

VYSAL[®] Electric underfloor heating systems

OWNERS MANUAL

Vysa-Therm™ 3000



Electrical and electronic specifications.

- Supply Voltage: 230 Vac nominal (operating range 200 to 260 Vac), 50/60 Hz
- Standby power consumption: 500 mW
- Relay rating: 16 A resistive (4 A inductive), 230 Vac, 3600 W
- Ambient operating temperature: 0 to 35 °C
- Room sensor control set point range: 5 to 35 °C
- Room sensor display and setting resolution: 0.2 °C
- Room sensor operating differential: 0.4 °C
- Room sensor accuracy: ± 1.5 °C over range 10 to 30 °C
- Room sensor: built in NTC thermistor
- Floor sensor control set point range: 5 to 45 °C
- Floor sensor display and setting resolution: 0.2 °C
- Floor sensor operating differential: 1.0 °C
- Floor sensor accuracy: ± 2.0 °C over range 10 to 40 °C
- Floor sensor: NTC thermistor, resistance 10k Ω @25 °C
- Floor sensor: the length of the floor sensor lead can be extended up to a maximum of 20 m.

I. Introduction

The Vysa-Therm™ 3000 is the most advanced thermostat available in the market today. Vysa-Therm™ 3000 has the largest microprocessor available and is packed full of features to make life simple for the installer and user alike.

The Vysa-Therm™ 3000 is the simplest thermostat to install and *never programme*. The default programme has been optimised for economy and comfort suitable for typical lifestyles. The Vysa-Therm™ 3000 has a high capacity 3V Lithium coin battery to protect the factory pre-set time and date so that the installer / user need not enter them during installation.

There are two modes of operation; timed or un-timed.

The operation mode is initially selected by the DIL switches during installation but can be changed later under the engineer menu without having to open the control.

When *timed operation* is chosen the control uses a real time clock and timer periods to change the temperature between the comfort temperature and the savings temperature.

When *un-timed operation* is chosen the control is set to the required temperature using ▲ and ▼ and controls to this temperature until it is manually adjusted.

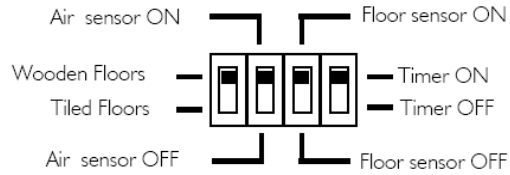
Contents

1. Introduction to your new Vysa-Therm™ 3000 thermostat
2. Factory default settings - *No programming required*
 - 2.1. DIL switches
 - 2.2. Program times
 - 2.2.1. Weekday times
 - 2.2.2. Weekend times
 - 2.3. Temperatures
3. Vysa-Therm™ 3000 features – *What your thermostat can do*
 - 3.1. Modes of operation
 - 3.2. Sensor configurations
 - 3.3. Timer periods and day-mode configurations
 - 3.4. Maximum floor temperature
 - 3.5. Minimum floor temperature
 - 3.6. Control temperature
 - 3.7. Temperature modes
 - 3.8. Tamper proof locking of temperature adjustment
 - 3.9. Heater hours usage meter
 - 3.10. PIN protection
 - 3.11. Floor sensor only temperature display
4. Engineer Settings – *Configures your thermostat to your particular installation*
 - 4.1. Set maximum floor temperature
 - 4.2. Set sensor configuration
 - 4.3. Set timed or un-timed
 - 4.4. Set programme day (Timed mode only)
 - 4.5. Set temperature display mode (floor sensor only control mode)
 - 4.6. Set PIN security code
 - 4.7. Reset to default
5. User Settings – *Personalise your thermostat to meet your own requirements*
 - 5.1. Enter PIN security code (PIN Enabled)
 - 5.2. Set the tamper lock (PIN not enabled)
 - 5.3. Floor temperature display (Room and floor sensor only)
 - 5.4. Set timer periods (Timer operation only)
 - 5.4.1. Set timer periods, 1 day mode
 - 5.4.2. Set timer periods, 5:2 day mode
 - 5.4.3. Set timer periods, 7 day mode
 - 5.5. Set comfort temperature
 - 5.6. Set savings temperature
 - 5.7. Set minimum floor temperature (Floor & Room and Floor only sensor)
 - 5.8. Set clock time (timed operation only)
 - 5.9. Set date (timed operation only)
 - 5.10. Today's energy usage display
 - 5.11. Yesterday's energy usage display
 - 5.12. Last weeks energy usage display
 - 5.13. Total energy usage display
 - 5.14. Total energy usage clear
 - 5.15. Set thermostat for timed operation
 - 5.16. Set thermostat for manual operation
 - 5.17. Energy usage reset
6. Daily controls – *The controls you will use on a daily basis*
 - 6.1. Enter PIN
 - 6.2. Temperature adjustment (un-timed operation only)
 - 6.2.1. Floor sensor only operation temperature adjustment
 - 6.2.2. Floor and room sensor/room sensor only operation temporary temperature adjustment
 - 6.3. Temporary temperature adjustment (timed operation only)
 - 6.4. Off and Frost protection
 - 6.5. Constant comfort or savings temperature control (timed operation only)
7. Displays
 - 7.1. Normal use display
 - 7.2. Error displays
 - 7.3. LCD display
8. Battery replacement
9. Electrical and electronic specifications

