



# Thick Film Conduction Heaters

## Thick Film Heater is Ideal for Clamp-On Applications

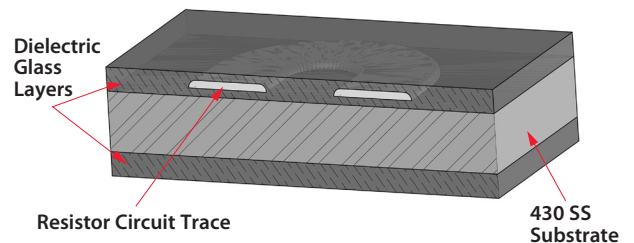
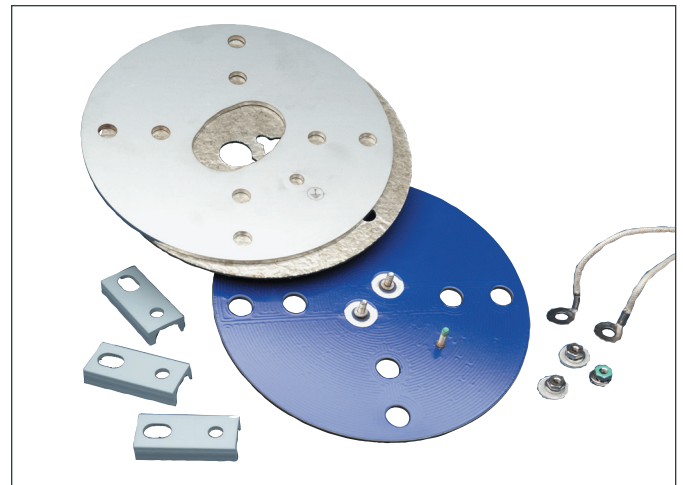
The Watlow® 430 stainless steel thick film conduction heater is ideal for many applications where fast response and uniformity are essential. A clamp-on, thick film heater provides the best possible combination of heat transfer, thermal efficiency, temperature response and uniformity in a low profile package.

This high-performance heater can be used in areas where space is limited or where conventional heaters cannot be used due to limited voltage and wattage combinations.

Thick film conduction heaters provide a low-profile in a variety of shapes including two-dimensional circular and rectangular forms. Direct contact of thick film heaters to surfaces ensures efficient heat transfer through thermally stable substrates and precise resistance trace patterns.

### Performance Capabilities

- Maximum substrate temperature up to 1022°F (550°C). Contact your Watlow representative for application temperatures higher than 842°F (450°C)
- Watt densities up to 75 W/in<sup>2</sup> (11.6 W/cm<sup>2</sup>)
- Voltages up to 240V



### Features and Benefits

#### Watt densities up to 75W/in<sup>2</sup> (11.6 W/cm<sup>2</sup>) for clamp-on applications

- Allows precise, repeatable wattage distribution and uniform temperature profile

#### Threaded stud termination

- Produces strong, trouble-free connections. See *Termination Assembly* drawing on next page.

#### Agency approvals

- UL® component recognition available upon request

### Typical Applications

- Food warming cabinets
- Load dump resistors
- Seal bars
- Deposition chamber lids

## Specifications

Min. Length: 2.25 in. (57 mm)

Max. Length: 24 in. (610 mm)

Max. Voltage: 240VAC

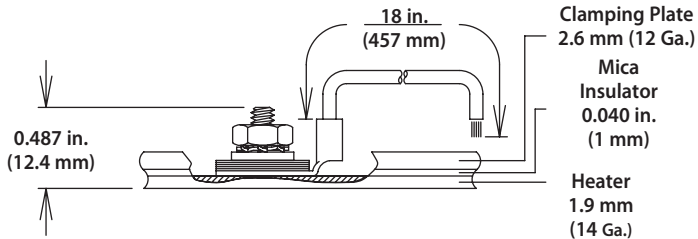
Max. Amperage: 25A

Terminations: Stud terminals

Substrate: 14 ga. typical

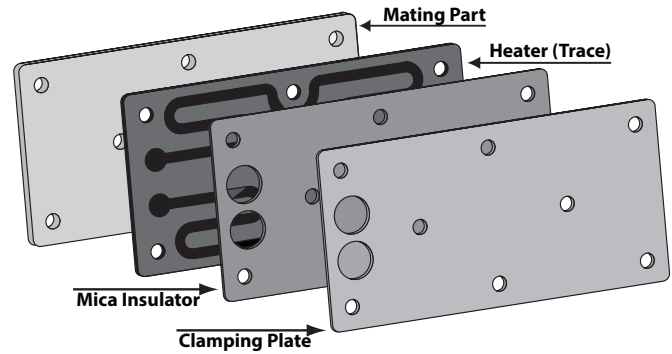
Features: Holes/slots up to 15% of area

## Termination Assembly



To install, mount the heater to the surface being heated and assemble mounting hardware. Standard measurements of assembly hardware are illustrated in the *Termination Assembly* drawing above. Please refer to the *Installation and Maintenance Manual* (316-42-32-1) supplied with for mounting instructions.

## Construction



Thick film conduction heaters, designed for clamp-on applications, are supplied as a multi-part assembly: heater, mica insulator, clamping plate and mounting hardware.

The mica insulator acts as a thermal barrier to effectively force heat into the part being heated and as an additional protective layer for the heater.

The clamping plate distributes pressure evenly across the entire surface of the heater to promote close contact between the thick film heater and the part to be heated.

The mounting hardware is designed to effectively clamp to the part requiring heat, based on the heater size.

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