

# Over-The-Side Heaters

## Ideal For Heating Water, Oil, Solvents, Salts and Acids

Over-the-side heaters are ideal for heating water, oils, solvents, salts and acids. Application versatility is enhanced with optional sheath materials, kilowatt ratings, terminal enclosures and mounting methods.

The L and O shaped “installed-from-the-top” heaters slide easily into tanks, with the heated portion immersed along the side or at the bottom. The drum immersion heaters are designed for direct immersion in a standard 55 gallon steel drum. Watlow vertical loop immersion heaters are well-suited for open tank applications.

### L and O Shaped Performance Capabilities

- Alloy 800 sheath element watt densities up to 60 W/in<sup>2</sup> (9.3 W/cm<sup>2</sup>)
- Wattages up to 50 kilowatts
- Voltages up to 600VAC

### Features and Benefits

#### Rugged, light-weight construction

- Resists damage during installation or removal

#### 0.475 in. (12 mm) diameter WATROD heating elements

- Offers one- or three-phase operation

#### WATROD hairpins are repressed (recompacted)

- Maintains MgO density, dielectric strength, heat transfer and heater life

#### Four inch (100 mm) sludge legs

- Keeps heating elements off the tank’s bottom to help avoid being covered with sediment

#### RTV riser seal

- Prevents moisture from infiltrating electrical areas

#### Standardized size 1 in. (25 mm) conduit openings

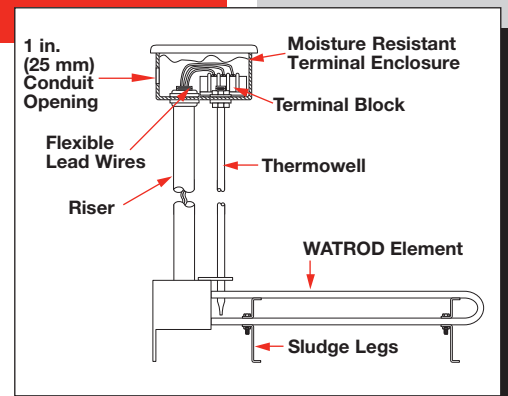
- Facilitates wiring

#### SRG insulated flexible lead wires, rated to 390°F (200°C)

- Allows factory or field wiring for three- or one-phase operation

#### Riser materials are compatible with element sheath materials such as stainless steel with alloy 800 sheath and steel with steel sheath

- Meets varying application needs
- Ensures ease of use



#### Integral thermowells

- Provides convenient temperature sensor insertion and replacement without draining the fluid being heated

#### Moisture resistant

- Standardizes enclosures

#### UL® and CSA component recognition

- 480 and 600VAC maximum under file numbers E52951 and 31388 respectively

### Typical Applications

- Water heating
- Solvents
- Freeze protection
- Salts
- Viscous oils
- Caustic solutions
- Storage tanks
- Paraffin
- Degreasing tanks

## Options (L and O Shaped)

### Terminal Enclosures

Moisture resistant terminal enclosures, without thermostats, are standard on all Watlow L and O shaped over-the-side heaters. Optional terminal enclosures meet application requirements with:

- Corrosion resistant, available with or without a single- or double-pole thermostat.
- Explosion/moisture resistant Class 1, Div. I and II, Groups B, C and D. Available with or without a single- or double-pole thermostat.

### Thermostats

Optional single- and double-pole thermostats are also available separately.

### Wattages and Voltages

Watlow routinely supplies over-the-side heaters with 240 to 480VAC as well as wattages from 3 to 18 kilowatts.

### Multiple Elements

Over-the-side immersion heaters are configured with three WATROD heating elements.

To achieve a specific kilowatt rating, Watlow can configure units with up to six heating elements.

To order, specify **multiple elements**, the **number of elements**, **volts**, **watts**, **phase** and **maximum bundle height** and **width**.

### Riser

A stainless steel or steel riser is supplied to keep terminal enclosures out of the heated solution. Stock heights are 39<sup>5</sup>/<sub>16</sub> or 51<sup>5</sup>/<sub>16</sub> in. (1000 or 1320 mm). Upon request, riser height up to 60 ft (18.3 m) can be provided.

To order, specify **riser material** and **height**.

### Right Angle Riser

Riser may be right angle formed to move the terminal enclosure away from over the tank.

To order, specify **right angle riser** and **dimensions**.

### Sludge Legs

Four inch (100 mm) sludge legs are supplied on all stock units to keep elements above sediments. Shorter or longer sludge legs are available upon request.

To order, specify **sludge legs** and **height**.

### Sheath Material

Stock O and L shaped over-the-side heaters come with alloy 800 or steel sheaths.

To order, specify the **sheath material**.



### Caution

Explosion-resistant terminal enclosures are intended to provide explosion containment in the electrical termination/wiring enclosure only. No portion of the assembly outside of this enclosure is covered under this rating. Rating effectiveness may be compromised by abuse or misapplication.

### Thermocouples

ASTM Type J or K thermocouples offer more accurate sensing of process and/or sheath temperatures.

A thermocouple may be inserted into the thermowell or attached to the heater's sheath.

Thermocouples are supplied with 120 in. (3050 mm) leads (longer lead lengths available). Unless otherwise specified, thermocouples are supplied with temperature ranges detailed on the Thermocouple Types chart.

Thermocouples require an appropriate temperature and power controller. These must be purchased separately. Watlow offers a wide variety of temperature and power controllers to meet virtually all applications. Temperature controllers can be configured to accept process variable inputs, too. Contact your Watlow representative for details.

To order, specify **Type J** or **K** thermocouple, **lead length**, and indicate if it is for measuring **process** temperature or as a **high-limit** sensing device.

### Thermocouple Types

ASTM Type	Conductor Characteristics		Recommended Temperature Range	
	Positive	Negative	°F	(°C) ①
J	Iron (Magnetic)	Constantan (Non-magnetic)	0 to 1000	(-20 to 540)
K	Chromel® (Non-magnetic)	Alumel® (Magnetic)	0 to 2000	(-20 to 1100)

① Type J and Type K thermocouples are rated 32 to 1382°F and 32 to 2282°F (0-750°C and 0-1250°C), respectively. Watlow does not recommend exceeding temperature ranges shown on this chart for the tubular product line.

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