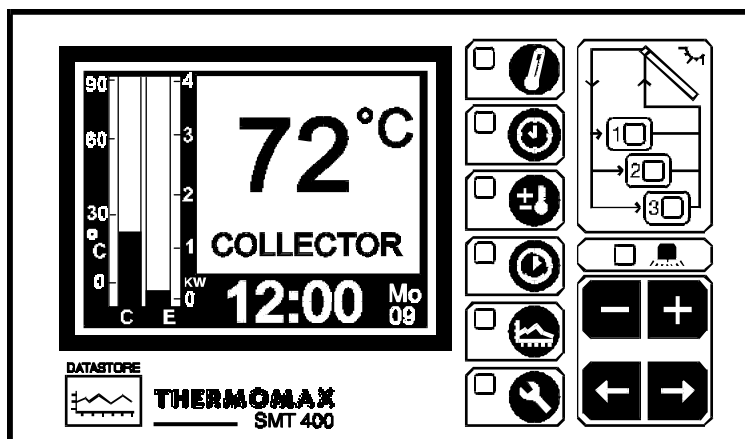


THERMOMAX

SMT 400

SOLAR HEATING CONTROLLER

ENGLISH



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SECTION 1 - INTRODUCTION

BACKGROUND

The SMT 400 is a high specification integrated solar heating controller, compact, robust and easy to use. This controller has evolved as a result of research and development and years of experience in the solar industry. It forms a valuable information system for the modern-day user and provides the necessary details, revealing the performance of the solar system. The large graphics display ensures that the unit communicates with the user with the greatest of ease and friendliness.

THE SMT 400 FEATURES

- Precise digital differential controller for efficient heat collection
- Digital display of collector (manifold) temperature
- Digital display of return (system) temperature
- Digital display of Tank 1 and Tank 2 temperatures
- Digital display of daily collected energy in kilo-calories
- Bargraph display of collector (manifold) temperature
- Bargraph display of instantaneous power collected in kW, with auto-adjusting scale
- 50 Year clock & calendar
- Two presettable divert temperatures providing a three-user zone system
- Pump control matrix providing total user versatility
- 'Smart' Mode providing automatic heat diversion
- Adjustable Delta T (ΔT) differential from 4-10°C
- Adjustable 'Smart' Mode Delta T ($S\Delta T$) differential from 6-12°C
- Anti-frost thermostat for system protection
- Maximum system temperature thermostat
- Daily maximum / minimum temperature recorder for all its sensors
- Three independent time-thermostats for heat boosting
- Graphical display of collector and tank temperatures as well as the energy gain for the current and previous days, based on an average reading taken every 10 minutes
- Graphical display of collector daily maximum temperatures, tank1 daily maximum temperatures and total daily energy gain for the last 8 weeks
- Bar graph display of monthly accumulated energy gain for the last 6 months
- Status screen for indication of the current state of inputs and outputs of the collector
- Manual override of outputs for system testing
- Alarm indicator for warning in case of sensor failure or over-temperature
- Plug-removable controller for ease of installation
- Plug-in sensors for ease of installation

Note: The information supplied in this manual is for guidance only - no part of this may be used for any agreement, whether express or implied, or to form any contract. Thermomax reserves the right to change specifications without prior notice.

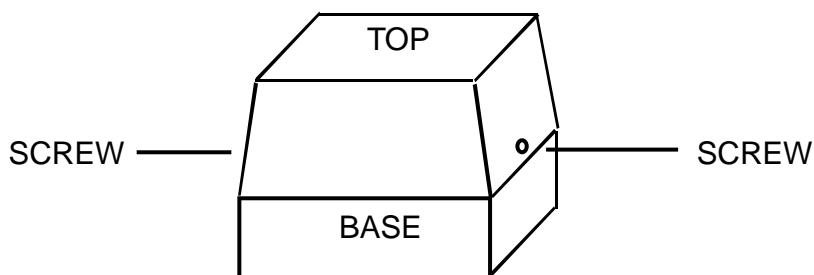
SECTION 2 - INSTALLATION

Note: This installation procedure is for guidance only, and its suitability should be verified by the installer.

2.1 SMT 400 UNIT

NOTES: For viewing comfort, the SMT 400 unit should be positioned at eye level. It is always good practice to keep electronic equipment away from cold, and heat, as extremes of temperature may reduce the lifetime of the device. It is also good practice to keep electronic equipment away from heavy electrical loads, switches, relays or contactors as these may cause electrical and electromagnetic interference when switched on or off.

- 1 Remove the two side restraining screws as per diagram below, then separate the TOP controller from the connector BASE.



- 2 If your cables are to enter the enclosure from behind the unit, then knock out the appropriate entries in the BASE of the SMT 400.
- 3 Use the BASE of the enclosure to mark the four corner mounting holes. Remove the base and drill all necessary holes in the wall or mounting panel.
- 4 Assemble any grommets or conduit adapters if used, replace the base and fasten using the four corner screws.

2.2 SENSORS

The SMT 400 is supplied with three sensors (Collector, Return, Tank 1). If longer cables are needed, sensors are available with extended cable lengths. Alternatively, sensor extenders are available in a variety of lengths. If the sensors need to be extended, but factory-made extenders are not available, they can be extended using a suitable 4 core or 3 core cable, according to the diagram shown below.

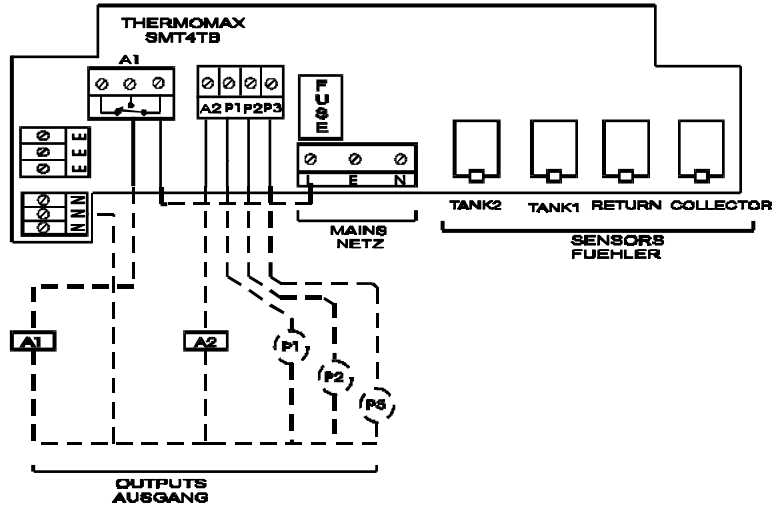
(Note: The SMT 400 is supplied with Tank 2 sensor disabled. A Tank 2 sensor may ordered separately if required. See section 3.4 for details).



2.3 POWER CONNECTIONS AND WIRING DIAGRAM

NOTES: This device should be properly earthed. Flexible wires simplify connection to the terminals. All connections should be secure and adequately tightened. It is good practice to keep mains cables away from sensor cables and other low voltage signal cables.

