV	463	Type 6	0	RO	Low SP PI, Ti Cir B	–1
EXV_CFG_sbc_kp_a	AV	435	Type 6	0	RO	Subcool PI, Kp Cir A	–1
EXV_CFG_sbc_kp_b	AV	453	Type 6	0	RO	Subcool PI, Kp Cir B	–1
EXV_CFG_sbc_ni_a	AV	437	Type 6	0	RO	Subcool PI, NI Cir A	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
EXV_CFG_sbc_ni_b	AV	455	Type 6	0	RO	Subcool PI, NI Cir B	–1
EXV_CFG_sbc_ti_a	AV	436	Type 6	0	RO	Subcool PI, Ti Cir A	–1
EXV_CFG_sbc_ti_b	AV	454	Type 6	0	RO	Subcool PI, Ti Cir B	–1
EXV_CFG_scsp_max	AV	430	Type 6	0	RO	Subcooling Setpoint Max	–1
EXV_CFG_scsp_min	AV	431	Type 6	0	RO	Subcooling Setpoint Min	–1
EXV_CFG_sh_sp_a	AV	432	Type 6	0	RO	Superheat Setpoint A	–1
EXV_CFG_sh_sp_b	AV	433	Type 6	0	RO	Superheat Setpoint B	–1
EXV_CFG_ssh_kp_a	AV	450	Type 6	0	RO	Suction SH PI, Kp Cir A	–1
EXV_CFG_ssh_kp_b	AV	468	Type 6	0	RO	Suction SH PI, Kp Cir B	–1
EXV_CFG_ssh_ni_a	AV	452	Type 6	0	RO	Suction SH PI, NI Cir A	–1
EXV_CFG_ssh_ni_b	AV	470	Type 6	0	RO	Suction SH PI, NI Cir B	–1
EXV_CFG_ssh_ti_a	AV	451	Type 6	0	RO	Suction SH PI, Ti Cir A	–1
EXV_CFG_ssh_ti_b	AV	469	Type 6	0	RO	Suction SH PI, Ti Cir B	–1
EXV_CTRL_DSH_A	AV	157	Type 6	0	RO	Discharge Superheat A	–1
EXV_CTRL_DSH_B	AV	169	Type 6	0	RO	Discharge Superheat B	–1
EXV_CTRL_dsh_spa	AV	158	Type 6	0	RO	Dis. Superheat Setpnt A	–1
EXV_CTRL_dsh_spb	AV	170	Type 6	0	RO	Dis. Superheat Setpnt B	–1
EXV_CTRL_EXV_A	AV	156	Type 6	0	RO	EXV Position (Pct) A	30000
EXV_CTRL_EXV_B	AV	168	Type 6	0	RO	EXV Position (Pct) B	30000
EXV_CTRL_exv_lsta	AV	165	Type 6	0	RO	EXV Previous State A	–1
EXV_CTRL_exv_lstb	AV	177	Type 6	0	RO	EXV Previous State B	–1
EXV_CTRL_exv_sta	AV	164	Type 6	0	RO	EXV State A	–1
EXV_CTRL_exv_stb	AV	176	Type 6	0	RO	EXV State B	–1
EXV_CTRL_exvwposa	AV	166	Type 6	0	RO	EXV Wished Position A	–1
EXV_CTRL_exvwposb	AV	178	Type 6	0	RO	EXV Wished Position B	–1
EXV_CTRL_ov_exv_a	AV	155	Type 6	0	RO	EXV Override Circuit A	30000
EXV_CTRL_ov_exv_b	AV	167	Type 6	0	RO	EXV Override Circuit B	30000
EXV_CTRL_pinch_a	AV	161	Type 6	0	RO	Evap ExchangeDT Cir A	–1
EXV_CTRL_pinch_b	AV	173	Type 6	0	RO	Evap ExchangeDT Cir B	–1
EXV_CTRL_SH_A	AV	159	Type 6	0	RO	Suction Superheat A	–1
EXV_CTRL_SH_B	AV	171	Type 6	0	RO	Suction Superheat B	–1
EXV_CTRL_sh_sp_a	AV	160	Type 6	0	RO	Suct. Superheat Setpnt A	–1
EXV_CTRL_sh_sp_b	AV	172	Type 6	0	RO	Suct. Superheat Setpnt B	–1
EXV_CTRL_subc_spa	AV	163	Type 6	0	RO	Subcooling Setpoint A	–1
EXV_CTRL_subc_spb	AV	175	Type 6	0	RO	Subcooling Setpoint B	–1
EXV_CTRL_subcoola	AV	162	Type 6	0	RO	Subcooling Circuit A	–1
EXV_CTRL_subcoolb	AV	174	Type 6	0	RO	Subcooling Circuit B	–1
FACTORY_cpass_nb	AV	319	Type 6	0	RO	Evap Pass Number	–1
FACTORY_emm_nrcp	BV	100	Type 4	0	RO	Energy Management Module	–1
FACTORY_fac_pass	AV	320	Type 6	0	RO	Factory Password	–1
FACTORY_fan_fact	AV	323	Type 6	0	RO	Fan Freq Factor(0.7-1.1)	–1
FACTORY_fMaxEnA	BV	103	Type 4	0	RO	Enable Max Frequency A	–1
FACTORY_fMaxEnB	BV	104	Type 4	0	RO	Enable Max Frequency B	–1
FACTORY_fMaxOvrA	AV	321	Type 6	0	RO	Max Frequency Override A	–1
FACTORY_fMaxOvrB	AV	322	Type 6	0	RO	Max Frequency Override B	–1
FACTORY_fMinOvr	AV	324	Type 6	0	RO	Min Frequency Override	–1
FACTORY_freq_60H	BV	96	Type 4	0	RO	60Hz Sel (No=50, Yes=60)	–1
FACTORY_heat_sel	BV	98	Type 4	0	RO	Evap Heater Installed	–1
FACTORY_lastspda	AV	325	Type 6	0	RO	Low Amb. Start Spd A	–1
FACTORY_lastspdb	AV	326	Type 6	0	RO	Low Amb. Start Spd B	–1
FACTORY_leak_chk	BV	102	Type 4	0	RO	Leakage Charge Detection	–1
FACTORY_loambopt	BV	101	Type 4	0	RO	Low Ambient Option (STD)	–1
FACTORY_mfg_tier	AV	318	Type 6	0	RO	Tier 0=STD, 1=MID, 2=HI	–1
FACTORY_mst_slv	BV	99	Type 4	0	RO	Master Slave Setup	–1
FACTORY_probrine	BV	97	Type 4	0	RO	Process Brine Evap	–1
FACTORY_unitsize	AV	316	Type 6	0	RO	Unit Capacity	–1
FACTORY_voltage	AV	317	Type 6	0	RO	Power Supply Voltage	–1
FACTORY2_eco_cnfa	AV	329	Type 6	0	RO	Economizer A Steps Numb	–1
FACTORY2_eco_cnfb	AV	330	Type 6	0	RO	Economizer B Steps Numb	–1
FACTORY2_exvmax_a	AV	327	Type 6	0	RO	EXV A Maximum Steps Numb	–1
FACTORY2_exvmax_b	AV	328	Type 6	0	RO	EXV B Maximum Steps Numb	–1
FACTORY2_vfd_cmp	AV	331	Type 6	0	RO	Nb VFD Compressor	–1
FACTORY2_vfd_fana	AV	332	Type 6	0	RO	Nb Fan Drive Cir A	–1
FACTORY2_vfd_fanb	AV	333	Type 6	0	RO	Nb Fan Drive Cir B	–1
FAN_BACNET_fan_moda	MV	250	Type 5	0	RO	Fan Mode A	–1
FAN_BACNET_fan_modb	MV	258	Type 5	0	RO	Fan Mode B	–1
FAN_BACNET_fan_txta	MV	251	Type 5	0	RO	Fan Mode Text A	–1
FAN_BACNET_fan_txtb	MV	259	Type 5	0	RO	Fan Mode Text B	–1
FAN_CFG_cp_factA	AV	522	Type 6	0	RO	Compressor Factor A	–1
FAN_CFG_cp_factB	AV	523	Type 6	0	RO	Compressor Factor B	–1
FAN_CFG_fan_ctrl	BV	119	Type 4	0	RO	Fan Ctrl Type (Vari,Fix)	–1
FAN_CFG_fan_hlim	AV	517	Type 6	0	RO	Fan Max Frequency	–1
FAN_CFG_fan_llim	AV	518	Type 6	0	RO	Fan Min Frequency	–1

