

### / Description

The digital control unit S305 is a centralized control unit for thermal solar panels. Supplied with 5 outputs (Load Relays + Alarm Relays), 2 PWM outputs, and 4 Inputs (Probes) it is able to manage a system configuration that can be selected among 20 common types of layouts. When a specific installation is selected, the control unit automatically manages the outputs and inputs used to control the valves, the pumps, the integrative sources and the probes used in the type of installation selected.

Moreover on the backlit LCD display it is possible to visualize the hydraulic diagram of the installation set up, the state of the outputs, the probes as well as several other data and informations. **Control unit supplied with 3 PT1000 probes.**

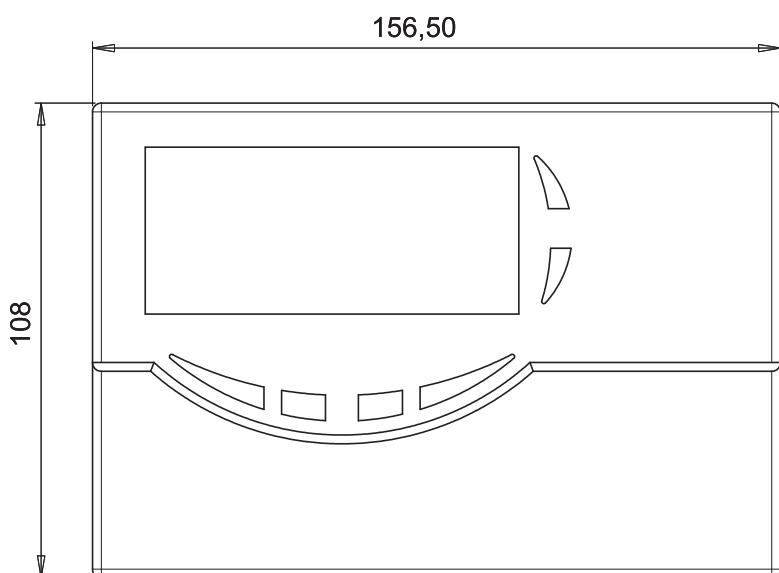


### / Technical features

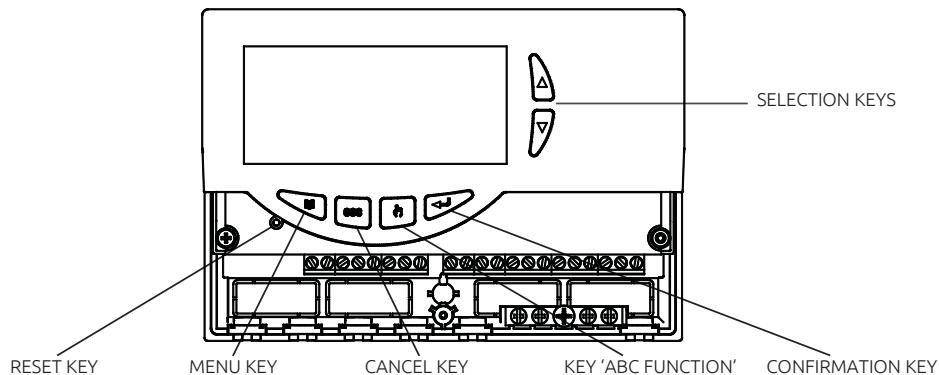
Power supply:	230V~ 50Hz
Power absorption:	4 VA
Sensors type:	4 x Pt1000 Class B DIN
Sensor operating range:	-50 °C .. +200 °C (Collector) -50 °C .. +110 °C (Boiler)
Temperature reading range:	-40,0°C .. 260,0°C
Accuracy:	± 1°C
Resolution:	0,1°C (0,2°F)
Offset adjustment:	on S1: ±5.0°C
	on S2: ±5.0°C
	on S3: ±5.0°C
	on S4: ±5.0°C
Installer Password:	0000 .. 9999 (default 0000)
Acoustic Signal:	On/Off (default On)
Backlight timing:	20 sec from last keypress
OUT2 Relay Logic:	NOR=N.O. REV=N.C. non-editable logic for layouts with 2 collectors (default N.O.)
OUT3 Relay Logic:	NOR=N.O. REV=N.C. (default N.O.)
OUT4 Relay Logic:	NOR=N.O. REV=N.C. (default N.O.)
Output relay contacts rating:	
OUT1 - OUT2 - OUT3 - OUT4:	4x2(1)A max 230V~(SPST) Voltage free.
Alarm relay contacts rating:	4(1)A max @ 230V~(SPDT) Voltage free.
<u>Output Signal:</u>	
PWM:	Amplitude: 10V ±15%
	Frequency: 1KHz
	Current: 15mA max.
	Resolution: 0.5%
Max allowed PWM cable length:	< 5m.
Protection grade:	IP 40
Type of action:	1

