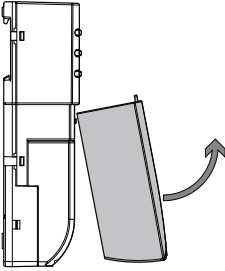




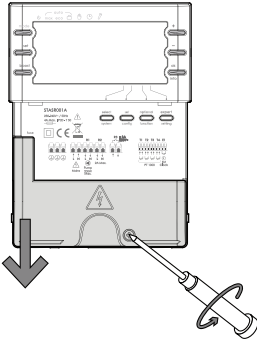
Installation and User instructions Grant GSD3 Solar Controller

WALL MOUNTING INSTRUCTIONS

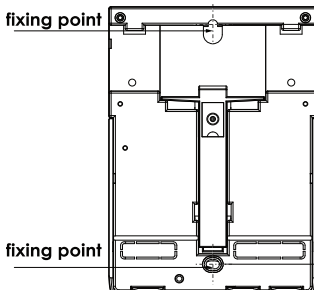
1- Remove the front cover.



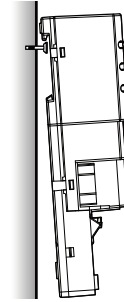
2- Unscrew the screw at the bottom of the product, and remove the terminal cover.



3- Mark the upper fixing point on the wall and set the wall plug and screw leaving the head protruding.

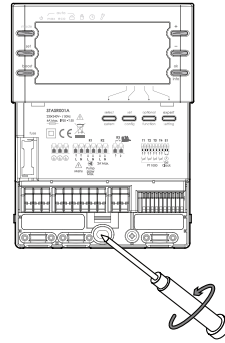


4- Hang the housing on the upper fixing point and mark the lower fixing point through the hole in the housing socket. Set the lower wall plug.

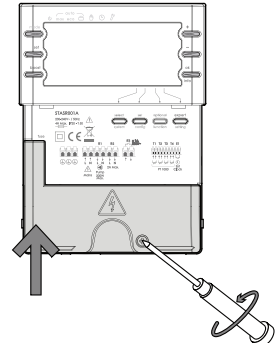


Distance between the attachment points: 130 mm.

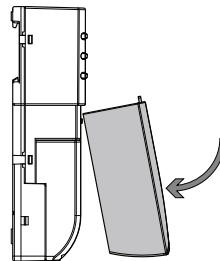
5- Fasten the housing on to the wall by fixing the wall by the lower screw.



6- Fit the terminal cover on to the cabinet and tighten the screw at the bottom of the product.



7- Fit the front cover on to the device.



The electrical connection must be carried out by a qualified professional installer in accordance with the requirements of the Electricity at Work Regulations 1989 and BS7671:2008 Wiring Regulations 17th edition (including all amendments).

 **DANGER**
Risk of death by electrocution!

- 1- Switch off the power supply of the controller before removing the terminal cover.
- 2- Remove the controller from the power supply before opening the case.
- 3- Only switch the power supply back on after the casing has been closed.

NOTE

The device is to be connected to a 230V50Hz mains supply by means of a 2-pole isolator (3A fused) in accordance with the installation requirements of the IEE Wiring Regulations (as above).

• Preparing the cable feed

Depending on the type of installation, the cables may enter the device through the rear of the case ① or the lower side of the case ②.

- Feeding the cable through the rear of the case

Remove the plastic flaps ① from the rear side of the case using an appropriate tool.

- Feeding the cable through the lower side of the case

Cut the left and right plastic flaps ② using an appropriate tool.

• Connecting the cables

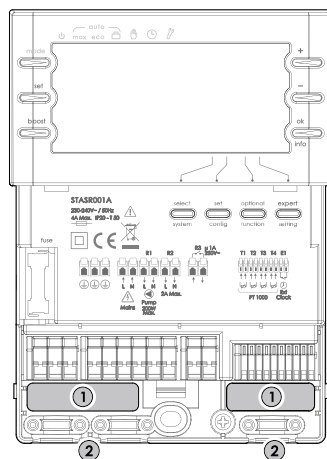
> The terminals are approved for connection of cables as follows:

- Max wire section for power terminals = 2,5 mm²
- Max wire section for signal terminals = 0,5 mm²

> Only use the original temperature sensors (Pt1000) that are approved for use with the controller. Observe the following points:

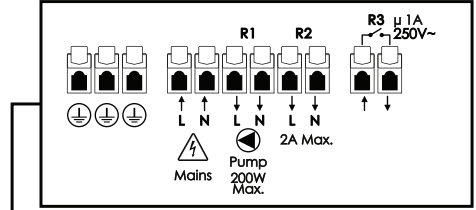
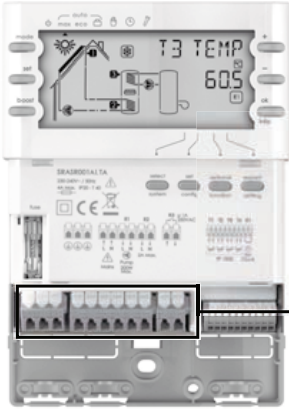
- The polarity of the temperature sensor contacts is not important.
- Do not lay sensor cables close to power cables.
- Sensor cables may be extended (use 0,75 mm² min wires).

> Observe the terminal pinout diagram and system wiring diagrams.



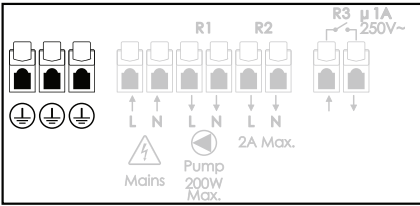
ELECTRICAL CONNECTIONS

• Power connections



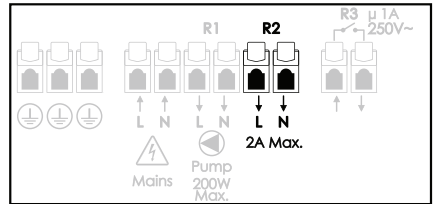
Earth terminals

The earth brought with the power supply can be connected to the actuators (eg. the solar pump).



• R2 output terminals

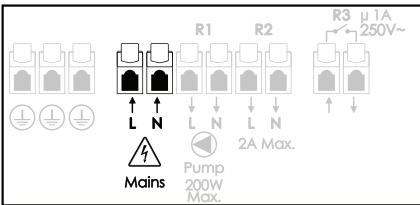
- L = Switched output Line
- N = Neutral



