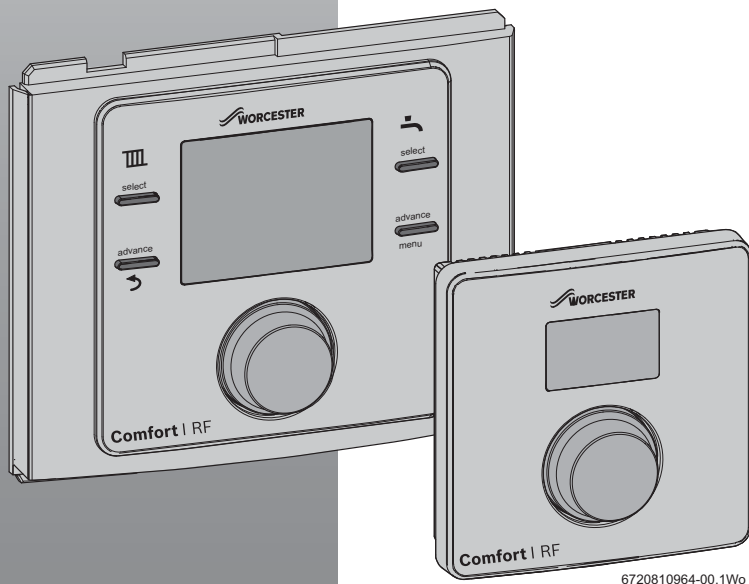


# Installation and operating instructions

## Radio Frequency Twin Channel Programmer/Receiver and Room Thermostat **Greenstar Comfort I RF**

For EMS compatible Worcester Greenstar condensing boilers



UK/IE

  
**WORCESTER**  
Bosch Group


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## 1 Key to symbols and safety instructions

### 1.1 Key to symbols


#### Warnings

	<p>Warnings in this document are identified by a warning triangle printed against a grey background.</p> <p>Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.</p>
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The following keywords are defined and can be used in this document:

- **NOTICE** indicates a situation that could result in damage to property or equipment.
- **CAUTION** indicates a situation that could result in minor to medium injury.
- **WARNING** indicates a situation that could result in severe injury or death.
- **DANGER** indicates a situation that will result in severe injury or death.

#### Important information

	<p>This symbol indicates important information where there is no risk to people or property.</p>
--	--

#### Additional symbols

Symbol	Explanation
▶	Step in an action sequence
→	Cross-reference to another part of the document
•	List entry
–	List entry (second level)

#### Abbreviations

CH	=	Central Heating
DHW	=	Domestic Hot Water
RF	=	Radio Frequency
DST	=	Daylight Savings Time
BST	=	British Summer Time
GMT	=	Greenwich mean time
RPB	=	Rotary Push Button

#### Definitions (DST/BST)

Daylight Saving Time (DST) and British Summer Time (BST) begins on the last Sunday in March at 1:00am GMT and clocks are put forward by one hour.

British Summer Time (BST) ends on the last Sunday in October at 2:00am BST and the clocks are put back by one hour.

## 1.2 General safety instructions

These installation instructions are intended for heating engineers, and electricians.

- ▶ Read all installation instructions (boiler, heating controls, etc.) carefully before starting the installation.
- ▶ Observe the safety instructions and warnings.
- ▶ Observe national and regional regulations, technical rules and guidelines.
- ▶ Record all work carried out.

#### Appliance operation

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision. (BS EN 60335-1 2012)

#### Installation, commissioning and servicing

Installation, commissioning and servicing must only be carried out by a competent engineer.

- ▶ Only use original spares.

#### Electrical work

Electrical work must only be carried out by a qualified electrician.

- ▶ Before starting electrical work:
  - Isolate the mains electrical supply and secure against unintentional re-connection.
  - Check for zero voltage.
- ▶ Also observe connection diagrams of other system components.

#### Handover to the user

When handing over, instruct the user how to operate the heating system and inform them about its operating conditions.

- ▶ Explain how to operate the heating system and draw the user's attention to any safety-relevant action.
- ▶ Explain that modifications and repairs must only be carried out by an authorised contractor.
- ▶ Advise the user to have the system serviced annually by a competent engineer.
- ▶ Leave this instruction manual with the user or at the appliance.

## 2 Comfort I RF

The Comfort I RF comprises a boiler or wall mounted twin channel Programmer/Receiver and wall mounted Room thermostat.

### 2.1 Programmer/Receiver

The boiler fascia mounted unit is a twin channel Programmer/Receiver and is connected to an RF Room thermostat transmitter. The Programmer/Receiver is for central heating and hot water control with modulating/enhanced load compensating boiler regulation. This enhance load compensating function enables an intelligent conversation with the boiler to achieve the desired room temperature in the most efficient way possible. To help save the customer money by burning less fuel, and to minimise room temperature "overshoot" the boilers burner may stop firing just prior to the desired room temperature being reached. This behaviour including reduced radiator temperature is perfectly normal. The customer should simply set a temperature on the thermostat that they are comfortable with and allow the room thermostat and boiler to do their work.

The Programmer/receiver has up to three sets of ON and OFF times that can be set to control central heating and hot water. The unit has user and installer menus to allow the setting of the time programs, monitoring of system information, setting current time/date, daylight savings, and pairing the device with the Room thermostat.

