AquaForce®
30XV140-500, Series B
Variable Speed Air-Cooled Liquid Chillers with Greenspeed® Intelligence

Controls, Start-Up, Operation, Service and Troubleshooting

CONTENTS

Catalog No. 04-53300222-01 Printed in U.S.A. Form 30XV-5T Pg 1 12-21 Replaces: 30XV-4T

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 and filters and replacing filters. 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

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 gage 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. 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

Compressor contains a permanent magnet motor. 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 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. BACnet is a trademark of ASHRAE.

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
gal — Gallon
GLCP — Graphical Local Control Panel
gpm — Gallons Per Minute
HMI — Human Machine Interface
HPS — High Pressure Switch
HVAC — Heating, Ventilation and Air-Conditioning
Hz — Hertz
IGBT — Insulated Gate Bipolar Transistor
in.-lb — Inch-Pounds
IP — Internet Protocol
IR — Intrinsic Reporting
kg — Kilograms
kHz — Kilohertz
kPa — Kilopascals
kW — Kilowatt
L — Liters
L/s — Liters Per Second
lb — Pounds
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
mA — Milliamps
MCHX — Microchannel Heat Exchanger
mm — Millimeter
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
RCD — Replacement Components Division
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*
SDT — Saturated Discharge Temperature*
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

*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. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213
	Power Wiring Schematic (High)	Fig. 114, page 214; Fig. 115, page 215
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV160	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213; Fig. 115, page 215
	Power Wiring Schematic (High)	Fig. 114, page 214; Fig. 115, page 215
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV180	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213; Fig. 115, page 215
	Power Wiring Schematic (High)	Fig. 114, page 214; Fig. 115, page 215
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV200	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213; Fig. 115, page 215
	Power Wiring Schematic (High)	Fig. 114, page 214; Fig. 115, page 215
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV225	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213
	Power Wiring Schematic (High)	Fig. 116, pages 216-217
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV250	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213
	Power Wiring Schematic (High)	Fig. 116, pages 216-217
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV275	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 109, page 207
	Power Wiring Schematic (Mid)	Fig. 113, page 213
	Power Wiring Schematic (High)	Fig. 116, pages 216-217
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV300	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 110, pages 208-209
	Power Wiring Schematic (Mid)	Fig. 116, pages 216-217
	Power Wiring Schematic (High)	Fig. 116, pages 216-217
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226

Table 2 — Control and Power Drawings (cont)

UNIT	DESCRIPTION	LOCATION
30XV325	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 110, pages 208-209
	Power Wiring Schematic (Mid)	Fig. 116, pages 216-217
	Power Wiring Schematic (High)	Fig. 116, pages 216-217
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119-120, pages 220-222
	Component Arrangement	Fig. 122, pages 225-226
30XV350	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 111, pages 210-211
	Power Wiring Schematic (Mid)	Fig. 112, page 212
	Power Wiring Schematic (High)	Fig. 112, page 212
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119, 121, pages 220, 223-224
	Component Arrangement	Fig. 123, page 227
30XV400	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 111, pages 210-211
	Power Wiring Schematic (Mid)	Fig. 112, page 212
	Power Wiring Schematic (High)	Fig. 112, page 212
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119, 121, pages 220, 223-224
	Component Arrangement	Fig. 123, page 227
30XV450	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 111, pages 210-211
	Power Wiring Schematic (Mid)	Fig. 112, page 212
	Power Wiring Schematic (High)	Fig. 112, page 212
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119, 121, pages 220, 223-224
	Component Arrangement	Fig. 123, page 227
30XV500	Typical Field Connections Wiring Schematic	Fig. 108, pages 205-206
	Power Wiring Schematic (Std)	Fig. 111, pages 210-211
	Power Wiring Schematic (Mid)	Fig. 112, page 212
	Communication Wiring	Fig. 117, page 218
	Control Wiring Schematics	Fig. 119, 121, pages 220, 223-224
	Component Arrangement	Fig. 123, page 227

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 16.

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.

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. See Fig. 3.

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. 4 and 5.

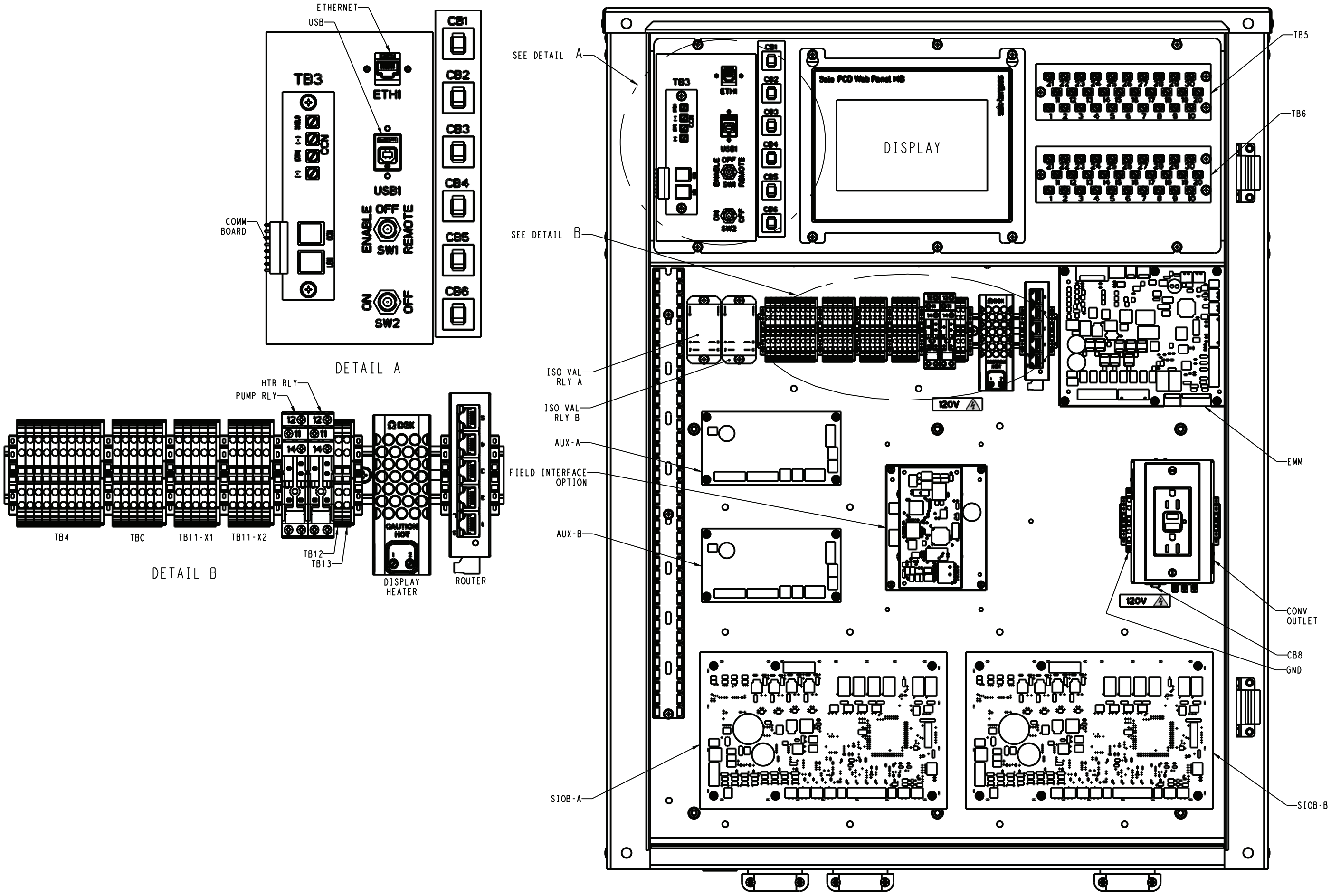


Fig. 1 — Component Layout Drawing (30XVB140-325 Shown)

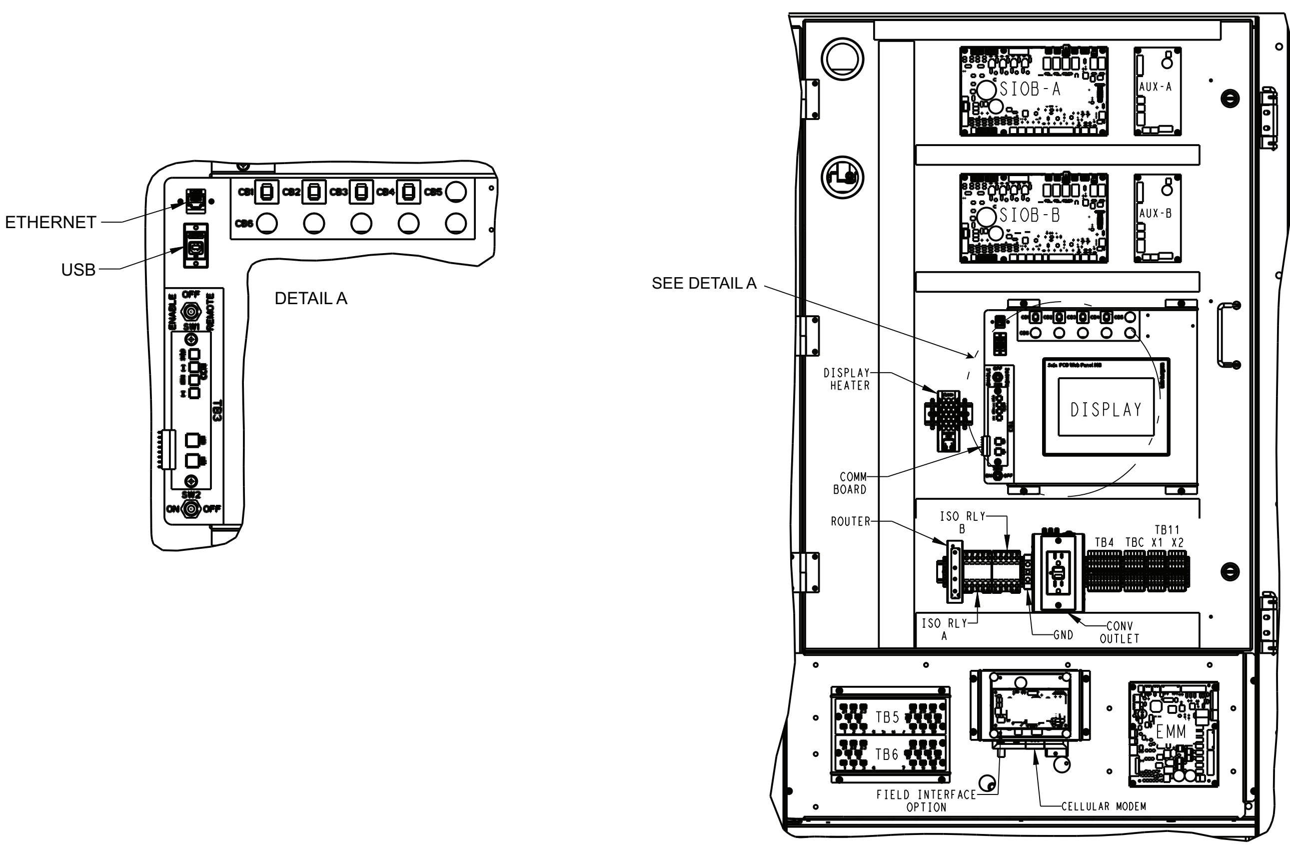


Fig. 2 — Component Layout Drawing (30XVB350-500 Shown)

Fig. 3 — Welcome Screen

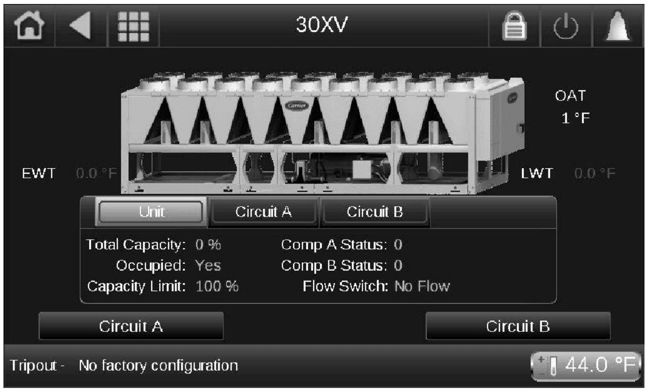


Fig. 4 — Home Screen

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

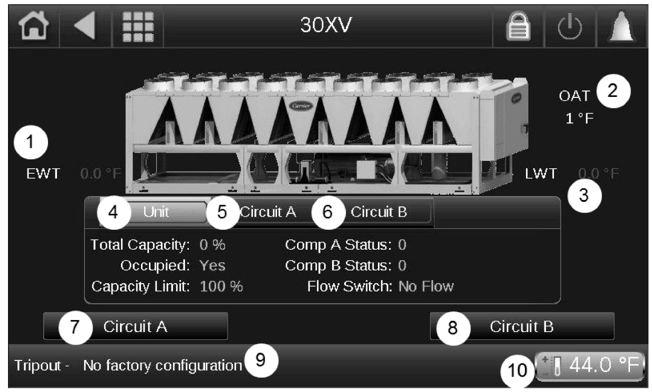
 Main Menu — Touch the Main Menu button to access all unit functions. See Main Menu Screen on page 12 for details.

 Log In — Touch to enter passwords and select language or change the system of measurement. See page 10 for login details.

 Start/Stop — Touch to access the machine control method menu. See page 28 for details on available operating modes.

 Alarm — The alarm icon blinks red when a fault is detected. See page 185 for details on system alarms and alerts.

To display circuit specific information select the desired Circuit Button. See Fig. 5.



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. 5 — Home Screen with Saturated Condensing Temperature (SCT) and Saturated Discharge Temperature (SDT)

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 12.
	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 28.
	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 185.
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 14. 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 14. 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 14. 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. 6) 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. 6) 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. 6.

Fig. 6 — Login Screen

User Level

When User Level Login is selected from the User Login Screen, the User Level Login screen appears (Fig. 7). 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.

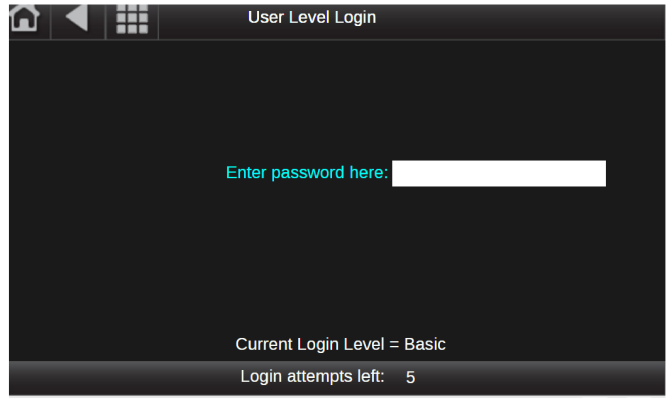


Fig. 7 — User Level Login Screen

Service Level

When Service Level Login is selected from the User Login Screen, the Customer Service Login screen appears (Fig. 8). Input the required password or touch the Home button to return to the home page.

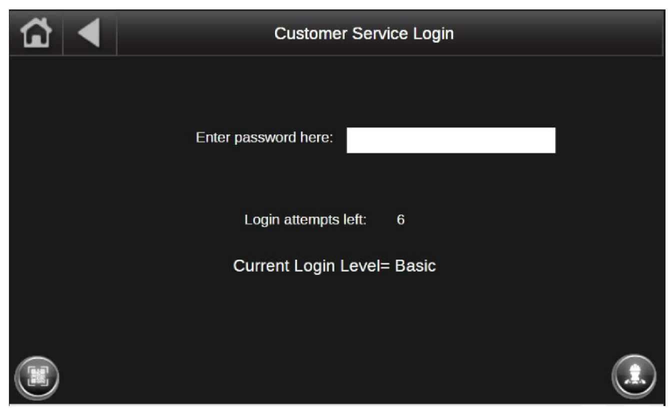


Fig. 8 — Customer Service Login Screen

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. 9).

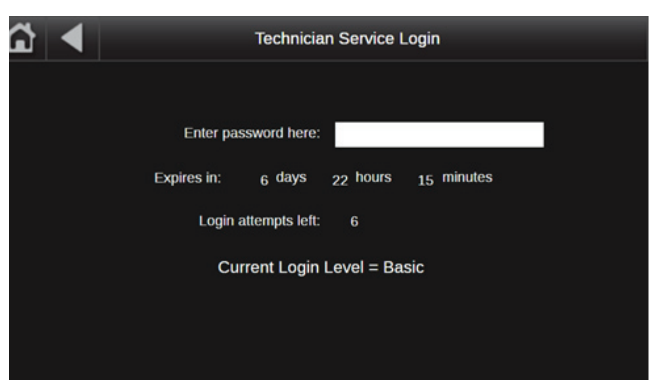


Fig. 9 — Technician Service Login Screen

Service Level Rolling Password

To acquire Service Level access, a rolling password is required. Rolling password authentication is applicable for service & factory login levels only. The Service Level Rolling Password screen is shown in Fig. 10. 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.

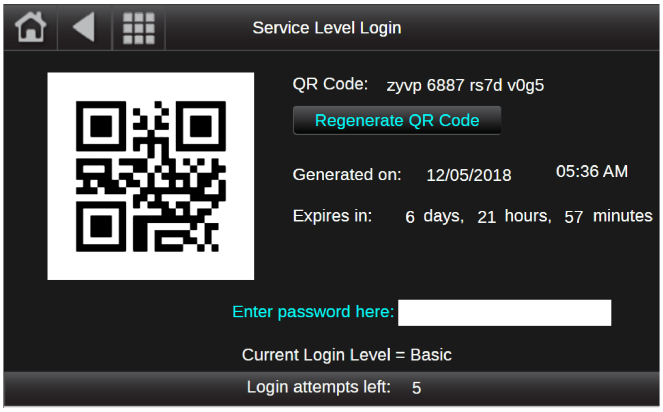


Fig. 10 — Service Level Rolling Password Login

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.

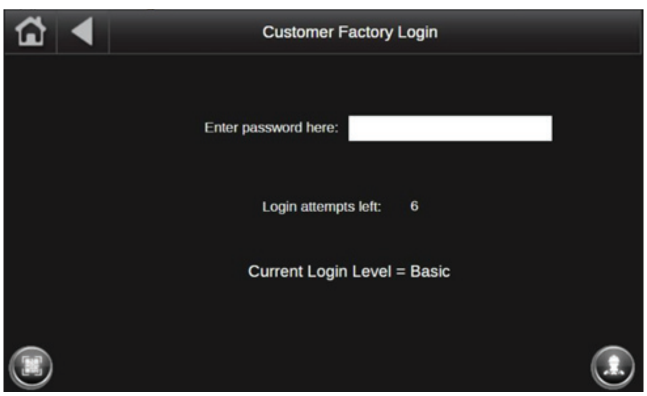


Fig. 11 — Customer Factory Login Screen

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).

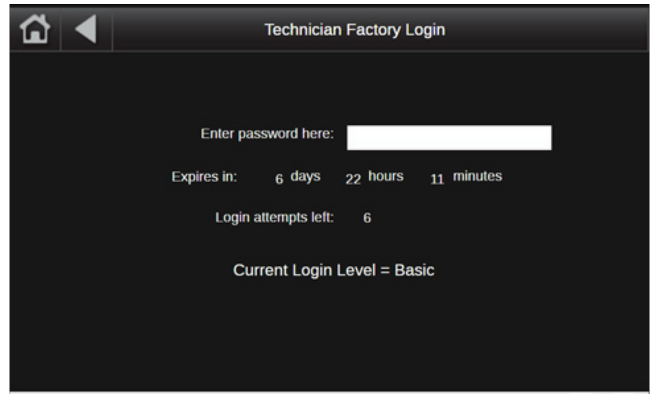


Fig. 12 — Technician Factory Login Screen

Factory Level Rolling Password

To acquire Factory Level access, a rolling password is required. Rolling password authentication is applicable for service & 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.

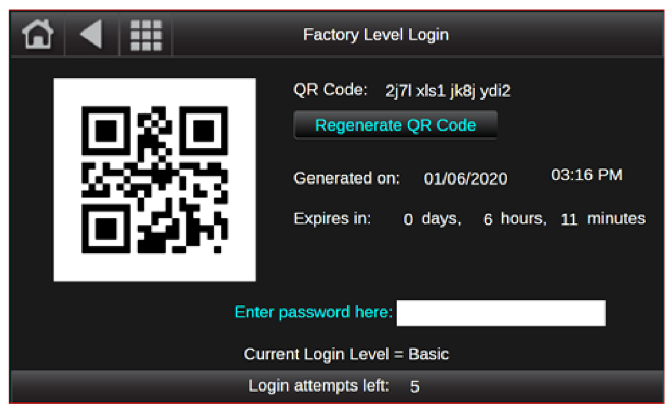


Fig. 13 — Factory Level Rolling Password Login

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

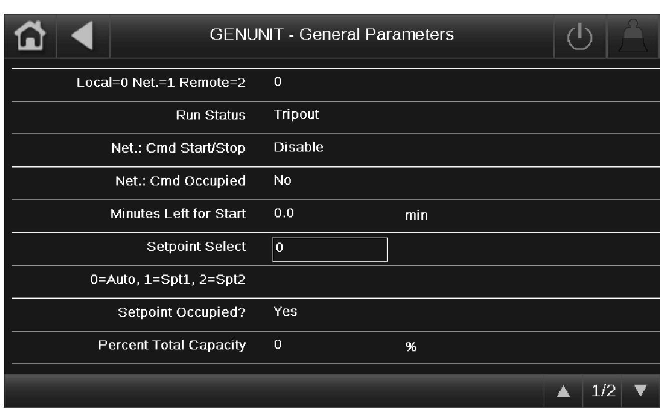


Fig. 15 — General Parameters, Page 1

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 Key, a Cancel button, and a Done button. Enter the data required and touch the Done 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 Cancel, Clear, Set, and Relinquish keys (see Fig. 17). Use the keypad to enter the value and touch the Set 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.

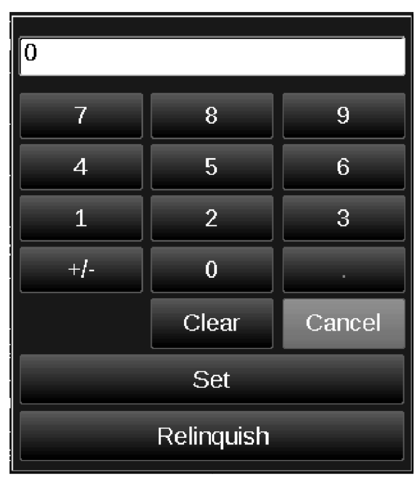


Fig. 17 — Data Entry Keypad

GENERAL CONFIGURATION TABLE

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

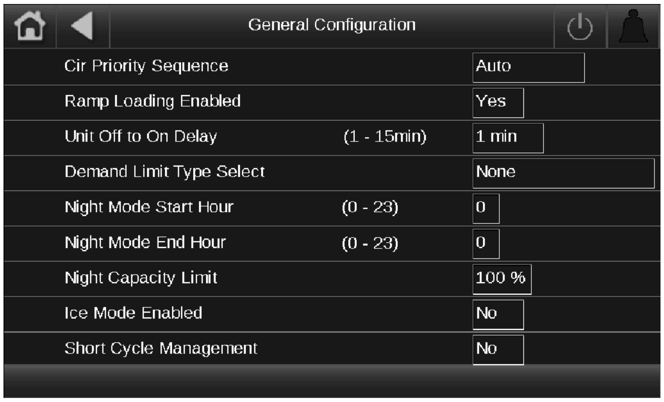


Fig. 18 — General Configuration

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. 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 Display Options Button. Once the parameters to be trended are selected and saved, touch the Display Trend Log Button and the trend graph will be displayed. See Fig. 20.

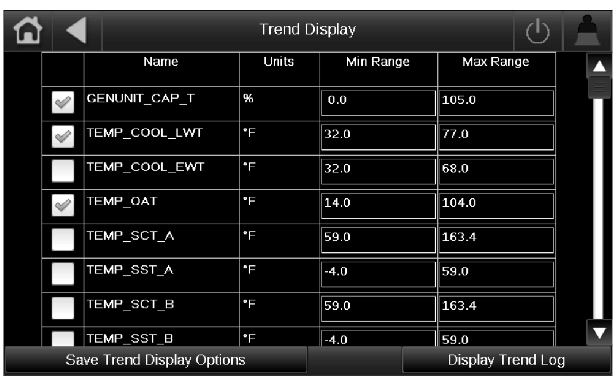
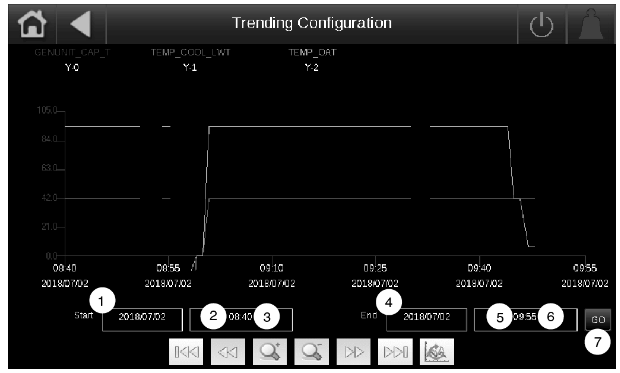


Fig. 19 — Trend Display Screen



LEGEND

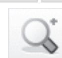
1 — Set the start date
2 — Set the start hour
3 — Set the start minutes
4 — Set the end date
5 — Set the end hour
6 — Set the end minutes
7 — Select Go to graph

Fig. 20 — Trending Configuration Screen

Use the following buttons to adjust the Trendings display:


Navigate across the time line.


Go to beginning or end of selected period.


Zoom in to magnify the view.


Zoom out to expand the viewed area.


Refresh (reload) data.

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.

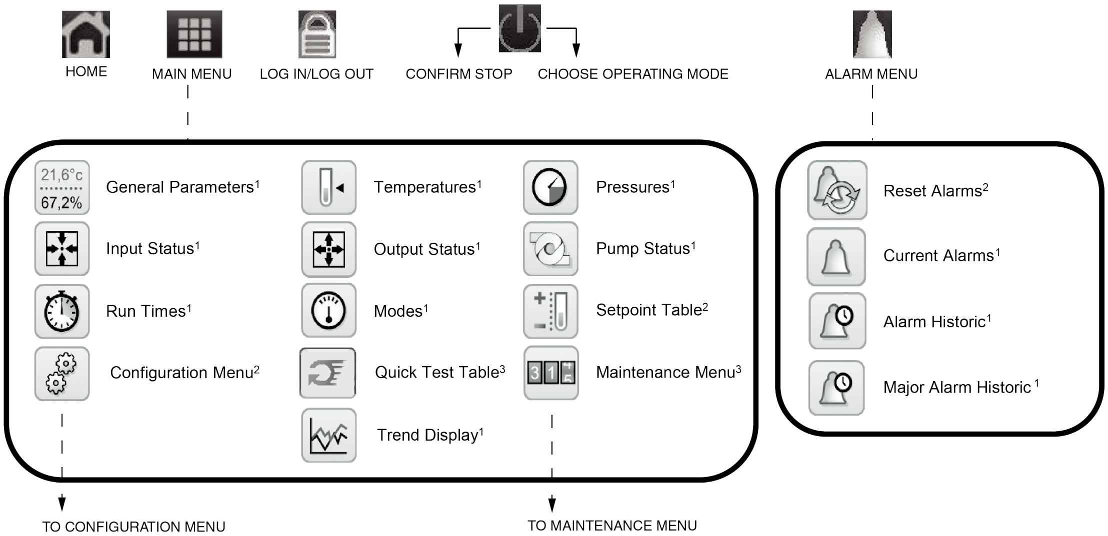


Fig. 21 — Main Menu and Alarm Menu Structure

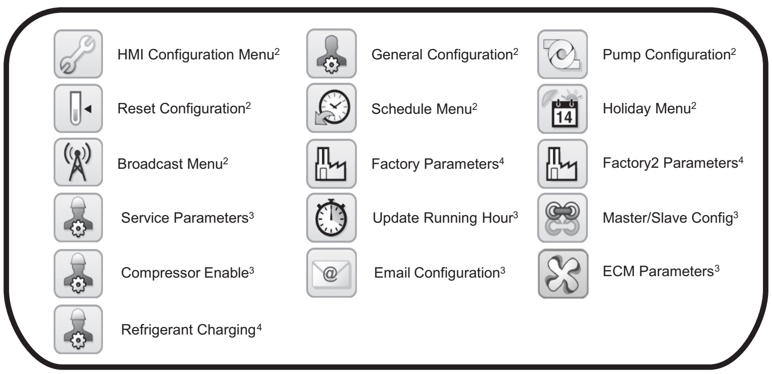


Fig. 22 — Configuration Menu Structure

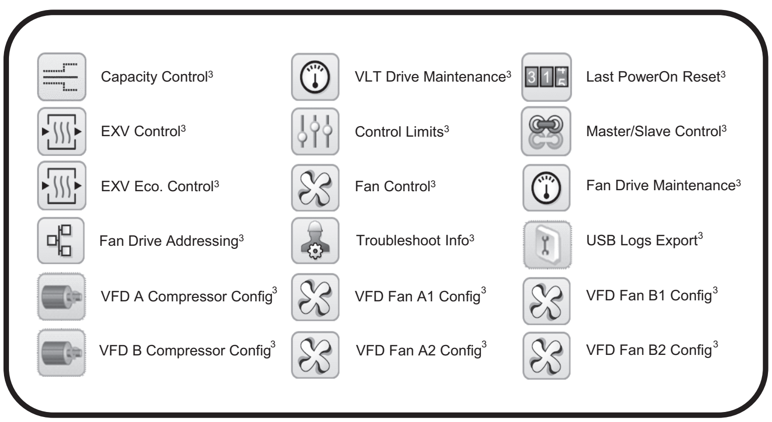


Fig. 23 — Maintenance Menu Structure

LEGEND — FIG. 21-23

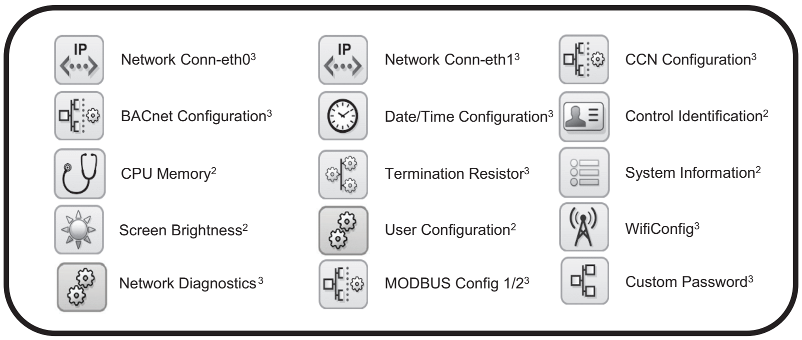
1 — Basic Access (No password required)
2 — User Access (Default password 1111)
3 — Service Access (Provided via QR code with SmartService App)
4 — Factory Access (Provided via QR code with SmartService App)

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

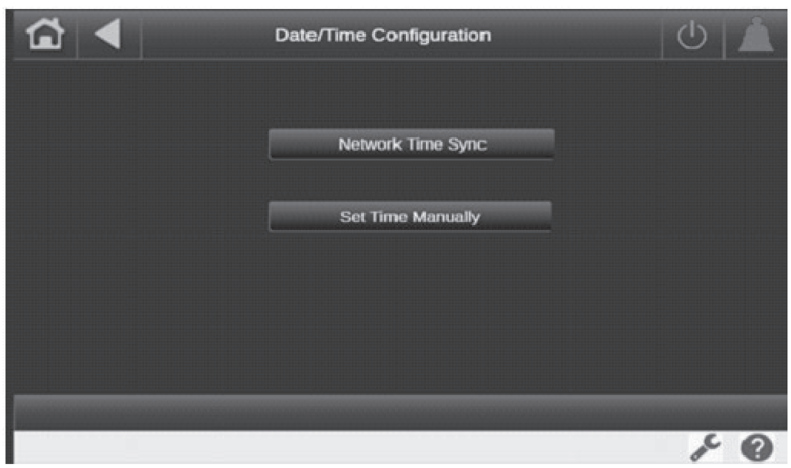


Fig. 25 — Date/Time Configuration Screen

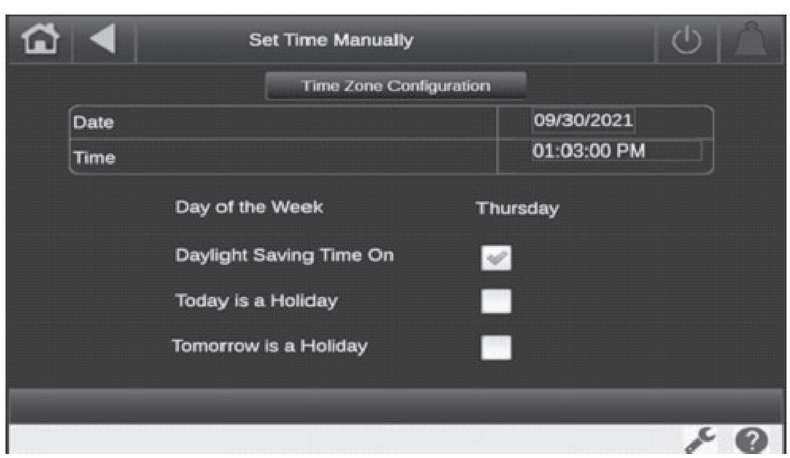


Fig. 26 — Set Time Manually Screen

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 5 for port connections. See Fig. 27 for interface and connectors.

Table 5 — Carrier Controller Display Port Connections

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
	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, WAN (connectivity)
J16	RJ45	Ethernet-1: WAN (connectivity)

NOTES:
1. For more information about password access, see Carrier Controller Login and Display Setup on page 10.
2. PINOUT is listed as viewed from back, left to right on connector.

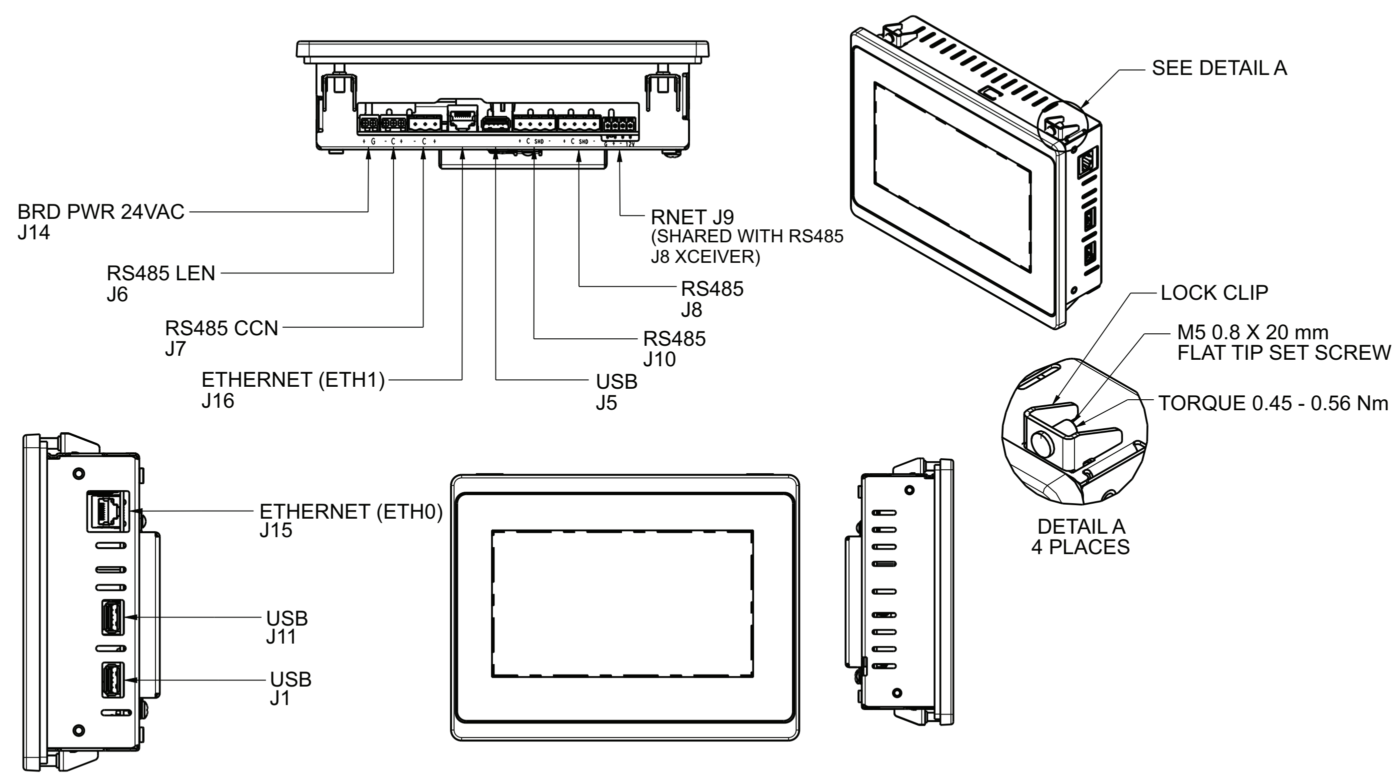


Fig. 27 — Carrier Controller Display Interface and Connectors

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 6 for SIOB DIP switch settings. See Tables 7 and 8 for a list of inputs and outputs for the two SIOBs.

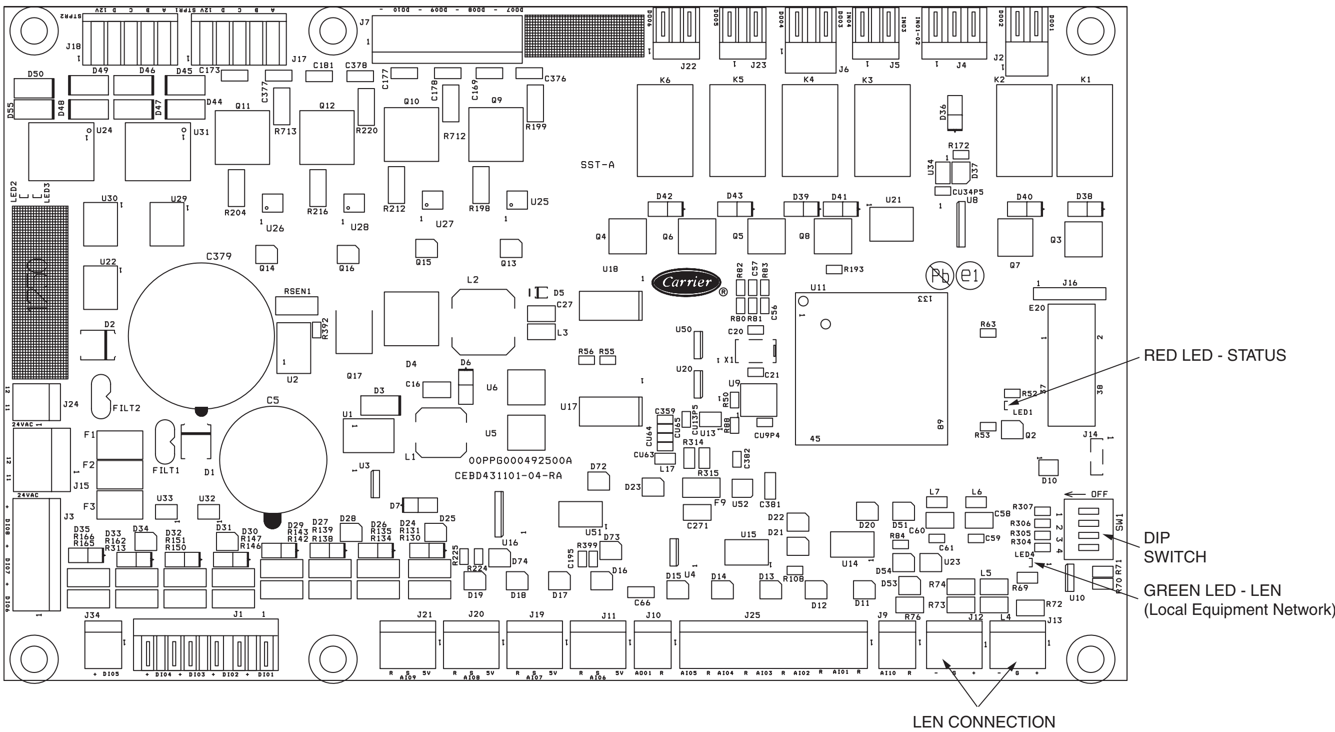


Fig. 28 — SIOB

Table 6 — 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 7 — 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 8 — 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 9 for AUX board A and B DIP switch settings. See Tables 10 and 11 for a list of inputs and outputs for the AUX boards.

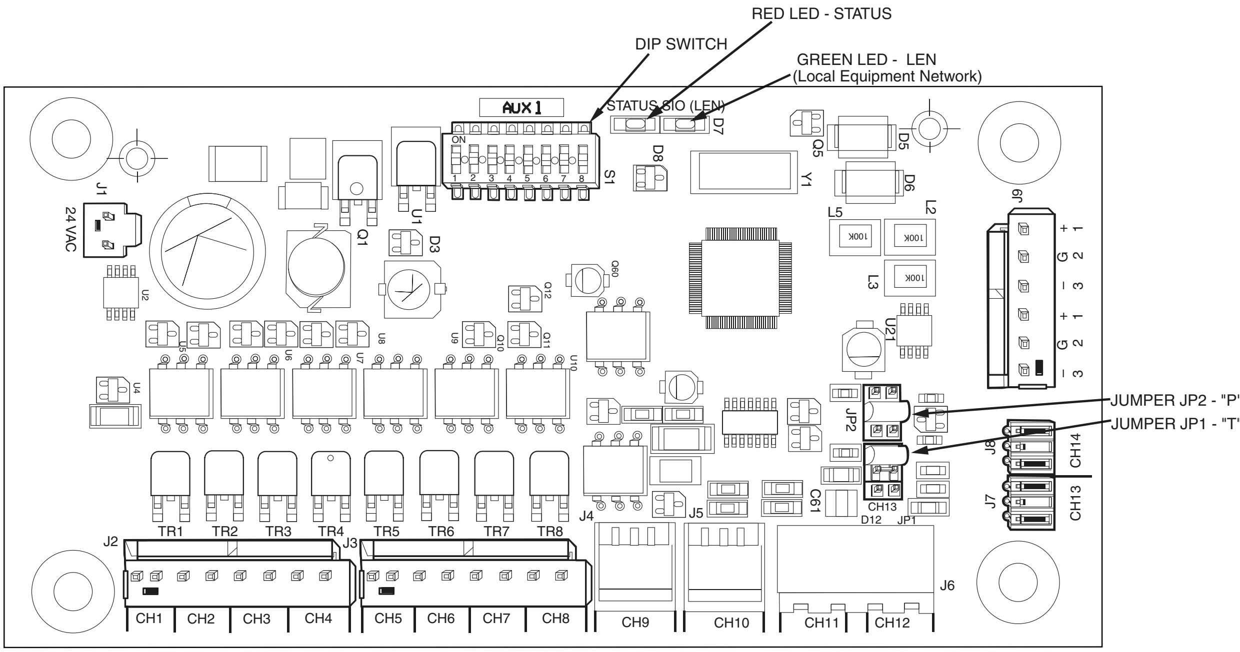


Fig. 29 — AUX Board

Table 9 — 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 10 — 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 11 — AUX Board B Inputs and Outputs

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: 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 28 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 to10 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 12 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.

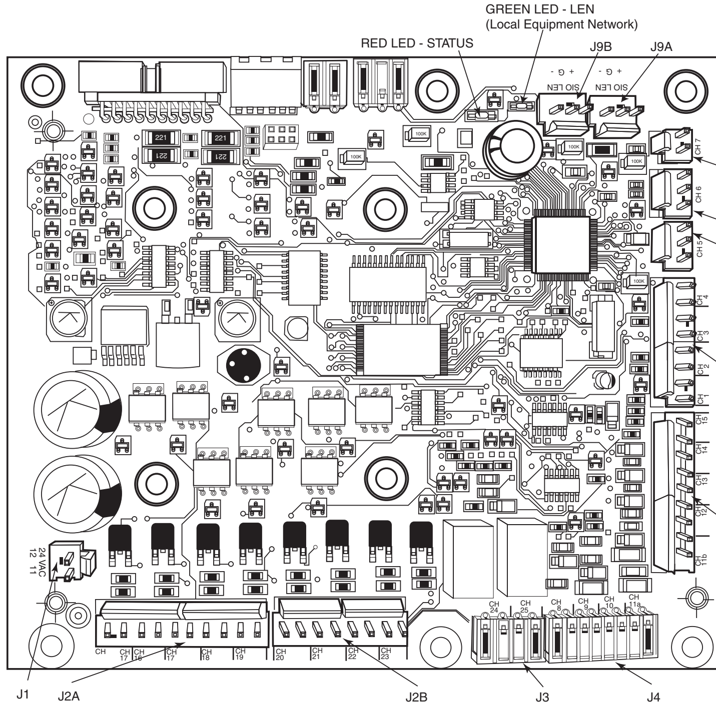


Fig. 30 — Energy Management Module

Table 12 — 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 SmartView 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. Teflon is a registered trademark of DuPont.

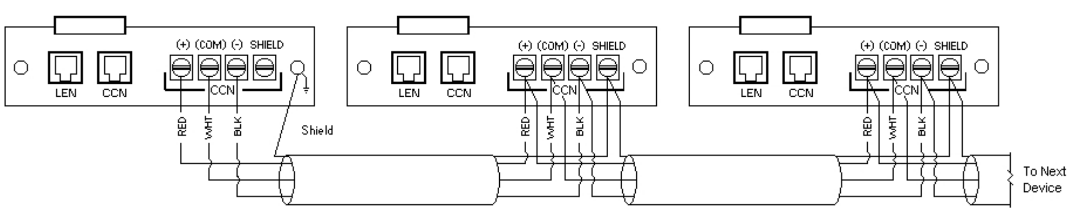


Fig. 31 — Carrier Controller CCN Communication Wiring

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 13 shows the Carrier Controller configuration required to access the unit on the CCN. Figure 32 shows the CCN configuration screen.

Table 13 — 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

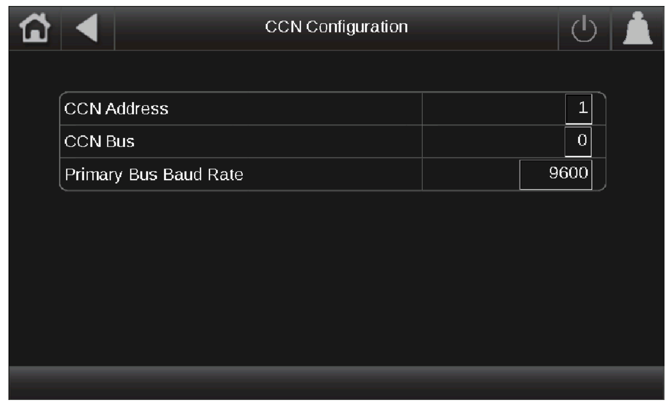


Fig. 32 — CCN Configuration Screen

Carrier Controller Menu Tables

Carrier Controller operation is controlled by configuration information entered in the configuration tables listed in Tables 14-18. 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 14 — Main Menu Table

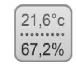
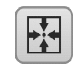
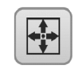
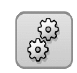
ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	MENU ICON
1	GENUINT	BASIC, USER, SERVICE, FACTORY	General Parameters	
2	TEMP	BASIC, USER, SERVICE, FACTORY	Temperatures	
3	PRESSURE	BASIC, USER, SERVICE, FACTORY	Pressures	
4	INPUTS	BASIC, USER, SERVICE, FACTORY	Inputs Status	
5	OUTPUTS	BASIC, USER, SERVICE, 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, SERVICE, FACTORY	Setpoint Table	
10	CONFIG	USER, SERVICE, FACTORY	Configuration Menu	
11	QCK_TEST	SERVICE, FACTORY	Quick Test Table	
12	MAINTAIN	SERVICE, FACTORY	Maintenance Menu	
13	TRENDING	BASIC, USER, SERVICE, FACTORY	Trend Display	

Table 15 — 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 16 — 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	FACTORY	Refrigerant Charging	

Table 17 — Maintenance Menu Table

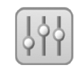
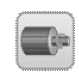
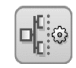
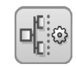
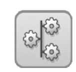
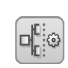
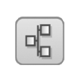
ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	ICON
1	CAPACTRL	SERVICE, FACTORY	Capacity Control	
2	VLT_DRV	SERVICE, FACTORY	VLT Drive Maintenance	
3	LAST_POR	SERVICE, FACTORY	Last PowerOn Reset	
4	EXV_CTRL	SERVICE, FACTORY	EXV Control	
5	LIMITS	SERVICE, FACTORY	Control Limits	
6	M_MSTSLV	SERVICE, FACTORY	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	

Table 18 — HMI Configuration Menu Table

ITEM	CCN MENU NAME	ACCESS	MENU TEXT DESCRIPTION	ICON
1	NET_ETH0	SERVICE, FACTORY	Network Conn - eth0	
2	NET_ETH1	SERVICE, FACTORY	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	

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.

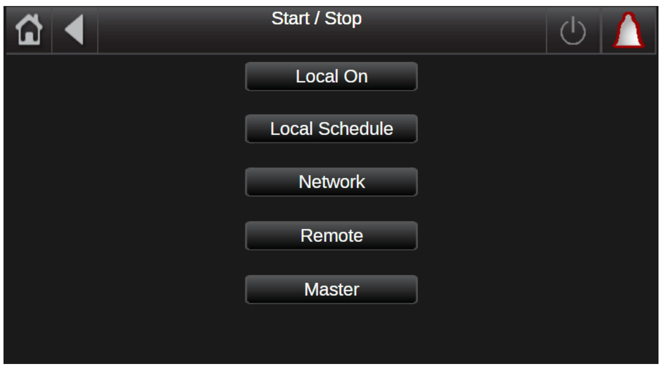


Fig. 33 — Machine Control Methods

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 31 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.

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 19 summarizes the available operating types.

Table 19 — 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).

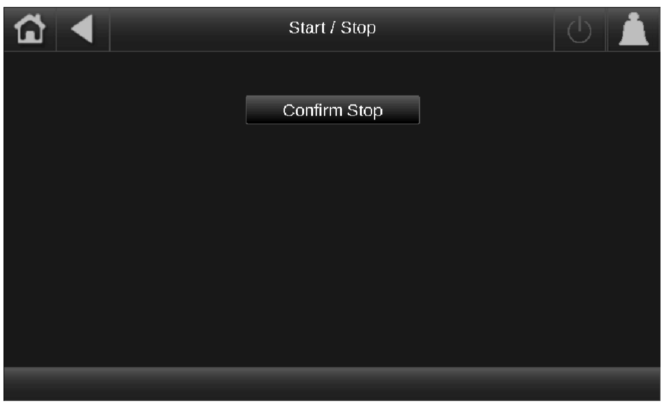


Fig. 35 — Confirm Stop

For Machine Control Method Local Schedule, touch the Local Off button to stop the machine or Back button to cancel (Fig. 35).

For Machine Control Method Network, touch the Local Off button to stop the machine or Back button to cancel (Fig. 36).

If the unit was operating when a power failure occurred, the controller initializes when power is restored and displays a Warning screen to indicate the machine may start (Fig. 36). If the Stop Chiller button is touched, the Success screen will be displayed (Fig. 37). 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.

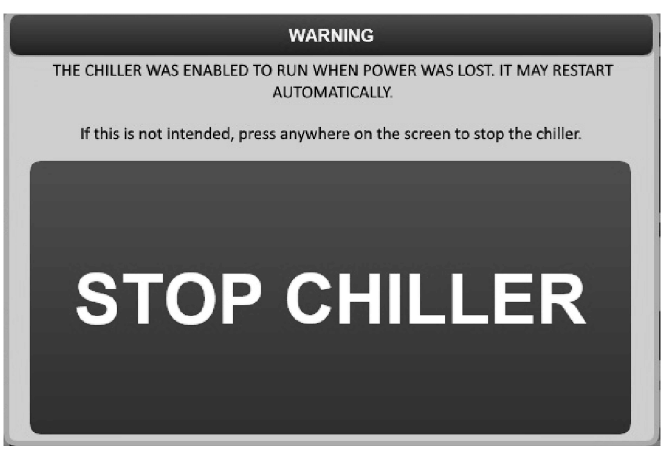


Fig. 36 — Chiller May Restart Automatically Warning Screen

Fig. 37 — Chiller in Off Position Screen

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 20 summarizes possible unit states.

Table 20 — 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 21 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 21 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 41.) **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 22).

See the Ice Storage Operation section on page 49 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 22. These values depend on the Evaporator Fluid Type and the Brine Freeze Setpoint (see Chilled Water Fluid Type Selection on page 33).

Table 21 — 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 22 — Evaporator Fluid Set Point Limits

Set Point Limits	EVAPORATOR FLUID TYPE (flui_typ)		
	1 = Water	2 = Medium Brine	3 = Low Brine
Minimum*	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)

* 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 23 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. 38.

Table 23 — Active Cooling Set Point Parameters

OPERATING TYPE	PARAMETER STATUS					ACTIVE SETPOINT
	Setpoint Selection	Ice Storage Configuration*	Ice Done Contact*	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

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

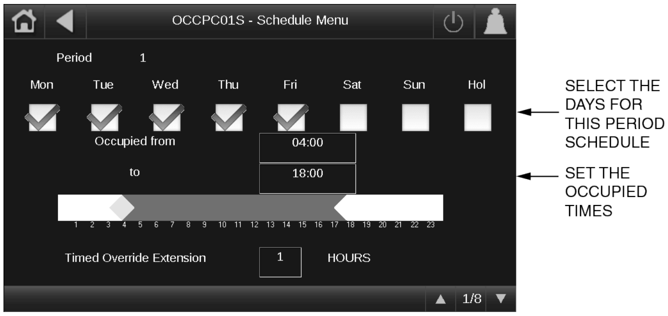


Fig. 38 — Schedule Menu

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 24, 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 24 — 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 29).

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 slave 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 25 summarizes evaporator pump configuration parameters. Figure 39 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 25 — 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

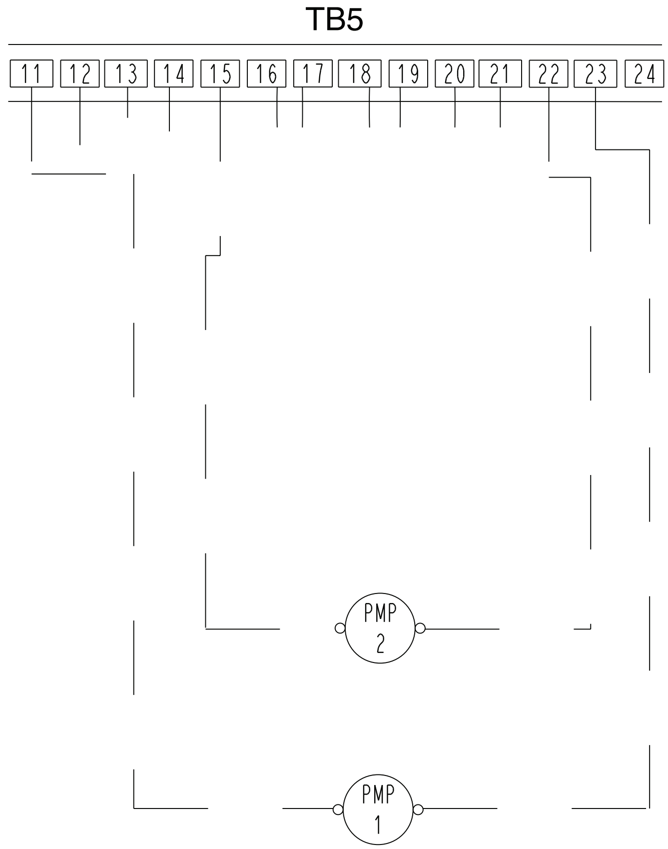


Fig. 39 — Wiring for Evaporator Pump Control

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 77).

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. For setup and operating details, see "Factory-Supplied Pumps" on page 321.

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:

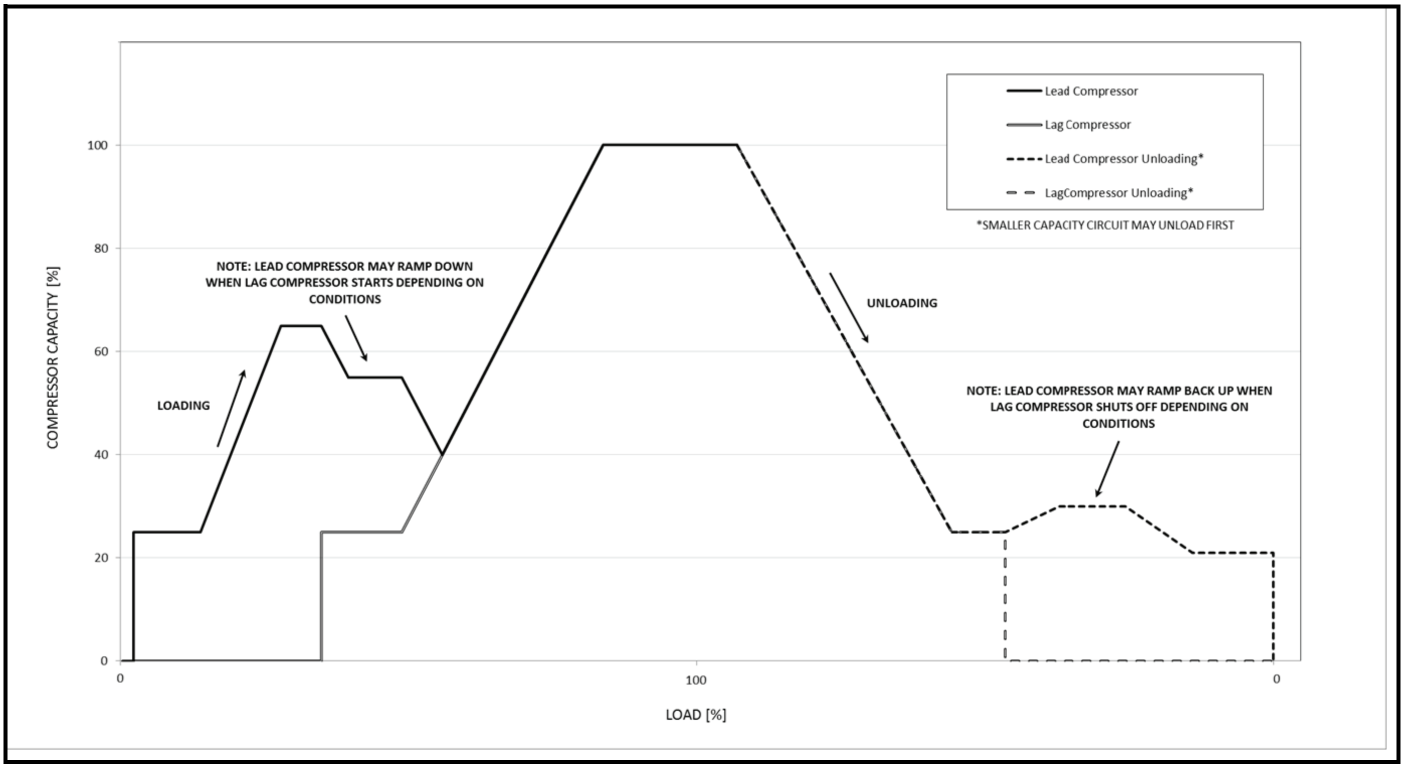
DISPLAY NAME	PATH	LINE NO.	VALUE
Circuit Priority Sequence	***Main Menu → Configuration Menu →General Configuration***	1	0 = Auto 1 = Ckt A Priority 2 = Ckt B Priority

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. 40 for a graphical representation of initial system loading and unloading. (Figure 40 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. 40 — 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. 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 26. To configure the slave chiller for parallel applications, see Table 27.

Table 26 — 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 27 — Dual Slave Chiller Control Parameters for Parallel Applications

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: 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 41-44 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 stand-alone 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 28. To configure the slave chiller for series applications, see Table 29.

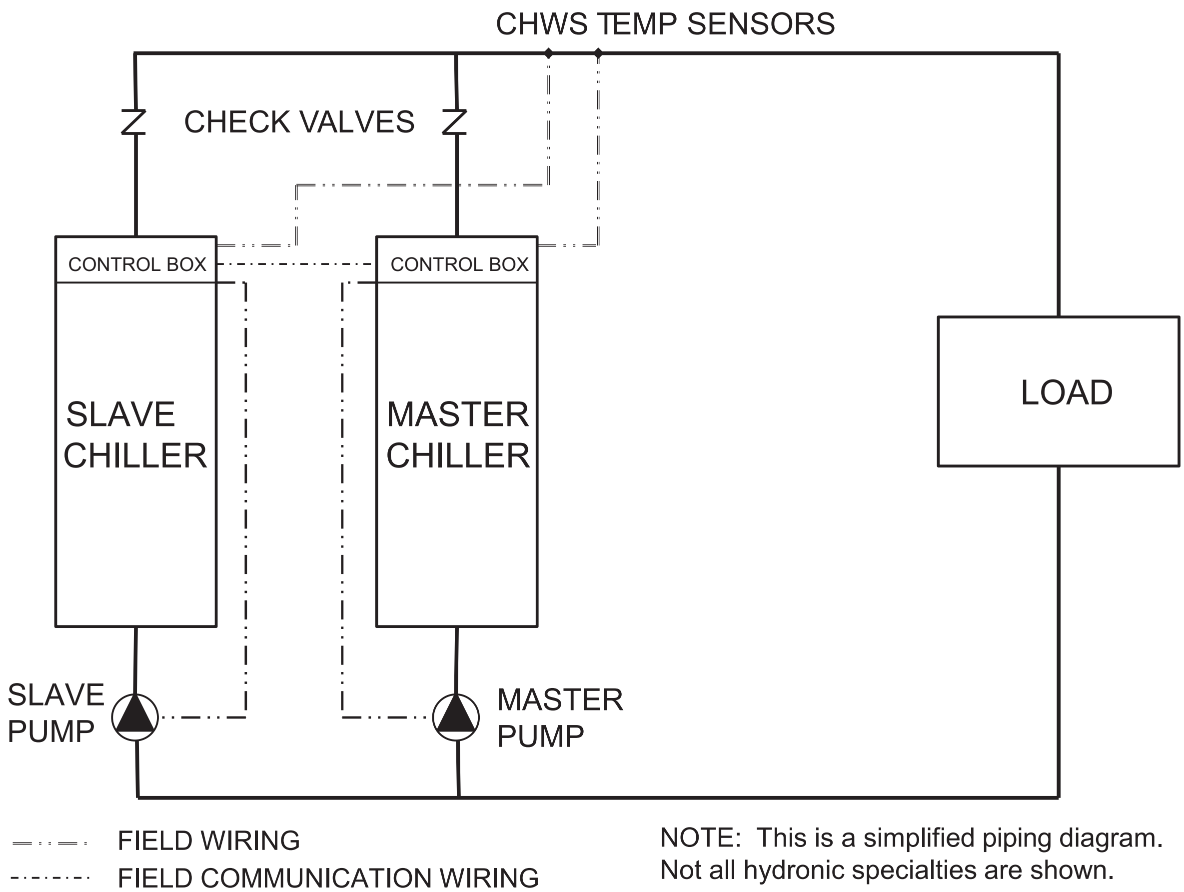


Fig. 41 — Typical Parallel Master/Slave Chillers Dedicated Primary Pumping, Variable Flow, Leaving Water Control

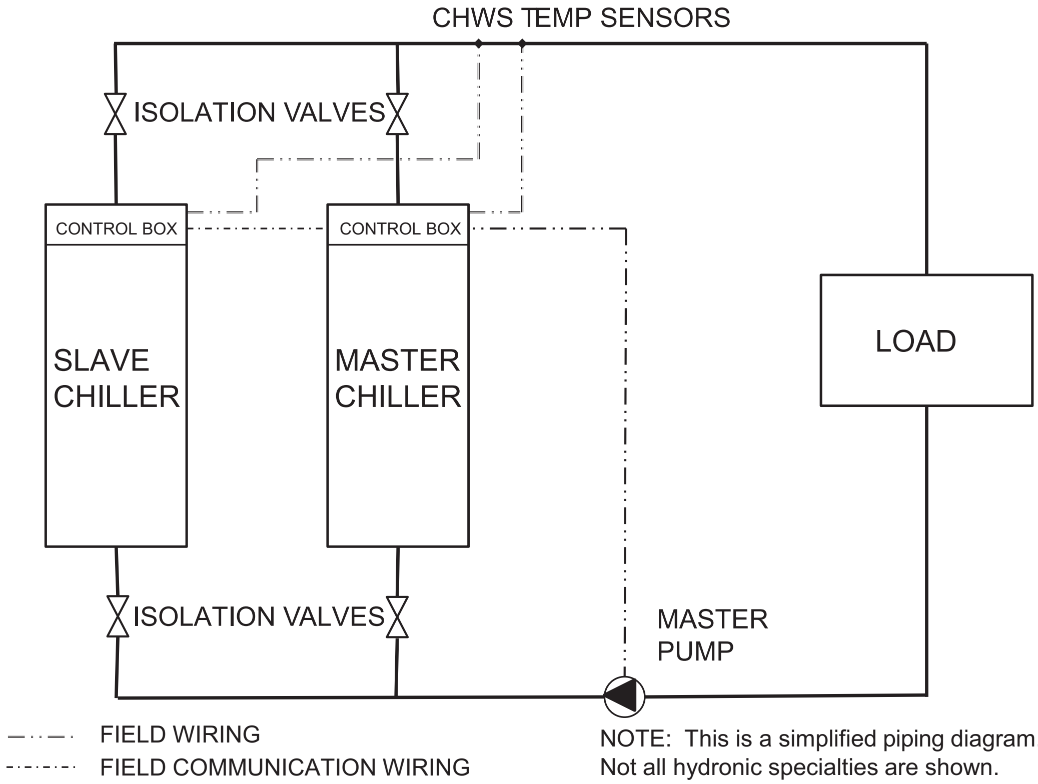


Fig. 42 — Typical Parallel Master/Slave Chillers Common Primary Pumping, Constant Flow, Leaving Water Control

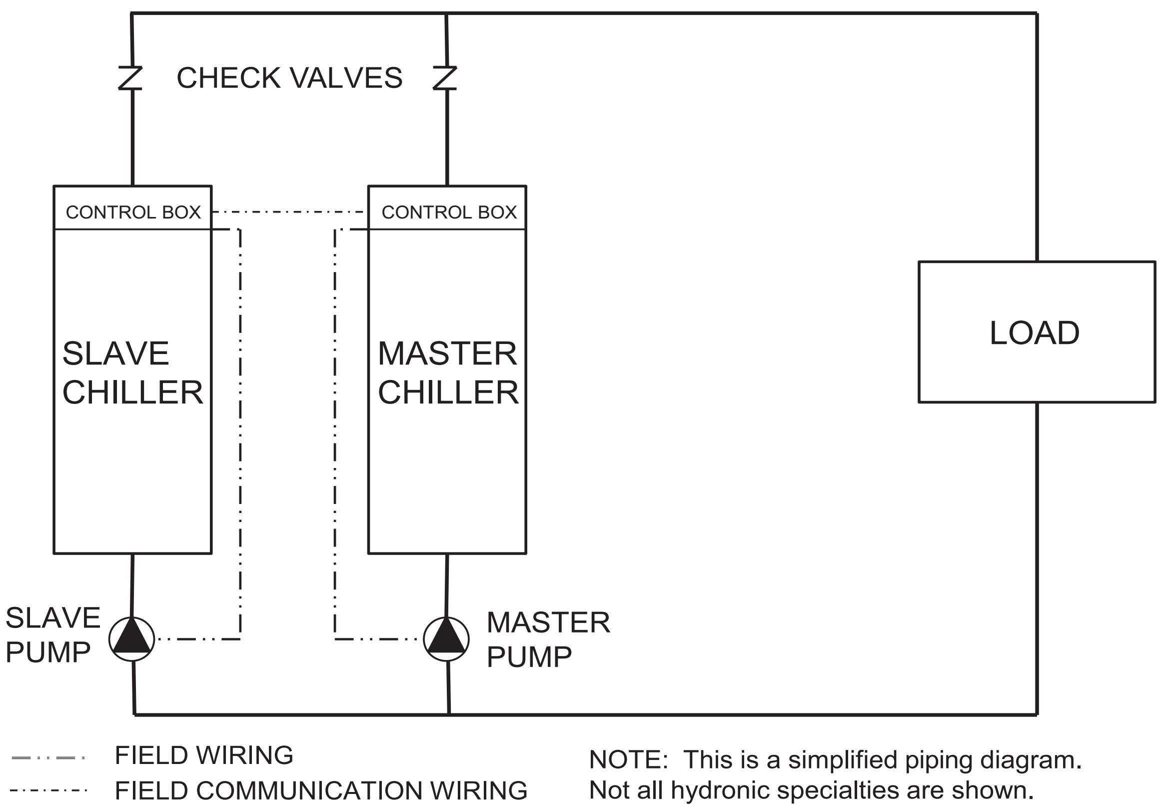


Fig. 43 — Typical Parallel Master/Slave Chillers Dedicated Primary Pumping, Variable Flow, Entering Water Control

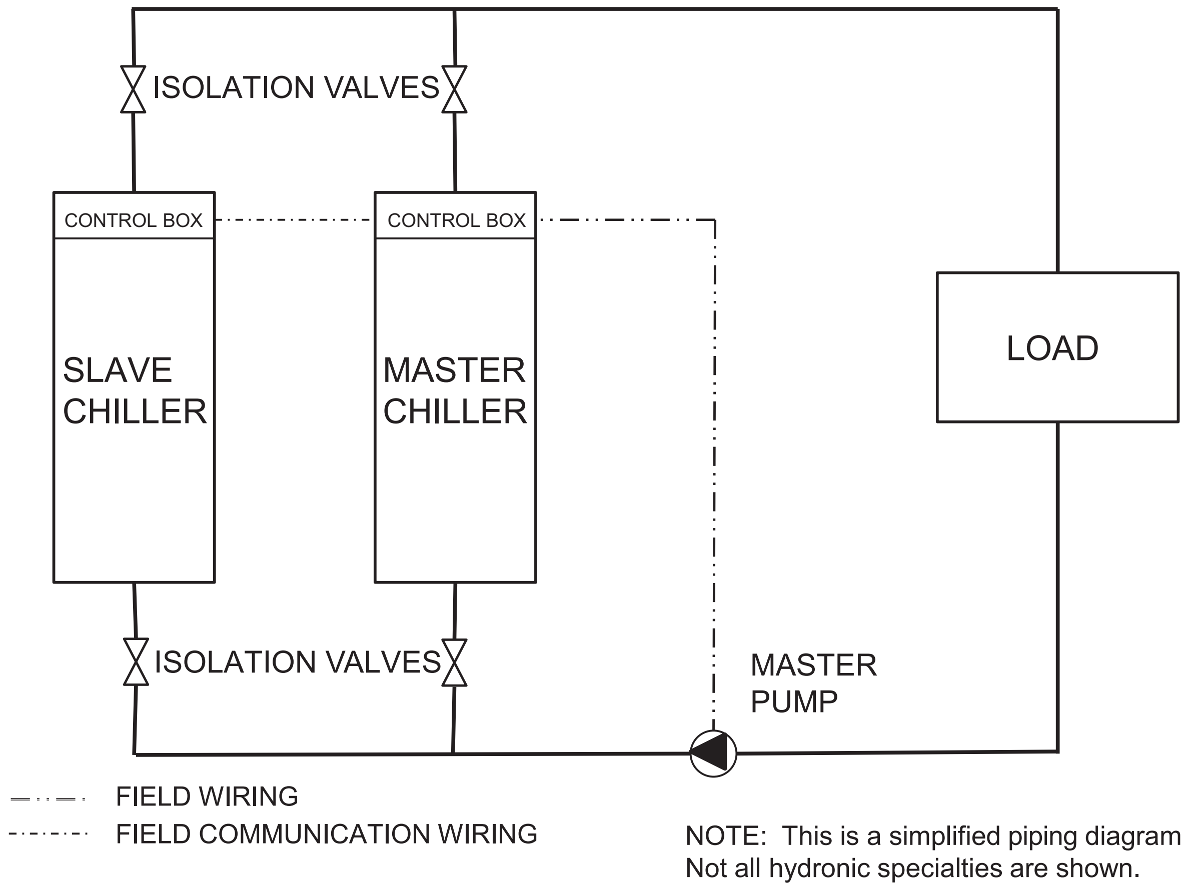


Fig. 44 — Typical Parallel Master/Slave Chillers Common Primary Pumping, Variable Flow, Entering Water Control

Table 28 — 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 29 — Slave Chiller Configuration in Series Applications

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

NOTES:
1. 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.
2. 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 61. Figure 45 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. 46. 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. 47.

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.

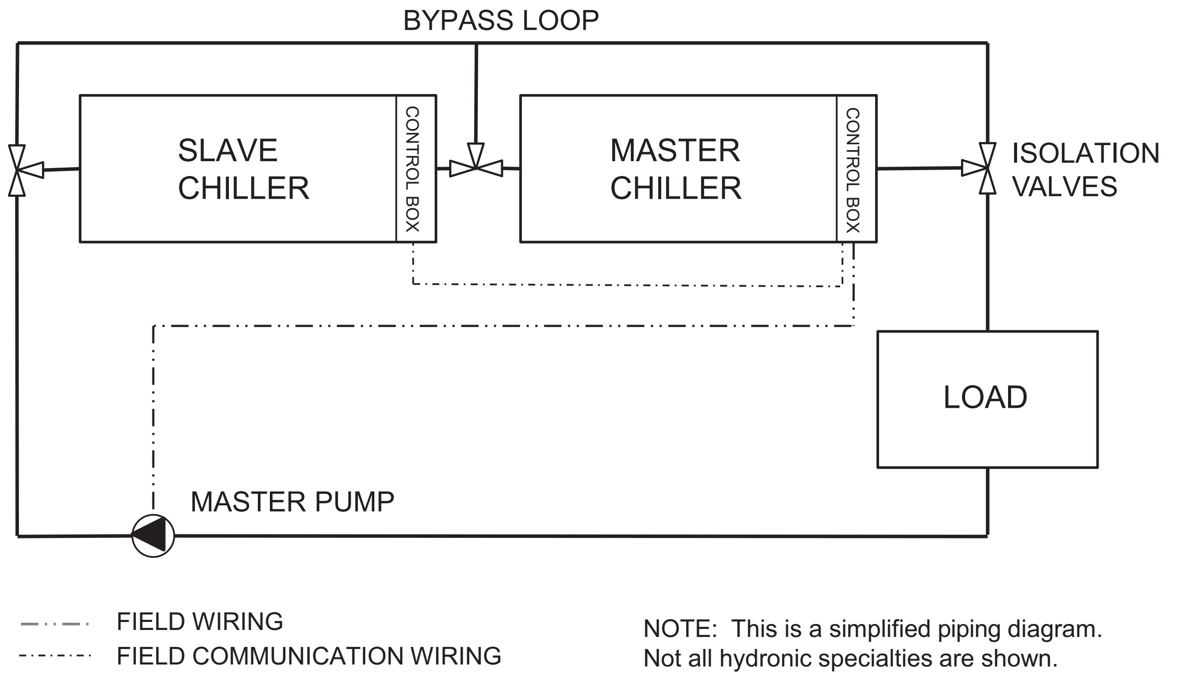
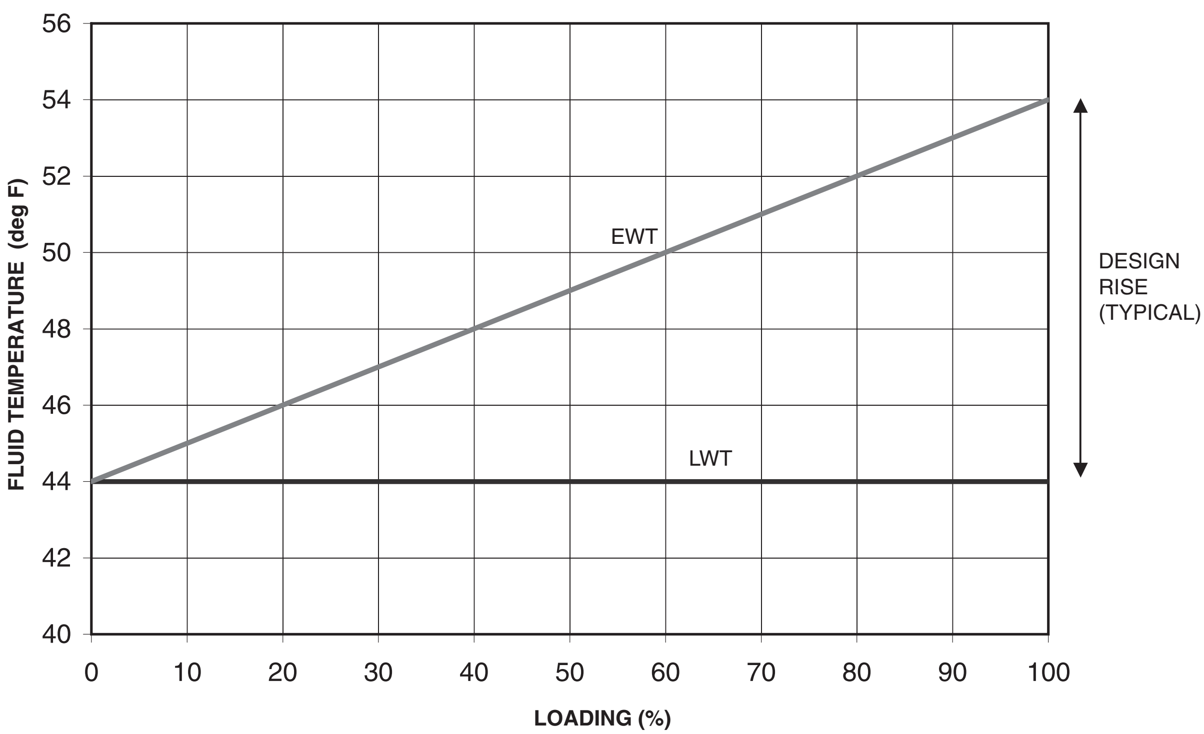
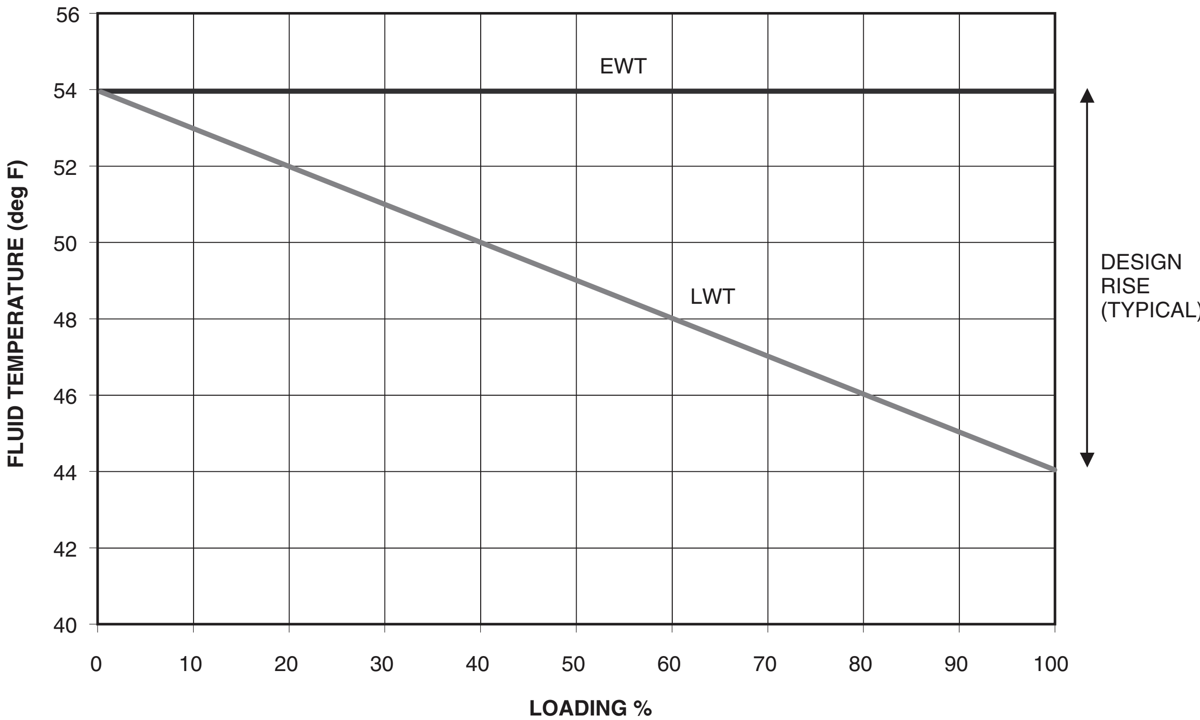


Fig. 45 — Typical Series Master/Slave Chillers Dedicated Primary Pumping, Constant Flow, Leaving Water Control



LEGEND
EWT — Entering Water Temperature
LWT — Leaving Water Temperature

Fig. 46 — Leaving Chilled Water Temperature Control



LEGEND
EWT — Entering Water Temperature
LWT — Leaving Water Temperature

Fig. 47 — 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. 48, 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.

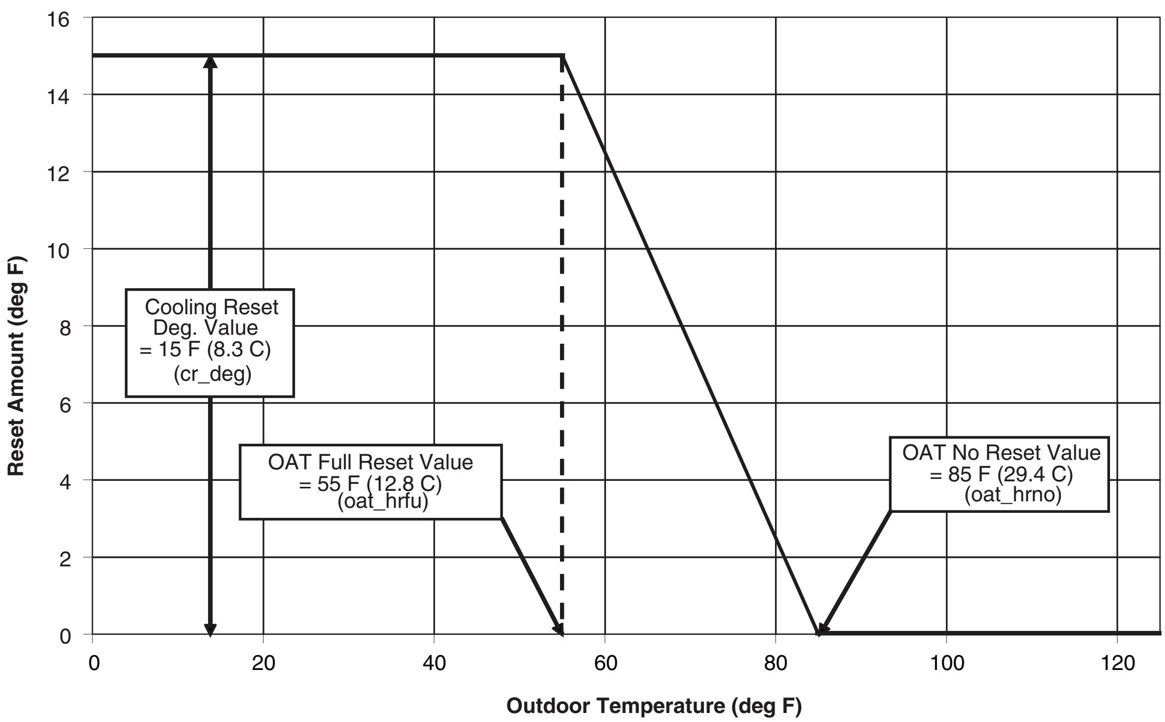


Fig. 48 — Example: OAT Reset

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. 49 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).

