SCS312 / SCS318
Installation Instructions

SCS312 or SCS318 Comprising of SCS311 or SCS317 Wireless Programmable Room Thermostat and SSR303 Receiver

Programmable room thermostats are widely recognised as one of the best ways in which to control central heating. The SCS311 & SCS317 programmable room thermostats have a large display and intuitive user interface, making them easy to set up and use. The SCS311 & SCS317 use a sophisticated time proportional integral (TPI) algorithm for accurate temperature control and energy efficiency. The SCS311 / SCS317 is a wireless electronic battery powered programmable room thermostat that uses interoperable two-way RF mesh networking technology which avoids the need for additional wiring or unsightly cable runs.

Installation and connection should only be carried out by a suitable qualified person and in accordance with the relevant wiring regulations.

Warning: Isolate mains supply before commencing installation.

Installing the SSR303 receiver

The SSR303 receiver should be located as near as is practical to the boiler or zone valve to be controlled, as well as a convenient mains electricity supply. To remove the wall plate from the SSR303 undo the two retaining screws located in the underside, the wall plate should now be easily removed. Once the wall plate has been removed from the packaging please ensure the SSR303 is resealed to prevent damage from dust, debris etc.

The wall plate should be fitted with the retaining screws located at the bottom and in a position which allows a total clearance of at least 50mm around the SSR303 receiver.

Direct Wall Mounting

Offer the plate to the wall in position where the SSR303 is to be mounted and mark the fixing positions through the slots in the wall plate. Drill and plug the wall, then secure the plate into position. The slots in the wall plate will compensate for any misalignment of the fixings.

Wall Box Mounting

The wall plate may be fitted directly on to a single gang flush wiring box, using two M3.5 screws. The receiver is suitable for mounting on a flat surface only; it is not suitable for mounting on an unearthed metal surface.

Electrical Connections

WARNING: ISOLATE THE MAINS SUPPLY BEFORE COMMENCING INSTALLATION

As the SCS311 / SCS317 is a wireless product with no electrical connections all electrical wiring will be made to the SSR303 receiver.

All necessary electrical connections should now be made. Flush wiring can enter from the rear through the aperture in the backplate.

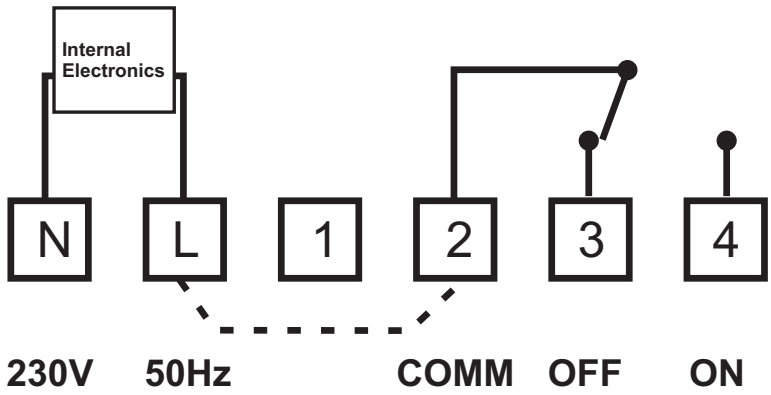
The mains supply terminals are intended to be connected to the supply by means of fixed wiring.

The receiver is mains powered and requires a 3 Amp fused spur.

The recommended cable size is 1.0mm².

The receiver is double insulated and does not require an earth connection, an earth connection block is provided on the backplate for terminating any cable earth conductors. Earth continuity must be maintained and all bare earth conductors must be sleeved. Ensure that no conductors are left protruding outside the central space enclosed by the backplate.

SSR303 Receiver internal wiring diagram



The receiver has Voltage Free contacts. A link between Live and terminal 2 is required for mains Voltage applications.

Example circuit diagrams for typical boiler installations are shown below. These diagrams are schematic and should be used for guidance only.

