

The MI band heater 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, which lowers element wire temperatures and increases heater life.



Product Features and Benefits

Performance Capabilities

- Operating temperatures to 1400°F (760°C)
- Watt densities to 100 W/in² (15.5 W/cm²) available on large diameter barrel bands
- Maximum voltage to 480V

Applications

- Extruders
- Blown Film dies
- Injection Molding Machines
- Other cylinder heating applications

Features and Benefits

- High thermal conductivity of MI and low mass construction gives an almost instant response to temperature control
- Eliminates temperature overshoot
- Higher watt densities contributes to faster heat-up and throughput for increased productivity
- Stainless steel cover and side fold design
- Resists contamination from overflow of plastic or other free-flowing materials
- Attached clamp bars eliminates clamping straps, making installation easier

Specifications and Tolerances

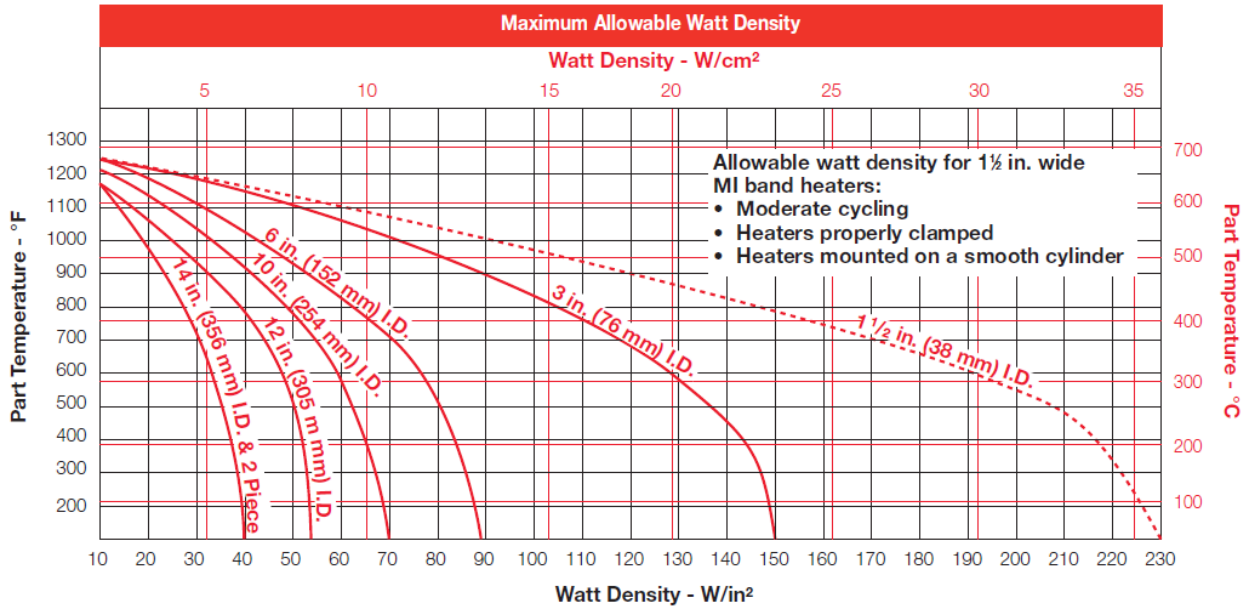
Performance Ratings

- Maximum width of 1 in. (25 mm) diameter heater is 1 1/2 in. (38 mm)
- Maximum heater width: 2x heater diameter
- Minimum ID for most leads: 1 in. (25 mm)
- Minimum ID for—90° leads: 1 1/8 in. (28.6 mm)
- Maximum lead amps: 12.5A per pair
- SLE maximum: 17.0A
- Maximum amps (post terminals): 30A per pair
- Minimum diameter and width for SLE: 4 in. x 1 1/2 in. (102 mm x 38 mm) width
- 90° leads not available over 250VAC
- Minimum ID for post terminals: 1 1/4 in. (32 mm)
- Actual width for 7 in. (178 mm) width: 67/8 in. (174.6 mm)