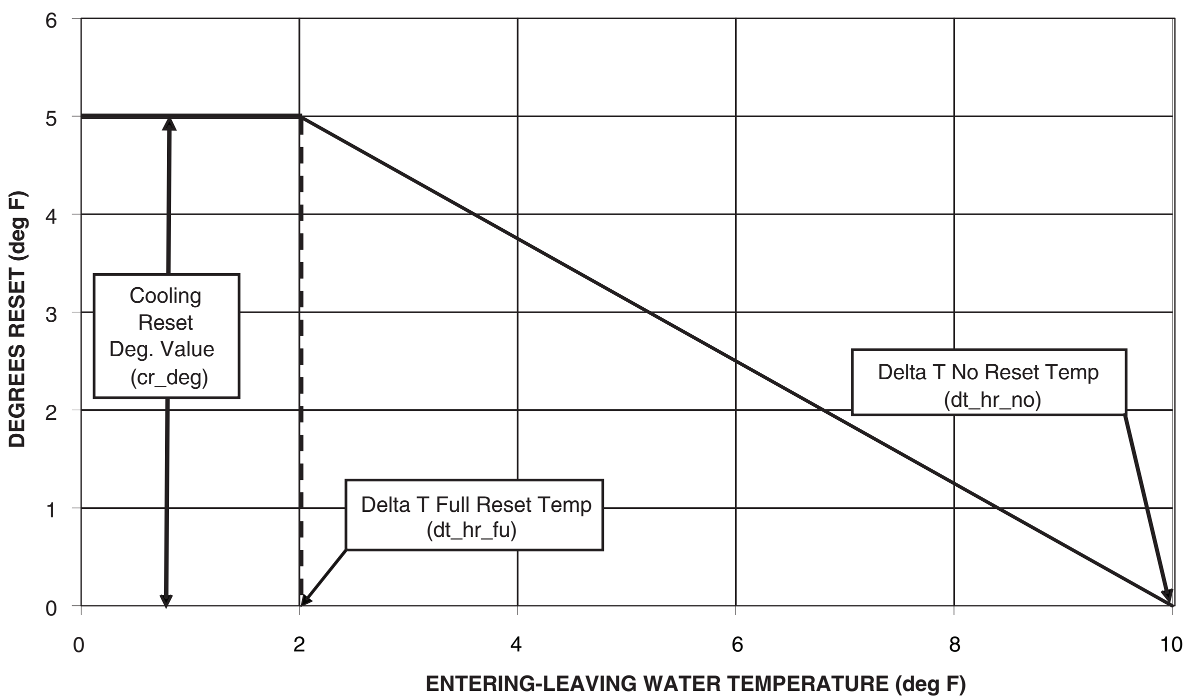


Fig. 49 — Example: Return Water Reset

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. 50, 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. 51, 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).

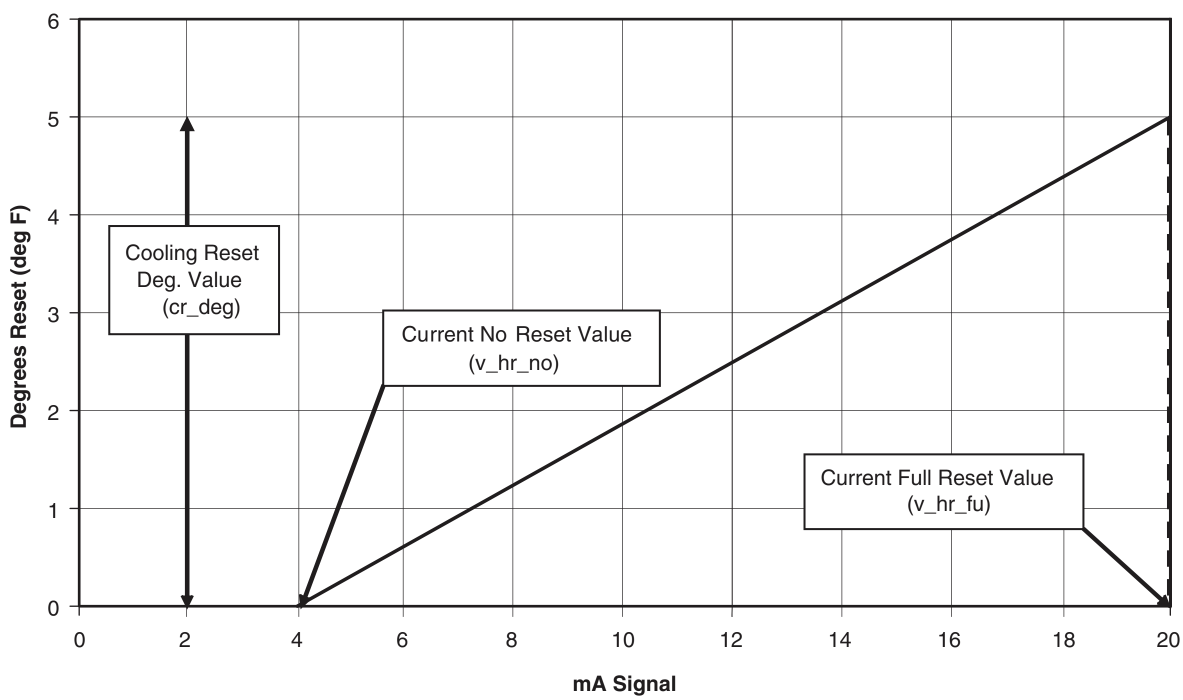


Fig. 50 — Example: 4 to 20 mA Temperature Reset

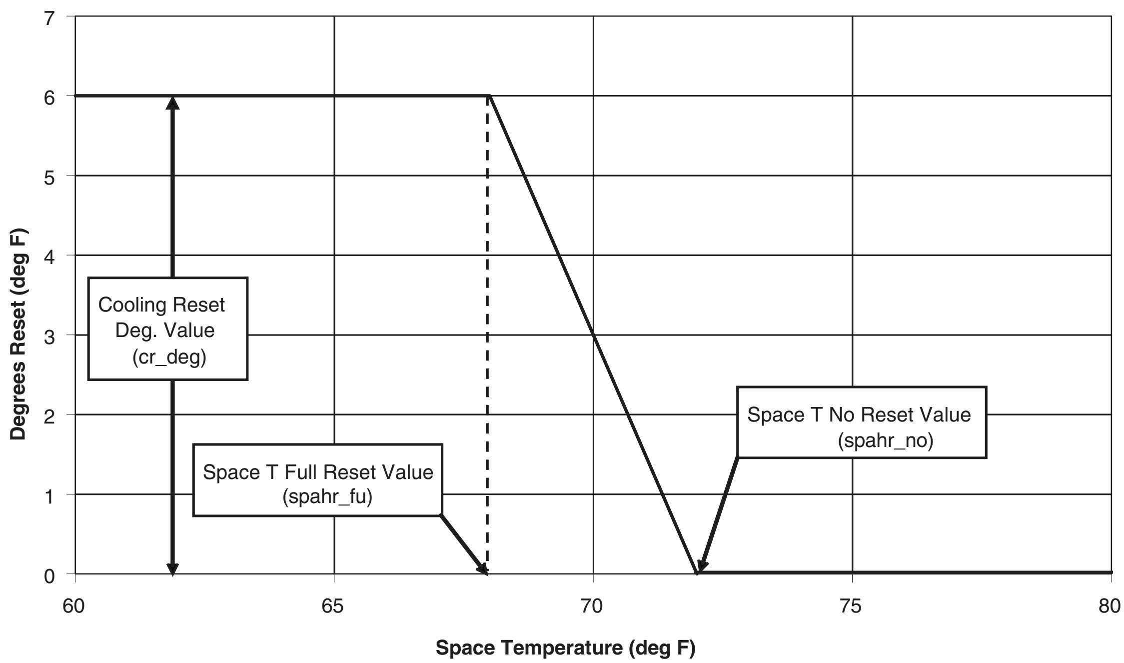


Fig. 51 — Example: Space Temperature Reset

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 user-configurable level 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 51.

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 52.

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. 52, 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.

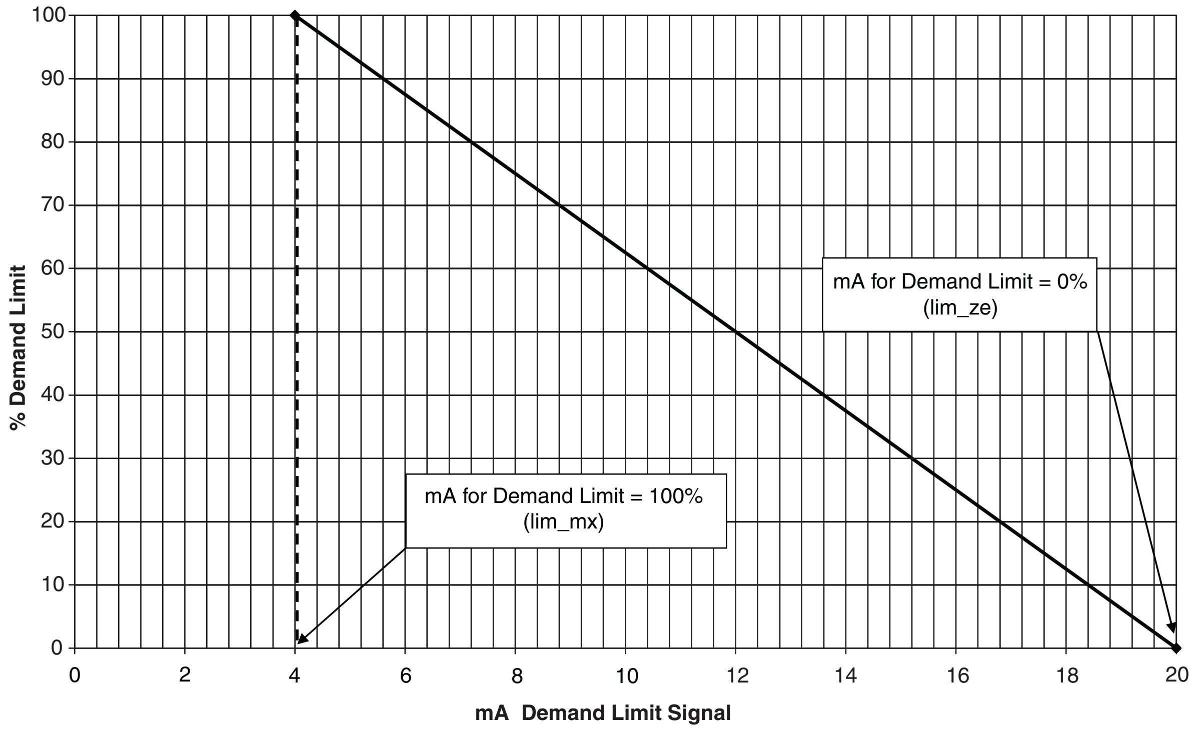


Fig. 52 — Example: 4 to 20 mA Demand Limit

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 205 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. 53. 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 30.

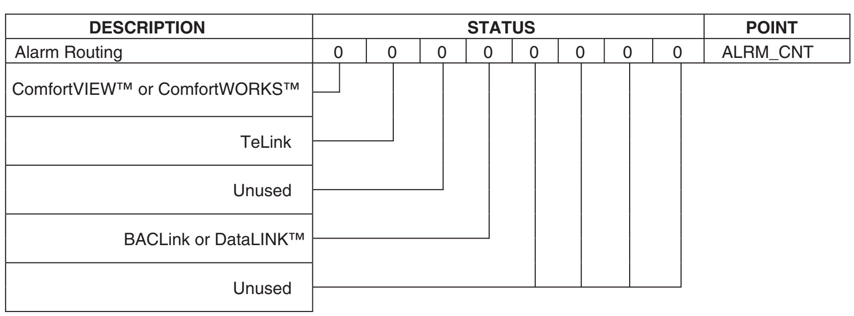


Fig. 53 — Alarm Routing Control

Table 30 — 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 31 for a list of capacity control overrides. See the Operating Modes section on page 62 for more information regarding operating modes.

Table 31 — 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 32 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 32 — Sound Optimization Factor Settings

FACTOR	COMPRESSOR SPEED	RANGE	DEFAULT
Enable Max Frequency A	fMaxEnA	no/yes	0 (no)
Enable Max Frequency B	fMaxEnB	no/yes	0 (no)
Max Frequency Override A	fMaxOvrA	50 to 105	75
Max Frequency Override B	fMaxOvrB	50 to 105	75
Fan Freq Fctor (0.7-1.1)	fan_fact	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 control, 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 the 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, check to see 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*	32	0
Maximum Evaporator EWT†	95	35
Maximum Evaporator LWT	60	15
Minimum Evaporator LWT	38**	3.3
Maximum Evaporator Glycol EWT†	95	35
Minimum Evaporator Glycol LWT	30	16.7

LEGEND

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

* 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.
† For sustained operation, EWT should not exceed 70°F (21.1°C).
** Unit requires brine fluid for operation below this 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 for more information.

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%.

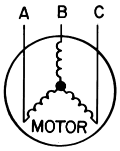
To determine percent voltage imbalance:

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

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



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.

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.

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 33-35. See Fig. 54-62 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 33 — 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 34 — 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 35 — 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

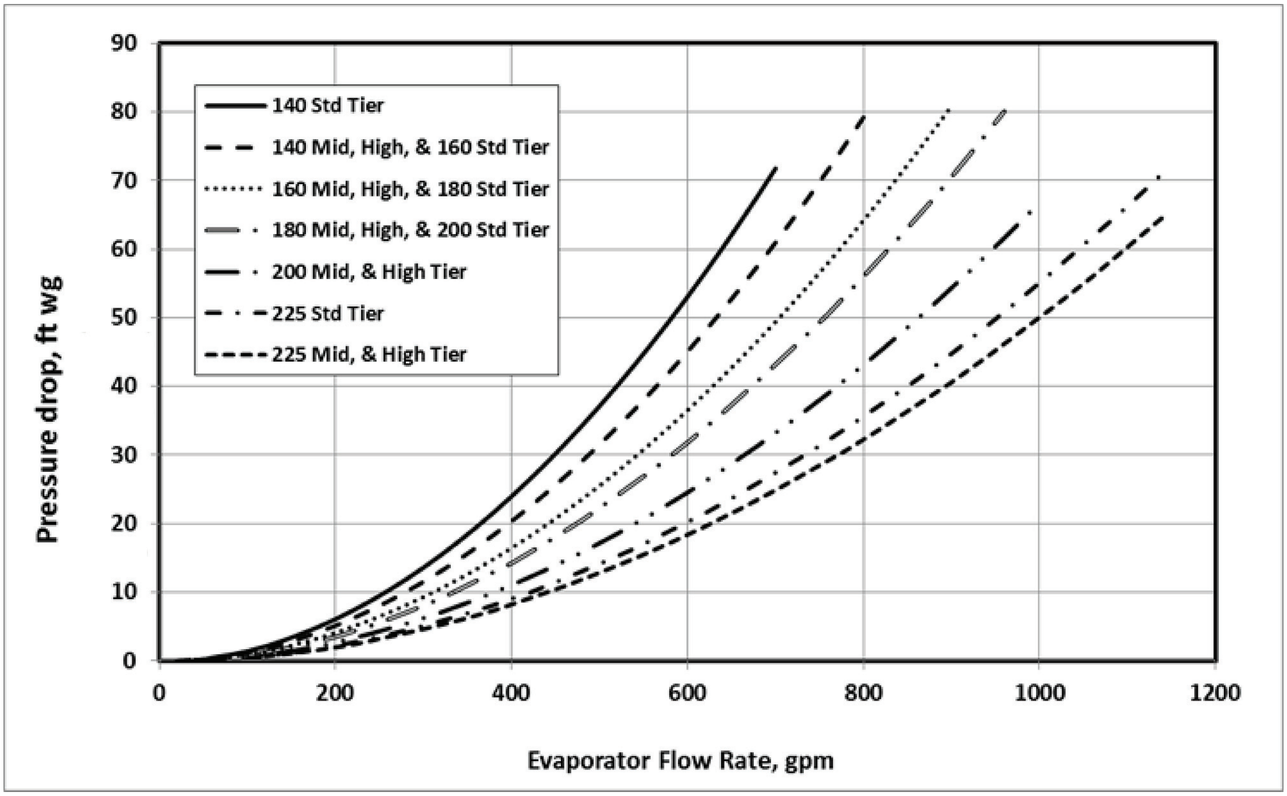


Fig. 54 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV140-225)

Unit Sizes 30XV250, 275, 300, 325

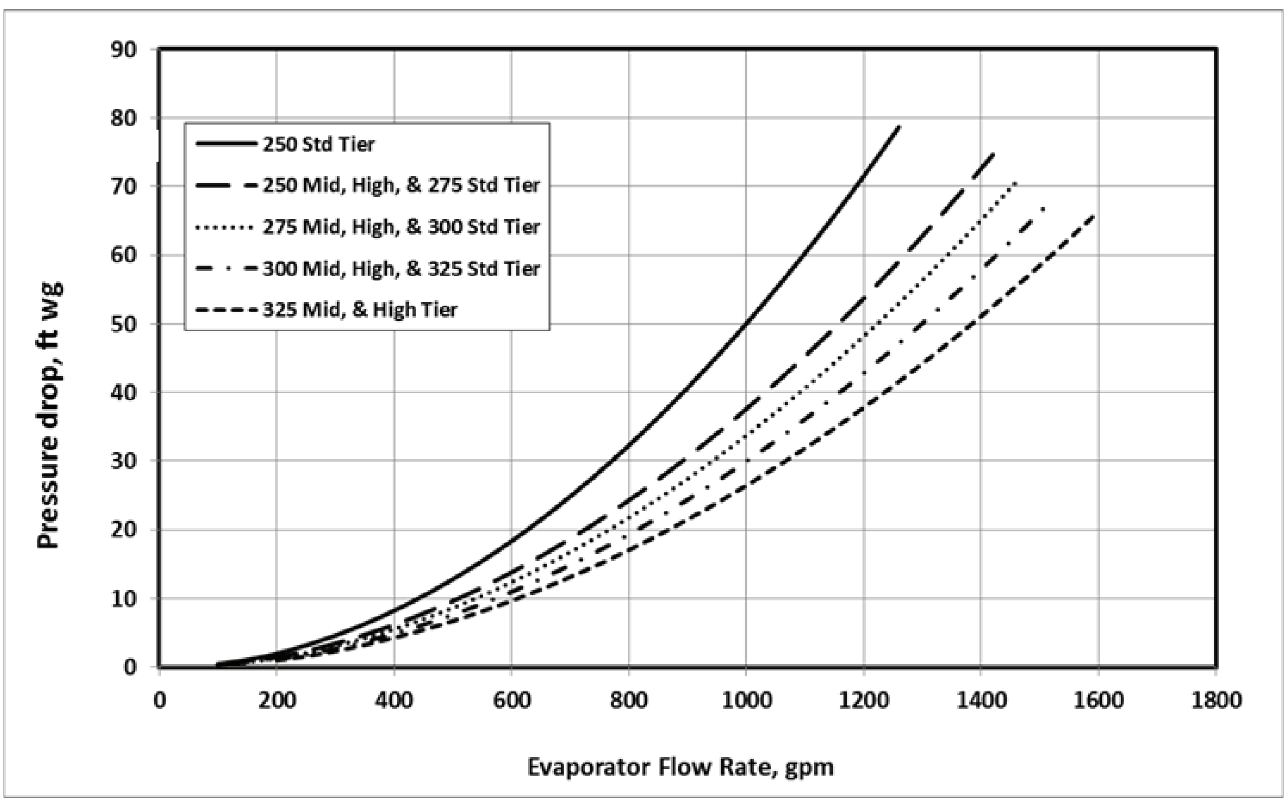


Fig. 55 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV250-325)

Unit Sizes 30XV350, 400, 450, 500

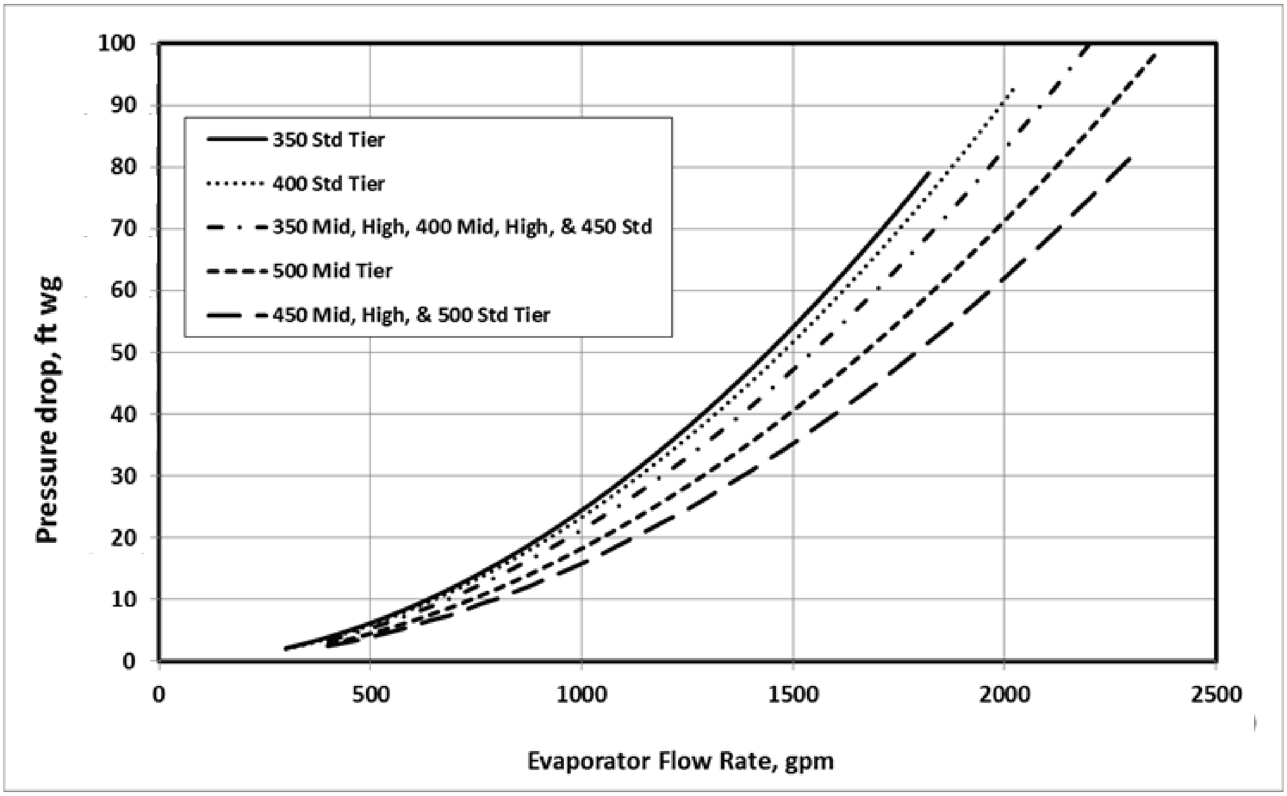


Fig. 56 — Evaporator Pressure Drop Curves (English), Standard Pass Flooded Evaporator (30XV350-500)

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

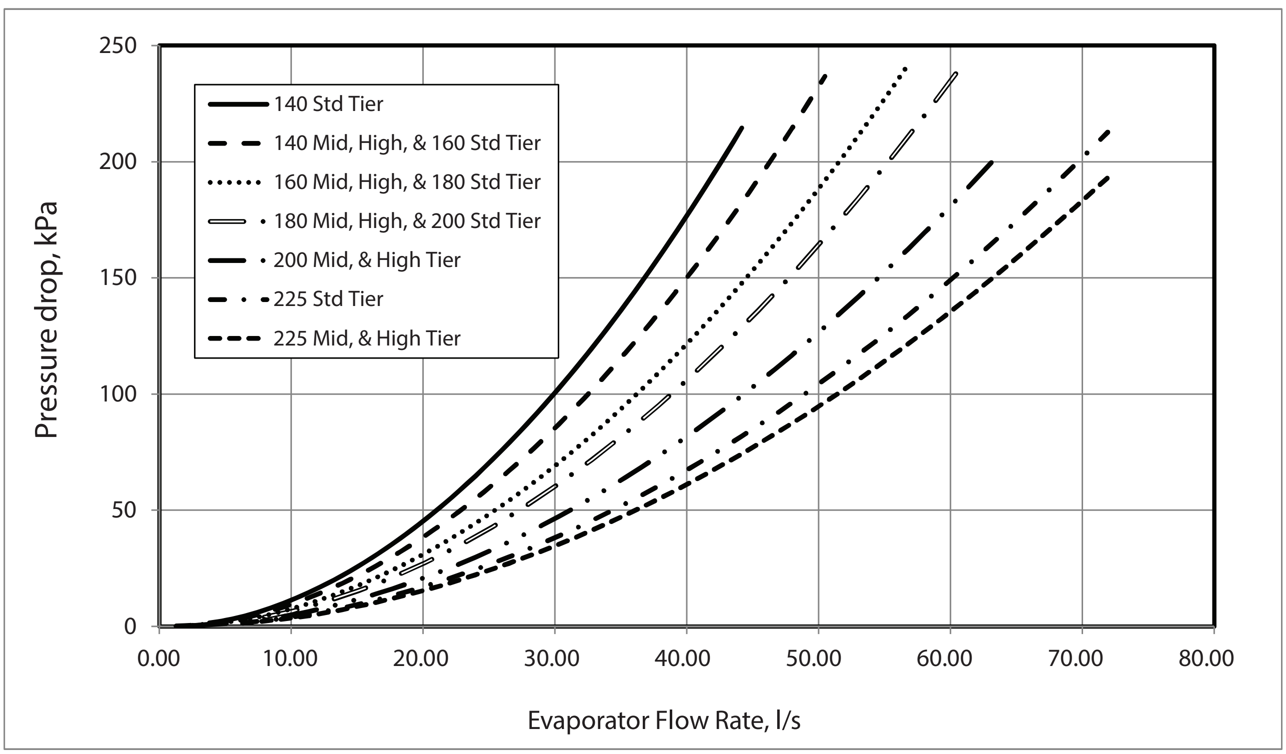


Fig. 57 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV140-225)

Unit Sizes 30XV250, 275, 300, 325

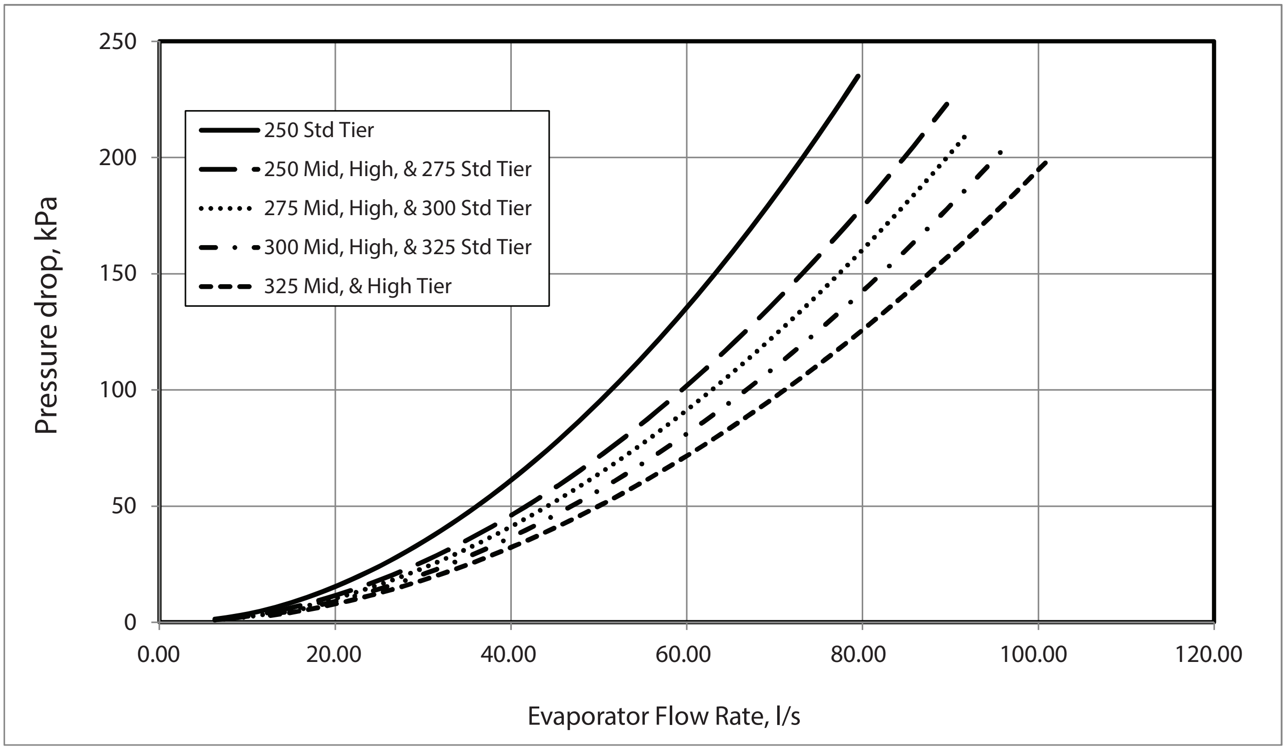


Fig. 58 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV250-325)

Unit Sizes 30XV350, 400, 450, 500

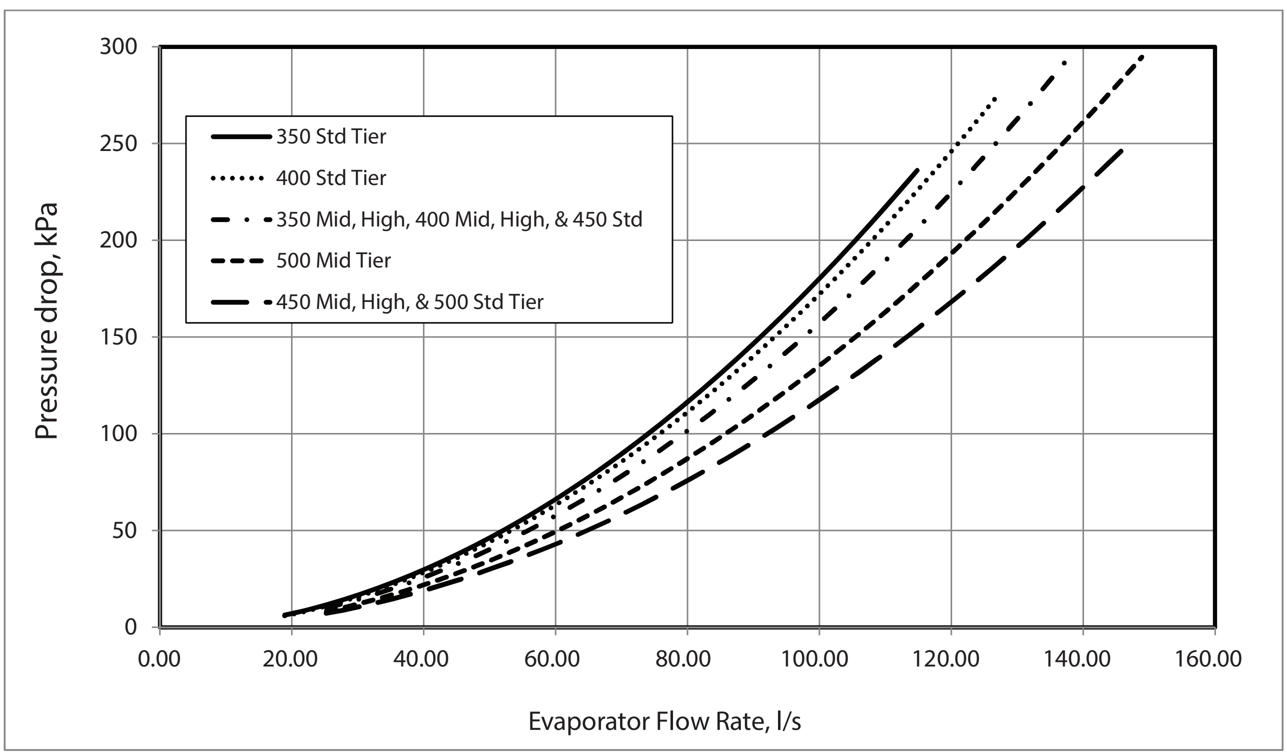


Fig. 59 — Evaporator Pressure Drop Curves (SI), Standard Pass Flooded Evaporator (30XV350-500)

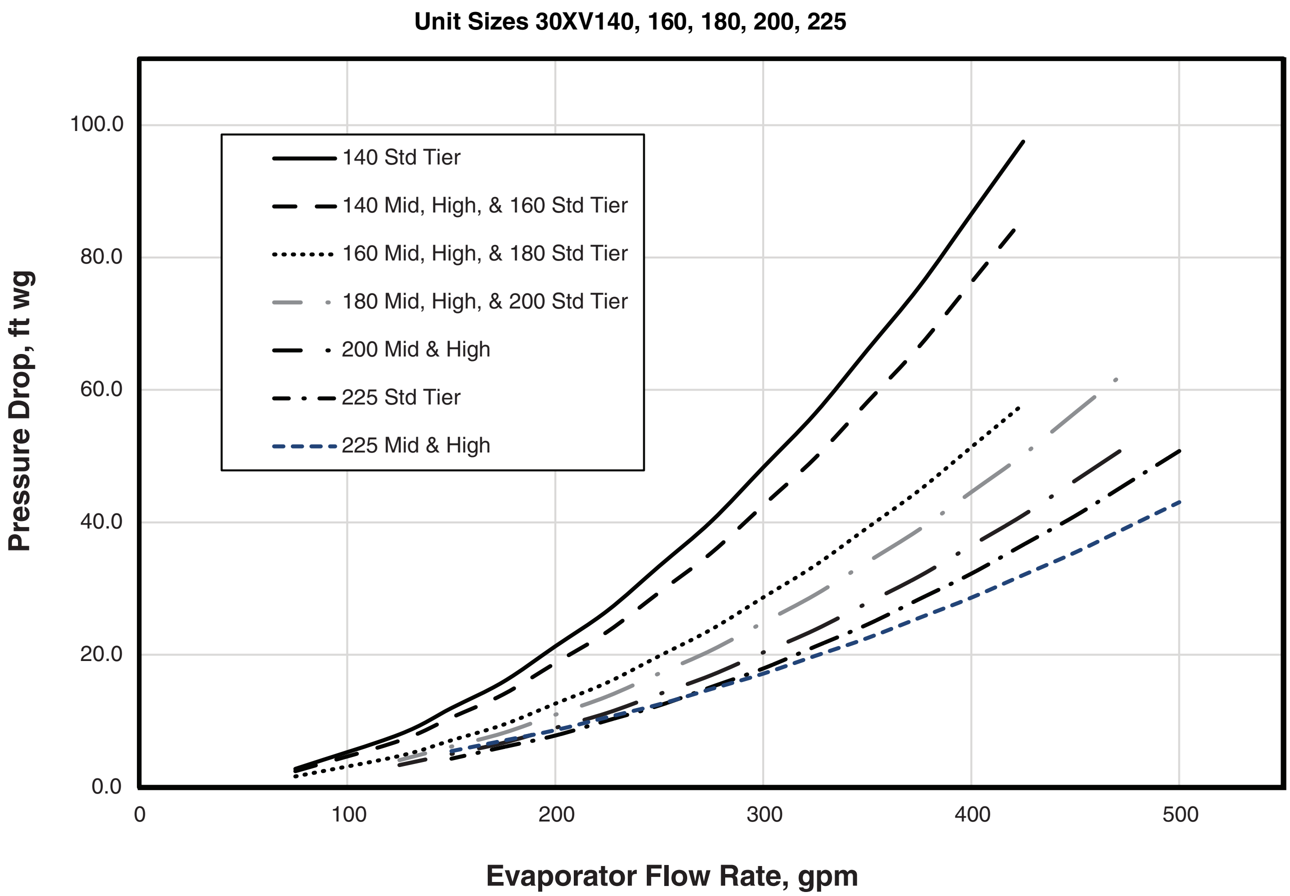


Fig. 60 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV140-225)

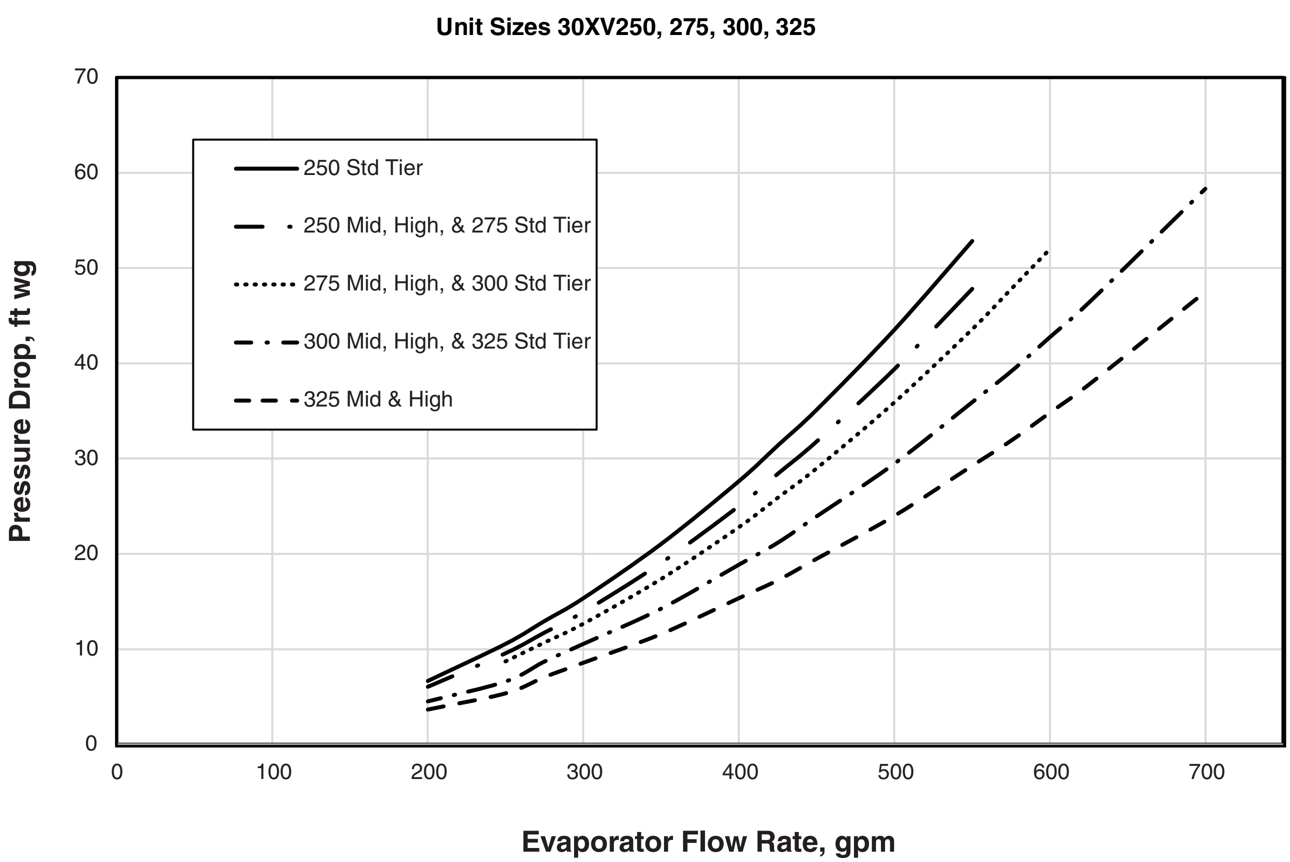


Fig. 61 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV250-325)

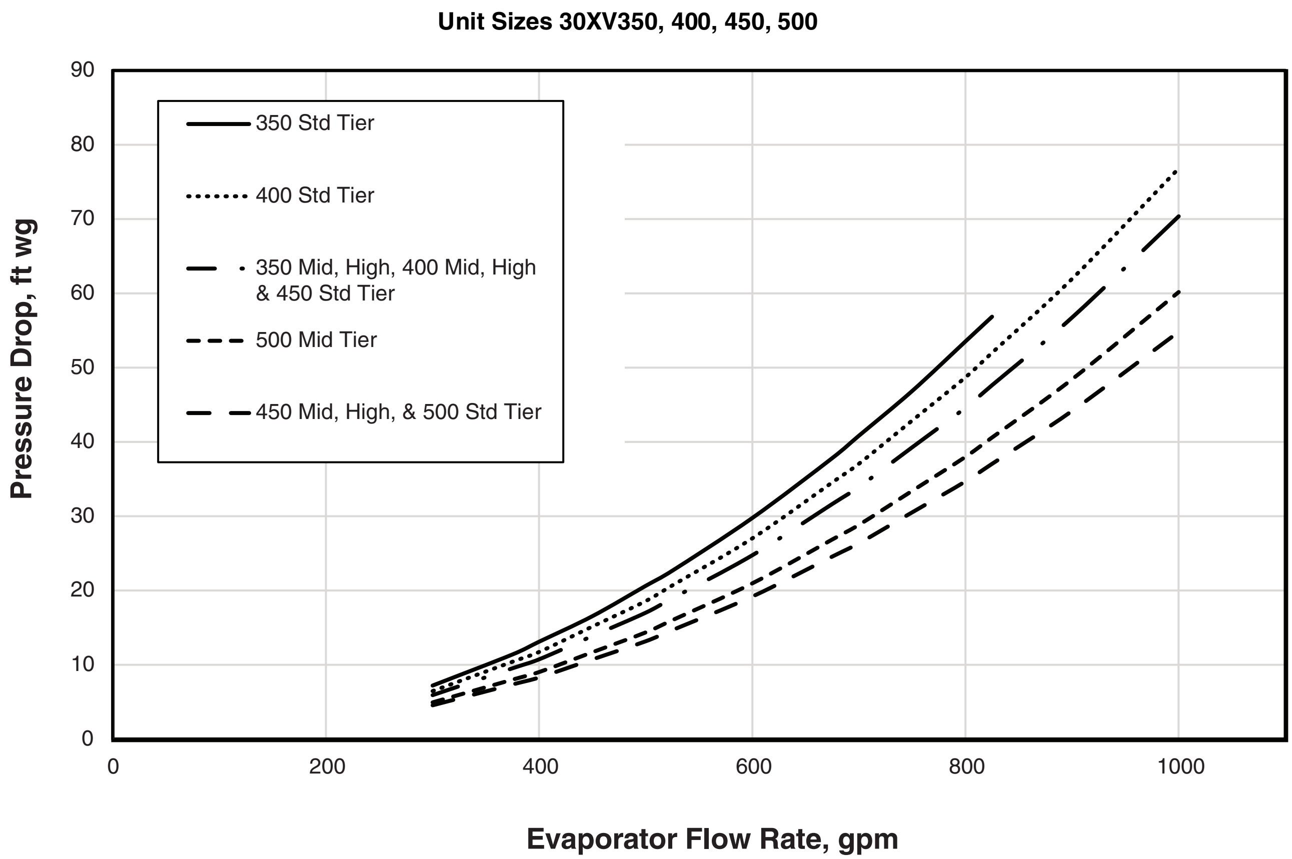


Fig. 62 — Evaporator Pressure Drop Curves (English), Three Pass Flooded Evaporator (30XV350-500)

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. 63 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. 64 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. 65 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. 65.
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.

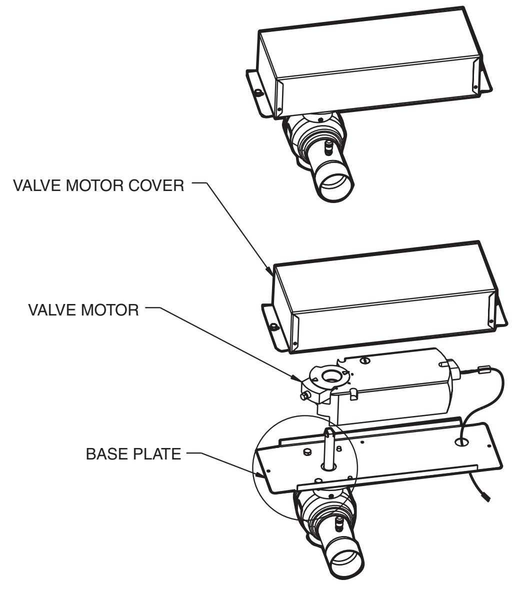


Fig. 63 — Typical ABV Assembly with Enclosure

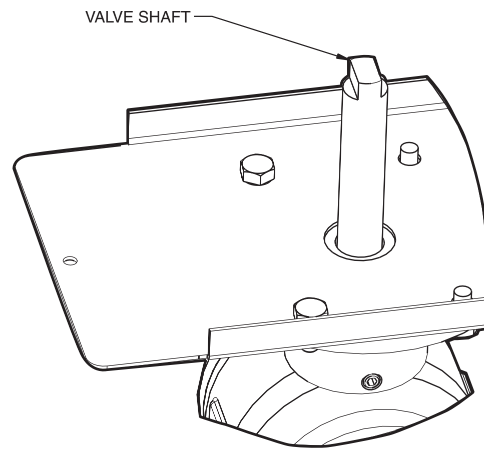


Fig. 64 — Fully Open Ball Valve with Actuator Removed

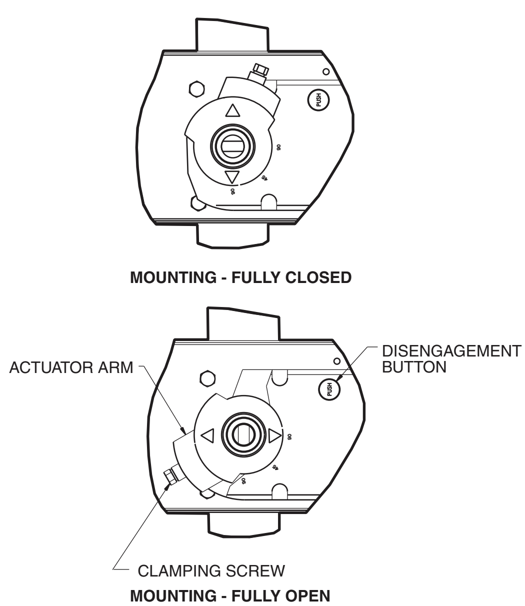


Fig. 65 — Ball Valve Motor

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 51).

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 36 for a list of operating modes.

Table 36 — 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 the 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 → Master/ 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. 66.

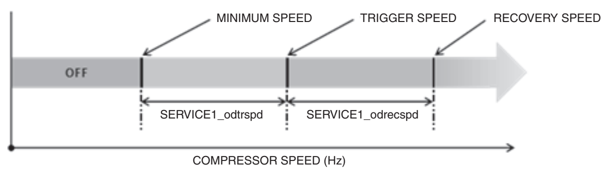


Fig. 66 — Oil Recovery Diagram

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 37-41)

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. 67 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. 68.

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. 69. 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. 69):

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. 70 for transducer locations.

Table 37 — 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 38 — 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 39 — 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

Table 39 — 5K Thermistor Temperature vs. Resistance (cont)

°F	°C	RESISTANCE, OHMS
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

Table 39 — 5K Thermistor Temperature vs. Resistance (cont)

°F	°C	RESISTANCE, OHMS
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

Table 39 — 5K Thermistor Temperature vs. Resistance (cont)

°F	°C	RESISTANCE, OHMS
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 40 — 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
50	3.328	19,903
51	3.298	19,386
52	3.268	18,874
53	3.238	18,384
54	3.208	17,904
55	3.178	17,441
56	3.147	16,991
57	3.117	16,552
58	3.086	16,131
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
134	1.096	2,809
135	1.079	2,752
136	1.062	2,697
137	1.045	2,643
138	1.028	2,590
139	1.012	2,539
140	0.996	2,488
141	0.980	2,439
142	0.965	2,391
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
218	0.292	620
219	0.288	610
220	0.284	601
221	0.279	592
222	0.275	583
223	0.272	574
224	0.268	566
225	0.264	557

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

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

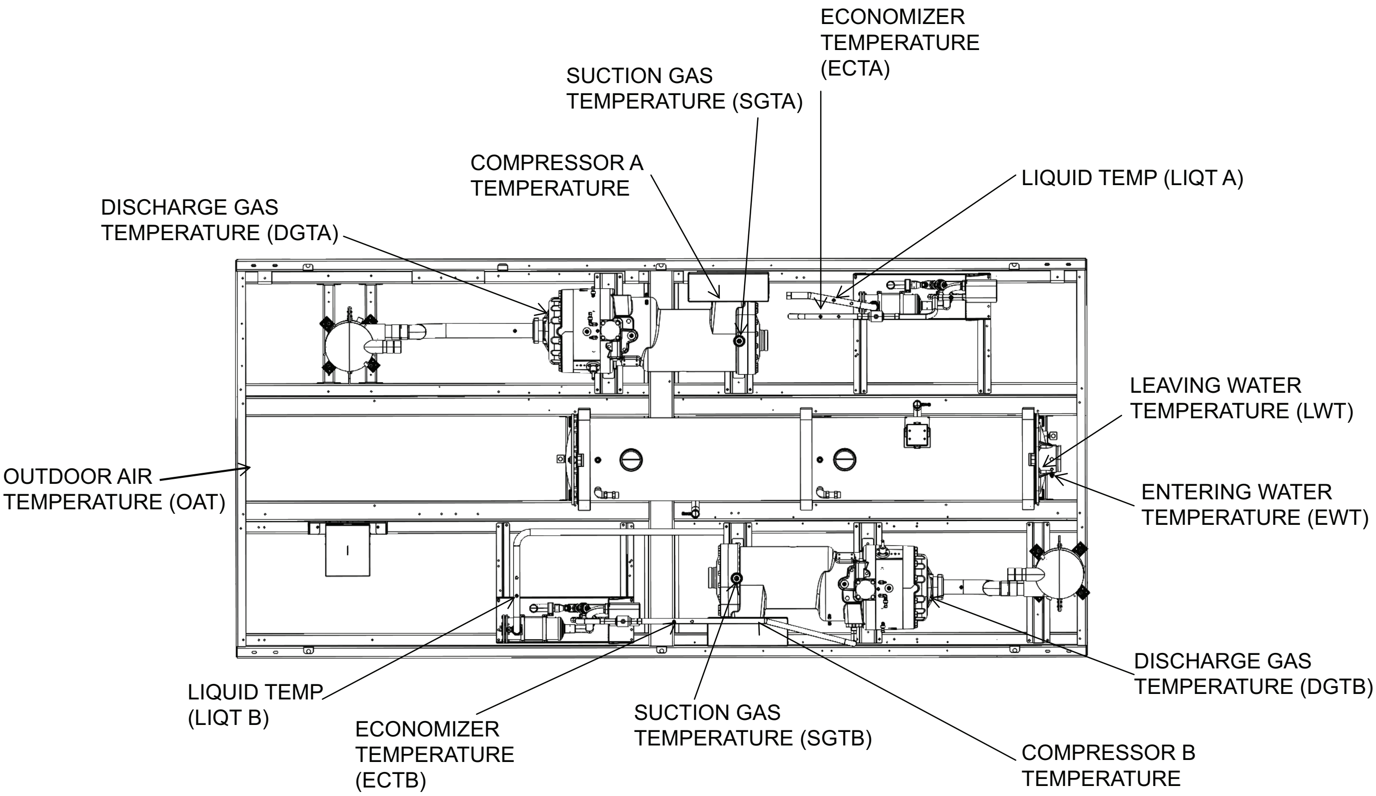


Fig. 67 — Thermistor Locations

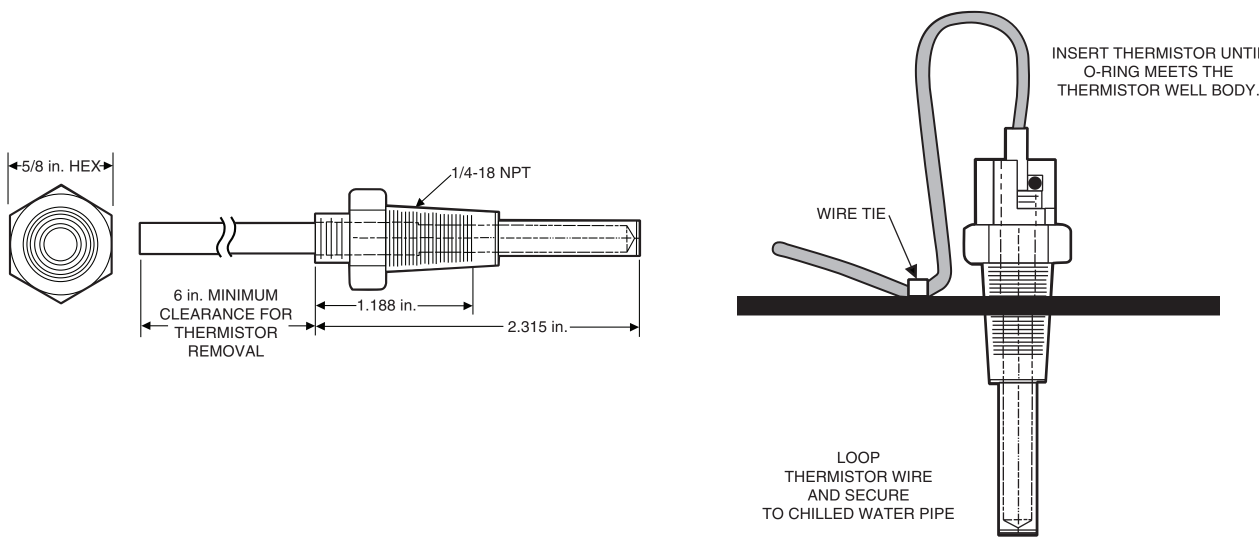


Fig. 68 — Dual Chiller Accessory Kit Leaving Water Thermistor and Well (P/N 00EFN900044000A)

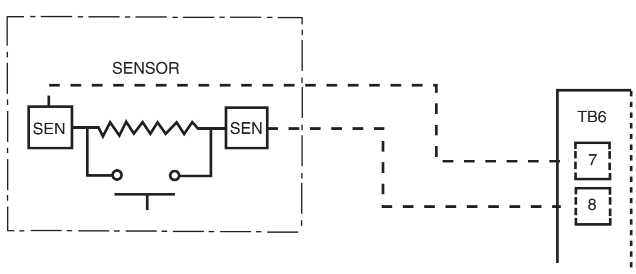


Fig. 69 — Typical Space Temperature Sensor (33ZCT55SPT) Wiring

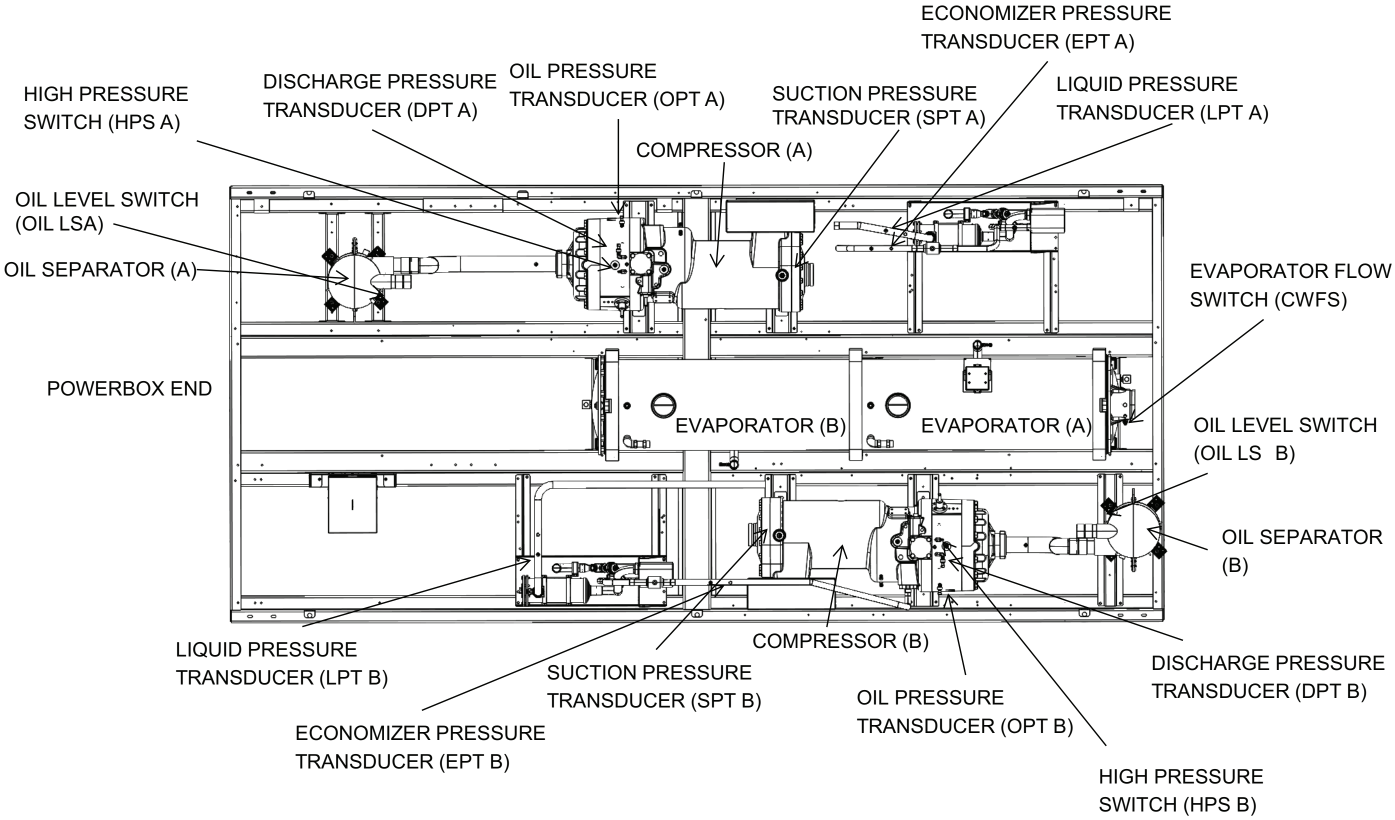


Fig. 70 — Transducer and Switch Locations

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. 71.

Electronic Expansion Valve

See Fig. 72 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.

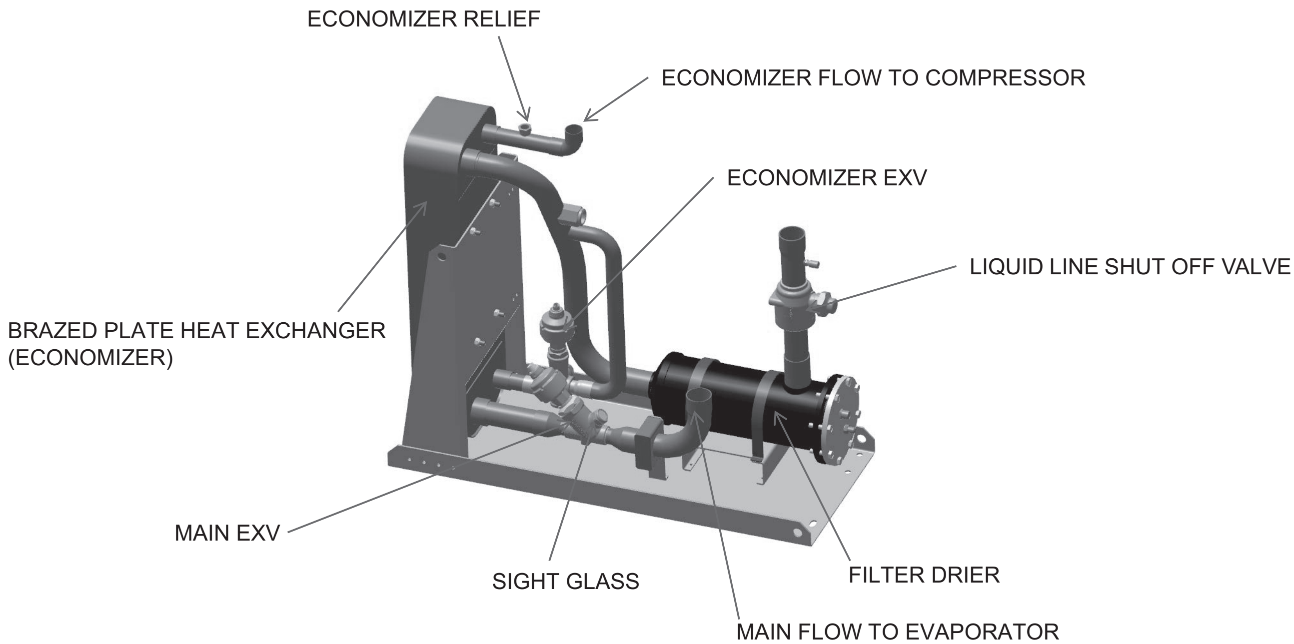


Fig. 71 — Economizer Assembly

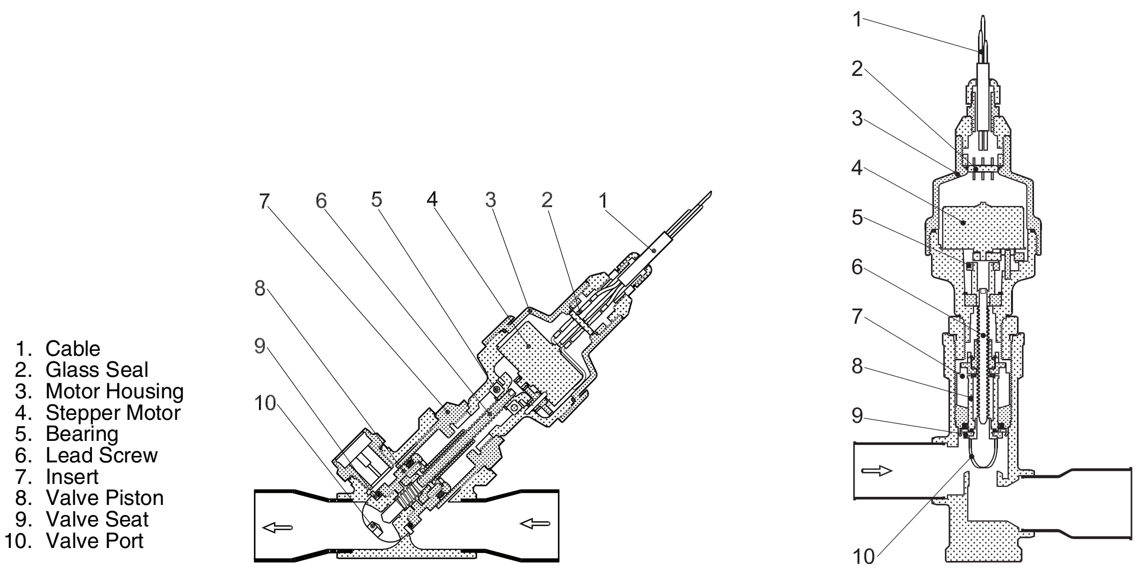


Fig. 72 — Cutaway Views of the Electronic Expansion Valve

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 → Circuit A EXV Position***) or EXV Position Circuit B % Open (***Main Menu → Maintenance Menu → EXV Control***). Use Quick Test procedure on page 203. 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 7 and 8 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 203, 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 61 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. 72. 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. 72. 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. 73. 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

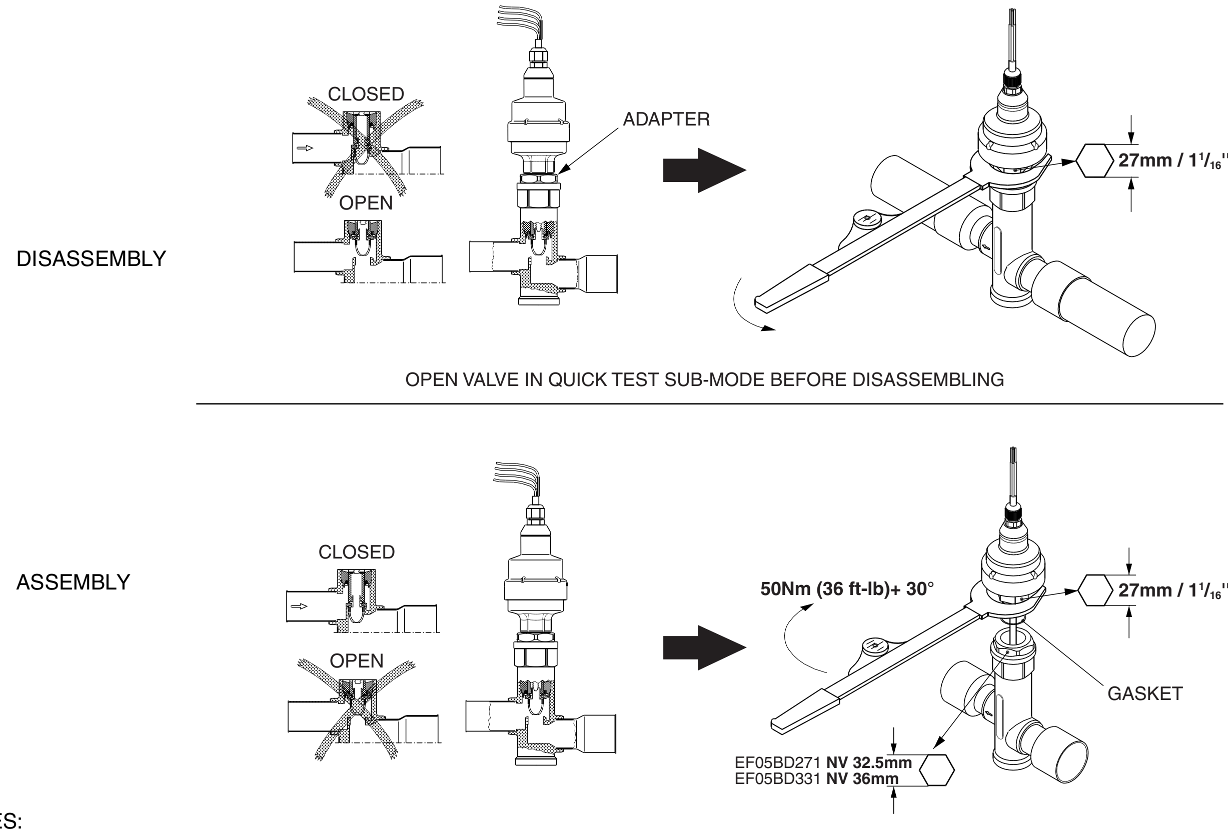
Clear flow of liquid refrigerant indicates sufficient charge in system. Bubbles in the sight glass indicate undercharged system or presence of noncondensables. Moisture in system, measured in parts per million (ppm), changes color of indicator. See Table 42. Change filter drier at first sign of moisture 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.

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.



NOTES:
1. Push down on valve piston to close valve before assembling.
2. After valve is assembled close valve in Quick Test sub-mode or cycle power before opening service valve.

Fig. 73 — Disassembly and Assembly of EXV Motor

Table 42 — 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	30-100	45-170
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. Micro-channel 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. 74 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 the 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. 75 and 76. See Table 43 for required oil quantity per circuit, initially included from the factory.

Table 43 — Unit Oil Quantities

30XV UNIT SIZE	OIL CHARGE (gal, [liters])	
	Circuit A	Circuit B
140-325	5.5 [20.8]	5.5 [20.8]
350	7.5 [28.4]	5.5 [20.8]
400-500	7.5 [28.4]	7.5 [28.4]

Oil Charge

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

- Manufacturer. . . . . Emkarate RL220XL
- Oil Type . . . . Inhibited polyolester-based synthetic compressor lubricant for use with screw compressors.
- ISO Viscosity Grade 220

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 if 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 in the oil separator sight glass. An oil level should be visible in the upper sight glass. If level is not visible, the unit is low on oil charge.
4. Add oil until the oil is at the center of the upper sight glass. Make sure not to add oil beyond this level as excess oil will be carried out of the oil separator into the system and might lead to system instabilities at certain conditions.
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.

Evaporator Service

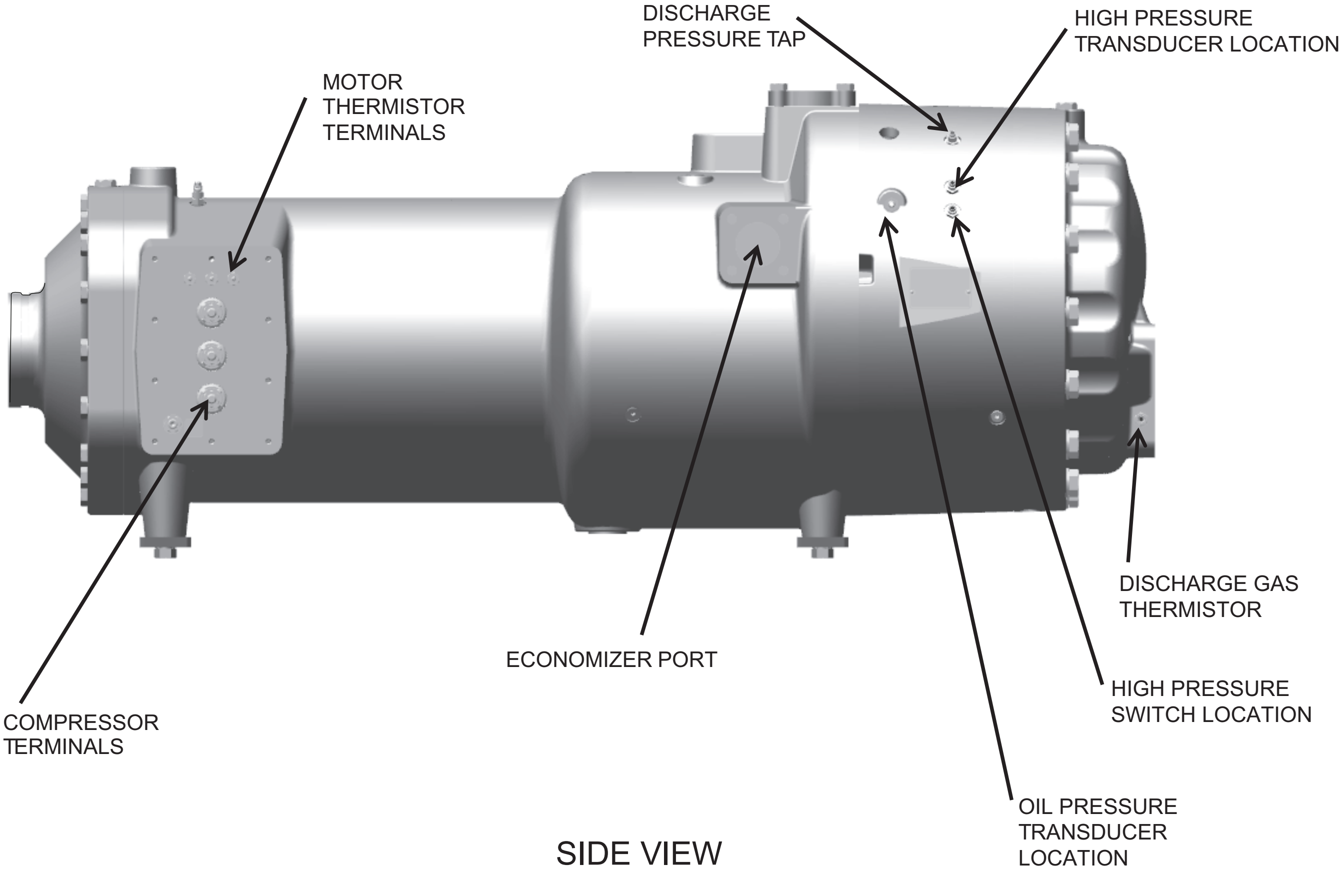
The 30XV units use flooded style evaporators.

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. 77 and 78 for details on the butterfly suction service valve operation. The valve locks into place when fully opened or fully closed. See Table 44 for compressor usage.

Table 44 — 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



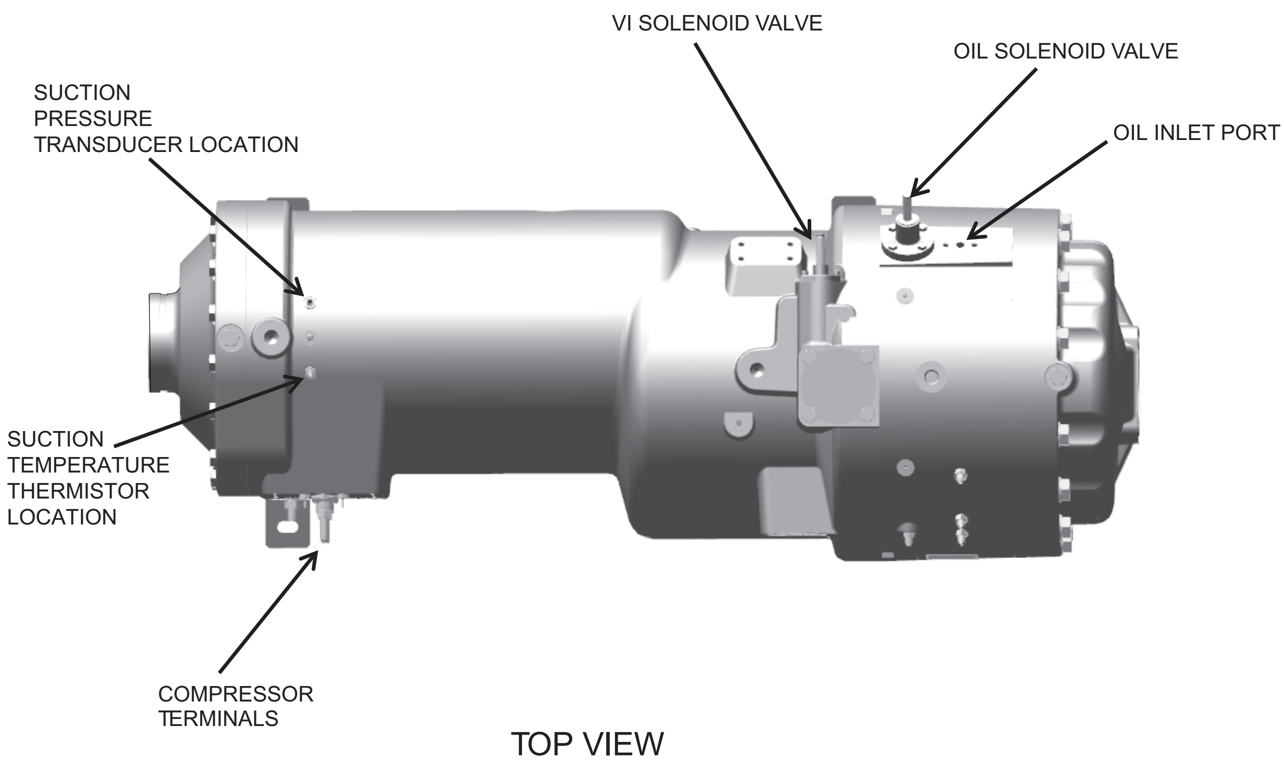


Fig. 74 — Typical 06Z Compressor (All Units)

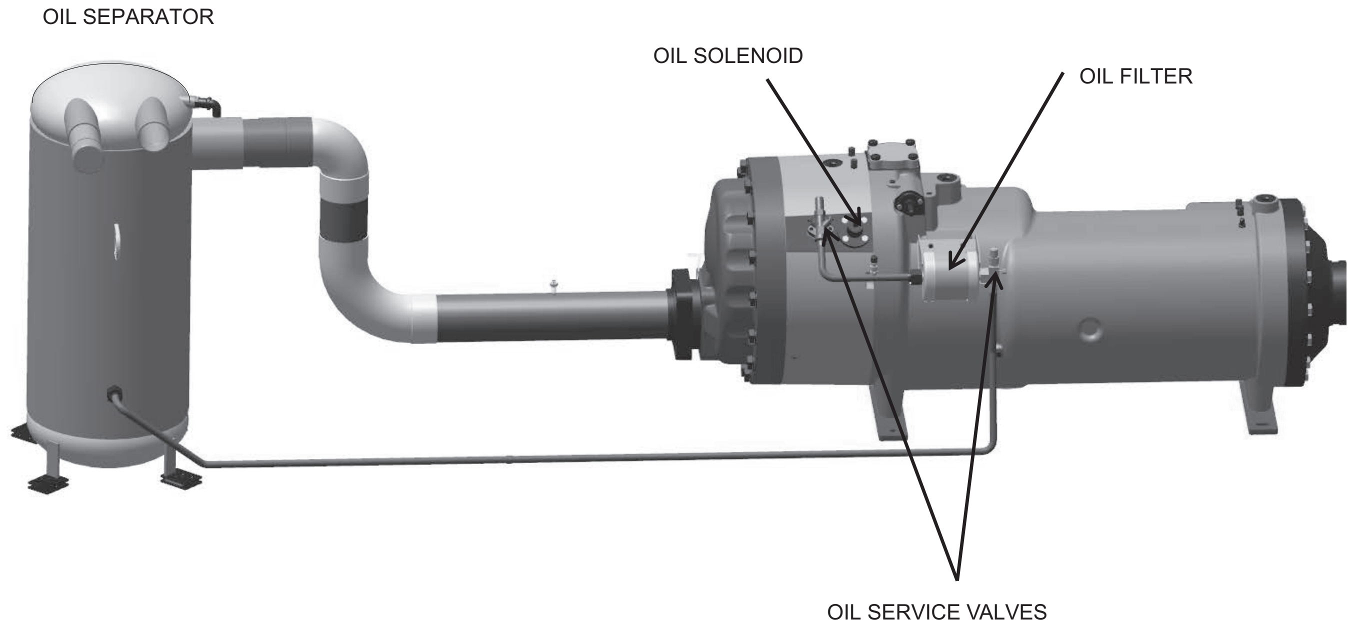


Fig. 75 — Typical Oil System (140-325, 350 Circuit B)

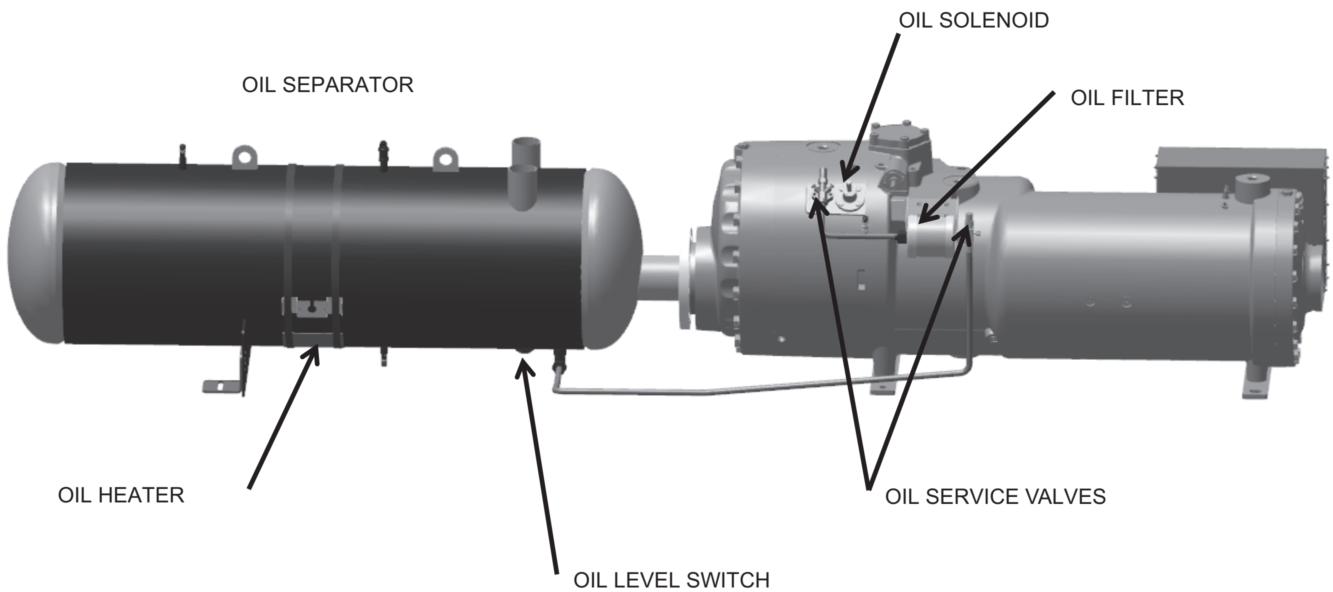


Fig. 76 — Typical Oil System (350 Circuit A, 400-500)

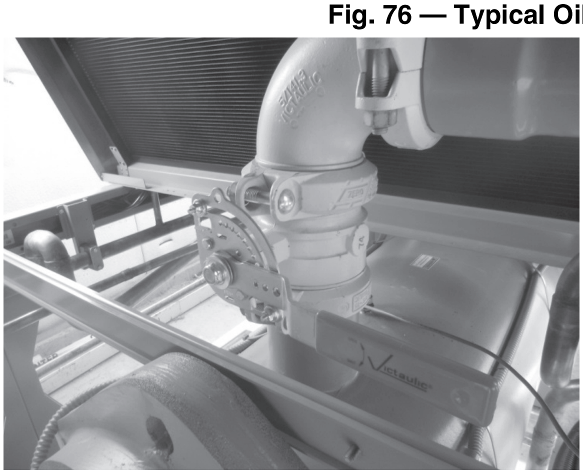


Fig. 77 — Suction Service Valve Butterfly Valve Closed

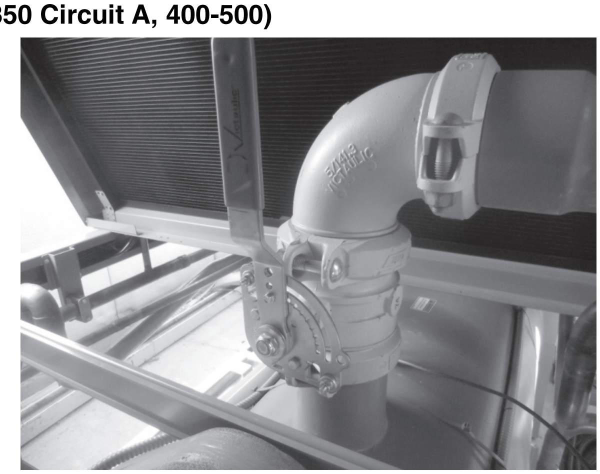


Fig. 78 — Suction Service Valve Butterfly Valve Open

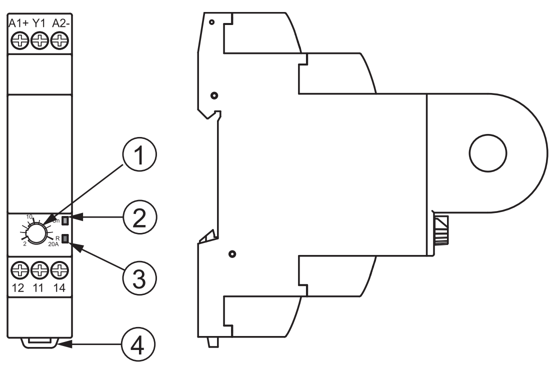
EVAPORATOR FREEZE PROTECTION

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. 79 for evaporator heater current sensing relay set point adjustment location.



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. 79 — 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 80 shows an Elliott tube plug and a cross-sectional view of a plug in place. See Tables 45 and 46 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.

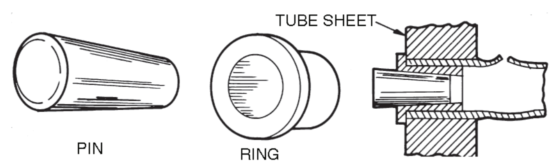


Fig. 80 — Elliott Tube Plug

Table 45 — Plug Component Parts (Evaporator Units Only)

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

*Order directly from Elliot Tool Technologies, Dayton, OH or RCD.
†Can be obtained locally.

Table 46 — Evaporator Tube Components

COMPONENT	SIZE in.	SIZE 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: 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. 81. 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.

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.