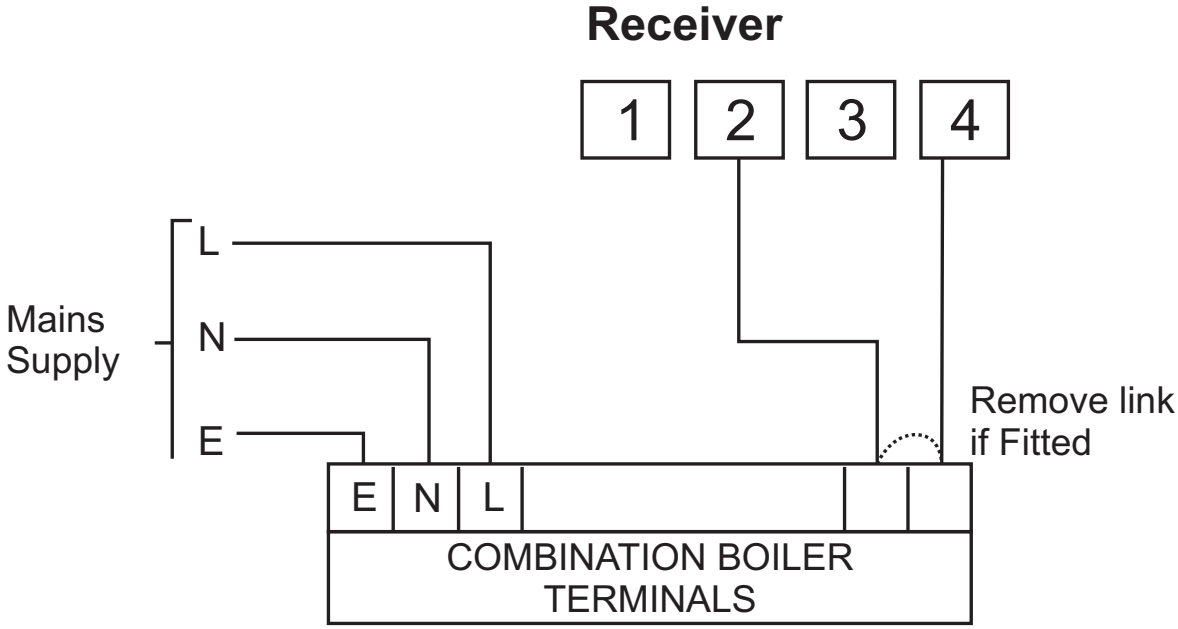
Please ensure that all installations comply with the relevant wiring regulations and the boiler manufacturer's installation instructions.

For reasons of space and clarity not every connection has been included and the diagrams have been simplified, for instance some earth connections have been omitted.

