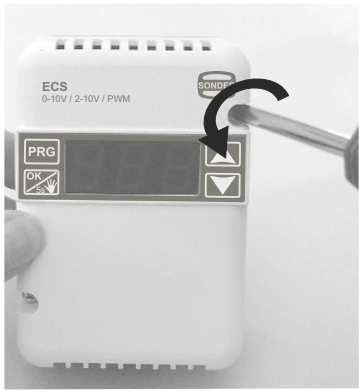
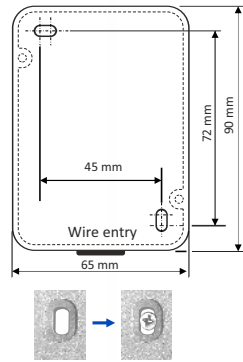


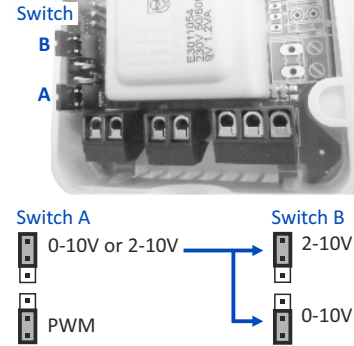
**Installation**



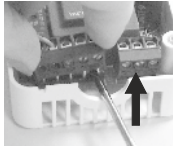
Measures for wall installation



**Set Analog output**



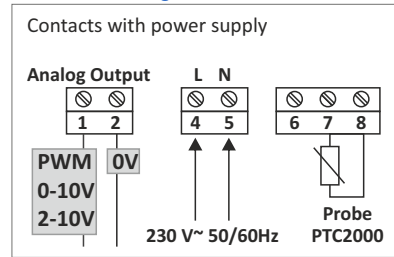
**PLUG-IN Connector**



**ASSEMBLY NOTE**

Before making any electrical connections, ensure that the control is disconnected from the power supply.  
Any manipulation of the control is to be performed only by qualified personnel.

**Electrical Drawing**



**Guarantee Conditions**

This appliance has a three-years guarantee limited to replacement of defective parts. Transports not included.

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 of liquid spills or gaseous emissions.

For the rest of general conditions visit our web.

**VERY IMPORTANT:**

Before opening the box, to access the connection, make sure the voltage switch.

This controller is not a safety device, or can be used as such, it is the responsibility incorporate adequate protection to every type of installation (**homologated**) installer.

The probe cable must be as far away as possible from other electrical conductors. If need lengthen, it is to be done by welding and shrink to keep reading value and isolate from moisture.

Independent control device mounting, and connection via fixed pipeline.

Reserved the right of modify without prior notice.

**Sonder Regulación, S.A.**

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Cód: 8060V0 - ING - ABR20

**Operation**

- When the device is switched on, the display shows "--" "OR" "--" (indicates model) & the temperature detected by the sensor. Press **▲** or **▼** and the setpoint temperature value appears blinking.
- To change the setpoint press **▲▼** while blinking, to increase or decrease the desired temperature. The temperature is memorized after 3 seconds of not playing the keys.

**Factory Settings**

Function ...	Description	Adjusted to	Scale
- ...	Temperature setpoint	50.0°C	-40 to 140°C
HSE...	High setpoint	99°C	-40 to 140°C
LSE...	Low setpoint	-40°C	-40 to 140°C
inr...	Inverted Analog Output signal	OFF	On / OFF
MSr...	Minimum Speed Running	15%	0 to 50%
C-H...	Control type	CEL	cA (☹) / rE (☼)
dEG...	Temperature units	CEL	CEL / FAH
CAL...	Sensor calibration	0°C	-9°C to +9°C
dit...	Defrost timer	24 Hours	1 a 168H
dEt...	Defrost stop time	0 minutes	0 a 99 min
tPP...	Time to access to Prog. Parameters	5 seconds	3 a 40 Sec.
PAS...	Parameter access code	0 Deactivated	0 a 99
rtF...	Analog Output operation for ALP/ES	50%	0% / 100%
rPi...	Degree of sensitivity for PID response	2	1 / 2

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 please read this manual carefully.