Power supply terminals

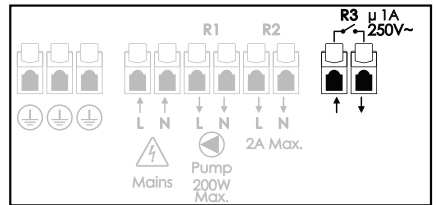
L = Line

N = Neutral



• R3 output terminals

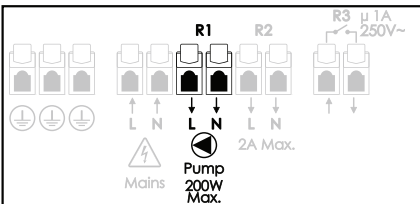
- Voltage free output switch



R1 output terminals

L = Switched output Line

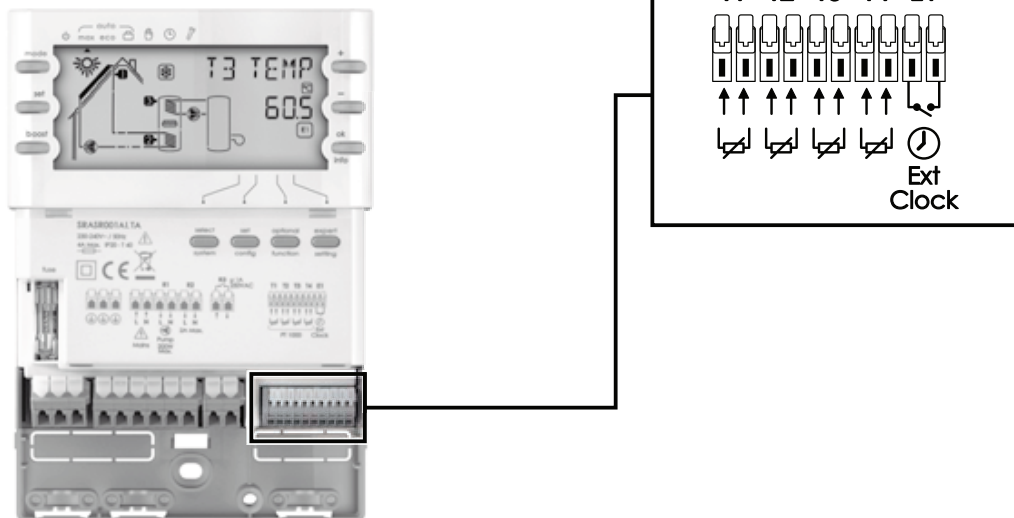
N = Neutral



TEMPERATURE SENSOR CONNECTIONS

cables for temperature sensors are without polarity

• Signal connections



TEMPERATURE SENSORS

RED covered PT1000 sensor. Probe is installed in the SOLAR COLLECTOR

BLACK covered PT1000 sensors. Probes installed as follows:

Hot water cylinder (lower section, look for probe pocket provided).

Hot water cylinder (upper section, look for probe pocket provided), or as per Grant Cylinder Instructions. Where an upper cylinder pocket is not available, insert both T2 and T3 temperature probes into the lower cylinder pocket. Note: All sensors shown on the wiring diagrams (see pages 16 to 21) must be connected to the controller.

For other applications see system diagram - refer to pages 16 to 21.

Heat quantity measurement

The temperature probe should be inserted into the RETURN line after the Cylinder and before the pump.

Alternately, strap the probe to the pipe ensuring direct contact, fix and insulate.

PT1000 sensors, class B, compliant to IEC751 standard

ANNEX D - PT1000 SENSOR DATA

First “power on” messages

At the first power-on:

- 1- Select the language.
- 2- Set the time.
- 3- Select the system.

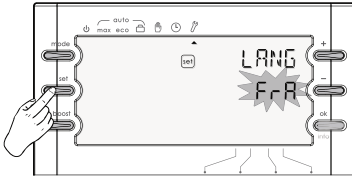
1-Language

One of 10 languages may be selected:

French	English
FRA	ENG
German	Italian
DEU	ITA
Spanish	Dutch
ESP	NED
Finnish	Norwegian
SUO	NOR
Swedish	Danish
SUE	DEN

Select the desired language using


 or .
Save by pressing .

2-Celsius or Fahrenheit

You can select Celsius or Fahrenheit degrees:







Select the desired measure unit using

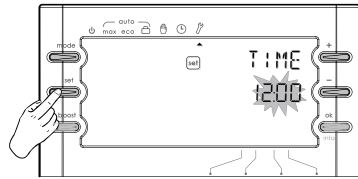
 or .
Save by pressing .





3-Set the time

The internal off-peak hours and programmable Boost functions require the time to be set.

The time display flashes, set the time using  or . Hours and minutes can be quickly scrolled through by pressing a longtime  or . Save by pressing .




Note : You can disable the clock function by setting the  value.

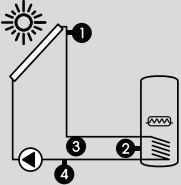
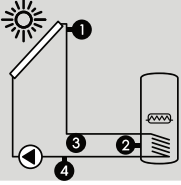
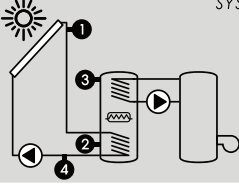
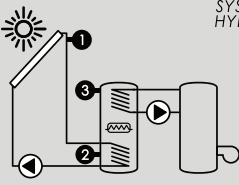
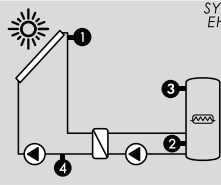
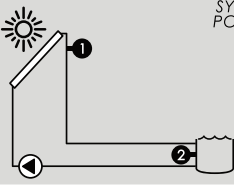
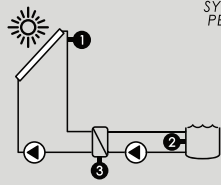
Please see page 4 for full guidance on how to set the clock.

4-Select system

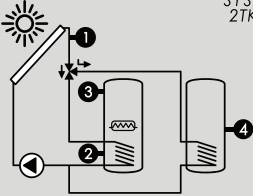
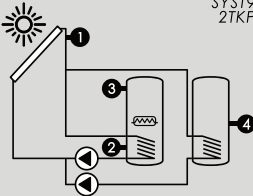
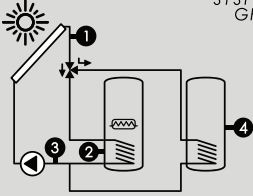
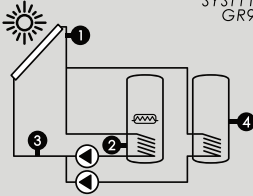
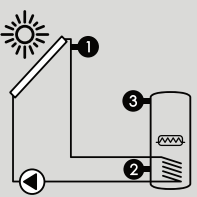
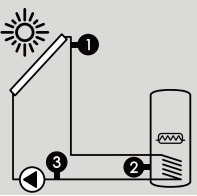
Select the system matching your actual installation.

See installer settings section (page 12).

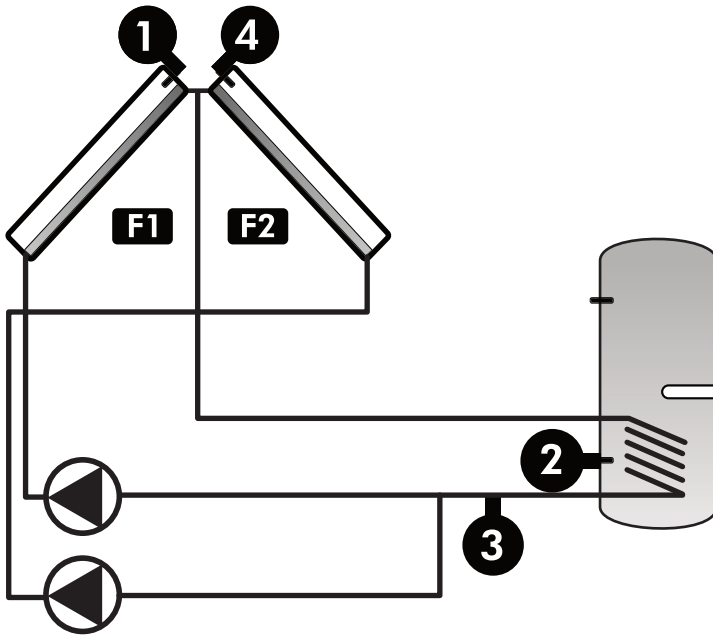
Identify your system configuration

System Diagram	System Description
 <p>SYST1 SR</p>	<p>System 1 = SR</p> <p><i>This system is intended for the control of a basic solar water heater with electric auxiliary heating - with heat quantity estimation</i></p>
 <p>SYST2 SRPC</p>	<p>System 2 = SRPC</p> <p><i>This system is intended for the control of a basic solar water heater with solar pump speed control (RPM) and Electric auxiliary heating</i></p>
 <p>SYST3 HY</p>	<p>System 3 = HY</p> <p><i>This system is intended for the control of a solar water heater with both electric and hydraulic auxiliary heating - with heat quantity estimation</i></p>
 <p>SYST4 HYPC</p>	<p>System 4 = HYPC</p> <p><i>This system is intended for the control of a solar water heater with solar pump speed control (RPM) and both electric and hydraulic auxiliary heating</i></p>
 <p>SYST5 EHEX</p>	<p>System 5 = EHEX</p> <p><i>This system is intended for the control of a solar water heater from an external heat exchanger</i></p>
 <p>SYST6 POOL</p>	<p>System 6 = POOL</p> <p><i>This system is intended to control the solar heating of a pool</i></p>
 <p>SYST7 PEHE</p>	<p>System 7 = PEHE</p> <p><i>This system is intended to control the solar heating of a pool from an external heat exchanger</i></p>

