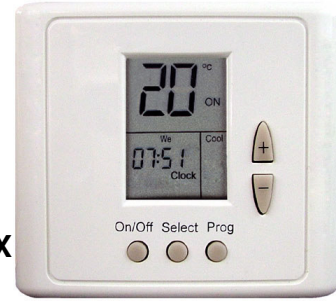


Systems Controls & Instruments (UK) Ltd.

Manx House, Bousley Rise, Ottershaw, Surrey, KT16 0JX

Tel / Fax; +44 (0)1 93287 5227 & 5225:

E mail: info@sciuk.co.uk Web: www.sciuk.co.uk



ETN-24-SUPER-PROG-SF Series

Owner's Manual – Installation and Operating Instructions



Please read this manual carefully before installation and use.

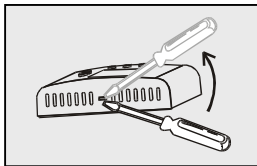
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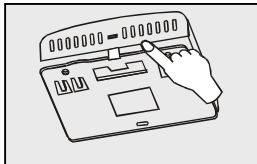
1. Options & Accessories

- External sensor option: RS01 for remote temperature sensing (1 required) RS01 for averaging temperature with thermostat (4 required) RS02 for averaging temperature with thermostat (2 required RS02 has two thermistors in one enclosure).
- Door switch or window contact connection.
- WP4 – Decorative back plate.

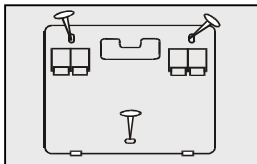
2. Installation Instructions



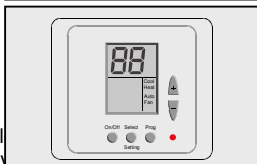
Separate the front panel from back panel by depressing the tongue located in the top of the unit.



Pull the back panel out.



Line the back panel up against the wall or flat surface. Install three screws as required.



Make electrical connections as shown on enclosed electrical wiring diagram. (Next page)

Install the cover to the back panel; first the two tabs on the bottom and then the top tongue. Push until tight against the wall.

3. Wiring Connections

Choose the right configuration for your model.

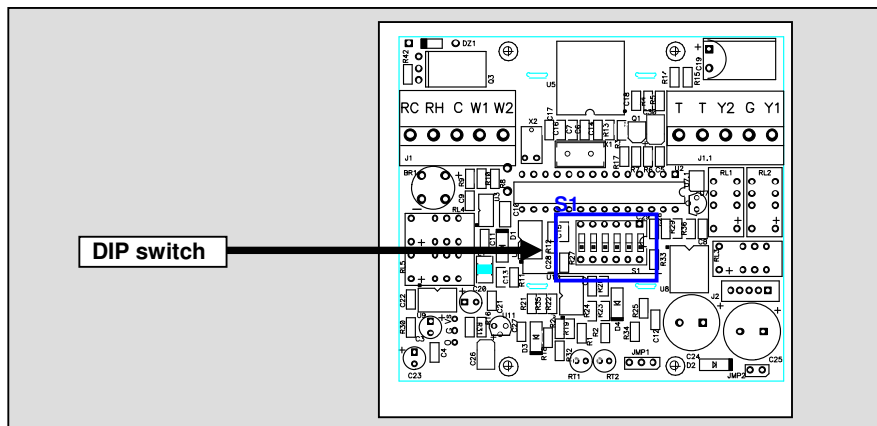
SWITCH		FUNCTION
Board	Sticker	
Rh	R	24 Vac RED
C	C	24 Vac Common from transformer
Rc	E	Fault input
W1	W1	HEAT 1 (W1)
W2	W2	HEAT 2 (W2)
T	SO	External sensor and Ground for Fault input
T	S	External sensor
Y2	Y2	COMP.2 (Y2)
G	G	FAN
Y1	Y1	COMP.1 (Y1)



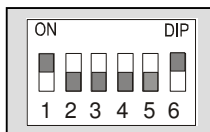
IMPORTANT! Before making any changes in the DIP switch disconnect electricity in the main board.

