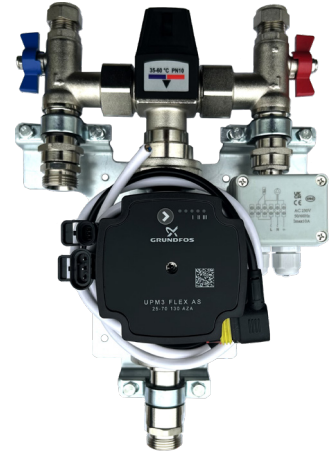


Single Zone Mixing Pack

Designed for use on small rooms or extensions, provides temperature controlled mixed water to underfloor heating systems with a heat output of upto 3kW, satisfying underfloor heating areas up to 40 sqm.

- Compact bolt-on unit providing quick and simple installation
- Provides mixed temperature water to underfloor heating systems with a heat output up to 3Kw
- Easy set up with adjustable temperature range
- Controls flow temperature +/-2°C even with fluctuating temperature and flow from boiler
- ‘A’ rated circulating pump

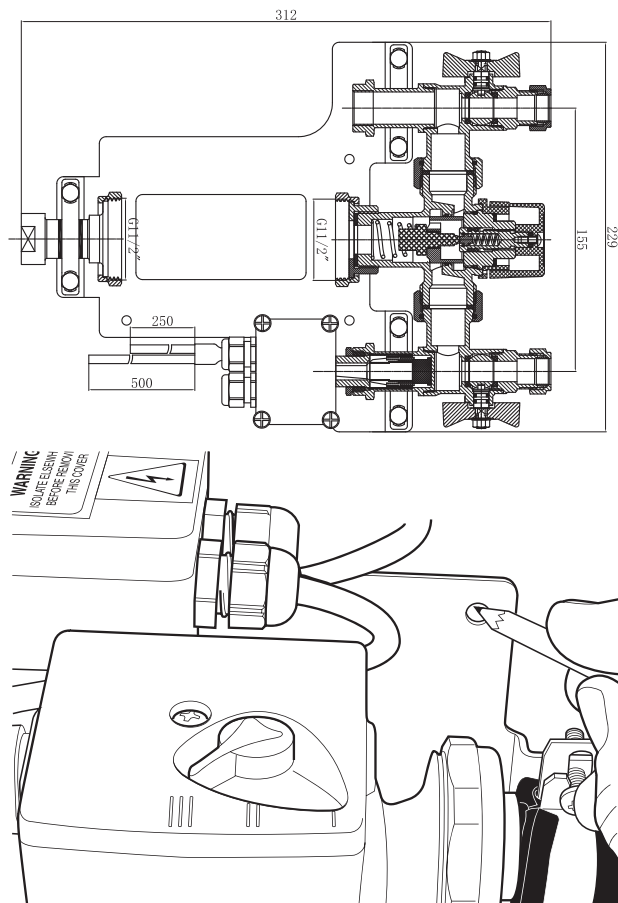


Product Code	Product Description
TIOSZP0001	Single Zone Mixing Pack

General

Provides control of flow and return water temperature in an underfloor heating system. The pump is pre-wired in conjunction with a flow temperature thermostat and mains connection cable and has provision to connect a room thermostat. The unit has integral ball valves for connecting/isolating the primary heating system, an adjustable thermostat blending valve and an ‘A’ rated 6 meter circulating pump all secured to a fixing bracket with anti-vibration mountings for silent operation.

Connections & Dimensions



Installation

The Single room UFH control pack is designed for wall fixing and ideally should be mounted in a horizontal position with the electrical connection box uppermost. However, it can also be mounted vertical to pump up or down if desired. Provision should be made to vent air to protect pump from cavitation. The unit must not be floor mounted or in any position that inclines the pump shaft vertical. Refer to the pump installation leaflet enclosed. Choose the location for the unit ensuring adequate clearance and accessibility for pipe work and any subsequent maintenance. This is particularly important if enclosed within a cupboard space for example. Locate the unit on the wall and mark the hole fixing positions through the bracket. Take care to protect any electrical equipment and cables during handling.

