



Pneumatic Isolation Module

(Cat. 2030-Pxxxxx)



ATTENTION: Hazardous Voltage or other forms of energy could be present.

To avoid serious injury or death:

Prior to beginning the installation and wiring process, make sure that all forms of energy to the installation site have been properly turned OFF and locked out.



ATTENTION: This device is a component in a safety system. Do not defeat, tamper with, bypass or alter. Severe injury to personnel could result.

Only qualified service technicians must perform service or maintenance. Resealing of the device is the responsibility of the person or organization performing the service or maintenance. Follow NFPA 70E requirements

Specifications

| Description | Specification | |
|--|---|------------------------|
| Enclosure Dimensions H x W x D (by port size designator) | 1, 3, 4 = 32.9 in. x 28.09 in. x 13.34 in. (835.66 x 713.49 x 338.84) | |
| | 2 = 26.9 in. x 24.09 in. x 11.34 in. (835.66 x 713.49 x 338.84) | |
| | 6 = 38.9 in. x 34.09 in. x 17.34 in. (988.06 x 865.89 x 440.44) | |
| Degree of Protection (By enclosure type designator) | A = NEMA Type 1 | J = NEMA Type 12 |
| | C = NEMA Type 4X | P = IP30 |
| | F = NEMA Type 4 | W = IP65 |
| | H = IP54 | |
| Input Voltage Rating | 24V DC and 120V / 60Hz | |
| Status Indicator Lights | 24V LED and 120V AC (neon) | |
| Inlet Air Pressure Range (by air pressure designator) | 120 = 30 - 120 psi | |
| | 007 = 3 - 7 BAR | |
| Inlet & Outlet Air Fitting Size (by port size designator) | 1 = 1 in. NPT (inlet and outlet fittings are the same size) Cv=6.0 | |
| | 2 = 1/2 in. NPT (inlet and outlet fittings are the same size) Cv=3.1 | |
| | 3 = 3/4 in. NPT (inlet and outlet fittings are the same size) Cv=4.4 | |
| | 4 = 1 in. NPT (inlet and outlet fittings are the same size) Cv=8.5 | |
| | 6 = 1.5 in. NPT (inlet and outlet fittings are the same size) Cv=22.2 | |
| Connector Plug (HC) - Wire Size - Torque | #14 AWG Max. | 21mm ² Max. |
| | 4.6 lb-in | 0.5 Nm |
| Operating Ambient Temperature | 0...+40° C (+32...+104° F) | |
| Storage Ambient Temperature | -10...+60° C (+14...+140° F) | |
| Storage Relative Humidity | 5...95%, non-condensing | |
| Agency Certification | UL, cUL, TUV EN9541 Category 4, TUV EN60204-1, CE | |

Overview

The optional Pneumatic Isolation Module helps provide isolation of pneumatic energy to the machine or process. When an RLS is switched to the OFF position, the Pneumatic Isolation Module exhausts through the muffler on the module.

The Pneumatic Isolation Module can be utilized as a part of the ElectroGuard® Safety Isolation System manufactured by Rockwell Automation and designed for use with only these systems.

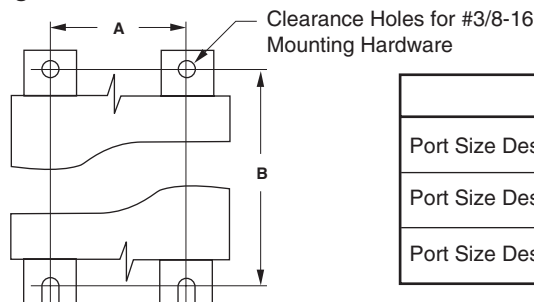
Section 1

Mounting the Pneumatic Isolation Module

1. The Pneumatic Isolation Module enclosure is factory sealed. Installation of the module does not require opening the enclosure or breaking the factory seal.
2. Select the location for mounting the Pneumatic Isolation Module enclosure and mark locations for mounting bolt holes on the mounting surface. Use the mounting holes of the supplied enclosure as a guide or see Figure 1.