4. DIP switch Explanations (different configurations)

Location of DIP switches:



Factory default configuration for DIP switches:



Default DIP switch configuration:

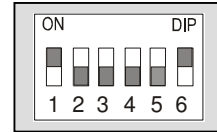


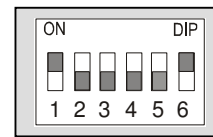
Table 4.1 – DIP switch selection

Func. No.	Correction (T1+T2)		HC / HP configuration				3 Minute delay for compressor		Internal/External Temperature Sensor	
	With Correction	No Correction	HC		HP		With Delay	Without Delay	Internal	External
			Elc. Heat*	Oil Heat	HP in Heat	HP in Cool				
1	ON*	OFF	X	X	X	X	X	X	X	X
2	X	X	OFF*	OFF*	ON	ON	X	X	X	X
3	X	X	OFF*	ON	ON	OFF*	X	X	X	X
4	X	X	X	X	X	X	OFF*	ON	X	X
5	X	X	X	X	X	X	X	X	OFF*	ON
6	X	X	X	X	X	X	X	X	ON*	OFF

X = Not important * = Default switch

4.2 DIP switch Operation

The DIP switch has 6 pins.
Each pin can be ON or OFF.
In this example picture, pins 1,6 - ON and pins 2,3,4,5 - OFF



Example

4.3 External sensor connection - option



Important! The external sensor must be SCI. type.

Table 4.3 - N.T.C. Sensor: Temperature ~ Resistance Characteristics

Temp °C	7.2	10.0	12.8	15.6	18.3	21.1	23.9	26.7	29.4	32.2
Temp °F	45	50	55	60	65	70	75	80	85	90
Res. k	115.8	100.9	88.1	77.1	67.7	59.6	52.5	46.4	41.2	36.6



The default from factory is INTERNAL SENSOR.

- Disconnect power to the thermostat 24vac.
- Move the DIP switch S1 as described in the table above
- Connect the temperature sensor to S0, S terminals.
- Reconnect power 24vac.
- Make sure the reading in the display is by the external sensor.

The length of the cable for the external sensor is 100 feet (30 meters) with standard cable.

If longer distance is needed then the cable MUST be shielded.

There is a wide range of sensors for different applications, duct, rooms, etc.

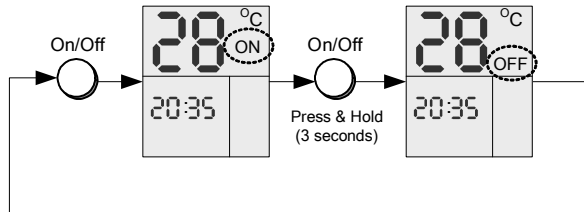
There is also option for averaging the temperature.

For details please contact our technical line or visit our web site.

5. Operating Manual

5.1 On/Off


- Press the ON/OFF button to activate the thermostat.
- Press and hold (3 seconds) the ON/OFF button to deactivate the thermostat.
- The word "ON" or "OFF" will appear in the display.

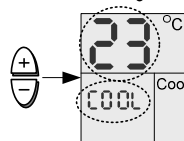


5.2 Set temperature

In Cool Mode:


- Press the "+" or "-" buttons – "COOL" will appear on display and the temperature will flash.
- Adjust the set temperature for cooling using the "+" or "-" buttons.

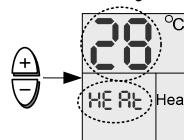
Adjust the set temperature for cooling using the  buttons



In Heat Mode:

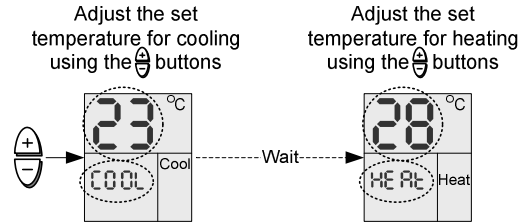
- Press the "+" or "-" buttons – "HEAT" will appear on display and the temperature will flash.
- Adjust the set temperature for heating using the "+" or "-" buttons.

Adjust the set temperature for heating using the  buttons



In Fan mode and in Auto Change-Over modes:

- Press the “+” or “-” buttons – “COOL” will appear on display and the temperature will flash.
- Adjust the set temperature for cooling using the “+” or “-” buttons.
- After a few seconds “HEAT” will appear on display and the temperature will flash.
- Adjust the set temperature for heating using the “+” or “-” buttons.



Important:

In auto change-over mode, set heat is less than set cool.

