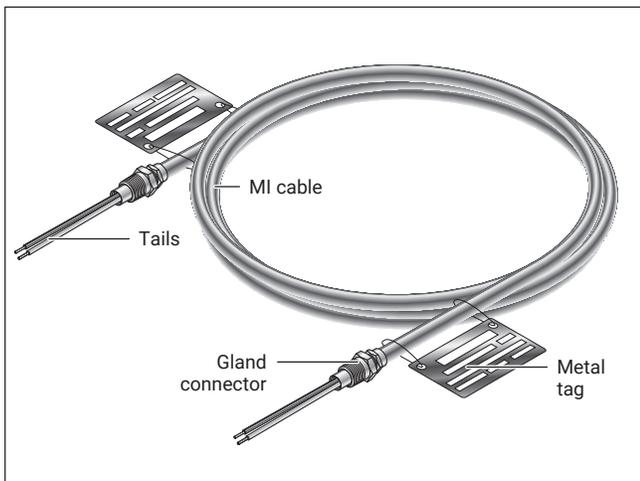




PYROTENAX

Pre-terminated Copper-sheathed Wiring Cable Unit for Gas Path Block Applications

Installation Instructions



APPROVALS



UL Classified, 2-hour fire-resistive cable, tested to UL 2196



ULC Listed, 2-hour fire-resistant cable, tested to ULC-S139

Cables terminated with epoxy resin or mastic compound seal.

Nonhazardous Locations

Hazardous Locations



Class I, Div. 1 and 2, Groups A, B, C, D
Class II, Div. 1, and 2 Groups E, F, G
Class III

WARNING:

Copper-sheathed MI cables must be installed in accordance with these manufacturer's installation instructions and the requirements of national and local codes. Read these important warnings and carefully follow the installation instructions.

- Ensure the cable has been stored properly and is in good condition prior to commencing installation. Do not install damaged cable.
- When installing fire-rated cables, use only steel or copper in the support system; no other materials are acceptable.

- Copper sheathed cables used for 2-hour fire-rated applications in commercial buildings must be supported as shown in the MI Cable Commercial Wiring Installation Manual (H57864) and the Electrical Circuit Protective System Listing, System 1850.
- Leave these installation instructions with the user for future reference.

DESCRIPTION

nVent PYROTENAX copper-sheathed mineral insulated (MI) cable can be used for fire-rated and non fire-rated applications and is a proven gas path block in hazardous areas. The cable can be connected directly to junction boxes, explosion-proof motors, and other equipment in hazardous areas without the requirement for conduit systems and special seals. Factory assembled MI wiring cables are supplied with one or both ends already terminated, simplifying installation in the field. For detailed installation instructions for commercial or industrial wiring applications, refer to the MI Cable Commercial Wiring Installation Manual (H57864) or the MI Cable Industrial Wiring Installation Manual (H57987) available from our web site, nVent.com.

INITIAL INSPECTION

- Inspect the factory-applied protective covering on the cable for evidence of shipment damage. Keep the protective cover in place until it is necessary to remove it.
- Check the cable sheath for evidence of shipment damage and verify that terminations are not damaged, missing, or removed.
- Verify that the metal tag supplied with the cable is correctly labeled for use in the designated area (such as hazardous areas).
- Check the insulation resistance (IR) for the presence of moisture in the cable using a megohmmeter. Damage to the sheath or terminations will cause moisture to enter the cable. Refer to the section on Testing for IR guidelines (see Page 3).

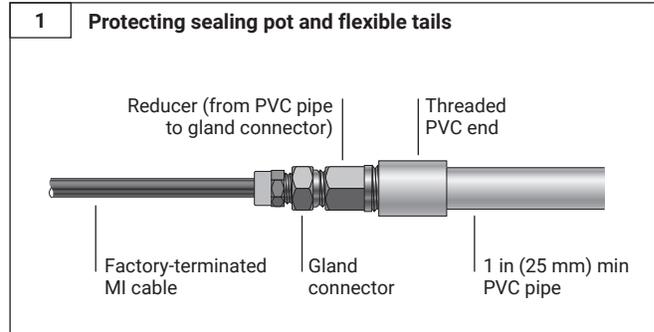
STORAGE MEASURES

- To protect cables and terminations from physical damage and the environment, store all cables indoors in a clean, dry location and protect from moisture, construction equipment, falling objects, chemical spills, moving vehicles, and other hazards.