Connect the mains supply to the unit, as per diagram below:

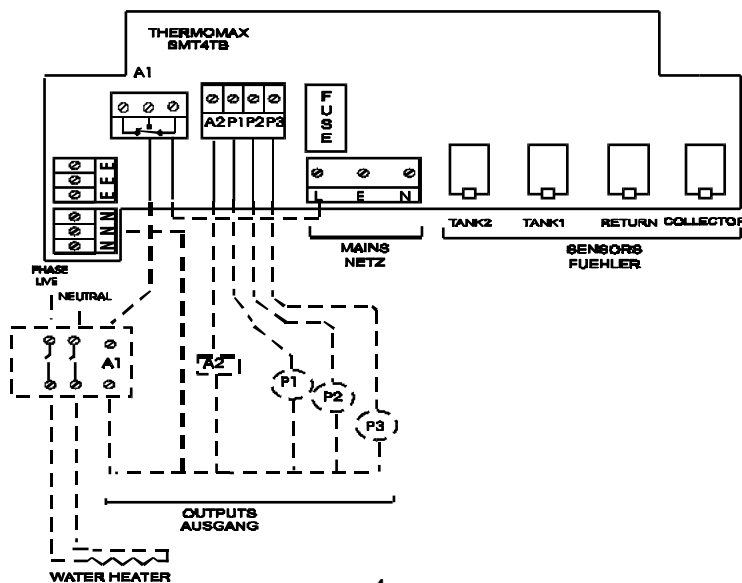


Ⓟ - Hot Water Pump 1 Ⓟ - Hot Water Pump 2 Ⓟ - Hot Water Pump 3

Ⓜ - Auxiliary Heater 1 Ⓜ - Auxiliary Heater 2

| | |
|-------------------------|-----------------|
| AUX1 + AUX2 : | MAX 3.5A (800W) |
| PUMP1 + PUMP2 + PUMP3 : | MAX 2.0A (450W) |
| TOTAL LOAD : | 5.5A(1250W) |

If the Auxiliary outputs are being used to drive a water heater which has a greater rating than 800W, then a mains contactor (Relay) should be used as illustrated below:

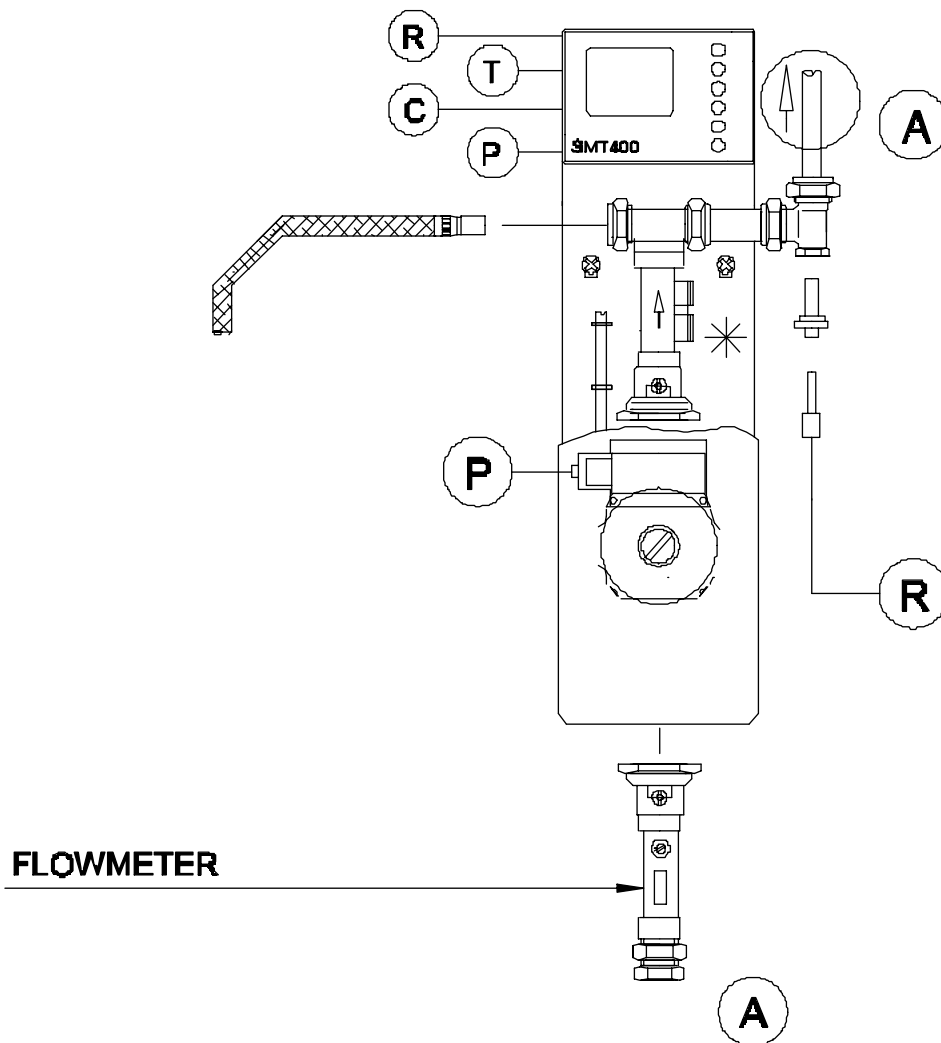


2.4 BATTERY

The battery supplied is a PP3 nickel metal hydride rechargeable battery and is contained in the battery compartment inside the unit, but not connected. This should be connected after installation. A battery is not essential for the system operation, but is used in the case of power failure, thereby maintaining the system clock for 1 - 2 hours. It is recommended for the battery to be changed every 6 - 12 months, in order to maintain good mains failure operation. When replacing, ensure that the same type of battery is used as specified.

2.5 ENERGY COLLECTED CALCULATIONS & SETTINGS

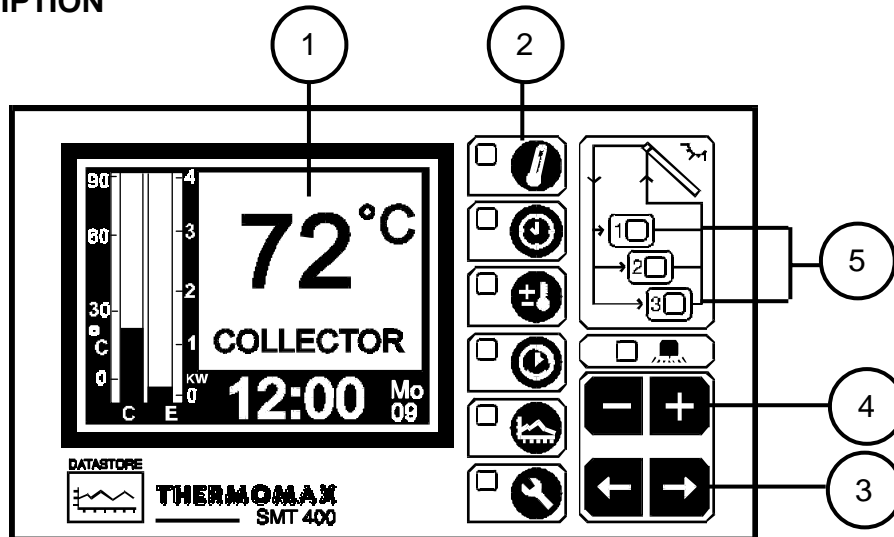
The Flow rate of the system is used to calculate the Energy Collected. A flow meter is used to determine the actual value of flow rate in Litres per Minute. **This value must then be entered into SMT 400 control unit (see section 3.4 "System presets")** for further information on setting the flow rate and setting the % of Anti-freeze (Glycol) used in your system. The diagram below shows the location of the flow meter on the SMT 400 Pump control Unit.