2. Factory default settings

2.1 DIL switches

SW1: on=28°C (wooden floor)
 SW2: off=room sensor operation disabled
 SW3: on=floor sensor operation enabled
 SW4: on=timed operation



2.2 Program Times.

Default is timed operation (from DIL switch)
 Default day mode is 5:2

Period	Times	Temperature	Event
Monday to Friday			
P1	06:00 - 08:00	Comfort 26°C	06:00 am. Wake up to a warm house
P2	08:00 - 16:00	Setback 20°C	08:00 am. Save on heat when you are out of the house during the day
P3	16:00 - 22:30	Comfort 26°C	16:00 pm. Return home to a warm house.
P4	22:30 - 06:00	Setback 20°C	22:30 pm. Save on heat when you are sleeping at night
Saturday to Sunday			
P1	08:00 - 23:00	Comfort 26°C	08:00 am. Enjoy all-day warmth in the house
P4	23:00 - 08:00	Setback 20°C	23:00 pm. Save on heat when you are sleeping at night

Program mode is d 5:2 and any of these periods, times or temperature settings can be changed or deleted very easily as required

2.2.1 Weekday times.

All days in 1 day mode; Weekdays in 5:2 day mode; Mo, Tu, We, Th and Fr in 7 day mode

Timer period 1, comfort temperature, starts 06:00
 Timer period 2, savings temperature, starts 08:00
 Timer period 3, comfort temperature, starts 16:00
 Timer period 4, savings temperature, starts 22:30

2.2.2 Weekend times.

Weekend days in 5:2 day mode; Sa and Su in 7 day mode

Timer period 1, comfort temperature, starts 08:00
 Timer period 2, savings temperature, starts 12:00
 Timer period 3, comfort temperature, starts 12:00
 Timer period 4, savings temperature, starts 23:00

2.3 Temperatures.

Default sensor mode is floor sensor only control (from DIL switches).

Default temperature display mode is °C.

Frost temperature is fixed as 5°C, this is the floor or air temperature.

Savings temperature, floor sensor only mode, 20°C floor temperature
 Savings temperature, floor and room sensor/room sensor only mode, 15°C air temperature

Comfort temperature, floor sensor only mode, 26°C floor temperature
 Comfort temperature, floor and room sensor/room sensor only mode, 21°C air temperature

3. Software features

3.1 Mode of operation.

There are two modes of operation; timed or un-timed. The mode is initially selected by DIL switch during installation but can be changed later under the configuration menu without having to open the control.

When **timed operation** is chosen the control uses a real time clock and timer periods to change the temperature between the comfort temperature and the savings temperature.

When **un-timed operation** is chosen the control is set to the required temperature using ▲ and ▼ and controls to this temperature until it is adjusted.

[3.2 Sensor configuration.](#)

There are three sensor operating configurations; 1. floor sensor & room sensor control, 2. floor sensor only control and 3. room sensor only control (simple thermostat). The operating configuration is initially selected by the DIL switch during installation but can be changed later under the configuration menu without having to open the control. If the installer erroneously sets both sensor DIL switches to off then the control will default to floor sensor only mode.

When floor and room sensor configuration is chosen the control acts as a thermostat to control the room temperature to the comfort or savings temperatures which have been set. The floor sensor is used to control minimum and maximum floor temperatures (at the sensor position), the minimum floor temperature applies during comfort and saving periods. An energy saving feature is also incorporated so that the room temperature target is adjusted down by 0.1 deg for every 1 deg that the floor temperature is above the room temperature set point - this feature takes account of the way occupants 'feel' the temperatures.

- When floor and room sensor configuration is chosen, the display will show the room temperature. The floor temperature can be checked by using the menu button.
- When floor sensor only operation is chosen the control acts as a thermostat to control the floor temperature to the comfort or savings floor temperatures that have been set. The maximum floor temperature is used to limit the comfort and savings temperatures that can be set.
- When floor sensor only configuration is chosen the display will show the floor temperature. The room temperature is not displayed as the control may be located in a different room (e.g. in a hallway outside the bathroom).
- When room sensor only configuration is chosen the control acts as a thermostat to control the room temperature to the comfort or savings temperatures that have been set.
- When room sensor only configuration is chosen the display will show the room temperature.

[3.3 Timer period day mode configurations \(timed mode only\).](#)

There are three different timer period day modes that can be set.

- In 1 day mode no days are shown and the same timer periods are used for all days.
- In 5:2 day mode the days are grouped into weekdays and weekends and one set of timer periods apply to all week days (Monday, Tuesday, Wednesday, Thursday and Friday) whilst another set of timer periods apply to all weekend days (Saturday and Sunday).
- In 7 day mode each day has its own set of timer periods and each can be different.

All timer period configurations offer 4 timer periods per day.

[3.4 Maximum floor temperature.](#)

The maximum floor temperature is initially set by DIL switch during installation. The choices are wooden floor, giving 28°C maximum floor temperature, or concrete floor, giving 35°C maximum. This can be changed later under the configuration menu without having to open the control.

[3.5 Minimum floor temperature.](#)

A minimum floor temperature can be set by the user, this minimum applies during all time periods - comfort or savings - but not when the control is off or during frost protection. The minimum floor temperature is ignored if the sensor configuration is room sensor only.

[3.6 Control temperatures \(timed modes only\).](#)

There are two control temperatures when the control is in timed mode.

