



MANIFOLDS & WATER TEMPERATURE CONTROL

Weather Compensated Control Pack (WC250)



The Weather Compensated Control Pack WC250 is a pre-assembled water blending and pumping unit which is designed to be connected, via ball valves, to the UFH manifold. The unit modulates the flow temperature to the system requirements depending on outdoor weather conditions.

The pack is suitable for use with floor areas of up to 250m² or a maximum output of 20kW. It is good practice to fit a 2 port motorised zone valve on the primary flow to manifold and Maincor will usually supply one. We recommend fitting an automatic bypass (supplied by others) on the primary flow prior to the 2 port motorised zone valve. Temperature controller complete with outdoor sensor

- Outdoor sensor with 20m cable supplied.
- Blending valve and 'A' rated energy efficient pump.
- Ideal for large area UFH systems.
- Supplied complete with high quality actuator.
- Left-hand and right-hand configurations available.

Weather Compensation

Including weather compensation in the underfloor heating system design provides substantial benefits to the owner or building occupier in terms of comfort and increased energy efficiency. With the system able to take the outside temperature into account via an external sensor it is better able to predict the changes in indoor temperature requirements and make adjustments accordingly. This ability to predict user heating requirements makes the system more responsive in getting up to temperature if the weather turns unseasonably cold, or turn the temperature down if it's an unexpectedly warm day for example. Including weather compensation further optimises the underfloor heating system design and helps to create a superb indoor environment in terms of occupier comfort in changeable weather conditions like we have here in the UK.

1. Pump.
2. Connection to Return Manifold.
3. Connection to Flow Manifold.
4. Pump Power Lead.
5. Power Unit for Actuator.
6. Actuator Motor.
7. Temperature Sensor.



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Weather Compensated Control Pack (WC250) - Installation

Fitting the Outdoor Sensor

The Sensor is to be connected to the supplied 20m cable and is to be mounted on the north side of the building under the eaves. This will protect the outdoor sensor from direct sunlight and rain. Connect the cable plug into the actuator.

Mounting the Flow Sensor

The Flow Sensor which is pre-fitted to the actuator, is to be mounted on the flow manifold (top bar) and secured using the reflective tape supplied with the unit.

Fitting the Actuator

The valve needs to be in its mid position (with the red indicator pointing between 3 and 6 o'clock, as is supplied - see fig 1) before the actuator is fitted. Pull off the black dial from the valve spindle to prepare for the fitting of the actuator, so that you can see the black actuator mounting ring (note; this should not be removed as it is required to ensure the valve stem retaining ring is held in position).

The actuator is supplied in mid position and is factory ready to be fitted onto the blending valve (fig 2).

To enable the actuator to lock onto the valve spindle, there is a white hexagonal drive coupling included. On one side of the drive coupling, there's a deep groove that needs to be aligned with the shoe at the mid position between 3 and 6 o'clock (as per fig 3).

The actuator can be mounted in any of four 90° positions. Pull the manual override dial off the actuator (fig 4), fit the actuator onto the valve over the drive coupling, and secure through the middle of the actuator with the supplied retaining screw (take care not to overtighten as this will start to rotate the valve). Replace the manual override dial ensuring its fully engaged. There should be no visual red between the actuator and the dial. If there is 5mm of red showing between the actuator and the dial then it is in manual mode and needs to be moved slightly left or right so that it can fully engage.



Figure 1.



Figure 2.



Figure 3.



Figure 4.

Installation - Pump

The pump comes with a flying lead with live (brown), neutral (blue) and earth wires (green/yellow). Typically these are to be connected to the wiring centre where a relay is housed that will control the operation of the pump. The pump should be set to the "constant differential pressure mode" (via the Operation Button for pump adjustment) for underfloor heating systems: 

1) Set the Upper Limit – This is the maximum limit the set point (mixed flow) can be set to and should be used to protect floors against overheat.

Press and hold down the thumb wheel for 5 seconds. The small upwards arrow will flash to indicate you are in the upper limit settings. There should be a small spanner icon to indicate set up mode.

Press the thumb wheel. The temperature will now flash and the up arrow will constantly be on.

Use the thumb wheel to scroll left and right to set the required upper limit which is typically 50°C.

Press the thumb wheel in again so that the up arrow is again flashing.

2) Set the Lower Limit – This is the minimum temperature that the set point can be adjusted to and can be used to protect sensitive equipment.

You should have the upper arrow flashing. Turn the thumb wheel to the left. You should now have the down arrow flashing. (Again, there should be a small spanner icon to indicate set up mode.)

Press the thumb wheel. The temperature will now flash and the down arrow will constantly be on.

Use the thumb wheel to scroll left and right to set the required lower limit which is typically 25°C.

Press down the thumb wheel for 5 seconds to return to the main menu.

3) Adjust the Offset.

The unit is to be configured for the UK climate to suit the floor construction of the underfloor heating.

Press and hold down the thumb wheel for 5 seconds. There should be a small spanner icon to indicate you are in set up mode.

Use the thumb wheel to scroll left until "OFS" is displayed.

Press the thumb wheel. The Offset temperature is set at 0°C and this needs to be adjusted via the thumb wheel to 8°C for a screed floor or 13°C for a timber or floating floor.

Press down the thumb wheel for 5 seconds to return to the main menu.

Viewing the Outdoor Temperature

Press and hold down the thumb wheel for 5 seconds. There should be a small spanner icon to indicate you are in set up mode.

Use the thumb wheel to scroll left until OUT is displayed.

Press the thumb wheel. The outdoor temperature is now displayed.

Press down the thumb wheel for 5 seconds to return to the main menu.