Figure 1

Enclosure Mounting Dimensions for Pneumatic Isolation Module



| | A | B |
|----------------------------|--------------------------|--------------------------|
| Port Size Designator=1,3,4 | 18.00 in. (457.20 mm) | 31.25 in. (793.75 mm) |
| Port Size Designator=2 | 14.00 in. (355.60 mm) | 25.25 in. (641.35 mm) |
| Port Size Designator=6 | 24.00 in. (609.6 mm) | 37.25 in. (946.15 mm) |

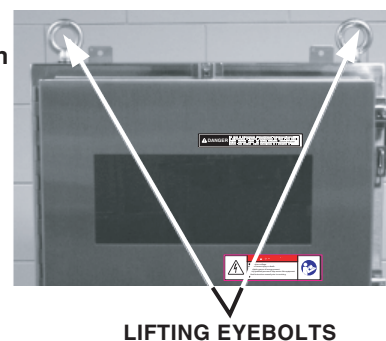
3. Drill and tap the holes in the mounting surface to accept the mounting hardware, four 3/8in.-16 UNC bolts.

Section 1 (Cont'd) Mounting the Pneumatic Isolation Module

ATTENTION: The enclosed module, weighs approximately 135 lbs. (62 Kg), includes two lifting eyebolts on its top surface (see Figure 2). Use the eyebolts an overhead hoist or other lifting means to transport, lift and position the enclosure for installing the mounting bolts. Assistance may be needed to avoid possible personal injury and/or equipment damage.

4. Partially install the two lower mounting bolts into the mounting surface so the bottom mounting feet of the enclosure can be placed over them.
5. Raise the enclosure into position and lower it down onto the two partially installed lower bolts.
6. Align the holes in the upper mounting feet on the enclosure with the upper two holes in the mounting surface and install the two upper mounting bolts.
7. Torque all four 3/8-16 mounting bolts to 22-32 lb-ft (30-43 Nm).
8. Detach the lifting means from the enclosure eyebolts.

Figure 2
Lifting Eyebolts on
Module Enclosure



Section 2. Connecting Customer Air Piping to Pneumatic Isolation Module Air Fittings

Two hard-piped connections are required when the module is connected to a facility's compressed air system. First connection is to the air inlet fitting located at the outer right hand side of the enclosure (see Figure 3). The other connection is to the air outlet fitting location on the outer bottom side of the enclosure (see Figure 4) The muffler and check valve do not require connections and must not be obstructed.

Table 1: Summary of Pneumatic Module Input / Output Ports

| Designator | Location | Function |
|---------------------------|------------|--|
| Air Inlet | Right Side | Connection for incoming air to module |
| Air Outlet | Bottom | Connection for outgoing air from module |
| HC (electrical connector) | Right Side | Interface to Control Module |
| Exhaust Muffler | Bottom | Exhausts residual air pressure when RLS is in the "OFF" position. |
| Check Valve | Bottom | Pressure relief valve in the event of internal air leak in module enclosure. |

IMPORTANT: When installing air connections, the Pneumatic Isolation Module external pipe fitting must be held secure. Internal fittings may become loose and cause an air leak if not held secure.

The compressed air supplied to the inlet of the Pneumatic Isolation Module must be dry and filtered.

To extend the life of the valve, a 5µm filter and water trap must be installed before the air inlet and a water trap must be installed after the air outlet.

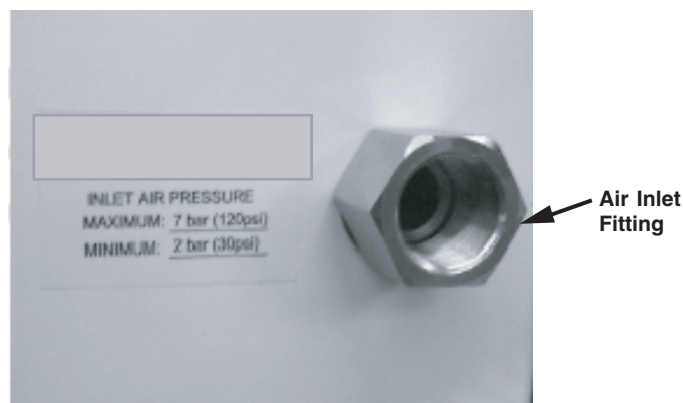
When making the hard-piped air connections to the air inlet and outlet fittings on the module, a clearance of 6 in. (15 cm) should be observed for ease of installation and module replacement.

Follow your facility's procedures when making the piping connections.

Check pipe connections for air leaks when installation of the module is complete.

1. Verify all energy sources have been properly turned OFF and have been locked out or tagged out.
2. Connect the inlet air pipe to the inlet fitting on the right hand side of the Pneumatic Isolation Module. Use wrench to hold the air inlet fitting on the enclosure secure during installation and observe proper clearances from the fitting.