- Comfort temperature applies during timer periods 1 & 3
- Savings temperature applies during timer periods 2 & 4

[3.7 Temperature modes.](#)

There are five different temperature modes available when the control has been configured for timed mode operation. These are: timed (using timer periods plus comfort and savings temperatures), constant comfort, constant savings, frost protection (with temperature fixed at 5°C) and off.

There are three different temperature modes available when the control has been configured for un-timed mode operation. These are: constant temperature, frost protection (with temperature fixed at 5°C) and off.

[3.8 Tamper proof locking of temperature adjustment.](#)

For enhanced safety a tamper proof lock can be enabled to protect the control temperatures, frost protection, off mode and continuous operation modes from adjustment.

When tamper proof lock is enabled the **PADLOCK** icon is visible; the ▲ and ▼ buttons do not adjust the temperature of the control, the **O/I** button and the **24h** button does not respond.

When tamper proof lock is disabled the **PADLOCK** icon is clear; the ▲ and ▼ buttons can adjust the temperature of the control, the **O/I** button responds and the **24h** button responds.

[3.9 Heater hours usage meter.](#)

The control keeps a log of the usage of the heater which can be displayed for information purposes. The display shows the number of hours that the heater element has been on. The control displays the heater usage time for today, yesterday, last week and total use. The total use counter can be reset to 0000.

[3.10 PIN protection.](#)

For applications where the occupant should not be able to adjust the control access can be protected by PIN entry. The PIN is set under the engineer settings, access to the engineer settings is not protected by the PIN.

If the PIN is left at 0000 or set to 0000 at a later date then no PIN entry is required.

Once a PIN has been set access to the user settings menu, temperature changes using ▲ and ▼, **O/I** button and **24h** button is protected by the PIN.

[3.1.1 Floor sensor only temperature display.](#)

When floor sensor only is selected the temperature display can be changed from showing °C to a scale of 0 to 13. The scale will display temperatures using the following conversion:

0	15.6°C and below
1	15.8°C to 18.0°C
2	18.2°C to 20.4°C
3	20.6°C to 22.8°C
4	23.0°C to 25.2°C
5	25.4°C to 27.6°C
6	27.8°C to 30.0°C
7	30.2°C to 32.4°C
8	32.6°C to 34.8°C
9	35.0°C to 37.2°C
10	37.4°C to 39.6°C
11	39.8°C to 42.0°C
12	42.2°C to 44.4°C
13	44.6°C and above

Therefore when the maximum floor temperature is set to 28°C (using the DIL switch) the scale will be 0 to 6 and when the maximum floor temperature is set to 35°C (using the DIL switch) the scale will be 0 to 9. Other maximum floor temperatures set using the configuration menu will have other ranges.

[4. Engineer Settings](#)

A number of features can be set by the installer or user under Engineer Settings.

To access Engineer Settings press and hold the **OK** button then press the **MENU** button also. Then press the **MENU** button until the appropriate icons for the item to be changed are shown on the display, the variable being changed will be shown flashing ready for adjustment.

If the user stops programming part way through a process then after 1-minute the control will automatically return to normal operation. Settings changed up to that point will have been saved.

The **MENU** button presents the settings in the following order:

- Set maximum floor temperature
- Set sensor setting
- Set timed/un-timed setting
- Set program day mode (timed mode only)
- Set temperature display mode (floor sensor only control mode)
- Set PIN code
- Reset to default

[4.1 Maximum floor temperature.](#)

The maximum floor temperature applicable to the type of floor can be adjusted from the value selected by the DIL switch setting.

1. Press **MENU** until **Set** and **FLOOR THERMOMETER** and **Max** icons are displayed.
2. Maximum floor temperature will be flashing.
3. Adjust temperature using ▲ and ▼.
4. Press **OK** to accept maximum floor temperature and advance to next item in Engineer Menu.

[4.2 Sensor configuration.](#)

The sensor configuration can be changed from the configuration selected by the DIL switch setting.

Sensor configuration is shown in the time area as **C: FA** for floor sensor and room (ambient) sensor operation, as **C: F** for floor sensor only operation and as **C: A** for room (ambient) sensor only operation.

1. Press **MENU** until **Set** icon and **C:** in the time area are displayed.
2. Sensor configuration as set by DIL switch will be flashing.
3. Adjust sensor configuration using ▲ and ▼.
4. Press **OK** to accept sensor configuration and advance to next item in Engineer Settings

4.3 Timed/un-timed configuration.

The timed/un-timed configuration can be changed from the configuration selected by the DIL switch setting.

Timed/un-timed configuration is shown in the time area as **t: 1** for timed operation and as **t: 0** for un-timed operation.

1. Press **MENU** until **Set** icon and **t:** are displayed.
2. Current timed/un-timed configuration as set by DIL switch will be flashing.
3. Adjust timed/un-timed configuration using **▲** and **▼**.
4. Press **OK** to accept timed/un-timed configuration and advance to next item.

4.4 Timer period day mode (timed mode only).

Day mode is shown in the time area as **d 1** for 1 day mode, **d5:2** for 5/2 day mode and **d 7** for 7 day mode. Likewise the day icons show as none for 1 day mode, alternating **MoTuWeThFr** and **SaSu** for 5:2 day mode and **MoTuWeThFrSaSu** for 7 day mode.

