

CABLE TERMINATION PRACTICES FOR SUBMERSIBLE PRESSURE/LEVEL TRANSMITTERS

Background:	A properly constructed submersible transmitter is a highly reliable product, which will last many years in service, perhaps even a decade or more. Correct installation is key to long term survival however, and the number one cause of premature failure is improper installation.
Vented Cable:	<p>Most submersible transmitters rely on a vented cable to properly “reference” the sensor to atmospheric pressure. The vent ensures that the transmitter measures only the pressure caused by the head of fluid, and not changes in atmospheric pressures caused by weather or by installations at differing elevations.</p> <p>While a vented transmitter offers considerably better accuracy than sealed types of sensors, care must be taken to properly terminate the vented cable. Moisture entering the cable through the vent tube, and in some cases moisture wicking into the cable between the conductors, can severely affect reliability and service life.</p>
Terminating the cable:	Whenever possible, the process of trimming and terminating the cable should be done under dry conditions. When cable termination must be done under rainy or wet conditions, care should be taken to keep the end of the cable sealed and dry until it is placed in a protective enclosure such as a TE-10 Dri-Box .
Moisture damage protection:	<p>Moisture (including humidity) is prevented from entering the vent tube by one of two methods. The most common method involves the use of a desiccant, either in the form of an in-line cartridge (MP-10) or a desiccant pack built into an enclosure (TE-10). The second method uses a sealed reference volume (MP-11) which comes pre-filled with dry nitrogen. The sealed volume approach means that no outside air enters the vent system, making this approach maintenance free.</p> <p>The TE-10 enclosure has the added advantage of protecting both the vent tube and the exposed end of the cable. This means that, provided the desiccant packs are replaced periodically, no appreciable moisture will ever enter through the vent tube or around the conductors.</p>
Sealing the cable:	<p>If the MP-10 or MP-11 approaches are used, the exposed end of the cable must be sealed with silicone RTV or a similar sealant, and protected from weather to the greatest extent practical.</p> <p>The <u>most</u> reliable installation results when the MP-11 is used in conjunction with TE-10 or similar enclosure. In this configurations the MP-11 provides a dry, maintenance free termination for the vent tube, and the TE-10 provides a moisture proof enclosure that protects the stripped end of the cable.</p>

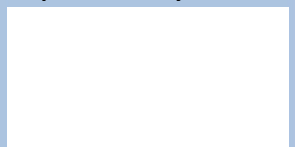


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Contact

PMC Engineering LLC
 11 Old Sugar Hollow Rd
 Danbury, CT 06810
 USA
 sales@pmc1.com
 Tel: 203-792-8686
 Fax: 203-743-2051
 www.pmc1.com