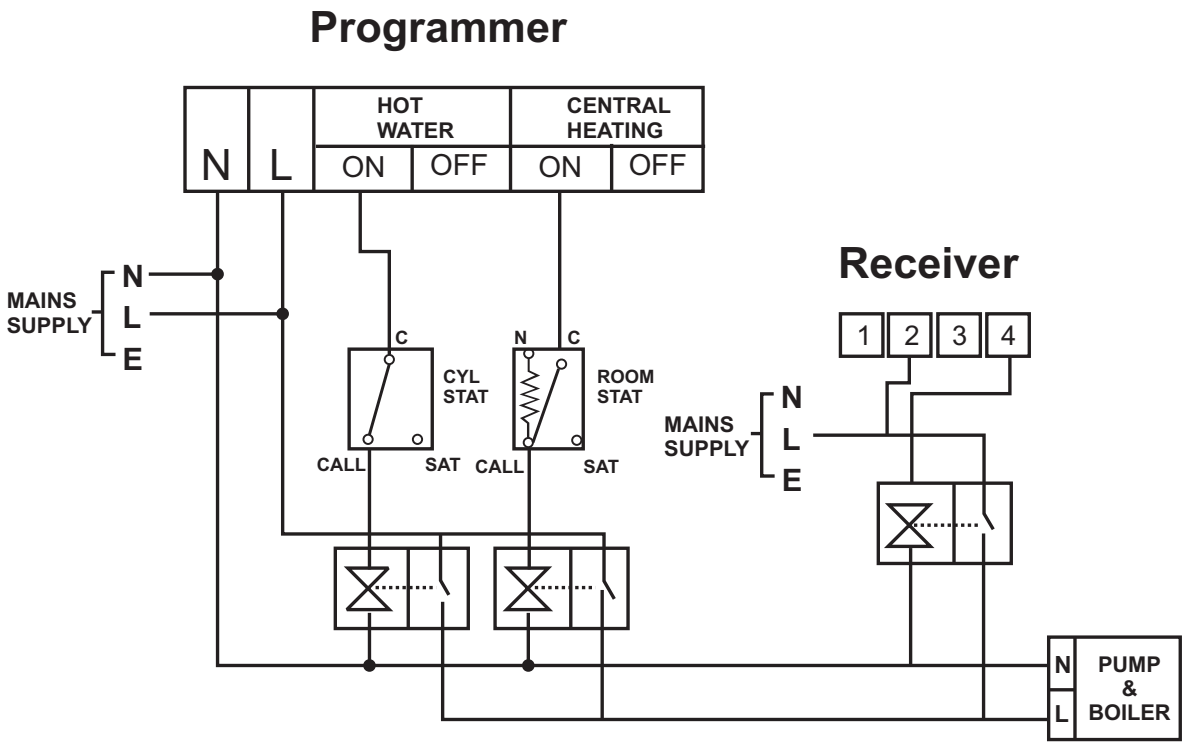
Cylinder and Room Thermostat Key:

C= Common CALL= Call for heat or break on rise

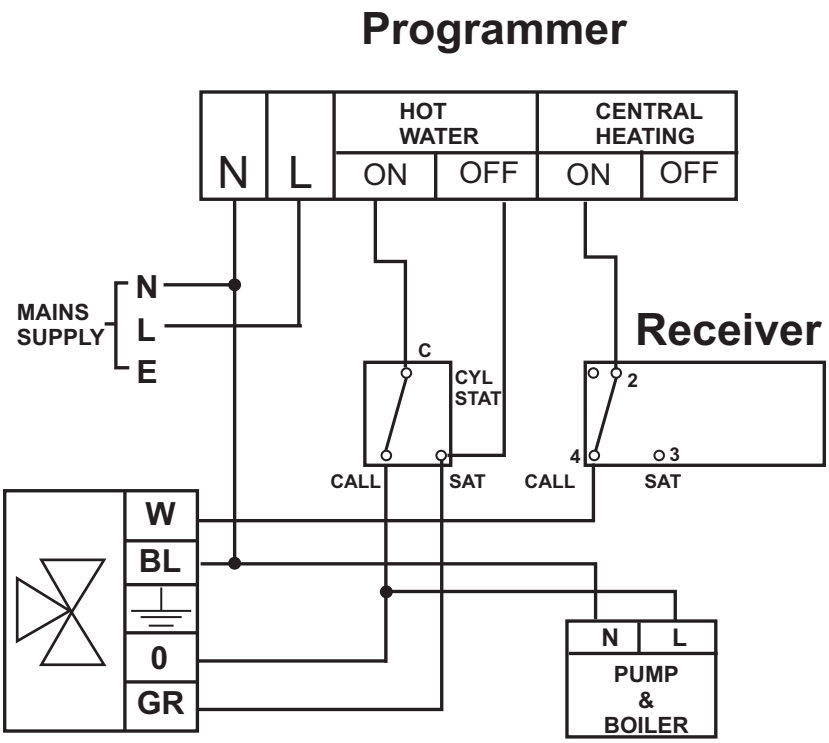
SAT= Satisfied on rise N= Neutral



SSR303 receiver controlling typical combination boiler installation.
For precise termination connection information please refer to the boiler manufactures instructions

