

# R27-RF<sup>V2</sup>



## 2 Zone RF Programmer

Installation and Operating Guide

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2 Zone RF Programmer

**Installation Instructions**

## Factory Default Settings

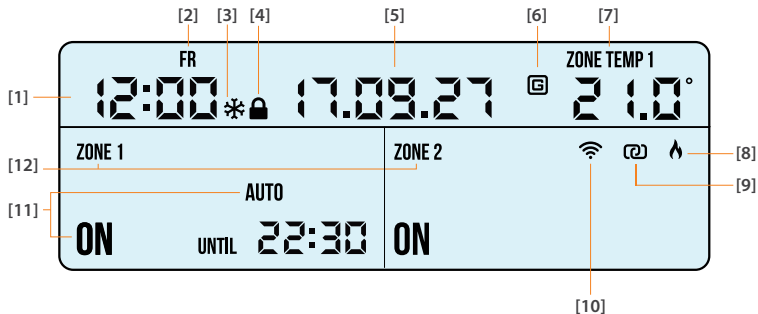
|                   |      |                   |      |
|-------------------|------|-------------------|------|
| Program:          | 5/2D | Operating Mode:   | Auto |
| Backlight:        | On   | Pin Lock:         | Off  |
| Keypad Lock:      | Off  | Service Interval: | Off  |
| Frost Protection: | Off  |                   |      |

## Specifications

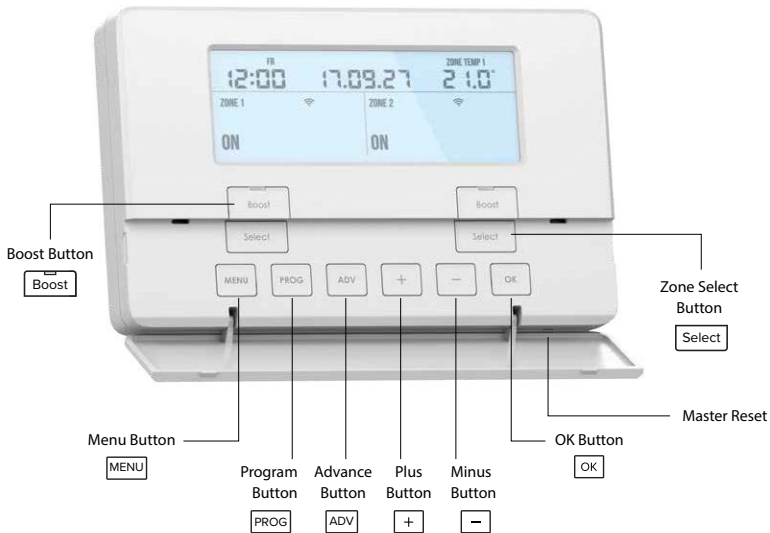
|                      |                                  |                   |   |
|----------------------|----------------------------------|-------------------|---|
| Switch Output:       | 230Vac SPDT                      | Backplate:        | British System Standard                               |
| Power Supply:        | 230Vac                           | Pollution degree: | 2 (Resistance to voltage surge 2000V; as per EN60730) |
| Ambient Temperature: | 0...50°C                         | Software Class:   | Class A   |
| Dimensions:          | 161 x 100 x 31 mm                | Frequency:        | 868.35 MHz  |
| Contact Rating:      | 3(1)A 230Vac                     |                   |   |
| Program Memory       | 5 Years                          |                   |   |
| Temperature Sensor:  | NTC 100K                         |                   |   |
| Backlight:           | White                            |                   |   |
| IP Rating:           | IP20                             |                   |   |
| Battery:             | 3VDC Lithium<br>LIR2032 & CR2032 |                   |   |

## LCD Display

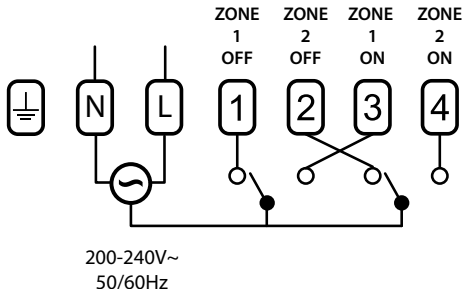
- [1] Displays current time.
- [2] Displays current day of the week.
- [3] Displays when frost protection is activated.
- [4] Displays when keypad is locked.
- [5] Displays current date.
- [6] Displays when Gateway is connected.
- [7] Displays zone temperature.
- [8] Displays when calling for heat.
- [9] Displays RF thermostat connection.
- [10] Displays RF transmission.
- [11] Displays current mode.
- [12] Displays zone title.