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
FAN_CFG_fldp_kpa	AV	511	Type 6	0	RO	Fan Low DP PI, Kp, Cir A	–1
FAN_CFG_fldp_kpb	AV	514	Type 6	0	RO	Fan Low DP PI, Kp, Cir B	–1
FAN_CFG_fldp_nia	AV	513	Type 6	0	RO	Fan Low DP PI, NI Cir A	–1
FAN_CFG_fldp_nib	AV	516	Type 6	0	RO	Fan Low DP PI, NI Cir B	–1
FAN_CFG_fldp_tia	AV	512	Type 6	0	RO	Fan Low DP PI, Ti Cir A	–1
FAN_CFG_fldp_tib	AV	515	Type 6	0	RO	Fan Low DP PI, Ti Cir B	–1
FAN_CFG_fldtfact	AV	524	Type 6	0	RO	Fan Low Dis. Factor	–1
FAN_CFG_n_coilsA	AV	520	Type 6	0	RO	Cir Cond Coil Number A	–1
FAN_CFG_n_coilsB	AV	521	Type 6	0	RO	Cir Cond Coil Number B	–1
FAN_CFG_os_d_amp	AV	527	Type 6	0	RO	Opt. Disturbance Ampl.	–1
FAN_CFG_os_d_per	AV	528	Type 6	0	RO	Opt. Disturbance Period	–1
FAN_CFG_os_f_pow	AV	529	Type 6	0	RO	Opt. Freeze Power Tol.	–1
FAN_CFG_sct_bias	AV	531	Type 6	0	RO	SCT bias at start	–1
FAN_CFG_sct_decr	AV	533	Type 6	0	RO	Decrement SCT bias time	–1
FAN_CFG_sct_tim	AV	532	Type 6	0	RO	Total SCT bias time	–1
FAN_CFG_sync_Kp	AV	519	Type 6	0	RO	Sychronizing Output Kp	–1
FAN_CFG_xt_enabl	BV	120	Type 4	0	RO	Optimization Enable	–1
FAN_CFG_xt_in_tl	AV	526	Type 6	0	RO	Opt. Deviation Tolerance	–1
FAN_CFG_xt_s_smp	AV	525	Type 6	0	RO	Stablility Sample Nb	–1
FAN_CFG_xtos_flt	AV	530	Type 6	0	RO	Opt. Filter Time	–1
FAN_CTRL_fan_f_a	AV	246	Type 6	0	RO	Fan Freq Cir A	30000
FAN_CTRL_fan_f_b	AV	254	Type 6	0	RO	Fan Freq Cir B	30000
FAN_CTRL_fan_lsta	AV	248	Type 6	0	RO	Fan Previous State A	–1
FAN_CTRL_fan_lstb	AV	256	Type 6	0	RO	Fan Previous State B	–1
FAN_CTRL_fan_moda	AV	250	Type 6	0	RO	Fan Mode A	–1
FAN_CTRL_fan_modb	AV	258	Type 6	0	RO	Fan Mode B	–1
FAN_CTRL_fan_sta	AV	247	Type 6	0	RO	Fan State A	–1
FAN_CTRL_fan_stb	AV	255	Type 6	0	RO	Fan State B	–1
FAN_CTRL_fan_txta	AV	251	Type 6	0	RO	Fan Mode Text A	–1
FAN_CTRL_fan_txtb	AV	259	Type 6	0	RO	Fan Mode Text B	–1
FAN_CTRL_fcont_a	AV	253	Type 6	0	RO	Fan Contactors On A	–1
FAN_CTRL_fcont_b	AV	261	Type 6	0	RO	Fan Contactors On B	–1
FAN_CTRL_ftotpowa	AV	252	Type 6	0	RO	Fan Tot Pwr Filtered A	–1
FAN_CTRL_ftotpowb	AV	260	Type 6	0	RO	Fan Tot Pwr Filtered B	–1
FAN_CTRL_wfan_f_a	AV	249	Type 6	0	RO	Fan Wished Freq A	–1
FAN_CTRL_wfan_f_b	AV	257	Type 6	0	RO	Fan Wished Freq B	–1
FAN_DRV_fd_CCTa1	AV	270	Type 6	0	RO	Fan Drive Ctrl Card T A1	–1
FAN_DRV_fd_CCTa2	AV	279	Type 6	0	RO	Fan Drive Ctrl Card T A2	–1
FAN_DRV_fd_CCTa3	AV	288	Type 6	0	RO	Fan Drive Ctrl Card T A3	–1
FAN_DRV_fd_CCTb1	AV	297	Type 6	0	RO	Fan Drive Ctrl Card T B1	–1
FAN_DRV_fd_CCTb2	AV	306	Type 6	0	RO	Fan Drive Ctrl Card T B2	–1
FAN_DRV_fd_CCTb3	AV	315	Type 6	0	RO	Fan Drive Ctrl Card T B3	–1
FAN_DRV_fd_DCVa1	AV	268	Type 6	0	RO	Fan Drv DC Link Volt A1	–1
FAN_DRV_fd_DCVa2	AV	277	Type 6	0	RO	Fan Drv DC Link Volt A2	–1
FAN_DRV_fd_DCVa3	AV	286	Type 6	0	RO	Fan Drv DC Link Volt A3	–1
FAN_DRV_fd_DCVb1	AV	295	Type 6	0	RO	Fan Drv DC Link Volt B1	–1
FAN_DRV_fd_DCVb2	AV	304	Type 6	0	RO	Fan Drv DC Link Volt B2	–1
FAN_DRV_fd_DCVb3	AV	313	Type 6	0	RO	Fan Drv DC Link Volt B3	–1
FAN_DRV_fd_Fa1	AV	266	Type 6	0	RO	Fan Drive Frequency A1	–1
FAN_DRV_fd_Fa2	AV	275	Type 6	0	RO	Fan Drive Frequency A2	–1
FAN_DRV_fd_Fa3	AV	284	Type 6	0	RO	Fan Drive Frequency A3	–1
FAN_DRV_fd_Fb1	AV	293	Type 6	0	RO	Fan Drive Frequency B1	–1
FAN_DRV_fd_Fb2	AV	302	Type 6	0	RO	Fan Drive Frequency B2	–1
FAN_DRV_fd_Fb3	AV	311	Type 6	0	RO	Fan Drive Frequency B3	–1
FAN_DRV_fd_HSTa1	AV	269	Type 6	0	RO	Fan Drive Heat Sink T A1	–1
FAN_DRV_fd_HSTa2	AV	278	Type 6	0	RO	Fan Drive Heat Sink T A2	–1
FAN_DRV_fd_HSTa3	AV	287	Type 6	0	RO	Fan Drive Heat Sink T A3	–1
FAN_DRV_fd_HSTb1	AV	296	Type 6	0	RO	Fan Drive Heat Sink T B1	–1
FAN_DRV_fd_HSTb2	AV	305	Type 6	0	RO	Fan Drive Heat Sink T B2	–1
FAN_DRV_fd_HSTb3	AV	314	Type 6	0	RO	Fan Drive Heat Sink T B3	–1
FAN_DRV_fd_Ia1	AV	263	Type 6	0	RO	Fan Drive Amps A1	–1
FAN_DRV_fd_Ia2	AV	272	Type 6	0	RO	Fan Drive Amps A2	–1
FAN_DRV_fd_Ia3	AV	281	Type 6	0	RO	Fan Drive Amps A3	–1
FAN_DRV_fd_Ib1	AV	290	Type 6	0	RO	Fan Drive Amps B1	–1
FAN_DRV_fd_Ib2	AV	299	Type 6	0	RO	Fan Drive Amps B2	–1
FAN_DRV_fd_Ib3	AV	308	Type 6	0	RO	Fan Drive Amps B3	–1
FAN_DRV_fd_pwr	AV	556	Type 5	0	RO	Total Fan Drive Power	30000
FAN_DRV_fd_pwra1	AV	262	Type 6	0	RO	Fan Drive Power A1	30000
FAN_DRV_fd_pwra2	AV	271	Type 6	0	RO	Fan Drive Power A2	30000
FAN_DRV_fd_pwra3	AV	280	Type 6	0	RO	Fan Drive Power A3	–1
FAN_DRV_fd_pwrb1	AV	289	Type 6	0	RO	Fan Drive Power B1	30000
FAN_DRV_fd_pwrb2	AV	298	Type 6	0	RO	Fan Drive Power B2	30000
FAN_DRV_fd_pwrb3	AV	307	Type 6	0	RO	Fan Drive Power B3	–1