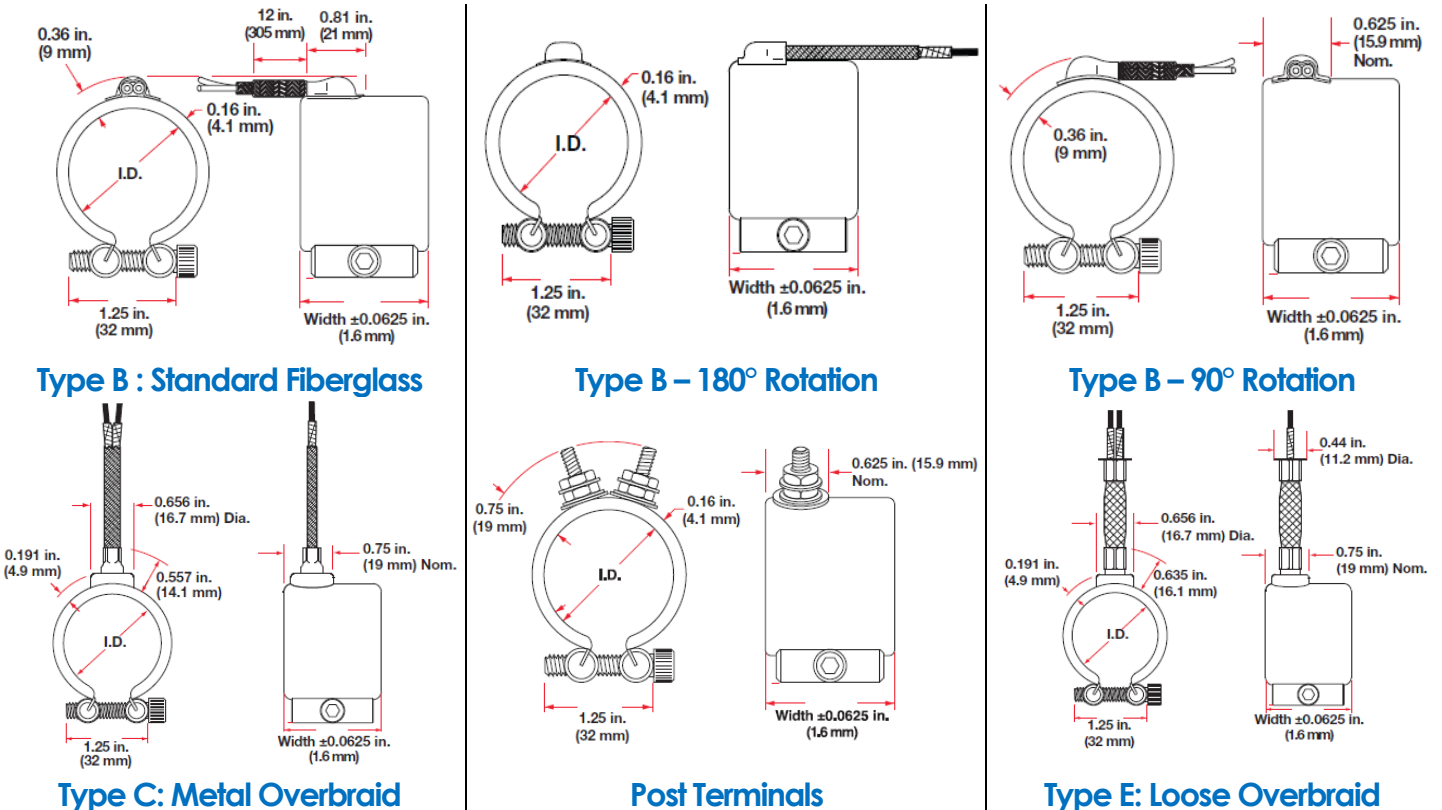
Gap Ratings

- ≤ 3 in. = 1/8 in. nominal
- 3 in. ≤ 6 in. = 1/4 in. nominal ±1/8 in.
- 6 in. ≤ 14 in. = 3/8 in. nominal ±1/8 in.
- >14 in. = 1/2 in. nominal ±1/4 in.