# Button Description



# Wiring Diagram



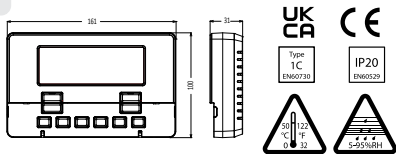
## Terminal Connections

|   |   |
|---|---|
| ⏚ | Earth                                       |
| N | Neutral                                     |
| L | Live  |
| 1 | Zone 1 OFF - N/C Normally closed connection |
| 2 | Zone 2 OFF - N/C Normally closed connection |
| 3 | Zone 1 ON - N/O Normally open connection    |
| 4 | Zone 2 ON - N/O Normally open connection    |

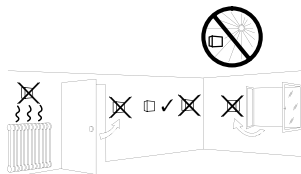


# Mounting & Installation

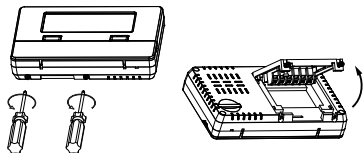
1



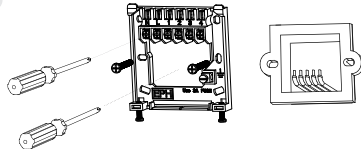
2



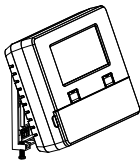
3



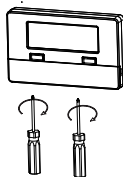
4



5



6



### Caution!

- Installation and connection should only be carried out by a qualified person.
- Only qualified electricians or authorised service staff are permitted to open the programmer.
- If the programmer is used in a way not specified by the manufacturer, its safety may be impaired.
- Prior to setting the programmer, it is necessary to complete all required settings described in this section.
- Before commencing installation, the programmer must be first disconnected from the mains.

### **This programmer can be surface mounted or mounted to a recessed conduit box.**

- 1) Remove the programmer from its packaging.
- 2) Choose a mounting location for the programmer:
  - Mount the programmer 1.5 metres above the floor level.
  - Prevent direct exposure to sunlight or other heating / cooling sources.
- 3) Use a phillips screwdriver to loosen the screws of the backplate on the bottom of the programmer.  
The programmer is lifted upwards from the bottom and removed from the backplate.  
(See Diagram 3 on Page 7)
- 4) Screw the backplate onto a recessed conduit box or directly to the surface.
- 5) Wire the backplate as per the wiring diagram on page 6.
- 6) Sit the programmer onto the backplate making sure the programmer pins and the backplate contacts are making a sound connection, push the programmer flush to the surface and tighten the screws of the backplate from the bottom. (See Diagram 6 on Page 7)



2 Zone RF Programmer

**Operating Instructions**

## Quick introduction to your R27-RF<sup>V2</sup> programmer:

The R27-RF<sup>V2</sup> programmer will be used to control two separate zones in your central heating system. It is compatible with the EPH range of room and cylinder thermostats.

Each zone can be independently operated and programmed to suit your needs. Each zone has up to three daily heating programs called P1, P2 and P3. See Page 13 for instructions on how to adjust the program settings.

On the LCD screen of your programmer you will see two separate sections, one to represent each zone.

Within these sections you can see what mode the zone is currently in.

When in the AUTO mode, it will show when the zone is next programmed to be switched ON or OFF.

For 'Mode Selection' please see page 11 for further explanation.

When the zone is ON, you will see the red LED for that zone light up. This indicates that power is being sent from the programmer on this zone.

When the wireless thermostat is satisfied and not calling for heat, it will stop the programmer from activating. The red light for that zone will not turn on.

In the event your wireless cylinder thermostat loses connection it will prevent the zone from activating. The red light will not turn on. The batteries should be checked/replaced.

