

Installation Instructions

Power Exhaust Kit

Model Number: BAYPWRX029*
Used With: 12½ - 25 Ton Packaged Rooftop units
BAYPWRX030*
BAYPWRX031*

 SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

1

Cautions, Warnings and Notices

 WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury

 CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

Indicates a situation that could result in equipment or property-damage only accidents.

Important: Environmental Concerns! Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important: Responsible Refrigerant Practices! Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

2

 WARNING

Personal Protective Equipment Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

General

Power Exhaust is designed for downflow applications. For horizontal applications, the Power Exhaust may be mounted on the horizontal return duct. However, it is the installer's responsibility to determine how to complete such installation.

An economizer or motorized damper must be installed and functional before attempting to install the Power Exhaust.

The power exhaust can be turned "ON" at infinite fresh air damper settings depending on how the unit is configured and whether it has an RTOM.

Inspection

1. Unpack all components of the Power Exhaust kit.
2. Remove hardware package from Power Exhaust Assembly.
3. Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.

- 3
- Parts List
- 1 - Power Exhaust hood assembly
 - 1 - Edge protector 10" long
 - 1 - Tube caulk (clear)
 - 10 - Wire ties
 - 2 - Economizer exhaust hood block-off plates
 - 15 - Screws (drill point)
 - 1 - 1" x 3" "Power Exhaust Installed" Label
 - 1 - Template showing where mounting holes are to be drilled and opening to be cut.
 - 1 - Enhanced Econ Logic Module
 - 1 - Econ Logic Module Mounting Screw, # 6-19 x 0.625

 WARNING

Proper Field Wiring and Grounding Required!

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow code could result in death or serious injury.

 WARNING

Rotating Components!

Failure to disconnect power before servicing could result in rotating components cutting and slashing technician which could result in death or serious injury. Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/ tagout procedures to ensure the power can not be inadvertently energized.

1. Open and lock unit disconnect before attempting to install this accessory.
2. Remove the supply fan access panels from front side of the unit.

4

Cutting of Opening and Removal of Barometric Blade

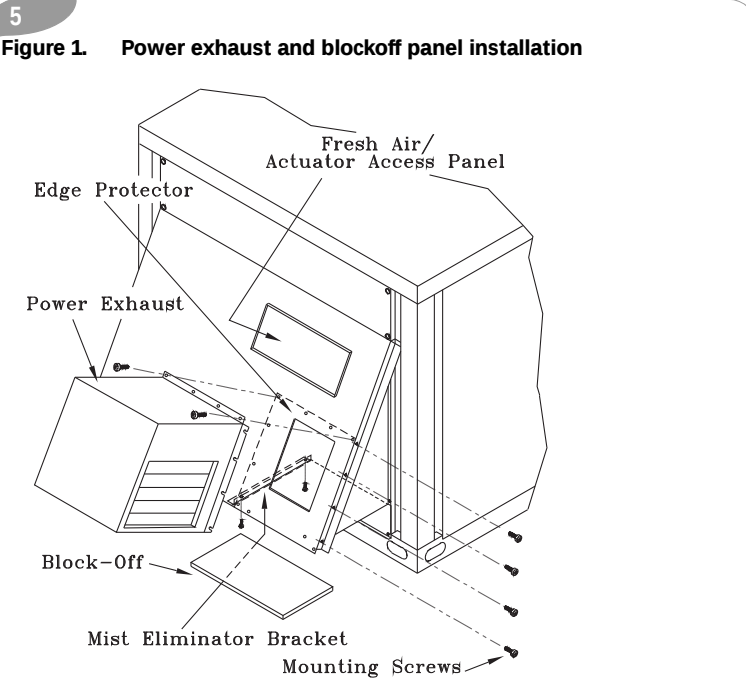
Use the template provided to locate positions, then drill holes and cut required new opening.

Important: Alignment of the template is critical. Instructions for alignment and cutting are printed on the template.