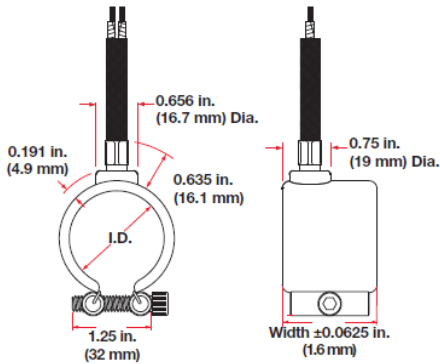
Maximum Watt Densities



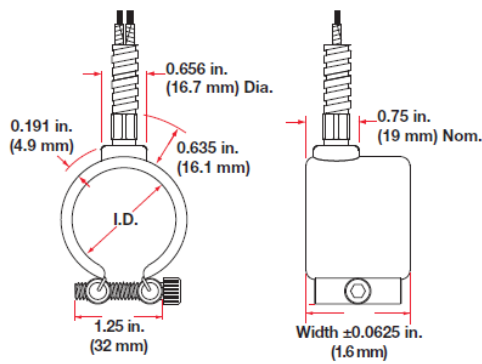
Termination Variations



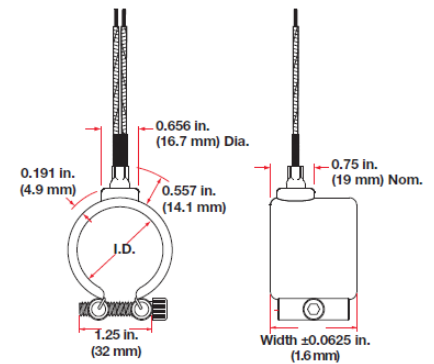
Termination Variations (continued)



Type F : Loose Fiberglass Sleeve

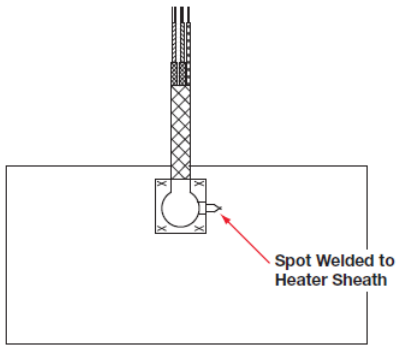


Type H – Flexible Armor Cable



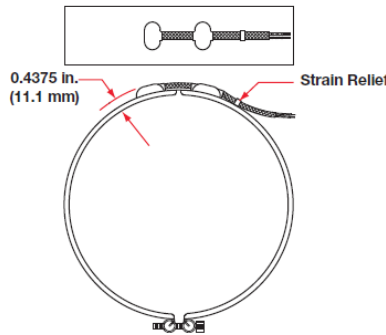
Type K: Flexible Lead Wires

Variations



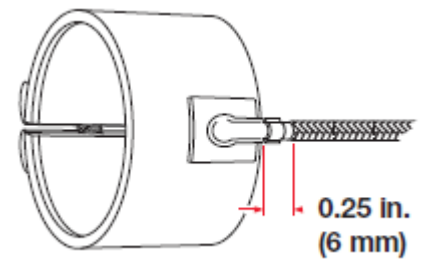
Thermocouple

Available with J or K type thermocouples. The thermocouple junction, spot-welded to the heater sheath, provides a signal for measuring relative temperature.



Type SLE

Two fiberglass lead wires exit a single, tightly woven metal braid at a right angle on the expandable construction vs. two sets of leads. The minimum diameter capability is 4 in. (102 mm). Minimum width is 1 1/2 in. (38 mm). To order, specify Type SLE and length.



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.



1 1/2 in. (38 mm) wide and greater

Expandable Heaters with Post Terminals or Leads

Expandable heaters are 2-piece units with a common top metal allowing the heater to expand open to the full diameter of the barrel. Each half will be one half of the total wattage.

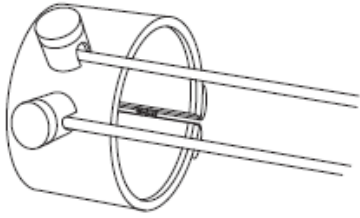
Ground Wire

Insulated ground wire is available, contact a Thermal Solutions of Texas representative.

