



High Performance Heater with More Efficient Heat

The Mineral Insulated (MI) band heater from Watlow & Tempco is a high-performance heater. Its performance and name are derived from exclusive mineral insulation—a material with much higher thermal conductivity than mica and hard ceramic insulators used in conventional heaters. A thin layer of the “high” thermal conductive MI material is used to electrically insulate the element wire from the inside diameter of the heater sheath. A thicker, “low” thermal conductivity layer backs up the element wire directing the heat inward toward the part being heated. The result is more efficient heat transfer—a performance solution lowering element wire temperatures and increasing heater life. Included features and benefits include:

- **Operating Temperatures up to 1400°F (760°C)** Allows safe melting of today’s high performance resins
- **Higher Watt Densities** contributes to faster heat-up and throughput for increased productivity
- **High Thermal Conductivity** of MI and low mass construction gives an almost instant temp response
- **Eliminates Thermal Lag** and temperature overshoot associated with ceramic knuckle heaters
- **Stainless Steel** cover and side fold design
- **Resists Contamination** from overflow of plastic or other free-flowing materials
- **Permanently Attached Clamp Bars** Eliminates cumbersome clamping straps, making installation easy

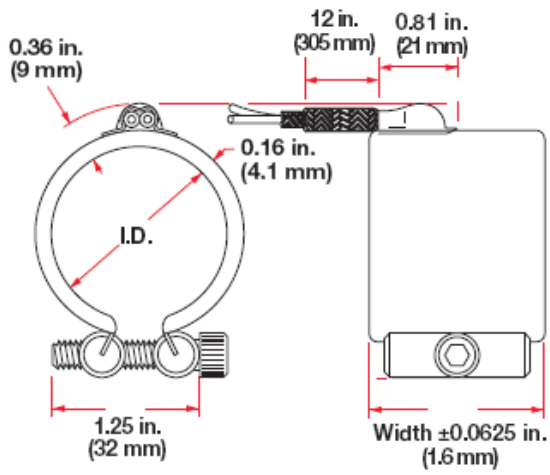
Specifications

Electrical	Mechanical
Resistance tolerance: -10 percent (+5 percent)	Minimum width: 1-inch ±1/8 inch
Wattage tolerance: +10 percent (-5 percent)	Maximum width: 8-inches
Maximum watt density: 150 W/in ²	Minimum I.D.: 1-inches (1pc)
Maximum operating temperature: 760°C (1400°F)	Maximum I.D.: 14 inches (one piece only) Maximum I.D.: 28 inches (two piece only)

