

## Differential thermostat with 3 probes and 3 relays

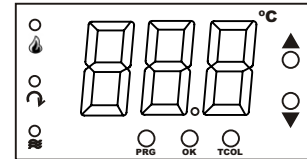
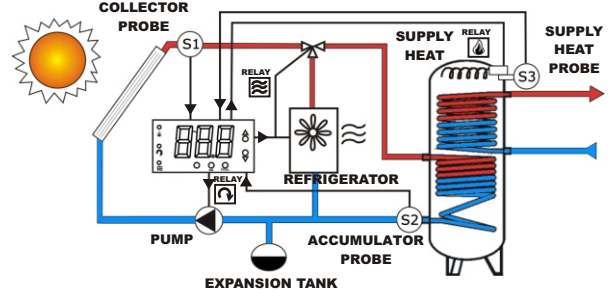
### USER MANUAL

The device is used to control solar installations. It has 3 temperature probes ( S1 solar collector, S2 tank accumulator and S3 supply heat) and 3 relays. The relay turns on / off following the temperature difference between S1 and S2 and manages the water pump of the collector-accumulator circuit.

The relay turns on when collector and/or accumulator probes (S1 and/or S2) exceed certain value (parameter ALA and/or ALC) and manages the cooling circuit.

The relay is the output of a simple thermostat following S3 probe, and it is used to supply heat when solar collector is not enough, or in order to re-use heat excess.

- The screen shows the water tank accumulator temperature (S2).
- To view the solar collector temperature (S1), press TCOL key.
- To view supply heat temperature (S3) press ▲ or ▼ .
- To programme parameters, press PRG key during "tEP" seconds.
- To manually turn ON relays:
  - Relay press TCOL key for 10 seconds.
  - Relay (simple thermostat), press ▲ or ▼ keys for 10 seconds.
  - Relay (Cooling circuit) press OK key for 10 seconds.
 The associated led will light.
- To turn OFF relays, press any key.



**SCREEN MESSAGES**

ErA: Accumulator probe error (S2).  
 ErC: Collector probe error (S1).  
 ErH: Thermostat probe error (S3).  
 ErP: Programing error. "don" must be greater than "doF".  
 E2P: Internal memory error.

Symbols : Shows on or off relays.

### INSTALLATION MANUAL

**ATTENTION:** before connecting the thermostat, make sure you have turned off the general electricity supply. The installer has the responsibility to provide the proper electrical protection devices. The probe wire mustn't be installed near other electrical wires.

#### PARAMETERS PROGRAMMING

To view or modify default values, press **PRG** key during "tEP" seconds. Release key. The first parameter name "CCo" appears. To view its value, press **OK** key. The value blinks. With the arrows keys ▲▼ the value can be changed. Press **OK** key to end value change. Press the up key ▲ to reach the next parameter name, and so on. Press the down key ▼ to reach the previous parameter name. Proceed in the same way with the other parameters. To exit programming, press **PRG** key or wait 40 seconds without pressing any key.

#### PARAMETERS

- CCo** Solar collector probe calibration (S1): S1 probe temperature displayed adjustment depending on location or wire length.
- CAC** Tank accumulator probe calibration (S2): S2 probe temperature displayed adjustment depending on location or wire length.
- CHt** Simple thermostat probe calibration (S3): S3 probe temperature displayed adjustment depending on location or wire length.
- don** Differential temperature turning ON the fluid pump(): if S1 plus "don" is greater than S2, the fluid pump relay turns ON.
- doF** Differential temperature turning OFF the fluid pump(): if S1 plus "doF" is lower than S2, the fluid pump relay turns OFF.
- ALA** Tank accumulator probe temperature (S2) alarm: if S2 temperature is higher than this value, the relays and turns ON.
- ALC** Collector probe temperature (S1) alarm: if S1 temperature is higher than this value, the relays and turns ON.
- Ant** Freezing protection: if S1 is lower than "Ant" temperature value, the relay will turn ON to move fluid to avoid freezing.

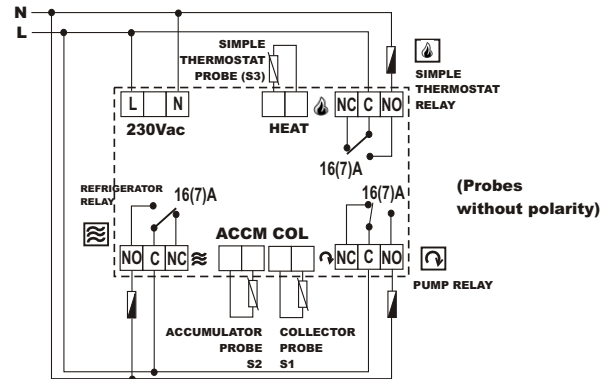
- ton** Simple thermostat temperature turn on():
- toF** Simple thermostat temperature turn off ():
  - Si **ton** < toF --> The thermostat is used in heating mode.
  - Si **ton** > toF --> The thermostat is used in cooling mode.
  - Si **ton** = toF --> The thermostat is used as a simple thermostat heating mode with 0,3 degree hysteresis.

Heating example:  
 If S3 probe temperature is lower than **ton**, turn on relay .  
 If S3 probe temperature is higher than **toF**, turn off relay .

**Pin** Programming password entry: Number to view or modify parameters. By default it is set to zero (disabled). If this value isn't 0, "Pin" is viewed on entry. Enter a number using the arrows keys ▲▼ and then press **OK** key.

**tEP** Programming time entry: Time to keep PRG key pressed to enter or modify parameters programming.

#### WIRING DIAGRAM



Parameter	Values	Default
CCo	-9.0 to 9.0 °C	0.0 °C
CAC	-9.0 to 9.0 °C	0.0 °C
CHt	-9.0 to 9.0 °C	0.0 °C
don	2 to 15 °C	8 °C
doF	1 to 11 °C	4 °C
ALA	15 to 90 °C	55 °C
ALC	100 to 140 °C	120 °C
Ant	-25 to 10 °C	5 °C
ton	0 to 95 °C	40 °C
toF	0 to 95 °C	45 °C
Pin	0 to 99	0
tEP	3 to 40 sec.	5 sec.

#### TECHNICAL FEATURES

Accuracy	+/- 1°C
Resolution	0.1°C (between -19.9 y 99.9°C)
Temperature probes	PTC 2000Ohm IP67
Wiring diameter	1,5mm <sup>2</sup>
Temperature display	-40 to 140
Max resistive load	16 A 250VAC
Max inductive load	7 A 250VAC
Working temperature	-5°C to 45°C
Storage temperature	-10°C to 50°C
Ingress protection	IP30
Power supply	230Vac +10% -15% 50/60hz