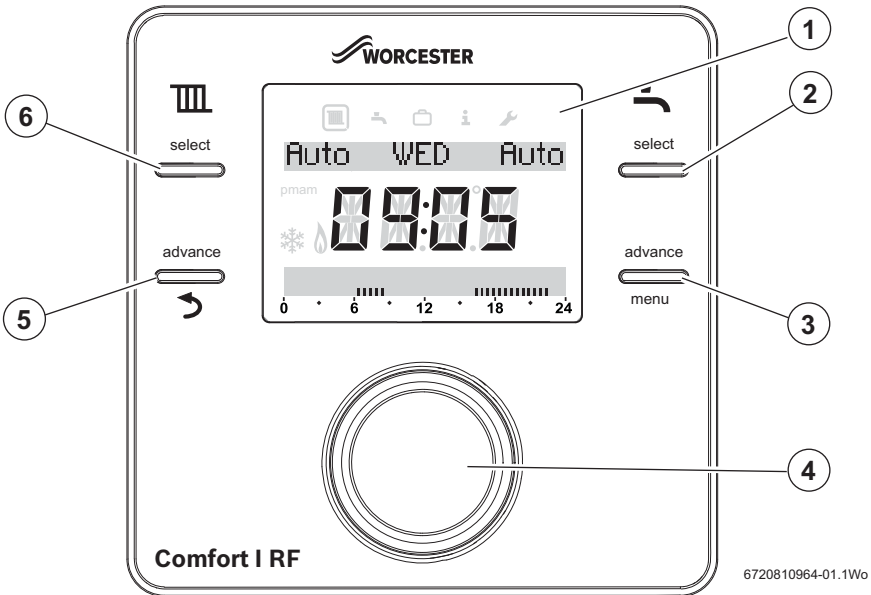


Fig. 1 Programmer/Receiver

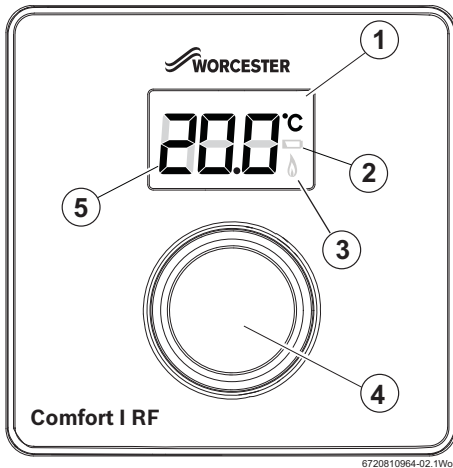
1	Display	Time, date, CH and DHW program selection, fault codes, menu symbols and operational symbols
2	Hot water program selection	ON, OFF, AUTO, ONCE
3	Hot water (HW) program advance button / user menu selection button	Only functional in AUTO mode. Pressed once, advances the timer to the next programmed ON or OFF time, pressed again, returns to the current program. Hold the button down for more than 3 seconds to enter the user menu program
4	Rotary push button knob	Turn or press to select or confirm settings
5	Central heating (CH) program advance button / Back button	Only functional in AUTO mode. Pressed once, advances the timer to the next programmed ON or OFF time, pressed again, returns to the current program. When in the menu functions this button returns to next higher level
6	Central heating program selection	ON, OFF, AUTO, ONCE

## 2.2 RF Room thermostat

The Room thermostat can only be used in conjunction with the Programmer/Receiver. The Room thermostat displays the current room temperature and is also used to set a new temperature set point. This information is transmitted back to the Programmer/Receiver to control the boiler output to maintain the desired room temperature.

Setting a new temperature will not have any effect when the Programmer/Receiver is in an OFF time period, but will be stored and take effect during the next ON period.

The display is not backlit, this will reduce the drain on battery power which will maximise the life of the batteries.



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Fig. 2 RF Room thermostat

1	Display	<ul style="list-style-type: none"> <li>▶ Current room temperature in degrees centigrade (°C)</li> <li>▶ New temperature set points when the knob is being turned</li> <li>▶ Control fault codes</li> </ul>
2	Battery condition indicator	The battery condition indicator is displayed to advise of low battery power, at this point there is approximately 2 months battery life
3	Burner ON indicator	This symbol is displayed when the boiler is heating (can be up to 6 minutes delay)
4	Rotary push button knob	Press briefly to show the required room temperature and turn to select new temperature set point and press to confirm
5	Current room temperature	This is displayed until the knob is turned or pressed

### 3 Installation



#### CAUTION: Mains supplies

- ▶ Isolate the mains supplies to the boiler before starting any work, and follow all relevant safety precautions

Refer to the boiler's Installation, Commissioning and Servicing instruction manual for information on the boiler.

Refer to this manual for detailed information on installing and using the Comfort I RF.

A brief overview of the Comfort I RF installation procedure is listed below:

- ▶ Isolate the boiler
- ▶ Remove any panels or casings required to gain access to the control panel
- ▶ Mount the Programmer/Receiver (boiler fascia or a suitable wall location using the optional Wall Mounting Plate Kit, this will require wiring between the boiler EMS BUS connections and Wall Mounting Plate)
- ▶ Turn the boiler on
- ▶ Set time and date on the Programmer/Receiver
- ▶ Insert batteries in the Room thermostat
- ▶ The units will automatically connect to each other
- ▶ Ensure that the signal strength is adequate at the Room thermostat before mounting in a suitable reference room  
→ Section 6.7

#### 3.1 Comfort I RF Installation

The Comfort I Twin Channel Radio Frequency Programmer/Receiver and Room Thermostat comprises two units: the Programmer/Receiver that mounts into the boiler fascia or, with an optional wall mounting kit, onto the wall, and the Room thermostat that mounts on the wall in a suitable reference room.

#### 3.2 Programmer/Receiver mounting

There are two methods of mounting the Programmer/Receiver:

- In the boiler fascia
- On the wall (optional wall mounting kit 7 733 600 039)  
If your boiler is located remotely i.e. in the loft or an outbuilding you may want the Programmer/Receiver to be conveniently located for easy access

##### Boiler fascia mounted Programmer/Receiver

Refer to your boiler's Installation, Commissioning and Servicing instruction manual for mounting the Programmer/Receiver into the boiler fascia.

##### Wall mounted Programmer/Receiver

Choose a convenient wall location, approximately 1.2 metres from the floor, to mount the Programmer/Receiver.

#### Programmer/boiler connection



#### NOTICE: EMS Connections

- ▶ **The Programmer must NOT be connected to the boiler's 230 volt supply or an external 230 volt supply.**



- ▶ Ensure that the EMS cable is at least 100mm away from any power cables to eliminate any mains interference
- ▶ EMS connections are not polarity sensitive

The Comfort I RF connects to your boiler's EMS BUS connections.

Run a two core cable from the boiler to the Programmer.

Use an electrical cable with a minimum rating of H05VV-F.


For cable runs up to:

- ▶ 100 metres, use 0.50mm<sup>2</sup> conductor cross sectional area
- ▶ 300 metres, use 1.5mm<sup>2</sup> conductor cross sectional area

Connect the cable to the EMS bus point connections on the boiler control circuit board, refer to the Installation, Commissioning and Servicing instruction manual for your boiler to locate the EMS connections.

#### Optional wall mounting kit



The Comfort I RF connects to your boiler's EMS BUS connections only, on an edge connector identified either with **BB** or .

Using the wall plate as a template, mark the position of the mounting screws.

The optional wall mounting kit contains:

- 2 x countersunk screws
- 2 x plastic wall plugs
- Wall plate
- Top retainer
- ▶ Drill two holes to suit the size and depth of the wall plugs
- ▶ Fit the wall plugs
- ▶ Feed the two core cable through the back of the wall plate
- ▶ Fit the wall plate [1], ensuring that it is level and tighten the screws to secure
- ▶ Connect the two core cable to the terminal block, one core to each outer connection, ignore the middle connection

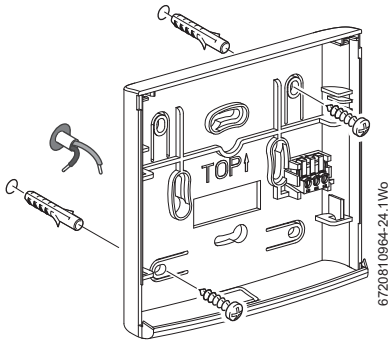


Fig. 3 Suggested Programmer wall plate mounting

- ▶ Engage the four clips on the back of the Programmer [2] with the four slots on the wall plate as shown in figure 4
- ▶ Push the Programmer down into the wall plate to secure
- ▶ Engage the tabs on the top retainer [3] into the slots on the wall plate [1] and push down onto the Programmer

