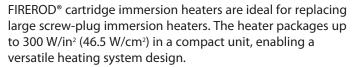


FIREROD® Cartridge Immersion Heaters

Compact Heater Enables Versatile Heating System Design



FIREROD immersion heaters are complete with a stainless steel ³/₄ inch National Pipe Thread Taper (NPT) double threaded fitting, which allows conduit boxes to be added. They are also sealed at the lead end with a silicone rubber seal.

Solid copper leads with silicone rubber sleeves are provided for unrestricted wiring. These units are recommended for immersion in water of 90+ percent water soluble solutions.

Features and Benefits

Nickel-chromium resistance wire precisely centered in the unit

• Ensures even and efficient distribution of heat to the sheath

Magnesium oxide (MgO) insulation compacted to the proper density

 Results in high dielectric strength and contributes to faster heat-up

Alloy 800 sheath

Resists corrosion from water

Metalurgially-bonded conductor pins

 Overlaps the resistance wire inside the core, ensuring trouble-free electrical continuity

Lead end with silicone rubber seal

Protects the heater against moisture contamination

Stainless steel fittings

· Offers availability for use in corrosive applications

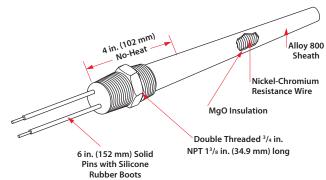
Horizontal through the wall tank mounting

Provides faster set-up

240 and 480VAC voltage

Allows wiring flexibility for heater use in particular applications





Performance Capabilities

- Maximum operating temperature in water up to 212°F (100°C) at atmospheric pressure
- Maximum watt density up to 300 W/in² (46.5 W/cm²)
- Maximum voltage up to 480VAC

Typical Applications

- Plastic reclamation
- Food preparation
- Lab equipment





Applications and Technical Data

The small size and large capacity of FIREROD immersion heaters are ideal for use in cramped quarters. When heating liquids of low viscosity, FIREROD heaters have high watt density to pack more heat into tight spots. For water heating applications, a rating of 150 to 300 W/in² is recommended. Laboratory tests show that under certain conditions, ratings as high as 700 W/in² are safe. For longer life at high watt densities, the FIREROD heater:

- Should not be contained in the main body of the liquid or in a restricted space
- Should be covered with liquid at all times
- Should not be allowed to cycle on and off too frequently
- Should not form scale build up

When heating viscous liquids, such as oils, watt densities must be kept low to prevent carbonization at the heater sheath. FIREROD cartridges offer advantages for heating viscous materials where long life and high quality outweigh usual economic considerations.

As in all immersion applications, scale build-up on the sheath and sludge on the bottom of the tank must be carefully controlled to ensure long heater life.

Equipped with smaller threaded fittings than conventional immersion heaters, FIREROD heaters leave space for more units in the same location. Replacement of single FIREROD units in multi-heater assemblies is fast and easy to avoid discarding the complete assembly.

Moisture resistant seals are available for protection against damp atmospheres.

Threaded fittings are furnished in stainless steel. FIREROD heaters are designed with alloy 800 sheaths; however, other sheath materials can be provided on made-to-order FIREROD units.

Fittings and sheath material should be appropriate for the specific liquid material being heated.

Sheath Material Compositions

Sheath Materials	Chemical Composition															
	Al	C	Со	Cr	Cu	Fe	Mn	Мо	Ni	Р	S	Si	Та	Ti	٧	W
Nickel Alloys Alloy 800	0.15-0.6	0.1		19-23	0-75	Bal	1.5		30-35		0.015	1.0		0.15-0.6		
Stainless Steels 304 316		0.08 ^① 0.08 ^①		18-20 16-18		Bal Bal	2 ^① 2 ^①	2-3	8-12 10-14			1 ^① 1 ^①				

¹ Maximum

Watlow® and FIREROD® are registered trademarks of Watlow Electric Manufacturing Company.

Powered by Possibility

To be automatically connected to the nearest

1-800-WATLOW2 • www.watlow.com

inquiry@watlow.com

North American Technical Sales Office:

International Technical Sales Offices: Austria +43 6244 20129 0

+86 21 3532 8532 China France +33 1 41 32 79 70 Germany +49 7253 9400 0

India +91 40 6661 2700 Italy +39 02 458 8841 Japan +81 3 3518 6630 Korea +82 2 2169 2600

Mexico +52 442 256 2200 Singapore +65 6773 9488 Spain

+34 91 675 1292 Taiwan +886 7 288 5168 UK +44 115 964 0777

WATLOW