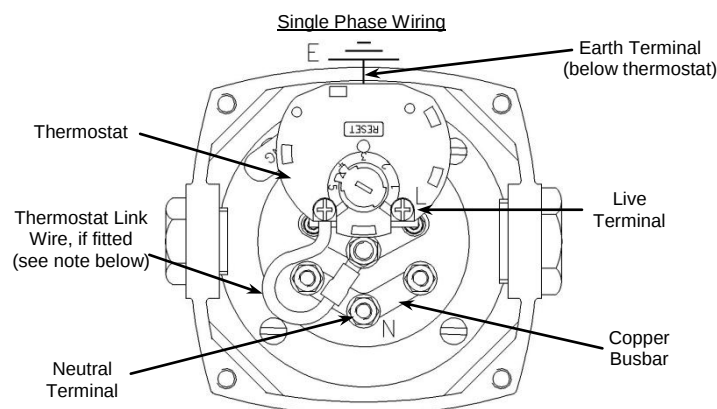


WR RANGE DATA SHEET THREE ELEMENTS

This data sheet applies to the 'WR' range of immersion heaters fitted with three heating elements. The heater is suitable for connection to either single phase or three phase supplies. Refer to the List Number table below for the number of phases. This data sheet shows the terminal layout, a suggested wiring layout and the detailed specification of the heater. All electrical wiring must be carried out by a qualified person and must comply with the current IET Wiring Regulations to BS7671.

If required, suitable **contactors** (as tabled below) or **control panels** can be supplied by Howden Electric.

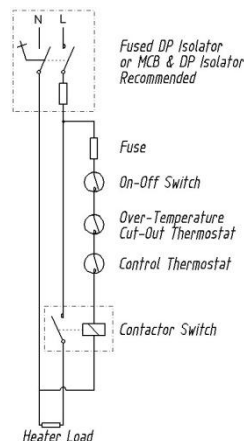
Warning: This Appliance Must Be Earthed



For heaters drawing more than 20A (4.8kW at 240V), the Thermostat Link Wire to the busbar, as shown above, must be removed and the heaters wired through a contactor.

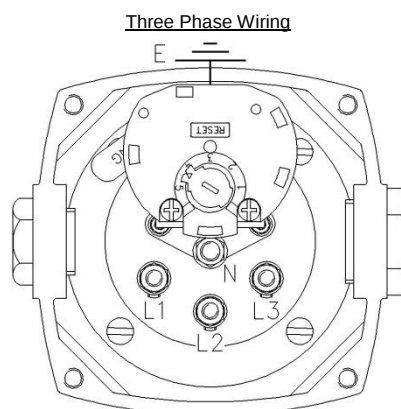
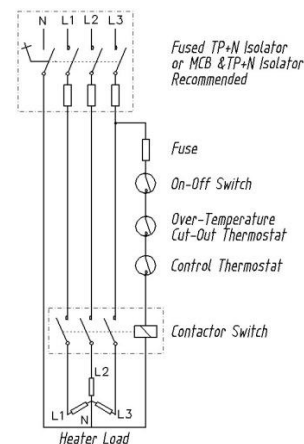
Suggested Wiring Layout

Where the mains incoming supply is single phase and the heater draws more than 20A (4.8kW at 240V) per circuit, a contactor switch is required.



Suggested Wiring Layout

Where the mains incoming supply is three phase, or where the heater draws more than 20A (4.8kW at 240V) per circuit, a contactor switch is required.



To wire for three phase, the copper busbar linking the bottom terminals and the Thermostat Link Wire to the top busbar must be removed, as shown above.

TECHNICAL SPECIFICATION

Phases.....: Either single phase or 3 phase, 4 wire 'Star'. See table below.
 Number of Circuits.....: One
 Boss Material.....: Brass
 Gasket Material.....: 3mm Thick Non-Asbestos Fibre, WRAS Approved
 Element Material.....: Nicalloy 825
 Element Fixing.....: Fixed Elements
 Thermostat Pockets.....: Stainless Steel 1.4404 (316L)
 Thermostat.....: WTS Type, 20-70°C Control, 85°C Cut-Out, 20 amps
 Terminal Enclosure.....: IP66 Painted Cast Aluminium
 Maximum Design Temperature.....: 90°C
 Maximum Operating Temperature.....: 70°C
 Maximum Operating Pressure.....: 6 bar (10 bar where a sound seal to the mating boss is achieved. A copper gasket is recommended. See Below.)
 Withdrawal Distance.....: Immersed Length + 110mm

List Number			kW Load at 240/415V	Number of Phases	Immersed Length mm (in)	Cold Zone mm	Watts Density W/cm ²
2.5"BSP	2.25"BSP	2"BSP					
WR201	WR401	WR601	1	1	280 (11)	25	8.7
WR202	WR402	WR602	2	1	280 (11)	25	9.2
WR203	WR403	WR603	3	1 or 3	280 (11)	25	8.7
WR204	WR404	WR604	3	1	760 (30)	25	7.8
WR205	WR405	WR605	4.5	1 or 3	380 (15)	25	9.0
WR206	WR406	WR606	6	1 or 3	280 (11)	25	9.2
WR207	WR407	WR607	6	1 or 3	480 (19)	25	9.2
WR208	WR408	WR608	6	1 or 3	760 (30)	100	6.5
WR209	WR409	WR609	7.5	3	610 (24)	100	9.1
WR210	WR410	WR610	9	3	530 (21)	25	9.4
WR211	WR411	WR611	9	3	690 (27)	25	9.4
WR212	WR412	WR612	9	3	915 (36)	100	7.8
WR213	WR413	WR613	12	3	610 (24)	100	9.1
WR214	WR414	WR614	12	3	915 (36)	100	9.1
WR215	WR415	WR615	15	3	690 (27)	100	9.3
WR216	WR416	WR616	18	3	690 (27)	25	9.4
WR217	WR417	WR617	18	3	915 (36)	100	7.8
WR218	WR418	WR618	24	3	915 (36)	25	9.2

SUITABLE CONTACTORS

List Number	Maximum Load
CT107	6kW, 240V, 1 phase
CT101	12kW, 415V, 3 phase
CT102	15kW, 415V, 3 phase
CT103	18kW, 415V, 3 phase
CT104	24kW, 415V, 3 phase
CT105	30kW, 415V, 3 phase
CT106	36kW, 415V, 3 phase

COPPER GASKETS

List Number	Description
SP151	2" BSP Copper Gasket
SP152	2.25" BSP Copper Gasket
SP153	2.5" BSP Copper Gasket