Figure 3
Air Inlet Fitting on Right-hand Side of Module Enclosure

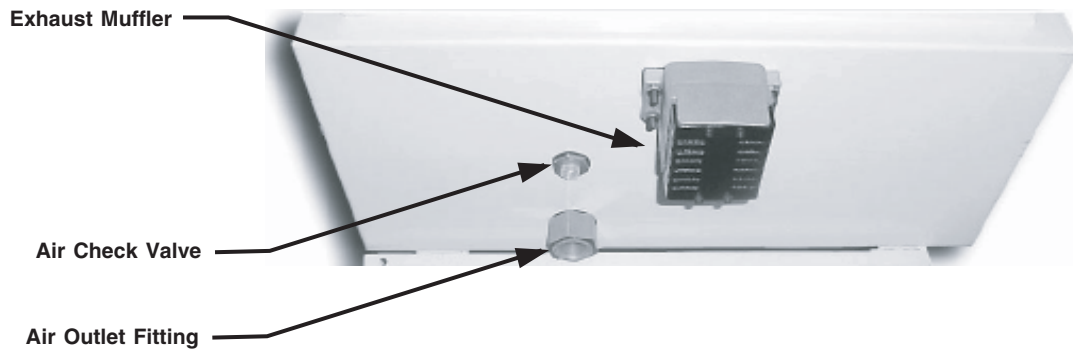


Section 2 (Cont'd)

Connecting Customer Air Piping to Pneumatic Isolation Module Air Fittings

3. Connect outlet air pipe to the outlet fitting on bottom of the Pneumatic Isolation Module. Use a wrench to hold the air inlet fitting on the enclosure secure during installation and observe proper clearances from the fitting.

Figure 4
Air Outlet Fitting on Bottom of Module Enclosure



4. Check for air leaks around the inlet and outlet pipes.

Section 3

Wiring to Connect the Pneumatic Isolation Module to the ElectroGuard® Control Module

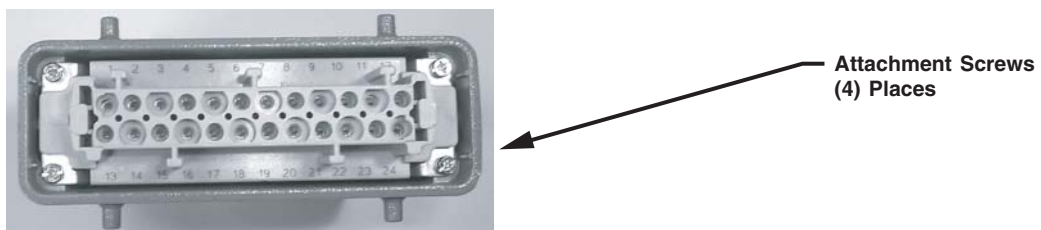
The Pneumatic Isolation Module includes a single 24 pin electrical connector (HC), located on the outer, right hand side of the module enclosure (see Figure 5). This connector (referenced as HC in the connection diagrams) interfaces signals between the Pneumatic Isolation Module and the ElectroGuard® Power Panel.

Figure 5
Connector HC on the Right-hand Side of the Enclosure



1. Verify all energy sources to the ElectroGuard® system have been properly turned OFF and have been locked out or tagged out.
2. Unfasten the HC connector hood from the bulkhead connector on the right hand side of the module by pushing the top and bottom hold-down tabs toward the module surface (see Figure 5) and then pulling the connector hood free.
3. Loosen the four insert attachment screws to remove insert from the hood (see Figure 6).

Figure 6
Removing Insert from "HC" Connector Hood



Section 3 (Cont'd)

Wiring to Connect the Pneumatic Isolation Module to the ElectroGuard® Control Module

4. Remove plugs HP1, HP2, and HV from the Control Module that this Pneumatic Isolation Module will connect to. To remove the HP1 and HP2 plugs, firmly grasp the strain relief tab and pull straight downwards. To remove the HV plug, loosen the two screws and pull downwards.

IMPORTANT: The cable run between the Pneumatic Isolation Module and the Control Module in the ElectroGuard® Power Panel must be protected from physical damage. This requires installing flexible conduit between the pneumatic Isolation Module and the ElectroGuard® Power Panel.

