



A comprehensive range of Polypipe room temperature controls are available to compliment Polypipe Underfloor Heating Systems, designed to maximise comfort and efficiency of the system, whilst providing ease of use to occupants. They provide perfect control solution for underfloor heating systems and are available in both Wired and Radio Frequency (RF) options.

Controlling underfloor heating

Whilst regulations permit all of our control systems to be used with any of our floor types we would recommend that some control systems are more appropriate than others due to floor type, use of space, type of project, and the user or occupant. All our control systems allow individual room temperature control as a minimum with our programmable controls providing independent time and temperature control of each room.

Time and temperature control of each room (Programmable Room Thermostats)

This control method uses programmable room thermostats and allows each room to be individually programmed ensuring that rooms are heated to the level required, when required. Each room can be programmed differently for each day of the week ensuring that rooms are only heated when occupied. This option is available in both Wired and RF ranges. This control method also provides "setback" and "optimum start" functions:

- Setback This ensures that when the room is unoccupied, a minimum temperature level is pre set by the user. This is important when using high mass systems such as the Polypipe solid floor system. The response time of the system is slower than that of other Polypipe systems and we therefore recommend that this method be used to ensure that rooms are heated to an appropriate level when required
- Optimum start This function allows the thermostat to learn the heat up profile of each room individually. This allows the user to set a "warm by" time rather than an on time ensuring that the room is always to temperature by the time required This allows the user to set a "warm by" time rather than an on time ensuring that the room is always to temperature by the time required

Temperature control of each room (Time Clocks and Room Thermostats)

This method allows the user to set the on/off time for all rooms served by a single manifold and provides individual room temperature control. This option is most suited for low mass systems that have a quicker response e.g. Overlay[™], where setback is not required.

The room temperature control can either be provided by means of a Digital Display Thermostat (Digi stat) or traditional Dial type stat. All options are available in both Wired and RF ranges.

Room temperature control operation

In all cases the control setup will consist of room thermostats, a master wiring centre, slave units (for multiple room control) a zone valve and actuators.

In essence the operation is the same where the room demand is sensed by the room thermostat. This then opens an actuator on each circuit of pipe supplying the room and also opens the zone valve serving the manifold. When the zone valve is open the underfloor pump is activated and a 230V or Volt free signal is sent to the boiler for firing.



Building regulations requirements

In order to comply with the room temperature control requirements for domestic buildings under the Buildings Regulations (Part L). The following should be adhered to as a minimum.

NOTE:

This applies to installations connected to both domestic gas boilers and heat pumps.

- Each room should be provided with its own thermostat or programmable thermostat. Where 2 rooms have a similar function e.g. kitchen and utility room It may be possible to use one thermostat to control both rooms
- In single storey open plan dwellings where the living area is greater than 70% of the total area, individual room controls are not required
- Setback (programmable) controls are recommended where solid floors are thicker than 65mm*
- * Although the recommended thickness of Polypipe solid floor system is 65mm we recommend that programmable stats are used on this floor type.

Polypipe room temperature controls selection

All control options provide temperature control to each room as required, a summary of the options is shown below.

	Time control		Displ opera	ay / ation	Connectivity	
Control type	Per room	Per manifold	Digital	Dial	Wired	Wireless RF
Programmable Wired Thermostats	\bigotimes		Ø		Ø	
Programmable RF Thermostats	\bigotimes		\oslash			\oslash
Digital Wired Thermostats		\oslash	\oslash		\oslash	
Digital RF Thermostats		Ø	Ø			\oslash
Dial Wired Thermostats		\bigotimes		\oslash	\oslash	
Dial RF Thermostats		\oslash		\oslash		\oslash

Control equipment -Room Thermostats

Programmable Room Thermostats (PBPRP) and RF version (PBPRPS RF)

Programmable room thermostats offer the following outstanding features:

- -
- 7 day programming
- Setback and optimum start
- Frost protection
- Holiday standby mode
- 9 pre set programs for easy programming
- Simple user defined programming
- Wet room sensor connection

Digital Room Thermostats (PBDIG) and RF version (PBDIG RF)

The digital room thermostat provides simple temperature control with a large easy to read digital display. Used in conjunction with



the time clock (PB2CTC or PB4CTC RF) they provide stylish and accurate room control. All are provided with a wet room sensor connection.

