

# BAXI

Please leave these instructions with the user for safe keeping.

## User Guide



## Solarflo - Solar Thermal Domestic Hot Water System

When your Baxi Solarflo domestic water heating system was installed the installer should have fully commissioned the system and left it in working order. Following this they should have explained the system, its function and control including:

### **Heating by solar**

Explained how the cylinder is heated when there is sufficient solar heating gain.

### **Heating by auxiliary heating source**

Explained how the cylinder is heated if additional heat input is required due to insufficient solar gain being available (little or no sun) or additional quantities of hot water are required.

### **Operation of the Solar Differential Temperature Controller**

Explained the icons and their meanings displayed at the controller.

### **System Malfunction**

Explained what to do in the event of a system fault including how to isolate the electrical supply or water supply.

### **System Maintenance**

Explained the necessity for the system to receive regular maintenance to ensure its continued safe and efficient operation.

### **Literature**

Handed over all installation, commissioning, service, maintenance and user instructions for the system. Completed the Benchmark logbook or commissioning certificate for the cylinder. Completed the Commissioning Record (see page 21 of the Baxi Solarflo Commissioning, Maintenance and Servicing Guide) for the Solarflo System.

The following leaflet further explains a number of the above points and should be retained as a reminder of how to operate the Baxi Solarflo water heating system. If you are in any doubt, please ask your installer for clarification or contact the Baxi Technical Enquiry Line, Telephone 08700 603261.

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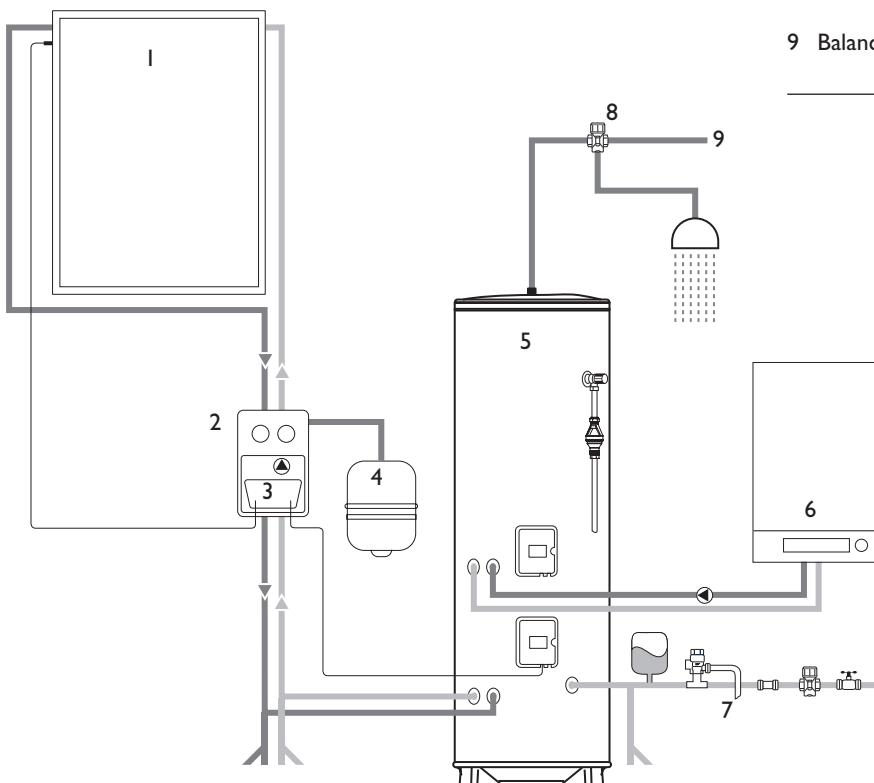
Your Baxi Solarflo system consists of several component parts that work together to heat your domestic hot water supply either from the power of the sun, by conventional means (by a boiler or electric immersion heaters) or combination of both.

This combination is required because the sun's energy is not uniformly received throughout the year (some 70% of the UK's annual radiation is received over the period April to September). The amount of sunshine hours will vary and the proportion of direct radiation (from a clear sunny day) and diffuse radiation (from partly cloudy or overcast skies) will also vary. However, on average up to 60% of a dwellings annual hot water requirement can be provided by a solar water heating system. The balance is provided by the auxiliary heating source.

Fig 1 shows the main component parts of the Baxi Solarflo System.

- 1 Solar panel  
(Note: larger cylinders may have 2 or 3 panels connected)
- 2 Solar Hydraulic Station
- 3 Solar Differential Temperature controller  
(Note: May be mounted remotely from Hydraulic Station)
- 4 Solar Expansion Vessel
- 5 Solar Cylinder
- 6 Auxiliary Boiler  
(Note: Auxiliary heating may be by immersion heaters)
- 7 Solar Cylinder cold water controls
- 8 Thermostatic blending valve
- 9 Balanced cold water supply

Fig. 1



### 3.0 System operation

Generally the operating settings of your Baxi Solarflo Domestic hot water heating system will have been set up by your installer. For the system to operate correctly and efficiently these settings should not be altered. Section 4 details the user controls which your installer should familiarise you with during commissioning the system.