- Manual DEFROST: Press **OK** for 10 seconds. The "dEt" duration cycles starts during wich "dEF" is shown on the display.
- Automatic DEFROST: performed every number of hours indicated in the "dit" parameter, lasting the time set in the "dEt" parameter.
- TO CANCEL ALL TYPES OF DEFROST, program the "dEt" to 0.

**Description of Parameters**

- The display shows the temperature detected by the sensor.
- Low setpoint (LSE) and High setpoint (HSE):** The temperature limits within which the setpoint can be adjusted and set.
- Inverted (inr):** Inverts the signal value of the analog output.
- Minimum speed running (MSr):** Initial speed that pump need's to run. It is calculated based on the characteristics of each pump. Example: Pump speed range 800 to 4800 rpm -> MSr = 800 x 100 / 4800 = 16%
- Control type (C-H):**
  - "cA" (☹) type: It will heat until the setpoint is reached and maintain it proportionally.
  - "rE" (☼) type: It will refrigerate until the setpoint is reached and maintain it proportionally.
- Temperature units (dEG):** Defines in which units it shows the temperature, degrees Celsius (CEL) or degrees Fahrenheit (FAH).
- 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.
- Time of access to programming of parameters (tPP):** it is the time that should be pressing the key **PRG.** to enter in the programming of parameters, either to modify them or to visualize their values. (Time expressed in seconds)

- **Parameters access code:** Factory set to zero (disabled). Enter parameter programming by holding down **PRG** for 5 seconds. If this code is not zero, to enter parameters proceed as follows:

- PAS** appears for an instant and then the message "0"; with arrows, up or down, select the access code previously programmed.
- Press **OK.** If the selected number is correct, appears **HSE.** If the number selected it is incorrect control does not allow access to programming, appearing "--".

- **Analog Output operation in the case of ALP / ES alarms (rtF):** When it detects ALP/ES it generates an analog signal at the output with the % set in the parameter.

- **Degree of sensitivity for PID response (rPi):** Sets the degree of reactivity for PID algorithm: 1 - little reactive, 2 - very reactive.

**Parameters Programming**

- Press **PRG** during the time settled down in the parameter tPP (of factory 5 s.) & "HSE" appear in the screen. Release the key.
- pressing **OK** their current value will appear blinking.
- While value is blinking, press **▲** or **▼** to change the desired value. Press **OK** to store it in memory. The designation of the parameter being programmed reappears.
- Press **▲** to scroll forward to the next parameter. Repeat No. 3
- Press **PRG** to exit the parameters "--" appears and then the current temperature detected by the sensor. After 1 minute without pressing any key, the thermostat leaves programming of parameters.

**Relay Display**

- Fixed, indicates that the Analog Output is running.
- Flashing, indicates that the Analog Output is waiting for the time doF parameter to activate it.

**ERROR Indicators**

- "ES" Probe Error: Probe is disconnected or its wires are cut.
- "ALP" Required temperature beyond limits (HSE & LSE limits).
- "AL" The room temperature is beyond the limits marked by the HSE & LSE parameters. AL & temperature detected by probe.

**Reset settings to factory defaults**

- Disconnect the control power and reconnect, wait until see on the screen the temperature reading.
- Press **OK** until see on the display "--" (approx. 40 seconds).
- The settings return to the factory settings if you has the password disabled ("0-").

**Technical Specifications**

Power Supply	230Vac +10%, -15% 50/60Hz.
Probes (without polarity)	PTC 2000 IP65 -40 to +140°C.
Resolution	0,1°C.
Maximum cable section to connect	1,5mm <sup>2</sup> .
Analog Output	0-10V / 2-10V / PWM.
Environment	Tmin. 0°C, Tmax. 45°C, %H.R. 20 ... 85%.
Storage temperature	máximo 50°C.
Protection degree	IP20.
Pollution degree	2.
Action type According EN 60730	1.B.