Identify your system configuration

System Diagram	System Description
 <p style="text-align: right;">SYST8 2TKV</p>	<p>System 8 = 2TKV</p> <p><i>This system is intended for the control of a dual-cylinder solar water heater from a 3-way valve</i></p> <p>R2 : 3-way valve</p>
 <p style="text-align: right;">SYST9 2TKP</p>	<p>System 9 = 2TKP</p> <p><i>This system is intended for the control of a dual-cylinder solar water heater from two pumps</i></p>
 <p style="text-align: right;">SYST10 GR8</p>	<p>System 10 = GR8</p> <p><i>This system is intended for the control of a dual-cylinder solar water heater from a 3-way valve with Heat Quantity estimation</i></p> <p>R2 : 3-way valve</p>
 <p style="text-align: right;">SYST11 GR9</p>	<p>System 11 = GR9</p> <p><i>This system is intended for the control of a dual-cylinder solar water heater from two pumps with Heat Quantity estimation</i></p>
 <p style="text-align: right;">SYST12 E/W</p>	<p>System 12 = E/W</p> <p><i>This system is intended for the control of a solar water heater and East/West collector arrays (F1/F2)</i></p> <p>T1 : Solar collector 1 (F1) T4 : Solar collector 2 (F2) R2 : Solar pump 2 (optional)</p>
 <p style="text-align: right;">SYST13 GR12</p>	<p>System 13 = GR12</p> <p><i>This system is intended for the control of a solar water heater and East/West collector arrays (F1/F2) with Heat Quantity estimation</i></p> <p>T1 : Solar collector 1 (F1) T4 : Solar collector 2 (F2) R2 : Solar pump 2 (optional)</p>

Identify your system configuration



EAST WEST - System 12 (E/W)

Note that the screen display shows only one collector on the representative diagram, but the two collector fields are shown as F1 and F2. The temperature probe is fitted in collector field F2. Refer to the diagram on page 20.







EAST WEST - System 13 (GR12)

As with system 12, the screen display shows only one collector on the representative diagram, but the two collector fields are shown as F1 and F2. T4 is fitted to collector field F2. Refer to the diagram below and on page 21. Note the position of probe T3 for Heat Quantity Estimation.

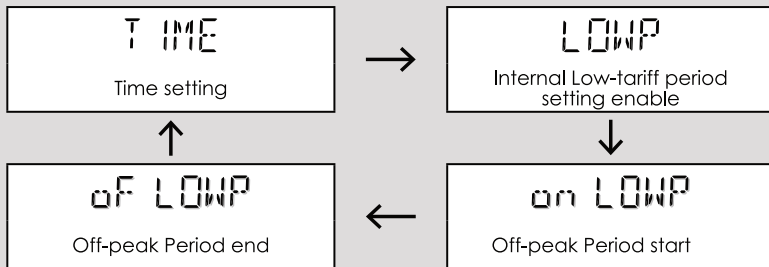
Low tariff power timing option

CLOCK MODE: TIME AND OFF-PEAK HOUR SETTING

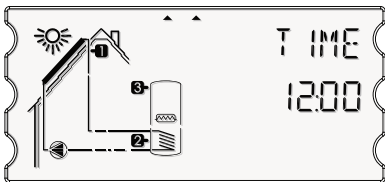
For more energy savings, this function enables you to program an off-peak hour time range. The electric auxiliary heating will be allowed in off peak-hour only (this function can be used in Auto Max mode only).

- 1- Press  to set the mode selector on .
- 2- Press  to enter the setting.
- 3- Press  or  to change the parameter value and  to save it.

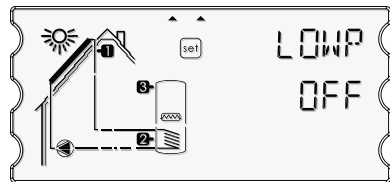
Parameter sequence:



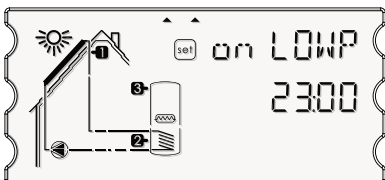
Time setting



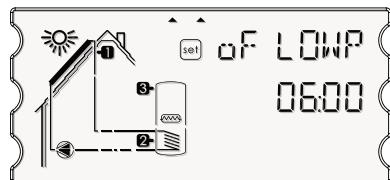
Internal Low-tariff period setting enable



Off-peak Period start



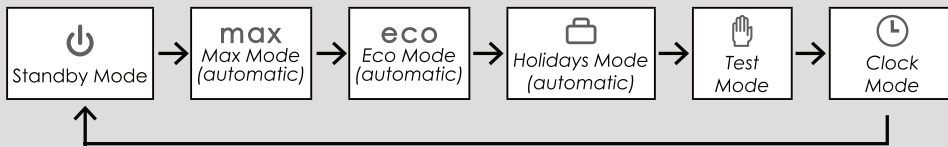
Off-peak Period end



For the USER - choose Automatic operation

Select the required mode by pressing  once or several time.

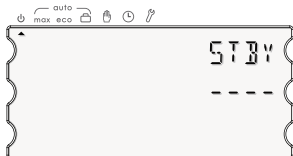
Mode sequence:



Standby Mode

This mode disables the water heating, in summer for instance.

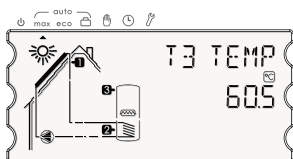
All functions are disabled except primary system protection functions (protection against high temperature, AF) and Boost.



Max Mode (automatic)

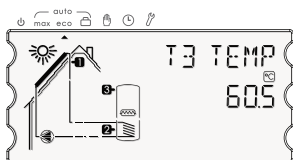
The controller operates automatically according to the settings.

Maximal comfort, solar heating with hydraulic or electric auxiliary heating (depending on the selected system).



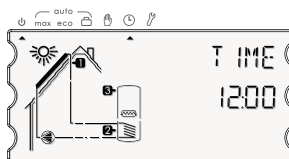
Eco Mode (automatic)

Ecological / Economy Automatic mode without any auxiliary heating except for Boost function or Anti-Legionella protection.



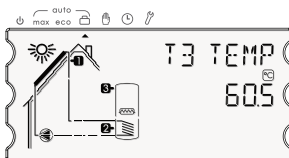
Clock setting Mode

Mode to change the time and time-related settings.



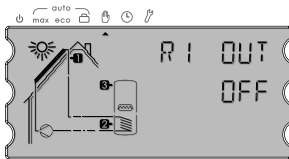
Holidays Mode (automatic)

Special automatic mode for holidays to lower temperature in the solar circuit and the DHW cylinder at night.



