



**HORSTMANN**

# **ThermoPlus AS2-RF User Operating Instructions**

**Programmable Room Thermostat  
with wireless communication technology.**



The Horstmann ThermoPlus AS2-RF is a wireless Programmable Room Thermostat that has been designed to make its operation very simple for the householder.

The built in automatic clock means it will not need setting or adjusting for BST and GMT time changes.

The ThermoPlus will provide a pre-programmed temperature profile preset by your installer and day-to-day user adjustments are carried out using just three buttons.

The ThermoPlus AS2-RF is supplied in two parts. The receiver which is hard wired to the combi or conventional system boiler and the AS2-RF thermostat which can be used in any normal domestic environment within a typical 30 metre range without the need for any costly or disruptive wiring.

# The ThermoPlus AS2-RF

The instructions contained in this user guide are designed to help with the programming and operation of the unit.

**Part 1** of these instructions explains the day to day operation of the AS2-RF

**Part 2** of these instructions describes programming the AS2-RF

**Part 3** of these instructions is for understanding the receiver

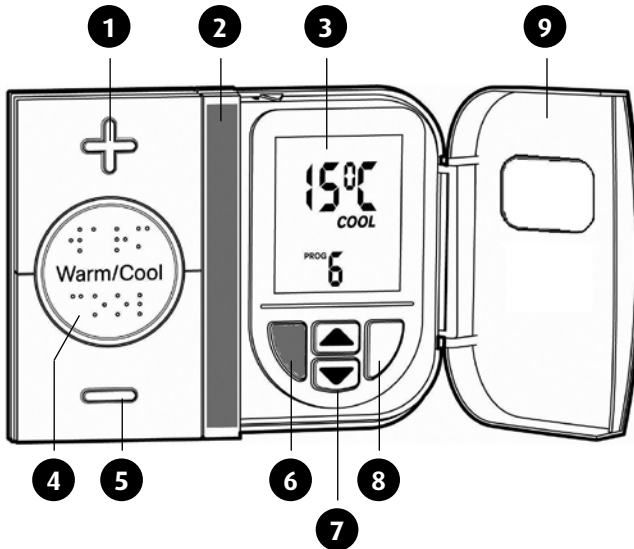
The AS2-RF thermostat kit is made up of two parts:

1 x ASR-RF Receiver

1 x AS2-RF Transmitter

The AS2-RF has been designed with ease of installation in mind. No hard wiring is required between the transmitter and the receiver. The receiver unit is hard wired to the boiler and should be sited close to the existing wiring. The AS2-RF can then be positioned up to 30 metres away - Range will vary depending upon the composition, density and number of walls between the AS2-RF transmitter and the receiver.

## AS2-RF Transmitter



- 1 - Plus '+' Button
- 2 - LED Indicator lights
- 3 - Installer Display
- 4 - 'Warm/Cool' Button
- 5 - Minus '-' Button

- 6 - Standby Time/Set Button
- 7 - Increase/Decrease Buttons
- 8 - Prog/Exit Button
- 9 - Front flap shown open

## Part 1 – Day to Day operation

The ThermoPlus AS2-RF has been designed to be a simple to use thermostat, requiring minimal user intervention with a pre-programmed heating profile. Simple temperature adjustments can be easily carried out by using the '+' and '-' buttons. The indicator lights react to any temporary user adjustments, with the LED indicators working in the following way;

'Warm' is shown by two red lights and 'Cool' is shown by a single blue light (see Power Down Mode below). The centre button marked 'Warm/Cool' allows you to toggle between the warm and cool settings.

When one or more red lights are on, you can increase the temperature by pressing the '+' button. For example, press once to go up by 1°C or press twice to go up by 2°C.

When the two or three red lights are on, the temperature can also be lowered by using the '-' button. For example, press once to go down to the warm setting temperature and press again to go down to 1°C below warm setting temperature. (Maximum adjustment to warm temperature +/- 2°C). The blue light indicates the unit is working to the lower set temperature. Please note that the '+' or '-' buttons will have no effect on the lower temperature setting.

Under the flap is a blue button (6). During the summer, or when you want your central heating off for long periods, for example if you go on holiday, press the blue button and close the flap. When you want to go back to normal operation, open the flap and press the blue button again, remembering to close the flap once finished.