Time Clocks – 2 Zone Clock (PB2CTC) and 4 Zone Clock RF (PB4CTC RF)

The digital time clocks are used in conjunction with digital and dial thermostats. The time clocks offer the following features:

- 7 day programming
- Frost protection
- Holiday standby mode
- External (frost stat) connection
- 2 zone (2 manifold) control in the wired version (PB2CTC)
- 4 zone (4 manifold) control in the RF (PB4CTC RF) version
- 9 pre set programs for easy programming
- Simple user defined programming

Room Temperature Controls

Dial Room Thermostat (PBRS) and RF version (PBRS RF)

This traditional dial type room thermostat combines accurate comfort control with a familiar dial type user operation.

This thermostat is used in

conjunction with the time clock (PB2CTC or PB4CTC RF). All are provided with a wet room sensor connection.

Wiring centres

Single Zone Master Unit (PB1ZM) and RF version (PB2ZM RF)

The master wiring centres enable simple wiring and switching of all common components in the system. For multiple zone systems this is used in

conjunction with the slave units. Neon indicators show the status of the connections.

These wiring centres allow connection of:

- Heating main supply, UFH pump, zone valve and clock
- Both 230V and volt free boiler switching connection
- Connection for a single room thermostat (wired version) and 2 room thermostats in the RF version
- Plug in connectivity to the slave units for multiple zone control

Slave Units - 4 Zone Slave (PB4ZS and 6 Zone Slave PB6ZS) and 4 Zone RF version (PB4ZS RF)

These units are always used in conjunction with the master unit and provide simple wiring of

actuators and room thermostats for multiple zone control. Neon indicators show room activation.

Ancillary items

Wet Room Sensors (PB23020)

Where temperature control needs to be provided to a bathroom or other wet area, this sensor is installed in the wet area and connected

to any of the room



thermostats which can be installed in an adjacent dry area.

The sensor is supplied with 3m of cable which can be extended to a maximum of 10m providing NTC 10k cable is used.

The sensor can be removed from the housing and used as a floor sensor where sensitive floor coverings are used.

Single RF Receiver (PBREC RF)

The receiver accepts a signal from any RF Thermostat or clock and allows RF clocks and RF stats to be used with wired master or slave units.



Wiring centres - for wired controls

Single Zone Master (PB1ZM):

When used in a 'single zone' application the master wiring centre (PB1ZM) provides the wiring connections for the underfloor heating pump, two-port zone valve, boiler switched live connection (230V or volt free) and the programmable room thermostat.

Wiring details for Single Zone Master Unit (PB1ZM)



4 and 6 Zone Slave Unit (PB4ZS and PB6ZS):

Where multiple room control is required the master wiring centre should be used in conjunction with the 4 or 6 zone slave units PB4ZS or PB6ZS. The slave units provide wiring connections for the programmable room thermostats and the manifold 2-wire actuators. Up to 4 actuators can be connected per zone.

The 4 and 6 zone slave units (PB4ZS and PB6ZS), must be used in conjunction with the Single Zone Master (PB1ZM). The slave unit simply plugs into the master unit to provide additional connections for the required number of control zones.

0	0 0		0	0 0					0	0
	0 0 0	0			0 00 0000	0	0 00 00000	0 00		
0	0 0 0 0 0		0	0 0		1			0	0

Wiring details for 4 and 6 Zone Slave Unit (PB4ZS and PB6ZS)



Wiring centres - for RF controls

2 Zone Master Unit RF (PB2ZM RF):

The PB2ZM RF master unit provides electrical connections for the UFH pump, motorised valve, actuators, boiler and up to 2 control zones.