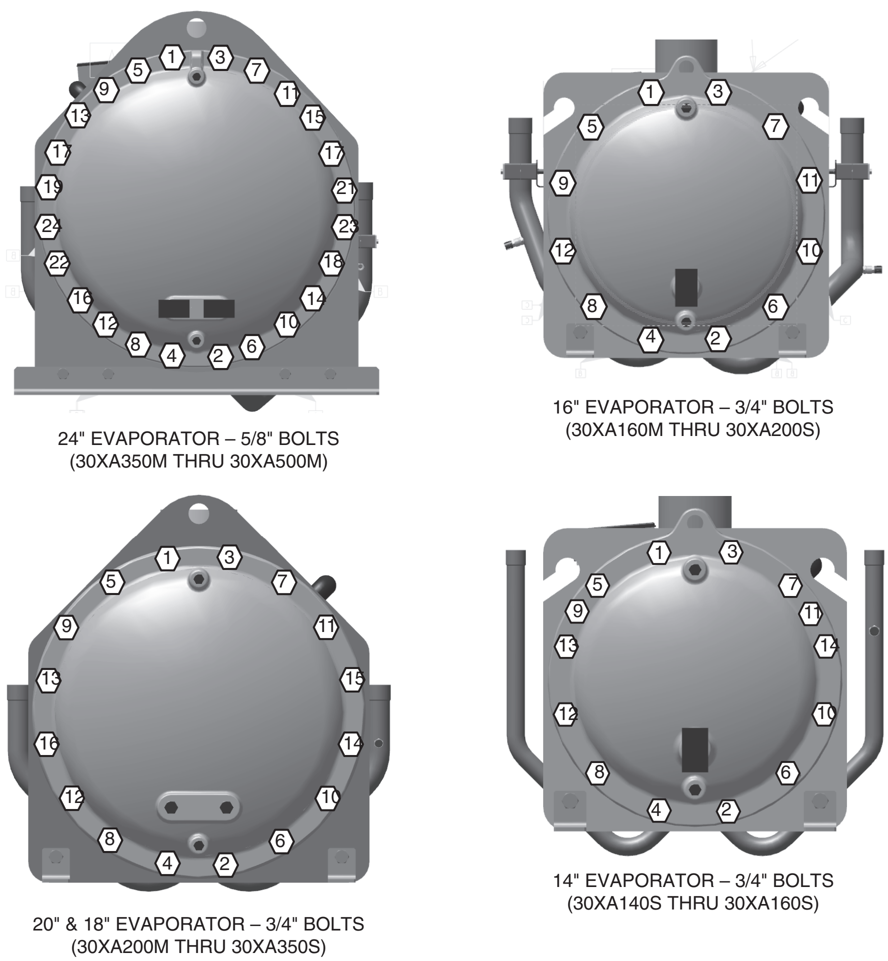


Fig. 81 — Flooded Evaporator Unit Head Recommended Bolt Torque Sequence

EVAPORATOR CHILLED WATER FLOW SWITCH

A thermal-dispersion flow switch is factory installed in the entering water nozzle for all machines. See Fig. 82 and 83. Figure 83 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 56 to calculate the flow and compare this to system requirements. The pressure drop curves are for water only.

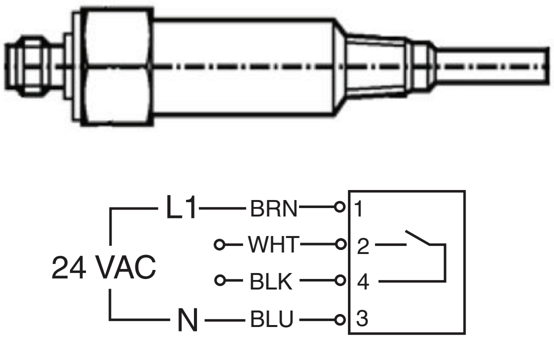


Fig. 82 — Chilled Water Flow Switch

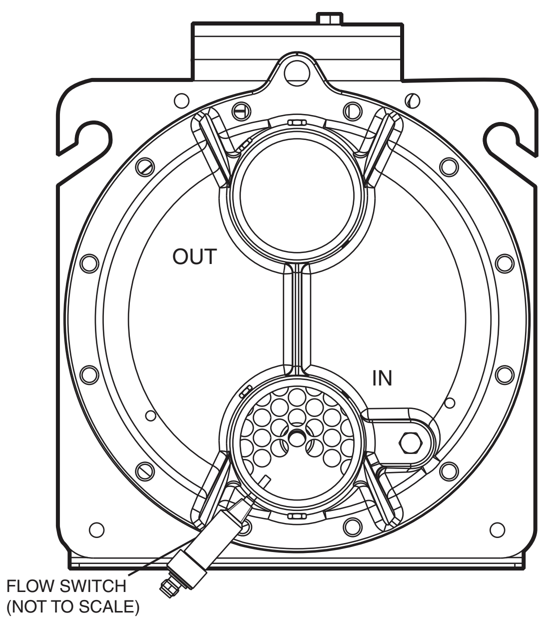


Fig. 83 — Flow Switch Location

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, be sure that 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.
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.

⚠ 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.

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.

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 MicroChannel Heat Exchanger (MCHX) 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® environmentally balanced coil cleaner is essential to extend the life of coils. This cleaner is available from Carrier Replacement Parts division 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 environmentally balanced 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 environmentally balanced 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 Environmentally Balanced 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 Environmentally Balanced 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 environmentally balanced 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: <u>DO</u> <u>NOT</u> <u>USE</u> water in excess of 130°F (54.4°C), as the enzymatic activity will be destroyed.

5. Thoroughly apply Totaline environmentally balanced 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. 84. To remove the fan a special puller (RCD 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 exposed end of the fan motor shaft is protected from weather by grease. If fan motor must be removed for service or replacement, re-grease the fan shaft. 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-lbs (21.7 ± 2.7 Nm). Torque the axial bolt to 24 ± 2 ft-lbs (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 MODE

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.

All compressors have factory-installed high-pressure switches. See Table 47. 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.

Table 47 — High-Pressure Switch Settings

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

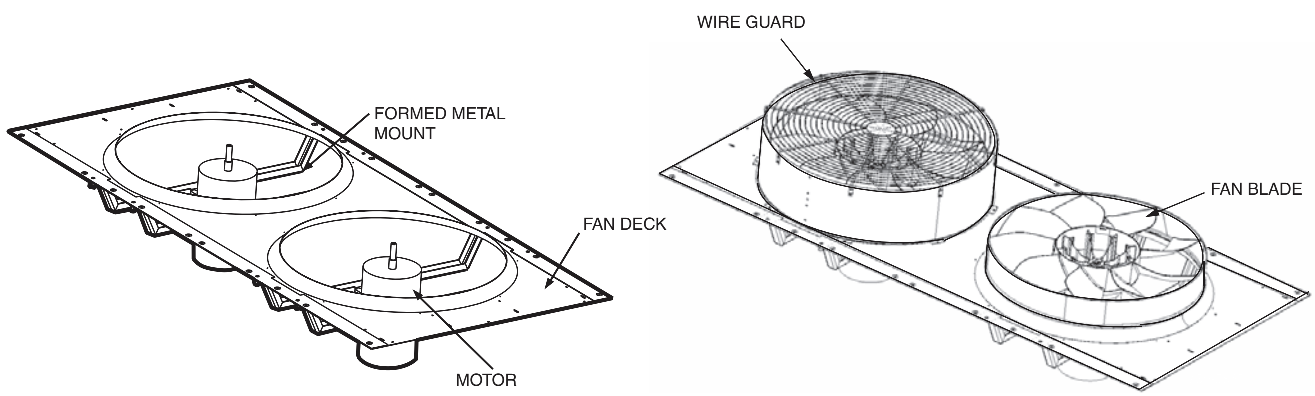


Fig. 84 — Fan Mounting

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 48. Some local building codes require that relieved gases be exhausted to a specific location. This connection allows conformance to this requirement.

Table 48 — 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 49. Addresses must be set in VFD Parameter 8-31.

Table 49 — 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. 85.

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 50 to determine correct Communications Wiring in Fig. 86-91.

1. VLT is a registered trademark of Danfoss Group Global.

Fig. 85 — VFD LEN Wiring Termination

Table 50 — 30XV VFD Communication Wiring

30XV	VOLTAGE	TIER (POSITION 10) S	TIER (POSITION 10) S W/ LOW AMBIENT OPTION	TIER (POSITION 10) M	TIER (POSITION 10) H
140	208/230-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	380-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	400-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 87
160	208/230-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	380-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 87
180	208/230-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	380-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 87
200	208/230-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	380-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 87
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 87
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 87
225	380-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 88

Table 50 — 30XV VFD Communication Wiring (cont)

30XV	VOLTAGE	TIER (POSITION 10) S	TIER (POSITION 10) S W/ LOW AMBIENT OPTION	TIER (POSITION 10) M	TIER (POSITION 10) H
250	380-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 88
275	380-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	460-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	575-3-60	Figure 86	Figure 87	Figure 87	Figure 88
	380-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	400-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	415-3-50	Figure 86	Figure 87	Figure 87	Figure 88
	440-3-50	Figure 86	Figure 87	Figure 87	Figure 88
300	380-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	460-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	575-3-60	Figure 86	Figure 87	Figure 88	Figure 88
	380-3-50	Figure 86	Figure 87	Figure 88	Figure 88
	400-3-50	Figure 86	Figure 87	Figure 88	Figure 88
	415-3-50	Figure 86	Figure 87	Figure 88	Figure 88
	440-3-50	Figure 86	Figure 87	Figure 88	Figure 88
325	380-3-60	Figure 86	Figure 88	Figure 88	Figure 88
	460-3-60	Figure 86	Figure 88	Figure 88	Figure 88
	575-3-60	Figure 86	Figure 88	Figure 88	Figure 88
	380-3-50	Figure 86	Figure 88	Figure 88	Figure 88
	400-3-50	Figure 86	Figure 88	Figure 88	Figure 88
	415-3-50	Figure 86	Figure 88	Figure 88	Figure 88
	440-3-50	Figure 86	Figure 88	Figure 88	Figure 88
350	380-3-60	Figure 86	Figure 89	Figure 90	Figure 90
	460-3-60	Figure 86	Figure 89	Figure 90	Figure 90
	575-3-60	Figure 86	Figure 89	Figure 90	Figure 90
	380-3-50	Figure 86	Figure 89	Figure 90	Figure 90
	400-3-50	Figure 86	Figure 89	Figure 90	Figure 90
	415-3-50	Figure 86	Figure 89	Figure 90	Figure 90
	440-3-50	Figure 86	Figure 89	Figure 90	Figure 90
400	380-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	460-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	575-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	380-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	400-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	415-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	440-3-50	Figure 86	Figure 90	Figure 90	Figure 90
450	380-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	460-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	575-3-60	Figure 86	Figure 90	Figure 90	Figure 90
	380-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	400-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	415-3-50	Figure 86	Figure 90	Figure 90	Figure 90
	440-3-50	Figure 86	Figure 90	Figure 90	Figure 90
500	380-3-60	Figure 86	Figure 90	Figure 90	—
	460-3-60	Figure 86	Figure 90	Figure 90	—
	575-3-60	Figure 86	Figure 90	Figure 90	—
	380-3-50	Figure 86	Figure 90	Figure 90	—
	400-3-50	Figure 86	Figure 90	Figure 90	—
	415-3-50	Figure 86	Figure 90	Figure 90	—
	440-3-50	Figure 86	Figure 90	Figure 90	—

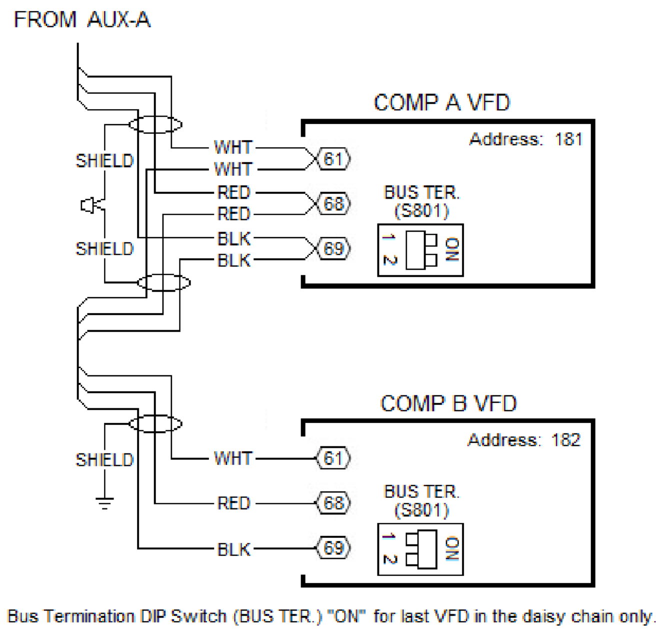


Fig. 86 — VFD Communication Wiring (Compressor A-B) For All Standard Tier Units without Low Ambient Option

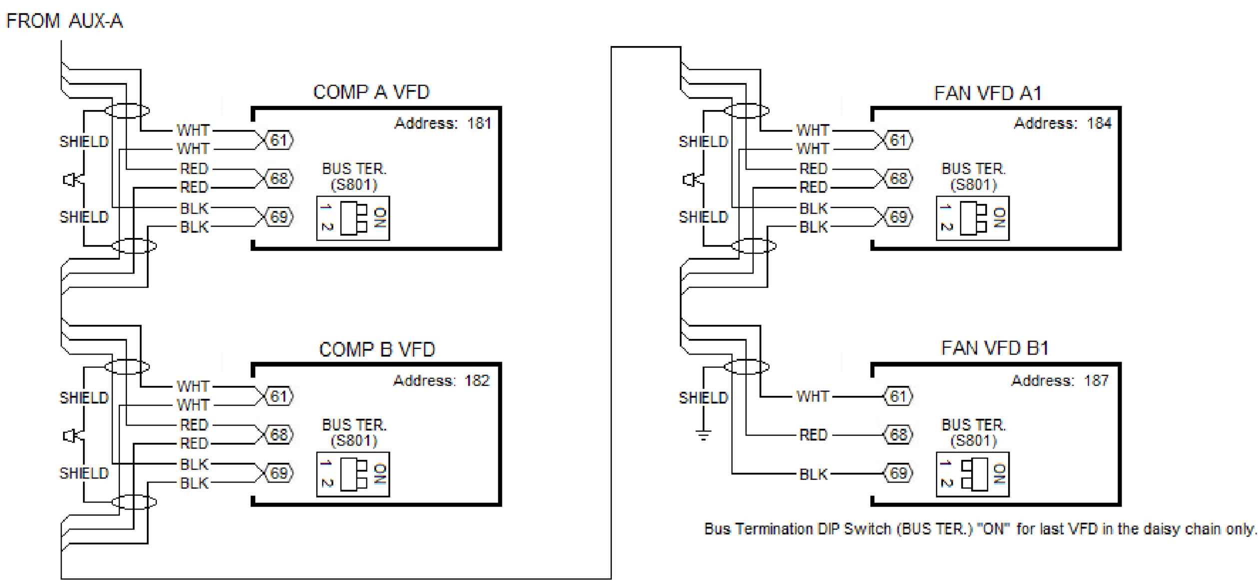


Fig. 87 — VFD Communication Wiring (Compressor A-B-Fan VFD A1-B1)

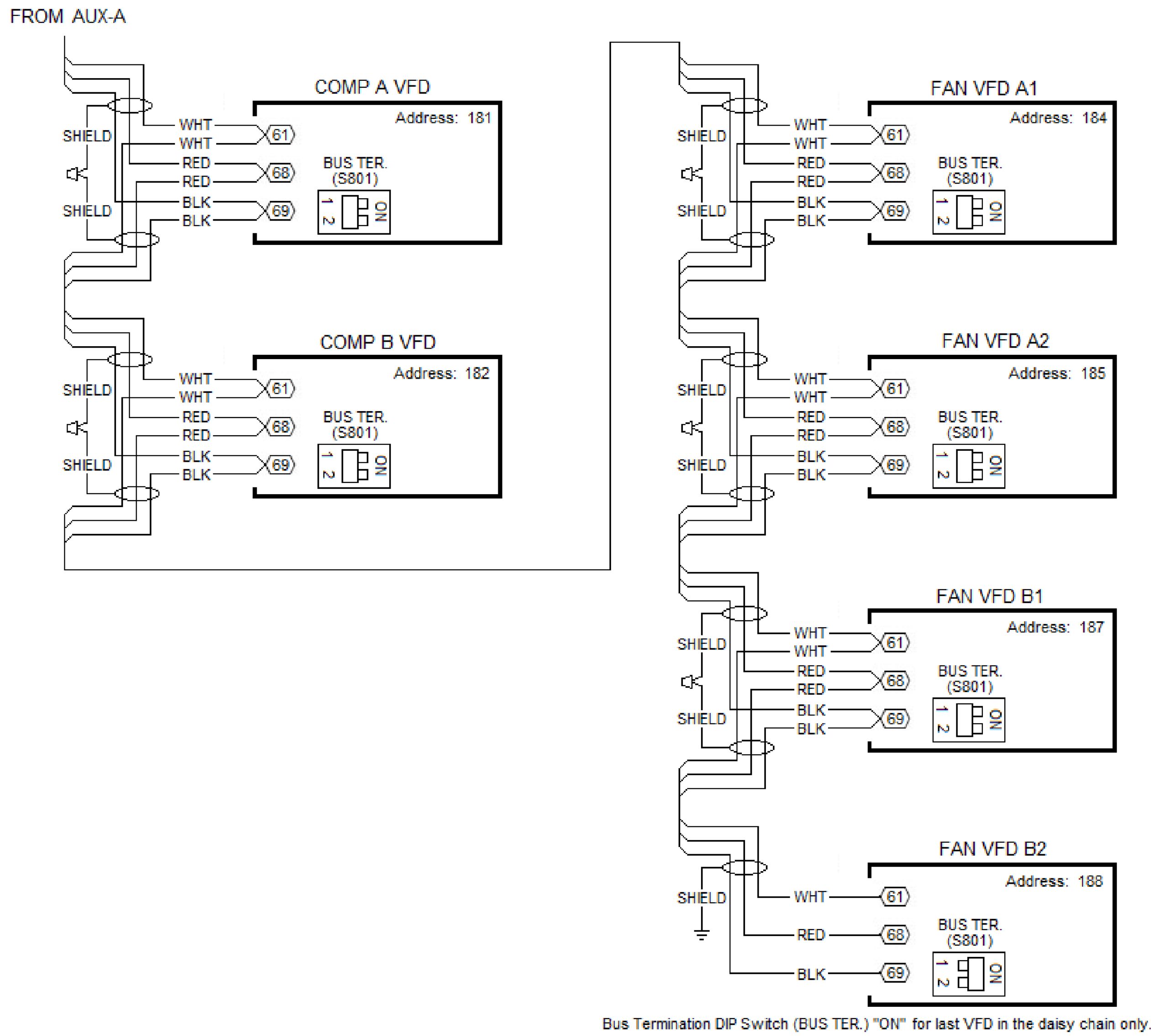
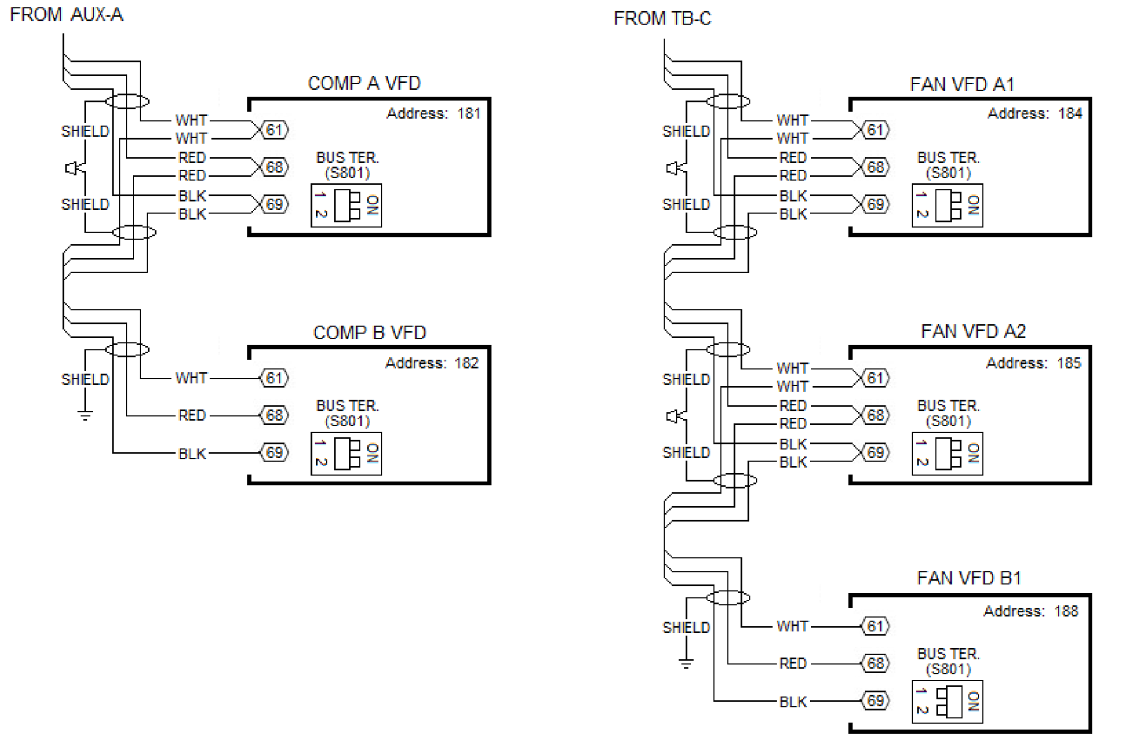
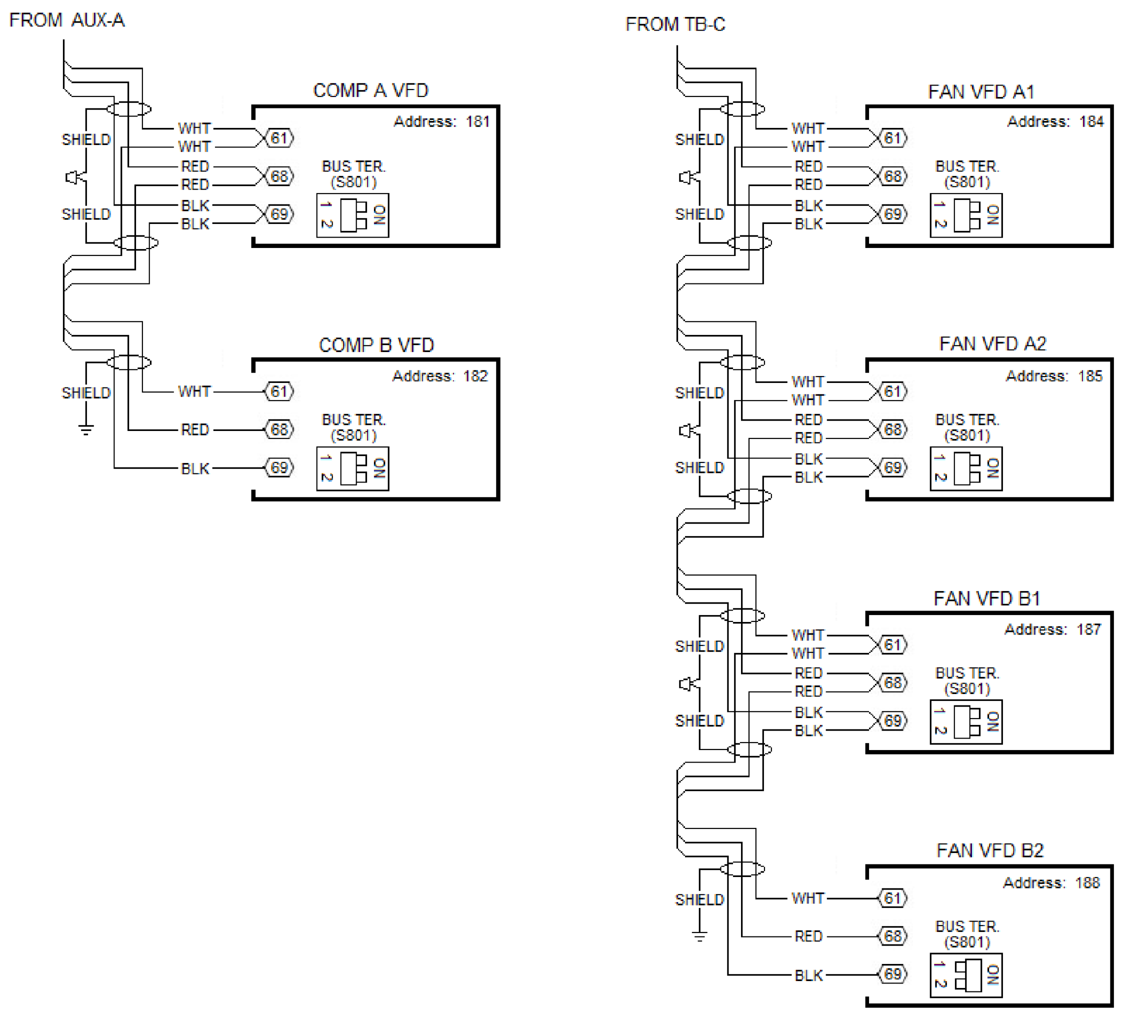


Fig. 88 — VFD Communication Wiring (Compressor A-B-Fan VFD A1-A2-B1-B2)



Bus Termination DIP Switch (BUS TER.) "ON" for last VFD in the daisy chain only.

Fig. 89 — VFD Communication Wiring (Compressor A-B, Fan VFD A1-A2-B1)



Bus Termination DIP Switch (BUS TER.) "ON" for last VFD in the daisy chain only.

Fig. 90 — 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. 91.

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. 92.

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. 93 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 51 shows the standard tier fan sequences. Tables 52-54 show which condenser fans are controlled by each drive. See Tables 52-54 for typical fan VFD arrangement. See Fig. 94 for typical fan VFD location.

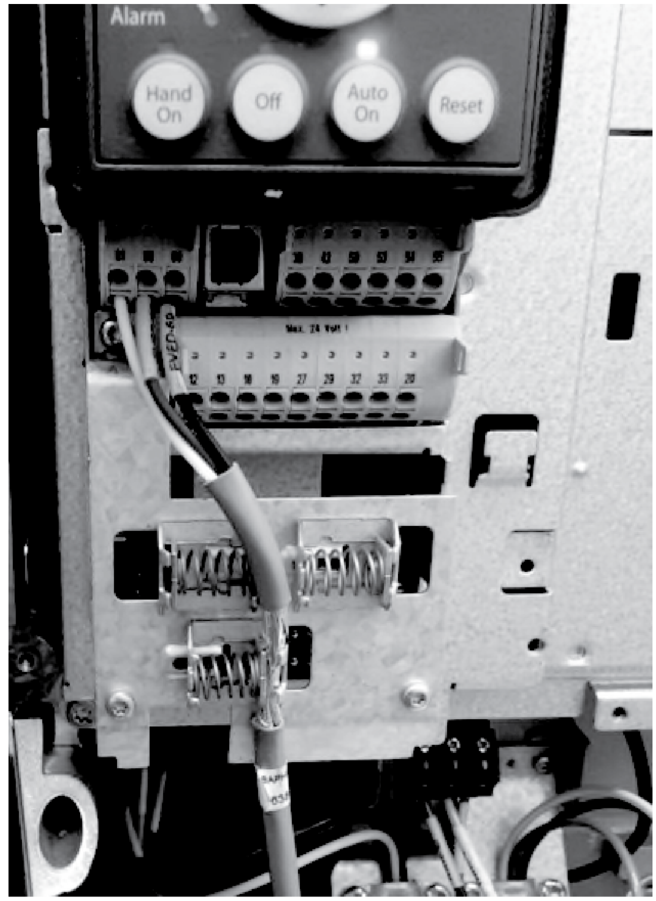


Fig. 91 — LEN Shield Grounding

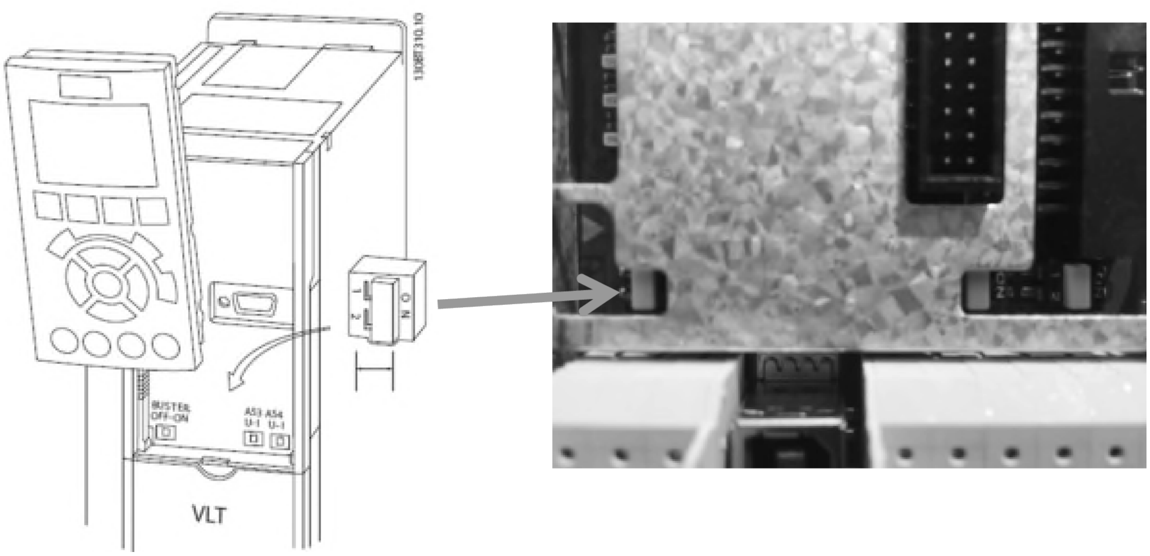


Fig. 92 — BUS TER Location

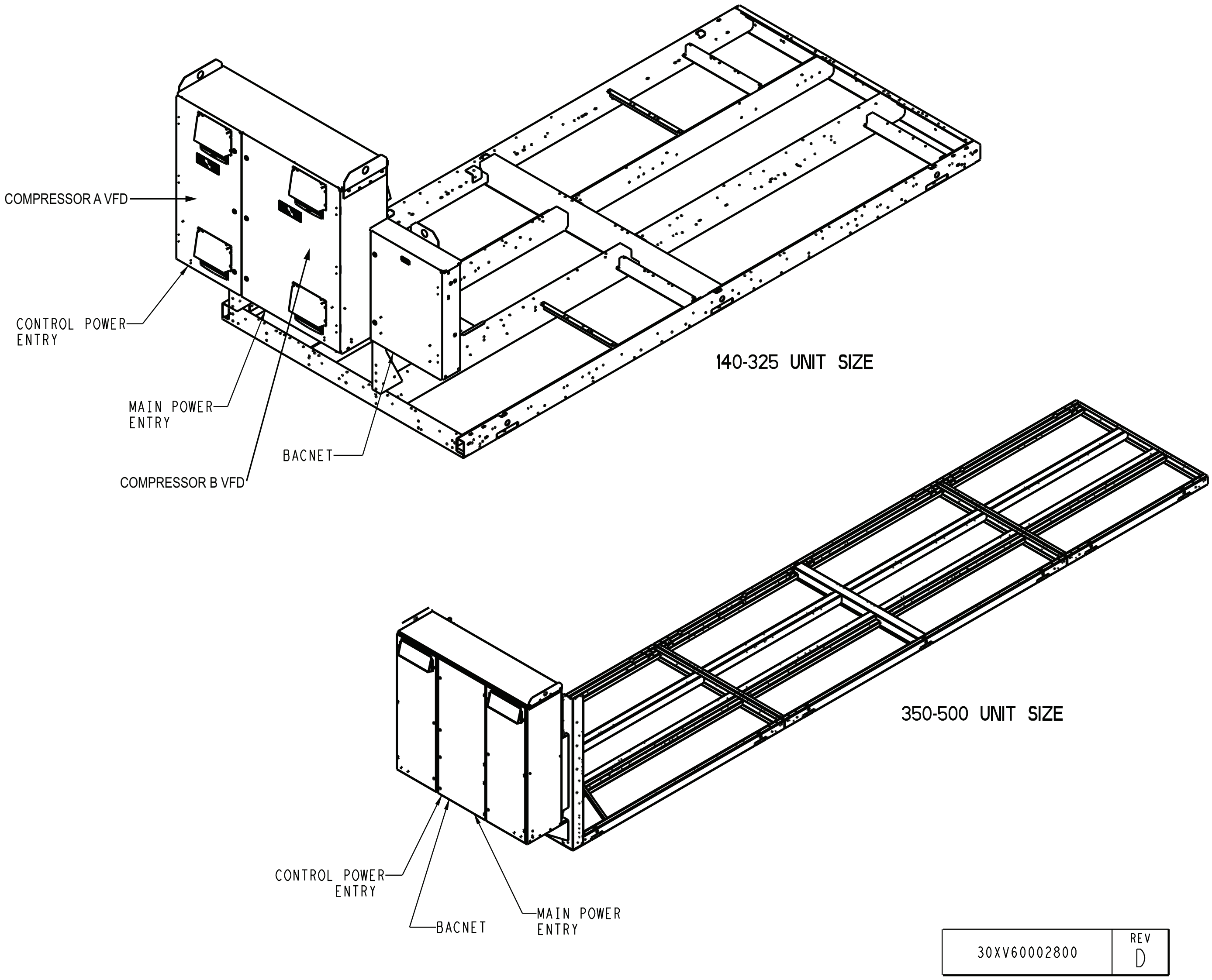
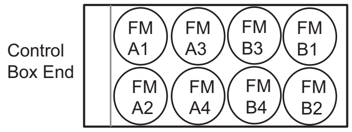


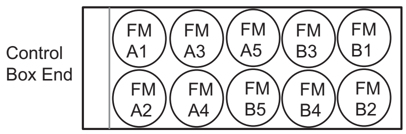
Fig. 93 — VFD Compressor Locations

Table 51 — Standard Tier Fan Sequence



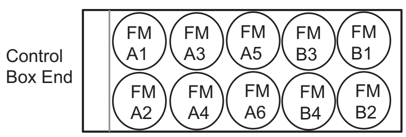
140-180

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



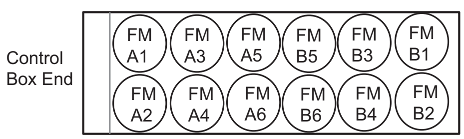
200

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



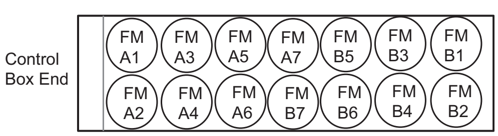
225

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



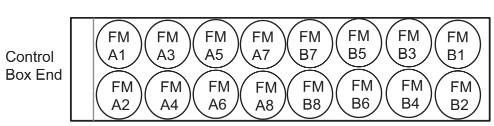
250-275

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



300

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

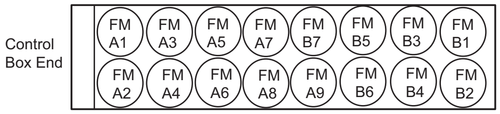


325

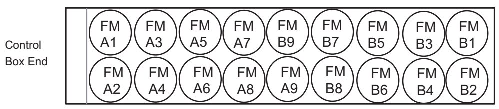
CKT		1	2	3	4	5	6	7
A	FAN STAGE A	1	2	3	4	5	6	7
A	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6	FC A7
A	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7 I FMA8
B	FAN STAGE B	1	2	3	4	5	6	7
B	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6	FC B7
B	FAN POSITION	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7 I FMB8

Table 51 — Standard Tier Fan Sequence (cont)

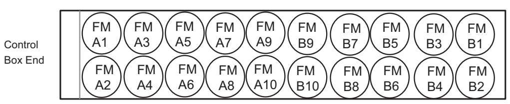
FANS



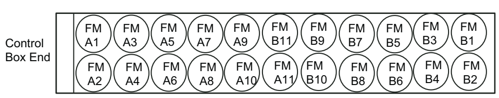
CKT	350											
A	FAN STAGE A	1	2	3	4	5	6		7		8	
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6		FC A7		FC A8	
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6		FMA7		FMA8	FMA9
B	FAN STAGE B	1	2	3	4	5	6		7			
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6		FC B7			
	FAN POSITION	FMB1	FMB2	FMB3	FMB4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



CKT	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



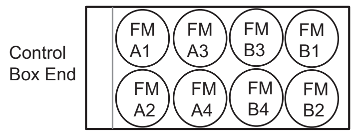
CKT	450											
A	FAN STAGE A	1	2	3	4	5	6		7		8	
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6		FC A7		FC A8	
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6		FMA7	FMA8	FMA9	FMA10
B	FAN STAGE B	1	2	3	4	5	6		7		8	
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6		FC B7		FC B8	
	FAN POSITION	FMB1	FMB2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



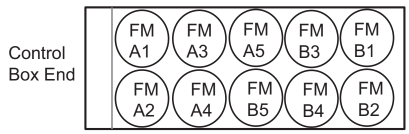
CKT	500											
A	FAN STAGE A	1	2	3	4	5	6		7		8	
	CONTACTOR #	FC A1	FC A2	FC A3	FC A4	FC A5	FC A6		FC A7		FC A8	
	FAN POSITION	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
B	FAN STAGE B	1	2	3	4	5	6		7		8	
	CONTACTOR #	FC B1	FC B2	FC B3	FC B4	FC B5	FC B6		FC B7		FC B8	
	FAN POSITION	FMB1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

Table 52 — Condenser Fan Drive Arrangement, Standard Tier with Low Ambient Option

FANS

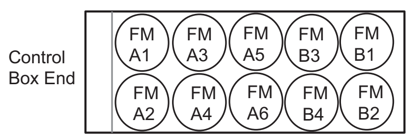


CKT	30XV140, 160, 180 (ALL VOLTAGES)				
A	VFD Designation	A1			
	Fan Position	FMA1	FMA2	FMA3	FMA4
B	VFD Designation	B1			
	Fan Position	FMB1	FMB2	FMB3	FMB4

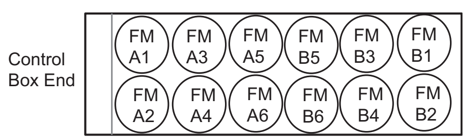


CKT	30XV200 (208/230V)					
A	VFD Designation	A2		A1		
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5
B	VFD Designation	B2		B1		
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5

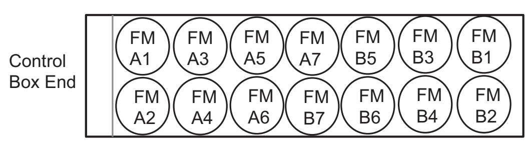
CKT	30XV200 (380-575V)					
A	VFD Designation	A1				
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5
B	VFD Designation	B1				
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5



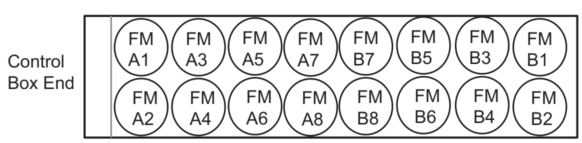
CKT	30XV 225 (380-575V)						
A	VFD Designation	A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	VFD Designation	B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4		



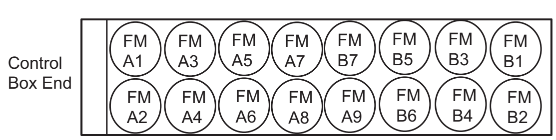
CKT	30XV 250,275 (380-575V)						
A	VFD Designation	A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	VFD Designation	B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6



CKT	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



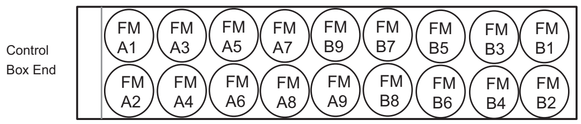
CKT	30XV325 (380V-575V)								
A	VFD Designation	A2				A1			
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
B	VFD Designation	B2				B1			
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8



CKT	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		

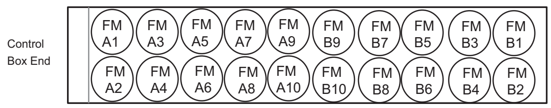
Table 52 — Condenser Fan Drive Arrangement, Standard Tier with Low Ambient Option (cont)

FANS



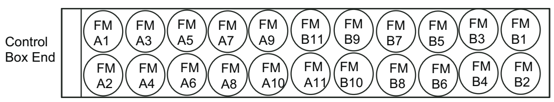
30XV400 (380-575V)

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



30XV450 (380-575V)

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



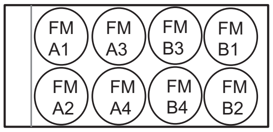
30XV500 (380-575V)

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

Table 53 — Condenser Fan Drive Arrangement, Mid Tier

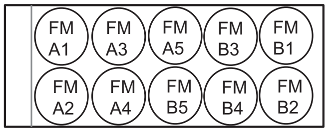
FANS

Control Box End



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

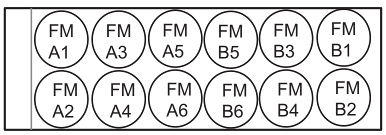
Control Box End



CKT	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

CKT	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

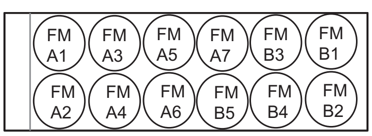
Control Box End



CKT	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

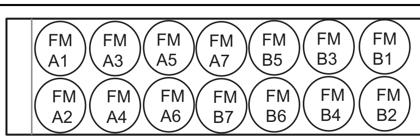
CKT	30XV200 (380-575V)						
A	VFD Designation	A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	VFD Designation	B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6

Control Box End



CKT	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		

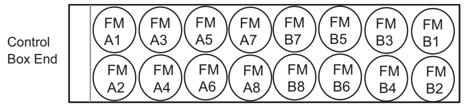
Control Box End



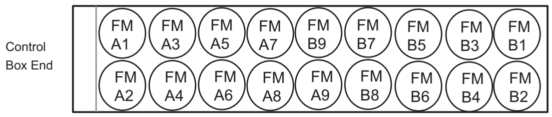
CKT	30XV250,275 (380-575V)							
A	VFD Designation	A1						
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7
B	VFD Designation	B1						
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7

Table 53 — Condenser Fan Drive Arrangement, Mid Tier (cont)

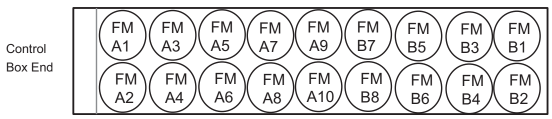
FANS



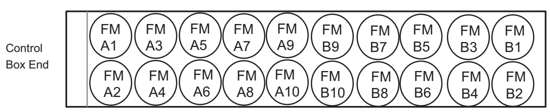
CKT		30XV300 (380V-575V)							
A	VFD Designation	A2				A1			
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
B	VFD Designation	B2				B1			
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8



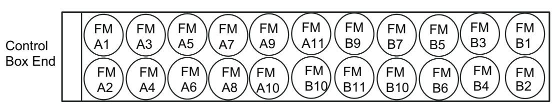
CKT		30XV325 (380-575V)								
A	VFD Designation	A2				A1				
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9
B	VFD Designation	B2				B1				
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9



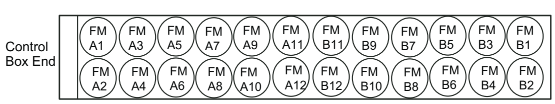
CKT		30XV350 (380V-575V)									
A	VFD Designation	A2				A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
B	VFD Designation	B2				B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8		



CKT		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

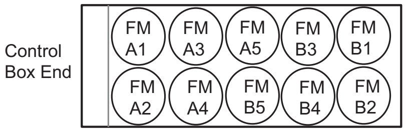


CKT		30XV450 (380V-575V)										
A	VFD Designation	A2					A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
B	VFD Designation	B2					B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10	FMB11



CKT		30XV500 (380-575V)											
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 54 — Condenser Fan Drive Arrangement, High Tier

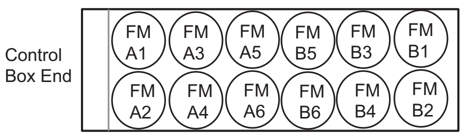


30XV140 (208/230V)

CKT						
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)

CKT						
A	VFD Designation	A1				
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5
B	VFD Designation	B1				
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5

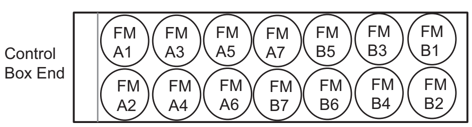


30XV160,180 (208/230V)

CKT							
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)

CKT							
A	VFD Designation	A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6
B	VFD Designation	B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6

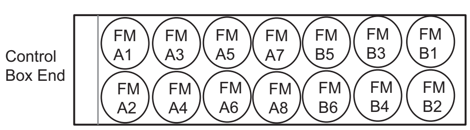


30XV200 (208/230V)

CKT								
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)

CKT								
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

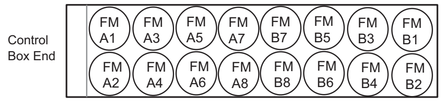


30XV225 (380-575V)

CKT									
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		

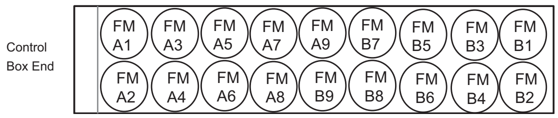
Table 54 — Condenser Fan Drive Arrangement, High Tier (cont)

FANS — **30XV250, 275 (380V-575V)**



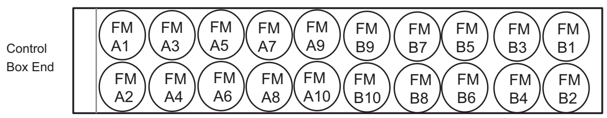
CKT									
A	VFD Designation	A2				A1			
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8
B	VFD Designation	B2				B1			
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8

30XV300 (380-575V)



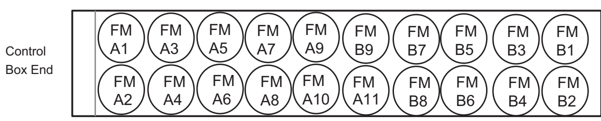
CKT										
A	VFD Designation	A2				A1				
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9
B	VFD Designation	B2				B1				
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9

30XV325 (380-575V)



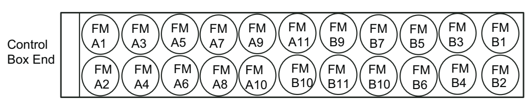
CKT											
A	VFD Designation	A2				A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10
B	VFD Designation	B2				B1					
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9	FMB10

30XV350 (380V-575V)



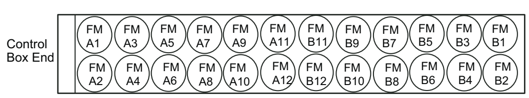
CKT												
A	VFD Designation	A2					A1					
	Fan Position	FMA1	FMA2	FMA3	FMA4	FMA5	FMA6	FMA7	FMA8	FMA9	FMA10	FMA11
B	VFD Designation	B2				B1						
	Fan Position	FMB1	FMB2	FMB3	FMB4	FMB5	FMB6	FMB7	FMB8	FMB9		

30XV400 (380-575V)



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

30XV450 (380-575V)



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

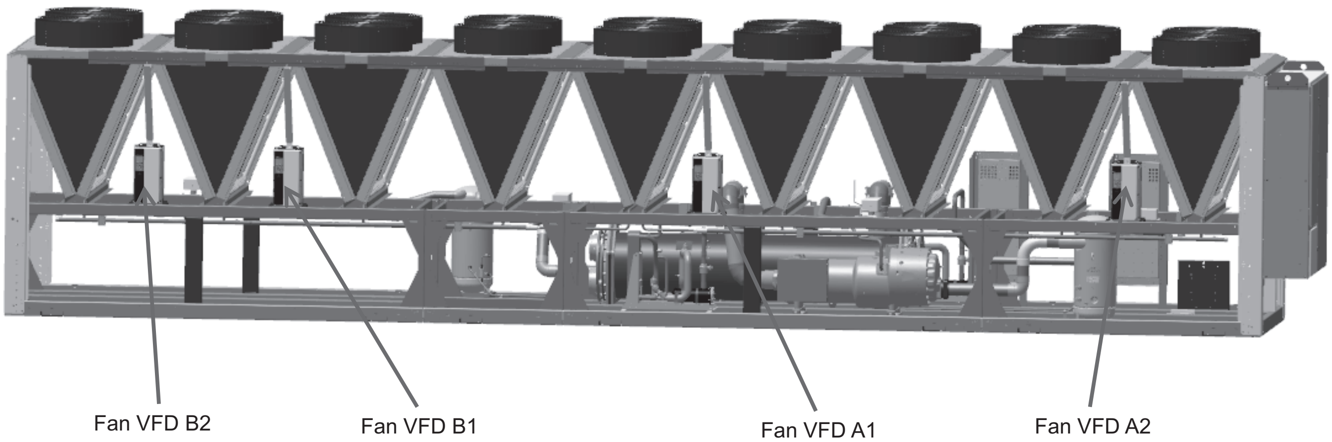


Fig. 94 — Typical Fan VFD Location

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)

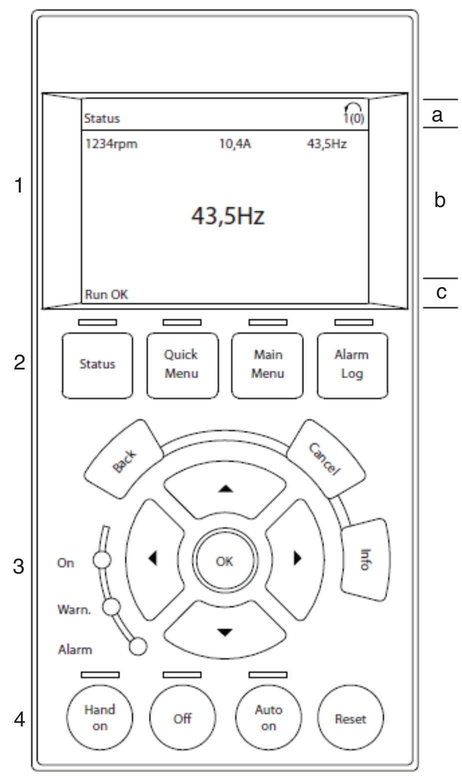
See Fig. 95. The display is backlit with a total of 6 alpha-numeric lines. All data is displayed on the GLCP, which can show up to 5 operating variables while in Status mode.

The display lines (see items a-c in Fig. 95) 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. 96. 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. 95 — VFD Graphical Local Control Panel

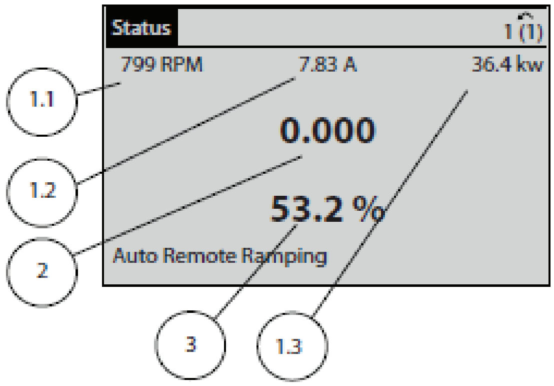


Fig. 96 — Status Display I

Status Display II shows the operating variables 1.1, 1.2, 1.3 and 2. In the example shown in Fig. 97, 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.

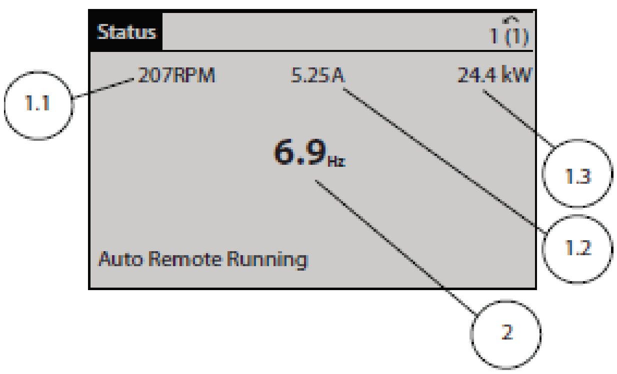


Fig. 97 — Status Display II

Status Display III shows events and actions of the Smart Logic Control. Figure 98 shows an example.

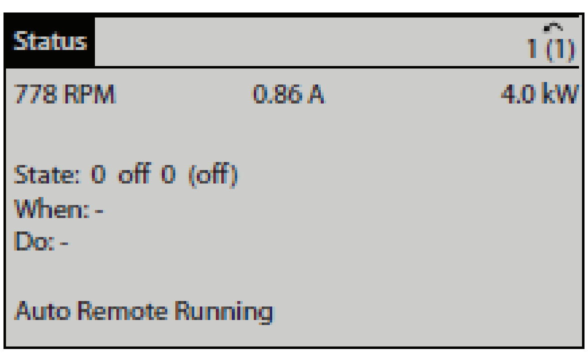


Fig. 98 — Status Display III

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. 99.

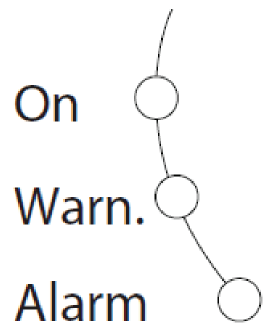


Fig. 99 — Indicator Lights

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. 96-98). 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. 95). 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 55-135 for compressor and fan VFD parameters.

Table 55 — VFD Parameters, Standard Plus Tier, for 208/230 V/60 Hz Units, 30XV160-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	0	0	0
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—

Table 56 — VFD Parameters, Medium Tier, for 208/230 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 58 — VFD Parameters, Standard Plus Tier, for 380 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	30.4	—	30.4	—	30.4	—	30.4	—	38	—	38	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function At Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 59 — VFD Parameters, Standard Plus Tier, for 380 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	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	—
1-23	Motor Frequency	Motor Dependent	—	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	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	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function At Stop	Coast	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	20	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	60	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	150	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	110	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	1	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	10	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	2	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	6	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 61 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 62 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 63 — VFD Parameters, Medium Tier, for 380 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 64 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 65 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 66 — VFD Parameters, High Tier, for 380 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 67 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	30.4	—	30.4	—	30.4	—	30.4	—	38	—	38	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function At Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 68 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 69 — VFD Parameters, Standard Plus Tier, for 400 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 70 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 71 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 72 — VFD Parameters, Medium Tier, for 400 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 73 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 74 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 75 — VFD Parameters, High Tier, for 400 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time To Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 76 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	460	—	460	—	460	—	460	—	460	—	460	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	24.4	—	24.4	—	24.4	—	24.4	—	30.5	—	30.5	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 77 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 78 — VFD Parameters, Standard Plus Tier, for 460 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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																				
1-03	Torque Profile	Compressor Torque	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-20	Motor kW	Size Dependent	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
1-22	Motor Volts	Motor 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
1-23	Motor Frequency	Motor Dependent	460	460	460	460	460	460	460	—	460	460	460	460	460	460	460	460	460	460	460	460
1-24	Motor Amperage	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
1-25	Motor rpm	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
1-71	Compressor Start Delay	0s	1130	1130	1130	1130	1130	1130	1130	—	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
1-73	Flying Restart	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-78	Starting Frequency	Hz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
3-03	Max Reference	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-13	Type Reference	Remote	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
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	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
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	20	20	20	20	20	20	20	—	20	20	20	20	20	20	20	20	20	20	20	20
4-10	Motor Speed Direct	Clockwise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
4-16	Torque Limit	Size Dependent	60	60	60	60	60	60	60	—	60	60	60	60	60	60	60	60	60	60	60	60
4-18	Current Limit	Size Dependent	150	150	150	150	150	150	150	—	150	150	150	150	150	150	150	150	150	150	150	150
4-19	Max Output Frequency	Size Dependent	110	110	110	110	110	110	110	—	110	110	110	110	110	110	110	110	110	110	110	110
5-12	DI #27	Coast Inverse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8-02	Control Source	FC port=RS485	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
8-03	Time Out Time	10s	1	1	1	1	1	1	1	—	1	1	1	1	1	1	1	1	1	1	1	1
8-04	Time Out Function	Stop And Trip	10	10	10	10	10	10	10	—	10	10	10	10	10	10	10	10	10	10	10	10
14-00	Pattern [AVM]	60AVM	2	2	2	2	2	2	2	—	2	2	2	2	2	2	2	2	2	2	2	2
14-01	Switching Frequency	3kHz	0	0	0	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0
14-03	Overmodulation	Yes	6	6	6	6	6	6	6	—	6	6	6	6	6	6	6	6	6	6	6	6
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 79 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 80 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 81 — VFD Parameters, Medium Tier, for 460 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 82 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 83 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 84 — VFD Parameters, High Tier, for 460 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 85 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	575	—	575	—	575	—	575	—	575	—	575	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	20.8	—	20.8	—	20.8	—	20.8	—	26	—	26	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 86 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 87 — VFD Parameters, Standard Plus Tier, for 575 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 88 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 89 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 90 — VFD Parameters, Medium Tier, for 575 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 91 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 92 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 93 — VFD Parameters, High Tier, for 575 V/60 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 94 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 95 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 96 — VFD Parameters, Standard Plus Tier, for 380 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 97 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 98 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 99 — VFD Parameters, Medium Tier, for 380 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 100 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 101 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 102 — VFD Parameters, High Tier, for 380 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 103 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 104 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 105 — VFD Parameters, Standard Plus Tier, for 400 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 106 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 107 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 108 — VFD Parameters, Medium Tier, for 400 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 109 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 110 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 111 — VFD Parameters, High Tier, for 400 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 112 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 113 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 114 — VFD Parameters, Standard Plus Tier, for 415 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 115 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 116 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 117 — VFD Parameters, Medium Tier, for 415 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 118 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 119 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 120 — VFD Parameters, High Tier, for 415 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 121 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
1-20	Motor kW	Size Dependent	—	—	—	—	9.2	—	9.2	—	9.2	—	9.2	—	11.5	—	11.5	—
1-22	Motor Volts	Motor Dependent	—	—	—	—	380	—	380	—	380	—	380	—	380	—	380	—
1-23	Motor Frequency	Motor Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
1-24	Motor Amperage	Size Dependent	—	—	—	—	31.2	—	31.2	—	31.2	—	31.2	—	39	—	39	—
1-25	Motor rpm	Size Dependent	—	—	—	—	1130	—	1130	—	1130	—	1130	—	1130	—	1130	—
1-71	Compressor Start Delay	0s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-80	Function at Stop	Coast	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
1-90	Motor Thermal Protection	0	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-02	Min Ref	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3-03	Max Reference	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
3-13	Type Reference	Remote	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-15	SRC ref#1	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-16	SRC ref#2	No Function	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
3-41	Ramp Up	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-42	Ramp Down	100s	—	—	—	—	20	—	20	—	20	—	20	—	20	—	20	—
3-82	Starting Ramp Time	3s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4-10	Motor Speed Direct	Clockwise	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-12	Motor Speed Low Limit	Hz	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
4-14	Motor Speed High Limit	Size Dependent	—	—	—	—	60	—	60	—	60	—	60	—	60	—	60	—
4-16	Torque Limit	Size Dependent	—	—	—	—	150	—	150	—	150	—	150	—	150	—	150	—
4-18	Current Limit	Size Dependent	—	—	—	—	110	—	110	—	110	—	110	—	110	—	110	—
4-19	Max Output Frequency	Size Dependent	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8_01	Control Site	Digital & Control Word	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
8-02	Control Source	FC port=RS485	—	—	—	—	1	—	1	—	1	—	1	—	1	—	1	—
8-03	Time Out Time	10s	—	—	—	—	10	—	10	—	10	—	10	—	10	—	10	—
8-04	Time Out Function	Stop And Trip	—	—	—	—	2	—	2	—	2	—	2	—	2	—	2	—
14-00	Pattern [AVM]	60AVM	—	—	—	—	0	—	0	—	0	—	0	—	0	—	0	—
14-01	Switching Frequency	3kHz	—	—	—	—	6	—	6	—	6	—	6	—	6	—	6	—
14-03	Overmodulation	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 122 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 123 — VFD Parameters, Standard Plus Tier, for 440 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 124 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 125 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	0	0	0
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 126 — VFD Parameters, Medium Tier, for 440 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 127 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV140-200

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV140				30XV160				30XV180				30XV200			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-73	Flying Restart	No	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
1-78	Starting Frequency	Hz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-12	DI #27	Coast Inverse	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
5-19	DI#37 Safe Stop	Safe Stop Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 128 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV225-300

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV225				30XV250				30XV275				30XV300			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 129 — VFD Parameters, High Tier, for 440 V/50 Hz Units, 30XV325-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	30XV325				30XV350				30XV400				30XV450				30XV500			
			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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-03	Torque Profile	Compressor Torque	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—	—	—	—
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	—	—	—	—
1-22	Motor Volts	Motor Dependent	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	—	—	—	—
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	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1-79	Comp Start Max Time to Trip	5s	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[36]	Relay 1	Control Word Bit 11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5-40[5]	Relay 2	Running	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-10	Main Failure	Alarm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-11	Mains Voltage at Mains Fault	Voltage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-50	RFI Filter	On	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-60	Function at Overtemp	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 130 — 30XV STD Compressor Common VFD Parameters, 30XV140-500

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			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 Profile	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	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460
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 131 or 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
1-73	Flying Restart	No	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
1-78	Starting Frequency	Hz	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1-79	Comp Start Max Time to Trip	5s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
3-03	Max Reference	Size Dependent	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
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	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3-82	Starting Ramp Time	3s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-10	Motor Speed Direct	Clockwise	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
4-12	Motor Speed Low Limit	Hz	75	85	95	105	83	93	80	85	90	98	75	90	75	84	94
4-14	Motor Speed High Limit	Size Dependent	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
4-16	Torque Limit	Size Dependent	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
4-18	Current Limit	Size Dependent	76	86	96	106	84	94	81	86	91	99	76	91	76	85	95
4-19	Max Output Frequency	Size Dependent	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5-12	DI #27	Coast Inverse	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5-19	DI#37 Safe Stop	Safe Stop Alarm	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5-40[36]	Relay 1	Control Word Bit 11	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5-40[5]	Relay 2	Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8_01	Control Site	Digital & Control Word	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8-02	Control Source	FC port=RS485	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8-03	Time Out Time	10s	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
8-04	Time Out Function	Stop And Trip	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14-00	Pattern [AVM]	60AVM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-01	Switching Frequency	3kHz	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14-03	Overmodulation	Yes	Refer to Table 131 or Table 132 for specific voltage														
14-10	Main Failure	Alarm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14-11	Mains Voltage at Mains Fault	Voltage	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14-61	Inverter Overload	Derate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 131 — 30XV STD Compressor Tier and Voltage-Specific Parameters, 30XV140-500, 60 Hz

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			Compressor														
			A,B				A	B	A,B				A	B	A,B		
208/230V																	
Standard 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
Standard Plus 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
Medium 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
High Tier																	
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	N/A
380V																	
Standard Tier																	
1-24	Motor Amperage*	Size Dependent	177	211	246	252	354	225	333	360	365	399	548	397	516	599	629
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	204	239	243	338	217	327	340	358	394	534	387	493	592	638
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	171	184	214	235	320	205	303	329	338	367	483	350	482	582	611
High Tier																	
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	N/A
400V																	
Standard Tier																	
1-24	Motor Amperage*	Size Dependent	177	211	246	252	354	226	333	360	365	399	548	397	516	599	629
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	204	239	243	338	217	327	340	358	394	534	387	493	592	638
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	171	184	214	235	320	205	303	329	338	367	483	350	482	582	611
High Tier																	
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	N/A
460V																	
Standard Tier																	
1-24	Motor Amperage*	Size Dependent	146	174	204	208	292	187	273	296	302	330	452	327	425	494	519
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	168	197	200	279	178	269	280	296	324	441	319	407	489	526
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	141	151	175	194	263	168	251	270	279	303	398	289	397	480	504
High Tier																	
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	N/A
575V																	
Standard Tier																	
1-24	Motor Amperage*	Size Dependent	146	174	204	208	292	187	273	296	302	330	452	327	425	494	519
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	168	197	200	279	178	269	280	296	324	441	319	407	489	526
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	141	151	175	194	263	168	251	270	279	303	398	289	397	480	504
High Tier																	
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	N/A

* Parameter 1-24 (motor amperage) must be equal to or less than the following:
(Compressor RLA *1.56) / 1.1

Table 132 — 30XV STD Compressor Tier and Voltage-Specific Parameters, 30XV140-500, 50 Hz

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			Compressor														
			A,B				A	B	A,B				A	B	A,B		
380V																	
Standard 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
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	208	245	249	346	322	334	347	367	402	546	395	503	605	650
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
High Tier																	
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	N/A
400V																	
Standard 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
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
High Tier																	
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	N/A
415V																	
Standard 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
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
High Tier																	
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	N/A
440V																	
Standard 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
Standard Plus Tier																	
1-24	Motor Amperage*	Size Dependent	N/A	208	245	249	346	222	334	347	367	402	546	395	503	605	650
Medium Tier																	
1-24	Motor Amperage*	Size Dependent	175	188	219	241	327	209	310	336	346	375	493	357	492	595	624
High Tier																	
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	N/A

* Parameter 1-24 (motor amperage) must be equal to or less than the following:
(Compressor RLA *1.56) / 1.1

Table 133 — 30XV PM Compressor, Common VFD Parameters

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			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 134 or Table 135 for specific voltage														
1-16	High Speed Filter Time Cons	s	Refer to Table 134 or Table 135 for specific voltage														
1-17	Voltage Speed Filter Time Cons	s	Refer to Table 134 or Table 135 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 134 or Table 135 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 134 or Table 135 for specific voltage														
1-37	d-Axis Inductance	mH	Refer to Table 134 or Table 135 for specific voltage														
1-38	q-Axis Inductance	mH	Refer to Table 134 or Table 135 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 134 or Table 135 for specific voltage														
1-45	q-Axis Inductance Sat (LqSat)	mH	Refer to Table 134 or Table 135 for specific voltage														
1-49	q-Axis Inductance Sat Point	%	Refer to Table 134 or Table 135 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	214	170	190	164	174	184	200	154	184	154	178	196
4-14	Motor Speed High Limit	Hz	150	170	190	210	166	186	160	170	180	196	150	180	150	174	192
4-16	Torque Limit	%	160	160	160	160	160	160	160	160	160	160	126.5	160	126.5	126.5	126.5
4-18	Current Limit	%	Refer to Table 134 or Table 135 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	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 or Table 135 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 134 — 30XV PM Compressor Tier and Voltage-Specific Parameters, 30XV140-500, 60 Hz

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			Compressor														
			A,B				A	B	A,B				A	B	A,B		
380V																	
Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Standard Plus Tier																	
4-18	Current Limit	%	N/A	96	113	115	127	102	123	128	135	148	108	145	100	120	129
Medium Tier																	
4-18	Current Limit	%	81	87	101	111	120	97	114	123	127	138	98	131	97	118	123
High Tier																	
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
400V																	
Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Standard Plus Tier																	
4-18	Current Limit	%	N/A	91	107	109	121	97	117	121	128	141	103	139	95	114	122
Medium Tier																	
4-18	Current Limit	%	76	83	95	105	114	91	108	117	121	131	93	125	92	112	117
High Tier																	
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
460V																	
Standard 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	0.08	0.08	0.08	0.08	0.13	0.08	0.13	0.13	0.13	0.13	0.09	0.13	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.88	0.88	0.88	0.88	0.65	0.88	0.65	0.65	0.65	0.65	0.23	0.65	0.23	0.23	0.23
1-38	q-Axis Inductance	mH	3.18	3.18	3.18	3.18	2.08	3.18	2.08	2.08	2.08	2.08	0.89	2.08	0.89	0.89	0.89
1-40	Back EMF**	Voltage	82	82	82	82	82	82	82	82	82	82	52	82	52	52	52
1-45	q-Axis Inductance Sat (LqSat)	mH	1.72	1.72	1.72	1.72	1.01	1.72	1.01	1.01	1.01	1.01	0.48	1.01	0.48	0.48	0.48
1-49	q-Axis Inductance Sat Point	%	52	52	52	52	60	52	60	60	60	60	60	60	60	60	60
Standard Plus Tier																	
4-18	Current Limit	%	N/A	98	114	116	111	103	107	112	118	129	117	127	108	130	139
Medium Tier																	
4-18	Current Limit	%	82	88	102	113	105	98	99	108	111	121	105	115	105	127	134
High Tier																	
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

* Parameter 1-24 (motor amperage) must be equal to or less than the following: (Compressor RLA *1.56) / 1.1

** Parameter 1-40 (Back EMF) directly affects parameter 4-19 (max output frequency). A lower EMF value allows a higher maximum frequency. The maximum output frequency is limited automatically based on the maximum back EMF voltage the drive can withstand under a coast/trip scenario; 590 Hz is a hard limit. The calculation is based on motor back EMF and drive nominal input voltage. You can always use a lower value for safety purposes. See equation:

$$f_{sMax} = \frac{UdcMax \cdot 1000 \cdot Zpp}{E_{Line-Line\,RMS\,1000RPM} \cdot \sqrt{2} \cdot 1.2 \cdot 60}$$

Fsmax: limits the range available on parameter 4-19
Zpp: pole par number (total number of poles divided by 2)
E line to line @ 1000 rpm: the RMS back EMF at 1000 rpm measured line to line
1.2: 20% safety factor
UdcMax: maximum value, dependent on drive nominal voltage in the following table:

Drive voltage range (V)	T2 (200-240V)	T4 (380-480V)	T5 (380-500V)	T6 (525-600V)	T7 (525-690V)
Udc Maximum	410	820	855	975	1120

Table 135 — 30XV PM Compressor Tier and Voltage-Specific Parameters, 30XV140-500, 50 Hz

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			Compressor														
			A,B				A	B	A,B				A	B	A,B		
			380V														
			Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
			Standard Plus Tier														
4-18	Current Limit	%	N/A	98	116	118	130	105	126	131	138	151	110	148	102	122	132
			Medium Tier														
4-18	Current Limit	%	83	89	103	114	123	99	117	126	130	141	100	134	99	120	126
			High Tier														
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
			400V														
			Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
			Standard Plus Tier														
4-18	Current Limit	%	N/A	93	110	112	123	100	120	124	131	144	105	142	97	116	125
			Medium Tier														
4-18	Current Limit	%	79	85	99	108	117	94	111	120	123	134	95	128	94	114	120
			High Tier														
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
			415V														
			Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
			Standard Plus Tier														
4-18	Current Limit	%	N/A	90	106	108	119	96	116	120	127	139	101	136	93	112	121
			Medium Tier														
4-18	Current Limit	%	76	81	95	104	113	91	107	116	119	129	91	123	91	110	116
			High Tier														
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 135 — 30XV PM Compressor Tier and Voltage-Specific Parameters, 30XV140-500, 50 Hz (cont)

PARAM. NO.	PARAMETER DESCRIPTION	SETTING DESCRIPTION	140	160	180	200	225		250	275	300	325	350		400	450	500
			Compressor														
			A,B				A	B	A,B				A	B	A,B		
440V																	
Standard 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	0.06	0.06	0.06	0.06	0.12	0.06	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.09	0.09
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	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01
1-37	d-Axis Inductance	mH	0.64	0.64	0.64	0.64	0.49	0.64	0.49	0.49	0.49	0.49	0.13	0.49	0.13	0.13	0.13
1-38	q-Axis Inductance	mH	2.34	2.34	2.34	2.34	1.53	2.34	1.53	1.53	1.53	1.53	0.50	1.53	0.50	0.50	0.50
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	1.27	1.27	1.27	1.27	0.76	1.27	0.76	0.76	0.76	0.76	0.27	0.76	0.27	0.27	0.27
1-49	q-Axis Inductance Sat Point	%	50	50	50	50	65	50	65	65	65	65	65	65	65	65	65
Standard Plus Tier																	
4-18	Current Limit	%	N/A	85	100	101	112	91	108	113	119	131	95	128	88	106	114
Medium Tier																	
4-18	Current Limit	%	72	76	89	98	106	85	101	109	112	122	86	116	86	104	109
High Tier																	
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

* Parameter 1-24 (motor amperage) must be equal to or less than the following: (Compressor RLA *1.56) / 1.1

** Parameter 1-40 (Back EMF) directly affects parameter 4-19 (max output frequency). A lower EMF value allows a higher maximum frequency. The maximum output frequency is limited automatically based on the maximum back EMF voltage the drive can withstand under a coast/trip scenario; 590 Hz is a hard limit. The calculation is based on motor back EMF and drive nominal input voltage. You can always use a lower value for safety purposes. See equation:

$$f_{sMax} = \frac{UdcMax \cdot 1000 \cdot Zpp}{E_{Line-Line\,RMS\,1000RPM} \cdot \sqrt{2} \cdot 1.2 \cdot 60}$$

Fsmax: limits the range available on parameter 4-19
Zpp: pole par number (total number of poles divided by 2)
E line to line @ 1000 rpm: the RMS back EMF at 1000 rpm measured line to line
1.2: 20% safety factor
UdcMax: maximum value, dependent on drive nominal voltage in the following table:

Drive voltage range (V)	T2 (200-240V)	T4 (380-480V)	T5 (380-500V)	T6 (525-600V)	T7 (525-690V)
Udc Maximum	410	820	855	975	1120

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 100. 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. 101 for wiring details for compressor drives. Torque connections are shown in Table 136.

> 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.

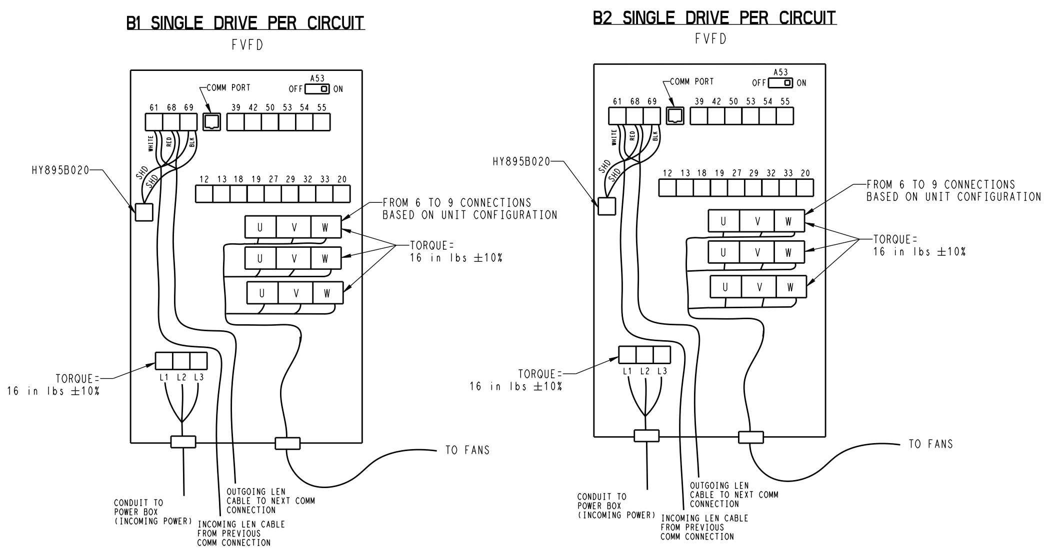
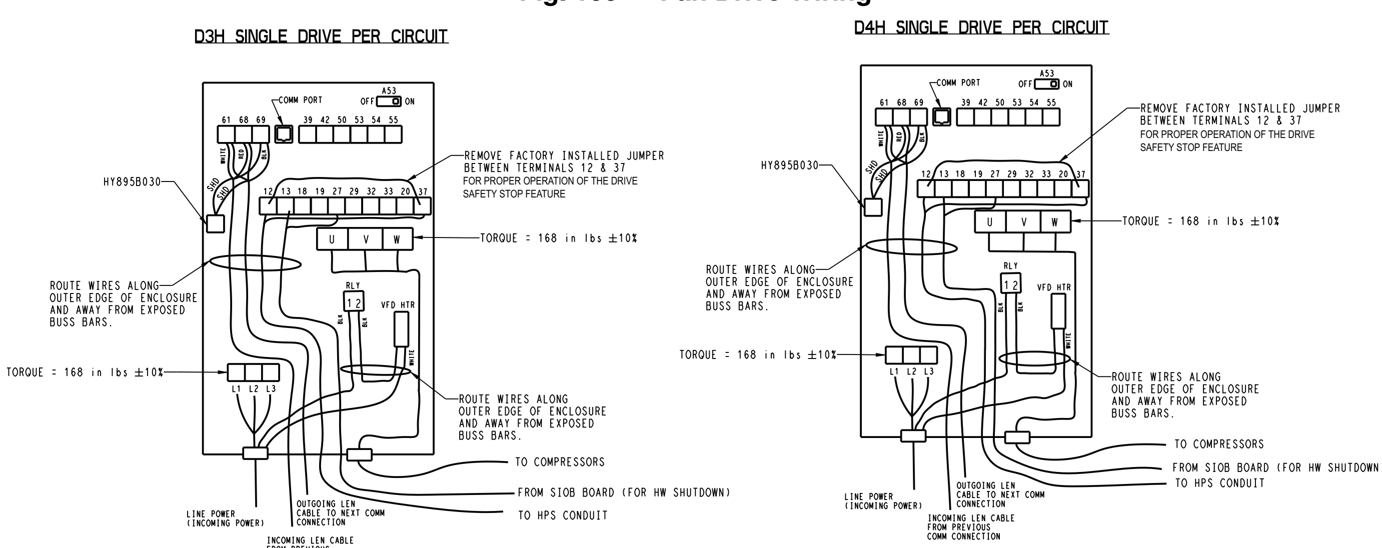


Fig. 100 — Fan Drive Wiring



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. 101 — Compressor Drive Wiring

Table 136 — 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 49 to determine the correct address. For fan drives, see Fig. 100 for typical arrangement. For compressor drives, see Fig. 101 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. 102-104.

1. Modbus is a registered trademark of Schneider Electric.

Fig. 102 — ECM Parameters Icon on Configuration Menu Screen

Fig. 103 — ECM Parameter Screen

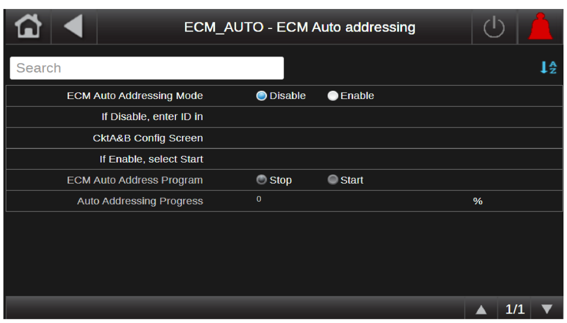


Fig. 104 — ECM_AUTO-ECM Auto Addressing Screen

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. 105). Enter the fan serial number on the ECM CirA Configuration screen.

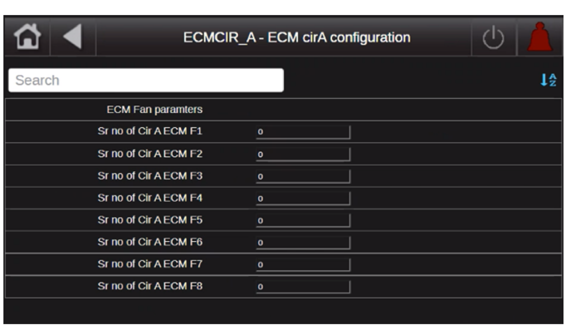


Fig. 105 — ECM CirA Configuration Screen

Field Refrigerant Charging Mode

Field refrigerant charging mode controls the SCT to the values shown in Table 137 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 137 — 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. 106-107.

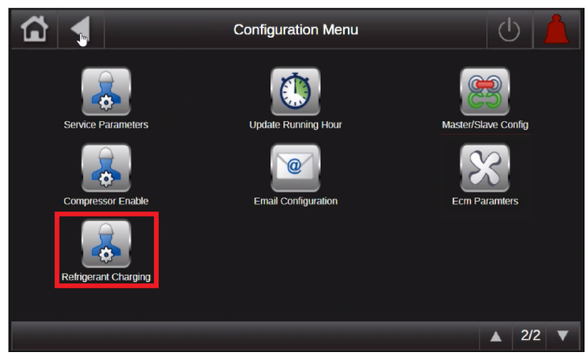


Fig. 106 — Refrigerant Charging Icon on Configuration Menu Screen

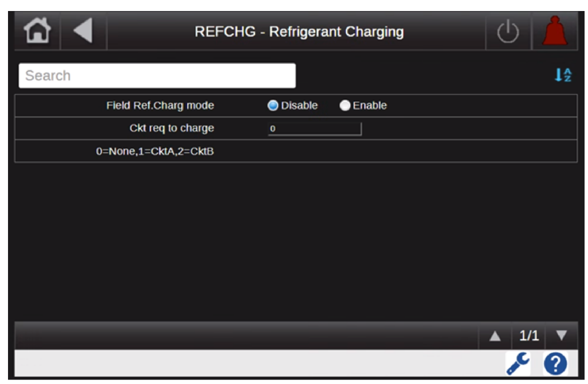


Fig. 107 — Refrigerant Charging Screen

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 138.