Both the Warm and Cool temperature settings can be permanently adjusted, this operation is detailed on page 4.

### Power Down Mode

During normal operation the AS2-RF will go into Power Down Mode, this is to maximise the life of the 3 x AA batteries fitted. Normal operation will continue during this mode, and the heating will be unaffected. The result of the Power Down Mode will mean that the LED indicators will not be displayed and LCD will not be illuminated, although the 'Warm' or 'Cool' temperature will be displayed.

To 'wake up' the AS2-RF press the 'Warm/Cool' button for 5 seconds, this will then illuminate both the LED and LCD displays for a period. Any adjustment can then be made, the Power Down Mode will commence again approximately 8 seconds after the last button press.

# Warm and Cool Temperature Adjustment

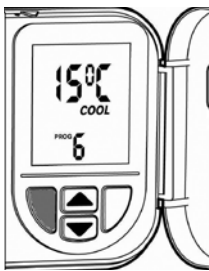
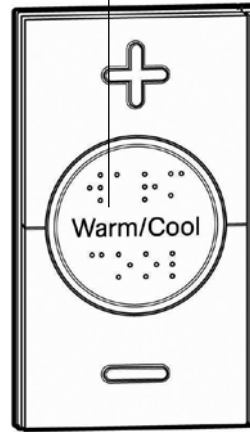
The Warm and Cool target temperature settings on the ThermoPlus AS2-RF are fully adjustable. To change a target temperature it is first necessary to press the centre button to bring up the 'Warm' or 'Cool' setting (indicated by the red or blue LED indicators).

By using the up/down keys under the flap the Warm/Cool temperature can be increased or decreased to the desired temperature setting.

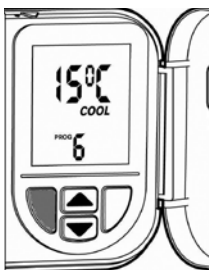
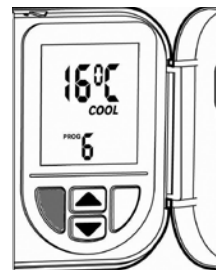
PLEASE NOTE – it is not possible to set the warm setting to below that of the cool setting or vice versa.

Once a new temperature has been set in either the Warm or Cool setting the AS2-RF will continue to use this setting until the next manual adjustment.

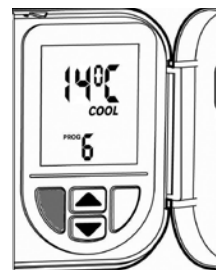
Press here to select  
Warm or Cool



To increase  
Press



To decrease  
Press



## Audible Feedback

All buttons on the AS2-RF give an audible confirmation when pressed. A short bleep means 'Yes', a longer buzz means 'No' – the setting/adjustment cannot be done.

## Frost Protection

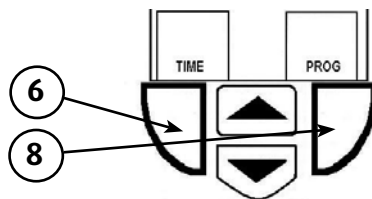
The blue button situated under the flap will initiate the frost protection mode, when pressed the word 'STANDBY' will appear on the display, the thermostat has been pre-programmed with a frost protection temperature level of 7°C, this can be adjusted by using the up and down arrow buttons. Minimum setting 5°C. It is not possible to set a frost protection temperature above the cool setting.

## Part 2 – Programming Mode

The ThermoPlus AS2-RF has been designed for minimal user intervention, however should any changes to the existing programme be required please press button 6 and 8 simultaneously to enter the programming mode, this will allow you to;

