

# TCM5PS

## Pump and Mains Water Top-Up Control

### Installation and Operation Manual



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## Description of Operation

TCM5PS is intended to manage a submerged single phase pump and control mains water top-up to the same tank to ensure the availability of water when the level becomes low, with a measured amount of mains water.

Pump control is managed by a Brio pressure switch unit which will start and stop the pump as needed based on pressure in the discharge pipework.

Water level in the tank is sensed via a float switch, and top-up of mains water is achieved via a solenoid valve connected to the mains water supply, feeding back to the rainwater tank from the building.

The solenoid will be activated when the float switch reaches a downward angle of approx 45deg or more, the top-up cycle will then continue until the float switch reaches an upward angle of approx 45deg, thereby ensuring a measured quantity of water is introduced to the tank and avoiding unnecessarily frequent top-ups.

***The supplied tundish is a mandatory requirement in the UK designed to prevent contamination of the mains water supply when introducing mains water to a rainwater system.***

## Supplied Components

- Float-switch with weight, 15m or 20m cable, and connector.
- Brio pump controller
- Solenoid valve
- Tundish and fittings
- Galvanised wall mounting plate
- Power cable with moulded plug.

## Installation

### Safety Precautions

Mains Voltage – There are exposed electrical conductors inside this appliance. This appliance must be installed and serviced by a competent electrical technician to the current requirements of BS7671 and IEEE recommendations. Before servicing this appliance, normal safe isolation procedures should be implemented.

Do not touch any connection terminals while energised.

Do not attempt to service this item when wet, or in a wet or high humidity environment.

If the housing of the control panel becomes damaged, you must shut down and securely isolate this appliance immediately.

## ***Control Unit***

The bracket assembly along with attached controller and solenoid should be installed indoors, in a location protected from freezing temperatures. It is small enough to be situated beneath a kitchen sink or unit, although other common locations for installation include utility rooms and adjoining garages. The most convenient location is often dictated by the location of the service duct supplying the rainwater tank, as this is typically the route by which mains water will be fed into the tank via a 50mm pipe or hose. All components are designed for wall mounting.

Discharge pipework from the pump to the building must pass through the E-Control box (pressure controller), this must also be considered when selecting an installation location.

Note that the pumped water from the tank must not pass through the solenoid valve, and the mains water supply does not connect to the pump controller, these are 2 separate water circuits.

To fit the bracket, screw to a wall or suitable surface through the mounting holes.

## ***Tundish and Solenoid Valve***

The tundish and solenoid are held via the steel bracket.

The air gap as supplied is compliant with BS EN 13076:2003. Modification of the solenoid & tundish arrangement may void compliance.

## ***Float Switch***

Connect the float switch via it's 3 pin plug to the control box.

The float switch is installed in the rainwater tank, and switches the controller on when hanging downward at an angle of 45 degrees or more. It will then switch off when the float lies upwards at an angle of 45 degrees or more. For this reason you must ensure that the weight supplied is set correctly in order that the float pivots around a fixed level. If this is not done, the float is likely to sit horizontally on the surface of the water until the tank is full, which wastes water and may cause the tank to overflow.

The activation level of the float switch (pointing downward) should be above the intake level of the pump intake. If a floating intake is present the float switch should activate above the top of the pump. Allow sufficient depth of water for adequate frost protection during winter (usually 100mm or more).

## ***Adjustment***

The amount of water topped up into the tank can be adjusted by moving the weight relative to the float. A shorter distance results in less water being topped up, a longer distance will top up with more water.

You should ideally top up with only a minimal amount of water. However, allowing a greater amount of top-up water can help to meet peak demands where the pump may be drawing water faster than the solenoid can fill the tank. This can be a particular issue in areas where mains water pressure may be low, or where water is used at a high rate, such as washing down yards, filling bowzers, etc.

## **Operation**

### ***Safety Precautions***

Mains Voltage – There are exposed electrical conductors inside this appliance. This appliance must be installed and serviced by a competent electrical technician to the current requirements of BS7671 and IEEE recommendations. Before servicing this appliance, normal safe isolation procedures should be implemented.

Do not touch any connection terminals while energised.

Do not attempt to service this item when wet, or in a wet or high humidity environment.

If the housing of the control panel becomes damaged, you must shut down and securely isolate this appliance immediately.

### ***Adjustments***

Operation is automatic. There are no adjustments to be made at the control unit.

### **Non-weighted float cables**

The level around which the system starts and stops the top-up cycle can be adjusted by moving the point at which the float cable is attached within the tank.

The top-up duration can be adjusted by increasing or decreasing by the length of free cable to the float.

### **Weighted float cables**

If your float switch has a weight attached along its length, the position of that weight can be adjusted. You may need to secure it with a cable tie.

The level around which the system starts and stops the top-up cycle can be raising or lowering the float into the tank.

The top-up duration can be adjusted by increasing or decreasing by the length of free cable between the float and the weight.

## Specifications

### ***Control Unit***

Supply Voltage	230-240Vac 50Hz
Supply Cable	2m
Pump Supply	10A max
Ingress Protection	IP54
Material	PP

### ***Solenoid***

Supply voltage	230-240 Vac 50 Hz
Connection cable	2 m
Power consumption	5.5 VA to 20VA (excluding pump)
Medium	Clean water
Mounting position	Wall mount
Function	Normally Closed
Max pressure	10 bar
Ingress Protection	IP54 or above