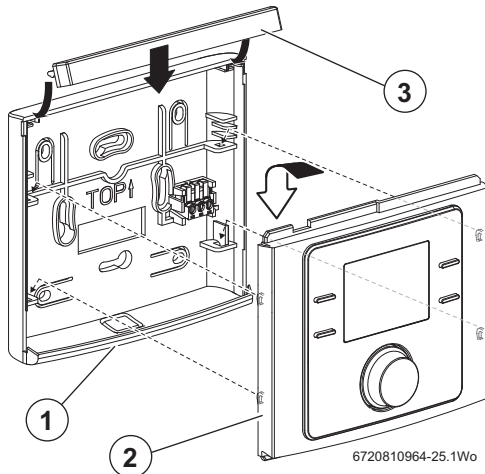


Fig. 4 Fitting Timer to wall plate assembly

### 3.3 Time and date set up

- ▶ Turn the boiler ON
- ▶ Fit the batteries into the Room thermostat, refer to section 9.1 for instruction on how to fit the batteries

Before mounting the Room thermostat on the wall, it is good practice to find a position that affords good signal strength.

To check the signal strength, refer to section 6.7 **S2 RF Signal strength** on page 18.

**i** **The Programmer/Receiver and Room Thermostat are factory set and “Paired” to each other, so that they are fully operational.**

The unit will initially display an error code A21 “No wireless signal to EMS interface”, refer to chapter 7 for information on fault codes.

When they have established RF communications with each other, the Programmer/Receiver display will revert to a factory default time and date with the control in “Auto” mode for both heating and hot water.

The Room thermostat will display the current room temperature.



#### Set the current time and date

- ▶ Hold the menu button down for more than 3 seconds to enter the user menu, turn the knob to select Settings and press to enter
- ▶ Refer to section 5.1.5 **Info - Time/Date** for setting the Time and Date, and clock format

### 3.4 Pairing/Unpairing the units



**The Programmer/Receiver and Room thermostat are delivered together and are factory paired, they automatically connect when the system is switched on. There is no need to pair/unpair the units during installation, unless there is a problem with one or both of the units.**

If a faulty unit is replaced with a new unit, then the existing unit must be unpaired before the two units can be paired.

If the units have to be paired/unpaired, all units must be in the same pairing/unpairing mode.

#### 3.4.1 Programmer/Receiver - Installer menu - Radio settings - Pair

The Room thermostat and Programmer/Receiver must be in the same mode of pairing.

The Programmer/Receiver Pairing/Unpairing function is found under the Installer menu, in Radio settings and Pair.

To enter the Installer menu, press the menu button and return button for more than three seconds.

Six icons are shown across the top of the display:

1. Heating
2. Hot water
3. Holiday
4. Info
5. Settings
6. Installer setting

Turn the knob to select the Installer icon and press the knob to enter the function.

- ▶ Turn the knob to select **Radio settings**
- ▶ Press the knob to display **Pairing**, that is RF pairing of the devices in the system
- ▶ Turn the knob to display **Unpairing** or **Pairing**
- ▶ If **Pairing** is chosen, press the knob and pairing is displayed with advancing bars.  
When the pairing between the devices has been made the number 1 is displayed confirming the Room thermostat is connected
- ▶ If **Unpairing** is chosen, press the knob and **Unpairing** is displayed with advancing bars, when the unpairing between the devices has been made the number 0 is displayed confirming that the Room thermostat has been disconnected

### 3.4.2 Room Thermostat - Settings- rF 1 Pair

To enter the **Settings** menu:



If a fault code is displayed the user must first press the knob to return to the main display then the user can hold the knob to enter the Settings menu

1. Press the knob until the two bars are displayed
2. Release the knob to enter the **Settings** menu



Fig. 5 Settings

The following sub-menus are available:

1. **E 1** Room temperature sensor adjustment
  2. **F 1** Factory reset
  3. **rF 1** Pairing/Unpairing
  4. **S 1** Software version
  5. **S 2** RF signal strength indication
- ▶ Turn the knob to select **rF 1** and press
  - ▶ Turning the knob will display **A** or **d**



- ▶ To **Pair** the Room thermostat with the Programmer/ Receiver, turn the knob to select **A**



- ▶ Press the knob to start the pairing process, the Programmer/Receiver has to be in the same mode.

During the pairing process **0** flashes until the units are connected and then **1** will be displayed flashing, when the pairing is completed **A** is displayed. Either wait 30 seconds and the display will revert to displaying the current room temperature, to move to the next higher level, press the knob for more than three seconds and when the bars are displayed, release the knob.

To leave the menu and display current room temperature, press the knob again for more than three seconds and when the bars are displayed, release the knob to display the current room temperature.

- ▶ To **Unpair** (disconnect) the units, turn the knob to select **d**



- ▶ Press the knob to start the unpairing (disconnection), a 1 will be displayed flashing, when the unpairing is completed a flashing 0 will be displayed and when the process is complete, **d** is displayed
- ▶ When the unit(s) have been unpaired or disconnected a zero will be displayed indicating that no units are connected.

Press the knob, for more than three seconds, to return to the previous level, **rF 1**.

Press the knob until the three bars are displayed and release the knob to display the current room temperature.

### 3.5 Room thermostat mounting

The Room thermostat is a radio frequency (RF) device and as such is flexible for positioning, there is no requirement to hard wire the device.

The Room thermostat requires free air flow and should be mounted in an open area and not obscured by curtains or furniture. The thermostat should be mounted no closer than 300mm to metal objects, including metal wall boxes.

Mount the thermostat on a wall that is not subject to direct sunlight or draughts, preferably on an inside wall at 1.2 metres above the floor.



The thermostat must not be directly influenced by radiators or other appliances giving off heat, such as televisions or table lamps.

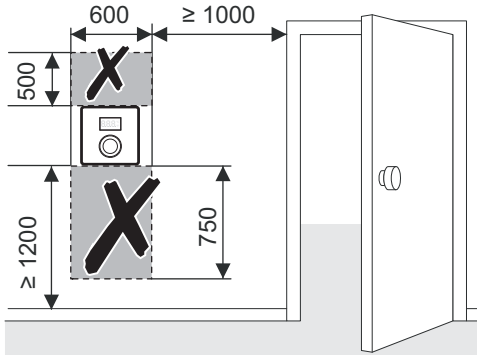


Fig. 6 Device location

### Wall mounting plate

To remove the wall mounting plate:

1. Insert a suitable flat bladed screwdriver into the slot on the bottom edge of the thermostat
2. Twist the screwdriver gently until the catches are released.
3. Remove the wall plate from the thermostat.