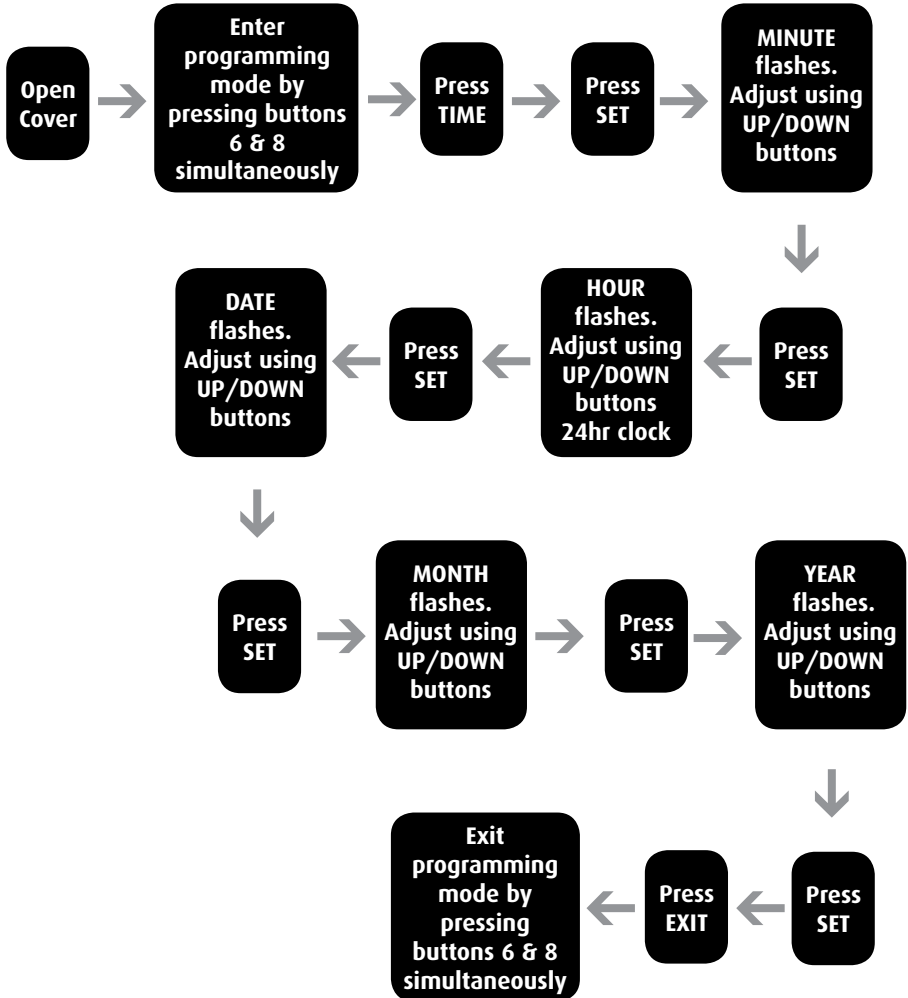
- **Check the current time/date/year**
- **Check the current profile**
- **Set a new pre-set profile or**
- **Set a user defined profile**

PLEASE NOTE; Upon completion of any of the adjustments above, please ensure that you exit the programming mode by pressing buttons 6 and 8 simultaneously.



# Time and Date Check

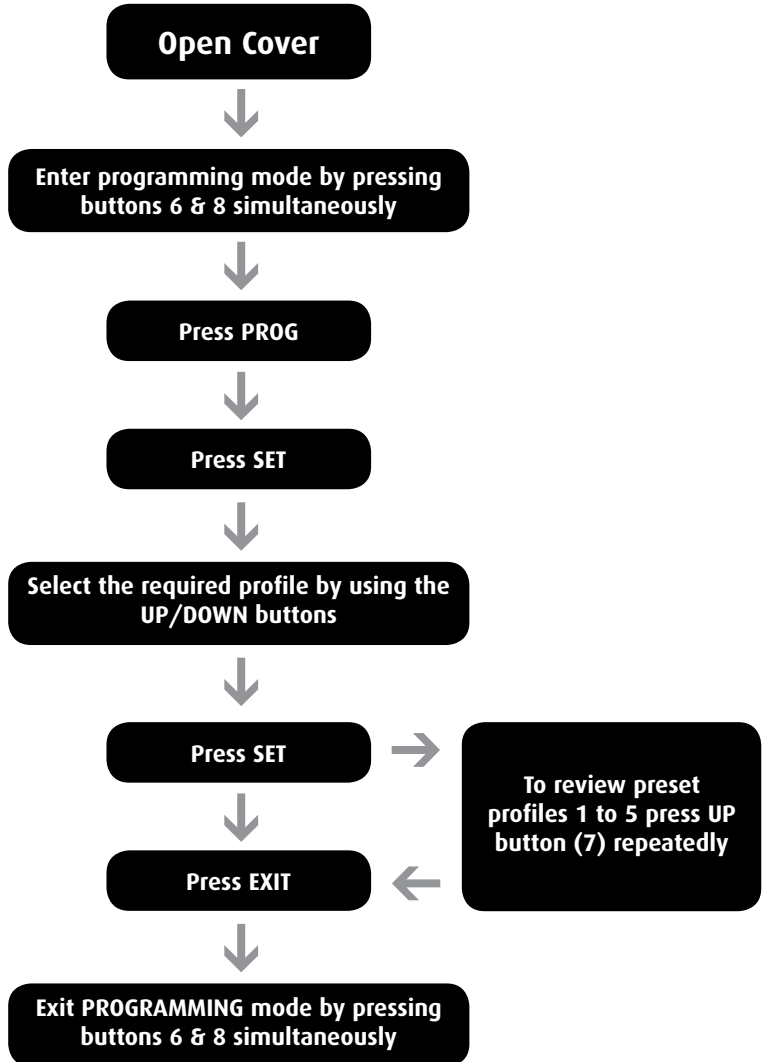
The Thermoplus AS2-RF thermostat has a built in automatic clock adjusting for BST & GMT time changes and has been preset with the current time and date during manufacture. No alteration should be required to the time and date, however if any modification is required please refer to the flowchart below.