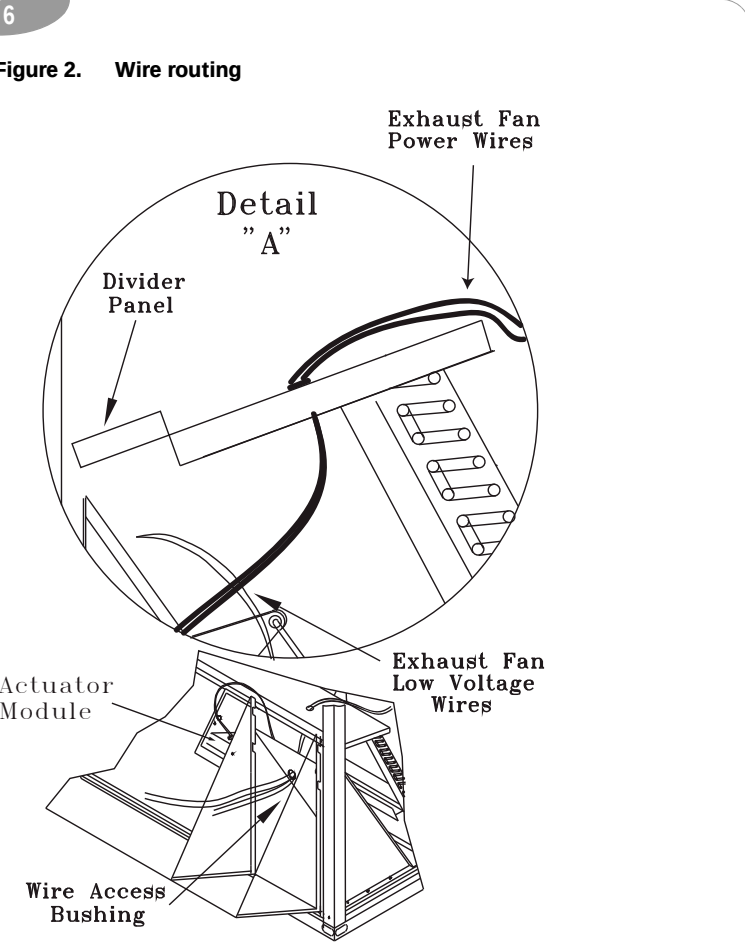
Recommended procedure

1. Place the template into position for drilling and cutting, and secure it with pieces of duct tape (field supplied).
2. Before cutting new opening, remove small mist eliminator/filter. Reach up under panel opening, push up the filter and lift it out.
3. Drill holes through the template and panel at the same time. Likewise, cut through the template and panel at the same time to create the new opening; discard the scrap metal.
4. To remove the barometric relief blade, remove the shipping screw in the bottom of the blade if present. Reach through the new opening, lift up on the blade, and remove it through the new opening. Discard blade after it has been removed from the unit.
5. Install edge protector (supplied) along the down-facing top edge of the new cutout (see [Figure 1](#)).

- Install Blockoff Panel**
1. A bracket underneath the economizer front panel separates two (2) mist eliminators - a long one, and a short one. Remove the two screws holding the mist eliminator bracket in place, then discard bracket. (See [Figure 1](#))
 2. Position the blockoff plate(s) under the short mist eliminator, with the front edge(s) resting above the sheet metal lip protruding from the economizer. Be sure the foam rubber sealing strips face upward toward the unit. Secure with the four (4) screws provided.
 3. Discard any un-used blockoff plates provided in the kit.



- Power Exhaust Installation with Reliatel Controls**
1. Before the Power Exhaust is attached to the unit, create a water-tight seal by caulking all four (4) flanges that will mate up to the economizer panel (caulking provided).
 2. Set the power exhaust assembly as close as possible to the end of unit.
 3. Uncoil the wires from inside the Power Exhaust assembly and route them through the newly cut opening. Route the two high-voltage wires up through the bushing in the barometric relief hood, and over into the fan section. (See [Figure 2](#))
 4. Route the low voltage wires through the bushing in the barometric relief hood and over to the economizer actuator. (See [Figure 2](#))