When changing set points without considering this rule, the thermostat will automatically change it to apply with this rule.

Example:

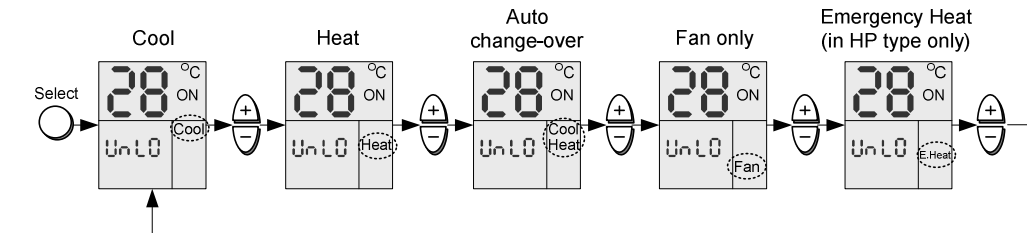
Set point for cooling: 23°C.

Set point for heating: 26°C (set incorrectly by the user).

→ The thermostat will automatically change the set point for cooling to 27°C. (the last changed set point will be kept and the other will be changed).

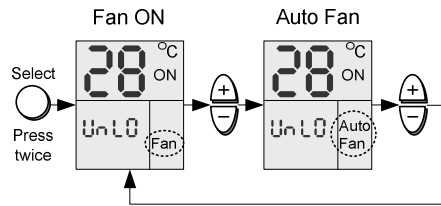
5.3 Selecting modes

- Press the SELECT button – “UnLO” will appear on display.
- Using the “+” and “-” buttons to switch between the five modes:
 - Cool – “Cool” will appear on display.
 - Heat – “Heat” will appear on display.
 - Cool/heat (auto-change over) – both “Cool” and “Heat” appear on display.
 - Fan only – “Fan” will appear on display.
 - Emergency heat selectable in heat mode in Heat Pump type (only).



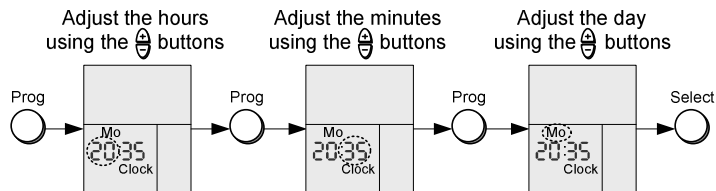
5.4 Fan/Auto Fan function

- Press the SELECT button twice – “UnLO” will appear on display.
- Using the “+” and “-” buttons to switch between the fan modes:
 - FAN ON
 - AUTO FAN - In AUTO FAN the fan will only run when calling for heat or cool.



5.5 Real Time Clock and Day

- Adjust the hours: Press the PROG button - the hours will flash.
- Using the “+” and “-” buttons set the hours.
- Adjust the minutes: Press the PROG button - the minutes will flash.
- Using the “+” and “-” buttons set the minutes.
- Adjust the day of the week: Press the PROG button - the day of the week will flash.
- Using the “+” and “-” buttons set the day of the week.
- Press the SELECT button or wait (20 seconds) to return to normal display.



6. Weekly Program

6.1 General

The weekly program allows you to set different programs for each day of the week and for each day 4 programs: Wake, Day, Return and Sleep.

Adjustable start time, set temperature for cooling and set temperature for heating for each of the programs.

Order of program settings:

1. Monday - Program: Wake - Start time, Set temp. for cooling, Set temp. for heating
2. Monday - Program: Day - Start time, Set temp. for cooling, Set temp. for heating
3. Monday - Program: Return - Start time, Set temp. for cooling, Set temp. for heating
4. Monday - Program: Sleep - Start time, Set temp. for cooling, Set temp. for heating
5. Tuesday - Program: Wake - Start time, Set temp. for cooling, Set temp. for heating
6. Tuesday - Program: Day - Start time, Set temp. for cooling, Set temp. for heating



28. Sunday - Program: Sleep - Start time, Set temp. for cooling, Set temp. for heating

6.2 Switch between Programming and Non-Programming modes.

- Press and hold the PROG button to switch between Programming and Non-Programming modes – In Programming mode, the word “Program” will appear on display.

