Installation Instructions

Power Exhaust Part Numbers: CRPWREXH071A01 through CRPWREXH079A01
Conversion Package Numbers: CRPECONV005A00, CRPECONV006A00

CONTENTS

⚠ WARNING

Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury.

⚠ WARNING

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

GENERAL

IMPORTANT: In order to field install the High Capacity Power Exhaust accessory on 48/50K units only, the unit must have the "Power and Control Accessory" option installed from the factory. Otherwise the accessory will not be able to operate.

⚠ CAUTION

When removing panels from the unit, be careful not to damage roof or other surfaces with the panels.

See Table 1 for package usage. See Table 2 for a complete list of parts contained in each kit. For 48/50A 020-050 or 48/50K 20-50 units, either 1 or 2 module versions of the accessory may be ordered and installed depending on the desired exhaust airflow. For 48/50A 060 or 48/50K 60 units, either 2 or 3 module versions of the accessory may be ordered and installed depending on the desired exhaust airflow.

The high-capacity power exhaust blowers are shipped assembled and are packaged with one hood assembly per container. Each module has 2 high-capacity power exhaust blowers. Brackets, wires, and extra gasket screws are also included in the package.

In addition to the power exhaust accessory, the following accessories are required for 48/50A only. See Table 3 for conversion parts list.

To convert a constant volume unit without power exhaust to a modulating power exhaust unit, conversion kits CRPECONV005A00 and CRPECONV006A00 must be installed. NOTE: If the unit has the factory-installed hot gas bypass (HGBP) option (also referred to as a minimum load valve), or digital compressor, or if it is a VAV (variable air volume) unit, then the CRPECONV005A00 kit will not be required.

To convert a VAV unit without power exhaust to a modulating power exhaust unit, conversion kit CRPECONV006A00 must be installed.

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure). Only trained, qualified installers and service technicians should install, start-up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply:

- Follow all safety codes
- Wear safety glasses and work gloves
- Use care in handling and installing this accessory

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.

Table 1 — High-Capacity Power Exhaust Package Usage

UNIT SIZE	VOLTAGE (V-Ph-Hz)	NUMBER OF MODULES	PART NUMBER
48/50A 020-050, 48/50K 20-50	208/230-3-60	1	CRPWREXH071A01
		2	CRPWREXH074A01
	460-3-60	1	CRPWREXH072A01
		2	CRPWREXH075A01
	575-3-60	1	CRPWREXH073A01
		2	CRPWREXH076A01
48/50A 060, 48/50K 60	208/230-3-60	2	CRPWREXH074A01
		3	CRPWREXH077A01
	460-3-60	2	CRPWREXH075A01
		3	CRPWREXH078A01
	575-3-60	2	CRPWREXH076A01
		3	CRPWREXH079A01

Table 2 — High-Capacity Power Exhaust Parts List

ITEM DESCRIPTION (QUANTITY)	QUANTITY (PART NO. CRPWREXH---A01)								
	071	072	073	074	075	076	077	078	079
Power Exhaust Module Assembly	1	1	1	2	2	2	3	3	3
Auxiliary Control Panel Terminal Block	1	1	1	1	1	1	1	1	1
ECB-1 to VFD Control Wiring Harness (20 ft)[a]	1	1	1	1	1	1	1	1	1
VFD to VFD Control Wiring Harness (10 ft)	—	—	—	1	1	1	2	2	2
Auxiliary Panel to VFD Power Wiring (20 ft)	1	1	1	2	2	2	3	3	3
CCB to Auxiliary Panel Power Wiring (36 ft)[a]	—	—	—	—	—	—	1	—	—
Replacement Control Circuit Breaker[a]	—	—	—	1	—	1	1	1	—

NOTE(S):

a. These parts are not required for 48/50K.

LEGEND

CCB — Control Circuit Breaker
ECB — Economizer Control Board
VFD — Variable Frequency Drive

Table 3 — Conversion Package Parts List[a]

ACCESSORY	ITEM DESCRIPTION (QUANTITY)
CRPECONV005A00	Economizer Board — 50ZZ401127
CRPECONV006A00	Building Pressure Transducer — HK05ZG022 Control Tube (1)

NOTE(S):

a. These parts are not compatible with 48/50K.

INSTALLATION

Vertical Discharge Units (48/50AJ,AK,A2,A3,A6,A7 and 48/50K2, K3)

NOTE: For 48/50A 020-050 and 48/50K 20-50 units, 1 or 2 modules may be installed. For 48/50A 060 and 48/50K 60 units, 2 or 3 modules may be installed. Installation will be repeated for each module.

1. Unpack accessory packages.
2. Disconnect power to unit.
3. If the economizer hoods have been installed, perform the following:
   a. Remove the filters from the economizer hoods.
   b. Remove the 5 screws from the bottom of the economizer hood(s) and the 3 screws on each side of the economizer hood(s). Save screws.
   c. Remove the upper panel by removing screws and pulling out the economizer assembly at the bottom to release panel. Save screws.
   d. Remove the lower panel. Save all screws.
   e. There are 2 economizer hoods and 4 panels on size 020-050 units. There are 3 economizer hoods and 6 panels on size 060 units. Repeat this step for each economizer hood and panel (if required).
   If the economizer hoods have not been installed, remove the upper and lower panels covering each return air section. See Fig. 1 for panel locations. Save all screws.
4. Open the unit filter access door. Remove the panel below the filters that cover the auxiliary control panel. See Fig. 2 for auxiliary panel location. **NOTE: The following statement is valid for A-series only.** Mount the auxiliary control panel terminal block in the auxiliary control box; in the location shown in Fig. 3.
5. Route the wires from the 20 ft long power exhaust control and power harnesses through the hole(s) in the auxiliary control panel. See Fig. 3 or 4 for terminal block and harness locations. Secure the metal clad connector with the locknut.
6. Connect the terminals on the end of the power harness wires to the auxiliary control panel terminal block as shown in Fig. 5-10. The other end of the 20 ft harness will be routed through the return/exhaust section of the unit to the economizer section. **NOTE: The following statement is valid for A-series only.** Remove the factory-installed power exhaust harness and plug(s) below the economizer and replace with accessory harness and power exhaust plugs. See Fig. 11 for harness plug location. Secure the harness in place so as not to interfere with the economizer or power exhaust.
7. Set each power exhaust module in front of the relief openings (being careful not to damage the roof). With the 2 and 3 module accessory packages, make sure that the module marked "Module 1" is closest to the auxiliary control panel.
8. Plug the wiring harness from the power exhaust module into the mating plug from the power harness installed in Step 6.
9. **NOTE: The following statement is valid for A-series only.** Route the control wiring from the module closest to the auxiliary control panel to ECB-1. Plug the control harness plug with 500-ohm resistor on Terminal J9, pins 1 and 2 on the ECB-1 control board. See Fig. 12 for control wiring. Route the VFD (variable frequency drive) control wiring behind each support panel that separates each exhaust module and plug the control wiring into the VFD of the next module(s). For K series units the VFD control wiring should be plugged into the control harness. See Fig. 4 for auxiliary control details.
10. Set the power exhaust module in place over the exhaust opening on the unit. The bottom flange of the module will rest on top of the unit base rail. Caulk the module's mating flanges and secure to the unit.
11. **NOTE: The following statement is valid for A-series only.** In the auxiliary control box, remove the red, brown and blue wires from the factory-installed power exhaust contactors. These contactors will not be used with this accessory power exhaust. Transfer these wires to terminals 11, 12, and 13 on the auxiliary control panel terminal block installed in Step 4 and as shown Fig. 5-10. Follow all local and applicable electrical codes.
12. When installing part numbers CRPWREXH074, 076, 077, or 078 replace the control circuit breaker (CCB) in the main control box with the replacement CCB provided.
    NOTE: For the three-module, 208/230-v, 3-phase power exhaust (part no. CRPWREXH077A01), a field-installed 8 AWG (American Wire Gauge) wire must be routed from the CCB (control circuit breaker) in the main control box of the unit to the accessory terminal block (in the auxiliary control box).
13. Remove tape from damper blades.
14. **48/50A units only:** Complete the section "Configuration for 48/50A Only" on page 11.
15. Variable air volume (VAV) units and units with power exhaust with building pressure (BP) control include, pressure transducers for measuring the duct supply pressure (SP) or building pressure (BP) that require field supplied pneumatic tubing and pressure pickup ports. The pressure transducers are in an auxiliary control box, accessible through the filter access door. See Fig. 2 and "Auxiliary Control Panel Opening" in Fig. 15 on page 10 for the location of auxiliary control box, located behind filter access door. See Fig. 4 for pressure transducer locations.