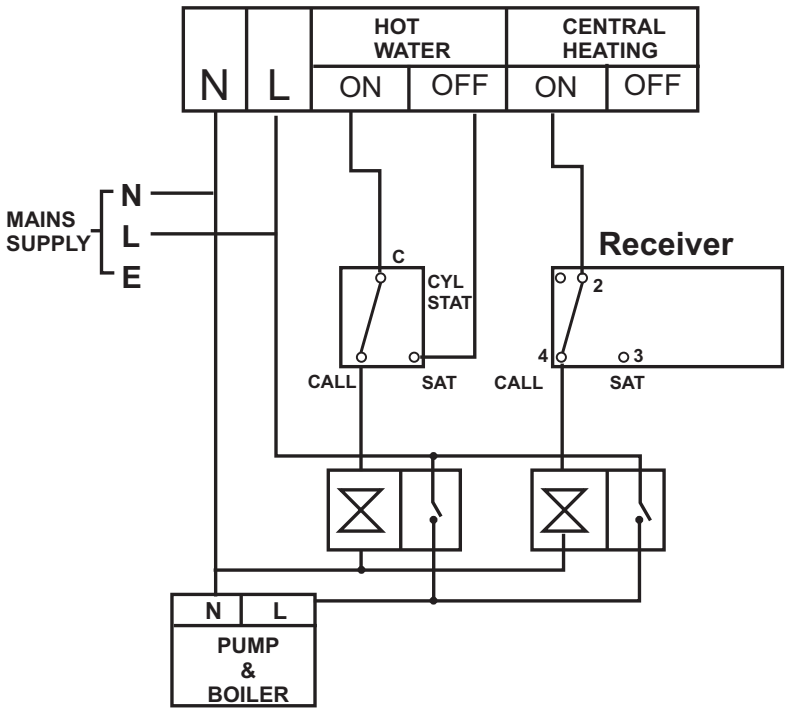


SSR303 receiver controlling a secondary heating zone on a fully pumped system with existing programmer and two spring return valves with auxiliary switches



SSR303 receiver replacing a conventional room thermostat on a fully pumped system with an existing programmer and 3 port mid-position valve.

Programmer



SSR303 receiver replacing a conventional room thermostat on a fully pumped system with existing programmer and two spring return valves with auxiliary switches

TPI Temperature control software

Thermostats using TPI (Time Proportional Integral) control algorithms will reduce the temperature swing that normally occurs when using traditional bellows or thermally operated thermostats. As a consequence, a TPI regulating thermostat will maintain the comfort level far more efficiently than any traditional thermostat.

When used with a condensing boiler, the TPI thermostat will help to save energy as the control algorithm allows the boiler to operate in condensing mode more consistently compared to older types of thermostat.

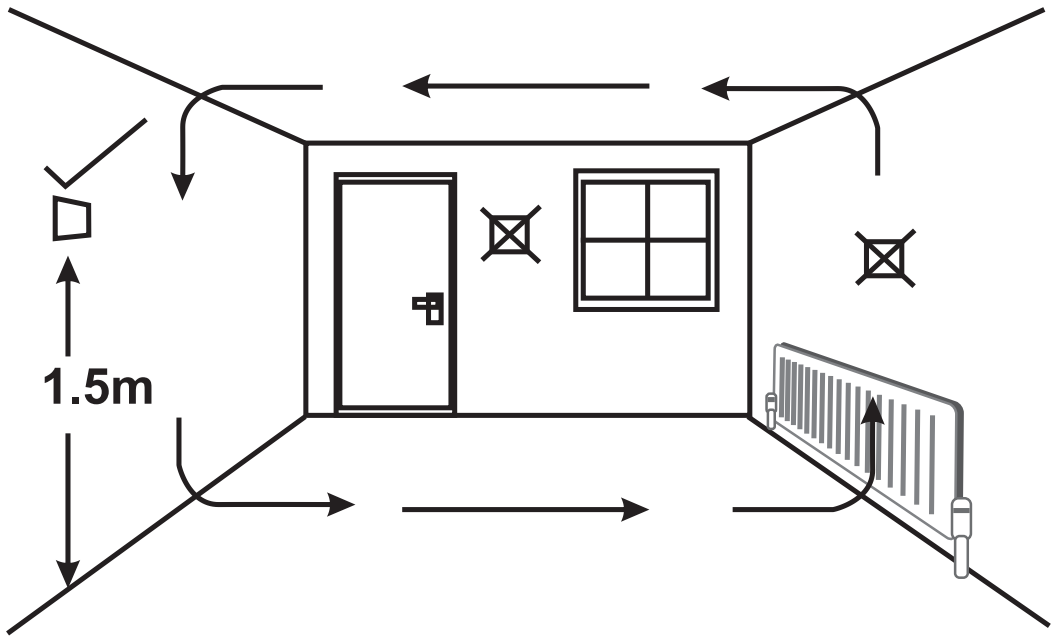
- For Gas boilers set the TPI setting to 6 cycles per hour (default setting)
- For Oil boilers set the TPI setting to 3 cycles per hour
- For Electric heating set the TPI setting to 12 cycles per hour

