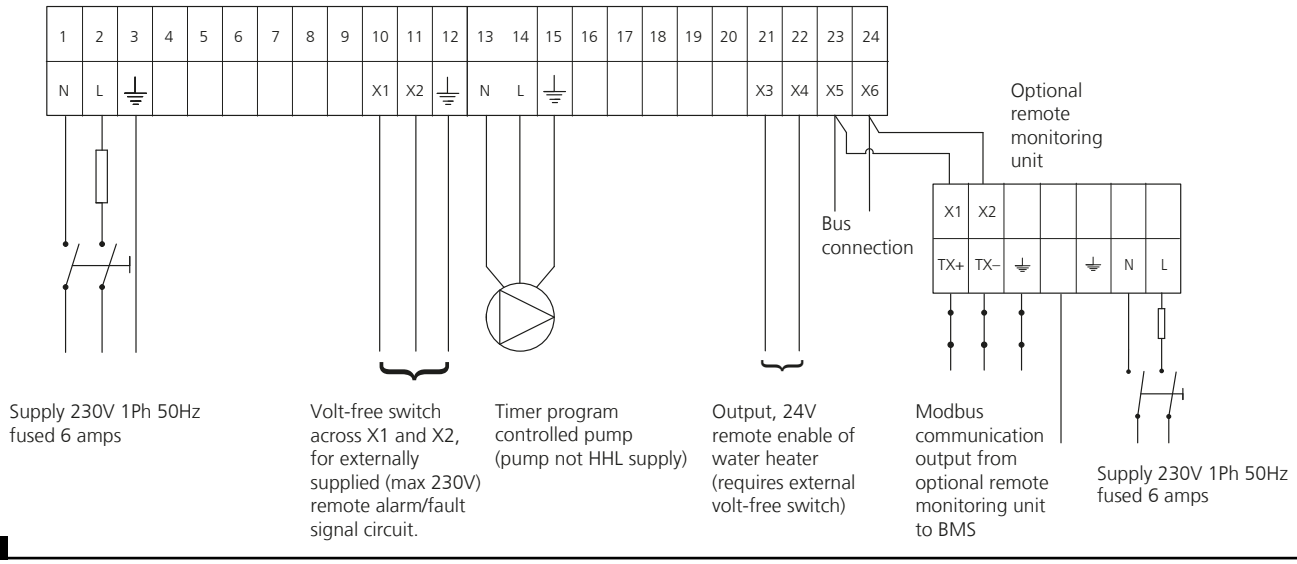
Electrical Details

Dorchester DR-FC Evo

The following electrical connections are provided on each water heater:

- Supply live, neutral and earth
- Alarm signal output (volt free contact)
- Timer programmed pump output
- Remote enable of water heater
- Bus connection for optional remote monitoring unit.

Fig 1 Control Panel Terminal Block (top of water heater)



Electrical Connections

The electrical connection junction box is located within the upper casing section of the water heater to accept cables for power supply and controls. A single terminal rail is located within this junction box for all external connections.

Power Supply

An independent isolator and fused electrical supply is required for each water heater and remote monitoring unit for interfacing with a building management system (BMS). Supply 230 volt, 50Hz, single phase.

Wiring external to the heater and any optional remote monitoring unit must be in accordance with IET regulations and any local regulations which apply. Wiring must be completed in heat resistant cables, and mains supply cables should be 3-core cable, size 1.00mm2. External fuses should be 6 Amp.

Remote Alarm/Fault Signal

In the event of the water heater developing a fault, a common alarm signal is raised, which closes a normally-open volt-free switch to connect terminals X1 and X2 together. This can be used to complete a circuit switching on an externally powered (maximum 230V) fault indication lamp or alarm circuit (not HHL supply). At the same time as the switch is made, an error code associated with the fault is generated and displayed at the control panel to aid fault diagnosis.

Programmable Timer-controlled Pump

A 230V 50Hz single phase timer-controlled supply is provided for the direct control of a single pump only (maximum rating 150W) for system recirculation or top-to-bottom recirculation. If more than one pump is to be controlled at the same time by the water heater, then these should be supplied separately via contactors using the program controlled 230V power supply as the switching control signal. Pump operation can be co-ordinated to operate in tandem with the anti-legionella cycle as well as any programmed ON period.

Remote Enable

For external timer, BMS control, or remote manual control, each water heater can be controlled via a remote enable circuit, which, if enabled, switches ON the combustion heating circuit of the water heater, overriding the water heater's internal time clock program while ON.

The remote enable circuit operates at 24V supplied by the water heater with the water heater enabled when X3 and X4 are connected. Therefore any external control relay or switch wired across X3 and X4 must use volt-free contacts rated to 24V 1A with resistance no greater than 150Ω when closed. Wiring is not provided.

Optional Remote Monitoring Unit

Stored data can be made available to a BMS (Building Management System) via an optional Remote Monitoring Unit which act as an interface between the water heater controller and the BMS, converting the data into Modbus format.

The remote monitoring unit requires 230V 1ph 50Hz supply. Communication between the water heater remote monitor unit and BMS is via a 2-wire low-voltage communication bus.