- 7
- Power Exhaust Installation with Novar Controls
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 4. On the Power Exhaust assembly, remove plug wires 128A and 132A from the exhaust fan relay and discard.
 5. In the economizer wiring harness in the unit, locate wires 128A and 132A. These wires will have 1/4" insulated quick connects. (See [Figure 2](#))
 6. Attach power exhaust assembly to unit.
 - a. To help position the power exhaust for attachment to the unit, start 4 screws in the pre-drilled holes along the right-hand edge of economizer panel, but do not tighten. (See [Figure 1](#))
 - b. Lift the power exhaust up and set into place over the opening, allowing the metal tabs to rest on the un-tightened screws; this holds the assembly temporarily in place.
 - c. Adjust positioning of the Power Exhaust until the holes in its top and left-side flanges align with the new holes drilled in the end panel. Install self-tapping screws (provided) to secure the Power Exhaust assembly in place.
 - d. Now tighten the partially installed screws along the right- hand edge of the economizer panel.
 - e. To ensure a rain-tight seal, run a bead of caulking around the outside edge of each flange.
 - f. Since insulation behind the economizer panel may have been damaged by the cutting process, seal the right-side sheet metal joint where the economizer meets the back side of the economizer panel (See [Figure 1](#)). Use the caulking provided.

Wiring Installation

⚠ WARNING

Hazardous Voltage!

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⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

Important: Use provided wire ties to make sure wire are secured and protected from sharp edges and hot surfaces.

Power Wiring

Refer to ReliaTel controls wiring diagram for connections.

- Using the wire routing guide shown in [Figure 2](#), route the long, dual, high-voltage wires up over the coil, and along the unit wiring harness, then along the fan panel across to the Fan Terminal Board (FTB). On units with a factory installed variable frequency drive (VFD), route the long, dual, high-voltage wires to the FTB located inside the fuse enclosure which is mounted either underneath the VFD on horizontal units, or on the side of the VFD enclosure on downflow units (see [Figure 3](#)). Bundle any excess wire in the corner near the access-door opening, away from the blower housing, and secure into place.
- Connect the two (2) high voltage wires to the Fan Terminal Block (FTB), matching wire colors to those found on the FTB-D; red-to-red and FTB-B black-to-black (see [Figure 4](#)). If ventilation override option is installed, see note 2 in [Figure 7](#).
- Ensure that all wires are protected from damage by moving parts. Secure the wires with wire-ties (provided).

Figure 3. Variable Frequency Drive FTB location

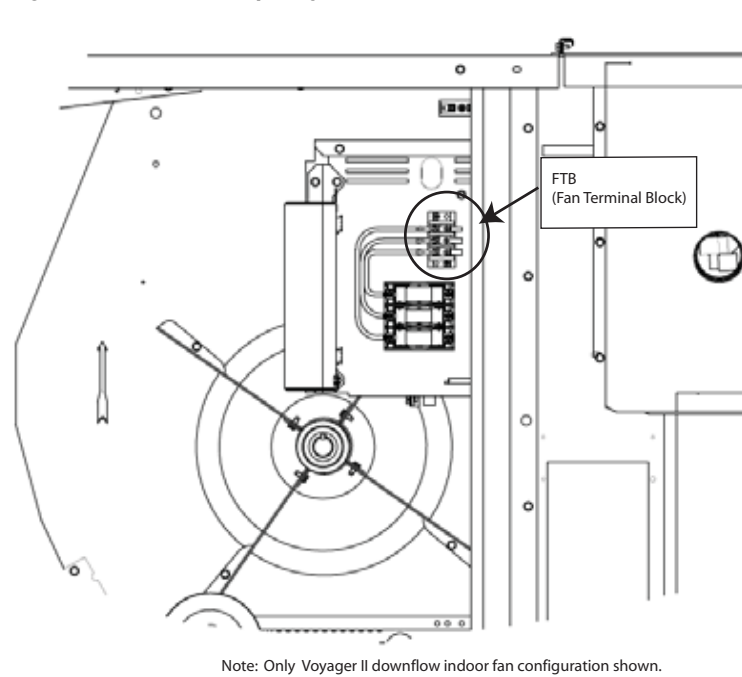
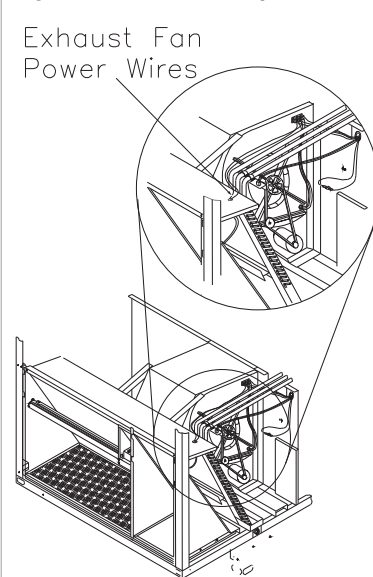


Figure 4. Exhaust fan power wires



Control Wiring - ReliaTel Control

Note: Inspect existing economizer actuator for necessary logic module connections. If connections are not present, remove one mounting screw from the top of the existing logic module. Remove existing logic module. Install the new logic module included in the kit. Secure the new logic module with the existing mounting screw or mounting screw provided in the kit. See [Figure 5](#).