**If in doubt contact a qualified solar installation engineer, alteration of some settings could adversely effect the operation of the Solarflo system.**

As with any heating system there are certain aspects that will require regular checking and/or maintenance. Section 6 details what these should be. Any maintenance or servicing should only be carried out by qualified personnel and be recorded in the Commissioning Maintenance and Servicing Guide supplied with the Baxi Solarflo.

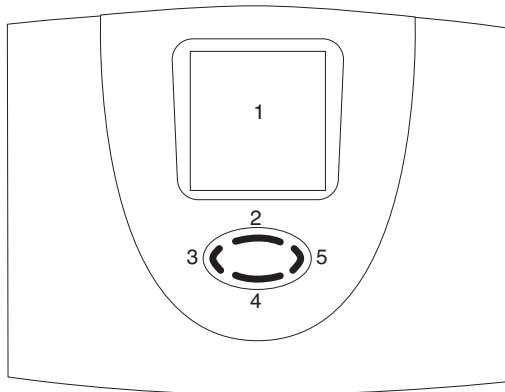
### 4.0 User controls

The following gives an overview of the Solar Differential Temperature Controller Display and operation.





#### 4.1 Overview of display and operating elements (see Fig. 2).


Number	Description
1	Display with graphic symbols
2	Control button scroll upwards / +
3	Control button exit / break-off
4	Control button scroll downwards / -
5	Control button choice / confirmation










Fig. 2











#### 4.1.1 Explanation of graphic symbols

Graphic symbol	Description	Indication in operation
<b>Main Menu</b>		
	Menu "Info"	When symbol flashes it is possible for it to be selected. If that symbol is chosen by pressing the button, the symbol remains static (not flashing).
	Menu "Programming"	
	Menu "Manual operation"	
	Menu "Basic adjustment"	

Graphic symbol	Description	Indication in operation
<b>Indicator values</b>		
dT	Temperature difference	
min	Min value	Appears when minimum values are indicated
max	Max value	Appears when maximum values are indicated
	5 x 7 segment display. Presentation of figures 00000 to 99999	Display of all values, display flashes when a value is changed
°C	Temperature in Celsius	
K	Temperature difference in Kelvin	
h	Operating hours	
kWh	Productivity indication in kWh	

Graphic symbol	Description	Indication in operation
<b>Measuring points assignment</b>		
	Temperature measuring point collector 1	
	Temperature measuring point collector 2	
	Temperature measuring point storage tank 1 lower (storage tank charging)	
	Temperature measuring point storage tank 2 lower (storage tank charging)	
	Temperature measuring point collector - return	
	Temperature measuring point storage tank upper (reheat thermostat function)	
	Antifreezing sensor or universal temperatures measuring point (T3) (no sensor monitoring)	
	2nd temperature differential controller	
	Operating hours, energy productivity measurement	

<b>Status indication</b>		
	Solar circulation pump	Symbol revolves when solar circulation pump is on
	Switch output 1 is active	Appears when switch output 1 is active (on)
	Switch output 2 is active	Appears when switch output 2 is active (on)
	Switch output 3 is active	Appears when switch output 3 is active (on)
	Reference to system fault	Display flashes when a fault occurs in the system
	Safety query for value changes which are to be stored	Input value can be either  rejected or  accepted





**4.1.2 Button function**

Operation and programming of the Solarflo differential temperature controller is by means of 4 operating buttons. By means of pressing these buttons you can:

- recall display values
- carry out controller adjustments

The graphic symbols on the display step through the operating structure and show clearly the current menu points, display values or parameters.

Operating buttons have the following functions:

Button	Function	Description
	"Up" "+"	<ul style="list-style-type: none"> <li>• Step up through menu</li> <li>• Value change: Increase of the indicated value by 1, holding the button down will automatically increase values</li> </ul>
	"Call" "Down"	<ul style="list-style-type: none"> <li>• Call up of main menu, step down through menu</li> <li>• Value change: Decrease of the indicated value by 1, holding the button down will automatically decrease values</li> </ul>
	"Scroll left" "Exit"  "Break-off"	<ul style="list-style-type: none"> <li>• In main menu, scrolls to the left</li> <li>• Exit current menu</li> <li>• Exit menu point</li> <li>• Break-off value change without storing</li> </ul>
	"Scroll right" "Choice" "Confirmation"	<ul style="list-style-type: none"> <li>• In main menu, scrolls to the right</li> <li>• Choosing one menu point</li> <li>• Confirmation of value change, stores value change</li> </ul>

It is not intended that the householder should attempt to programme the operation of the system so various parts of the programming menu are not reproduced here. For further information on programming the Solar Differential Temperature Controller refer to the section 3.0 of the Commissioning, Maintenance and Servicing Guide.