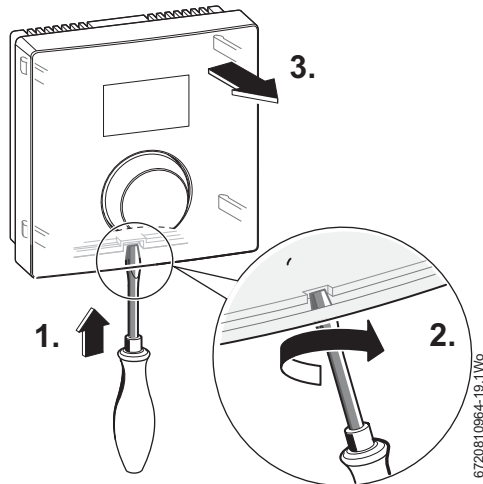


Fig. 7 Remove back plate

### Wall mounting

Using the wall plate as a template, mark the position of the mounting screws.

The mounting kit provided with the Room thermostat contains:

- 2 x countersunk screws
- 2 x plastic wall plugs
- ▶ Drill the two holes to suit the wall plugs
- ▶ Fit the wall plugs
- ▶ Fit the screws, but leave a sufficient amount proud to allow the wall plate to be fitted over the screw heads
- ▶ Fit the wall plate, ensuring that it is level and tighten the screws to secure

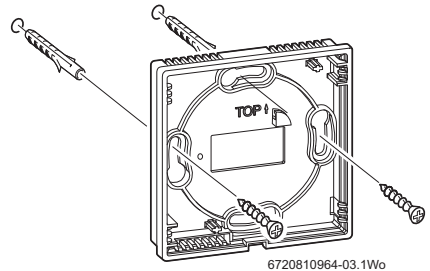


Fig. 8 Wall plate mounting

### Fitting the batteries



Ensure that the batteries are correctly oriented as shown in figure 9

- ▶ Insert the batteries ensuring that the positive + end of the battery is inserted into the positive + terminal of the holder

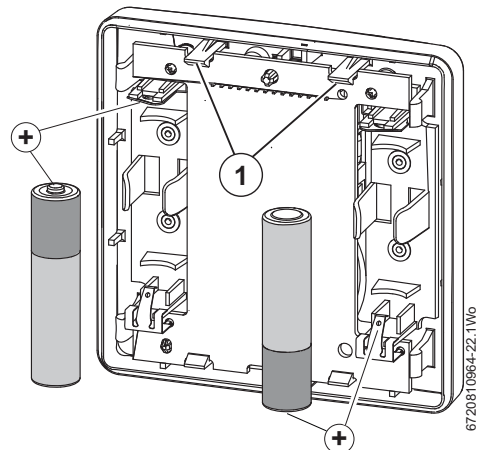


Fig. 9 Fitting the batteries

- ▶ Fit the thermostat to the wall plate, locating the catches [1] on the top edge and then snap the bottom edge into place

## 4 Operation

The Programmer/Receiver is supplied with factory set default ON and OFF times, for central heating (CH) and hot water (HW), that are shown in the table below. These time settings can be reset according to the homeowner's requirements via the User menu function on the Programmer/Receiver, → section 5.1. The times can be reset to the factory setting via the User menu.

The Room thermostat displays the current room temperature and is linked by an RF signal to the Programmer/Receiver.

	06:30	08:30	16:30	22:30
CH	ON	OFF	ON	OFF
HW	ON	OFF	ON	OFF

### 4.1 Programmer/Receiver

During normal operation the display shows:

- the operational modes of the central heating and hot water, either **ON**, **OFF**, **AUTO**, **ONCE** or **ADV**, press the Central heating or DHW **select** button to choose either:
  - ON** = heating or hot water is permanently on
  - OFF** = heating or hot water is permanently off
  - AUTO** = programmed times for heating and hot water
  - ONCE** = heating or hot water is on from the first programmed on time to the last programmed off time
- In the Auto mode, press the Advance button once to move to the next on or off time, press for a second time to return to the current programme
- the current time and day,
- am or pm for the 12 hour time format
- Graphical indication of the current time program, the black markers indicate half hour time periods. The flashing black marker indicates the current time position in the programmed sequence, either in the ON or OFF period.

- Central heating operational status
- Current day
- HW operational status
- Current time
- Graphical indication of the current time program
- 24 hour time scale
- Frost protection - displayed when boiler is set to minimum
- Burner ON - display when boiler is heating
- am or pm display - not displayed in 24 hour clock format

Pressing the knob once and releasing during an OFF period will display the current temperature setting and when the next ON time is scheduled. The example shown below indicates that the Central heating is OFF and will not be ON again "until 16:30" (or "until 4:30pm" in 12 hour format) and if the temperature drops below 5°C the heating will come on. This setting is for frost protection and the frost protection symbol will be displayed.

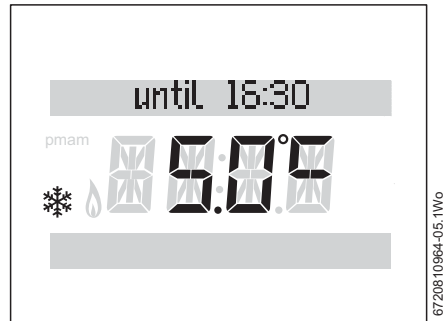


Fig. 11 Heating off

Pressing the knob once and releasing during an ON time will display the current temperature setting and when the next OFF time is scheduled. The example shown below indicates that the Central heating is ON and will not be OFF again "until 22:30" (or "until 10:30pm" in 12 hour format) and the temperature has been set to 20°C.



Fig. 12 Heating on

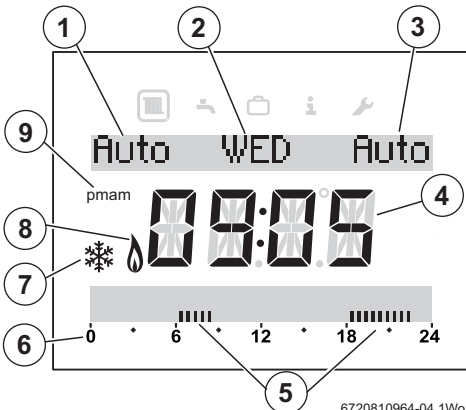


Fig. 10 Display elements

## 5 Programmer/Receiver settings






There are two levels of settings:

1. User
2. Installer

### 5.1 User

Press the menu button for more than three seconds to enter the User setting area of the Programmer/Receiver.

Five icons are shown across the top of the display:

1. Heating 
2. Hot water 
3. Holiday 
4. Info 
5. Settings 

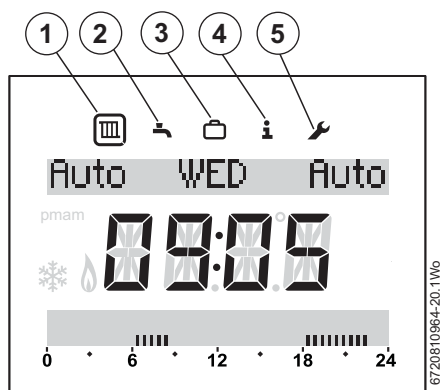


Fig. 13 User menu

Turn the knob to select an icon, the icon is encircled to confirm the selection, and press the knob to enter that section.

