

BASIC, ADVANCED, PLUS Series

Electronic control units for solar thermal systems

Technical Data Sheet



Description

BASIC, ADVANCED and **PLUS Series** electronic control units provide a synoptic that enables you to monitor system status by means of the LCD or LED display: fluid temperature in storage tank, temperature difference between solar collector and system circuit, solar collector temperature, fluid temperature at bottom of tank, pump operating status. When the sun heats the solar collector to a temperature exceeding the temperature in the water heater, the electronic control actuates the pump built into the **FlowBox Series** units.

BASIC



Electronic control unit for solar panel systems with LED operating status indicator lights. Pt1000 sensors (ST Series - art. PPLELE00060) for solar collector, tank and auxiliary included as standard. 2 x 230VAC-8A relay outputs for controlling heating circuit and solar circuit pumps (ON-OFF). Easy to use, with just three pushbuttons. Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 4-30°C (default 8°C). Maximum tank temperature control: 30-90°C (default 90°C). Tank temperature control with auxiliary sensor: 0-85°C (default 50°C). Solar circuit protection:

- against overtemperature: 100-200°C (default 140°C);
- with operation of pump for 15 sec. if unused for 5 days.

IP rating: IP42. Power supply: 230VAC-50Hz.

Type	Part No.	No. of sensors
BASIC	P03686	2 (L = 3 m + L = 1.5 m)
BASIC	P03752	3 (two L = 3 m + one L = 1.5 m)

ADVANCED (PHASE OUT)



Control unit for controlling up to 2 solar panels with back-lit LCD display. 7 different display configurations. Easy to use, with 4 interface pushbuttons for reading data and setting parameters. 2 Pt1000 sensors (ST Series - art. PPLELE00060) and 2 NTC sensors 10k 5% L=3m, included as standard. The control unit is also set up to control 4 different control points (2 solar collectors, 2 tanks). Maximum tank temperature control: 15-95°C (default 65°C). Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 3-40°C (default 7°C).

The pumps can be controlled in ON-OFF mode.

It has:

- 7 system configurations;
 - 2 inputs for Pt1000 sensors, collector temperature;
 - 2 inputs for NTC sensors, tank temperature;
 - 2 pump relay outputs (live contact);
 - 1 pump relay output (voltage-free contact);
 - automatic, manual or test mode;
 - automatic short circuit monitoring, 2 sensors.
- Solar circuit protection:
- against overtemperature: 110-150°C (default 120°C)
 - with operation of pump for 15 sec. if unused for 2 days.

IP rating: IP20. Power supply: 230VAC – 50Hz.

Type	Part No.	No. of sensors
ADVANCED	P03491	3 (two L = 3 m + one L = 1.5 m)

PLUS



Electronic control unit for solar thermal systems with up to 2 solar panels with backlit LCD display and SD card for recording the parameters set.

8 different display configurations.

Easy to use, with 4 interface pushbuttons. 4 Pt1000 sensors (ST Series-art. PPLELE00060) for solar collector, tank and auxiliary included as standard. The control unit is also set up to control 5 different control points (2 solar collectors, 2 tanks, 1 extra).

It has:

- 1 Pt1000 T1 sensor input (collector);
- 1 Pt1000 T2 sensor input (tank);
- 1 Pt1000 T3 sensor input (optional);
- 1 Pt1000 T4 sensor input (optional, collector 2, tank 2);
- 1 Pt1000 T5 sensor input (collector return);
- 1 Pt1000 T6 sensor input (pulse flow meter);
- 2 TRIAC outputs max. 1A 230VAC (STD or PWM main pump);
- 1 relay output max. 2A 230VAC (standard pump, additional heating, cooling).

Solar circuit protection:

- against overtemperature: 110-150°C (default 120°C);
- with operation of pump for 15 sec. if unused for 2 days.

Maximum tank temperature control: 15-95°C (default 65°C).

Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 3-40°C (default 7°C). USB adaptor for plugging in an SD card to read and analyse the data recorded or configure controls from a PC (display software included). Room temperature: 0-50°C.

IP rating: IP20. Power supply: 230VAC 50Hz.

Type	Part No.	No. of sensors
PLUS	P04456	3 (two L = 3m + one L = 1.5m)



ST

Pt1000 temperature sensors.

- in silicone sheath, up to 105°C, length 3 metres (suitable for tank);
- in PVC sheath, up to 180°C, length 1.5 metres (suitable for solar collector).