Wiring details for 2 Zone Master Unit RF (PB2ZM RF)



4 Zone Slave Unit RF (PB4ZS RF):

Where more than 2 zones of control are required, the PB4ZS RF is used with the PB2ZM RF master unit above to provide up to 4 additional control zones. The unit provides wiring for up to 4 actuators per zone and 4 built in zone receivers.



Wiring details for 4 Zone Slave Unit RF (PB4ZS RF)



Pairing devices to the master and slave unit

First ensure that the wiring unit is correctly wired up to the electrical system in accordance with the instructions as given in the installation manual as supplied with the PB2ZM RF. Switch on the power to the unit and the green power LED should illuminate.

Pairing the RF Thermostats (PBDIG RF PBRS RF and PBPRPS RF)

Step 1:

Press and hold the OK button for approximately 10 seconds and the first green LED will illuminate (flashing).



Step 2:

Press the OK button again quickly and the first LED will turn Red to show that the first zone is ready to be paired with the relevant room thermostat. At the same time the second LED will flash green.



Step 3:

Pair the first thermostat by following the procedure as shown in the installation guide as supplied with the RF thermostat units Once the pairing signal has been accepted the first LED will become solid green. At this point it is important to remember to then switch this thermostat to the OFF mode so as to prevent its wireless signal from interfering with any further pairing process.



Step 4:

Press the OK button again quickly and the second LED will now flash Red indicating that the second zone is ready to be paired. Follow the same pairing process for this zone as previously explained.



At this stage the PB2ZM RF unit will now be paired to the two thermostatic zones. If an additional RF Slave Unit is to be used continue to follow the above procedure until all of the remaining zones have also been paired.

Additional Information:

To toggle between zones to be paired please use the left and right arrow buttons.

IMPORTANT NOTE:

At this stage the thermostat units will now be paired to their relevant master wiring centre and slave unit zones (if used). In the case of the PBPRPS RF fully programmable units where no additional timer unit is to be used it is necessary to now complete the pairing process by pressing and holding the OK button until all of the LED's go out. Once this happens the pairing process is now complete and the zones should respond to the relevant demand signals from thermostat unit/s.

Step 5: Pairing the Time Clock

Where the PBDIG RF or PBRS RF units have been used it is necessary to now pair the relevant timer channel on the PB4CTC RF timer unit to the master wiring centre. To do this you will need to access the Installer Menu in the timer unit by following the instructions as supplied with the unit. Once you have chosen the required channel to be used and have initialised the pairing function all of the Green LED's will switch off inside the master unit and slave unit to indicate that the pairing of the time clock has been successful. Please note that no actions are necessary to the master wiring centre.



Once the time clock and room thermostats have been switched to the required operating mode the system should now respond accordingly.

Performing a full factory reset

Sometimes it may become necessary to return the master wiring unit and slave unit (if fitted) to their factory resets. This action will completely erase any current pairing information and enable the units to be fully reprogrammed.

Depending on whether the RF master unit is in 'programming mode' or 'auto mode' please follow the instructions below.

Unit in programming mode:

In order to perform a full factory reset whilst the master unit is already in the programming mode you will first need to hold down all three buttons simultaneously until both of the green LED's illuminate. Continue to hold down these buttons until the green LED's go out. When this happens release the buttons. The green LED's will flash once and then go out. The unit is now returned to full factory reset mode.

Unit in auto mode:

If the unit is already in normal operation mode then in order to perform a full reset of the unit you will first need to switch the unit in to its 'programming mode'. To do this first press and hold the OK button until the first green LED illuminates. Then quickly press the OK again until the first LED turns red. The unit is now in 'programming mode. Next hold down all three buttons simultaneously until both of the green LED's illuminate. Continue to hold down these buttons until the green LED's go out. When this happens release the buttons. The green LED's will flash once and then go out. The unit is now returned to full factory reset mode.