SECTION 3 - OPERATION

In order to understand the simplicity of operation SMT 400, the description below should be read carefully.

3.1 DESCRIPTION



1 Graphics LCD Display:

Displays all the information. The contrast is adjustable to suit the user. (See MAIN SCREEN Digital Temperature Display, Section 3.2).

2 Function Keys:

There are six function keys on the SMT 400 controller:



MAIN SCREEN 1 Temperature and Energy Display



CLOCK SCREEN Setting the System Clock



SET SCREEN 1 - Main System parameters
 SET SCREEN 2 - The SMT 400 Pump control matrix
 SET SCREEN 3 - System Presets.
 SET SCREEN 4 - Energy calculation configuration



TIMER SCREEN - Auxiliary heat Boost.



SOLAR HISTORY - Collector, Tank and Energy Collected







STATUS SCREEN - System Diagnostics.



3 Select Keys 

Within each function, there are a few parameters that can be selected for setting or display purposes. The select keys allow the different parameters to be chosen, without changing the value of any of the parameters.

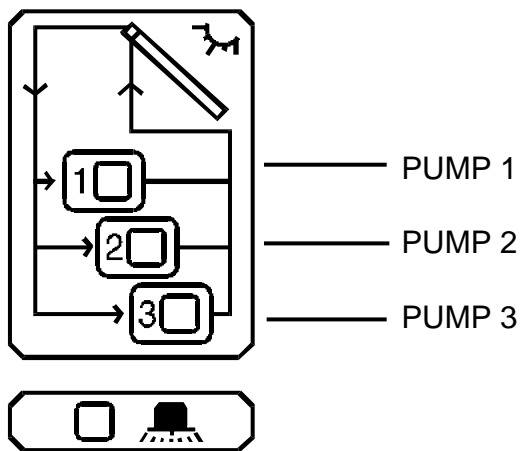
4 Set Keys 

Once any parameter is chosen, in order to set the value, the  and  keys increase / decrease the value respectively. In most of the functions

described later, the  and  keys have an auto-repeat facility: press and hold the key in order to advance quickly.

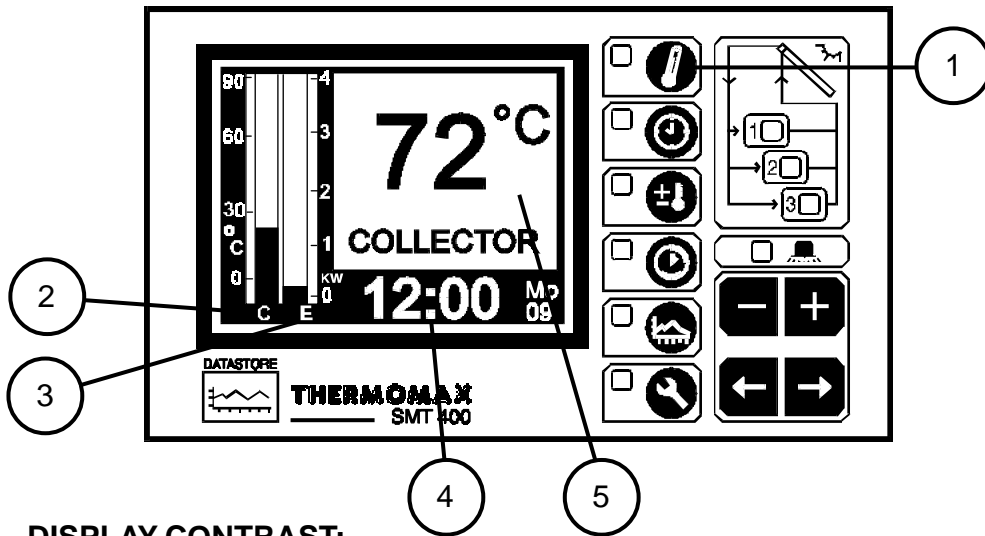
Note that the  and  keys are the only 'destructive' keys. The other keys may be pressed to view or select any of the parameters without affecting any change in the system.

5 Indicators



The System Alarm can be triggered by a high temperature alarm or by a sensor fault.

3.2 MAIN SCREEN 1 - TEMPERATURE AND ENERGY DISPLAY

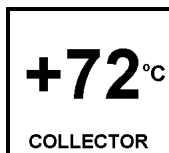


DISPLAY CONTRAST:

The display contrast may be adjusted in this screen. Press the **+** key to increase and the **-** key to decrease the contrast. To adjust quickly, press and hold for auto-repeat.

- 1 **MAIN SCREEN Function selector**
Pressing this button once reveals Main Screen 1. This screen may display either the Collector temperature or the “Energy Collected” for the current day. Pressing this key a second time reveals Main Screen 2 which is a digital display of all four temperature sensors.
- 2 **Collector temperature bar graph**
Displays the current collector temperature in bargraph form.
- 3 **Energy Collected bar graph**
Displays the instantaneous power being collected in kW with automatically adjusting scale.
- 4 **Current Time display**
- 5 **Information Window**

Use the **←** **→** keys to change the “Information Window” to display either the current Collector temperature or the Energy Collected for the current day.

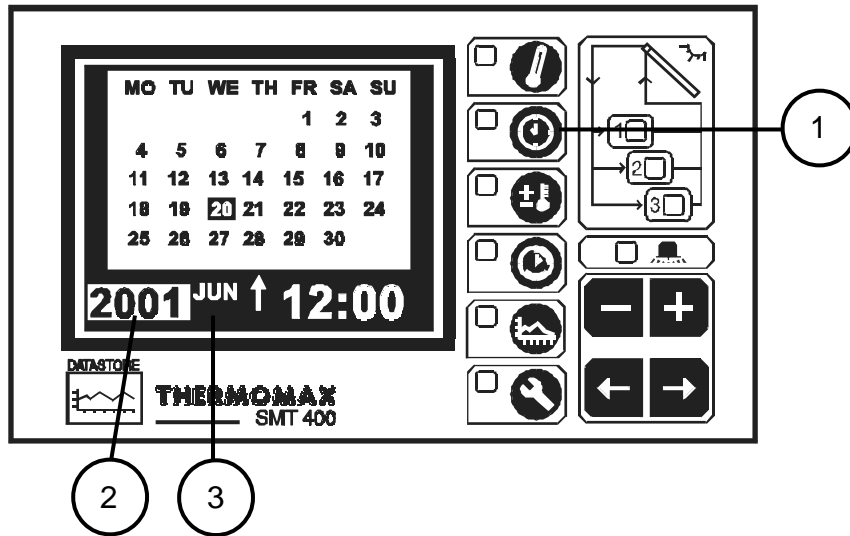


This window will display the current collector temperature when the “C” option 1 is selected.



This window will display the Energy Collected for the current day when the “E” option is selected.

