Installation Instructions for Chemelex® PolyMatrix® Monitor Wire End Seal Kit

Description
The PolyMatrix PMK-LE-M is a low-profile end seal kit that can be used with all monitor wire configurations (-M or -MCT) of Auto-Trace® self-regulating heating cable. The end seal kit is corrosion resistant.

⚠️ WARNING: This component is an electrical device which must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all the installation instructions.

- To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or misinstalled, use a ground fault protection device (GFPD). Arcing may not be stopped by conventional circuit breakers.
- Component approvals and performance are based on the use of specified parts only. Do not use substitute parts or vinyl electrical tape.
- The black heating cable core and fibers are conductive and can short. They must be properly insulated and kept dry.
- Damaged bus wires can overheat or short. Do not break bus wire or monitor wire strands when scoring the jacket or core.
- Heat-damaged components can short. Use a heat gun or a torch with a soft, yellow, low-heat flame, not a blue focused flame. Keep the flame moving to avoid overheating, blistering, or charring the heat-shrinkable tubes. Avoid heating other components. Replace any damaged parts.

⚠️ WARNING: Overheating heat-shrinkable tubes will produce fumes that may cause irritation. Use adequate ventilation and avoid charring or burning. Consult MSDS for further information.

Tools Required
Utility Knife
Mini torch   (Raychem: FH2616A-1), or heat gun
             (Raychem: CV5000-750B)
Ruler
Wire cutter
Needle-nose pliers
Flat blade screwdrivers, 1/8 in, 1/4 in
Crimp tool   (Thomas and Betts #WT161M or WT11M)

Additional Materials Required
1 Grommet (see selection chart, step 1)

Kit Contents

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>End seal body with captive screws.</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>End seal pressure plate</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>Heat-shrinkable tube 3/8-inch dia. x 1-3/8 inch long</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>Heat-shrinkable tube 1/8-inch dia. x 1/2-inch long</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>Uninsulated crimp</td>
</tr>
</tbody>
</table>

 Ordinary area

 Hazardous areas

 Class I, Division 2, Groups B, C, D
 Class II, Division 2, Groups F, G
 Class III, Division 2

 Hazardous areas

 Class I, Division 2, Groups A, B, C, D
 Class II, Division 2, Groups E, F, G
 Class III, Division 2
1. Determine correct grommet (order separately) from chart below.

<table>
<thead>
<tr>
<th>Heating Cable</th>
<th>Grommet</th>
<th>Heating Cable</th>
<th>Grommet</th>
</tr>
</thead>
<tbody>
<tr>
<td>3BTV1-M</td>
<td>B</td>
<td>10QTVR1-M</td>
<td>B</td>
</tr>
<tr>
<td>3BTV1-MCT</td>
<td>N</td>
<td>10QTVR1-MCT</td>
<td>G</td>
</tr>
<tr>
<td>3BTV2-M</td>
<td>B</td>
<td>10QTVR2-M</td>
<td>B</td>
</tr>
<tr>
<td>3BTV2-MCT</td>
<td>N</td>
<td>10QTVR2-MCT</td>
<td>G</td>
</tr>
<tr>
<td>5BTV1-M</td>
<td>B</td>
<td>15QTVR1-M</td>
<td>G</td>
</tr>
<tr>
<td>5BTV1-MCT</td>
<td>N</td>
<td>15QTVR1-MCT</td>
<td>F</td>
</tr>
<tr>
<td>5BTV2-M</td>
<td>B</td>
<td>15QTVR2-M</td>
<td>B</td>
</tr>
<tr>
<td>5BTV2-MCT</td>
<td>N</td>
<td>15QTVR2-MCT</td>
<td>G</td>
</tr>
<tr>
<td>8BTV1-M</td>
<td>C</td>
<td>20QTVR1-M</td>
<td>G</td>
</tr>
<tr>
<td>8BTV1-MCT</td>
<td>E</td>
<td>20QTVR1-MCT</td>
<td>F</td>
</tr>
<tr>
<td>8BTV2-M</td>
<td>C</td>
<td>20QTVR2-M</td>
<td>G</td>
</tr>
<tr>
<td>8BTV2-MCT</td>
<td>E</td>
<td>20QTVR2-MCT</td>
<td>F</td>
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<tr>
<td>10BTV1-M</td>
<td>G</td>
<td>All XTV-MCT</td>
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<td>10BTV1-MCT</td>
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<tr>
<td>10BTV2-M</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10BTV2-MCT</td>
<td>F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⚠️ WARNING: Use of the wrong grommet can result in leaks, cracked components, shock or fire, and will invalidate approvals and certifications.

Note: 3BTV, 8BTV, and 15QTVR monitor wire heating cables are not available for sale.

2. First slide pressure plate and then grommet onto heating cable. Grommet cavity in pressure plate should face end of heating cable.

3. Strip end of heating cable. Follow instructions on the following pages for the type of heating cable being used.
BTV-M and QTVR-M Monitor Wire
Heating Cable Stripping Instructions

Heating cable construction.

3a. Measure 1 inch from end and score partially around heating cable as shown. Do not score over monitor wire. Score down middle of heating cable to end. Peel back jacket and twist to break off next to monitor wire.

3b. Using wire cutters, cut 1/4 inch along inside of each bus wire. Peel bus wires away from conductive core by grasping with needle-nose pliers.

3c. Remove conductive core from bus wires. Remove core from between bus wires by scoring even with jacket and breaking it off. Bus wires should be clean. Cut off bus wire adjacent to monitor wire even with core jacket.
**BTV-MCT and QTVR-MCT Monitor Wire**

**Heating Cable Stripping Instruction**

3a. Measure 1-3/8 inches from end and remove outer jacket by scoring around and down middle of jacket with utility knife.

3b. Fan braid and trim flush with heating cable outer jacket. **Be sure no loose strands remain.**

3c. Measure 1 inch from end and score partially around heating cable as shown. Do not score over monitor wire. Score down middle of heating cable to end. Peel back jacket and twist to break off next to monitor wire.

3d. Using wire cutters, cut 1/4 inch along inside of each bus wire. Peel bus wires away from conductive core by grasping with needle nose pliers.

3e. Remove conductive core from bus wires. Remove core from between bus wires by scoring even with inner jacket and breaking it off. Bus wires should be clean. Cut off bus wire adjacent to monitor wire even with inner jacket.
XTV-MCT Monitor Wire
Heating Cable Stripping Instructions

Heating cable construction.

3a. Measure 1-3/8 inches from end and remove outer jacket by scoring around and down middle of jacket with utility knife.

3b. Fan braid and trim flush with heating cable outer jacket. **Be sure no loose strands remain.**

3c. Remove plastic wrap.

3d. Measure 1 inch from end and score around heating cable as shown. Do not cut monitor wire insulation. Score down middle of heating cable to end. Remove jacket.

3e. Use utility knife to cut off conductive fibers and spacer at inner jacket.
3. Cut off bus wire adjacent to monitor wire even with inner jacket.

4. Place 1/8 inch dia. heat shrinkable tube on remaining bus wire and shrink in place. Strip 1/2 inch of insulation off end of monitor wire.

5. Twist end of bus wire and monitor wire together. Crimp should be installed so that end of crimp is flush with end of twisted bus wire/monitor wire. Crimp bus wire and monitor wire together using crimp.

6. Install 3/8 inch dia. heat-shrinkable tube over crimp and end of inner jacket. Tube should extend 3/16 inch over end of inner jacket. It is acceptable if tube does not completely cover end of crimp. Shrink tube in place.

7. Push heating cable completely into end seal body. Seat grommet in end seal body. Tighten pressure plate firmly against body.

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