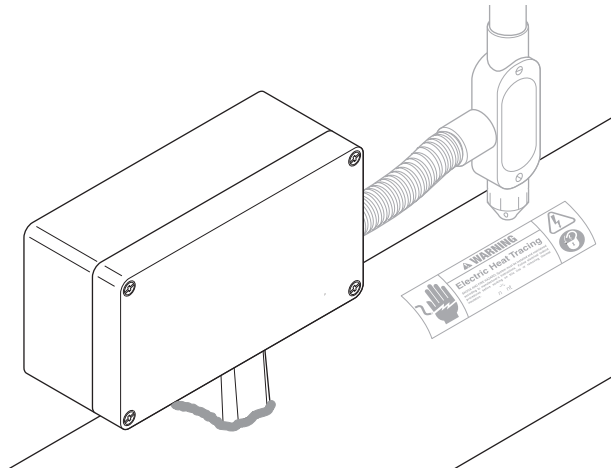




PTMEPCB

Installation Instructions



Power Connection, Powered Splice, Powered Tee, Dual Power Connection, Splice or Tee with Junction Box

DESCRIPTION

The Protherm PTMEPCB is a NEMA 4X-rated connection kit. It is designed for use with Protherm self regulating and constant wattage cables. The kit can be used to connect one, two, or three heating cables to power, to connect two separate heat-trace circuits, or to splice or tee up to three heating cables. The PTMEPCB kit utilizes larger terminal blocks to accommodate up to 6 AWG power wires.

Note: For two or more heating cables powered by a single circuit, the length of each heating cable should not exceed the maximum allowable circuit length published in the self-regulating cable's design guide and the total current of all heating cable on the circuit should equal no more than 80% of the circuit breaker current rating.

This kit may be installed at temperatures as low as -40°F (-40°C). For easier installation store above freezing until just before installation.

For technical support call Protherm Industries at (615) 834-4044.

APPROVALS

Hazardous Locations



Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, Groups E, F, G
Class III
CLI, ZN1, AEx e II T* ⁽¹⁾
Ex e II T*



(JBM-100-A only) Ex e IIC T* Gb ⁽²⁾

IECEX

JBM-100-A is IECEX certified for use with:
BTVC-CR/BTV-CT: IECEX BAS 06.0043X
QTVR-CT: IECEX BAS 06.0045X
XTV-CT: IECEX BAS 06.0044X
KTV-CT: IECEX BAS 06.0046X
VPL-CT: IECEX BAS 06.0048X

⁽¹⁾ Except VPL

* For system Temperature Code, see heating cable or design documentation.

⁽²⁾ Except KTV-CT

KIT CONTENTS

Item	Qty	Description
A	1	Stand assembly
B	2	Grommet plugs
C	1	Box plug, o-ring, and locknut
D	1	Cable lubricant
E	3	Core sealers
F	3	Green/yellow tubes
G	1	Box with terminal blocks
H	1	Lid

TOOLS REQUIRED

- Wire cutters
- Adjustable pliers
- Needle nose pliers
- Utility knife
- 3/8 in hex key (required for splice and tee connections)
- 1/4 in or smaller slotted screwdriver
- Marking pen
- Wire stripper
- Large slotted screwdriver

ADDITIONAL MATERIALS REQUIRED

- Pipe strap
- Glass cloth tape



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 of 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 nVent, agency certifications, and national electrical codes, ground-fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers.
- The power connection may be powered by more than one circuit. Be sure all power sources are de-energized before opening box.

- Component approvals and performance are based on the use of nVent 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.
- Keep components and heating cable ends dry before and during installation.
- Use only fire-resistant insulation materials, such as fiberglass wrap or flame-retardant foam.

