ms electronics

energy saving controls

Product Guide

Set-Back/Set-Forward Thermostat

today, tomorrow and in the future

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Product Overview

The E8210 thermostat combines the functionality of a standard set-back thermostat with a set-forward thermostat all in a single wall-plate style of unit. This gives the end-user the ability to select between 1 of 3 different fixed temperature levels (Low, Med, High) to allow greater end-user control when compared to a set-back thermostat, but its tamperproof features prevent unauthorised modification of the temperature setpoints.

The medium level temperature setpoint ("Med" mode) is adjustable between +12°C and +26°C while the "High" and "Low" modes are adjustable between 0°C and 7°C above and below the "Med" setpoint. The end-user is able to select between these 3 modes via the touch-sensitive pushbutton. LED indicators on the front plate illuminate to display which mode the thermostat is operating in.

All setpoints are combined with an adjustable temperature hysteresis (differential) which is adjustable to anything between 0.25°C and 4°C.
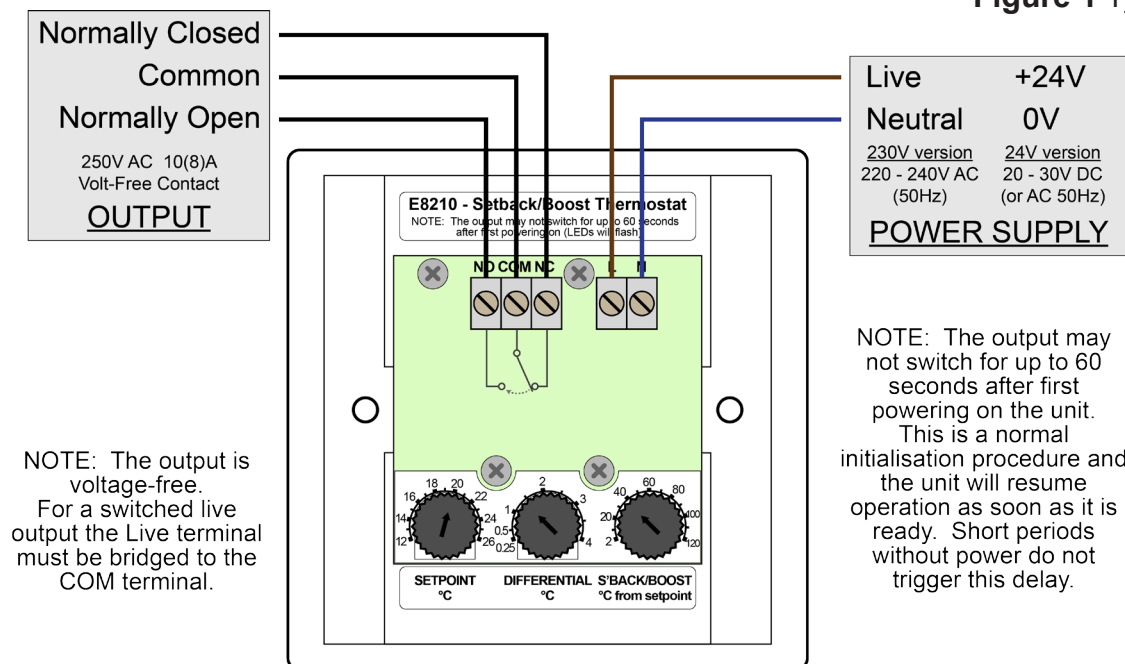
Product Wiring

⚠️ Ensure the electrical supply is isolated before making any connections or adjustments.

1. Power to the thermostat is provided via the 2-way terminal block.
   - Product codes without any suffix are mains powered using the terminals labelled L and N (230V AC, 50Hz).
   - Product codes with the "/24V" suffix are 24V powered using the terminals labelled 24V (24V AC or DC).
2. A voltage-free changeover relay output capable of switching loads of up to 10A, 250V AC (resistive) is provided by the thermostat at the "NC, COM, NO" terminals.
3. The Common "COM" terminal is connected to the Normally Open "NO" terminal when the sensed room temperature is above the selected temperature.
4. Conversely, it is connected to the Normally Closed "NC" terminal when the room temperature is sensed to be below the selected temperature.

Figure 1 Typical wiring example

NOTE: The output is voltage-free. For a switched live output the Live terminal must be bridged to the COM terminal.