3.3 CLOCK/CALENDAR SCREEN - SETTING THE SYSTEM CLOCK AND DATE



1 CLOCK/CALENDAR SCREEN Function selector

The datalogging system uses the calendar to file the logged data.

2 Selection indicator

The highlighted parameter is adjusted by pressing the **- +** keys. (The selections are: 'year', 'month', 'day', '↑', 'hour' and 'minutes') The '↑' indicates that the day on the calendar above is being set. The clock is in 24-hour format.

To advance quickly press and hold the **- +** keys for auto repeat.

3 Calendar

This is the calendar of the month selected, with the day of the week indication.

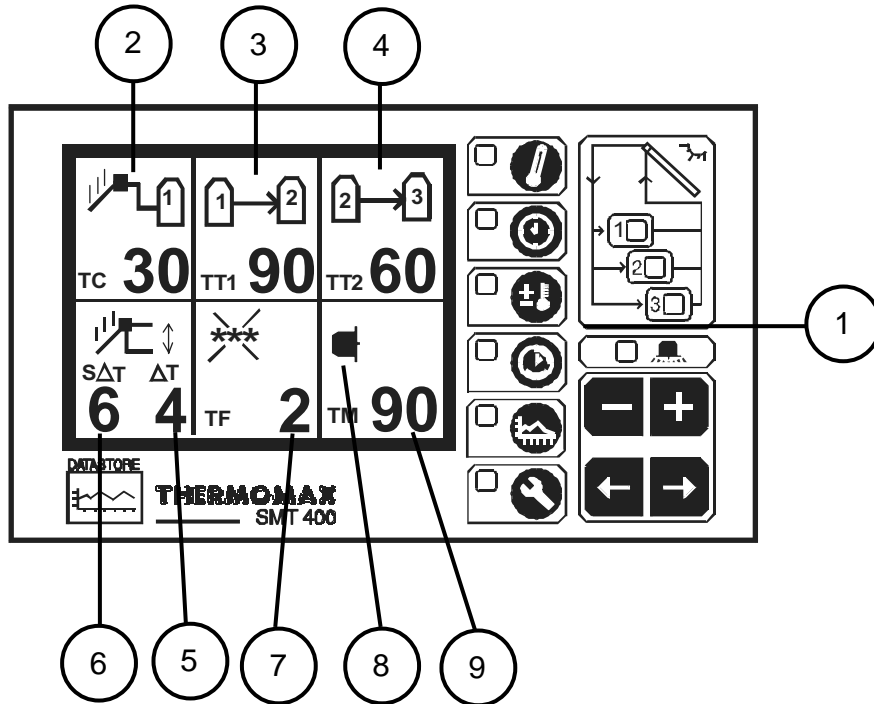
SETTING THE DATE AND TIME

Step 1: Use the **- +** keys to set the current 'Year'.

Step 2: Use the **→** key to move to the 'Month' option and then use the **- +** keys to set the current month.

Step 3: Repeat step 2 to set the current 'date' and 'time' ('minutes' and 'hours') in turn.

3.4 SET SCREEN 1 - MAIN SYSTEM PARAMETERS

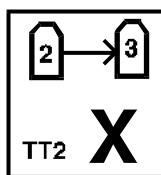


1 Set Screen function selector
 Pressing this key once reveals Set Screen 1. The main system parameters are set using this screen.

2 TC is the minimum collector temperature which will activate the pumps (recommended set value: 30°C).






3 TT1 is the State 1 to State 2 divert temperature; (In normal/default operation this is the Tank1 to Tank2 divert temperature). The default value is set to 90°C for a one pump system. In an application that has more than one pump, this value must be adjusted to the required divert temperature, (i.e. a temperature of 40°C is recommended).

4 TT2







In the default state (as shipped from the factory), the Tank 2 sensor input is disabled. This is denoted by an X in the **TT2** window. If your system has two tank 2 sensors, then you will need to follow step (a) as follows:



(a) TO ENABLE THE TANK 2 SENSOR





Use the   keys to move to the TT2 window. Then press the  key for 5 seconds to remove the X. The  /  keys may now be used to set TT2 (state 2 to state 3 divert temperature).

(b) TO DISABLE THE TANK 2 SENSOR

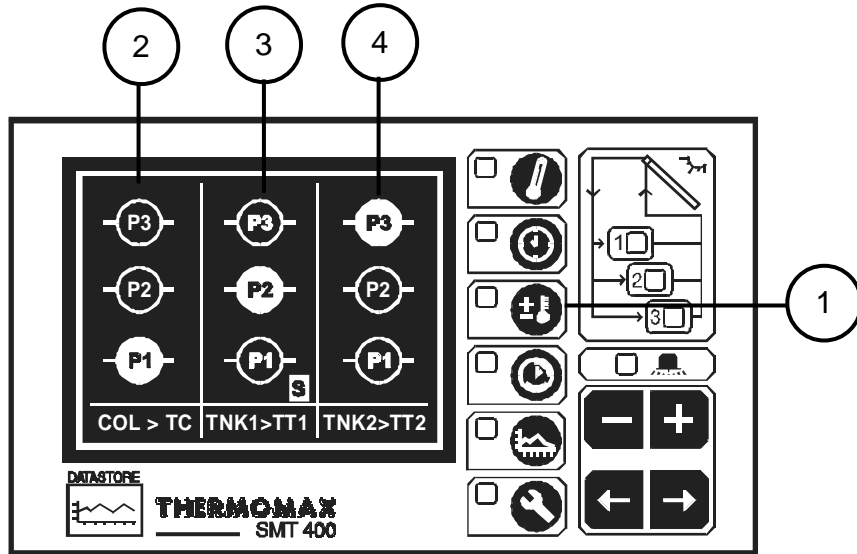
If your system does not have a Tank 2 sensor, this input must be disabled to ensure correct operation of the controller. This is done as follows :

Use the   keys to move to the TT2 window. Then press the  key until the TT2 parameter reaches 90°C, continue to press the  key for 5 seconds (until an X appears in this window). This sensor has now been disabled.

- 5** ΔT is the required temperature difference between the collector and return temperature to activate the pump (recommended set value: 4).
- 6** $S\Delta T$ is the required temperature difference between the collector and return temperature to satisfy the 'Smart' condition, (Section 4, page 13).
- 7** **TF** is the anti-frost temperature (recommended set value with no anti-freeze: +2°C).
- 8** This is the alarm mute selector, press  to enable piezo alarm or  to disable it.
- 9** **TM** is the maximum system temperature alarm.
If the temperature of either Tank 1 or Tank 2 sensor exceeds TM, then all Pump relays are switched OFF as a protection feature.

To set any parameter use the   keys to move to the appropriate window, then use the   keys to adjust this parameter.

SET SCREEN 2 - THE SMT 400 PUMP CONTROL MATRIX

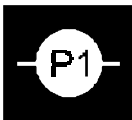


1 Set Screen function selector

Pressing this key a second time reveals Set Screen 2. The Screen allows the user to program the output status of each pump when the SMT is in one of three states. (It is assumed that the collector temperature is greater than the return temperature by ΔT).