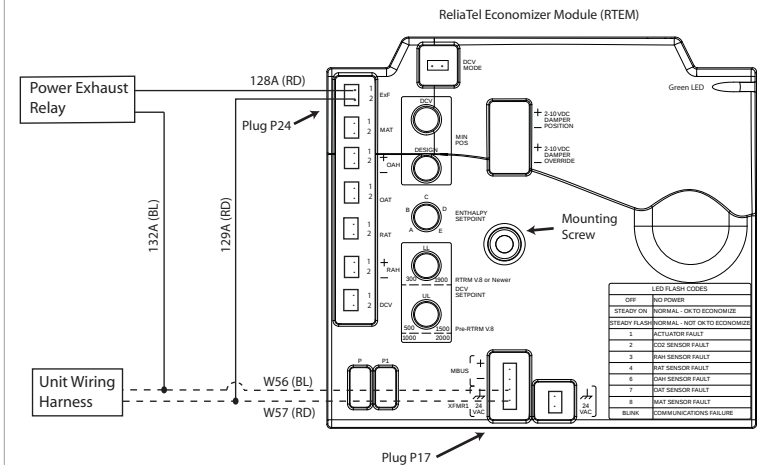
Refer to [Figure 7](#) for connections.

- Remove P17 plug from actuator module.
- Using 18 ga. red quick splice connectors provided, splice unit P17 plug, wires #W56 (BLU) and W57 (RED) removed from actuator in [Step 1](#), to

power exhaust wires #132A (BLU) and 129A (RED) respectively. See [Figure 5](#).

- Reconnect P17 plug, wires #W56 (BLU) and W57 (RED) to actuator module. See [Figure 5](#)
- Connect power exhaust P24 plug, wires #128A and 129A, to EXF on actuator module. See [Figure 5](#).

Figure 5. RTEM wiring with ReliaTel control



Control Wiring - Novar Control

Refer to wiring diagram, [Figure 7](#) for connections.

- Locate P24 plug, wires #128A and 129A, in the unit wiring harness and connect to EXF on the actuator module. See [Figure 6](#).
- Route wires 128A (RD) and 132A (BL) to the power exhaust assembly and connect to the exhaust fan relay coil (XFR). See [Figure 6](#).
- Using 18 ga. red quick splice connectors provided, splice wire 130A(BK) to wire 128A(RD), and splice wire 131(BK) to wire 129A(RD) from NOVAr damper relay normally open contact pins 4 and 7. See [Figure 6](#).

- Using 18 ga. red quick splice connectors provided, splice wire 132A(BL) to wire W56(BL), and splice wire 129A(RD) to wire W57(RD). See [Figure 6](#).