Type	Part No.	No. of sensors
ST	PPLELE00061	Length 1.5 m - 180°C
ST	PPLELE00060	Length 3.0 m - 105°C

Technical features	BASIC	ADVANCED	PLUS
Operating temperature	0-50°C	0-50°C	0-50°C
IP rating	IP42	IP42	IP20
Supply voltage	230VAC +/- 10% Hz	230VAC +/- 10% Hz	230VAC +/- 10% Hz
Outputs: P1 – main pump P2 – secondary pump P3 – auxiliary contact	8A 250VAC relay - 8A 250VAC relay	0.5 A 230V triac 0.5 A 230V triac 2A 250VAC relay	1 A 230V triac, min. load > 1 W 1 A 230V triac, min. load > 1 W 2A 250VAC relay
Inputs: Temp. sensor, coll. 1 Temp. sensor, coll. 2 Temp. sensor, tank 1 Temp. sensor, tank 2 Temp. sensor, extra Flow meter sensor Flow rate sensor Pressure sensor	Pt 1000 (1.5 m – 180°C) - Pt 1000 (3 m – 105°C) - - - - -	Pt 1000 (1.5 m – 180°C) Pt 1000 (1.5 m – 180°C) Pt 1000 (3 m – 105°C) Pt 1000 (3 m – 105°C) Pt 1000 (3 m – 105°C) 5V pulse - -	2 x Pt 1000 (1.5 m – 180°C) Pt 1000 (1.5 m – 180°C) Pt 1000 (3 m – 105°C) Pt 1000 (3 m – 105°C) Pt 1000 (3 m – 105°C) 5V pulse analogue analogue