To adjust this setting go to the SET UP MENU and select TPI CYCLES

Fitting the SCS311 / SCS317 Programmable Room Thermostat

Before final installation it is advisable to commission the product and ensure that the Thermostat and Receiver are communicating satisfactorily. First install the 2 x AA batteries provided making sure that they are fitted correctly as indicated by the markings in the battery compartment on the front of the SCS311 / SCS317. Once the thermostat and receiver are successfully 'paired' the thermostat can be installed in its correct location. Please see Z-Wave pairing instructions on page 9.

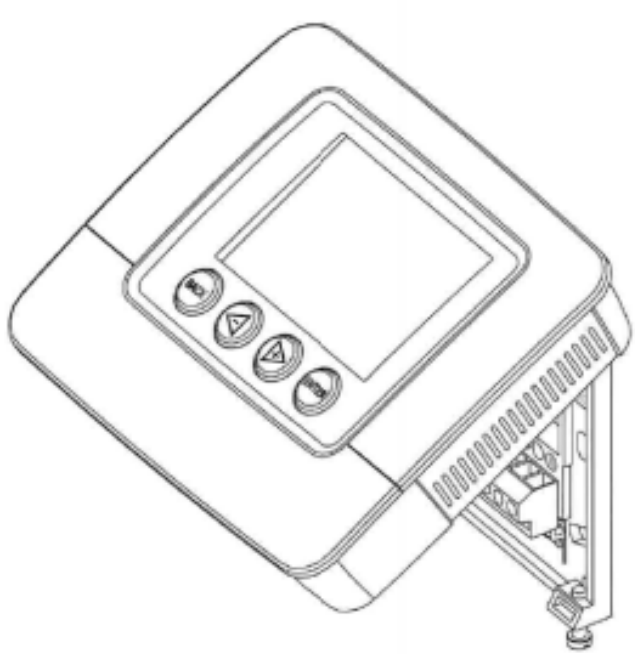
Avoid installing the SCS311 / SCS317 against or behind any large metal surfaces which could interfere with the radio signals to and from the SSR303 receiver. The SCS311 / SCS317 should be mounted on an internal wall approximately 1.5 metres from floor level using the wall plate provided and should be in a position away from draughts, direct heat and sunlight. Ensure that there will be enough space to allow easy access to the two retaining screws located at the base of the wall plate.



Before fixing the wall plate in position check to see that the thermostat and receiver are still able to communicate satisfactorily by turning the thermostat temperature up and down to switch the SSR303 receiver on and off.

Offer the plate to the wall in the position where the SCS311 / SCS317 is to be mounted and mark the fixing positions through the slots in the wall plate. Drill and plug the wall, then secure the plate into position. The slots in the wall plate will compensate for any misalignment of the fixings.

Complete installation by swinging the SCS311 / SCS317 into position by engaging with the lugs at the top of the wall plate before pushing it carefully home into its plug-in terminal block.



