CRPWREXH032A00, 049A00
CRPWREXH037A00-040A00

48/50PD05–06, 48/50PG03–14
PROPELLER POWER EXHAUST ACCESSORY
SINGLE PACKAGE ROOFTOP UNIT

Installation Instructions

PACKAGE CONTENTS

QTY	CONTENTS
1	Power Exhaust Assembly*
1	Hardware Bag

*CRPWREXH048A00 and CRPWREXH049A00 assemblies include a factory–installed transformer for 575–v units.

PACKAGE USAGE

UNIT 48/50PD, 48/50PG	PART NUMBER	VOLTAGE TYPE
03-07	CRPWREXH032A00	208/230
	CRPWREXH037A00	460
	CRPWREXH048A00	575
08-14	CRPWREXH038A00	208/230
	CRPWREXH039A00	460
	CRPWREXH049A00	575

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.

When working on 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.

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, and CAUTION. 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 a hazard 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.

GENERAL

IMPORTANT: Read these instructions completely before attempting to install the accessory power exhaust.

The propeller power exhaust accessory will provide system exhaust of up to 100% of return air (vertical only) when used with an economizer. The power exhaust accessory can be installed on both vertical (CRECOMZR028A00 and CRECOMZR029A00) and horizontal (CRECOMZR034A00 and CRECOMZR035A00) economizers. The shipping weight is 28 lb for the power exhaust used on size 03-07 units and 40 lb for the power exhaust used on size 08-14 units.

INSTALLATION

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury and/or death.

Turn off unit power and lock out.

⚠ CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

When removing access panels or performing maintenance functions inside your unit, be aware of sharp sheet metal parts and screws. Although special care is taken to reduce sharp edges to a minimum, be extremely careful when handling parts or reaching into the unit.

IMPORTANT: The power exhaust should be installed at the same time the economizer is installed. Refer to the accessory economizer installation instructions for more information on installing the economizer.

Install Power Exhaust

To install the power exhaust, perform the following:

1. Make sure power supply is turned off and lockout tag is installed.
2. At this time, due to the economizer installation, the return air cover should be removed and the economizer should be placed in front of the unit. (See Fig. 1 and 2.)

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Replaces: 48/50PG–5SI

3. Remove the cover plate from the side of the economizer assembly. (See Fig. 3.)
4. Set the power exhaust assembly next to the economizer. Route the power exhaust plug/harness through the hole where the cover plate was removed.
5. Secure the power exhaust assembly to the economizer with the 4 screws provided. (See Fig. 1 and 2.)
6. Connect the power exhaust harness plug to the unit power exhaust harness.