Low power or discount store battery brands should not be used. When the battery is low, a battery low notification will appear on the thermostat and on the EMBER app. The batteries should be changed immediately.

## Mode Selection AUTO

There are four modes available for selection.

**AUTO** The zone operates up to three 'ON/OFF' periods per day (P1, P2, P3).

**ALL DAY** The zone operates one 'ON/OFF' period per day. This operates from the first 'ON' time to the third 'OFF' time.

**ON** The zone is permanently ON.

**OFF** The zone is permanently OFF.

Press  to change between AUTO, ALL DAY, ON & OFF.

The current mode will be shown on the screen under the specific zone.

The  are found under the front cover. Each zone has its own .

## Programming Modes


This programmer has the following programming modes.

**5/2 Day mode** Programming Monday to Friday as one block and Saturday and Sunday as a 2nd block.

**7 Day mode** Programming all 7 days individually.

**24 Hour mode** Programming all 7 days as one block.

## Factory Program Settings 5/2d

| 5/2 Day   |       |        |       |        |       |        |
|---|-------|--------|-------|--------|-------|--------|
|  | P1 ON | P1 OFF | P2 ON | P2 OFF | P3 ON | P3 OFF |
| Mon-Fri   | 06:30 | 08:30  | 12:00 | 12:00  | 16:30 | 22:30  |
| Sat-Sun   | 07:30 | 10:00  | 12:00 | 12:00  | 17:00 | 23:00  |

| 7 Day      |       |        |       |        |       |        |
|------------|-------|--------|-------|--------|-------|--------|
|            | P1 ON | P1 OFF | P2 ON | P2 OFF | P3 ON | P3 OFF |
| All 7 days | 06:30 | 08:30  | 12:00 | 12:00  | 16:30 | 22:30  |

| 24 Hour  |       |        |       |        |       |        |
|----------|-------|--------|-------|--------|-------|--------|
|          | P1 ON | P1 OFF | P2 ON | P2 OFF | P3 ON | P3 OFF |
| Everyday | 06:30 | 08:30  | 12:00 | 12:00  | 16:30 | 22:30  |

## Adjust the Program Setting in 5/2 Day Mode

Press .

**Programming for Monday to Friday for Zone 1 is now selected.**

To change programming for Zone 2 press the appropriate .

Press  and  to adjust the P1 ON time.

Press .

Press  and  to adjust the P1 OFF time.

Press .

Repeat this process to adjust P2 and P3 times.

**Programming for Saturday to Sunday is now selected.**

Press  and  to adjust the P1 ON time.

Press .

Press  and  to adjust the P1 OFF time.

Press .

Repeat this process to adjust P2 and P3 times.

Press  to return to normal operation.

While in programming mode, pressing  will jump to the next day (block of days) without changing the program.

### Note:

1. To change from 5/2d to 7D or 24H programming, refer to page 19, Menu P03.
2. If you don't wish to use one or more of the daily programs then simply set the start time and end time to be identical. For example, if P2 is set to start at 12:00 and end at 12:00 the programmer will simply ignore this program and proceed to the next switching time.

## Reviewing the Program Settings

Press **PROG** .

Press **OK** to scroll through the periods for the individual day (block of days).

Press **Select** to jump to the next day (block of days).

Press **MENU** to return to normal operation.

You must press the specific **Select** to review the schedule for that zone.

## Boost Function

Each zone can be boosted for 30 minutes, 1, 2 or 3 hours while the zone is in the AUTO, ALL DAY & OFF mode.

Press **Boost** 1, 2, 3 or 4 times, to apply the desired BOOST period to the Zone.

When a **Boost** is pressed there is a 5 second delay before activation where 'BOOST' will flash on the screen, this gives the user the time to select the desired BOOST period.

To cancel a BOOST, press the respective **Boost** again.

When a BOOST period has ended or has been cancelled, the Zone will return to the mode that was previously active prior to the BOOST.

**Note:** A BOOST cannot be applied while in the ON or Holiday Mode.



## Advance Function

When a zone is in the AUTO or ALL DAY mode, the Advance function allows the user to bring the zone or zones forward to the next switching time.

