ESRTP

Programmable Room Thermostat, with Delayed & Optimum Start

Energy Saving Innovative Controls Limited

User and Installation Instructions

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User Instructions

What is a Programmable Room Thermostat?...
An explanation for householders

Put simply a Programmable Room Thermostat is a timer and thermostat combined in one unit. With a standard timer you choose your heating ON times and set your room thermostat (fitted usually away from the timer) to the desired comfort temperature required. With a Programmable Room Thermostat this is done within the one unit. i.e. for your heating ON times you assign a comfort temperature to those times.

The added bonus is that you can also attach a chosen temperature to the OFF time of your heating. This is called the set back temperature and is designed to prevent the temperature in the house falling below a pre-set temperature while the heating is programmed OFF. The advantage to this function is that by narrowing the gap between OFF house temperature and ON house temperature (usually 20°c) less energy will be required to bring the house temperature back up to 20°c when the heating is turned back on. The recommended set back (OFF) temperature is 16°c, although it can be set higher or lower depending on personal choice (scale is 7°c-34°c).

Having this function can be of assistance to elderly people as it prevents the house getting too cold when heating is programmed OFF.

(**N.B!!** The unit is capable of operating in an air conditioning/cooling mode also. See instructions for further details.)

Introduction to the ESRTP

The ESRTP is an easy to install and use 7 Day, 5/2 Day or 24 Hr Programmable Room Thermostat which offers up to six time and temperature changes each day, with different programmes available for weekdays and weekends. It is designed to provide automatic time and temperature control of heating systems in domestic or light commercial premises. A large LCD screen and easy-to-use function buttons ensures simplified programming and operation for all users.

What is Delayed Start?

Thermostats with the Delayed Start function have been shown to reduce heating costs by as much as 10%. This feature delays the start-up of the heating, depending on how warm the room temperature is at the time when the central heating is due to come on.

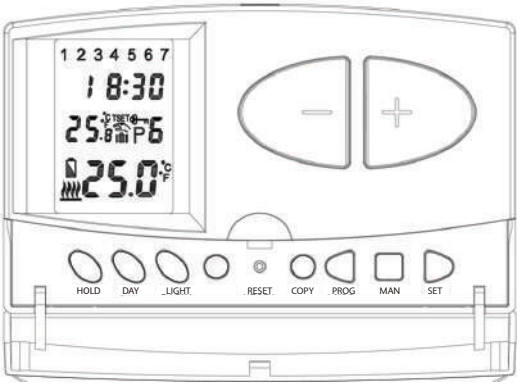
The heating start can be delayed for up to an hour if the room is already relatively warm, when the weather is milder for example. This often reduces how long the heating is on per day, with no comfort loss, saving you energy and money! The delayed start feature can be fully automated and needs no extra programming.

What is Optimum Start?

The Optimum Start adjusts the starting time for home heating according to the temperature measured within the building. Instead of setting an arbitrary time for the heating to come on, the home owner programmes the time that the home should be at the desired temperature. Up to 10% of domestic energy costs can be saved, as the warm up time is automatically reduced according to the

ambient temperature. Many homeowners set their heating to start a couple of hours before getting up to avoid waking up to a cold house. With the Optimum Start function you don't need to do this. The actual start time is automatically delayed or advanced to ensure your home reaches the set temperature by the programmed time.

The Optimum Start function automatically calculates the heating time required so that the home is warm for the programmed time. There is no need to calculate this yourself, the thermostat will do this for you and it will automatically learn and adapt throughout the year. Milder days may only require heating for 30 minutes or less whereas colder days may require longer.