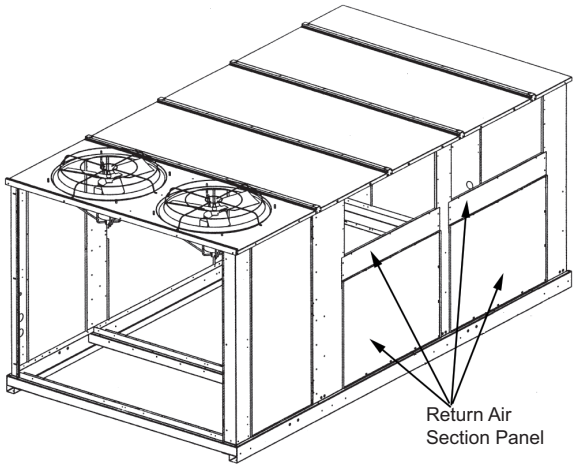


Fig. 1 — Typical Panel Locations (48/50A020 Series Unit Shown)

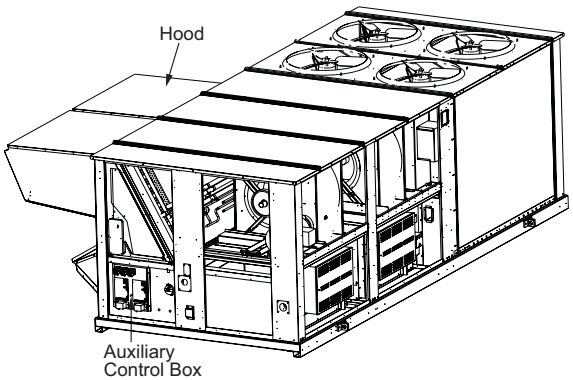


Fig. 2 — Auxiliary Panel Location (48/50A 040 Series Unit Shown)