If any of the menu names are accompanied by flashing arrow heads at each end of the name, this indicates that there are other menus available by turning the knob.




The display will dim after 20 seconds of inactivity and remain dimmed until a button is pressed or the knob is turned/pressed. After 60 seconds of inactivity the display will return to normal operation.

#### 5.1.1 Heating

This Time program is used to set your required ON and OFF times for the central heating. The Programmer has default time settings as shown below:

	06:30	08:30	16:30	22:30
CH	ON	OFF	ON	OFF

### Time program

Select **Time program** with the knob, and press to enter. Press the Return button  at any time to return to the previous higher level.

In the Time program you can select **ON** and **OFF** times for the central heating, there are three **ON** and three **OFF** programs. Using the knob you can select various combinations of days, for example:

1. Mon to Fri
2. Sat and Sun
3. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday

Whether you choose to set the same times for Monday to Friday and different times for Saturday and Sunday or set times for individual days the setting operation is the same.

- ▶ Select the desired day(s) using the knob
- ▶ Press the knob to select the first Heating **ON** setting
- ▶ The hours flash
- ▶ Turn the knob to select the desired hours setting
- ▶ Press the knob to confirm
- ▶ The minutes flash
- ▶ Turn the knob to select the desired minutes
- ▶ Press the knob to confirm
- ▶ The first Heating **OFF** hours flash
- ▶ Turn the knob to select the desired hours setting
- ▶ Press the knob to confirm
- ▶ The minutes flash
- ▶ Turn the knob to select the desired minutes
- ▶ Press the knob to confirm
- ▶ Now the second Heating **ON** hours flash
- ▶ Repeat the process to set the hours and minutes for the second Heating **ON** times
- ▶ Repeat the process for the second Heating **OFF** times



If the third heating period is not required repeatedly press the knob to cycle through the third period without making any settings.

- ▶ Repeat the whole process for the third Heating **ON** and **OFF** times, if required

If after setting the third time period you decide that you no longer require it and wish to disable it, follow these steps:

- ▶ In the Time program, cycle through time periods 1 and 2 by just pressing the knob to accept the time setting until you reach period 3
- ▶ Turn the knob to set the flashing hours to 00
- ▶ Press to accept and the minutes flash
- ▶ Turn the knob clockwise to 00 and then the display changes to just bars and period 3 is disabled

### 5.1.2 Hot water

This Time program is used to set your required ON and OFF times for the hot water. The Programmer has default time settings as shown below:

	06:30	08:30	16:30	22:30
HW	ON	OFF	ON	OFF

#### Time programs

Select time program with the knob, and press to enter.

In the time program you can select ON and OFF times for the hot water heating, there are three ON and three OFF programs. Using the knob you can select various combinations of days or individual days:

- ▶ Mon to Fri
- ▶ Sat and Sun
- ▶ Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday



**Whether you choose to set the same times for Monday to Friday and different times for Saturday and Sunday or set times for individual days the setting operation is the same as previously set in the Heating program.**

### 5.1.3 Holiday function

This function, by default, is set to OFF.


When the Holiday function is set, via this program, the function will become active at 00:01 am of the day set and inactive at midnight on the last day set.

During the holiday period **Holiday** and 5 °C will be displayed, the HW and CH functions are off and will return to normal operation at the end of the holiday period. The Frost symbol will be displayed, indicating that the boiler is OFF but is protected when the temperature fall below 5 °C.

Turn the knob to select the **Holiday** function

- ▶ Press the knob to enter the program and **OFF** is displayed
  - ▶ Press the knob and **OFF** flashes, turn the knob to select **ON**
  - ▶ Press the knob to select **ON**, two day/months are displayed which will be the start and finish of the holiday period, the first date displayed will be today's with the day flashing
  - ▶ Turn the knob to select the desired day
  - ▶ Press the knob to confirm the day, now the month flashes
  - ▶ Turn the knob to select the desired month
  - ▶ Press the knob to confirm
  - ▶ Now the last day of the holiday period flashes
  - ▶ Turn the knob to select the desired day
  - ▶ Press the knob to confirm and the month now flashes
  - ▶ Turn the knob to select the desired month
  - ▶ Press the knob to confirm
  - ▶ **ON** will be displayed when the function is active
4. After setting the holiday period, repeatedly press the Return button to return to the normal display.

#### To cancel the holiday function:

- ▶ Press the menu key for more than three seconds to enter user menus and select **Holiday**, **ON** will be displayed.
- ▶ Press the knob and **ON** flashes, turn the knob to select **OFF**
- ▶ Press the knob to confirm **OFF**
- ▶ Press the return button  to go back to the normal display

### 5.1.4 Info

Turn the knob to select **Info** and press the knob to enter that function and the current room temperature is displayed.

### 5.1.5 Setting

- ▶ Turn the knob to select **Settings** and press to enter the function. Four menus are available, indicated by the flashing arrow heads, turning the knob will cycle through the available menus:

1. Language
2. Time/date
3. Format
4. Reset all

#### 1. Language

This function allows you to choose the language used by the Programmer, by default is set to English (EN).


- ▶ Turn the knob to select language, EN flashes, select either:
  - EN (English)
  - NL (Dutch)
  - dE (German)
- ▶ Press the knob to confirm the desired language

#### 2. Time/Date

This function allows the current time and date to be set, this would be used on initial set up of the Programmer or if the time and date were lost due to the boiler being switched off for an extended period of time.

Turn the knob to select **Time/date** and press to enter the **Clock time** function:

- ▶ Press the knob to select clock time and the hours flash
- ▶ Turn the knob to select the correct hour
- ▶ Press the knob to confirm the selection and minutes flash
- ▶ Turn the knob to select the correct minutes
- ▶ Press the knob to confirm the selection
- ▶ Turn the knob to display the date
- ▶ Press the knob to select the date setting, the day flashes
- ▶ Turn the knob to select the correct day
- ▶ Press the knob to confirm the correct day and then the month flashes
- ▶ Turn the knob to select the correct month
- ▶ Press the knob to confirm and then the year flashes
- ▶ Turn the knob to select the correct year
- ▶ Press the knob to confirm to set the year
- ▶ Turn the knob to display **DST** (Daylight savings time) ON
- ▶ Press the knob and **ON** flashes

- ▶ Turn the knob to select **ON** or **OFF**, if **ON** is selected the Programmer will automatically adjust the time in conjunction with daylight savings time
- ▶ Press the knob to confirm the selection
- ▶ Press the return button  to go back to **Time/date** and turn the knob to select **Format**

	06:30	08:30	16:30	22:30
CH	ON	OFF	ON	OFF
HW	ON	OFF	ON	OFF

### 3. Format

This function allows you to change the way the date is displayed, by default the format is DD.MM.YYYY. Once the date and time have been set the date format can be set:

- ▶ Press the knob to show the date format flashing
- ▶ Turn the knob to select either:
  - DD.MM.YYYY
  - MM/DD/YYYY
- ▶ When the desired format for the date has been selected, press the knob to confirm and return to **Date format**
- ▶ Turn the knob to select **Time format**
- ▶ Press the knob and the time format is displayed flashing
- ▶ Turn the knob to select either:
  - 12 hour
  - 24 hour
- ▶ Press the knob to confirm once the choice has been made
- ▶ When the desired format has been selected, turn the knob to display **Contrast**
- ▶ Press the knob to select **Contrast**
- ▶ Press the knob to select **Contrast**, this function allows you to adjust the contrast of the screen, by default it is set to 10
- ▶ The current contrast flashes
- ▶ Turn the knob to select from 0 to 20 the desired level, adjusting the contrast increases the intensity of the display
- ▶ Press the knob to confirm

Press the return button at any time to return to the next higher level, you can keep pressing the return button until you return to the normal display.