1. Press **MENU** until **Set** icon and **d**, in the time area, are displayed.
2. Day mode configuration will be flashing.
3. Adjust day mode configuration using **▲** and **▼**.
4. Press **OK** to accept day mode configuration and advance to next item.

4.5 Temperature display mode (floor sensor only control mode).

Temperature display mode is shown in the time area as **F: 0** for °C display and as **F: 1** for 0-13 scale display.

1. Press **MENU** until **Set** icon and **F**, in the time area, are displayed.
2. Temperature display mode configuration will be flashing.
3. Adjust temperature display mode configuration using **▲** and **▼**.
4. Press **OK** to accept temperature display mode configuration and advance to next item.

4.6 Set PIN code.

1. Press **MENU** until **Set** icon, **PADLOCK** icon and **0000** are displayed.
2. The first **0** will be displayed flashing.
3. Adjust PIN digit 1 using **▲** and **▼**.
4. Press **OK** to accept digit 1. The second **0** will be displayed flashing.
5. Adjust PIN digit 2 using **▲** and **▼**.
6. Press **OK** to accept digit 2. The third **0** will be displayed flashing.
7. Adjust PIN digit 3 using **▲** and **▼**.
8. Press **OK** to accept digit 3. The fourth **0** will be displayed flashing.
9. Adjust PIN digit 4 using **▲** and **▼**.
10. Press **OK** to accept digit 4 and advance to next item in configuration menu.

4.7 Reset to defaults.

The control can be reset back to its default factory settings (including timer day mode, timer periods, control temperatures, default time and date etc) by using the reset function.

To maintain safety the control will revert to the DIL switch settings, as set by the installer, for sensor configuration, timed/un-timed operation and the maximum floor temperature.

1. Press **MENU** until **Set** icon and **dFLt** in the time area are displayed.
2. Press **OK** to enable reset to defaults.
3. **dFLt** will be flashing.
4. Press **OK** to confirm reset to defaults and return to normal operation.

5. User Settings

The **MENU** button is used to access User Settings for change by the user. The button is pressed until the appropriate icons for the item to be changed are shown on the display.

If the user stops programming part way through a process then after 1 minute the control will automatically return to normal operation. Settings changed up to that point will have been saved.

The menu button will only present settings that are relevant to the timed mode of operation when that mode has been selected.

The MENU button presents the settings in the following order:

- Enter PIN (PIN enabled only)
- Set tamper lock on or off (PIN not enabled only)
- Floor temperature display (room and floor sensor mode only)
- Set comfort temperature (timed mode only)
- Set savings temperature (timed mode only)
- Set minimum floor temperature (floor/room and floor sensor modes only)
- Set timer periods (timed mode only)
- Set time (timed mode only)
- Set date (timed mode only)
- Energy usage display
- Energy usage counter clearing

5.1 Enter PIN (PIN enabled only).

1. Press **MENU** to access settings menu. The **PADLOCK** icon and **0000** are displayed.
2. The first **0** will be displayed flashing.
3. Adjust PIN digit 1 using **▲** and **▼**.
4. Press **OK** to accept digit 1. The second **0** will be displayed flashing.
5. Adjust PIN digit 2 using **▲** and **▼**.
6. Press **OK** to accept digit 2. The third **0** will be displayed flashing.
7. Adjust PIN digit 3 using **▲** and **▼**.
8. Press **OK** to accept digit 3. The fourth **0** will be displayed flashing.
9. Adjust PIN digit 4 using **▲** and **▼**.
10. Press **OK** to accept digit 4. If the PIN entered is incorrect the control will return to normal operation but if the PIN is correct then the settings menu will be accessed and remain accessible for 4 minutes.

5.2 Set tamper lock on or off (PIN not enabled only).

1. Press **MENU** until **Set** and **PADLOCK** icons are displayed.
2. **On** or **Off** will be displayed flashing in the time area.
3. Adjust lock state using **▲** and **▼**.
4. Press **OK** to accept lock state and return to normal operation.

5.3 Floor temperature display (room + floor sensor mode only).

The temperature reading of the floor sensor can be displayed temporarily. (Whilst in Floor Air sensor mode)

1. Press **MENU** until **FLOOR TEMPERATURE** icon and the floor sensor temperature reading are displayed.
2. Press **OK** to return to normal operation.

5.4 Set timer periods (timed mode only).

Dependant on whether the control has been set as a 1 day, 5:2 day or a 7 day the timer periods are set differently. Timer periods are set with a resolution of 10 minutes, e.g. 00, 10, 20, 30, 40, 50 minutes.

The range of times for each timer period can be set as follows:

Timer period 1, 00:00 to 24:00

Timer period 2, timer period 1 to 24:00

Timer period 3, timer period 2 to 24:00

Timer period 4, timer period 3 to 24:00

This range of times gives flexibility to programming; in particular if timer period 2 and timer period 3 are set as the same time then effectively there is only one comfort period for that day beginning at timer period 1 and ending at timer period 4.

5.4.1 Set timer periods, 1 day mode.

In 1 day mode the day icons are not used when setting timer periods.