CAUTION:

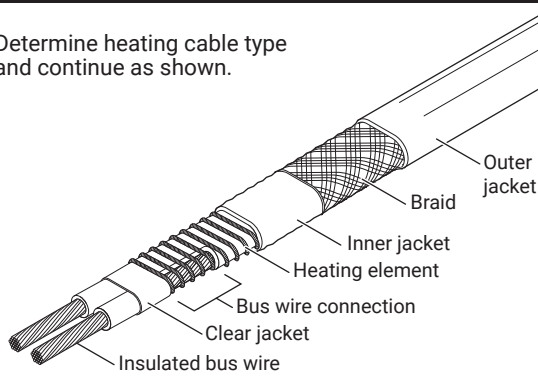
HEALTH HAZARD: Prolonged or repeated contact with the sealant in the core sealer may cause skin irritation. Wash hands thoroughly. Overheating or burning the sealant will produce fumes that may cause polymer fume fever. Avoid contamination of cigarettes or tobacco. Consult MSDS VEN 0058 for further information.

CHEMTREC 24-hour emergency telephone:
(800) 424-9300

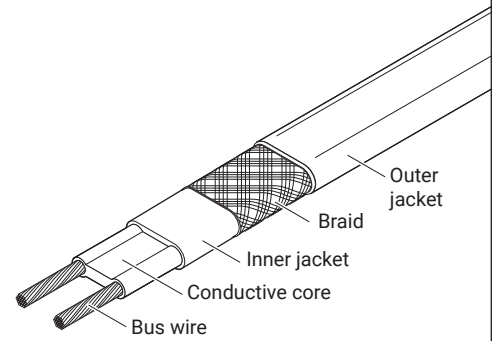
Non-emergency health and safety information:
(800) 545-6258.

Heating Cable Types

- Determine heating cable type and continue as shown.



Constant Wattage

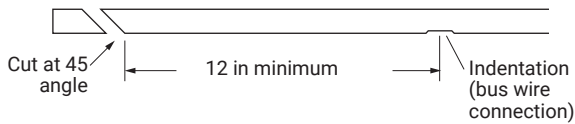


Self Regulating

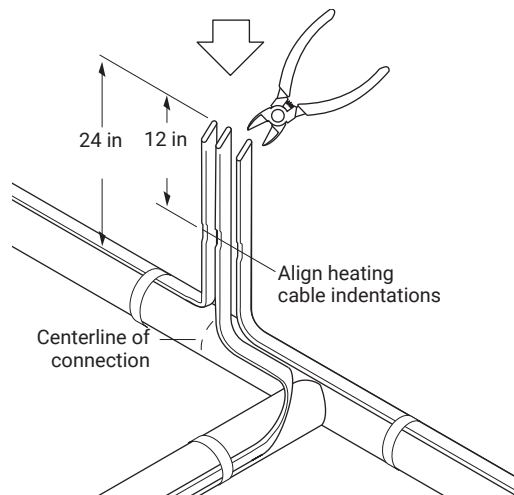
1a

Constant Wattage

- Cut each heating cable 12 in (30 cm) from the center of the first indentation, cut at a 45° angle.

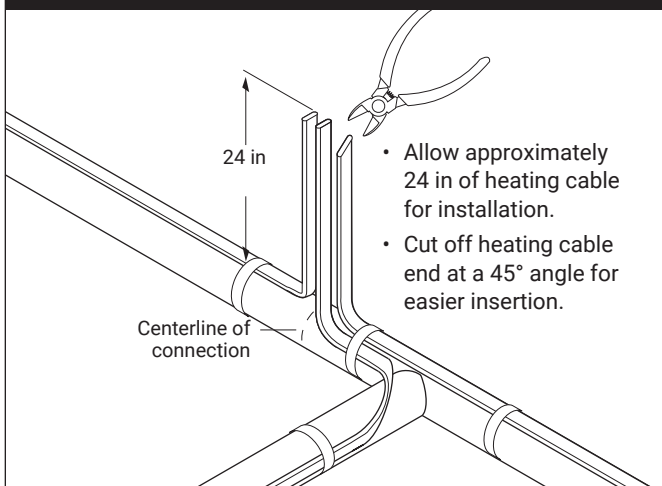


- After heating cable has been cut, align indentations. Allow approximately 24 in of heating cable for installation.