If the zone is currently timed to be OFF and  is pressed, the zone will be switched ON until the end of the next switching time. If the zone is currently timed to be ON and  is pressed, the zone will be switched OFF until the start of the next switching time.

Press .

Zone1 and Zone 2 will begin to flash.

Press the appropriate .

The zone will display '**ADVANCE ON**' or '**ADVANCE OFF**' until the end of the next switching time.

Zone 1 will stop flashing and enter Advance mode.

Zone 2 will remain flashing.

Repeat this process with Zone 2 if required.

Press .

To cancel an ADVANCE, press the appropriate .

When an ADVANCE period has ended or has been cancelled, the zone will return to the mode that was previously active prior to the ADVANCE.

## Menu

This menu allows the user to adjust additional functions.


To access the menu, press .


## P01 RF Thermostat Pairing

This function allows the user to connect an RF thermostat to the R27-RF<sup>V2</sup> programmer.


### To connect an RFR<sup>V2</sup>, RFRB<sup>V2</sup> or RFC<sup>V2</sup> to an R27-RF<sup>V2</sup> programmer

#### 1. On the R27-RF<sup>V2</sup>:

Press , 'P01 rF COn' will appear on the screen.

Press , 'RF CONNECT' will appear solid on the screen.

#### 2. On the thermostat:

Remove the back cover & press the RF button  on the PCB.



RFRV2




RFRBV2



RFCV2


#### 3. On the R27-RF<sup>V2</sup>:

Once 'ZONE' flashes press .

#### 4. On the thermostat:

When 'r01' appears, press  to confirm the thermostat is connected.

#### 5. On the R27-RF<sup>V2</sup>:

Press  to return to the main screen.

## ■ P01 RF Thermostat Pairing continued



CDT2-RF

### To connect a CDT2-RF to an R27-RF<sup>V2</sup> programmer

#### 1. On the R27-RF<sup>V2</sup>:

Press , 'P01 rF COn' will appear on the screen.

Press , 'RF CONNECT' will appear solid on the screen.

#### 2. On the thermostat:

Press the RF button  on the left side of the thermostat housing.

#### 3. On the R27-RF<sup>V2</sup>:

Once 'ZONE' flashes press .

#### 4. On the thermostat:

When 'r01' appears, press  to confirm the thermostat is connected.

#### 5. On the R27-RF<sup>V2</sup>:

Press  to return to the main screen.

**Note:** When pairing the 2nd zone on the RF controller, 'r02' will appear on the thermostat screen.

## P01 RF Thermostat Pairing continued



RDT-RF

### To connect an RDT-RF to an R27-RF<sup>V2</sup> programmer

#### 1. On the R27-RF<sup>V2</sup>:

Press  , 'P01 rF CO' will appear on the screen.

Press  , 'RF CONNECT' will appear solid on the screen.

#### 2. On the thermostat:

Press and hold  and  together for 5 seconds.

'PO1' will appear on the screen, press .

#### 3. On the R27-RF<sup>V2</sup>:

Once 'ZONE' flashes press .

#### 4. On the thermostat:

When 'r01' appears solid on the screen, press  to confirm the thermostat is connected.

#### 5. On the R27-RF<sup>V2</sup>:

Press  to return to the main screen.

**Note:** When pairing to the 2nd zone on the RF controller, 'r02' will appear on the thermostat screen.

## P01 RF Thermostat Pairing continued



### HDT-RF

#### To connect a HDT-RF to an R27-RF<sup>V2</sup> programmer


##### 1. On the R27-RF<sup>V2</sup>:

Press  , 'P01 rF CO' will appear on the screen.

Press  , 'RF CONNECT' will appear solid on the screen.

##### 2. On the thermostat:


Press and hold  and  together for 5 seconds.

'PO1' will appear on the screen, press .

##### 3. On the R27-RF<sup>V2</sup>:

Once 'ZONE' flashes press  .

##### 4. On the thermostat:

When 'r01' appears solid on the screen, press  to confirm the thermostat is connected.

##### 5. On the R27-RF<sup>V2</sup>:

Press  to return to the main screen.

**Note:** When pairing to the 2nd zone on the RF controller, 'r02' will appear on the thermostat screen.

## P02 GW04 Gateway Pairing



### GW04 Gateway

This function allows the user to connect the GW04 Gateway to the R27-RF<sup>V2</sup> programmer.

