

SANGAMO

Fit & forget...

CHOICE RSTAT9 Digital RF Programmable Room Thermostat with wall mounted receiver



Introduction

The Choice RSTAT9 comprises of a portable battery powered thermostat (transmitter) for accurate temperature control and a separate wall mounted mains relay box (receiver). The transmitter is located in the main living area and the receiver is mounted close to the boiler. This programmable room thermostat has been designed to bring you comfort and energy economy. It allows you to program and regulate your heating system using up to 6 programmable events per day.

The thermostat provides clear feedback to the user of the current time and temperature and depending on the program settings transmits RF signals to the wall mounted receiver to switch the boiler or zone valve appropriately. To ensure its correct operation the thermostat should be mounted or situated approximately 1.3m above the floor and away from direct sunlight, heat sources and drafts.

Features

- 24 or 7 day programmable
- Default adjustable program
- Permanent hold temperature
- Timed hold temperature
- Temporary temperature override
- Automatic Summer/Winter time change
- Low battery voltage indication
- Button press back-light operation

Installation

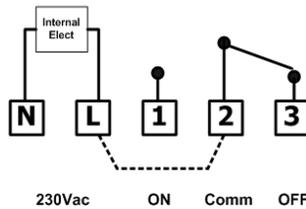
This product must be installed by a competent person in line with the latest IEE regulations. Isolate mains before commencing installation of the product.

As these products communicate using RF technology, it is important to consider location of the RF components as well as the building structure as they may influence performance of the RF system. It is important to take into consideration that walls and ceilings will reduce the RF signal. The two products should communicate reliably within a 30m range.

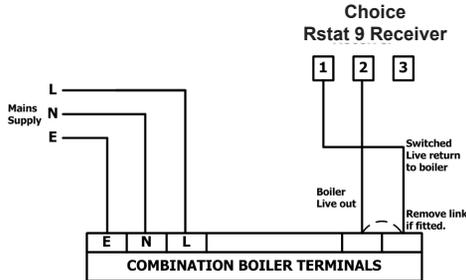
Receiver

Loosen the supplied wall plate from the receiver and secure in the desired position in an open space away from any metal objects including wall boxes and the boiler housing. Route wires through rear entry hole and connect wiring in accordance with information printed on receiver.

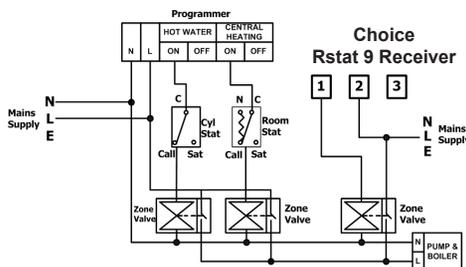
Choice Rstat 9 Receiver internal wiring



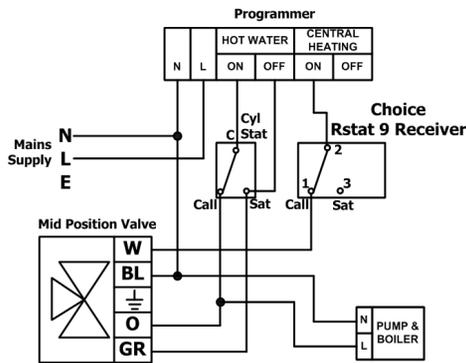
Example circuit diagrams for typical installations are shown below. For reasons of space and clarity not every system can be shown



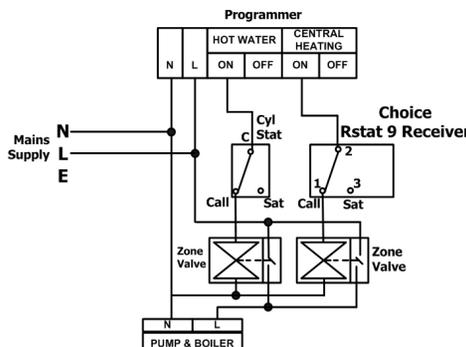
Choice Rstat 9 Receiver controlling a typical combination boiler installation. For precise terminal connection information - please refer to boiler manufacturers instructions.



Choice Rstat 9 Receiver controlling a secondary heating zone on a pumped system with existing programmer and two spring return valves with auxiliary switches.