Figure 6. RTEM wiring with Novar control

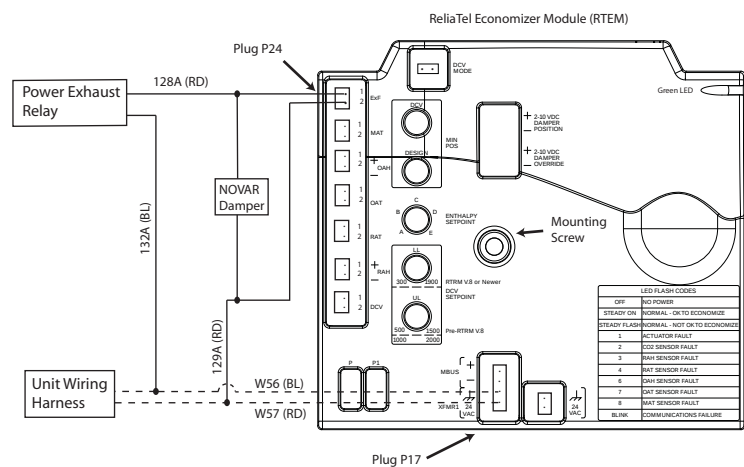
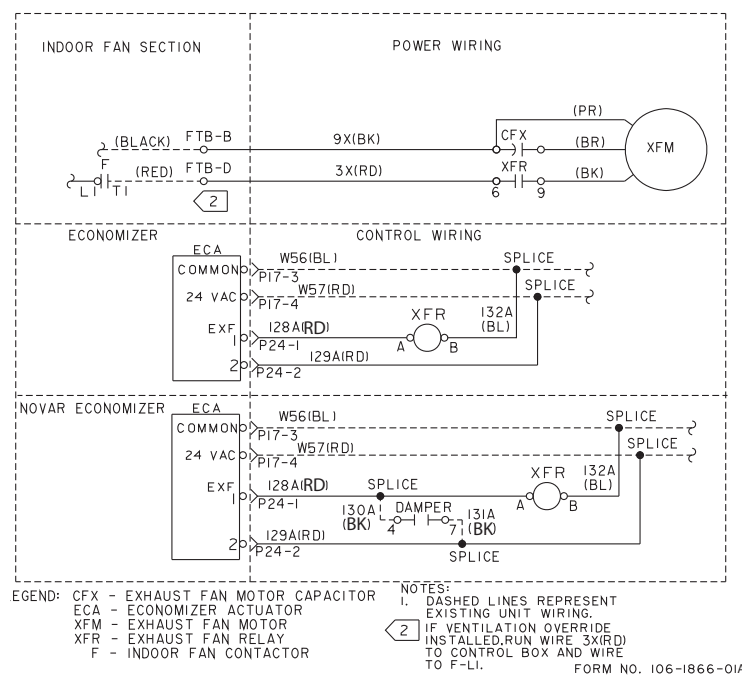


Figure 7. Wiring diagram



ReliaTel Unit Power Exhaust Operation and Settings

Units without a ReliaTel Options Module (RTOM)

The power exhaust is turned on whenever the indoor blower is running and the economizer damper is at 25% outside air or greater. This is not adjustable.

ReliaTel Units with an RTOM and without Ventilation Override Accessory

The power exhaust setpoint (point at which the power exhaust is turned on) is adjustable from 0% to 100% economizer damper outside air setting, corresponding to the setting of the "exhaust setpoint" potentiometer on the RTOM. the power exhaust is turned on when the indoor blower is running and the damper position is greater than the power exhaust set point. See [Figure 8](#).

ReliaTel Units with an RTOM and with an Optional Ventilation Override Accessory

Same as above except Ventilation Override Exhaust function causes power exhaust to run with damper closed and indoor blower off.

ReliaTel Units with Novar Controls

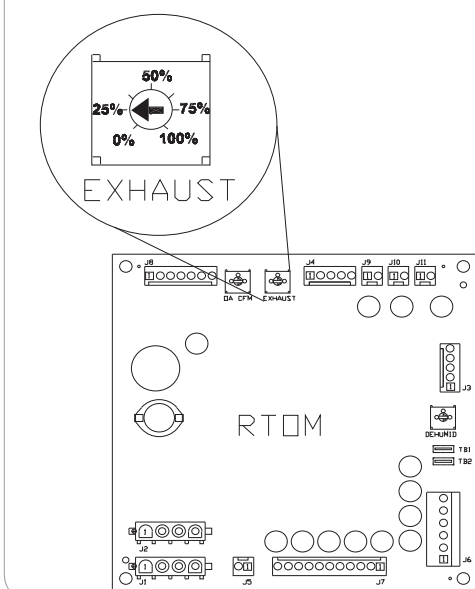
Power exhaust option operates the same as standard ReliaTel Control, except the economizer can be enabled and disabled as required through the Novar damper relay contacts.

Note: ReliaTel units without RTOM option, power exhaust will not come on until economizer damper reaches approximately 25% open. ReliaTel units with RTOM option, power exhaust will operate based on exhaust setpoint on RTOM module.

Close unit disconnect, then place the zone sensor fan selector in the Fan "ON" position, and the Heat/Cool selector in the "OFF" position. This places the damper in the minimum ventilation position.

On ReliaTel units, to verify power exhaust operation, put unit in test mode and step through to economizer step. Adjust power exhaust initiate point as desired.

Figure 8. RTOM



The manufacturer optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, the manufacturer offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit www.IRCO.com.

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