#### 1. On the R27-RF<sup>V2</sup>:

Press  , 'P01 rF CO<sup>n</sup>' will appear on the screen.

Press  until 'P02 gAtE' will appear on the screen.

Press  . 'CONNECT' will flash on the screen.

#### 2. On the GW04 Gateway:

Press and hold the RF connect button until the white RF LED begins to flash.

#### 3. On the R27-RF<sup>V2</sup>:

When successful 'r1' and 'CONNECTED' will appear on the screen.

Press  .

Press  and the programmer will return to normal operation.

#### Notes:

If multiple R27-RF<sup>V2</sup> programmers are paired to the same gateway **r2**, **r3** or **r4** may appear on the screen.

When in the gateway pairing screen the wireless channel (**CH**) will be displayed on the top right of the screen.

## P03 Setting the Date, Time and the Programming Mode DST ON

Press **MENU**, 'P01 rF COn' will appear on the screen.

Press **+** until 'P03 tIne' appears on the screen.

Press **OK**, the year will begin to flash.

Press **+** and **-** to adjust the year.

Press **+** and **-** to adjust the month.

Press **+** and **-** to adjust the day.

Press **+** and **-** to adjust the hour.

Press **+** and **-** to adjust the minute.

Press **+** and **-** to adjust from 5/2d to 7d or 24h mode.

Press **+** and **-** to turn DST (Day Light Saving time) On or Off.

Press **MENU** and the programmer will return to normal operation.

Press **OK**.

Press **OK**.

Press **OK**.

Press **OK**.

Press **OK**.

Press **OK**.

### Note:

Please see page 12 for descriptions of Programming Modes.

## P04 Holiday Mode

This function allows the user to switch off their heating system by defining a start and end date.

Press  , 'P01 rF COn' will appear on the screen.

Press  until 'P04 HOL' will appears on the screen.

Press  , 'HOLIDAY FROM', the date and time will appear on the screen. The year will begin to flash.

Press  and  to adjust the year.

Press  .

Press  and  to adjust the month.

Press  .

Press  and  to adjust the day.

Press  .

Press  and  to adjust the hour.

Press  .

'HOLIDAY TO' and the date and time will appear on the screen. The year will begin to flash.

Press  and  to adjust the year.

Press  .

Press  and  to adjust the month.

Press  .

Press  and  to adjust the day.

Press  .

Press  and  to adjust the hour.

Press  .

The programmer will now be switched off during this selected period.

To cancel the HOLIDAY, press  .

The programmer will return to normal operation when the holiday has finished or has been canceled.



## P05 Frost Protection OFF

This function allows the user to activate the frost protection between a range of 5°C and 20°C.

Frost protection is default set to OFF.

Press  , 'P01 rF COn' will appear on the screen.

Press  until 'P05 FrOST' appears on the screen.

Press  , 'OFF' will appear on the screen.

Press  to select 'ON'.

Press  .

'5°C' will flash on the screen.

Press  and  to select your desired frost protection temperature.

Press  .

Press  and the programmer will return to normal operation.

The Frost symbol ❄ will display on the screen if the user activates it in the menu.

If the room temperature drops below the desired frost protection temperature, all zones of the programmer will activate and the frost symbol will flash until the frost protection temperature has been achieved.

## P06 PIN

This function allows the user to put a PIN lock on the programmer. The PIN lock will reduce the functionality of the programmer.

The user will have two options to choose from:

**01:** All buttons will be disabled.

**02:** Functionality will be reduced to a 30 minutes and 1 hour boost. The only modes available are the AUTO & OFF.

### Set up the PIN


Press  , 'P01 rF COn' will appear on the screen.

Press  until 'P06 Pin' appears on the screen. Press  , 'OFF' will appear on the screen.

Press  to change from OFF to ON. Press  . '01' will be appear on the screen.

Press  and  to choose between options 01 and 02.

Press  button. '0000' will flash on the screen. Press  and  to set the value from 0 to 9 for the first digit. Press  to move to the next PIN digit. When the last digit of the PIN is set, Press  . 'VERiFy' is displayed with '0000' . Press  and  to set the value from 0 to 9 for the first digit.