Choice Rstat 9 Receiver replacing a conventional room thermostat on a fully pumped system with an existing programmer and 3 port mid-position valve.



Choice Rstat 9 Receiver replacing a conventional room thermostat on a fully pumped system with an existing programmer and two spring return valves with auxiliary switches.

Position the receiver to the wall plate by locating onto the top locating tabs and closing over and securing via the 2 fixing screws at the bottom.

Transmitter

Using a screwdriver release locking tab at the top and separate the back plate from the fascia.

Insert Batteries

With the fascia unclipped from its backplate, fit supplied AA batteries into the battery compartment shown. All LCD data will flash. Press SET to stop the flashing. Refit fascia to backplate by first locating bottom catches and closing into position at the top.



Pairing of Transmitter & Rec.

1. Apply power to the receiver, red and green LED will turn on for 3 seconds, hold **M/A** key for 10 seconds, green LED flashes, the receiver enters into learning status.
2. On the transmitter hold both the **SET** and **CLOCK** buttons for 10 seconds, green LED turns off on receiver.

Install or Position Transmitter

The transmitter may be wall mounted or secured to its table stand so it is portable. Use the test process below to confirm operation.

Test Process

Check that the transmitter and receiver reliably communicate in their installed positions. Hold "TEST" button for 3 seconds, heating symbol will alternate on or off every 5 seconds and it will last 2 minutes, whilst checking the receiver will be on or off accordingly.

User Instructions

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 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.

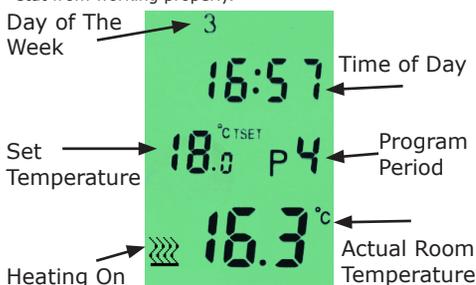
The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job. The best way to do this is to set low temperatures first, say 18°C and then turn them up by 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. The RSTAT9 automatically adjusts between spring and autumn at the changes between Greenwich Mean Time and British

Summer Time.

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.



Programme Settings

Clock Setting

1. Press **CLOCK** button once, year flashes, press + or - buttons to set year.
2. Press **CLOCK** button again, month flashes, press + or - buttons to set month.
3. Press **CLOCK** button again, day flashes, press + or - buttons to set day.
4. Press **CLOCK** button again, hour flashes, press + or - buttons to set hour.
5. Press **CLOCK** button again, minute flashes, press + or - buttons to set minute.
6. Press **SET** button to confirm, or just wait 15 seconds, it will be confirmed automatically.

Program Setting/Review

1. Default program values are:

Day Group	Cycle	P1	P2	P3	P4	P5	P6
1-7 (default)	24hr	6:30 21°C	8:00 18°C	12:00 21°C	14:00 18°C	18:00 21°C	22:30 16°C
1,2,3,4 & 5	7 Day	6:30 21°C	8:00 18°C	12:00 21°C	14:00 18°C	18:00 21°C	22:30 16°C
6 & 7	7 Day	8:00 21°C	10:00 21°C	12:00 21°C	14:00 21°C	18:00 21°C	23:00 16°C

If 1-7 are all selected then the 24hour cycle option is active- each days programs will be the same.

If either of 1,2,3,4,5,6,7 is selected then the 7 day cycle option is active - each days programs can be different.

Dependant on your lifestyle, these default program settings may be satisfactory.

2. Hold **SET** button, then press **PROG** button once, the current day or day group (1-7) will flash;
3. Press + or - buttons to change the day group (1-7) to individual day to be set (1, 2, 3, 4, 5, 6, 7)
4. Press **PROG** button once to display P1 and clock flashes, press + or - buttons to set time (increment 10 minutes)
5. Press **PROG** button again and temperature flashes, press + or - buttons to set temperature (increment 0.5°C)

Specification

Transmitter

Power supply : 2xAA 1.5V batteries
 Battery lifespan : 1 year
 Temperature display range: 5-40° (increment 0.1)
 Temperature control range: 7- 35°C (increment 0.5)
 Program time increment: 10 minutes
 Temperature accuracy: +/-1°C
 Switching differential: +/-0.2°C or +0/-0.2°C
 Operating temperature: 0 - 45°C
 Clock accuracy: <1sec / day
 Protection rating: IP30
 Dimensions: 135 x 89 x 32mm
 Transmission frequency: 868.35MHz

Hold Days: Temperature is held for a number of days before returning to the programs

Hold **HOLD** button for 3 seconds to display **d:01** and **⏸** symbol.