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 138 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 138-140 for lists of alarms by code. See Table 141 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 138 — Alarm Reference Lists

BY NAME

ALARM NAME	CODE
Circ A - High Condensing Temperature Out of Map Compressor	Alarm 10037
Circ A - High Saturated Temperature Out of Map Compressor	Alarm 10101
Circ B - High Condensing Temperature Out of Map Compressor	Alarm 10038
Circ B - High Saturated Temperature Out of Map Compressor	Alarm 10102
Circuit A Compressor Motor Thermistor	Alarm 15033
Circuit A Condenser Subcooling Liquid Pressure Transducer	Alarm 12031
Circuit A Condenser Subcooling Liquid Thermistor	Alarm 15018
Circuit A Discharge Gas Thermistor	Alarm 15015
Circuit A Discharge Transducer	Alarm 12001
Circuit A Economizer Gas Thermistor	Alarm 15024
Circuit A Economizer Pressure Transducer	Alarm 12013
Circuit A High Discharge Gas Temperature	Alarm 10078
Circuit A High Oil Filter Drop Pressure	Alarm 10084
Circuit A Low Oil Level	Alarm 10075
Circuit A Low Oil Pressure	Alarm 10067
Circuit A Low Suction Temperature	Alarm 10005
Circuit A Max Oil Filter Differential Pressure	Alarm 10070
Circuit A Oil Pressure Transducer	Alarm 12010
Circuit A Suction Gas Thermistor	Alarm 15012
Circuit A Suction Transducer	Alarm 12004
Circuit A Suction Valve Closed	Alarm 10081
Circuit A Sensor Swap	Alarm 61003
Circuit B Sensor Swap	Alarm 61004
Circuit B Compressor Motor Thermistor	Alarm 15034
Circuit B Condenser Subcooling Liquid Pressure Transducer	Alarm 12032
Circuit B Condenser Subcooling Liquid Thermistor	Alarm 15019
Circuit B Discharge Gas Thermistor	Alarm 15016
Circuit B Discharge Transducer	Alarm 12002
Circuit B Economizer Gas Thermistor	Alarm 15025
Circuit B Economizer Pressure Transducer	Alarm 12014
Circuit B High Discharge Gas Temperature	Alarm 10079
Circuit B High Oil Filter Drop Pressure	Alarm 10085
Circuit B Low Oil Level	Alarm 10076
Circuit B Low Oil Pressure	Alarm 10068
Circuit B Low Suction Temperature	Alarm 10006
Circuit B Max Oil Filter Differential Pressure	Alarm 10071
Circuit B Oil Pressure Transducer	Alarm 12011
Circuit B Suction Gas Thermistor	Alarm 15013
Circuit B Suction Transducer	Alarm 12005
Circuit B Suction Valve Closed	Alarm 10082
Compressor A High Pressure Switch Protection	Alarm 1103
Compressor A Motor Temperature Too High	Alarm 1101
Compressor B High Pressure Switch protection	Alarm 2103
Compressor B Motor Temperature Too High	Alarm 2101
Compressor VFD Error, Circuit A	Alarm 17nnn
Compressor VFD Error, Circuit A	Alarm 35nnn
Compressor VFD Error, Circuit B	Alarm 18nnn
Compressor VFD Error, Circuit B	Alarm 36nnn
Customer Interlock Failure	Alarm 10014
Database Module Failure	Alarm 55001
Dual Chiller Thermistor Failure	Alarm 15011
Evaporator Entering Fluid Thermistor	Alarm 15001
Evaporator Flow Switch Failure	Alarm 10091
Evaporator Freeze Protection	Alarm 10001
Evaporator Leaving Fluid Thermistor	Alarm 15002
Evaporator Pump #1 Fault	Alarm 10032
Evaporator Pump #2 Fault	Alarm 10033
Fan A1 VFD Error, Circuit A	Alarm 20nnn
Fan A1 VFD Error, Circuit A	Alarm 38nnn
Fan A2 VFD Error, Circuit A	Alarm 21nnn
Fan A2 VFD Error, Circuit A	Alarm 39nnn
Fan B1 VFD Error, Circuit B	Alarm 23nnn
Fan B1 VFD Error, Circuit B	Alarm 41nnn
Fan B2 VFD Error, Circuit B	Alarm 24nnn
Fan B2 VFD Error, Circuit B	Alarm 42nnn

Table 138 — Alarm Reference Lists (cont)
BY NAME (cont)

ALARM NAME	CODE
Illegal Configuration	Alarm 7001
Lenscan Module Failure	Alarm 56001
Loss of Communication with Auxiliary # 1	Alarm 4501
Loss of Communication with Auxiliary # 2	Alarm 4502
Loss of Communication with Auxiliary # 3	Alarm 4503
Loss of communication with Energy Management Board	Alarm 4603
Loss of Communication with Fan Drive Board #4	Alarm 4704
Loss of Communication with Fan Drive Board #5	Alarm 4705
Loss of Communication with Fan Drive Board #7	Alarm 4707
Loss of Communication with Fan Drive Board #8	Alarm 4708
Loss of Communication with SIOB Board Number 1	Alarm 4901
Loss of Communication with SIOB Board Number 2	Alarm 4902
Loss of Communication with Compressor VFD Drive Board #1	Alarm 4701
Loss of Communication with Compressor VFD Drive Board #2	Alarm 4702
Main EXV Stepper Motor Failure - Circuit A	Alarm 57020
Main EXV Stepper Motor Failure - Circuit B	Alarm 57021
Main ECO Stepper Motor Failure - Circuit A	Alarm 57023
Main ECO Stepper Motor Failure - Circuit B	Alarm 57024
Master/Slave Alarms	Alarm 90nn
No Factory Configuration	Alarm 8000
OAT Thermistor Failure	Alarm 15010
Space Temperature Thermistor	Alarm 15021
Unit is in Emergency Stop	Alarm 10031
VI Solenoid Diagnostic Test Failure - Circuit A	Alarm 60001
VI Solenoid Diagnostic Test Failure - Circuit B	Alarm 61001
Water Exchanger Temperature Sensors Swap	Alarm 10097

Table 138 — Alarm Reference Lists
BY CODE

CODE	ALARM NAME
Alarm 10001	Evaporator Freeze Protection
Alarm 10005	Circuit A Low Suction Temperature
Alarm 10006	Circuit B Low Suction Temperature
Alarm 10014	Customer Interlock failure
Alarm 10031	Unit is in Emergency Stop
Alarm 10032	Evaporator Pump #1 fault
Alarm 10033	Evaporator Pump #2 fault
Alarm 10037	Circ A - High Condensing temperature out of map compressor
Alarm 10038	Circ B - High Condensing temperature out of map compressor
Alarm 10067	Circuit A Low Oil Pressure
Alarm 10068	Circuit B Low Oil Pressure
Alarm 10070	Circuit A Max Oil Filter Differential Pressure
Alarm 10071	Circuit B Max Oil Filter Differential Pressure
Alarm 10075	Circuit A Low Oil Level
Alarm 10076	Circuit B Low Oil Level
Alarm 10078	Circuit A High Discharge Gas Temperature
Alarm 10079	Circuit B High Discharge Gas Temperature
Alarm 10081	Circuit A Suction Valve closed
Alarm 10082	Circuit B Suction Valve closed
Alarm 10084	Circuit A High Oil Filter Drop Pressure
Alarm 10085	Circuit B High Oil Filter Drop Pressure
Alarm 10091	Evaporator Flow Switch Failure
Alarm 10097	Water Exchanger Temperature Sensors Swap
Alarm 10101	Circ A - High saturated temperature out of map compressor
Alarm 10102	Circ B - High saturated temperature out of map compressor
Alarm 10123	IM PM Motor Mismatch Cir A
Alarm 10124	IM PM Motor Mismatch Cir B
Alarm 1101	Compressor A Motor temperature too high
Alarm 1103	Compressor A High Pressure Switch protection
Alarm 12001	Circuit A Discharge Transducer
Alarm 12002	Circuit B Discharge Transducer
Alarm 12004	Circuit A Suction Transducer
Alarm 12005	Circuit B Suction Transducer
Alarm 12010	Circuit A Oil Pressure Transducer
Alarm 12011	Circuit B Oil Pressure Transducer

Table 138 — Alarm Reference Lists (cont)

BY CODE (cont)

CODE	ALARM NAME
Alarm 12013	Circuit A Economizer Pressure Transducer
Alarm 12014	Circuit B Economizer Pressure Transducer
Alarm 12031	Circuit A Condenser Subcooling Liquid Pressure Transducer
Alarm 12032	Circuit B Condenser Subcooling Liquid Pressure Transducer
Alarm 15001	Evaporator Entering Fluid Thermistor
Alarm 15002	Evaporator Leaving Fluid Thermistor
Alarm 15010	OAT Thermistor Failure
Alarm 15011	Dual Chiller Thermistor Failure
Alarm 15012	Circuit A Suction Gas Thermistor
Alarm 15013	Circuit B Suction Gas Thermistor
Alarm 15015	Circuit A Discharge Gas Thermistor
Alarm 15016	Circuit B Discharge Gas Thermistor
Alarm 15018	Circuit A Condenser Subcooling Liquid Thermistor
Alarm 15019	Circuit B Condenser Subcooling Liquid Thermistor
Alarm 15021	Space Temperature Thermistor
Alarm 15024	Circuit A Economizer Gas Thermistor
Alarm 15025	Circuit B Economizer Gas Thermistor
Alarm 15033	Circuit A Compressor Motor Thermistor
Alarm 15034	Circuit B Compressor Motor Thermistor
Alarm 17nnn	Compressor VFD Error, Circuit A
Alarm 18nnn	Compressor VFD Error, Circuit B
Alarm 20nnn	Fan A1 VFD Error, Circuit A
Alarm 2101	Compressor B Motor temperature too high
Alarm 2103	Compressor B High Pressure Switch protection
Alarm 21nnn	Fan A2 VFD Error, Circuit A
Alarm 23nnn	Fan B1 VFD Error, Circuit B
Alarm 24nnn	Fan B2 VFD Error, Circuit B
Alarm 26znn	ECM Fan Error
Alarm 27znn	ECM Fan Error
Alarm 28znn	ECM Fan Error
Alarm 35nnn	Compressor VFD Error, Circuit A
Alarm 36nnn	Compressor VFD Error, Circuit B
Alarm 38nnn	Fan A1 VFD Error, Circuit A
Alarm 39nnn	Fan A2 VFD Error, Circuit A
Alarm 41nnn	Fan B1 VFD Error, Circuit B
Alarm 42nnn	Fan B2 VFD Error, Circuit B
Alarm 4502	Loss of Communication with Auxiliary Board AUXA
Alarm 4503	Loss of Communication with Auxiliary Board AUXB
Alarm 4603	Loss of communication with Energy Management Board
Alarm 4701	Loss of Communication with VLT Drive Board #1
Alarm 4702	Loss of Communication with VLT Drive Board #2
Alarm 4704	Loss of Communication with Fan Drive Board #4
Alarm 4705	Loss of Communication with Fan Drive Board #5
Alarm 4707	Loss of Communication with Fan Drive Board #7
Alarm 4708	Loss of Communication with Fan Drive Board #8
Alarm 4901	Loss of Communication with SIOB Board Number 1
Alarm 4902	Loss of Communication with SIOB Board Number 2
Alarm 55001	Database module failure
Alarm 56001	Lenscan module failure
Alarm 57020	Main EXV stepper motor failure - Circuit A
Alarm 57021	Main EXV stepper motor failure - Circuit B
Alarm 57023	Main ECO stepper motor failure - Circuit A
Alarm 57024	Main ECO stepper motor failure - Circuit B
Alarm 60001	VI Solenoid Diagnostic Test Failure - Circuit A
Alarm 61001	VI Solenoid Diagnostic Test Failure - Circuit B
Alarm 7001	Illegal configuration
Alarm 8001	No Factory Configuration
Alarm 90nn	Master/Slave Alarms
Alarm 61003	Circuit A Sensor Swap
Alarm 61004	Circuit B Sensor Swap

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

NOTE: For VFD alarms, “nnn” corresponds to alarm code in Table 142.

Table 139 — Alarm Details by Code

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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)
10005 10006	Circuit A Low Suction Temperature Circuit B 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 Circuit B 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***)
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 items 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 items for faults: • CCN Emergency Stop command
10032 10033	Evaporator pump #1 fault Evaporator pump #2 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)

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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 • the discharge service valves to be sure that they are open • check the discharge pressure transducer for accuracy • confirm 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.	Manual	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 • the 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.	Manual	
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	
10075	Circuit A Low Oil Level	When the compressor is running or off. The alarm will trip if the compressor is running and the oil level switch is opened for more than 10 seconds NOTE: When the units starts the oil level switch is verified after 2 minutes.	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				

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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
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).

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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).
01101	Compressor A Motor temperature too high	Tested when the compressor is ON or OFF. The alarm is 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. The alarm is 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
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 63 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.	
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.	
12011	Circuit B Oil Pressure Transducer				
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.	
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.	
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 63 for thermistor description and connections
15002	Evaporator Leaving Fluid T hermistor	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)	
15011	Dual Chiller 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.	
15013	Circuit B Suction Gas Thermistor				

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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 63 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.	
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	
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	
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.	
15034	Circuit B Compressor Motor Thermistor				
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 143 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 143 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 143 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 143 for VFD Alarm/Alert Codes
02101	Compressor B Motor temperature too high	Tested when the compressor is ON or OFF. The alarm is 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. The alarm is 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
23nnn	Fan B1 VFD Error, Circuit B	Fan B1 VFD Circuit B fault (see VFD Alarms and Alerts section on page 198)	Circuit B will be shut down	Manual	See Table 143 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 198)	Circuit B will be shut down	Manual	See Table 143 for VFD Alarm/Alert Codes
26znn	ECM Fan Error Cir A Fan 1-10	Tested when the unit is On and Off and ECM drives are configured. Alarm subcodes “nn” are described in Table 140.	Circuit A will be shut down	Manual	See Table 143 for VFD Alarm/Alert Codes
27znn	ECM Fan Error Cir A Fan 11-14, Cir B Fan 1-6	Tested when the unit is On and Off and ECM drives are configured. Alarm subcodes “nn” are described in Table 140.	Circuit A or Circuit B will be shut down	Manual	See Table 143 for VFD Alarm/Alert Codes
28znn	ECM Fan Error Cir B Fan 7-14	Tested when the unit is On and Off and ECM drives are configured. Alarm subcodes “nn” are described in Table 140.	Circuit B will be shut down	Manual	See Table 143 for VFD Alarm/Alert Codes
35nnn	Compressor VFD Error, Circuit A	Compressor VFD Circuit A fault (see VFD Alarms and Alerts section on page 198)	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 143 for VFD Alarm/Alert Codes
36nnn	Compressor VFD Error, Circuit B	Compressor VFD Circuit B fault (see VFD Alarms and Alerts section on page 198)	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 143 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 198)	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 143 for VFD Alarm/Alert Codes

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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 198)	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 143 for VFD Alarm/Alert Codes
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 198)	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 143 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 198)	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 143 for VFD Alarm/Alert Codes

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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
04502	Loss of Communication with Auxiliary Board A	Alarm will trip if 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	Alarm will trip if 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	Alarm will trip if 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: • the EMM is installed (***Main Menu → Configuration Menu → Factory Parameters → Line 9 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	
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
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	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 B shall be stopped	Manual	Check ECO EXV connections on SIOB Check connection on ECO EXV

Table 139 — Alarm Details by Code (cont)

ALARM CODE	ALARM NAME	CRITERIA FOR TRIP	ACTION TAKEN BY CONTROL	RESET METHOD	POSSIBLE CAUSES/CORRECTIVE ACTIONS
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.
07001	Illegal configuration	The alarm will be generated 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	If this condition is encountered, confirm unit configuration
08001	No Factory Configuration	The alarm will be generated if the Unit Capacity (***Main Menu → Configuration Menu → Factory Parameters***) is missing.	Unit is not allowed to start	Automatic when configured correctly	If this condition is encountered, confirm unit configuration
090nn	Master/Slave Alarms	Tested when the unit is On and Off. The alarm from 9001 to 9016 will be tripped if the unit is in Master or Slave operating type and a master/slave configuration error (ms_error) is detected. See Table 141 for alarm descriptions.	Master/Slave functions are deactivated. Both chillers will operate as standalone units.	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

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 140 — ECM Fan Number Alarm Codes

SUB-CODE	ALARM/ALERT WORD	POSITION	ALARM/ALERT KIND	ALARM/ALERT DESCRIPTION	COMMENT
nn	(26znn-28znn) ECM Fan Number Alarm Codes				
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	

Table 141 — Master/Slave Alarm Codes

ALARM CODE	ALARM DESCRIPTION
09001	Lag_pump control is selected while pump configuration is disabled.
09002	Master and Slave units have the same address.
09003	No Slave configured at Slave address.
09004	Slave Lag_pump is selected while Slave pump configuration is disabled.
09005	Water control type conflict. Master configured for EWT control while Slave configured for LWT control.
09006	Water control type conflict. Master configured for LWT control while Slave configured for EWT control.
09007	Pump control conflict. Master is configured for lag pump control while Slave is not configured for lag pump control.
09008	Pump control conflict. Master is not configured for lag pump control while Slave is configured for lag pump control.
09009	Slave chiller is in Local On or Remote control. (needs to be CCN)
09010	Slave chiller is down due to fault.
09011	Master chiller operating type is not Master
09012	Communication between Master and Slave has been lost for more than 2 minutes.
09013	Master and Slave Heat/Cool selections are not the same.
09014	Master and Slave parallel/series selections are not the same.
09015	Master using EWT control while in series.
09016	Slave using EWT control while in series.

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 185. Table 142 lists the VFD alarm and alert naming conventions, while Table 143 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 142 — VFD Alarm/Alert Naming Conventions

VFD ALARMS AND ALERTS	ALARM FORMAT*	ALERT FORMAT*
Compressor A	17nnn	35nnn
Compressor B	18nnn	36nnn
Fan A1	20nnn	38nnn
Fan A2	21nnn	39nnn
Fan B1	23nnn	41nnn
Fan B2	24nnn	42nnn

* The Danfoss Alarm/Alert code is represented by nnn. See Table 143.

Table 143 — Alarms List

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	DOES MACHINE SHUT DOWN	ACTION TO BE TAKEN	REFERENCE PARAMETER
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.	
002	NOTE 1	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
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
004	NOTE 1	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
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	
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	
007	NOTE 1	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.	
008	NOTE 1	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.	
009	NOTE 1	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.	
010	NOTE 1	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 overloaded. • 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])
011	NOTE 1	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 the motor is mechanically overloaded.	1-90 Motor Thermal Protection (this parameter should be set to [0])

Table 143 — Alarms List (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	DOES MACHINE SHUT DOWN	ACTION TO BE TAKEN	REFERENCE PARAMETER
012	NOTE 1	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	
013	NOTE 1	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.	
014	NOTE 1	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.	
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	
017	NOTE 1	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
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	
029	NOTE 1	Heat Sink Overtemperature	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 the frequency converter. • Damaged heat sink fan. • Dirty heat sink.	
030	NOTE 1	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
031	NOTE 1	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
032	NOTE 1	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
034	NOTE 1	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.	
036	NOTE 1	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%)	
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	NOTE 1	24V Supply Low	The supply on the power card is out of range		Contact Carrier Service	

Table 143 — Alarms List (cont)

CODE	WARNING/ ALARM	DESCRIPTION	POSSIBLE CAUSES	DOES MACHINE SHUT DOWN	ACTION TO BE TAKEN	REFERENCE PARAMETER
049	NOTE 1	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]
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	
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	
064	Warning	Voltage Limit	Supply Voltage is too low		Check supply voltage to determine if within permissable limits of VFD	
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	
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	
068	Alarm	Safe Stop	Safe Stop input has been activated	Yes	Check Compressor High Pressure Switch	5-19 Terminal 37 Safe Stop
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	
072	Alarm	Emergency Stop	An unexpected combination of failures		Contact Carrier Service	
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
243	Warning/ Alarm	IGBT Fault	IGBT is defective or not functioning properly		Contact Carrier Service	
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.	The circuit is shut down or not allowed to start.	Automatic, after heat sink temperature falls below a preset point.	
246	Alarm	Power Card Supply				
247	Alarm	Power Card Temperature				

LEGEND
AMA — Automatic Motor Adaptation
IGBT — Insulated Gate Bipolar Transistor
PTC — Positive Temperature Coefficient
VFD — Variable Frequency Drive

NOTE: Warning or Alarm is determined by the setting of the reference Parameter.

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 144 and 145.

Table 144 — 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 Overrid 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

Table 145 — 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

TROUBLESHOOTING GUIDE

Table 146 shows potential unit issues and possible solutions. This table is meant only as a guide, and is not exhaustive in issues or solutions.

Table 146 — 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 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.
	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 the Alarms and Alerts section and follow troubleshooting instructions. Check Active Capacity Override, CAPA_override.
	Active operating mode	Check for Operating Modes. See the 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 the 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. 108-121.

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. 122 and 123 for component arrangement diagrams.

NOTE: There may be up to a one-minute delay before the selected item is energized.

LEGEND FOR FIG. 108-121

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

NOTES:

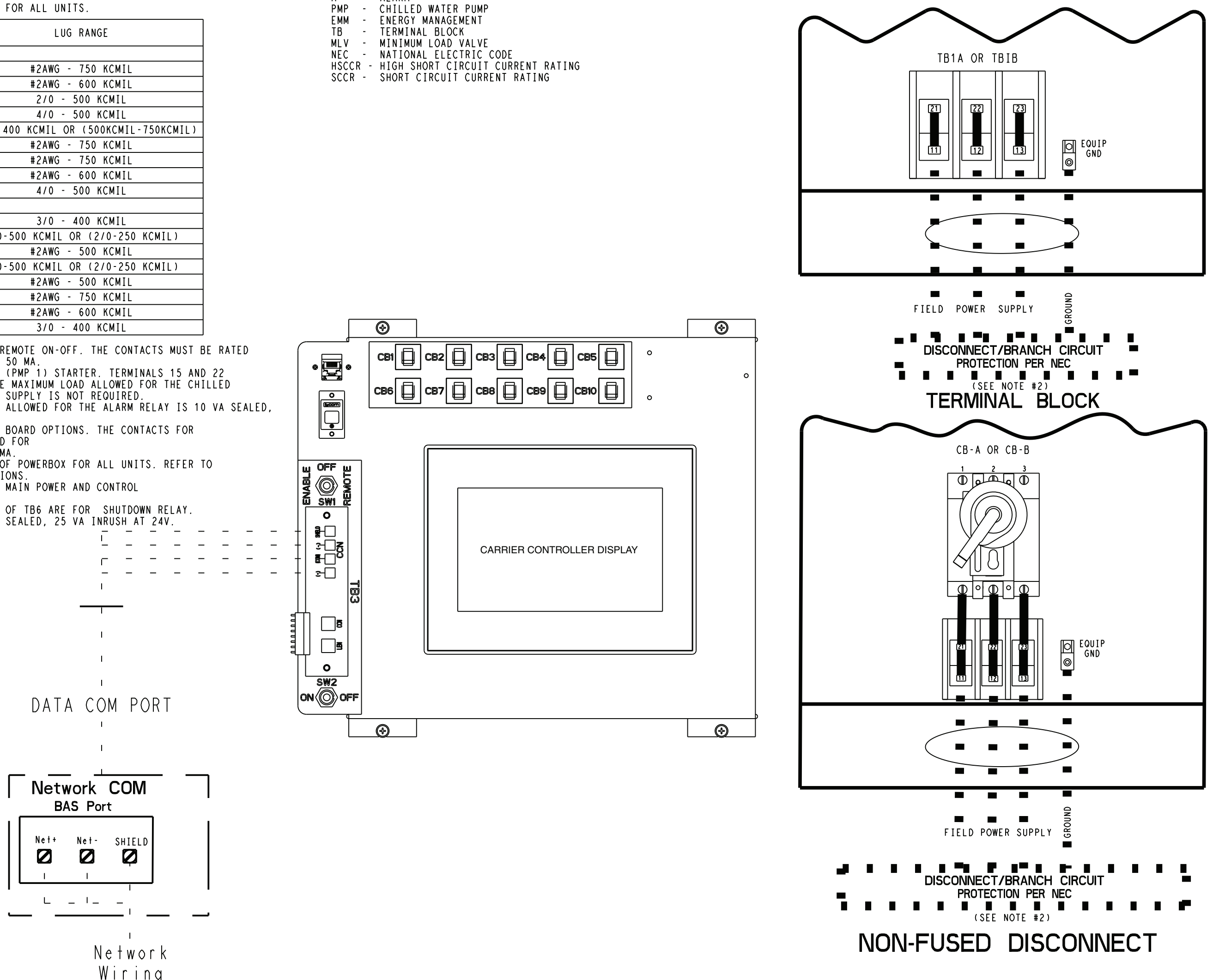
1. FACTORY WIRING IS IN ACCORDANCE WITH UL 1995 STANDARDS. FIELD MODIFICATIONS OR ADDITIONS MUST BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
2. WIRING FOR MAIN FIELD SUPPLY MUST BE RATED 75C MINIMUM. USE COPPER FOR ALL UNITS.

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:

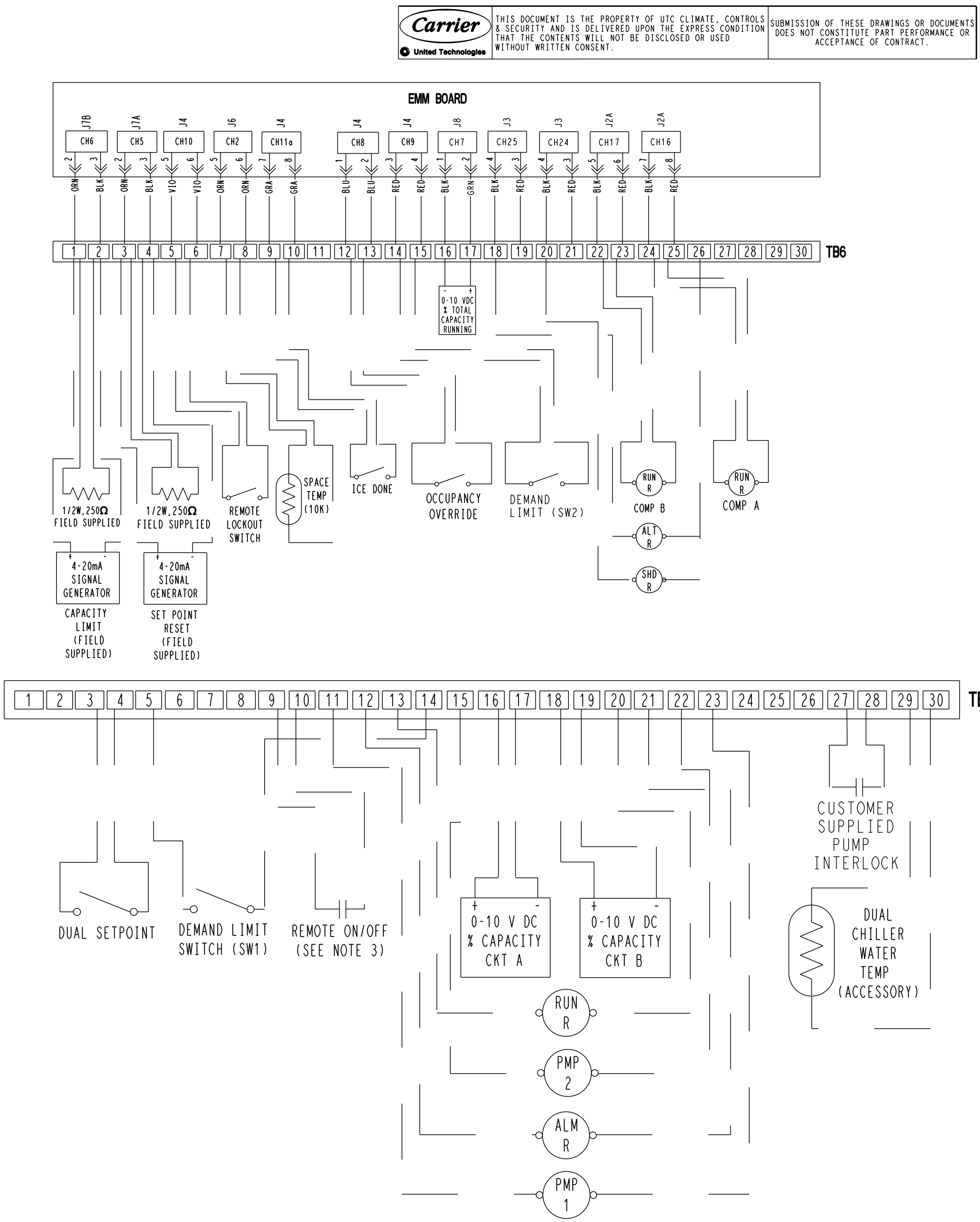
A - ALARM
PMP - CHILLED WATER PUMP
EMM - ENERGY MANAGEMENT
TB - TERMINAL BLOCK
MLV - MINIMUM LOAD VALVE
NEC - NATIONAL ELECTRIC CODE
HSCCR - HIGH SHORT CIRCUIT CURRENT RATING
SCCR - SHORT CIRCUIT CURRENT RATING



ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:EAR99	1 OF 3	04/04/19		30XV 140-500 AIR COOLED	30XV60002800	D

NOTE: See Legend on page 204.

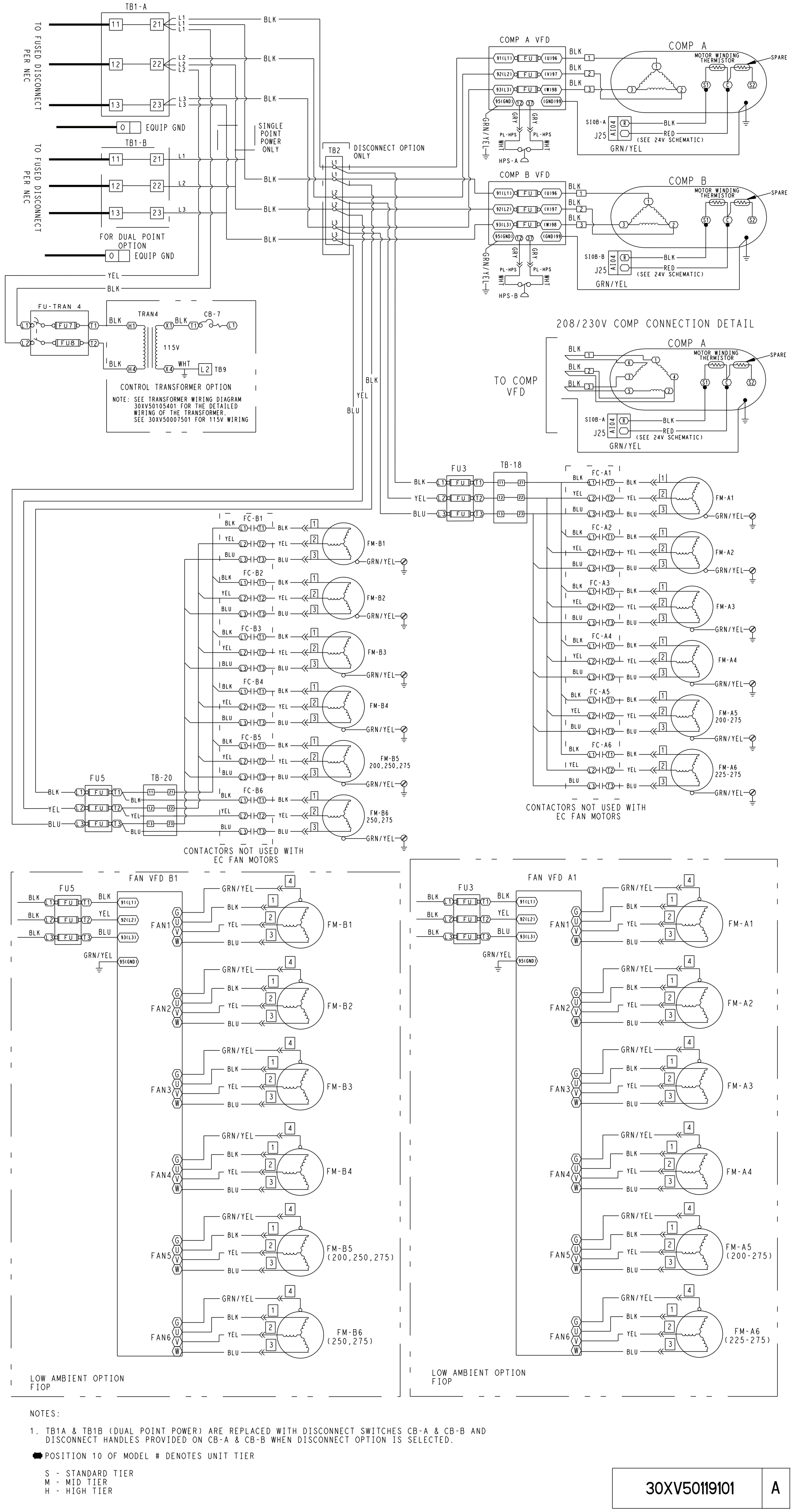
Fig. 108 — 30XV Typical Field Wiring Schematic



ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:EAR99	2 OF 3	05/17/18		30XV 140-500 AIR COOLED	30XV60002800	D

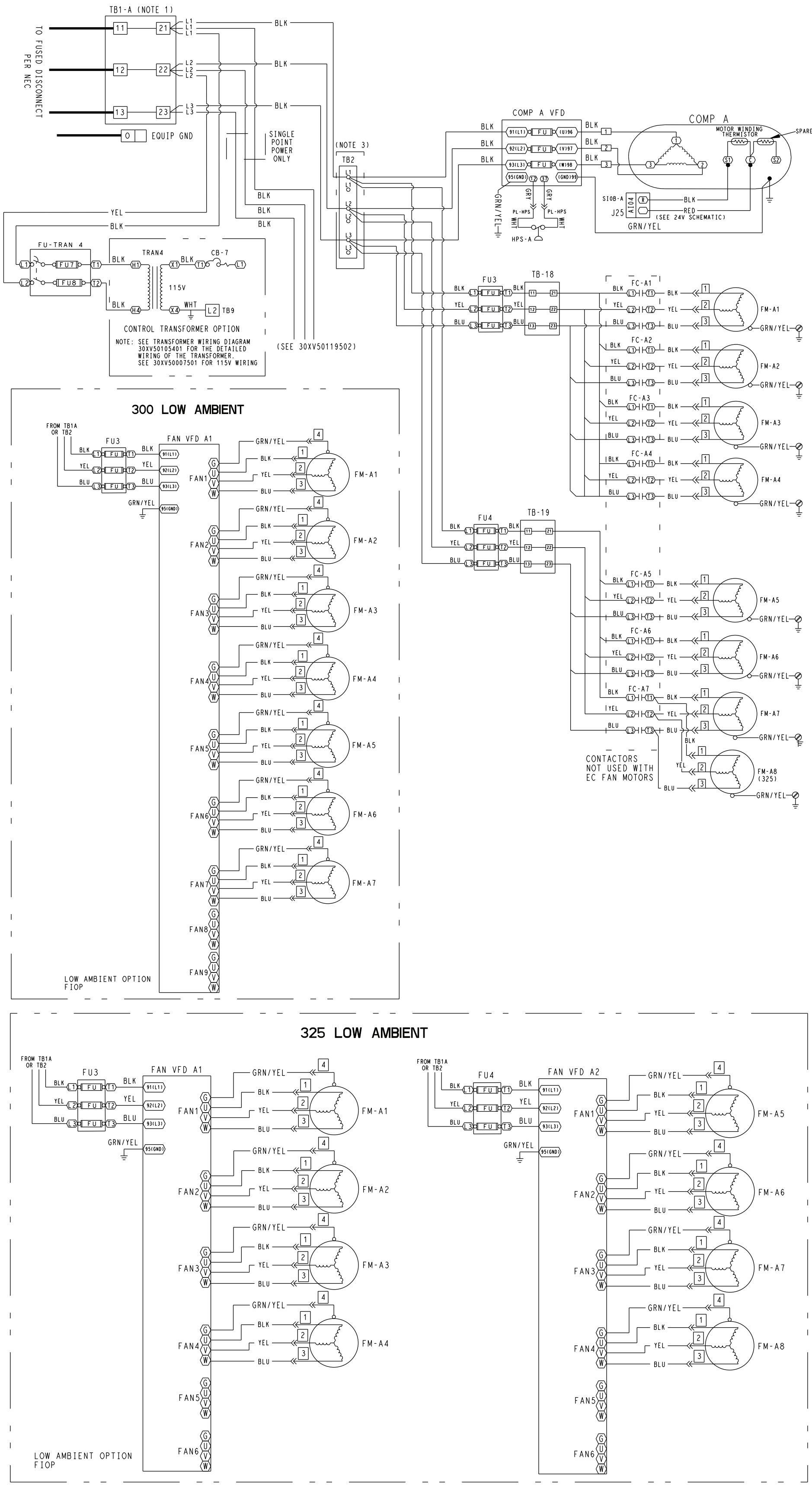
NOTE: See Legend on page 204.

Fig. 108 —30XV Typical Field Wiring Schematic (cont)



NOTE: See Legend on page 204.

Fig. 109 — 30XV Standard Tier 140-275 (All Voltages) Power Schematic



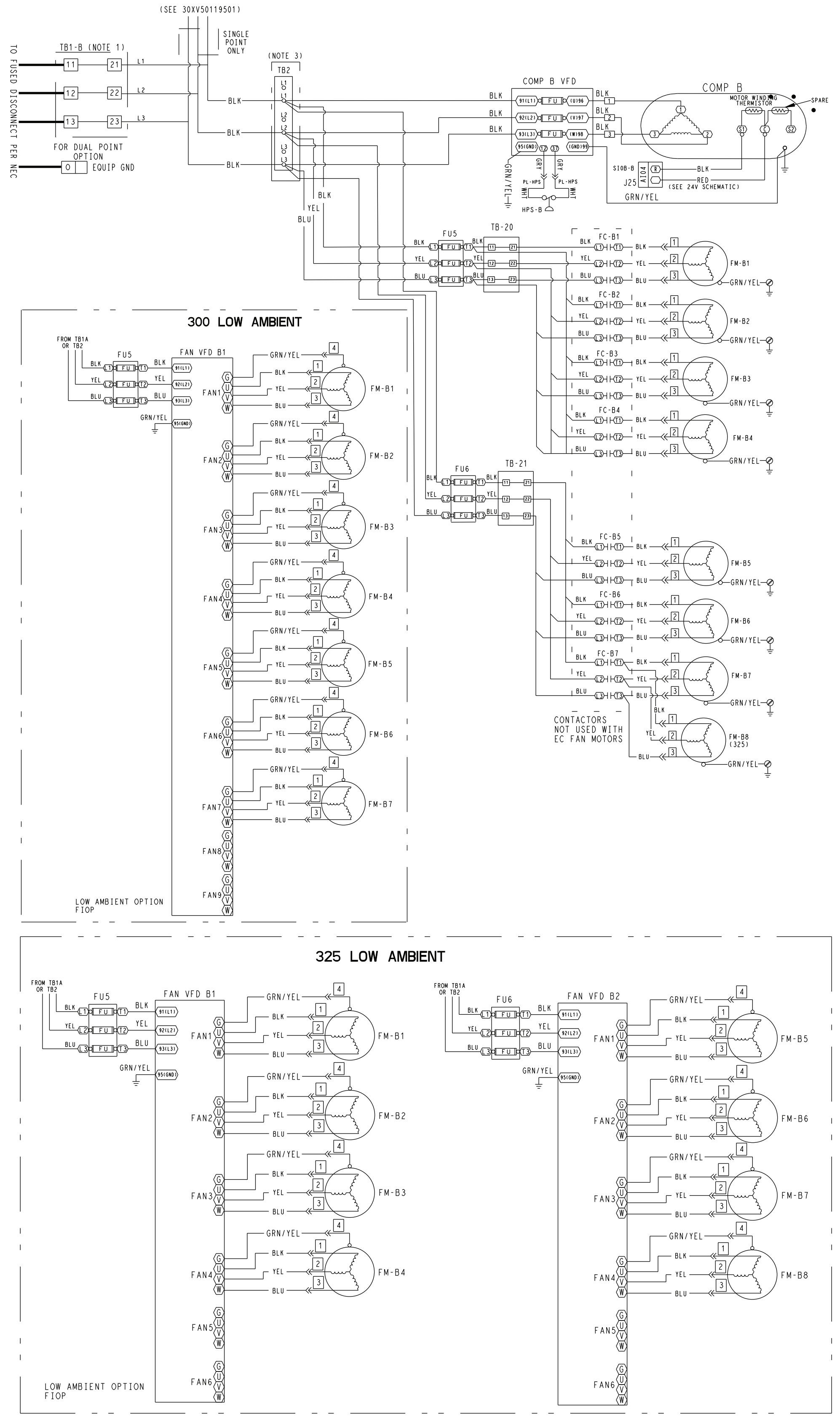
NOTES:
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.
3. TB2 PRESENT ONLY ON UNITS WITH DISCONNECT OPTION.

POSITION 10 OF MODEL # DENOTES UNIT TIER
S - STANDARD TIER
M - MID TIER
H - HIGH TIER

30XV50119501	A

NOTE: See Legend on page 204.

Fig. 110 — 30XV Standard Tier 300, 325 (All Voltages) Power Schematic



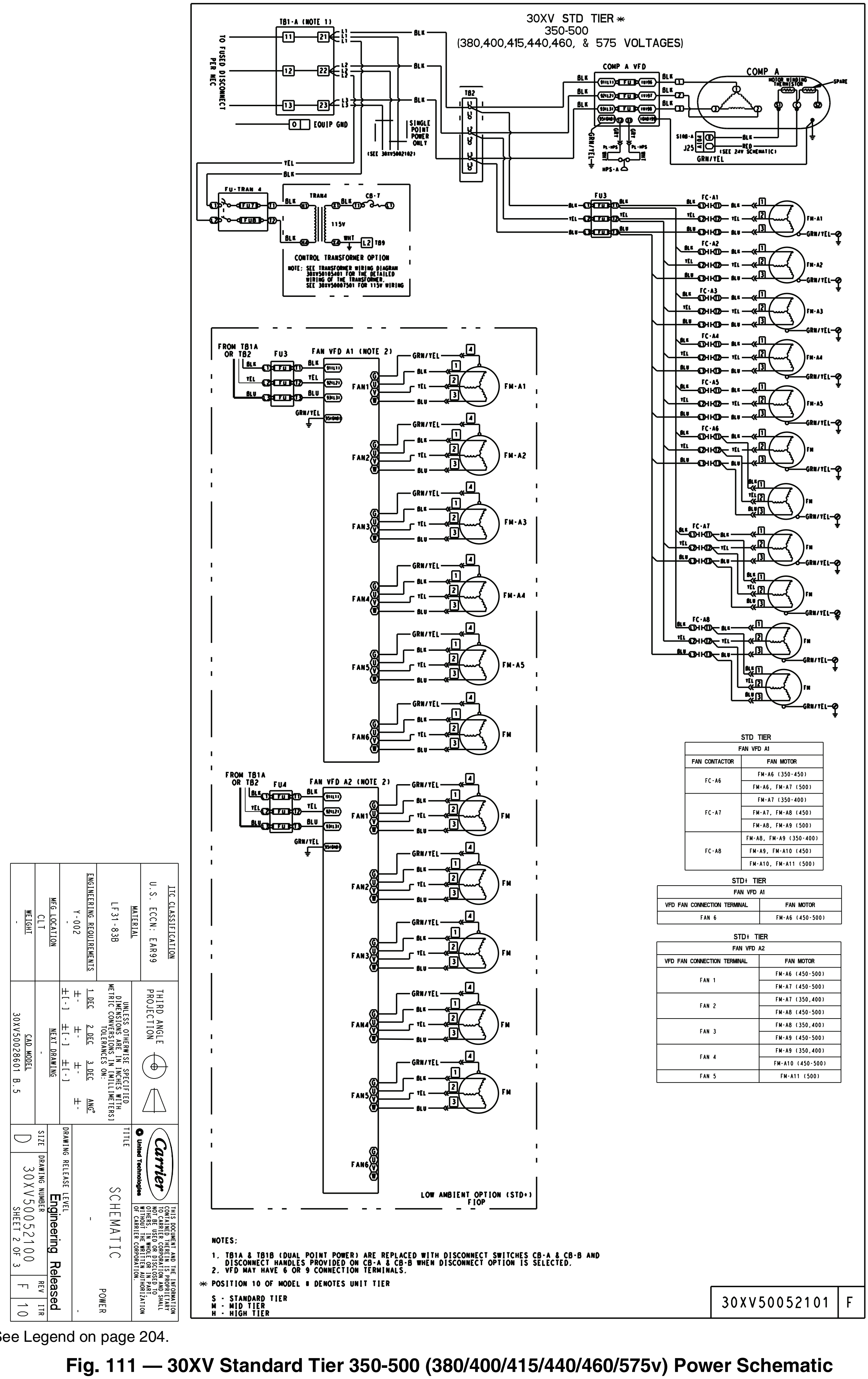
NOTES:
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. COMP A VFD RLY 2 & COMP B RLY 2 ARE RELAYS LOCATED IN THE COMPRESSOR VFD'S & ARE CONTROLLED BY THE VFD.
3. TB2 PRESENT ONLY ON UNITS WITH DISCONNECT OPTION.

POSITION 10 OF MODEL # DENOTES UNIT TIER
S - STANDARD TIER
M - MID TIER
H - HIGH TIER

30XV50119502 | A

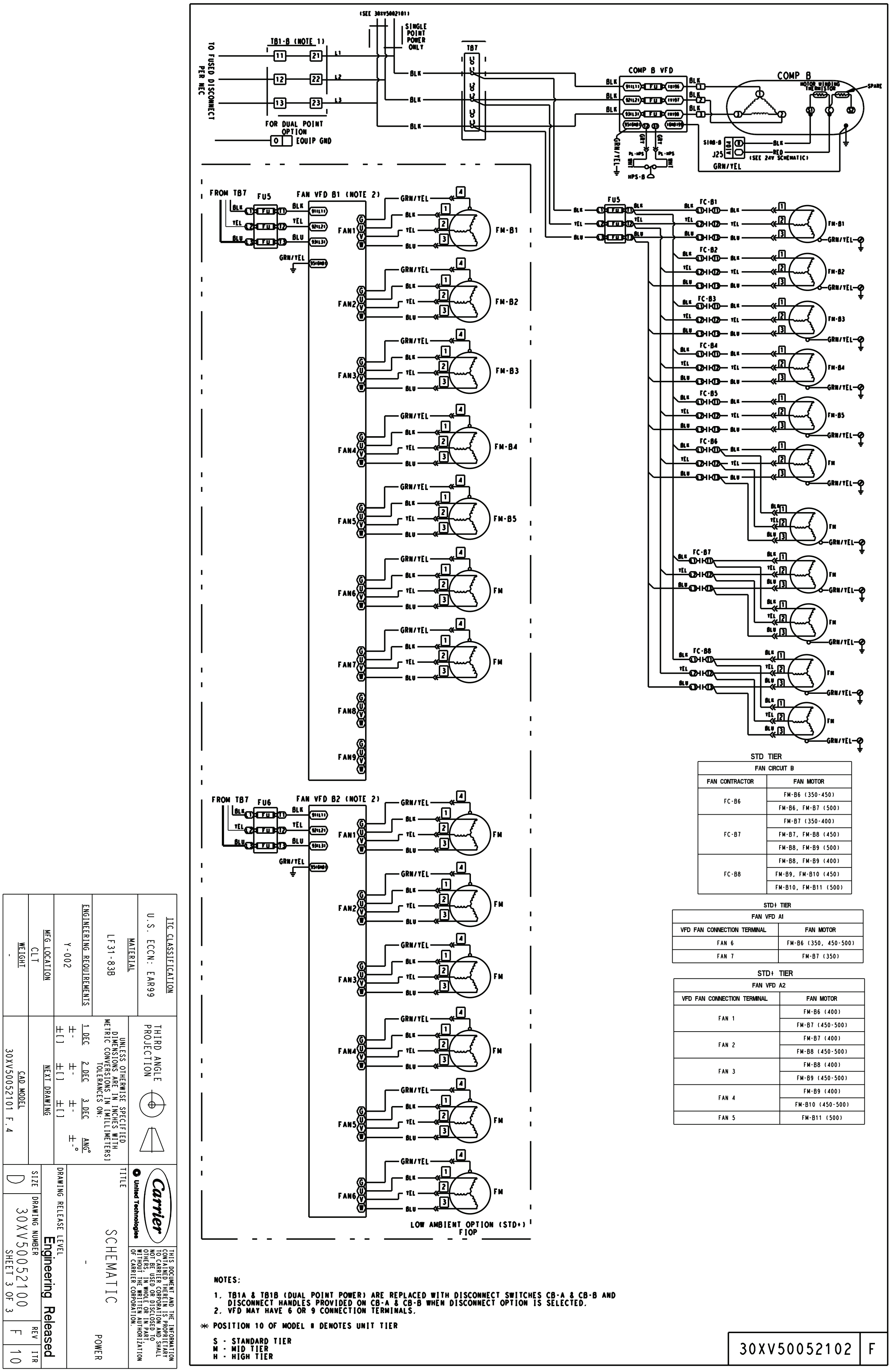
NOTE: See Legend on page 204.

Fig. 110 —30XV Standard Tier 300, 325 (All Voltages) Power Schematic (cont)



NOTE: See Legend on page 204.

Fig. 111 — 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:

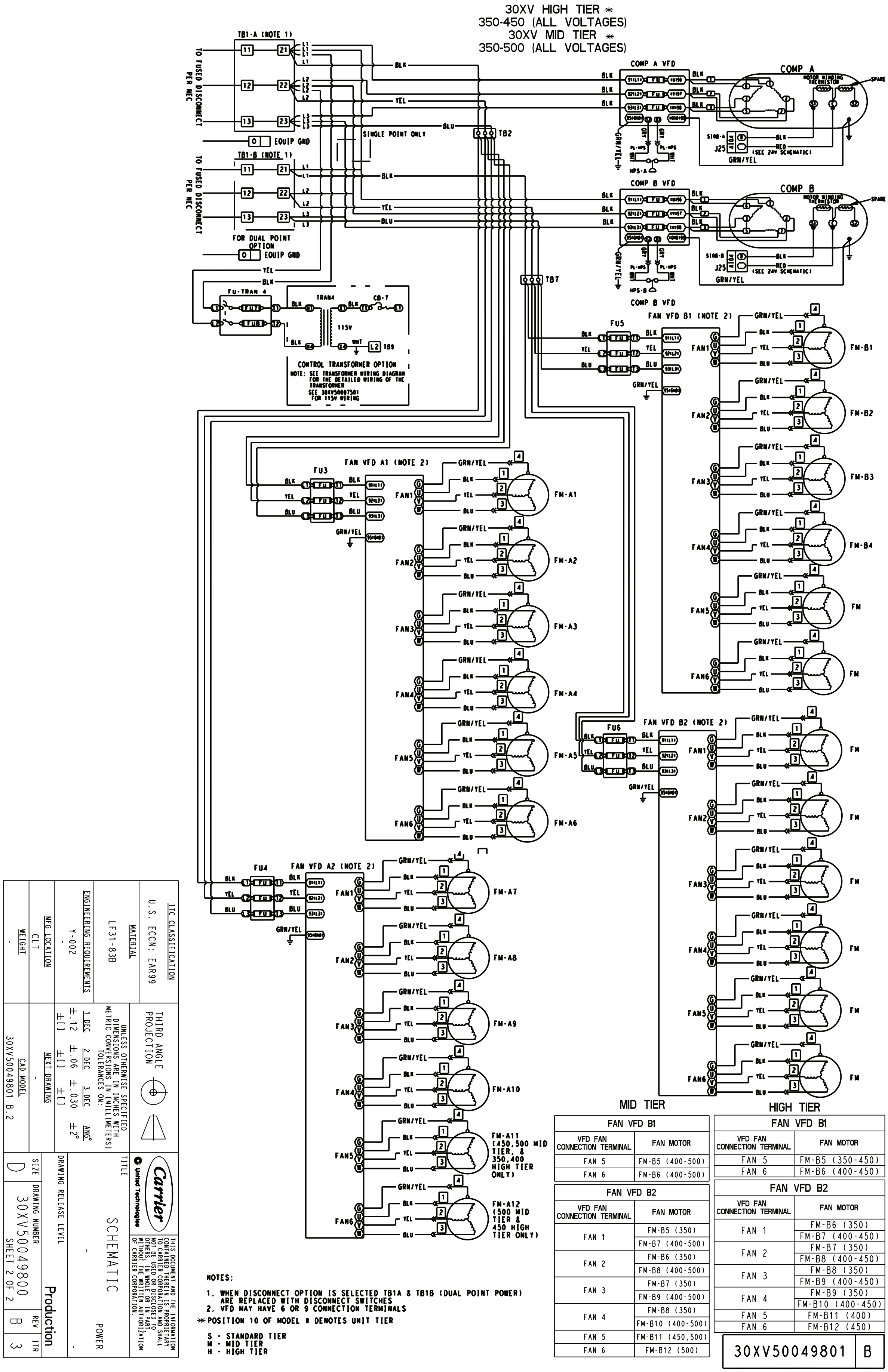
1. TB1A & TB1B (DUAL POINT POWER) ARE REPLACED WITH DISCONNECT SWITCHES CB-A & CB-B AND DISCONNECT HANDLES PROVIDED ON CB-A & CB-B WHEN DISCONNECT OPTION IS SELECTED.
2. VFD MAY HAVE 6 OR 9 CONNECTION TERMINALS.

* POSITION 10 OF MODEL # DENOTES UNIT TIER

S - STANDARD TIER
M - MID TIER
H - HIGH TIER

NOTE: See Legend on page 204.

Fig. 111 — 30XV Standard Tier 350-500 (380/400/415/440/460/575v) Power Schematic (cont)



MID TIER

FAN VFD B1	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 5	FM-B5 (400-500)
FAN 6	FM-B6 (400-500)

FAN VFD B2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-B5 (350)
	FM-B7 (400-500)
FAN 2	FM-B6 (350)
	FM-B8 (400-500)
FAN 3	FM-B7 (350)
	FM-B9 (400-500)
FAN 4	FM-B8 (350)
	FM-B10 (400-500)
FAN 5	FM-B11 (450,500)
FAN 6	FM-B12 (500)

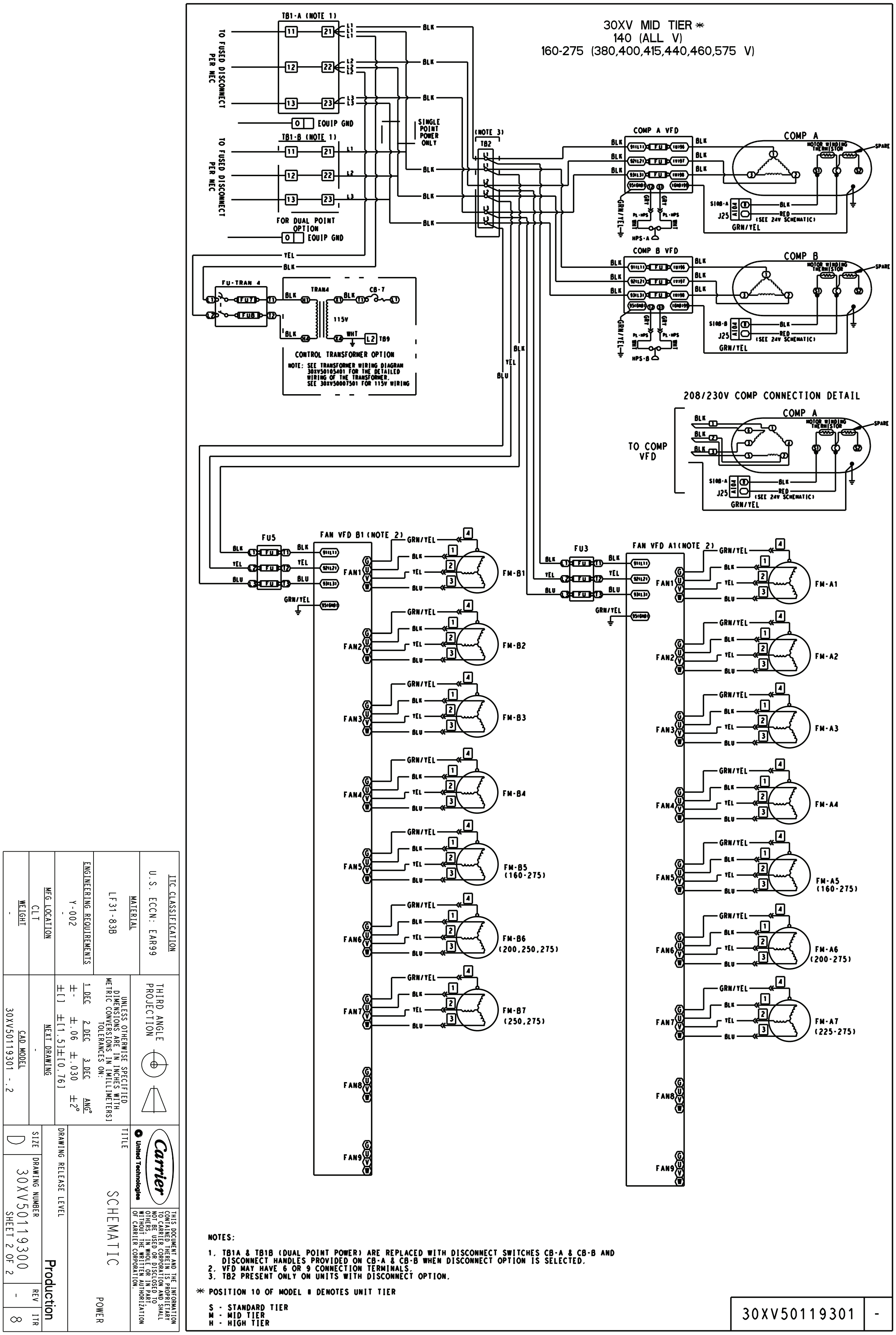
HIGH TIER

FAN VFD B1	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 5	FM-B5 (350-450)
FAN 6	FM-B6 (400-450)

FAN VFD B2	
VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-B6 (350)
	FM-B7 (400-450)
FAN 2	FM-B7 (350)
	FM-B8 (400-450)
FAN 3	FM-B8 (350)
	FM-B9 (400-450)
FAN 4	FM-B9 (350)
	FM-B10 (400-450)
FAN 5	FM-B11 (400)
FAN 6	FM-B12 (450)

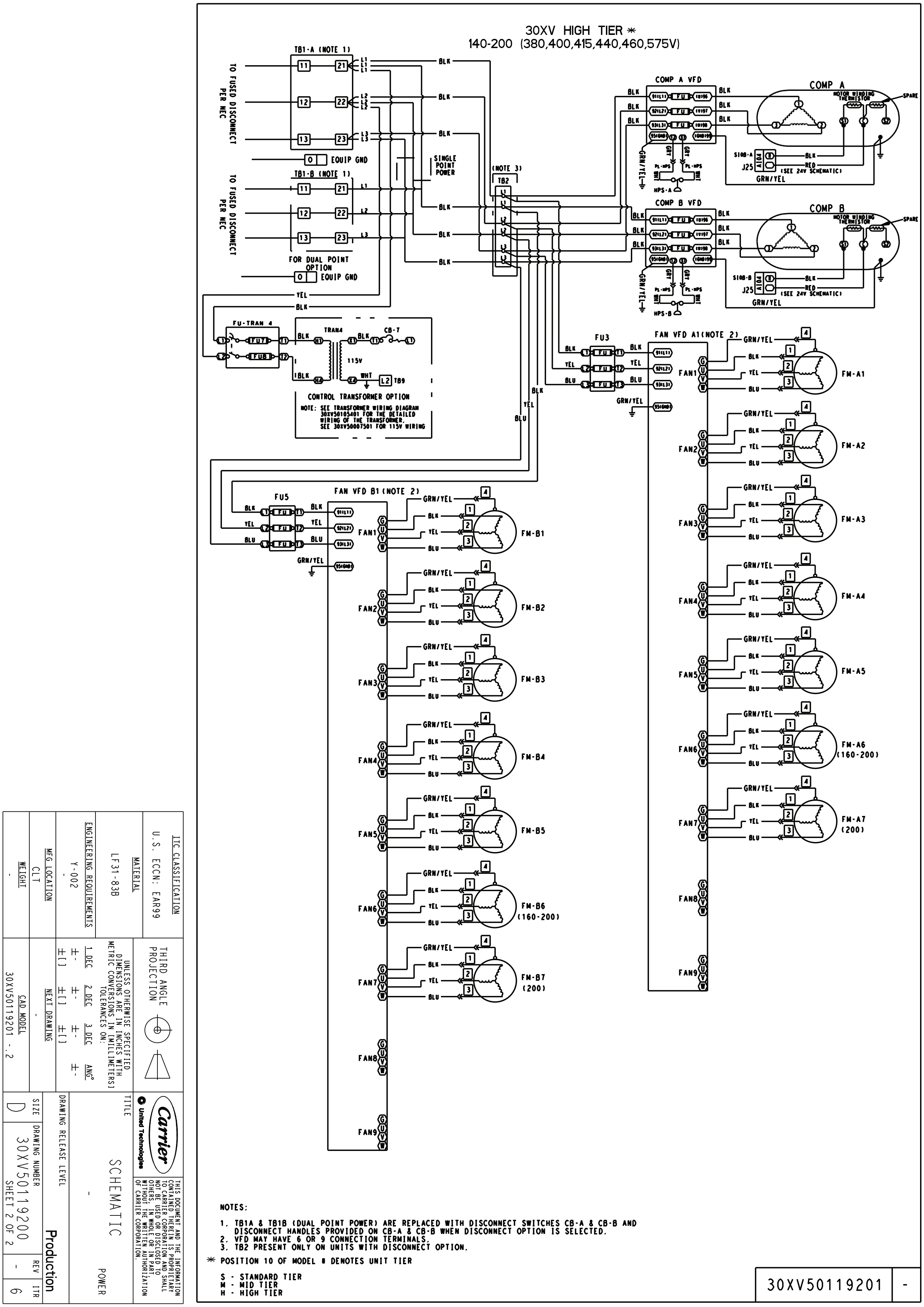
NOTE: See Legend on page 204.

Fig. 112 — 30XV High Tier 350-450 (All Voltages), Mid Tier 350-500 (All Voltages) Power Schematic



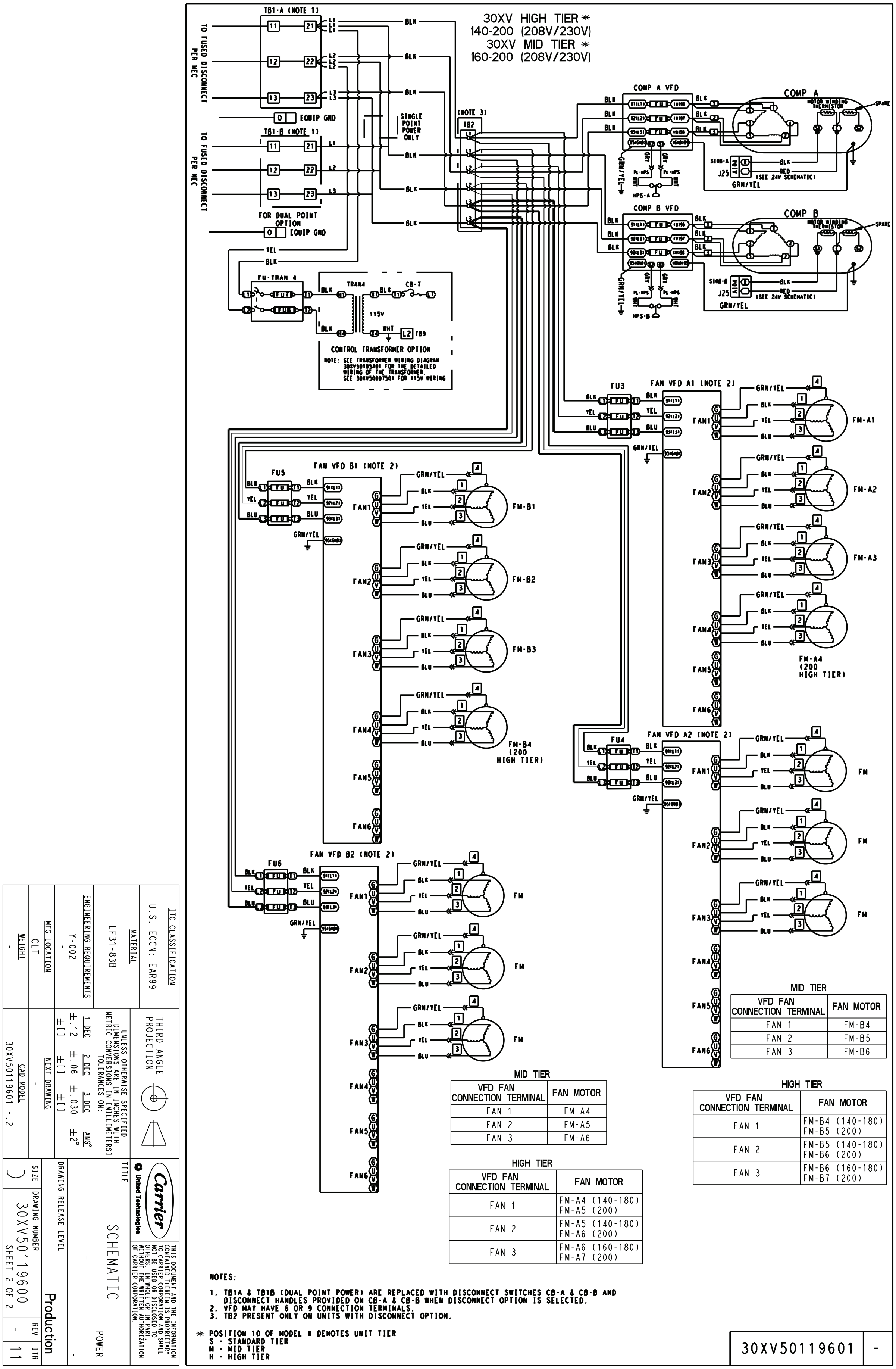
NOTE: See Legend on page 204.

Fig. 113 — 30XV Mid Tier 140 (All Voltages),160-275 (380/400/415/440/460/575v) Power Schematic



NOTE: See Legend on page 204.

Fig. 114 — 30XV High Tier 140-200 (380/400/415/440/460/575v) Power Schematic



MID TIER

VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-A4
FAN 2	FM-A5
FAN 3	FM-A6

HIGH TIER

VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-A4 (140-180) FM-A5 (200)
FAN 2	FM-A5 (140-180) FM-A6 (200)
FAN 3	FM-A6 (160-180) FM-A7 (200)

MID TIER

VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-B4
FAN 2	FM-B5
FAN 3	FM-B6

HIGH TIER

VFD FAN CONNECTION TERMINAL	FAN MOTOR
FAN 1	FM-B4 (140-180) FM-B5 (200)
FAN 2	FM-B5 (140-180) FM-B6 (200)
FAN 3	FM-B6 (160-180) FM-B7 (200)

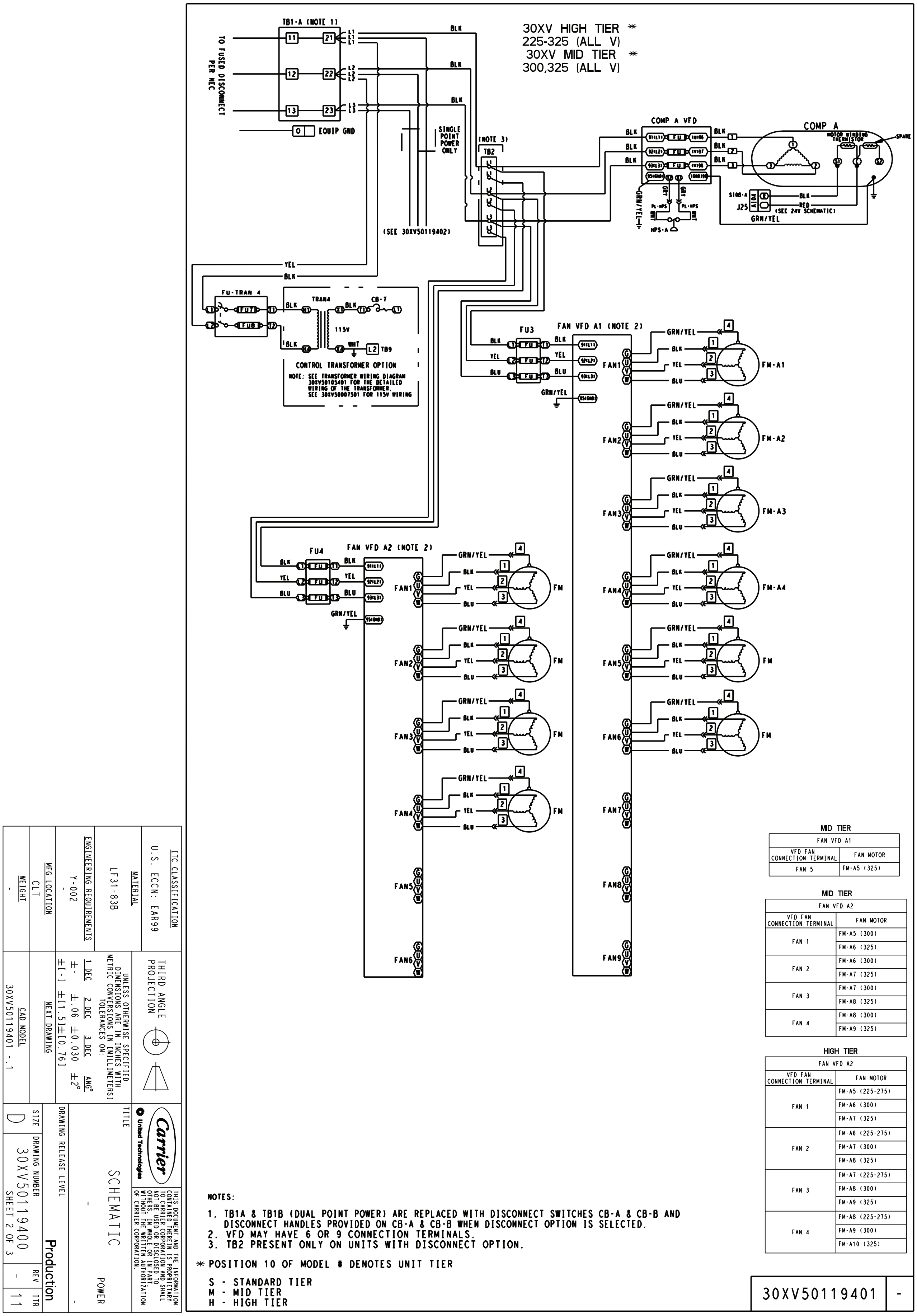
NOTES:

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.
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

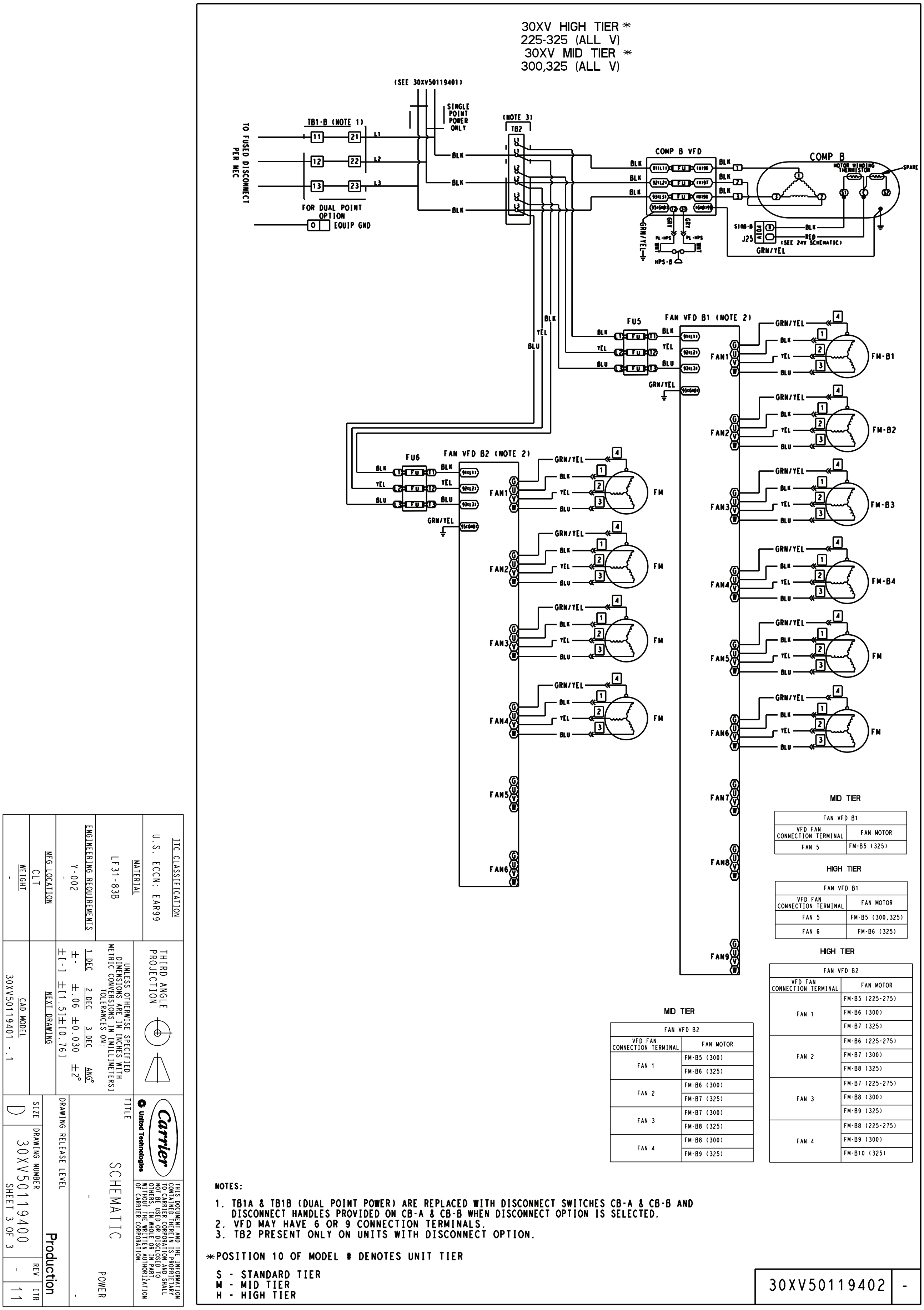
NOTE: See Legend on page 204.

Fig. 115 — 30XV High Tier 140-200 (208/230v), Mid Tier 160-200 (208/230v) Power Schematic



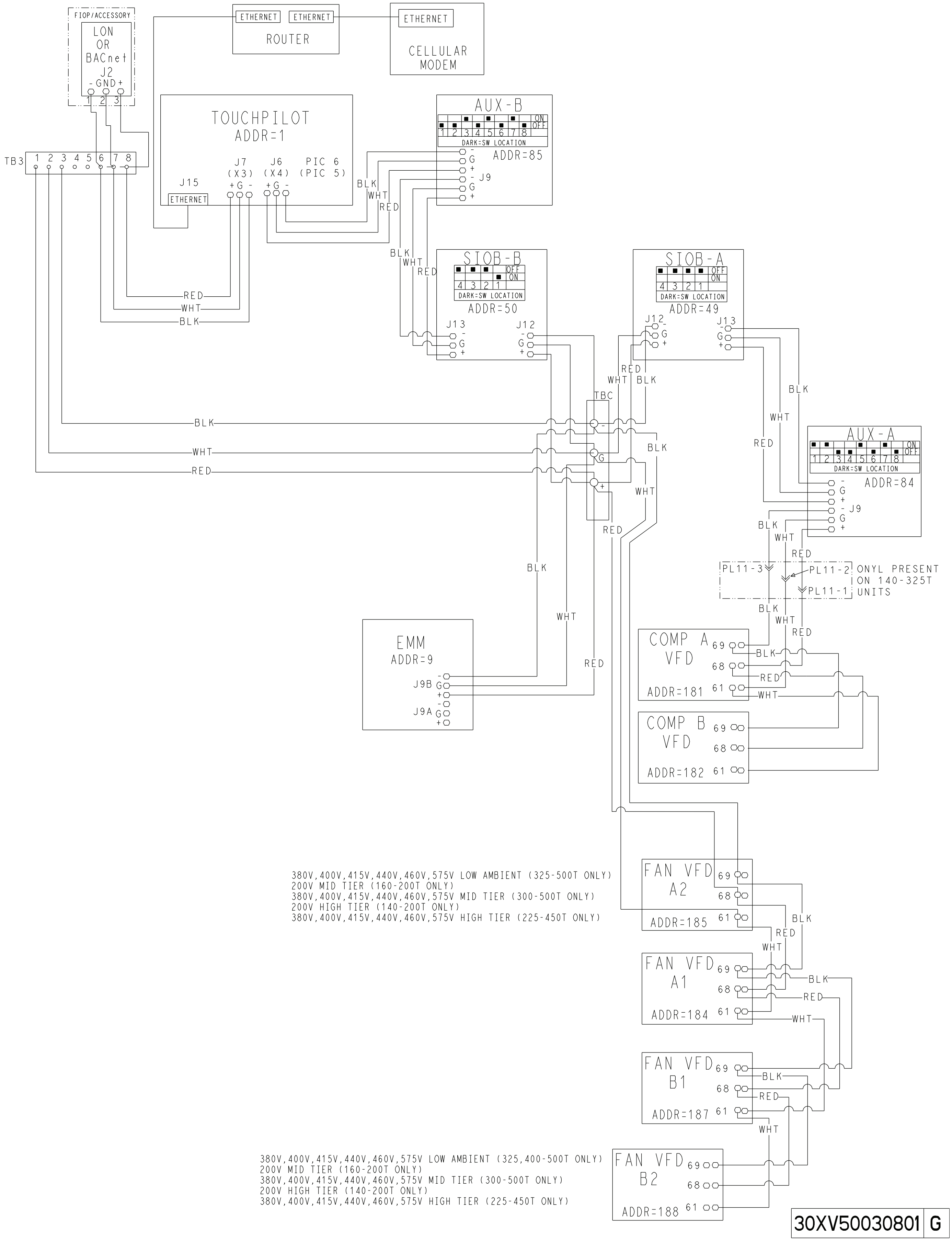
NOTE: See Legend on page 204.

Fig. 116 — 30XV High Tier 225-325 (All Voltages), Mid Tier 300, 325 (All Voltages) Power Schematic



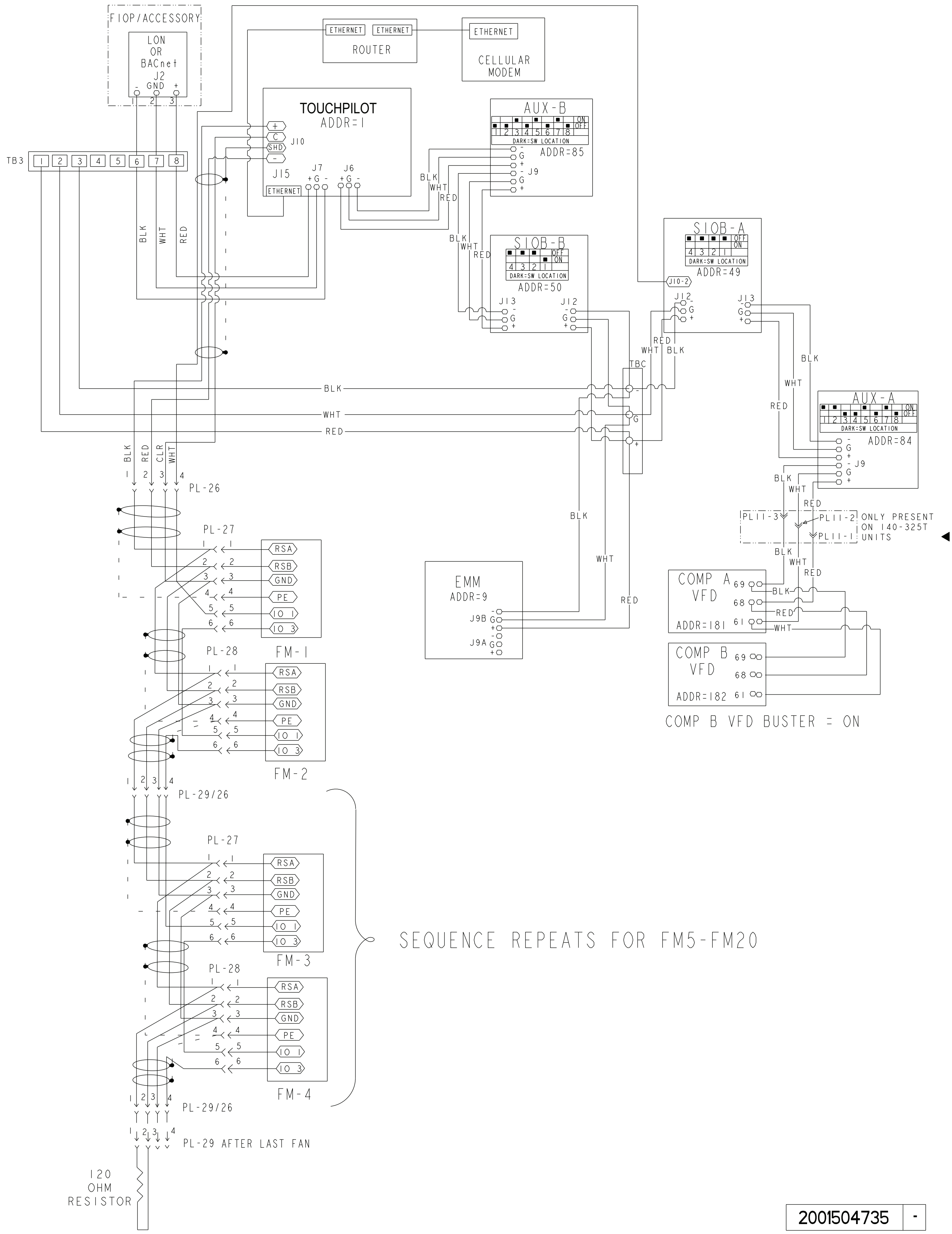
NOTE: See Legend on page 204.

Fig. 116 — 30XV High Tier 225-325 (All Voltages), Mid Tier 300, 325 (All Voltages) Power Schematic (cont)



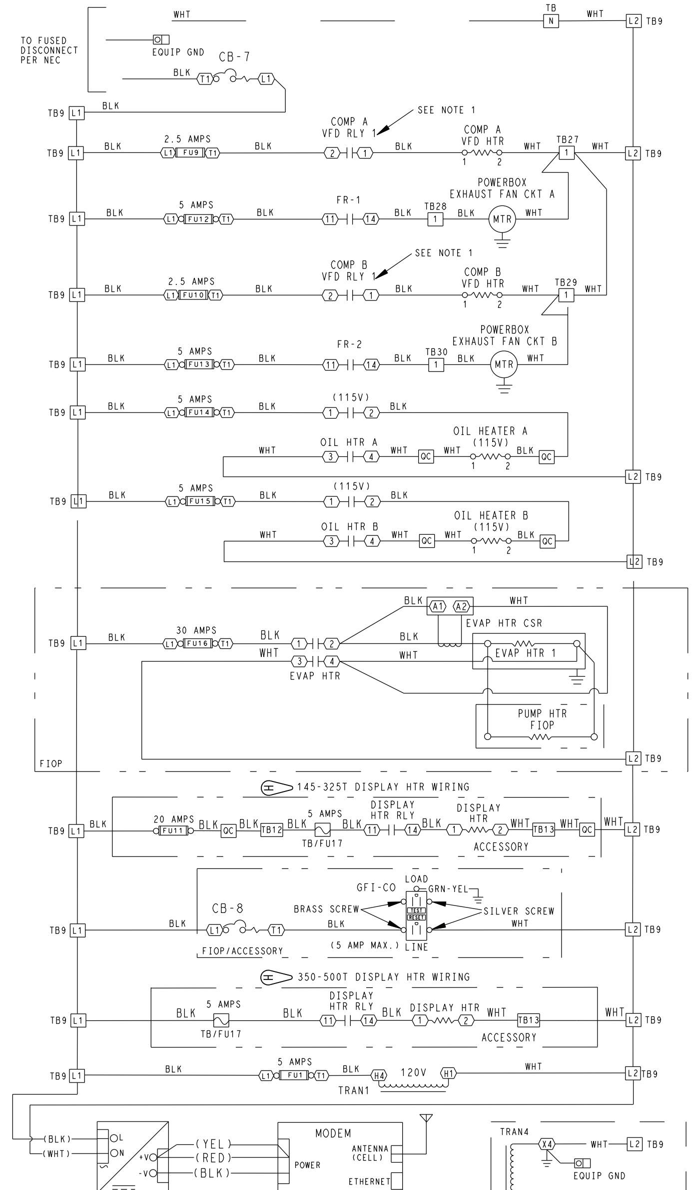
NOTE: See Legend on page 204.

Fig. 117 — 30XV Communication Wiring



NOTE: See Legend on page 204.

Fig. 118 — 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.