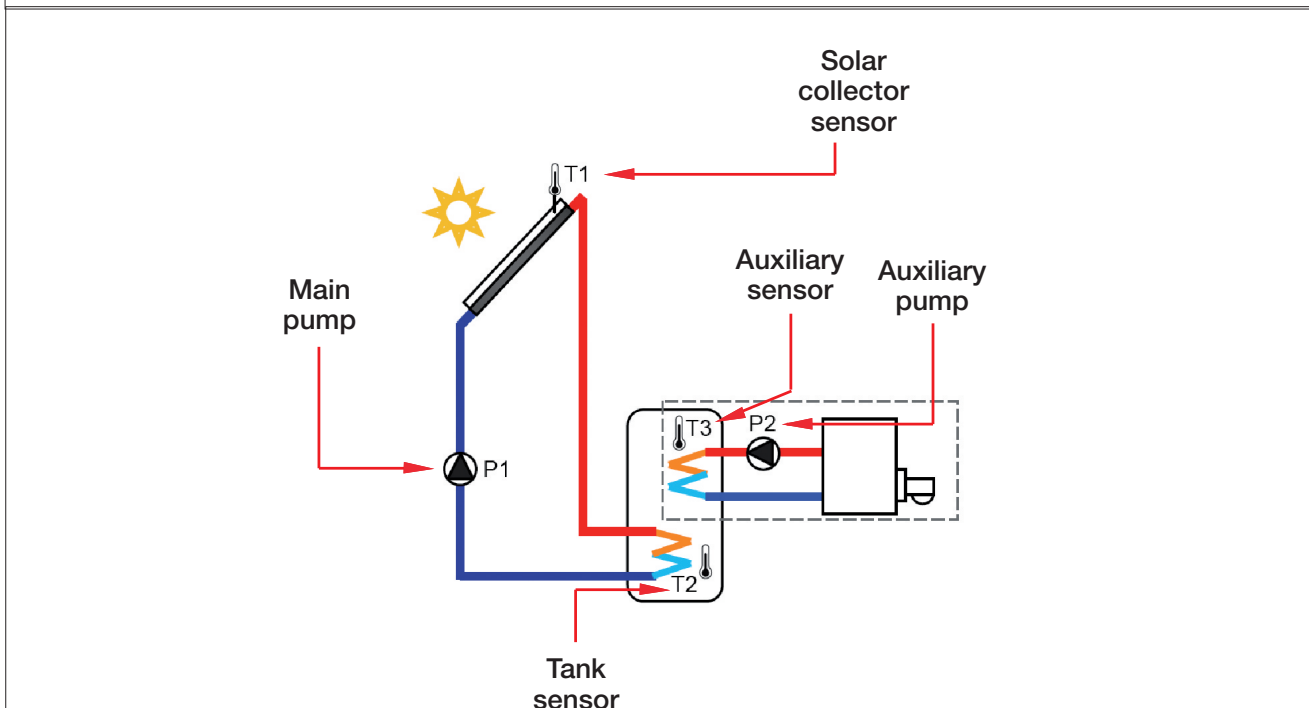
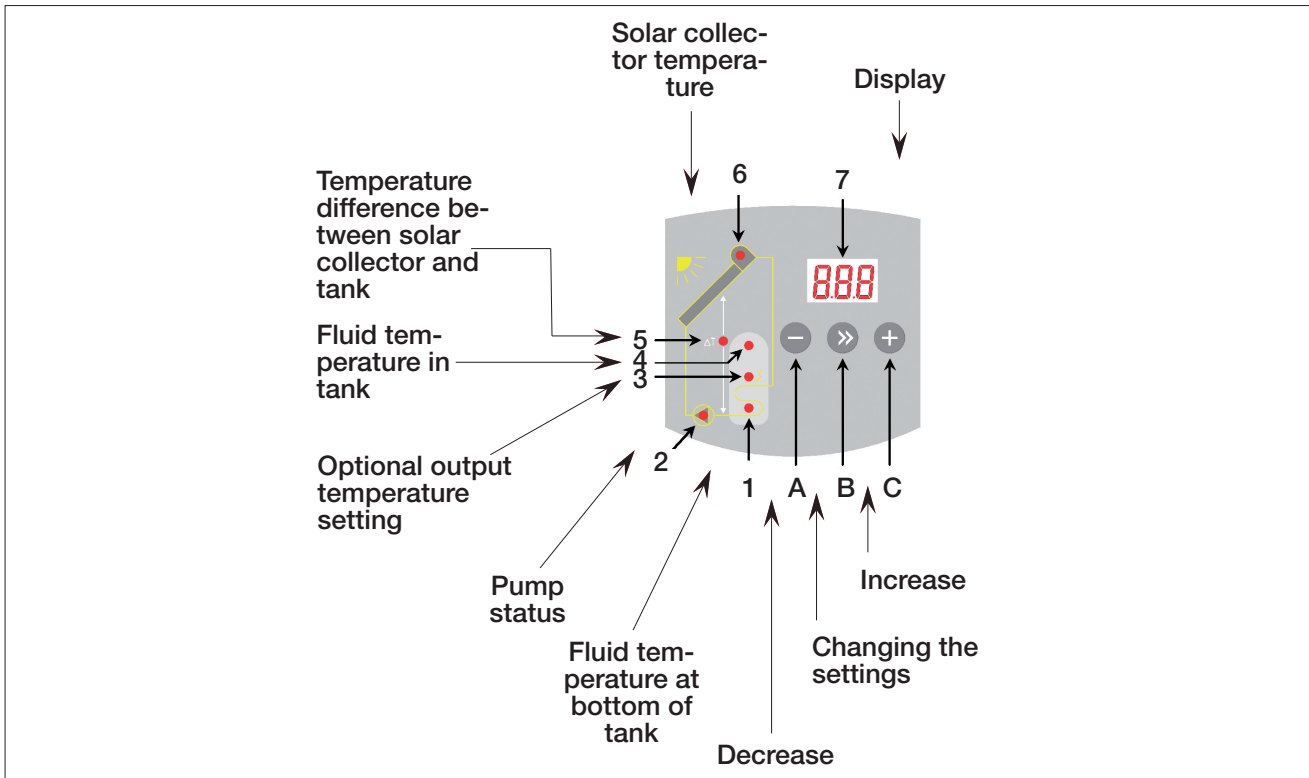
Application

BASIC

BASIC Series electronic control units are used to manage and control forced-circulation solar thermal systems with one solar collector, one tank and one pump (+ one solar pump). The front panel of the control unit shows a schematic of the system configuration, and LEDs indicate the operating status of the individual components. The unit is easy to use and programme with just three pushbuttons, and depending on the parameter selected (pushbutton B), the display (7) shows the following:

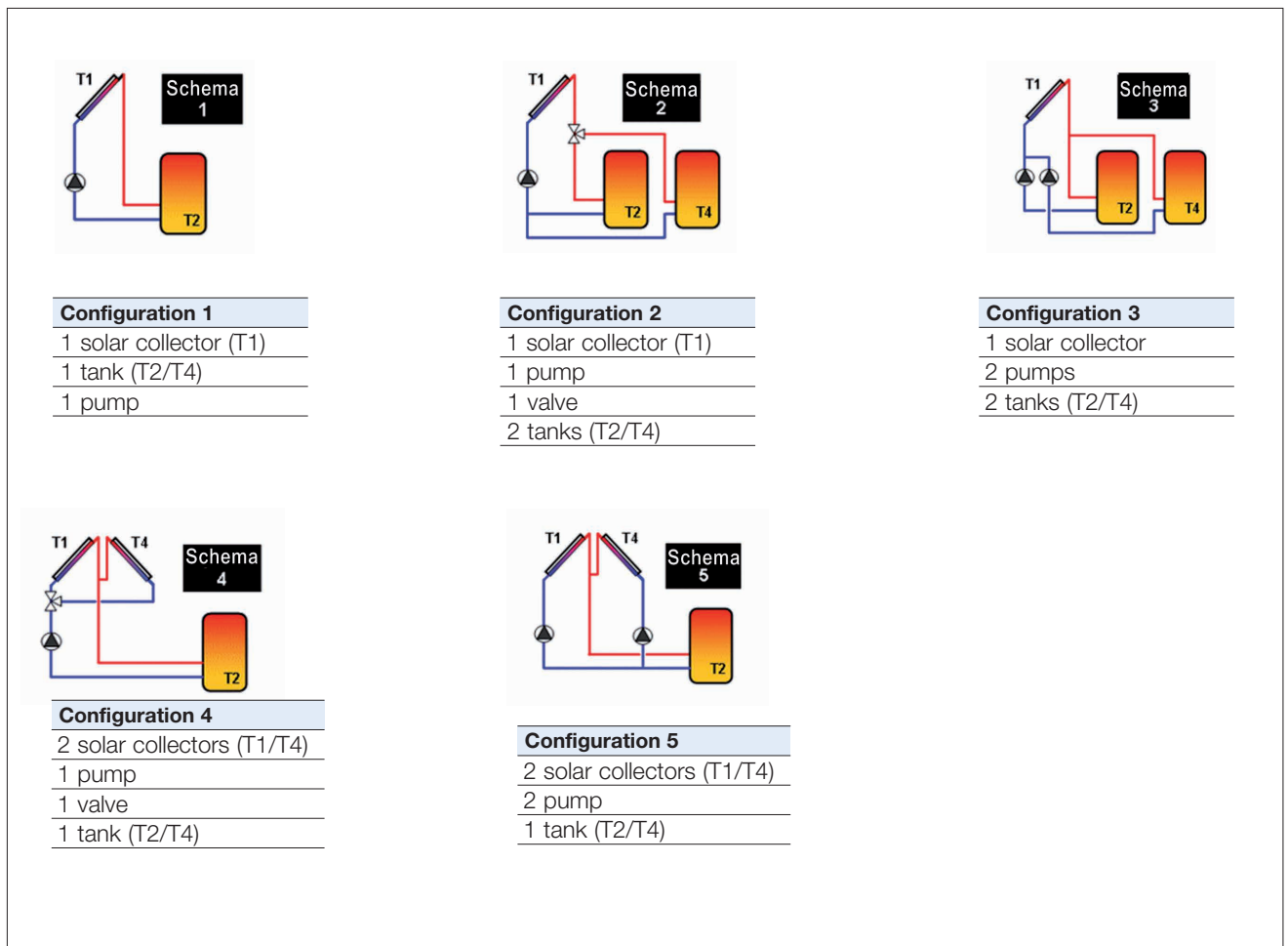
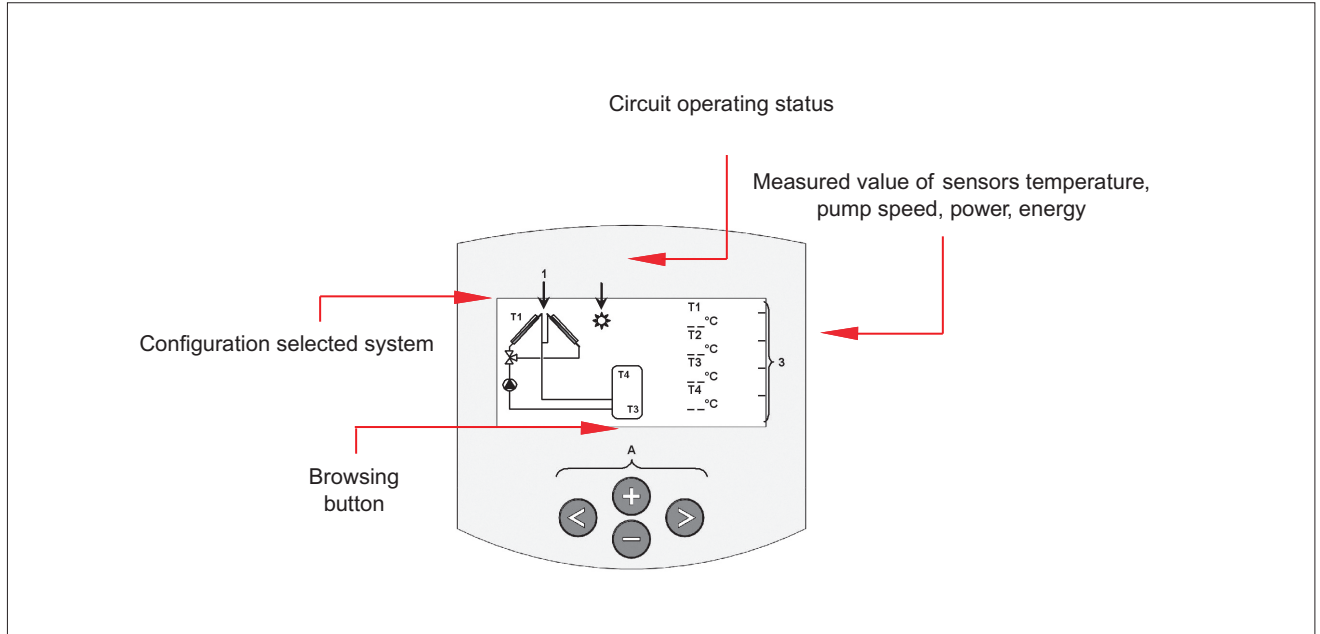
- fluid temperature at bottom of tank (1);
- fluid temperature in tank (4);
- temperature difference between solar collector and tank (5);
- solar collector temperature (6);
- optional output temperature setting (3).