Manual test mode

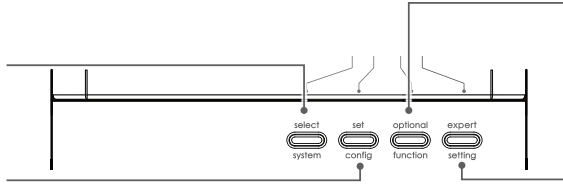
Manual test mode for the installer to drive manually the outputs during the system setup.



For the Installer - choose Automatic operation

Select system key
To select a system number

Set config key
To set the whole system configuration



Optional function key
To set optional functions

Expert setting key
To set expert parameters

Installer sets the system

1. Press the select system button
2. Systems will be displayed to choose from. Use + or - keys to view different selections
3. When system selected (example Sys 3, for twin coil) Press 'Set Config' key
4. If no changes are required to factory settings, simply press the Mode key, and start automatic operation, either Max or Eco.
5. If factory settings (example T2, or cylinder temp is set at 60C) need changes then continue in Set Config mode. Also with options. See page 20 for details on each step.

AUXILIARY HEATING CONTROL

The thermostat function controls auxiliary heating of the cylinder using the temperature in the Upper section of the cylinder and the clock time.

• Auxiliary heating versus user mode

The MAX mode allows auxiliary heating while the ECO mode does not (except for BOOST and Anti-Legionella heating).

The user may launch a BOOST cycle at any time in MAX, ECO or STANDBY mode. The auxiliary heating is not allowed while the solar loading is running except with BOOST or AL function.

• Electric or hydraulic auxiliary heating

Hydraulic auxiliary heating (HYD) is allowed at anytime (in Max mode) while Electric auxiliary heating (ELEC) is only allowed during Off-Peak hour Period (OFPP).

When both Electric and hydraulic auxiliary heating are enabled, Hydraulic auxiliary heating takes priority.

• Thermostat function summary

	USER MODE	HEAT SOURCE	PERIOD / TIME	HEAT / TEMPERATURE START CONDITION	STOP CONDITION	COMMENTS
REGULAR AUX. HEATING	MAX	HYD	Any	$TU < (T2SET - dTAUX)$	$TU = T2SET$	Timeout
	MAX	ELEC	OFPP	$TU < (T2SET - dTAUX)$	$TU = T2SET$	OFPI/OFPE
BOOST	MAX	HYD/ELEC	BOOST time	$TU < T2SET$	$TU = T2SET$, timeout	1-shot boost or Daily boost
	ECO	ELEC				
ANTI-LEGIONELLA	MAX	HYD/ELEC	OFPP start time + 1h	If AL heating required	Timeout (once hot)	1h at night if no OFPP
	ECO	ELEC				

TU = Temperature in the Upper section of the Cylinder, T2SET = Temperature Cylinder Max, dTAUX = Temperature difference (from the temperature setpoint) for Auxiliary heating authorization, OFPI = OFPP Internal, OFPE = OFPP External

For the Installer - choose Automatic operation

HEAT QUANTITY ESTIMATION

This function (only available for systems 1, 3, 5, 10, 11 and 13) requires an extra sensor (T4) to measure the return flow temperature, it estimates the heat fed into the storage cylinder from the solar energy supply system.

A basic flowmeter is required as fitted to the Grant Pump Station. The volume flow (in litres/minute) read at this flowmeter must be entered at the SR controller settings (FL L/M). If a Glycol anti-freeze liquid is used, the heat transfer fluid shall be defined; the Glycol type and concentration have to be set at the controller.

• Heat Quantity Estimation (HQ) to be read in the INFO mode:

HQ KWh	Heat Quantity during the last 24H
HQ MWh	Heat Quantity in total

Systems 2 and 4 cannot be used with Heat Quantity estimation because the fluctuating pump speed will not match the fixed flow values set in the controller memory for accurate HQ Estimation.

Installer

For the controller to calculate and estimate heat gains for hot water from solar, the 4th probe is used and connected to T4 in the inputs terminal block. Refer to pages 16 to 21 for the connection diagram for the system concerned.

The measurement is kW (Kilowatt) first up to 9999, then Mw (megawatt).

When selecting to engage HQ estimation, the controller will also ask 3 further sets of values to be entered into the controller.

1. The system fluid type (water, GLYCOL ethylene, or GLYCOL propylene).
.....SELECT 'Prop' setting for Grant Solar Thermal Systems!
2. The GLYCOL concentration (%) - for Grant Solar Thermal Systems set 40%
3. The system flow rate set onto the pump station flow balancing valve

As always, to change a setting press SET, to amend pres + or -, and to save press 'OK'

COLD START FEATURE

The cold start feature is useful in cold climate conditions when there are long runs of pipe work. When this function is enabled, the switch-on temperature differential (dT ON) between the collector and the cylinder is increased to 10°C if ever the collector temperature is lower than a set limit (T1 COLD) and the solar pump has not run for 3 hours.

The installer can define a minimum run duration for the solar pump (5 or 10 min.)

For the Installer - choose Automatic operation

ANTI-FREEZE PROTECTION

If the Anti-freeze protection (AF) function is activated, the solar circuit pump is switched on as soon as the collector temperature sinks below +4°C (adjustable limit). This causes heat to be pumped through the collector from the lower part of the storage cylinder in an attempt to prevent the collector from freezing.

If the collector reaches a temperature of +7°C, the pump is switched off again. This function is useless if a glycol-based AF transfer fluid used.

- **Activating the frost protection function**

See installer settings section.

PROTECTION OF THE CYLINDER AGAINST HIGH TEMPERATURES

If the COOL function is not activated (default), the cylinder water heating is stopped once the temperature in the cylinder reaches T2 SET.

If the COOL function is activated (COOL ON in the « Optional function » mode), the temperature in the cylinder may rise above T2 SET up to T2 MAX while the collector is being cooled.

ANTI-LEGIONELLA PROTECTION

The Anti-Legionella protection (AL/ALEG) is achieved by heating every day the DHW water at the AL temperature setpoint (T ALEG) for a given time. This function uses either the electric or the hydraulic auxiliary heating (if both means are enabled, the last one has priority).

This protection is disabled by default, the installer can enable this function or change the ALEG temperature setpoint in the « Optional function » mode.

- The ALEG heating timeout depends on the setpoint temperature (T ALEG):

ALEG temperature set point	60°C	65°C	70°C
ALEG timeout	70 min.	5 min.	3 min.

This function runs daily 1 hour after the Off-Peak hour Period (OFPP) has started or at 1am (night) if no OFPP period, except if the DHW has already been heated (as much as required by ALEG) during the day.


R2 output is switched on (with systems 1/2 only) during the AL cycle in order to run optionally a recirculation pump intended to boost the heating of the water in the lower part of the cylinder.

For the User - timed functions

• Boost start

From Auto Max mode or Auto Eco mode, Boost function is used to guarantee that the hot water will be at the temperature desired by the user even when the solar heating is insufficient. Boost function can be used only if you set up an electric heater or a hydraulic auxiliary heating from a boiler.

2 types of Boost :

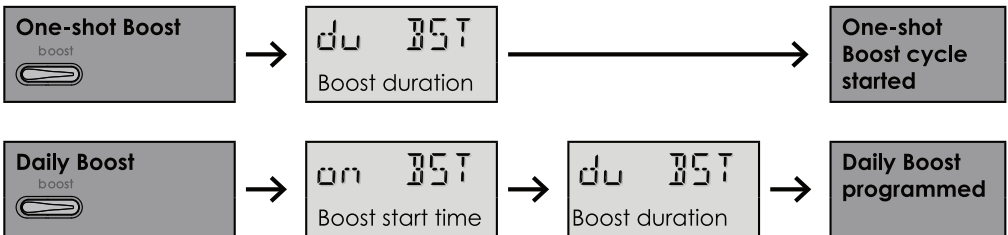
- **One shot:** Manual Boost activation by pressing .
- **Daily Boost:** Automatic Boost activation each day of the week at the pre-set time once programmed.