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
FAN_DRV_fd_Sa1	AV	265	Type 6	0	RO	Fan Drive Speed A1	–1
FAN_DRV_fd_Sa2	AV	274	Type 6	0	RO	Fan Drive Speed A2	–1
FAN_DRV_fd_Sa3	AV	283	Type 6	0	RO	Fan Drive Speed A3	–1
FAN_DRV_fd_Sb1	AV	292	Type 6	0	RO	Fan Drive Speed B1	–1
FAN_DRV_fd_Sb2	AV	301	Type 6	0	RO	Fan Drive Speed B2	–1
FAN_DRV_fd_Sb3	AV	310	Type 6	0	RO	Fan Drive Speed B3	–1
FAN_DRV_fd_Ta1	AV	267	Type 6	0	RO	Fan Drive Torque A1	–1
FAN_DRV_fd_Ta2	AV	276	Type 6	0	RO	Fan Drive Torque A2	–1
FAN_DRV_fd_Ta3	AV	285	Type 6	0	RO	Fan Drive Torque A3	–1
FAN_DRV_fd_Tb1	AV	294	Type 6	0	RO	Fan Drive Torque B1	–1
FAN_DRV_fd_Tb2	AV	303	Type 6	0	RO	Fan Drive Torque B2	–1
FAN_DRV_fd_Tb3	AV	312	Type 6	0	RO	Fan Drive Torque B3	–1
FAN_DRV_fd_Va1	AV	264	Type 6	0	RO	Fan Drive Voltage A1	–1
FAN_DRV_fd_Va2	AV	273	Type 6	0	RO	Fan Drive Voltage A2	–1
FAN_DRV_fd_Va3	AV	282	Type 6	0	RO	Fan Drive Voltage A3	–1
FAN_DRV_fd_Vb1	AV	291	Type 6	0	RO	Fan Drive Voltage B1	–1
FAN_DRV_fd_Vb2	AV	300	Type 6	0	RO	Fan Drive Voltage B2	–1
FAN_DRV_fd_Vb3	AV	309	Type 6	0	RO	Fan Drive Voltage B3	–1
FAN_DRV2_FD_COMA1	BV	88	Type 5	0	RO	Comm Fan Drive A1 Ok	–1
FAN_DRV2_FD_COMA2	BV	89	Type 5	0	RO	Comm Fan Drive A2 Ok	–1
FAN_DRV2_FD_COMA3	BV	90	Type 5	0	RO	Comm Fan Drive A3 Ok	–1
FAN_DRV2_FD_COMB1	BV	91	Type 5	0	RO	Comm Fan Drive B1 Ok	–1
FAN_DRV2_FD_COMB2	BV	92	Type 5	0	RO	Comm Fan Drive B2 Ok	–1
FAN_DRV2_FD_COMB3	BV	93	Type 5	0	RO	Comm Fan Drive B3 Ok	–1
FAN_DRV2_SET_FDA1	BV	82	Type 5	0	RO	Fan Drive A1 Attach	–1
FAN_DRV2_SET_FDA2	BV	83	Type 5	0	RO	Fan Drive A2 Attach	–1
FAN_DRV2_SET_FDA3	BV	84	Type 5	0	RO	Fan Drive A3 Attach	–1
FAN_DRV2_SET_FDB1	BV	85	Type 5	0	RO	Fan Drive B1 Attach	–1
FAN_DRV2_SET_FDB2	BV	86	Type 5	0	RO	Fan Drive B2 Attach	–1
FAN_DRV2_SET_FDB3	BV	87	Type 5	0	RO	Fan Drive B3 Attach	–1
FAN_DRV2_stopfana	BV	94	Type 5	0	RO	Stop Cir A Fan Drive	–1
FAN_DRV2_stopfanb	BV	95	Type 5	0	RO	Stop Cir B Fan Drive	–1
GENCONF_ice_cnfg	BV	2	Type 4	0	RO	Ice Mode Enable	–1
GENCONF_lim_sel	AV	3	Type 6	0	RO	Demand Limit Type Select	–1
GENCONF_nh_end	AV	5	Type 6	0	RO	Night Mode End Hour	–1
GENCONF_nh_limit	AV	6	Type 6	0	RO	Night Capacity Limit	–1
GENCONF_nh_start	AV	4	Type 6	0	RO	Night Mode Start Hour	–1
GENCONF_off_on_d	AV	2	Type 6	0	RO	Unit Off to On Delay	–1
GENCONF_prio_cir	AV	1	Type 6	0	RO	Cir Priority Sequence	–1
GENCONF_ramp_sel	BV	1	Type 4	0	RO	Ramp Loading Enable	–1
GENCONF_shortcyc	BV	3	Type 4	0	RO	Short Cycle Management	–1
GENUNIT_CAP_T	AV	24	Type 5	10	RO	Percent Total Capacity	–1
GENUNIT_CHIL_OCC_rd	BV	7	Type 5	0	RO	Net.: Cmd Occupied	–1
GENUNIT_CHIL_OCC_wr	BV	129	Type 1	0	RW	Chiller occupied?	–1
GENUNIT_CHIL_S_S_rd	BV	6	Type 4	0	RO	Net.: Cmd Start/Stop	–1
GENUNIT_CHIL_S_S_wr	BV	123	Type 1	0	RW	Chiller Start/Stop	–1
GENUNIT_CTRL_PNT_rd	AV	26	Type 5	1	RO	Control Point	–1
GENUNIT_CTRL_PNT_wr	AV	552	Type 2	0	RW	Control Point	–1
GENUNIT_CTRL_TYP	AV	20	Type 6	0	RO	Local=0 Net.=1 Remote=2	–1
GENUNIT_DEM_LIM_rd	AV	27	Type 6	0	RO	Active Demand Limit Val	30000
GENUNIT_DEM_LIM_wr	AV	553	Type 2	0	RW	Demand Limit	–1
GENUNIT_EMSTOP_rd	BV	9	Type 4	0	RO	Emergency Stop	–1
GENUNIT_EMSTOP_wr	BV	126	Type 1	0	RW	Emergency Stop	–1
GENUNIT_min_left	AV	22	Type 6	0	RO	Minutes Left for Start	–1
GENUNIT_min_lim	AV	28	Type 6	0	RO	Demand Limit Minimum	–1
GENUNIT_SP	AV	25	Type 6	0	RO	Current Setpoint	–1
GENUNIT_SP_OCC_rd	BV	8	Type 4	0	RO	Setpoint Occupied?	–1
GENUNIT_SP_OCC_wr	BV	128	Type 1	0	RW	Setpoint Occupied?	–1
GENUNIT_SP_SEL_rd	AV	23	Type 6	0	RO	Setpoint Select	30000
GENUNIT_SP_SEL_wr	AV	554	Type 2	0	RW	Setpoint Select	–1
GENUNIT_STATUS	AV	21	Type 5	0	RO	Run Status	3000
INPUTS_HEATR_SW	BV	19	Type 5	0	RO	Evap Heater Detector	–1
INPUTS_ICE_SW	BV	17	Type 5	0	RO	Ice Done Storage Switch	–1
INPUTS_leak_2_v	AV	65	Type 6	0	RO	Leakage Detector 2	–1
INPUTS_leak_v	AV	64	Type 6	0	RO	Leakage Detector 1	–1
INPUTS_LIM_ANAL	AV	63	Type 6	0	RO	Remote Dem. Limit	–1
INPUTS_LIM_SW1	BV	12	Type 5	0	RO	Limit Switch 1	–1
INPUTS_LIM_SW2	BV	13	Type 5	0	RO	Limit Switch 2	–1
INPUTS_OCC_OVSW	BV	18	Type 5	0	RO	Occupied Override Switch	–1
INPUTS_OIL_L_A	BV	14	Type 5	0	RO	Oil Level Input A	30000
INPUTS_OIL_L_B	BV	15	Type 5	0	RO	Oil Level Input B	30000
INPUTS_ONOFF_SW	BV	10	Type 5	0	RO	Remote On/Off Switch	–1
INPUTS_REM_LOCK	BV	16	Type 5	0	RO	Customer Interlock	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
INPUTS_SETP_SW	BV	11	Type 5	0	RO	Remote Setpoint Switch	–1
INPUTS_SP_RESET	AV	62	Type 6	0	RO	Remote Reset Setpoint	–1
LAST_POR_date_of1	AV	137	Type 6	0	RO	PowerDown 1:day-mon-year	–1
LAST_POR_date_of2	AV	141	Type 6	0	RO	PowerDown 2:day-mon-year	–1
LAST_POR_date_of3	AV	145	Type 6	0	RO	PowerDown 3:day-mon-year	–1
LAST_POR_date_of4	AV	149	Type 6	0	RO	PowerDown 4:day-mon-year	–1
LAST_POR_date_of5	AV	153	Type 6	0	RO	PowerDown 5:day-mon-year	–1
LAST_POR_date_on1	AV	135	Type 6	0	RO	Power On 1 :day-mon-year	–1
LAST_POR_date_on2	AV	139	Type 6	0	RO	Power On 2 :day-mon-year	–1
LAST_POR_date_on3	AV	143	Type 6	0	RO	Power On 3 :day-mon-year	–1
LAST_POR_date_on4	AV	147	Type 6	0	RO	Power On 4 :day-mon-year	–1
LAST_POR_date_on5	AV	151	Type 6	0	RO	Power On 5 :day-mon-year	–1
LAST_POR_time_of1	AV	138	Type 6	0	RO	PowerDown 1:hour-minute	–1
LAST_POR_time_of2	AV	142	Type 6	0	RO	PowerDown 2:hour-minute	–1
LAST_POR_time_of3	AV	146	Type 6	0	RO	PowerDown 3:hour-minute	–1
LAST_POR_time_of4	AV	150	Type 6	0	RO	PowerDown 4:hour-minute	–1
LAST_POR_time_of5	AV	154	Type 6	0	RO	PowerDown 5:hour-minute	–1
LAST_POR_time_on1	AV	136	Type 6	0	RO	Power On 1 :hour-minute	–1
LAST_POR_time_on2	AV	140	Type 6	0	RO	Power On 2 :hour-minute	–1
LAST_POR_time_on3	AV	144	Type 6	0	RO	Power On 3 :hour-minute	–1
LAST_POR_time_on4	AV	148	Type 6	0	RO	Power On 4 :hour-minute	–1
LAST_POR_time_on5	AV	152	Type 6	0	RO	Power On 5 :hour-minute	–1
LIMITS_chdpacta	AV	216	Type 6	0	RO	ENV comp high dp act A	–1
LIMITS_chdpactb	AV	232	Type 6	0	RO	ENV comp high dp act B	–1
LIMITS_chdpstpa	AV	217	Type 6	0	RO	ENV comp high dp stp A	–1
LIMITS_chdpstpb	AV	233	Type 6	0	RO	ENV comp high dp stp B	–1
LIMITS_dgtacta	AV	226	Type 6	0	RO	dgt act A	–1
LIMITS_dgtactb	AV	242	Type 6	0	RO	dgt_act B	–1
LIMITS_dgtstpa	AV	227	Type 6	0	RO	dgt stp A	–1
LIMITS_dgtstpb	AV	243	Type 6	0	RO	dgt_stp B	–1
LIMITS_dshacta	AV	212	Type 6	0	RO	EXV_dsh_act A	–1
LIMITS_dshactb	AV	228	Type 6	0	RO	EXV_dsh_act B	–1
LIMITS_dshstpa	AV	213	Type 6	0	RO	EXV_dsh_stp A	–1
LIMITS_dshstpb	AV	229	Type 6	0	RO	EXV_dsh_stp B	–1
LIMITS_elspacta	AV	214	Type 6	0	RO	EXV_lsp_act A	–1
LIMITS_elspactb	AV	230	Type 6	0	RO	EXV_lsp_act B	–1
LIMITS_elspstpa	AV	215	Type 6	0	RO	EXV_lsp_stp A	–1
LIMITS_elspstpb	AV	231	Type 6	0	RO	EXV_lsp_stp B	–1
LIMITS_fhdpacta	AV	218	Type 6	0	RO	ENV fan high dp act A	–1
LIMITS_fhdpactb	AV	234	Type 6	0	RO	ENV fan high dp act B	–1
LIMITS_fhdpstpa	AV	219	Type 6	0	RO	ENV fan high dp stp A	–1
LIMITS_fhdpstpb	AV	235	Type 6	0	RO	ENV fan high dp stp B	–1
LIMITS_hspacta	AV	222	Type 6	0	RO	ENV high sp act A	–1
LIMITS_hspactb	AV	238	Type 6	0	RO	ENV high sp act B	–1
LIMITS_hspstpa	AV	223	Type 6	0	RO	ENV high sp stp A	–1
LIMITS_hspstpb	AV	239	Type 6	0	RO	ENV high sp stp B	–1
LIMITS_ldpacta	AV	220	Type 6	0	RO	ENV low dp act A	–1
LIMITS_ldpactb	AV	236	Type 6	0	RO	ENV low dp act B	–1
LIMITS_ldpstpa	AV	221	Type 6	0	RO	ENV low dp stp A	–1
LIMITS_ldpstpb	AV	237	Type 6	0	RO	ENV low dp stp B	–1
LIMITS_lspacta	AV	224	Type 6	0	RO	ENV low sp act A	–1
LIMITS_lspactb	AV	240	Type 6	0	RO	ENV low sp act B	–1
LIMITS_lspdcpa	AV	558	Type 6	0	RO	ENV low sp delta A	–1
LIMITS_lspdcpb	AV	559	Type 6	0	RO	ENV low sp delta B	–1
LIMITS_lspstpa	AV	225	Type 6	0	RO	ENV low sp stp A	–1
LIMITS_lspstpb	AV	241	Type 6	0	RO	ENV low sp stp B	–1
M_MSTSLV_cap_max	BV	81	Type 4	0	RO	Max Available Capacity ?	–1
M_MSTSLV_l_strt_d	AV	181	Type 6	0	RO	Lag Start Delay	–1
M_MSTSLV_lagstat	AV	184	Type 6	0	RO	Slave lagstat	–1
M_MSTSLV_lead_sel	BV	78	Type 4	0	RO	Lead Unit is the:	–1
M_MSTSLV_ll_chang	BV	79	Type 4	0	RO	Lead/lag Changeover?	–1
M_MSTSLV_ll_hr_d	AV	182	Type 6	0	RO	Lead/lag Hours Delta	–1
M_MSTSLV_ll_pull	BV	80	Type 4	0	RO	Lead Pulldown ?	–1
M_MSTSLV_ms_activ	BV	77	Type 4	0	RO	Master/Slave Ctrl Active	–1
M_MSTSLV_ms_error	AV	183	Type 6	0	RO	Master/Slave Error	–1
M_MSTSLV_slav_ewt	AV	186	Type 6	0	RO	Slave Evap Ent. Fluid	–1
M_MSTSLV_slav_hr	AV	185	Type 6	0	RO	Slave Operating Hours	–1
M_MSTSLV_slav_lwt	AV	187	Type 6	0	RO	Slave Evap Leav. Fluid	–1
M_MSTSLV_slv_capt	AV	180	Type 6	0	RO	Slave Chiller Total Cap	–1
M_MSTSLV_slv_stat	AV	179	Type 6	0	RO	Slave Chiller State	–1
MODES_m_2stpt	BV	64	Type 5	0	RO	Second Setpoint In Use	–1
MODES_m_delay	BV	63	Type 5	0	RO	Start Up Delay In Effect	–1
MODES_m_demlim	BV	66	Type 5	0	RO	Demand Limit Active	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
MODES_m_ice	BV	71	Type 5	0	RO	Ice Mode In Effect	–1
MODES_m_night	BV	69	Type 5	0	RO	Night Low Noise Active	–1
MODES_m_pmpper	BV	68	Type 5	0	RO	Pump Periodic Start	–1
MODES_m_pmprot	BV	67	Type 5	0	RO	Evaporator Pump Rotation	–1
MODES_m_reset	BV	65	Type 5	0	RO	Reset In Effect	–1
MODES_m_slave	BV	70	Type 5	0	RO	Master Slave Active	–1
MST_SLV_lag_mini	AV	397	Type 6	0	RO	Lag Minimum Running Time	–1
MST_SLV_lag_pump	AV	398	Type 6	0	RO	Lag Unit Pump Control	–1
MST_SLV_lead_pul	AV	395	Type 6	0	RO	Lead Pulldown Time	–1
MST_SLV_lead_sel	AV	392	Type 6	0	RO	Lead Lag Select	–1
MST_SLV_ll_bal_d	AV	393	Type 6	0	RO	Lead/Lag Balance Delta	–1
MST_SLV_ll_serie	BV	116	Type 4	0	RO	Chiller In Series	–1
MST_SLV_lstr_tim	AV	394	Type 6	0	RO	Lead/Lag Start Timer	–1
MST_SLV_ms_ctrl	AV	390	Type 6	0	RO	Master Control Type	–1
MST_SLV_ms_sel	AV	389	Type 6	0	RO	Master/Slave Select	–1
MST_SLV_slv_addr	AV	391	Type 6	0	RO	Slave Address	–1
MST_SLV_start_dt	AV	396	Type 6	0	RO	Start If Error Higher	–1
OUTPUTS_ALARM	BV	34	Type 5	0	RO	Alarm Relay Status	–1
OUTPUTS_ALERT	BV	36	Type 5	0	RO	Alert Relay State	–1
OUTPUTS_BOX_HTR	BV	57	Type 5	0	RO	Control Box Heater	–1
OUTPUTS_C_HEATER	BV	38	Type 5	0	RO	Evap Heater Output	–1
OUTPUTS_CAPT_010	AV	70	Type 6	0	RO	Chiller Capacity Signal	–1
OUTPUTS_CAPT010A	AV	66	Type 6	0	RO	Capacity Signal Cir A	–1
OUTPUTS_CAPT010B	AV	68	Type 6	0	RO	Capacity Signal Cir B	–1
OUTPUTS_CP_A	BV	21	Type 5	0	RO	Compressor A	–1
OUTPUTS_CP_B	BV	28	Type 5	0	RO	Compressor B	–1
OUTPUTS_FCA1	BV	39	Type 5	0	RO	Fan Contactor 1A	–1
OUTPUTS_FCA2	BV	40	Type 5	0	RO	Fan Contactor 2A	–1
OUTPUTS_FCA3	BV	41	Type 5	0	RO	Fan Contactor 3A	–1
OUTPUTS_FCA4	BV	42	Type 5	0	RO	Fan Contactor 4A	–1
OUTPUTS_FCA5	BV	43	Type 5	0	RO	Fan Contactor 5A	–1
OUTPUTS_FCA6	BV	44	Type 5	0	RO	Fan Contactor 6A	–1
OUTPUTS_FCA7	BV	45	Type 5	0	RO	Fan Contactor 7A	–1
OUTPUTS_FCA8	BV	46	Type 5	0	RO	Fan Contactor 8A	–1
OUTPUTS_FCB1	BV	47	Type 5	0	RO	Fan Contactor 1B	–1
OUTPUTS_FCB2	BV	48	Type 5	0	RO	Fan Contactor 2B	–1
OUTPUTS_FCB3	BV	49	Type 5	0	RO	Fan Contactor 3B	–1
OUTPUTS_FCB4	BV	50	Type 5	0	RO	Fan Contactor 4B	–1
OUTPUTS_FCB5	BV	51	Type 5	0	RO	Fan Contactor 5B	–1
OUTPUTS_FCB6	BV	52	Type 5	0	RO	Fan Contactor 6B	–1
OUTPUTS_FCB7	BV	53	Type 5	0	RO	Fan Contactor 7B	–1