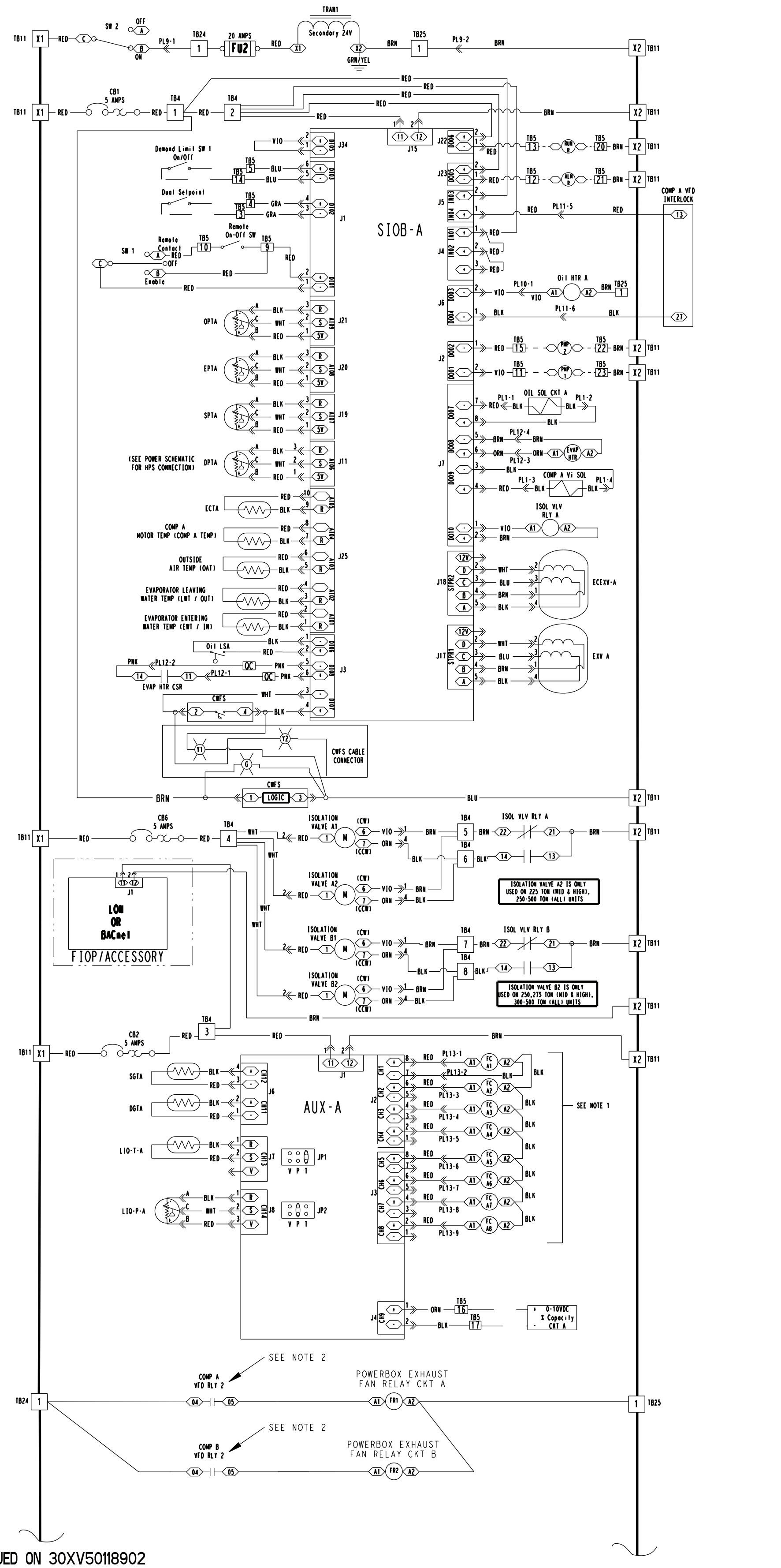
LEGEND

A - Alarm
ALM R - Alarm Relay
ALT R - Alert Relay
AUX A - Auxiliary Input-Output Board Circuit A
AUX B - Auxiliary Input-Output Board Circuit B
CB1 - SIOB-A Board, CWFS, PMP1 RLY, PMP2 RLY Power Mini Circuit Breaker
CB2 - AUX A Board, UPC Board, LON Board Power Mini Circuit Breaker
CB3 - AUX B Board Power Mini Circuit Breaker
CB5 - SIOB-B Power Mini Circuit Breaker
CB8 - EMM Board Power Mini Circuit Breaker
CB12 - Isolation Valve Relays Mini Circuit Breaker
CB13 - 115V Power Feed Circuit Breaker
CB-A - Circuit Breaker A Circuit
CB-B - Circuit Breaker B Circuit
CB-FNA1 - Fan Circuit Breaker A Circuit
CB-FNB1 - Fan Circuit Breaker B Circuit
CCN - Carrier Comfort Network®
CH - Channel
CLR HR - Cooler Heater Relay
CLR HTR - Cooler Heater
COMM - Communication
COMP - Compressor
CSR - Current Sensing Relay
CWFS - Chilled Water Flow Switch
DGT - Discharge Gas Thermistor
DPT - Discharge Pressure Transducer
ECEXV - Economizer Electronic Expansion Valve
ECT - Economizer Temperature
EMM - Energy Management Module
EPT - Economizer Pressure Transducer
EQUIP - Equipment
EWT - Entering Water Temperature
EXV - Electronic Expansion Valve
FC - Fan Contactor
FIOP - Factory Installed Option
FIOP - Factory Installed Option
FM - Fan Motor
FN - Fan
FU - Fuse
GFI-CO - Ground Fault Interruptor- Convenience Outlet
GND - Ground
HPS - High Pressure Switch
HTR - Heater
ISO - Isolation
ISOL VLV - Relay Isolation Valve
LEN - Local Equipment Network
LIQ-P - Liquid Pressure
LIQ-T - Liquid Temperature
LON - LONWORKS board
LS - Level Switch
LWT - Leaving Water Temperature
NEC - National Electrical Code (U.S.A.)
OAT - Outdoor Air Temperature
OPT - Oil Pressure Transducer
PL - Plug
PMP - Chilled Water Pump
QC - Quick Connect
RLY - Relay
RUN R - Run Relay
SGT - Suction Gas Temperature
SHD R - Shutdown Relay
SIOB - Starfire Input-Output Board
SOL - Solenoid
SW - Switch
T - Thermistor
TB - Terminal Block
TEMP - Temperature
TRAN - Transformer
UPC - Universal Protocol Converter Board
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

Fig. 119 — 30XV 115V Control Wiring (All Tonnages, All Voltages)



CONTINUED ON 30XV50118902

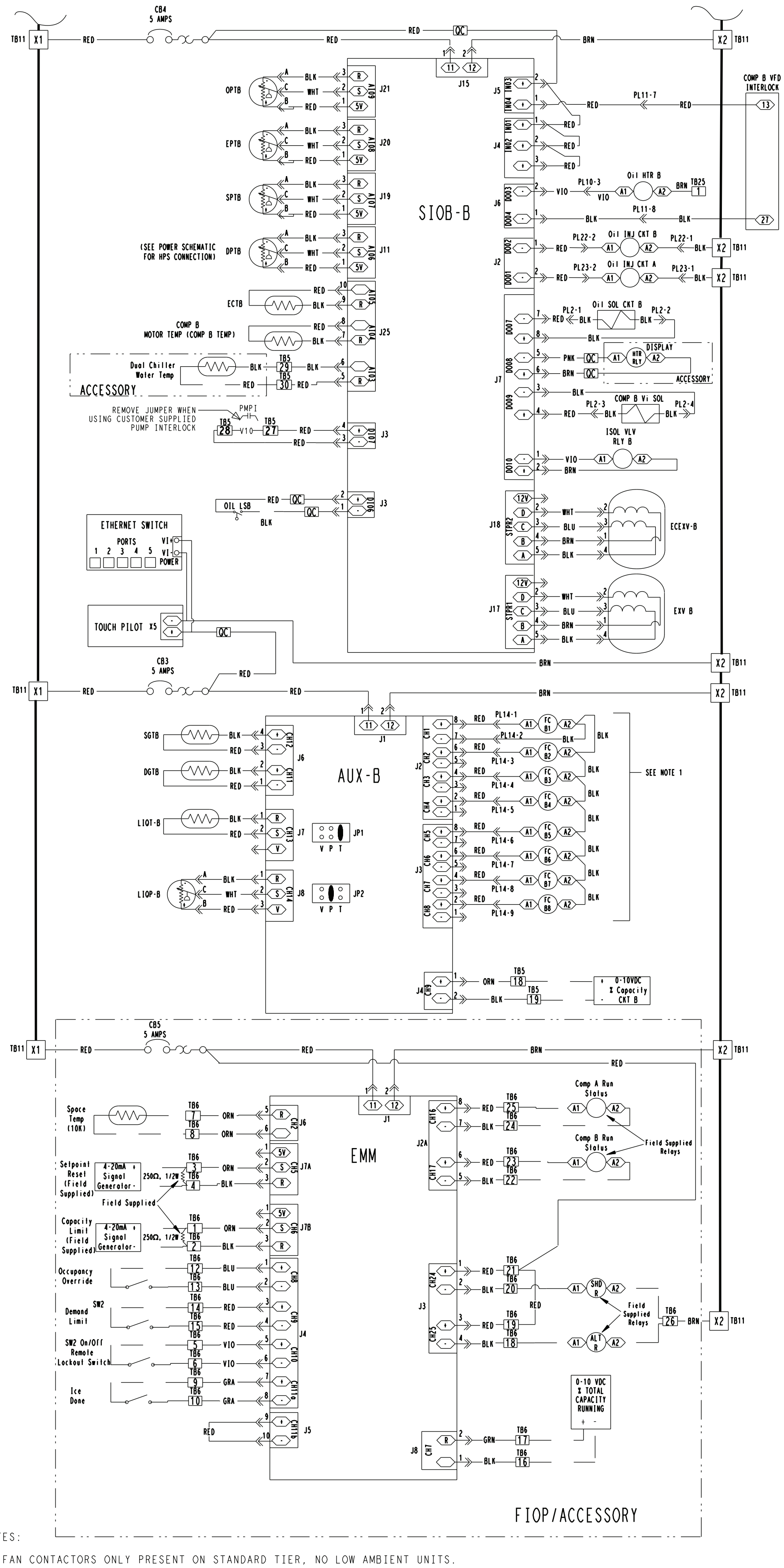
NOTES:

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.

30XV50118901	B

Fig. 120 — 30XV 24V Control Wiring (30XV140-325, All Voltages)

CONTINUED FROM 30XV50118901

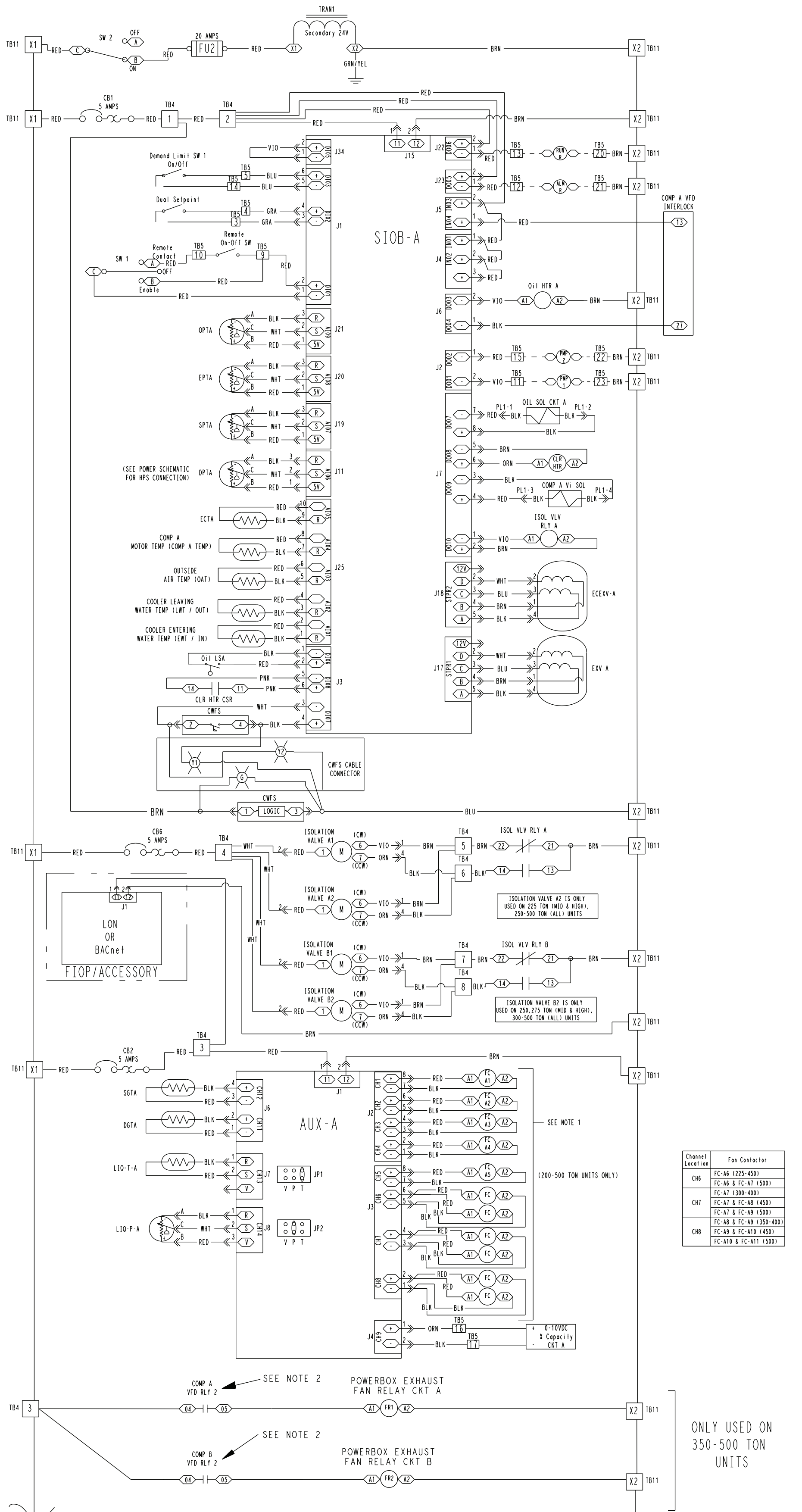


NOTES:

1. FAN CONTACTORS ONLY PRESENT ON STANDARD TIER, NO LOW AMBIENT UNITS.

30XV50118902 B

Fig. 120 — 30XV 24V Control Wiring (30XV140-325, All Voltages) (cont)



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)

CONTINUED ON 30XV50030902

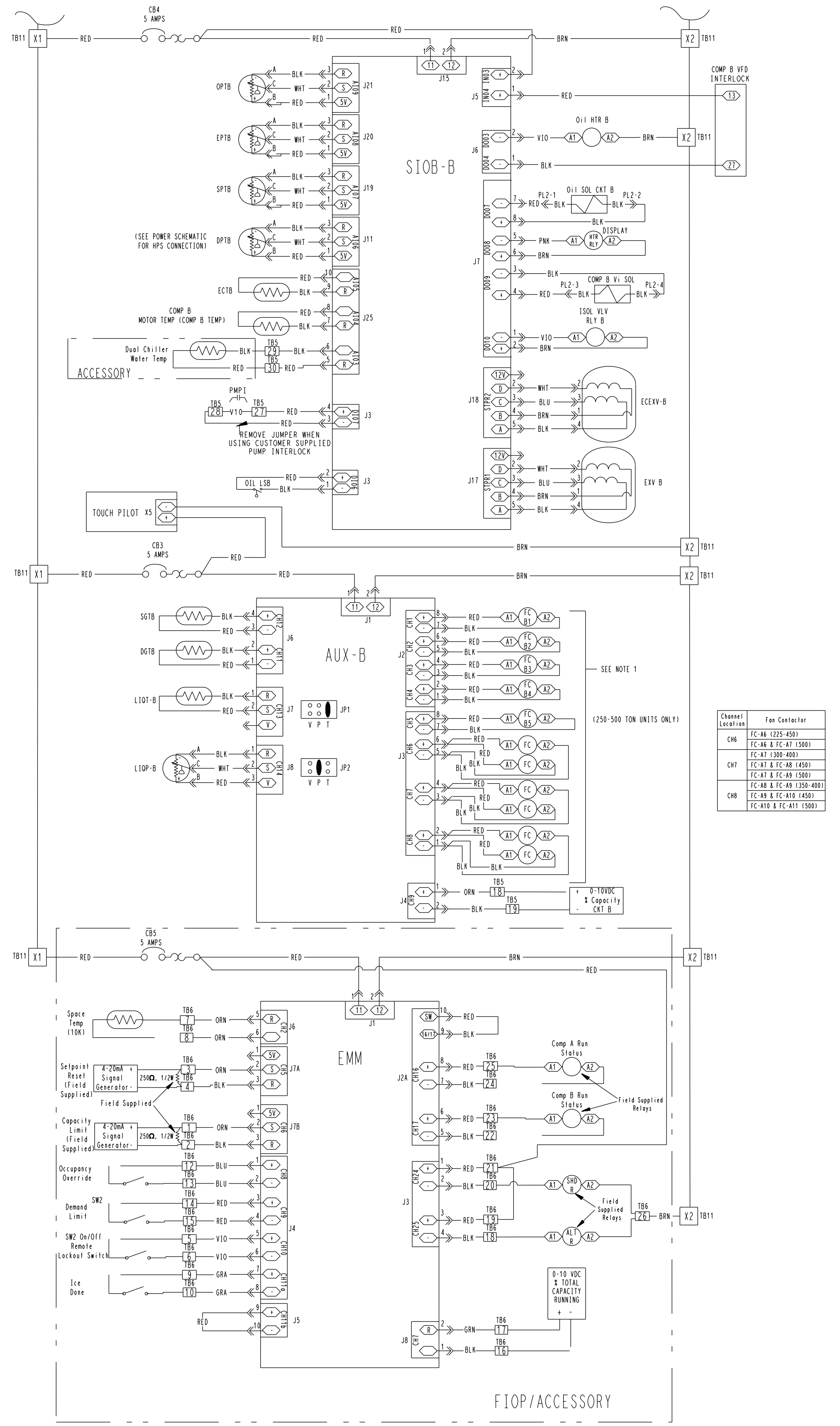
NOTES:

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. 121 — 30XV 24V Control Wiring (30XV350-500, All Voltages)

CONTINUED FROM 30XV50030901



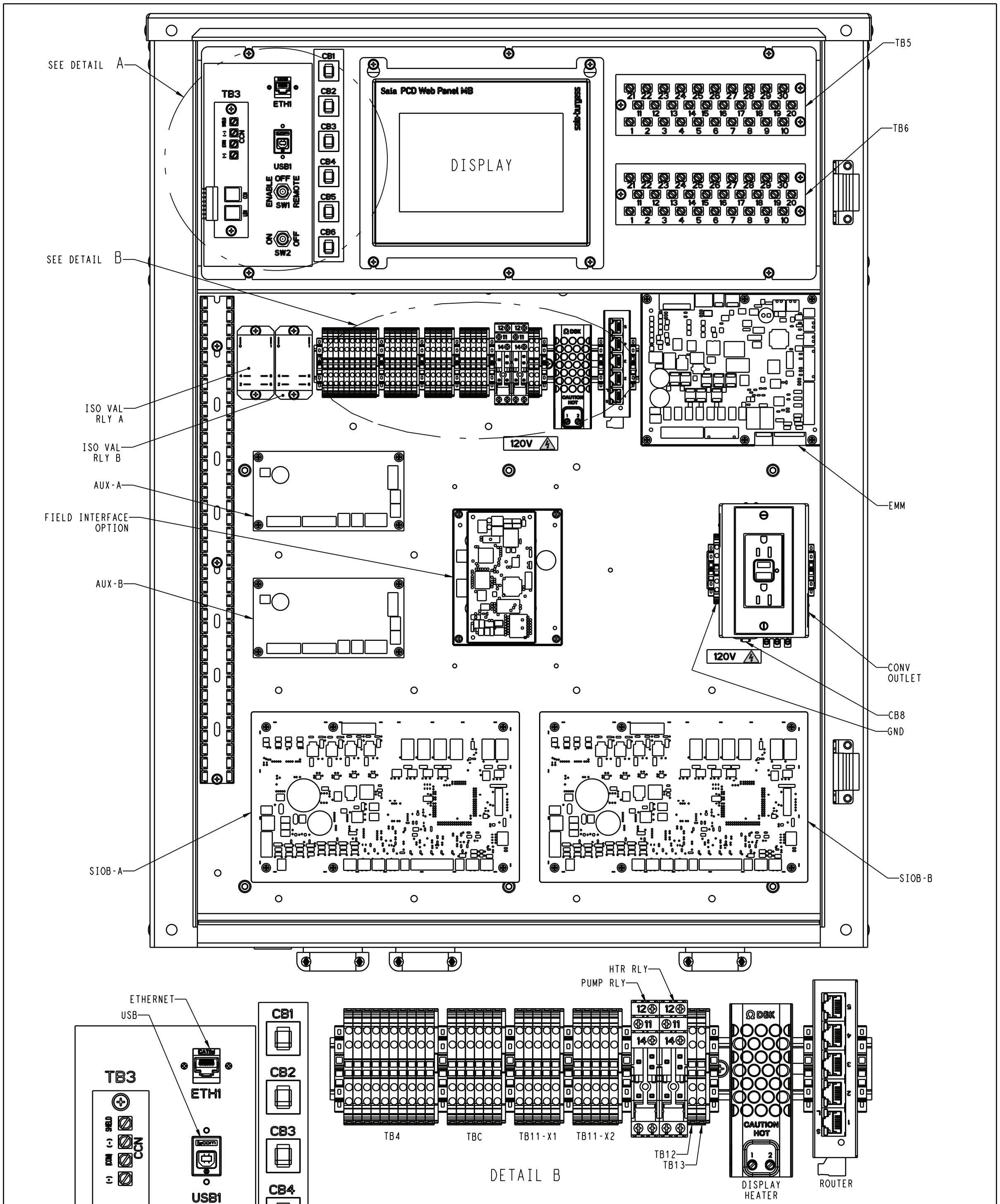
Channel Location	Fan Contactor
CH6	FC-A6 (225-450)
	FC-A6 & FC-A7 (500)
CH7	FC-A7 (300-400)
	FC-A7 & FC-A8 (450)
	FC-A7 & FC-A9 (500)
CH8	FC-A8 & FC-A9 (350-400)
	FC-A9 & FC-A10 (450)
	FC-A10 & FC-A11 (500)

NOTES:

1. FAN CONTACTORS ONLY PRESENT ON STANDARD TIER, NO LOW AMBIENT UNITS.

30XV50030902 I

Fig. 121 — 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

Fig. 122 — Component Arrangement Diagram for 30XV140-325

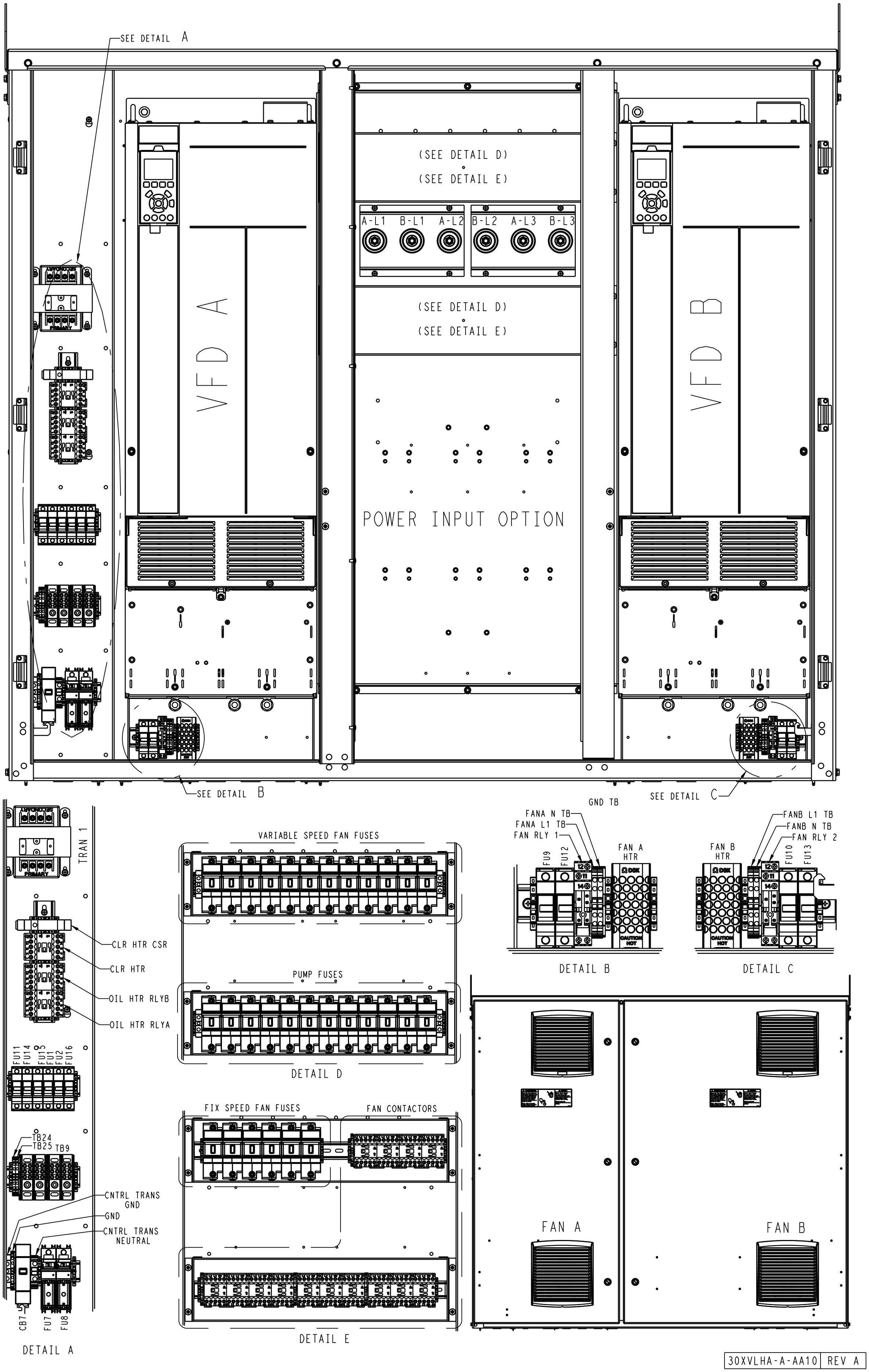
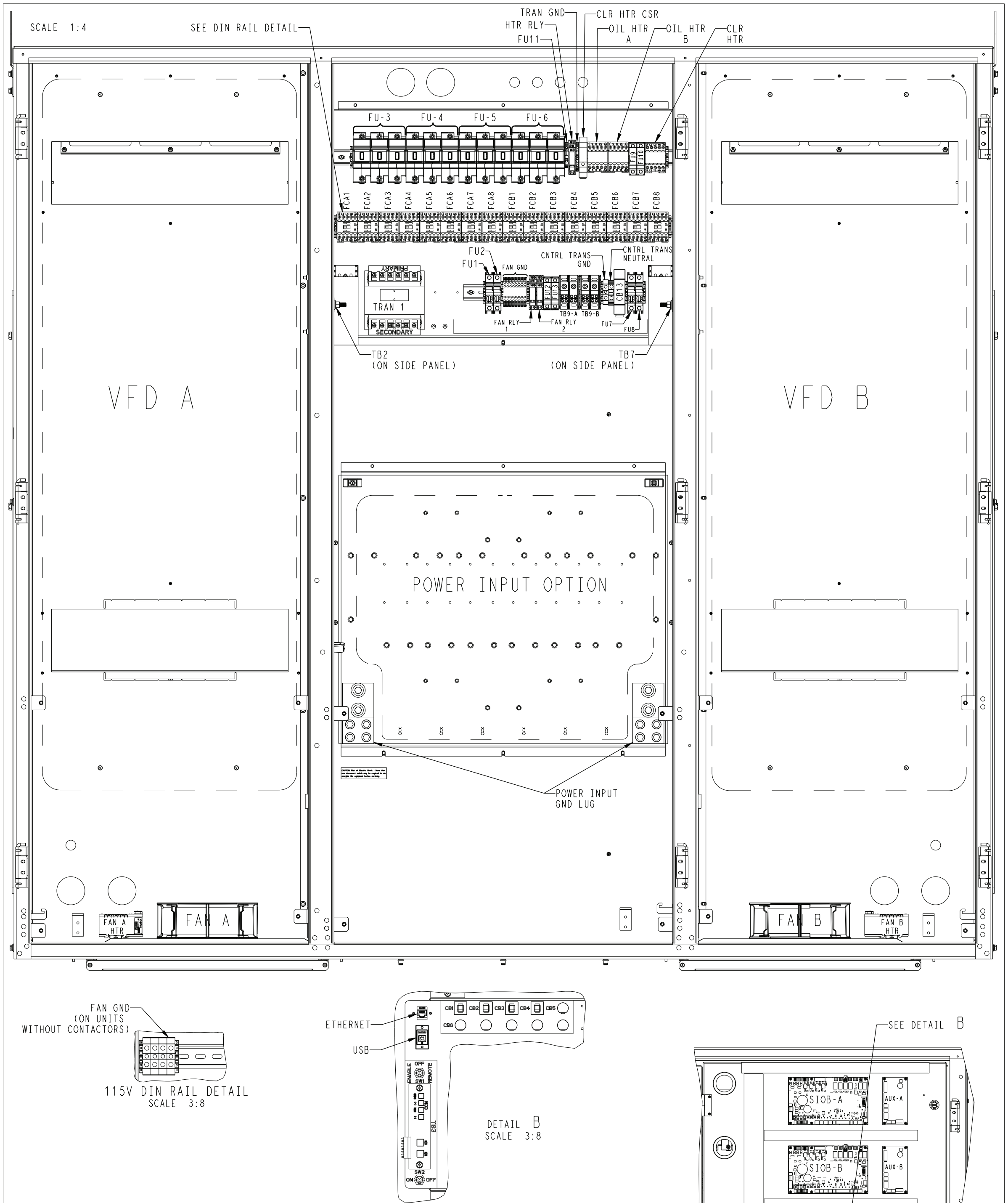


Fig. 122 — Component Arrangement Diagram for 30XV140-325 (cont)

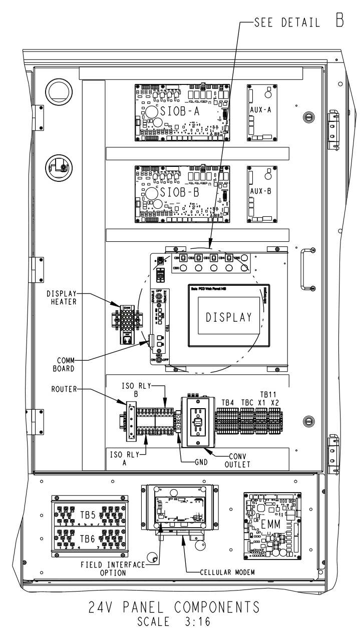


TB5

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

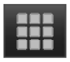


30XVLSA-A-AA10	REV. -

Fig. 123 — Component Arrangement Diagram for 30XV350-500

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES

MENU DESCRIPTIONS

MAIN MENU 

ICON	DISPLAYED TEXT*	ASSOCIATED TABLE
	General Parameters	GENUINT
	Temperatures	TEMP
	Pressures	PRESSURE
	Inputs Status	INPUTS
	Outputs Status	OUTPUTS
	Pump Status	PUMPSTAT
	Run Times	RUNTIME
	Modes	MODES
	Setpoint Table	SETPOINT
	Configuration Menu	CONFIG
	Quick Test Table	QCK_TEST
	Maintenance Menu	MAINTAIN
	Trend Display	TRENDING

* Depends on the selected language (English by default).

GENUNIT — GENERAL PARAMETERS

Carrier Controller PATH: Main Menu → General Parameters

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT
1	Local=0 Net.=1 Remote=2	CTRL_TYP	0 to 2	0	—
2	Run Status	STATUS	Off Running Stopping Delay Tripout Ready Override Test	—	—
3	Net.: Cmd Start/Stop	CHIL_S_S	Disable(0)/Enable(1)	Disable(0)	—
4	Net.: Cmd Occupied	CHIL_OCC	NO(0)/YES(1)	NO(0)	—
5	Minutes Left for Start	min_left	—	0	min
6	Setpoint Select	SP_SEL	0 to 2	0	—
7	0=Auto, 1=Spt1, 2=Spt2	—	—	—	—
8	Setpoint Occupied?	SP_OCC	NO(0)/YES(1)	YES(1)	—
9	Percent Total Capacity	CAP_T	0 to 100	0	%

LEGEND

Spt — Set Point

TEMP — Temperatures

Carrier Controller PATH: Main Menu → Temperatures

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT
1	Evap Entering Fluid	COOL_EWT	—	—	°F (°C)
2	Evap Leaving Fluid	COOL_LWT	—	—	°F (°C)
3	Evap Delta T	COOL_DLT	—	—	°F (°C)
4	Outdoor Air Temperature	OAT	—	—	°F (°C)
5	Saturated Cond Tmp Cir A	SCT_A	—	—	°F (°C)
6	Saturated Suction Temp A	SST_A	—	—	°F (°C)
7	Saturated Liquid Temp A	SLT_A	—	—	°F (°C)
8	Compressor Suction Tmp A	SUCT_A	—	—	°F (°C)
9	Discharge Gas Temp Cir A	DGT_A	—	—	°F (°C)
10	Motor Temperature Cir A	CP_TMP_A	—	—	°F (°C)
11	EXV Eco. Tmp Cir A	ECO_T_A	—	—	°F (°C)
12	Eco. Saturated Tmp A	ECO_SATA	—	—	°F (°C)
13	Liquid Temperature A	LIQ_T_A	—	—	°F (°C)
14	Saturated Cond Tmp Cir B	SCT_B	—	—	°F (°C)
15	Saturated Suction Temp B	SST_B	—	—	°F (°C)
16	Saturated Liquid Temp B	SLT_B	—	—	°F (°C)
17	Compressor Suction Tmp B	SUCT_B	—	—	°F (°C)
18	Discharge Gas Temp Cir B	DGT_B	—	—	°F (°C)
19	Motor Temperature Cir B	CP_TMP_B	—	—	°F (°C)
20	EXV Eco. Tmp Cir B	ECO_T_B	—	—	°F (°C)
21	Eco. Saturated Tmp B	ECO_SATB	—	—	°F (°C)
22	Liquid Temperature B	LIQ_T_B	—	—	°F (°C)
23	Space Temp (Opt.)	SPACETMP	—	—	°F (°C)
24	Chill Water Temp (Opt.)	CHWSTEMP	—	—	°F (°C)

* Depends on the selected language (English by default).

PRESSURE — Pressures

Carrier Controller PATH: Main Menu → Pressures

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Discharge Pressure A	DP_A	—	—	psi (kPa)	RO
2	Main Suction Pressure A	SP_A	—	—	psi (kPa)	RO
3	Oil Pressure A	OP_A	—	—	psi (kPa)	RO
4	Delta Oil Pressure A	DOP_A	—	—	psi (kPa)	RO
5	Oil Filter Press. Drop A	OFDP_A	—	—	psi (kPa)	RO
6	Economizer Pressure A	ECO_P_A	—	—	psi (kPa)	RO
7	Liquid Pressure A	LIQ_P_A	—	—	psi (kPa)	RO
8	Discharge Pressure B	DP_B	—	—	psi (kPa)	RO
9	Main Suction Pressure B	SP_B	—	—	psi (kPa)	RO
10	Oil Pressure B	OP_B	—	—	psi (kPa)	RO
11	Delta Oil Pressure B	DOP_B	—	—	psi (kPa)	RO
12	Oil Filter Press. Drop B	OFDP_B	—	—	psi (kPa)	RO
13	Economizer Pressure B	ECO_P_B	—	—	psi (kPa)	RO
14	Liquid Pressure B	LIQ_P_B	—	—	psi (kPa)	RO

INPUTS — Inputs Status

Carrier Controller PATH: Main Menu → Inputs Status

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Remote On/Off Switch	ONOFF_SW	Open(0)/Closed(1)	Open(0)	—	RO
2	Remote Setpoint Switch	SETP_SW	Open(0)/Closed(1)	Open(0)	—	RO
3	Limit Switch 1	LIM_SW1	Open(0)/Closed(1)	Open(0)	—	RO
4	Limit Switch 2	LIM_SW2	Open(0)/Closed(1)	Open(0)	—	RO
5	Oil Level Input A	OIL_L_A	Open(0)/Closed(1)	Open(0)	—	RO
6	Oil Level Input B	OIL_L_B	Open(0)/Closed(1)	Open(0)	—	RO
7	Remote Reset Setpoint	SP_RESET	—	—	mA	RO
8	Remote Dem. Limit	LIM_ANAL	—	—	mA	RO
9	Leakage Detector 1	leak_v	—	—	Volts	RO
10	Leakage Detector 2	leak_2_v	—	—	Volts	RO
11	Customer Interlock	REM_LOCK	Open(0)/Closed(1)	Open(0)	—	RO
12	Ice Done Storage Switch	ICE_SW	Open(0)/Closed(1)	Open(0)	—	RO
13	Occupied Override Switch	OCC_OVSW	Open(0)/Closed(1)	Open(0)	—	RO
14	Evap Heater Detector	HEATR_SW	Open(0)/Closed(1)	Open(0)	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

OUTPUTS — Outputs Status

Carrier Controller PATH: Main Menu → Outputs Status

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	CIRCUIT A	LABEL_A	Normal(0)/ Alarm(1)	Normal(0)	—	RO
2	Compressor A	CP_A	Off(0)/On(1)	Off(0)	—	RO
3	Oil Solenoid Output A	OIL_SL_A	Off(0)/On(1)	Off(0)	—	RO
4	VI Solenoid Output A	VI_A	Off(0)/On(1)	Off(0)	—	RO
5	Capacity Signal Cir A	CAPT010A	—	—	V	RO
6	VariFan Speed A	VFAN_A	0 to 100	—	%	RO
7	Ref Iso Relay Energize A	ISO_OP_A	Off(0)/On(1)	Off(0)	—	RO
8	Ref Iso Valve State A	ISO_POSA	Close(0)/Open(1)	Close(0)	—	RO
9	Oil Heater Output A	OIL_HT_A	Off(0)/On(1)	Off(0)	—	RO
10	CIRCUIT B	LABEL_B	Normal(0)/ Alarm(1)	Normal(0)	—	RO
11	Compressor B	CP_B	Off(0)/On(1)	Off(0)	—	RO
12	Oil Solenoid Output B	OIL_SL_B	Off(0)/On(1)	Off(0)	—	RO
13	VI Solenoid Output B	VI_B	Off(0)/On(1)	Off(0)	—	RO
14	Capacity Signal Cir B	CAPT010B	—	—	V	RO
15	VariFan Speed B	VFAN_B	0 to 100	—	%	RO
16	Ref Iso Relay Energize B	ISO_OP_B	Off(0)/On(1)	Off(0)	—	RO
17	Ref Iso Valve State B	ISO_POSB	Close(0)/Open(1)	Close(0)	—	RO
18	Oil Heater Output B	OIL_HT_B	Off(0)/On(1)	Off(0)	—	RO
19	Alarm Relay Status	ALARM	Off(0)/On(1)	Off(0)	—	RO
20	Running Relay Status	RUNNING	Off(0)/On(1)	Off(0)	—	RO
21	Chiller Capacity Signal	CAPT_010	—	—	V	RO
22	Alert Relay State	ALERT	Off(0)/On(1)	Off(0)	—	RO
23	Shutdown Indicator State	SHUTDOWN	Off(0)/On(1)	Off(0)	—	RO
24	Evap Heater Output	C_HEATER	Off(0)/On(1)	Off(0)	—	RO
25	Fan Contactor 1A	FCA1	Off(0)/On(1)	Off(0)	—	RO
26	Fan Contactor 2A	FCA2	Off(0)/On(1)	Off(0)	—	RO
27	Fan Contactor 3A	FCA3	Off(0)/On(1)	Off(0)	—	RO
28	Fan Contactor 4A	FCA4	Off(0)/On(1)	Off(0)	—	RO
29	Fan Contactor 5A	FCA5	Off(0)/On(1)	Off(0)	—	RO
30	Fan Contactor 6A	FCA6	Off(0)/On(1)	Off(0)	—	RO
31	Fan Contactor 7A	FCA7	Off(0)/On(1)	Off(0)	—	RO
32	Fan Contactor 8A	FCA8	Off(0)/On(1)	Off(0)	—	RO
33	Fan Contactor 1B	FCB1	Off(0)/On(1)	Off(0)	—	RO
34	Fan Contactor 2B	FCB2	Off(0)/On(1)	Off(0)	—	RO
35	Fan Contactor 3B	FCB3	Off(0)/On(1)	Off(0)	—	RO
36	Fan Contactor 4B	FCB4	Off(0)/On(1)	Off(0)	—	RO
37	Fan Contactor 5B	FCB5	Off(0)/On(1)	Off(0)	—	RO
38	Fan Contactor 6B	FCB6	Off(0)/On(1)	Off(0)	—	RO
39	Fan Contactor 7B	FCB7	Off(0)/On(1)	Off(0)	—	RO
40	Fan Contactor 8B	FCB8	Off(0)/On(1)	Off(0)	—	RO
41	Comp. HW Enable A	VFD_EN_A	Off(0)/On(1)	Off(0)	—	RO
42	Comp. HW Enable B	VFD_EN_B	Off(0)/On(1)	Off(0)	—	RO
43	Control Box Heater	BOX_HTR	Off(0)/On(1)	Off(0)	—	RO
44	Oil Inject CirA valve	A_valve	Off(0)/On(1)	Off(0)	Not supported	
45	Oil Inject CirB valve	B_valve	Off(0)/On(1)	Off(0)	Not supported	

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

PUMPSTAT — Pump Status

Carrier Controller PATH: Main Menu → Pump Status

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Evap Pump #1 Command	CPUMP_1	Off(0)/On(1)	Off(0)	—	RW
2	Evap Pump #2 Command	CPUMP_2	Off(0)/On(1)	Off(0)	—	RW
3	Rotate Evap Pumps ?	ROTCPUMP	No(0)/Yes(1)	No(0)	—	RW
4	Evap Flow Switch #1	FLOW_SW	Open(0)/Close(1)	—	—	RO
5	Evap Flow Switch #2	FLOW_SWB	Open(0)/Close(1)	—	—	RO
6	Countdown to Rotate	ROTCNTDN	0 to 0	0	hours	RO

* Depends on the selected language (English by default).

RUNTIME — Run Times

Carrier Controller PATH: Main Menu → Run Times

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Machine Operating Hours	HR_MACH	—	—	hours	RO
2	Machine Starts	st_mach	—	—	—	RO
3	Compressor A Hours	HR_CP_A	—	—	hours	RO
4	Compressor A Starts	st_cp_a	—	—	—	RO
5	Compressor B Hours	HR_CP_B	—	—	hours	RO
6	Compressor B Starts	st_cp_b	—	—	—	RO
7	Evap Pump #1 Hours	hr_cpum1	—	—	hours	RO
8	Evap Pump #2 Hours	hr_cpum2	—	—	hours	RO
9	VI Cycle Count A	VIctA	—	—	cycles	RO
10	VI Cycle Count B	VIctB	—	—	cycles	RO
11	Circuit A Fan #1 Hours	hrfana01	—	—	hours	RO
12	Circuit A Fan #2 Hours	hrfana02	—	—	hours	RO
13	Circuit A Fan #3 Hours	hrfana03	—	—	hours	RO
14	Circuit A Fan #4 Hours	hrfana04	—	—	hours	RO
15	Circuit A Fan #5 Hours	hrfana05	—	—	hours	RO
16	Circuit A Fan #6 Hours	hrfana06	—	—	hours	RO
17	Circuit A Fan #7 Hours	hrfana07	—	—	hours	RO
18	Circuit A Fan #8 Hours	hrfana08	—	—	hours	RO
19	Circuit A Fan #9 Hours	hrfana09	—	—	hours	RO
20	Circuit A Fan #10 Hours	hrfana10	—	—	hours	RO
21	Circuit A Fan #11 Hours	hrfana11	—	—	hours	RO
22	Circuit A Fan #12 Hours	hrfana12	—	—	hours	RO
23	Circuit A Fan #13 Hours	hrfana13	—	—	hours	RO
24	Circuit A Fan #14 Hours	hrfana14	—	—	hours	RO
25	Circuit B Fan #1 Hours	hrfanb01	—	—	hours	RO
26	Circuit B Fan #2 Hours	hrfanb02	—	—	hours	RO
27	Circuit B Fan #3 Hours	hrfanb03	—	—	hours	RO
28	Circuit B Fan #4 Hours	hrfanb04	—	—	hours	RO
29	Circuit B Fan #5 Hours	hrfanb05	—	—	hours	RO
30	Circuit B Fan #6 Hours	hrfanb06	—	—	hours	RO
31	Circuit B Fan #7 Hours	hrfanb07	—	—	hours	RO
32	Circuit B Fan #8 Hours	hrfanb08	—	—	hours	RO
33	Circuit B Fan #9 Hours	hrfanb09	—	—	hours	RO
34	Circuit B Fan #10 Hours	hrfanb10	—	—	hours	RO
35	Circuit B Fan #11 Hours	hrfanb11	—	—	hours	RO
36	Circuit B Fan #12 Hours	hrfanb12	—	—	hours	RO
37	Circuit B Fan #13 Hours	hrfanb13	—	—	hours	RO
38	Circuit B Fan #14 Hours	hrfanb14	—	—	hours	RO

LEGEND

RO — Read Only
RW — Read/Write

* Depends on the selected language (English by default).

MODES — Modes

Carrier Controller PATH: Main Menu → Modes

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Start Up Delay In Effect	m_delay	No(0)/Yes(1)	No(0)	—	RO
2	Second Setpoint In Use	m_2stpt	No(0)/Yes(1)	No(0)	—	RO
3	Reset In Effect	m_reset	No(0)/Yes(1)	No(0)	—	RO
4	Demand Limit Active	m_demlim	No(0)/Yes(1)	No(0)	—	RO
5	Evaporator Pump Rotation	m_pmprot	No(0)/Yes(1)	No(0)	—	RO
6	Pump Periodic Start	m_pmpper	No(0)/Yes(1)	No(0)	—	RO
7	Night Low Noise Active	m_night	No(0)/Yes(1)	No(0)	—	RO
8	Master Slave Active	m_slave	No(0)/Yes(1)	No(0)	—	RO
9	Ice Mode In Effect	m_ice	No(0)/Yes(1)	No(0)	—	RO
10	Ambient Lockout Active	m_oatl	No(0)/Yes(1)	No(0)	—	RO
11	Current Alarm 1	m_alarm1	—	—	—	RO
12	Current Alarm 2	m_alarm2	—	—	—	RO
13	Current Alarm 3	m_alarm3	—	—	—	RO
14	Current Alarm 4	m_alarm4	—	—	—	RO
15	Current Alarm 5	m_alarm5	—	—	—	RO

* Depends on the selected language (English by default).

SETPOINT — Setpoint Table

Carrier Controller PATH: Main Menu → Setpoint Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Cooling Setpoint 1	csp1	–20 to 78.8 (–28.89 to 26.00)	44(6.67)	°F (°C)	RW
2	Cooling Setpoint 2	csp2	–20 to 78.8 (–28.89 to 26.00)	44(6.67)	°F (°C)	RW
3	Cooling Ice Setpoint	ice_sp	–20 to 78.8 (–28.89 to 26.00)	44(6.67)	°F (°C)	RW
4	Cooling Ramp Loading	cramp_sp	0.1 to 20 (0.06 to 11.11)	0.5(0.28)	°F (°C)	RW
5	Switch Limit Setpoint 1	lim_sp1	0 to 100	100	%	RW
6	Switch Limit Setpoint 2	lim_sp2	0 to 100	100	%	RW
7	Switch Limit Setpoint 3	lim_sp3	0 to 100	100	%	RW
8	Ambient Lockout Temp	oatl	–20 to 120	–20	°F (°C)	RW
9	WintFanFreezetemp	wnt_frz	0 to 50	30	°F (°C)	RW

LEGEND

RO — Read Only
RW — Read/Write

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES (cont)

CONFIGURATION MENU 

ICON	DISPLAYED TEXT*	ASSOCIATED TABLE
	HMI Configuration Menu	HMI_CONF
	General Configuration	GEN_CONF
	Pump Configuration	PUMPCONF
	Reset Configuration	RESETCFG
	Schedule Menu	SCHEDULE
	Holiday Menu	HOLIDAY
	Broadcast Menu	BRODCAST
	Factory Parameters	FACTORY
	Factory2 Parameters	FACTORY2
	Service Parameters	SERVICE
	Update Running Hour	UPDTHOUR
	Master Slave Config	MST_SLV
	Compressor Enable	CP_UNABL
	Email Configuration	EMAILCFG
	Ecm Parameters	ECM
	Refrigerant Charging	REFCHG

* Depends on the selected language (English by default).

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES (cont)

HMI CONFIGURATION MENU

ICON	DISPLAYED TEXT*	ASSOCIATED TABLE
	Network Conn - eth0	NET_ETH0
	Network Conn - eth1	NET_ETH1
	CCN Configuration	CCN_CONF
	BACnet Configuration	BAC_CONF
	Date/Time Configuration	DATETIME
	Control Identification	CTRL_ID
	CPU/Memory	CPU_MEM
	Termination Resistor	TERM_RES
	System Information	SYS_INFO
	Screen Brightness	SCRN_BRT
	User Configuration	USRPWCHG
	Wifi Config	WIFI
	Network diagnostics	NET_DIAG
	MODBUS Config 1/2	MODCONF
	Custom Password	PASSCUST

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE†
1	MAC address					RO
2	IP address					RO
3	Subnet Mask					RO
4	Default Gateway					RO
5	DNS Server1					RO
6	DNS Server2					RO

NET_ETH1 — Network Conn-eth1

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → Network Conn-eth1

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE†
1	MAC address					RO
2	IP address					RO
3	Subnet Mask					RO
4	Default Gateway					RO
5	DNS Server1					RO
6	DNS Server2					RO

CCN_CONF — CCN Configuration

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → CCN Configuration

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE†
1	CCN address			1		RW
2	CCN Bus			0		RW
3	Primary Bus Baud Rate		9600 19200 38400	9600		RW

BACCONF — BACNet Standard Configuration

Carrier Controller PATH: Main Menu → Configuration Menu → HMI Configuration → BACNet Configuration

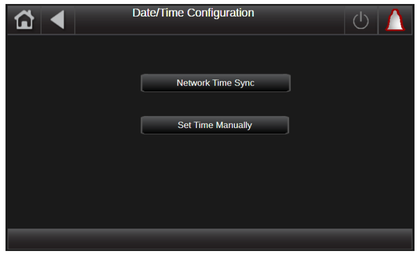
LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE†
1	Metric Units	bacunit	No(0)/Yes(1)	Yes(1)	—	RW
2	Network	network	1 to 9999	1601	—	RW
3	Identifier	ident	0 to 9999999	1600001	—	RW
4	BACnet Mgmt Device†	bbmd	0 to 2	0	—	RW
5	BACnet Data Link Layer	XXXXX	MS/TP(0)/ BACnet IP(1)	XXXXX	—	RW
6	MS/TP MAC Address	XXXXX	XXXXX	XXXXX	—	RW
7	MS/TP Baud Rate	XXXXX	XXXXX	XXXXX	—	RW
8	Max Masters	XXXXX	XXXXX	XXXXX	—	RW
9	MS/TP Max Info Frames	XXXXX	XXXXX	XXXXX	—	RW

* Depends on the selected language (English by default).
† Points are RO unless the Configure Bar is selected at which time ALL the points become RW.

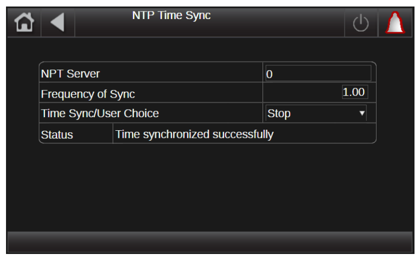
DATETIME — Date/Time Configuration

Carrier Controller PATH:

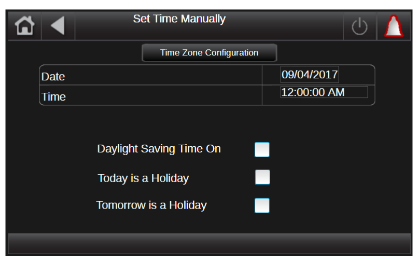
Main Menu  **→ Configuration Menu**  **→ HMI Configuration**  **→ Date/Time Configuration** 



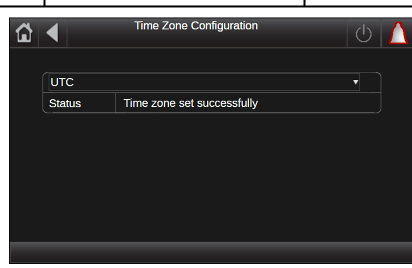
LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Network Time Sync				—	RW
2	Set Time Manually				—	RW



LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	NPT Server				—	RW
2	Frequency of Sync				—	RW
3	Time/Sync User Choice				—	
4	Status				—	



LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Time Zone Configuration				—	RW
2	Date				—	RW
3	Time				—	
4	Daylight Savings Time On				—	
	Today is a Holiday				—	
	Tomorrow is a Holiday				—	



LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	UTC				—	RW
2	Status				—	RW

* 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*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Device Description				—	RO
2	Device Location				—	RW
3	Software Part Number				—	RO
4	Serial Number				—	RW

CPU_MEM — CPU Memory Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → CPU Memory Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Core Board CPU Usage				—	RO
2	Core Board Total Memory				—	RO
3	Core Board Free Memory				—	RO
4	PIC6 controller uptime				—	RO

TERM_RES — Termination Resistor Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → Termination Resistor Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Termination Resistor COM1 connector J7		Disable(0)/Enable(1)	Disable(0)	—	RW
2	Termination Resistor COM2 connector J10		Disable(0)/Enable(1)	Disable(0)	—	RW
3	Termination Resistor COM3 connector J8		Disable(0)/Enable(1)	Disable(0)	—	RW
4	Termination Resistor COM4 connector J6		Disable(0)/Enable(1)	Disable(0)	—	RW

SYS_INFO — System Information Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → System Information Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	SDK Version					RO
2	UI Version					RO
3	Core board – OS Version					RO
4	Core board – OS Build info					RO
5	Core board – Boot loader Version					RO
6	Core board – Boot loader Build info					RO
7	UI board – OS Version					RO
8	UI board – OS Build info					RO
9	UI board – Boot loader Version					RO
10	UI board – Boot loader Build info					RO

LEGEND

RO — Read Only
RW — Read/Write

* 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

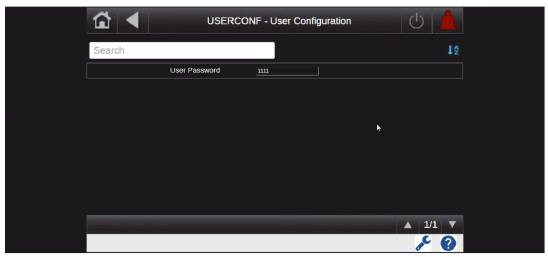
LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Adjust Display Brightness		Very Low(0) Low(1) Medium(2) High(3) Very High(4)		—	RW

USERCONF — User Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → HMI Configuration → User Configuration

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	New user password				—	RW



GEN_CONF — General Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → General Configuration Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Cir Priority Sequence	prio_cir	Auto(0) A Priority(1) B Priority(2)	0	—	RW
2	Ramp Loading Enabled	ramp_sel	No(0)/Yes(1)	Yes(1)	—	RW
3	Unit Off to On Delay	off_on_d	1 to 15	1	min	RW
4	Demand Limit Type Select	lim_sel	None(0) Switch(1) 4 to 20mA(2)	0	—	RW RW RW
5	Night Mode Start Hour	nh_start	0 to 23	0	—	RW
6	Night Mode End Hour	nh_end	0 to 23	0	—	RW
7	Night Capacity Limit	nh_limit	0 to 100	100	%	RW
8	Ice Mode Enable	ice_cnfg	No(0)/Yes(1)	No(0)	—	RW
9	Short Cycle Management	shortcyc	No(0)/Yes(1)	No(0)	—	RW

LEGEND

RW — Read/Write

* Depends on the selected language (English by default).

PUMPCONF — Pump Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → Pump Configuration

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Evap Pumps Sequence	cpumpseq	No Pump(0) One Pump Only(1) Two Pumps Auto(2) Pump#1 Manual(3) Pump#2 Manual(4)	Two Pumps Auto(2)	—	RW
2	Pump Auto Rotation Delay	pump_del	24 to 3000	48	Hours	RW
3	Pump Sticking Protection	pump_per	No(0)/Yes(1)	No(0)	—	RW
4	Flow Check if Pump Off	pump_loc	No(0)/Yes(1)	Yes(1)	—	RW

RESETCFG — Reset Configuration Table

Carrier Controller PATH:

Main Menu → Configuration Menu → Reset Configuration Table

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Cooling Reset Select	cr_sel	None(0) OAT(1) Delta T(2) 4 to 20mA(3) Space Temp(4)	None(0)	—	RW
2	OAT No Reset Value	oat_crno	14 to 125(–10 to 51.7)	14(–10)	°F(°C)	RW
3	OAT Full Reset Value	oat_crfu	14 to 125(–10 to 51.7)	14(–10)	°F(°C)	RW
4	Delta T No Reset Value	dt_cr_no	0 to 25(–17.8 to –3.9)	0(–17.8)	°F(°C)	RW
5	Delta T Full Reset Value	dt_cr_fu	0 to 25(–17.8 to –3.9)	0(–17.8)	°F(°C)	RW
6	Current No Reset Value	v_cr_no	0 to 20	0	mA	RW
7	Current Full Reset Value	v_cr_fu	0 to 20	0	mA	RW
8	Space T No Reset Value	spacr_no	14 to 125(–10 to 51.7)	14(–10)	°F(°C)	RW
9	Space T Full Reset Value	spacr_fu	14 to 125(–10 to 51.7)	14(–10)	°F(°C)	RW
10	Cooling Reset Deg. Value	cr_deg	–30 to 30(–34.4 to –1.1)	0(–17.8)	°F(°C)	RW

LEGEND

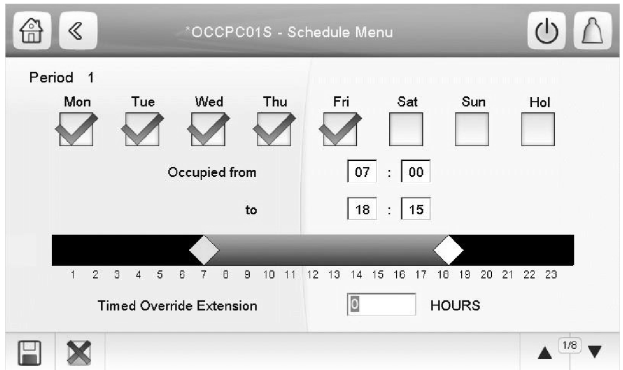
RW — Read/Write

* 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*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Holiday Start Month	HOL_MON	0 to 12	0	—	RW
2	Start Day	HOL_DAY	0 to 31	0	—	RW
3	Duration(days)	HOL_LEN	0 to 99	0	—	RW

BRODCAST — Holiday Menu

Carrier Controller PATH:

Main Menu → Configuration Menu → Broadcast Menu → BROCASTS

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Activate**	ccnbroad	0 to 2		—	RW
2						
3	OAT Broadcast					
4	Bus #	oatbusn	0 to 239	0	—	RW
5	Element #	oatlocad	0 to 239	0	—	RW
6						
7	Daylight Savings Select	dayl_sel	Disable(0)/ Enable(1)	Disable(0)	—	RW
8	ENTERING					
9	Month	startmon	1 to 12		—	RW
10	Day of Week(1=Monday)	startdow	1 to 7		—	RW
11	Week Number of Month	startwom	1 to 5		—	RW
12	LEAVING					
13	Month	stopmon	1 to 12		—	RW
14	Day of Week(1=Monday)	stopdow	1 to 7		—	RW
15	Week Number of Month	stopwom	1 to 5		—	RW

* Depends on the selected language (English by default)

** 0=Disabled,
1=Broadcast time date, Daylight Savings Time and Holiday, and
2=Stand alone OAT Broadcast

FACTORY — Factory Parameters Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Factory Parameters**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Unit Capacity	unitsize	0 to 2000	0	—	RW
2	Power Supply Voltage	voltage	0 to 700	460	Volts	RW
3	Frequency Select	freq_60H	50(0)/60(1)	60	Hz	RW
4	Tier	mfg_tier	STD(0) MID(1) HIGH(2)	0	—	RW
5	Process Brine Evap	probrine	No(0)/Yes(1)	No(0)	—	RW
6	Evap Pass Number	cpass_nb	minus 1 pass(0)/ 2 pass(1)	2 pass(1)	—	RW
7	Evap Heater Installed	heat_sel	No(0)/Yes(1)	No(0)	—	RW
8	Master Slave Setup	mst_slv	No(0)/Yes(1)	No(0)	—	RW
9	Energy Management Module	emm_nrcp	No(0)/Yes(1)	No(0)	—	RW
10	Low Ambient Option (STD)	loambopt	No(0)/Yes(1)	No(0)	—	RW
11	Leakage Charge Detection	leak_chk	No(0)/Yes(1)	No(0)	—	RW
12	Enable Max Frequency A	fMaxEnA	No(0)/Yes(1)	No(0)	—	RW
13	Enable Max Frequency B	fMaxEnB	No(0)/Yes(1)	No(0)	—	RW
14	Max Frequency Override A	fMaxOvrA	50 to 105	75	Hz	RO
15	Max Frequency Override B	fMaxOvrB	50 to 105	75	Hz	RO
16	Fan Freq Factor	fan_fact	0.7 to 1.1	1.0	—	RW
17	Min Frequency Override	fMinOvr	26 to 40	26	Hz	RW
18	Comp Low Amb Start Spd A		26 to 60	40	Hz	RW
19	Comp Low Amb Start Spd B		26 to 60	40	Hz	RW
20	Refrigerant type			R134A		
21	Comp Low Amb Start Spd A		26 to 60	40	Hz	
22	Comp Low Amb Start Spd B		26 to 60	40	Hz	
23	ECM fan Enabled		No(0)/Yes(1)	No(0)	—	RW
24	PM Motor compressor Enabled		No(0)/Yes(1)	No(0)	—	RW
25	Condenser Coil type selection		MCHX/RTPF	MCHX		

FACTORY2 — Factory2 Parameters Table

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Factory2 Parameters**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	EXV A Maximum Steps Numb	exvmax_a	0 to 10000	—	—	RO
2	EXV B Maximum Steps Numb	exvmax_b	0 to 10000	—	—	RO
3	Economizer A Steps Numb	eco_cnfa	0 to 15000	—	—	RO
4	Economizer B Steps Numb	eco_cnfb	0 to 15000	—	—	RO
5	Nb VFD Compressors	vfd_cmp	—	—	—	RO
6	Nb Fan Drives Cir A	vfd_fana	—	—	—	RO
7	Nb Fan Drives Cir B	vfd_fanb	—	—	—	RO

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES (cont)

SERVICE — Service Parameters Table

Carrier Controller PATH:

Main Menu → Configuration Menu → Service Parameters

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Evaporator Fluid Type	flui_typ	1 to 3	1	—	RW
	1=Water, 2=Med Brine, 3=Low Brine					
2	Entering Fluid Control	ewt_opt	No(0)/Yes(1)	No(0)	—	RW
3	Brine Freeze Setpoint	freezesp	–20 to 34 (–28.9 to 1.1)	34(1.1)	°F(°C)	RW
4	Brine Minimum Fluid Temp	mini_lwt	–20 to 38 (–28.9 to 3.3)	38(3.3)	°F(°C)	RW
5	Fast Capacity Recovery 0=Disabled 1=Quickstart Load 2=Fast Capacity Recov	fastcapr	0 to 2	0	—	RW
6	EWT Probe on Cir A Side	ewt_cirA	No(0)/Yes(1)	Yes(1)	—	RW
7	Leakage Charge Threshold	leak_thr	0 to 10	2.5	Volts	RW
8	Leakage Charge Timer	leak_tmr	0 to 600	60	min	RW
9	Enable Eco Exv Dgt Protection		Disable(0)/Enable(1)	Disabled		
10	Compressor RFI Filter En	RFI_conf	Off(0)/On(1)	On(1)	—	RW
11	Metric Units? (Blackbox)	metric	No(0)/Yes(1)	No(0)	—	RW
12	Send Fan Drive Config?	fdrv_cfg	No(0)/Yes(1)	Yes(1)	—	RW
13	Send Comp. Drive Config?	cdrv_cfg	No(0)/Yes(1)	Yes(1)	—	RW
14	Evap Heater Delta Spt	heatersp	0 to 6.0	2.0	—	RW
15	Freeze Override Offset	freez_ov	0 to 5.8 (–17.8 to –14.6)	0(–17.8)	°F(°C)	RW
16	Auto Start When SM Lost	auto_sm	Disable(0)/Enable(1)	Disable(0)	—	RW
17	VI Self-Test Threshold	ViPwrChk	0.5 to 15	1.15	KW	RW
18	VI Self-Test Enable	ViChkEn	Off(0)/On(1)	Off(0)	—	RW
19	Pump Rot. AntiFrz Protec	AntiFrz	Off(0)/On(1)	On(1)	—	RW
20	Oil Delta Trigger Speed	odtrspd	0 to 15	5	Hz	RW
21	Oil Trigger Time	otrigtim	600 to 7200	3600	seconds	RW
22	Oil Delta Recovery Speed	odrecspd	0 to 15	5	Hz	RW
23	Oil Recovery Time	orectim	30 to 120	60	seconds	RW
24	Water Temp Hysteresis	wateesys	0.9 to 10	0.9	Volts	RW
25	Enable High VI at Start	vistrten	Disable(0)/Enable(1)	Enable(1)	—	RW
26	High VI Time at Start	vistrtdt	0 to 3600	900	Tons/H	RW
27	Approach Ctrl at Start?	apr_en	No(0)/Yes(1)	Yes(1)	—	RW
28	Compressor Protection: Approach High Limit F		0 to 50	30.0	°F	
29	SST Low Offset (from Freeze point)		0 to 50	20.0	°F	
30	SST Rate-of-Change Limit		–30 to 0	–18.0	°F	
31	DGT High Limit		0 to 215	185.0	°F	
32	DGT Rate-of-Change Limit		0 to 50	13.5	°F	
33	Start Time		0 to 600	60.0	sec	

LEGEND

RW — Read/Write
Spt — Set Point

* Depends on the selected language (English by default).

UPDTHOUR — Update Running Hour

Carrier Controller PATH:

Main Menu → Configuration Menu → Update Running Hour

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Machine Operating Hours	hr_mach	0 to 99999999	0	hours	RO
2	Machine Starts Number	st_mach	0 to 99999999	0	—	RO
3	Compressor A Hours	hr_cp_a	0 to 99999999	0	hours	RO
4	Compressor A Starts	st_cp_a	0 to 99999999	0	—	RO
5	Compressor B Hours	hr_cp_b	0 to 99999999	0	hours	RO
6	Compressor B Starts	st_cp_b	0 to 99999999	0	—	RO
7	Evap Pump #1 Hours	hr_cpum1	0 to 99999999	0	hours	RO
8	Evap Pump #2 Hours	hr_cpum2	0 to 99999999	0	hours	RO
9	VI Cycle Count A	VIctA	0 to 99999999	0	cycles	RO
10	VI Cycle Count B	VIctB	0 to 99999999	0	cycles	RO
11	Circuit A Fan #1 Hours	hrfana01	0 to 99999999	0	hours	RO
12	Circuit A Fan #2 Hours	hrfana02	0 to 99999999	0	hours	RO
13	Circuit A Fan #3 Hours	hrfana03	0 to 99999999	0	hours	RO
14	Circuit A Fan #4 Hours	hrfana04	0 to 99999999	0	hours	RO
15	Circuit A Fan #5 Hours	hrfana05	0 to 99999999	0	hours	RO
16	Circuit A Fan #6 Hours	hrfana06	0 to 99999999	0	hours	RO
17	Circuit A Fan #7 Hours	hrfana07	0 to 99999999	0	hours	RO
18	Circuit A Fan #8 Hours	hrfana08	0 to 99999999	0	hours	RO
19	Circuit A Fan #9 Hours	hrfana09	0 to 99999999	0	hours	RO
20	Circuit A Fan #10 Hours	hrfana10	0 to 99999999	0	hours	RO
21	Circuit A Fan #11 Hours	hrfana11	0 to 99999999	0	hours	RO
22	Circuit A Fan #12 Hours	hrfana12	0 to 99999999	0	hours	RO
23	Circuit A Fan #13 Hours	hrfana13	0 to 99999999	0	hours	RO
24	Circuit A Fan #14 Hours	hrfana14	0 to 99999999	0	hours	RO
25	Circuit B Fan #1 Hours	hrfanb01	0 to 99999999	0	hours	RO
26	Circuit B Fan #2 Hours	hrfanb02	0 to 99999999	0	hours	RO
27	Circuit B Fan #3 Hours	hrfanb03	0 to 99999999	0	hours	RO
28	Circuit B Fan #4 Hours	hrfanb04	0 to 99999999	0	hours	RO
29	Circuit B Fan #5 Hours	hrfanb05	0 to 99999999	0	hours	RO
30	Circuit B Fan #6 Hours	hrfanb06	0 to 99999999	0	hours	RO
31	Circuit B Fan #7 Hours	hrfanb07	0 to 99999999	0	hours	RO
32	Circuit B Fan #8 Hours	hrfanb08	0 to 99999999	0	hours	RO
33	Circuit B Fan #9 Hours	hrfanb09	0 to 99999999	0	hours	RO
34	Circuit B Fan #10 Hours	hrfanb10	0 to 99999999	0	hours	RO
35	Circuit B Fan #11 Hours	hrfanb11	0 to 99999999	0	hours	RO
36	Circuit B Fan #12 Hours	hrfanb12	0 to 99999999	0	hours	RO
37	Circuit B Fan #13 Hours	hrfanb13	0 to 99999999	0	hours	RO
38	Circuit B Fan #14 Hours	hrfanb14	0 to 99999999	0	hours	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

MST_SLV — Master/Slave Configuration

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Master/Slave Configuration**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Master/Slave Select	ms_sel	0 to 2	Disable(0)	—	RW
	0=Disable					
	1=Master					
	2=Slave					
2	Master Control Type	ms_ctrl	1 to 3	Local Con- trol(1)	—	RW
	1=Local Control					
	2=Remote Control					
	3=CCN Control					
3	Slave Address	slv_addr	1 to 236	2	—	RW
4	Lead/Lag Select	lead_sel	0 to 2	0	—	RW
	0=Always Lead					
	1=Lag Once Failed Only					
	2= Lead/Lag Runtime Sel					
5	Lead/Lag Balance Delta	ll_bal_d	40 to 400	168	Hours	RW
6	Lead Lag Start Timer	lstr_tim	2 to 30	10	min	RW
7	Lead Pulldown Time	lead_pul	0 to 60	0	min	RW
8	Start of Error Higher	start_dt	3 to 18 (–16.1 to –7.8)	4(–15.6)	°F(°C)	RW
9	Lag Minimum Running Time	lag_mini	0 to 150	0	min	RW
10	Lag Unit Pump Control	lag_pump	0 to 1	0	—	RW
	0=Stop if Unit Stops					
	1=Run if Unit Stops					
11	Chiller in Series	ll_serie	No(0)/Yes(1)	No(0)	—	RW

CP_ENABL — Compressor Enable

Carrier Controller PATH:

Main Menu → **Configuration Menu** → **Compressor Enable**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	DISABLE COMPRESSORS					
2	Compressor A Disable	en_cp_a	No(0)/Yes(1)	No(0)	—	RW
3	Compressor B Disable	en_cp_b	No(0)/Yes(1)	No(0)	—	RW

LEGEND

RW — Read/Write

* Depends on the selected language (English by default).

EMAILCFG — Email Configuration

Carrier Controller PATH:

Main Menu → Configuration Menu → Email Configuration

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Sender Email Part1	senderP1				RW
2	@	—				
3	Sender Email Part2	senderP2				RW
4	Recip1 Email Part1	recip1P1				RW
5	@	—				
6	Recip1 Email Part2	recip1P2				RW
7	Recip2 Email Part1	recip2P1				RW
8	@	—				
9	Recip2 Email Part2	recip2P2				RW
10	SMTP IP Addr Part 1	smtpP1	0 to 255	0	—	RW
11	SMTP IP Addr Part 2	smtpP2	0 to 255	0	—	RW
12	SMTP IP Addr Part 3	smtpP3	0 to 255	0	—	RW
13	SMTP IP Addr Part 4	smtpP4	0 to 255	0	—	RW
14	Account Email Part1	accP1				RW
15	@	—				
16	Account Email Part2	accP2				RW
17	Account Password	accPass				RW
18	Port Number	portNbr	0 to 255	25	—	RW
19	Server Timeout	srvTim	0 to 255	30	sec	RW
20	Server Authentification	srvAut	0 to 1	0	—	RW

LEGEND

RW — Read/Write

* Depends on the selected language (English by default).

QCK_TEST — Quick Test Table*

Carrier Controller PATH:

Main Menu → **Quick Test Table**

LINE	DISPLAYED TEXT**	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Quick Test Enable	QCK_TEST	Disable(0)/Enable(1)	Disable(0)	—	RO
2	Circuit A EXV Position	Q_EXVA	0 to 100	0	%	RO
3	Circuit A Oil Solenoid	Q_OILS_A	Off(0)/On(1)	Off(0)	—	RO
4	EXV Eco Position Cir A	Q_ECO_A	0 to 100	0	%	RO
5	Oil Heater Circuit A	Q_OILHTA	Off(0)/On(1)	Off(0)	—	RO
6	Capacity Cir A Output	Q_010_A	0 to 100	0	%	RO
7	Comp A Running Output	Q_COMPA	Off(0)/On(1)	Off(0)	—	RO
8	Isolation Valve State A	Q_ISOP_A	Close(0)/Open(1)	Close(0)	—	RO
9	Circuit A VI	Q_VI_A	Off(0)/On(1)	Off(0)	—	RO
10	VariFan Speed A	Q_VFAN_A	0 to 100	0	%	RO
11	Circuit B EXV Position	Q_EXVB	0 to 100	0	%	RO
12	Circuit B Oil Solenoid	Q_OILS_B	Off(0)/On(1)	Off(0)	—	RO
13	EXV Eco Position Cir B	Q_ECO_B	0 to 100	0	%	RO
14	Oil Heater Circuit B	Q_OILHTB	Off(0)/On(1)	Off(0)	—	RO
15	Capacity Cir B Output	Q_010_B	0 to 100	0	%	RO
16	Comp B Running Output	Q_COMPB	Off(0)/On(1)	Off(0)	—	RO
17	Isolation Valve State B	Q_ISOP_B	Close(0)/Open(1)	Close(0)	—	RO
18	Circuit B VI	Q_VI_B	Off(0)/On(1)	Off(0)	—	RO
19	VariFan Speed B	Q_VFAN_B	0 to 100	0	%	RO
20	Evaporator Heater	Q_CL_HTR	Off(0)/On(1)	Off(0)	—	RO
21	Evaporator Pump 1	Q_CPMP1	0 to 2	0	—	RO
22	Evaporator Pump 2	Q_CPMP2	0 to 2	0	—	RO
23	Alarm Relay Status	Q_ALARM	Off(0)/On(1)	Off(0)	—	RO
24	Shutdown Relay Status	Q_SHUTD	Off(0)/On(1)	Off(0)	—	RO
25	Running Relay Status	Q_RUN	Off(0)/On(1)	Off(0)	—	RO
26	Alert Relay Switch	Q_ALERT	Off(0)/On(1)	Off(0)	—	RO
27	Capacity Total Output	Q_CAP010	0 to 100	0	%	RO
28	Comp drive heater A	Q_DRVHTA	Off(0)/On(1)	Off(0)	—	RO
29	Comp drive heater B	Q_DRVHTB	Off(0)/On(1)	Off(0)	—	RO
30	Fan Contactor 1A	Q_FCA1	Off(0)/On(1)	Off(0)	—	RO
31	Fan Contactor 2A	Q_FCA2	Off(0)/On(1)	Off(0)	—	RO
32	Fan Contactor 3A	Q_FCA3	Off(0)/On(1)	Off(0)	—	RO
33	Fan Contactor 4A	Q_FCA4	Off(0)/On(1)	Off(0)	—	RO
34	Fan Contactor 5A	Q_FCA5	Off(0)/On(1)	Off(0)	—	RO
35	Fan Contactor 6A	Q_FCA6	Off(0)/On(1)	Off(0)	—	RO
36	Fan Contactor 7A	Q_FCA7	Off(0)/On(1)	Off(0)	—	RO
37	Fan Contactor 8A	Q_FCA8	Off(0)/On(1)	Off(0)	—	RO
38	Fan Contactor 1B	Q_FCB1	Off(0)/On(1)	Off(0)	—	RO
39	Fan Contactor 2B	Q_FCB2	Off(0)/On(1)	Off(0)	—	RO
40	Fan Contactor 3B	Q_FCB3	Off(0)/On(1)	Off(0)	—	RO
41	Fan Contactor 4B	Q_FCB4	Off(0)/On(1)	Off(0)	—	RO
42	Fan Contactor 5B	Q_FCB5	Off(0)/On(1)	Off(0)	—	RO
43	Fan Contactor 6B	Q_FCB6	Off(0)/On(1)	Off(0)	—	RO
44	Fan Contactor 7B	Q_FCB7	Off(0)/On(1)	Off(0)	—	RO
45	Fan Contactor 8B	Q_FCB8	Off(0)/On(1)	Off(0)	—	RO
46	Comp. HW Enable A	Q_VF_ENA	Off(0)/On(1)	Off(0)	—	RO
47	Comp. HW Enable B	Q_VF_ENB	Off(0)/On(1)	Off(0)	—	RO
48	Control Box Heater	Q_BOX_HT	Off(0)/On(1)	Off(0)	—	RO
49	All ECM Fan Spd CirA	Q_A_F_SP	0 to 100	0	%	RO
50	All ECM Fan Spd CirB	Q_B_F_SP	0 to 100	0	%	RO

LEGEND

RW — Read/Write

* Unit must be in Local-Off.
** Depends on the selected language (English by default).

APPENDIX A — CARRIER CONTROLLER DISPLAY TABLES (cont)

MAINTENANCE MENU

ICON	DISPLAYED TEXT*	ASSOCIATED TABLE
	Capacity Control	CAPACTRL
	VLT Drive Maintenance	VLT_DRV
	Last PowerOn Reset	LAST_POR
	EXV Control	EXV_CTRL
	Control Limits	LIMITS
	Master Slave Control	M_MSTSLV
	EXV Eco. Control	ECO_CTRL
	Fan Control	FAN_CTRL
	Fan Drive Maintenance	FAN_DRV
	Fan Drive Addressing	FAN_DRV2
	Troubleshoot Info	TBLSHT
	VFD A Compressor Config	VFD_CMPA
	VFD B Compressor Config	VFD_CMPB
	VFD Fan A1 Config	FAN_A1
	VFD Fan A2 Config	FAN_A2
	VFD Fan B1 Config	FAN_B1
	VFD Fan B2 Config	FAN_B2
	USB Log Export	USB_LOG

CAPACTRL — Capacity Control

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Capacity Control**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Controlled Water Temp	ctrl_wt	—	—	°F (°C)	RO
2	Ctrl Water Temp, Deg/Min	cwt_rate	—	—	°F (°C)	RO
3	Current Capacity Limit	cap_lim	0 to 100	100	%	RO
4	Wished Comp. Frequency A	drvcmda	—	—	Hz	RO
5	Capa Ctrl State A	capstata	—	—	—	RO
6	Capa Ctrl State Text A	captxta	—	—	—	RO
7	Override State A	ovrstata	—	—	—	RO
8	Override State Text A	ovrtxta	—	—	—	RO
9	Capa Ctrl Stat Nb A	capmoda	—	—	—	RO
10	Last Capa Ctrl Stat Nb A	lcapmoda	—	—	—	RO
11	Override Capacity Nb A	overrida	—	—	—	RO
12	Estimated Capacity A	cap_pc_a	0 to 100	—	%	RO
13	Wished Comp. Frequency B	drvcmdb	—	—	Hz	RO
14	Capa Ctrl State B	capstatb	—	—	—	RO
15	Capa Ctrl State Text B	captxtb	—	—	—	RO
16	Override State B	ovrstatb	—	—	—	RO
17	Override State Text B	ovrtxtb	—	—	—	RO
18	Capacity Ctrl Stat Nb B	capmodb	—	—	—	RO
19	Last Capa Ctrl Stat Nb B	lcapmodb	—	—	—	RO
20	Override Capacity Nb B	overridb	—	—	—	RO
21	Estimated Capacity B	cap_pc_b	0 to 100	—	%	RO
22	Max Comp. Frequency A	cMaxFrqA	—	95	Hz	RO
23	Max Comp. Frequency B	cMaxFrqB	—	95	Hz	RO
24	Comp. VI Cmd A	viCmdA	—	—	—	RO
25	Comp. VI Cmd B	viCmdB	—	—	—	RO
26	Reset Amount	reset	—	—	°F (°C)	RO
27	Circuit Running Number	CirRunNb	—	—	—	RO
28	State of Circuit A	StatCirA	—	—	—	RO
29	State of Circuit B	StatCirB	—	—	—	RO
30	Dual Circuit Master	DualMast	—	—	—	RO
31	Transfer Spd, add cir	xSpdHigh	0 to 0	60	Hz	RO
32	Transfer Spd, remove cir	xSpdLow	0 to 0	30	Hz	RW
33	Compressor Start Freq	cStrtFrq	0 to 0	26	Hz	RO
34	Compressor Min Frequency	cMinFrq	0 to 0	26	Hz	RO
35	DGT A, Deg/min	dgt_dt_a	—	—	°F (°C)	RO
36	SST A, Deg/min	sst_dt_a	—	—	°F (°C)	RO
37	DGT B, Deg/min	dgt_dt_b	—	—	°F (°C)	RO
38	SST B, Deg/min	sst_dt_b	—	—	°F (°C)	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

VLT_DRV — VLT Drive Maintenance

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **VLT Drive Maintenance**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Cir A Drive Power	drv_pwra	—	—	kW	RO
2	Cir A Drive Power %	drv_pwPa	0 to 100	—	%	RO
3	Cir A Drive Amps	drv_Ia	—	—	Amps	RO
4	Comp A Amperage %	drv_IPa	0 to 100	—	%	RO
5	Cir A Drive Voltage	drv_Va	—	—	Volts	RO
6	Comp A Line voltage %	drv_VPa	0 to 135	—	%	RO
7	Cir A Drive Speed	drv_Sa	—	—	rpm	RO
8	Comp A Speed%	drv_SPa	0 to 100	—	%	RO
9	Cir A Drive Frequency	drv_Fa	—	—	Hz	RO
10	Comp A Frequency %	drv_FPa	0 to 100	—	%	RO
11	Cir A Drive Torque	drv_Ta	—	—	—	RO
12	Circ A Drive Torque %	drv_TPa	0 to 100	—	%	RO
13	Cir A Drive DC Link Volt	drv_DCVa	—	—	Volts	RO
14	Comp A DC Link Voltage %	drv_DCPa	0 to 135	—	%	RO
15	Cir A Drive Heat Sink T	drv_HSTa	—	—	°F (°C)	RO
16	Comp A Heat Sink Temp %	drv_HSPa	0 to 135	—	%	RO
17	Cir A Drive Ctrl Card T	drv_CCTa	—	—	°F (°C)	RO
18	Cir A Drive Heater	drv_HTRa	Off(0)/On(1)	Off(0)	—	RO
19	Cir B Drive Power	drv_pwrb	—	—	kW	RO
20	Cir B Drive Power %	drv_pwPb	0 to 100	—	%	RO
21	Cir B Drive Amps	drv_Ib	—	—	Amps	RO
22	Comp B Amperage %	drv_IPb	0 to 100	—	%	RO
23	Cir B Drive Voltage	drv_Vb	—	—	Volts	RO
24	Comp B Line voltage %	drv_VPb	0 to 135	—	%	RO
25	Cir B Drive Speed	drv_Sb	—	—	rpm	RO
26	Comp B Speed%	drv_SPb	0 to 100	—	%	RO
27	Cir B Drive Frequency	drv_Fb	—	—	Hz	RO
28	Comp B Frequency %	drv_FPb	0 to 100	—	%	RO
29	Cir B Drive Torque	drv_Tb	—	—	—	RO
30	Circ B Drive Torque %	drv_TPb	0 to 100	—	%	RO
31	Cir B Drive DC Link Volt	drv_DCVb	—	—	Volts	RO
32	Total Comp Drive Power	drv_pwr	—	—	kW	RO
33	Comp B DC Link Voltage %	drv_DCPb	0 to 135	0 to 100	%	RO
34	Cir B Drive Heat Sink T	drv_HSTb	—	—	°F (°C)	RO
35	Comp B Heat Sink Temp %	drv_HSPb	0 to 135	0 to 100	%	RO
36	Cir B Drive Ctrl Card T	drv_CCTb	—	—	°F (°C)	RO
37	Cir B Drive Heater	drv_HTRb	Off(0)/On(1)	Off(0)	—	RO
38	Drive A Attach	SET_DRVA	No(0)/Yes(1)	No(0)	—	RW
39	Drive B Attach	SET_DRVB	No(0)/Yes(1)	No(0)	—	RW
40	Comm with Drive A Ok	VLT_COMA	No(0)/Yes(1)	No(0)	—	RO
41	Comm with Drive B Ok	VLT_COMB	No(0)/Yes(1)	No(0)	—	RO
42	Force Comp Drv A Config	CnfgDrva	No(0)/Yes(1)	No(0)	—	RO
43	Force Comp Drv B Config	CnfgDrvb	No(0)/Yes(1)	No(0)	—	RO

LEGEND

RO — Read Only
RW — Read/Write

* Depends on the selected language (English by default).