1. Press **MENU** until **Set** and **TIME PERIOD 1** icons are displayed.
2. Time period 1 set time will be displayed flashing.
3. Adjust the set time using **▲** and **▼**.
4. Press **OK** to accept the set time.
5. **TIME PERIOD 2** icon will be displayed and Time period 2 set time will be displayed flashing.
6. Adjust the set time using **▲** and **▼**.
7. Press **OK** to accept the set time.
8. **TIME PERIOD 3** icon will be displayed and Time period 3 set time will be displayed flashing.
9. Adjust the set time using **▲** and **▼**.
10. Press **OK** to accept the set time.
11. **TIME PERIOD 4** icon will be displayed and Time period 4 set time will be displayed flashing.
12. Adjust the set time using **▲** and **▼**.
13. Press **OK** to accept the set time and return to normal operation.

5.4.2 Set timer periods, 5:2 day mode.

Weekdays Mo/Tu/We/Th/Fr will be programmed first.

1. Press **MENU** until **Set**, **TIME PERIOD 1** and **Mo/Tu/We/Th/Fr** icons are displayed.
2. Time period 1 set time will be displayed flashing.
3. Adjust the set time using **▲** and **▼**.
4. Press **OK** to accept the set time.
5. **TIME PERIOD 2** icon will be displayed and Time period 2 set time will be displayed flashing.
6. Adjust the set time using **▲** and **▼**.
7. Press **OK** to accept the set time.
8. **TIME PERIOD 3** icon will be displayed and Time period 3 set time will be displayed flashing.
9. Adjust the set time using **▲** and **▼**.
10. Press **OK** to accept the set time.
11. **TIME PERIOD 4** icon will be displayed and Time period 4 set time will be displayed flashing.
12. Adjust the set time using **▲** and **▼**.
13. Press **OK** to accept the set time and advance to **Sa/Su** day group programming.

Sa/Su day group is programmed just as Mo/Tu/We/Th/Fr was. After Sa/Su programming the control returns to normal operation.

5.4.3 Set timer periods, 7 day mode.

1. Press **MENU** until **Set**, **TIME PERIOD 1** and **Mo** icons are displayed.
2. Time period 1 set time will be displayed flashing.
3. Adjust the set time using **▲** and **▼**.
4. Press **OK** to accept the set time.
5. **TIME PERIOD 2** icon will be displayed and Time period 2 set time will be displayed flashing.
6. Adjust the set time using **▲** and **▼**.
7. Press **OK** to accept the set time.
8. **TIME PERIOD 3** icon will be displayed and Time period 3 set time will be displayed flashing.
9. Adjust the set time using **▲** and **▼**.
10. Press **OK** to accept the set time.
11. **TIME PERIOD 4** icon will be displayed and Time period 4 set time will be displayed flashing.
12. Adjust the set time using **▲** and **▼**.
13. Press **OK** to accept the set time and advance to Tuesday programming.

Each day is programmed in turn, just as Monday was, with the appropriate day icon displayed. After Sunday programming the control returns to normal operation.

5.5 Set comfort temperature (timed mode only).

1. Press **MENU** until **Set** and **SUN** and **THERMOMETER** icons are displayed. If floor sensor only operation then the **FLOOR THERMOMETER** icon is displayed.
2. Comfort temperature will be flashing.
3. Adjust temperature using **▲** and **▼**.
4. Press **OK** to accept comfort temperature and return to normal operation.

5.6 Set savings temperature (timed mode only).

1. Press **MENU** until **Set** and **MOON** and **THERMOMETER** icons are displayed. If floor sensor only operation then the **FLOOR THERMOMETER** icon is displayed.
2. Savings temperature will be flashing.
3. Adjust temperature using **▲** and **▼**.
4. Press **OK** to accept savings temperature and return to normal operation.

5.7 Set minimum floor temperature (floor sensor enabled only).

1. Press **MENU** until **Set** and **FLOOR THERMOMETER** and **Min** icons are displayed.
2. Minimum floor temperature will be flashing.
3. Adjust temperature using **▲** and **▼**.
4. Press **OK** to accept minimum floor temperature and return to normal operation.

5.8 Set clock time (timed mode only).

1. Press **MENU** until **Set** and **CLOCK** icons are displayed.
2. Day will be flashing.
3. Adjust day using **▲** and **▼**.
4. Press **OK** to accept day.
5. Hours will be flashing.
6. Adjust hours using **▲** and **▼**.
7. Press **OK** to accept hours.
8. Minutes will be flashing.
9. Adjust minutes using **▲** and **▼**.
10. Press **OK** to accept minutes and return to normal operation.

5.9 Set date (timed mode only).

1. Press **MENU** until **Set** and **CALENDER** icons are displayed.
2. Day of month will be flashing in hours and a 'd' displayed in minutes.
3. Adjust day using **▲** and **▼**.
4. Press **OK** to accept day.
5. Month will be flashing in hours and 'nn' displayed in minutes.
6. Adjust month using **▲** and **▼**.
7. Press **OK** to accept month.
8. Year will be flashing in hours (e.g. 07) and 'y' displayed in minutes.
9. Adjust year using **▲** and **▼**.
10. Press **OK** to accept year and return to normal operation.

5.10 Today's energy usage display.

The energy usage of the control today can be displayed temporarily.

1. Press **MENU** until **Hrs use** and today's **DAY** icons are displayed.
2. The energy usage in hours and minutes is displayed in the time area.
3. Press **OK** to return to normal operation.

5.11 Yesterday's energy usage display.

The energy usage of the control yesterday can be displayed temporarily.

1. Press **MENU** until **Hrs use** and yesterday's **DAY** icons are displayed.
2. The energy usage in hours and minutes is displayed in the time area.
3. Press **OK** to return to normal operation.

