



ITS Motorised 3 way ball valves

The ITS Moto 15-3 and Moto 20-3 are 3 way motorised ball valves which are switched using a 220VAC signal, in a 15mm and 20mm thread configuration. The following document describes their operation, and the preferred connection method.



Figure 1: Front view of Moto 15-3

1.1 Water connections

When seen from beneath the different connections are numbered as shown in the figure below.

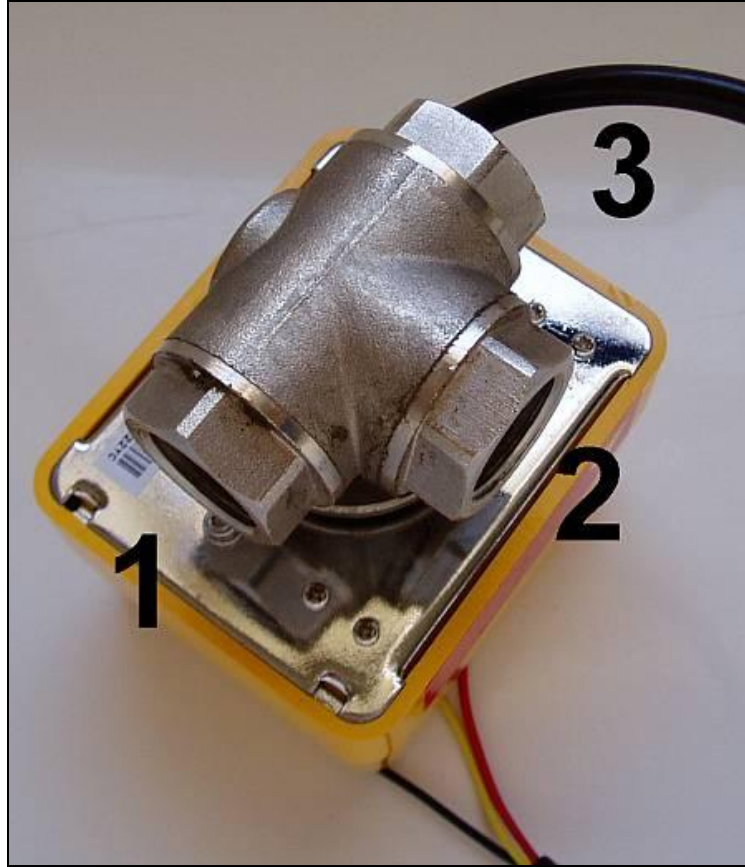


Figure 2: Bottom view of Moto 15-3

The common terminal is Port 1, and the default flow path should be between Port 1 and Port 3. With the alternate flow path between Port 1 and Port 2.

1.2 Electrical connections

There are 3 wires for controlling the ball valve, namely Black, Red and Yellow. Black is the neutral terminal and Red and Yellow control which water line is selected.

Water path	220 V AC applied
Port 1 and Port 3 (default)	Black and Red
Port 1 and Port 2	Black and Yellow

1.3 Controller connections

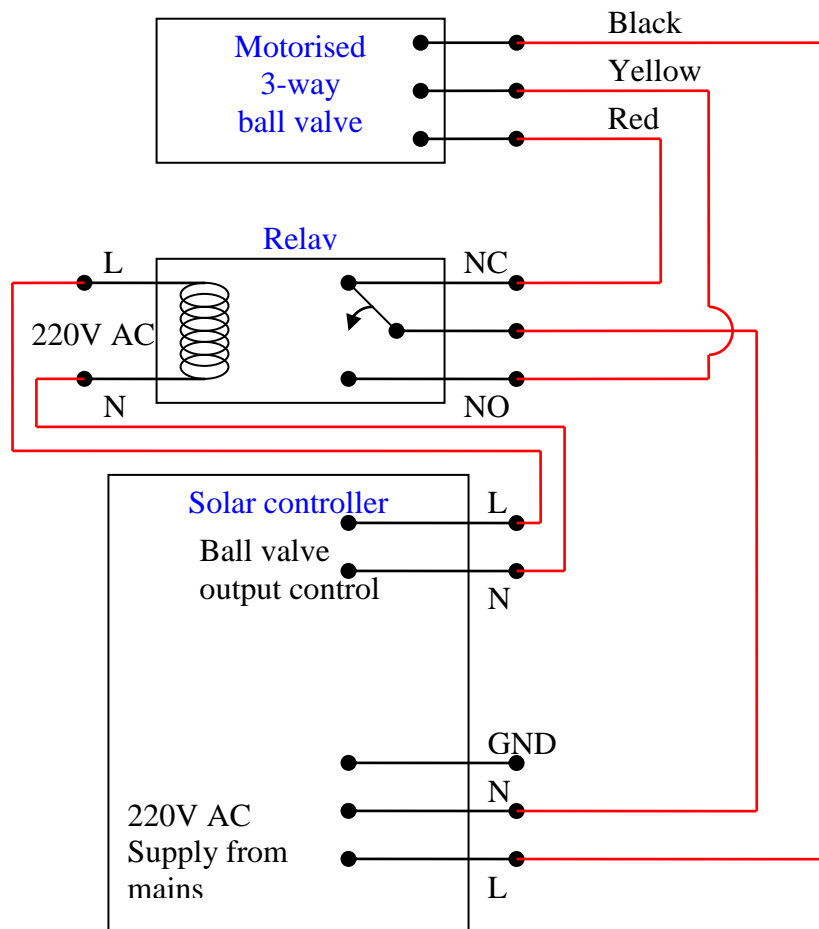
If the controller used for driving the ball valve has only got a 2 terminal output instead of a 3 terminal output then it is necessary to add an additional relay. It needs to be a Single Throw, Double Pole 220 VAC relay with a minimum of 1 Amp rating.

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The wiring diagram for this port extension is described below.



The 220V AC mains are branched off from the supply rail of the solar controller, with the Live connection going to the Black wire on the ball valve, and the neutral terminal connecting to the common connections on the relay.

The 2 terminal 220VAC output port from the solar controller is used to drive the relay coil for selecting between NO (Normally Open) and NC (Normally closed).

The Red wire of the ball valve is connected to the NC connection on the relay.

The Yellow wire of the ball valve is connected to the NO connection of the relay.

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