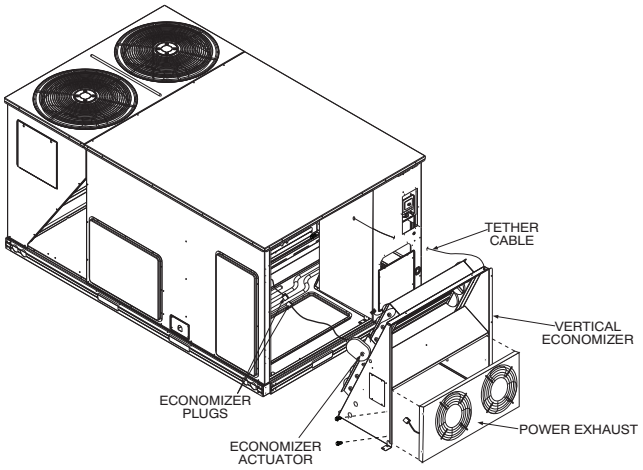

Fig. 1 - Installation with Vertical Economizer

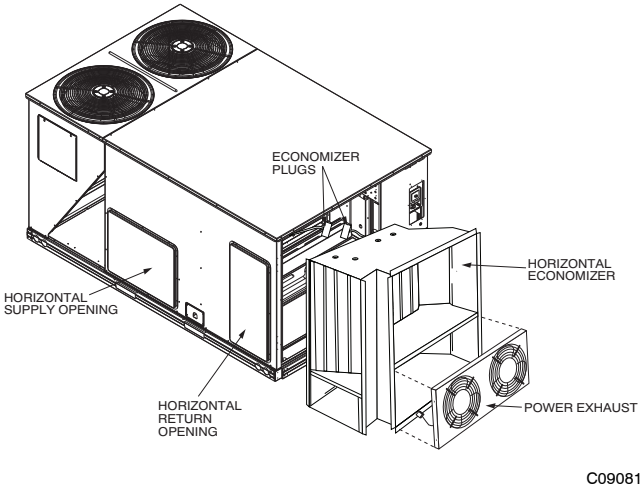

Fig. 2 - Installation with Horizontal Economizer

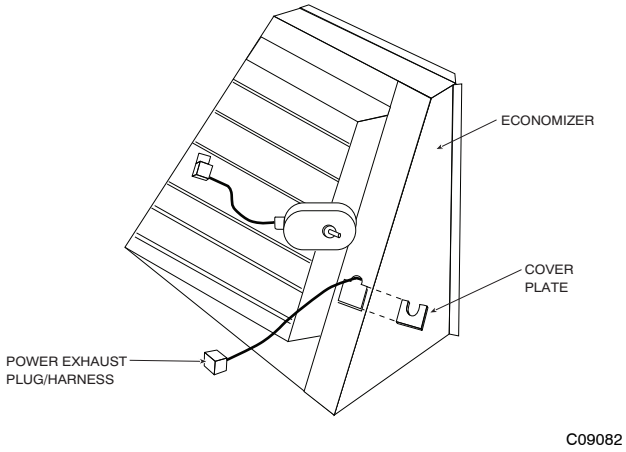

Fig. 3 - Cover Plate Removal

7. The power exhaust is powered from the base unit. The addition of a power exhaust may impact wire sizing and overcurrent protection. Refer to the base unit installation instructions for unit MCA (minimum circuit amps) and MOCP (maximum overcurrent protection) electrical data. See Fig. 4 and 5 for wiring.

   If a separate power supply is used, disconnect power wires from the indoor fan contactor. Refer to the base unit power schematic for location. Pull wires from control box area. Provide a separate field-supplied junction box and disconnect. Refer to Table 1 for wire sizing and fuse protection.

   A transformer is factory-installed in the accessory for 575-v units.

