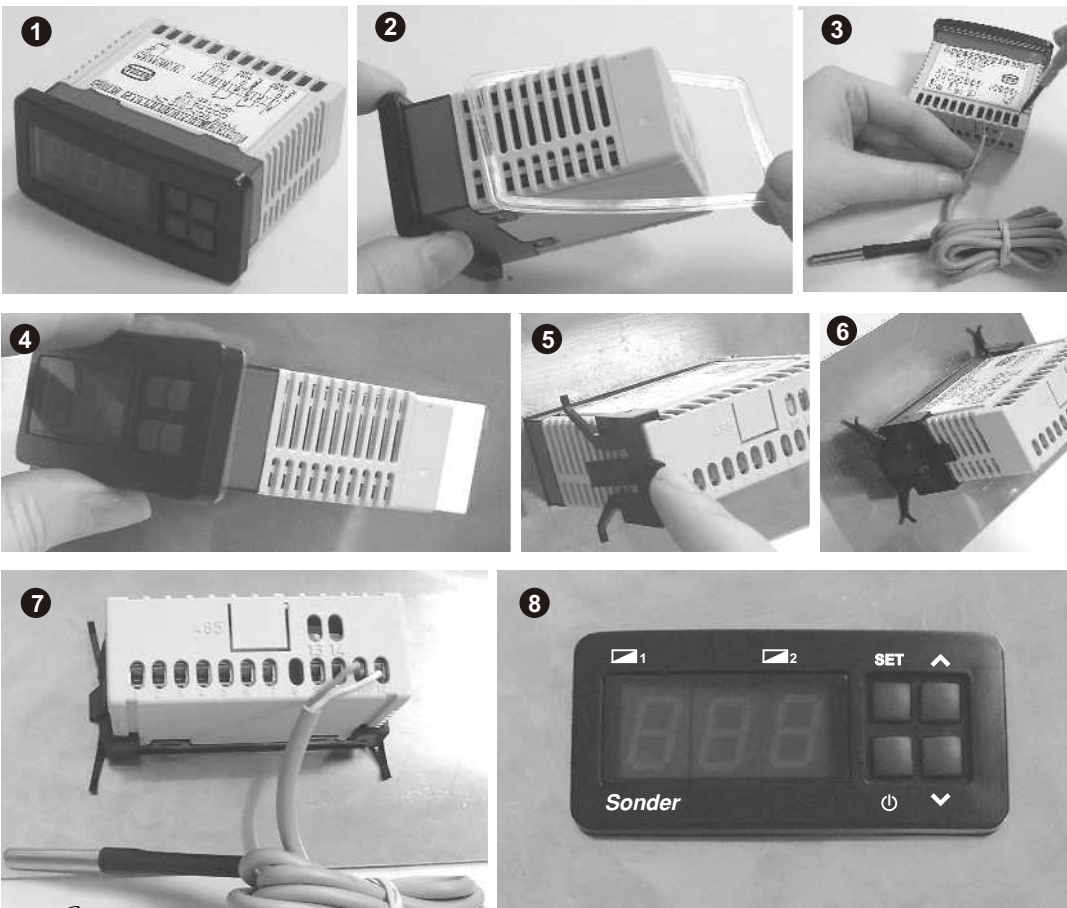


EC 70-312AL

Electronic Control

INSTALLATION AND USE INSTRUCTIONS



Guarantee conditions

This appliance has a two-year guarantee limited to replacement of defective parts.

We will not accept any responsibility for damage caused to the appliance by poor handling.

The guarantee does not include:

- Appliances with a damaged, effaced or altered series number.
- Appliances which have not been connected or used following the instructions that accompany it.
- Appliances which have been altered without the prior consent of the manufacturer.
- Appliances damaged by blows or liquid spills or gaseous emissions.

USER

First name: _____
Surname(s): _____
Address: _____
Town: _____
Postcode: _____
Tel. no.: _____
Purchase date: _____

INSTALLER

First name: _____
Surname(s): _____
Address: _____
Town: _____
Postcode: _____
Tel. no.: _____
Purchase date: _____

Installer or store stamp:

Return this slip to:

SONDER REGULACIÓN S.A.
Avda. La Llana 93.
P.I. "La Llana" 230.
08191 RUBÍ (Barcelona) SPAIN
FAX 93 588 49 94



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INSTALLATION AND USE INSTRUCTIONS



OPERATION

- 1.- When the appliance is switched on, the display will show the temperature detected by the sensor. Press SET, to view the temperature setpoint.
- 2.- To change the setpoint, hold down SET, and use the \wedge \vee keys to increase or decrease the desired temperature. Release SET to store it in memory.
- 3.- To turn off ks.01 press by 10 s ⏻ . To restart press by 1 s ⏻ .
- 4.- Press 10 sec. \vee to enter in defrost manual.