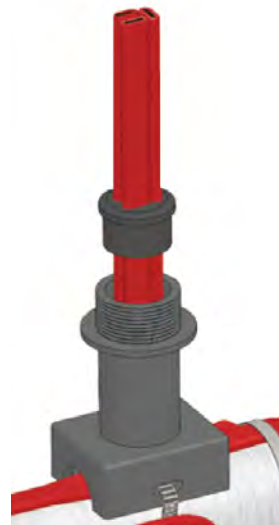
1b

Self Regulating



- Allow approximately 24 in of heating cable for installation.
- Cut off heating cable end at a 45° angle for easier insertion.

2

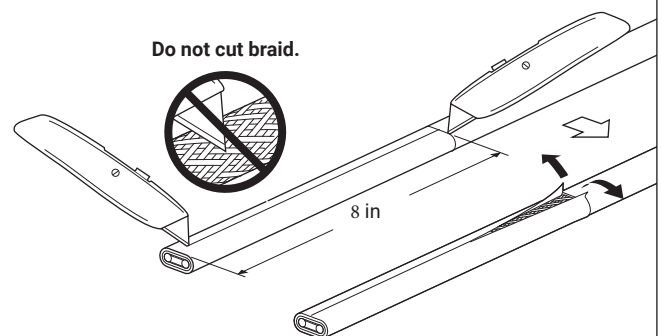


- Push heating cable through stand as shown. Use cable lubricant if needed.
- Square off cable end with 90° angle cut.

Complete steps 3 through 6 for each heating cable before going on to the next length of heating cable.

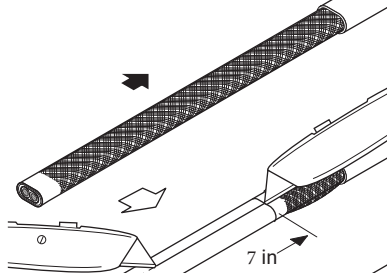
3

- Lightly score outer jacket around and down as shown.
- Bend heating cable to break jacket at score, then peel off jacket.



4a**CONSTANT WATTAGE**

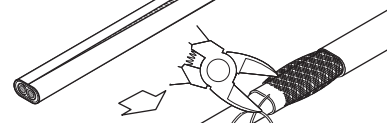
- Push braid back and bunch as tight as possible.



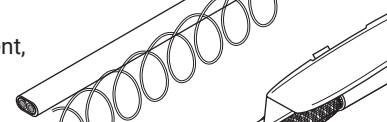
Lightly score inner jacket around and down as shown.



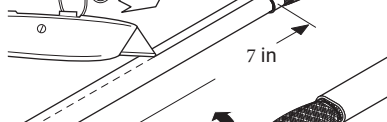
- Peel off inner jacket.



- Unwind heating element, cut and remove as shown.



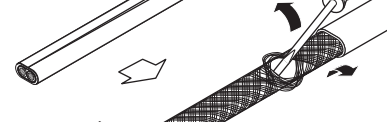
- Lightly score clear jacket around and down as shown.



- Bend heating cable to break jacket at the score then peel off jacket.



- Push braid forward. Use a screwdriver to open braid.

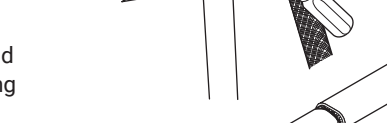


- Bend heating cable and work it through opening in braid.

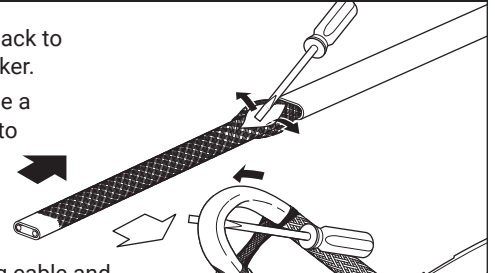


- Remove insulation from ends of bus wires.