Quick Operating Guide

① Accepts changes **(SET)**

② Places Thermostat into Frost Protection Mode **(MAN)**

③ Selects Programme **(PROG)**

④ Resets Unit to Default Settings **(RESET)**

⑤ Blue Backlight Illuminates Display **(LIGHT)**

⑥ Sets Time and Date **(DAY)**

⑦ Selects Operation Mode **(HOLD)**

⑧ Display

⑨ Temporary Override/Settings Adjustment

⑩ Copy **(COPY)**

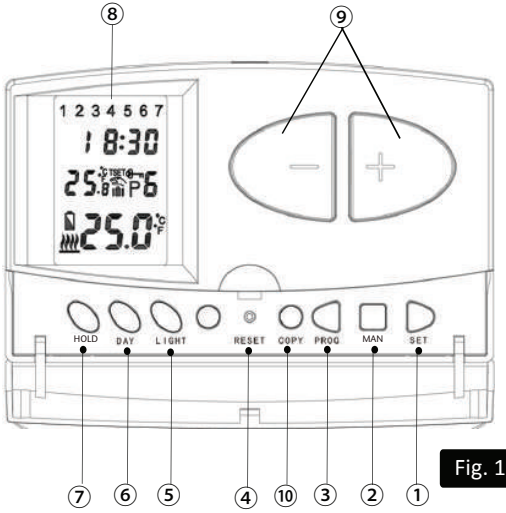


Fig. 1

⑪ Day Display

⑫ Time Display

⑬ User Set Temperature

⑭ Low Battery Warning

⑮ Heating ON Display

⑯ Room Temperature

⑰ Holiday Mode Display

⑱ Programme Events Display

⑲ Manual Mode Display Symbols

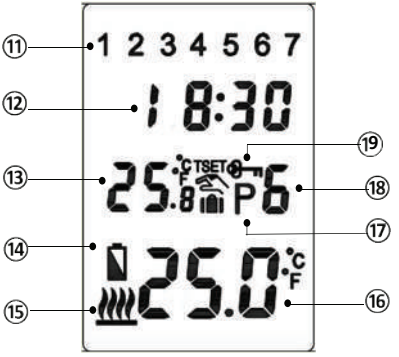


Fig.2

Factory Pre-Set Programme

This Programmable Room Thermostat has been designed to be a simple to use thermostat, requiring minimal user intervention with a pre-programmed heating profile.

The pre-set heating times and temperatures will suit most people (see table below). To accept the factory pre-set settings, press the SET button which will revert the thermostat to Run Mode (the colon (:) in the LCD display will begin to flash).

Pre-Set Temperatures: 5/2 Day:

Mon-Fri pre-set time and temperature settings

Event	Time	Temp °c
1	06:30	20
2	08:30	16
3	12:00	16
4	14:00	16
5	16:30	21
6	22:30	7

Sat & Sun pre-set time and temperature settings

Event	Time	Temp °c
1	07:30	20
2	09:30	20
3	11:30	20
4	13:30	20
5	16:30	20
6	22:30	15

7 Day:

In 7 day setting, the pre-set settings are the same as 5/2 Day programme (Mon to Fri and Sat/Sun).

24 Hr:

In 24hr setting, the pre-set settings are the same as Sat/Sun of the 5/2 Day programme.

Choosing Between 7 Day, 5/2 Day & 24Hr Operation

1. Press and hold SET then press PROG until days of the week are flashing.

2. Press either + or – buttons to move the flashing day symbols until you get the operation you desire:-

7 Day operation is shown by just one day flashing (e.g Monday-1)

5/2 Day operation is shown by 1,2,3,4,5 flashing (5 Day) and 6,7 flashing (2 Day)

24 hr operation is shown by 1,2,3,4,5,6,7 flashing.

3. Press SET to lock in your selection.

Permanent Manual Overrides

1. To override the temperature settings, press HOLD once until the key symbol ① (Fig. 3) is displayed in the window, the programmer is then in manual mode.

2. Press + or – to adjust the temperature to the desired setting. This will set a constant temperature 24hrs a day.

3. Press SET to revert back to AUTO mode.

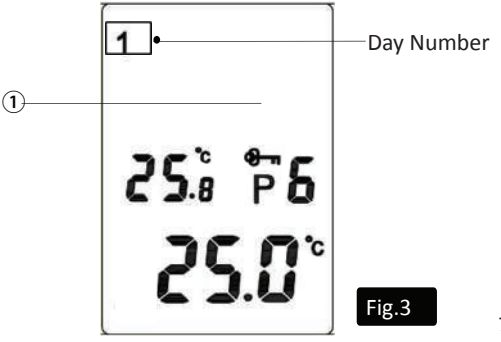


Fig.3

Temporary Manual Overrides

1. To temporarily override the Programmable Room Thermostat status or temperature press the + or – buttons. The hand symbol ① (Fig 4.) will appear on screen.

2. Press the + button to increase the set temperature in increments of 0.5°c and/or press the - button to decrease the set temperature in increments of 0.5°c.

3. Once the desired temperature is reached (and after approx 6 seconds) the time display will be replaced by a display indicating the time left to the next programme (the length of time the temporary override will run, if left unhindered). When the next ON/comfort programme is arrived at, the temporary override will end and Auto mode is reactivated.