# Setting Heating Profiles

The ThermoPlus AS2-RF contains a selection of five preset and one user definable profile options, one of these will have been set by the Installer. Care should be taken to ensure a profile is selected that suits your lifestyle the best. Profiles one to five are detailed on pages 8 and 9.

If none of the preset profiles meet your requirements it is possible to set a user defined profile, full details are given on page 10.



# Heating Profiles

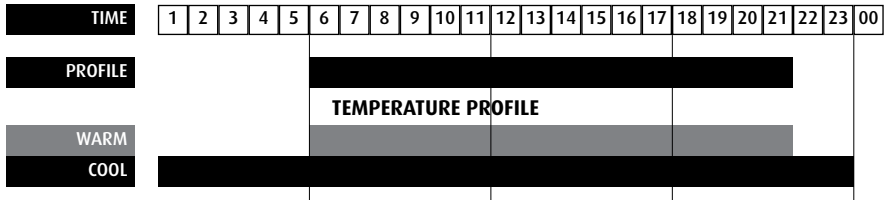
The ThermoPlus AS2-RF has six heating profiles, five are fixed and one is adjustable. Profile 'ONE' has been set as the default and is detailed below. During installation a heating profile should have been set to best match your requirements; illustrations of the preset profiles are shown below.

## PROFILE 1

PROFILE ONE – DEFAULT	START	STATUS
EVERY DAY	06:00	WARM
	22:00	COOL

### 24 HOUR

#### TIME PROFILE

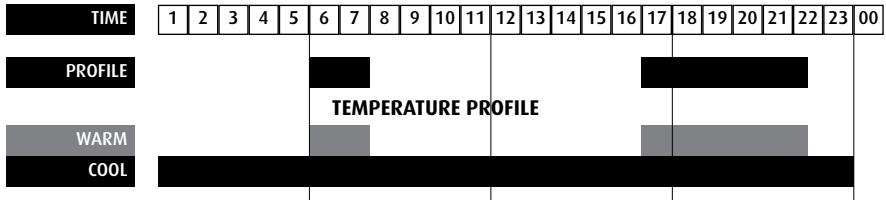


## PROFILE 2

PROFILE TWO	START	STATUS
EVERY DAY	06:00	WARM
	08:00	COOL
	17:00	WARM
	22:30	COOL

### 24 HOUR

#### TIME PROFILE

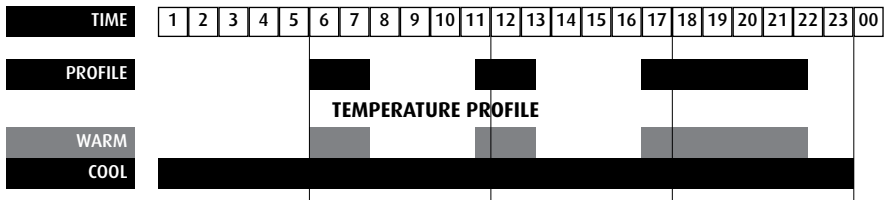


## PROFILE 3

PROFILE THREE	START	STATUS
EVERY DAY	06:00	WARM
	08:00	COOL
	11:30	WARM
	13:30	COOL