- 2 **State 1** - When the COLL > TC, the controller is in State 1. Therefore any pump which has been selected in Column 1 will be "ON".
- 3 **State 2** - When the TNK1 > TT1 and COLL > TC, the controller is in State 2. Therefore any pump which has been selected in Column 2 will be "ON". The conditions for State 2 are overridden when the 'Smart' mode is selected. Please refer to "Smart Mode Select" on page 13. If the 'Smart' mode is selected 'S' will appear at the bottom right hand corner of this window.
- 4 **State 3** - When the TNK2 > TT2 and TNK1 > TT1 and COLL > TC, the controller is in State 3. Therefore any pump which has been selected in Column 3 will be "ON".

Note:

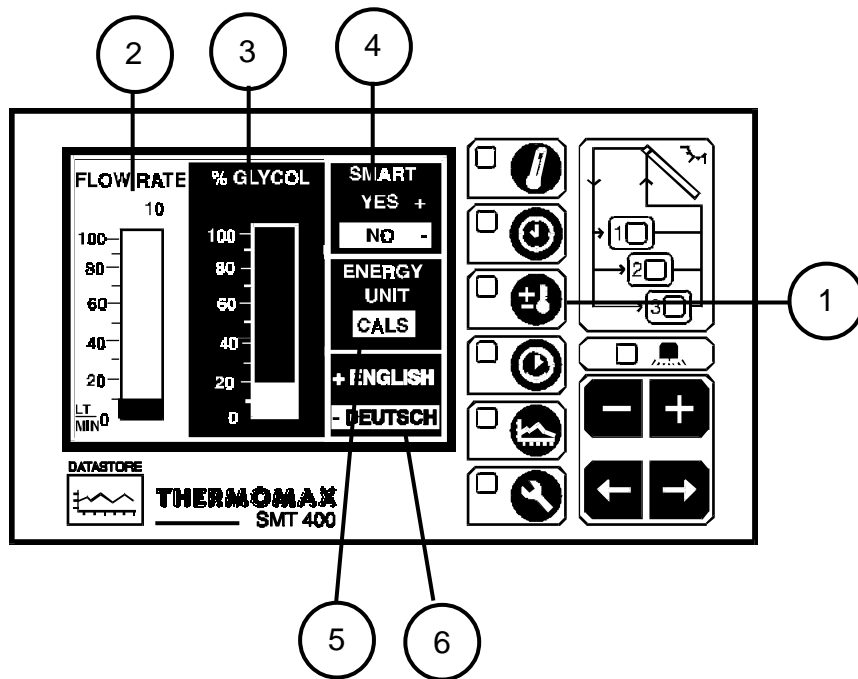


This indicates that Pump1 will be "ON" for this State.



This indicates that Pump1 will be "OFF" for this State. To change the status of any pump simply use the keys to move the selection window, then use the key to switch the pump to "ON", and the key to switch the pump to "OFF"

SET SCREEN 3 - SYSTEM PRESETS



1 Set Screen function selector

Pressing this key a third time reveals Set Screen 3. The system presets are set using this screen.

2 Flow Rate

Use the **[-]** **[+]** keys to set the system flow rate in steps of 1 Litre per minute, (0-100) or 10l per minute (100-1000).

This value is used with Delta T (ΔT) to calculate the Energy Collected. See section 2.5

“Energy Collected Calculations” and section 3.4 note 2.

3 System Anti-freeze (Glycol) Percentage

Use the **[→]** key to select this window then use the **[-]** **[+]** keys to set percentage anti-freeze.

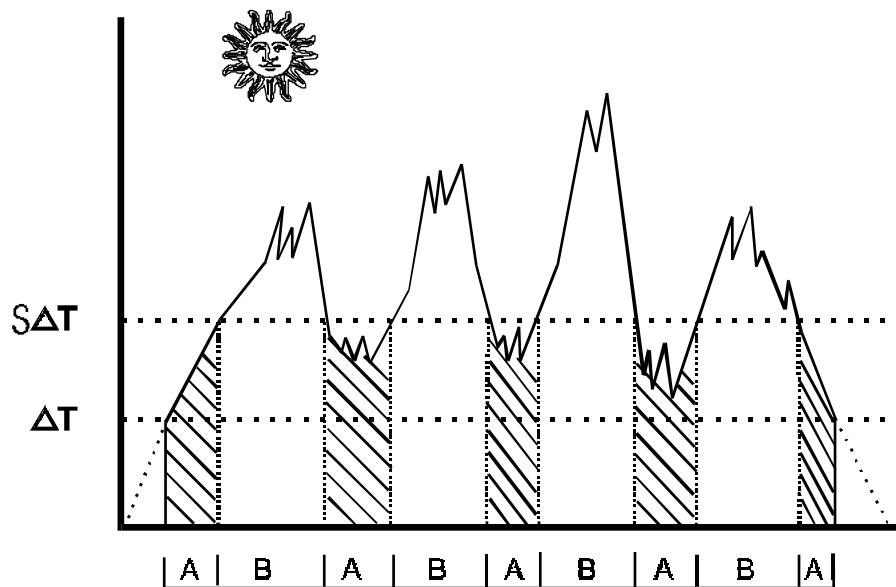
4 ‘Smart’ mode select

Principle of Smart Mode Operation:

The SMT 400 offers the facility to maximise the energy gain from the solar system. When the energy gain from the system is low during some periods of the day, the heat output from the system may be diverted to a swimming pool. When the energy gain increases the heat output from the system is diverted to the hot water tank. A new Smart Mode Delta T “ $S\Delta T$ ” is used to govern this operation. The diagram on the following page illustrates operation in this mode.

Use the **→** key to select this window then use the **- +** keys to enable or disable 'Smart' mode. (Press and hold for 3 seconds). When the Smart option is enabled, the unit switches to Pump status 2, as long as $COLL - RET > \Delta T$ and $COLL - RET < S\Delta T$, (see diagram below). When the Smart option is activated, $S\Delta T$ appears on the display to the left of ΔT .

Please note that the controller will operate as normal if the conditions for State 1, State 2 and State 3 are met.



A = SWIMMING POOL, B = HOT WATER TANK

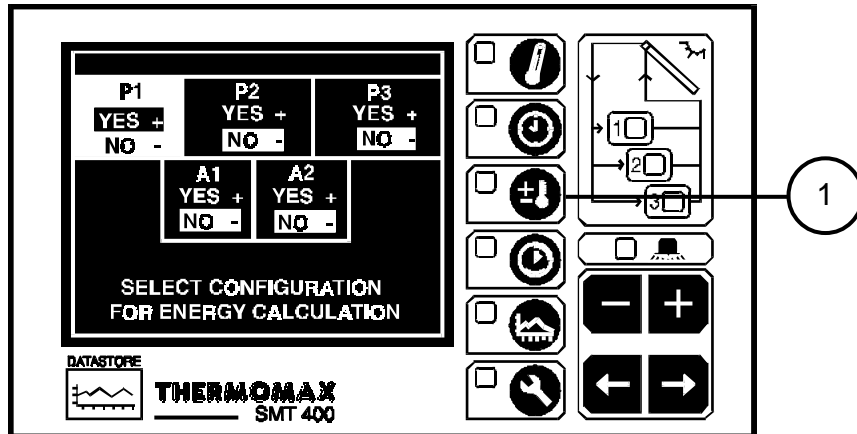
5 Energy units

Use the **→** key to select this window then press and hold the **+** key for 5 seconds to change the energy units from kWh to calories or vice versa.



