Ultraflow Smart Switch

Description

The self-calibrating Ultraflow Smart Switch has been designed to switch the pressure controlled submersible Ultraflow Maxi Pump fitted in caravans, motor homes and other vehicles. It is not approved for installation in boats.

The inline adaptive system measures the performance of your submersible water pump and constantly adjusts the start and stop pressures to suit the water pump and battery voltage. If the water container runs dry the water pump is stopped after a short time, and the pressure switch locks out to prevent damage to the water pump until the water is refilled. Due to the integrated processor there are no adjustments to be made.

Safety intructions

- Use the switch only in a technical flawless condition.
- The power supply has to be rated with 6.3 AT (slow).
- The cable terminals have to be fitted completely and firmly.
- The system has to be drained in danger of frost.
- In combination with a mains water supply a pressure reducer is absolutely necessary.
- If the safety instruction are not respected, it results in forfeiture of our product liability.

Technical data

Power supply	12 V DC
Maximum power consumption, water pump	5 A (36 W)
Standby power consumption	5 mA (60 mW)
Fuse	5 - 6.3 AT (slow)
Max. operating water pressure	2.1 bar / 30 psi
Connection diameter	12 mm
Medium	Drinking water 5 °C to 30 °C

CE

The right to effect technical modifications is reserved!

Principle of operation, Maintainance

First steps

Fill the aquaroll with water and fit the pump into the socket.
Close all taps and drain valves.
Switch on the on-board power supply.
Switch on the pump power supply.

Initialization

Now the Truma Ultraflow Smart Switch looks for the pump to raise a system pressure above 0.7 bar (10.1 psi). If this condition is met the pump continues to run for approximately 7 sec until it stops. Whatever maximum pressure is reached is remembered by Ultraflow Smart Switch and providing that the voltage across the pressure switch is maintained this is referred to for future pump operations.

In the event that the pressure of approximately 0.7 bar (10.1 psi) is not reached (for example if the system is being purged of air with the taps open) the pump will continue to run until the taps are closed.

After a purge cycle the tap may have to be used two or three times in order for full pressure to be attained. In order to give the system time to purge the dry run feature is inhibited for a period of three minutes from the initial switch on.

Assuming that the system is now full of water, the tap closed and the pump has stopped, the pressure in the system is likely to be in the range of 0.9 - 1.2 bar (13 - 17 psi – target pressure) dependent on voltage and the example of pump used.

Normal use

If a tap is opened the pump will start to run when the pressure in the system drops to the target pressure less 0.2 bar (2.9 psi). After the tap is closed and target pressure less 0.1 bar (1.5 psi) is again reached the pump will continue for approximately seven seconds then stop.

Voltage reduction

In the event of a reduction of voltage the target pressure and all associated switch on/off pressures are adjusted downwards. If the values are reduced too much this does not matter as the next time the tap is closed the pump will push them back up.

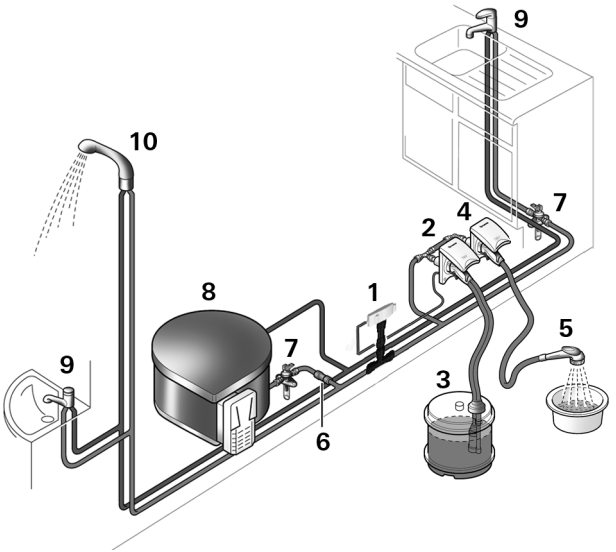
Dry-run protection

Finally in the event that the pump is running but pressure is below 0.25 bar (3.6 psi) the unit switches off the pump and locks out in order to protect the pump knowing that the water supply has run out. After the water container has been refilled the power should be removed from the system for a period of approximately three seconds then re-connected. The unit will then operate normally.

All pressures quoted above are for example only and in practice may vary slightly.

Installation to the cold water pipe

For a precise function the smart switch should be installed nearby the pump connector (Compact housing or Filter housing) and only in the coldwater pipe using a 12 mm John Guest T-piece. The switch has to be fixed in a vertical position in order to avoid water draining into the sensor. Even if the sensor is specified to get in contact with water that would cause the risk of destruction in case of frost. Please ensure a strong and tight junction between the switch and the JG T-piece.



Installation example

1 Smart Switch
2 Compact housing
3 Pump assembly
4 Shower housing
5 Shower assembly
6 Non-return valve
7 Safety/drain valve
8 Ultrastore
9 Water taps in bathroom and kitchen
10 Shower assembly

Electrical wiring

Left: 12 V DC supply fused with 6.3 AT (slow)
Center: negative pole of the pump
Right: negative pole of the battery or on board supply (GND)

The use of isolated 6.3 mm cable terminals is mandatory to avoid the risk of short circuits. For the same reason push the cable shoe connections/terminals completely over the connector.

In case of unintended reverse polarity the switch will probably not work correctly but due to the integrated protection it will not be destroyed.

Fixation on wall or floor

To avoid water getting in the sensitive pressure sensor which could result in frost damages the Ultraflow Smart Switch must be stabilized in a nearly vertical position.

Installation example

GB Always notify the Truma Service Centre or one of our authorised service partners if problems are encountered (see Truma Service book or www.truma.com).

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