

## CENTRAL HEATING UNIT CU4 3-phase 230V, ASSEMBLY AND INSTALLATION

### 1. CONSTRUCTION

Central heating unit CU4 consists of two-pole thermostat and three-pole over-temperature cut-out device. Loval central heating units are assembled of the following components (Picture 1):

Immersion heater UKT 323, UTT 323 or UKT 623 (2000 – 6000 W, 3-phase 230 V)  
Terminal box S7, including thermostat and over-temperature cut-out, c/w terminal block and internal wiring.  
Stand-off (100 mm, 150 mm or 200 mm) 100 mm as standard.

### 2. ASSEMBLY AND INSTALLATION

#### Mounting of immersion heater

Screw on the immersion heater (1) together with the gasket onto the mating boss on the boiler. Check that the thread size and the immersed length of the heater are suitable for the boiler. If supplied gasket is not sufficient, the boss can be sealed with hemp packing and sealing putty. The operating position of the immersion heater is not restricted, however, it must be completely immersed in water. If the mating boss on the boiler is inside thermal insulation, use a suitable stand-off between the heater boss and the terminal box. If no stand-off is required, continue to section “Installation without stand-off”

#### Installation with stand-off (Pictures 1 and 2)

The supplied long wires (9) are terminated to the terminal screws of the immersion heater. Screw on the studs (10) to the element boss. Then put on the stand-off (11) over the terminal wires and studs. Open the lid (6) of the terminal box and mount the base of the box (2) onto the stand-off, using the clamp ring (3). Remove the screws on the clamp ring and secure the box using the nuts on the studs. The pre-installed over-temperature cut-out (5) has to be removed. Push the bulbs of the temperature cut-out and thermostat into the pocket tube of the heater, shorter one first.

Terminate the wires from the element terminals L2 and L3 to the push-on terminals 12 and 32 of the thermostat. Terminate the wire from terminal screw L1 to the push-on terminal 12 of the over-temperature cut-out. The pre-installed yellow-green earth wire is terminated to the push-on terminal on the fixing stud of the stand-off. Next mount back the over-temperature cut-out. Make sure not to loosen the push-on terminals. The supply cable can now be connected. Strip back the earth wire slightly longer than the phase wires.

Terminate the phase wires L1, L2 and L3 to terminals L1, L2 and L3. Terminate the earth wire to the PE terminal on the terminal block (marked with earth symbol). When fixing the lid, make sure that the wires do not get caught between the lid and the base or between different components.

#### Installation without stand-off (Pictures 1 and 2)

Open the lid (6) of the terminal box and mount the base of the box (2) onto the heater boss, using the clamp ring (3). Place a push-on earth terminal under one of the screws. The pre-installed over-temperature cut-out (5) has to be removed. Push the bulbs of the temperature cut-out and thermostat into the pocket tube of the heater, shorter one first. Terminate the wires from the element terminals L2 and L3 to the push-on terminals 12 and 32 of the thermostat. Terminate the wire from terminal 1 to the push-on terminal 12 of the over-temperature cut-out. The pre-installed yellow-green earth wire is terminated to the push-on terminal on the fixing screw of the heater boss.

Next mount back the over-temperature cut-out. Make sure not to loosen the push-on terminals. The supply cable can now be connected. Strip back the earth wire slightly longer than the phase wires. Terminate the phase wires L1, L2 and L3 to terminals L1, L2 and L3. Terminate the earth wire to the PE terminal on the terminal block (marked with earth symbol). When fixing the lid, make sure that the wires do not get caught between the lid and the base or between different components.