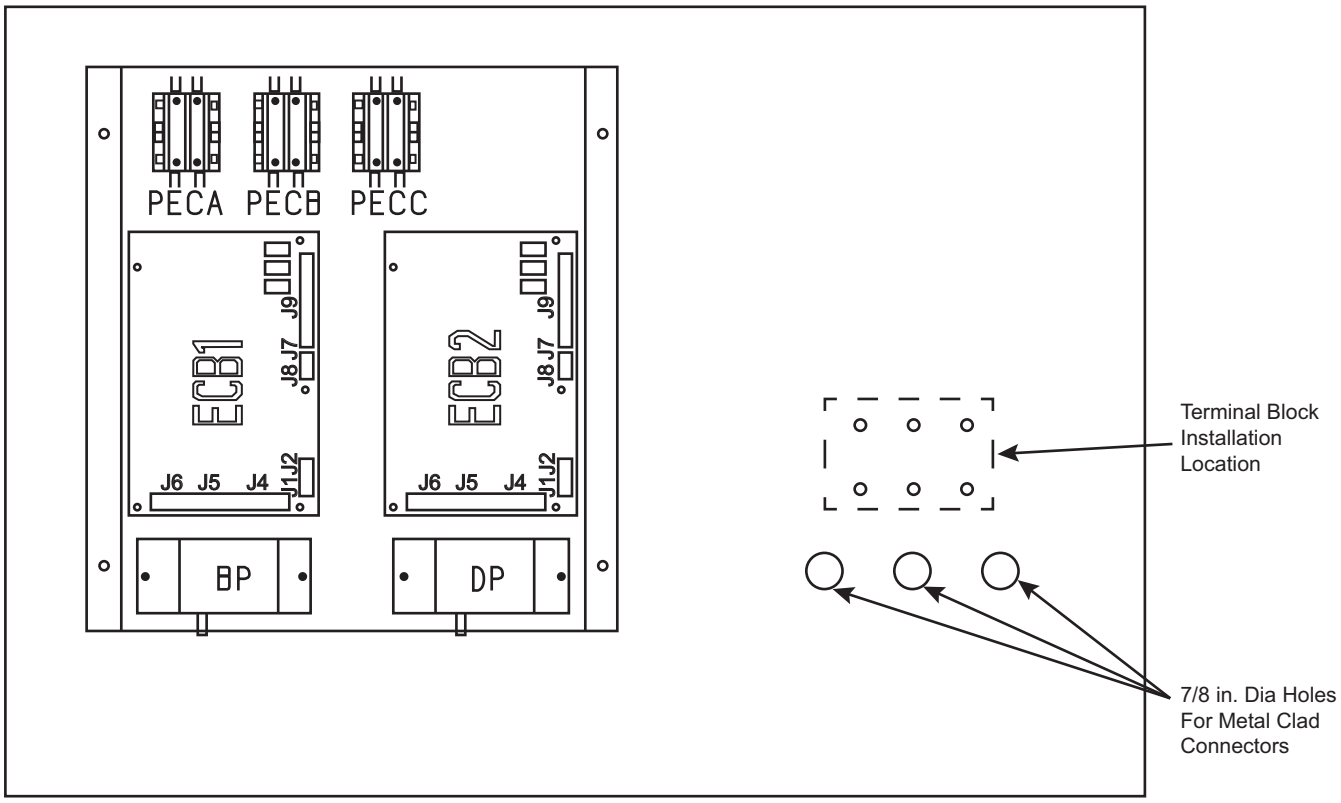


Fig. 3 — Auxiliary Control Box for 48/50A Units

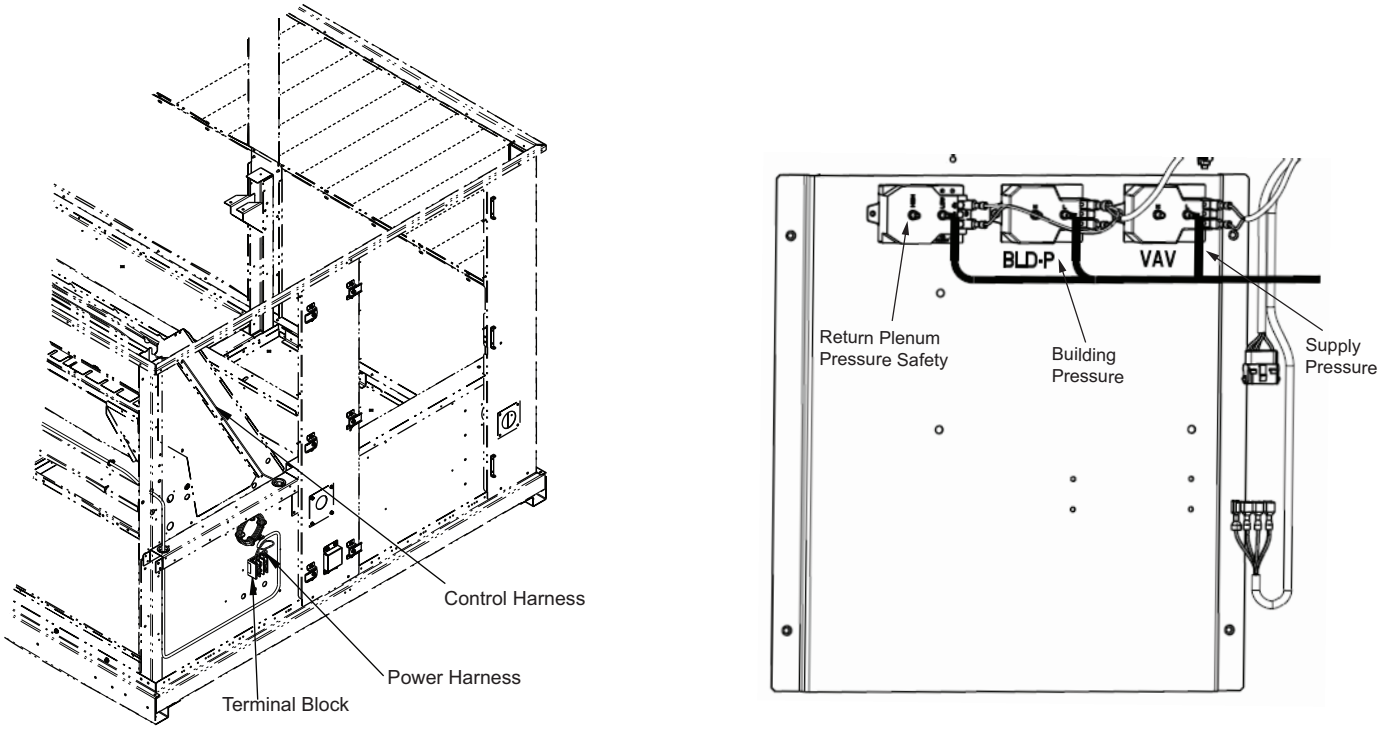


Fig. 4 — Auxiliary Control Box for 48/50K Units

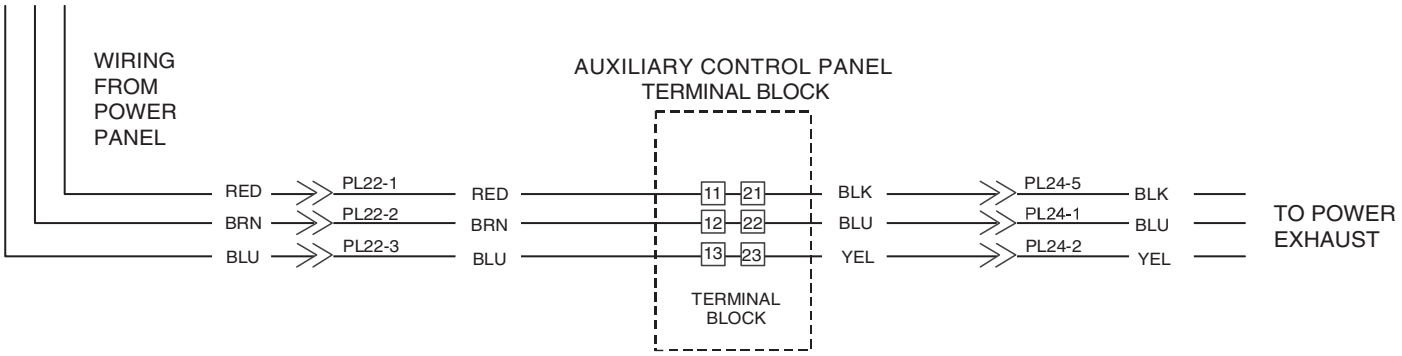


Fig. 5 — Power Exhaust Wiring (1 Module) for 48/50A Only

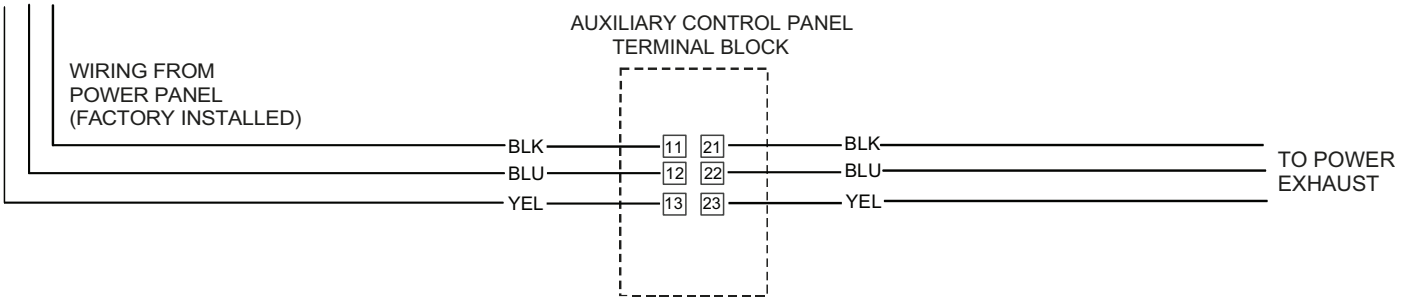


Fig. 6 — Power Exhaust Wiring (1 Module) for 48/50K Only

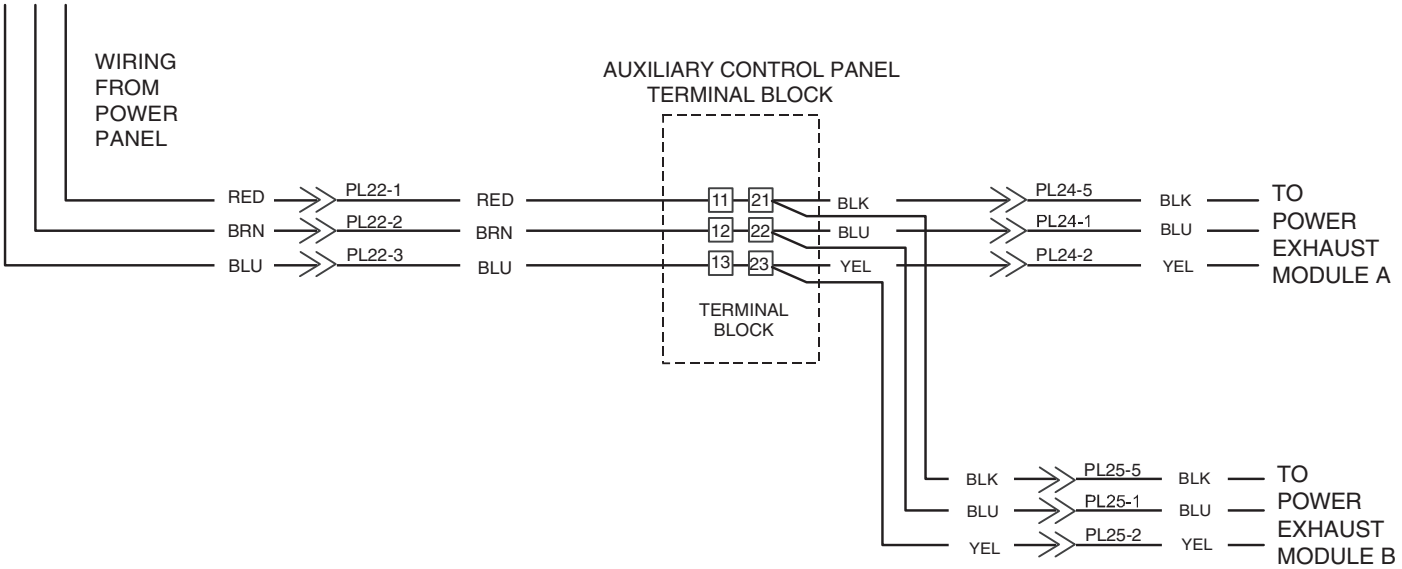


Fig. 7 — Power Exhaust Wiring (2 Modules) for 48/50A Only