Remove the unit and drill (8mm masonry drill) and plug the holes. Align, and secure the unit to the wall with the screws provided. The unit is now ready for connecting to the primary heating supply and underfloor heating loops. If appropriate the unit can be connected to the underfloor heating loop(s), filled and pressurised via the integral ball valves and then locked off for floor screeding before making the boiler connection.

Maintenance

The performance of the Heatguard UFH blending valve should be checked on an annual basis and verified against the original installation performance. If the water or installation conditions are more severe this check should be carried out more frequently. If water conditions or installation conditions are severe and the valve is sluggish in operation, it is possible that there is a build up of scale or debris within the valve, it can then be stripped down and cleaned very easily:

1. Isolate the hot flow and cold return supplies and remove the valve from the installation. Make note of the orientation of the parts as they are removed so that they can be re-assembled in the correct manner.
2. To clean the internals of the main valve body, first remove the cap using an allen key, then remove the plastic locking ring, then finally carefully remove the valve headwork by unscrewing the large hex nut.

3. Slide the piston and thermostat assembly out of the valve body and clean all internal surfaces and ‘O’ rings with clean running water.
4. Using a WRARoved silicone based waterproof grease, lightly lubricate the ‘O’-ring in the body and the external surface of the piston.
5. After cleaning, re-assemble the Heatguard UFH blending valve. Reset and test the valve.

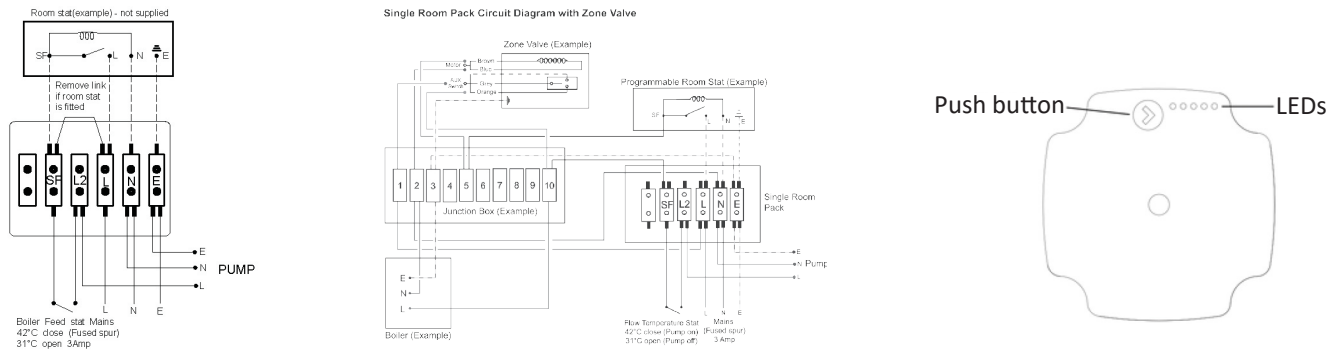
WARNING Thread sealed joints should not be rotated as this will break the seal and invalidate the warranty.

Connection Layout

All wiring should be undertaken by a qualified installer and conform to IEE regulations. To comply with IEE regulations, the pump on the unit is provided with an earth connection via the connection box. A fused spur should be provided adjacent to the unit. The mains cable should be connected to the spur and fused at 3 amps.

If a thermostat is fitted, remove the link between the terminals as indicated on the following diagrams in the next section.

Wiring Diagram



Pump control modes and functions

The user interface is designed with a single push button, one red/green LED and four yellow LEDs. The pump mixer can be attached to the heating system. Using the dimensions shown in Fig. 1, ensure that there is enough available space for installation and maintenance at the intended position.