### 4. Reset all

Turn the knob to select **Reset all**, this function will reset all the Programmer User settings back to the factory default settings. Any customised ON /OFF times for heating or hot water or any other customised settings will have to be re-entered.

Any default settings are described at the beginning of the functional descriptions.

Turn the knob to select **Reset all**


- ▶ Press the knob and NO flashes
- ▶ If a reset is required turn the knob to select YES
- ▶ Press the knob to confirm
- ▶ Dashes progress across the screen until four are displayed briefly, then the display reverts to just showing **Reset all**

The Programmer will be reset to factory default settings, as shown in the table below, any customised ON /OFF times for heating or hot water will have to be re-entered.


## 5.2 Installer

These functions are only used by the installer/service engineer and are useful during installation.

Press the menu button and return button for more than three seconds to enter the Installer setting area of the programmer. Five user icons are shown across the top of the display, plus the sixth that is the Installer icon:

1. Heating 
2. Hot water 
3. Holiday 
4. Info 
5. Settings 
6. Installer setting 

Selections 1 to 5 are the same as the Programmer/Receiver user menu, → section 5.1.

Turn the knob to select the Installer icon  and press the knob to enter the function.

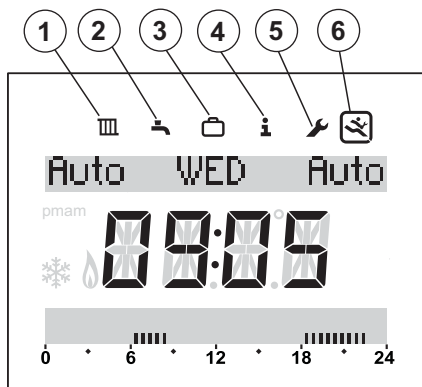


Fig. 14 Installer menu

### Installer settings menu options

1. Reset all
2. Maintenance
3. System info
4. Radio settings

The menu options are displayed on the top line with flashing left and right arrows heads, indicating that there are other menu options available. Turning the knob will select each option in turn, eventually returning to the first option.

#### 1. Reset all

- ▶ Press the knob and **NO** flashes
- ▶ Turn the knob to select **NO** or **YES**

- ▶ Press the knob to confirm, if **YES** is chosen all menus within the Installer menu are reset back to default settings, four bars progress across the display until the reset has taken place, if **NO** is chosen, no reset takes place

#### 2. Maintenance

- a. Fault history
  - Cont. faults
- b. Landlord func.
  - Maint. date
  - Maint. contact

#### a. Fault history

- ▶ Press the knob and **Cont. faults** is displayed
- ▶ Press the knob and the first of five faults is displayed with the fault code and occurrence date. The fault screens can be scrolled through using the knob. If no faults have occurred, the text **No fault** will be displayed.

#### b. Landlord func.

This function is for social housing landlords only and enables a maintenance/annual service date to be set.

The maintenance reminder message "Maintenance" is displayed 30 days before the set date.


Along with the Maintenance message a contact telephone number will be displayed.

The tenant should call this number to arrange a convenient date for the service.

Landlords, call the Worcester Bosch technical support team for instructions of how to reset the Maintenance message or contact telephone number.

If the maintenance reminder message is not cleared or reset to a later date, by the Service engineer, then 14 days after the scheduled maintenance date the controller will limit the room temperature set point to 18°C.

#### 3. System info

- ▶ Turn the knob to select **System info**
- ▶ Press the knob and **Install date** flashes
- ▶ Press the knob and the install date is displayed
- ▶ Press the knob to return to **Install date**
- ▶ Turn the knob to select **SW controller**
- ▶ Press the knob to display the software controller version
- ▶ Press the knob to return to **SW controller**
- ▶ Press the return button  to go back to **System info**

#### 4. Radio settings - Pair/Unpair

**i** **The Programmer/Receiver and Room thermostat are delivered together and are factory paired, they will automatically connect when the system is switched on.**

If the a units have to be paired, all units must be in the pairing mode to be connected, refer to section 6.5 to put the Room thermostat into the pairing mode.

When the devices are being paired, the Room thermostat and Programmer/Receiver must be in the same mode of pairing. Refer to section 6.5 for pairing of the Room thermostat.

Ensure that the Room thermostat is positioned as suggested in Section 3.2 and away from metal objects that might attenuate the RF signal.

Before mounting the Room thermostat on the wall, it is good practice to find a position that affords good signal strength.

When the units have been paired, check the signal strength at the Room thermostat. If the signal strength is low, try another position in that room until the best possible signal strength is obtained, refer to section 6.7 for the **Signal strength** at the Room thermostat.

- ▶ Turn the knob to select **Radio settings**
- ▶ Press the knob to display **Pairing**, that is RF pairing of the devices in the system
- ▶ Turn the knob to display **Unpairing** or **Pairing**
- ▶ If **Pairing** is chosen, press the knob and pairing is displayed with advancing bars, when the pairing between the devices has been made a number is displayed confirming the number of Room thermostats connected
- ▶ If **Unpairing** is chosen, press the knob and **Unpairing** is displayed with advancing bars, when the unpairing between the devices has been made the number 0 is displayed confirming that the Room thermostat(s) have been disconnected

### 5.3 Key lock

When the **Key lock** is active, no user interaction with the units is possible, if a button is pressed or the knob turned/pressed the word **Key lock** is displayed.

#### Key lock ON

To activate the **Keylock**:

- ▶ Hold down the CH Select button and the knob at the same time for more than three seconds and the **Keylock** is active

#### Key lock OFF

To de-activate the **Key lock**:

- ▶ Hold down the CH Select button and the knob at the same time for more than three seconds and the **Key lock** is de-activated and the normal display is shown

## 6 Room thermostat

**i** After 30 seconds of inactivity the display reverts to the showing the current room temperature.

### 6.1 Normal operation

Under normal operation the display shows the current room temperature in centigrade.



Fig. 15 Normal screen

1. Current room temperature
2. Battery condition indicator
3. Burner ON indicator

Press the knob briefly to display the required room temperature.