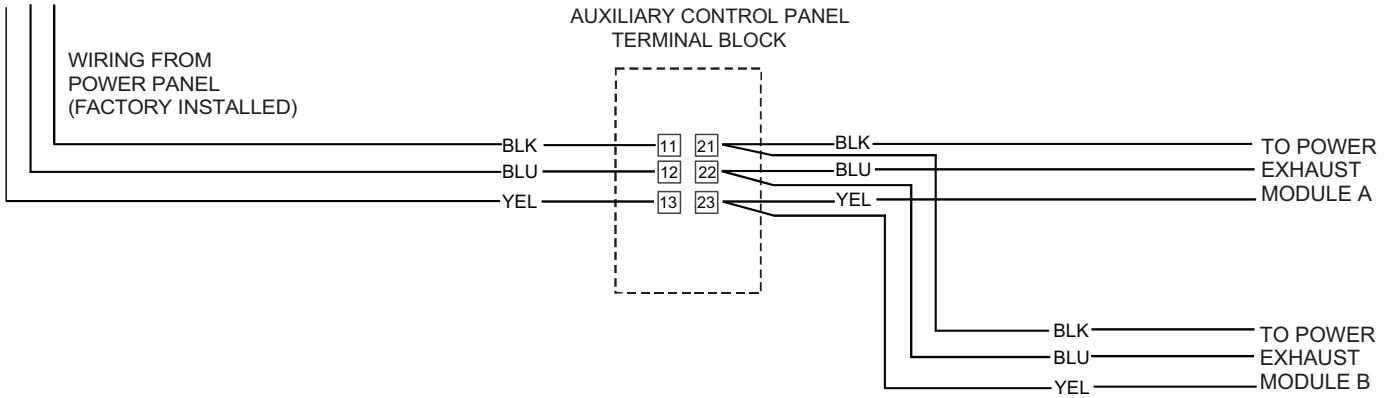


Fig. 8 — Power Exhaust Wiring (2 Modules) for 48/50K Only

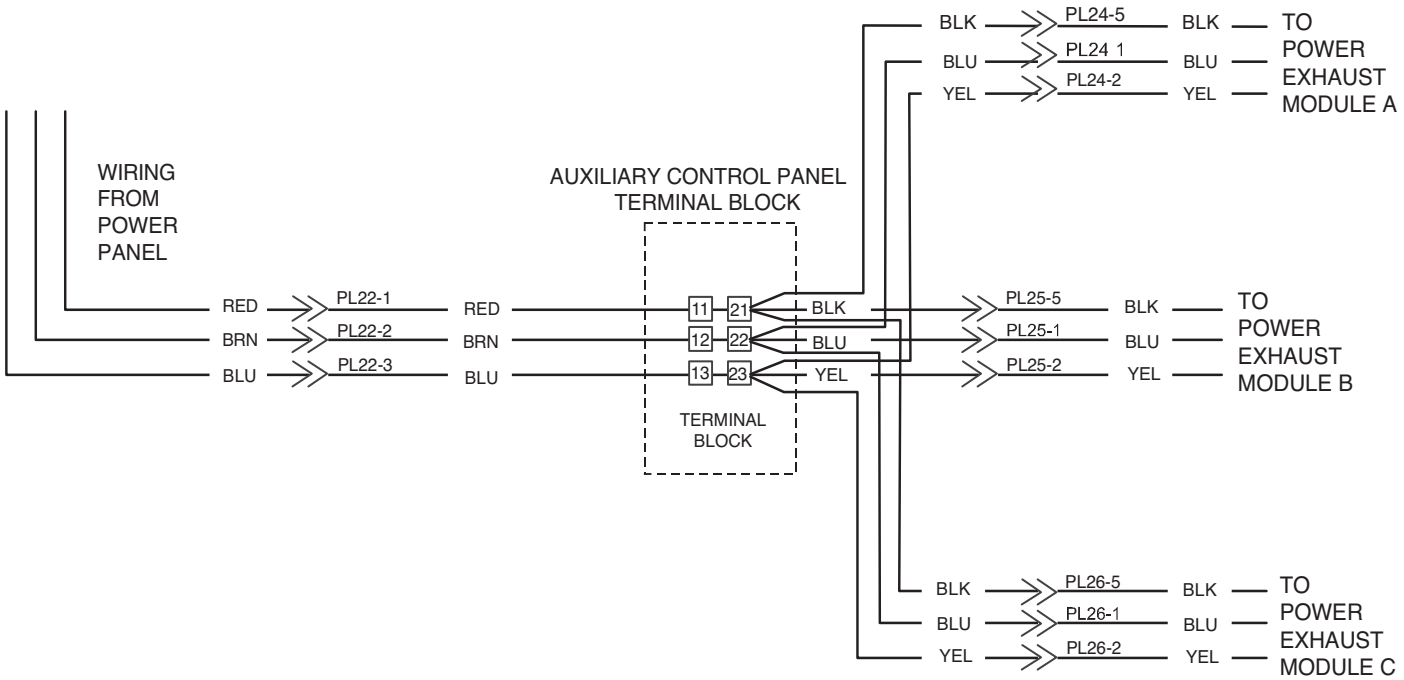


Fig. 9 — Power Exhaust Wiring (3 Modules) for 48/50A Only

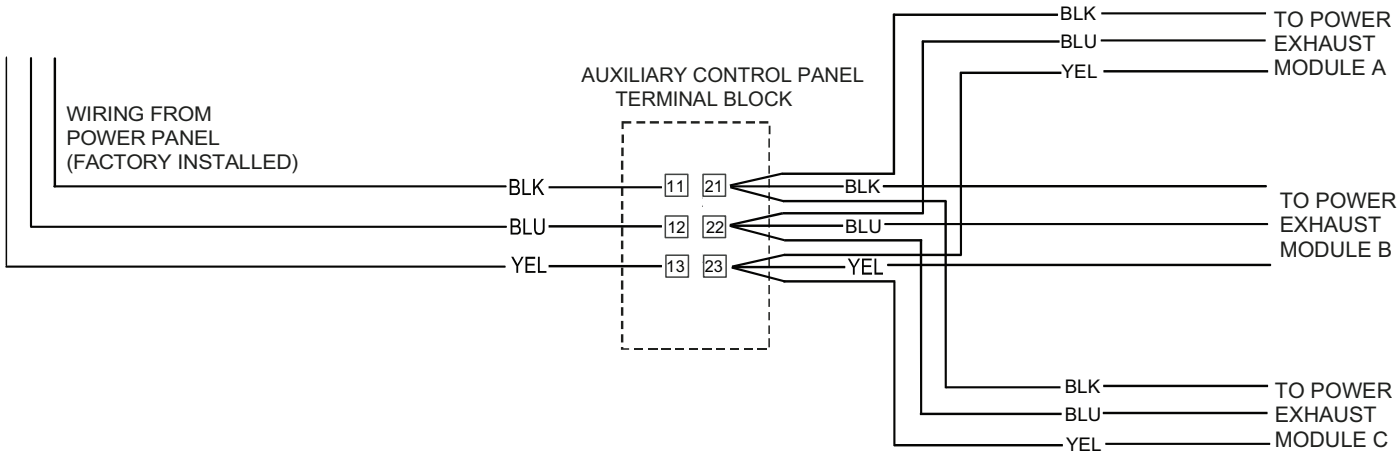


Fig. 10 — Power Exhaust Wiring (3 Modules) for 48/50K Only

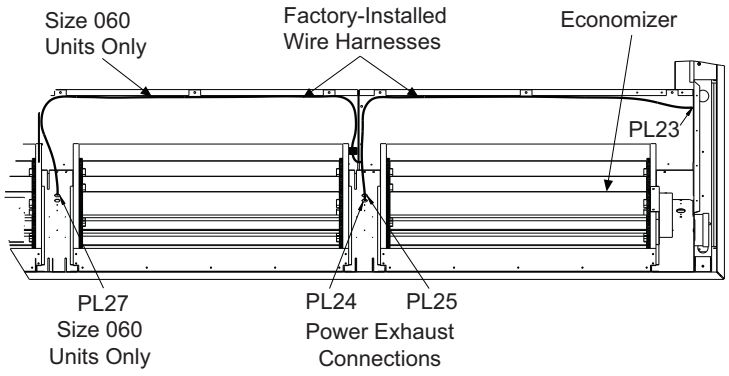


Fig. 11 — Wire Harness Plug Location for 48/50A Only

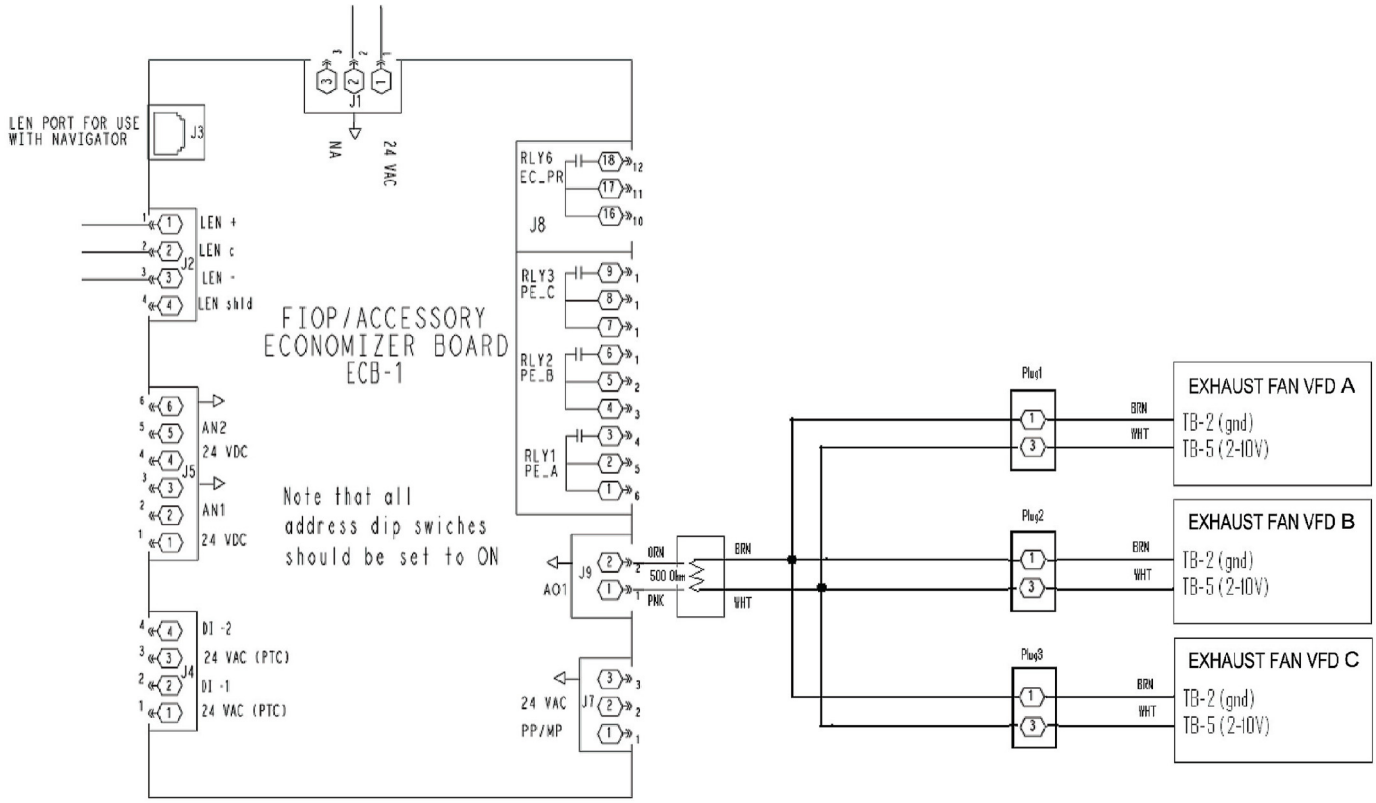
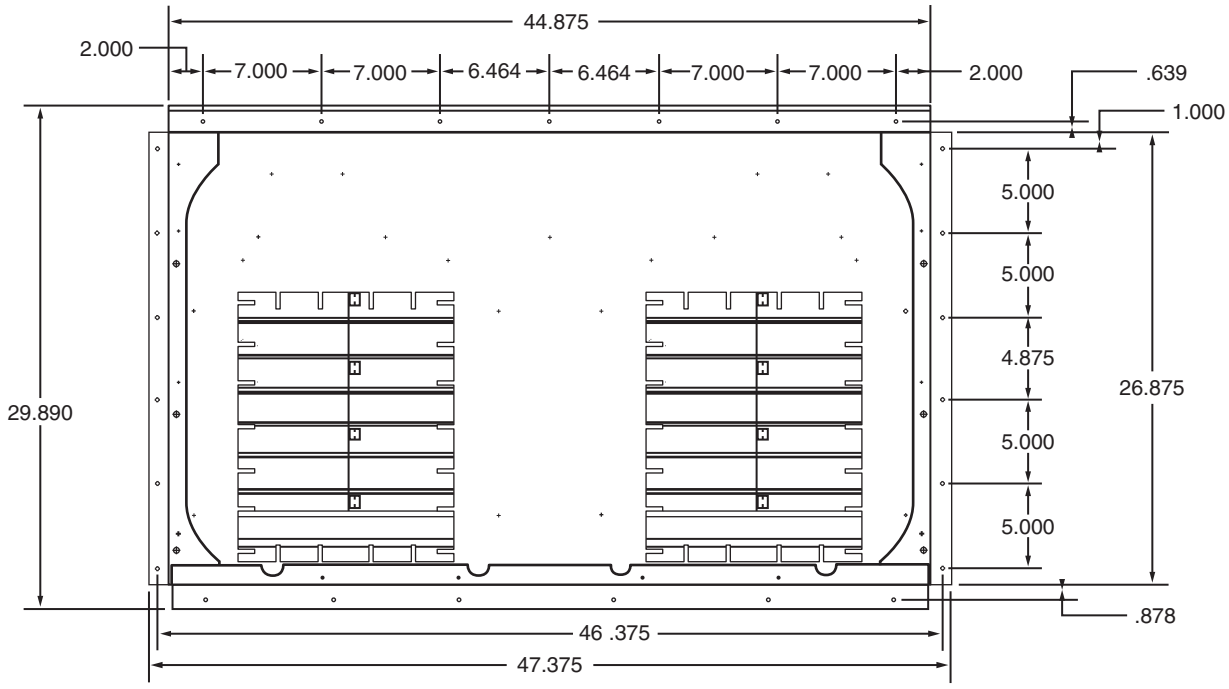


