OP-DUOSTAT Series
Programmable RF Room Thermostat

OP-DUOSTAT (Tx) programmable
room thermostat (transmitter)

OP-DUOSTAT(Rx)
(Receiver)

1.General

The OP-DUOSTAT (Tx) is a radio controlled room thermostat which requires no wiring and is designed to be fitted in a conventional household installation, at a maximum 30 metres range of the OP-DUOSTAT(Rx) RF receiver.

The OP-DUOSTAT(Rx) RF receiver should be mounted in a dry environment, on a vertical flat surface near the boiler or central heating wiring centre. Do not place it too close to objects which might interfere with the radio signal. It is preferable to mount the receiver such that an imaginary straight line between it and the transmitter thermostat is not obscured by the boiler or any other large metal objects such as kitchen appliances. When installing these devices, please avoid touching the PCB as static damage can occur.

The OP-DUOSTAT control set has already been commissioned, or matched, in the factory. Just connect power to the receiver / put batteries in the transmitter, and the set will communicate. If for any reason you wish to verify the RF link please refer to the fourth option under section 7. Configuration Setting

2.Technical Data

Operating voltage: receiver : 230VAC ± 10%
                     transmitter: 3.0V ± 0.2 V DC

Time regulation: < 3s/Day

Transmitter power supply: 2 x AA alkaline

Consumption: <0.06W

Set-point range: 5.0℃ –35.0℃

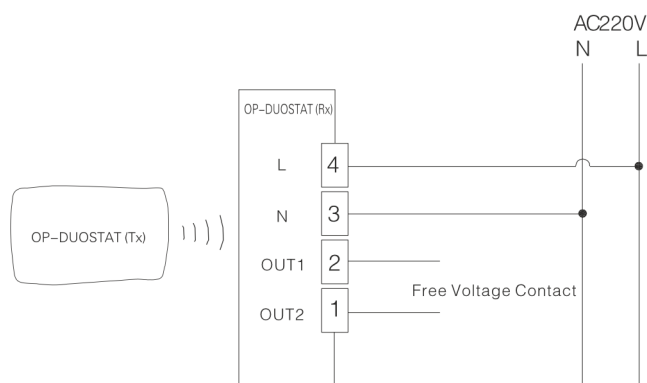Accuracy: ±0.5℃

Load current: 2A

Thermostat size: 136mm x 90mm x 30mm

Receiver size: 86mm x 90mm x 20mm
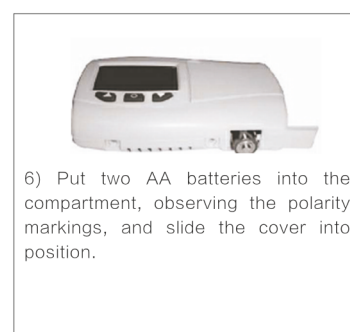
3.OP-DUOSTAT(RX) Receiver Fitting and Wiring

AC220V
N   L

OP-DUOSTAT (Rx)

OP-DUOSTAT (Tx)

L   4
N   3
OUT1 2
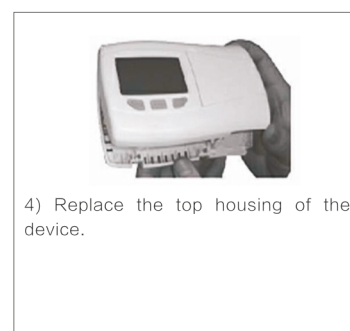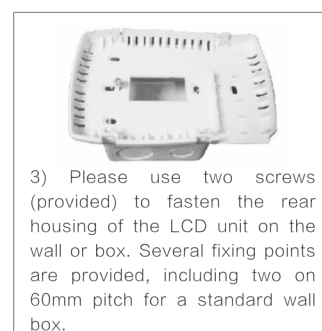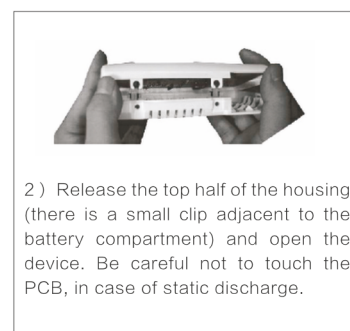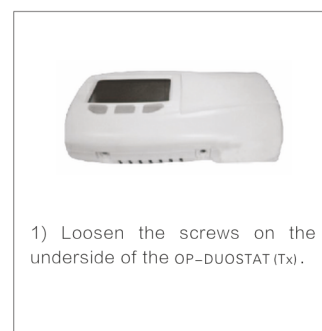OUT2 1   Free Voltage Contact