6 Communication Language



Use the **→** key to select this window then use the **- +** keys to select the communication language.

SET SCREEN 4 - ENERGY CALCULATION CONFIGURATION



1 SET SCREEN function selector

Pressing this key a fourth time reveals the energy calculation configuration screen. This screen lets you choose which pump outputs will be used for the energy calculation. Use the   keys to select which outputs to able or disable for calculation.

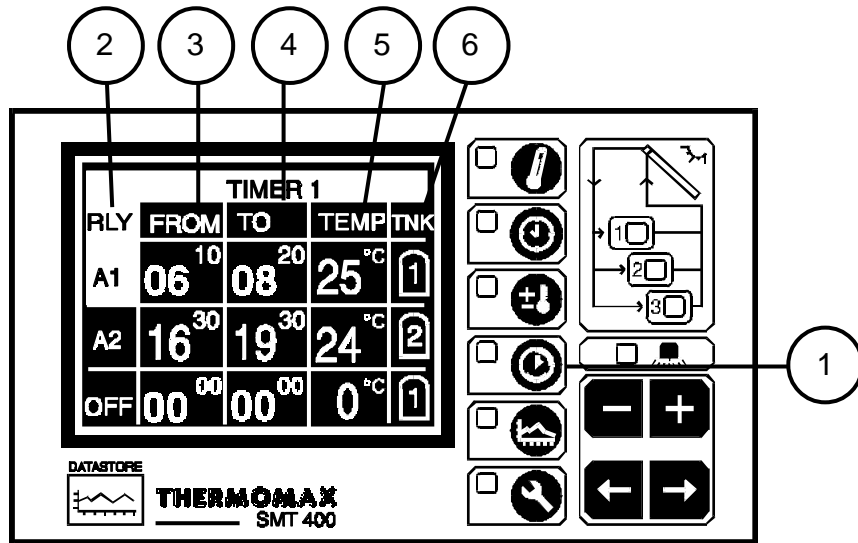
Use the   keys to make setting.

NOTE 1: For correct energy calculation, outputs NOT powering pumps should NOT be enabled for calculation.

NOTE 2: The accuracy of the solar energy gain calculations are dependent upon the accuracy of the flow meter. As this is a mechanical device and it's accuracy will fluctuate over time, the flow rate in set screen 3 should be set as follows:

When the sun is vertical to the collector, the solar intensity (instantaneous collected power) should be approximately 700W per square meter. The flow rate value in set screen 3 should be adjusted to obtain this reading.

3.5 TIMER SCREEN - AUXILIARY HEAT BOOST



3.5.1

1 Timer Screen function selector

Pressing this key once reveals the timer screen as shown above. The SMT 400 offers three independent timers with associated thermostats. Each timer can be linked to any of the two tank sensors and two relays.

2 Auxiliary output selection

This allows you to select which relay will be controlled by the selected output.

'OFF': This selection indicates that the selected timer will not affect any of the relays.

'A1': This selection indicates that the selected timer will control auxiliary output 1 relay.

'A2': This selection indicates that the selected timer will control auxiliary output 2 relay.

Use the **- +** keys to make the selection.

3,4,5 Timer start, timer end and temperature settings

Use the **- +** keys to adjust the start time, end time and temperature settings of the timer.

6 Sensor selection

This allows you to select which sensor will be used for the selected timer.



This selection indicates that Tank sensor 1 will be used.

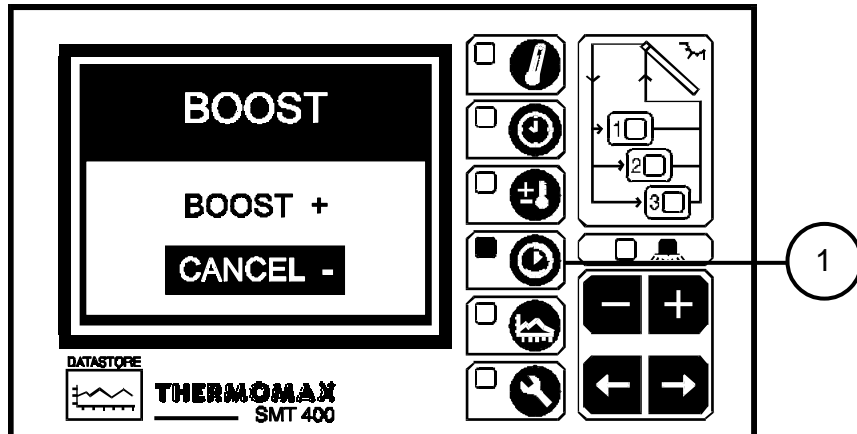





This selection indicates that Tank sensor 2 will be used.

Use the **- +** keys to make the selection.


Use the **← →** keys to select the required parameter.

3.5.2 BOOST OPTION



- 1 Pressing and holding the  key for 4 seconds will select the boost option.
- 2 Pressing the  key allows you to activate the boost function.
- 3 Pressing the  key allows you to cancel the boost function.




Note: This option will only operate if the timer temperature parameters have been programmed for A1, (auxiliary output 1). The unit will choose the maximum temperature which has been programmed for A1, [i.e. 45°C in this example, as 45°C (timer 1) > 40°C (timer 3)]. The auxiliary output will remain switched on until:

- (a) the appropriate tank sensor ( in this example) has reached 45°C, or
- (b) a one hour period has elapsed.

If no times have been set when the  key has been pressed, the unit will display the message: “**BOOST UNAVAILABLE PLEASE REFER TO MANUAL**”

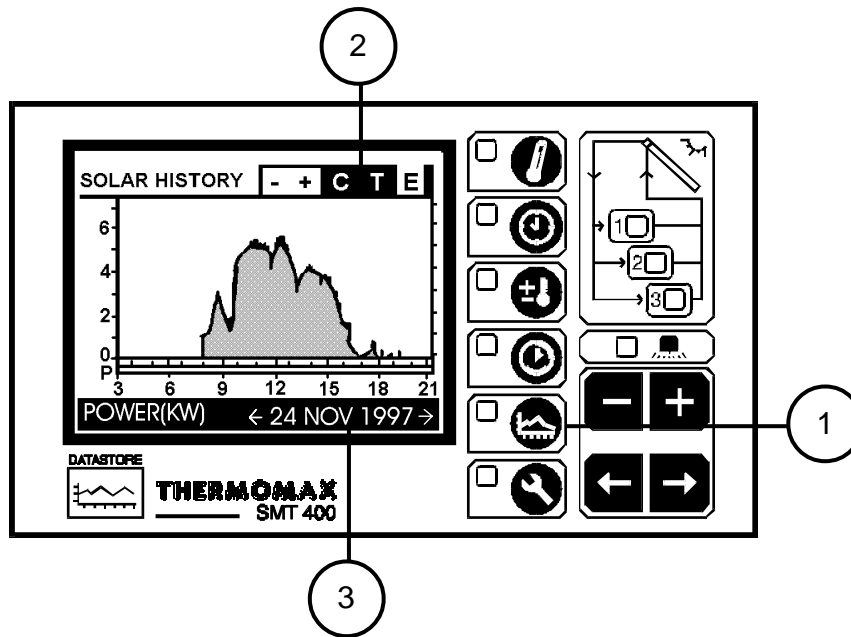
If this screen is displayed, then any one of the following reasons will prevent the boost function from being activated:

- (1) AUX 1 Relay has been manually switched off (see section 3.7, page 20).
- (2) AUX 1 Relay has been manually switched on (see section 3.7, page 20).
- (3) A1 timer temperature has not been set.
- (4) A1 Relay has not been selected.
- (5) A1 timer is already running.

| TIMER 1 | | | | |
|---------|------------------|------------------|-------|---|
| RLY | FROM | TO | TEMP | TNK |
| A1 | 06 ¹⁰ | 08 ²⁰ | 45 °C |  |
| A2 | 16 ³⁰ | 19 ³⁰ | 0 °C |  |
| OFF | 00 ⁰⁰ | 00 ⁰⁰ | 40 °C |  |

— TIMER 1
— TIMER 2
— TIMER 3

3.6 SOLAR HISTORY - COLLECTOR, TANK AND ENERGY COLLECTED



1 SOLAR HISTORY Function selector

Pressing this key once reveals the solar history screen. The SMT 400 records the collector and tank temperature of each day as well as the energy collected. The storage capacity of the SMT 400 is approximately 2 years. When the memory is full the oldest data in the databank will be overwritten. A sample is taken every 10 minutes from each of these readings. These are then displayed in graphical form, thereby representing the system performance for the user with clarity. A calendar allows the user to choose the day of which data will be plotted. The unit also records daily readings from the last 8 weeks, which is also plotted and can be viewed by pressing this key **twice**. Pressing this key **three times** will display the directory of the memory bank. The highlighted months on the screen are the months for which the databank contains data. To view the plot of a particular day, select the required month from the calendar using the **←** **→** keys, followed by the **+** key to accept the selection. A second screen appears for the selection of the day after which the logged data of the required day is displayed for inspection.

2 Collector, Tank & Energy Selector




Use the **-** **+** keys to select which parameter is to be displayed on the graph.

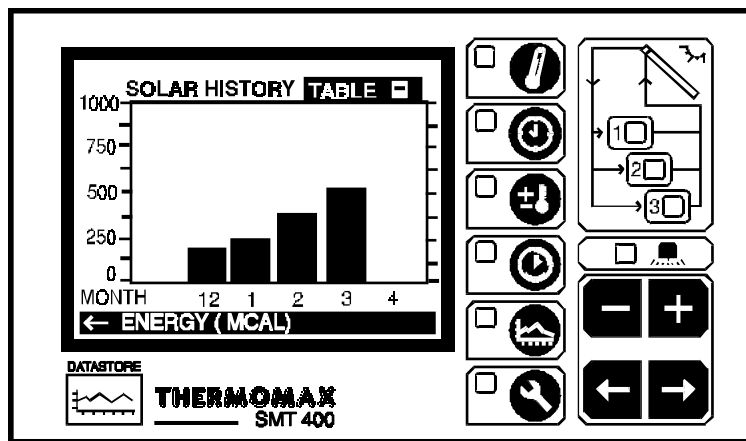
C - Collector sensor temperature.


T - Tank sensor temperature.

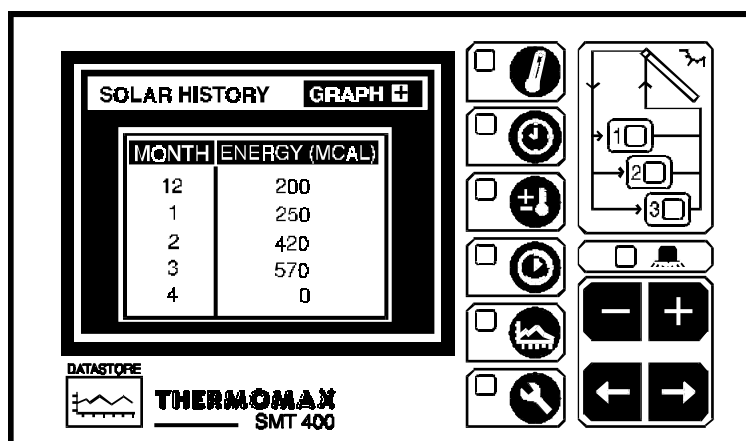
E - Energy collected.

3 Monthly Total Collected Energy / Previous Log Selector (MCAL or KWHR)

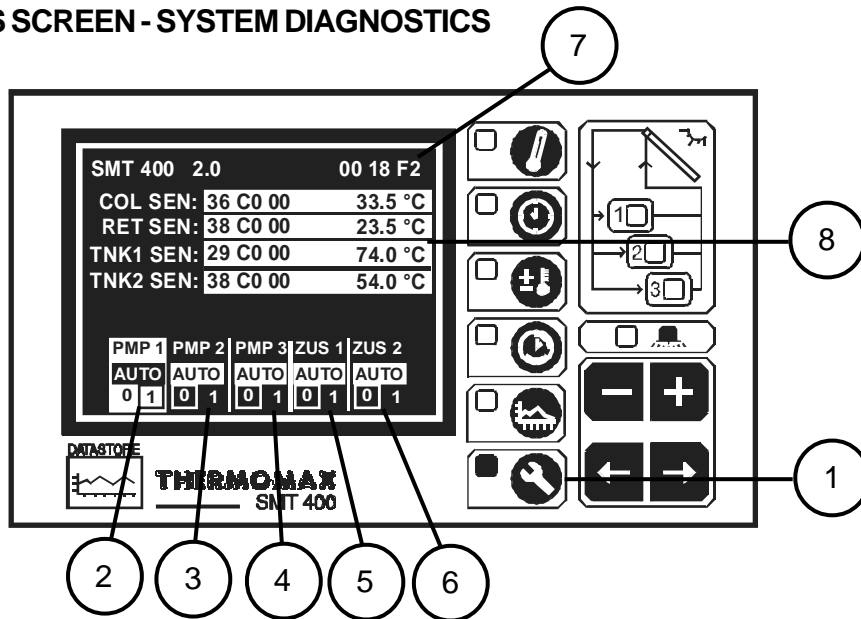
- (a) The screen on the previous page is shown by pressing the  key.
- (b) By pressing the  key, the current day's plot can be selected.
- (c) By pressing the  key, this data can be viewed in graphical form, as shown below.



- (d) By pressing the  key, this data can also be viewed in tabular form, as shown below.



3.7 STATUS SCREEN - SYSTEM DIAGNOSTICS



1 Status Screen function selector

Pressing this key reveals the Status Screen as shown above.

2 Pump 1 Relay Status.

The output status of the Pump 1 relay may be viewed here, or altered by pressing the **+** or **-** key when the RELAY window is selected.

“0” = Relay Manually OFF

“AUTO” = For normal operation

“1” = Relay Manually ON

→ a frame around ‘0’ indicates Relay OFF

→ a frame around ‘1’ indicates Relay ON

3 Pump 2 Relay Status.

The output status of the Pump 2 relay may be viewed or changed here (as above).

4 Pump 3 Relay Status.

The output status of the Pump 3 relay may be viewed or changed here (as above).