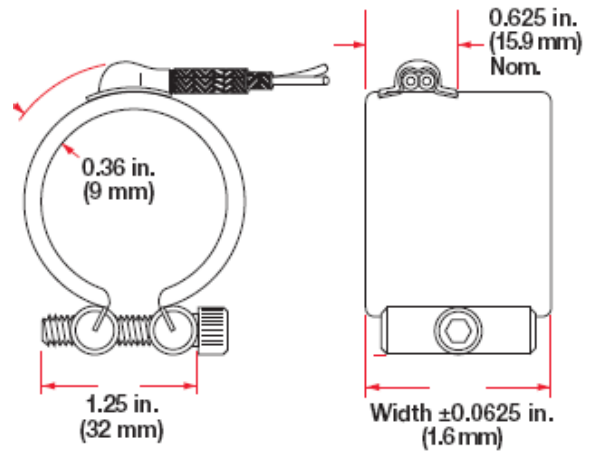


Lead Arrangements

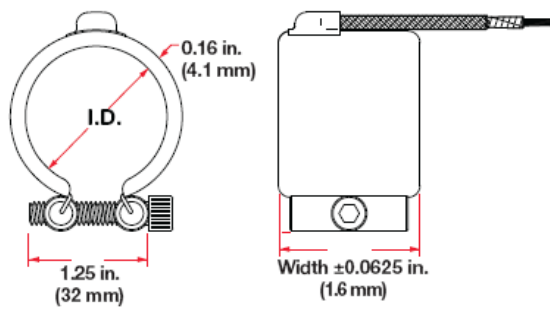
Type B - Standard



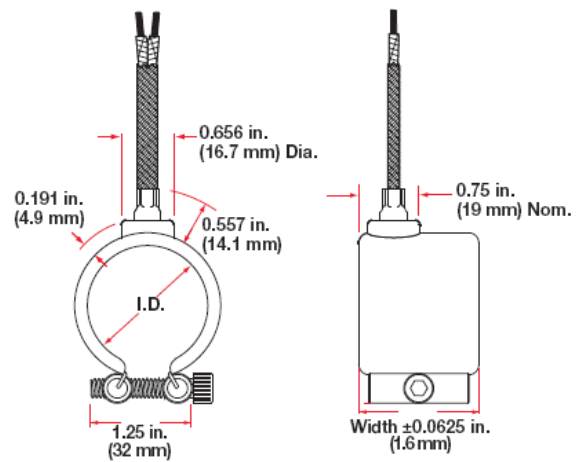
Type B - 90° Rotation



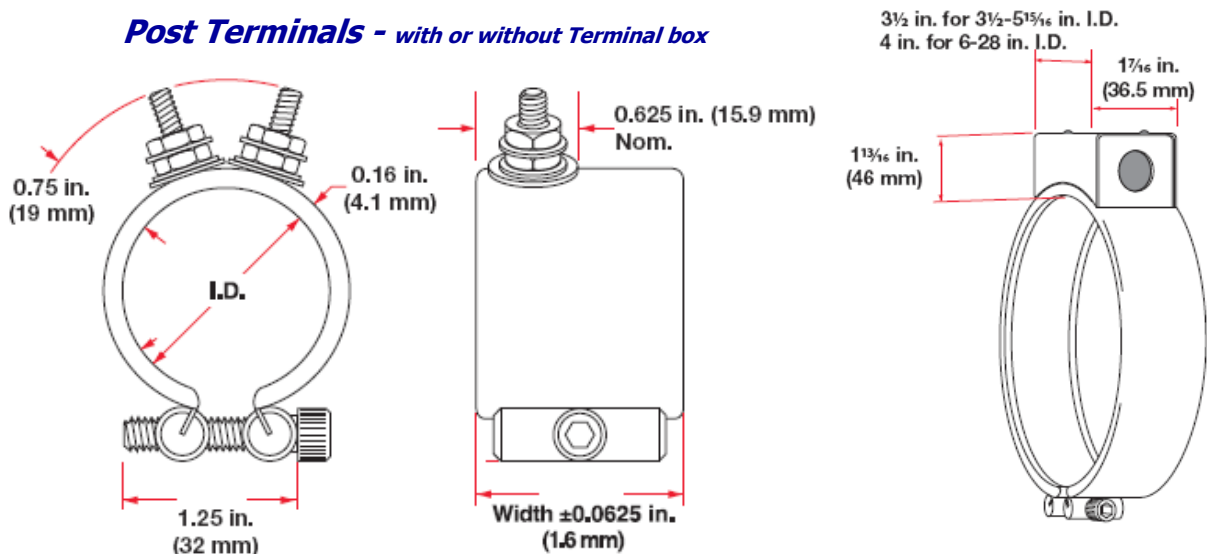
Type B - 180° Rotation



Type C - Tight Metal Braid

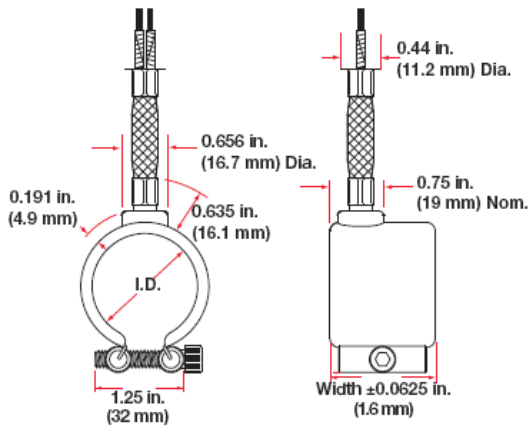


Post Terminals - with or without Terminal box

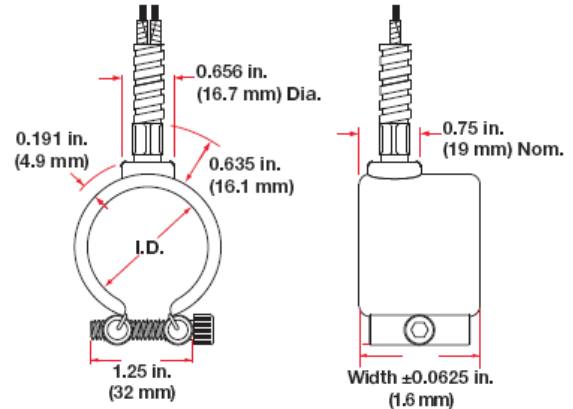


Lead Arrangements *continued*

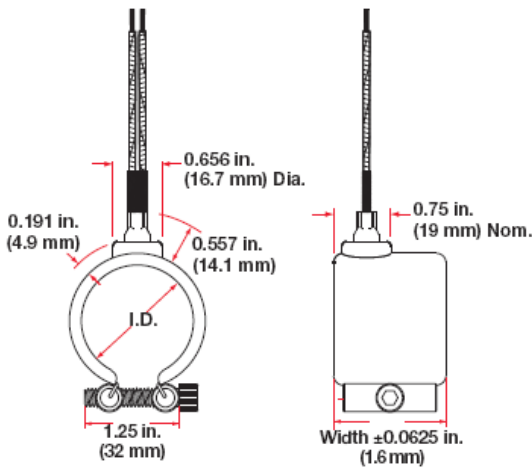
Type E - Loose Metal Braid



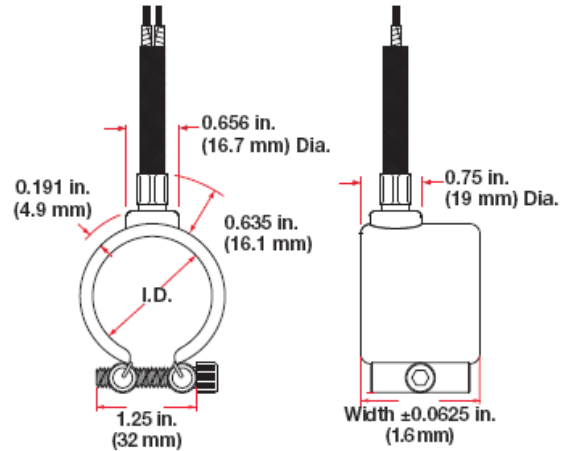
Type H - Steel Flex Hose



Type K - Flexible Lead Wires



