

# IMMERSION HEATERS

## CR RANGE



### CR RANGE APPLICATION

The CR range of immersion heater is designed to heat water or various chemical solutions in industrial, pharmaceutical, food processing and anti-frost applications or for domestic hot water heating (DHW) in very hard water areas.

The CR range features a ceramic core heating element which is fitted inside a metal sheathed element tube. The ceramic core heating element can be withdrawn from the heater without removing the heater from the vessel. This is particularly advantageous where it is not practical to drain the vessel in order to inspect or replace the element, minimising down time and maintenance costs.

All models are fitted with a robust, water-tight, cast aluminium enclosure rated to IP66 suitable for indoor or outdoor applications or for use in damp or humid conditions.

Models are available in single and three phase configurations. Higher kW loadings can be supplied. Please contact our Technical Department.

### STANDARD RANGE

The CR range of immersion heater is designed to heat water or chemical solutions in tanks or fitted to large storage vessels for anti-frost protection. The elements have a low mean Watts Density of 3.1 W/cm<sup>2</sup> (20 W/in<sup>2</sup>) for copper and 2.5W/cm<sup>2</sup> (16 W/in<sup>2</sup>) for stainless steel making this design more suitable for hard or aggressive waters and certain chemical solutions.

Models are available with a brass boss and copper element tube or a 316L stainless steel boss and 316L stainless steel element tube. Loadings up to 6kW are available in single and three phase configurations

### Copper Element Tube and Brass 2½" BSP Boss

LIST No		kW LOAD @ 240/415V	No. OF PHASES	IMMERSED LENGTH mm(in)
Thermostat Range 3-55°C	Thermostat Range 30-90°C			
CR106	CR206	1	1	280 (11")
CR111	CR211	1.5	1	380 (15")
CR107	CR207	2	1	480 (19")
CR108	CR208	3	1 or 3	700 (28")
CR109	CR209	4.5	1 or 3	1000* (39")
CR110	CR210	6	1 or 3	1300* (51")

### 316L Stainless Steel Tube and 2½" BSP Boss

LIST No		kW LOAD @ 240/415V	No. OF PHASES	IMMERSED LENGTH mm(in)
Thermostat Range 3-55°C	Thermostat Range 30-90°C			
CR306	CR406	1	1	320 (13")
CR311	CR411	1.5	1	440 (17.3")
CR307	CR407	2	1	600 (24")
CR308	CR408	3	1 or 3	850 (34")
CR309	CR409	4.5	1 or 3	1200* (47")
CR310	CR410	6	1 or 3	1600* (63")

Note: if heater is over 1m long, it is important to support the element tube inside the vessel.

### SPECIALIST APPLICATIONS

The CR range is primarily used for the applications listed above, however it can be used for other applications or manufactured to a non-standard design. Alternative boss sizes are a popular variation to this range. If a flanged fitting is required please see our RF range. For oil and caustic applications please refer to our HO and HF ranges. For fire water tanks please refer to our FW range. To obtain a quotation or further information please contact our Technical Department.

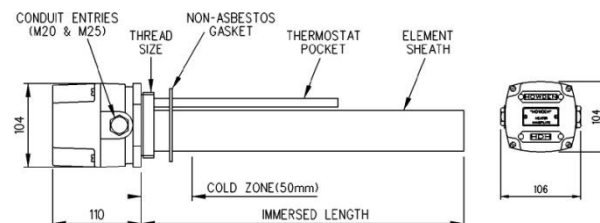
### MOUNTING

Heaters are suitable for horizontal screwed mounting, however vertical mounting heaters can be supplied. Please contact our Technical Department.

To avoid localised boiling or air locks, care should be taken to ensure the cold zone extends beyond any neck piece. Longer cold zones are available. Please contact our Technical Department

The standard fixing boss is threaded 2½" BSP, however alternative thread sizes are available including NPT threads. Please contact our Technical Department.

The heater is supplied with a WRAS approved fibre gasket.



### TEMPERATURE CONTROL

Standard models are supplied with a factory fitted control thermostat, with a range of 37-90°C rated to 20 Amps and an over-temperature, manual reset, safety cut-out thermostat, with a range of 45-95°C rated to 16 Amps. Alternative thermostat ranges are available. Please contact our Technical Department.

Where the current consumed exceeds the thermostat rating, the heater must be wired through a contactor switch. A contactor switch must be fitted on all three phase supplies.

Control panels can be supplied incorporating all necessary controls. Please refer to our TC range.

### OPERATING TEMPERATURE & PRESSURE

Standard models have a maximum design temperature of 90°C and a maximum operating temperature of 55°C or 75°C depending on the thermostat fitted. The maximum operating pressure is 6 Bar. Higher operating temperatures and pressures can be supplied. Please contact our Technical Department.

### VOLTAGE

Single phase heaters from our standard range are designed to operate at 230/240V and three phase heaters at 400/415V.

Non-standard models can be supplied designed to suit operating voltages from 110V to 480V AC or DC. Please contact our Technical Department.

### CONSTRUCTION

Immersion heaters are manufactured generally to BS7798.

The element tube is either brazed, using silver solder, or welded into a 2.5" BSP fixing boss. The boss material on standard models is either brass or stainless steel, however alternative boss materials are available e.g. mild steel.

The terminal enclosure is cast aluminium, impact-resistant and rated to IP66 with two conduit entries (M20 and M25).

### COMMON VARIATIONS

Please contact our Technical Department for further details.

- Various operating voltages in single or three phase star or delta.
- Higher kW loadings.
- Smaller BSP sizes, however the thermostats may require to be mounted separately.
- NPT Threads.
- Alternative boss material, e.g. mild steel.
- Alternative element tube materials such as mild steel.
- Longer cold zones.
- Alternative thermostat ranges e.g. 55-120°C.
- Higher operating pressures and temperatures.