Pneumatic Isolation Module Cable Specifications

IMPORTANT:

- Use #14 AWG control wire for distances < 500 ft (152m).
- Use #16 AWG control wire for distances < 300 ft (91m).
- Cable must have copper conductors only.
- Cable with 600V insulation is required.
- Oil resistant cable is recommended.
- Individual conductors within the cable should be color-coded or otherwise clearly marked.
- Cable must have a shield with a drain wire similar to ALPHA wire "XTRA-GUARD® 2":
 - Part No. 25450/25 for #14 AWG, 0.98" O.D.
 - Part No. 25440/25 for #16 AWG, 0.93" O.D.

IMPORTANT: Maximum allowable cable length between the Pneumatic Isolation Module and the ElectroGuard® Power Panel is 500 ft. (152 m), based upon using cable with #14 AWG (21mm) conductors or 300ft (91m) using cable with #16 AWG (13mm²) conductors.

Exceeding this length or using smaller conductor sizes may affect the reliable operation between the Pneumatic Isolation Module and the Control Module in the ElectroGuard® Power Panel.

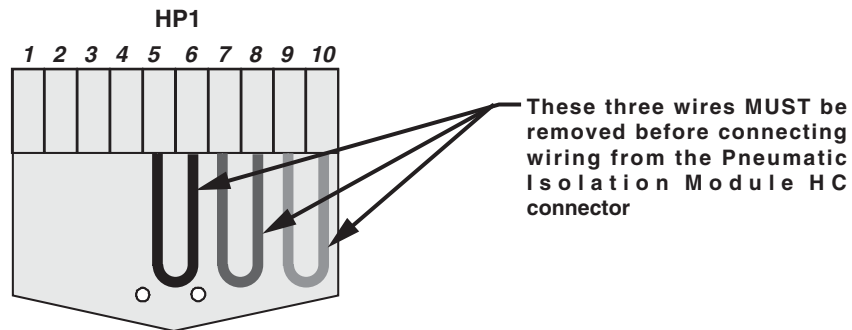
5. Wire to the 24-pin connector HC on the Pneumatic Isolation Module to the HP1, HP2, and HV plugs per connection diagram supplied with the module (see figure 8).

IMPORTANT: HP1 and HP2 Control Module connector plugs and ports are factory keyed. This is done to ensure correct plug mating during installation after maintenance or servicing which may have required the removal of any of the connector plugs. The HV connector plug is not and does not require keying.

Installing a connector plug into a port with non-matching keying may damage the connector as well as the Control Module port.

IMPORTANT: The HP1 plug provided on ElectroGuard® Control Modules are Factory shipped with three jumper wires installed (see figure 7). These three jumper wires must be removed and discarded when wiring is performed to connect a Pneumatic Isolation Module to the HP1 plug. Failure to remove the three jumper wires prevents proper operation of the Pneumatic Isolation Module.

Figure 7
HP1 Connector Plug Jumper Wire

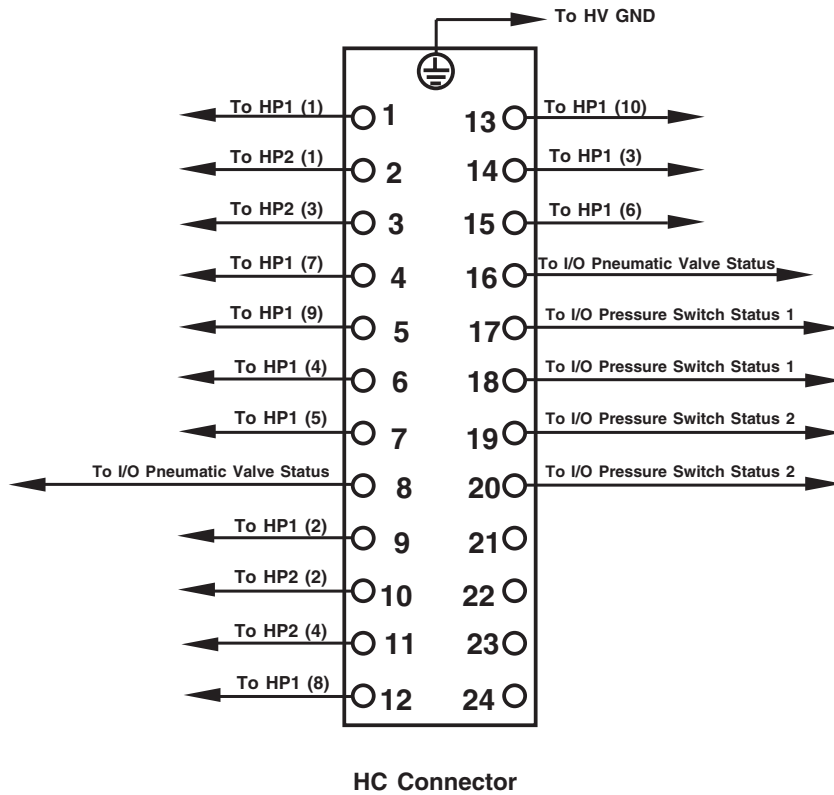


Section 3 (Cont'd)