LAST_POR — Last PowerOn Reset

Carrier Controller PATH:

Main Menu → Maintenance Menu → Last PowerOn Reset

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Power On 1 :day-mon-year	date_on1	—	—	—	RO
2	Power On 1 :hour-minute	time_on1	—	—	—	RO
3	PowerDown 1:day-mon-year	date_of1	—	—	—	RO
4	PowerDown 1:hour-minute	time_of1	—	—	—	RO
5	Power On 2 :day-mon-year	date_on2	—	—	—	RO
6	Power On 2 :hour-minute	time_on2	—	—	—	RO
7	PowerDown 2:day-mon-year	date_of2	—	—	—	RO
8	PowerDown 2:hour-minute	time_of2	—	—	—	RO
9	Power On 3 :day-mon-year	date_on3	—	—	—	RO
10	Power On 3 :hour-minute	time_on3	—	—	—	RO
11	PowerDown 3:day-mon-year	date_of3	—	—	—	RO
12	PowerDown 3:hour-minute	time_of3	—	—	—	RO
13	Power On 4 :day-mon-year	date_on4	—	—	—	RO
14	Power On 4 :hour-minute	time_on4	—	—	—	RO
15	PowerDown 4:day-mon-year	date_of4	—	—	—	RO
16	PowerDown 4:hour-minute	time_of4	—	—	—	RO
17	Power On 5 :day-mon-year	date_on5	—	—	—	RO
18	Power On 5 :hour-minute	time_on5	—	—	—	RO
19	PowerDown 5:day-mon-year	date_of5	—	—	—	RO
20	PowerDown 5:hour-minute	time_of5	—	—	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

EXV_CTRL — EXV Control

Carrier Controller PATH:

Main Menu → Maintenance Menu → EXV Control

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Circuit A	—	—	—	—	—
2	EXV Override Circuit A	ov_exv_a	—	—	—	RO
3	EXV Position (Pct) A	EXV_A	—	—	%	RO
4	EXV Position (Steps) A	EXV_STPA	0 to 10000	—	—	RO
5	Discharge Superheat A	DSH_A	—	—	°F (°C)	RO
6	Dis. Superheat Setpnt A	dsh_spa	—	—	°F (°C)	RO
7	Suction Superheat A	SH_A	—	—	°F (°C)	RO
8	Suct. Superheat Setpnt A	sh_sp_a	—	—	°F (°C)	RO
9	Evap ExchangeDT Cir A	pinch_a	—	—	°F (°C)	RO
10	Subcooling Circuit A	subcoola	—	—	°F (°C)	RO
11	Subcooling Setpoint A	subc_spa	—	—	°F (°C)	RO
12	EXV State A	exv_sta	—	—	—	RO
13	EXV Previous State A	exv_lsta	—	—	—	RO
14	EXV Wished Position A	exvwposa	—	—	—	RO
15	EXV Mode A	exv_moda	Closed(0)/Open(1)	—	—	RO
16	EXV Mode Text A	exv_txta	Closed(0)/Open(1)	—	—	RO
17	Circuit B	—	—	—	—	—
18	EXV Override Circuit B	ov_exv_b	—	—	—	RO
19	EXV Position (Pct) B	EXV_B	—	—	%	RO
20	EXV Position (Steps) B	EXV_STPB	0 to 10000	—	—	RO
21	Discharge Superheat B	DSH_B	—	—	°F (°C)	RO
22	Dis. Superheat Setpnt B	dsh_spb	—	—	°F (°C)	RO
23	Suction Superheat B	SH_B	—	—	°F (°C)	RO
24	Suct. Superheat Setpnt B	sh_sp_b	—	—	°F (°C)	RO
25	Evap ExchangeDT Cir B	pinch_b	—	—	°F (°C)	RO
26	Subcooling Circuit B	subcoolb	—	—	°F (°C)	RO
27	Subcooling Setpoint B	subc_spb	—	—	°F (°C)	RO
28	EXV State B	exv_stb	—	—	—	RO
29	EXV Previous State B	exv_lstb	—	—	—	RO
30	EXV Wished Position B	exvwposb	—	—	—	RO
31	EXV Mode B	exv_modb	Closed(0)/Open(1)	—	—	RO
32	EXV Mode Text B	exv_txtb	Closed(0)/Open(1)	—	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

LIMITS — Control Limits

Carrier Controller PATH:

Main Menu → Maintenance Menu → Control Limits

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	EXV_dsh_act A	dshacta	—	—	°F (°C)	RO
2	EXV_dsh_stp A	dshstpa	—	—	°F (°C)	RO
3	EXV_lsp_act A	elspacta	—	—	psi (kPa)	RO
4	EXV_lsp_stp A	elspstpa	—	—	psi (kPa)	RO
5	ENV comp high dp act A	chdpacta	—	—	psi (kPa)	RO
6	ENV comp high dp stp A	chdpstpa	—	—	psi (kPa)	RO
7	ENV fan high dp act A	fhdpacta	—	—	psi (kPa)	RO
8	ENV fan high dp stp A	fhdpstpa	—	—	psi (kPa)	RO
9	ENV low dp act A	ldpacta	—	—	psi (kPa)	RO
10	ENV low dp stp A	ldpstpa	—	—	psi (kPa)	RO
11	ENV high sp act A	hspacta	—	—	psi (kPa)	RO
12	ENV high sp stp A	hspstpa	—	—	psi (kPa)	RO
13	ENV low sp act A	lspacta	—	—	psi (kPa)	RO
14	ENV low sp stp A	lspstpa	—	—	psi (kPa)	RO
15	ENV low sp delta A	lspdcpa	—	—	psi (kPa)	RO
16	dgt act A	dgtacta	—	—	°F (°C)	RO
17	dgt stp A	dgtstpa	—	—	°F (°C)	RO
18	EXV_dsh_act B	dshactb	—	—	°F (°C)	RO
19	EXV_dsh_stp B	dshstpb	—	—	°F (°C)	RO
20	EXV_lsp_act B	elspactb	—	—	psi (kPa)	RO
21	EXV_lsp_stp B	elspstpb	—	—	psi (kPa)	RO
22	ENV comp high dp act B	chdpactb	—	—	psi (kPa)	RO
23	ENV comp high dp stp B	chdpstpb	—	—	psi (kPa)	RO
24	ENV fan high dp act B	fhdpactb	—	—	psi (kPa)	RO
25	ENV fan high dp stp B	fhdpstpb	—	—	psi (kPa)	RO
26	ENV low dp act B	ldpactb	—	—	psi (kPa)	RO
27	ENV low dp stp B	ldpstpb	—	—	psi (kPa)	RO
28	ENV high sp act B	hspactb	—	—	psi (kPa)	RO
29	ENV high sp stp B	hspstpb	—	—	psi (kPa)	RO
30	ENV low sp act B	lspactb	—	—	psi (kPa)	RO
31	ENV low sp stp B	lspstpb	—	—	psi (kPa)	RO
32	ENV low sp delta B	lspdcpb	—	—	psi (kPa)	RO
33	dgt_act B	dgtactb	—	—	°F (°C)	RO
34	dgt_stp B	dgtstpb	—	—	°F (°C)	RO
35	Cmp Env Min SST A	sstMinA	—	—	°F (°C)	RO
36	Cmp Env Max SST A	sstMaxA	—	—	°F (°C)	RO
37	Cmp Env Min SDT A	sdtMinA	—	—	°F (°C)	RO
38	Cmp Env Max SDT A	sdtMaxA	—	—	°F (°C)	RO
39	Cmp Env Min SST B	sstMinB	—	—	°F (°C)	RO
40	Cmp Env Max SST B	sstMaxB	—	—	°F (°C)	RO
41	Cmp Env Min SDT B	sdtMinB	—	—	°F (°C)	RO
42	Cmp Env Max SDT B	sdtMaxB	—	—	°F (°C)	RO
43	Max Compressor Rate	maxinc	—	—	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

M_MSTSLV — Master Slave Control

Carrier Controller PATH:

Main Menu → Maintenance Menu → Master Slave Control

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	MASTER/SLAVE CONTROL	—	—	—	—	—
2	Unit is Master or Slave	mstslv	Disable(0)/ Enable(1)	Disable(0)	—	RO
3	Master Control Type	ms_ctrl	—	—	—	RO
4	Master/Slave Ctrl Active	ms_activ	False(0)/True(1)	False(0)	—	RO
5	Lead Unit is the:	lead_sel	Master(0)/Slave(1)	Master(0)	—	RO
6	Slave Chiller State	slv_stat	—	—	—	RO
7	Slave Chiller Total Cap	slv_capt	0 to 100	—	%	RO
8	Lag Start Delay	l_strt_d	—	—	min	RO
9	Lead/lag Hours Delta	ll_hr_d	—	—	hours	RO
10	Lead/lag Changeover?	ll_chang	No(0)/Yes(1)	No(0)	—	RO
11	Lead Pulldown ?	ll_pull	No(0)/Yes(1)	No(0)	—	RO
12	Master/Slave Error	ms_error	—	—	—	RO
13	Max Available Capacity ?	cap_max	No(0)/Yes(1)	No(0)	—	RO
14	Slave lagstat	lagstat	—	—	—	RO
15	Slave Operating Hours	slav_hr	—	—	hours	RO
16	Slave Evap Ent. Fluid	slav_ewt	—	—	°F (°C)	RO
17	Slave Evap Leav. Fluid	slav_lwt	—	—	°F (°C)	RO

ECO_CTRL — EXV Eco. Control

Carrier Controller PATH:

Main Menu → Maintenance Menu → EXV Eco. Control

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	EXV Eco Pos. (Pct) A	eco_a	0 to 100	—	%	RO
2	EXV Eco Pos. (Steps) A	eco_stpa	0 to 10000	—	—	RO
3	Eco Suction Superheat A	eco_sh_a	—	—	°F (°C)	RO
4	Eco Suction SH Setpt A	esh_sp_a	—	—	°F (°C)	RO
5	EXV Eco State A	eco_sta	—	—	—	RO
6	EXV Eco Previous State A	eco_lsta	—	—	—	RO
7	EXV Eco Wished Pos A	ecowposa	—	—	—	RO
8	EXV Eco Mode A	eco_moda	—	—	—	RO
9	EXV Eco Mode Txt A	eco_txta	—	—	—	RO
10	EXV Eco Pos. (Pct) B	eco_b	0 to 100	—	%	RO
11	EXV Eco Pos. (Steps) B	eco_stpb	0 to 10000	—	—	RO
12	Eco Suction Superheat B	eco_sh_b	—	—	°F (°C)	RO
13	Eco Suction SH Setpt B	esh_sp_b	—	—	°F (°C)	RO
14	EXV Eco State B	eco_stb	—	—	—	RO
15	EXV Eco Previous State B	eco_lstb	—	—	—	RO
16	EXV Eco Wished Pos B	ecowposb	—	—	—	RO
17	EXV Eco Mode B	eco_modb	—	—	—	RO
18	EXV Eco Mode Txt B	eco_txtb	—	—	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

FAN_CTRL — Fan Control

Carrier Controller PATH:

Main Menu → Maintenance Menu → Fan Control

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Fan Freq Cir A	fan_f_a	—	—	Hz	RO
2	Fan State A	fan_sta	—	—	—	RO
3	Fan Previous State A	fan_lsta	—	—	—	RO
4	Fan Wished Freq A	wfan_f_a	—	—	Hz	RO
5	Fan Mode A	fan_moda	—	—	—	RO
6	Fan Mode Text A	fan_txta	—	—	—	RO
7	Fan Tot Pwr Filtered A	ftotpowa	—	—	kW	RO
8	Fan Contactors On A	fcont_a	—	—	—	RO
9	Fan Freq Cir B	fan_f_b	—	—	Hz	RO
10	Fan State B	fan_stb	—	—	—	RO
11	Fan Previous State B	fan_lstb	—	—	—	RO
12	Fan Wished Freq B	wfan_f_b	—	—	Hz	RO
13	Fan Mode B	fan_modb	—	—	—	RO
14	Fan Mode Text B	fan_txtb	—	—	—	RO
15	Fan Tot Pwr Filtered B	ftotpowb	—	—	kW	RO
16	Fan Contactors On B	fcont_b	—	—	—	RO

LEGEND

RO — Read Only

* Depends on the selected language (English by default).

FAN_DRV — Fan Drive Maintenance

Carrier Controller PATH:

Main Menu → Maintenance Menu → Fan Drive Maintenance

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Fan Drive Power A1	fd_pwra1	—	—	kW	RO
2	Fan Drive Amps A1	fd_Ia1	—	—	Amps	RO
3	Fan Drive Voltage A1	fd_Va1	—	—	Volts	RO
4	Fan Drive Speed A1	fd_Sa1	—	—	rpm	RO
5	Fan Drive Frequency A1	fd_Fa1	—	—	Hz	RO
6	Fan Drive Torque A1	fd_Ta1	—	—	—	RO
7	Fan Drv DC Link Volt A1	fd_DCVa1	—	—	Volts	RO
8	Fan Drive Heat Sink T A1	fd_HSTa1	—	—	°F (°C)	RO
9	Fan Drive Ctrl Card T A1	fd_CCTa1	—	—	°F (°C)	RO
10	Fan Drive Power A2	fd_pwra2	—	—	kW	RO
11	Fan Drive Amps A2	fd_Ia2	—	—	Amps	RO
12	Fan Drive Voltage A2	fd_Va2	—	—	Volts	RO
13	Fan Drive Speed A2	fd_Sa2	—	—	rpm	RO
14	Fan Drive Frequency A2	fd_Fa2	—	—	Hz	RO
15	Fan Drive Torque A2	fd_Ta2	—	—	—	RO
16	Fan Drv DC Link Volt A2	fd_DCVa2	—	—	Volts	RO
17	Fan Drive Heat Sink T A2	fd_HSTa2	—	—	°F (°C)	RO
18	Fan Drive Ctrl Card T A2	fd_CCTa2	—	—	°F (°C)	RO
19	Fan Drive Power A3	fd_pwra3	—	—	kW	RO
20	Fan Drive Amps A3	fd_Ia3	—	—	Amps	RO
21	Fan Drive Voltage A3	fd_Va3	—	—	Volts	RO
22	Fan Drive Speed A3	fd_Sa3	—	—	rpm	RO
23	Fan Drive Frequency A3	fd_Fa3	—	—	Hz	RO
24	Fan Drive Torque A3	fd_Ta3	—	—	—	RO
25	Fan Drv DC Link Volt A3	fd_DCVa3	—	—	Volts	RO
26	Fan Drive Heat Sink T A3	fd_HSTa3	—	—	°F (°C)	RO
27	Fan Drive Ctrl Card T A3	fd_CCTa3	—	—	°F (°C)	RO
28	Fan Drive Power B1	fd_pwrb1	—	—	kW	RO
29	Fan Drive Amps B1	fd_Ib1	—	—	Amps	RO
30	Fan Drive Voltage B1	fd_Vb1	—	—	Volts	RO
31	Fan Drive Speed B1	fd_Sb1	—	—	rpm	RO
32	Fan Drive Frequency B1	fd_Fb1	—	—	Hz	RO
33	Fan Drive Torque B1	fd_Tb1	—	—	—	RO
34	Fan Drv DC Link Volt B1	fd_DCVb1	—	—	—	RO
35	Fan Drive Heat Sink T B1	fd_HSTb1	—	—	°F (°C)	RO
36	Fan Drive Ctrl Card T B1	fd_CCTb1	—	—	°F (°C)	RO
37	Fan Drive Power B2	fd_pwrb2	—	—	kW	RO
38	Fan Drive Amps B2	fd_Ib2	—	—	Amps	RO
39	Fan Drive Voltage B2	fd_Vb2	—	—	Volts	RO
40	Fan Drive Speed B2	fd_Sb2	—	—	rpm	RO
41	Fan Drive Frequency B2	fd_Fb2	—	—	Hz	RO
42	Fan Drive Torque B2	fd_Tb2	—	—	—	RO
43	Fan Drv DC Link Volt B2	fd_DCVb2	—	—	Volts	RO
44	Fan Drive Heat Sink T B2	fd_HSTb2	—	—	°F (°C)	RO
45	Fan Drive Ctrl Card T B2	fd_CCTb2	—	—	°F (°C)	RO
46	Fan Drive Power B3	fd_pwrb3	—	—	kW	RO
47	Fan Drive Amps B3	fd_Ib3	—	—	Amps	RO
48	Fan Drive Voltage B3	fd_Vb3	—	—	Volts	RO
49	Fan Drive Speed B3	fd_Sb3	—	—	rpm	RO
50	Fan Drive Frequency B3	fd_Fb3	—	—	Hz	RO
51	Fan Drive Torque B3	fd_Tb3	—	—	—	RO
52	Fan Drv DC Link Volt B3	fd_DCVb3	—	—	Volts	RO
53	Fan Drive Heat Sink T B3	fd_HSTb3	—	—	°F (°C)	RO
54	Fan Drive Ctrl Card T B3	fd_CCTb3	—	—	°F (°C)	RO
55	Total Fan Drive Power	fd_pwr	—	—	kW	RO

FAN_DRV2 — Fan Drive Addressing

Carrier Controller PATH:

Main Menu → Maintenance Menu → Fan Drive Addressing

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Fan Drive A1 Attach	SET_FDA1	No(0)/Yes(1)	No(0)	—	RW
2	Fan Drive A2 Attach	SET_FDA2	No(0)/Yes(1)	No(0)	—	RW
3	Fan Drive A3 Attach	SET_FDA3	No(0)/Yes(1)	No(0)	—	RW
4	Fan Drive B1 Attach	SET_FDB1	No(0)/Yes(1)	No(0)	—	RW
5	Fan Drive B2 Attach	SET_FDB2	No(0)/Yes(1)	No(0)	—	RW
6	Fan Drive B3 Attach	SET_FDB3	No(0)/Yes(1)	No(0)	—	RW
7	Comm Fan Drive A1 Ok	FD_COMA1	No(0)/Yes(1)	—	—	RO
8	Comm Fan Drive A2 Ok	FD_COMA2	No(0)/Yes(1)	—	—	RO
9	Comm Fan Drive A3 Ok	FD_COMA3	No(0)/Yes(1)	—	—	RO
10	Comm Fan Drive B1 Ok	FD_COMB1	No(0)/Yes(1)	—	—	RO
11	Comm Fan Drive B2 Ok	FD_COMB2	No(0)/Yes(1)	—	—	RO
12	Comm Fan Drive B3 Ok	FD_COMB3	No(0)/Yes(1)	—	—	RO
13	Stop Cir A Fan Drive	stopfana	No(0)/Yes(1)	No(0)	—	RO
14	Stop Cir B Fan Drive	stopfanb	No(0)/Yes(1)	No(0)	—	RO
15	Force Fan Drv A1 Config	CnfgFDA1	No(0)/Yes(1)	No(0)	—	RO
16	Force Fan Drv A2 Config	CnfgFDA2	No(0)/Yes(1)	No(0)	—	RO
17	Force Fan Drv A3 Config	CnfgFDA3	No(0)/Yes(1)	No(0)	—	RO
18	Force Fan Drv B1 Config	CnfgFDB1	No(0)/Yes(1)	No(0)	—	RO
19	Force Fan Drv B2 Config	CnfgFDB2	No(0)/Yes(1)	No(0)	—	RO
20	Force Fan Drv B3 Config	CnfgFDB3	No(0)/Yes(1)	No(0)	—	RO

LEGEND

RO — Read Only
RW — Read/Write

* Depends on the selected language (English by default).

TBLSHT — Troubleshoot Info

Carrier Controller PATH:

Main Menu → **Maintenance Menu** → **Troubleshoot Info**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Evap Entering Fluid	COOL_EWT	—	—	°F (°C)	RO
2	Evap Leaving Fluid	COOL_LWT	—	—	°F (°C)	RO
3	Capacity Signal Cir A	CAPT010A	0 to 100	—	%	RO
4	Cir A Drive Amps	drv_Ia	—	—	A	RO
5	Cir A Drive Speed	drv_Sa	—	—	rpm	RO
6	Saturated Cond Tmp Cir A	SCT_A	—	—	°F (°C)	RO
7	Saturated Suction Temp A	SST_A	—	—	°F (°C)	RO
8	Saturated Liquid Temp A	SLT_A	—	—	°F (°C)	RO
9	Compressor Suction Tmp A	SUCT_A	—	—	°F (°C)	RO
10	Discharge Gas Temp Cir A	DGT_A	—	—	°F (°C)	RO
11	Motor Temperature Cir A	CP_TMP_A	—	—	°F (°C)	RO
12	EXV Eco. Tmp Cir A	ECO_T_A	—	—	°F (°C)	RO
13	Discharge Superheat A	DSH_A	—	—	°F (°C)	RO
14	Suction Superheat A	SH_A	—	—	°F (°C)	RO
15	Liquid Temperature A	LIQ_T_A	—	—	°F (°C)	RO
16	Discharge Pressure A	DP_A	—	—	psi (kPa)	RO
17	Main Suction Pressure A	SP_A	—	—	psi (kPa)	RO
18	Oil Pressure A	OP_A	—	—	psi (kPa)	RO
19	Oil Pressure DifferenceA	DOP_A	—	—	psi (kPa)	RO
20	Oil Level Input A	OIL_L_A	Off(0)/On(1)	Off(0)	—	RO
21	Oil Solenoid Output A	OIL_SL_A	Off(0)/On(1)	Off(0)	—	RO
22	Economizer Pressure A	ECO_P_A	—	—	psi (kPa)	RO
23	Liquid Pressure A	LIQ_P_A	—	—	psi (kPa)	RO
24	Capacity Signal Cir B	CAPT010B	0 to 100	—	%	RO
25	Cir B Drive Amps	drv_Ib	—	—	A	RO
26	Cir B Drive Speed	drv_Sb	—	—	rpm	RO
27	Saturated Cond Tmp Cir B	SCT_B	—	—	°F (°C)	RO
28	Saturated Suction Temp B	SST_B	—	—	°F (°C)	RO
29	Saturated Liquid Temp B	SLT_B	—	—	°F (°C)	RO
30	Compressor Suction Tmp B	SUCT_B	—	—	°F (°C)	RO
31	Discharge Gas Temp Cir B	DGT_B	—	—	°F (°C)	RO
32	Motor Temperature Cir B	CP_TMP_B	—	—	°F (°C)	RO
33	EXV Eco. Tmp Cir B	ECO_T_B	—	—	°F (°C)	RO
34	Discharge Superheat B	DSH_B	—	—	°F (°C)	RO
35	Suction Superheat B	SH_B	—	—	°F (°C)	RO
36	Liquid Temperature B	LIQ_T_B	—	—	°F (°C)	RO
37	Discharge Pressure B	DP_B	—	—	psi (kPa)	RO
38	Main Suction Pressure B	SP_B	—	—	psi (kPa)	RO
39	Oil Pressure B	OP_B	—	—	psi (kPa)	RO
40	Oil Pressure DifferenceB	DOP_B	—	—	psi (kPa)	RO
41	Oil Level Input B	OIL_L_B	Off(0)/On(1)	Off(0)	—	RO
42	Oil Solenoid Output B	OIL_SL_B	Off(0)/On(1)	Off(0)	—	RO
43	Economizer Pressure B	ECO_P_B	—	—	psi (kPa)	RO
44	Liquid Pressure B	LIQ_P_B	—	—	psi (kPa)	RO
45	Comm with Cmp VFD A Ok	VLT_COMA	No(0)/Yes(1)	—	—	RO
46	Comm with Cmp VFD B Ok	VLT_COMB	No(0)/Yes(1)	—	—	RO
47	Comm with Fan VFD A1 Ok	FD_COMA1	No(0)/Yes(1)	—	—	RO
48	Comm with Fan VFD A2 Ok	FD_COMA2	No(0)/Yes(1)	—	—	RO
49	Comm with Fan VFD A3 Ok	FD_COMA3	No(0)/Yes(1)	—	—	RO
50	Comm with Fan VFD B1 Ok	FD_COMB1	No(0)/Yes(1)	—	—	RO
51	Comm with Fan VFD B2 Ok	FD_COMB2	No(0)/Yes(1)	—	—	RO
52	Comm with Fan VFD B3 Ok	FD_COMB3	No(0)/Yes(1)	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Hand on button	A_0_40	—	—	—	RO
2	Torque profile	A_1_03	—	—	—	RO
3	Motor KW	A_1_20	—	—	—	RO
4	Motor volts	A_1_22	—	—	—	RO
5	Motor frequency	A_1_23	—	—	—	RO
6	Motor amperage	A_1_24	—	—	—	RO
7	Motor RPM	A_1_25	—	—	—	RO
8	Compressor start delay	A_1_71	—	—	—	RO
9	Starting frequency	A_1_78	—	—	—	RO
10	Comp start max trip time	A_1_79	—	—	—	RO
11	Function at stop	A_1_80	—	—	—	RO
12	Motor thermal protection	A_1_90	—	—	—	RO
13	Minimum reference	A_3_02	—	—	—	RO
14	Maximum reference	A_3_03	—	—	—	RO
15	Type reference	A_3_13	—	—	—	RO
16	Src ref#1	A_3_15	—	—	—	RO
17	Src ref#2	A_3_16	—	—	—	RO
18	Ramp up	A_3_41	—	—	—	RO
19	Ramp down	A_3_42	—	—	—	RO
20	Starting ramp time	A_3_82	—	—	—	RO
21	Motor speed direct	A_4_10	—	—	—	RO
22	Motor speed low limit	A_4_12	—	—	—	RO
23	Motor speed high limit	A_4_14	—	—	—	RO
24	Torque limit	A_4_16	—	—	—	RO
25	Current limit	A_4_18	—	—	—	RO
26	Max output frequency	A_4_19	—	—	—	RO
27	DI #27	A_5_12	—	—	—	RO
28	DI #37 safe stop	A_5_19	—	—	—	RO
29	relay 1 or 2	A_5_40	—	—	—	RO
30	Control site	A_8_01	—	—	—	RO
31	Source control	A_8_02	—	—	—	RO
32	Timeout time	A_8_03	—	—	—	RO
33	Timeout function	A_8_04	—	—	—	RO
34	Switching frequency	A_14_01	—	—	—	RO
35	Over modulation	A_14_03	—	—	—	RO
36	Main failure	A_14_10	—	—	—	RO
37	Main voltage	A_14_11	—	—	—	RO
38	RFI filter	A_14_50	—	—	—	RO
39	Function at overtemp	A_14_60	—	—	—	RO
40	inverter overload	A_14_61	—	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Hand on button	B_0_40	—	—	—	RO
2	Torque profile	B_1_03	—	—	—	RO
3	Motor KW	B_1_20	—	—	—	RO
4	Motor volts	B_1_22	—	—	—	RO
5	Motor frequency	B_1_23	—	—	—	RO
6	Motor amperage	B_1_24	—	—	—	RO
7	Motor RPM	B_1_25	—	—	—	RO
8	Compressor start delay	B_1_71	—	—	—	RO
9	Starting frequency	B_1_78	—	—	—	RO
10	Comp start max trip time	B_1_79	—	—	—	RO
11	Function at stop	B_1_80	—	—	—	RO
12	Motor thermal protection	B_1_90	—	—	—	RO
13	Minimum reference	B_3_02	—	—	—	RO
14	Maximum reference	B_3_03	—	—	—	RO
15	Type reference	B_3_13	—	—	—	RO
16	Src ref#1	B_3_15	—	—	—	RO
17	Src ref#2	B_3_16	—	—	—	RO
18	Ramp up	B_3_41	—	—	—	RO
19	Ramp down	B_3_42	—	—	—	RO
20	Starting ramp time	B_3_82	—	—	—	RO
21	Motor speed direct	B_4_10	—	—	—	RO
22	Motor speed low limit	B_4_12	—	—	—	RO
23	Motor speed high limit	B_4_14	—	—	—	RO
24	Torque limit	B_4_16	—	—	—	RO
25	Current limit	B_4_18	—	—	—	RO
26	Max output frequency	B_4_19	—	—	—	RO
27	DI #27	B_5_12	—	—	—	RO
28	DI #37 safe stop	B_5_19	—	—	—	RO
29	relay 1 or 2	B_5_40	—	—	—	RO
30	Control site	B_8_01	—	—	—	RO
31	Source control	B_8_02	—	—	—	RO
32	Timeout time	B_8_03	—	—	—	RO
33	Timeout function	B_8_04	—	—	—	RO
34	Switching frequency	B_14_01	—	—	—	RO
35	Over modulation	B_14_03	—	—	—	RO
36	Main failure	B_14_10	—	—	—	RO
37	Main voltage	B_14_11	—	—	—	RO
38	RFI filter	B_14_50	—	—	—	RO
39	Function at overtemp	B_14_60	—	—	—	RO
40	Inverter overload	B_14_61	—	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Torque profile	A1_1_03	—	—	—	RO
2	Motor KW	A1_1_20	—	—	—	RO
3	Motor volts	A1_1_22	—	—	—	RO
4	Motor frequency	A1_1_23	—	—	—	RO
5	Motor amperage	A1_1_24	—	—	—	RO
6	Motor RPM	A1_1_25	—	—	—	RO
7	Flying restart	A1_1_73	—	—	—	RO
8	Function at stop	A1_1_80	—	—	—	RO
9	Motor thermal protection	A1_1_90	—	—	—	RO
10	Maximum reference	A1_3_03	—	—	—	RO
11	Type reference	A1_3_13	—	—	—	RO
12	Src ref#1	A1_3_15	—	—	—	RO
13	Src ref#2	A1_3_16	—	—	—	RO
14	Ramp up	A1_3_41	—	—	—	RO
15	Ramp down	A1_3_42	—	—	—	RO
16	Motor speed direct	A1_4_10	—	—	—	RO
17	Motor speed low limit	A1_4_12	—	—	—	RO
18	Motor speed high limit	A1_4_14	—	—	—	RO
19	Torque limit	A1_4_16	—	—	—	RO
20	Current limit	A1_4_18	—	—	—	RO
21	Max output frequency	A1_4_19	—	—	—	RO
22	DI #27	A1_5_12	—	—	—	RO
23	Control site	A1_8_01	—	—	—	RO
24	Source control	A1_8_02	—	—	—	RO
25	Timeout time	A1_8_03	—	—	—	RO
26	Timeout function	A1_8_04	—	—	—	RO
27	Pattern [AVM]	A1_14_00	—	—	—	RO
28	Switching frequency	A1_14_01	—	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Torque profile	A2_1_03	—	—	—	RO
2	Motor KW	A2_1_20	—	—	—	RO
3	Motor volts	A2_1_22	—	—	—	RO
4	Motor frequency	A2_1_23	—	—	—	RO
5	Motor amperage	A2_1_24	—	—	—	RO
6	Motor RPM	A2_1_25	—	—	—	RO
7	Flying restart	A2_1_73	—	—	—	RO
8	Function at stop	A2_1_80	—	—	—	RO
9	Motor thermal protection	A2_1_90	—	—	—	RO
10	Maximum reference	A2_3_03	—	—	—	RO
11	Type reference	A2_3_13	—	—	—	RO
12	Src ref#1	A2_3_15	—	—	—	RO
13	Src ref#2	A2_3_16	—	—	—	RO
14	Ramp up	A2_3_41	—	—	—	RO
15	Ramp down	A2_3_42	—	—	—	RO
16	Motor speed direct	A2_4_10	—	—	—	RO
17	Motor speed low limit	A2_4_12	—	—	—	RO
18	Motor speed high limit	A2_4_14	—	—	—	RO
19	Torque limit	A2_4_16	—	—	—	RO
20	Current limit	A2_4_18	—	—	—	RO
21	Max output frequency	A2_4_19	—	—	—	RO
22	DI #27	A2_5_12	—	—	—	RO
23	Control site	A2_8_01	—	—	—	RO
24	Source control	A2_8_02	—	—	—	RO
25	Timeout time	A2_8_03	—	—	—	RO
26	Timeout function	A2_8_04	—	—	—	RO
27	Pattern [AVM]	A2_14_00	—	—	—	RO
28	Switching frequency	A2_14_01	—	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Torque profile	B1_1_03	—	—	—	RO
2	Motor KW	B1_1_20	—	—	—	RO
3	Motor volts	B1_1_22	—	—	—	RO
4	Motor frequency	B1_1_23	—	—	—	RO
5	Motor amperage	B1_1_24	—	—	—	RO
6	Motor RPM	B1_1_25	—	—	—	RO
7	Flying restart	B1_1_73	—	—	—	RO
8	Function at stop	B1_1_80	—	—	—	RO
9	Motor thermal protection	B1_1_90	—	—	—	RO
10	Maximum reference	B1_3_03	—	—	—	RO
11	Type reference	B1_3_13	—	—	—	RO
12	Src ref#1	B1_3_15	—	—	—	RO
13	Src ref#2	B1_3_16	—	—	—	RO
14	Ramp up	B1_3_41	—	—	—	RO
15	Ramp down	B1_3_42	—	—	—	RO
16	Motor speed direct	B1_4_10	—	—	—	RO
17	Motor speed low limit	B1_4_12	—	—	—	RO
18	Motor speed high limit	B1_4_14	—	—	—	RO
19	Torque limit	B1_4_16	—	—	—	RO
20	Current limit	B1_4_18	—	—	—	RO
21	Max output frequency	B1_4_19	—	—	—	RO
22	DI #27	B1_5_12	—	—	—	RO
23	Control site	B1_8_01	—	—	—	RO
24	Source control	B1_8_02	—	—	—	RO
25	Timeout time	B1_8_03	—	—	—	RO
26	Timeout function	B1_8_04	—	—	—	RO
27	Pattern [AVM]	B1_14_00	—	—	—	RO
28	Switching frequency	B1_14_01	—	—	—	RO

LEGEND

RO — Read Only

* 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	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Torque profile	B2_1_03	—	—	—	RO
2	Motor KW	B2_1_20	—	—	—	RO
3	Motor volts	B2_1_22	—	—	—	RO
4	Motor frequency	B2_1_23	—	—	—	RO
5	Motor amperage	B2_1_24	—	—	—	RO
6	Motor RPM	B2_1_25	—	—	—	RO
7	Flying restart	B2_1_73	—	—	—	RO
8	Function at stop	B2_1_80	—	—	—	RO
9	Motor thermal protection	B2_1_90	—	—	—	RO
10	Maximum reference	B2_3_03	—	—	—	RO
11	Type reference	B2_3_13	—	—	—	RO
12	Src ref#1	B2_3_15	—	—	—	RO
13	Src ref#2	B2_3_16	—	—	—	RO
14	Ramp up	B2_3_41	—	—	—	RO
15	Ramp down	B2_3_42	—	—	—	RO
16	Motor speed direct	B2_4_10	—	—	—	RO
17	Motor speed low limit	B2_4_12	—	—	—	RO
18	Motor speed high limit	B2_4_14	—	—	—	RO
19	Torque limit	B2_4_16	—	—	—	RO
20	Current limit	B2_4_18	—	—	—	RO
21	Max output frequency	B2_4_19	—	—	—	RO
22	DI #27	B2_5_12	—	—	—	RO
23	Control site	B2_8_01	—	—	—	RO
24	Source control	B2_8_02	—	—	—	RO
25	Timeout time	B2_8_03	—	—	—	RO
26	Timeout function	B2_8_04	—	—	—	RO
27	Pattern [AVM]	B2_14_00	—	—	—	RO
28	Switching frequency	B2_14_01	—	—	—	RO

USB_LOG — USB Logs Export

Carrier Controller PATH:

Main Menu → Maintenance Menu → USB Logs Export

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Export Technical Data	TECHNICAL_DATA	—	—	—	RO
2	Export Developer Data	DEVELOPER_DATA	—	—	—	RO

* Depends on the selected language (English by default).

LEGEND

RO — Read Only

MAINTAIN MENU

ICON	DISPLAYED TEXT*	ASSOCIATED TABLE
	Reset Alarms	ALARMRST
	Current Alarms	CUR_ALM
	Alarm Historic	ALMHIST1
	Major Alarm Historic	ALMHIST2

ALARMRST — Reset Alarms

Carrier Controller PATH:

Alarms → **Reset Alarms**

LINE	DISPLAYED TEXT*	CCN NAME	RANGE	DEFAULT VALUE	UNIT	READ/ WRITE
1	Alarm Reset	RST_ALM	No(0)/Yes(1)	No(0)	—	RW
2	Alarm State	ALM	—	—	—	RO
3	Current Alarm 1	alarm_1c	—	—	—	RO
4	Current Alarm 2	alarm_2c	—	—	—	RO
5	Current Alarm 3	alarm_3c	—	—	—	RO
6	Current Alarm 4	alarm_4c	—	—	—	RO
7	Current Alarm 5	alarm_5c	—	—	—	RO
8	Jbus Current Alarm 1	alarm_1	—	—	—	RO
9	Jbus Current Alarm 2	alarm_2	—	—	—	RO
10	Jbus Current Alarm 3	alarm_3	—	—	—	RO
11	Jbus Current Alarm 4	alarm_4	—	—	—	RO
12	Jbus Current Alarm 5	alarm_5	—	—	—	RO

LEGEND

RO — Read Only
RW — Read/Write
* 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 N/A (only
	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

See Legend on page 292.

Status/MODES — Modes

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Start Up Delay In Effect	No/Yes		m_delay	N	N/A
Second Setpoint In Use	No/Yes		m_2stpt	N	N/A
Reset In Effect	No/Yes		m_reset	N	N/A
Demand Limit Active	No/Yes		m_demlim	N	N/A
Evaporator Pump Rotation	No/Yes		m_pmprot	N	N/A
Pump Periodic Start	No/Yes		m_pmpper	N	N/A
Night Low Noise Active	No/Yes		m_night	N	N/A
Master Slave Active	No/Yes		m_slave	N	N/A
Ice Mode In Effect	No/Yes		m_ice	N	N/A
Current Alarm 1	Current Alarm 1	—	m_alarm1	N	N/A
Current Alarm 2	Current Alarm 2	—	m_alarm2	N	N/A
Current Alarm 3	Current Alarm 3	—	m_alarm3	N	N/A
Current Alarm 4	Current Alarm 4	—	m_alarm4	N	N/A
Current Alarm 5	Current Alarm 5	—	m_alarm5	N	N/A

Status/OUTPUTS — Outputs Status

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
CIRCUIT A	Normal/Alarm		LABEL_A	Y	N/A
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	N/A
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

See Legend on page 292.

Status/OUTPUTS — Outputs Status (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
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 292.

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	N/A
Compressor A Hours		hours	HR_CP_A	Y	RO
Compressor A Starts			st_cp_a	N	N/A
Compressor B Hours		hours	HR_CP_B	Y	RO
Compressor B Starts			st_cp_b	N	N/A
Evap Pump #1 Hours		hours	hr_cpum1	N	N/A
Evap Pump #2 Hours		hours	hr_cpum2	N	N/A
VI Cycle Count A		Cycles	VIctA	N	N/A
VI Cycle Count B		Cycles	VIctB	N	N/A
Circuit A Fan #1 Hours		hours	hrfana01	N	N/A
Circuit A Fan #2 Hours		hours	hrfana02	N	N/A
Circuit A Fan #3 Hours		hours	hrfana03	N	N/A
Circuit A Fan #4 Hours		hours	hrfana04	N	N/A
Circuit A Fan #5 Hours		hours	hrfana05	N	N/A
Circuit A Fan #6 Hours		hours	hrfana06	N	N/A
Circuit A Fan #7 Hours		hours	hrfana07	N	N/A
Circuit A Fan #8 Hours		hours	hrfana08	N	N/A
Circuit A Fan #9 Hours		hours	hrfana09	N	N/A
Circuit A Fan #10 Hours		hours	hrfana10	N	N/A
Circuit A Fan #11 Hours		hours	hrfana11	N	N/A
Circuit A Fan #12 Hours		hours	hrfana12	N	N/A
Circuit A Fan #13 Hours		hours	hrfana13	N	N/A
Circuit A Fan #14 Hours		hours	hrfana14	N	N/A

See Legend on page 292.

Status/RUNTIME — Run Times (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Circuit B Fan #1 Hours		hours	hrfanb01	N	N/A
Circuit B Fan #2 Hours		hours	hrfanb02	N	N/A
Circuit B Fan #3 Hours		hours	hrfanb03	N	N/A
Circuit B Fan #4 Hours		hours	hrfanb04	N	N/A
Circuit B Fan #5 Hours		hours	hrfanb05	N	N/A
Circuit B Fan #6 Hours		hours	hrfanb06	N	N/A
Circuit B Fan #7 Hours		hours	hrfanb07	N	N/A
Circuit B Fan #8 Hours		hours	hrfanb08	N	N/A
Circuit B Fan #9 Hours		hours	hrfanb09	N	N/A
Circuit B Fan #10 Hours		hours	hrfanb10	N	N/A
Circuit B Fan #11 Hours		hours	hrfanb11	N	N/A
Circuit B Fan #12 Hours		hours	hrfanb12	N	N/A
Circuit B Fan #13 Hours		hours	hrfanb13	N	N/A
Circuit B Fan #14 Hours		hours	hrfanb14	N	N/A

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

See Legend on page 292.

Maintenance\OCCDEFCM\OCCPC01S

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Current Mode	0=Unoccupied 1=Occupied		MODE	N	N/A
Current Occup Period #	1 to 8		PER-NO	N	N/A
Timed-Override in Effect	No/Yes		OVERLAST	N	N/A
Timed-Override Duration	0 to 4	hours	OVR_HRS	N	N/A
Current Occupied Time	00:00 to 23:59		STRTTIME	N	N/A
Current Unoccupied Time	00:00 to 23:59		ENDTIME	N	N/A
Next Occupied Day	Mon to Sun		NXTOCDAY	N	N/A
Next Occupied Time	00:00 to 23:59		NXTOCTIM	N	N/A
Next Unoccupied Day	Mon to Sun		NXTUNDAY	N	N/A
Next Unoccupied Time	00:00 to 23:59		NXTUNTIM	N	N/A
Prev Unoccupied Day	Mon to Sun		PRVUNDAY	N	N/A
Prev Unoccupied Time	00:00 to 23:59		PRVUNTIM	N	N/A

Maintenance\OCCDEFCM\OCCPC02S

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Current Mode	0=Unoccupied 1=Occupied		MODE	N	N/A
Current Occup Period #	1 to 8		PER-NO	N	N/A
Timed-Override in Effect	No/Yes		OVERLAST	N	N/A
Timed-Override Duration	0 to 4	hours	OVR_HRS	N	N/A
Current Occupied Time	00:00 to 23:59		STRTTIME	N	N/A
Current Unoccupied Time	00:00 to 23:59		ENDTIME	N	N/A
Next Occupied Day	Mon to Sun		NXTOCDAY	N	N/A
Next Occupied Time	00:00 to 23:59		NXTOCTIM	N	N/A
Next Unoccupied Day	Mon to Sun		NXTUNDAY	N	N/A
Next Unoccupied Time	00:00 to 23:59		NXTUNTIM	N	N/A
Prev Unoccupied Day	Mon to Sun		PRVUNDAY	N	N/A
Prev Unoccupied Time	00:00 to 23:59		PRVUNTIM	N	N/A

See Legend on page 292.

Maintenance\ALARMRST — Reset Alarms

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Alarm Reset	No/Yes		RST_ALM	Y	N/A
Alarm State	Normal/Alarm		ALM	Y	RW
Current Alarm 1			alarm_1c	N	N/A
Current Alarm 2			alarm_2c	N	N/A
Current Alarm 3			alarm_3c	N	N/A
Current Alarm 4			alarm_4c	N	N/A
Current Alarm 5			alarm_5c	N	N/A
Jbus Current Alarm 1			alarm_1	N	N/A
Jbus Current Alarm 2			alarm_2	N	N/A
Jbus Current Alarm 3			alarm_3	N	N/A
Jbus Current Alarm 4			alarm_4	N	N/A
Jbus Current Alarm 5			alarm_5	N	N/A

Maintenance\CAPACTRL — Capacity control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Controlled Water Temp		°F (°C)	ctrl_wt	N	N/A
Ctrl Water Temp, Deg/Min		°F (°C)	cwt_rate	N	N/A
Current Capacity Limit	0 to 100	%	cap_lim	N	N/A
Wished Comp. Frequency A		Hz	drvcmda	N	N/A
Capa Ctrl State A			capstata	N	N/A
Capa Ctrl State Text A			captxta	N	N/A
Override State A			ovrstata	N	N/A
Override State Text A			ovrtxta	N	N/A
Capa Ctrl Stat Nb A			capmoda	N	N/A
Last Capa Ctrl Stat Nb A			lcapmoda	N	N/A
Override Capacity Nb A			overrida	N	N/A
Estimated Capacity A	0 to 100	%	cap_pc_a	N	N/A
Wished Comp. Frequency B		Hz	drvcmdb	N	N/A
Capa Ctrl State B			capstatb	N	N/A
Capa Ctrl State Text B			captxtb	N	N/A
Override State B			ovrstatb	N	N/A
Override State Text B			ovrtxtb	N	N/A
Capacity Ctrl Stat Nb B			capmodb	N	N/A
Last Capa Ctrl Stat Nb B			lcapmodb	N	N/A

See Legend on page 292.

Maintenance\CAPACTRL — Capacity control (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Override Capacity Nb B			overridb	N	N/A
Estimated Capacity B	0 to 100	%	cap_pc_b	N	N/A
Max Comp. Frequency A		Hz	cMaxFrqA	N	N/A
Max Comp. Frequency B		Hz	cMaxFrqB	N	N/A
Comp. VI Cmd A			viCmdA	N	N/A
Comp. VI Cmd B			viCmdB	N	N/A
Reset Amount		°F (°C)	reset	N	N/A
Circuit Running Number			CirRunNb	N	N/A
State of Circuit A			StatCirA	N	N/A
State of Circuit B			StatCirB	N	N/A
Dual Circuit Master			DualMast	Y	RO
Transfer Spd, add cir		Hz	xSpdHigh	N	N/A
Transfer Spd, remove cir		Hz	xSpdLow	N	N/A
Compressor Start Freq		Hz	cStrtFrq	N	N/A
Compressor Min Frequency		Hz	cMinFrq	N	N/A
DGT A, Deg/min	DGT A, Deg/min	°F (°C)	dgt_dt_a	N	N/A
SST A, Deg/min	SST A, Deg/min	°F (°C)	sst_dt_a	N	N/A
DGT B, Deg/min	DGT B, Deg/min	°F (°C)	dgt_dt_b	N	N/A
SST B, Deg/min	SST B, Deg/min	°F (°C)	sst_dt_b	N	N/A

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	N/A
EXV Eco Pos. (Steps) A		—	eco_stpa	N	N/A
Eco Suction Superheat A		°F (°C)	eco_sh_a	N	N/A
Eco Suction SH Setpt A		°F (°C)	esh_sp_a	N	N/A
EXV Eco State A			eco_sta	N	N/A
EXV Eco Previous State A			eco_lsta	N	N/A
EXV Eco Wished Pos A			ecowposa	N	N/A
EXV Eco Mode A			eco_moda	N	N/A
EXV Eco Mode Txt A			eco_txta	N	N/A
EXV Eco Position Cir B	0 to 100	%	eco_b	N	N/A
EXV Eco Pos. (Steps) B		—	eco_stpb	N	N/A
Eco Suction Superheat B		°F (°C)	eco_sh_b	N	N/A
Eco Suction SH Setpt B		°F (°C)	esh_sp_b	N	N/A
EXV Eco State B			eco_stb	N	N/A
EXV Eco Previous State B			eco_lstb	N	N/A
EXV Eco Wished Pos B			ecowposb	N	N/A
EXV Eco Mode B			eco_modb	N	N/A
EXV Eco Mode Txt B			eco_txtb	N	N/A

See Legend on page 292.

Maintenance\EXV_CTRL — EXV Control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Circuit A					
EXV Override Circuit A			ov_exv_a	N	N/A
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	N/A
Evap ExchangeDT Cir A		°F (°C)	pinch_a	N	N/A
Subcooling Circuit A		°F (°C)	subcoola	N	N/A
Subcooling Setpoint A		°F (°C)	subc_spa	N	N/A
EXV State A			exv_sta	N	N/A
EXV Previous State A			exv_lsta	N	N/A
EXV Wished Position A			exvwposa	N	N/A
EXV Mode A			exv_moda	N	N/A
EXV Mode Text A			exv_txta	N	N/A
Circuit B					
EXV Override Circuit B			ov_exv_b	N	N/A
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	N/A
Evap ExchangeDT Cir B		°F (°C)	pinch_b	N	N/A
Subcooling Circuit B		°F (°C)	subcoolb	N	N/A
Subcooling Setpoint B		°F (°C)	subc_spb	N	N/A
EXV State B			exv_stb	N	N/A
EXV Previous State B			exv_lstb	N	N/A
EXV Wished Position B			exvwposb	N	N/A
EXV Mode B			exv_modb	N	N/A
EXV Mode Text B			exv_txtb	N	N/A

See Legend on page 292.

Maintenance\FAN_CTRL — Fan control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Freq Cir A		Hz	fan_f_a	N	N/A
Fan State A			fan_sta	N	N/A
Fan Previous State A			fan_lsta	N	N/A
Fan Wished Freq A		Hz	wfan_f_a	N	N/A
Fan Mode A			fan_moda	N	N/A
Fan Mode Text A			fan_txta	N	N/A
Fan Tot Pwr Filtered A		kW	ftotpowa	N	N/A
Fan Contactors On A			fcont_a	N	N/A
Fan Freq Cir B		Hz	fan_f_b	N	N/A
Fan State B			fan_stb	N	N/A
Fan Previous State B			fan_lstb	N	N/A
Fan Wished Freq B		Hz	wfan_f_b	N	N/A
Fan Mode B			fan_modb	N	N/A
Fan Mode Text B			fan_txtb	N	N/A
Fan Tot Pwr Filtered B		kW	ftotpowb	N	N/A
Fan Contactors On B			fcont_b	N	N/A

Maintenance\FAN_DRV — Fan Drive Maintenance

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Drive Power A1		kW	fd_pwra1	N	N/A
Fan Drive Amps A1		AMPS	fd_Ia1	N	N/A
Fan Drive Voltage A1		Volts	fd_Va1	N	N/A
Fan Drive Speed A1		rpm	fd_Sa1	N	N/A
Fan Drive Frequency A1		Hz	fd_Fa1	N	N/A
Fan Drive Torque A1			fd_Ta1	N	N/A
Fan Drv DC Link Volt A1		Volts	fd_DCVa1	N	N/A
Fan Drive Heat Sink T A1		°F (°C)	fd_HSTa1	N	N/A
Fan Drive Ctrl Card T A1		°F (°C)	fd_CCTa1	N	N/A
Fan Drive Power A2		kW	fd_pwra2	N	N/A
Fan Drive Amps A2		AMPS	fd_Ia2	N	N/A
Fan Drive Voltage A2		Volts	fd_Va2	N	N/A
Fan Drive Speed A2		rpm	fd_Sa2	N	N/A
Fan Drive Frequency A2		Hz	fd_Fa2	N	N/A
Fan Drive Torque A2			fd_Ta2	N	N/A
Fan Drv DC Link Volt A2		Volts	fd_DCVa2	N	N/A
Fan Drive Heat Sink T A2		°F (°C)	fd_HSTa2	N	N/A

See Legend on page 292.

Maintenance\FAN_DRV — Fan Drive Maintenance (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Fan Drive Ctrl Card T A2		°F (°C)	fd_CCTa2	N	N/A
Fan Drive Power A3		kW	fd_pwra3	N	N/A
Fan Drive Amps A3		AMPS	fd_Ia3	N	N/A
Fan Drive Voltage A3		Volts	fd_Va3	N	N/A
Fan Drive Speed A3		rpm	fd_Sa3	N	N/A
Fan Drive Frequency A3		Hz	fd_Fa3	N	N/A
Fan Drive Torque A3			fd_Ta3	N	N/A
Fan Drv DC Link Volt A3		Volts	fd_DCVa3	N	N/A
Fan Drive Heat Sink T A3		°F (°C)	fd_HSTa3	N	N/A
Fan Drive Ctrl Card T A3		°F (°C)	fd_CCTa3	N	N/A
Fan Drive Power B1		kW	fd_pwrb1	N	N/A
Fan Drive Amps B1		AMPS	fd_Ib1	N	N/A
Fan Drive Voltage B1		Volts	fd_Vb1	N	N/A
Fan Drive Speed B1		rpm	fd_Sb1	N	N/A
Fan Drive Frequency B1		Hz	fd_Fb1	N	N/A
Fan Drive Torque B1			fd_Tb1	N	N/A
Fan Drv DC Link Volt B1		Volts	fd_DCVb1	N	N/A
Fan Drive Heat Sink T B1		°F (°C)	fd_HSTb1	N	N/A
Fan Drive Ctrl Card T B1		°F (°C)	fd_CCTb1	N	N/A
Fan Drive Power B2		kW	fd_pwrb2	N	N/A
Fan Drive Amps B2		AMPS	fd_Ib2	N	N/A
Fan Drive Voltage B2		Volts	fd_Vb2	N	N/A
Fan Drive Speed B2		rpm	fd_Sb2	N	N/A
Fan Drive Frequency B2		Hz	fd_Fb2	N	N/A
Fan Drive Torque B2			fd_Tb2	N	N/A
Fan Drv DC Link Volt B2		Volts	fd_DCVb2	N	N/A
Fan Drive Heat Sink T B2		°F (°C)	fd_HSTb2	N	N/A
Fan Drive Ctrl Card T B2		°F (°C)	fd_CCTb2	N	N/A
Fan Drive Power B3		kW	fd_pwrb3	N	N/A
Fan Drive Amps B3		AMPS	fd_Ib3	N	N/A
Fan Drive Voltage B3		Volts	fd_Vb3	N	N/A
Fan Drive Speed B3		rpm	fd_Sb3	N	N/A
Fan Drive Frequency B3		Hz	fd_Fb3	N	N/A
Fan Drive Heat Sink T B3		°F (°C)	fd_HSTb3	N	N/A
Fan Drive Ctrl Card T B3		°F (°C)	fd_CCTb3	N	N/A
Fan Drive Torque B3			fd_Tb3	N	N/A
Fan Drv DC Link Volt B3		Volts	fd_DCVb3	N	N/A
Total Fan Drive Power		kW	fd_pwr	N	N/A

See Legend on page 292.

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	N/A
Comm Fan Drive A2 Ok	No/Yes		FD_COMA2	N	N/A
Comm Fan Drive A3 Ok	No/Yes		FD_COMA3	N	N/A
Comm Fan Drive B1 Ok	No/Yes		FD_COMB1	N	N/A
Comm Fan Drive B2 Ok	No/Yes		FD_COMB2	N	N/A
Comm Fan Drive B3 Ok	No/Yes		FD_COMB3	N	N/A
Stop Cir A Fan Drive	No/Yes		stopfana	N	N/A
Stop Cir B Fan Drive	No/Yes		stopfanb	N	N/A
Force Fan Drv A1 Config	No/Yes		CnfgFDA1	N	N/A
Force Fan Drv A2 Config	No/Yes		CnfgFDA2	N	N/A
Force Fan Drv A3 Config	No/Yes		CnfgFDA3	N	N/A
Force Fan Drv B1 Config	No/Yes		CnfgFDB1	N	N/A
Force Fan Drv B2 Config	No/Yes		CnfgFDB2	N	N/A
Force Fan Drv B3 Config	No/Yes		CnfgFDB3	N	N/A

Maintenance\LAST_POR — Last PowerOn reset

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Power On 1 :day-mon-year			date_on1	N	N/A
Power On 1 :hour-minute			time_on1	N	N/A
PowerDown 1:day-mon-year			date_of1	N	N/A
PowerDown 1:hour-minute			time_of1	N	N/A
Power On 2 :day-mon-year			date_on2	N	N/A
Power On 2 :hour-minute			time_on2	N	N/A
PowerDown 2:day-mon-year			date_of2	N	N/A
PowerDown 2:hour-minute			time_of2	N	N/A
Power On 3 :day-mon-year			date_on3	N	N/A
Power On 3 :hour-minute			time_on3	N	N/A
PowerDown 3:day-mon-year			date_of3	N	N/A

See Legend on page 292.

Maintenance\LAST_POR — Last PowerOn reset (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
PowerDown 3:hour-minute			time_of3	N	N/A
Power On 4 :day-mon-year			date_on4	N	N/A
Power On 4 :hour-minute			time_on4	N	N/A
PowerDown 4:day-mon-year			date_of4	N	N/A
PowerDown 4:hour-minute			time_of4	N	N/A
Power On 5 :day-mon-year			date_on5	N	N/A
Power On 5 :hour-minute			time_on5	N	N/A
PowerDown 5:day-mon-year			date_of5	N	N/A
PowerDown 5:hour-minute			time_of5	N	N/A

Maintenance\LIMITS — Control Limits

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
EXV_dsh_act A		°F (°C)	dshacta	N	N/A
EXV_dsh_stp A		°F (°C)	dshstpa	N	N/A
EXV_lsp_act A		psi (kPa)	elspacta	N	N/A
EXV_lsp_stp A		psi (kPa)	elspstpa	N	N/A
ENV comp high dp act A		psi (kPa)	chdpacta	N	N/A
ENV comp high dp stp A		psi (kPa)	chdpstpa	N	N/A
ENV fan high dp act A		psi (kPa)	fhdpacta	N	N/A
ENV fan high dp stp A		psi (kPa)	fhdpstpa	N	N/A
ENV low dp act A		psi (kPa)	ldpacta	N	N/A
ENV low dp stp A		psi (kPa)	ldpstpa	N	N/A
ENV high sp act A		psi (kPa)	hspacta	N	N/A
ENV high sp stp A		psi (kPa)	hspstpa	N	N/A
ENV low sp act A		psi (kPa)	lspacta	N	N/A
ENV low sp stp A		psi (kPa)	lspstpa	N	N/A
ENV low sp delta A		psi (kPa)	lspdcpa	N	N/A
dgt act A		°F (°C)	dgtacta	N	N/A
dgt stp A		°F (°C)	dgtstpa	N	N/A
EXV_dsh_act B		°F (°C)	dshactb	N	N/A
EXV_dsh_stp B		°F (°C)	dshstpb	N	N/A
EXV_lsp_act B		psi (kPa)	elspactb	N	N/A
EXV_lsp_stp B		psi (kPa)	elspstpb	N	N/A
ENV comp high dp act B		psi (kPa)	chdpactb	N	N/A
ENV comp high dp stp B		psi (kPa)	chdpstpb	N	N/A
ENV fan high dp act B		psi (kPa)	fhdpactb	N	N/A

See Legend on page 292.

APPENDIX B — CCN POINT TABLE (cont)

Maintenance\LIMITS — Control Limits (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
ENV fan high dp stp B		psi (kPa)	fhdpstpb	N	N/A
ENV low dp act B		psi (kPa)	ldpactb	N	N/A
ENV low dp stp B		psi (kPa)	ldpstpb	N	N/A
ENV high sp act B		psi (kPa)	hspactb	N	N/A
ENV high sp stp B		psi (kPa)	hspstpb	N	N/A
ENV low sp act B		psi (kPa)	lspactb	N	N/A
ENV low sp stp B		psi (kPa)	lspstpb	N	N/A
ENV low sp delta B		kPa	lspdcpb	N	N/A
dgt_act B		°F (°C)	dgtactb	N	N/A
dgt_stp B		°F (°C)	dgtstpb	N	N/A
Cmp Env Min SST A		°F (°C)	sstMinA	N	N/A
Cmp Env Max SST A		°F (°C)	sstMaxA	N	N/A
Cmp Env Min SDT A		°F (°C)	sdtMinA	N	N/A
Cmp Env Max SDT A		°F (°C)	sdtMaxA	N	N/A
Cmp Env Min SST B		°F (°C)	sstMinB	N	N/A
Cmp Env Max SST B		°F (°C)	sstMaxB	N	N/A
Cmp Env Min SDT B		°F (°C)	sdtMinB	N	N/A
Cmp Env Max SDT B		°F (°C)	sdtMaxB	N	N/A
Max Compressor Rate			maxinc	N	N/A

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	N/A
Master Control Type	1=Local 2=Remote 3=CCN		ms_ctrl	N	N/A
				N	N/A
				N	N/A
Master/Slave Ctrl Active	FALSE/TRUE		ms_activ	N	N/A
Lead Unit is the:	Master/Slave		lead_sel	N	N/A
Slave Chiller State			slv_stat	N	N/A
Slave Chiller Total Cap	0 to 100	%	slv_capt	N	N/A
Lag Start Delay		min	l_strt_d	N	N/A
Lead/lag Hours Delta		hours	ll_hr_d	N	N/A
Lead/lag Changeover	No/Yes		ll_chang	N	N/A
Lead Pulldown	No/Yes		ll_pull	N	N/A
Master/Slave Error			ms_error	N	N/A

See Legend on page 292.

Maintenance\M_MSTSLV — Master Slave Control

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Max Available Capacity	No/Yes		cap_max	N	N/A
Slave lagstat			lagstat	N	N/A
Slave Operating Hours		hours	slav_hr	N	N/A
Slave Evap Ent. Fluid		°F (°C)	slav_ewt	N	N/A
Slave Evap Leav. Fluid		°F (°C)	slav_lwt	N	N/A

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

See Legend on page 292.

Maintenance\QCK_TEST — Quick Test (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
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

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	N/A
Cir A Drive Speed		rpm	drv_Sa	N	N/A
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

See Legend on page 292.

Maintenance\TBLSHT — Troubleshoot (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
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	N/A
Cir B Drive Speed		rpm	drv_Sb	N	N/A
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	N/A
Comm with Cmp VFD B Ok		—	VLT_COMB	Y	N/A
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 292.

Maintenance\VLT_DRV — VLT Drive Maintenance

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Cir A Drive Power		kW	drv_pwra	N	N/A
Cir A Drive Power %		%	drv_pwPa	N	N/A
Cir A Drive Amps		A	drv_Ia	N	N/A
Comp A Amperage %		%	drv_IPa	N	N/A
Cir A Drive Voltage		V	drv_Va	N	N/A
Comp A Line voltage %		%	drv_VPa	N	N/A
Cir A Drive Speed		rpm	drv_Sa	N	N/A
Comp A Speed%		%	drv_SPa	N	N/A
Cir A Drive Frequency		Hz	drv_Fa	N	N/A
Comp A Frequency %		%	drv_FPa	N	N/A
Cir A Drive Torque		—	drv_Ta	N	N/A
Circ A Drive Torque %		%	drv_TPa	N	N/A
Cir A Drive DC Link Volt		V	drv_DCVa	N	N/A
Comp A DC Link Voltage %		%	drv_DCPa	N	N/A
Cir A Drive Heat Sink T		°F (°C)	drv_HSTa	N	N/A
Comp A Heat Sink Temp %		%	drv_HSPa	N	N/A
Cir A Drive Ctrl Card T		°F (°C)	drv_CCTa	N	N/A
Cir A Drive Heater		—	drv_HTRa	N	N/A
Cir B Drive Power		kW	drv_pwrb	N	N/A
Cir B Drive Power %		%	drv_pwPb	N	N/A
Cir B Drive Amps		A	drv_Ib	N	N/A
Comp B Amperage %		%	drv_IPb	N	N/A
Cir B Drive Voltage		V	drv_Vb	N	N/A
Comp B Line voltage %		%	drv_VPb	N	N/A
Cir B Drive Speed		rpm	drv_Sb	N	N/A
Comp B Speed%		%	drv_SPb	N	N/A
Cir B Drive Frequency		Hz	drv_Fb	N	N/A
Comp B Frequency %		%	drv_FPb	N	N/A
Cir B Drive Torque		—	drv_Tb	N	N/A
Circ B Drive Torque %		%	drv_TPb	N	N/A
Cir B Drive DC Link Volt		V	drv_DCVb	N	N/A
Total Comp Drive Power		kW	drv_pwr	N	N/A
Comp B DC Link Voltage %		%	drv_DCPb	N	N/A
Cir B Drive Heat Sink T		°F (°C)	drv_HSTb	N	N/A
Comp B Heat Sink Temp %		%	drv_HSPb	N	N/A
Cir B Drive Ctrl Card T		°F (°C)	drv_CCTb	N	N/A
Cir B Drive Heater		—	drv_HTRb	N	N/A
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	N/A
Comm with Drive B Ok	No/Yes	—	VLT_COMB	N	N/A
Force Comp Drv A Config	No/Yes	—	CnfgDrva	N	N/A
Force Comp Drv B Config	No/Yes	—	CnfgDrvb	N	N/A

See Legend on page 292.

Configuration/ALARMDEF/ALARMS01

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Alarm Routing Control			ALRM_CNT	N	N/A
Alarm Equipment Priority			EQP_TYP	N	N/A
Comm Failure Retry Time		min	RETRY_TM	N	N/A
Realarm Time		min	RE_ALARM	N	N/A
Alarm System Name	ALM_30XV		ALRM_NAM	N	N/A

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	N/A
OAT Broadcast				N	N/A
Bus #	Range: 0 to 239 Default: 0		oatbusnm	N	N/A
Element #	Range: 0 to 239 Default: 0		oatlocad	N	N/A
				N	N/A
DAYLIGHT SAVINGS SELECT	Disable/Enable		dayl_sel	N	N/A
ENTERING				N	N/A
Month	Range: 1 to 12 Default: 3		startmon	N	N/A
				N	N/A
Day of Week (1=Monday)	Range: 1 to 7 Default: 7		startdow	N	N/A
				N	N/A
Week Number of Month	Range: 1 to 5 Default: 5		startwom	N	N/A
				N	N/A
LEAVING				N	N/A
Month	Range: 1 to 12 Default: 10		stopmon	N	N/A
				N	N/A
Day of Week (1=Monday)	Range: 1 to 7 Default: 7		stopdow	N	N/A
				N	N/A
Week Number of Month	Range: 1 to 5 Default: 5		stopwom	N	N/A
				N	N/A

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	N/A
Start Day	Range: 0 to 31 Default: 0		HOL-DAY	N	N/A
Duration (days)	Range: 0 to 99 Default: 0		HOL-LEN	N	N/A

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	N/A
Period 1 DOW (MTWTFSSH)			DOW1	N	N/A
Occupied from	NN:NN		OCCTOD1	N	N/A
Occupied to	NN:NN		UNOCTOD1	N	N/A
Period 2 DOW (MTWTFSSH)			DOW2	N	N/A

See Legend on page 292.

Configuration/OCCDEFCS/OCCPC0nS (n = 1,2) (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Occupied from	NN:NN		OCCTOD2	N	N/A
Occupied to	NN:NN		UNOCTOD2	N	N/A
Period 3 DOW (MTWTFSSH)			DOW3	N	N/A
Occupied from	NN:NN		OCCTOD3	N	N/A
Occupied to	NN:NN		UNOCTOD3	N	N/A
Period 4 DOW (MTWTFSSH)			DOW4	N	N/A
Occupied from	NN:NN		OCCTOD4	N	N/A
Occupied to	NN:NN		UNOCTOD4	N	N/A
Period 5 DOW (MTWTFSSH)			DOW5	N	N/A
Occupied from	NN:NN		OCCTOD5	N	N/A
Occupied to	NN:NN		UNOCTOD5	N	N/A
Period 6 DOW (MTWTFSSH)			DOW6	N	N/A
Occupied from	NN:NN		OCCTOD6	N	N/A
Occupied to	NN:NN		UNOCTOD6	N	N/A
Period 7 DOW (MTWTFSSH)			DOW7	N	N/A
Occupied from	NN:NN		OCCTOD7	N	N/A
Occupied to	NN:NN		UNOCTOD7	N	N/A
Period 8 DOW (MTWTFSSH)			DOW8	N	N/A
Occupied from	NN:NN		OCCTOD8	N	N/A
Occupied to	NN:NN		UNOCTOD8	N	N/A

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 N N	N/A N/A N/A
Ramp Loading Enable	No/Yes		ramp_sel	N	N/A
Unit Off to On Delay		min	off_on_d	N	N/A
Demand Limit Type Select	0=None 1=Switch Control 2=4 to 20mA Control		lim_sel	N N N	N/A N/A N/A
Night Mode Start Hour	NN:NN		nh_start	N	N/A
Night Mode End Hour	NN:NN		nh_end	N	N/A
Night Capacity Limit	0 to 100	%	nh_limit	N	N/A
Ice Mode Enable	No/Yes		ice_cnfg	N	N/A
Short Cycle Management	No/Yes		shortcyc	N	N/A

See Legend on page 292.

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	N/A
Pump Auto Rotation Delay	Range: 24 to 3000 Default: 48	hours	pump_del	N	N/A
				N	N/A
Pump Sticking Protection	No/Yes		pump_per	N	N/A
Flow Checked If Pump Off	No/Yes		pump_loc	N	N/A

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	N/A
Cooling				N	N/A
OAT No Reset Value		°F (°C)	oat_crno	N	N/A
OAT Full Reset Value		°F (°C)	oat_crfu	N	N/A
Delta T No Reset Value		°F (°C)	dt_cr_no	N	N/A
Delta T Full Reset Value		°F (°C)	dt_cr_fu	N	N/A
Current No Reset Value		mA	v_cr_no	N	N/A
Current Full Reset Value		mA	v_cr_fu	N	N/A
Space T No Reset Value		°F (°C)	spacr_no	N	N/A
Space T Full Reset Value		°F (°C)	spacr_fu	N	N/A
Cooling Reset Deg. Value		°F (°C)	cr_deg	N	N/A

Configuration/USER

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
User Password	1111=User		use_pass	N	N/A

Service\BACNET

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
BACnet Enable	Disabel/Enable		bacena	N	N/A
Metric Unit	No/Yes		bacunit	N	N/A
Network	Range: 1 to 9999 Default: 1601		network	N	N/A
Identifier	Range: 0 to 9999999 Default: 1600001		ident	N	N/A
BACnet Management Device	0=None 1=FD(Foreign Device) 2=BBMD(BACnet Broadcast Management Device)		bbmd	N	N/A

See Legend on page 292.

Service\CP_ENABL

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
DISABLE COMPRESSORS					
Compressor A Disable	No/Yes		en_cp_a	N	N/A
Compressor B Disable	No/Yes		en_cp_b	N	N/A

Service\EMAILCFG

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Sender Email Part1			senderP1	N	N/A
@					
Sender Email Part2			senderP2	N	N/A
Recip1 Email Part1			recip1P1	N	N/A
@					
Recip1 Email Part2			recip1P2	N	N/A
Recip2 Email Part1			recip2P1	N	N/A
@					
Recip2 Email Part2			recip2P2	N	N/A
SMTP IP Addr Part 1			smtpP1	N	N/A
SMTP IP Addr Part 2			smtpP2	N	N/A
SMTP IP Addr Part 3			smtpP3	N	N/A
SMTP IP Addr Part 4			smtpP4	N	N/A
Account Email Part1			accP1	N	N/A
@					
Account Email Part2			accP2	N	N/A
Account Password			accPass	N	N/A
Port Number			portNbr	N	N/A
Server Timeout		sec	srvTim	N	N/A
Server Authentication			srvAut	N	N/A

See Legend on page 292.

Service\FACTORY

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Unit Capacity			unitsize	N	N/A
Power Supply Voltage			voltage	N	N/A
60Hz Sel (No=50, Yes=60)	NO_YES	—	freq_60H	N	N/A
Tier	0=STD 1=MID 2=HI		mfg_tier	N	N/A
DX Evaporator Installed	No/Yes		dxcooler	N	N/A
Evap Pass Number	1 to 3		cpass_nb	N	N/A
Evap Heater Installed	No/Yes		heat_sel	N	N/A
Master Slave Setup	No/Yes		mst_slv	N	N/A
Energy Management Module	No/Yes		emm_nrcp	N	N/A
Low Ambient Option (STD)	No/Yes		loambopt	N	N/A
Leakage Charge Detection	No/Yes		leak_chk	N	N/A
Factory Password	113		fac_pass	N	N/A
Enable Max Frequency A	No/Yes		fMaxEnA	N	N/A
Enable Max Frequency B	No/Yes		fMaxEnB	N	N/A
Max Frequency Override A		Hz	fMaxOvrA	N	N/A
Max Frequency Override B		Hz	fMaxOvrB	N	N/A
Fan Freq Factor(0.7-1.1)	Range: 0.7 to 1.1 Default: 1.0		fan_fact	N	N/A
Min Frequency Override		Hz	fMinOvr	N	N/A
Low Amb. Start Spd A	26 to 60	Hz	lastspda	N	N/A
Low Amb. Start Spd B	26 to 60	Hz	lastspdb	N	N/A

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	N/A
EXV B Maximum Steps Numb	Range: 0 to 10000 Default: 0		exvmax_b	N	N/A
Economizer A Steps Numb	Range: 0 to 15000 Default: 0		eco_cnfa	N	N/A
Economizer B Steps Numb	Range: 0 to 15000 Default: 0		eco_cnfb	N	N/A
Nb VFD compressor	Range: 0 to 2 Default: 0		vfd_cmp	N	N/A
Nb Fan Drive cir A	Range: 0 to 3 Default: 0		vfd_fana	N	N/A
Nb Fan Drive cir B	Range: 0 to 3 Default: 0		vfd_fanb	N	N/A

See Legend on page 292.

APPENDIX B — CCN POINT TABLE (cont)

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	N/A
Master Control Type	1=Local Control 2=Remote Control 3=CCN Control		ms_ctrl	N	N/A
Slave Address			slv_addr	N	N/A
Lead Lag Select	0=Always Lead 1=Lag Once Failed Only 2=Lead/Lag Runtime Sel		lead_sel	N	N/A
Lead/Lag Balance Delta		hours	ll_bal_d	N	N/A
Lead/Lag Start Timer		min	lstr_tim	N	N/A
Lead Pulldown Time		min	lead_pul	N	N/A
Start If Error Higher		°F (°C)	start_dt	N	N/A
Lag Minimum Running Time		min	lag_mini	N	N/A
Lag Unit Pump Control	0=Stop if Unit Stops 1=Run if unit Stops		lag_pump	N	N/A
Chiller In Series	No/Yes		ll_serie	N	N/A

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	N/A
Entering Fluid Control	No/Yes		ewt_opt	N	N/A
Brine Freeze Setpoint	Range: -20 to 34 Default: 34	°F (°C)	freezesp	N	N/A
Brine Minimum Fluid Temp	Range: -20 to 38 Default: 38	°F (°C)	mini_lwt	N	N/A
Fast Capacity Recovery	0=Disabled 1=Quickstart Load 2=Fast Capacity Recovery		fastcapr	N	N/A
EWT Probe on Cir A Side	No/Yes		ewt_cirA	N	N/A
Service Password	Range: 0 to 9999 Default: 88		ser_pass	N	N/A
Leakage Charge Threshold	Range: 0 to 10 Default: 2.5	Volts	leak_thr	N	N/A
Leakage Charge Timer	Range: 0 to 600 Default: 60	min	leak_tmr	N	N/A
Compressor RFI Filter En	Off/On		RFI_conf	N	N/A
Metric Units? (Blackbox)	No/Yes		metric	N	N/A
Send fan drive config?	No/Yes		fdrv_cfg	N	N/A

See Legend on page 292.

Service\SERVICE1 (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Send comp. drive config?	No/Yes		cdrv_cfg	N	N/A
Evap Heater Delta Spt	Range: 0 to 6 Default: 2		heatersp	N	N/A
Freeze Override Offset	Range: 0 to 5.8 Default: 0	°F (°C)	freez_ov	N	N/A
Auto Start When SM Lost	Disable/Enable		auto_sm	N	N/A
VI Self-Test Threshold	Range: 0.5 to 15 Default: 1.15	kW	ViPwrChk	N	N/A
VI Self-Test Enable	Off/On		ViChkEn	N	N/A
Pump Rot. AntiFrz Protec	Off/On		AntiFrz	N	N/A
Oil Delta Trigger Speed	Range: 0 to 15 Default: 5	Hz	odtrspd	N	N/A
Oil Trigger Time	Range: 1800 to 7200 Default: 3600	sec	otrigtim	N	N/A
Oil Delta Recover Speed	Range: 0 to 15 Default: 5	Hz	odrecspd	N	N/A
Oil Recover Time	Range: 30 to 120 Default: 60	sec	orectim	N	N/A
Water Temp Hysteresis	0.9 to 10 Default: 0.9	V	wateesys	N	N/A
High VI Time at Start	0 to 3600 Default: 900	TONS/H	vistrtdt	N	N/A
Enable High VI at Start	NO/YES	TONS/H	vistrten	N	N/A
Approach Ctrl at Start?	NO/YES	A	apr_en	N	N/A

Service\UPDTHOUR

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Machine Operating Hours		hours	hr_mach	N	N/A
Machine Starts Number			st_mach	N	N/A
Compressor A Hours		hours	hr_cp_a	N	N/A
Compressor A Starts			st_cp_a	N	N/A
Compressor B Hours		hours	hr_cp_b	N	N/A
Compressor B Starts			st_cp_b	N	N/A
Evap Pump #1 Hours		hours	hr_cpum1	N	N/A
Evap Pump #2 Hours		hours	hr_cpum2	N	N/A
VI Cycle Count A		Cycles	VIctA	N	N/A
VI Cycle Count B		Cycles	VIctB	N	N/A
Circuit A Fan #1 Hours		hours	hrfana01	N	N/A
Circuit A Fan #2 Hours		hours	hrfana02	N	N/A

See Legend on page 292.