To select one-shot or daily Boost, see chapter User set (page 21).

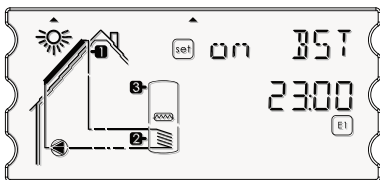
1-Select Boost mode by pressing .

2-Press  or  to change the parameter and save by .

Parameter sequence:

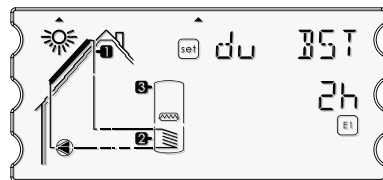


Set the time between 00:00 and 23:30 by 30 minutes step.
The time is preset at 23:00.



Setting the Boost duration

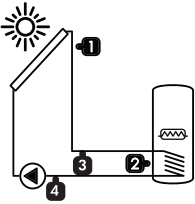
Set the duration between 1h to 9h by 1h step.
The duration is preset at 2h.



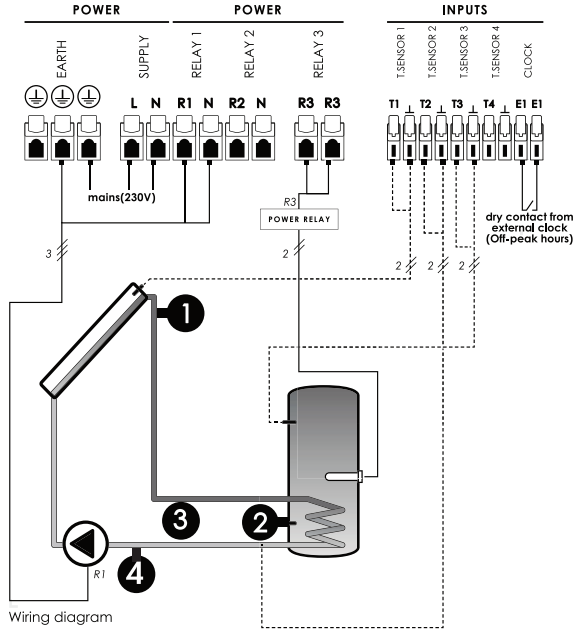
Syst 1 - Basic solar system with electric AUX heating (immersion heater) (note Syst 2 is the same, but has Pump Speed Control, and NO heat qty measurement)

Basic solar system with Electric auxiliary heating

T1	Solar collector
T2	DHW cylinder, bottom
T3	DHW cylinder, top
R1	Solar pump
R3	Electric heater (thru power relay)
E1	Clock sync



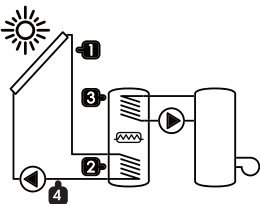
Display



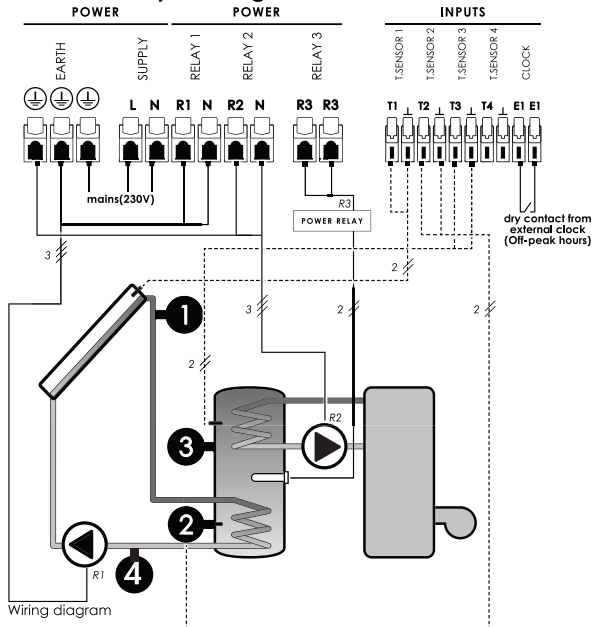
Syst 3 - Solar System with Boiler back up (AUX) and Immersion Heater option (note Syst 4 is the same, but has Pump Speed Control, and NO heat qty measurement)

Solar system with HYdraulic and Electric auxiliary heating

T1	Solar collector
T2	DHW cylinder, bottom
T3	DHW cylinder, top
R1	Solar pump
R2	Pump 2
R3	Electric heater (thru power relay)
E1	Clock sync

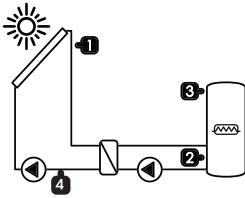


Display

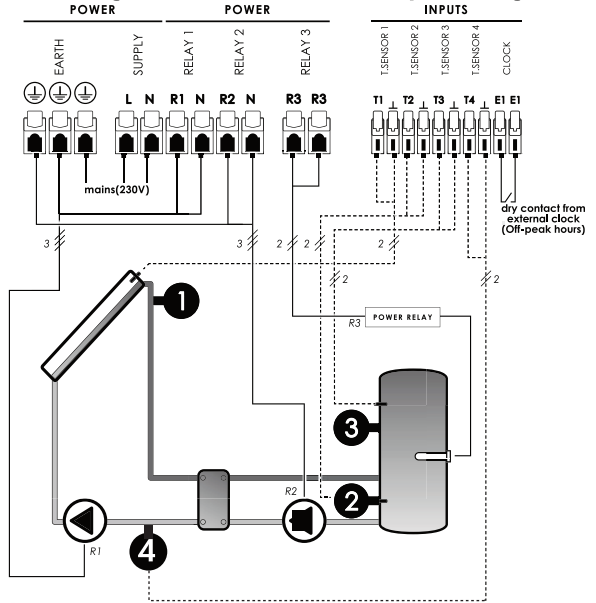


Syst 5 Solar system with External Heat EXchanger and Electric auxiliary heating

T1	Solar collector
T2	DHW cylinder, bottom
T3	DHW cylinder, top
T4	Heat exchanger
R1	Solar pump
R2	Pump 2
R3	Electric heater (thru power relay)
E1	Clock sync