4. Press SET to cancel this function and reactivate Auto mode.

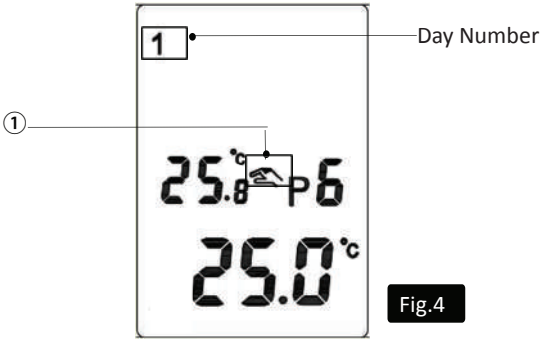


Fig.4

Holiday Mode

Holiday mode saves energy by letting you reduce the temperature for 1 to 99 days while you are away from home, resuming normal operation on your return.

To set the Holiday Mode:

1. Press + or – to set the desired temperature.

2. Press HOLD until the Suitcase ① is displayed and d:01 ② is flashing (Fig. 5).

3. Press + or – to set the number of days you will be away.

4. Press PROG to confirm settings.

5. Press SET to revert back to the main display. The number of days chosen will alternate with time symbol on display.

6. Once the countdown has finished, the thermostat will return to normal operation. It may be advisable to set the holiday mode 1 day less so the house is back up to temperature for your return.

6. To cancel the HOLIDAY setting or to exit the function at any time, press SET to revert back to AUTO Mode.

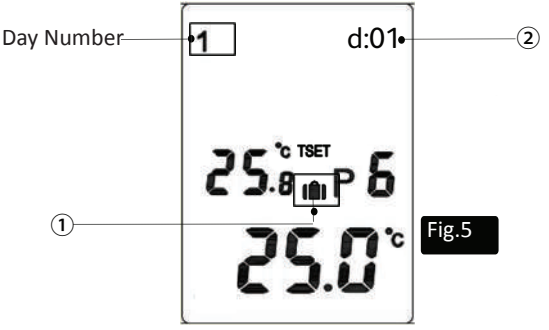


Fig.5

Party Mode

The party mode temporary overrides the programme to maintain a comfortable temperature whilst you entertain guests. When the time has expired, the temperature and programme will revert to the pre-set schedule.

To set the Party Mode:

1. Press + or – to set the desired temperature.

2. Press the DAY button and the suitcase symbol appears along with a flashing number 1.

3. Continue to press the DAY button until the desired number of hours have been selected (1 to 9). Close the flap without pressing any other button .

4. Press SET to cancel.

Frost Protection

This function is provided as an option if it is desirable to turn the heating off permanently. It is usually used in summer.

To set the Frost Protection Mode:

1. Press and Hold MAN ② for 6 seconds to turn off the thermostat and enter frost protection mode. This will be indicated by a 5°C and the room temperature only being displayed (Fig. 6).

2. Press and hold MAN ② for 6 seconds to exit frost protection mode.

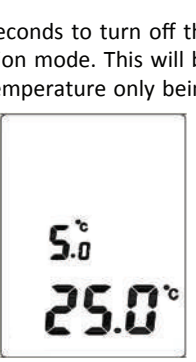


Fig. 6

Setting the Time and Date

The time and date are factory set so it will not normally be necessary to do this on site. Changes between summer and winter time are handled automatically by the unit.

1. Press SET to make sure the programmer is in Run Mode.

2. Press DAY once until the year date is flashing, use + or – to adjust the year.

3. Press DAY once until the month date is flashing, use + or – to adjust the month.

4. Press DAY once until the day date is flashing, use + or – to adjust the day.

5. Press DAY once until the hour symbol is flashing, Use + or – to adjust the hour.

6. Press DAY once until the minute symbol is flashing, use + or – to adjust the minutes.

7. Press SET to confirm changes and return to run mode.

Changing the Programme: 7 Day

1. Press and hold SET then press PROG until the days of the week are flashing (1,2,3,4,5,6,7).

2. Release SET button then press + or – until 1 (Monday) is flashing ① (Fig. 7, page 12).

3. Press PROG once and the time will flash ②. Use + or – to adjust the first time to required setting.

4. Press PROG once and the temperature will flash ③. Use + or – to adjust the temperature.

5. Repeat steps 3 to 4 above until all 6 time and temperature settings above have been set for Monday.

6. Once Monday's time and temperatures have been adjusted to desired settings and 1 (Monday) is flashing, repeat steps 2 to 4 until all 7 days of the week have been set to desired times and temperatures.