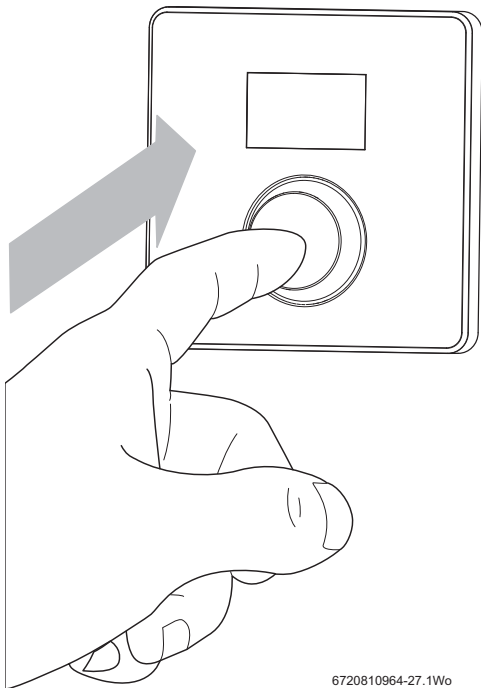


Fig. 16

Turn the knob anti-clockwise to decrease the temperature or clockwise to increase. The new temperature setting will flash for three seconds.

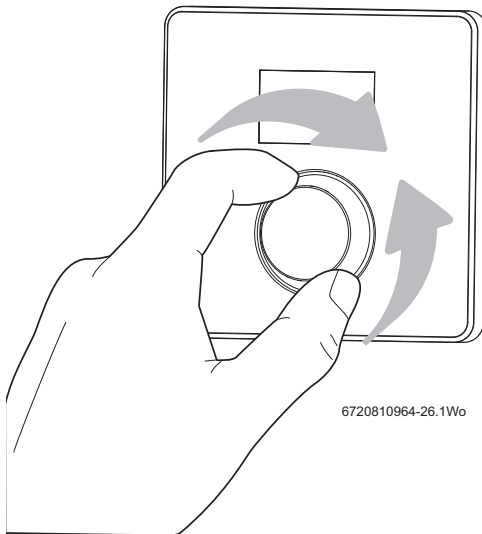


Fig. 17

If the Programmer/Receiver is in an **OFF** period, the Room thermostat will display the new temperature setting flashing for three seconds and then **OFF** flashing for three seconds.

#### Low battery

The battery symbol indicates the batteries require replacing within two months refer to section 9.1

#### Burner ON indicator

The symbol is shown when the boiler is firing (there may be up to a six minute delay between the boiler firing and the symbol being displayed).

#### Low RF signal strength

**i** The **A21** fault code will be displayed at initial switch on until the two units have established an RF communication link

The **A21** fault code indicates no RF signal, refer to section 6.7 for the signal strength indication on the Room Thermostat.



## 6.2 Settings

These functions are only used by the installer/service engineer and are useful during installation.

To enter the **Settings** menu:



If a fault code is displayed the user must first press the knob to return to the main display then the user can hold the knob to enter the Settings menu

1. Press the knob until two bars are displayed.
2. Release the knob to enter the **Settings** menu



Fig. 18 Enter the Settings menu

To leave the **Settings** menu:

1. Press the knob until three bars are displayed.
2. Release the knob to leave the **Settings** menu and display the current room temperature



Fig. 19 Leaving the Settings menu

The following **Settings** sub-menus are available:

1. **E 1** Room temperature sensor adjustment
2. **F 1** Factory reset
3. **rF 1** Pairing/Unpairing
4. **S 1** Software version
5. **S 2** RF signal strength indication

Turn the knob clockwise to cycle forward through the menus and anti-clockwise to cycle back to **E 1**.

### 6.3 E 1 Room temperature sensor adjustment

If it is suspected that the temperature display is off by a few degrees and if there is a precision temperature gauge/meter available, the display can be offset by  $\pm 5^\circ\text{C}$  to compensate. The default value is  $0.0^\circ\text{C}$ .

- Turn the knob to select **E 1**



Fig. 20 Temperature sensor adjustment

- Press the knob to enter the temperature offset function, the offset value is displayed, by default it is  $0.0^\circ\text{C}$ .
- Press the knob and the display flashes.
- Turn the knob to adjust the temperature offset, between  $-5$  and  $+5^\circ\text{C}$ .
- Press the knob to confirm the desired setting
- Press the knob for more than three seconds to return to the previous level

### 6.4 F 1 Factory reset

1. Turn the knob to select **F 1**



Fig. 21 Factory reset

2. Press the knob to enter the factory reset function, a **0** is displayed
3. Press the knob and the figure flashes
4. Turn the knob to select **1**
5. Press the knob to confirm and the figure changes back to **0**
6. The Room thermostat is now set back to the factory default
7. Press the knob for more than three seconds to return to the previous level

## 6.5 rF 1 Pair with other devices



**The Programmer/Receiver and Room thermostat are delivered together and are factory paired, they will automatically connect when they are switched on.**

If the units have to be paired, all units must be in the pairing mode to be connected, refer to Sections 5.2 Radio settings to put the Programmer/Receiver into the pairing mode.

- ▶ Turn the knob to select **rF 1** and press to enter the function



- ▶ To **Pair** the devices, turn the knob to select **A**, pair this programmer with the Room thermostat



- ▶ Press the knob to start the pairing process, the timer has to be in the same mode, → page 14 Radio setting. During the pairing process **0** flashes until the units connected and then 1, 2 or 3 will be displayed flashing, when the pairing is completed **A** is displayed. Either wait 30 seconds and the display will revert to displaying the current room temperature or to move to the previous level, press the knob for more than three seconds. To leave the menu and display current room temperature, press the knob again until the three bars are displayed and release the knob to display the current room temperature.
- ▶ To **Unpair** (disconnect) the units, turn the knob to select **d**



- ▶ Press the knob to start the unpairing (disconnection), a 1, 2 or 3 will be displayed flashing, when the unpairing is completed a flashing 0 will be displayed and when the process is complete, **d** is displayed

- ▶ When the unit(s) have been unpaired or disconnected a zero will be displayed indicating that no units are connected.

Press the knob, for more than three seconds, to return to the previous level, **rF 1**.

Press the knob until the three bars are displayed and release the knob to return to the normal display i.e. the current room temperature.

## 6.6 S 1 Software version

- ▶ Turn the knob to select **S 1**



- ▶ Press the knob to enter the software version function
- ▶ The software version is displayed
- ▶ Press the knob for more than three seconds to return to the previous level

## 6.7 S 2 RF signal strength

- ▶ Turn the knob to select **S 2**



- ▶ Press the knob to enter the signal strength function
- ▶ The signal strength is displayed a number 0 to 10



- [0] no signal
- [1-3] weak signal
- [4-6] acceptable signal
- [7-10] very good signal

Press the knob, for more than three seconds, to return to the previous level.

Press the knob until the three bars are displayed and release the knob to return to normal display.