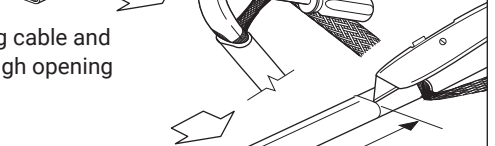
- Pull braid tight to make pigtail.

**Go to Step 5****4b****SELF REGULATING**

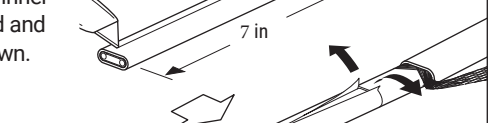
- Push braid back to create a pucker.
- At pucker use a screwdriver to open braid.



- Bend heating cable and work it through opening in braid.



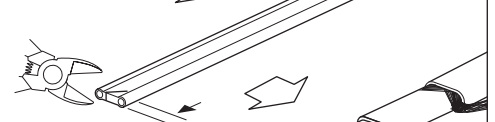
- Lightly score inner jacket around and down as shown.



- Peel off inner jacket.



- Notch core.



- Peel bus wire from core.

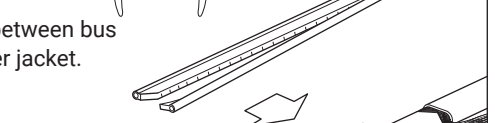


- Score core between bus wires at inner jacket.



- Bend and snap core.

- Peel core from bus wire.



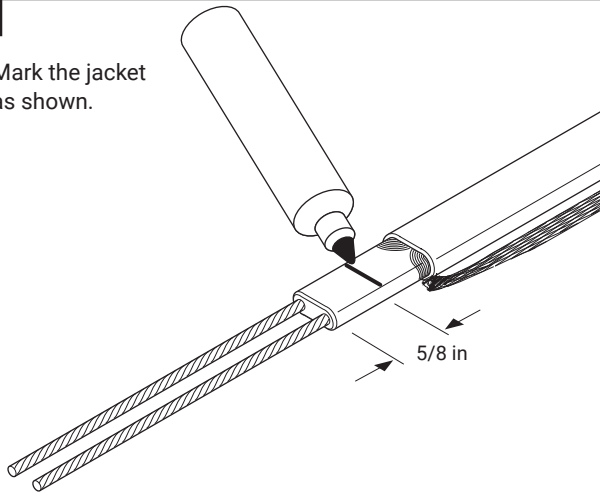
- Remove any remaining core material from bus wires.

- Pull braid tight to make pigtail.

**Go to Step 5**

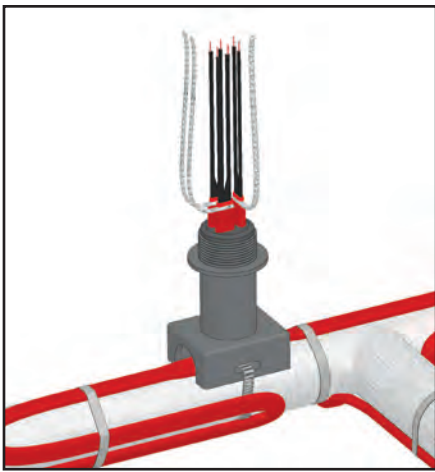
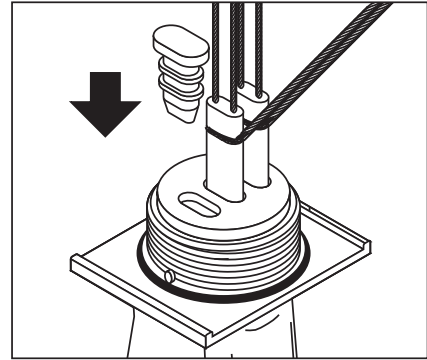
5

- Mark the jacket as shown.