	17:00	WARM
	22:30	COOL

### 24 HOUR

#### TIME PROFILE



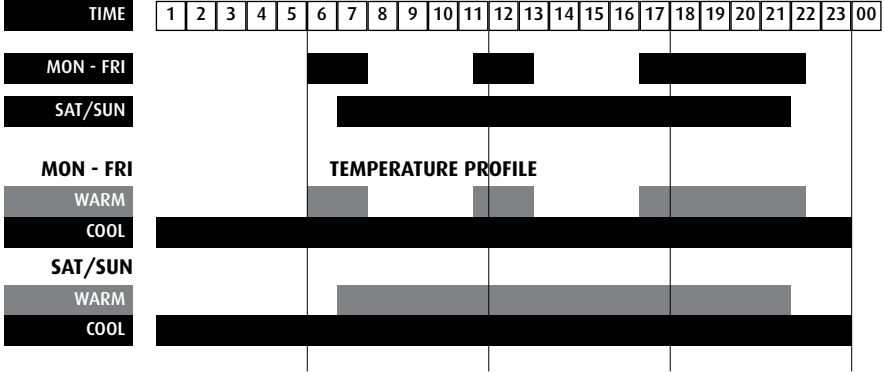


# PROFILE 4

## 5/2 DAY

PROFILE FOUR	START	STATUS	START	STATUS	
MON - FRI	06:00	WARM	SAT/SUN	07:00	WARM
	08:00	COOL		22:00	COOL
	11:30	WARM			
	13:30	COOL			
	17:00	WARM			
	22:30	COOL			

### TIME PROFILE

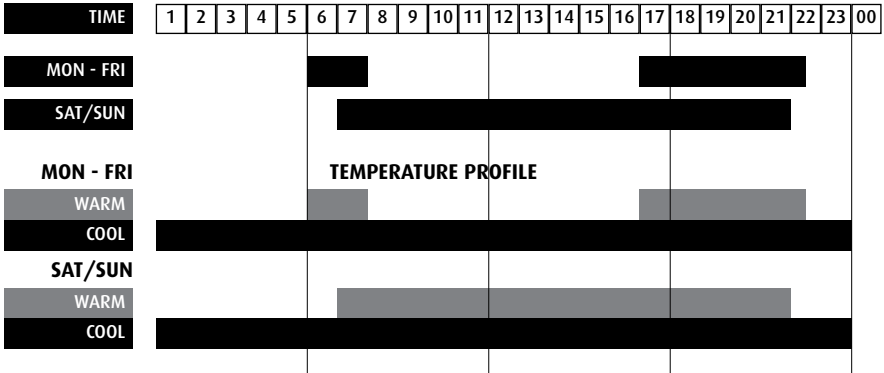


# PROFILE 5

## 5/2 DAY

PROFILE FIVE	START	STATUS	START	STATUS	
MON - FRI	06:00	WARM	SAT/SUN	07:00	WARM
	08:00	COOL		22:00	COOL
	17:00	WARM			
	22:30	COOL			

### TIME PROFILE



Profiles one to five have fixed periods, no alteration to the Warm/Cool times can be made, if it is necessary to make any alterations then profile six must be used. Profile six will allow you to set up a profile to your exact requirements. Please refer to the flowchart on page 10.

# PROFILE 6

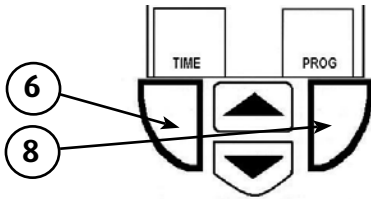
## User Definable - 7 Day Programming

Profile 6 will allow you to set up a profile to your exact requirements. By using the flow chart below you can adjust the Warm/Cool timing periods as required. If only one or two Warm/Cool periods are required on any day set the times accordingly and set the remaining Warm and Cool start times to be exactly the same as each other.