PRE-INSTALLATION

- A minimum installation temperature of 14°F (-10°C) is recommended for polymer jacketed MI cables. However, pre-terminated, unjacketed MI cable may be installed at a temperature as low as -40°F (-40°C).
- Prior to installation of long runs of cable, attach a short length of PVC conduit to the pre-terminated ends to provide temporary protection for the sealing pot and flexible tails (Figure 1). Use 1 in (25 mm) minimum PVC pipe, or larger if a 1 in or 1-1/4 in (25 mm or 32 mm) gland connector is supplied. This will prevent damage to the sealing pot and tails during installation.
- Handle cable carefully during uncoiling to prevent damage due to kinking or twisting.
- Do not run over cable, drag cable over sharp objects, or subject cable to other such treatment that could cause damage.
- Protect exposed cable from any nearby or overhead work that could damage the cable.
- Support longer runs of cable per the spacing requirements in the National Electrical Code (NEC) or Canadian Electrical Code (CEC). When installing copper sheathed cables for 2-hour fire-rated applications in commercial buildings, support the cable in the manner described in the MI Cable Commercial Wiring Installation Manual, H57864.

- Form an expansion loop in the cable to allow for cable expansion and contraction and to absorb vibration from motors or other vibrating equipment.
- All wiring must be in accordance with the applicable requirements of the latest edition of the NEC or CEC, and/or the Authority Having Jurisdiction and these instructions.

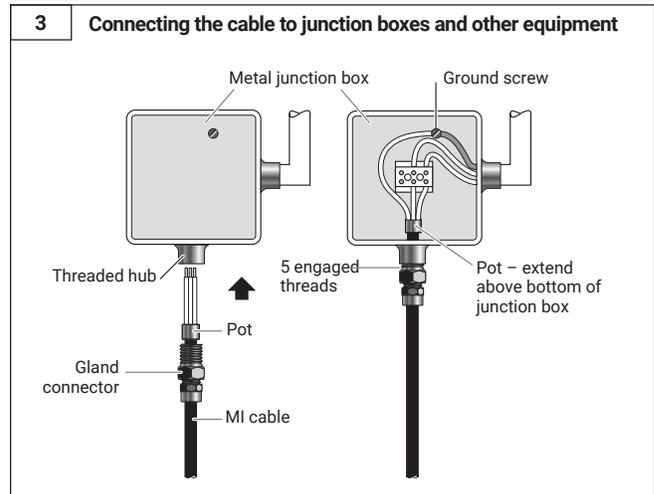
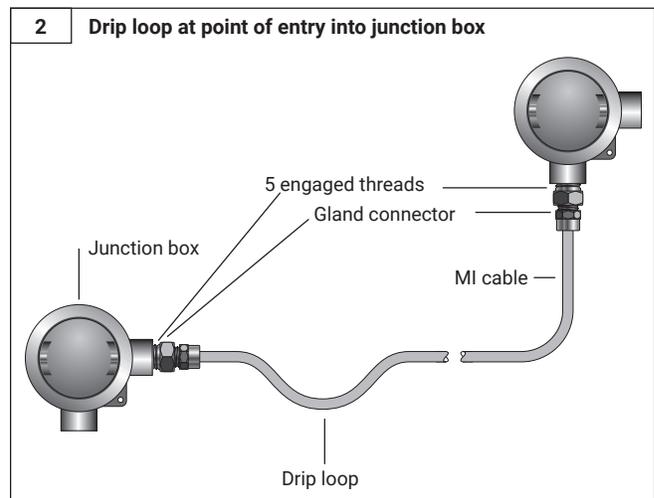