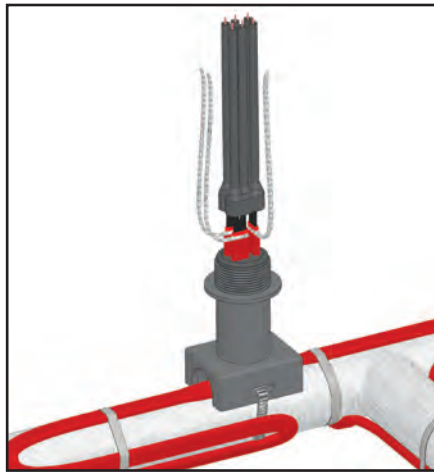
6

- Install grommet plugs in unused openings.



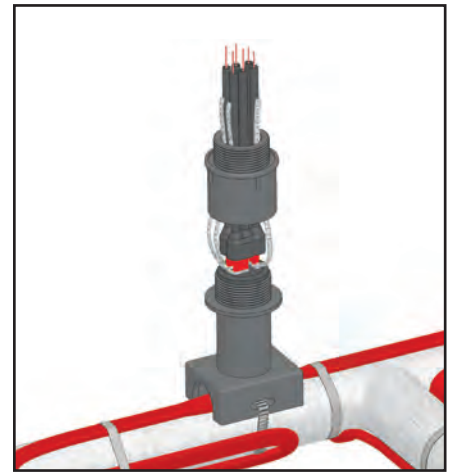
7. Strip each bus wire 1/4".

*Separate CWM leads and strip 1/4" from each leadwire.

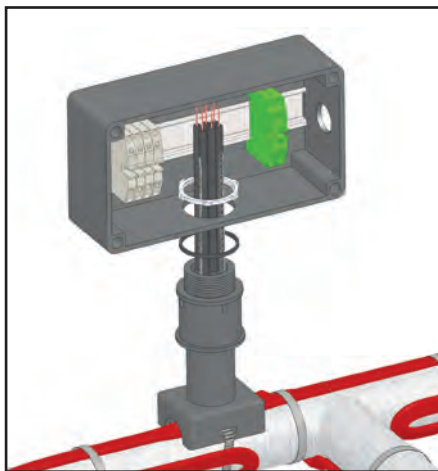


8. Liberally apply RTV over the exposed matrix and leads. Push the rubber boot over the heating cable. Trim lead ends as needed.

*Boot is not needed when using CWM constant wattage cable.



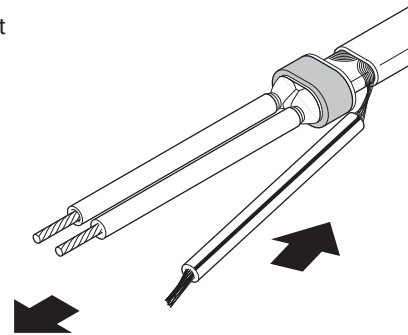
9. Slide compression fitting over cable. Grommet should be placed inside pipe standoff. Termination boot should be spaced 1/2" from sealing grommet. Tighten compression fitting until it bottoms out against pipe standoff.

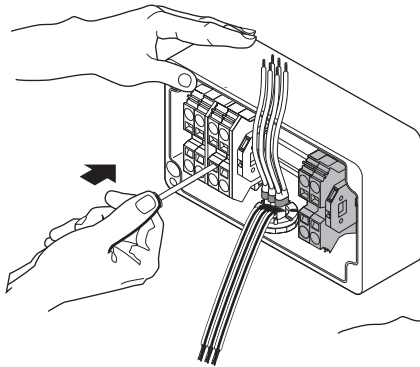


10. Assemble junction box to compression fitting as shown. Tighten locknut until the junction box bottoms out against the lip of the compression fitting.

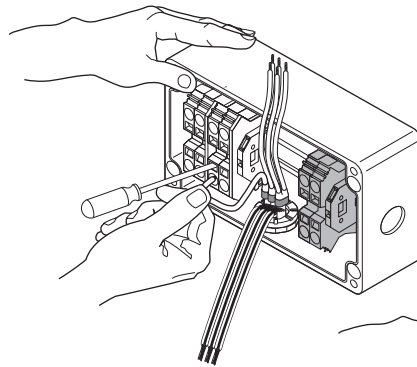
11

- Slip the green/yellow tube onto the braid. Heat-shrinking is not required.