Overvoltage category:	II
Pollution degree:	2
Tracking index (PTI):	175
Class of protection against electric shock:	II
Rated impulse voltage:	2500V
Number of manual cycles:	50000
Number of automatic cycles:	100000
Software class:	A
EMC test voltage:	230V~ 50Hz
EMC test current:	34mA
Distances tolerances fault mode 'short' exclusion:	±0,15mm
Ball pressure test temperature:	75°C
Operating temp. range:	0°C .. 40°C
Storage temp. range:	-10°C .. +50°C
Humidity limits:	20% .. 80% RH non-condensing
Case:	Material: ABS V0 self-extinguishing
	Color: Signal White (RAL 9003)
Dimensions:	156 x 108 x 47 (W x H x D)
Weight:	~723 gr. (version with probe) ~553 gr. (version without probe)
Installation:	Wall-mount

## / Dimensions



### Description of the keys

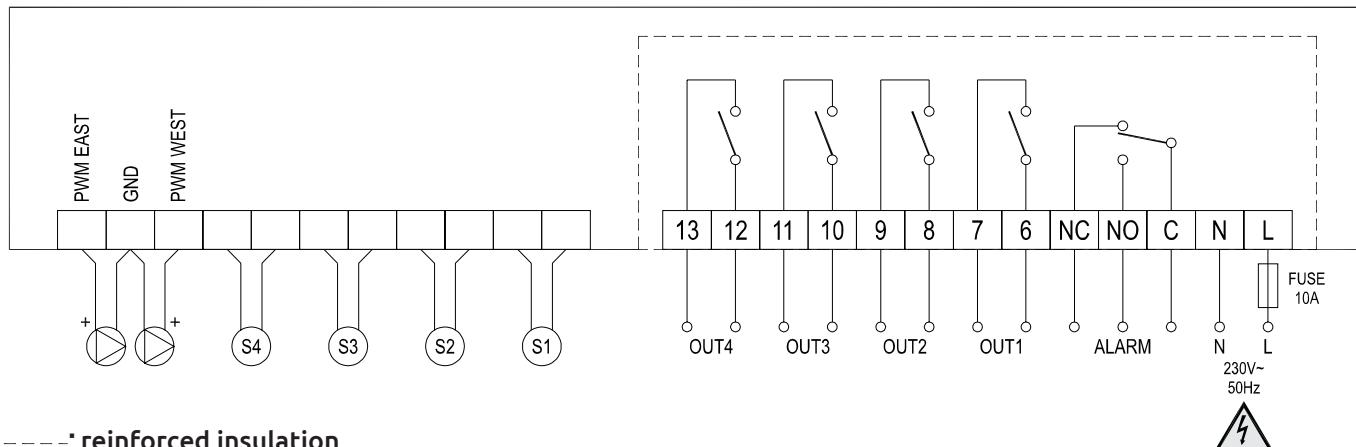


#### WARNING!



The installation technician shall operate in full compliance with all the applicable technical standards in order to grant the unit safety.

### Electrical connections



#### WARNING!



Before wiring the appliance be sure to turn the mains power off.

**WARNING!** S1 (or 'COL'), S2, S3 and S4 are Pt1000 temperature sensors. For S1 sensor the -50°C..+200°C range probe (grey cable) must be used, while the probes with the range of -50°C..+110°C (blue cable) can be used for the other probes.

