1 - Installation

Material included
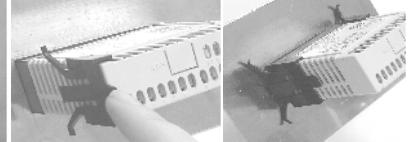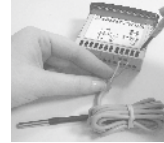
Control
Probe

Sealing joint
Anchors to Fix panel
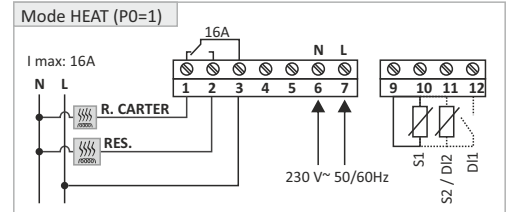Manual
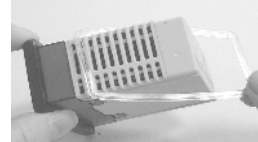
Fit joint
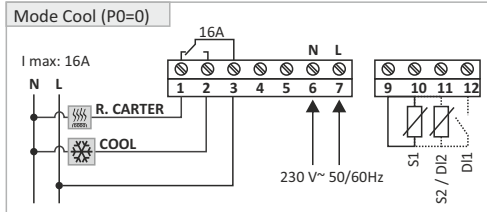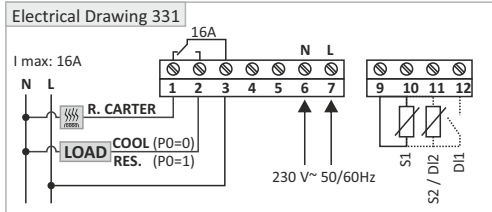Locate on the panel
Fix on the panel

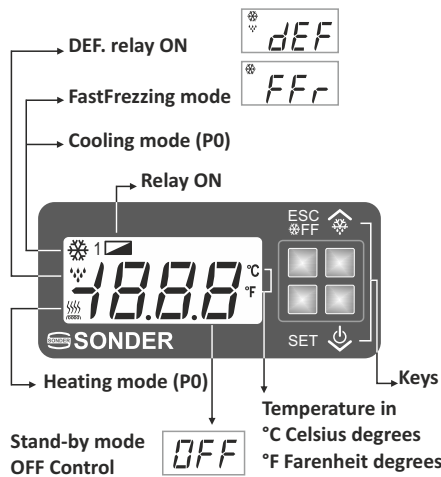Make connections according to label

Control manipulation should be carried out by qualified technicians and probe cables should **NEVER** be installed together with power cables, control or power.

Connect to the power supply

Electrical Drawing 331
I max: 16A
16A
N L
N L
R. CARTER
LOAD COOL (P0=0)
RES. (P0=1)
1 2 3 4 5 6 7
9 10 11 12
230 V~ 50/60Hz
S1
S2 / DI2
DI1

Mode Cool (P0=0)
I max: 16A
16A
N L
N L
R. CARTER
COOL
1 2 3 4 5 6 7
9 10 11 12
230 V~ 50/60Hz
S1
S2 / DI2
DI1

Mode HEAT (P0=1)
I max: 16A
16A
N L
N L
R. CARTER
RES.
1 2 3 4 5 6 7
9 10 11 12
230 V~ 50/60Hz
S1
S2 / DI2
DI1

2 - Operation

DEF. relay ON — `dEF`

FastFrezzing mode — `FFr`

Cooling mode (P0)

Relay ON

Keys

Heating mode (P0)

Stand-by mode OFF Control — `OFF`

Temperature in °C Celsius degrees °F Farenheit degrees

ESC / ESC⊕FF key
Press for 5 seconds to start/stop Fast Freezing mode (rapid cooling).
In the programming menu, exit without saving parameter, return to previous level or exit programming.