OUTPUTS_FCB8	BV	54	Type 5	0	RO	Fan Contactor 8B	–1
OUTPUTS_ISO_OP_A	BV	24	Type 5	0	RO	Ref Iso Relay Energize A	–1
OUTPUTS_ISO_OP_B	BV	31	Type 5	0	RO	Ref Iso Relay Energize B	–1
OUTPUTS_ISO_POSA	BV	25	Type 5	0	RO	Ref Iso Valve State A	–1
OUTPUTS_ISO_POSB	BV	32	Type 5	0	RO	Ref Iso Valve State B	–1
OUTPUTS_LABEL_A	BV	20	Type 5	0	RO	CIRCUIT A	–1
OUTPUTS_LABEL_B	BV	27	Type 5	0	RO	CIRCUIT B	–1
OUTPUTS_OIL_HT_A	BV	26	Type 5	0	RO	Oil Heater Output A	–1
OUTPUTS_OIL_HT_B	BV	33	Type 5	0	RO	Oil Heater Output B	–1
OUTPUTS_OIL_SL_A	BV	22	Type 5	0	RO	Oil Solenoid Output A	–1
OUTPUTS_OIL_SL_B	BV	29	Type 5	0	RO	Oil Solenoid Output B	–1
OUTPUTS_RUNNING	BV	35	Type 5	0	RO	Running Relay Status	–1
OUTPUTS_SHUTDOWN	BV	37	Type 5	0	RO	Shutdown Indicator State	–1
OUTPUTS_VFAN_A	AV	67	Type 6	0	RO	VariFan Speed A	–1
OUTPUTS_VFAN_B	AV	69	Type 6	0	RO	VariFan Speed B	–1
OUTPUTS_VFD_EN_A	BV	55	Type 5	0	RO	Comp. HW Enable A	–1
OUTPUTS_VFD_EN_B	BV	56	Type 5	0	RO	Comp. HW Enable B	–1
OUTPUTS_VI_A	BV	23	Type 5	0	RO	VI Solenoid Output A	–1
OUTPUTS_VI_B	BV	30	Type 5	0	RO	VI Solenoid Output B	–1
PRESSURE_DOP_A	AV	53	Type 5	15	RO	Delta Oil Pressure A	–1
PRESSURE_DOP_B	AV	59	Type 5	15	RO	Delta Oil Pressure B	–1
PRESSURE_DP_A	AV	50	Type 5	15	RO	Discharge Pressure A	–1
PRESSURE_DP_B	AV	56	Type 5	15	RO	Discharge Pressure B	–1
PRESSURE_ECO_P_A	AV	54	Type 5	15	RO	Economizer Pressure A	30000
PRESSURE_ECO_P_B	AV	60	Type 5	15	RO	Economizer Pressure B	30000
PRESSURE_LIQ_P_A	AV	55	Type 5	15	RO	Liquid Pressure A	–1
PRESSURE_LIQ_P_B	AV	61	Type 5	15	RO	Liquid Pressure B	–1
PRESSURE_OP_A	AV	52	Type 5	15	RO	Oil Pressure A	–1
PRESSURE_OP_B	AV	58	Type 5	15	RO	Oil Pressure B	–1
PRESSURE_SP_A	AV	51	Type 5	15	RO	Main Suction Pressure A	–1
PRESSURE_SP_B	AV	57	Type 5	15	RO	Main Suction Pressure B	–1
PUMPCONF_cpumpseq	AV	7	Type 6	0	RO	Evap Pumps Sequence	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
PUMPCONF_pump_del	AV	8	Type 6	0	RO	Pump Auto Rotation Delay	–1
PUMPCONF_pump_loc	BV	5	Type 4	0	RO	Flow Checked If Pump Off	–1
PUMPCONF_pump_per	BV	4	Type 4	0	RO	Pump Sticking Protection	–1
PUMPSTAT_CPUMP_1_rd	BV	58	Type 5	0	RO	Evap Pump #1 Command	–1
PUMPSTAT_CPUMP_1_wr	BV	124	Type 1	0	RW	Evaporator pump 1	–1
PUMPSTAT_CPUMP_2_rd	BV	59	Type 5	0	RO	Evap Pump #2 Command	–1
PUMPSTAT_CPUMP_2_wr	BV	125	Type 1	0	RW	Evaporator pump 2	–1
PUMPSTAT_FLOW_SW	BV	61	Type 5	0	RO	Evap Flow Switch #1	–1
PUMPSTAT_FLOW_SWB	BV	62	Type 5	0	RO	Evap Flow Switch #2	–1
PUMPSTAT_ROTCPUMP_rd	BV	60	Type 5	0	RO	Rotate Evap Pumps ?	–1
PUMPSTAT_ROTCPUMP_wr	BV	127	Type 1	0	RW	Rotate Evap Pumps ?	–1
RESETCFG_cr_deg	AV	19	Type 6	0	RO	Cooling Reset Deg. Value	–1
RESETCFG_cr_sel	AV	10	Type 6	0	RO	Cooling Reset Select	–1
RESETCFG_dt_cr_fu	AV	14	Type 6	0	RO	Delta T Full Reset Value	–1
RESETCFG_dt_cr_no	AV	13	Type 6	0	RO	Delta T No Reset Value	–1
RESETCFG_oat_crfu	AV	12	Type 6	0	RO	OAT Full Reset Value	–1
RESETCFG_oat_crno	AV	11	Type 6	0	RO	OAT No Reset Value	–1
RESETCFG_spacr_fu	AV	18	Type 6	0	RO	Space T Full Reset Value	–1
RESETCFG_spacr_no	AV	17	Type 6	0	RO	Space T No Reset Value	–1
RESETCFG_v_cr_fu	AV	16	Type 6	0	RO	Current Full Reset Value	–1
RESETCFG_v_cr_no	AV	15	Type 6	0	RO	Current No Reset Value	–1
RUNTIME_HR_CP_A	AV	73	Type 6	0	RO	Compressor A Hours	360000
RUNTIME_HR_CP_B	AV	75	Type 6	0	RO	Compressor B Hours	360000
RUNTIME_hr_cpum1	AV	77	Type 6	0	RO	Evap Pump #1 Hours	–1
RUNTIME_hr_cpum2	AV	78	Type 6	0	RO	Evap Pump #2 Hours	–1
RUNTIME_HR_MACH	AV	71	Type 6	0	RO	Machine Operating Hours	360000
RUNTIME_hrfana01	AV	81	Type 6	0	RO	Circuit A Fan #1 Hours	–1
RUNTIME_hrfana02	AV	82	Type 6	0	RO	Circuit A Fan #2 Hours	–1
RUNTIME_hrfana03	AV	83	Type 6	0	RO	Circuit A Fan #3 Hours	–1
RUNTIME_hrfana04	AV	84	Type 6	0	RO	Circuit A Fan #4 Hours	–1
RUNTIME_hrfana05	AV	85	Type 6	0	RO	Circuit A Fan #5 Hours	–1
RUNTIME_hrfana06	AV	86	Type 6	0	RO	Circuit A Fan #6 Hours	–1
RUNTIME_hrfana07	AV	87	Type 6	0	RO	Circuit A Fan #7 Hours	–1
RUNTIME_hrfana08	AV	88	Type 6	0	RO	Circuit A Fan #8 Hours	–1
RUNTIME_hrfana09	AV	89	Type 6	0	RO	Circuit A Fan #9 Hours	–1
RUNTIME_hrfana10	AV	90	Type 6	0	RO	Circuit A Fan #10 Hours	–1
RUNTIME_hrfana11	AV	91	Type 6	0	RO	Circuit A Fan #11 Hours	–1
RUNTIME_hrfana12	AV	92	Type 6	0	RO	Circuit A Fan #12 Hours	–1
RUNTIME_hrfana13	AV	93	Type 6	0	RO	Circuit A Fan #13 Hours	–1
RUNTIME_hrfana14	AV	94	Type 6	0	RO	Circuit A Fan #14 Hours	–1
RUNTIME_hrfanb01	AV	95	Type 6	0	RO	Circuit B Fan #1 Hours	–1
RUNTIME_hrfanb02	AV	96	Type 6	0	RO	Circuit B Fan #2 Hours	–1
RUNTIME_hrfanb03	AV	97	Type 6	0	RO	Circuit B Fan #3 Hours	–1
RUNTIME_hrfanb04	AV	98	Type 6	0	RO	Circuit B Fan #4 Hours	–1
RUNTIME_hrfanb05	AV	99	Type 6	0	RO	Circuit B Fan #5 Hours	–1
RUNTIME_hrfanb06	AV	100	Type 6	0	RO	Circuit B Fan #6 Hours	–1
RUNTIME_hrfanb07	AV	101	Type 6	0	RO	Circuit B Fan #7 Hours	–1
RUNTIME_hrfanb08	AV	102	Type 6	0	RO	Circuit B Fan #8 Hours	–1
RUNTIME_hrfanb09	AV	103	Type 6	0	RO	Circuit B Fan #9 Hours	–1
RUNTIME_hrfanb10	AV	104	Type 6	0	RO	Circuit B Fan #10 Hours	–1
RUNTIME_hrfanb11	AV	105	Type 6	0	RO	Circuit B Fan #11 Hours	–1
RUNTIME_hrfanb12	AV	106	Type 6	0	RO	Circuit B Fan #12 Hours	–1
RUNTIME_hrfanb13	AV	107	Type 6	0	RO	Circuit B Fan #13 Hours	–1
RUNTIME_hrfanb14	AV	108	Type 6	0	RO	Circuit B Fan #14 Hours	–1
RUNTIME_st_cp_a	AV	74	Type 6	0	RO	Compressor A Starts	360000
RUNTIME_st_cp_b	AV	76	Type 6	0	RO	Compressor B Starts	360000
RUNTIME_st_mach	AV	72	Type 6	0	RO	Machine Starts	360000
RUNTIME_VIctA	AV	79	Type 6	0	RO	VI Cycle Count A	–1
RUNTIME_VIctB	AV	80	Type 6	0	RO	VI Cycle Count B	–1
SERVICE1_AntiFrz	BV	113	Type 4	0	RO	Pump Rot. AntiFrz Protec	–1
SERVICE1_apr_en	AV	555	Type 6	0	RO	Approach Ctrl at Start?	–1
SERVICE1_auto_sm	BV	111	Type 4	0	RO	Auto Start When SM Lost	–1
SERVICE1_cdrv_cfg	BV	110	Type 4	0	RO	Send comp. drive config?	–1
SERVICE1_ewt_cirA	AV	338	Type 6	0	RO	EWT Probe on Cir A Side	–1
SERVICE1_ewt_opt	BV	105	Type 4	0	RO	Entering Fluid Control	–1
SERVICE1_fastcapr	AV	337	Type 6	0	RO	Fast Capacity Recovery	–1
SERVICE1_fdrv_cfg	BV	109	Type 4	0	RO	Send fan drive config?	–1
SERVICE1_flui_typ	AV	334	Type 6	0	RO	Evaporator Fluid Type	–1
SERVICE1_freez_ov	AV	342	Type 6	0	RO	Freeze Override Offset	–1
SERVICE1_freezesp	AV	335	Type 6	0	RO	Brine Freeze Setpoint	–1
SERVICE1_heatersp	AV	341	Type 6	0	RO	Evap Heater Delta Spt	–1
SERVICE1_leak_thr	AV	339	Type 6	0	NA	Leakage Charge Threshold	–1
SERVICE1_leak_tmr	AV	340	Type 6	0	RO	Leakage Charge Timer	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
SERVICE1_metric	BV	108	Type 4	0	RO	Metric Units? (Blackbox)	–1
SERVICE1_mini_lwt	AV	336	Type 6	0	RO	Brine Minimum Fluid Temp	–1
SERVICE1_odrecspd	AV	346	Type 6	0	RO	Oil Delta Recover Speed	–1
SERVICE1_odtrspd	AV	344	Type 6	0	RO	Oil Delta Trigger Speed	–1
SERVICE1_orectim	AV	347	Type 6	0	RO	Oil Recover Time	–1
SERVICE1_otrigtim	AV	345	Type 6	0	RO	Oil Trigger Time	–1
SERVICE1_RFI_conf	BV	107	Type 4	0	RO	Compressor RFI Filter En	–1
SERVICE1_ser_pass	BV	106	Type 4	0	RO	Service Password	–1
SERVICE1_ViChkEn	BV	112	Type 4	0	RW	VI Self-Test Enable	–1
SERVICE1_ViPwrChk	AV	343	Type 6	0	RW	VI Self-Test Threshold	–1
SERVICE1_vistrtdt	AV	349	Type 6	0	RO	High VI Time at Start	–1
SERVICE1_vistrten	AV	350	Type 6	0	RO	Enable High VI at Start	–1
SERVICE1_wateesys	AV	348	Type 6	0	RO	Water Temp Hysteresis	–1
SETPOINT_cramp_sp	AV	548	Type 6	0	RW	Cooling Ramp Loading	–1
SETPOINT_csp1	AV	545	Type 6	0	RW	Cooling Setpoint 1	–1
SETPOINT_csp2	AV	546	Type 6	0	RW	Cooling Setpoint 2	–1
SETPOINT_ice_sp	AV	547	Type 6	0	RW	Cooling Ice Setpoint	–1
SETPOINT_lim_sp1	AV	549	Type 6	0	RW	Switch Limit Setpoint 1	–1
SETPOINT_lim_sp2	AV	550	Type 6	0	RW	Switch Limit Setpoint 2	–1
SETPOINT_lim_sp3	AV	551	Type 6	0	RW	Switch Limit Setpoint 3	–1
tab621_cap_max_flag	AV	564	Type 5	0	RO	FSM unit capacity fully loaded	–1
tab621_chil_cap	AV	563	Type 5	0	RO	FSM Percent unit total capacity	–1
tab621_chilstat	AV	562	Type 5	0	RO	FSM chiler status	–1
TEMP_CHWSTEMP	AV	49	Type 5	2	RO	Chill Water Temp (Opt.)	–1
TEMP_COOL_EWT	AV	29	Type 5	2	RO	Evap Entering Fluid	30000
TEMP_COOL_LWT	AV	30	Type 5	2	RO	Evap Leaving Fluid	30000
TEMP_CP_TMP_A	AV	37	Type 5	2	RO	Motor Temperature Cir A	30000
TEMP_CP_TMP_B	AV	45	Type 5	2	RO	Motor Temperature Cir B	30000
TEMP_DGT_A	AV	36	Type 5	2	RO	Discharge Gas Temp Cir A	30000
TEMP_DGT_B	AV	44	Type 5	2	RO	Discharge Gas Temp Cir B	30000
TEMP_ECO_T_A	AV	38	Type 5	2	RO	EXV Eco. Tmp Cir A	30000
TEMP_ECO_T_B	AV	46	Type 5	2	RO	EXV Eco. Tmp Cir B	30000
TEMP_LIQ_T_A	AV	39	Type 5	2	RO	Liquid Temperature A	–1
TEMP_LIQ_T_B	AV	47	Type 5	2	RO	Liquid Temperature B	–1
TEMP_OAT	AV	31	Type 5	2	RO	Outdoor Air Temperature	30000
TEMP_SCT_A	AV	32	Type 5	2	RO	Saturated Cond Tmp Cir A	30000
TEMP_SCT_B	AV	40	Type 5	2	RO	Saturated Cond Tmp Cir B	30000
TEMP_SLT_A	AV	34	Type 5	2	RO	Saturated Liquid Temp A	–1
TEMP_SLT_B	AV	42	Type 5	2	RO	Saturated Liquid Temp B	–1
TEMP_SPACETMP	AV	48	Type 5	2	RO	Space Temp (Opt.)	–1
TEMP_SST_A	AV	33	Type 5	2	RO	Saturated Suction Temp A	30000
TEMP_SST_B	AV	41	Type 5	2	RO	Saturated Suction Temp B	30000
TEMP_SUCT_A	AV	35	Type 5	2	RO	Compressor Suction Tmp A	–1
TEMP_SUCT_B	AV	43	Type 5	2	RO	Compressor Suction Tmp B	–1
UNIT_Status	MV	21	Type 5	0	RO	UNIT_Status	30000
UPDTHOUR_hr_cp_a	AV	353	Type 6	0	RO	Compressor A Hours	–1
UPDTHOUR_hr_cp_b	AV	355	Type 6	0	RO	Compressor B Hours	–1
UPDTHOUR_hr_cpum1	AV	357	Type 6	0	RO	Evap Pump #1 Hours	–1
UPDTHOUR_hr_cpum2	AV	358	Type 6	0	RO	Evap Pump #2 Hours	–1
UPDTHOUR_hr_mach	AV	351	Type 6	0	RO	Machine Operating Hours	–1
UPDTHOUR_hrfana01	AV	361	Type 6	0	RO	Circuit A Fan #1 Hours	–1
UPDTHOUR_hrfana02	AV	362	Type 6	0	RO	Circuit A Fan #2 Hours	–1
UPDTHOUR_hrfana03	AV	363	Type 6	0	RO	Circuit A Fan #3 Hours	–1
UPDTHOUR_hrfana04	AV	364	Type 6	0	RO	Circuit A Fan #4 Hours	–1
UPDTHOUR_hrfana05	AV	365	Type 6	0	RO	Circuit A Fan #5 Hours	–1
UPDTHOUR_hrfana06	AV	366	Type 6	0	RO	Circuit A Fan #6 Hours	–1
UPDTHOUR_hrfana07	AV	367	Type 6	0	RO	Circuit A Fan #7 Hours	–1
UPDTHOUR_hrfana08	AV	368	Type 6	0	RO	Circuit A Fan #8 Hours	–1
UPDTHOUR_hrfana09	AV	369	Type 6	0	RO	Circuit A Fan #9 Hours	–1
UPDTHOUR_hrfana10	AV	370	Type 6	0	RO	Circuit A Fan #10 Hours	–1
UPDTHOUR_hrfana11	AV	371	Type 6	0	RO	Circuit A Fan #11 Hours	–1
UPDTHOUR_hrfana12	AV	372	Type 6	0	RO	Circuit A Fan #12 Hours	–1
UPDTHOUR_hrfana13	AV	373	Type 6	0	RO	Circuit A Fan #13 Hours	–1
UPDTHOUR_hrfana14	AV	374	Type 6	0	RO	Circuit A Fan #14 Hours	–1
UPDTHOUR_hrfanb01	AV	375	Type 6	0	RO	Circuit B Fan #1 Hours	–1
UPDTHOUR_hrfanb02	AV	376	Type 6	0	RO	Circuit B Fan #2 Hours	–1
UPDTHOUR_hrfanb03	AV	377	Type 6	0	RO	Circuit B Fan #3 Hours	–1
UPDTHOUR_hrfanb04	AV	378	Type 6	0	RO	Circuit B Fan #4 Hours	–1
UPDTHOUR_hrfanb05	AV	379	Type 6	0	RO	Circuit B Fan #5 Hours	–1
UPDTHOUR_hrfanb06	AV	380	Type 6	0	RO	Circuit B Fan #6 Hours	–1
UPDTHOUR_hrfanb07	AV	381	Type 6	0	RO	Circuit B Fan #7 Hours	–1
UPDTHOUR_hrfanb08	AV	382	Type 6	0	RO	Circuit B Fan #8 Hours	–1
UPDTHOUR_hrfanb09	AV	383	Type 6	0	RO	Circuit B Fan #9 Hours	–1