NOTE: The output may not switch for up to 60 seconds after first powering on the unit. This is a normal initialisation procedure and the unit will resume operation as soon as it is ready. Short periods without power do not trigger this delay.

⚠️ All electrical installation and maintenance must be carried out by a competent person. If in doubt, consult a qualified electrician. Any new wiring must be carried out by qualified personnel in accordance with the current edition of the IET Wiring Regulations (BS7671), or those specifically applicable to your area.

Installation

⚠️ Ensure the electrical supply is isolated before making any connections or adjustments.

1. The unit is designed to be mounted in any single-gang British Standard pattress box (surface or flush mounted) which has a minimum internal depth of 20mm.
2. Ensure best-practices are used when choosing a location for the thermostat so that optimal thermostatic control is achieved. Do not mount near drafts, heaters, radiators, air conditioners, in direct sunlight or any other place where the sensed temperature may be unnaturally influenced. A good mounting height is typically between 1m and 2m from the floor.
3. Connect the wiring as shown in Figure 1 (or any suitably appropriate form) via the screw-terminals. Make sure to choose the correct output terminals that are suitable to your application.
4. Adjust the internal thumbwheels to suit the desired operational requirements (see below).
5. Affix the thermostat to the pattress box using the supplied M3.5 raised-countersunk screws then finally insert the screw-caps for a neat finish.
6. The screw caps may be removed without damage using a sticky putty such as blu-tack.

Operation

⚠️ Ensure the electrical supply is isolated before making any connections or adjustments.

1. Adjust the setpoint ("Setpoint") dial to the temperature the room is to be regulated to in the 'Med' mode (typically 20ºC).
2. Adjust the set-back/set-forward ("S'Bck/S'Fwd") dial to the number of °C either side of the 'Med' temperature that the 'Low' and 'High' temperatures are to be (typically 2°C).
3. Set the differential ("Diff.") to the total temperature swing either side of the resulting setpoint that the room temperature is required to keep within (typically 1°C).
4. Example set-up:
      Setpoint set to 20ºC, Differential set to 1ºC, Set-Back/Set-Forward set to 2°C.
            Low mode - The unit will maintain the temperature between 17.5ºC and 18.5ºC
            Med mode - The unit will maintain the temperature between 19.5ºC and 20.5ºC
            High mode - The unit will maintain the temperature between 21.5ºC and 22.5ºC

Notes

1. ***Applying power for the first time***: The output of the thermostat may not switch in response to temperature for up to 60 seconds after first powering on. This is normal behaviour due to a necessary initialisation phase - please wait until this is completed before attempting to test the thermostat. Normal operation will resume as soon as the initialisation phase has completed.
   If the unit has already completed initialisation then short interruptions of power of up to 5 minutes will not trigger the initalisation phase and the humidistat will resume normal operation immediately within a couple of seconds. Power interruptions longer than 5 minutes may trigger the initialisation phase again.

Technical Specification

Power supply:	220V - 240V AC 50Hz (live/neutral) 22V - 26V AC or DC [/24V variant only]
Output switch rating:	10A, 250V AC 50Hz (resistive)
Output switch type:	Changeover relay (volt-free)
Temperature control:	[Med setpoint]: +12°C to +26°C [Low/High setpoint]: 0°C to 7°C below/above the Med setpoint
Temperature differential:	0.25°C to 4°C
Sensor drift:	0.15°C over 5 years
Guarantee:	5 Years
Weight:	90g
Dimensions mm:	86mm x 86mm x 27mm

Product Accessories

MSD-154	M3.5 tamperproof screws
MSD-155	Tamperproof screwdriver for MSD-154 screws

IMPORTANT INSTALLATION NOTICE
The installation of this product should be carried out in accordance with the latest IEE wiring regulations and all wiring completed by a qualified electrician.

Technical Support

For further help or information on this and the other products in the MS Electronics range visit www.mselectronics.co.uk or call 0333 666 1176.

Alternatively, email techsupport@mselectronics.co.uk
Additional copies of this product guide can be downloaded from our website.

Product Warranty

MS Electronics guarantees all their products against manufacturing defects for 5 years from the purchase date. If your product is found to be faulty, MS Electronics will, at their discretion, repair or replace the product free of charge.

Note

Any modification or damage to the outer casing of the product, as well as any damage to the product due to abuse or incorrect wiring may invalidate the guarantee.

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