Press + or - buttons to select holding days from **d:01** to **d:99**, then press **PROG** button once.

Then press **SET** to confirm or you can wait 15 seconds to confirm automatically.

Press + or - buttons to set override temperature.

The setting will be kept until finished the holding days, or you can press **SET** button to exit manually.

Hold Hours: Temperature is held for a number of hours before returning to the programs

Press + or - buttons to set temperature, Press **CLOCK** button, then + or - buttons to select time

signal automatically sent every 9minutes
 Transmission distance ; 80m open, 30m indoors
 Mounting : Wall or free standing using table stand.

Receiver

Power supply : 230Vac, 50Hz
 Contact rating ; 6(2), 250Vac(Volt Free contact)
 Insulation class ; 2
 Flexible wire size : 0.5-1.5mm
 Rigid wire size : 0.5-2.5mm
 Dimensions : 85x85x38mm
 Wall mounting : Industry standard wall-plate

range from 1 - 9 hours. Press **PROG** button. Then press **SET** button to confirm or you can wait 15 seconds to confirm automatically. The setting will be kept until finished the holding hours, or you can press **SET** button to exit manually.

Hold until next program: Make a temporary change to the temperature

Press + or - buttons to set temperature, press **PROG** button once.

Then press **SET** button to confirm or you can wait 15 seconds to confirm automatically. The setting will be kept until next program, or you can press **SET** button to exit manually.

Set Temporary Temperature Default Settings : Temperatures initially offered when + or - buttons are pressed

Default temperatures when first pressing the + or - buttons

Hold **SET** and press + button once to flash 22.0°, press + or - button to set temporary override temperature (7 - 35°C, default is 22°C).

Hold **SET** and press - button once to flash 18.0°C, press + or - button to set temporary override temperature (7 - 35°C, default is 18°C).

SET button to confirm, or just wait 15 seconds, it will be confirmed automatically

Additional Instructions

Switching Differential (on/off control) : The tolerance from the set temperature before the measured temperature signals the thermostat to switch its output.

Press **CLOCK** button once, then press **COPY** button once to display **S: 1**, press + or - buttons to change between **S:1** or **S: 2**, then press **SET** button to confirm.

S: 1: differential is ±0.2°. When room temperature is -0.2°C below setting temperature, it will display **⏸** symbol and boiler will turn on. When room temperature is +0.2°C above setting temperature, symbol will disappear and relay will turn off.

S: 2: differential is +0°C or -0.2°. When room temperature is -0.2°C below setting temperature, it will display **⏸** symbol and boiler will turn on. When room temperature is reached, i.e. +0.0°C, symbol will disappear and relay will turn off.

LCD Back-light Operation

Press **LIGHT** button to turn on back-light. It will turn off without pressing in 15 seconds.

Receiver Operation

1. Press **MANUAL** button once, green LED is on, that means it enters into manual status.
2. Press **M/A** button once, red LED is on and relay turns on.
3. Press **M/A** button again, red LED is off and relay turns off.
4. Press **MANUAL** button, green LED is off, it returns to auto status.

Reset

1. Reset software: Press **RESET** button to return to default values.
2. Reset hardware: Press SW11 key on the PCB to reset the thermostat. The program settings are retained.

Approval Standards

EN60730-1
 EN60730-2-7
 EN60730-2-9

If you have a problem or require any further information please contact our technical team on:

01475 745131

Sangamo Limited
Industrial Estate, Port Glasgow,
Renfrewshire, PA14 5XG

Tel 01475 745131
Fax: 01475 744567

Email: enquiries@sangamo.co.uk
Web: www.sangamo.co.uk