When setting up installations with 2 solar panels, the probes corresponding to S1 and S4 **must be exclusively of the -50°C .. +200°C range type**. The relay outputs relative to 1, 2, 3, 4 loads are voltage free; the output of the auxiliary alarm relay is changeover type (SPDT) with voltage free contacts. It is advisable to fit a 10A 250V~ fuse on the power unit mains capable to intervene in case of short circuits on loads.

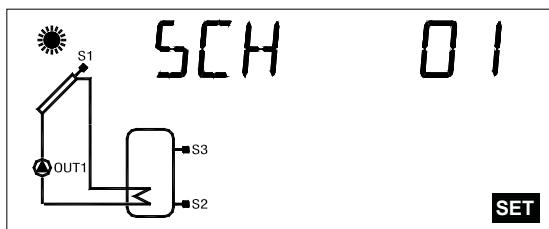
**IN ORDER TO CHECK THAT THE DEVICE IS WORKING CORRECTLY IT IS NECESSARY FOR THE LOADS TO BE CONNECTED.**

**TERMINAL BOARD GROUNDING:** On the base of the control unit case is located a brass terminal board for connecting the ground protection conductors of the load devices connected to the control unit.

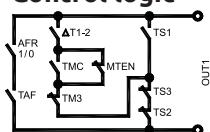
### Available diagrams

#### SCH 01

Solar heating installation with 1 tank and no integrative heat source.



#### Control logic

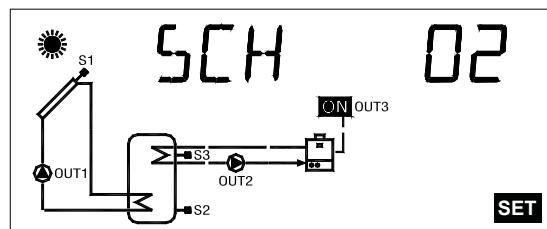


#### SCH 02

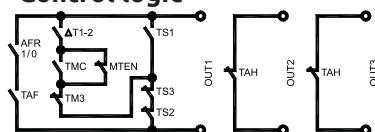
Solar heating installation with 1 tank and additional thermostatic heating.

#### SCH 02

Solar heating installation with 1 tank and additional thermostatic heating.

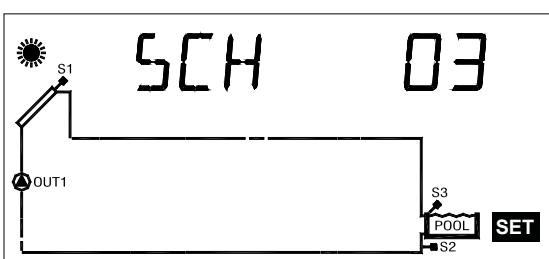


#### Control logic

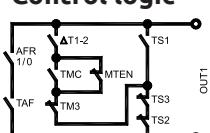


#### SCH 03

Pool solar heating installation.



#### Control logic

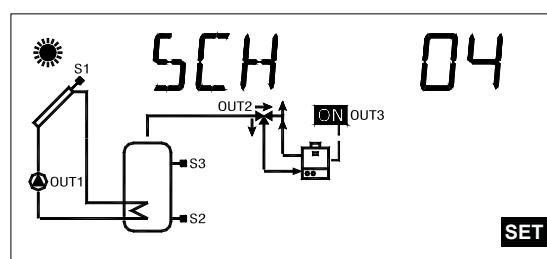


#### SCH 04

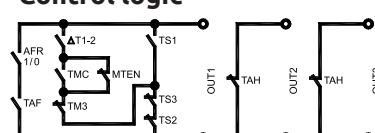
Natural circulation solar heating installation with 1 tank and direct integration by means of valve logic.

#### SCH 04

Solar heating installation with 1 tank, direct integration by means of valve logic.

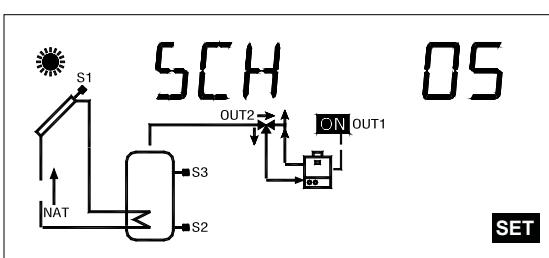


#### Control logic

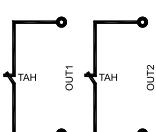


#### SCH 05

Natural circulation solar heating installation with 1 tank and direct integration by means of valve logic.