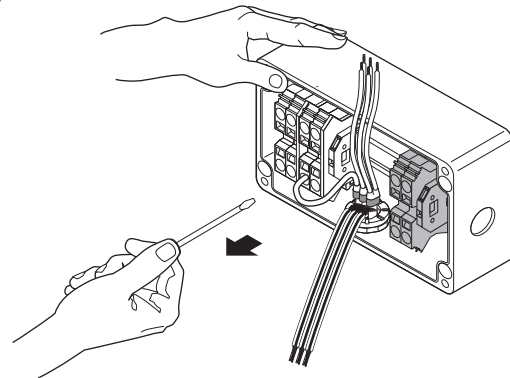




- Refer to wiring diagram, step 13A, 13B, or 13C.

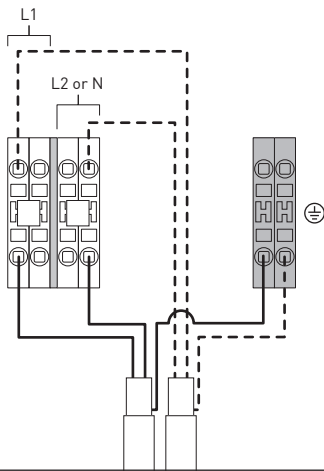


- Insert wire into hole.
- Use green terminal for braid and ground wires.

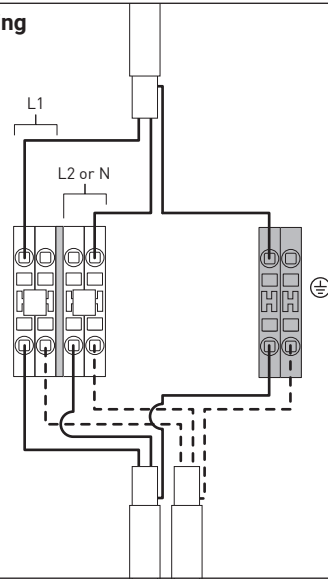


- Remove screwdriver.
- Repeat for all connections.

13A Splice Wiring

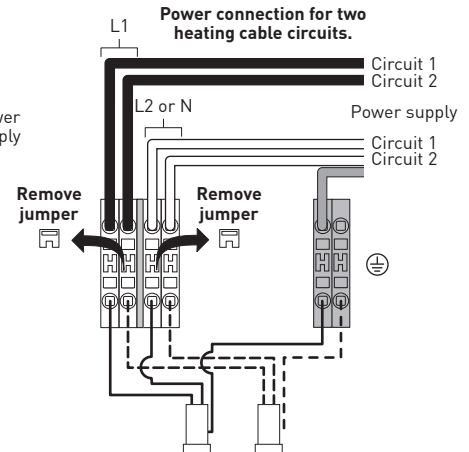
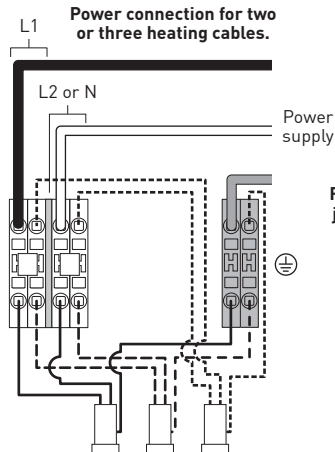
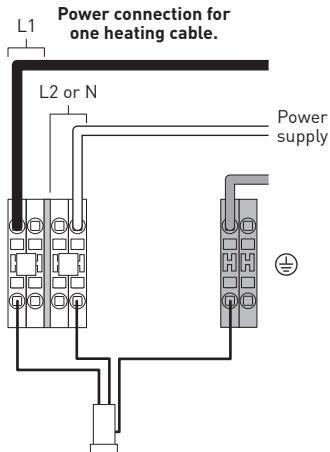