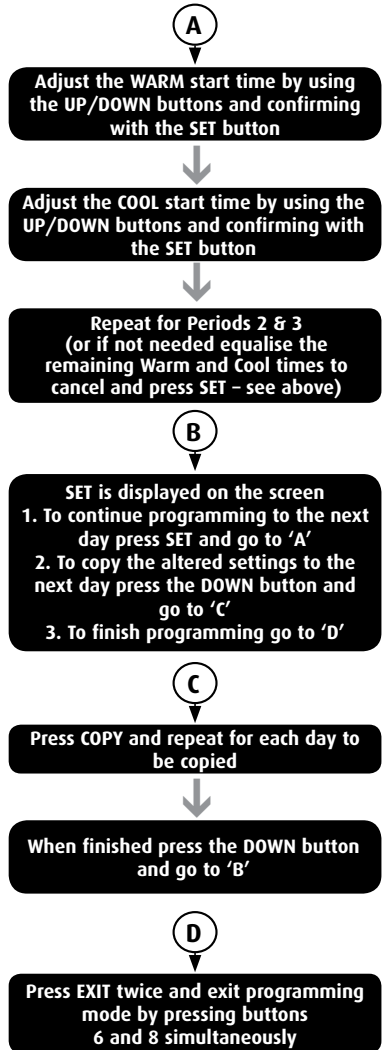
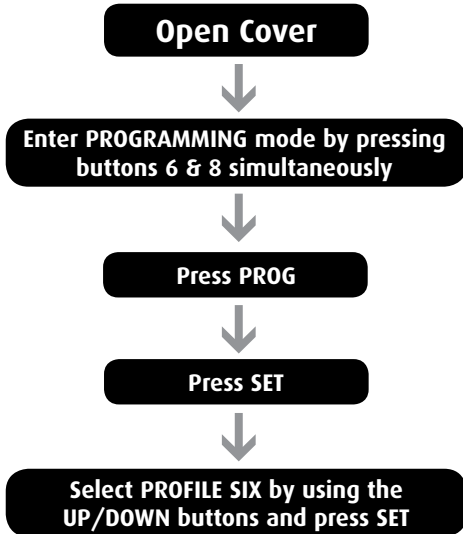
This will cancel the 2nd or 3rd Warm/Cool periods altogether for the day concerned. Unused periods will be shown by a series of dashes on the settings screen. Press SET and the next day and SET appears in the display. Press SET to adjust the next days settings or EXIT to return to the main menu. To do this press SET until the next day and SET appears in the display. Unused periods will be shown by a series of dashes on the setting screen.

If one or two periods have been set and you wish to return to three periods in 24 hours then pressing the up arrow when the dashes appear after the last Cool setting will bring back the hidden Warm/Cool settings.

PROFILE SIX	START	STATUS
DEFAULT	06:00	WARM
EVERYDAY	08:00	COOL
	11:30	WARM
	13:30	COOL
	17:00	WARM
	22:30	COOL



### START FLOW CHART

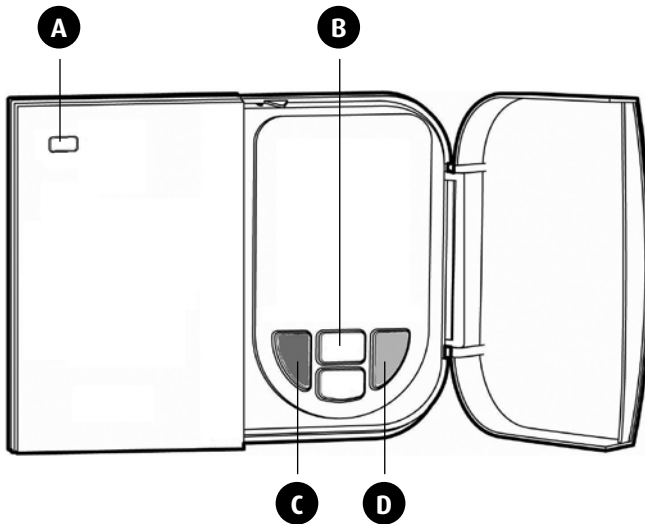


## Part 3 – Understanding the receiver

### RF TECHNOLOGY

The AS2-RF thermostat uses radio frequency technology to communicate wirelessly between the receiver and transmitter. This makes the AS2-RF ideal for fitting in either new or existing systems where additional wiring cannot be used for either practical or cosmetic reasons. The receiver and AS2-RF use Z-wave technology to communicate, this means it can be used as a stand alone item or added to an existing Z-wave installation.