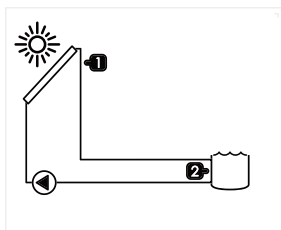
Display



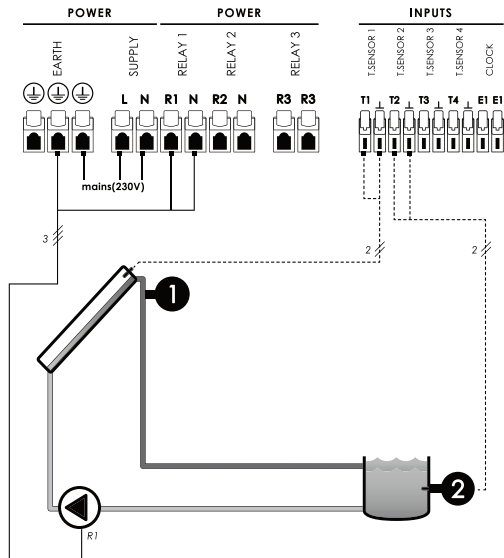
Wiring diagram

Syst 6 Basic POOL solar system

T1	Solar collector
T2	Pool
R1	Solar pump



Display

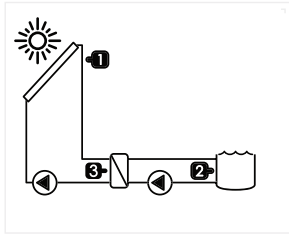


Wiring diagram

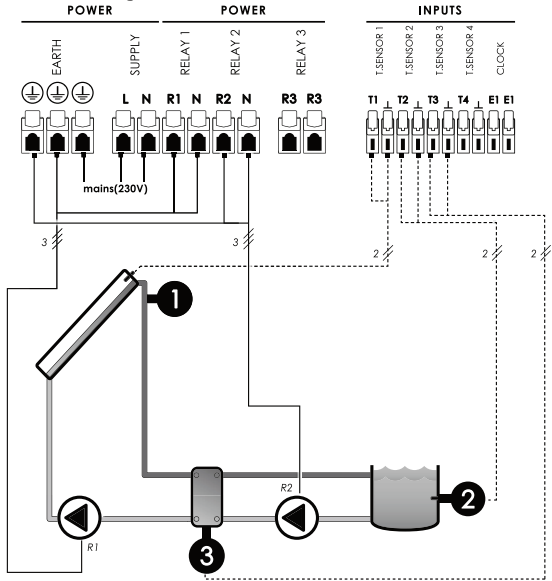
Syst 7

Pool solar heating with External Heat Exchanger

T1	Solar collector
T2	Pool
T3	Heat exchanger
R1	Solar pump
R2	Pump 2



Display

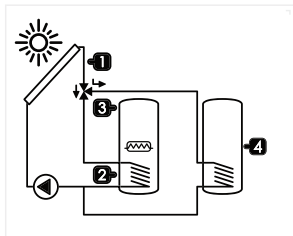


Wiring diagram

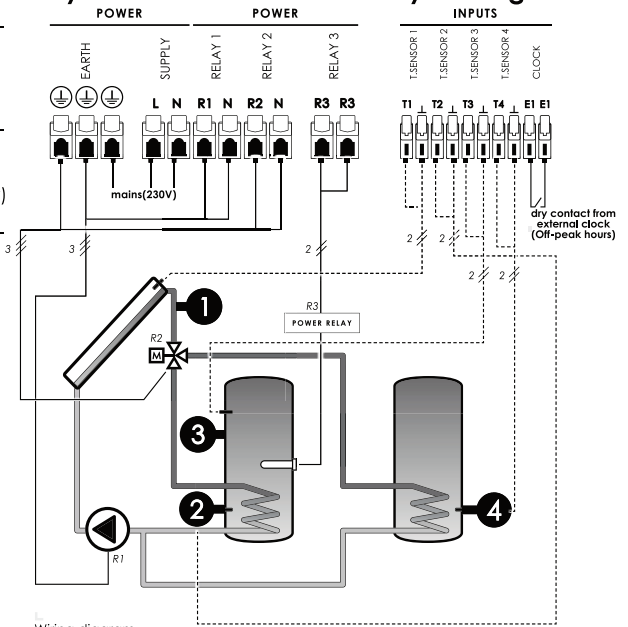
Syst 8

Solar system with 2 cylinders, 3-way Valve and Electric auxiliary heating

T1	Solar collector
T2	Cylinder 1, bottom
T3	Cylinder 1, top
T4	Cylinder 2, bottom
R1	Solar pump
R2	Diverting valve
R3	Electric heater (thru power relay)
E1	Clock sync



Display

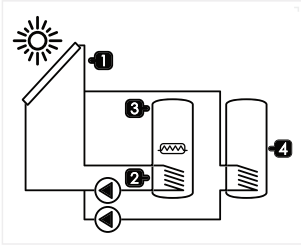


Wiring diagram

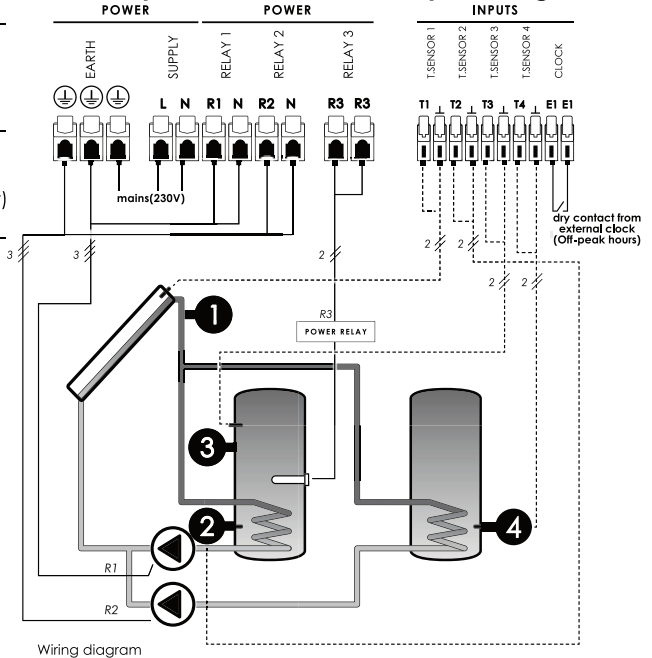
Syst 9

Solar system with 2 cylinders, 2nd Pump and Electric auxiliary heating

T1	Solar collector
T2	Cylinder 1, bottom
T3	Cylinder 1, top
T4	Cylinder 2, bottom
R1	Solar pump 1
R2	Solar pump 2
R3	Electric heater (thru power relay)
E1	Clock sync



Display

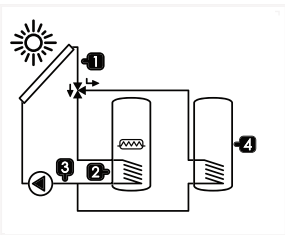


Wiring diagram

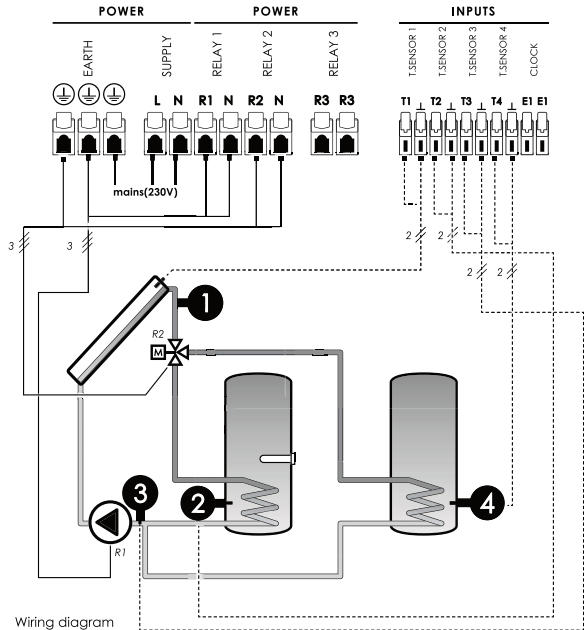
Syst 10 (GR8)

Solar system with 2 cylinders, 3-way Valve and Heat Quantity function

T1	Solar collector
T2	Cylinder 1, bottom
T3	Return flow (to collector)
T4	Cylinder 2, bottom
R1	Solar pump
R2	Diverting valve