Fig. 12 — Auxiliary Control Box ECB1 Wiring for 48/50A Only

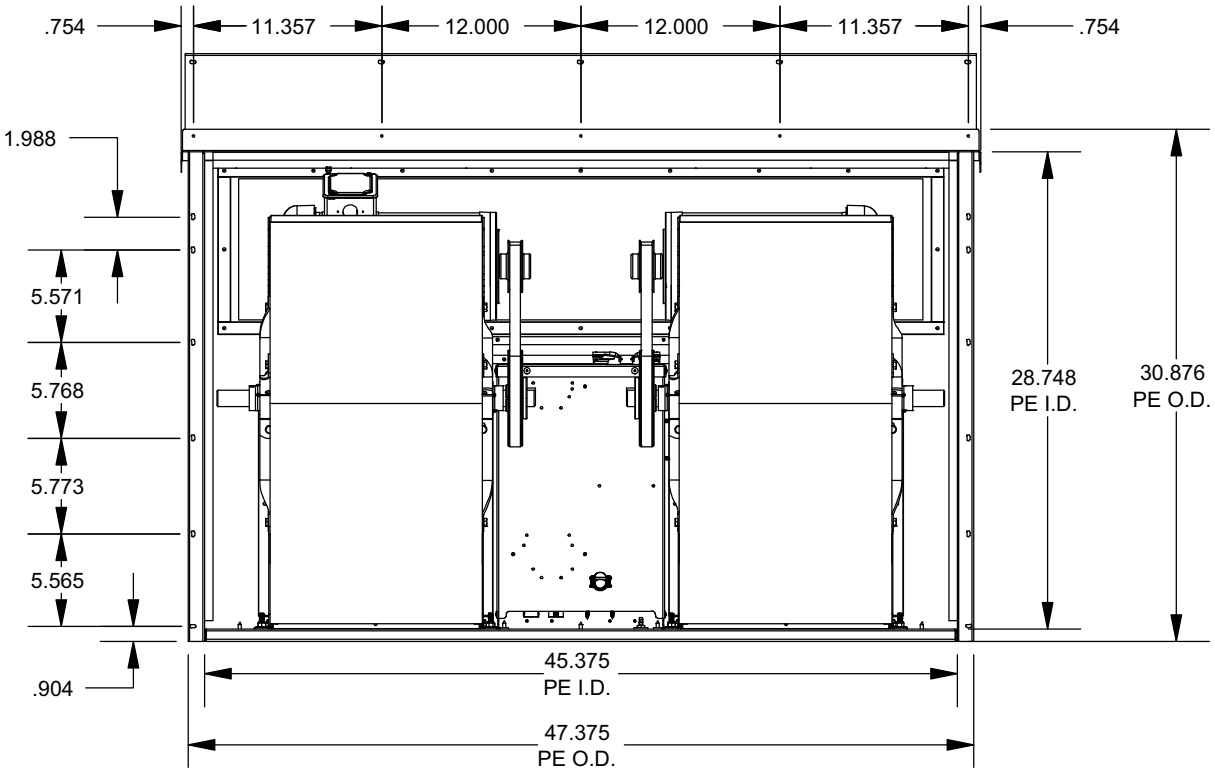
Horizontal Discharge Units (48/50AW,AY,A4,A5,A8,A9 and 48/50K4, K5)

1. Unpack accessory package contents. The support panel is not used and may be discarded.
2. Disconnect power to unit.
3. Provide openings 43 in. wide by 26-1/2 in. high in the side of the return air duct for the number of accessories ordered. See Fig. 13-15 for discharge mounting and power exhaust locations.
   Ensure that the transition required to accommodate these openings begins at least 3-1/2 ft away from the outdoor-air hood. Any obstruction closer than 3-1/2 ft will interfere with the airflow and result in rain entering the hood through the filters. See Fig. 15 for power exhaust details.
4. Drill engagement holes for 1/4 in. screws around openings as shown in Fig. 13 or 14, depending on module voltage.
5. Open the unit filter access door. Remove the panel below the filters that cover the auxiliary control panel. **NOTE: The following statement is valid for A-series only.** Mount the auxiliary control panel terminal block in the auxiliary control box, in the location shown in Fig. 3.
6. Route the wires from the 20 ft long power exhaust control and power harnesses harness through the hole(s) in the auxiliary control panel. See Fig. 3 or 4 for terminal block and harness locations. Secure the metal clad connector with the locknut.
7. Connect the terminals on the end of the power harness wires to the terminal block as shown in Fig. 5-10. The other end of the 20 ft harness will be routed through the return/exhaust section of the unit to the economizer. **NOTE: The following statement is valid for A-series only.** Remove the factory-installed power exhaust harness and plug(s) below the economizer and replace with accessory harness and power exhaust plugs. Refer to Fig. 11 for harness plug location. Secure the harness in place so as not to interfere with the economizer or power exhaust.
8. Set each power exhaust module in front of the openings cut into the return duct. With the 2 and 3 module accessory packages, make sure that the module marked "Module 1" is closest to the auxiliary control panel.
   NOTE: Power exhaust modules cannot be supported by the duct. Field provided support is required.
9. Route the power wiring through the return duct and plug the wiring harness from the power exhaust module into the mating plug from the power harness installed in Step 6.
10. **NOTE: The following statement is valid for A-series only.** Route the control wiring from the "A" module through the return duct to the auxiliary control panel. Plug the control harness plug with 500-ohm resistor on terminal J9, pins 1 and 2 on the ECB-1 control board. Refer to Fig. 12 for control wiring. For additional module accessory packages, Route the VFD (variable frequency drive) control wiring behind each support panel that separates each exhaust module and plug the control wiring into the VFD of the next module(s).
11. Caulk the mating flanges of the module and set in place.
12. **NOTE: The following statement is valid for A-series only.** In the auxiliary control box remove the red, brown, and blue wires from the factory-installed power exhaust contactors. These contactors will not be used with this accessory power exhaust. Transfer these wires to terminals 11, 12, and 13 on the auxiliary control panel terminal block installed in Step 5 and as shown in Fig. 5-10. Follow all local and applicable electrical codes.
13. When installing part numbers CRPWREXH074, 076, 077, or 078 replace the control circuit breaker (CCB) in the main control box with the replacement CCB provided.
    NOTE: For the 3-module, 208/230-3-60 power exhaust (part no. CRPWREXH077A01), the field-installed 8 AWG (American Wire Gauge) wire must be routed from the control circuit breaker (CCB) in the main control box of the unit to the accessory terminal block (in the auxiliary control box).
14. 48/50A series units only: Complete Configuration section on page 11.
15. Variable air volume (VAV) units and units with power exhaust with building pressure (BP) control include, pressure transducers for measuring the duct supply pressure (SP) or building pressure (BP) that require field supplied pneumatic tubing and pressure pickup ports. The pressure transducers are in an auxiliary control box, accessible through the filter access door. Refer to Fig. 2 and "Auxiliary Control Panel Opening" in Fig. 15 for the location of auxiliary control box, located behind filter access door. Refer to Fig. 4 for pressure transducer locations.