APPENDIX E — BACNET IP AND MS/TP POINTS (cont)

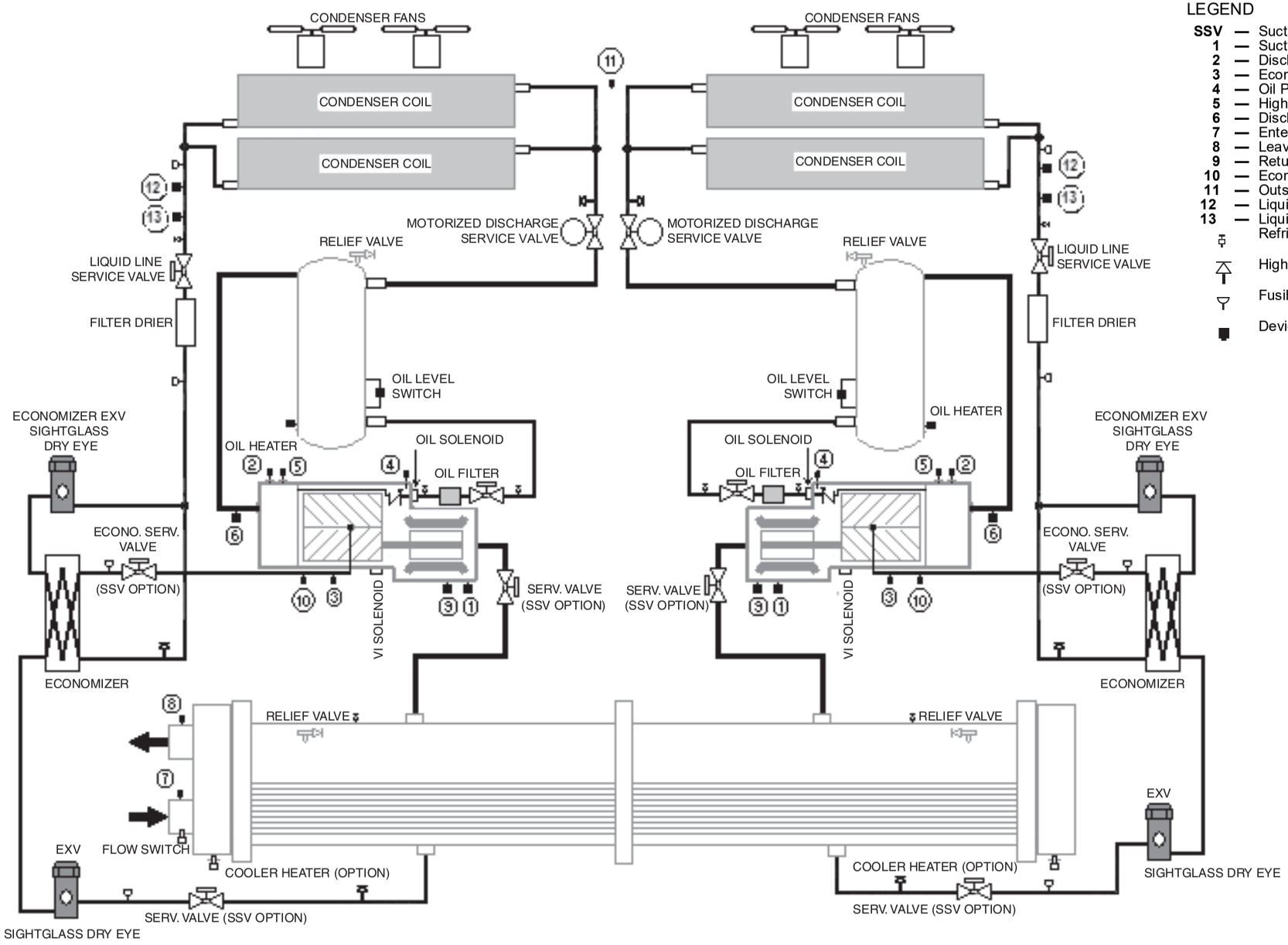
OBJECT NAME	TYPE	INSTANCE	OPTION	COVINC	PV ACCESS	DESCRIPTION	LOG INTERVAL
UPDTHOUR_hrfanb10	AV	384	Type 6	0	RO	Circuit B Fan #10 Hours	–1
UPDTHOUR_hrfanb11	AV	385	Type 6	0	RO	Circuit B Fan #11 Hours	–1
UPDTHOUR_hrfanb12	AV	386	Type 6	0	RO	Circuit B Fan #12 Hours	–1
UPDTHOUR_hrfanb13	AV	387	Type 6	0	RO	Circuit B Fan #13 Hours	–1
UPDTHOUR_hrfanb14	AV	388	Type 6	0	RO	Circuit B Fan #14 Hours	–1
UPDTHOUR_st_cp_a	AV	354	Type 6	0	RO	Compressor A Starts	–1
UPDTHOUR_st_cp_b	AV	356	Type 6	0	RO	Compressor B Starts	–1
UPDTHOUR_st_mach	AV	352	Type 6	0	RO	Machine Starts Number	–1
UPDTHOUR_VIctA	AV	359	Type 6	0	RO	VI Cycle Count A	–1
UPDTHOUR_VIctB	AV	360	Type 6	0	RO	VI Cycle Count B	–1
USERCONF_use_pass	AV	9	Type 6	0	RW	User Password	–1
VLT_DRV_drv_CCTa	AV	123	Type 6	0	RO	Cir A Drive Ctrl Card T	–1
VLT_DRV_drv_CCTb	AV	133	Type 6	0	RO	Cir B Drive Ctrl Card T	–1
VLT_DRV_drv_DCVa	AV	121	Type 6	0	RO	Cir A Drive DC Link Volt	–1
VLT_DRV_drv_DCVb	AV	131	Type 6	0	RO	Cir B Drive DC Link Volt	–1
VLT_DRV_drv_Fa	AV	119	Type 6	0	RO	Cir A Drive Frequency	30000
VLT_DRV_drv_Fb	AV	129	Type 6	0	RO	Cir B Drive Frequency	30000
VLT_DRV_drv_HSTa	AV	122	Type 6	0	RO	Cir A Drive Heat Sink T	–1
VLT_DRV_drv_HSTb	AV	132	Type 6	0	RO	Cir B Drive Heat Sink T	–1
VLT_DRV_drv_HTRa	AV	124	Type 6	0	RO	Cir A Drive Heater	–1
VLT_DRV_drv_HTRb	AV	134	Type 6	0	RO	Cir B Drive Heater	–1
VLT_DRV_drv_Ia	AV	116	Type 6	0	RO	Cir A Drive Amps	30000
VLT_DRV_drv_Ib	AV	126	Type 6	0	RO	Cir B Drive Amps	30000
VLT_DRV_drv_pwr	AV	557	Type 1	0	RO	Total Comp Drive Power	30000
VLT_DRV_drv_pwra	AV	115	Type 6	0	RO	Cir A Drive Power	30000
VLT_DRV_drv_pwrb	AV	125	Type 6	0	RO	Cir B Drive Power	30000
VLT_DRV_drv_Sa	AV	118	Type 6	0	RO	Cir A Drive Speed	–1
VLT_DRV_drv_Sb	AV	128	Type 6	0	RO	Cir B Drive Speed	–1
VLT_DRV_drv_Ta	AV	120	Type 6	0	RO	Cir A Drive Torque	–1
VLT_DRV_drv_Tb	AV	130	Type 6	0	RO	Cir B Drive Torque	–1
VLT_DRV_drv_Va	AV	117	Type 6	0	RO	Cir A Drive Voltage	–1
VLT_DRV_drv_Vb	AV	127	Type 6	0	RO	Cir B Drive Voltage	–1
VLT_DRV_SET_DRVA	BV	73	Type 5	0	RO	Drive A Attach	–1
VLT_DRV_SET_DRVB	BV	74	Type 5	0	RO	Drive B Attach	–1
VLT_DRV_VLT_COMA	BV	75	Type 5	0	RO	Comm with Drive A Ok	–1
VLT_DRV_VLT_COMB	BV	76	Type 5	0	RO	Comm with Drive B Ok	–1

