Description
The PolyMatrix PMK-JS-M is a high-profile splice kit that can be used with all monitor wire configurations (M or MCT) of Auto-Trace® self-regulating heating cable. The connection 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.

Kit Contents

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Bases</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>Tops</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Sealing rings</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>Junction box with lid</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>Locknuts</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>4-pole terminal block</td>
</tr>
<tr>
<td>G</td>
<td>4</td>
<td>Black heat-shrinkable tubes, 1/8-inch dia. x 6-inch long</td>
</tr>
<tr>
<td>H</td>
<td>2</td>
<td>Heat-shrinkable tubes, 3/4-inch dia. x 1-inch long</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
<td>Yellow/green heat-shrinkable tubes, 1/4-inch dia. x 6-inch long</td>
</tr>
</tbody>
</table>

*Not shown

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

Additional Materials Required

- 2 Grommet (see selection chart, step 1)
- 2 Pipe straps (specify size)

Ordinary area
- 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

Diagram:

- PMK-JS-M Connection Kit
- Heating Cable Sect #2
- Grommet (order separately)
- Pipe strap (order separately)
- Heating cable Sect #1
1. Feed heating cables through bases with 10 inches of heating cable extending above bases. Fasten bases to pipe with straps. Heating cable should not be underneath straps. Do not leave more than 1/8 inch of space between bases. Select correct grommets (order separately) from chart below.

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

Slide grommet over heating cable and seat firmly in base cavity.

2. Position tops over bases and tighten screws. Place sealing ring over threads.

3. Strip end of heating cables and install heat-shrinkable tubes. 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

3a. Measure 6-1/2 inches 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. Use wire cutters to 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.

3d. Slide 6-inch black heat-shrinkable tubes over bus wires. Gently heat tubes until they shrink.
3e. Position 1 inch long heat-shrinkable tube 1/2 inch over end of heating cable. Gently heat tube until it shrinks and adhesive flows out ends. While still hot, pinch between bus wires with needle-nose pliers and hold for at least 5 seconds to ensure proper seal. Separate monitor wire, pinch between bus wire and monitor wire for 5 seconds to ensure proper seal.

3f. After assembly has cooled, strip 1/2 inch of insulation from end of monitor wire.
BTV-MCT and QTVR-MCT Monitor Wire
Heating Cable Stripping Instructions

Heating cable construction.

3a. Measure 7-1/2 inches from end and remove outer jacket by scoring around and down middle of jacket with utility knife.

3b. Separate braid and pull out heating cable from braid close to outer jacket.

3c. Twist braid into pigtail.

3d. Measure 6-1/2 inches 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.

3e. Use wire cutters to cut 1/4 inch along inside of each bus wires. Peel bus wires away from conductive core by grasping with needle-nose pliers.
3f. Remove all conductive core from bus wires. Remove core from between bus wires by scoring even with inner jacket and breaking it off.

3g. Slide 6-inch black heat-shrinkable tubes over bus wires. Gently heat tubes until they shrink.

3h. Position 1-inch heat-shrinkable tube 1/2 inch over inner jacket. Gently heat tube until it shrinks and adhesive flows out ends. While still hot, pinch between bus wires with needle-nose pliers and hold for at least 5 seconds to ensure proper seal. Separate monitor wire, pinch between bus wires and monitor wire for 5 seconds to ensure proper seal.

3i. After assembly has cooled, strip 1/2 inch of insulation from end of monitor wire.

3j. Slide 6-inch yellow/green heat-shrinkable tube over pigtail braid. Gently heat tube until it shrinks.
XTV-MCT Monitor Wire
Heating Cable Stripping Instructions

Heating cable construction.

3a. Measure 7-1/2 inches from end and remove outer jacket by scoring around and down middle of jacket with utility knife.

3b. Separate braid and pull out heating cable from braid close to outer jacket.

3c. Twist braid into pigtail and remove plastic wrap back to braid.

3d. Measure 6-1/2 inches from end and score around heating cable as shown. Do not cut monitor wire. Score down middle of heating cable to end.

3e. Use utility knife to cut off conductive fibers and spacer at inner jacket.
3f. Slide 6-inch black heat-shrinkable tubes over bus wires. Gently heat tubes until they shrink.

3g. Position 1-inch heat-shrinkable tube 1/2 inch over inner jacket. Gently heat tube until it shrinks and adhesive flows out ends. While still hot, pinch between bus wires with needle-nose pliers and hold for at least 5 seconds to ensure proper seal. Separate monitor wire, pinch between bus wires and monitor wire for 5 seconds to ensure proper seal.

3h. After assembly has cooled, strip 1/2 inch of insulation from end of monitor wire.

3i. Slide 6-inch yellow/green heat-shrinkable tube over pigtail braid. Gently heat tube until it shrinks.

4. Feed stripped end of heating cables through holes in junction box and fasten box to tops using locknuts. Connect bus wires, monitor wire, and braid (if applicable) to the four-pole terminal block as shown.

5. Stow wires and terminal block in box. Check locknut tightness to ensure watertight seal between box and tops. Fasten lid in place.