### ASR-RF Receiver



- A** – Status Indicator LED
- B** – AS2-RF Add/Remove Buttons
- C** – Boiler 'Off' Override (Red)
- D** – Boiler 'On' Override (Green)

# RECEIVER STATUS INDICATOR (LED) LIGHT

The tri-coloured LED on the receiver allows both the installer and the end user to understand the status of communication between the receiver and the AS2-RF. The LED has six different indications, these are;

## INSTALLATION MODE

PLEASE NOTE; These will not be visible during normal user operation, users should not attempt to re-commission an existing installation, please consult your service engineer for assistance.

**Flashing Red** - No network connection, please refer to 'COMMISSIONING INSTRUCTIONS' section of the installation guide.

**Flashing Green** - Indicates a successful network connection.

## NORMAL OPERATION;

The following LED indications should be present during normal operation;

**Solid Red** - Heating off

**Solid Green** - Heating on

## FAIL SAFE MODE

If, during normal operation, the RF signal is lost for more than 60 minutes then the receiver will switch to Fail Safe Mode (off). During Fail Safe Mode the receiver relay/heating will be switched off and can be controlled by using the emergency red (off) and green (on) buttons located below the flap on the receiver if required, further details are given in the following sections. When the emergency buttons are used the LED will operate in the following way;

**Solid Amber** - Heating off - indicating no message from AS2-RF for 60 minutes

**Flashing Amber** - Heating on - Green override button activated

PLEASE NOTE; The red and green override buttons on the receiver will only operate in fail safe mode. In normal operation pressing these buttons will have no effect.

# Communication Fail Safe Modes

## RECEIVER FAIL SAFE MODE

Should your receiver enter the Fail Safe Mode this will be conveyed by the LED indicator going solid amber. This will only happen if the receiver has not received a signal from the AS2-RF for more than 60 minutes. Some basic instructions are detailed in the previous section and on the inside of the receiver flap for the emergency use of the relay/heating during this mode.

To resume normal operation please use the following procedures;

Press the 'Warm/Cool' button on the front of the AS2-RF for 5 seconds, or until the display illuminates, then press again to send a signal to the receiver, if successful this will be indicated by the LED on the receiver changing from amber to either red or green.

**Or**

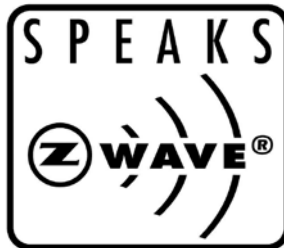
Check and replace, if necessary, the 3 x AA batteries in the AS2-RF transmitter, then follow the process above.

If the processes above fail to regain normal operation then please consult your heating or service engineer for further assistance.

## OPERATING MODES

During normal operation the receiver will indicate the boiler status through the colour of its LED, please refer to the RECEIVER STATUS INDICATOR LED on page 12.

The AS2-RF also uses a combination of LED and LCD displays to assist the user to gain maximum benefit from the thermostat. During normal operating period, where no user intervention has occurred, the AS2-RF will power down to maximize battery life. To 'wake' the AS2-RF press the Warm/Cool for 5 seconds, the displays, both LED and LCD will now illuminate and will stay lit for a period of 8 seconds after the last button press.



For more information on Z Wave technology please visit; [www.zen-sys.com](http://www.zen-sys.com)

# GENERAL INFORMATION

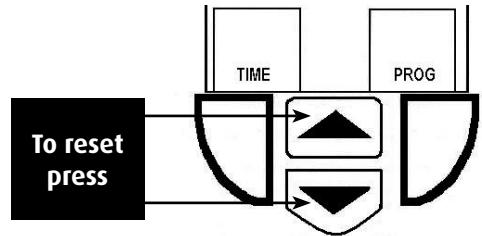
## Resetting the AS2-RF Transmitter

Electronic equipment can in some circumstances be affected by electrical interference. If the display becomes frozen or scrambled; or if you wish to revert back to the default settings please use the following procedure.