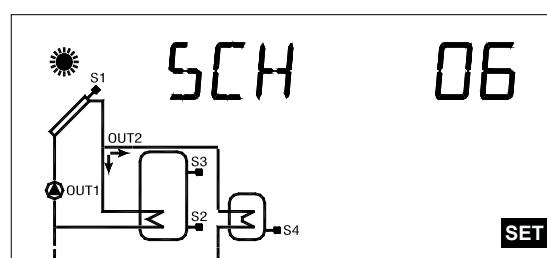


#### Control logic

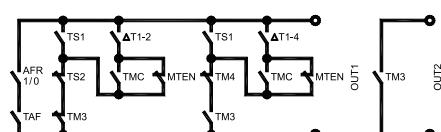


#### SCH 06

Solar heating installation with 2 tanks, valve logic control and no integrative heat source.

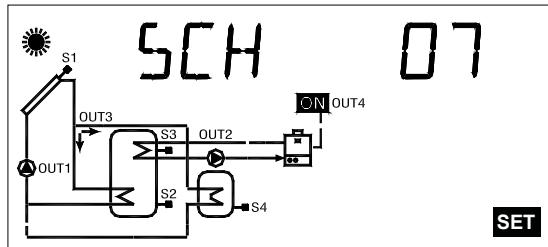


#### Control logic

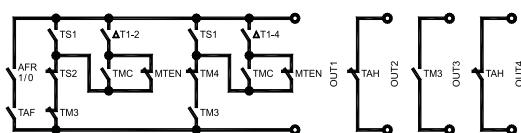


### SCH 07

Solar heating installation with 2 tanks, logic valve control, and integrative heat source.



#### Control logic

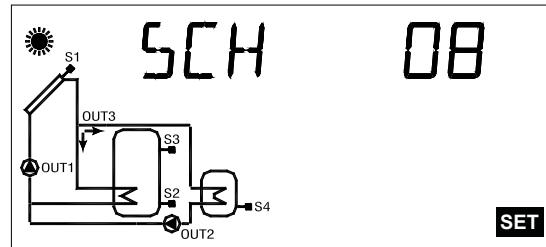


### SCH 08

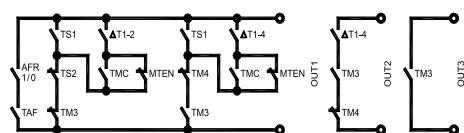
Solar heating installation with 2 tanks, valve logic control, no integrative heat source.

### SCH 08

Solar heating installation with 2 tanks, valve logic control, no integrative heat source.

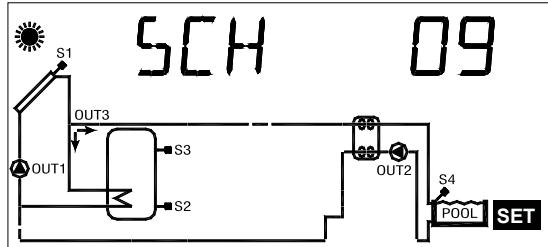


#### Control logic

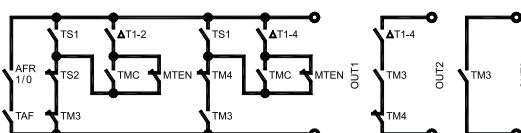


### SCH 09

Solar heating installation with 1 tank, valve logic control and heat exchanger for pool heating.



#### Control logic

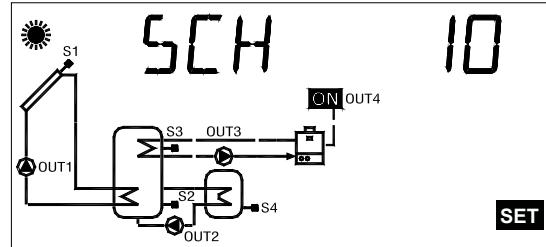


### SCH 10

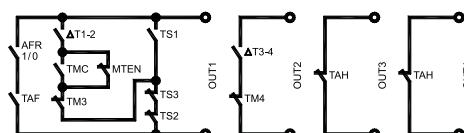
Solar heating installation with 2 tanks, sanitary regulation with thermal exchange and integrative heat source.