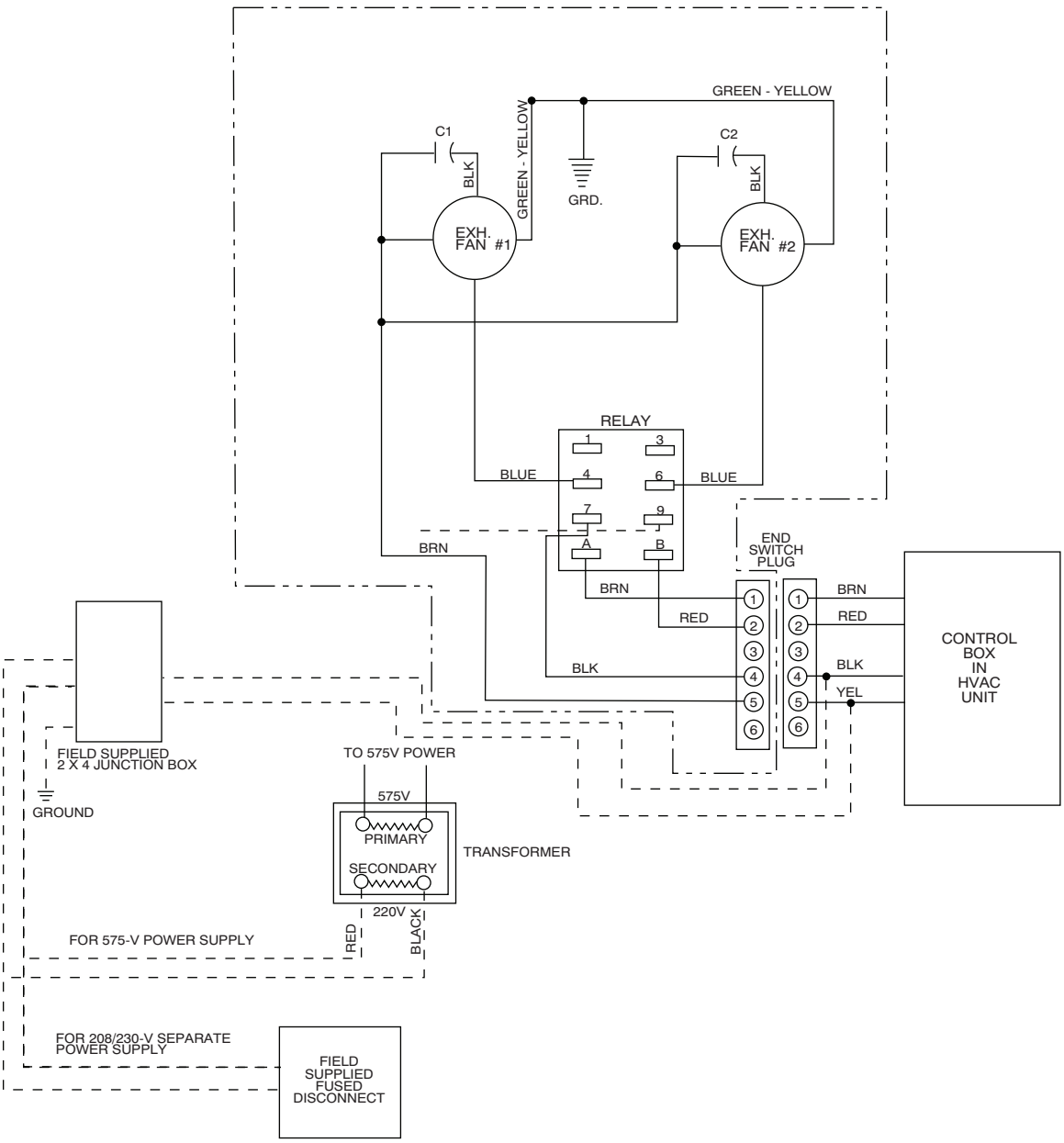

Fig. 4 - Power Exhaust Wiring - 208/230-v and 575-v Units

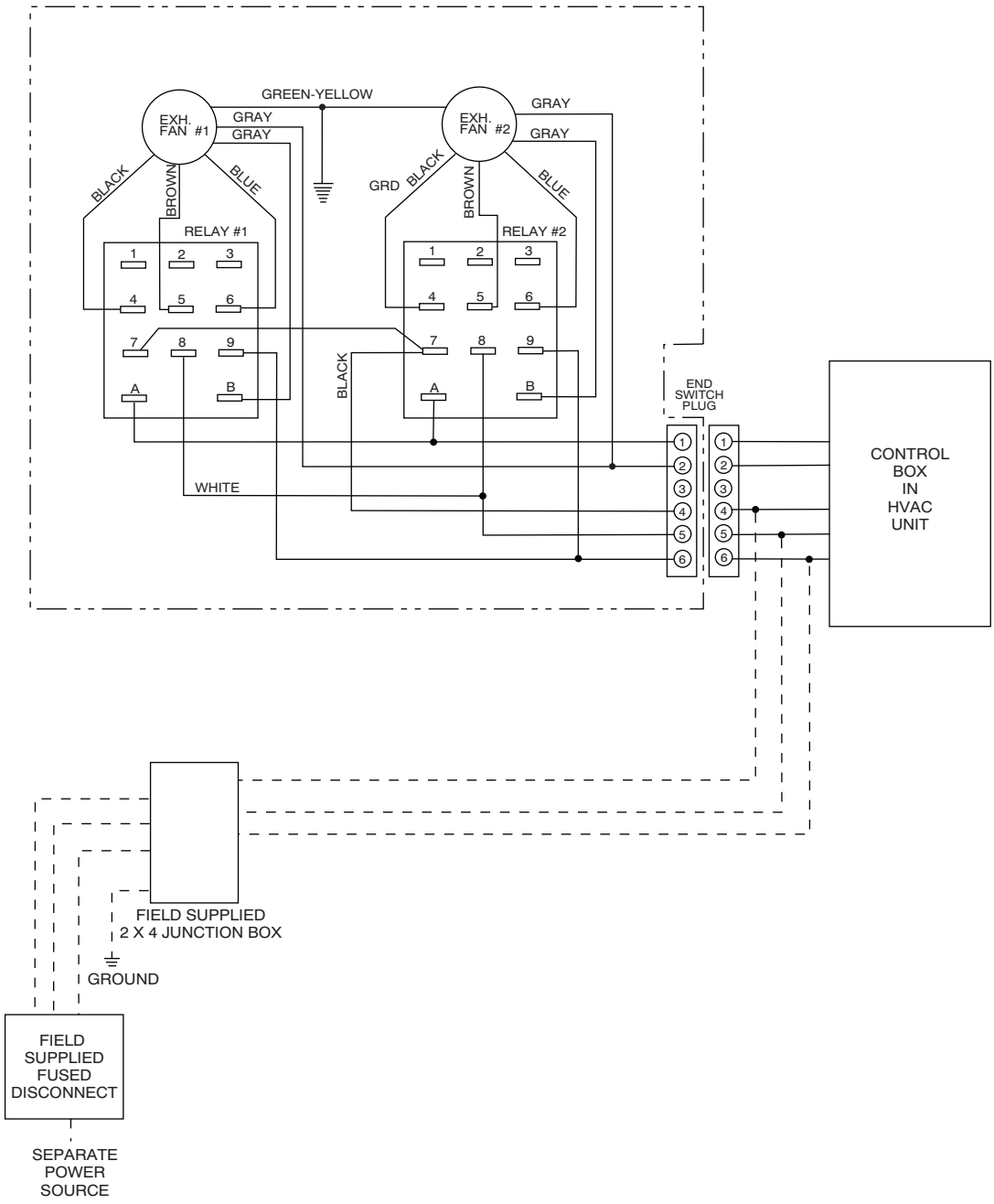

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Fig. 5 - Power Exhaust Wiring - 460-v Units

Table 1 – Power Exhaust Electrical Data

POWER EXHAUST PART NO.	MCA (230 v)	MCA (460 v)	MCA (575 v)	MOCP (for separate power source)
CRPWREXH032A01	3.3	N/A	N/A	15
CRPWREXH037A01	N/A	0.9	N/A	15
CRPWREXH048A01	N/A	N/A	1.32	15
CRPWREXH038A01	1.5	N/A	N/A	15
CRPWREXH039A01	N/A	1.8	N/A	15
CRPWREXH049A01	N/A	N/A	0.64	15

LEGEND
MCA – Minimum Circuit Amps
MOCP – Maximum Overcurrent Protection
N/A – Not Available

8. Complete economizer installation. Install the return air panel with hoods over the economizer. Fig. 6-9 show the economizer and power exhaust installed in the unit.
9. Remove lockout tag and return power to unit. The *Comfort*Link™ control must now be configured to use the power exhaust.

