H910
WinterGard® Splice and Tee Kit with End Seal

Installation Instructions

Description
The WinterGard® H910 Splice and Tee Kit is for use with WinterGard self-regulating heating cables to make splice, tee, and end seal connections. The kit contains materials for one splice and one end seal, or one tee connection and one end seal. This kit does not provide a power connection; use an H900 or H908 power connection kit for a complete installation.

Applications
Use the H910 kit with the following WinterGard heating cables: H311, H611, H612, H621, and H622. All are designed for pipe freeze protection in dry locations, but H612 and H622 cables are designed for both wet and dry areas, as well as for roof and gutter de-icing. The cable type is printed on the outer jacket of the cable.

Tools Required
• Diagonal Cutters  • Needle nose pliers
• Utility knife  • Heat gun or torch
• Crimp tools (Ideal 30-425 and T&B WT112M or WT2000)
• Hammer and nail (for gutter/downspout applications only)

Installation and Support
The minimum installation temperature for this kit is 0°F (–18°C). See the WinterGard Application and Design Guide (H53585), H900, or H908 installation instructions for design information.

For additional technical support call Tyco Thermal Controls at (800) 545-6258.

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>Insulated bus wire crimps</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>Uninsulated braid crimps</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>Cable ties</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>Mastic strips</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>Heat-shrinkable cap</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>Heat-shrinkable tube (6” long, 1” dia.)</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
<td>Black cloth tape (6” long)</td>
</tr>
<tr>
<td>H</td>
<td>1</td>
<td>Clamp tie</td>
</tr>
<tr>
<td>I</td>
<td>1</td>
<td>End seal</td>
</tr>
</tbody>
</table>

WARNING:
This component is an electrical device that 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, and to comply with the requirements of Tyco Thermal Controls, agency certifications, and national electrical codes, ground-fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers.
• Bus wires will short if they contact each other. Keep bus wires separated.

• Keep components and heating cable ends dry before and during installation.
• The black heating cable core is conductive and can short. It must be properly insulated and kept dry.
• Component approvals and performance are based on the use of Tyco Thermal Controls-specified parts only. Do not use substitute parts or vinyl electrical tape.
• Leave these instructions with end user for reference and future use.

CAUTION:
Health Hazard: Overheating heat-shrinkable tubes will produce fumes that may cause irritation. Use adequate ventilation and avoid charring or burning. Consult MSDS RAY3122 for further information.

CHEMTREC 24-hour emergency telephone: (800) 424-9300.
Non-emergency health and safety information: (800) 545-6258.
Splice or Tee Connections
The instructions are shown for a tee connection. Splice connections are done the same way, without the third heating cable section.

1. Allow 12" of extra heating cable as shown. If necessary trim cables evenly.

2. • H311, H611 and H621 do not have an outer jacket. Proceed to Step #3.
• Lightly score completely around and then down outer jacket.
• Bend heating cable to break jacket at score then peel off outer jacket.

3. • For H612 and H622, unravel the braid back to the outer jacket. For H311, H611 and H621, unravel the braid back 2 inches.
• Position braid on same side of each heating cable section.
• Straighten the braid and twist into a “pigtail”.

4. • At the end of each heating-cable section lightly score completely around and down inner jacket.

5. • Notch core at the end.
• Twist back and peel bus wires from core.
**H910 Installation Instructions**

6

- Score between bus wires at base jacket.
- Bend core to break free at base jacket.

Do not cut bus wires.

- Peel core and any remaining material from bus wires.

Repeat steps 2 through 6 for other heating cable sections.

7

- Remove release paper from mastic strip.

8

- Wrap a piece of mastic around the outer jacket on each heating cable section.

- Remove release paper from mastic strip.

- Wrap a piece of mastic around the end of each heating cable section and position as shown.

- Pinch the mastic in the center to completely seal the core at the end of each heating cable.

9

- Carefully align the heating cable sections and place them together.
- Press mastic strips firmly together.

- Fasten with a cable tie at each of the two positions shown.
10

• Twist the braid pigtails together.

• Slide uninsulated crimp over braid to within 1/4" of heating cable as shown.

• Crimp the braid, using the Ideal crimp tool.

• Cut off the extra braid.

11

Black tape

• Fold the crimped braid back against the heating cables.

• Wrap black cloth tape evenly around crimp and heating cables. Cover crimp completely.

12

• Select one bus wire from each cable section and twist the wires together.

• Repeat with remaining bus wires.

Be careful not to twist together bus wires from the same heating cable.

• Use insulated bus wire crimps and T&B crimp tool to crimp each set of bus wires together.

13

• Slide heat-shrinkable cap over bus wire crimps.

• It is not necessary to shrink cap.

14

• Position the 6"-long heat-shrinkable tube as shown.
Secure end of connection to heating cable

15

• Shrink the tube completely. Start at end farthest from the cap and work toward the open end.
• Keep heating after tube has shrunk, to melt adhesive and mastic inside tube. Total heating time should be about 5 minutes.

• Immediately after shrinking, pinch the end of the tube with needle-nose pliers until the end stays sealed; this normally takes 10 seconds.

Important: Additional heat is needed after the tube is shrunk to melt mastic and adhesive inside.

• After the connection has cooled, fold over the connection and fasten it with the third cable tie.

16a For all applications except WinterGard Wet in gutters and downspouts

16b WinterGard Wet gutter and downspout applications

• Secure heating cable with down-spout hanger (H915).
• Fasten clamp tie to center of connection.
• Use a hammer, nail, and clamp tie to secure connection and keep it off of the gutter bottom as shown.

CAUTION: To avoid burns allow heated sections to cool before touching.

Immediately after shrinking, pinch the end of the tube with needle-nose pliers until the end stays sealed; this normally takes 10 seconds.
End Seal Installation Instructions for H612 and H622 Heating Cables

Note: The end seal is designed to be installed only once. It cannot be removed from the heating cable once it is installed. Do not install it until instructed to do so in Step 3.

1. Unravel and remove exposed braid.
2. Clearly cut off the end of the cable.
3. Score down and around outer jacket 1 inch from the end.
4. Remove the outer jacket.
5. Do not cut or damage inner jacket.

3. Firmly push end seal onto the cable (at least 1½ inch).
   Some gel may ooze out.
   Do not twist or try to remove the end seal during or after insertion.
   Do not reuse an end seal.
**End Seal Installation Instructions for H311, H611 and H621 Heating Cables**

*Important:* The end seal is designed to be installed only once. It cannot be removed from the heating cable once it is installed. Do not install it until instructed to do so in Step 3.

1. **•** Cleanly cut off the end of the cable.

2. **•** Push the braid back 2 inches from the cable end.

3. **•** Firmly push end seal onto the cable (at least 1½ inch). Some gel may ooze out.
   **•** Do not twist or try to remove the end seal during or after insertion.
   **•** Do not reuse an end seal.

4. **•** Slide the braid up against the end seal and secure with the 6-inch length of tape provided.

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