13B Tee Wiring



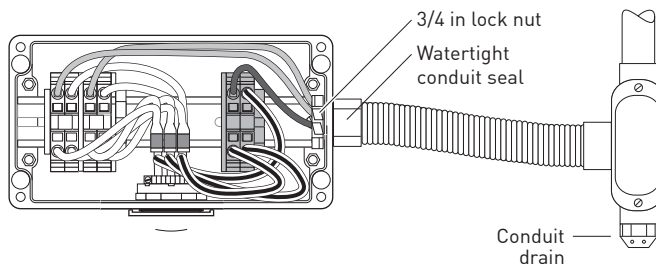
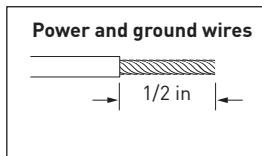
13C Power Connection Wiring

⚠ WARNING: Shock or fire hazard. When the power connection is energized by two circuits, the L1 and L2 jumpers must be removed to prevent an electrical short.



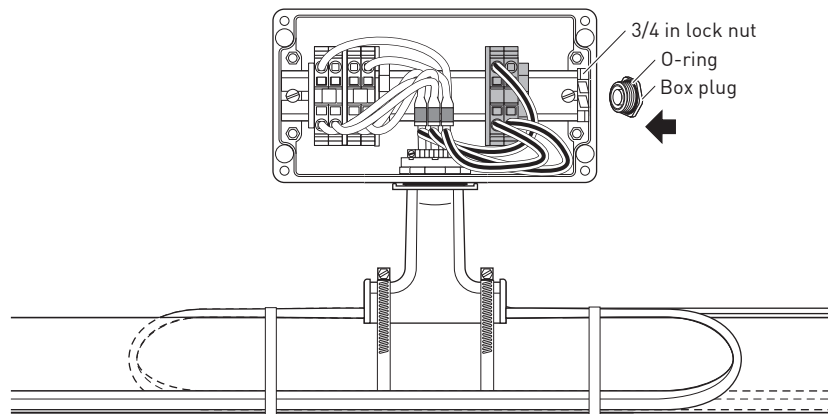
14A If used as a power connection

- Install conduit and fittings as shown. To minimize loosening due to vibration, use flexible conduit.
- Pull in power and ground wires, strip off 1/2 in (13 mm) of insulation, and terminate.



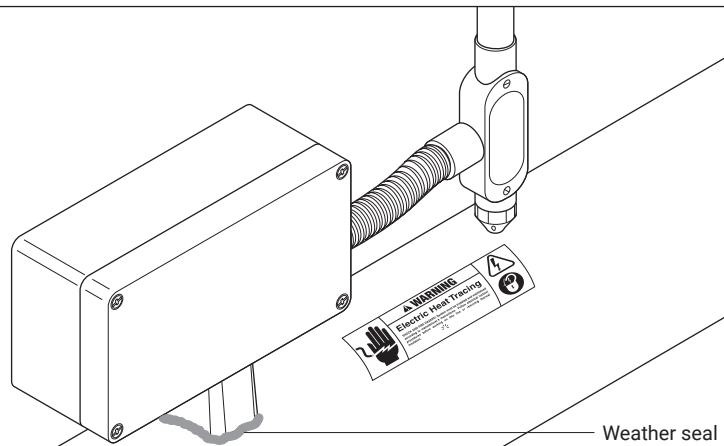
Make sure conductors are not exposed.