LEGEND

AV — Analog Value
BV — Binary Value
CMD — Command
COV — Change of Value
IR — Intrinsic Reporting
RO — Read Only
RW — Read Write
TL — Trend Log

APPENDIX F — PIPING AND INSTRUMENTATION

30XV140-325 Units



LEGEND

SSV	—	Suction Service Valve
1	—	Suction Pressure
2	—	Discharge Pressure
3	—	Economizer Pressure
4	—	Oil Pressure
5	—	High Pressure Switch
6	—	Discharge Gas Thermistor
7	—	Entering Water Thermistor
8	—	Leaving Water Thermistor
9	—	Return Gas Thermistor
10	—	Economizer Gas Thermistor
11	—	Outside Air Thermistor
12	—	Liquid Line Thermistor
13	—	Liquid Pressure

Refrigerant Access Fitting

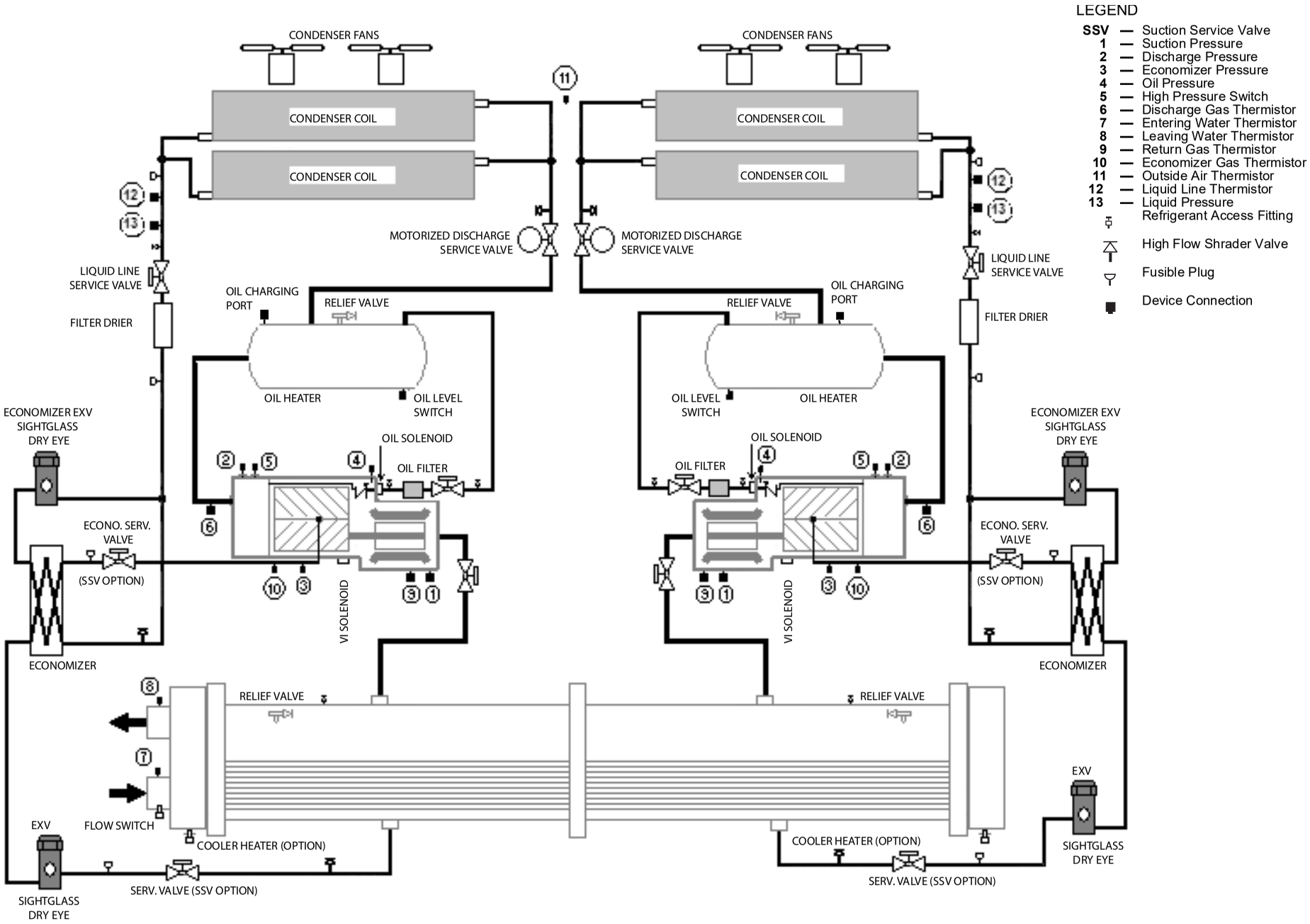
High Flow Shrader Valve

Fusible Plug

Device Connection

APPENDIX F — PIPING AND INSTRUMENTATION (cont)

30XV350-500 Units



APPENDIX G — MAINTENANCE SUMMARY AND LOG SHEETS

30XV Monthly Maintenance Log

Month			1	2	3	4	5	6	7	8	9	10	11	12
Date			/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Operator														
UNIT SECTION	**ACTION**	**UNIT**	**ENTRY**											
Compressor	Change Oil Filter (Screw Compressors)	yes/no	Year 1 then As Needed											
	Send Oil Sample Out for Analysis	yes/no	Annually											
	Leak Test	yes/no												
	Check Oil Separator Heater		Every 3 months											
	Check Oil Filter Pressure Drop		Every 3 months											
	Check Glycol Concentration		Annually											
Evaporator	Inspect and Clean Evaporator Tubes	yes/no	Every 3 to 5 Years											
	Inspect Evaporator Heater	amps	Annually											
	Inspect Relief Valves	yes/no	Annually											
	Leak Test	yes/no												
	Record Water Pressure Differential (PSI)	PSI												
	Check glycol concentration		Annually											
	Eddy Current Test	yes/no	Every 3 to 5 Years											
Condenser	Leak Test	yes/no												
	Inspect and Clean Condenser Coils	yes/no												
	Check condenser fan operation and condition		Every 3 months											
	Inspect Relief Valves	yes/no												
Controls	General Cleaning and Tightening Connections	yes/no	Annually											
	Check Pressure Transducers for Accuracy	yes/no	Annually											
	Verify Flow Switch Operation	yes/no	Every 3 months											
	Confirm Accuracy of Thermistors	yes/no	Annually											
Electrical	General Tightening and Cleaning Connections	yes/no	Annually											
	Inspect All Contactors	yes/no	Annually											
System	Check Refrigerant Charge	yes/no	Annually											
	Verify Operation of EXVs	yes/no												
	Check moisture indicating sight glass													
	Check refrigerant joints and valves for leaks		Every 3 months											
	Check filter drier for pressure drop		Annually											
	Check chilled water strainers		Annually											
	Record System Superheat	deg. F												
Compressor VFD	Clean or replace drive filters	yes/no												
All VFD	Check cooling fan operation	yes/no												
	Verify heat sinks are clear of debris	yes/no	Every 3 months											

NOTE: Equipment failures caused by lack of adherence to the Maintenance Interval Requirements are not covered under warranty.

APPENDIX G — MAINTENANCE SUMMARY AND LOG SHEETS (cont)

30XV Seasonal Shutdown Log

Month		1	2	3	4	5	6	7	8	9	10	11	12
Date		/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Operator													
UNIT SECTION	ACTION	ENTRY											
Evaporator	Isolate and Drain Waterbox/Evaporator												
	Add Glycol/Water Mixture to Prevent Freeze-up												
Controls	Do Not Disconnect Control Power												

NOTE: Equipment failures caused by lack of adherence to the Maintenance Interval Requirements are not covered under warranty.

APPENDIX H — EVAPORATOR HEATER SENSOR SET POINT

Evaporator Heater Sensor Set Point

Cooler Heater CSR Settings						
Tonnage	Tier	Setpoint [Amps]				
		Model 12th Digit 0,1,B No Pump	Model 12th Digit 2,C No Pump	Model 12th Digit 3 No Pump	Model 12th Digit 4,5,6,7,D,F,J,K,L,M Pump Option	Model 12th Digit 8,9,G,N,P Pump Option
140 - 180	ALL	5.2	5.2	5.2	10.4	10.4
200	S	5.2	5.2	NA	10.4	10.4
200	M, H	10.4	5.2	5.2	15.6	10.4
225 - 325	All	10.4	10.4	10.4	15.6	15.6
350 - 500	All	10.4	10.4	10.4	NA	NA

APPENDIX I — CARRIER CONTROLLER WEB AND NETWORK INTERFACE PARAMETERS

Web Interface

The Carrier Controller can be accessed via a web browser. The layout of the web interface is similar to the Carrier Controller interface. Connection is made from the PC using the web browser with java installed.

NOTE: Start/Stop a machine is not authorized through a web connection for security reasons.

IMPORTANT: Use firewalls and VPN for a secure connection.

MINIMUM WEB BROWSER CONFIGURATION

Internet Explorer (Version: 11.0 or Higher or Chrome (Version 65.0 or Higher) Mozilla Firefox (Version 65.0 or Higher).

Setup Menu

The Setup Menu allows users to modify settings such as network information The Setup menu can be accessed at any time via the controller. To access the Setup Menu, press anywhere on the Main Menu screen (by default, the Setup Menu is password-protected).

To browse and modify the unit IP address, follow these steps:

1. Begin at the home screen on the controller by selecting the HOME icon in the upper left corner of the screen. See Fig. A.

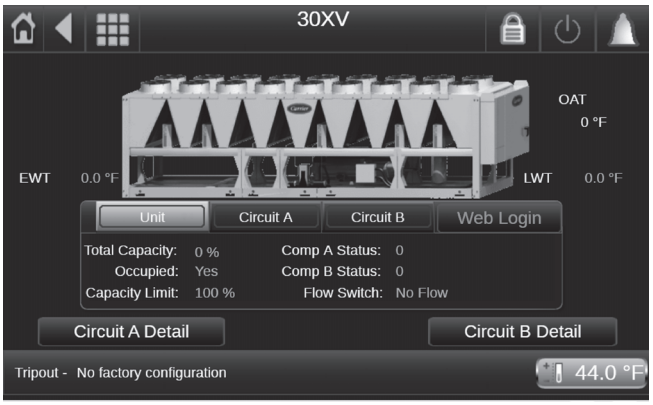


Fig. A — Home Screen

2. Access the LOGIN screen by selecting the LOCK icon on the HOME screen to bring up the LOGIN screen. See Fig. B.

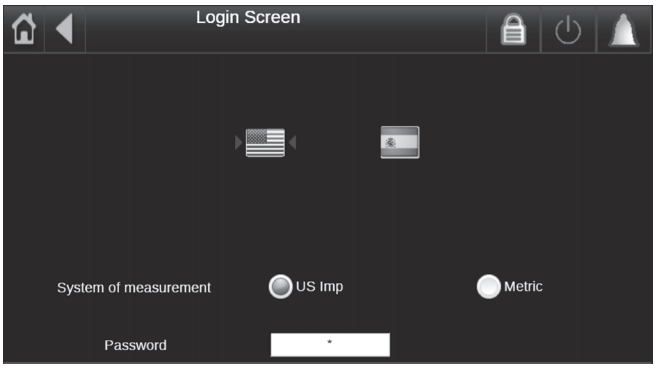


Fig. B — Login Screen

3. Enter the Factory Level Password (113) into the password entry box to allow access to the web and network interface parameters. After entering the password using the popup keyboard, select the done button on the popup keyboard, then select the MAIN MENU button to navigate to the MAIN MENU screen. Use the DOWN ARROW to navigate to page 2. See Fig. C.