Service\UPDTHOUR (cont)

DESCRIPTION	VALUE	UNITS	POINT NAME	TRANSLATOR ACCESSIBLE	NETWORK ACCESS
Circuit A Fan #3 Hours		hours	hrfana03	N	N/A
Circuit A Fan #4 Hours		hours	hrfana04	N	N/A
Circuit A Fan #5 Hours		hours	hrfana05	N	N/A
Circuit A Fan #6 Hours		hours	hrfana06	N	N/A
Circuit A Fan #7 Hours		hours	hrfana07	N	N/A
Circuit A Fan #8 Hours		hours	hrfana08	N	N/A
Circuit A Fan #9 Hours		hours	hrfana09	N	N/A
Circuit A Fan #10 Hours		hours	hrfana10	N	N/A
Circuit A Fan #11 Hours		hours	hrfana11	N	N/A
Circuit A Fan #12 Hours		hours	hrfana12	N	N/A
Circuit A Fan #13 Hours		hours	hrfana13	N	N/A
Circuit A Fan #14 Hours		hours	hrfana14	N	N/A
Circuit B Fan #1 Hours		hours	hrfanb01	N	N/A
Circuit B Fan #2 Hours		hours	hrfanb02	N	N/A
Circuit B Fan #3 Hours		hours	hrfanb03	N	N/A
Circuit B Fan #4 Hours		hours	hrfanb04	N	N/A
Circuit B Fan #5 Hours		hours	hrfanb05	N	N/A
Circuit B Fan #6 Hours		hours	hrfanb06	N	N/A
Circuit B Fan #7 Hours		hours	hrfanb07	N	N/A
Circuit B Fan #8 Hours		hours	hrfanb08	N	N/A
Circuit B Fan #9 Hours		hours	hrfanb09	N	N/A
Circuit B Fan #10 Hours		hours	hrfanb10	N	N/A
Circuit B Fan #11 Hours		hours	hrfanb11	N	N/A
Circuit B Fan #12 Hours		hours	hrfanb12	N	N/A
Circuit B Fan #13 Hours		hours	hrfanb13	N	N/A
Circuit B Fan #14 Hours		hours	hrfanb14	N	N/A

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	N/A
Cooling Setpoint 2	Range: –20 to 78.8 (–28.9 to 26) Default: 44	°F (°C)	csp2	N	N/A
Cooling Ice Setpoint	Range: –20 to 78.8 (–28.9 to 26) Default: 44	°F (°C)	ice_sp	N	N/A
Cooling Ramp Loading	Range: 0.2 to 20 Default: 1	°F (°C)	cramp_sp	N	N/A
Switch Limit Setpoint 1	Range: 0 to 100 Default: 100	%	lim_sp1	N	N/A
Switch Limit Setpoint 2	Range: 0 to 100 Default: 100	%	lim_sp2	N	N/A
Switch Limit Setpoint 3	Range: 0 to 100 Default: 100	%	lim_sp3	N	N/A

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	4-20mA 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
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TS — Time Schedule

APPENDIX E — BACNET IP POINTS

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
ALARMRST_alarm_1	AV	110	IR	RO	Jbus Current Alarm 1
ALARMRST_alarm_2	AV	111	IR	RO	Jbus Current Alarm 2
ALARMRST_alarm_3	AV	112	IR	RO	Jbus Current Alarm 3
ALARMRST_alarm_4	AV	113	IR	RO	Jbus Current Alarm 4
ALARMRST_alarm_5	AV	114	IR	RO	Jbus Current Alarm 5
ALARMRST_ALM	AV	109		RO	Alarm State
ALARMRST_RST_ALM	BV	72		RO	Alarm Reset
ALM_AUX1_1_COM_F	BV	157	IR	RO	AUX1_1_COM_F
ALM_AUX1_2_COM_F	BV	158	IR	RO	AUX1_2_COM_F
ALM_AUX1_3_COM_F	BV	159	IR	RO	AUX1_3_COM_F
ALM_AUX1_4_COM_F	BV	160	IR	RO	AUX1_4_COM_F
ALM_CCN_EMSTOP_F	BV	186	IR	RO	CCN_EMSTOP_F
ALM_CHWSTEMP_F	BV	133	IR	RO	CHWSTEMP_F
ALM_COOL_EWT_F	BV	130	IR	RO	COOL_EWT_F
ALM_COOL_LWT_F	BV	131	IR	RO	COOL_LWT_F
ALM_COOL_PUMP1_F	BV	187	IR	RO	COOL_PUMP1_F
ALM_COOL_PUMP2_F	BV	188	IR	RO	COOL_PUMP2_F
ALM_COOLER_FLOW_F	BV	196	IR	RO	COOLER_FLOW_F
ALM_COOLER_FREEZE_F	BV	170	IR	RO	COOLER_FREEZE_F
ALM_CP_TMP_A_F	BV	140	IR	RO	CP_TMP_A_F
ALM_CP_TMP_B_F	BV	141	IR	RO	CP_TMP_B_F
ALM_DATABASE_F	BV	220	IR	RO	DATABASE_F
ALM_DGT_A_T_F	BV	136	IR	RO	DGT_A_T_F
ALM_DGT_B_T_F	BV	137	IR	RO	DGT_B_T_F
ALM_DP_A_F	BV	145	IR	RO	DP_A_F
ALM_DP_B_F	BV	146	IR	RO	DP_B_F
ALM_ECO_P_A_F	BV	151	IR	RO	ECO_P_A_F
ALM_ECO_P_B_F	BV	152	IR	RO	ECO_P_B_F
ALM_ECO_T_A_F	BV	142	IR	RO	ECO_T_A_F
ALM_ECO_T_B_F	BV	143	IR	RO	ECO_T_B_F
ALM_EMM_BRD_COM_F	BV	161	IR	RO	EMM_BOARD_COM_F
ALM_FAN_DRIVE_A1_ALERT	BV	210	IR	RO	FAN_DRIVE_A1_ALERT
ALM_FAN_DRIVE_A1_F	BV	202	IR	RO	FAN_DRIVE_A1_F
ALM_FAN_DRIVE_A2_ALERT	BV	211	IR	RO	FAN_DRIVE_A2_ALERT
ALM_FAN_DRIVE_A2_F	BV	203	IR	RO	FAN_DRIVE_A2_F
ALM_FAN_DRIVE_A3_ALERT	BV	212	IR	RO	FAN_DRIVE_A3_ALERT
ALM_FAN_DRIVE_A3_F	BV	204	IR	RO	FAN_DRIVE_A3_F
ALM_FAN_DRIVE_B1_ALERT	BV	213	IR	RO	FAN_DRIVE_B1_ALERT
ALM_FAN_DRIVE_B1_F	BV	205	IR	RO	FAN_DRIVE_B1_F
ALM_FAN_DRIVE_B2_ALERT	BV	214	IR	RO	FAN_DRIVE_B2_ALERT
ALM_FAN_DRIVE_B2_F	BV	206	IR	RO	FAN_DRIVE_B2_F
ALM_FAN_DRIVE_B3_ALERT	BV	215	IR	RO	FAN_DRIVE_B3_ALERT
ALM_FAN_DRIVE_B3_F	BV	207	IR	RO	FAN_DRIVE_B3_F
ALM_FAN_DRIVEA1_COM_F	BV	164	IR	RO	FAN_DRIVEA1_COM_F
ALM_FAN_DRIVEA2_COM_F	BV	165	IR	RO	FAN_DRIVEA2_COM_F
ALM_FAN_DRIVEA3_COM_F	BV	166	IR	RO	FAN_DRIVEA3_COM_F
ALM_FAN_DRIVEB1_COM_F	BV	167	IR	RO	FAN_DRIVEB1_COM_F
ALM_FAN_DRIVEB2_COM_F	BV	168	IR	RO	FAN_DRIVEB2_COM_F

LEGEND

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
ALM_FAN_DRIVEB3_COM_F	BV	169	IR	RO	FAN_DRIVEB3_COM_F
ALM_HIGH_CP_TMP_A_F	BV	216	IR	RO	HIGH_CP_TMP_A_F
ALM_HIGH_CP_TMP_B_F	BV	217	IR	RO	HIGH_CP_TMP_B_F
ALM_HIGH_DGT_A_F	BV	192	IR	RO	HIGH_DGT_A_F
ALM_HIGH_DGT_B_F	BV	193	IR	RO	HIGH_DGT_B_F
ALM_HP_SWITCH_A_F	BV	218	IR	RO	HP_SWITCH_A_F
ALM_HP_SWITCH_B_F	BV	219	IR	RO	HP_SWITCH_B_F
ALM_ILL_FACT_CONF_F	BV	185	IR	RO	ILL_FACT_CONF_F
ALM_INI_FACT_CONF_F	BV	184	IR	RO	INI_FACT_CONF_F
ALM_LENSCAN_F	BV	221	IR	RO	LENSCAN_F
ALM_LIQUID_P_A_F	BV	153	IR	RO	LIQUID_P_A_F
ALM_LIQUID_P_B_F	BV	154	IR	RO	LIQUID_P_B_F
ALM_LIQUID_T_A_F	BV	138	IR	RO	LIQUID_T_A_F
ALM_LIQUID_T_B_F	BV	139	IR	RO	LIQUID_T_B_F
ALM_LOCK_F	BV	173	IR	RO	LOCK_F
ALM_LOSS_COM_MS_F	BV	174	IR	RO	LOSS_COM_MS_F
ALM_LOW_OIL_A_P_F	BV	175	IR	RO	LOW_OIL_A_P_F
ALM_LOW_OIL_B_P_F	BV	176	IR	RO	LOW_OIL_B_P_F
ALM_LOW_OIL_LEVEL_A_F	BV	181	IR	RO	LOW_OIL_LEVEL_A_F
ALM_LOW_OIL_LEVEL_B_F	BV	182	IR	RO	LOW_OIL_LEVEL_B_F
ALM_LOW_SUCTION_A_F	BV	171	IR	RO	LOW_SUCTION_A_F
ALM_LOW_SUCTION_B_F	BV	172	IR	RO	LOW_SUCTION_B_F
ALM_M_S_CONFIG_F	BV	183	IR	RO	M_S_CONFIG_F
ALM_OAT_F	BV	132	IR	RO	OAT_F
ALM_OIL_DROP_A_P_F	BV	179	IR	RO	OIL_DROP_A_P_F
ALM_OIL_DROP_B_P_F	BV	180	IR	RO	OIL_DROP_B_P_F
ALM_OIL_FILT_A_P_F	BV	177	IR	RO	OIL_FILT_A_P_F
ALM_OIL_FILT_B_P_F	BV	178	IR	RO	OIL_FILT_B_P_F
ALM_OIL_P_A_F	BV	149	IR	RO	OIL_P_A_F
ALM_OIL_P_B_F	BV	150	IR	RO	OIL_P_B_F
ALM_REFRIG_ESCAPE_F	BV	191	IR	RO	REFRIGERANT_ESCAPE_F
ALM_SCT_OUT_OF_CP_M_A_F	BV	189	IR	RO	SCT_OUT_OF_CP_MAP_A_F
ALM_SCT_OUT_OF_CP_M_B_F	BV	190	IR	RO	SCT_OUT_OF_CP_MAP_B_F
ALM_SENSORS_SWAP_F	BV	197	IR	RO	SENSORS_SWAP_F
ALM_SIOB1_COM_F	BV	155	IR	RO	SIOB1_COM_F
ALM_SIOB2_COM_F	BV	156	IR	RO	SIOB2_COM_F
ALM_SP_A_F	BV	147	IR	RO	SP_A_F
ALM_SP_B_F	BV	148	IR	RO	SP_B_F
ALM_SPACE_TEMP_F	BV	144	IR	RO	SPACE_TEMP_F
ALM_SST_OUT_OF_CP_M_A_F	BV	198	IR	RO	SST_OUT_OF_CP_MAP_A_F
ALM_SST_OUT_OF_CP_M_B_F	BV	199	IR	RO	SST_OUT_OF_CP_MAP_B_F
ALM_STEPPER_ECO_A_F	BV	224	IR	RO	STEPPER_ECO_A_F
ALM_STEPPER_ECO_B_F	BV	225	IR	RO	STEPPER_ECO_B_F
ALM_STEPPER_EXV_A_F	BV	222	IR	RO	STEPPER_EXV_A_F
ALM_STEPPER_EXV_B_F	BV	223	IR	RO	STEPPER_EXV_B_F
ALM_SUCT_VALV_CLOSD_A_F	BV	194	IR	RO	SUCT_VALV_CLOSED_A_F
ALM_SUCT_VALV_CLOSD_B_F	BV	195	IR	RO	SUCT_VALV_CLOSED_B_F
ALM_SUCTION_T_A_F	BV	134	IR	RO	SUCTION_T_A_F

LEGEND

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
ALM_SUCTION_T_B_F	BV	135	IR	RO	SUCTION_T_B_F
ALM_VI_DIAG_A_ALERT	BV	226	IR	RO	VI_DIAG_A_ALERT
ALM_VI_DIAG_B_ALERT	BV	227	IR	RO	VI_DIAG_B_ALERT
ALM_VLT_DRIVE_A_ALERT	BV	208	IR	RO	VLT_DRIVE_A_ALERT
ALM_VLT_DRIVE_A_F	BV	200	IR	RO	VLT_DRIVE_A_F
ALM_VLT_DRIVE_B_ALERT	BV	209	IR	RO	VLT_DRIVE_B_ALERT
ALM_VLT_DRIVE_B_F	BV	201	IR	RO	VLT_DRIVE_B_F
ALM_VLT_DRIVE1_COM_F	BV	162	IR	RO	VLT_DRIVE1_COM_F
ALM_VLT_DRIVE2_COM_F	BV	163	IR	RO	VLT_DRIVE2_COM_F
BACNET_bacena	BV	117		RO	BACnet Enable
BACNET_bacunit	BV	118		RO	Metric Units? (Blackbox)
BACNET_bbmd	AV	515		RO	BACnet Management Device
BACNET_ident	AV	514		RO	Identifier
BACNET_network	AV	513		RO	Network
CAPACTRL_cap_lim	AV	191	IR	RO	Current Capacity Limit
CAPACTRL_cap_pc_a	AV	196	IR	RO	Estimated Capacity A
CAPACTRL_cap_pc_b	AV	201	IR	RO	Estimated Capacity B
CAPACTRL_capmoda	AV	193	IR	RO	Capa Ctrl Stat Nb A
CAPACTRL_capmodb	AV	198	IR	RO	Capacity Ctrl Stat Nb B
CAPACTRL_CirRunNb	AV	207	IR	RO	Circuit Running Number
CAPACTRL_cMaxFrqA	AV	202	IR	RO	Max Comp. Frequency A
CAPACTRL_cMaxFrqB	AV	203	IR	RO	Max Comp. Frequency B
CAPACTRL_ctrl_wt	AV	189	IR	RO	Controled Water Temp
CAPACTRL_cwt_rate	AV	190	IR	RO	Ctrl Water Temp, Deg/Min
CAPACTRL_drvcmda	AV	192	IR	RO	Wished Comp. Frequency A
CAPACTRL_drvcmdb	AV	197	IR	RO	Wished Comp. Frequency B
CAPACTRL_DualMast	AV	210	IR	RO	Dual Circuit Master
CAPACTRL_lcapmoda	AV	194	IR	RO	Last Capa Ctrl Stat Nb A
CAPACTRL_lcapmodb	AV	199	IR	RO	Last Capa Ctrl Stat Nb B
CAPACTRL_overrida	AV	195	IR	RO	Override Capacity Nb A
CAPACTRL_overridb	AV	200	IR	RO	Override Capacity Nb B
CAPACTRL_reset	AV	206	IR	RO	Reset Amount
CAPACTRL_StatCirA	AV	208	IR	RO	State of Circuit A
CAPACTRL_StatCirB	AV	209	IR	RO	State of Circuit B
CAPACTRL_viCmdA	AV	204	IR	RO	Comp. VI Cmd A
CAPACTRL_viCmdB	AV	205	IR	RO	Comp. VI Cmd B
CAPACTRL_xSpdHigh	AV	211	IR	RO	Transfer Spd, add cir
CAPACTRL_xSpdLow	AV	212	IR	RO	Transfer Spd, remove cir
CMP_PI_cpt_kp_a	AV	410		RO	Comp Temp PI, Kp Cir A
CMP_PI_cpt_kp_b	AV	425		RO	Comp Temp PI, Kp Cir B
CMP_PI_cpt_ni_a	AV	412		RO	Comp Temp PI, NI Cir A
CMP_PI_cpt_ni_b	AV	427		RO	Comp Temp PI, NI Cir B
CMP_PI_cpt_ti_a	AV	411		RO	Comp Temp PI, Ti Cir A
CMP_PI_cpt_ti_b	AV	426		RO	Comp Temp PI, Ti Cir B
CMP_PI_dgt_kp_a	AV	407		RO	DGT PI Kp, Cir A
CMP_PI_dgt_kp_b	AV	422		RO	DGT PI Kp, Cir B
CMP_PI_dgt_ni_a	AV	409		RO	DGT PI, NI Cir A
CMP_PI_dgt_ni_b	AV	424		RO	DGT PI, NI Cir B

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
CMP_PI_dgt_ti_a	AV	408		RO	DGT PI, Ti Cir A
CMP_PI_dgt_ti_b	AV	423		RO	DGT PI, Ti Cir B
CMP_PI_dp_kp_a	AV	413		RO	Disch Press PI, Kp Cir A
CMP_PI_dp_kp_b	AV	428		RO	Disch Press PI, Kp Cir B
CMP_PI_dp_ni_a	AV	415		RO	Disch Press PI, NI Cir A
CMP_PI_dp_ni_b	AV	430		RO	Disch Press PI, NI Cir B
CMP_PI_dp_ti_a	AV	414		RO	Disch Press PI, Ti Cir A
CMP_PI_dp_ti_b	AV	429		RO	Disch Press PI, Ti Cir B
CMP_PI_lsp_kp_a	AV	416		RO	Low SP PI, Kp Cir A
CMP_PI_lsp_kp_b	AV	431		RO	Low SP PI, Kp Cir B
CMP_PI_lsp_ni_a	AV	418		RO	Low SP PI, NI Cir A
CMP_PI_lsp_ni_b	AV	433		RO	Low SP PI, NI Cir B
CMP_PI_lsp_ti_a	AV	417		RO	Low SP PI, Ti Cir A
CMP_PI_lsp_ti_b	AV	432		RO	Low SP PI, Ti Cir B
CMP_PI_wt_kp_a	AV	404		RO	Water Temp PI, Kp, Cir A
CMP_PI_wt_kp_b	AV	419		RO	Water Temp PI, Kp, Cir B
CMP_PI_wt_ni_a	AV	406		RO	Water Temp PI, NI Cir A
CMP_PI_wt_ni_b	AV	421		RO	Water Temp PI, NI Cir B
CMP_PI_wt_ti_a	AV	405		RO	Water Temp PI, Ti Cir A
CMP_PI_wt_ti_b	AV	420		RO	Water Temp PI, Ti Cir B
CP_ENABL_en_cp_a	BV	121		RO	Compressor A Disable
CP_ENABL_en_cp_b	BV	122		RO	Compressor B Disable
DELTA_chdp_hys	AV	483		RO	cmp high dp hysteresis
DELTA_chdtdact	AV	484		RO	cmp high dt act offset
DELTA_chdtdspt	AV	485		RO	cmp high dt stp offset
DELTA_cramprt	AV	512		RO	Compressor Ramp Rate
DELTA_dgt_act	AV	503		RO	dgt limit act offset
DELTA_dgt_hyst	AV	502		RO	dgt hysteresis
DELTA_dgt_spt	AV	504		RO	dgt limit spt offset
DELTA_dsh_act	AV	506		RO	dsh act offset
DELTA_dsh_hyst	AV	505		RO	dsh hysteresis
DELTA_dshdelay	AV	507		RO	exv_no_dsh_delay
DELTA_fhdp_hys	AV	486		RO	fan high dp hysteresis
DELTA_fhdtdact	AV	487		RO	fan high dt act offset
DELTA_fhdtdstp	AV	488		RO	fan high dt stp offset
DELTA_hsp_hyst	AV	492		RO	high sp hysteresis
DELTA_hstdact	AV	493		RO	high st act offset
DELTA_hstdspt	AV	494		RO	high st stp offset
DELTA_ldp_hys	AV	489		RO	low dp hysteresis
DELTA_ldtdact	AV	490		RO	low dt act offset
DELTA_ldtdspt	AV	491		RO	low dt stp offset
DELTA_lsp_hyst	AV	495		RO	low sp hysteresis
DELTA_lstdact	AV	496		RO	low st act offset
DELTA_lstdcpa	AV	498		RO	deltat lstEXV vs lstCAPA
DELTA_lstdspt	AV	497		RO	low st stp offset
DELTA_mopdelay	AV	508		RO	exv_no_mop_delay
DELTA_mt_dact	AV	500		RO	motor temp act offset
DELTA_mt_dspt	AV	501		RO	motor temp stp offset

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
DELTA_mt_hyst	AV	499		RO	motor temp hysteresis
DELTA_sbc_act	AV	510		RO	subcool act offset
DELTA_sbc_hys	AV	509		RO	subcool hysteresis
DELTA_sbc_spt	AV	511		RO	Subcooling Setpoint A
DELTA_wateesys	AV	482		RO	water_t_hysteresis
ECO_CTRL_eco_a	AV	247		RO	EXV Eco Position Cir A
ECO_CTRL_eco_b	AV	248		RO	EXV Eco Position Cir B
ECO_PI_capa_lim	AV	547		RO	Capacity Lim Disable Eco
ECO_PI_eco_max	AV	546		RO	EXV Eco. Max Position
ECO_PI_eco_min	AV	545		RO	EXV Eco. Min Position
ECO_PI_ecoshspa	AV	548		RO	Eco Superheat Setpoint A
ECO_PI_ecoshspb	AV	549		RO	Eco Superheat Setpoint B
ECO_PI_ecsh_kpa	AV	539		RO	EXV Eco. SH Kp, Cir A
ECO_PI_ecsh_kpb	AV	542		RO	EXV Eco. SH Kp, Cir B
ECO_PI_ecsh_nia	AV	541		RO	EXV Eco. SH NI Cir A
ECO_PI_ecsh_nib	AV	544		RO	EXV Eco. SH NI Cir B
ECO_PI_ecsh_tia	AV	540		RO	EXV Eco. SH Ti Cir A
ECO_PI_ecsh_tib	AV	543		RO	EXV Eco. SH Ti Cir B
EXV_CFG_apr_kp_a	AV	476		RO	Appr. PI, Kp Cir A
EXV_CFG_apr_kp_b	AV	479		RO	Appr. PI, Kp Cir B
EXV_CFG_apr_ni_a	AV	478		RO	Appr. PI, NI Cir A
EXV_CFG_apr_ni_b	AV	481		RO	Appr. PI, NI Cir B
EXV_CFG_apr_stp	AV	439		RO	Approach Setpoint
EXV_CFG_apr_ti_a	AV	477		RO	Appr. PI, Ti Cir A
EXV_CFG_apr_ti_b	AV	480		RO	Appr. PI, Ti Cir B
EXV_CFG_dop_kp_a	AV	452		RO	Dop PI, Kp Cir A
EXV_CFG_dop_kp_b	AV	470		RO	Dop PI, Kp Cir B
EXV_CFG_dop_ni_a	AV	454		RO	Dop PI, NI Cir A
EXV_CFG_dop_ni_b	AV	472		RO	Dop PI, NI Cir B
EXV_CFG_dop_ti_a	AV	453		RO	Dop PI, Ti Cir A
EXV_CFG_dop_ti_b	AV	471		RO	Dop PI, Ti Cir B
EXV_CFG_dsh_kp_a	AV	443		RO	DSH PI, Kp Cir A
EXV_CFG_dsh_kp_b	AV	461		RO	DSH PI, Kp Cir B
EXV_CFG_dsh_ni_a	AV	445		RO	DSH PI, NI Cir A
EXV_CFG_dsh_ni_b	AV	463		RO	DSH PI, NI Cir B
EXV_CFG_dsh_ti_a	AV	444		RO	DSH PI, Ti Cir A
EXV_CFG_dsh_ti_b	AV	462		RO	DSH PI, Ti Cir B
EXV_CFG_fixeddsh	AV	434		RO	Fixed DSH Setpoint
EXV_CFG_hsp_kp_a	AV	446		RO	High SP PI, Kp Cir A
EXV_CFG_hsp_kp_b	AV	464		RO	High SP PI, Kp Cir B
EXV_CFG_hsp_ni_a	AV	448		RO	High SP PI, NI Cir A
EXV_CFG_hsp_ni_b	AV	466		RO	High SP PI, NI Cir B
EXV_CFG_hsp_ti_a	AV	447		RO	High SP PI, Ti Cir A
EXV_CFG_hsp_ti_b	AV	465		RO	High SP PI, Ti Cir B
EXV_CFG_lsp_kp_a	AV	449		RO	Low SP PI, Kp Cir A
EXV_CFG_lsp_kp_b	AV	467		RO	Low SP PI, Kp Cir B
EXV_CFG_lsp_ni_a	AV	451		RO	Low SP PI, NI Cir A
EXV_CFG_lsp_ni_b	AV	469		RO	Low SP PI, NI Cir B

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
EXV_CFG_lsp_ti_a	AV	450		RO	Low SP PI, Ti Cir A
EXV_CFG_lsp_ti_b	AV	468		RO	Low SP PI, Ti Cir B
EXV_CFG_sbc_kp_a	AV	440		RO	Subcool PI, Kp Cir A
EXV_CFG_sbc_kp_b	AV	458		RO	Subcool PI, Kp Cir B
EXV_CFG_sbc_ni_a	AV	442		RO	Subcool PI, NI Cir A
EXV_CFG_sbc_ni_b	AV	460		RO	Subcool PI, NI Cir B
EXV_CFG_sbc_ti_a	AV	441		RO	Subcool PI, Ti Cir A
EXV_CFG_sbc_ti_b	AV	459		RO	Subcool PI, Ti Cir B
EXV_CFG_scsp_max	AV	435		RO	Subcooling Setpoint Max
EXV_CFG_scsp_min	AV	436		RO	Subcooling Setpoint Min
EXV_CFG_sh_sp_a	AV	437		RO	Superheat Setpoint A
EXV_CFG_sh_sp_b	AV	438		RO	Superheat Setpoint B
EXV_CFG_ssh_kp_a	AV	455		RO	Suction SH PI, Kp Cir A
EXV_CFG_ssh_kp_b	AV	473		RO	Suction SH PI, Kp Cir B
EXV_CFG_ssh_ni_a	AV	457		RO	Suction SH PI, NI Cir A
EXV_CFG_ssh_ni_b	AV	475		RO	Suction SH PI, NI Cir B
EXV_CFG_ssh_ti_a	AV	456		RO	Suction SH PI, Ti Cir A
EXV_CFG_ssh_ti_b	AV	474		RO	Suction SH PI, Ti Cir B
EXV_CTRL_DSH_A	AV	158		RO	Discharge Superheat A
EXV_CTRL_DSH_B	AV	170		RO	Discharge Superheat B
EXV_CTRL_dsh_spa	AV	159		RO	Dis. Superheat Setpnt A
EXV_CTRL_dsh_spb	AV	171		RO	Dis. Superheat Setpnt B
EXV_CTRL_EXV_A	AV	157		RO	EXV Position Circuit A
EXV_CTRL_EXV_B	AV	169		RO	EXV Position Circuit B
EXV_CTRL_exv_lsta	AV	166		RO	EXV Previous State A
EXV_CTRL_exv_lstb	AV	178		RO	EXV Previous State B
EXV_CTRL_exv_sta	AV	165		RO	EXV State A
EXV_CTRL_exv_stb	AV	177		RO	EXV State B
EXV_CTRL_exvwposa	AV	167		RO	EXV Wished Position A
EXV_CTRL_exvwposb	AV	179		RO	EXV Wished Position B
EXV_CTRL_ov_exv_a	AV	156		RO	EXV Override Circuit A
EXV_CTRL_ov_exv_b	AV	168		RO	EXV Override Circuit B
EXV_CTRL_pinch_a	AV	162		RO	Evap ExchangeDT Cir A
EXV_CTRL_pinch_b	AV	174		RO	Evap ExchangeDT Cir B
EXV_CTRL_SH_A	AV	160		RO	Suction Superheat A
EXV_CTRL_SH_B	AV	172		RO	Suction Superheat B
EXV_CTRL_sh_sp_a	AV	161		RO	Suct. Superheat Setpnt A
EXV_CTRL_sh_sp_b	AV	173		RO	Suct. Superheat Setpnt B
EXV_CTRL_subc_spa	AV	164		RO	Subcooling Setpoint A
EXV_CTRL_subc_spb	AV	176		RO	Subcooling Setpoint B
EXV_CTRL_subcoola	AV	163		RO	Subcooling Circuit A
EXV_CTRL_subcoolb	AV	175		RO	Subcooling Circuit B
FACTORY_cpass_nb	AV	323		RO	Evap Pass Number
FACTORY_emm_nrcp	BV	100		RO	Energy Management Module
FACTORY_fac_pass	AV	324		RO	Factory Password
FACTORY_fan_fact	AV	327		RO	Fan Freq Factor(0.7-1.1)
FACTORY_fMaxEnA	BV	103		RO	Enable Max Frequency A
FACTORY_fMaxEnB	BV	104		RO	Enable Max Frequency B

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
FACTORY_fMaxOvrA	AV	325		RO	Max Frequency Override A
FACTORY_fMaxOvrB	AV	326		RO	Max Frequency Override B
FACTORY_fMinOvr	AV	328		RO	Min Frequency Override
FACTORY_freq_60H	BV	96		RO	60Hz Sel (No=50, Yes=60)
FACTORY_heat_sel	BV	98		RO	Evap Heater Installed
FACTORY_lastspda	AV	329		RO	Low Amb. Start Spd A
FACTORY_lastspdb	AV	330		RO	Low Amb. Start Spd B
FACTORY_leak_chk	BV	102		RO	Leakage Charge Detection
FACTORY_loambopt	BV	101		RO	Low Ambient Option (STD)
FACTORY_mfg_tier	AV	322		RO	Tier 0=STD, 1=MID, 2=HI
FACTORY_mst_slv	BV	99		RO	Master Slave Setup
FACTORY_probrine	BV	97		RO	Process Brine Evap
FACTORY_unitsize	AV	320		RO	Unit Capacity
FACTORY_voltage	AV	321		RO	Power Supply Voltage
FACTORY2_eco_cnfa	AV	333		RO	Economizer A Steps Numb
FACTORY2_eco_cnfb	AV	334		RO	Economizer B Steps Numb
FACTORY2_exvmax_a	AV	331		RO	EXV A Maximum Steps Numb
FACTORY2_exvmax_b	AV	332		RO	EXV B Maximum Steps Numb
FACTORY2_vfd_cmp	AV	335		RO	Nb VFD Compressor
FACTORY2_vfd_fana	AV	336		RO	Nb Fan Drive Cir A
FACTORY2_vfd_fanb	AV	337		RO	Nb Fan Drive Cir B
FAN_CFG_cp_factA	AV	527		RO	Compressor Factor A
FAN_CFG_cp_factB	AV	528		RO	Compressor Factor B
FAN_CFG_fan_ctrl	BV	119		RO	Fan Ctrl Type (Vari,Fix), Optimization Parameters
FAN_CFG_fan_hlim	AV	522		RO	Fan Max Frequency
FAN_CFG_fan_llim	AV	523		RO	Fan Min Frequency
FAN_CFG_fldp_kpa	AV	516		RO	Fan Low DP PI, Kp, Cir A
FAN_CFG_fldp_kpb	AV	519		RO	Fan Low DP PI, Kp, Cir B
FAN_CFG_fldp_nia	AV	518		RO	Fan Low DP PI, NI Cir A
FAN_CFG_fldp_nib	AV	521		RO	Fan Low DP PI, NI Cir B
FAN_CFG_fldp_tia	AV	517		RO	Fan Low DP PI, Ti Cir A
FAN_CFG_fldp_tib	AV	520		RO	Fan Low DP PI, Ti Cir B
FAN_CFG_fldtfact	AV	529		RO	Fan Low Dis. Factor
FAN_CFG_n_coilsA	AV	525		RO	Cir Cond Coil Number A
FAN_CFG_n_coilsB	AV	526		RO	Cir Cond Coil Number B
FAN_CFG_os_d_amp	AV	532		RO	Opt. Disturbance Ampl.
FAN_CFG_os_d_per	AV	533		RO	Opt. Disturbance Period
FAN_CFG_os_f_pow	AV	534		RO	Opt. Freeze Power Tol.
FAN_CFG_sct_bias	AV	536		RO	SCT bias at start
FAN_CFG_sct_decr	AV	538		RO	Decrement SCT bias time
FAN_CFG_sct_tim	AV	537		RO	Total SCT bias time
FAN_CFG_sync_Kp	AV	524		RO	Sychronizing Output Kp
FAN_CFG_xt_enabl	BV	120		RO	Optimization Enable
FAN_CFG_xt_in_tl	AV	531		RO	Opt. Deviation Tolerance
FAN_CFG_xt_s_smp	AV	530		RO	Stablility Sample Nb
FAN_CFG_xtos_flt	AV	535		RO	Opt. Filter Time
FAN_CTRL_fan_f_a	AV	249	IR	RO	Fan Freq Cir A
FAN_CTRL_fan_f_b	AV	257	IR	RO	Fan Freq Cir B

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
FAN_CTRL_fan_lsta	AV	251	IR	RO	Fan Previous State A
FAN_CTRL_fan_lstb	AV	259	IR	RO	Fan Previous State B
FAN_CTRL_fan_moda	AV	253	IR	RO	Fan Mode A
FAN_CTRL_fan_modb	AV	261	IR	RO	Fan Mode B
FAN_CTRL_fan_sta	AV	250	IR	RO	Fan State A
FAN_CTRL_fan_stb	AV	258	IR	RO	Fan State B
FAN_CTRL_fan_txta	AV	254	IR	RO	Fan Mode Text A
FAN_CTRL_fan_txtb	AV	262	IR	RO	Fan Mode Text B
FAN_CTRL_fcont_a	AV	256	IR	RO	Fan Contactors On A
FAN_CTRL_fcont_b	AV	264	IR	RO	Fan Contactors On B
FAN_CTRL_ftotpowa	AV	255	IR	RO	Fan Tot Pwr Filtered A
FAN_CTRL_ftotpowb	AV	263	IR	RO	Fan Tot Pwr Filtered B
FAN_CTRL_wfan_f_a	AV	252	IR	RO	Fan Wished Freq A
FAN_CTRL_wfan_f_b	AV	260	IR	RO	Fan Wished Freq B
FAN_DRV_fd_CCTa1	AV	273	IR	RO	Fan Drive Ctrl Card T A1
FAN_DRV_fd_CCTa2	AV	282	IR	RO	Fan Drive Ctrl Card T A2
FAN_DRV_fd_CCTa3	AV	291	IR	RO	Fan Drive Ctrl Card T A3
FAN_DRV_fd_CCTb1	AV	300	IR	RO	Fan Drive Ctrl Card T B1
FAN_DRV_fd_CCTb2	AV	309	IR	RO	Fan Drive Ctrl Card T B2
FAN_DRV_fd_CCTb3	AV	318	IR	RO	Fan Drive Ctrl Card T B3
FAN_DRV_fd_DCVa1	AV	271	IR	RO	Fan Drv DC Link Volt A1
FAN_DRV_fd_DCVa2	AV	280	IR	RO	Fan Drv DC Link Volt A2
FAN_DRV_fd_DCVa3	AV	289	IR	RO	Fan Drv DC Link Volt A3
FAN_DRV_fd_DCVb1	AV	298	IR	RO	Fan Drv DC Link Volt B1
FAN_DRV_fd_DCVb2	AV	307	IR	RO	Fan Drv DC Link Volt B2
FAN_DRV_fd_DCVb3	AV	316	IR	RO	Fan Drv DC Link Volt B3
FAN_DRV_fd_Fa1	AV	269	IR	RO	Fan Drive Frequency A1
FAN_DRV_fd_Fa2	AV	278	IR	RO	Fan Drive Frequency A2
FAN_DRV_fd_Fa3	AV	287	IR	RO	Fan Drive Frequency A3
FAN_DRV_fd_Fb1	AV	296	IR	RO	Fan Drive Frequency B1
FAN_DRV_fd_Fb2	AV	305	IR	RO	Fan Drive Frequency B2
FAN_DRV_fd_Fb3	AV	314	IR	RO	Fan Drive Frequency B3
FAN_DRV_fd_HSTa1	AV	272	IR	RO	Fan Drive Heat Sink T A1
FAN_DRV_fd_HSTa2	AV	281	IR	RO	Fan Drive Heat Sink T A2
FAN_DRV_fd_HSTa3	AV	290	IR	RO	Fan Drive Heat Sink T A3
FAN_DRV_fd_HSTb1	AV	299	IR	RO	Fan Drive Heat Sink T B1
FAN_DRV_fd_HSTb2	AV	308	IR	RO	Fan Drive Heat Sink T B2
FAN_DRV_fd_HSTb3	AV	317	IR	RO	Fan Drive Heat Sink T B3
FAN_DRV_fd_Ia1	AV	266	IR	RO	Fan Drive Amps A1
FAN_DRV_fd_Ia2	AV	275	IR	RO	Fan Drive Amps A2
FAN_DRV_fd_Ia3	AV	284	IR	RO	Fan Drive Amps A3
FAN_DRV_fd_Ib1	AV	293	IR	RO	Fan Drive Amps B1
FAN_DRV_fd_Ib2	AV	302	IR	RO	Fan Drive Amps B2
FAN_DRV_fd_Ib3	AV	311	IR	RO	Fan Drive Amps B3
FAN_DRV_fd_pwr	AV	319	IR	RO	Total Fan Drive Power
FAN_DRV_fd_pwra1	AV	265	IR	RO	Fan Drive Power A1
FAN_DRV_fd_pwra2	AV	274	IR	RO	Fan Drive Power A2
FAN_DRV_fd_pwra3	AV	283	IR	RO	Fan Drive Power A3

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
FAN_DRV_fd_pwrb1	AV	292	IR	RO	Fan Drive Power B1
FAN_DRV_fd_pwrb2	AV	301	IR	RO	Fan Drive Power B2
FAN_DRV_fd_pwrb3	AV	310	IR	RO	Fan Drive Power B3
FAN_DRV_fd_Sa1	AV	268	IR	RO	Fan Drive Speed A1
FAN_DRV_fd_Sa2	AV	277	IR	RO	Fan Drive Speed A2
FAN_DRV_fd_Sa3	AV	286	IR	RO	Fan Drive Speed A3
FAN_DRV_fd_Sb1	AV	295	IR	RO	Fan Drive Speed B1
FAN_DRV_fd_Sb2	AV	304	IR	RO	Fan Drive Speed B2
FAN_DRV_fd_Sb3	AV	313	IR	RO	Fan Drive Speed B3
FAN_DRV_fd_Ta1	AV	270	IR	RO	Fan Drive Torque A1
FAN_DRV_fd_Ta2	AV	279	IR	RO	Fan Drive Torque A2
FAN_DRV_fd_Ta3	AV	288	IR	RO	Fan Drive Torque A3
FAN_DRV_fd_Tb1	AV	297	IR	RO	Fan Drive Torque B1
FAN_DRV_fd_Tb2	AV	306	IR	RO	Fan Drive Torque B2
FAN_DRV_fd_Tb3	AV	315	IR	RO	Fan Drive Torque B3
FAN_DRV_fd_Va1	AV	267	IR	RO	Fan Drive Voltage A1
FAN_DRV_fd_Va2	AV	276	IR	RO	Fan Drive Voltage A2
FAN_DRV_fd_Va3	AV	285	IR	RO	Fan Drive Voltage A3
FAN_DRV_fd_Vb1	AV	294	IR	RO	Fan Drive Voltage B1
FAN_DRV_fd_Vb2	AV	303	IR	RO	Fan Drive Voltage B2
FAN_DRV_fd_Vb3	AV	312	IR	RO	Fan Drive Voltage B3
FAN_DRV2_FD_COMA1	BV	88	IR	RO	Comm Fan Drive A1 Ok
FAN_DRV2_FD_COMA2	BV	89	IR	RO	Comm Fan Drive A2 Ok
FAN_DRV2_FD_COMA3	BV	90	IR	RO	Comm Fan Drive A3 Ok
FAN_DRV2_FD_COMB1	BV	91	IR	RO	Comm Fan Drive B1 Ok
FAN_DRV2_FD_COMB2	BV	92	IR	RO	Comm Fan Drive B2 Ok
FAN_DRV2_FD_COMB3	BV	93	IR	RO	Comm Fan Drive B3 Ok
FAN_DRV2_SET_FDA1	BV	82	IR	RO	Fan Drive A1 Attach
FAN_DRV2_SET_FDA2	BV	83	IR	RO	Fan Drive A2 Attach
FAN_DRV2_SET_FDA3	BV	84	IR	RO	Fan Drive A3 Attach
FAN_DRV2_SET_FDB1	BV	85	IR	RO	Fan Drive B1 Attach
FAN_DRV2_SET_FDB2	BV	86	IR	RO	Fan Drive B2 Attach
FAN_DRV2_SET_FDB3	BV	87	IR	RO	Fan Drive B3 Attach
FAN_DRV2_stopfana	BV	94	IR	RO	Stop Cir A Fan Drive
FAN_DRV2_stopfanb	BV	95	IR	RO	Stop Cir B Fan Drive
GENCONF_ice_cnfg	BV	2		RO	Ice Mode Enable
GENCONF_lim_sel	AV	3		RO	Demand Limit Type Select, 0 = None, 1 = Switch Control, 2 = 4-20mA Control
GENCONF_nh_end	AV	5		RO	Night Mode End Hour
GENCONF_nh_limit	AV	6		RO	Night Capacity Limit
GENCONF_nh_start	AV	4		RO	Night Mode Start Hour
GENCONF_off_on_d	AV	2		RO	Unit Off to On Delay
GENCONF_prio_cir	AV	1		RO	Cir Priority Sequence 0=Auto, 1=A Prio 2=B Prio
GENCONF_ramp_sel	BV	1		RO	Ramp Loading Enable
GENCONF_shortcyc	BV	3		RO	Short Cycle Management
GENUNIT_CAP_T	AV	24	COV IR	RO	Percent Total Capacity
GENUNIT_CHIL_OCC_rd	BV	7	IR	RO	Net.: Cmd Occupied
GENUNIT_CHIL_OCC_wr	BV	129	IR CMD	RW	Net.: Cmd Occupied
GENUNIT_CHIL_S_S_rd	BV	6		RO	Net.: Cmd Start/Stop

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
GENUNIT_CHIL_S_S_wr	BV	123	IR CMD	RW	Net.: Cmd Start/Stop
GENUNIT_CTRL_PNT_rd	AV	26	COV IR	RO	Control Point
GENUNIT_CTRL_PNT_wr	AV	557	IR CMD	RW	Control Point
GENUNIT_CTRL_TYP	AV	20	IR	RO	Local=0 Net.=1 Remote=2
GENUNIT_DEM_LIM_rd	AV	27		RO	Active Demand Limit Val
GENUNIT_DEM_LIM_wr	AV	558	IR CMD	RW	Active Demand Limit Val
GENUNIT_EMSTOP_rd	BV	9		RO	Emergency Stop
GENUNIT_EMSTOP_wr	BV	126	IR CMD	RW	Emergency Stop
GENUNIT_min_left	AV	22		RO	Minutes Left for Start
GENUNIT_min_lim	AV	28		RO	Demand Limit Minimum
GENUNIT_SP	AV	25		RO	Current Setpoint
GENUNIT_SP_OCC_rd	BV	8		RO	Setpoint Occupied?
GENUNIT_SP_OCC_wr	BV	128	IR CMD	RW	Setpoint Occupied?
GENUNIT_SP_SEL_rd	AV	23		RO	Setpoint Select, 0=Auto, 1=Spt1, 2=Spt2
GENUNIT_SP_SEL_wr	AV	559	IR CMD	RW	Setpoint Select
GENUNIT_STATUS	AV	21	COV IR	RO	Run Status
INPUTS_HEATR_SW	BV	19	IR	RO	Evap Heater Detector
INPUTS_ICE_SW	BV	17	IR	RO	Ice Done Storage Switch
INPUTS_leak_2_v	AV	65	IR	RO	Leakage Detector 2
INPUTS_leak_v	AV	64	IR	RO	Leakage Detector 1
INPUTS_LIM_ANAL	AV	63	IR	RO	Remote Dem. Limit
INPUTS_LIM_SW1	BV	12	IR	RO	Limit Switch 1
INPUTS_LIM_SW2	BV	13	IR	RO	Limit Switch 2
INPUTS_OCC_OVSW	BV	18	IR	RO	Occupied Override Switch
INPUTS_OIL_L_A	BV	14	IR	RO	Oil Level Input A
INPUTS_OIL_L_B	BV	15	IR	RO	Oil Level Input B
INPUTS_ONOFF_SW	BV	10	IR	RO	Remote On/Off Switch
INPUTS_REM_LOCK	BV	16	IR	RO	Customer Interlock
INPUTS_SETP_SW	BV	11	IR	RO	Remote Setpoint Switch
INPUTS_SP_RESET	AV	62	IR	RO	Remote Reset Setpoint
LAST_POR_date_of1	AV	138	IR	RO	PowerDown 1:day-mon-year
LAST_POR_date_of2	AV	142	IR	RO	PowerDown 2:day-mon-year
LAST_POR_date_of3	AV	146	IR	RO	PowerDown 3:day-mon-year
LAST_POR_date_of4	AV	150	IR	RO	PowerDown 4:day-mon-year
LAST_POR_date_of5	AV	154	IR	RO	PowerDown 5:day-mon-year
LAST_POR_date_on1	AV	136	IR	RO	Power On 1 :day-mon-year
LAST_POR_date_on2	AV	140	IR	RO	Power On 2 :day-mon-year
LAST_POR_date_on3	AV	144	IR	RO	Power On 3 :day-mon-year
LAST_POR_date_on4	AV	148	IR	RO	Power On 4 :day-mon-year
LAST_POR_date_on5	AV	152	IR	RO	Power On 5 :day-mon-year
LAST_POR_time_of1	AV	139	IR	RO	PowerDown 1:hour-minute
LAST_POR_time_of2	AV	143	IR	RO	PowerDown 2:hour-minute
LAST_POR_time_of3	AV	147	IR	RO	PowerDown 3:hour-minute
LAST_POR_time_of4	AV	151	IR	RO	PowerDown 4:hour-minute
LAST_POR_time_of5	AV	155	IR	RO	PowerDown 5:hour-minute
LAST_POR_time_on1	AV	137	IR	RO	Power On 1 :hour-minute
LAST_POR_time_on2	AV	141	IR	RO	Power On 2 :hour-minute
LAST_POR_time_on3	AV	145	IR	RO	Power On 3 :hour-minute

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
LAST_POR_time_on4	AV	149	IR	RO	Power On 4 :hour-minute
LAST_POR_time_on5	AV	153	IR	RO	Power On 5 :hour-minute
LIMITS_chdpacta	AV	217	IR	RO	ENV comp high dp act A
LIMITS_chdpactb	AV	234	IR	RO	ENV comp high dp act B
LIMITS_chdpstpa	AV	218	IR	RO	ENV comp high dp stp A
LIMITS_chdpstpb	AV	235	IR	RO	ENV comp high dp stp B
LIMITS_dgtacta	AV	228	IR	RO	dgt act A
LIMITS_dgtactb	AV	245	IR	RO	dgt_act B
LIMITS_dgtstpa	AV	229	IR	RO	dgt stp A
LIMITS_dgtstpb	AV	246	IR	RO	dgt_stp B
LIMITS_dshacta	AV	213	IR	RO	EXV_dsh_act A
LIMITS_dshactb	AV	230	IR	RO	EXV_dsh_act B
LIMITS_dshstpa	AV	214	IR	RO	EXV_dsh_stp A
LIMITS_dshstpb	AV	231	IR	RO	EXV_dsh_stp B
LIMITS_elspacta	AV	215	IR	RO	EXV_lsp_act A
LIMITS_elspactb	AV	232	IR	RO	EXV_lsp_act B
LIMITS_elspstpa	AV	216	IR	RO	EXV_lsp_stp A
LIMITS_elspstpb	AV	233	IR	RO	EXV_lsp_stp B
LIMITS_fhdpacta	AV	219	IR	RO	ENV fan high dp act A
LIMITS_fhdpactb	AV	236	IR	RO	ENV fan high dp act B
LIMITS_fhdpstpa	AV	220	IR	RO	ENV fan high dp stp A
LIMITS_fhdpstpb	AV	237	IR	RO	ENV fan high dp stp B
LIMITS_hspacta	AV	223	IR	RO	ENV high sp act A
LIMITS_hspactb	AV	240	IR	RO	ENV high sp act B
LIMITS_hspstpa	AV	224	IR	RO	ENV high sp stp A
LIMITS_hspstpb	AV	241	IR	RO	ENV high sp stp B
LIMITS_ldpacta	AV	221	IR	RO	ENV low dp act A
LIMITS_ldpactb	AV	238	IR	RO	ENV low dp act B
LIMITS_ldpstpa	AV	222	IR	RO	ENV low dp stp A
LIMITS_ldpstpb	AV	239	IR	RO	ENV low dp stp B
LIMITS_lspacta	AV	225	IR	RO	ENV low sp act A
LIMITS_lspactb	AV	242	IR	RO	ENV low sp act B
LIMITS_lspdcpa	AV	227	IR	RO	ENV low sp delta A
LIMITS_lspdcpb	AV	244	IR	RO	ENV low sp delta B
LIMITS_lspstpa	AV	226	IR	RO	ENV low sp stp A
LIMITS_lspstpb	AV	243	IR	RO	ENV low sp stp B
M_MSTSLV_cap_max	BV	81		RO	Max Available Capacity ?
M_MSTSLV_l_strt_d	AV	182		RO	Lag Start Delay
M_MSTSLV_lagstat	AV	185		RO	Slave lagstat
M_MSTSLV_lead_sel	BV	78		RO	Lead Unit is the:
M_MSTSLV_ll_chang	BV	79		RO	Lead/lag Changeover?
M_MSTSLV_ll_hr_d	AV	183		RO	Lead/lag Hours Delta
M_MSTSLV_ll_pull	BV	80		RO	Lead Pulldown ?
M_MSTSLV_ms_activ	BV	77		RO	Master/Slave Ctrl Active
M_MSTSLV_ms_error	AV	184		RO	Master/Slave Error
M_MSTSLV_slav_ewt	AV	187		RO	Slave Evap Ent. Fluid
M_MSTSLV_slav_hr	AV	186		RO	Slave Operating Hours
M_MSTSLV_slav_lwt	AV	188		RO	Slave Evap Leav. Fluid

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
M_MSTSLV_slv_capt	AV	181		RO	Slave Chiller Total Cap
M_MSTSLV_slv_stat	AV	180		RO	Slave Chiller State
MODES_m_2stpt	BV	64	IR	RO	Second Setpoint In Use
MODES_m_delay	BV	63	IR	RO	Start Up Delay In Effect
MODES_m_demlim	BV	66	IR	RO	Demand Limit Active
MODES_m_ice	BV	71	IR	RO	Ice Mode In Effect, Active Alarms:
MODES_m_night	BV	69	IR	RO	Night Low Noise Active
MODES_m_pmpper	BV	68	IR	RO	Pump Periodic Start
MODES_m_pmprot	BV	67	IR	RO	Evaporator Pump Rotation
MODES_m_reset	BV	65	IR	RO	Reset In Effect
MODES_m_slave	BV	70	IR	RO	Master Slave Active
MST_SLV_lag_mini	AV	402		RO	Lag Minimum Running Time
MST_SLV_lag_pump	AV	403		RO	Lag Unit Pump Control, 0=Stop if Unit Stops, 1=Run if Unit Stops
MST_SLV_lead_pul	AV	400		RO	Lead Pulldown Time
MST_SLV_lead_sel	AV	397		RO	Lead Lag Select, 0=Always Lead, 1=Lag Once Failed Only, 2=Lead/Lag Runtime Sel
MST_SLV_ll_bal_d	AV	398		RO	Lead/Lag Balance Delta
MST_SLV_ll_serie	BV	116		RO	Chiller In Series
MST_SLV_lstr_tim	AV	399		RO	Lead/Lag Start Timer
MST_SLV_ms_ctrl	AV	395		RO	Master Control Type, 1=Local Control, 2=Remote Con-trol, 3=CCN Control
MST_SLV_ms_sel	AV	394		RO	Master/Slave Select, 0=Disable, 1=Master, 2=Slave
MST_SLV_slv_addr	AV	396		RO	Slave Address
MST_SLV_start_dt	AV	401		RO	Start If Error Higher
OUTPUTS_ALARM	BV	34	IR	RO	Alarm Relay Status
OUTPUTS_ALERT	BV	36	IR	RO	Alert Relay State
OUTPUTS_BOX_HTR	BV	57	IR	RO	Control Box Heater
OUTPUTS_C_HEATER	BV	38	IR	RO	Evap Heater Output
OUTPUTS_CAPT_010	AV	70	IR	RO	Chiller Capacity Signal
OUTPUTS_CAPT010A	AV	66	IR	RO	Capacity Signal Cir A
OUTPUTS_CAPT010B	AV	68	IR	RO	Capacity Signal Cir B
OUTPUTS_CP_A	BV	21	IR	RO	Compressor A
OUTPUTS_CP_B	BV	28	IR	RO	Compressor B
OUTPUTS_FCA1	BV	39	IR	RO	Fan Contactor 1A
OUTPUTS_FCA2	BV	40	IR	RO	Fan Contactor 2A
OUTPUTS_FCA3	BV	41	IR	RO	Fan Contactor 3A
OUTPUTS_FCA4	BV	42	IR	RO	Fan Contactor 4A
OUTPUTS_FCA5	BV	43	IR	RO	Fan Contactor 5A
OUTPUTS_FCA6	BV	44	IR	RO	Fan Contactor 6A
OUTPUTS_FCA7	BV	45	IR	RO	Fan Contactor 7A
OUTPUTS_FCA8	BV	46	IR	RO	Fan Contactor 8A
OUTPUTS_FCB1	BV	47	IR	RO	Fan Contactor 1B
OUTPUTS_FCB2	BV	48	IR	RO	Fan Contactor 2B
OUTPUTS_FCB3	BV	49	IR	RO	Fan Contactor 3B
OUTPUTS_FCB4	BV	50	IR	RO	Fan Contactor 4B
OUTPUTS_FCB5	BV	51	IR	RO	Fan Contactor 5B
OUTPUTS_FCB6	BV	52	IR	RO	Fan Contactor 6B

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
OUTPUTS_FCB7	BV	53	IR	RO	Fan Contactor 7B
OUTPUTS_FCB8	BV	54	IR	RO	Fan Contactor 8B
OUTPUTS_ISO_OP_A	BV	24	IR	RO	Ref Iso Relay Energize A
OUTPUTS_ISO_OP_B	BV	31	IR	RO	Ref Iso Relay Energize B
OUTPUTS_ISO_POSA	BV	25	IR	RO	Ref Iso Valve State A
OUTPUTS_ISO_POSB	BV	32	IR	RO	Ref Iso Valve State B
OUTPUTS_LABEL_A	BV	20	IR	RO	CIRCUIT A
OUTPUTS_LABEL_B	BV	27	IR	RO	CIRCUIT B
OUTPUTS_OIL_HT_A	BV	26	IR	RO	Oil Heater Output A
OUTPUTS_OIL_HT_B	BV	33	IR	RO	Oil Heater Output B
OUTPUTS_OIL_SL_A	BV	22	IR	RO	Oil Solenoid Output A
OUTPUTS_OIL_SL_B	BV	29	IR	RO	Oil Solenoid Output B
OUTPUTS_RUNNING	BV	35	IR	RO	Running Relay Status
OUTPUTS_SHUTDOWN	BV	37	IR	RO	Shutdown Indicator State
OUTPUTS_VFAN_A	AV	67	IR	RO	VariFan Speed A
OUTPUTS_VFAN_B	AV	69	IR	RO	VariFan Speed B
OUTPUTS_VFD_EN_A	BV	55	IR	RO	Comp. HW Enable A
OUTPUTS_VFD_EN_B	BV	56	IR	RO	Comp. HW Enable B
OUTPUTS_VI_A	BV	23	IR	RO	VI Solenoid Output A
OUTPUTS_VI_B	BV	30	IR	RO	VI Solenoid Output B
PRESSURE_DOP_A	AV	53	COV IR	RO	Delta Oil Pressure A
PRESSURE_DOP_B	AV	59	COV IR	RO	Delta Oil Pressure B
PRESSURE_DP_A	AV	50	COV IR	RO	Discharge Pressure A
PRESSURE_DP_B	AV	56	COV IR	RO	Discharge Pressure B
PRESSURE_ECO_P_A	AV	54	COV IR	RO	Economizer Pressure A
PRESSURE_ECO_P_B	AV	60	COV IR	RO	Economizer Pressure B
PRESSURE_LIQ_P_A	AV	55	COV IR	RO	Liquid Pressure A
PRESSURE_LIQ_P_B	AV	61	COV IR	RO	Liquid Pressure B
PRESSURE_OP_A	AV	52	COV IR	RO	Oil Pressure A
PRESSURE_OP_B	AV	58	COV IR	RO	Oil Pressure B
PRESSURE_SP_A	AV	51	COV IR	RO	Main Suction Pressure A
PRESSURE_SP_B	AV	57	COV IR	RO	Main Suction Pressure B
PUMPCONF_cpumpseq	AV	7		RO	Evap Pumps Sequence, 0 = No Pump, 1 = One Pump Only, 2 = Two Pumps Auto, 3 = Pump#1 Manual, 4 = Pump#2 Manual
PUMPCONF_pump_del	AV	8		RO	Pump Auto Rotation Delay
PUMPCONF_pump_loc	BV	5		RO	Flow Checked If Pump Off
PUMPCONF_pump_per	BV	4		RO	Pump Sticking Protection
PUMPSTAT_CPUMP_1_rd	BV	58	IR	RO	Evap Pump #1 Command
PUMPSTAT_CPUMP_1_wr	BV	124	IR CMD	RW	Evap Pump #1 Command
PUMPSTAT_CPUMP_2_rd	BV	59	IR	RO	Evap Pump #2 Command
PUMPSTAT_CPUMP_2_wr	BV	125	IR CMD	RW	Evap Pump #2 Command
PUMPSTAT_FLOW_SW	BV	61	IR	RO	Evap Flow Switch #1
PUMPSTAT_FLOW_SWB	BV	62	IR	RO	Evap Flow Switch #2
PUMPSTAT_ROTCPUMP_rd	BV	60	IR	RO	Rotate Evap Pumps ?
PUMPSTAT_ROTCPUMP_wr	BV	127	IR CMD	RW	Rotate Evap Pumps ?
RESETCFG_cr_deg	AV	19		RO	Cooling Reset Deg. Value
RESETCFG_cr_sel	AV	10		RO	Cooling Reset Select, 0=None, 1=OAT, 2=Delta T, 3=4-20mA control, Cooling Reset Select, 4=Space Temp

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
RESETCFG_dt_cr_fu	AV	14		RO	Delta T Full Reset Value
RESETCFG_dt_cr_no	AV	13		RO	Delta T No Reset Value
RESETCFG_oat_crfu	AV	12		RO	OAT Full Reset Value
RESETCFG_oat_crno	AV	11		RO	OAT No Reset Value
RESETCFG_spacr_fu	AV	18		RO	Space T Full Reset Value
RESETCFG_spacr_no	AV	17		RO	Space T No Reset Value
RESETCFG_v_cr_fu	AV	16		RO	Current Full Reset Value
RESETCFG_v_cr_no	AV	15		RO	Current No Reset Value
RUNTIME_HR_CP_A	AV	73	IR	RO	Compressor A Hours
RUNTIME_HR_CP_B	AV	75	IR	RO	Compressor B Hours
RUNTIME_hr_cpum1	AV	77	IR	RO	Evap Pump #1 Hours
RUNTIME_hr_cpum2	AV	78	IR	RO	Evap Pump #2 Hours
RUNTIME_HR_MACH	AV	71	IR	RO	Machine Operating Hours
RUNTIME_hrfana01	AV	81	IR	RO	Circuit A Fan #1 Hours
RUNTIME_hrfana02	AV	82	IR	RO	Circuit A Fan #2 Hours
RUNTIME_hrfana03	AV	83	IR	RO	Circuit A Fan #3 Hours
RUNTIME_hrfana04	AV	84	IR	RO	Circuit A Fan #4 Hours
RUNTIME_hrfana05	AV	85	IR	RO	Circuit A Fan #5 Hours
RUNTIME_hrfana06	AV	86	IR	RO	Circuit A Fan #6 Hours
RUNTIME_hrfana07	AV	87	IR	RO	Circuit A Fan #7 Hours
RUNTIME_hrfana08	AV	88	IR	RO	Circuit A Fan #8 Hours
RUNTIME_hrfana09	AV	89	IR	RO	Circuit A Fan #9 Hours
RUNTIME_hrfana10	AV	90	IR	RO	Circuit A Fan #10 Hours
RUNTIME_hrfana11	AV	91	IR	RO	Circuit A Fan #11 Hours
RUNTIME_hrfana12	AV	92	IR	RO	Circuit A Fan #12 Hours
RUNTIME_hrfana13	AV	93	IR	RO	Circuit A Fan #13 Hours
RUNTIME_hrfana14	AV	94	IR	RO	Circuit A Fan #14 Hours
RUNTIME_hrfanb01	AV	95	IR	RO	Circuit B Fan #1 Hours
RUNTIME_hrfanb02	AV	96	IR	RO	Circuit B Fan #2 Hours
RUNTIME_hrfanb03	AV	97	IR	RO	Circuit B Fan #3 Hours
RUNTIME_hrfanb04	AV	98	IR	RO	Circuit B Fan #4 Hours
RUNTIME_hrfanb05	AV	99	IR	RO	Circuit B Fan #5 Hours
RUNTIME_hrfanb06	AV	100	IR	RO	Circuit B Fan #6 Hours
RUNTIME_hrfanb07	AV	101	IR	RO	Circuit B Fan #7 Hours
RUNTIME_hrfanb08	AV	102	IR	RO	Circuit B Fan #8 Hours
RUNTIME_hrfanb09	AV	103	IR	RO	Circuit B Fan #9 Hours
RUNTIME_hrfanb10	AV	104	IR	RO	Circuit B Fan #10 Hours
RUNTIME_hrfanb11	AV	105	IR	RO	Circuit B Fan #11 Hours
RUNTIME_hrfanb12	AV	106	IR	RO	Circuit B Fan #12 Hours
RUNTIME_hrfanb13	AV	107	IR	RO	Circuit B Fan #13 Hours
RUNTIME_hrfanb14	AV	108	IR	RO	Circuit B Fan #14 Hours
RUNTIME_st_cp_a	AV	74	IR	RO	Compressor A Starts
RUNTIME_st_cp_b	AV	76	IR	RO	Compressor B Starts
RUNTIME_st_mach	AV	72	IR	RO	Machine Starts
RUNTIME_VIctA	AV	79	IR	RO	VI Cycle Count A
RUNTIME_VIctB	AV	80	IR	RO	VI Cycle Count B
SERVICE1_AntiFrz	BV	113		RO	Pump Rot. AntiFrz Protec
SERVICE1_apr_en	AV	355		RO	Approach Ctrl at Start??

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APPENDIX E — BACNET IP POINTS (cont)

OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
SERVICE1_auto_sm	BV	111		RO	Auto Start When SM Lost
SERVICE1_cdrv_cfg	BV	110		RO	Send comp. drive config?
SERVICE1_ewt_cirA	AV	342		RO	EWT Probe on Cir A Side
SERVICE1_ewt_opt	BV	105		RO	Entering Fluid Control
SERVICE1_fastcapr	AV	341		RO	Fast Capacity Recovery
SERVICE1_fdrv_cfg	BV	109		RO	Send fan drive config?
SERVICE1_flui_typ	AV	338		RO	Evaporator Fluid Type, 1 = Water, 2 = Med Brine, 3 = Low Brine
SERVICE1_freez_ov	AV	346		RO	Freeze Override Offset
SERVICE1_freezesp	AV	339		RO	Brine Freeze Setpoint
SERVICE1_heatersp	AV	345		RO	Evap Heater Delta Spt
SERVICE1_leak_thr	AV	343			Leakage Charge Threshold
SERVICE1_leak_tmr	AV	344		RO	Leakage Charge Timer
SERVICE1_metric	BV	108		RO	Metric Units? (Blackbox)
SERVICE1_mini_lwt	AV	340		RO	Brine Minimum Fluid Temp
SERVICE1_odrecspd	AV	350		RO	Oil Delta Recover Speed
SERVICE1_odtrspd	AV	348		RO	Oil Delta Trigger Speed
SERVICE1_orectim	AV	351		RO	Oil Recover Time
SERVICE1_otrigtim	AV	349		RO	Oil Trigger Time
SERVICE1_RFI_conf	BV	107		RO	Compressor RFI Filter En
SERVICE1_ser_pass	BV	106		RO	Service Password
SERVICE1_ViChkEn	BV	112		RW	VI Self-Test Enable
SERVICE1_ViPwrChk	AV	347		RW	VI Self-Test Threshold
SERVICE1_vistrtdt	AV	353		RO	High VI Time at Start
SERVICE1_vistrten	AV	354		RO	Enable High VI at Start
SERVICE1_wateesys	AV	352		RO	Water Temp Hysteresis
SETPOINT_cramp_sp	AV	553		RW	Cooling Ramp Loading
SETPOINT_csp1	AV	550		RW	Cooling Setpoint 1
SETPOINT_csp2	AV	551		RW	Cooling Setpoint 2
SETPOINT_ice_sp	AV	552		RW	Cooling Ice Setpoint
SETPOINT_lim_sp1	AV	554		RW	Switch Limit Setpoint 1
SETPOINT_lim_sp2	AV	555		RW	Switch Limit Setpoint 2
SETPOINT_lim_sp3	AV	556		RW	Switch Limit Setpoint 3
TEMP_CHWSTEMP	AV	49	COV IR	RO	Chill Water Temp (Opt.)
TEMP_COOL_EWT	AV	29	COV IR	RO	Evap Entering Fluid
TEMP_COOL_LWT	AV	30	COV IR	RO	Evap Leaving Fluid
TEMP_CP_TMP_A	AV	37	COV IR	RO	Motor Temperature Cir A
TEMP_CP_TMP_B	AV	45	COV IR	RO	Motor Temperature Cir B
TEMP_DGT_A	AV	36	COV IR	RO	Discharge Gas Temp Cir A
TEMP_DGT_B	AV	44	COV IR	RO	Discharge Gas Temp Cir B
TEMP_ECO_T_A	AV	38	COV IR	RO	EXV Eco. Tmp Cir A
TEMP_ECO_T_B	AV	46	COV IR	RO	EXV Eco. Tmp Cir B
TEMP_LIQ_T_A	AV	39	COV IR	RO	Liquid Temperature A
TEMP_LIQ_T_B	AV	47	COV IR	RO	Liquid Temperature B
TEMP_OAT	AV	31	COV IR	RO	Outdoor Air Temperature
TEMP_SCT_A	AV	32	COV IR	RO	Saturated Cond Tmp Cir A

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
TEMP_SCT_B	AV	40	COV IR	RO	Saturated Cond Tmp Cir B
TEMP_SLT_A	AV	34	COV IR	RO	Saturated Liquid Temp A
TEMP_SLT_B	AV	42	COV IR	RO	Saturated Liquid Temp B
TEMP_SPACETMP	AV	48	COV IR	RO	Space Temp (Opt.)
TEMP_SST_A	AV	33	COV IR	RO	Saturated Suction Temp A
TEMP_SST_B	AV	41	COV IR	RO	Saturated Suction Temp B
TEMP_SUCT_A	AV	35	COV IR	RO	Compressor Suction Tmp A
TEMP_SUCT_B	AV	43	COV IR	RO	Compressor Suction Tmp B
TL_cap_pc_a	TL	40	IR	RW	Estimated Capacity A
TL_cap_pc_b	TL	42	IR	RW	Estimated Capacity B
TL_COOL_EWT	TL	4	IR	RW	Evap Entering Fluid
TL_COOL_LWT	TL	5	IR	RW	Evap Leaving Fluid
TL_CP_TMP_A	TL	10	IR	RW	Motor Temperature Cir A
TL_CP_TMP_B	TL	15	IR	RW	Motor Temperature Cir B
TL_ctrl_wt	TL	38	IR	RW	Controled Water Temp
TL_DEM_LIM	TL	3	IR	RW	Active Demand Limit Val
TL_DGT_A	TL	9	IR	RW	Discharge Gas Temp Cir A
TL_DGT_B	TL	14	IR	RW	Discharge Gas Temp Cir B
TL_drv_Fa	TL	29	IR	RW	Cir A Drive Frequency
TL_drv_Fb	TL	32	IR	RW	Cir B Drive Frequency
TL_drv_Ia	TL	28	IR	RW	Cir A Drive Amps
TL_drv_Ib	TL	31	IR	RW	Cir B Drive Amps
TL_drv_pwr	TL	33	IR	RW	Total Comp Drive Power
TL_drv_pwra	TL	27	IR	RW	Cir A Drive Power
TL_drv_pwrb	TL	30	IR	RW	Cir B Drive Power
TL_eco_a	TL	43	IR	RW	EXV Eco Position Cir A
TL_eco_b	TL	44	IR	RW	EXV Eco Position Cir B
TL_ECO_P_A	TL	17	IR	RW	Economizer Pressure A
TL_ECO_P_B	TL	18	IR	RW	Economizer Pressure B
TL_ECO_T_A	TL	11	IR	RW	EXV Eco. Tmp Cir A
TL_ECO_T_B	TL	16	IR	RW	EXV Eco. Tmp Cir B
TL_EXV_A	TL	35	IR	RW	EXV Position Circuit A
TL_EXV_B	TL	37	IR	RW	EXV Position Circuit B
TL_fan_f_a	TL	45	IR	RW	Fan Freq Cir A
TL_fan_f_b	TL	46	IR	RW	Fan Freq Cir B
TL_fd_pwr	TL	51	IR	RW	Total Fan Drive Power
TL_fd_pwr	TL	51	IR	RW	Total Fan Drive Power
TL_fd_pwra1	TL	47	IR	RW	Fan Drive Power A1
TL_fd_pwra1	TL	47	IR	RW	Fan Drive Power A1
TL_fd_pwra2	TL	48	IR	RW	Fan Drive Power A2
TL_fd_pwra2	TL	48	IR	RW	Fan Drive Power A2
TL_fd_pwrb1	TL	49	IR	RW	Fan Drive Power B1
TL_fd_pwrb1	TL	49	IR	RW	Fan Drive Power B1
TL_fd_pwrb2	TL	50	IR	RW	Fan Drive Power B2
TL_fd_pwrb2	TL	50	IR	RW	Fan Drive Power B2
TL_HR_CP_A	TL	23	IR	RW	Compressor A Hours
TL_HR_CP_B	TL	25	IR	RW	Compressor B Hours
TL_HR_MACH	TL	21	IR	RW	Machine Operating Hours

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OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
TL_OAT	TL	6	IR	RW	Outdoor Air Temperature
TL_OIL_L_A	TL	19	IR	RW	Oil Level Input A
TL_OIL_L_B	TL	20	IR	RW	Oil Level Input B
TL_ov_exv_a	TL	34	IR	RW	EXV Override Circuit A
TL_ov_exv_b	TL	36	IR	RW	EXV Override Circuit B
TL_overrida	TL	39	IR	RW	Override Capacity Nb A
TL_overridb	TL	41	IR	RW	Override Capacity Nb B
TL_SCT_A	TL	7	IR	RW	Saturated Cond Tmp Cir A
TL_SCT_B	TL	12	IR	RW	Saturated Cond Tmp Cir B
TL_SP_SEL	TL	2	IR	RW	Setpoint Select
TL_SST_A	TL	8	IR	RW	Saturated Suction Temp A
TL_SST_B	TL	13	IR	RW	Saturated Suction Temp B
TL_st_cp_a	TL	24	IR	RW	Compressor A Starts
TL_st_cp_b	TL	26	IR	RW	Compressor B Starts
TL_st_mach	TL	22	IR	RW	Machine Starts
TL_STATUS	TL	1	IR	RW	Run Status
UPDTHOUR_hr_cp_a	AV	358		RO	Compressor A Hours
UPDTHOUR_hr_cp_b	AV	360		RO	Compressor B Hours
UPDTHOUR_hr_cpum1	AV	362		RO	Evap Pump #1 Hours
UPDTHOUR_hr_cpum2	AV	363		RO	Evap Pump #2 Hours
UPDTHOUR_hr_mach	AV	356		RO	Machine Operating Hours
UPDTHOUR_hrfana01	AV	366		RO	Circuit A Fan #1 Hours
UPDTHOUR_hrfana02	AV	367		RO	Circuit A Fan #2 Hours
UPDTHOUR_hrfana03	AV	368		RO	Circuit A Fan #3 Hours
UPDTHOUR_hrfana04	AV	369		RO	Circuit A Fan #4 Hours
UPDTHOUR_hrfana05	AV	370		RO	Circuit A Fan #5 Hours
UPDTHOUR_hrfana06	AV	371		RO	Circuit A Fan #6 Hours
UPDTHOUR_hrfana07	AV	372		RO	Circuit A Fan #7 Hours
UPDTHOUR_hrfana08	AV	373		RO	Circuit A Fan #8 Hours
UPDTHOUR_hrfana09	AV	374		RO	Circuit A Fan #9 Hours
UPDTHOUR_hrfana10	AV	375		RO	Circuit A Fan #10 Hours
UPDTHOUR_hrfana11	AV	376		RO	Circuit A Fan #11 Hours
UPDTHOUR_hrfana12	AV	377		RO	Circuit A Fan #12 Hours
UPDTHOUR_hrfana13	AV	378		RO	Circuit A Fan #13 Hours
UPDTHOUR_hrfana14	AV	379		RO	Circuit A Fan #14 Hours
UPDTHOUR_hrfanb01	AV	380		RO	Circuit B Fan #1 Hours
UPDTHOUR_hrfanb02	AV	381		RO	Circuit B Fan #2 Hours
UPDTHOUR_hrfanb03	AV	382		RO	Circuit B Fan #3 Hours
UPDTHOUR_hrfanb04	AV	383		RO	Circuit B Fan #4 Hours
UPDTHOUR_hrfanb05	AV	384		RO	Circuit B Fan #5 Hours
UPDTHOUR_hrfanb06	AV	385		RO	Circuit B Fan #6 Hours
UPDTHOUR_hrfanb07	AV	386		RO	Circuit B Fan #7 Hours
UPDTHOUR_hrfanb08	AV	387		RO	Circuit B Fan #8 Hours
UPDTHOUR_hrfanb09	AV	388		RO	Circuit B Fan #9 Hours
UPDTHOUR_hrfanb10	AV	389		RO	Circuit B Fan #10 Hours
UPDTHOUR_hrfanb11	AV	390		RO	Circuit B Fan #11 Hours
UPDTHOUR_hrfanb12	AV	391		RO	Circuit B Fan #12 Hours
UPDTHOUR_hrfanb13	AV	392		RO	Circuit B Fan #13 Hours

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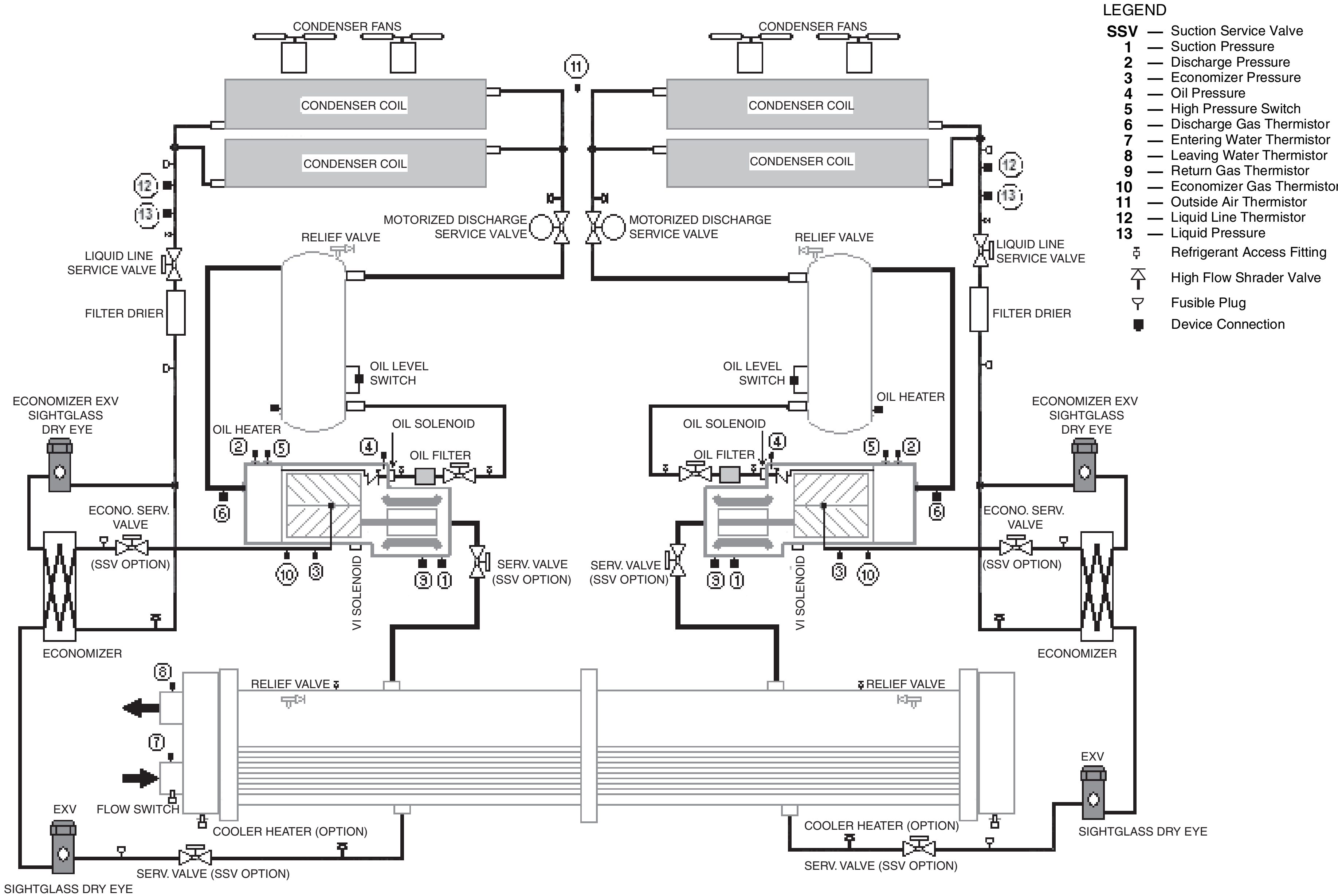
OBJECT NAME	OBJECT TYPE	INSTANCE	OPTION	PV ACCESS	DESCRIPTION
UPDTHOUR_hrfanb14	AV	393		RO	Circuit B Fan #14 Hours
UPDTHOUR_st_cp_a	AV	359		RO	Compressor A Starts
UPDTHOUR_st_cp_b	AV	361		RO	Compressor B Starts
UPDTHOUR_st_mach	AV	357		RO	Machine Starts Number
UPDTHOUR_VIctA	AV	364		RO	VI Cycle Count A
UPDTHOUR_VIctB	AV	365		RO	VI Cycle Count B
USERCONF_use_pass	AV	9		RW	User Password
VLT_DRV_drv_CCTa	AV	123	IR	RO	Cir A Drive Ctrl Card T
VLT_DRV_drv_CCTb	AV	133	IR	RO	Cir B Drive Ctrl Card T
VLT_DRV_drv_DCVa	AV	121	IR	RO	Cir A Drive DC Link Volt
VLT_DRV_drv_DCVb	AV	131	IR	RO	Cir B Drive DC Link Volt
VLT_DRV_drv_Fa	AV	119	IR	RO	Cir A Drive Frequency
VLT_DRV_drv_Fb	AV	129	IR	RO	Cir B Drive Frequency
VLT_DRV_drv_HSTa	AV	122	IR	RO	Cir A Drive Heat Sink T
VLT_DRV_drv_HSTb	AV	132	IR	RO	Cir B Drive Heat Sink T
VLT_DRV_drv_HTRa	AV	124	IR	RO	Cir A Drive Heater
VLT_DRV_drv_HTRb	AV	134	IR	RO	Cir B Drive Heater
VLT_DRV_drv_Ia	AV	116	IR	RO	Cir A Drive Amps
VLT_DRV_drv_Ib	AV	126	IR	RO	Cir B Drive Amps
VLT_DRV_drv_pwr	AV	135	IR	RO	Total Comp Drive Power
VLT_DRV_drv_pwra	AV	115	IR	RO	Cir A Drive Power
VLT_DRV_drv_pwrb	AV	125	IR	RO	Cir B Drive Power
VLT_DRV_drv_Sa	AV	118	IR	RO	Cir A Drive Speed
VLT_DRV_drv_Sb	AV	128	IR	RO	Cir B Drive Speed
VLT_DRV_drv_Ta	AV	120	IR	RO	Cir A Drive Torque
VLT_DRV_drv_Tb	AV	130	IR	RO	Cir B Drive Torque
VLT_DRV_drv_Va	AV	117	IR	RO	Cir A Drive Voltage
VLT_DRV_drv_Vb	AV	127	IR	RO	Cir B Drive Voltage
VLT_DRV_SET_DRVA	BV	73	IR	RO	Drive A Attach
VLT_DRV_SET_DRVB	BV	74	IR	RO	Drive B Attach
VLT_DRV_VLT_COMA	BV	75	IR	RO	Comm with Drive A Ok
VLT_DRV_VLT_COMB	BV	76	IR	RO	Comm with Drive B Ok

LEGEND

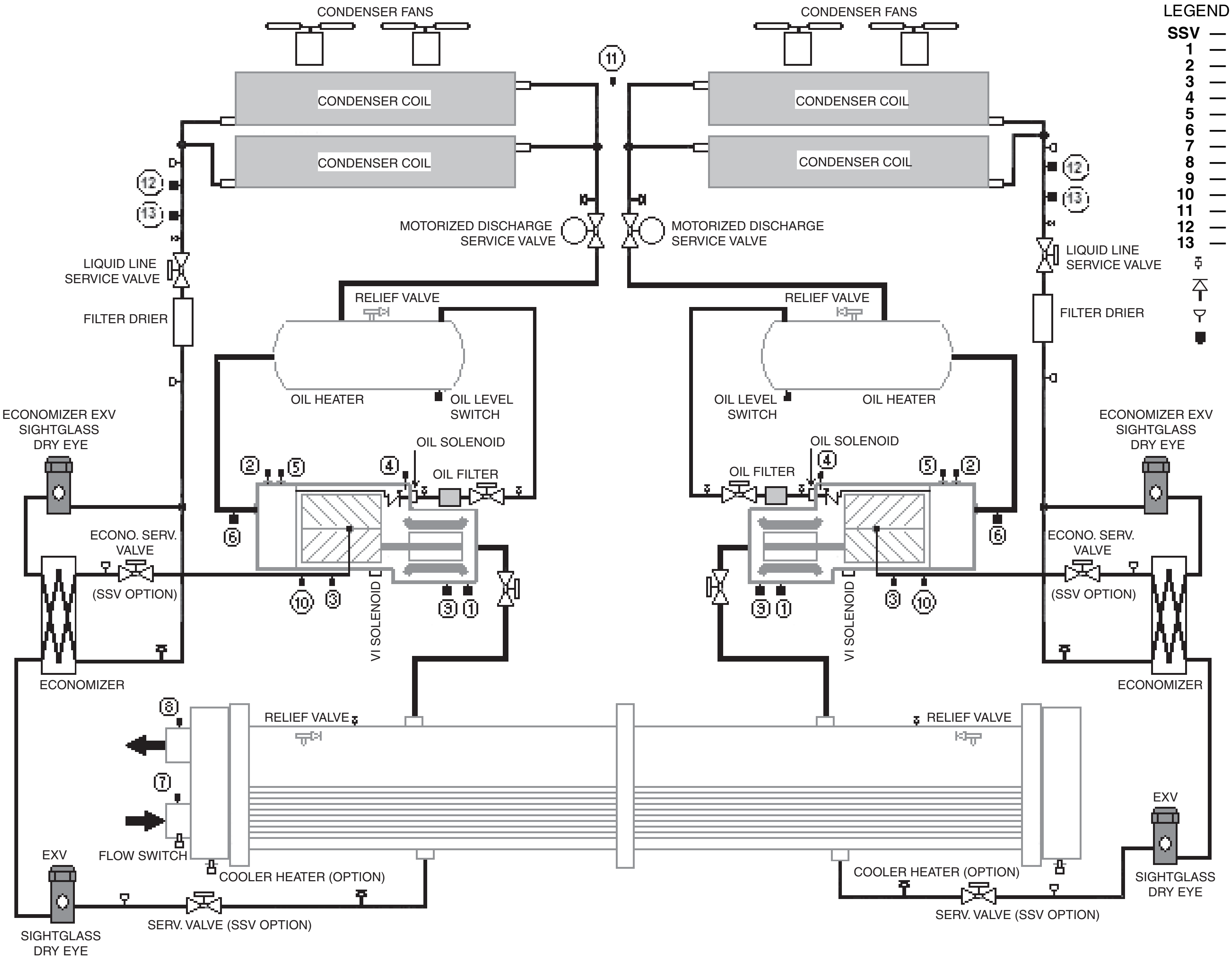
AV — Analog Value
BV — Binary Value
CMD — Command
COV — Change of Value
IR — Intrinsic Reporting
RO — Read Only
RW — Read Write
TL — Trend Log

APPENDIX F — PIPING AND INSTRUMENTATION

30XV140-325 Units



30XV350-500 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 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	n/a	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	n/a	n/a

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.

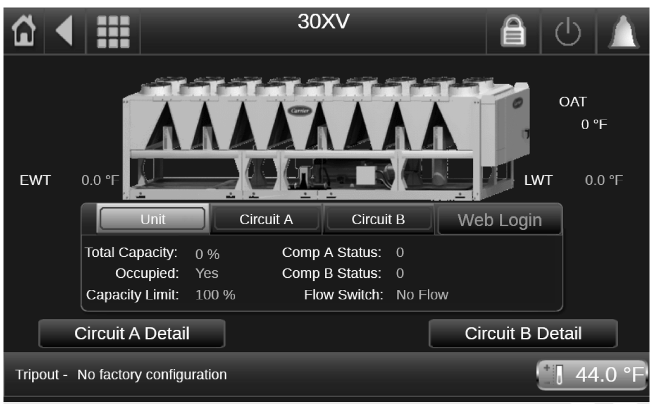


Fig. A — Home Screen

2. Access the LOGIN screen by selecting the LOCK  icon on the HOME screen to bring up the LOGIN screen. See Fig. B.

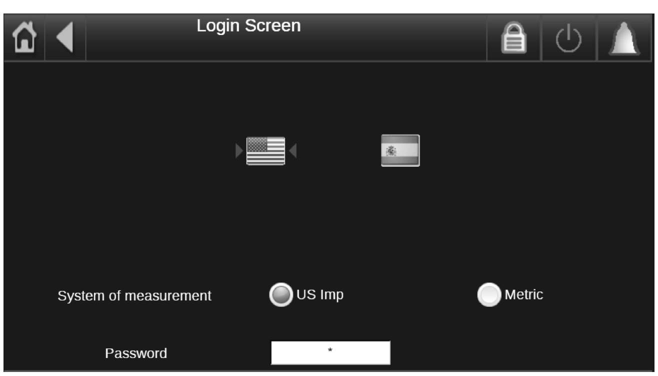


Fig. B — Login Screen

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.