Wiring to Connect the Pneumatic Isolation Module to the ElectroGuard® Control Module

Figure 8

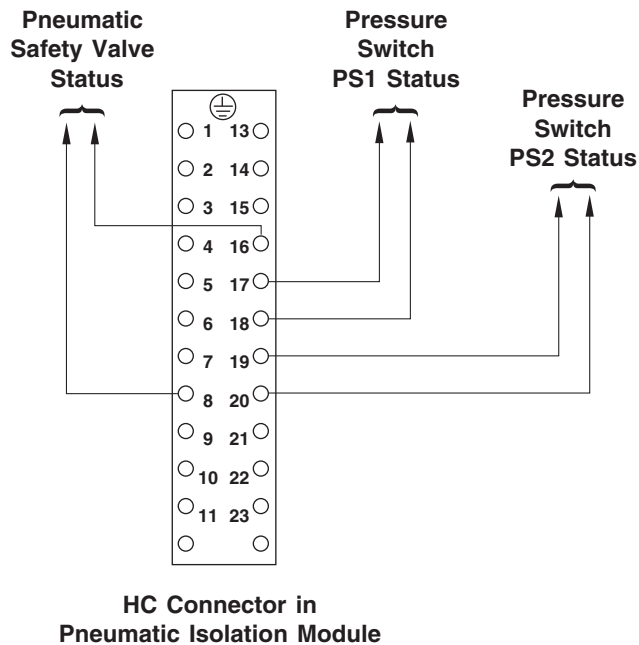
Wiring Plug "HC" for the Pneumatic Isolation Module to the Control Module Connectors



6. If a customer supplied Remote Communications Device is to be connected to the Pneumatic Module, wire that to the HC plug per Figure 9.

Figure 9

Wiring the Pneumatic Isolation Module Status Signals



Section 3 (Cont'd)

Wiring to Connect the Pneumatic Isolation Module to the ElectroGuard® Control Module

7. Use Table 2 to perform a point-to-point continuity check to verify that wiring between the plugs is correct.

Table 2
Wiring for Pneumatic Isolation Module

| Pneumatic Isolation Module HC Connector Pin Number | Control Module Connector | |
|---|---|-----------------------|
| | Connect to Plug | Pin Number |
| 1 | HP1 | 1 |
| 9 | | 2 |
| 14 | | 3 |
| 6 | | 4 |
| 7 | | 5 |
| 15 | | 6 |
| 4 | | 7 |
| 12 | | 8 |
| 5 | | 9 |
| 13 | | 10 |
| 2 | HP2 | 1 |
| 10 | | 2 |
| 3 | | 3 |
| 11 | | 4 |
| 8 | Pneumatic Safety Valve Status Output, connects to Remote Communication Device if used | |
| 16 | Pneumatic Safety Valve Status Output, connects to Remote Communication Device if used | |
| 17 | Pressure Switch PS1 Status Output, connects to Remote Communication Device if used | |
| 18 | Pressure Switch PS1 Status Output, connects to Remote Communication Device if used | |
| 19 | Pressure Switch PS2 Status Output, connects to Remote Communication Device if used | |
| 20 | Pressure Switch PS2 Status Output, connects to Remote Communication Device if used | |
| Ground Terminal on the HC Connector Plug Insert | HV | Ground Terminal Block |

8. After continuity check is successfully completed, insert connector plugs HP1 and HP2 into their corresponding ports and connector plug HV into the HV port on the Control Module. Torque the two retention screws on connector HV flanges to 4.5 - 5.3 lb-in. (0.5 - 0.6 Nm).

9. Place the HC connector 24-pin insert into the connector hood. Secure the insert with the four attachment screws and torque them to 10.5 lb-in. (1.20 Nm)

10. Plug the HC connector into the bulkhead base on the side of the Pneumatic Isolation Module and latch the two locking levers to secure the hood to the base.

11. Commission the Pneumatic Isolation Module per Chapter 3 of the ElectroGuard® User Manual Revision 2030-UM003A-EN-P or later.