Press  to move to the next PIN digit. When the last digit of the PIN is set, Press  . The PIN is now verified, and the PIN lock is activated. If the verification PIN is entered incorrectly the user is brought back to the menu. When the PIN lock is active the Lock symbol  will flash every second on the screen.

When the programmer is PIN locked, Pressing the  will take the user to the PIN unlock screen.

## To Unlock the PIN

Press **MENU**, '**UNLOCK**' will appear on the screen. '**0000**' will flash on the screen.

Press **+** and **-** to set the value from 0 to 9 for the first digit.

Press **OK** to move to the next PIN digit.

When the last digit of the PIN is set.

Press **OK**.

The PIN is now unlocked.

If a PIN has been unlocked on the programmer, it will automatically reactivate if there is no button pressed for 2 minutes.

## To Deactivate the PIN

When the PIN is unlocked (see above instructions)

Press **MENU**, '**P01 rF CON**' will appear on the screen.

Press **+** until '**P06 Pin**' appears on the screen.

Press **OK**, '**ON**' will appear on the screen.

Press **+** or **-** to select '**OFF**'.

Press **OK**.

'**0000**' will flash on the screen. Enter the PIN.

Press **OK**.

The PIN is now disabled.

Press **MENU** to return to normal operation or it will automatically exit after 20 seconds.

## P07 RF Thermostat UnPairing

This function allows the user to disconnect an RF thermostat from an R27-RFv2 programmer.

Press **MENU**, 'P01 rF COn' will appear on the screen.

Press **+** until 'P07 dISCON' appears on the screen.

Press **OK**.

'Zone' will flash on the screen. (e.g. Zone 1 or Zone 2)

Press **Select** and 'ZONE' will disappear on the screen.

Press **OK**.

Your RF thermostat is now disconnected.

Press **MENU** and the programmer will return to normal operation.

## Copy Function

Copy function can only be used when the 7d mode is selected. (See page 19 to select 7d mode)

Press **PROG** to program the ON and OFF periods for the day for the week you want to copy.

**Do not press OK on the P3 OFF time, leave this period flashing.**

Press **ADV**, 'COPY' will appear on the screen, with the next day of the week flashing.

To add the desired schedule to this day, press **+**.

To skip this day, press **-**.

Press **OK** when the schedule has been applied to the desired days.

Ensure the zone is in the 'Auto' mode for this schedule to operate accordingly.

Repeat this process for Zone 2 if required.

### Note:

You cannot copy schedules from one zone to another, E.g. Copying Zone 1 schedule to Zone 2 is not possible.

## Backlight Mode Selection ON

There are 3 backlight settings available for selection:

**AUTO** Backlight stays on for 10 seconds when any button is pressed.

**ON** Backlight is permanently On.

**OFF** Backlight is permanently Off.

To adjust the backlight press and hold  for 10 seconds.

'Auto' appears on the screen.

Press  or  to change the mode between Auto, On and Off.

Press  to confirm selection and to return to normal operation.

## Locking the Keypad

To lock the programmer, press and hold **+** and **-** together for 10 seconds.

**🔒** will appear on the screen. The buttons are now disabled.

To unlock the programmer, press and hold **+** and **-** for 10 seconds.

**🔒** will disappear from the screen. The buttons are now enabled.

## Resetting the Programmer

To reset the programmer to factory settings:

Press **MENU**.

'**P01 rF CO**n' will appear on the screen.

Press **+** until '**P08 rE**Set' appears on the screen.

Press **OK** to select.

'**nO**' will begin to flash.

Press **+**, to change from '**nO**' to '**YES**'.

Press **OK** to confirm.

The programmer will restart and revert to its factory defined settings.

The time and date will not be reset.

## Master Reset

To master reset the programmer to factory settings, locate the master reset button on the right-hand side underneath the programmer. *(see page 5)*

Press the Master Reset button and release it.

The screen will go blank and reboot.

The programmer will restart and revert to its factory defined settings.

The time and date will need to be set.

## Service Interval OFF

The service interval gives the installer the ability to put an annual countdown timer on the programmer. When the Service Interval is activated 'SEruCE' will appear on the screen which will alert the user that their annual boiler service is due.

For details on how to enable or disable the Service Interval, please contact customer service.









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