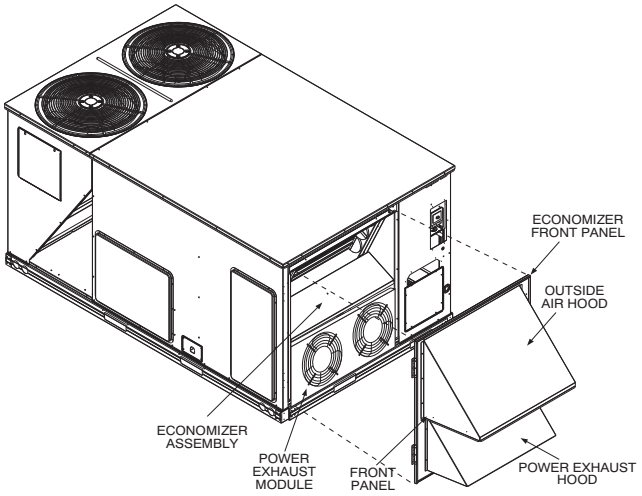

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Fig. 6 - Vertical Economizer and Power Exhaust Installed in Unit

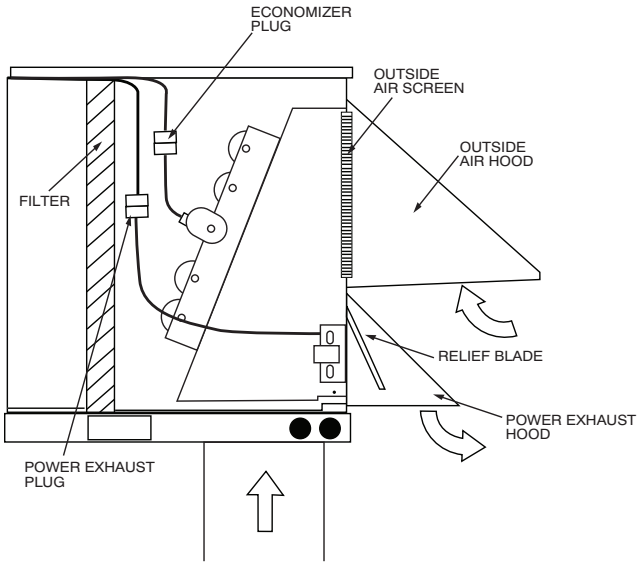

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Fig. 7 - Side View of Vertical Economizer and Power Exhaust

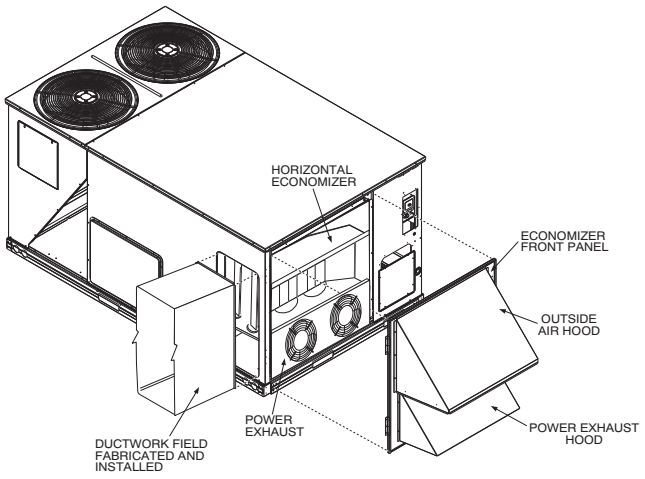

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Fig. 8 - Horizontal Economizer and Power Exhaust Installed in Unit

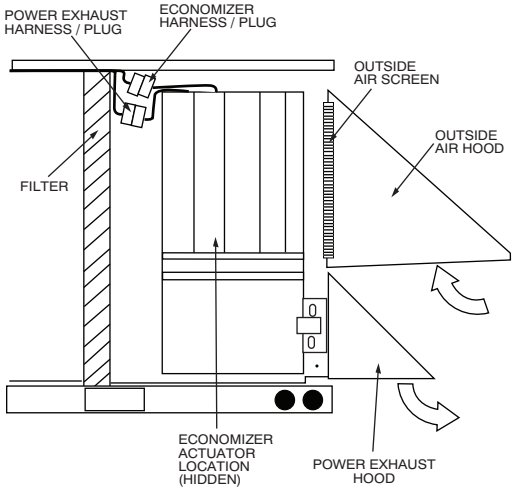

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Fig. 9 - Side View of Horizontal Economizer and Power Exhaust

