AMG-BS-III
AutoMatrix® Splice Connection Kit

Installation Instructions

Description
The AMG-BS-III is a copper free aluminum (maximum 4/10 of 1% copper) NEMA 4X(1) rated splice connection kit. The kit contains materials for one splice connection.

Tools Required
• Screwdriver
• Needle-nose pliers
• Wire cutters
• Utility knife
• Adjustable pliers
• Heat gun or mini-torch
• 1/4” nut driver
• 3/8” nut driver
• Crimp tool

Additional Materials Required
• Pipe straps
• GT-66 tape(3), Installation temp. above 40° F
• GS-54 tape(3), Installation temp. above -40° F

(1) This type 4X enclosure is intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water. It is not suitable for use where subject to attack by alkalis.

(2) May be required (see step 1).

(3) Required for CSA Class I, II, III Division 2 Certification (see step 12)

Kit Contents

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>Connection box assembly</td>
<td>911161</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connection box lid</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lid gasket</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connection box</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure plate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Base gasket</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connection base</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Connection box screws</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>Grounding locknut (green)</td>
<td>990335</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Pressure plate screws (1” SS)</td>
<td>730141</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>Terminal block assembly</td>
<td>633473</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>Core insulator kit</td>
<td>463319</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red grommet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ring terminal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green/yellow heat-shrinkable tube</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear yellow heat-shrinkable tube</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Black heat-shrinkable tubes</td>
<td></td>
</tr>
</tbody>
</table>

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 improperly installed, 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 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 RAY/3122 for further information.

Hazardous Locations

NEMA 4X
Class I, Div. 2, Groups B, C, D
Class II, Div. 2, Groups F, G
Class III, Div. 2

TYPE 4X
Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, Groups F, G
Class III, Div. 2

APPROVED
1. Identify heating cable type.
   • Select correct grommet from chart on right.

<table>
<thead>
<tr>
<th>Heating Cable</th>
<th>Type</th>
<th>Grommet</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTV, QTVR, XTV</td>
<td>-CT or -CR</td>
<td>RED</td>
<td>725157</td>
</tr>
<tr>
<td>KTV</td>
<td>-CT</td>
<td>P*</td>
<td>700823</td>
</tr>
<tr>
<td>LBTV</td>
<td>-CT or -CR</td>
<td>K*</td>
<td>222724</td>
</tr>
</tbody>
</table>

* Order separately

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

2. Tap (typical)
3. Slide parts onto heating cables.

4. Lightly score outer jacket.
   • Bend heating cable to break jacket at score, then peel off outer jacket.

5. Push braid back to create a pucker.
   • Open braid at pucker using screwdriver.

6. Bend heating cable and work it through opening in braid.
   • Pull braid tight.
1. Notch core.
2. Twist back and peel bus wire from core.
3. Score core between bus wires at base jacket.
4. Bend and snap core.
5. Peel core free from bus wire.
6. Clean bus wires.

8 Fiber core heating cable.

1. Cut and remove all fiber strands.
2. Score and remove center spacer.
3. Clean bus wires.

4. Use heat gun or mini-torch with soft yellow flame to gently heat tubes until they shrink.

10. Center clear yellow tubing over end of base jacket.
11. Heat tube until it shrinks and adhesive flows out ends. While still hot, pinch between bus wires and hold for 5 seconds to create a seal.
12. Trim wire ends.
11 For CSA Class I, II, III, Division 2 applications only.

- Attach connection box base to pipe with pipe straps. Loop and tape extra heating cable to pipe.

12

- Start pressure plate screws but do not tighten.
- Pull heating cable thru base and position as shown.
- Tighten screws.

13

- Trim ground braid to 1/4-inch and crimp on ring terminals.

14 For braided heating cable only.

- Install junction box over heating cables.
- Tighten screws.
16

- Connect bus wires to terminal block.
- Connect braid wires to grounding post on terminal block bracket.

17

- Position terminal block bracket into box. Slide into place and tighten screws.
- Place lid onto box and tighten screws.

18

- Installation is complete.
Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their particular application. Tyco Thermal Controls makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Thermal Controls' only obligations are those in the Tyco Thermal Controls Standard Terms and Conditions of Sale for this product, and in no case will Tyco Thermal Controls or its distributors be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Tyco Thermal Controls reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.