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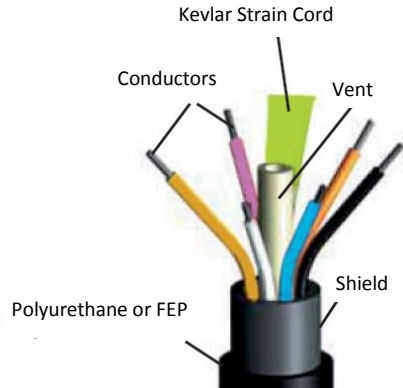
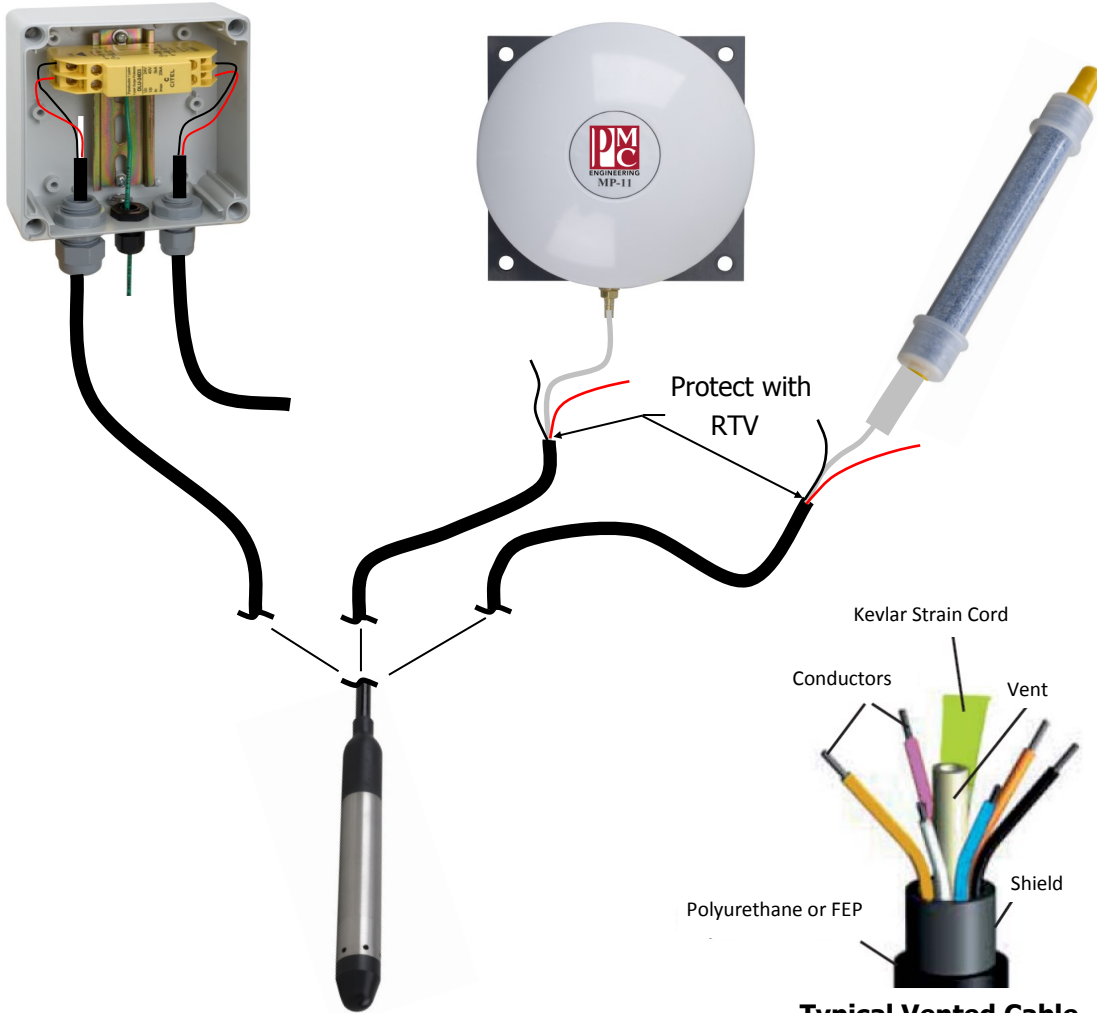


PMC Engineering adopts a continuous development program which sometimes necessitates specification changes without notice

Your depth and level specialists for Ground, Surface, Sea and Waste Water

ILLUSTRATIONS

The diagrams below illustrate the recommended sealing methods.



Typical Vented Cable Construction



TE-10

Dri-Box Enclosure



MP-11

**Sealed Reference Volume
(Maintenance Free)**



MP-10

Desiccant Cartridge

Process Measure Control

Sensors for

- Pressure
- Level
- Vacuum
- Humidity
- Temperature
- Force
- Position

Accessories

PMC offers a range of Accessories and variants for depth and level transmitters. Reference separate data sheet.

- Termination Enclosure
- Cable Hanger
- Moisture Protection
- Calibration Adaptor
- Sink Weights
- Level Meters

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