The LED (2) shows the pump operating status. Changing the settings: pushbutton A (decrease), C (increase).



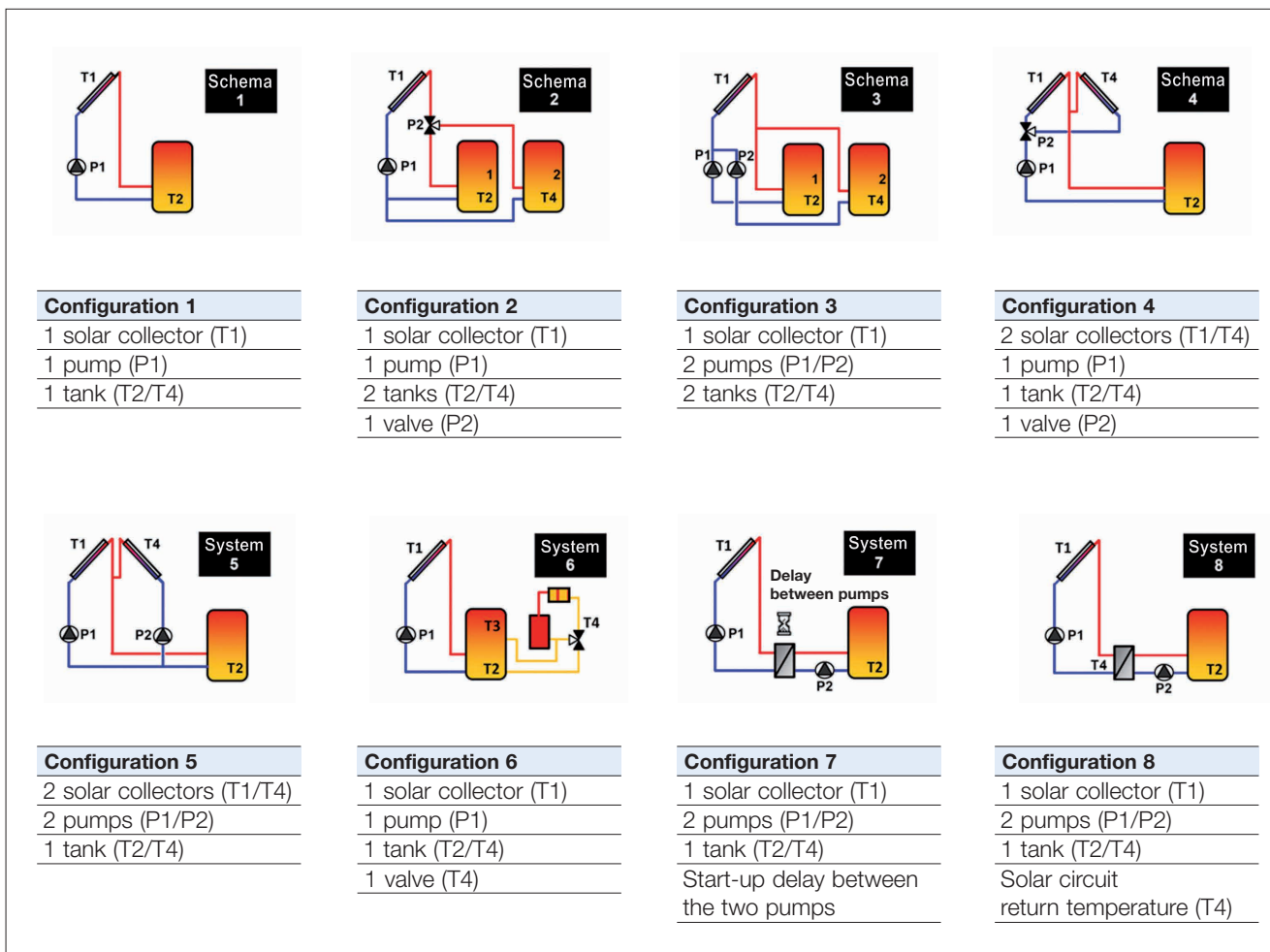
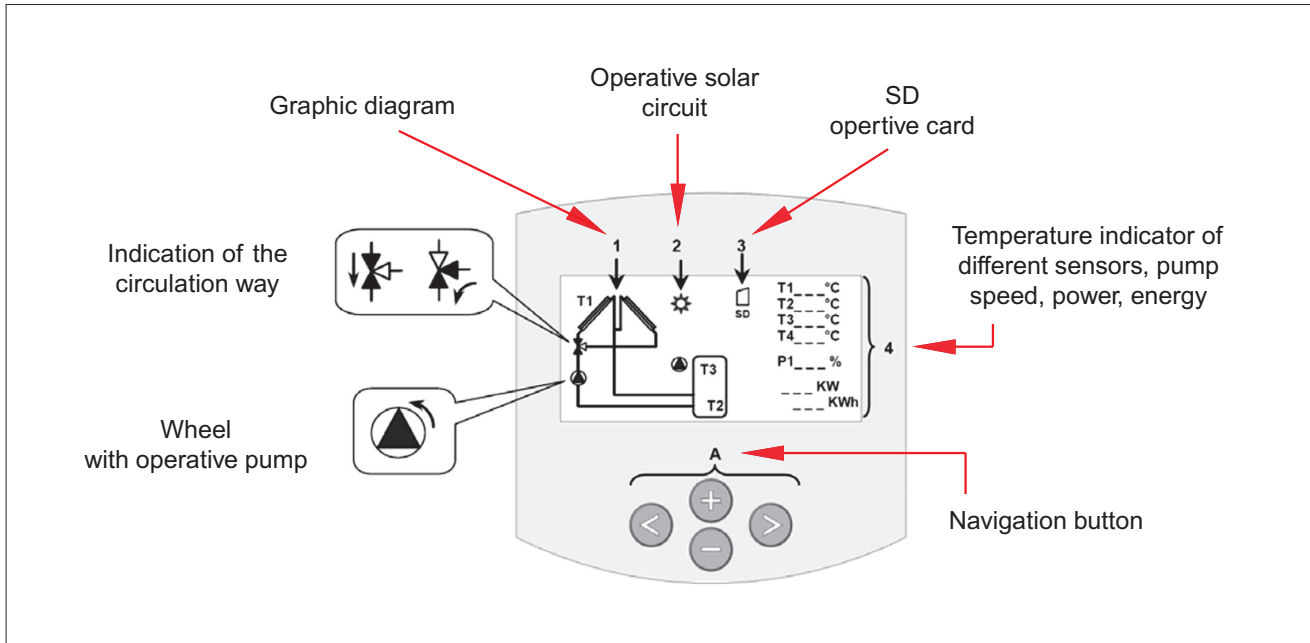
ADVANCED Series (PHASE OUT)

ADVANCED Series electronic control units are used to manage and control forced-circulation solar thermal systems with one or two solar collectors, one or two tanks and one or two pumps. The large display shows a schematic of the system configuration, which can be set to one of the 5 defaults shown below. All the temperatures of the sensors are shown next to the configuration. All the temperatures of the sensors are shown next to the configuration.