Configure the *Comfort*Link™ Control

1. The *Comfort*Link control can now be configured to operate the Power Exhaust. To do this, the unit must be configured for Power Exhaust Type, Power Exhaust Motors, Power Exhaust Stage 1 Economizer Position setting (default is 25%), Power Exhaust Stage 2 Economizer Position setting (default is 75%). 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 on the display to the "Configuration" position and press ENTER. Use the arrow keys to scroll down until the display reads "ECON", and press the ENTER key. At the Power Exhaust Installed setting, press ENTER twice. The display should be flashing "No". Use the arrow keys to change the configuration to "Yes" and press ENTER and then ESCAPE.
4. Use the arrow keys to scroll down to the Power Exhaust Stage 1 Economizer Position setting (PE.1) and press ENTER twice. Use the arrow keys to increase or decrease the economizer position percentage that will start the first power exhaust fan, and press ENTER and ESCAPE. Use the arrow keys to scroll down to the Power Exhaust Stage 2 Economizer Position setting setting (PE.2) and press ENTER twice. Use the arrow keys to increase or decrease the economizer position percentage that will start the second power exhaust fan, and press ENTER and 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. See Fig. 10 for power exhaust performance.

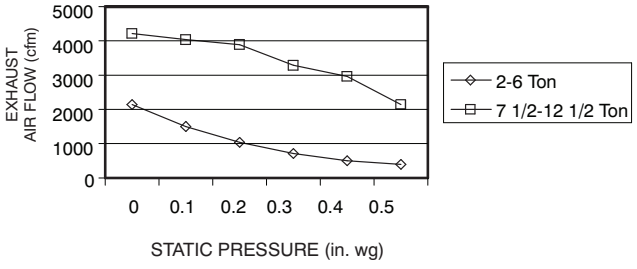

Fig. 10 - Power Exhaust Performance - 48/50PD05-06, 48/50PG03-14

Additional Guidance for 48/50PD Units ONLY

Centurion PD units utilize a variable speed fan system. The economizer in these units will modulate based on the rooftop unit indoor fan speed to maintain the ventilation airflow above the minimum set-point. If this constant volume power exhaust module is used on a 48/50PD unit, the power exhaust should be set to activate at an economizer open-position based on the min/max CFM ranges of the rooftop unit airflow. This typically results in the constant volume power exhaust being set to the lowest allowable rooftop unit airflow value, so that the two fan systems will not fight each other. An alternative approach is to use a completely different modulating power exhaust system so that the power exhaust can modulate with the rooftop unit fan.

For configuration of this constant volume power exhaust on a Centurion 48/50PD unit, the controls require an accurate supply duct CFM at the unit design point where the indoor fan will run at the Supply Fan Maximum Speed (FS.MX) for proper operation. The supply duct CFM is configured by the Indoor Fan Max Speed CFM (***Configuration→ECON→IDF.C***). Default values for Indoor Fan Max Speed CFM (IDF.C) are at 400 CFM per ton or 1600 CFM for the 05 size and 2000 CFM for the 06 size. It is preferred to use the supply duct CFM from an air balance report to configure the Indoor Fan Max Speed CFM (IDF.C).

If an air balance report is not available, then use the fan tables supplied in the 48/50PD Installation Instructions or Controls and Troubleshooting book to determine Fan Max Speed CFM (IDF.C). When using the fan tables to determine Fan Max Speed CFM (IDF.C) set Economizer Position Test (***Service Test→INDP→ECO***N) to 0 (Economizer Damper Closed) and Indoor Fan Speed Test (***Service Test→FANS→F.SPD***) equal to Supply Fan Maximum Speed (FS.MX). Measure the supply to return duct static pressure difference and indoor fan RPM. Make correction to static pressure for all options installed in the unit per the accessory pressure drop table. Determine Indoor Fan Max Speed CFM (IDF.C) on the fan table where the corrected static pressure and RPM cross.