Lead Wire

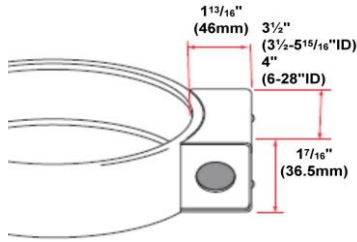
Lead insulation UL® rated for operation to 840°F (450°C) is available for high-temp applications where the leads are shrouded or enclosed with the heater. These leads are available in any of the Type B with loose braid as well as Types E, F and H leads. All heaters rated at more than 250VAC use this wire. When ordering, specify 850°F (450°C) wire.

Variations (continued)



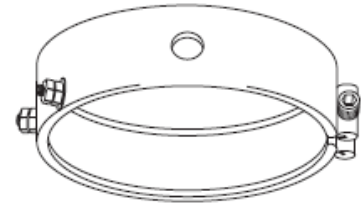
Ceramic Terminal Covers

Ceramic covers, with openings for leads, are screwed on to post terminals, providing a convenient, economical insulator.



Terminal Boxes

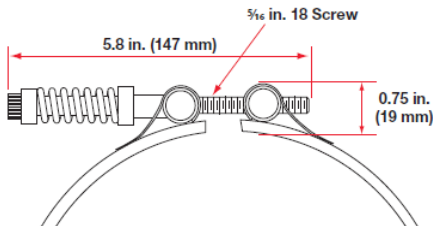
Metallic terminal boxes, which attach directly to the heater, act as a safety feature by covering the terminals.



Holes

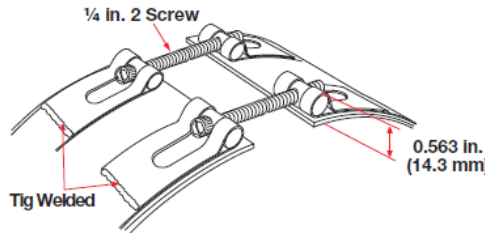
MI band heaters with holes are available on all widths except 1 in. (25 mm) wide. To order, specify hole size and location

Clamping Variations



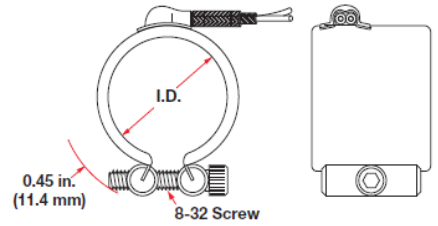
Tig-Welded Barrel Nuts with Spring Loaded Clamping

Welded barrel nuts with spring loaded clamping are used during start-up to maintain a tight heater fit on large barrels.



Tig-Welded Barrel Nuts

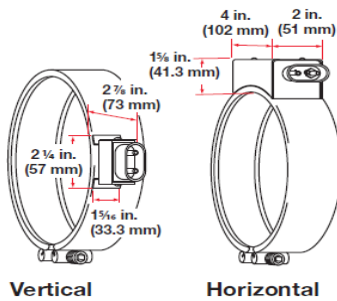
An ideal way to provide access for instrumentation is to specify an oversized gap between the heater ends.



Low-Profile Clamp Bars

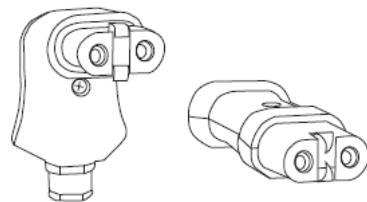
Low-profile clamp bars are available on both 1" and 1 1/2" wide heaters. The bars are 1/4" diameter with an 8-32 screw.

Extended Variations



High Temp "Quick Disconnect" European Style Plugs

The safest way to apply power to band heaters, with a combination of high-temp male and female "quick disconnect" plug assemblies eliminates all live exposed terminals and electrical wiring.

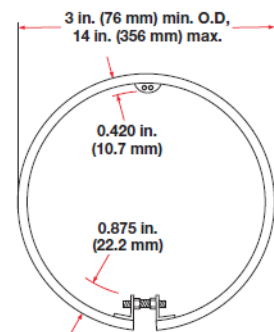


Right Angle

Straight

High Temp "Quick Disconnect" European Style Female Adapters

Available as an accessory item that must be used in conjunction with high-temperature "quick disconnect" European style plugs.



Outside Diameter Heater

Two fiberglass-insulated lead wires rated to 840°F exit a metal braid 180° opposite from gap, Type B outside diameter designed and constructed to mate with inside diameter of cylinders.