7. When all 7 days, time and temperatures have been set to desired settings, press SET to confirm settings and return the programmer to Run Mode.

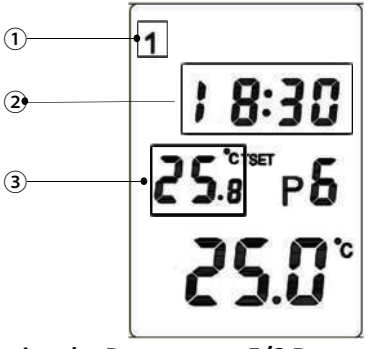


Fig. 7

Changing the Programme: 5/2 Day

Mon—Fri

1. Press and hold SET then press PROG until the days of the week are flashing (1,2,3,4,5,6,7).

2. Release SET button then press + or – until 1,2,3,4,5 (Mon—Fri) symbols are flashing ①. (Fig. 8, page 13). Press PROG once and the time will flash ②. Use + or – to adjust the first time to required setting.

3. Press PROG once and the temperature will flash ③. Use + or - to adjust the temperature.

4. Repeat steps 2 to 3 above until all 6 time and temperature settings above have been set for 1,2,3,4,5 (Mon - Fri).

5. Once Mon—Fri times and temperatures have been

adjusted to desired settings, press SET to confirm changes and continue to press until the programmer returns to Run Mode.

Sat—Sun

1. Press and hold SET then press PROG until the days of the week are flashing (1,2,3,4,5,6,7) then release SET button.

2. Press + or – until 6,7 (Sat—Sun) symbols are flashing ① (Fig. 9). Press PROG once and the time will flash ②. Use + or – to adjust the first time to required setting.

3. Press PROG once and the temperature will flash ③. Use + or – to adjust the temperature.

4. Repeat steps 2 to 3 above until all 6 time and temperature settings above have been set for 6,7 (Sat–Sun).

5. Once Sat—Sun times and temperatures have been adjusted to desired settings, press SET to confirm changes and continue to press until the programmer returns to Run Mode.

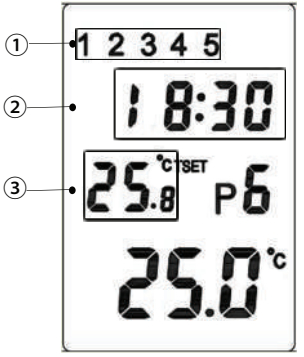


Fig. 8

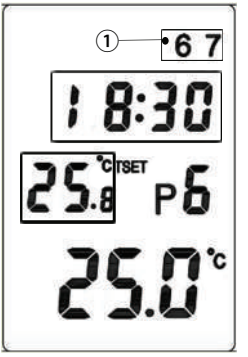


Fig. 9

Changing the Programme: 24 Hr

1. Press and hold SET then press PROG until all the days of the week are flashing (1, 2, 3, 4, 5, 6 ,7) ① in Fig.10.

2. Press PROG once and the time will flash ②. Adjust the time for P1 using the + and – buttons if required.

3. Press PROG again and the temperature setting for P1 will flash ③. Adjust the temperature if required.

4. Repeat steps 2 and 3 for programmes 2 – 6 if required.

5. Press SET to confirm new settings and return the programmaer to Auto/Run mode.

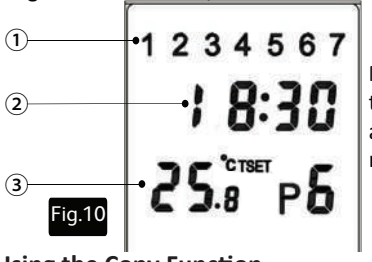


Fig.10

N.B! Programme times are only adjustable in 10 minutes segments.

Using the Copy Function

The unit is provided with a copy function which allows an adjusted programme to be copied to another day or set of days. This avoids the necessity of re-entering a desired programme for another day or sets of days.

To operate the copy function

1. Press and hold the COPY button for 3-4 seconds until the Day 1 symbol flashes in top left corner of screen.

2. Press the +/- button to get to the day you want to copy. Press COPY and the day number stops flashing.

3. Press the +/- button to arrive at the day that you want to copy to. Press COPY.

4. Press SET to lock in changes and return to Auto mode.

It is possible to copy Day 1, or 2 or 3 etc. to 7 Day setting or 5/2 Day setting. Just choose the day (or block of days) that you wish the selected day copied to. You can also copy a 5 Day block of settings to the 2 Day block, 7 Day block or the 24HR block.