Display

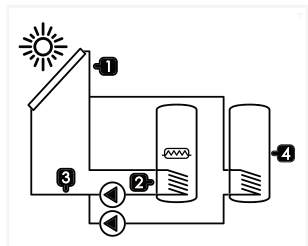


Wiring diagram

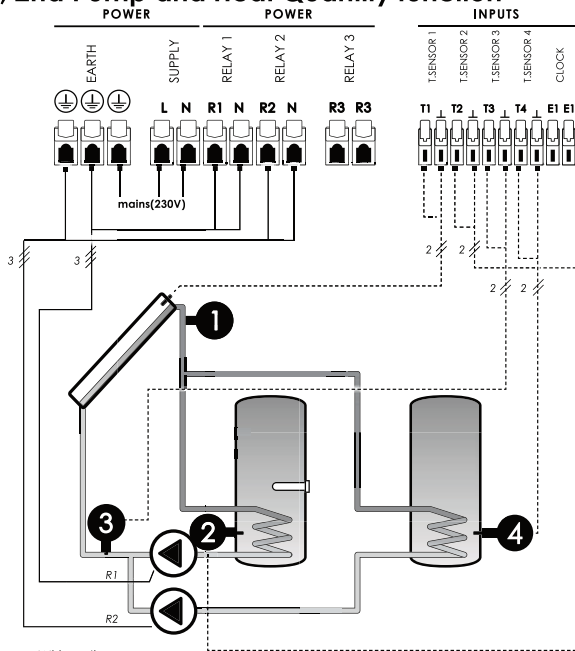
Syst 11 (GR9)

Solar system with 2 cylinders, 2nd Pump and Heat Quantity function

T1	Solar collector
T2	Cylinder 1, bottom
T3	Return flow to collector
T4	Cylinder 2, bottom
R1	Solar pump 1
R2	Solar pump 2



Display

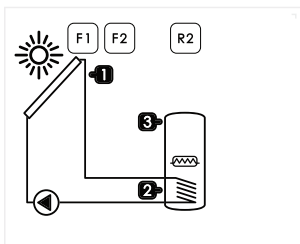


Wiring diagram

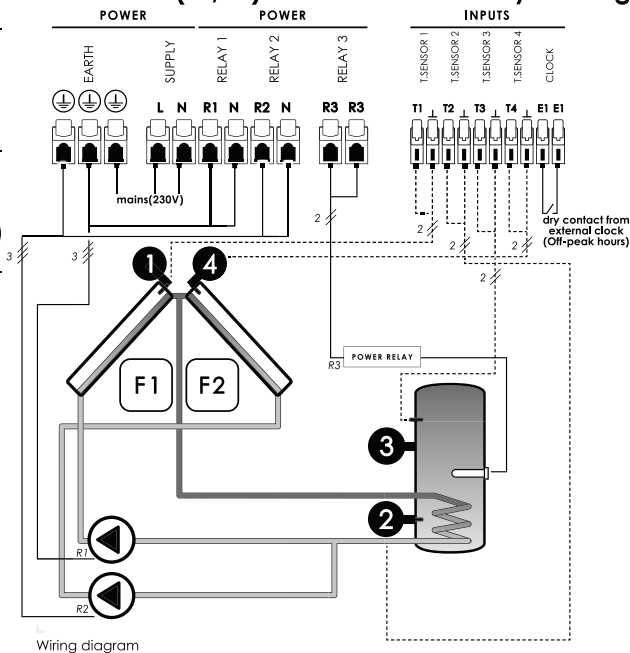
Syst 12

Solar system with East/West collector fields (F1/F2) and Electric auxiliary heating

T1	Solar collector
T2	DHW cylinder, bottom
T3	DHW cylinder, top
T4	Solar collector 2
R1	Solar pump 1
R2	Solar pump 2 (optional)
R3	Electric heater (thru power relay)
E1	Clock sync



Display

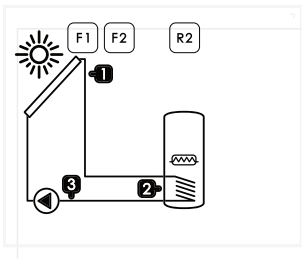


Wiring diagram

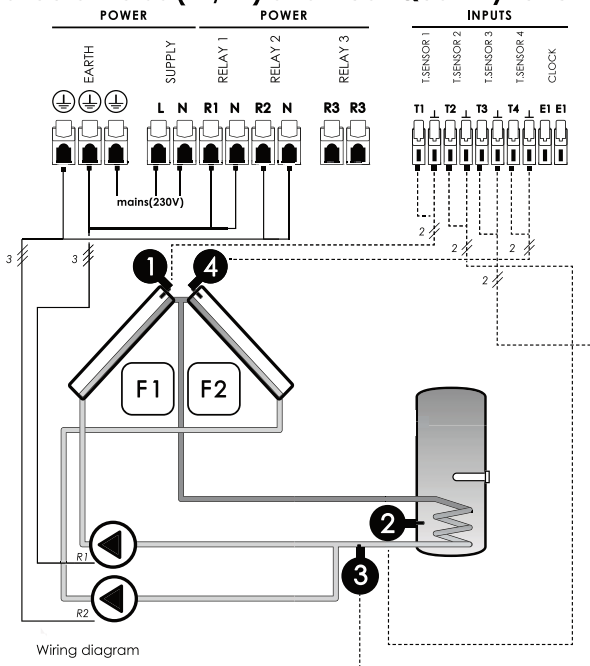
Syst 13 (GR12)

Solar system with East/West collector fields (F1/F2) and Heat Quantity function

T1	Solar collector
T2	DHW cylinder, bottom
T3	Return flow (to collector)
T4	Solar collector 2
R1	Solar pump 1
R2	Solar pump 2 (optional)



Display



Wiring diagram

System 3 twin coil cylinder system details

The following is the setup procedure for the Grant twin coil cylinder arrangement, with operational boiler auxiliary heating on the top coil.

R1 supplies power to the solar pump.

R2 output supplies power to the boiler by energising a motorised valve. The auxiliary relay on the valve supplies power to the heating boiler and pump. Consult the boiler wiring diagram.

SYSTEM 03: Basic solar system with Hydraulic and Electric auxiliary heating

Set Config	Factory Setting	Values
1 Collector Type	T1 FLAT ----	T1 FLAT TITUBE ----- 0000 or
2 Cylinder temperature setpoint	T2 SET 60	From 20 to 75
3 Temperature difference to switch on the solar heating	dT ON 6	From 3 to 20
4 Temperature difference to switch off the solar heating	dT OFF 3	From 1 to 18
5 R3 output	R3 ELEC On	On or OFF
6 Temperature difference (from the temp. setpoint) for Auxiliary heating authorization	dT AUX 10	From 2 to 20
7 Language	LANG FrA	FrA-Eng-dEU-ItA ESP-nEd-SuO-nOr SuE-dEn

System 3 twin coil cylinder system details

Set Config		Factory Setting	Values
8	Degree unit	T C/F °C	°C or °F
9	Display / light timeout	du LIT 20''	10''-20''-30'' 40''-50''-60'' 0n
Optional function		Factory Setting	Values
1	Anti-Legionella function	ALEG 0n	0n or OFF
2	Anti-Legionella temperature threshold	T ALEG 65	60, 65 or 70
3	Cooling (safety function)	COOL OFF	0n or OFF
4	Maximum cylinder temperature (safety)	T2 MAX 75	From 75 to 95
5	Anti-Freeze function	AF OFF	0n or OFF
6	Anti-Freeze temperature threshold	T1 AF 4	From - 10 to 10
7	Cold start function	COLD 0n	0n or OFF
8	Cold start temperature threshold	T1 COLD 4	From - 10 to 10
9	Heat Quantity Estimation function	Q _t HEAT OFF	0n or OFF
10	Anti-Freeze fluid type	AF WAT	AF WAT, AF GLYC AF GLYC PROP or ETH4
11	Anti-freeze glycol concentration rate	AF GLYC 50	From 20 to 80