### Installation of thermal insulation

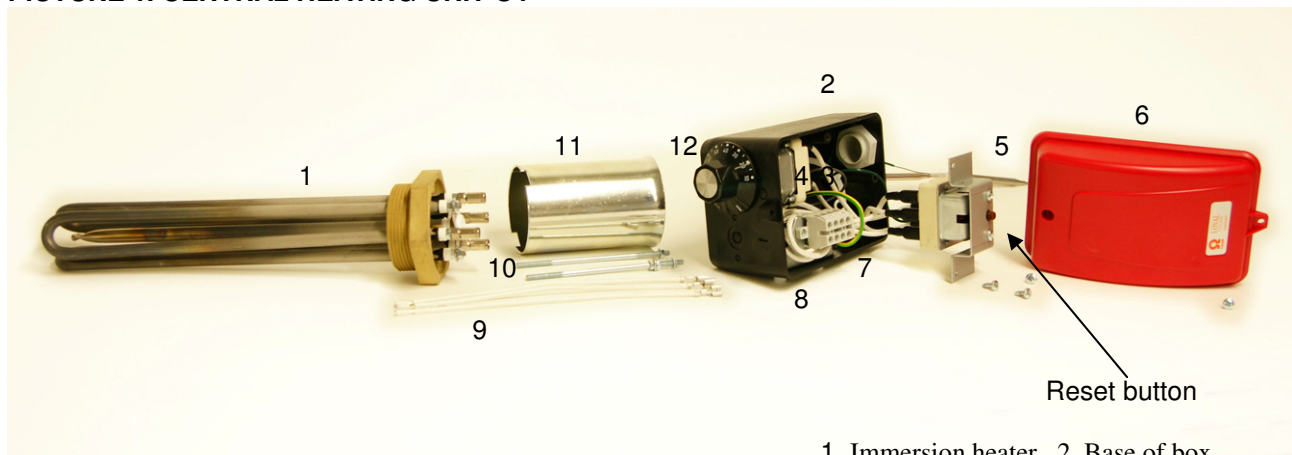
Make sure that the thermal insulation of the boiler is tightly around the stand-off. This ensures as small thermal conduction as possible into the terminal box. The supply cable and the terminal box have to remain outside of thermal insulation.

### Notes on electric installation

The type plate on the terminal box lists various alternative powers and the differential  $\pm 2^{\circ}\text{C}$  of the thermostat. Tick the correct power on assembly. The supply cable must be suitable for the chosen power. If the stand-off is sufficiently high and in accordance with this instruction, then plastic sleeved supply cable (MMJ) can be used. If no stand-off is used, the temperature rating of the supply cable must be min.  $170^{\circ}\text{C}$ . A switch must be provided to enable switching off of all phases of the unit from the mains supply.

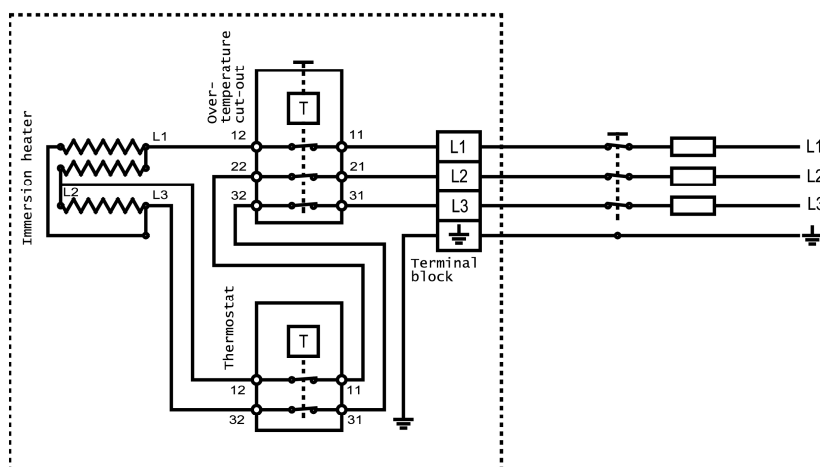
**If the heater doesn't work for some reason: first press the brown reset button on the over-temperature cut out to check that the cut out has not operated.**

PICTURE 1. CENTRAL HEATING UNIT C4



- |                       |                         |
|-----------------------|-------------------------|
| 1. Immersion heater   | 2. Base of box          |
| 3. Clamp ring         | 4. Thermostat           |
| 5. Cut-out            | 6. Lid of box           |
| 7. Terminal block     | 8. Terminal block wires |
| 9. Heater screw wires | 10. Fixing studs        |
| 11. Stand-off         | 12. Control knob        |

The two-stage switching of the thermostat enables accurate temperature control. The temperature difference of the two stages is  $4^{\circ}\text{C}$ .



PICTURE 2.  
WIRING DIAGRAM OF CENTRAL HEATING UNIT C4