User interface displays:

- Performance view (during operation):
 - Operation status
 - Alarm status
 - Settings view (after pressing the button):
- During operation, the display shows the performance view. If you press the button, the user interface switches the view or runs in the setting selection mode.

Alarm Status:

If the circulator has detected one or more alarms, the bi-colored LED 1 switches from green to red. When an alarm is active, the LEDs indicate the alarm type as defined in the table below. If multiple alarms are active at the same time, the LEDs only show the error with the highest priority. The priority is defined by the sequence of the table below. When there is no longer an active alarm, the user interface switches back to operation mode.

Display	Indication	Pump Operation	Counter Action
One red LED + One yellow LED (LED 5)	Rotor is blocked	Trying to start again every 1.33 seconds	Wait or unblock the shaft
One red LED + One yellow LED (LED 4)	Supply voltage too low	Only warning - pump still running	Control the supply voltage
One red LED + One yellow LED (LED 3)	Electrical error	Pump is stopped because of low supply voltage or serious failure	Control the supply voltage or exchange the pump

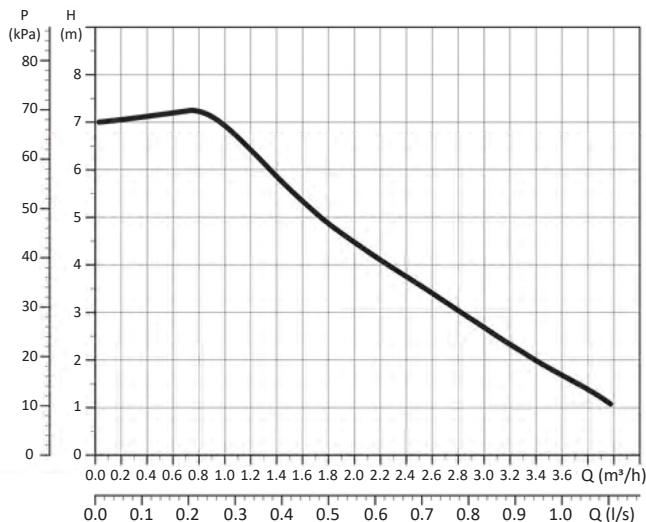
Performance View

The performance view shows either the operation status or the alarm status.

Operation Status

When the circulator is running, LED 1 is green. The four yellow LEDs indicate the current power consumption (P1) as shown in the table below. When the operation mode is active, all active LEDs are constantly on in order to differentiate this mode from the select setting mode. If the circulator is stopped by an external signal, LED 1 flashes green.

Display	Indication	Performance in % of P1 MAX
One green LED (flashing)	Standby (only externally controlled)	0
One green LED + one yellow LED	Low performance	0-25
One green LED + two yellow LED	Medium low performance	25-50
One green LED + three yellow LED	Medium high performance	50-75
One green LED + four yellow LED	High performance	75-100



Temperature Settings

The thermostatic blending valve has a temperature setting range between 35°C and 60°C. Initial setting of the thermostatic blending valve should provide the 40-45°C for screeded floors and 55-60°C for timber floors. These initial settings can then be adjusted to provide optimal comfort. A maximum floor surface temperature of 29°C should not be exceeded (bar wet areas such as bathrooms - 35°C). With timber floor finishes including strip laminate products, the maximum floor temperatures of 27°C should not be exceeded as this may result in excessive material shrinkage. Please ensure that the commissioning of the valve is done under normal operating conditions. The blending valve is supplied factory set at 43°C. To alter this setting between 35-60°C please follow the instructions below:

1. Remove the screw which secures the cap with the help of an allen key, then lift the cap off.
2. With both hot and cold valves fully open and the terminal fitting open, adjust the temperature to the desired setting.
3. Turn the cap clockwise to decrease or anti-clockwise to increase the temperature.
4. A digital handheld thermometer should be used to measure the outlet temperature correctly.
5. Re-fit the cap ensuring it is secured through the slots on the locking ring so that the valve cannot be adjusted by the end user.