Type F - Loose Fiberglass Sleaving

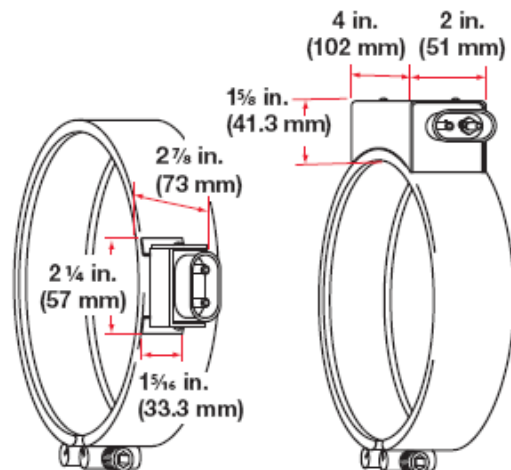


EuroPlug - Horizontal or Vertical

EuroPlugs provide the simplest and safest way to apply power to band heaters. The combination of high temperature male and female "quick disconnect" plug assemblies eliminates all live exposed terminals and electrical wiring that can be a potential hazard to employees or machine. Maximum 15 amperes at 240V \bar{A} (ac), maximum 240 volts.

When ordering, specify vertical or horizontal

Mating connectors are also available through Star Electric's accessory program. Ask your representative for details.