5.12 Last weeks energy usage display.

The energy usage of the control during the previous seven days can be displayed temporarily.

1. Press **MENU** until **Hrs use** and all seven **DAY** icons are displayed.
2. The energy usage in hours is displayed in the time area.
3. Press **OK** to return to normal operation.

5.13 Total energy usage display.

The total energy usage of the control can be displayed temporarily.

1. Press **MENU** until **Hrs use** icon is displayed.
2. The energy usage in hours is displayed in the time area.
3. Press **OK** to return to normal operation.

5.14 Total energy usage clear.

The total energy usage of the control can be cleared back to 0000.

1. Press **MENU** until **Hrs use** icons are displayed along with **clr** in the time area.
2. Press **OK** to reset the total energy usage and return to normal operation.

6. User controls.

Various buttons allow the user to adjust the control.

If the control has been PIN protected then when any of the buttons **▲**, **▼**, **O/I**, **24h** are pressed the PIN entry routine will be presented, as in section 5.1, before the user can continue.

6.1 Enter PIN (PIN enabled only).

1. Press **MENU** to access settings menu. The **PADLOCK** icon and **0000** are displayed.
2. The first **0** will be displayed flashing.
3. Adjust PIN digit 1 using **▲** and **▼**.
4. Press **OK** to accept digit 1. The second **0** will be displayed flashing.
5. Adjust PIN digit 2 using **▲** and **▼**.
6. Press **OK** to accept digit 2. The third **0** will be displayed flashing.
7. Adjust PIN digit 3 using **▲** and **▼**.
8. Press **OK** to accept digit 3. The fourth **0** will be displayed flashing.
9. Adjust PIN digit 4 using **▲** and **▼**.
10. Press **OK** to accept digit 4. If the PIN entered is incorrect the control will return to normal operation but if the PIN is correct then the user adjustment will be accessed and remain accessible for 4 minutes.

6.2 Temperature adjustment (un-timed mode only).

The control temperature is adjusted using the **▲** and **▼** buttons. If the tamper lock has been set then this needs to be cleared before the adjustment can be made and reset after the adjustment.

Note: the temperature adjustment is from the current measured floor or room temperature (not the set temperature). This is so that the adjustment is relevant to the current environment being experienced not what it ought to be. For example if the room temperature is set as 20°C but the room has only reached 15°C when the adjustment is made then the user might not appreciate that the temperature is still to increase and would thus overheat the room if the adjustment was made from 20°C instead of 15°C.

6.2.1 Floor sensor only operation temperature adjustment.

1. Press **▲** or **▼** and the current floor temperature will be displayed flashing with the **FLOOR THERMOMETER** icon.
2. Adjust the temperature up or down as required.
3. Press **OK** to complete the adjustment and return to normal operation with the current floor temperature displayed but with the revised floor temperature target.

6.2.2 Floor and room sensor/room sensor only operation temporary temperature adjustment.

1. Press **▲** or **▼** and the current room temperature will be displayed flashing with the **THERMOMETER** icon.
2. Adjust the temperature up or down as required.
3. Press **OK** to complete the adjustment and return to normal operation with the current room temperature displayed but with the revised room temperature target.

6.3 Temporary temperature adjustment (timed mode only).

The comfort or savings temperature that is currently operating can be temporarily adjusted using the ▲ and ▼ buttons. When the temperature has been manually changed in this way the **HAND** icon will be displayed. If the tamper lock has been set then this needs to be cleared before the adjustment can be made and reset after the adjustment.

The control will revert to the permanent comfort or savings temperature at the start of the next timer period. When the temperature reverts the **HAND** icon will clear.

Note: the temperature adjustment is from the current measured floor or room temperature (not the comfort or savings set temperature). This is so that the adjustment is relevant to the current environment being experienced not what it ought to be. For example if the room comfort temperature is set as 20°C but the room has only reached 15°C when the temporary adjustment is made then the user might not appreciate that the temperature is still to increase and would thus overheat the room if the adjustment was made from 20°C instead of 15°C.

1. Press ▲ or ▼ and the current measured room temperature will be displayed flashing with the **THERMOMETER** and **HAND** icons. If floor sensor only operation then the **FLOOR THERMOMETER** icon will be displayed.
2. Adjust the temperature up or down as required.
3. Press **OK** to complete the adjustment and return to normal operation with the current temperature displayed but with the revised temperature target.

6.4 Off and frost protection modes.

The control can be indefinitely set to either frost protection only mode or off mode. These modes are used for example for holiday periods, when the building is unoccupied or other times when the heating is not fully required. When operating with these modes the clock will keep running in the background and all of the settings and configuration will be preserved.

In frost protection only mode the control only operates the heater to stop the floor or room temperature falling below 5°C. When this mode is set the **FROST** icon is displayed. If the control is in timed mode the **TIME PERIOD** icons are not displayed.

To set frost protection mode press the **O/I** button once so that the **FROST** icon and **5°C** is displayed flashing. Press **OK** to accept this mode.

In off mode the control does not operate the heater whatever the temperature. When this mode is set only **OFF** is shown in the time display.

To set off mode press the **O/I** button twice and **OFF** is displayed flashing in the time area. Press **OK** to accept this mode.

To clear frost protection or off modes just press the **O/I** button and normal control will resume.