Tighten the 2 captive screws on the underside of the unit.

Now ensure that the heating system is responding to the ON/OFF commands from the SCS311 / SCS317 and explain its operation to the householder before handing over the User Instructions.

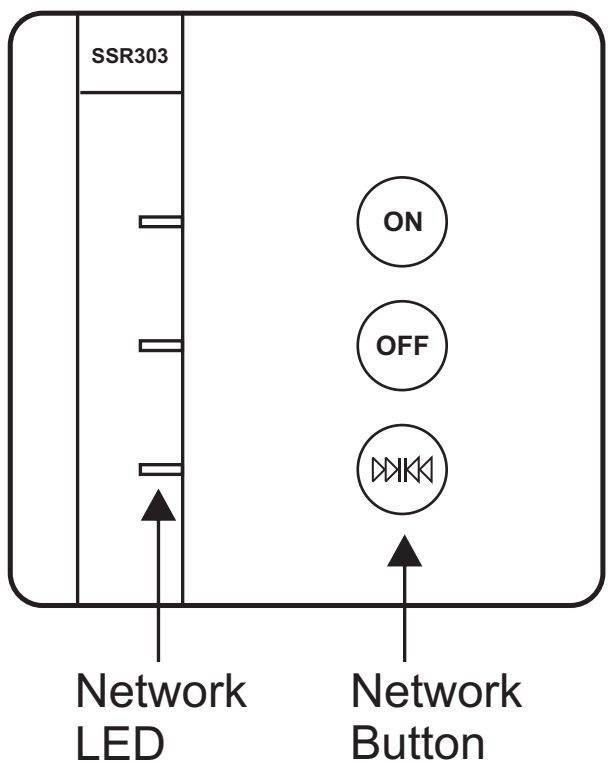
Pairing the SCS311 / SCS317 programmable room thermostat with SSR303 receiver

The SCS311 / SCS317 uses the latest Z-Wave wireless communication technology to give a reliable wireless link that should not suffer from interference from other nearby devices. The device comprises of a thermostat (SCS311 / SCS317) and its receiver (SSR303). Pairing the devices on site ensures reliable communication.

Follow these steps to ensure that the SCS311 / SCS317 programmable stat will communicate satisfactorily with its receiver; this is best carried out with the SCS311 / SCS317 held nearby the (powered) SSR303 receiver.

The SSR303 receiver should be powered up with the network button flashing red before following Procedure A on page 11.

If the red network button light does not flash red then please go to Procedure B on page 12 before returning to Procedure A on page 11.



Procedure A

1. On the SCS311 / SCS317 programmable stat, Press ENTER twice
2. Press '-' or '+' to select SETUP
3. Press ENTER
4. Press '-' or '+' to select SET UP Z-WAVE
5. Press ENTER
6. This will now show the sub menu available for the Z-Wave wireless communication settings
7. Select INCLUDE NODE / RECEIVER
8. Press ENTER
9. INCLUDING will appear under the INCLUDE NODE heading.
10. Press and hold the network button on the SSR303 Receiver until the flashing red light turns to a flashing green light followed quickly by a solid red light
11. RECEIVER INCLUDED will now appear in the display of the SCS311 / SCS317. Press BACK and the antenna icon on the top left had corner of the display will show it is active with radio waves
12. The SCS311 / SCS317 and SSR303 Receiver are now 'paired'. The Receiver should receive ON/OFF commands from the Thermostat wirelessly.

    Check this by turning the temperature on the SCS311 / SCS317 up and down to see that the SSR303 receiver responds accordingly with a green light for ON and a red light for OFF.