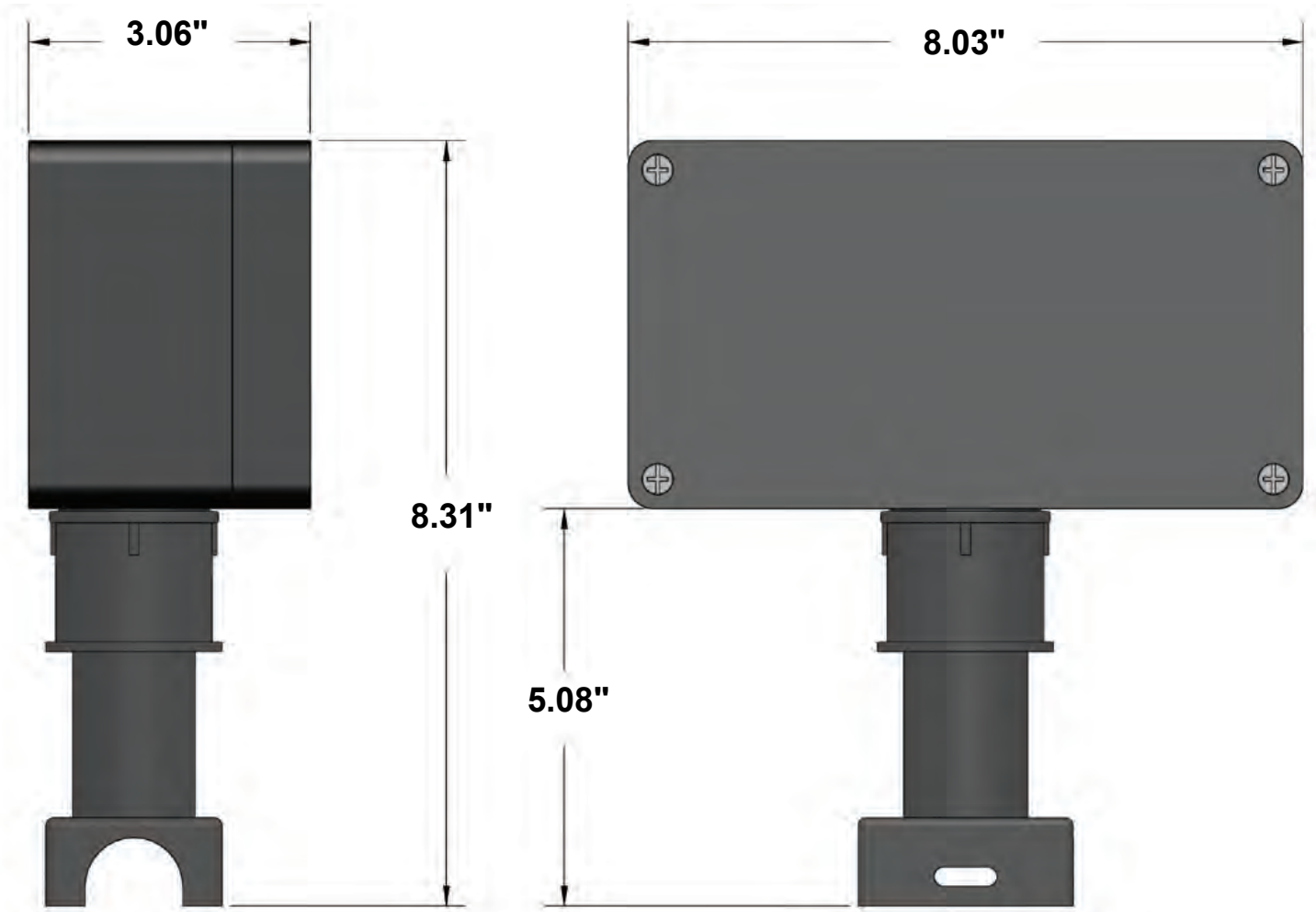
14B If used as a splice or tee connection



15

- Install lid.
- Apply insulation and cladding.
- Weather-seal the stand entry.
- Leave these instructions with the end user for future reference.





201 Pryor Creek Road | Suite 5 | Lebanon, TN 37090
Phone: (615) 834-4044 | Fax: (615) 834-5834 | Email: protherm@comcast.net
www.prothermind.com | www.heatingelementsplus.com