NOTE: Dimensions are in inches.

Fig. 13 — Horizontal Discharge Mounting Opening, 230-460-v Modules



NOTE: Dimensions are in inches.

Fig. 14 — Horizontal Discharge Mounting Opening

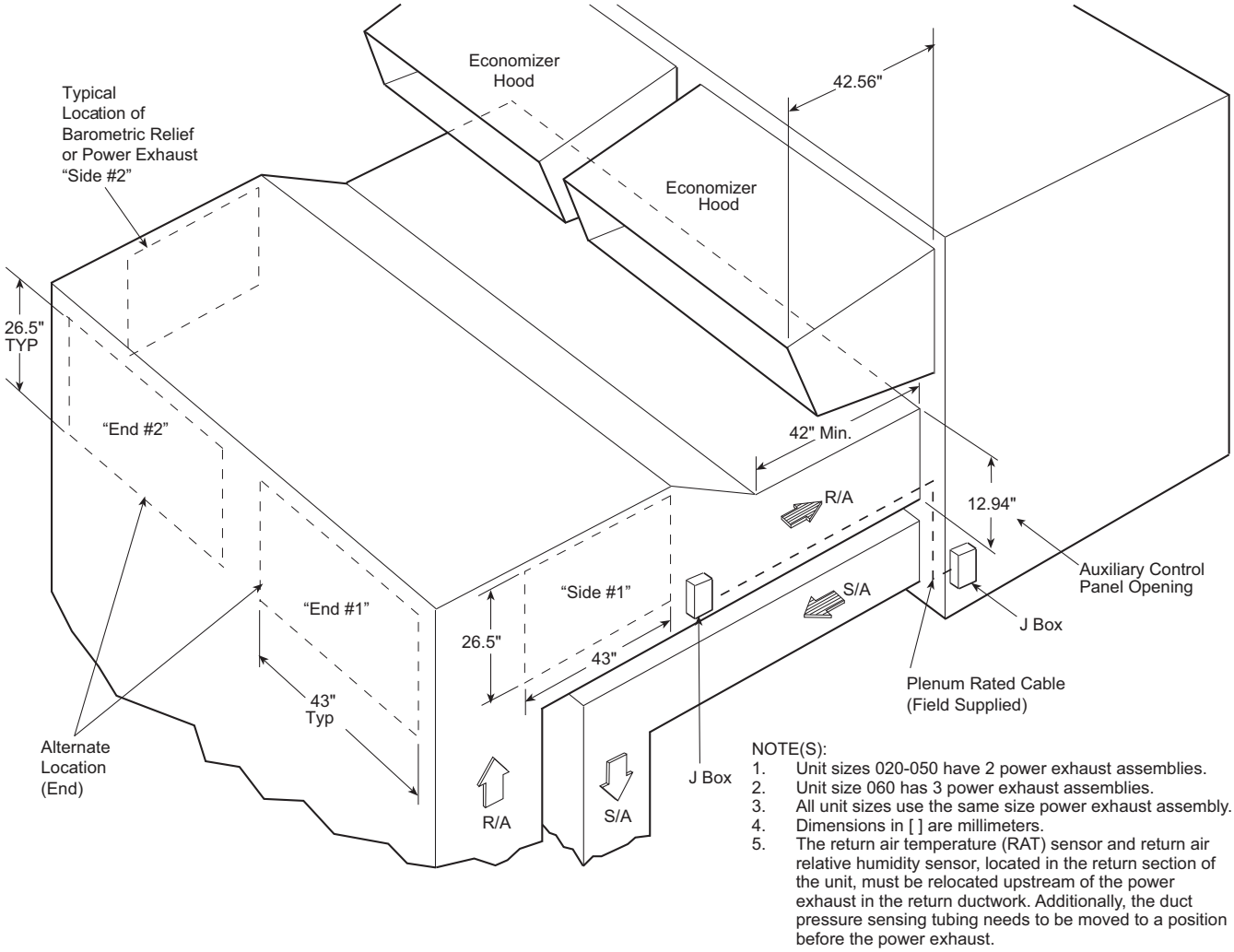


Fig. 15 — Power Exhaust Location on Side Return Duct

Configuration for 48/50A Only

1. The *Comfort*Link™ controls can now be configured to operate the power exhaust. These configurations are accomplished through the scrolling marquee display by using the configuration menu.
2. The control system must be configured to use the power exhaust. A password may be required to edit the configurations, depending on the previous settings configured in the unit. Default password is "1111".
3. To access the configuration, use the arrow keys to scroll the red LED (light-emitting diode) on the display to the "Configuration" position and press ENTER. Use the arrow keys to scroll down until the display reads "BP", and press the ENTER key. At the Building Pressure Configuration setting, press ENTER twice. The display should be flashing 0 (none). Use the arrow keys to change the configuration to "3" (PE VFD CTRL, building pressure control via VFD controlled power exhaust) and press ENTER.
4. Use the arrow keys to scroll until the display reads "BP.S" and press ENTER twice. The display should be flashing "DSBL" (disabled). Use the arrow keys to change the configuration to "ENBL" (Enabled) and press ENTER and then ESCAPE.
5. Configuration of the power exhaust is now complete. Pressing the ESCAPE key several times will return the display to the auto scroll setting.
6. Consult the Controls and Troubleshooting Guide for complete instructions on using the *Comfort*Link™ control system.
7. The unit is now ready for normal operation.

NOTE: Configuration is not needed with factory-installed "Power and Control Accessory" option on K-series.

Conversion Package for 48/50A Only

CRPECONV005A00 CONVERSION PACKAGE

This conversion kit contains the ECB-2 economizer board. This board controls the operation of the equipment used to maintain building pressure.

⚠ WARNING

Before beginning any modification, be certain that the main line electrical disconnect switch is in the OFF position. Electric shock could result. Tag disconnect switch with suitable warning labels.

1. Ensure the hood assemblies are installed.
2. Locate and remove the auxiliary control box cover. Refer to Fig. 2 for auxiliary panel locations.
3. Install ECB-2 in auxiliary control box. See Fig. 16 and 17 for control box layout and auxiliary box wiring.
4. Locate the factory-installed wire harness for ECB-2 in the control box and make the connections for J1, J2, and J5. See Fig. 17 for auxiliary control box wiring.
5. Replace the auxiliary control box cover.

CRPECONV006A00 CONVERSION PACKAGE

This conversion kit contains the building pressure transducer and control tubes. The transducer measures the building pressure and sends a 4 to 20 mA signal to ECB2.

⚠ WARNING

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

1. Ensure the hood assemblies are installed.
2. Locate and remove auxiliary control box cover. Refer to Fig. 2 for auxiliary panel location.
3. Install building pressure transducer (BP) in auxiliary control box. See Fig. 16 and 18 for auxiliary box layout and pressure transducer example.
4. Locate the factory-installed wire harness for BP in the control box and make the "+" and "–" connections. See Fig. 17 for wiring configuration.
5. Connect control tubes to building pressure transducer.
6. Connect LOW tap of transducer to ambient location tap on unit using the control tube provided. Install field-supplied "tee" as required. See Fig. 18 and 19 for building pressure transducer example and tap location.
7. Using field-supplied 1/4 in. tubing connect HIGH tap of transducer (control tube not provided) and extend other end to a location inside building where it is desired to maintain pressure (typically a location inside near the front door).
8. Replace the auxiliary control box cover.