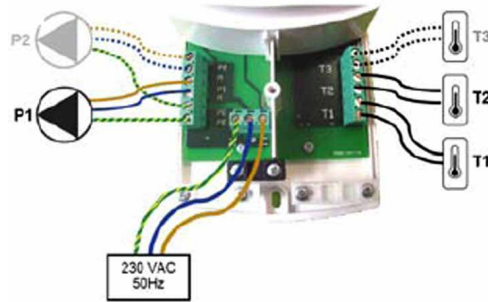
PLUS Series

PLUS Series electronic control units are used to manage and control forced-circulation solar thermal systems with one or two solar collectors, one or two tanks, one or two pumps and a heat exchanger. The large display shows a schematic of the system configuration, which can be set to one of the 8 defaults shown below. All the temperatures of the sensors are shown next to the configuration. On the side, there is a slot for an SD card for setting up the control unit and recording operating parameters. To meter the energy, you need to connect the pulse flow meter (to input T6) and select litres/pulse from the internal menu. Lastly, connect the temperature sensor for input T5.

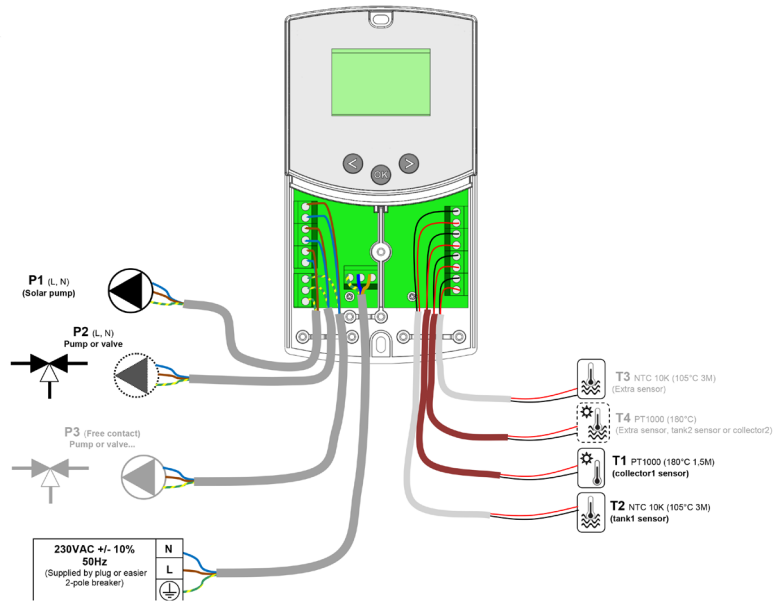


Electrical connections

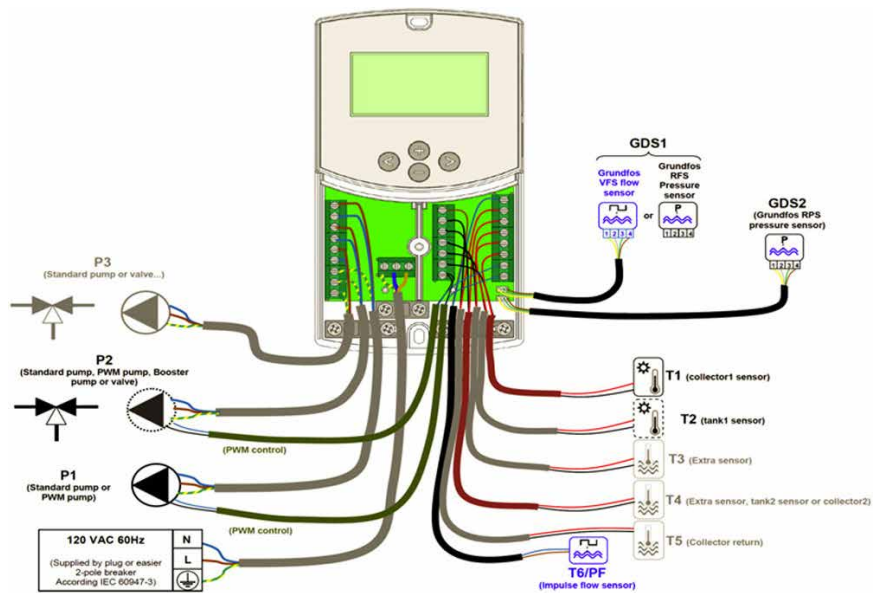
BASIC



ADVANCED

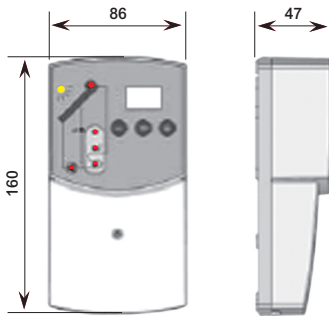


PLUS



Overall dimensions (mm)

For all three models



Specification text

BASIC Series

Electronic control unit for solar panel systems **BASIC Series** – WATTS brand – with LED operating status indicator lights. ST Series Pt1000 sensors for solar collector, tank and auxiliary included as standard. 2 x 230VAC-8A outputs for controlling heating circuit and solar circuit circulation pumps. Easy to use, with just three pushbuttons. Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 4-30°C (default 8°C). Maximum tank temperature control: 30-90°C (default 90°C). Tank temperature control with auxiliary sensor: 0-85°C (default 50°C). Solar circuit overtemperature protection: 100-200°C (default 140°C) and operation of pump for 15 sec. if unused for 5 days. IP rating: IP42. Power supply: 230VAC – 50Hz.

ADVANCED Series

Control unit for controlling up to 2 solar panels with back-lit LCD display **ADVANCED Series** – WATTS brand. 7 different display configurations. Easy to use, with 4 interface pushbuttons for reading data and setting parameters. 2 Pt1000 sensors (ST Series - art. PPLELE00060) and 2 NTC sensors 10k 5% L=3m, included as standard. The control unit is also set up to control 4 different control points (2 solar collectors, 2 tanks). Maximum tank temperature control: 15-95°C (default 65°C). Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 3-40°C (default 7°C). Solar circuit overtemperature protection: 110-150°C (default 120°C) and operation of pump for 15 sec. if unused for 2 days. IP rating: IP20. Power supply: 230VAC – 50Hz.