### SCH 10

Solar heating installation with 2 tanks, sanitary regulation with thermal exchange and integrative heat source.

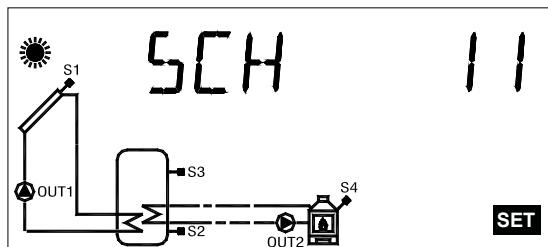


#### Control logic

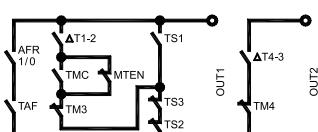


### SCH 11

Solar heating installation with 1 tank and additional heat source with solid fuel.

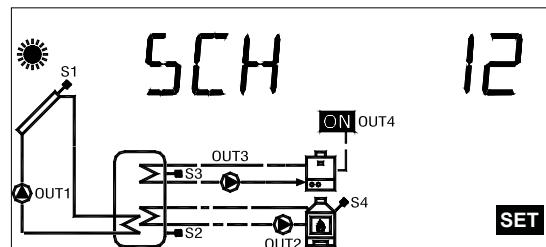


#### Control logic

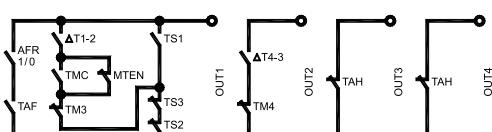


### SCH 12

Solar heating installation with 1 tank plus one integrative and one solid fuel heat sources.

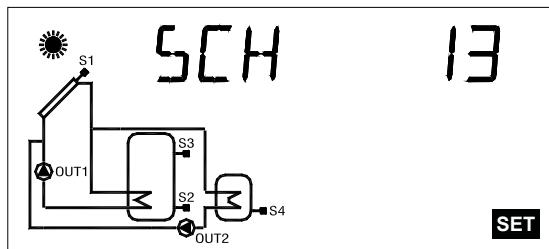


#### Control logic

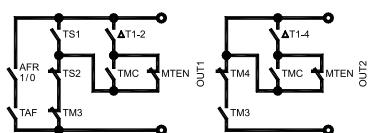


### SCH 13

Solar heating installation with 2 tanks, pump logic.

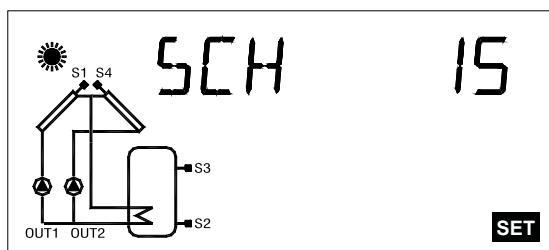


#### Control logic

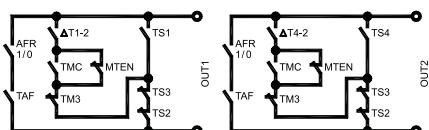


### SCH 15

Solar heating installation EAST / WEST, 1 tank and no integrative heat source.

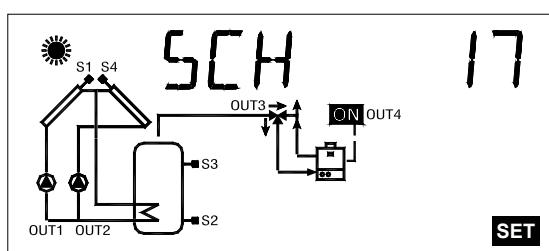


#### Control logic

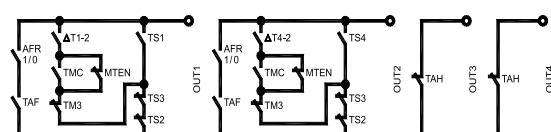


### SCH 17

Solar heating installation EAST / WEST, 1 tank, integrative heat source by means of valve logic.