System 3 twin coil cylinder system details

Optional function		Factory Setting	Values
12	Flow Rate from Meter Reading	FL L/M 6	From L/M to L/M 0 20
Expert Setting		Factory Setting	Values
1	Maximum collector temperature	T1 MAX 120	From 100 ^{°C} to 190 ^{°C}
2	Collector temperature safety limit	T1 LIM 140	From 110 ^{°C} to 200 ^{°C}
3	Night temperature setpoint (for HOLIDAYS mode)	T2 HOLI 35	From 17 ^{°C} to 60 ^{°C}
4	Maximum cylinder temperature (safety)	T2 MAX 75	From 75 ^{°C} to 95 ^{°C}
5	Minimum pump-on duration	R1 TIME OFF	0005,00:10 or OFF
Expert Setting Plus		Factory Setting	Values
1	Collector probe length	T1 LENG 2	
2	Temperature difference zero adjustment value	dT ADJ 0	From -5 ^{°C} to 5 ^{°C}
3	Additional temperature difference zero adjustment value (if Heat Quantity enabled)	dT ADJ 0	From -5 ^{°C} to 5 ^{°C}
4	T1 temperature zero adjustment value	T1 ADJ 0	From -5 ^{°C} to 5 ^{°C}
5	T2 temperature zero adjustment value	T2 ADJ 0	From -5 ^{°C} to 5 ^{°C}
6	T3 temperature. zero adjustment value	T3 ADJ 0	From -5 ^{°C} to 5 ^{°C}

System 3 twin coil cylinder system details

Expert Setting Plus	Factory Setting	Values
7 T4 temperature zero adjustment value (if Heat Quantity enabled)	T4 ADJ 0	From [Ⓚ] -5 to [Ⓚ] 5
8 Tube collector temperature test duration (if TUBE type collector)	du TCOL 30''	From 10'' to 60''

TROUBLESHOOTING

● Error messages

An ERROR (EM) signals a problem that does prevent the system from operating.

Display	Problem	Troubleshooting
EM T 15C --	Short-Circuit at T1 (T2, T3 or T4) preventing the system from working	T1 (T2, T3, or T4) probe is faulty or misconnected
EM T 10C -1-	Open-Circuit at T1 (T2, T3 or T4) preventing the system from working	T1 (T2, T3, or T4) probe is missing or faulty

● Warning messages

A WARNING (WM) signals a problem that does not prevent the system from operating.

Display	Problem	Troubleshooting
WM T 30C	Open circuit at T3 disabling the auxiliary heating	T3 probe missing
WM NORL	AL cannot run because no auxiliary heating enabled	Enable the electric heating, select a system with hydraulic heating or disable the AL function
WM ALNW	AL function does not work properly	Check that the selected system matches your installation, check the correct setup of the electric and/or hydraulic heating circuit (auxiliary pump, boiler . . .)
WM E INW	E1 Not Working properly (on duration shorter than 1 hour or period higher than 72h)	Check the timeswitch connection and working

TECHNICAL SPECIFICATIONS

Inputs / Outputs	Description	Name
4 temperature inputs	PT1000 sensor type	T1, T2, T3, T4
1 synchronization input	Input driven by a free-voltage contact from a time switch (closed when low-tariff period running)	E1
Solar pump control output, rated load	Semi-conductor 200W max, mains live switch (0,1A min output current)	R1
2nd control output, rated load	Relay 2A max, mains live switch	R2
3rd control output, rated load	Relay 1A max @ 250V, voltage-free	R3
Power supply voltage	230-240V~, -10% +5%, 50Hz	Mains

Accessories	Description	Name
1 x High temperature probe STAPT15HTA	PT1000 probe, -30°C to 200°C, 1,5 metres, red cord	T1 (T4)
2 x Standard temperature probe STAPT25NTA	PT1000 probe, -15°C to 105°C, 2,5 metres, black cord	T2, T3 (T4)
Extension cable	On request	T1 (T4)

Environment	Description
Safety	Insulation: Class II, Protection rating: IP20, Pollution degree: 2, Rated pulse voltage: 4KV
Operation temperature range	0 to +40°C
Storage temperature range	-20°C to +70°C
Maximum humidity rate	85% RH non condensing @ 25°C
Standards	EN60730-1 EN60730-2-9

Installer details

Notice for the home owner or user!

The controller settings may be locked for security, or for the most efficient operation of the system. They can however, be altered from factory settings.

The installer named below set and locked the controller settings. Please contact them to unlock.

Installer name.....

Company name

Contact details

Tel:

email:

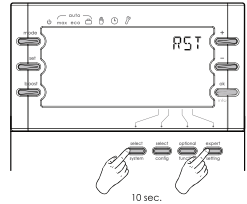
For the Installer:

Detach this section if you wish to lock the settings and secure the system setup!

Restoring factory settings (reset)



The reset function restores the factory settings for all parameters

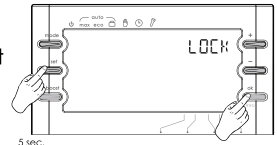
To restore factory settings, press  and  together and hold them down for 10 seconds.



Locking the settings

Once setting is finished, you can lock the install settings (so that only the user can change them).

From Expert mode, press  and  together and hold them down for 5 seconds.



To unlock the settings, press  and  together and hold them down for 5 seconds.

Installer Notes

The Grant solar controller can also be used for other types of systems or configurations. For special applications it would be wise to consult with the Grant Technical Advisory Team.

Contact details on the back cover.

LEGAL GUARANTEE


Clause 1 – Warranty:

1.1 Scope: Products are guaranteed against all material and manufacturing defects for a period of two years from the manufacturing date listed on each product. Acts undertaken under the terms of the warranty shall not have the effect of extending the term thereof. During the warranty period, the vendor undertakes to replace free of charge and in as short a timeframe as possible, the products or parts which are defective and thus unfit for their intended use.

After the vendor agrees to do so, the parts for repair or exchange shall be sent to the vendor's premises, under the care of and at the expense of the purchaser. They shall be delivered (carriage paid) to the purchaser, who shall bear the assembly or disassembly costs of the parts being repaired. Parts which are replaced shall remain the property of the vendor. The replacement products and the repaired products are guaranteed under the same terms and conditions as the original products, for an additional period of two years.

1.2 Exclusions: The warranty is not applicable if the purchaser cannot provide proof of full payment for the supplies or if the installation and operating instructions supplied by the vendor were not followed and, less specifically, if the damage in question arises out of the acts of the purchaser or of its servants, out of force majeure or unforeseeable accidents. The warranty does not apply in cases in which defects are due either to components provided by the purchaser, or those defects which arise out of a design required by the purchaser, or if the product does not fulfil objectives defined by the client of which the vendor was not informed. Any points not outlined in writing in the list of specifications or in the order are not covered by the warranty. Any and all damage due to normal wear and tear is also excluded.



The symbol,  on the product means that you must dispose of it at the end of its life at a special recycling point, in accordance with the European Directive WEEE 2002/96/EC. If you are replacing it, you can also return it to the retailer from which you buy the replacement equipment. Indeed, the product should not be disposed of with standard household waste. Recycling products enables us to protect the environment and to use less natural resources.



Compliance declaration: we hereby declare under our sole responsibility that the products described in these instructions comply with all the main requirements of the Low Voltage 2006/95/EC, CEM 2004/108/EC, RoHS 2002/95/EC and EuP 2005/32/EC directives, and were manufactured using processes which are certified ISO 9001:2000.

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