Setting Delayed Start and Optimum Start

1. Push “DAY” once, and then “PROG” once.

2. It will display “DAY:0-2”. 0 = OFF, 1 = Optimum Start, 2 = Delayed Start. Select your preference.

4. Press the SET button to exit.

5. When running in Optimum Start or Delayed Start mode, “P” will flash on display.

Battery Replacement

When the low battery symbol flashes in the LCD display ⑭ (Fig.2, page 5), the batteries need to be replaced as soon as possible. To replace the batteries, remove the Programmable Room Thermostat from its back-plate. The battery compartment is located on the main part of the thermostat. Remove the old batteries and insert new ones. All settings including time are maintained. **N.B!** If the display ever goes blank during normal operation, the batteries will need to be renewed with high quality alkaline cells. The reset button should be pressed to restart the unit. The date, time and factory pre-set heating times will be retained and not need to be re-programmed (assuming the back up battery has not failed).

Installation Instructions

Technical Data

Programmable Room Thermostat	
Programming	7 Day, 5/2 Day & 24Hr
Power Supply	2 x 1.5V Alkaline Batteries (type: AA size)
Temperature Sensor Type	NTC 10k Ω_t+/- 1% at 25°C
Switching Sensitivity	+/-0.2°C or 0°C/-0.2°C
Temperature Adjustment Range	7°C to 34°C
Total Switch Rating	8(2)A 230VAC
Contact Type	8A. 250VAC SPDT (Volt Free changeover contacts)
Plastic	Thermoplastic, flame retardant
Protection Rating	IP30
Dimensions	130mm(L) x 80mm(W) x 35mm(D)
Number of Events per Day	Up to 6
BST/GMT Time Change	Automatic
Factory Pre-Set Programme	Yes
Complies with:	EN60730-1 EN 60730-2.7, EMC Directive 2004/108/EC, LVD Directive 2006/95/EC

Installation Safety Instructions

The unit must be installed by a suitably qualified person in accordance with the latest IEE Wiring Regulations.

Isolate mains supply before commencing installation. Please read all instructions before proceeding.

Ensure that the fixed wiring connections to the mains supply is via a fuse rated at not more than 6 amps and class 'A' switch having a contact separation of a minimum of 3mm in all poles. The recommended cable sizes are 1.0mm sqr or 1.5mm sqr. No earth connection is required as the product is double insulated but ensure continuity of earth throughout the system.

General Safety Instructions

When fitting batteries, do not mix old and new batteries together. Do not use rechargable batteries.

This product complies with the essential requirements of the following EC Directives:

- Electro-Magnetic Compatibility Directive 2004/108/EC
- Low Voltage Directive 2006/95/EEC
- EC Marking Directive 93/68/EEC

Please leave the user instructions with the end user where they should be kept in a safe place for future reference.

Maintenance

Always isolate the mains supply before commencing any work, servicing or maintenance on the system. And please read all instructions before proceeding.

Arrange for an annual maintenance and inspection schedule to be carried out by a competent person on every part of the heating and hot water system.

Safety Notice

WARNING!

ALWAYS ISOLATE THE AC MAINS SUPPLY BEFORE INSTALLING.

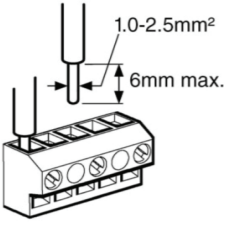
THIS PRODUCT MUST BE FITTED BY A COMPETENT PERSON, AND INSTALLATION MUST COMPLY WITH THE GUIDANCE PROVIDED IN THE CURRENT EDITIONS OF BS767 (IEE WIRING REGULATIONS) AND PART "P" OF THE BUILDING REGULATIONS.

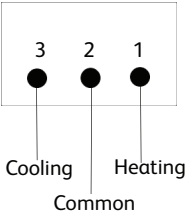
WARNING!

DO NOT FIT THE RECEIVER TO A BACK PLATE THAT IS LIVE.

SWITCH OFF MAINS BEFORE FITTING BACK PLATE AS LIVE AND NEUTRAL CONTACTS MAY TOUCH WHILE MOUNTING RECEIVER ON PLATE AND DAMAGE THE PRODUCT.