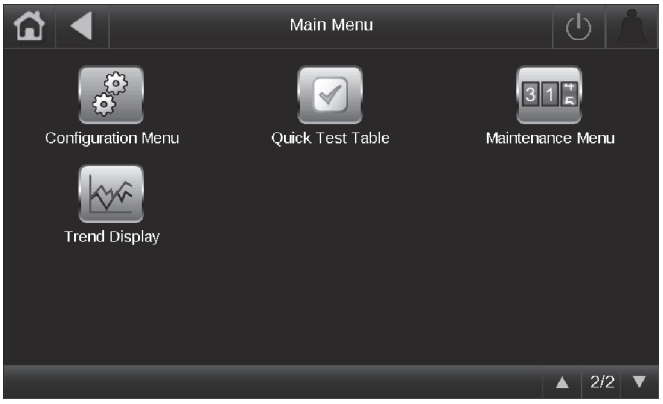


Fig. C — Main Menu Screen

4. Select the CONFIGURATION MENU button to navigate to the CONFIGURATION MENU screen. See Fig. D.

Fig. D — Configuration Menu Screen

5. Select the HMI CONFIGURATION MENU button to navigate to the HMI CONFIGURATION screen. See Fig. E.

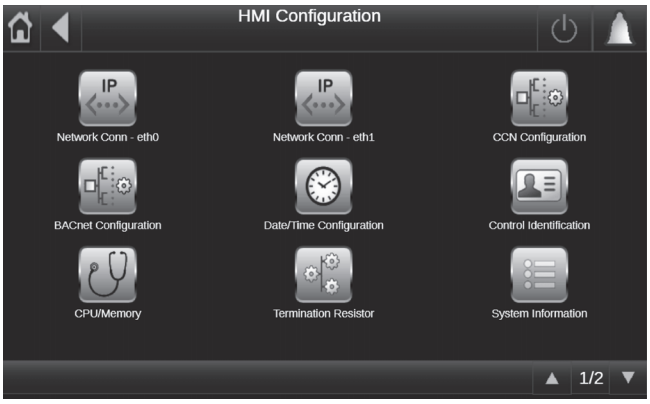


Fig. E — HMI Configuration Menu Screen

6. Select NETWORK CONN-ETH0 button to access the network parameters. See Fig. F.

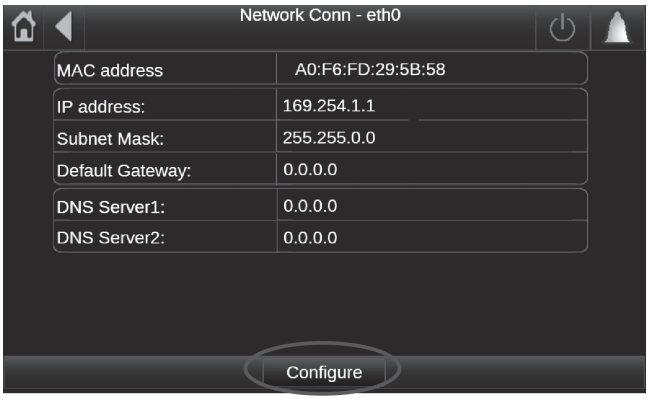


Fig. F — Network Connection Screen — Configure

Network Settings

Request an IP address, subnet mask, and default gateway from the system administrator before connecting the unit to the local Ethernet network. The NETWORK MENU allows the user to define network parameters, including TCP/IP address.

1. To access and change the network parameters, select the CONFIGURE button shown in Fig. F. This changes the fields to editable fields and allows the selection of each field, which can then be changed using the popup keyboard once the field is selected. Once all of the network parameters have been correctly entered select the SAVE button as shown in Fig. G.

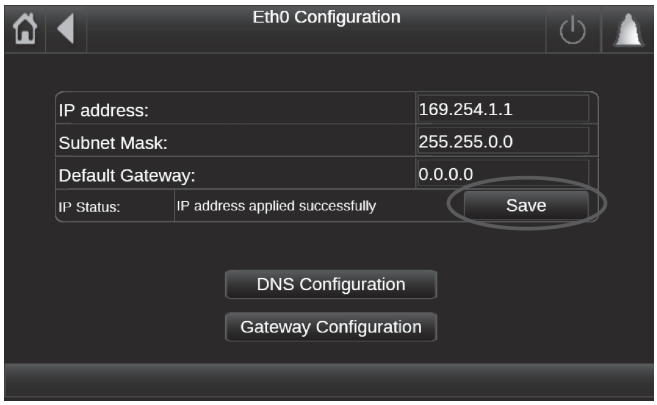


Fig. G — Network Connection Screen — Save

2. For DNS configuration and Gateway configuration, select the corresponding buttons as shown in Fig. G and enter the appropriate information.

   Once this is complete, the setup of the Carrier Controller is complete. The computer or network that the Carrier Controller is being connected to may need to have some settings changed in order to communicate between them. See the next section.

ETHERNET/IP CONNECTION

If the unit is point-to-point to a PC and the unit is energized, it may be necessary to check the Ethernet connection and/or configure the PC network board. Refer to the following instructions to verify PC settings and connection to the Carrier Controller.

To verify the unit's IP address, perform the following steps:

1. From the computer connected to the controller, go to Local Area Connection Properties and select Internet Protocol (TCP/IP). See Fig. H.

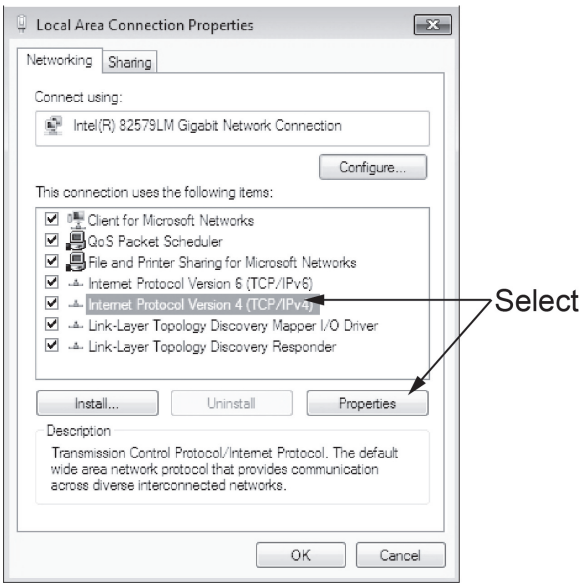


Fig. H — Local Area Connection Properties Screen

2. Once the Properties button is selected the Internet Protocol Properties Window opens. See Fig. I.

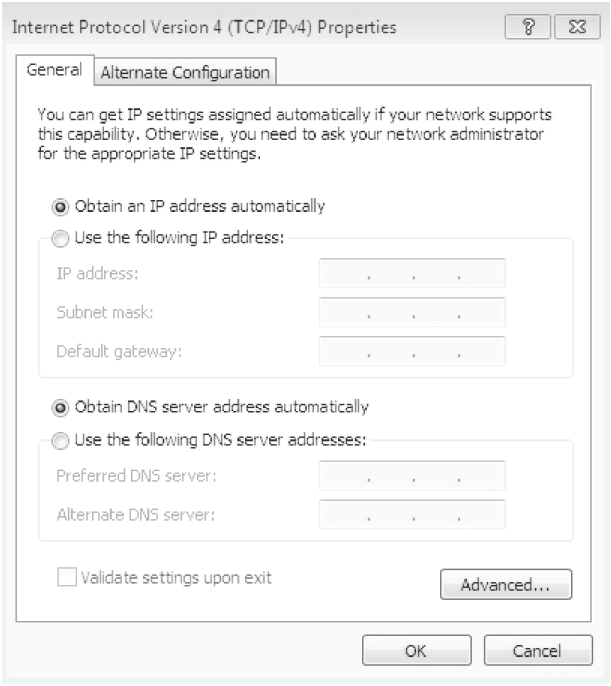


Fig. I — Internet Protocol Properties Screen

3. The IP address of the Carrier Controller must have matching system and subsystem fields in order for the two to communicate. In addition the last part of the IP address must be unique for both on the network.

   For example, Carrier Controller IP address: 172.30.101.11 and the PC address: 172.30.101.182.

   In this example 172.30 corresponds to the network and 101 corresponds to the subsystem and they must match. The last part of the IP address, 11 and 182, must be unique on the network.
4. Confirm that both Carrier Controller IP address and PC IP address meet the above criteria and select OK on the PC.

5. Communication between the Carrier Controller and the PC should be active. Using a standard Web Browser, with minimum versions shown above and with Java installed, type in the IP address of the Carrier Controller. The display on the PC should look very similar to what is on the Carrier Controller display.

If issues still exist with accessing the Carrier Controller using the web browser, try to ping the Carrier Controller by using the following steps:

1. Open a command prompt by either:
   a. Pressing the Window logo key + R to access the run command. Then type CMD and press enter.
   Or:
   b. Clicking the start button and then clicking run. Then type CMD and press enter.
2. At the command prompt, type the ping command followed by the unit IP address.
3. As shown in Fig. J, the device attached to IP address 161.145.71.145 communicated successfully. The IP address for the Carrier Controller should return a similar confirmation if the system is configured properly. If it does not additional IT assistance may be necessary.

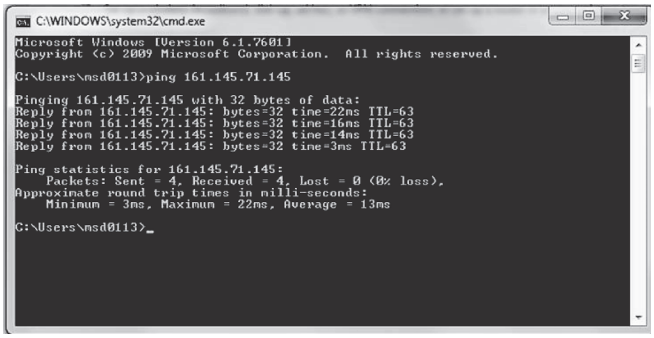


Fig. J — Ping Response Screen

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START-UP CHECKLIST FOR 30XV LIQUID CHILLERS

(Remove and use for Job File)

NOTE: To avoid injury to personnel and damage to equipment or property when completing the procedures listed in this start-up checklist, use good judgment, follow safe practices, and adhere to the safety considerations/information as outlined in preceding sections of this Controls, Start-Up, Operation, Service and Troubleshooting document.

A. PROJECT INFORMATION

Job name _____
Address _____
City _____ State ____ Zip _____

Equipment tag/mark for _____
Installing contractor _____
Sales office _____
Start-up performed by _____

Design Information

	CAPACITY	EWT	LWT	FLUID TYPE	FLOW RATE	P.D.	AMBIENT
Evaporator							

Unit

Model _____ Serial _____

Compressors

Compressor A
Model _____ Serial _____

Compressor B
Model _____ Serial _____

Evaporator

Model _____ Serial _____

B. PRELIMINARY EQUIPMENT CHECK (This section to be completed by installing contractor)

1. Is there any physical damage? ☐ Yes ☐ No
   Will this prevent start-up? ☐ Yes ☐ No
   Description:
2. Unit is installed level as per the installation instructions. ☐ Yes ☐ No
3. Power supply agrees with the unit nameplate. ☐ Yes ☐ No
4. Correct control voltage _____vac. ☐ Yes ☐ No
5. Electrical power wiring is installed properly. ☐ Yes ☐ No
6. Unit is properly grounded. ☐ Yes ☐ No
7. Electrical circuit protection has been sized and installed properly. ☐ Yes ☐ No
8. All terminals are tight. ☐ Yes ☐ No
9. All plug assemblies are tight. ☐ Yes ☐ No
10. All cables, thermistors and transducers have been inspected for cross wires. ☐ Yes ☐ No
11. All thermistors are fully inserted into wells. ☐ Yes ☐ No
12. Oil separator heaters energized for 24 hours before start-up. ☐ Yes ☐ No
13. Relief valve vent piping per local codes. ☐ Yes ☐ No

⚠ CAUTION

Make sure there is refrigerant pressure on each circuit prior to filling the evaporator with fluid. This may require manually opening refrigerant service valves. If either circuit is without sufficient refrigerant pressure, find and fix all leaks prior to filling the evaporator with fluid.