6.3 Set the Program

Monday, Program: Wake, Start time:

- Press the PROG button 4 times until “Program: Wake” and “Mo” appear on display. The **hours** will flash.
- Adjust the hours using the “+” and “-” buttons
- Press the PROG button again – The **minutes** will flash.
- Adjust the minutes using the “+” and “-” buttons.

Monday, Program: Wake, Set COOL and HEAT Temperatures:

- Press the PROG button again – “COOL” appears on display. The set temperature for cooling will flash.
- Adjust the set temperature for cooling using the “+” and “-” buttons.
- Press the PROG button again – “HEAT” appears on display. The set temperature for heating will flash.
- Adjust the set temperature for heating using the “+” and “-” buttons.

Monday, Program: Day, Start time:

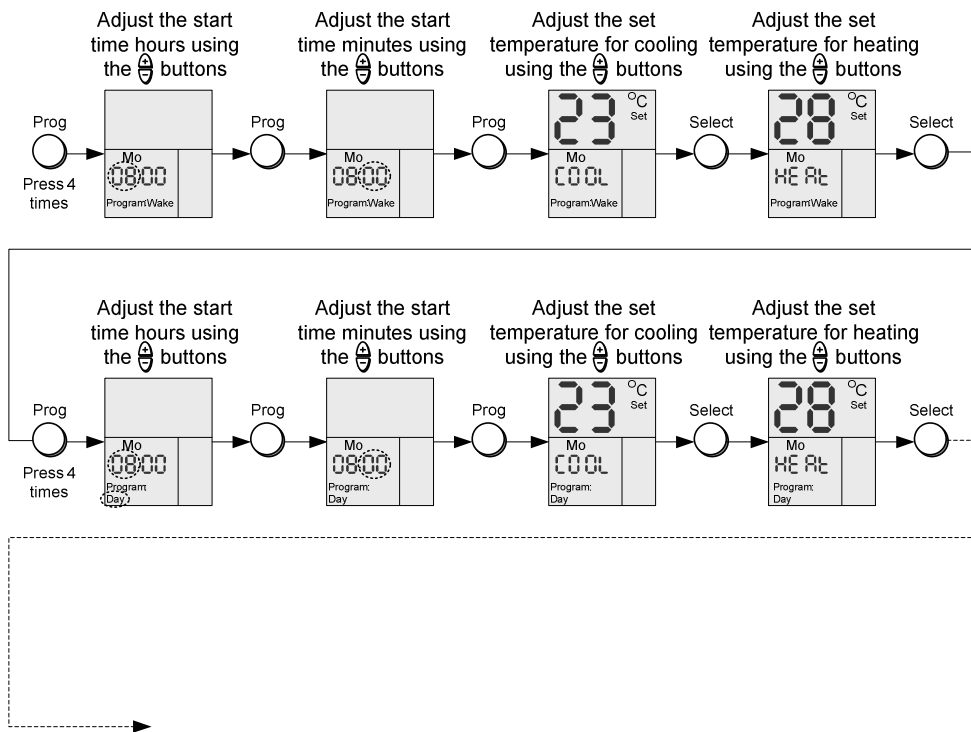
- Press the PROG button again - “Program: Day” and “Mo” appear on display. The **hours** will flash.
- Adjust the hours using the “+” and “-” buttons

- Press the PROG button again – The **minutes** will flash.
- Adjust the minutes using the “+” and “-” buttons.

Monday, Program: Day, Set COOL and HEAT Temperatures:

- Press the PROG button again – “COOL” appears on display. The set temperature for cooling will flash.
- Adjust the set temperature for cooling using the “+” and “-” buttons.
- Press the PROG button again – “HEAT” appears on display. The set temperature for heating will flash.
- Adjust the set temperature for heating using the “+” and “-” buttons.

- **Repeat the steps above for programs “Return” and “Sleep: for Monday.**
- **Repeat the steps above for the other days: Tue, Wed, Thu, Fri, Sat, Sun.**
- **Pressing the On/Off button during programming will automatically copy the program info of the previous day to the current day.**
- **You can review the program or change part of it by entering program mode and pressing the PROG button until reaching the desired program.**



It is recommended to plan and write down the different programs prior to setting the program.

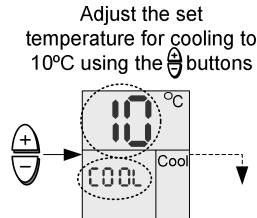
The following table can be used for pre editing the weekly program.