Wiring Diagram

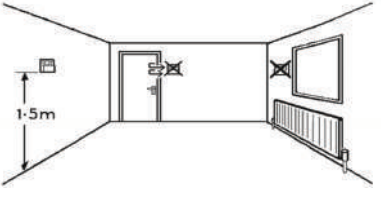




Fitting the Programmable Room Thermostat

Product Positioning

The ideal position to locate the Programmable Room Thermostat is about 1.5m above floor level, in a location where the thermostat is accessible, reasonably lit and free from extremes of temperature and draughts. Do not position the thermostat near sources of heat, such as radiators, lights, TV, direct sunlight or on an outside wall.



Installation

1. Remove the front cover using a flat screwdriver (Fig.1) and separate from back plate (Fig.2).

2. Fix the back plate directly on the wall using suitable wall plugs and screws or mount over existing wall box (Fig.3).

3. Unscrew the cover that is protecting the live terminals (Fig.4). Lift the cover to expose the wiring block (Fig.5), taking care to retain the screw.

4. Complete the connections in accordance with the wiring diagram (page 20).

5. Insert the 2 x AA batteries provided (Fig.6) and replace the thermostat onto the back plate.

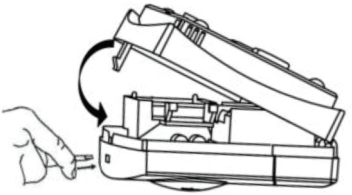
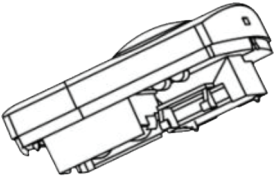


Fig.1



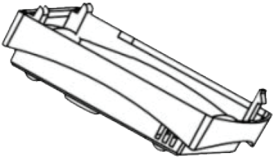


Fig.2

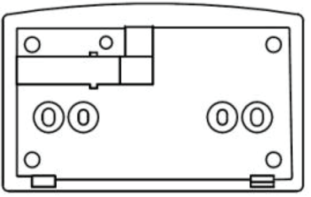


Fig.3

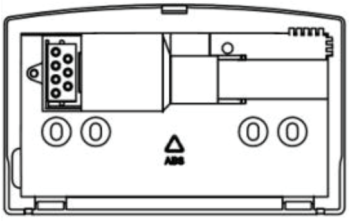


Fig.4

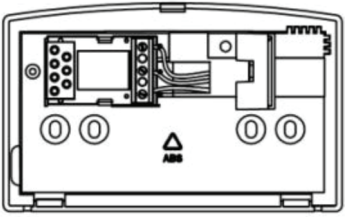


Fig.5

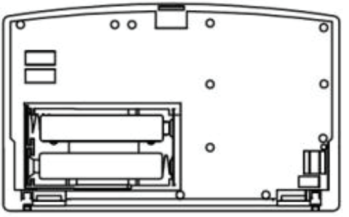


Fig.6

The Programmable Room Thermostat is now installed and will automatically start to control the room temperature according to the factory pre-set programme as shown in the User Instructions. The display shows the correct time and date which is automatically set together with the actual room temperature.

Switching Sensitivity Option

The switching sensitivity of the thermostat can be selected: **±0.2°C factory default setting**, recommended for radiator based heating systems with low thermal inertia e.g. where plate radiators are installed. The display shows symbol "S:1" for this setting. **+0/–0.2°C**, recommended to control heating systems with high thermal inertia e.g. underfloor heating. The display shows symbol "S:2" for this setting.

This figure means the temperature difference between the adjusted value and the actual temperature measured during the switching process. For example, if the factory default setting is 20°C on the thermostat then the device switches on the boiler at 19.8°C or below this level and switches it off at 20.2°C or above.

To Set Sensitivity

According to factory default settings, the switching sensitivity is ±0.2°C (the display indicates this setting with symbol "S:1") which can be modified to +0/–0.2°C (the display indicates this setting with symbol "S:2").

1. Press the SET button to go to the main screen.

2. Press the DAY, COPY and large + and – buttons one after the other.
3. Setting "S:1" (±0.2°C switching sensitivity) or "S:2" (+0/–0.2°C switching sensitivity) is acknowledged by pressing the SET button (after approx. 10 seconds, the settings are automatically acknowledged and the device goes back to the main screen).

4. To reset to the factory default setting (to ±0.2°C level; S:1), press the RESET button.

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