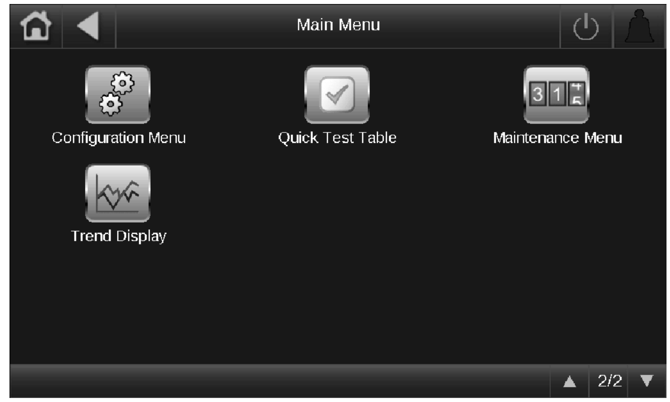
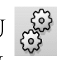


Fig. C — Main Menu Screen

4. Select the CONFIGURATION MENU  button to navigate to the CONFIGURATION MENU screen. See Fig. D.

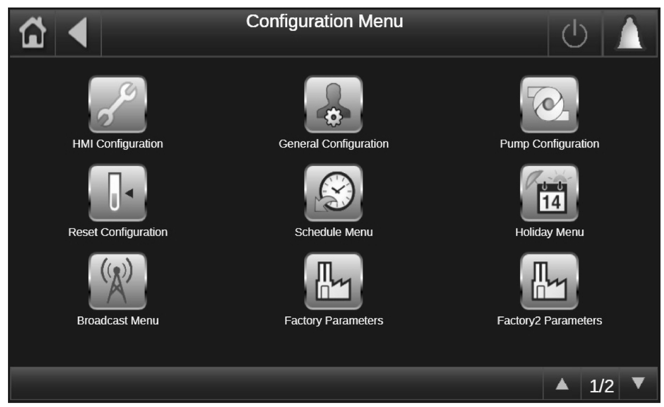


Fig. D — Configuration Menu Screen

5. Select the HMI CONFIGURATION MENU  button to navigate to the HMI CONFIGURATION screen. See Fig. E.

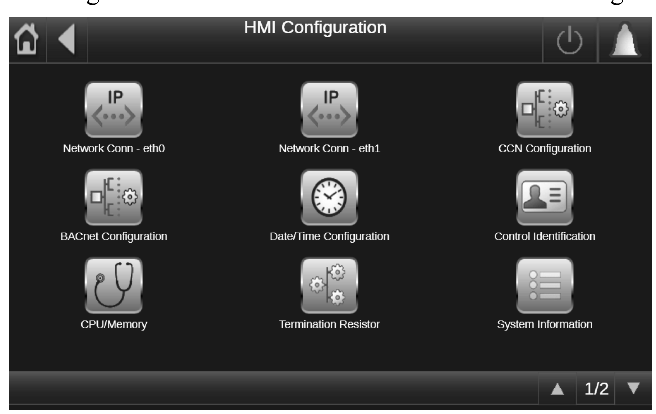


Fig. E — HMI Configuration Menu Screen

6. Select NETWORK CONN-ETH0  button to access the network parameters. See Fig. F.

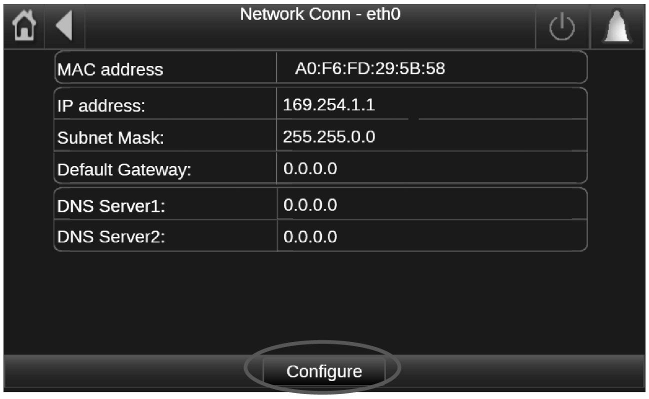


Fig. F — Network Connection Screen — Configure

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.

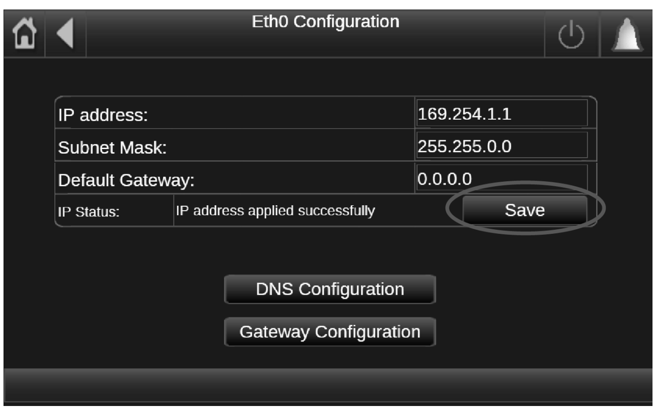


Fig. G — Network Connection Screen — Save

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.

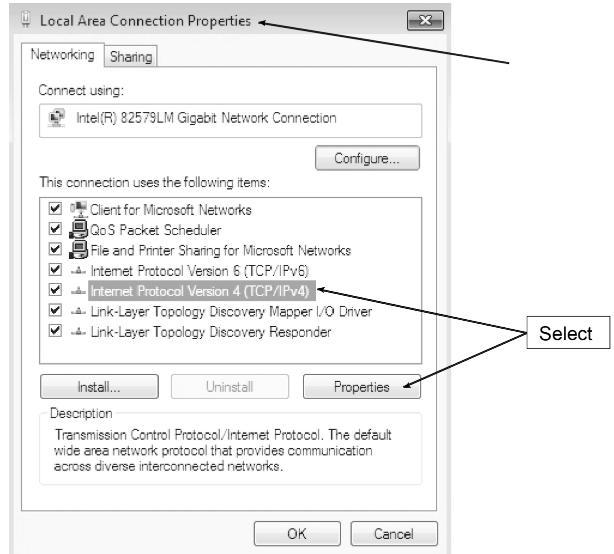


Fig. H — Local Area Connection Properties Screen

2. Once the Properties button is selected the Internet Protocol Properties Window opens. See Fig. I.

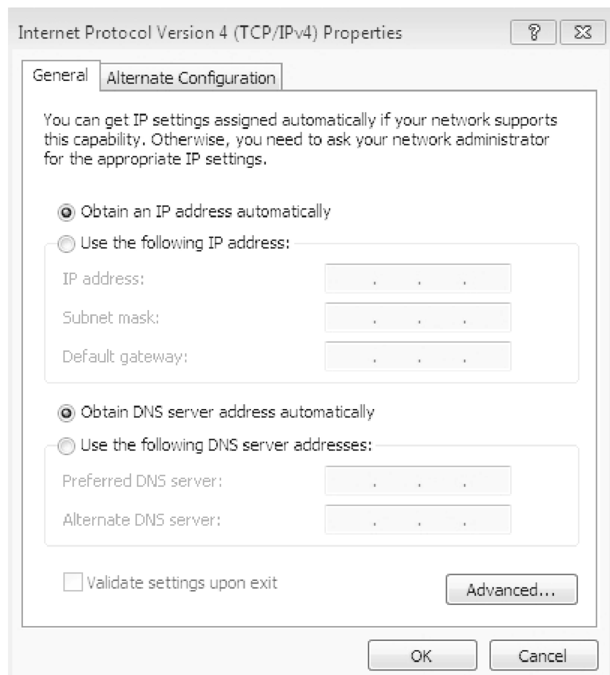


Fig. I — Internet Protocol Properties Screen

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.

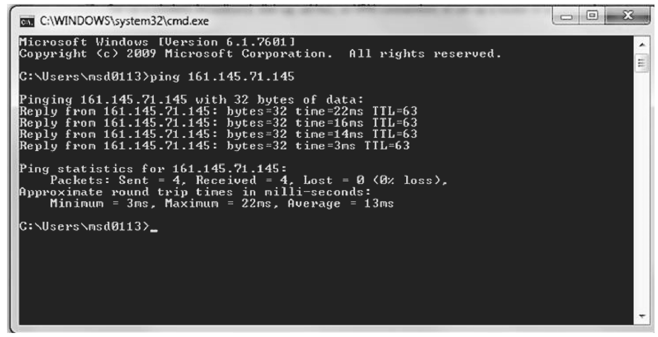


Fig. J — Ping Response Screen

APPENDIX J — FACTORY-SUPPLIED PUMPS

Sensorless pump speed control is standard on factory supplied pumps. This control monitors power and speed of the pump to determine where the pump is on the system curve. The system curve is defined by site specific user settings entered at commissioning of the unit. Pump motors are ECM design in a parallel arrangement. All of the pump motors may operate at once depending on the most efficient point for the pump system. See Fig. K-U.

⚠ CAUTION

If multiple chillers with factory supplied pumps with sensorless control are piped and parallel and run simultaneously, a separate pump controller is required. Pump surging may occur between chillers without this controller. Check with Carrier Service for details.

Pump Display

The pump motors have a touchscreen display where system parameters must be adjusted for the site. This consists of setting the design flowrate, total static pressure, and zero flow head pressure. The total static pressure includes the building and chiller pressure drop. Below is the layout of the touchscreen display.

Password

There are three levels of passwords; see Table A for touch screen password details and Table B for web interface password details. See Fig. K for login details.

Table A — Touch Screen

SCREEN			
Main/Home			
User level	**Level 0**	**Level 1**	**Level 2**
Working Professionals	Anyone	End User Local Maintenance Techs	SAA Service Tier 3 Trained Service Reps
Default Screen Password	N/A	1234	7644
Changing Password	N/A	Allowed by level 2,3,4	N/A
Control Functions			
Start - Auto	X	X	X
Start - Hand	X	X	X
Stop - Auto	X	X	X
Stop - Hand	X	X	X
Disabling Level 1 Start (Not Yet Available)	N/A	X	X
Pump Configuration			
Pump Control			
Parallel	N/A	X	X
Single	N/A	X	X
I/O	N/A	X	X
Remote / Communication	N/A	X	X
Dual Season Setup	N/A	X	X
Purchased Services	N/A	X	X
Auto-Flow Balance (if activated)	N/A	X	X
View Trends			
Flow/Time	X	X	X
Head/Time	X	X	X
Power/Time	X	X	X
Settings			
Brightness	N/A	X	X
Language	N/A	X	X
WiFi	N/A	X	X
Ethernet	N/A	X	X
Date & Time	N/A	X	X
Units	N/A	X	X
About			
Factory Setup - Screen Calibration	N/A	N/A	N/A
System			
Motor Data	X	X	X
Pump Data	X	X	X
Version	X	X	X
Patent	X	X	X
WiFi	X	X	X
Ethernet	X	X	X
Alarm & Warning			
Alarm - View	X	X	X
Warning - View	X	X	X
Warning - Acknowledged	N/A	X	X

APPENDIX J — FACTORY-SUPPLIED PUMPS (cont)

Table B — Web Interface

TAB			
Dashboard			
User level	**Level 0**	**Level 1**	**Level 2**
Working Professionals	Anyone	End User Local Maintenance Techs	SAA Service Tier 3 Trained Service Reps
Default Webserver Password	N/A	Armstrong 1	7^4$
Changing Password	N/A	Allowed by level 2,3,4	N/A
HOA	N/A	X	X
Display data			
Head	N/A	X	X
Flow	N/A	X	X
Speed	N/A	X	X
Power	N/A	X	X
Current	N/A	X	X
Voltage	N/A	X	X
Bus Voltage	N/A	N/A	X
Battery Voltage	N/A	N/A	X
Temperature	N/A	N/A	X
Acceleration	N/A	N/A	X
View Alarm & Warning	N/A	X	X
Acknowledge Warning	N/A	X	X
Display - Pump Status Graph	N/A	X	X
Data Tab			
Actual [Real Time]	N/A	X	X
Trends	N/A	X	X
Accelerometer Value	N/A	N/A	N/A
Setting Tab			
Pump			
Control and Design Tab			
View Pump SN	N/A	X	X
Set Pump SN	N/A	N/A	N/A
View Pump Tag	N/A	X	X
Set Pump Tag	N/A	X	X
View Pump Design Parameters	N/A	X	X
Set Pump Design Parameters	N/A	X	X
View Motor Rotation	N/A	X	X
Set Motor Rotation	N/A	X	X
View Motor Ramp Time	N/A	X	X
Set Motor Ramp Time	N/A	X	X
View Startup Operation [Operating State at Power-Up]	N/A	X	X
Set Startup Operation [Operating State at Power-Up]	N/A	X	X
View Digital Input Setting [1 & 2]	N/A	X	X
Change Digital Input Setting [1 & 2]	N/A	X	X
View Control Mode [automatic/manual/analog input/parallel/remote]	N/A	X	X
Set Control Mode [automatic/manual/analog input/parallel/remote]	N/A	X	X
View Operation Mode [Quad, Linear..]	N/A	X	X
Set Operation Mode [Quad, Linear..]	N/A	X	X
Outputs (work in progress)			
Digital Output 1 [View Digital Output 1 Function]	N/A	X	X
Digital Output 2 [View Digital Output 2 Function]	N/A	X	X
Digital Output 1 [Set Digital Output Function]	N/A	N/A	X
Digital Output 2 [Set Digital Output Function]	N/A	N/A	X
Analog Output [View Analog Output Function]	N/A	X	X
Analog Output [Set Analog Output Function]	N/A	X	X
Relay Outputs [Enable / Disable]	N/A	X	X
Sensorless Points	N/A	N/A	X
View Sensorless Points	N/A	N/A	X
Set Sensorless Points	N/A	N/A	X
Factory Sensorless Map Entry	N/A	N/A	X
Communication Tab			
iECM VFD			
Set Modbus ID	N/A	N/A	X
View Modbus ID	N/A	N/A	X
Set Baud rate	N/A	N/A	X
View Baud rate	N/A	N/A	X
Set Number of Data Bits	N/A	N/A	X
View Number of Data Bits	N/A	N/A	X
Set Number of Stop Bits	N/A	N/A	X

Table B — Web Interface (cont)

TAB			
View Number of Stop Bits	N/A	N/A	X
Set Parity	N/A	N/A	X
View Parity	N/A	N/A	X
iECM VFD [View VFD]	N/A	N/A	X
iECM VFD [Set VFD]	N/A	N/A	X
BMS Remote Control	N/A	X	X
Serial Communication Information	N/A	X	X
Ethernet Setup	N/A	X	X
DHCP Enable	N/A	X	X
Set IP information	N/A	X	X
View MAC Address	N/A	X	X
Wi-Fi Setup	N/A	X	X
Wi-Fi Enable	N/A	X	X
Mode - Station or Access Point	N/A	X	X
View MAC Address	N/A	X	X
Wi-Fi Security Settings	N/A	X	X
IP Settings	N/A	X	X
General Tab			
Timer Based Recording (Data Log interval)	N/A	X	X
Enable Data Logging	N/A	X	X
Set Time interval	N/A	X	X
Set Pump Default Configuration			
Set Configuration to Default	N/A	N/A	N/A
Restore default Pump Configuration	N/A	N/A	N/A
Language			
Set Language [Interface Language]	N/A	N/A	N/A
Import/Export Configuration			
Import Configuration	N/A	X	X
Export Configuration	N/A	X	X
Set Pump Sensorless Map to Factory Default			
Set Default Sensorless Map	N/A	N/A	N/A
Restore default Sensorless Map	N/A	N/A	N/A
Scheduled Tab			
Scheduled Tasks (Not Available Yet)	N/A	N/A	N/A
Alarms Tab			
Alarms			
Warnings			
Set Warning Thresholds	N/A	N/A	X
Hardware Test Tab			
EEPROM Test			
EEPROM Test	N/A	N/A	N/A
Flying Start Test			
Flying Start Test	N/A	N/A	N/A
Flash Test			
Flash Test	N/A	N/A	N/A
Pump Test Tab			
PID Values			
Set PID Values	N/A	N/A	N/A
Administrative Tab			
Security Settings			
LCD Interface			
Set Local Password (Level 2)			
Web Interface			
Set Web Password (Level 1)	N/A	N/A	X
Set Web Password (Level 2)	N/A	N/A	X
Set Timeout	N/A	N/A	X
Factory Reset			
Restore Factory Setting	N/A	N/A	X
Upload Packages			
Upload Packages	N/A	X	X
Upload Certificates	N/A	X	X
About Tab			
Information	N/A	X	X

Figures K-U show the menu and the associated screens.

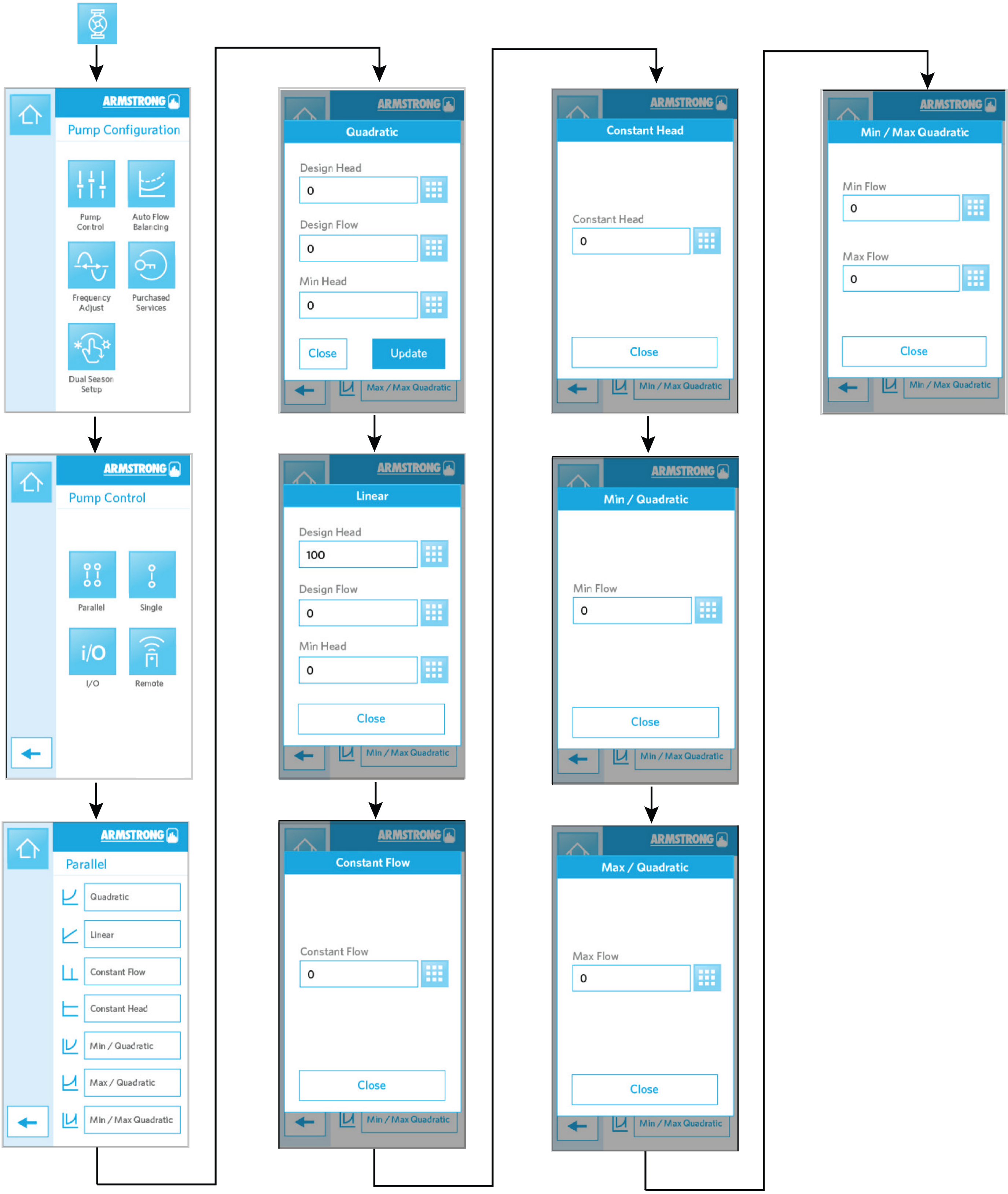
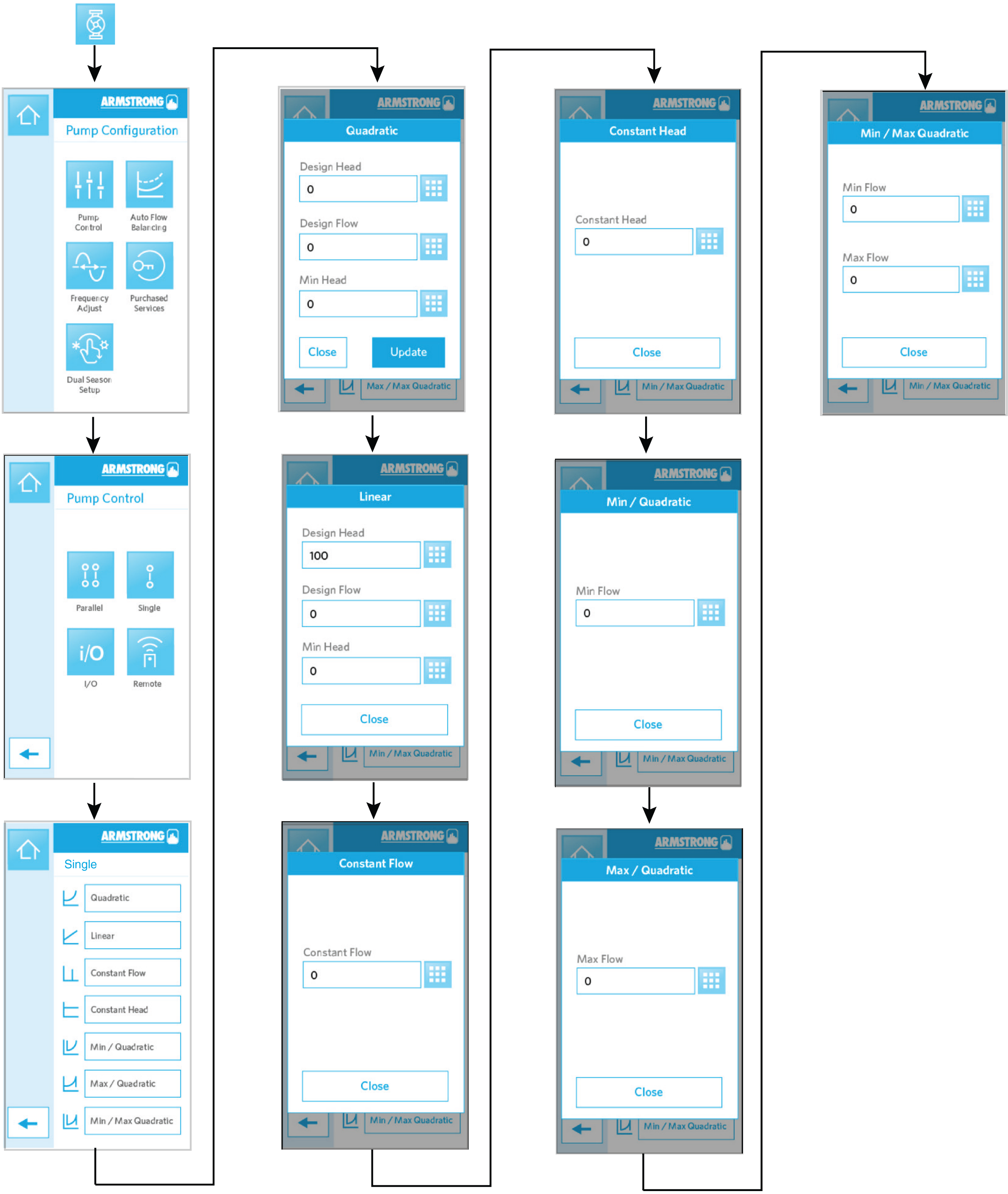


Fig. K — Pump Configuration Screens



Use parallel operation. Quadratic control is the factory default.
Set flow, head, and min head for site specific conditions.

Fig. L — Pump Control Screens

Fig. M — Sensor and Bypass Valve Control Screens

Fig. N — Pressure Sensor Control Screens

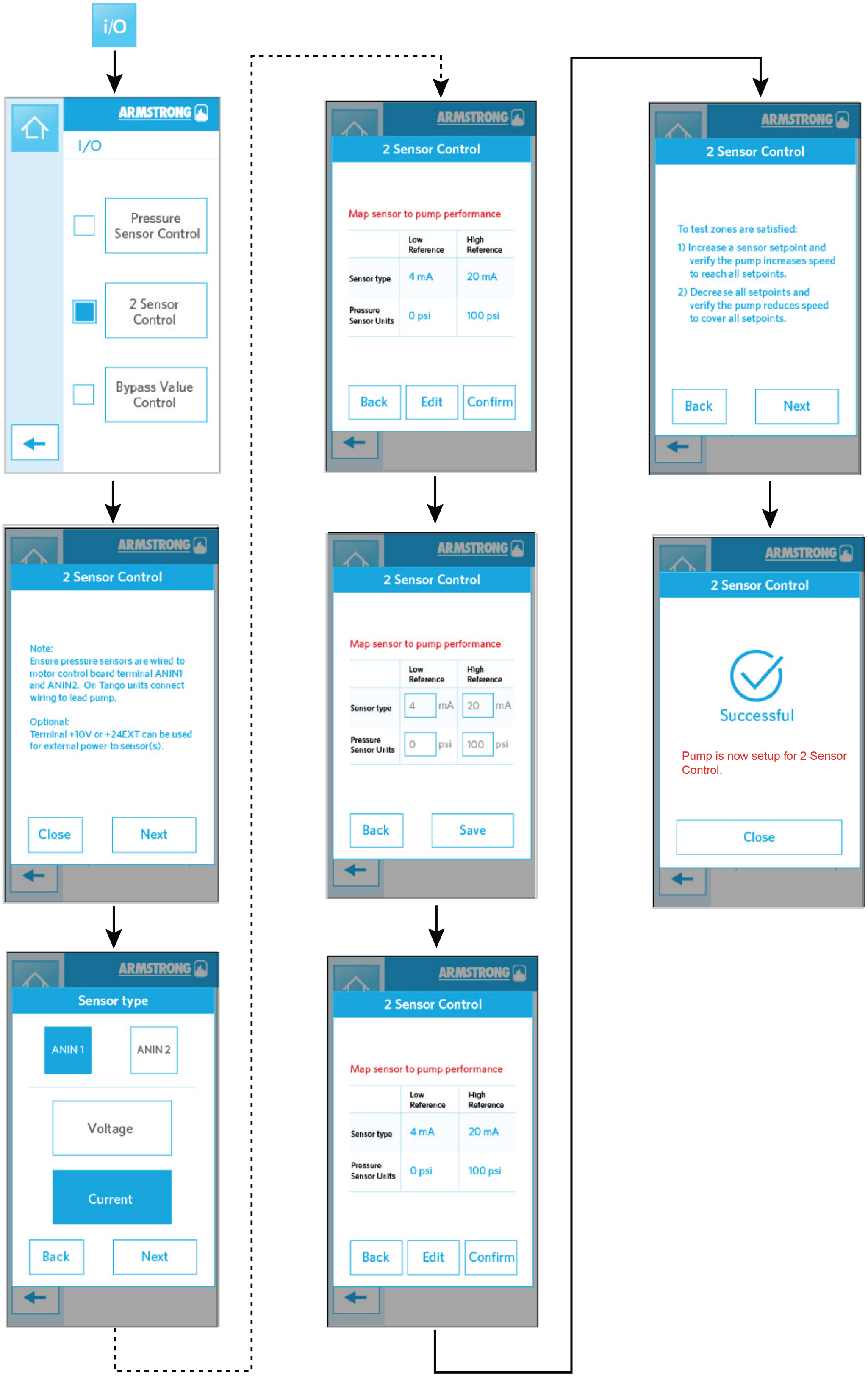


Fig. O — 2 Sensor Control Screens

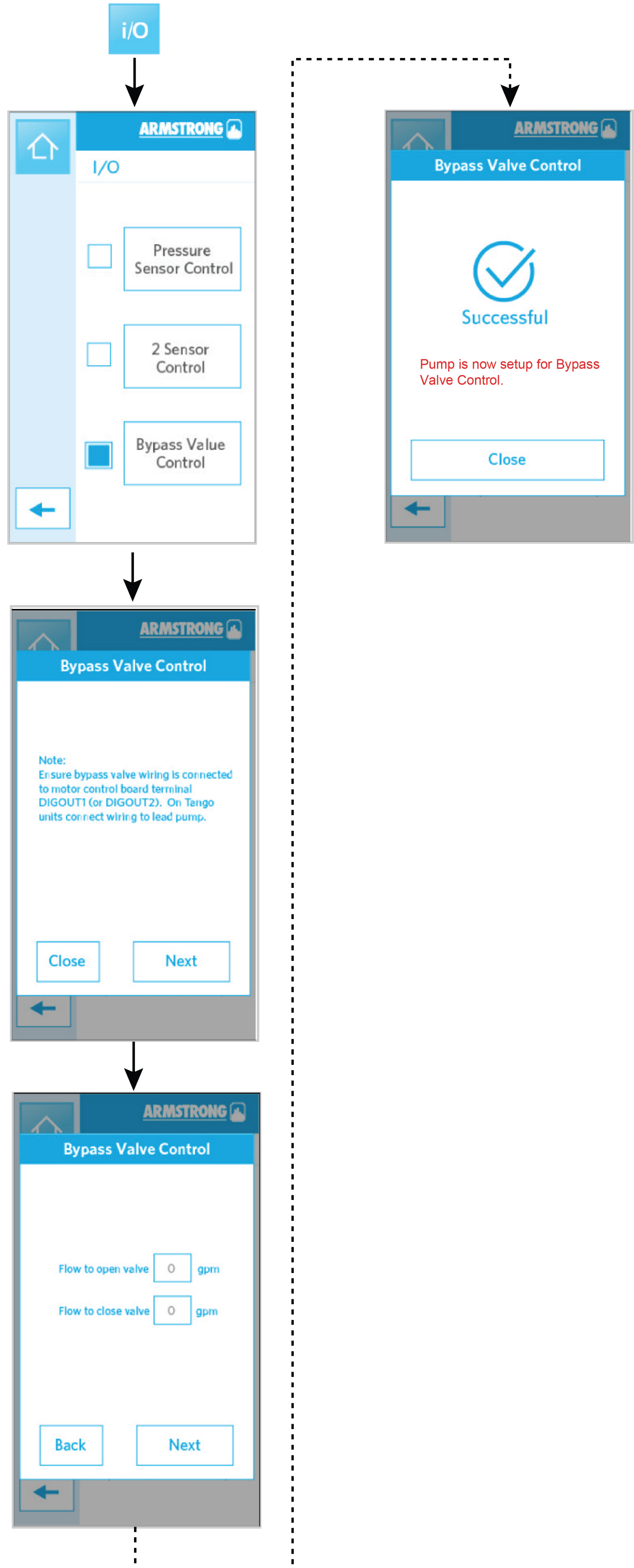


Fig. P — Bypass Valve Control Screens

Fig. Q — Modbus and BACnet Screens

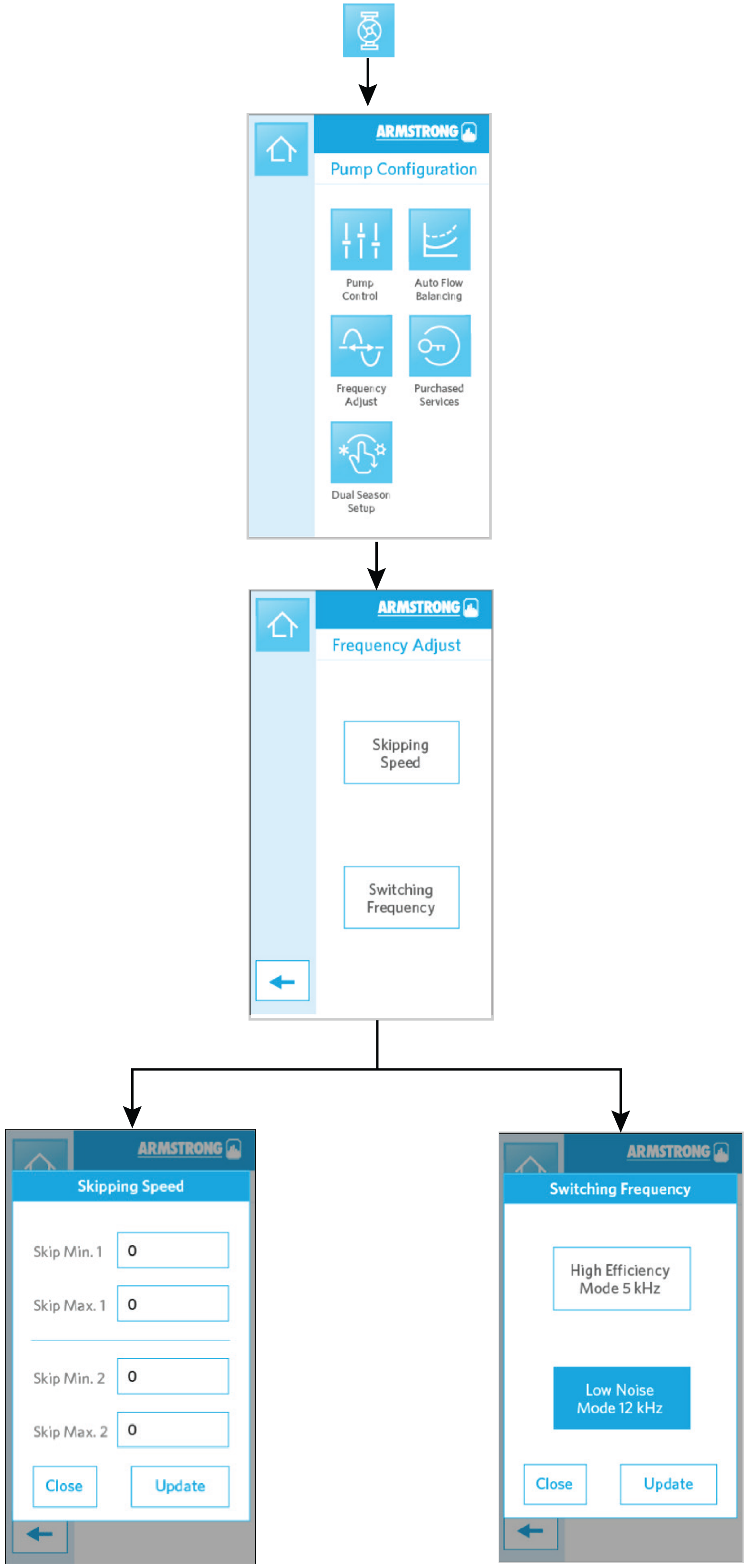


Fig. R — Skipping Speed and Switching Frequency Screens

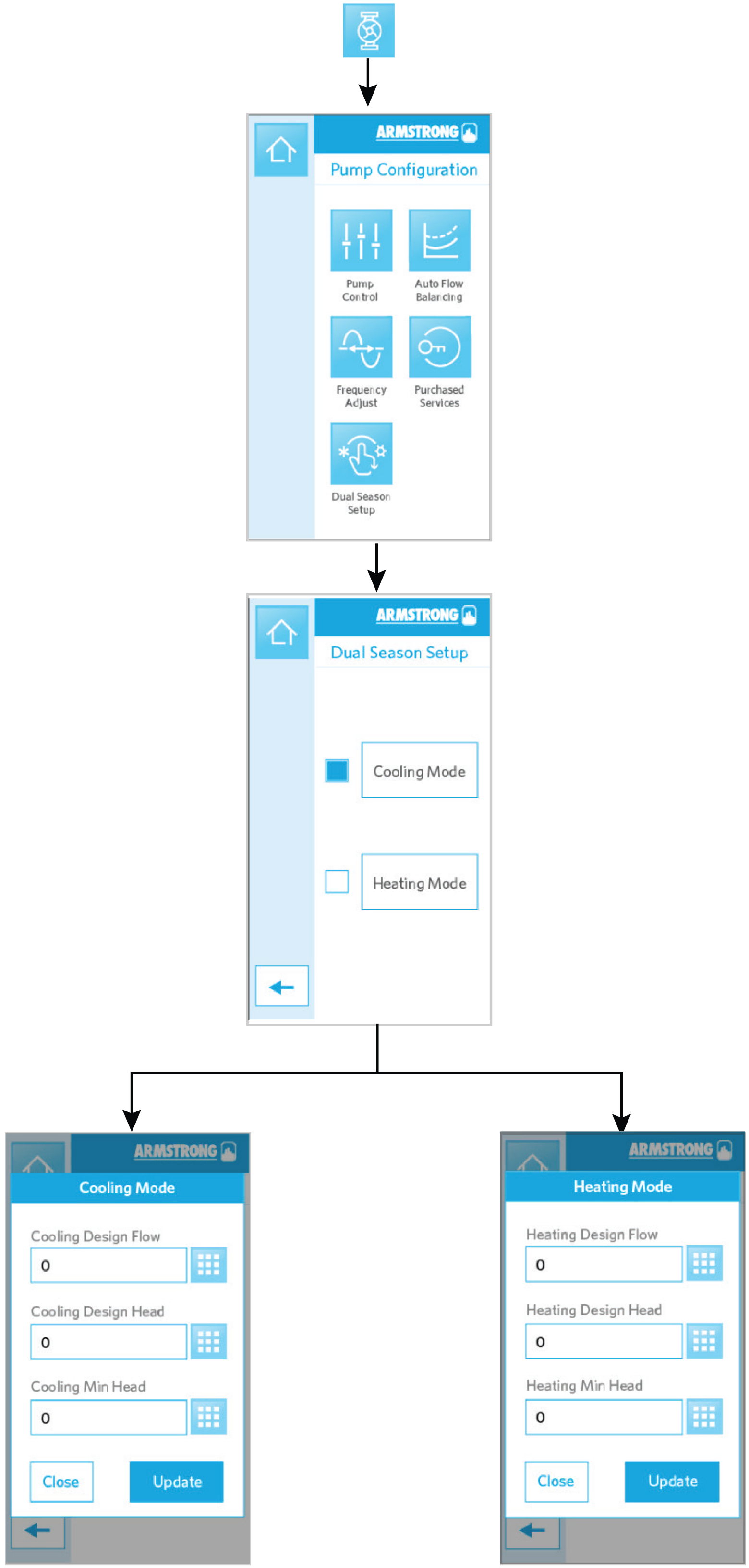


Fig. S — Dual Season Setup Cooling and Heating Mode Screens

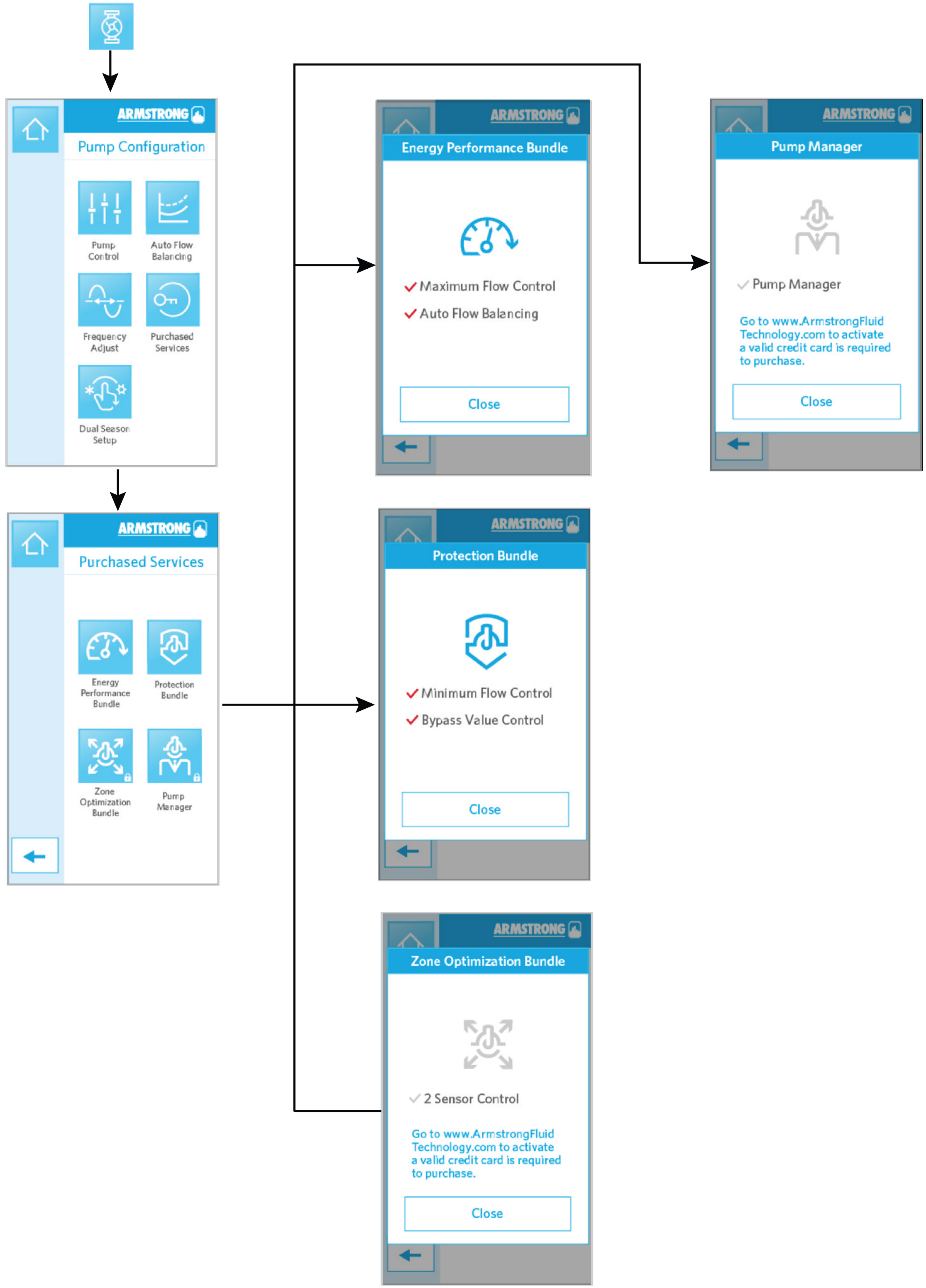


Fig. T — Purchased Services - Energy Performance, Protection, Zone Optimization, and Pump Manager Screens

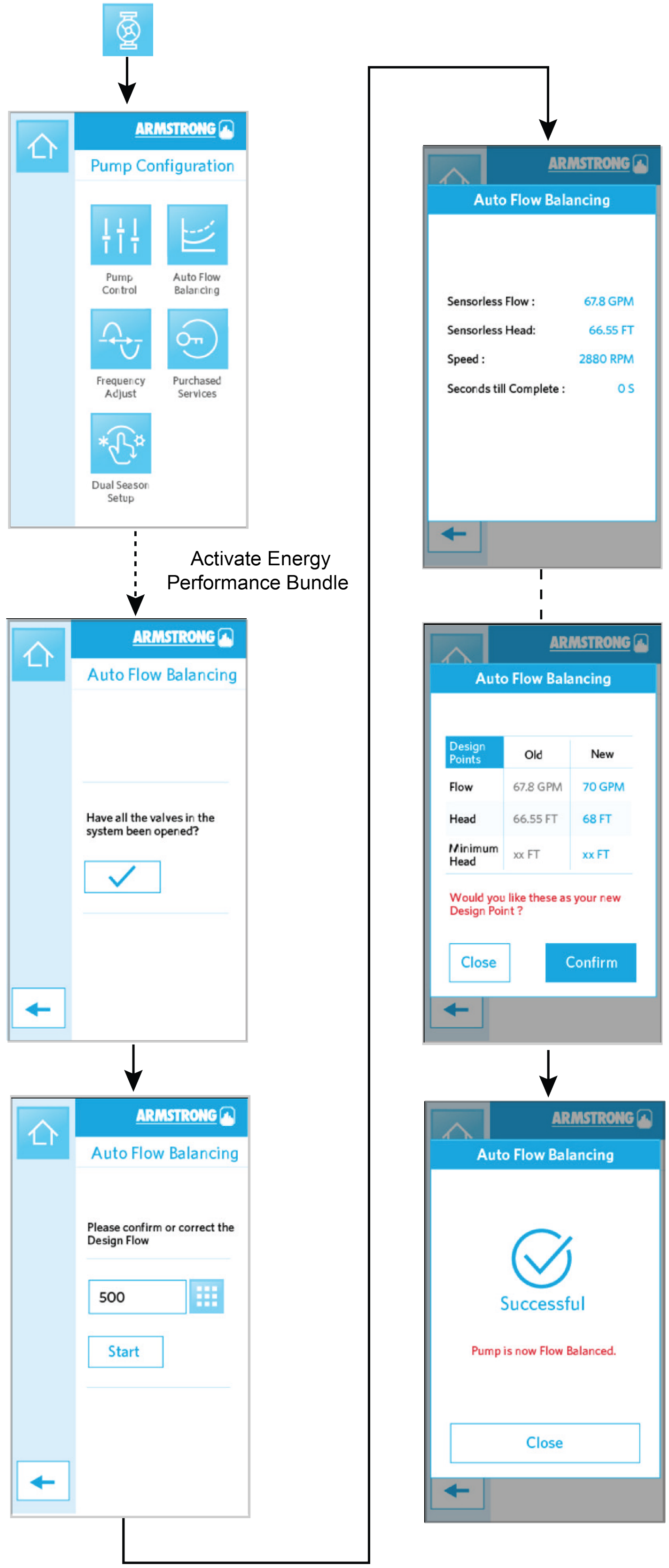


Fig. U — Energy Performance Auto Flow Balancing Screens

Wireless Connection to Pumps

The preferred method of changing the pump setup is through WiFi. This can be done with a PC, tablet, or smart phone.

1. Record the IP address of the pump from the display. Select the "information" icon, then the WiFi icon. Make sure the WiFi is active, showing Armstrong Connect or Access Point. See Fig. V.
2. Connect to pump WiFi on the PC or similar device. The name of the signal will be the Pump Tag shown in the bottom right corner of the pump display. These must be different for each pump. If not, change the Pump Tag on the pump display. Select settings, then pump tag. You can only set this to a number on the display. It can be changed over WiFi to PMP-0X.
3. Enter the 9 digit IP address into your browser. Use WiFi connection password, 7^4$. From this screen you can monitor and change configurations in the pump.
4. If you need to change the Pump Tag, modify it under Settings/Pump. Select update to change it. It will update and disconnect. Re-connect WiFi to the new Pump Tag.

Setup for Factory Supplied Pumps

Pumps are designed for sensorless control. It is important to set the application specific parameters in the pump for proper operation. These parameters, design pressure and flow, must be set over a wireless or Ethernet connection.

The dashboard is on the left side of the screen. Select Settings, then Pump. See Fig. W-Y for details of the settings.

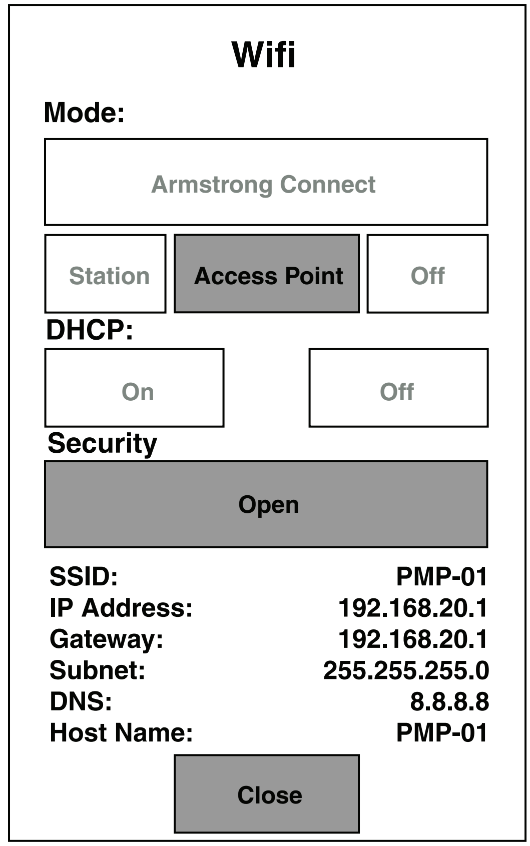


Fig. V — WiFi Settings

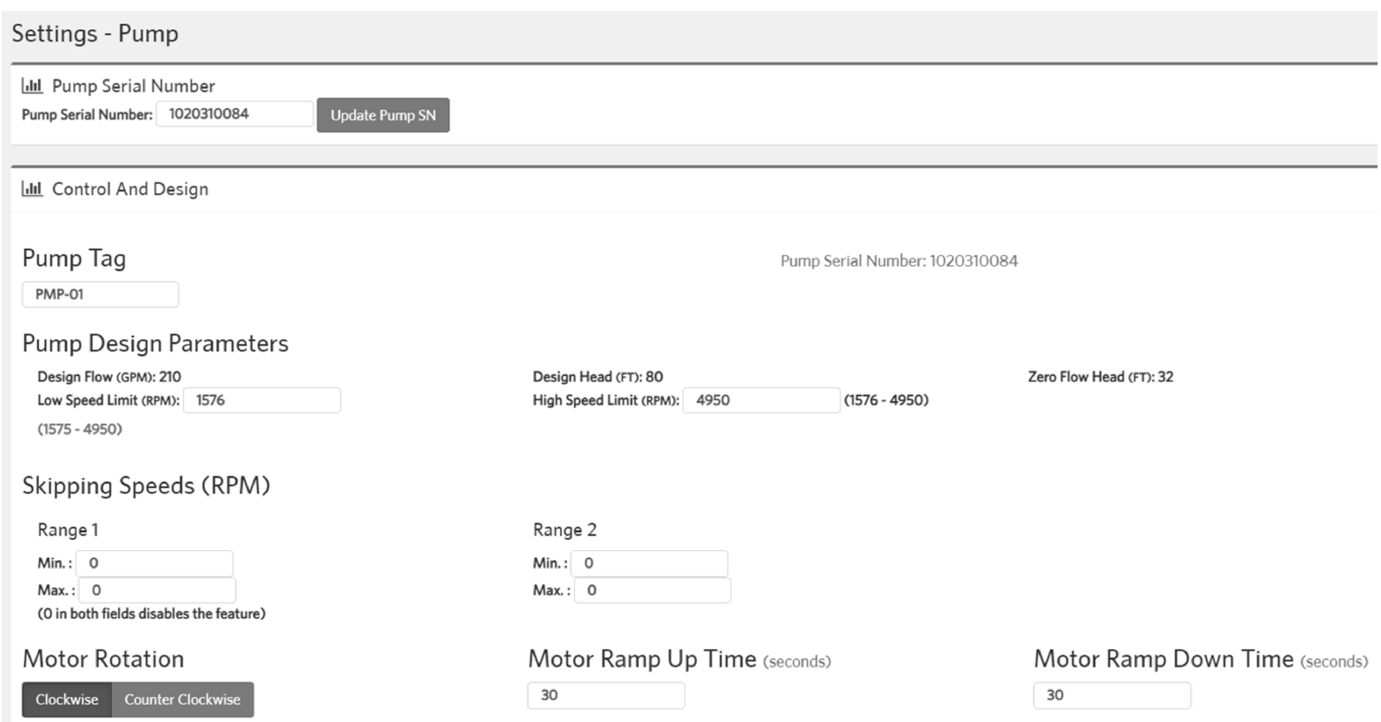


Fig. W — Factory Supplied Pump Settings Screen 1

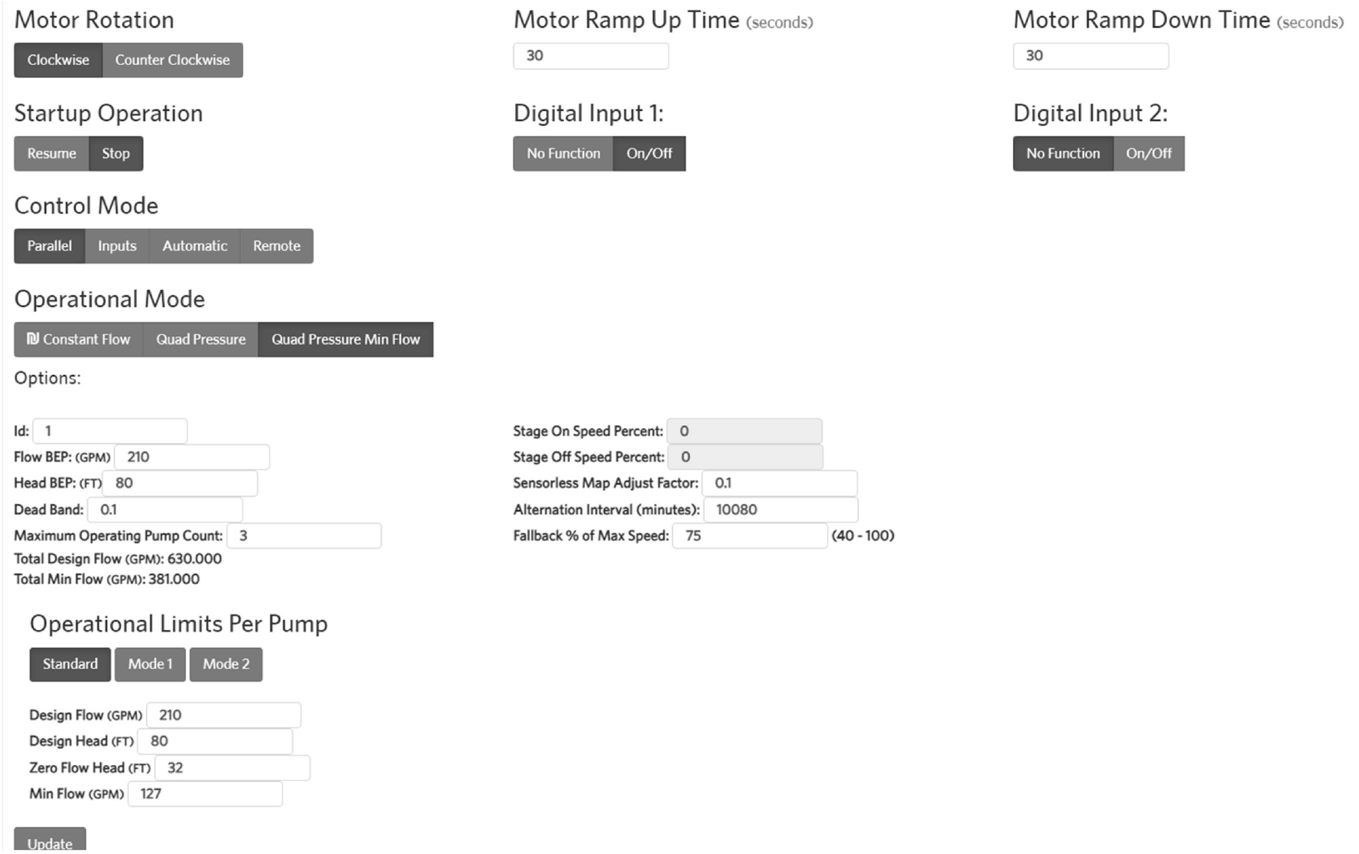


Fig. X — Factory Supplied Pump Settings Screen 2

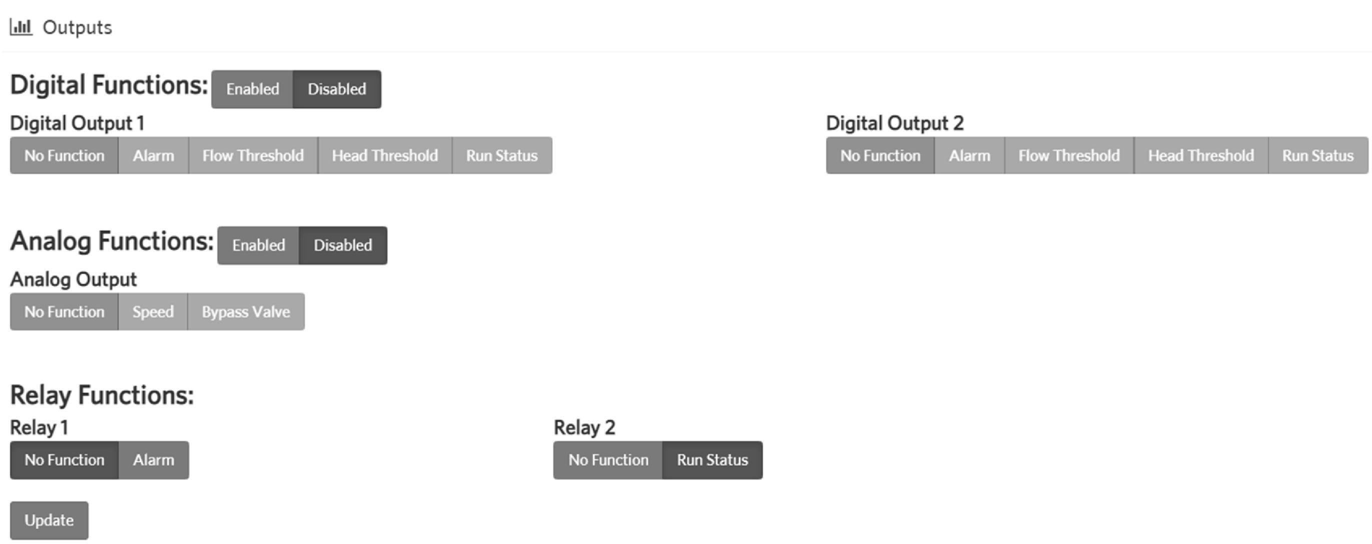


Fig. Y — Factory Supplied Pump Settings Screen 3

Control Mode: Set to “Parallel”.

Operational Mode: Set to “Quad Pressure Min Flow”.

Id: This is a number, 1-4 depending on number of pumps, to identify each pump. It will be different for each pump. The pump identified as 1 will be the master. Make this the furthest left pump looking at the displays.

BEP: This is the “Best Efficiency Point” for a single pump. It is set from the factory and does not need to be adjusted.

Maximum Operating Pump Count: Enter the number of pumps in the chiller.

Total Design Flow and Total Minimum Flow: Values are calculated from the design flows below and the Maximum Operating Pump Count. This is what the chiller will see.

Operational Limits: Set as “Standard”.

Design Flow: Enter the system design flow divided by the number of pumps.

Design Head: Enter the system design head for the pump. Use the total head including the building and chiller.

Zero Flow Head: Enter 40% of the design head.

Min Flow: Enter the min flow divided by the number of pumps. Assure the Total Minimum Flow shown above is higher than the chiller specified minimum. If value is not available, enter chiller nominal size times 1.5, divided by the number of pumps.

Once selections are made, touch the “Update” button at the bottom left of this section.

If wireless connection cannot be made, the following procedure can be used on a temporary basis to get the pumps running.

1. Using the manual mode on the pump, set the pumps to run at design flow. If this value is not available, use the nominal flow of the chiller, 2.4 * tons. The flow is per pump so set each pump to the design flow divided by the number of pumps used to meet the load. For the N+0 option, use the number of pumps. For the N+1 option, use the number of pumps minus one.
2. Record the head pressure at the design flow from the display.
3. Using the manual mode on the pump, set the pumps to run at minimum flow. Assure this is above the rated minimum flow of the chiller.
4. Record the head pressure at the minimum flow from the display.
5. Set these values at the pump display. Go to Pump Configuration/Pump Control/Parallel/Quadratic. Enter the design flow. Enter the design head pressure and minimum head pressure recorded from the steps above.

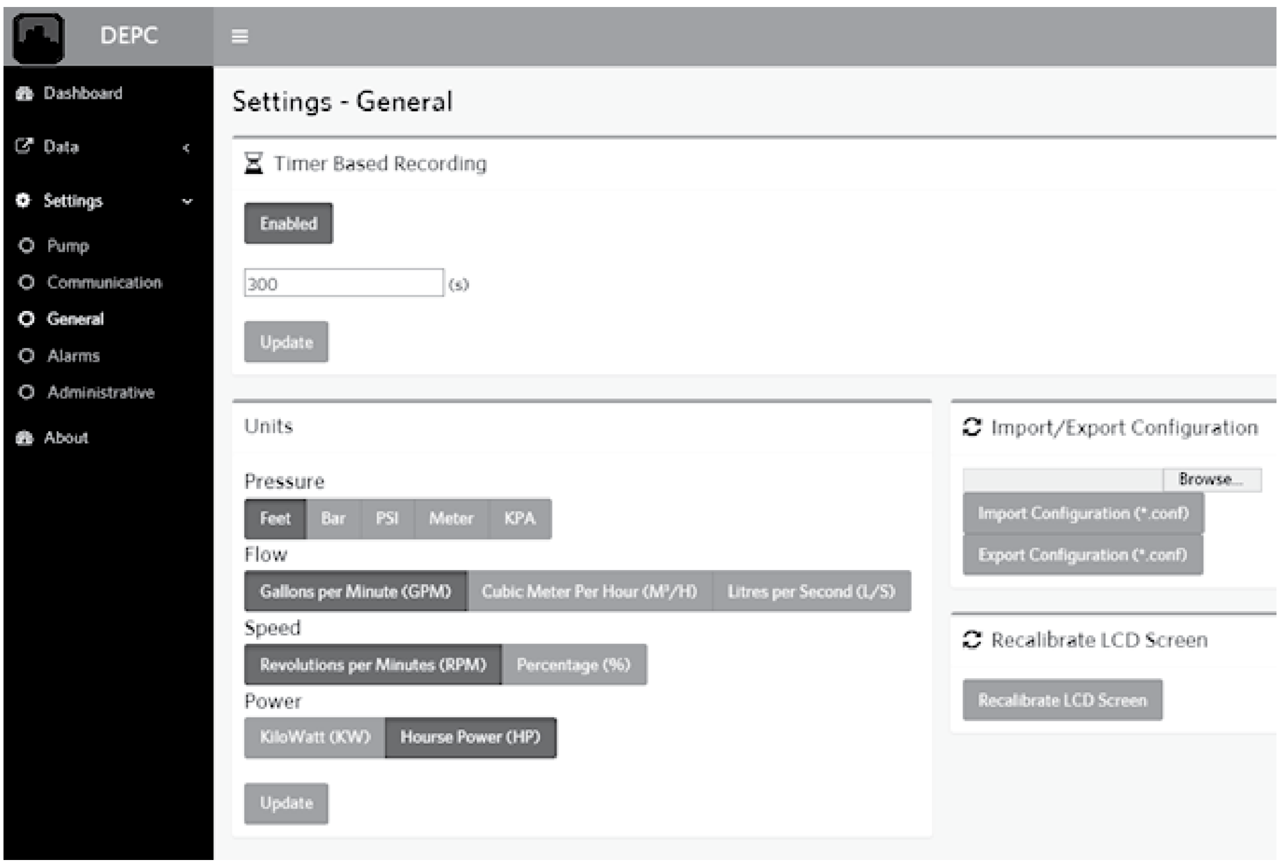


Fig. Z — General Settings

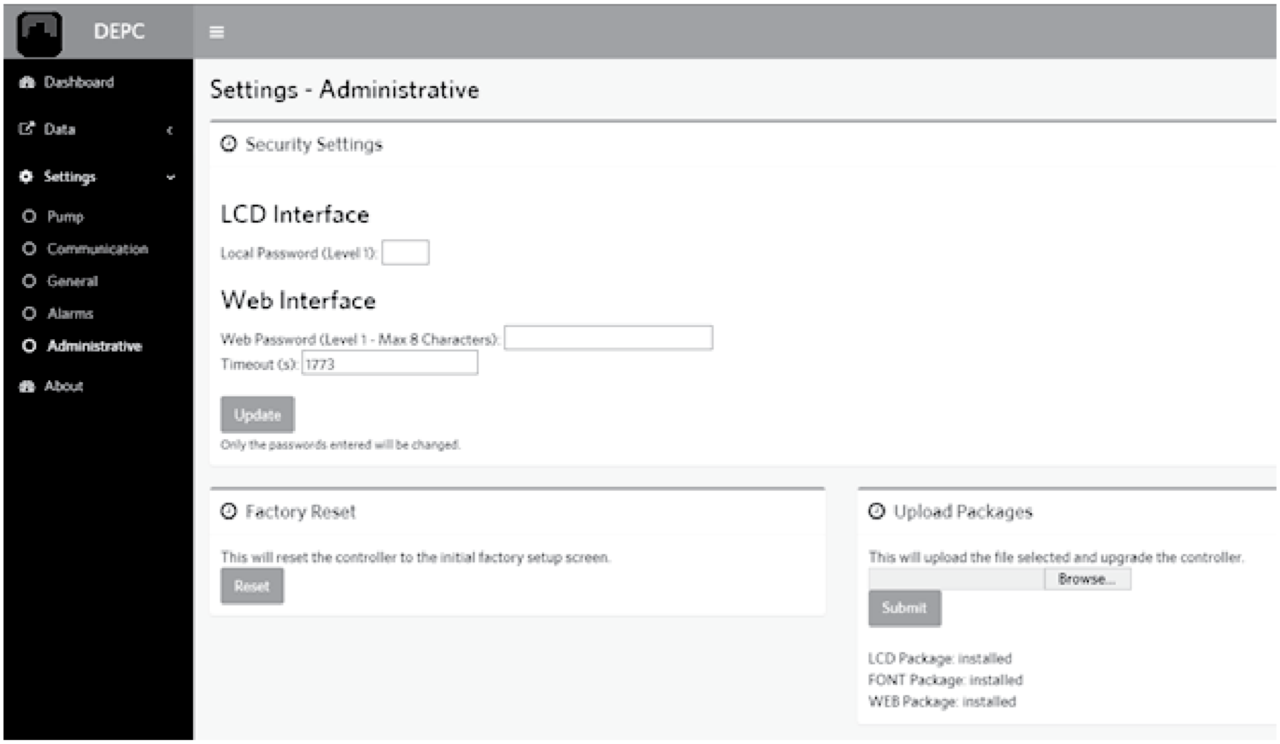


Fig. AA — Administrative Settings

Sequence of Operation

Pumps will start with a closed contact from the pump relay across the "DIG IN 1" input on the pump control board. This contact is wired to all pumps in parallel. At start the pumps will go to 50% of max speed.

After 30s of run time, the pump control will calculate the number of pumps and speed required to meet the required flowrate and head. Only pumps in "Auto" mode will be used in this operation. All pumps may not be used by the pump controller depending on flow requirements and most efficient operating point.

If all pumps are not running, but in "Auto" mode, the controller will sequence the pumps for even runtime. The pump rotation time is adjustable in the pump controller.

If a pump fails or one is set to the "Off" mode, another pump will start if available. If additional pump is not available, the speed of remaining pumps will be increased to meet the load.

Alarms

The following alarms may present at the pump display. The alarm descriptions are not communicated to the chiller control so they must be checked at the pump system. The chiller monitors the alarm relay on each pump. If all of the pumps are in alarm, not functional, the chiller will shut down and show a "pump failure" alarm. See Tables C and D.

Table C — Alarms

BIT POSITION	NAME	ALARM DESCRIPTION
0	VFD Over temperature	The temperature of a VFD or motor component is exceeding the thermal alarm limit. Turn off the power to the pump and verify that the motor, fan, and VFD cooling is functioning correctly. Verify that the pump is not overloaded. Wait until hot components have cooled before returning to service and if the alarm persists after powering up, contact an Armstrong Technical Service representative.
1	VFD Over Current	The VFD has detected current exceeding the safe limit. Turn the pump off. (If there is a discharge from the output phases to earth it can be verified by checking for any faults with a megohmmeter between ground and the motor leads.) If a current limit has been exceeded in the VFD check that the motor can be turned. If the pump is being overloaded reduce the pump speed using hand mode control. If the alarm persists after powering up, contact an Armstrong Technical Service representative.
2	External VFD Voltage	The voltage into the VFD is out of range. Verify that the correct voltage required to operate the VFD is present by measuring each of th three phases. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
3	Internal VFD Voltage	An internal voltage generated by the VFD is out of range. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
4	Internal VFD	An internal error in the VFD has occurred. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
5	VFD Parameter	One or more of the parameters to control the VFD is not correct. Check the settings on the control card. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
6	VFD Startup	An error occurred during the start-up of the motor. Turn off the power to the pump and verify that the motor can be turned by using hand mode control. If the alarm persists after powering up, contact an Armstrong Technical Service representative.
7	Other VFD	There has been an unknown alarm condition generated by the VFD. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
8	VFD Communication	There is a communication issue between the control card and the VFD. Turn off the power to the pump and check the connectors between the control card and the VFD.
9	VFD Speed	The speed set by the VFD is not within tolerance. If the alarm persists after cycling power to the pump, contact an Armstrong Technical Service representative.
10	Reserved	

Table D — Warnings

BIT POSITION	NAME	ALARM DESCRIPTION
0	VFD Over Temperature	The temperature of a VFD or motor component is near the thermal alarm limit. Check that the motor, fan, and VFD cooling is functioning correctly. Verify that the pump is not overloaded. If the warning persists, contact an Armstrong Technical Service representative.
1	VFD Over Current	The VFD has detected current exceeding the safe limit. Turn the pump off. (If there is a discharge from the output phases to earth it can be verified by checking for any faults with a megohmmeter between ground and the motor leads.) If a current limit has been exceeded in the VFD check that the motor can be turned. If the pump is being overloaded reduce the pump speed using hand mode control. If the warning persists after powering up, contact an Armstrong Technical Service representative.
2	External VFD Voltage	The voltage into the VFD is out of range. Verify that the correct voltage required to operate the VFD is present by measuring each of th three phases. If the warning persists, contact an Armstrong Technical Service representative.
3	Internal VFD Voltage	An internal voltage generated by the VFD is out of range. If the warning persists, contact an Armstrong Technical Service representative.
4	Internal VFD	An internal warning in the VFD has occurred. If the warning persists, contact an Armstrong Technical Service representative.
5	Reserved	
6	VFD Startup	A warning occurred during the start-up of the motor. Turn off the power to the pump and verify that the motor can be turned by using hand mode control. If the warning persists after powering up, contact an Armstrong Technical Service representative.
7	Other VFD	There has been an unknown warning condition generated by the VFD. If the warning persists, contact an Armstrong Technical Service representative.
8	VFD Communication	There is a communication issue between the control card and the VFD.
9	VFD Speed	The speed set by the VFD is not within tolerance. If the warning persists, contact an Armstrong Technical Service representative.
10	VFD Wiring	There is an issue in wiring to the VFD. Check the wiring to the motor from the VFD. If any I/O are used on the VFD, verify that there is continuity and no shorts for the connections.
11	System Over Temperature	The temperature measured by the control card is approaching the recommended operating conditions.
12	System Under Temperature	The temperature measured by the control card is approaching the recommended operating conditions.
13	Battery Under Voltage	The battery voltage is low. Replace the battery with CR2032 type cell.
14	BMS Communication Loss	BMS communication has been lost.
15	VFD Communication Loss	The communication with the VFD and the control card has stopped.
16	Invalid VFD Parameter	The control card has specified an invalid VFD parameter.
17	VFD Initialization Failure	The initialization of the VFD through Modbus has failed. Cycle power to the pump to reinitialize.
18	VFD Speed Set Failure	The speed could not be set by the controller. Check the connections between the VFD and control card.
19	VFD Start Set Failure	The controller could not start the motor. Check the connections between the VFD and control card.
20	Sensorless Error	The sensorless map that was entered has an error. Please refer to the Armstrong I&O Manual for further details.
21	Hard Mode Timeout	The pump has been in hard mode too long. Consider setting to automatic mode to save energy.

Pump Maintenance

GENERAL CARE

The vertical inline pumps provided with the 30XV product are built to operate without periodic maintenance. An inspection made at regular intervals will ensure years of trouble-free operation. Give special attention to the following:

1. Keep unit clean.
2. Keep refuse, dust, or other loose items away from pump and ventilating openings of the motor.

See Fig. AB for pump wiring.

LUBRICATION

Lubrication is not required. There are no bearings in the pump that need external lubrication service.

MECHANICAL SEAL

Mechanical seals require no special attention. The seal is fitted with a flush line. The seal is flushed from the suction side of the pump.

⚠ CAUTION

Do not run the pump unless properly filled with water or glycol; the seals require a film of liquid between the faces.

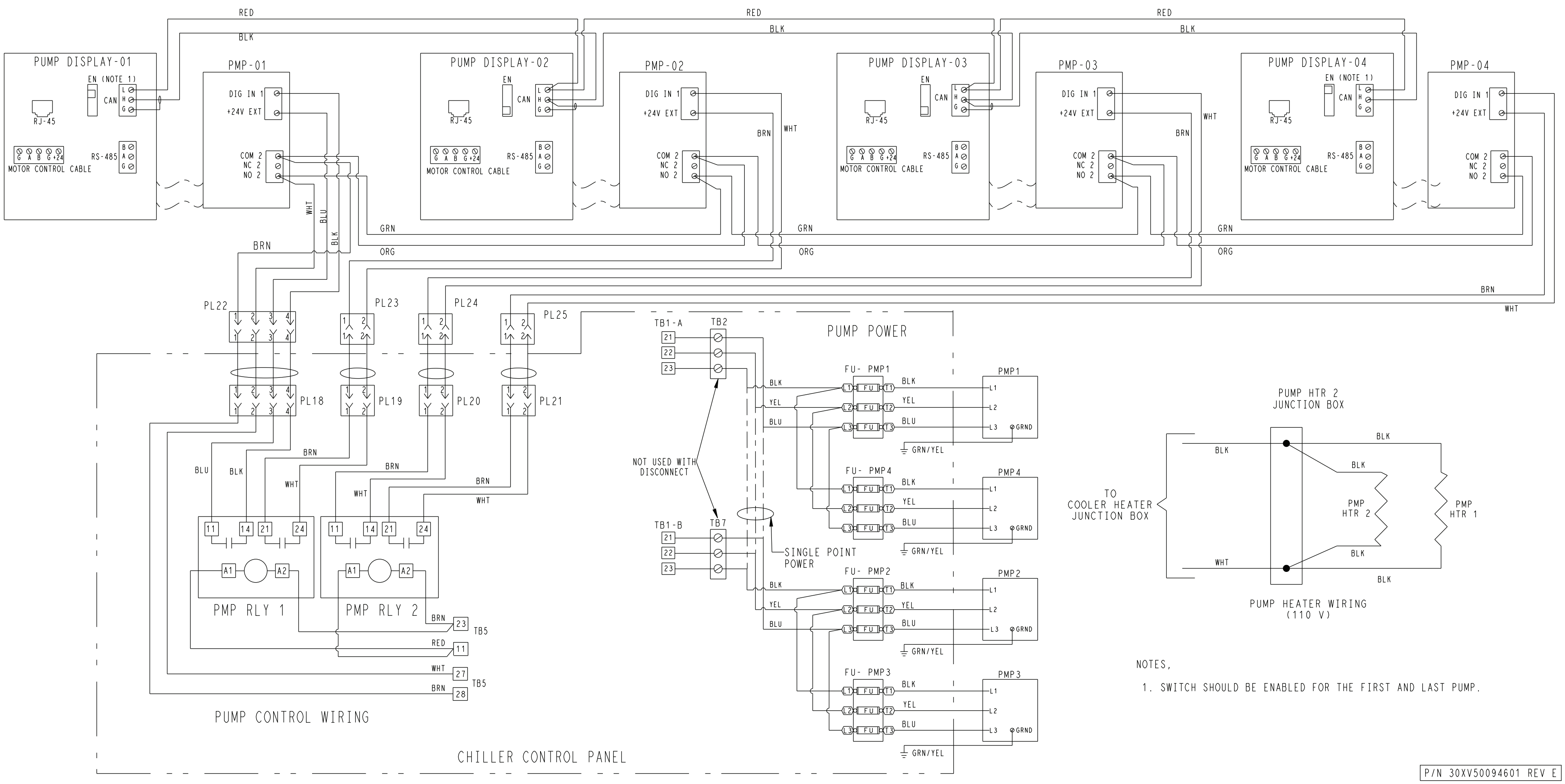


Fig. AB — Pump Wiring Diagram

Mechanical seals may weep slightly at start-up. Allow the pump to continue operating for several hours and the mechanical seal to seat properly prior to calling for service.

⚠ CAUTION

Do not use oil, petroleum jelly, or other petroleum or silicon base products for seal elastomer lubrication. This may cause swelling and failure of the seal.

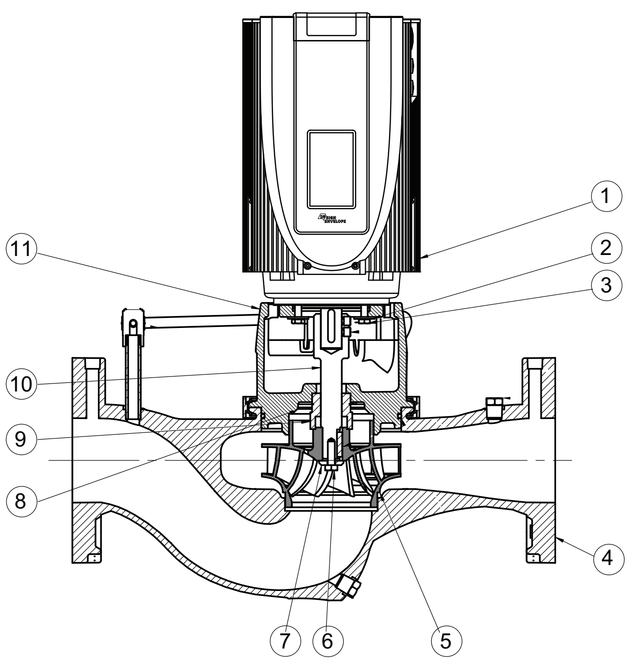
Seal Replacement (Fig. AC)

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. 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.



1 — Motor
2 — Motor Cap Screws
3 — Washer
4 — Casing
5 — Impeller
6 — Impeller Cap Screw
7 — Washer
8 — Stationary Seat
9 — Seal Head
10 — Shaft Stub
11 — Adapter

Fig. AC — Pump Seal Replacement

WIRING

If the pump motor is to be serviced on a bench, the motor wiring must be disconnected.

ISOLATION VALVES

Close isolation valves on both sides of the pump assembly. Use the drain plugs at the bottom of each manifold or the drain at the bottom of the pump.

⚠ CAUTION

Assure power is disconnected from evaporator/pump heaters before draining pump assembly. Heaters will fail if energized without water.

PREPARE FOR REMOVAL

Secure motor (1) with a lifting device. Motor and impeller assembly weighs 65 lbs.

Disconnect the flush line from the pump suction and secure the flex hose.

Remove the clamp ring between casing (4) and adapter (11).

REMOVE MOTOR

The rotating assembly (motor, adapter, and impeller) (1, 11, & 5) may now be lifted out of the casing.

The impeller (5) is fastened directly to the stub shaft and must be removed to replace the mechanical seal assembly (8 and 9).

IMPELLER CAP SCREW

The impeller (5) should be prevented from rotating while the impeller cap screw (6) is loosened. A heavy screwdriver or pry bar may be inserted in between the impeller blades to enable the impeller cap screw (6) to be backed off with a socket wrench. Be careful not to damage the impeller blades. Remove the impeller cap screw and washer (6 and 7).

PUMP IMPELLER

Using a wheel puller, with jaws behind the rear shroud of the impeller, pull the impeller free of the pump shaft. Impeller hub may be heated with a torch to aid in removal if required.

REMOVE MECHANICAL SEAL FROM MOTOR SHAFT

The mechanical seal spring usually comes free with the impeller. The mechanical seal rotating element, seal head (9) must be pried loose with pry bar or screwdrivers placed under each side of the seal drive band. Leverage is applied against the adapter. Once loosened, the seal may be pulled free of the shaft.

Do not damage the carbon face when removing the rotating element, seal head. It may be needed for analysis if seal failure investigation is required.

REMOVE SEAL SEAT FROM ADAPTER

The stationary seat (8) typically Silicon Carbide material, is pried loose from he recess in the adapter. If the seat cannot be removed in the manner, remove the motor cap screws and washer (2 and 3) and separate the adapter (11) from the motor (1). A screwdriver may then be used to push the seat out of the adapter from the rear.

REMOVE OLD CASING GASKET

The former adapter o-ring should be scraped from the adapter leaving clean surfaces, groove, for the new o-ring.

REPLACE MECHANICAL SEAL

Clean the shaft stub (10) surface, ensuring all the former seal elastomer pieces have been removed. Inspect for damage. Replace if necessary.

Install a new stationary seat (8) in the adapter cavity, being sure the lapped, polished, side of the insert is facing up. Ensure that the cavity has been thoroughly cleaned. Lubricate the stationary seat o-ring with a small amount of silicon or glycerin lubricant and firmly press down straight and even into the adapter cavity. Do not press the seat in with bare fingers or hammer. Use a clean cloth or the cardboard disc typically supplied with the seal packaging. Contamination on the polished and lapped stationary seat face could cause leakage.

If the adapter was removed from the motor, replace it. Assure the stationary seat is carefully guided over the stub shaft when assembling the adapter back onto the motor.

Lubricate the inside of the rotating seal, seal head (9), with a small amount of silicon or glycerin lubricant and slide onto stub shaft (10) with a twisting motion, carbon face first, until the carbon face is pressed firmly against the stationary seat (8). Firmly press on the rotating seal, seal head, metal parts with a screw driver all the way around the seal with a screwdriver to ensure the faces are mated properly. Remove the spring retainer from the seal spring and place the spring seal over the rotating seal.

REPLACE PUMP IMPELLER

Install the impeller key on the shaft and place the seal spring retainer onto the impeller hub register. Slide the impeller in the place on the stub shaft.

Ensure the seal spring is kept in place on the seal rotating assembly and fits well into the retainer on the impeller hub.

TIGHTEN IMPELLER CAP SCREW

Install the impeller cap screw and washer (6 and 7). Hold the impeller the same way as when the cap screw was loosened and tighten the cap screw.

INSTALL NEW ADAPTER O-RING

Insert new adapter o-ring into the o-ring groove of the adapter and apply silicon or glycerin lubricant around the o-ring.

CLAMP RING

Insert the clamp ring through the impeller and adapter flange. Tighten the nut on the clamp ring to 90 to 100 in-lbs.

LOWER ROTATING ASSEMBLY INTO PLACE

The rotating assembly motor, adapter, and impeller combination may now be lowered into the casing.

CASING AND ADAPTER CLAMP-RING

The casing and adapter clamp-ring is now installed and tightened. Reconnect the flush line flex hose.

ISOLATION VALVES

Replace the casing drain plug and open the suction and discharge isolation valves.

MOTOR WIRING

The motor conduit and its wiring are now replaced. If the motor is new, double check the voltage and rpm are identical to the original motor.

Be sure to check rotation of the motor after rewiring.

Ensure the pump is filled with water before operating to check rotation.

Pump Software

The pump control board contains the operating software for the pump and the calibration parameters that support sensorless operation. The calibration parameters are unique to the pump volute. If the motor is replaced, the calibration parameters must be entered into the new pump motor. These can be transferred from the old motor if the control system is still functional or can be obtained from Armstrong using the pump volute part number and serial number. The follow process covers upgrading software and moving the calibration file (sensorless map) and the configuration file from one motor to another.

Software change must be done with a computer connected to the pump. This can be done wireless or with an Ethernet cable. See operation section above for details on wireless connections. Ethernet cable connection is in the back of the pump display. Front cover of the motor must be removed to access this. For all imports/updates, the progress is shown by a red bar at the top of the pump display. Wait for the bar to scroll completely across the top of the pump display prior to the next step.

RETRIEVE SENSORLESS MAP

Go to Pump under the Settings screen. Click the Export Sensorless Map (*.map) link. The export feature works best with Google Chrome. Save the downloadable file. On the new pump motor or after software upgrade, chose Import Sensorless Map (*.map) on the same screen to add the map to the controller.

RETRIEVE CONFIGURATION

Go to General under Settings screen. Click Export Configuration. Save the downloadable file. On the new pump motor or after software upgrade, chose Import Configuration on the same screen to add the configuration file to the controller.

UPDATE PUMP SOFTWARE

Make sure the Sensorless Map and Configuration files are saved on your computer prior to updating the software. Go to Administrative under Settings. Locate the Upload Packages block. Use the Choose file icon to search for the file, uC_upgrade_#.##.pkg. Click upload. A red bar on the home screen will scroll across the top of the pump display showing progress. Wireless will disconnect during this process. Reconnect to pump and log in to continue.

Next, upload the following files with the same process:

- fonts_upgrade.pkg
- lcd_upgrade.pkg
- web_upgrade.pkg

Verify the software is uploaded by clicking the information button, i, on the pump display. Click System then Version. Verify the Web Package status shows Installed. Remember to import sensorless map and configuration after software update.

INDEX

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

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 10 and 11 have to be completed to provide evaporator freeze protection to –20°F (–28.9°C). 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
a. 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) X 100

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

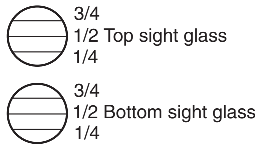
Additional charge required Circuit A __________ Circuit B _________

Oil Charge

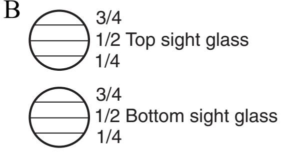
Additional charge required Circuit A__________ Circuit B __________

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.

SmartView™ 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	SmartView™ 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	SmartView™ 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→ Master Slave Config	Master/Slave Select	0 (disable)	
	Master Control Type	1 (Local)	
	Slave 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	SmartView™ 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

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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__________