## 7 Troubleshooting

### 7.1 Temperature related faults

Problem	Cause	Remedy
The required room temperature has not been achieved.	Airlock	Bleed the radiators and vent the heating system.
	Low system pressure	Top up the system pressure via the filling link
	Time program	Is the heating on for long enough
	Flow temperature	Set a higher flow temperature
	Thermostat valve in reference room	Operate the TRV to ensure that it does not stick Fully open the TRV
The room temperature is higher than the set value	Check the Room thermostat location refer to section 3.5	Move the Room thermostat to a more suitable location

### 7.2 Room thermostat/Programmer related faults

#### 7.2.1 Room thermostat

Faults are displayed alternating with the current room temperature.

Fault code	Cause code	Problem	Description	Remedy
A21	1001	No RF signal	All units powered and not showing low battery symbol	Check signal strength and reposition Room thermostat for better signal
A22	1002	No RF signal or pairing fault	All units powered and not showing low battery symbol	Repeat pairing
A23	1003	Room stat internal sensor failure	Internal room temperature sensor out of valid range	Replace RF Room thermostat
A24	1004	Remote RF unit has a fault	Another room thermostat in the system has a problem	Check other room thermostats within the system for fault codes
A27	1007	Unable to communicate with boiler's EMS bus	Boiler is EMS compatible but no communication	Replace EMS interface
A28	1008	Not paired	Unit is not paired	Unpair and pair all
		Blank display or low battery symbol	Batteries are spent	Replace batteries

#### 7.2.2 Programmer/Receiver

Faults will be display alternating between the fault code and the cause code

Fault code	Cause code	Problem	Description	Remedy
A21	1001	No RF signal	All units powered and not showing low battery symbol	Check signal strength and reposition Room thermostat for better signal
A22	1002	No RF signal or pairing fault	All units powered and not showing low battery symbol	Repeat pairing
A24	1004	Remote RF unit has a fault	A Room thermostat in the system has a fault	Check room thermostats within the system for fault codes
A27	1007	Unable to communicate with boiler's EMS bus	Boiler is EMS compatible but no communication	Replace EMS interface
A28	1008	Not paired	Unit is not paired	Unpair and pair all
		Blank display	No connection to EMS bus	Ensure EMS unit is connected properly

## 8 Servicing

These units can not be serviced.

Should either unit fail to function correctly check that the:

- ▶ Programmer/Receiver settings are correct
- ▶ RF signal link between the units is set up correctly, → sections 6.5 and page 14 Radio settings
- ▶ Room thermostat batteries are the correct type, fitted correctly and are not exhausted. If in doubt, fit new batteries → section 9.1.

## 9 Maintenance

These units require no maintenance apart from replacing used batteries in the Room thermostat.

The outer casing can be wiped clean using a dry cloth, do not use polish or detergents

### 9.1 Room thermostat battery replacement

If under normal operation the battery low symbol appears, then the batteries require replacing within 60 days or the programmed settings will be lost.

Replace the batteries with the same type: AAA 1.5V alkaline



Fig. 22 Low battery indication

#### Battery access

To remove the Room thermostat from the wall mounting plate:

1. Insert a suitable flat bladed screwdriver into the slot on the bottom edge of the device
2. Twist the screwdriver gently until the bottom catches are released.
3. Separate the device from the wall plate.

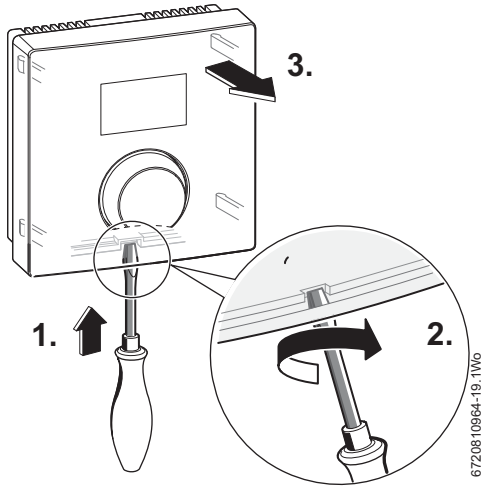


Fig. 23 Remove back plate

#### Battery replacement



Ensure that the batteries are correctly oriented, positive (+) battery terminal to the positive (+) battery holder terminal as shown in figure 24

Replace the spent batteries with new ones of the same type, ensuring that they are installed in the correct orientation. Insert the batteries ensuring that the positive + end of the battery is inserted into the positive + terminal of the holder. Fit the front cover to the wall plate, locating the catches [1] on the top edge and then snap the bottom edge into place.

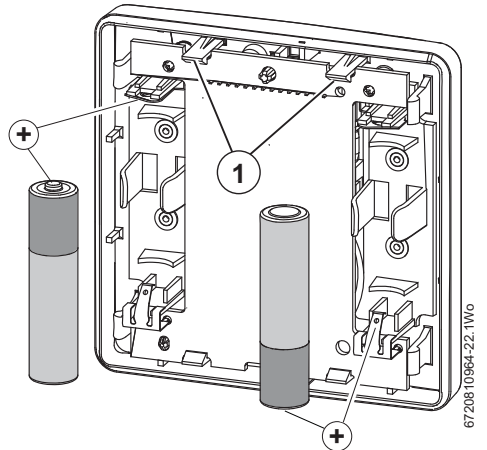


Fig. 24 Replace batteries

## 10 ErP Class

The data represented in the table below is required for the completion of Energy Related Product (ErP) Directive System Package fiche and, subsequently, the ErP system data label. ErP Labelling obligation applicable from 26th September 2015.

<b>Supplier</b>	Worcester Bosch Group
<b>Model</b>	Comfort I
<b>ErP Class</b>	V
<b>Function and ERP description</b>	<b>Load compensation</b> Modulating room thermostat, for use with modulating heaters: An electronic room thermostat that varies the flow temperature of the water leaving the heater dependant upon measured room temperature deviation from room thermostat set point. Control is achieved by modulating the output of the heater.
<b>Additional seasonal space heating efficiency gain</b>	<b>+3%</b>

### Battery recycling

Batteries, rechargeable or not, must not be disposed of into ordinary household waste. Instead, they must be recycled properly to protect the environment and cut down on the waste of precious resources. Your local waste management authority can supply details concerning the proper disposal of batteries.

## 11 Environment / disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.

The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed. We use the best possible technology and materials for protecting the environment taking account of economic considerations.

### Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling. All of our packaging materials are environmentally compatible and can be recycled.

### Electrical and electronic equipment



Scrap electrical and electronic equipment must be collected separately and returned to an environmentally compatible recycling facility (European Directive on waste electrical and electronic equipment).

Use the country specific return and collection system for the disposal of electrical and electronic equipment.

## Notes

## Notes

Worcester, Bosch Group  
Cotswold Way, Warndon, Worcester WR4 9SW.  
Tel. 0330 123 9559  
Worcester, Bosch Group is a brand name of  
Bosch Thermotechnology Ltd.

[worcester-bosch.co.uk](http://worcester-bosch.co.uk)

6 720 810 964 (2014/07)

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