INSTALLATION

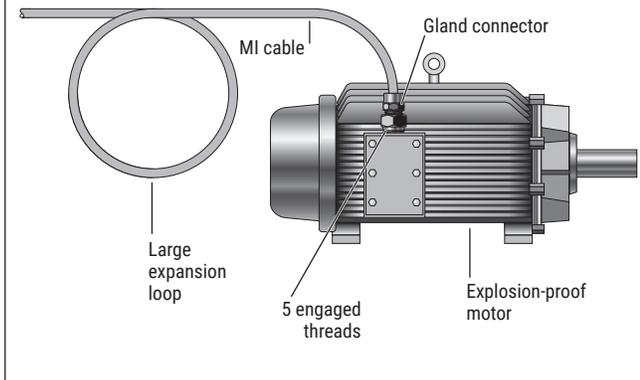
Factory terminated cables can be connected as received to junction boxes and other equipment. Where only one end is factory terminated, such as when the exact run length is unknown, the unterminated end must be terminated following the instructions supplied with the termination kit.

Connection to junction boxes, motors, and other equipment

- The minimum bending radius for permanent training of MI cable is six times the cable diameter for cables up to 0.75 in (19 mm) in diameter and 12 times the cable diameter for cables greater than 0.75 in (19 mm) in diameter.
- Connect the MI cable only to junction boxes, motors, and other equipment suitable for the area classification (hazardous or nonhazardous) and environmental conditions (corrosive, wet, etc.) expected.
- Mount all junction boxes and enclosures above grade level to prevent moisture from entering them.
- All cable or conduit leading to junction boxes must be installed so that water does not enter the box. Avoid entering junction boxes and other equipment from the top as this may allow water to enter. Take appropriate measures to ensure that moisture, due to condensation, does not accumulate within the junction box.
- In outdoor locations, form a large "U" shaped drip loop (Figure 2) at the points of entry into junction boxes and other equipment to prevent moisture entering the equipment through the hub.
- Minimize handling the tails to avoid breakage.
- Install the "pot" so that it extends above the bottom of the junction box (Figure 3). Screw the gland connector into the threaded hub (minimum of 5 completely engaged threads for hazardous areas). Next, tighten the compression nut (backnut on gland connector) to the torque shown on the paper tag attached to the cable. This will ensure that the cable sheath is properly bonded to ground and will provide a proper flame path in hazardous areas.



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Expansion loop at cable end to absorb vibration

- In applications where the termination is subjected to vibration, such as when connecting to a motor, a large expansion loop is recommended (Figure 4). In cases of severe differential vibration, the cable should be terminated into a junction box adjacent to the vibrating equipment and the final connection made via a flexible conduit and/or cable.

TESTING**Visual Inspection**

- Visually inspect the cable sheath and connections to the cable for physical damage. Damaged cable must be repaired or replaced.
- Check that no moisture is present in junction boxes and other enclosures.
- Ensure that electrical connections are tight and grounded.
- Ensure that the cable carries the correct circuit identification and that there have been no unauthorized modifications to the cable.
- Verify that all junction boxes are appropriate for the area classification and correctly sealed, and that the cable glands are tight and correctly fitted into junction boxes.

IR Test

IR (insulation resistance) testing is conducted using a megohmmeter and tests the integrity of the cable between the conductors and the cable sheath, and between conductor pairs in multiconductor cables. If the terminations or heat shrinkable end caps are damaged, missing, or removed, moisture will enter the mineral insulation, resulting in low IR readings.

Prior to testing factory terminated cables, wipe both ends of the cable sheath, pot, and tails with a clean, dry cloth to remove any moisture which may result in erroneous results (such as low IR readings).

Test Equipment

500 Vdc megohmmeter (calibrated).

IR Guidelines

The minimum IR should reflect the values shown below, regardless of the cable length.

- When cables are received
 - In a warm, dry environment, IR readings should be 200 MΩ or higher.
 - In an outdoor environment or indoors in wet or humid conditions, IR readings should all be above 100 MΩ.
 - Any large difference in readings between similar cables under similar conditions should be investigated.
- Prior to initial start-up (commissioning) - minimum 25 MΩ.
- After any maintenance or repair work - minimum 25 MΩ.

If IR readings are lower, contact nVent Technical Support at (800) 545-6258 for guidance.

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