6.5 Constant comfort or savings temperature control (timed mode only).

The control can be indefinitely set to either comfort or savings temperature. This might be required for example for short holiday periods at home, periods when an occupant is convalescing, periods of extreme weather or periods where the building might be unoccupied for a few days. When the control is operating in permanent comfort or savings temperature mode the display will show the **24h** and **SUN** or **MOON** icons but no **TIMER PERIOD** icons.

To set constant comfort temperature press the **24h** button once so that the **24h** and **SUN** icons are displayed flashing. Press **OK** to accept this mode.

To set constant savings temperature press the **24h** button twice so that the **24h** and **MOON** icons are displayed flashing. Press **OK** to accept this mode.

To clear either constant comfort or savings temperature mode just press the **24h** button and normal control will resume.

It is still possible to 'temporarily' adjust the temperature during constant comfort or savings temperature mode and the temporary adjustment will reset when the period of constant comfort or savings temperature is cleared.

7. Displays.

7.1 Normal use display.

In normal use the control displays either the room temperature (room and floor sensor/room sensor only modes) or the floor temperature (floor sensor only mode). Additionally one or more icons may show additional functions as follows:

- If the control is in timed mode then the current **TIMER PERIOD** icon (1 to 4) will also be displayed.
- If the control temperature has been manually overridden then the **HAND** icon will also be displayed.
- If the control has been tamper locked then the **PADLOCK** icon will be also displayed.
- If the control has been PIN protected then the **PADLOCK** icon will be displayed when the control is protected and will be clear when the PIN has been entered and the 4 minute access period is still running.
- If the control has been changed to constant comfort or savings temperature then the **24h** icon will also be displayed but not the **TIMER PERIOD** icons.
- If the control has been set to permanent frost protection mode then the **FROST** icon is displayed.
- If the control has been set to permanent off mode then only **OFF** is shown in the time display.
- Whenever the heater relay is on the **HEATER** icon will be displayed.
- If the clock backup battery is running low then the **BAD BATTERY** icon will be displayed.

[7.2 Error displays.](#)

If unexpected conditions are detected by the control then an error code will be displayed.

[7.2.1 E2, thermostat overheats.](#)

If the room sensor detects a temperature of greater than 40°C then the control will turn off the heater output and display **E2** until the fault is corrected.

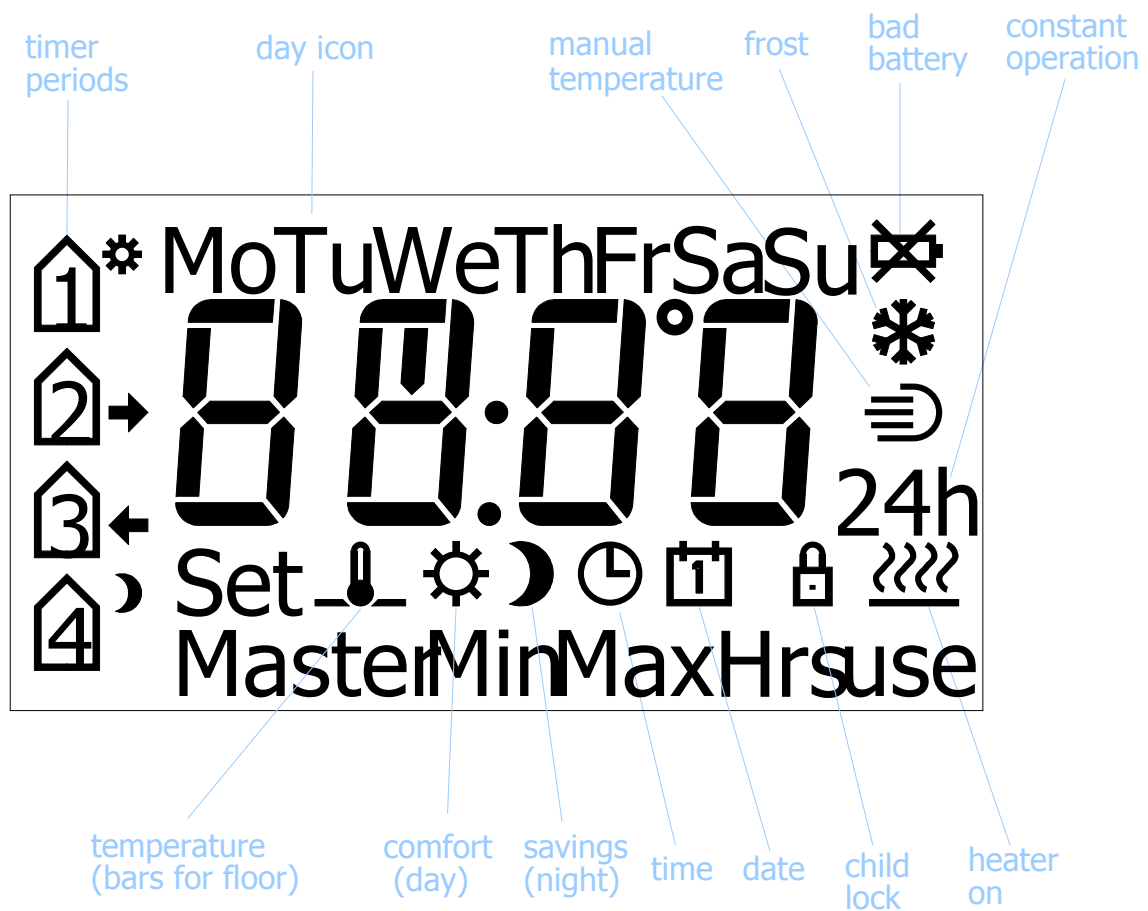
[7.2.2 E4, floor sensor short circuit.](#)

If the control detects a floor sensor short circuit then the control will turn off the heater output and display **E4** until the fault is corrected.