SET key
Press for 5 seconds to modify the set point (SP).
Press for 10 seconds to go to the programming menu. In the programming menu, go to the level displayed or accept the new value while setting a parameter.
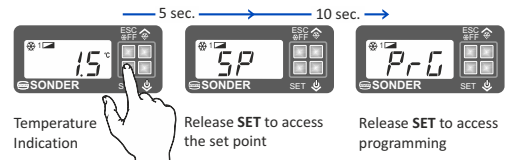
UP ⊛ key
Pressing for 5 seconds starts/stops defrosting.
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.
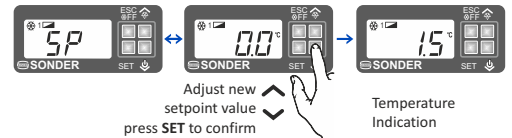
Down ⊕ key
Pressing for 5 seconds activates Standby mode, pressing for 2seconds returns the equipment to normal mode. In Standby mode,the equipment performs no actions and only the `OFF` indicator is displayed on the screen.
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.
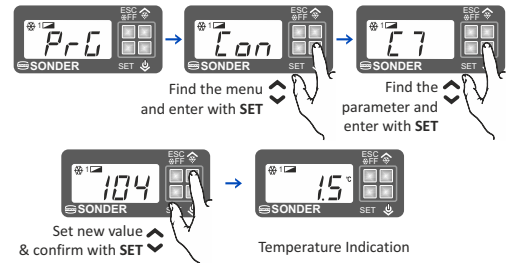
Acces to Setpoint and Programming
5 sec. → 10 sec. →

`1.5` — Temperature Indication
`SP` — Release **SET** to access the set point
`PrG` — Release **SET** to access programming

Change Setpoint
`SP` ↔ `0.0` → `1.5`
Adjust new setpoint value press **SET** to confirm
Temperature Indication

Programming Menu (parameters)
`PrG` → `Con` → `C7`
Find the menu and enter with **SET**
Find the parameter and enter with **SET**

`104` → `1.5`
Set new value & confirm with **SET**
Temperature Indication

3 - Screen messages

`PAS` — Access code (Password) request.

`dEF` — Indicates a defrost is underway. (Only if parameter d2=2)

`ES1` — Probe 1 faulty (open circuit, crossover, or temperature value out of range depending on the type of probe). **Activates the alarm relay.**

`ES2` — Probe 2 faulty (open circuit, crossover, or temperature value out of range depending on the type of probe). **Activates the alarm relay.**

`AH` — Flashing: maximum temperature alarm on probe 1 (A1). **Activates the alarm relay.**

`AL` — IFlashing: minimum temperature alarm on probe 1 (A2). **Activates the alarm relay.**

`AE` — External alarm activated (only if parameter P10 or P11=2). **Activates the alarm relay.**

`AES` — Severe external alarm activated (only if parameter P10 or P11=3). **Activates the alarm relay.**

`Adt` — Defrost time-out alarm (only if parameter A8=1).

`PAb` — Door open alarm (Only if P10 or P11=1 and as per time at A12).

4 - Very Important

Before opening the box, to access the connections, make sure disconnect the power.

This control is not a safety device, and can not be used as such, it is the installer's responsibility incorporate adequate protection for each type of facility **(Homologated).**

The power supply circuit should be provided with a switch for disconnection of minimum 2A, 230 V, located near the appliance. The cables must be enter through the back and should be H05VV-F or H05V-K. The cable section will depend on local regulations, but should never be less than 1 mm. The cables for connecting the relay contacts must have a section of 2.5 mm.

The equipment must be installed in a place protected from vibrations, water and corrosive gases, where the ambient temperature does not surpass the value in the technical data.

The probe cable must be as far away as possible from other electrical conductors. Its recommended by actual normative that maximum length should not exceed 3 meters, and if it is necessary lengthen has to be done with welding and shrink splice, to avoid reading errors.

5 - Start-up

On power-up, the equipment will start up in Wizard mode (P3 / 1 flashing), press ⌄ or ⌃ to select the most appropriate application and press **SET**.

1: Multipurpose
2: Frozen
3: Fruits and vegetables
4: Fresh fish
5: Soft Drinks
6: Bottle racks
7: AC
8: Heat / Incubators

DEFAULT SETTINGS BY APPLICATION (InI)

PARAMETERS	1	2	3	4	5	6	7	8
SP	2	-18	10	0	3	12	21	37
d0	4	4	4	4	24	24	96	-
d1	20	20	20	20	20	20	0	-
F0	8	0	30	8	8	30	99	-
F3	1	0	1	1	1	1	1	-
P0	0	0	0	0	0	0	0	1

The wizard will configure the parameters of the equipment for the chosen application (table "Default settings by application"). The parameters have been defined for the most common applications, check that these parameters are adjusted to your installation. Otherwise, enter programming to modify.