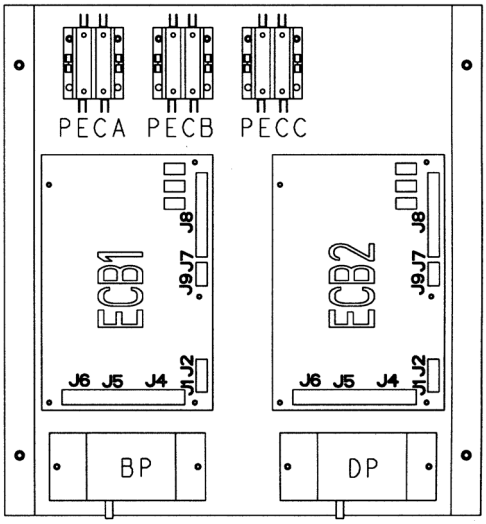
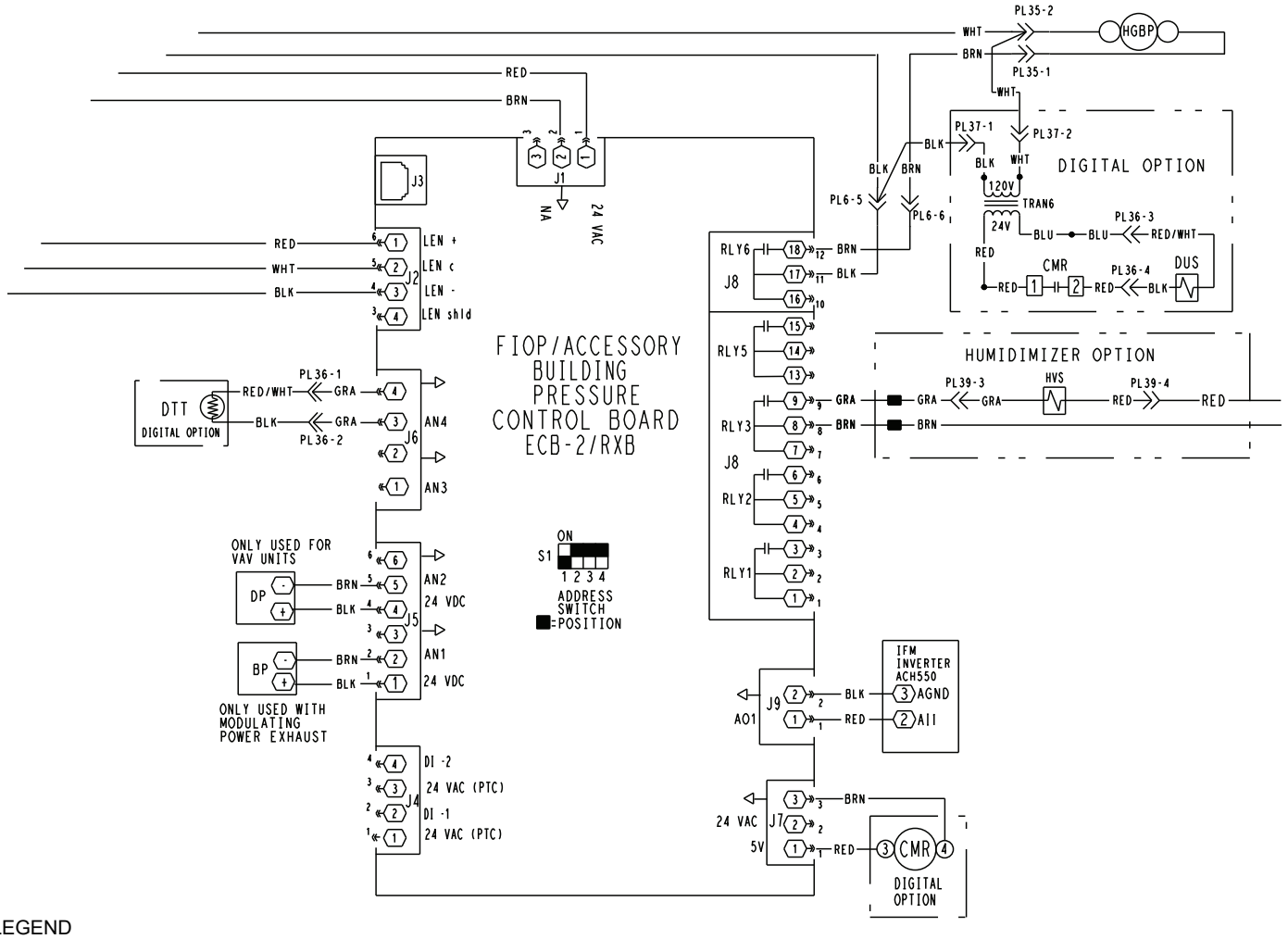


Fig. 16 — Auxiliary Control Box Layout for 48/50A



LEGEND

BP — Building Pressure Transducer
DP — Discharge Pressure Transducer
HGBP — Hot Gas Bypass
PL — Plug Assembly

Fig. 17 — Auxiliary Control Box ECB-2 Wiring for 48/50A

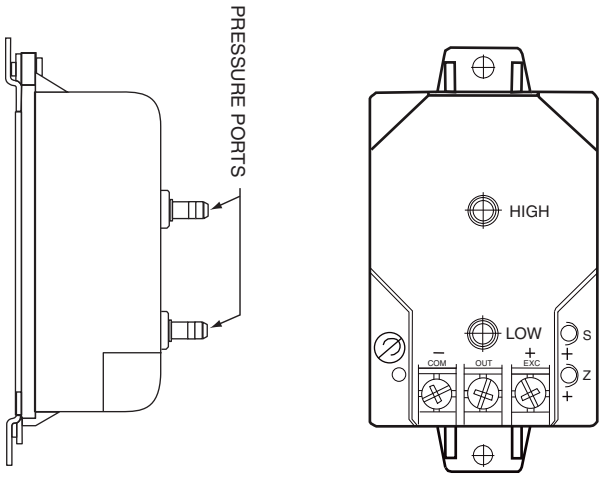


Fig. 18 — Building Pressure (BP) Transducer

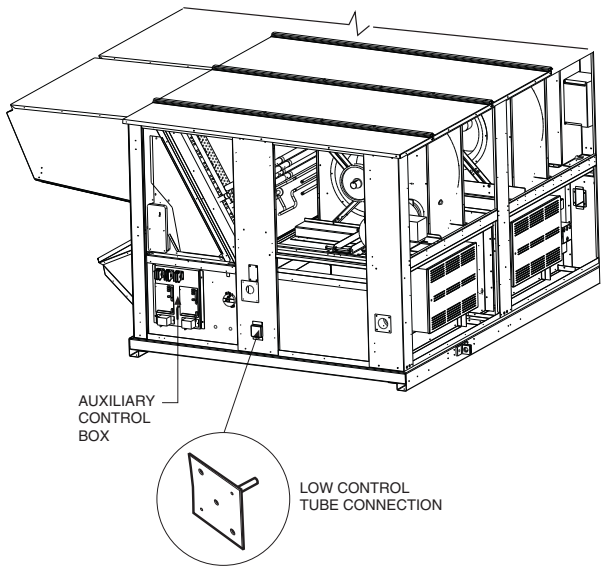


Fig. 19 — Ambient Location Tap (48/50A Series Units)

Programming

PROGRAMMING WITH THE LOCAL CONTROL PANEL

IMPORTANT: The adjustable frequency drive can also be programmed from a PC via RS485 com-port by installing the MCT-10 Set-up Software. This software can be either ordered using code number: 130B1000 or by downloading from the Danfoss website: http://www.danfoss.com/BusinessAreas/DrivesSolutions/softwaredownload.

Local Control Panel (LCP)

The following instructions are valid for the FC101 LCP. The LCP is divided into four functional sections. See Fig. 20 for control panel example. See Table 4 for panel display definitions.

At power-up

At the first power-up, the user is asked to choose the preferred language. Once selected, this screen will never be shown again in the following power-ups, but the language can still be changed in ***0-01 Language***. See Fig. 21 for language option screen.

Danfoss Parameters

See Table 5 on page 14 for high capacity Danfoss parameter descriptions, modes, and default settings.