[7.2.3 E5, floor sensor open circuit.](#)

If the control detects a floor sensor open circuit then the control will turn off the heater output and display **E5** until the fault is corrected.

[7.3 LCD Display](#)



[8. Battery replacement.](#)

The battery is a high capacity 3 Volt Lithium Coin Battery with an expected lifetime of about 10 years under normal circumstances.

Current drain only occurs when the control is disconnected from the 240V mains supply with the battery in-situ. Its purpose is to maintain the time and date settings correctly until the control is installed or during power cuts. At all other times when the 240 V mains supply is connected there is no current drain to cause the battery life to deteriorate.

We recommend changing the Coin Battery when the bad battery symbol is displayed. The only loss of performance that will occur when the battery life has ended is the loss of time and date settings during a power cut. Otherwise there will be no effect.

Please note that the control will 'lose' its time and date settings during battery replacement and the user will have to reset time and date after the new battery is fitted.

Simply remove the front of the control to reveal the battery and then remove the 'dead' battery. Fit a new CR 2032 type battery and replace the front of the control. Then set the time and date as described under sections 5.8 and 5.9 above.

9. Electrical and electronic specifications.

Supply Voltage: 230 Vac nominal (operating range 200 to 260 Vac), 50/60 Hz
 Standby power consumption: 500 mW
 Relay rating: 16 A resistive (4 A inductive), 230 Vac, 3600 W

Ambient operating temperature: 0 to 35 °C
 Room sensor control set point range: 5 to 35 °C
 Room sensor display and setting resolution: 0.2 °C
 Room sensor operating differential: 0.4 °C
 Room sensor accuracy: ± 1.5 °C over range 10 to 30 °C
 Room sensor: built in NTC thermistor
 Floor sensor control set point range: 5 to 45 °C
 Floor sensor display and setting resolution: 0.2 °C
 Floor sensor operating differential: 1.0 °C
 Floor sensor accuracy: ± 2.0 °C over range 10 to 40 °C
 Floor sensor: NTC thermistor, resistance 10kΩ @25 °C
 Floor sensor: the length of the floor sensor lead can be extended up to a maximum of 20 m.

Clock: crystal controlled with time and date plus automatic summer time correction
 Clock accuracy: ± 25 PPM (parts per million)
 Clock battery backup: replaceable lithium coin cell (Type CR2032)

Timer program, settings and configuration stored in non volatile EEPROM memory

Connections: 7 by 4.0 mm² rising clamp screw terminal
 (Live in, Neutral in, Live to load, Neutral to load, Earth - no internal connection, floor sensor signal, floor sensor return)

Keypad buttons: 6 silicon rubber (▲, ▼, OK, MENU, 24h, O/I)

LCD: custom, 16mm x 30mm, 60 segment, reflective (no backlight) - see appendix.

DIL switch setting of operating modes by installer

Switch 1, floor sensor maximum temperature select: on=28°C (wood floor), off=35°C (tiled floor)

Switch 2, room sensor operation select: on=use room sensor, off=do not use room sensor

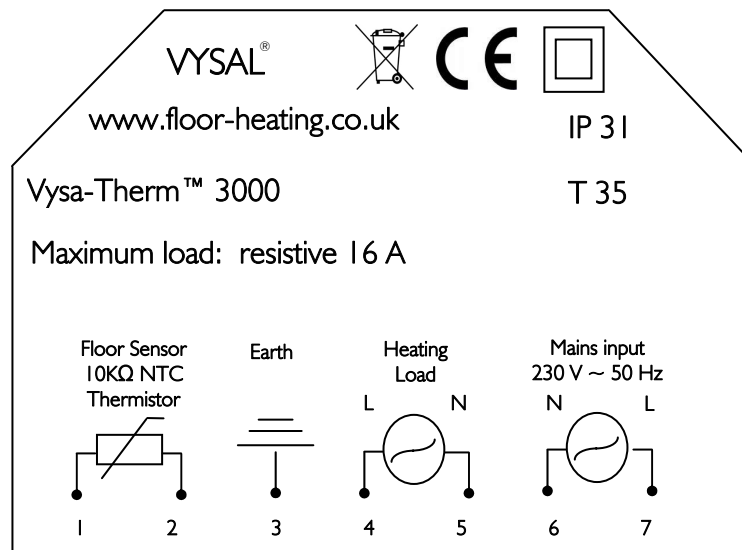
Switch 3, floor sensor operation select: on=use floor sensor, off=do not use floor sensor

Switch 4, timed operation select: on=timed operation, off=un-timed operation

The wiring requirements for the Vysa-Therm™ 3000 are printed on the reverse of the thermostat above the terminal connections.

The floor sensor and the cold tail leads **must not** be placed in the same conduit.

If the heating load exceeds the thermostats 16A switching capacity then the heating will be required to be connected via a contactor of sufficient rating. In this case terminal 4 becomes the live terminal to switch the contactors coil.



Rear of the thermostat showing the identification markings.