PLUS Series

Electronic control unit for solar thermal systems **PLUS Series** – WATTS brand – with up to 2 solar panels with backlit LCD display and SD card for recording the parameters set. 8 different display configurations. Easy to use, with 4 interface pushbuttons. 4 Pt1000 sensors (ST Series- art. PPLELE00060) for solar collector, tank and auxiliary included as standard. The control unit is also set up to control 5 different control points (2 solar collectors, 2 tanks, 1 extra). Equipped with 1 Pt1000 T1 sensor input (collector); 1 Pt1000 T2 sensor input (tank); 1 Pt1000 T3 sensor input (optional); 1 Pt1000 T4 sensor input (optional, collector 2, tank 2); 1 Pt1000 T5 sensor input (collector return); 1 Pt1000 T6 sensor input (pulse flow meter); 2 TRIAC outputs max. 1A 230VAC (STD or PWM main pump); 1 relay output max. 2A 230VAC (standard pump, additional heating, cooling). Solar circuit overtemperature protection: 110-150°C (default 120°C); with operation of pump for 15 sec. if unused for 2 days. Maximum tank temperature control: 15-95°C (default 65°C). Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 3-40°C (default 7°C). USB adaptor for plugging in an SD card to read and analyse the data recorded or configure controls from a PC (display software included). Room temperature: 0-50°C. Power supply: 230VAC 50Hz.

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.

Watts Industries reserves the right to carry out any technical and design improvements to its products without prior notice. Warranty: All sales and contracts for sale are expressly conditioned on the buyer's assent to Watts terms and conditions found on its website at www.wattsindustries.com. Watts hereby objects to any term, different from or additional to Watts terms, contained in any buyer communication in any form, unless agreed to in a writing signed by an officer of Watts.

WATTS[®]

Watts Industries Italia S.r.l.

Via Brenno, 21 • 20853 Biassono (MB) • Italy

Tel. +39 039 4986.1 • Fax +39 039 4986.222

infowattsitaila@wattswater.com • www.wattsindustries.com