6 - Table of parameters and Menus

Within the program you will find five menus, where you can adjust each parameter to the needs of your installation. **SET** column shows factory-set default parameters. Those marked with * are variable parameters depending on the application chosen in the wizard or the P3 parameter (see table "Default parameters by application"). If not indicated otherwise, the temperature values are in ºC. (Equivalent velues in °F)

COn Control

		SET	Escale
SP	Temperature Adjustment (SetPoint) (limits depending on probe type)	* -	NTC: -50...+99°C PTC: -50...+150°C
C0	Calibrating probe 1 (Offset)	0.0	-20.0...+20.0°C
C1	Probe 1 differential (Histeresis)	2.0	0.1...20.0K
C2	Upper blocking of the set point (cannot be set above this value)	99 -	NTC: C3...+99°C PTC: C3...+150°C
C3	Lower blocking of the set point (cannot be set below this value)	-50	-50...C2
C4	Type of delay for protection of the compressor: **0** = OFF/ON (since the last disconnection); **1** = ON (since the last start-up/reset); **2** = OFF-ON/ON-OFF (since the last shut-down /start-up)	0	0 / 1 / 2
C5	Protection delay time (value of the option selected in parameter C4)	0	0...120 minutes
C6	Status of COOL relay with probe fault **0** = OFF; **1** = ON; **2** = Average based on last 24 hours prior to probe fault; **3** = ON-OFF as prog. C7 and C8	0	0 / 1 / 2 / 3
C7	Time relay ON in case of faulty probe (If C7=0 and C≠80, the relay will always be OFF deenergised)	10	0...120 minutes
C8	Time relay OFF in case of fault of probe 1 (If C8=0 and C7≠0, the relay will always be ON energised)	5	0...120 minutes
C9	Maximum duration of fast freezing mode. (0=off)	24	0...48 hours
C10	Change set point (SP) in fast freezing mode, when it reaches this point (SP + C10) returns to normal. (SP+C10≥C3) (0=OFF)	-50	0°C...C3-SP
C11	Length of inactivity at digital input to activate ECO mode (Only if P10 or P11=1 and P0=0) (0=OFF)	2	0...24 hours
C12	Change set point (SP) in ECO mode (SP+C12 ≤C2) (0=off)	2	0...C2-SP
ESC	Exit to Main menu		

dEF DEFROST Control (if P0=0 Direct, Cold)

		SET	Escale
d0	Defrost frequency (Time between two starts)	*	0...96 hours
d1	Maximum defrost duration (0=defrost deactivated)	*	0...255 minutes
d2	Type of message during defrost: **0** = Current temperature **1** = Temperature at start of defrost **2** = Display dEF message	2	0 / 1 / 2
d3	Maximum duration of message (time added at the end of the defrost)	5	0...255 minutes
d4	Defrost end temperature (probe 2) (If P4 ≠ 1)	8	-50...+99,9°C
d5	Defrost on equipment start-up **0** = NO, First defrost as per d0 **1** = YES, First defrost as per d6	0	0 / 1
d6	Defrost start delay on equipment start-up	0	0...255 minutes
d8	Calculated time between defrost periods: **0** = Total actual time **1** = Sum of times the compressor is on	0	0 / 1
d9	Drip time at end of defrost (compressor and fans off) (if P4 ≠ 1)	1	0...255 minutes
ESC	Exit to Main menu		