Chilled Water System Check

1. All chilled water valves are open. ☐ Yes ☐ No
2. All piping is connected properly. ☐ Yes ☐ No
3. All air has been purged from the system. ☐ Yes ☐ No
4. Chilled water pump starter controlled by chiller. ☐ Yes ☐ No
5. Chilled water flow switch operational. ☐ Yes ☐ No
6. Units installed in open loop: inlet piping to evaporator includes a 20 mesh strainer within 10 ft of unit. ☐ Yes ☐ No
7. Water loop volume greater than 3 gal/ton (40 L/kW) for air conditioning or 6 gal/ton (80 L/kW) for process cooling and low ambient operation. ☐ Yes ☐ No
8. Proper loop freeze protection provided to ____ °F (°C).
   Antifreeze type_____ Concentration _____%. ☐ Yes ☐ No
   If antifreeze solution is not utilized on 30XV machines and the minimum outdoor ambient is below 32°F (0° C), then items 9 and 10 have to be completed to provide evaporator freeze protection to –20°F (–28.9°C) when the unit controls the cooler pump. NOTE: Electrical power is required for this protection. Without electrical power and antifreeze solution, there is no freeze protection.
   Refer to Installation Instructions for proper evaporator winterization procedure.
9. Outdoor piping wrapped with electric heater tape. ☐ Yes ☐ No
10. Evaporator heaters and oil separator heaters installed and operational. ☐ Yes ☐ No
11. Is the Unit equipped with low ambient head pressure control? ☐ Yes ☐ No
    If yes, are wind baffles installed? ☐ Yes ☐ No

C. UNIT START-UP

1. All liquid line service valves are open. ☐ Yes ☐ No
2. Verify actuated ball valve (ABV) operation. ☐ Yes ☐ No
3. All suction and discharge service valves are open. ☐ Yes ☐ No
4. Economizer service valves open. (Leaving Main EXV and Leaving Brazed Plate Heat Exchanger [Economizer]) ☐ Yes ☐ No
5. Oil service valves open. ☐ Yes ☐ No
6. Leak check unit. Locate, repair and report any refrigerant leaks. ☐ Yes ☐ No
7. Voltage at terminal block is within unit nameplate range. ☐ Yes ☐ No
   Check voltage imbalance: A-B_____ A-C_____B-C_____
   Average voltage = _____ (A-B + A-C + B-C)/3
   Maximum deviation from average voltage = _____
   Voltage imbalance = _____% (max. deviation / average voltage) x100
   Is voltage imbalance less than 2%. ☐ Yes ☐ No
   (DO NOT start chiller if voltage imbalance is greater than 2%. Contact local utility for assistance.)
8. Verify evaporator flow rate
   Pressure entering evaporator _____ psig (kPa)
   Pressure leaving evaporator _____ psig (kPa)
   Evaporator pressure drop _____ psig (kPa)
   Psig x 2.31 ft/psi = _____ ft of water
   kPa x 0.334 m/psi = _____ mm of water
   Evaporator flow rate _____ gpm (L/s) (See Evaporator Pressure Drop Curve)

Start and Operate Machine

1. Complete component test utilizing Quick Test Mode.
2. Operate all condenser fans and verify operation and rotation.
3. Operate compressors using manual test mode.
4. Check refrigerant and oil charge. Record charge information.
5. Record compressor and condenser fan motor current.
6. Record operating data.
7. Provide operating instructions to owner's personnel.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

Refrigerant Charge

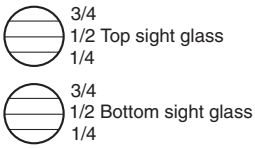
Additional charge required Circuit A _____ Circuit B _____

Oil Charge

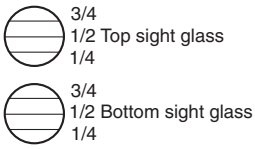
Additional charge required Circuit A_____ Circuit B _____

Oil Separator Oil Level Unit Sizes 140-325 and 350 Circuit B

Circuit A



Circuit B



NOTE: Oil level should be visible in top sight glass.

Carrier Controller Software Version

ACG-SR-10D2AA ___ ___ ___

To obtain software version, navigate to ***Menu → General Parameters*** and find "SW Version" displayed in this table.

Record Configuration Information

PATH	CARRIER CONTROLLER DESCRIPTION	DEFAULT	ENTRY
Login Button	Language	English	
	Units	US Imp	
Main Menu→General Parameters	Setpoint Select	0 (Auto)	
Main Menu→Configuration Menu→ General Configuration	Cir Priority Sequence	0 (Auto)	
	Ramp Loading Enable	0 (No)	
	Unit Off to On Delay	1 min	
	Demand Limit Type Select	0 (None)	
	Night Mode Start Hour	0	
	Night Mode End Hour	0	
	Night Capacity Limit	100%	
	Ice Mode Enable	0 (No)	
Main Menu→Configuration Menu→ Pump Configuration	Evap Pumps Sequence	0 (No Pump)	
	Pump Auto Rotation Delay	48 hours	
	Pump Sticking Protection	0 (No)	
	Flow Checked If Pump Off	1 (Yes)	
Main Menu→Configuration Menu→User Config.	User Password	11	
Main Menu→Configuration Menu→ Reset Configuration	Cooling Reset Select	0 (No reset)	
	OAT No Reset Value	14°F (–10°C)	
	OAT Full Reset Value	14°F (–10°C)	
	Delta T No Reset Value	0°F (0°C)	
	Delta T Full Reset Value	0°F (0°C)	
	Current No Reset Value	0 mA	
	Current Full Reset Value	0 mA	
	Space T No Reset Value	14°F (–10°C)	
	Space T Full Reset Value	14°F (–10°C)	
	Cooling Reset Deg. Value	0°F (0°C)	
Main Menu→Configuration Menu→ Factory Parameters	Unit Capacity	Unit Dependent	
	Power Supply Voltage	Unit Dependent	
	Energy Management Module	0	
	Leakage Charge Detection	0	

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

Record Configuration Information

PATH	CARRIER CONTROLLER DESCRIPTION	DEFAULT	ENTRY
Main Menu→Configuration Menu→ Service Parameters	Evaporator Fluid Type	1 (Water)	
	Entering Fluid Control	no	
	Brine Freeze Setpoint	34°F (1.1°C)	
	Brine Minimum fluid temp	38°F (3.3°C)	
	Fast Capacity Recovery	0	
	EWT Probe on cir A side	yes	
	Service Password	88	
	Leakage Charge Threshold	2.5 Volts	
	Leakage Charge Timer	60 min.	
	Compressor RFI Filter En	on	
	Metric Units?	no	
	Send fan drive config?	yes	
	Send comp. Drive config?	yes	
	Evaporator Heater Delta Spt	2 (Number of deg added to brine freeze setpoint to enable heater)	
	Freeze override offset	0°F (0°C)	
	Auto Start When SM Lost	0 (disable)	
	VI Self-Test Threshold	1.15 kW	
	Pump Rot. AntiFrz Protec	on	
Main Menu→Configuration Menu→ Lead Lag Config	Lead/Lag Select	0 (disable)	
	Lead Control Type	1 (Local)	
	Lag Address	2	
	Lead Lag Select	0 (Always Lead)	
	Lead/Lag Balance Delta	168 hours	
	Lead/Lag Start Timer	10 min	
	Lead Pulldown Time	0 min	
	Start If Error Higher	4°F (2.2°C)	
	Lag Minimum Running Time	0 min	
	Lag Unit Pump Control	0 (Stop if Unit Stops)	
	Chiller In Series	0 (No)	
Main Menu→Setpoint Table	Cooling Setpoint 1	44°F (6.7°C)	
	Cooling Setpoint 2	44°F (6.7°C)	
	Cooling Ice Setpoint	44°F (6.7°C)	
	Cooling Ramp Loading	1°F (0.6°C)	
	Switch Limit Setpoint 1	100%	
	Switch Limit Setpoint 2	100%	
	Switch Limit Setpoint 3	100%	

LEGEND

Spt — Set Point

Component Test — Complete the following tests to make sure all peripheral components are operational before the compressors are started.

PATH	CARRIER CONTROLLER DESCRIPTION	CHECK WHEN COMPLETE
Main Menu→Quick Test Table	Quick Test Enable (Unit must be in Local OFF)	
	Circuit A EXV Position	
	Circuit A Oil Solenoid	
	EXV Eco Position Cir A	
	Oil Heater Circuit A	
	Capacity Cir A Output	
	Comp A Running Output	
	Isolation Valve State A	
	Circuit A VI	
	VariFan Speed A	
	Circuit B EXV Position	
	Circuit B Oil Solenoid	
	EXV Eco Position Cir B	
	Oil Heater Circuit B	
	Capacity Cir B Output	
	Comp B Running Output	
	Isolation Valve State B	
	Circuit B VI	
	VariFan Speed B	
	Evaporator Heater	
	Evaporator Pump 1	
	Evaporator Pump 2	
	Alarm Relay Status	
	Shutdown Relay Status	
	Running Relay Status	
	Alert Relay Switch	
	Set Flow Switch	
	Capacity Total Output	
	Comp drive heater A	
	Comp drive heater B	
	Fan Contactor 1A	
	Fan Contactor 2A	
	Fan Contactor 3A	
	Fan Contactor 4A	
	Fan Contactor 5A	
	Fan Contactor 6A	
	Fan Contactor 7A	
	Fan Contactor 8A	
	Fan Contactor 1B	
	Fan Contactor 2B	
	Fan Contactor 3B	
	Fan Contactor 4B	
	Fan Contactor 5B	
	Fan Contactor 6B	
	Fan Contactor 7B	
	Fan Contactor 8B	
	Comp. HW Enable A	
	Comp. HW Enable B	
	Control Box Heater	

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

Operating Data:

Record the following information from the Run Status, Temperatures and Outputs Modes when machine is in a stable operating condition.

TEMPERATURES

EVAPORATOR ENTERING FLUID	_____
EVAPORATOR LEAVING FLUID	_____
CONTROL POINT	_____
CAPACITY	_____
OUTSIDE AIR TEMPERATURE	_____
CHWS TEMPERATURE	_____ (Dual Chiller Control Only)

CIRCUIT A		CIRCUIT B	
SATURATED COND TMP CIRC A	_____	SATURATED COND TMP CIRC B	_____
SATURATED SUCTION TEMP A	_____	SATURATED SUCTION TEMP B	_____
SATURATED LIQUID TMP A	_____	SATURATED LIQUID TMP B	_____
COMPRESSOR SUCTION TMP A	_____	COMPRESSOR SUCTION TMP B	_____
DISCHARGE GAS TEMP CIR A	_____	DISCHARGE GAS TEMP CIR B	_____
MOTOR TEMPERATURE CIR A	_____	MOTOR TEMPERATURE CIR B	_____
EXV ECO. TMP CIR A	_____	EXV ECO. TMP CIR B	_____
LIQUID TEMPERATURE A	_____	LIQUID TEMPERATURE B	_____

COMPRESSOR MOTOR CURRENT

	L1	L2	L3
COMPRESSOR A1	_____	_____	_____
COMPRESSOR B1	_____	_____	_____

CONDENSER FAN MOTOR CURRENT, STANDARD TIER UNITS

	L1	L2	L3		L1	L2	L3
FAN MOTOR A1	____	____	____	FAN MOTOR B1	____	____	____
FAN MOTOR A2	____	____	____	FAN MOTOR B2	____	____	____
FAN MOTOR A3	____	____	____	FAN MOTOR B3	____	____	____
FAN MOTOR A4	____	____	____	FAN MOTOR B4	____	____	____
FAN MOTOR A5	____	____	____	FAN MOTOR B5	____	____	____
FAN MOTOR A6	____	____	____	FAN MOTOR B6	____	____	____
FAN MOTOR A7	____	____	____	FAN MOTOR B7	____	____	____
FAN MOTOR A8	____	____	____	FAN MOTOR B8	____	____	____
FAN MOTOR A9	____	____	____	FAN MOTOR B9	____	____	____
FAN MOTOR A10	____	____	____	FAN MOTOR B10	____	____	____
FAN MOTOR A11	____	____	____	FAN MOTOR B11	____	____	____
FAN MOTOR A12	____	____	____	FAN MOTOR B12	____	____	____

CONDENSER FAN MOTOR CURRENT, STANDARD TIER WITH LOW AMBIENT MID AND HIGH TIER

	Hz	A
VFD A1	____	____
VFD A2	____	____
VFD B1	____	____
VFD B2	____	____

HEATER CURRENT

EVAPORATOR HEATER CURRENT	_____
OIL SEPARATOR HEATER CURRENT CIRCUIT A	_____
OIL SEPARATOR HEATER CURRENT CIRCUIT B	_____

COMMENTS:

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

SIGNATURES:

Start-up Technician _____Date_____

Customer Representative _____Date_____

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