Open the receiver by springing the two plastic lugs accessible from the top of the back panel. Take care not to touch the PCB in case of static discharge. Fit the back panel to the wall surface.

Connect wiring: 4 Live, 3 Neutral, 2 & 1 switched live (volt –free across 1 & 2) or for mains switching link 4 to 2, and take a 230V switched live from 1).
Clip the top cover back on to the back panel. Take care not to touch the PCB in case of static damage.

4. Installation Instructions

1) Loosen the screws on the underside of the OP-DUOSTAT (Tx) .

2) Release the top half of the housing (there is a small clip adjacent to the battery compartment) and open the device. Be careful not to touch the PCB, in case of static discharge.

3) Please use two screws (provided) to fasten the rear housing of the LCD unit on the wall or box. Several fixing points are provided, including two on 60mm pitch for a standard wall box.

4) Replace the top housing of the device.

5) Press lightly to close, and tighten the screws.

6) Put two AA batteries into the compartment, observing the polarity markings, and slide the cover into position.

5. Keys and Function Instruction

" ⏻ " : Power on/off – press briefly to switch the device ON or OFF

" ✋ " : Manual Mode.

" ☼ " : Programme Run Mode.

" ☾ " : Economy – press briefly for Economy Mode. Press " ☼ " to restore Programme Run Mode

" ⏱ " : Time Adjustment. Press the key in sequence: minute-hour-day.

" P " : Programme Entry Mode –Press the key to access programme setting

" ↵ " : Confirm. Press the key to confirm the setting parameters.

" ▲ " : In Programme Run and Manual Mode: temperature increase. In Programme Entry Mode: hour, minute or temperature increase.

" ▼ " : In Programme Run and Manual Mode: temperature decrease. In Programme Entry Mode: hour, minute or temperature decrease.

Receiver

● Override : The receiver has an override button - in the event the RF communication malfunctions, the receiver's override button can be pressed with e.g. a pencil, to turn the receiver on or off. As soon as a valid RF control signal is received, the receiver will revert to being controlled by the transmitter. For communication problems please see the fourth option OO or AA, in section 7. Configuration Setting, below.

6. Menu & setting

6.1. Temperature Setting

Press ▲ or ▼ once, the backlight will turn on. Then Press ▲ to increase the set temperature, or press ▼ , to reduce the set temperature. From Programme Run Mode, this will initiate Temporary Manual Mode, which will revert to Programme Run Mode at the next timed setting. See 6.4 below.

6.2. Manual Mode Setting

Switch to manual mode by pressing ⑾ . The hand symbol ⑾ will be displayed on the LCD screen. Having selected Manual Mode you can set a fixed temperature. Manual Mode is a permanent selection.

6.3. Weekly Programme Run Mode Setting

Switch to Programme Run Mode by pressing ☼ . The ☼ symbol will be displayed on the LCD screen and the automatic programme will operate.

6.4.Temporary Manual Mode Setting

During Programme Run Mode, press ▲ or ▼ once to turn on backlight (to prevent misoperation), and press ▲ or ▼ again to check the set-point in the current period of Weekly programming mode. Then press ▲ or ▼ to set the desired temperature for the Temporary Manual Mode. If both ☼ ⑾ symbols are visible in the display, the device is in Temporary Manual Mode.