Procedure B

1. On the SCS311 / SCS317 programmable stat, Press ENTER twice
2. Press '-' or '+' to select SETUP
3. Press ENTER
4. Press '-' or '+' to select SET UP Z-WAVE
5. Press ENTER
6. Press '-' or '+' to select NETWORK RESET
7. Press ENTER
8. Press ENTER again to confirm and NETWORK RESET COMPLETE will appear on the display
9. Press BACK to go back to SET UP Z-WAVE
10. Press ENTER
11. Press '-' or '+' to select EXCLUDE NODE / RECEIVER
12. Press ENTER
13. Go to the Powered SSR303 receiver, press and hold the network button
14. EXCLUDING will appear on the display of the SCS311 / SCS317
15. When completed NODE / EXCLUDED will appear on the display.
16. The red network light on the SSR303 will start flashing
17. Once the red light is flashing follow Procedure A on page 11

Installer Settings

There are a number of 'Installer Settings' that should be set on installation.

These can be found under the 'SET UP MENU' on page 15 of the user instructions.

Clock Format	AM/PM or 24 Hour clock display - Default setting AM/PM
Daylight saving	On or Off - Default setting ON
Standby temperature	Frost protection setting – Default setting 5°C
Upper and Lower Temperature limits	Default settings 30°C and 5°C
TPI Cycles	This setting will change according to the type of boiler being used - Default setting 6 For Gas boiler this setting should be 6 cycles per hour For Oil boilers this setting should be 3 cycles per hour For Electric panel heaters this should be 12 cycles per hour
Optimum Start	On or Off – Default setting Off

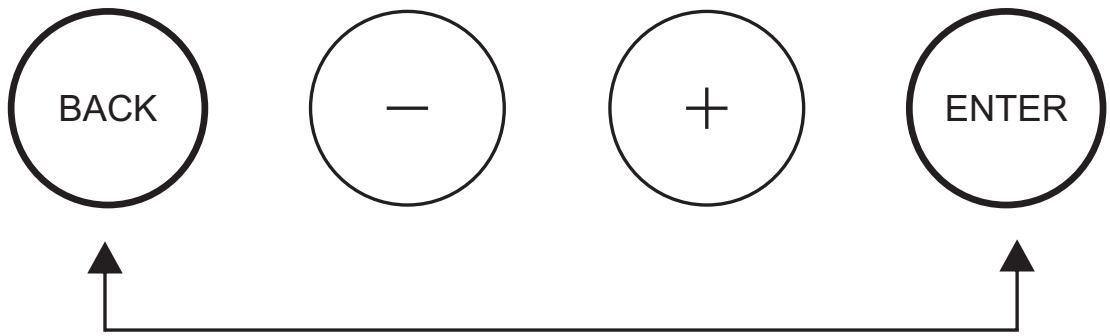
The TPI Cycles setting and Optimum Start settings should be carefully set on installation as this will affect system performance.

Resetting the SCS311 / SCS317

Electronic equipment can in some circumstances be affected by electrical interference.

If the display becomes frozen or scrambled simply press both the BACK and ENTER button simultaneously.

Using this procedure will restore the SCS311 / SCS317 to the original factory settings, the Time and date will remain correct.



Specification – SCS312 / SCS318

Thermostat

Power Supply	2 x AA Batteries
Contact type	Micro-disconnection
Wiring configuration	Voltage free c/o contacts (SPDT)
Temperature differential	0.5°C
Temperature accuracy	+/- 0.5°C to 21°C
Standards	EN 60730-2-9
Dimensions (WxHxD)	120mm x 100mm x 26.5mm
Weight	0.3kg (approx)
Enclosure	Flame retardant thermoplastic
Ingress protection	IP30
Pollution degree	Degree 2
Insulation class	Class II (Double Insulated)
Temperature range	0°C to 40°C
Transmitter Frequency	868 MHZ
Receiver Category	Category 3
Power Class	Class B

Receiver

Power Supply	230V AC 50Hz
Contact Type	Micro-disconnection Voltage Free
Contact Current Rating	3 (1) Amps 230V AC
Insulation Class	Double Insulated
Rated Impulse Voltage	Cat 2 – 2500V
Pollution Degree	Degree 2
Enclosure Protection	Flame retardant thermoplastic
Dimensions	86 x 86 x 36.25mm

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