FACTORY SETTINGS

Nº	FUNCTION	VALUE
-	Temperature setpoint.....	-5,0°C
diF	Temperatura diferencial (hysteresis).....	3,0°C
LSE	Low setpoint.....	- 40°C
HSE	High setpoint.....	130°C
don	Relay on delay.....	0 min
doF	Minimum off time.....	1 min
C-H	Control type.....	rE
CAL	Sensor calibration reset.....	0°C
dit	Defrost timer.....	24H
dEt	Defrost stop time.....	0 min
LAL	Low alarm temperature.....	- 30°C
HAL	High alarm temperature.....	130°C
dSA	Alarm on delay.....	10 min
PA	Parameters access code.....	0 Deactivated

SCALE

-40 to 130°C
0,3 to 9°C
-40 to 139°C
-39 to 140°C
0 to 99 min
0 to 15 min
rE / cA / Fr
-9 to 9°C
1 to 24H
0 to 99 min
-40 to 140°C
-40 to 140°C
0 to 120 min
0 to 49

The factory settings are those considered to be the most common for normal use of installations. If they are right for your purposes, your thermostat is ready to control and regulate your installation.

If you should need any other settings due to the requirements of your installation, please read this manual carefully.

DESCRIPTION OF PARAMETERS

- The display shows the temperature detected by the sensor PTC2000.
- **Differential (diF):** The compressor stops when it reaches the setpoint and restarts at a temperature equal to the setpoint plus the differential.
 - **Low setpoint (LSE) and High setpoint (HSE):** The temperature limits within which the setpoint can be adjusted and set.
 - **Compressor on delay (don):** Delay time applied when the temperature reaches the setpoint + differential. It is recommended to leave it at zero and use "doF" instead.
 - **Minimum off time (doF):** Delay time applied when the compressor stops and which prevents the compressor restarting even if conditions for this are met. This delay is also applied after switching on the thermostat to protect the compressor in the event of a power outage.

- Control type (C-H):

"rE" type: The relay disconnects when the temperature falls to the setpoint and will connect when it rises to the setpoint plus differential. "cA" type: it disconnects when the setpoint is reached and will connect when the temperature falls to setpoint minus differential.

"Fr" type: = rE type + activated of 2nd relay for the forced defrost.

- **Sensor calibration (CAL):** This function enables you to change the displayed temperature.

- **Defrost timer (dit):** Interval between the start of two successive defrosts expressed in hours.

- **Time-out defrost finish (dEt):** After this time has elapsed (in minutes) defrost finishes. Zero indicates defrost disabled. "dEF" appears on the display during defrost.

- **Low alarm limit (LAL):** A temperature belows this setting will activate a light on the right of the display.

- **High alarm limit (HAL):** A temperature above this setting will activate a light on the right of the display.

- **Alarm on delay (dSA):** Delay time applied when an alarm situation occurs.

- **Parameters access code:** Factory setting zero (disabled). Enter parameter programming by pressing and holding down both arrows for 10 s. If the code is other than zero, enter parameters as follows:

A.- "PAs" is briefly displayed and then the message "- 0 -"; Use the up or down arrows to select the previously programmed parameters access code.

B.- Press SET: If the selected number is the correct one, "diF" appears. If the selected number is incorrect the thermostat will not allow access to programming and "--" appears.

PARAMETERS PROGRAMMING

1. Press \wedge and \vee at the same time for 10 seconds and "diF" will appear on the display. Release the keys.
2. Press SET and its current value will be displayed.
3. Holding down SET, press \wedge or \vee to change the desired value. Release SET to store it in memory. The designation of the parameter being programmed reappears.
4. Press \wedge to scroll forward to the next parameter. Repeat point 3.
5. Press \wedge to exit the parameters "- --" appears and then the current temperature detected by the sensor.

RELAYS DISPLAY

⏻ LOAD: A fixed light below the symbol indicates "connected" \Rightarrow (during the don/doF parameter time it flashes).

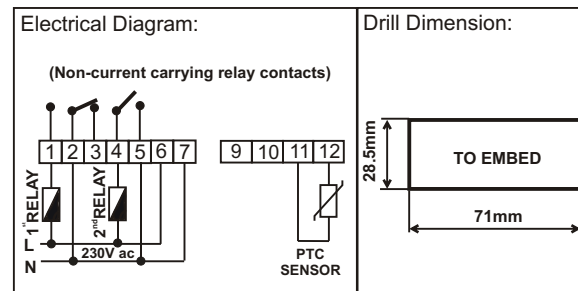
ERROR INDICATORS

"ErS" Sensor error: Sensor disconnected or its wiring cut off. "888" Memorization error in the parameters table.

RELAYS FUNCTION in case of anomaly depending on control type:

- C-H: rE COOLING: Connect main relay (compressor).
- C-H: cA HEATING: Disconnect main relay (heater).

TECHNICAL SPECIFICATIONS



Display:.....3 Digit (Red).
Input:.....1 PTC 2000 Ohm. IP67.
Control scale:.....from -40 to 130°C.
Resolution:.....0,1°C.
Power supply:.....230 Vac +10%, -15%. 50/60Hz.
Optional:.....12, 24 V ac/dc y 110 Vac.
Breaking power (contacts):.....8(3)A 250Vac 1/4Hp.
Max. Connected wire section:.....1,5mm².
External box protection grade:.....IP55.
Working temperature:.....-5°C to 45°C.
Storage temperature:.....de -20 to 60°C.
Action type:.....(1.B action).

VERY IMPORTANT !:

It is the installer's responsibility to fit electrical protection suitable for the installation (STANDARDIZED). Reserved the right of modify without prior notice.



Sonder Regulación, S.A.; Avda\ La Llana 93. Apto.: 230; 08191 RUBÍ (Barcelona) Spain
e-mail: info@sonder-regulacion.com; web:www.sonder-regulacion.com



Cod: 5075 ING:10/04