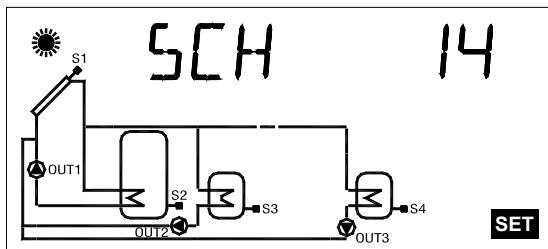


#### Control logic

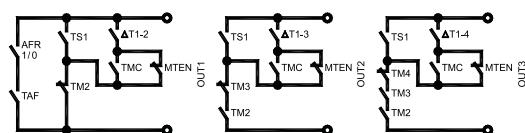


### SCH 14

Solar heating installation with 3 tanks, pump logic.

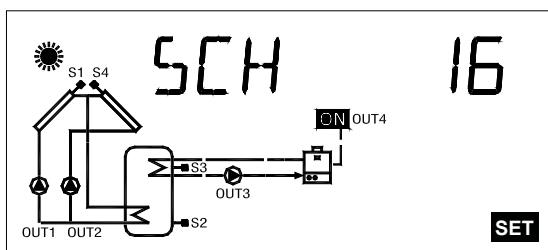


#### Control logic

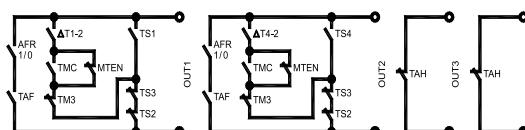


### SCH 16

Solar heating installation EAST / WEST, 1 tank and integrative heat source.

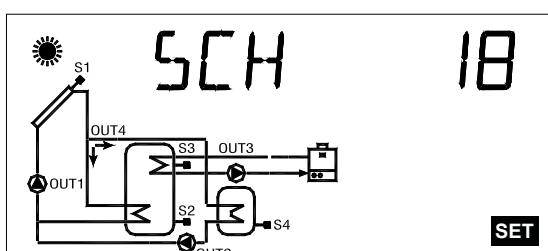


#### Control logic

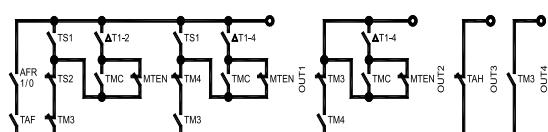


### SCH 18

Solar heating installation with 2 tanks, logic valve, integrative heat source, extra pump on the second boiler.

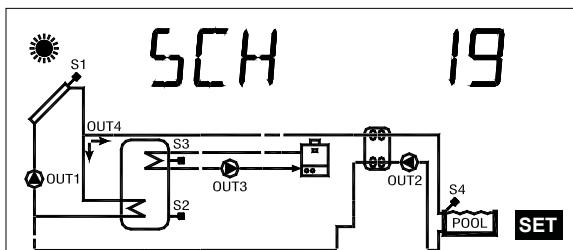


#### Control logic

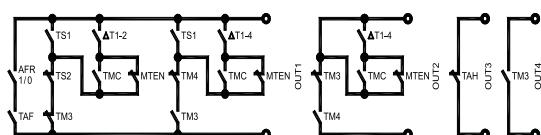


### SCH 19

Solar heating installation with 1 tank, logic valve, integrative heat source and heat exchanger for pool heating.

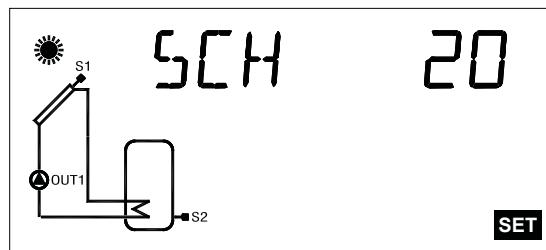


**Control logic**



### SCH 20

Solar heating system with 1 tank, 2 sensors only and supplemental heating excluded.



**Control logic**