	Wake			Day			Return			Sleep		
	Set	Set		Set	Set		Set	Set		Set	Set	
	Start	Cool	Heat	Start	Cool	Heat	Start	Cool	Heat	Start	Cool	Heat
Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Technician Settings

7.1 Set temperature limits and offset

- Set the set temperature for cooling or heating to 10°C.
- Wait until display returns to normal mode.



Set limit for cool

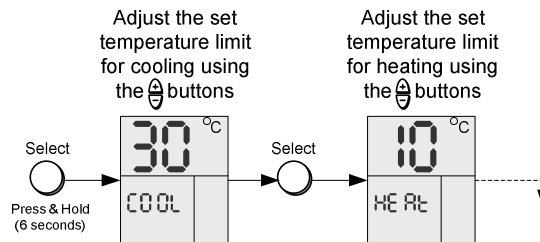
- Press and hold the SELECT button (6 seconds) until “COOL” and the set temperature limit for cooling will appear on display.
- Using the “+” and “-” buttons adjust the set limit for cool (Range 5°C/30°C – default 30°C).

Set limit for heat

- Press the SELECT button again - “HEAT” and the set temperature limit for heating will appear on display.
- Using the “+” and “-” buttons adjust the set limit for heat (Range 5°C/30°C – default 10°C).

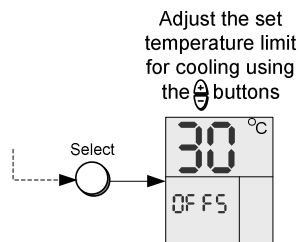


Important: The user can change the set temperatures on the display regardless of the limit set, but the thermostat will work by the limit settings.



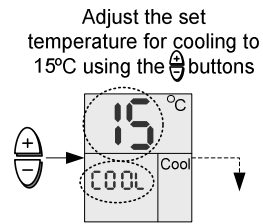
Set the offset (the offset is used for calibration of the measured temperature)

- Press the SELECT button again - “OFFS” and the current offset will appear on display.
- Adjust the offset using the “+” and “-” buttons (range -6°C/+6°C – default 0°C).



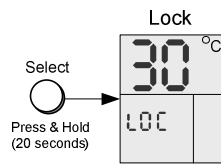
7.2 Lock/Unlock the thermostat's buttons

- Set the set temperature for cooling or heating to 15°C.
- Wait until display returns to normal mode.



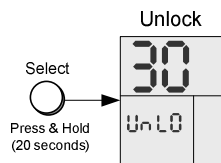
Lock the thermostat's buttons

- Press and hold the SELECT button (20 second) - "LOC" will appear on display.



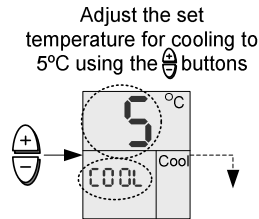
Unlock the thermostat's buttons

- Press and hold the SELECT button (20 second) - "UnLO" will appear on display.

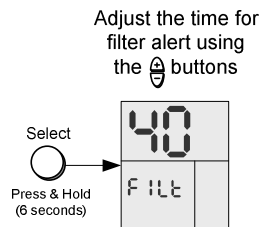


7.3 Set time for filter alert.

- Set the set temperature for cooling or heating to 5°C.
- Wait until display returns to normal mode.



- Press and hold the SELECT button (5 second) - "FILt" will appear on display.
- Set the time for change of filter alert using the "+" and "-" buttons (range 0,100,200...900 hours – default 400 hours).
The set time is the displayed number X 10 (i.e. "50" → 500 hours, 60 → 600 hours).



- When the thermostat reaches the specified time, the display will alternate between "FI" and ambient temperature.
- To cancel the alert, press and hold the ON/OFF button (16 seconds).



Set time to 0 in order to cancel this option.

7.4 Fault input.

The contact is Voltage free (2 terminals), normally open (active when close).

When the contact closes, the thermostat display will alternate between "EC" and ambient temperature.

To remove the alert – fix the problem and the thermostat will automatically return to normal working mode.



When the thermostat is OFF – the Fault input is active but the thermostat will not show any alert. "EC" will appear on display the next time the thermostat turns on.

Rev. 3