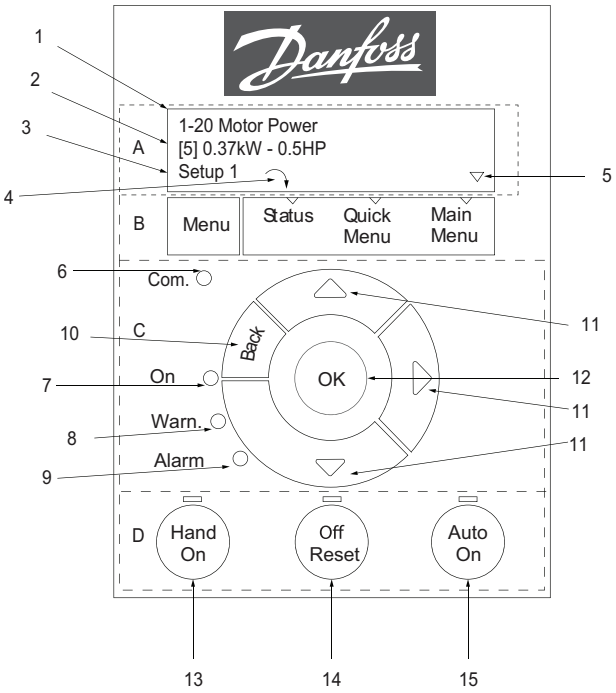


Fig. 20 — FC101 Local Control Panel

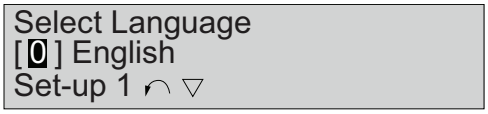


Fig. 21 — Select Language Option

Table 4 — Local Control Panel Display

NUMBER		DEFINITION
A	Alphanumeric Display — The LCD display is backlit with 2 alphanumeric lines. All data is displayed on the LCP.	
	1	Parameter number and name.
	2	Parameter value.
	3	Set-up number shows the active set-up and the edit setup. If the same set-up acts as both the active and edit setup, only that set-up number is shown (factory setting). When the active and edit set-up differ, both numbers are shown in the display (Set-up 12). The flashing number indicates the edit set-up.
	4	Motor direction is shown to the bottom left of the display, indicated by a small arrow pointing either clockwise or counterclockwise.
	5	The triangle indicates if the LCP is in status quick menu or main menu.
B	Menu Key — Use the menu key to select between status quick menu or main menu.	
C	Navigation Keys and LEDs	
	6	Com LED: Flashes when bus communication is communicating.
	7	Green LED/On: Control section is working.
	8	Yellow LED/Warning: Indicates a warning.
	9	Flashing Red LED/Alarm: Indicates an alarm.
	10	[Back]: For moving to the previous step or layer in the navigation structure.
	11	Arrows [▲] [▼] [►]: For navigating between parameter groups, parameters, and within parameters. Can also be used for setting local reference.
	12	[OK]: For selecting a parameter and for accepting changes to parameter settings.
D	Operation Keys and LEDs	
	13	[Hand On]: Starts the motor and enables control of the Adjustable frequency drive via the LCP.[a]
	14	[Off/Reset]: Stops the motor (off). If in alarm mode the alarm will be reset.
	15	[Auto On]: Adjustable frequency drive is controlled either via control terminals or serial communication.

NOTE(S):

a. Terminal 27 Digital Input (5-12 Terminal 27 Digital Input) has coast inverse as default setting so [Hand On] will not start the motor if there is no 24-v to terminal 27; ensure that terminal 12 connects to terminal 27.

Table 5 — High Capacity Danfoss Parameters

PARAMETERS	DESCRIPTION	MODE	DEFAULT
P0-03	Regional Settings	[1] North America	[0] International
P0-06	Grid Type	[102] 200-240-v/60 Hz [122] 440-480-v/60 Hz [132] 525-600-v/60 Hz	Size Related
P1-01	Motor Control Principle	[0] U/f	VVC+
P1-20	Motor Power	[11] 3kw-4hp	Size Related
P1-22	Motor Voltage	208 460 575	Size Related
P1-23	Motor Frequency	60 Hz	Size Related
P1-24	Motor Current	11.2 5.4 4.8	Size Related
P1-25	Motor Nominal Speed	1725	Size Related
P3-02	Minimum Reference	0	0
P3-03	Maximum Reference	60	50
P3-15	Reference 1 Source	[2] Analog Input 54	Analog Input 53
P3-16	Reference 2 Source	[0] No reference	[2] Analog Input 54
P3-17	Reference 3 Source	[0] No reference	[11] Local Bus Reference
P4-12	Motor Speed Low Limit	0	0
P5-12	Terminal 27 Digital Input	[0] No operation	[7] External Interlock
P5-13	Terminal 29 Digital Input	[0] No operation	[14] Jog
P6-20	Terminal 54 Low Voltage	2	0.07-v
P6-21	Terminal 54 High Voltage	10	10-v
P6-24	Terminal 54 Low Ref./Feedb.	0	0
P6-25	Terminal 54 High Ref./feedb.	60	60

TROUBLESHOOTING

Warnings and Alarms

The warnings and alarms shown in Table 6 can be used to find the root cause of failures. The VFD will show error codes; use the error code number to determine the cause of the problem.

Table 6 — Warnings and Alarms

FAULT NUMBER	ALARM/ WARNING BIT NUMBER	FAULT TEXT	WARNING	ALARM	TRIP LOCKED	CAUSE OF PROBLEM
2	16	Live zero error	X	X		Signal on terminal 53 or 54 is less than 50% of value set in par. 6-10, 6-12, 6-20 or 6-22. Also see parameter group 6-0X.
4	14	Mains ph. loss	X	X	X	Missing phase on supply side or too high voltage imbalance. Check supply voltage. See parameter 14-12.
7	11	DC overvolt	X	X		Intermediate circuit voltage exceeds the limit.
8	10	DC undervolt	X	X		Intermediate circuit voltage drops below the “voltage warning low” limit.
9	9	Inverter overload	X	X		More than 100% load for too long.
10	8	Motor ETR over	X	X		Motor is too hot due to more than 100% load for too long. See parameter 1-90.
11	7	Motor th over	X	X		The thermistor or the thermistor connection is disconnected. See parameter 1-90.
13	5	Overcurrent	X	X	X	Inverter peak current limit is exceeded.
14	2	Ground Fault		X	X	Discharge from output phases to ground.
16	12	Short Circuit		X	X	Short-circuit in the motor or on the motor terminals.
17	4	Ctrl.word TO	X	X		No communication to Adjustable frequency drive. See parameter group 8-0X.
24	50	Fan Fault	X	X		The fan is not working (Only on 400-v 40–125 hp [30–90 kW] units).
30	19	U phase loss		X	X	Motor phase U is missing. Check the phase. See parameter 4-58.
31	20	V phase loss		X	X	Motor phase V is missing. Check the phase. See parameter 4-58.
32	21	W phase loss		X	X	Motor phase W is missing. Check the phase. See parameter 4-58.
38	17	Internal fault		X	X	Contact your local Danfoss supplier.
44	28	Ground Fault		X	X	Discharge from output phases to ground.
47	23	Control Voltage Fault	X	X	X	24 vdc may be overloaded.
48	25	VDD1 Supply Low	X	X		Control voltage low. Please contact your local Danfoss supplier.
50		AMA Calibration failed		X		Contact your local Danfoss supplier.
51	15	AMA Unom, Inom		X		The setting of motor voltage, motor current and motor power is presumably wrong. Check the settings.
52		AMA low Inom		X		The motor current is too low. Check the settings.
53		AMA big motor		X		The motor is too big for the AMA to be carried out.
54		AMA small mot		X		The motor is too small for the AMA to be carried out.
55		AMA par. range		X		The parameter values found from the motor are outside acceptable range.
56		AMA user interrupt		X		The AMA has been interrupted by the user.
57		AMA timeout		X		Try to start the AMA again a number of times, until the AMA is carried out. Please note that repeated runs may heat the motor to a level where the resistances Rs and Rr are increased. In most cases, however, this is not critical.
58		AMA internal	X	X		Contact your local Danfoss supplier.
59	25	Current limit	X			The current is higher than the value in par. 4-18 Current Limit.
60	44	External Interlock		X		External interlock has been activated. To resume normal operation, apply 24 vdc to the terminal programmed for external interlock and reset the Adjustable frequency drive (via serial communication, digital I/O, or by pressing reset button on keypad).
66	26	Heatsink TemperatureLow	X			This warning is based on the temperature sensor in the IGBT module (Only on 400-v 40–125 hp [30–90 kW] units).
69	1	Pwr. Card Temp	X	X	X	The temperature sensor on the power card is either too hot or too cold.
79		Illegal power section configuration	X	X		Internal fault. Contact your local Danfoss supplier.
80	29	Drive initialized		X		All parameter settings are initialized to default settings.
87	47	Auto DC Braking	X			The drive is auto DC braking.
95	40	Broken Belt	X	X		Torque is below the torque level set for no load, indicating a broken belt. See parameter group 22-6.
200		Fire Mode	X			Fire mode has been activated.
202		Fire Mode Limits Exceeded	X			Fire mode has suppressed one or more warranty voiding alarms.
250		New spare part		X	X	The power or switch mode power supply has been exchanged. (Only on 400-v 40–125 hp [30–90 kW] units). Contact your local Danfoss supplier.
251		New Type code		X	X	The Adjustable frequency drive has a new type code (Only on 400-v 40–125 hp [30–90 kW] units). Contact your local Danfoss supplier.

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

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