5 Auxiliary Output 1 Relay Status.

The output status of the Auxiliary Output 1 relay may be viewed or changed here (as above).

6 Auxiliary Output 2 Relay Status.

The output status of the Auxiliary Output 2 relay may be viewed or changed here (as above).

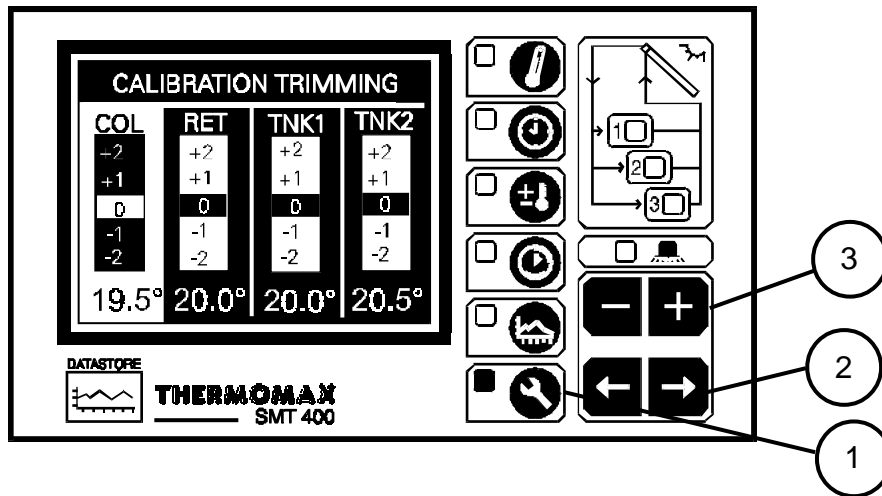
7 Electronic Signature.






Each SMT 400 has its own Electronic Signature which is used in the factory for date of manufacture information.

8 Sensor Calibration and Status Windows.

These windows display sensor calibration data and also the temperature reading for all sensors.

3.8 CALIBRATION TRIMMING SCREEN



- 1 Pressing and holding the  key for 10 seconds, reveals the calibration trimming screen.
- 2 Use the   keys to select which sensor temperature value you want to trim.
- 3 To alter the value of trimming, simply press the  or  key and the temperature reading will change accordingly.

SECTION 4 - FAULT FINDING

- Problem:** Nothing happens when the unit is powered-up.
Cause/Remedy: One of the fuses could be blown - check and replace if necessary (refer to specifications for values). If the fuses blow again, contact the agency where the unit was purchased.
- Problem:** The temperature display is fluctuating.
Cause/Remedy: One of the sensor connectors may be loose, or a sensor may be too close to a mains cable. Check sensor connectors and re-route cables as necessary.
- Problem:** The display screen is too dark or faint.
Cause/Remedy: Adjust the display contrast to suit - see 'Display Contrast' (Section 3.2).
- Problem:** The System Alarm light is flashing.
Cause/Remedy: This indicates a system alarm warning, which may be caused by a sensor fault or if the TM setting is exceeded (see Section 3.4 SET SCREEN 1). A sensor will show fault if it measures a temperature above +99°C or below -15°C, this will not damage the sensor and the fault condition will clear when the sensor is operated within this range.

- Problem:** The controller does not function correctly and all the LEDs are on.
- Cause/Remedy:** The unit may have been subjected to mains fluctuations or failures beyond it's specifications. To resolve this problem the controller must be reset as follows:
- (1) Switch off the mains supply to the unit.
 - (2) Remove the two restraining screws from the sides of the controller (see section 2.1) then separate the TOP controller from the BASE.
 - (3) Disconnect the PP3 battery from the controller.
 - (4) Now plug the TOP controller back onto the BASE and switch on the mains supply to the unit.
 - (5) The Unit should now restart and display the THERMOMAX opening screen. If the unit does not work at this stage, it must be returned to your distributor.
 - (6) If the unit is now functional you must switch off the mains supply to the unit, then disconnect the TOP from the BASE and reconnect the PP3 battery.
 - (7) Replace the TOP controller onto the BASE and then replace the two restraining screws.

Please note that this operation should be carried out by qualified personnel only !

Switch on the mains supply to the SMT 400. The Unit should now restart and display the THERMOMAX opening screen. The clock should now be set.

- Problem:** The Auxiliary timer does not appear to function correctly.
- Cause/Remedy:** The SMT 400 can be programmed to use either Tank sensor 1 and / or Tank sensor 2 to control Auxiliary outputs 1&2 (see Section 3.5 "Timer Screen"), therefore both **Tank 1** and **Tank 2** sensor must be connected to the unit.

- Problem:** The Auxiliary heater or water Pumps do not switch on when they should.
- Cause/Remedy:** The user can check the five relay's status by entering the system diagnostics screen (see Section 3.7 "STATUS SCREEN - System Diagnostics"). The relays may be switched to manually OFF, AUTO normal operation, or manually ON. If the external heaters or water pumps do not operate when the relays are switched to "manually ON" then check the system wiring (this should be carried out by qualified personnel only). Check all "neutral" connections. Check that the relay current specifications have not been exceeded. If your system is using an external Mains Relay (contactor) as per wiring diagram in section 2.3, then you should check connections to ensure they have not loosened.

NOTE: Please disconnect the PP3 battery when the unit is not in use.

ELECTRICAL:

Supply Voltage: 220-240V AC Single Phase
Fuses: 1 X 6.3A Slow Blow, 1 X 1A Quick Blow.
Relay Outputs: **Pump 1 Relay:** 2A single pole - output live when energized (max. 400W).
Pump 3 Relay: 2A single pole - output live when energized (max. 400W).
Pump 3 Relay: 2A single pole - output live when energized (max. 400W).
A1 Relay: 2A changeover 3 pin isolated (voltage free contacts) can be used for mains voltage only. (max. 400W).
A2 Relay: 2A single pole - output live when energized (max. 400W).
The Total Output Current must not exceed 5.5A

MECHANICAL:

Dimensions: width: 165mm
height: 100mm
depth: 85mm
weight: SMT 400 0.92Kg
Sensor: (each) 0.1Kg

Box Material: Plastic (ABS)
Front Panel: Reverse printed
Display: Large LCD supertwist graphics

SENSORS:

Type: Platinum PT100
Wire: 3- wire compensated
Cable Length: 1 X Collector sensor 25m
1 X Tank sensor 5m
1 X Return sensor 5m
Battery: 9V PP3 Rechargeable

| | | | |
|---------------------------|-------|------------------------------|-------|
| SMT 400 Control Unit | C0128 | Collector Sensor Pocket (TC) | A0477 |
| 25m Collector Sensor (TC) | A0741 | Return Sensor Pocket (TR) | A0683 |
| 10m Collector Sensor (TC) | A7143 | Tank Sensor Pocket (TT) | A0332 |
| 0.5m Return Sensor (TR) | A0740 | Sensor Extender 10m | A6911 |
| 5m Return Sensor (TR) | A7141 | Sensor Extender 20m | A6921 |
| 5m Tank 1 Sensor (TT1) | A0742 | Sensor Extender 50m | A6951 |
| 0.25m Tank 2 Sensor (TT2) | A7140 | | |