The thermostat runs according to the manually set temperature during Temporary Manual Mode, and returns to Weekly Programme Run Mode at the next period start time (the temperature set in Temporary Manual Mode is not stored).

6.5. Confirmation Key ↵

At any time while programming, press ↵ to confirm programming, changed data is stored, and the device will revert to Weekly Programme Run Mode.

6.6. Economy Key ☾

Press the 'moon' button to switch to economy mode. The moon symbol will show in the display. In Economy mode you can set the temperature value to a lower 'economy' level to suit your requirements – e.g. 8 / 10 / 12 degrees – using the ▲ or ▼ buttons. Press the ☼ button to go back to the normal Programme Run Mode.

6.7. Clock Setting

Press ⏲ to set minute, hour and week. Press ▲ and ▼ to change the flashing value. Press ⏲ to move to the next step, or press ↵ to confirm.

6.8. 5+2 Day Programmable Schedule Setting

Press P to enter the Weekly programming mode setting. Press ▲ and ▼ to adjust the parameters. After setting each parameter, press P to store your change and select the next parameter.

Programming is in the following sequence: (icons representing the six available programme spaces can be seen at each step on the right-hand side of the screen) – for example: 🏠

Start time (hours, then minutes) setting of 1st period of Monday to Friday morning →

Temperature setting of 1st period of Monday to Friday morning →⋯ ⋯ ⋯→

Continue with the same sequence to set the remaining time / temperature requirements for Monday to Friday. You will then reach Saturday / Sunday settings. Continue until you complete the temperature setting of 6th period of Saturday & Sunday. Or if you have completed programme changes mid-way through the sequence, press ↵ to confirm changes and return to Run mode. Please follow the sequence below to view and (if required) adjust each time and temperature set-point.

Hour Program and Factory Set

Period Indication		Weekday(Mon.–Fri.)		Weekend(Sat.–Sun.)	
		time	temp.	time	temp.
🏠1	Morning Wake up	06:00 ﹈ 08:00	20℃	06:00 ﹈ 08:00	20℃
2	Morning Out	11:30	15℃	11:30	20℃
3	Noon Home	﹈ 13:30	15℃	﹈ 13:30	20℃
4	Noon Out	17:00	15℃	17:00	20℃
5	Night Home	﹈ 22:00	20℃	﹈ 22:00	20℃
6	Night Sleep	The first period of the next day	15℃	The first period of the next day	15℃

7. Configuration Setting

Enter into Configuration Setting by pressing P briefly during Power-off Status. Then press P sequentially to view and amend (if required) parameters noted below.

You can confirm any changed parameters by pressing ↵ Press the Power Button ⏲ to exit configuration.

Display symbols	Options Properties	Remark
01	Inside sensor temperature correction	Range: –9 to +9℃ Press▲or▼for adjustment.
02	Temperature differential	Range: 1 – 5 ℃ Press ▲or▼for adjustment.
03	5+2 days, 6+1 days or 7 days programmable schedule selection	A1: 5+2 days programmable A2: 6+1 days programmable A3: 7 days programmable Press ▲ or ▼ to select A1, A2 or A3.
00 or AA	Display IP address XX XX	To refresh the RF matching. Turn off power to the receiver for 10 seconds. Select OO / AA configuration display. Switch on power to receiver, and within 10 seconds (Keep transmitter close to receiver), press↵ for matching. OO: waiting for match. AA: matched already. The receiver's IP code (printed on the side of the receiver) is shown in the lower right-hand corner of the LCD.
RS	Reset to factory setting	Press ↵ for 5 seconds to reset schedule

8. Warranty

This product has 12 months warranty from purchase date. Malfunctions due to mis-use or mis-application are not covered by the warranty.

9. ErP Directive (EU Regulation No. 811/2013)

ErP Class I : Contribution to system energy efficiency: 1% On/off room thermostat: A room thermostat that controls the on/off operation of a heater. Performance parameters are determined by the thermostat's mechanical construction.

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 this 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 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 withat 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℃, 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.