NOTE: Altering some settings could adversely affect the operation of the Solarflo system, if in doubt contact a qualified solar installation engineer. Alteration of functions, not covered in this user guide will invalidate the warranty.

**4.1.3 Menu "Info"**















In this menu mode all measured values and operating states are shown.

If the values are marked as "resettable", they may be reset in the following way:

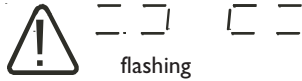
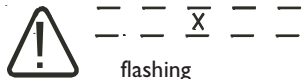


Choose the value with buttons  and 

Reset value by means of the button 

Message "OK?" confirm with  = no or  = yes

Indication		Description	Reset possible
75°C		Indication of current collector temperature	no
min. 12°C		Indication of minimum collector temperature Re-settable to current temperature	yes
max. 105°C		Indication of maximum collector temperature Re-settable to current temperature	yes
52°C		Indication of current temperature storage tank (lower)	no
min. 40°C		Indication of minimum temperature storage tank (lower) Re-settable to current temperature	yes
max. 67°C		Indication of maximum temperature storage tank (lower) Re-settable to current temperature	yes
25°C		Indication of universal temperature measuring points (T3)	no
55°C		Indication of current temperature storage tank thermostat	no
60°C		Indication of current temperature collector return	no
60°C		2nd temperature differential controller Temperature of heat generator	no
35°C		2nd temperature differential controller Temperature of heat consumer	no
1234 h		Operating hours for charging storage tank Resettable to 0 h	Yes
927 kWh		Energy productivity for storage tank Resettable to 0 kWh	Yes

The controller will display certain information in the event of some system faults. The following table indicates these and will aid in describing the nature of the fault to the Service Engineer. DO NOT attempt to rectify faults yourself, contact the After Sales Service number on 08700 603261 or a qualified Solar water heating engineer.

Error representation on display	Possible reasons	Measures
 flashing	<ul style="list-style-type: none"> <li>• Sensor wire broken</li> <li>• Sensor defect</li> </ul>	<ul style="list-style-type: none"> <li>• Check wire</li> <li>• Check sensor resistance, if necessary exchange sensor</li> </ul>
 flashing	<ul style="list-style-type: none"> <li>• Short circuit in sensor wire</li> <li>• Sensor defect</li> </ul>	<ul style="list-style-type: none"> <li>• Check wire</li> <li>• Check sensor resistance, if necessary exchange sensor</li> </ul>
Circulation error: no flow  flashing	<ul style="list-style-type: none"> <li>• Error in pump connection</li> <li>• Pump defect</li> <li>• Air in the system</li> </ul>	<ul style="list-style-type: none"> <li>• Check cabling</li> <li>• Exchange pump</li> <li>• Check the float of the flow meter moves when the system runs (if visible)</li> </ul>
Additionally at energy productivity measurement: 	<ul style="list-style-type: none"> <li>• Connection with flow meter defect</li> <li>• Sensor wire broken</li> <li>• Sensor defect</li> </ul>	<ul style="list-style-type: none"> <li>• Check wire</li> <li>• Check sensor resistance, if necessary exchange sensor</li> </ul>

## 5.0 Important notes

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If fluid or vapour is discharged from the Pressure Relief Valve on the Solar Hydraulic Station switch off the power supply to the Solarflo Differential Temperature Controller and contact a qualified solar water heating engineer.

Familiarise yourself with the controls and instructions supplied with the Solar Cylinder and follow manufacturers instructions in the event of a cylinder fault.

The pipework between the solar collector panels and the solar cylinder can be very hot. These pipes should have been insulated by the installer.

If the electrical supply for the Solar domestic hot water heating system is interrupted it will not operate. However, programme settings are stored by the controller and should not need resetting when power is restored.

Separate controls should have been installed to control the auxiliary heat source (boiler or immersion heaters). The Solarflo Differential Temperature Controller may have been integrated with the auxiliary heating controls to prevent un-necessary use of the auxiliary heat source, your installer should explain how the system will function in this event. The Solar Differential Temperature Controller will not control the space (central) heating system, separate controls will be necessary for this function. Refer to the instructions supplied with any separate auxiliary controls for details of their correct setting.

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## 6.0 Servicing and Maintenance

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To ensure the continued safe and efficient operation of your Baxi Solarflo water heating system it should regularly be checked and maintained by a qualified engineer. It is recommended that checks be carried out on an annual basis in accordance with the Maintenance requirements detailed in section 4.0 of the Commissioning, Maintenance and Servicing Guide and the Servicing and Maintenance record. Additionally the concentration of the solar thermal transfer fluid should be checked and if necessary, topped up or replaced every 2 years. Failure to maintain the system may invalidate your warranty.

For warranty Terms and Conditions see Commissioning, Maintenance & Servicing Guide page 30.

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All descriptions and illustrations provided in this leaflet have been carefully prepared but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet. All goods are sold subject to our standard Conditions of Sale which are available on request.

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