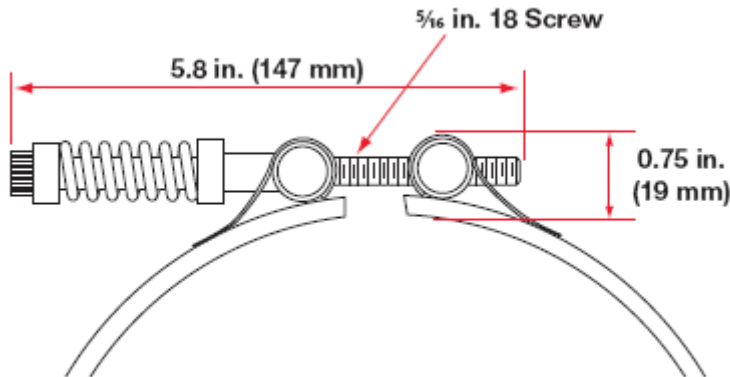


Vertical

Horizontal

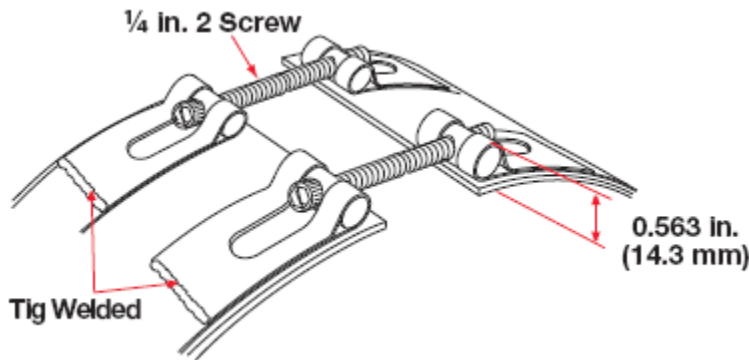
Clamping Arrangements

TIG Welded Barrel Nuts with Spring Loaded Clamping



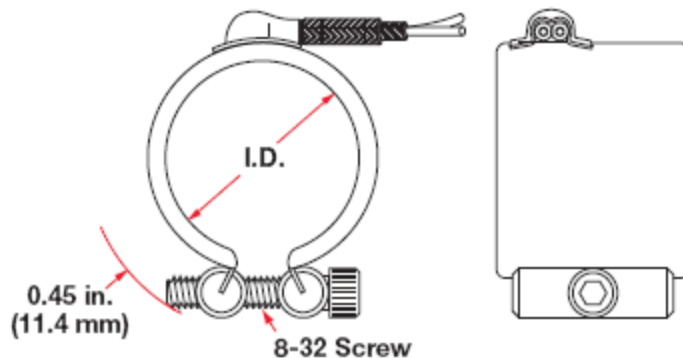
Welded Barrel Nuts with Spring Loaded Clamping are used during start-up to maintain a tight heater fit on large barrels. This clamping variation is standard for all MI band heaters that are greater than 14 in. (356 mm) in diameter and 1-1/2 in. (38 mm) or greater in width. .

TIG Welded Barrel Nuts



TIG Welded Barrel nuts are an ideal way to provide access for instrumentation is to specify an oversized gap between the heater ends. If the clamp bar screw interferes with the positioning of the instrumentation device, welded barrel nuts are recommended (TIG-welded barrel nuts are standard on 1 in. (25 mm) wide MI band heaters).

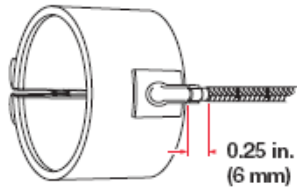
Low-Profile Clamp Bars



Low-Profile Clamp Bars are available on both 1 in. (25 mm) and 1-1/2 in. (38 mm) wide heaters, for wider widths contact your Watlow representative. Watlow recommends not using low-profile clamping on diameters and widths greater than 3 in. (76 mm) The bars are 1/4 in. (6 mm) diameter with an 8-32 screw.

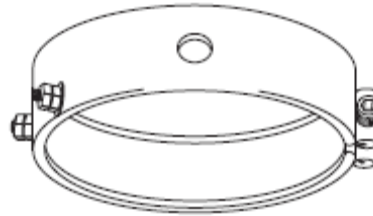
Other Options

Heavy Duty Strain Relief



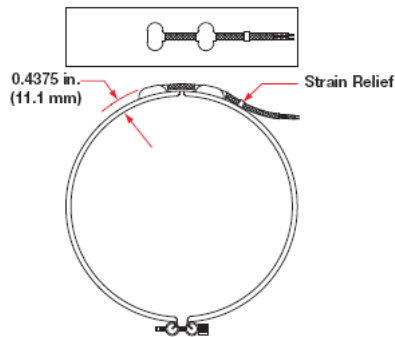
Heavy duty strain relief is recommended for applications where there is great stress or continued flexing of the leads. The strain relief is available on Type B, Type B - 90° and Type B - 180° leads only. Not available with loose braid or fiberglass sleeving.

Holes



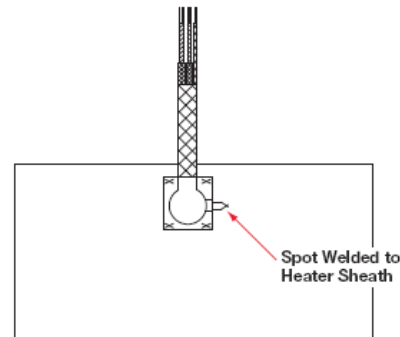
MI band heaters with holes are available on all widths except 1 in. (25 mm) wide.

Type SLE - Strain Relief leads



Two fiberglass lead wires exit a single, tightly woven metal braid at right angle on the expandable construction vs. two sets of leads. The minimum diameter capability is 4 in. (102 mm). Minimum width capability is 11/2 in. (38 mm).

Thermocouple



ASTM Type J or K thermocouples are available on lead Type B with loose braid and fiberglass sleeving. They are also available on E, F and H leads. The thermocouple junction, spot-welded to the heater sheath, provides a signal for measuring relative heater temperature. A separate thermocouple is available.

2-Piece Expandable



Expandable heaters are two-piece units with a common top metal allowing the heater to expand open to the full diameter of the barrel. On expandable bands, each half will be one half of the total wattage. Plus, on both expandable and two-piece bands, each half will be rated at full operating voltage, unless otherwise specified.