PLEASE NOTE: Do not attempt to reset without batteries being fitted. Using this procedure will restore the ThermoPlus AS2-RF to the original factory programme settings, the time setting will also default to midnight (00:00) on 1 January 2006.

### Resetting the ThermoPlus AS2-RF

- On the ThermoPlus AS2-RF press the 'UP' and 'DOWN' arrow buttons together:
- Then release the buttons and the thermostat will return to preset factory settings.
- Reset the time and date as shown on page 5.



## Battery Replacement

The ThermoPlus AS2-RF uses 3 x AA (LR6) batteries. The batteries supplied with the unit should last for approximately two years. When the batteries are nearing the end of their life a 'LOW BAT' message will flash on the display.

To change the batteries it is necessary to remove the AS2-RF from the wall, to achieve this first press the RELEASE BUTTONS located under the unit and pull the AS2-RF away from the mounting plate by gently pulling up.

Before removing the old batteries please wait for at least 15 seconds after the last button was pressed. Remove old batteries and ensure the L.C.D display has gone blank before fitting the new batteries.

Replace with three new AA size alkaline batteries, ensure they are fitted correctly as shown by the marking positioned between the battery terminals. Once batteries have been fitted, replace the AS2-RF to the mounting plate, ensuring that the two guide lugs are fitted into the corresponding slots in the top of the mounting plate. Now push the AS2-RF until the release button clicks into place.

WARNING: You must ensure that the AS2-RF is always running on 3 x AA batteries and when the battery low message is displayed it is important that they are changed as soon as possible. This is to preserve the secondary internal reserve battery which is non-replaceable.

**For best results use alkaline batteries rather than zinc carbon batteries.**



## No Signal Indicator

Should your AS2-RF enter the Fail Safe Mode this will be conveyed by the LCD display showing 'No Sig' every 3 seconds. This indicates that the AS2-RF has not received a signal to confirm the last 'Warm/Cool' change from the receiver.

To resume normal operation please use the following procedures;

- 1.** Press the 'Warm/Cool' button on the front of the AS2-RF for 5 seconds, or until the display illuminates, then press again to send a signal to the receiver, if successful this will make the 'No sig' flag disappear .

**or**

- 2.** Check the receiver, if the LED is not illuminated this indicates a power interruption or disconnection. In this case, the mains supply should be checked and if it cannot be restored the assistance of an electrician or service engineer should be sought.

## Service and Repair

The ThermoPlus AS2-RF is NOT user serviceable. Please do not dismantle the unit. In the event of a fault developing please refer to the **RESETTING THE AS2-RF TRANSMITTER** section on page 14. If this fails to resolve the problem please contact a local heating engineer or a qualified electrician.

## What is a programmable room thermostat? ...an explanation for householders.

A programmable room thermostat is both a programmer and a room thermostat. A programmer allows you to set 'ON and OFF' time periods to suit your own lifestyle. A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting and switching it off once the set temperature has been reached.

So, a programmable room thermostat lets you choose what times you want the heating to be on, and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs.

Turning a programmable room thermostat to a higher setting will not make the room heat up any faster. How quickly the room heats up depends on the design of the heating system, for example, the size of the boiler and radiators.

Neither does the setting affect how quickly the room cools down. Turning a programmable room thermostat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job. The best way to do this is to set low temperatures first, say 18°C and then turn them up by one degree each day until you are comfortable with the temperatures. You won't have to adjust the thermostat further. Any adjustments above these settings will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one programmable room thermostat to control the whole house. But you can have different temperatures in individual rooms by installing thermostatic radiator valves (TRVs) on individual radiators. If you don't have TRVs, you should choose a temperature that is reasonable for the whole house. If you do have TRVs, you can choose a slightly higher setting to make sure that even the coldest room is comfortable, then prevent any overheating in other rooms by adjusting the TRVs.

The time on the programmer must be correct. Some types have to be adjusted in spring and autumn at the changes between Greenwich Mean Time and British Summer Time.

You may be able to temporarily adjust the heating programme, for example, 'Override', 'Advance' or 'Boost'. These are explained in the manufacturer's instructions.

Programmable room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may prevent the thermostat from working properly.



**HORSTMANN**

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