7 - Technical specifications

Power supply:..230V~ +10, -15% 50/60Hz 3.5VA
Maximum Voltage SELV circuits:...20V
Inputs (According to P4):..........................**2 inputs NTC/PTC + digital input PTC**
Relay:...**16A**
Number of relay operations:........................... EN60730-1: **100.000 operations**
Types of probe:.. NTC **10K** / PTC **2000**
Measurement range NTC:................................. **-50.0°C to +99.9°C (-58.0°F to +211°F)**
PTC:................................... **-50.0°C to +150°C (-58.0°F to +302°F)**
Resolution:...**0.1°C**
Working environment:...**-10 a +50°C, humedad <90%**
Ambient storage humidity:..**-30 to +70°C, Humidity <90%**
Class of protection - front panel:..**IP65**
Fixation: ....**Panel-mounted with anchors**
Panel cutout dimensions:..**70 x 28 mm**
Front panel dimensions:..**77.2 x 35.2 mm**
Depth:...**62 mm**
Connections:..**Screw terminals for cables up to 2.5 mm²**
Rating of control device: ....built-in, automatic operation feature Type 1.B, for use in clean environments, Class A software and continuous operation. Pollution classification 2 s/ UNE-EN 60730-1. Double insulation between supply, secondary circuit and relay output.

AL ALARMS control

		SET	Escale
A0	Configuration of temperature alarms **0** = Relative to SP; **1** = Absolute	0	0 / 1
A1	Maximum alarm probe 1 (must be greater than SP)	99.9	NTC: A2...99.9°C PTC: A2...150.0°C
A2	Minimum alarm probe 1 (must be less than SP)	-50	-50...A1
A3	Temperature alarm delay during start-up	0	0...120 minutes
A4	Temperature alarm delay after completion of a defrost	0	0...99 minutes
A5	Temperature alarm delay after reaching the value of A1 or A2	30	0...99 minutes
A6	External alarm / Severe external alarm delay when receiving digital input signal (P10 or P11=2 or 3)	0	0...120 minutes
A7	Desactivation delay of the external alarm/Severe external alarm when the signal of the digital input disappears (P10 or P11=2 or 3)	0	0...120 minutes
A8	Show warning if defrost is terminated by time-out **0** = No, **1** = Yes	0	0 / 1
A10	Temperature Alarm Differential (A1 and A2)	1.0	0.1...20.0°C
A12	Door open alarm delay (if P10 or P11=1)	2	0...120 minutes
ESC	Exit to Main menu		

Pr General status

		SET	Escale
P0	Type of operation 0=Direct, Cold;1=Inverted, Heat	*	0 / 1
P1	Delay of all functions on receiving electrical power	0	0...255 minutes
P2	Access code (password) functions **0**=Inactive; **1**=Block access to parameters; **2**=Keyboard lock	2	0 / 1 / 2
P3	Selecting the type of configuration according to application	*	0...8

	1 Multi purpose	2 Frozen	3 Fruits and vegetables	4 Fresh fish	5 Soft Drinks	6 Bottle Racks	7 AC	8 Heat/ Incubators
SP	2	-18	10	0	3	12	21	37
d0	4	4	4	4	24	24	96	-
d1	20	20	20	20	20	20	0	-
F0	8	0	30	8	8	30	99	-
F3	1	0	1	1	1	1	1	-
P0	0	0	0	0	0	0	0	1

		SET	Escale
P4	Selection of type of input **1** = 1 probe + 2 digital inputs, **2** = 2 probes +1 digital input	1	1 / 2
P7	Temperature display mode **0** = Whole in ºC **1** = One decimal in ºC **2** = Whole in ºF **3** = One decimal in ºF	0	0 / 1 / 2 /3
P8	Probe to be displayed (as per parameter P4) **0** = visualization of all the probes in sequence; **1** = Probe 1; **2** = Probe 2	1	1 / 2
P9	Selection of probe type **0** = NTC; **1** = PTC	0	0 / 1
P10	Configuring digital input 1 **0**=Off **1**=Door contact; **2**=External alarm **3**=Severe external alarm; **4**=Slave defrost **5**=Act. ECO mode by pushbutton; **6**=Act. Fast Freezing **7**= Not used; **8**=Remote defrost; **9**=Act. ECO mode by switch	0	0...9
P11	Configuring digital input 2 **0**= Off; **1**=Door contact; **2**=External alarm; **3**=Severe external alarm; **4**=Slave defrost **5**=Act. ECO mode by pushbutton; **6**=Act. Fast Freezing **7**= Not used; **8**=Remote defrost; **9**=Act. ECO mode by switch	0	0...9
P12	Digital input polarity 1 **0**=Energised on closed contact; **1**=Energised on open contact	0	0 / 1
P13	Digital input polarity 2 **0**=Energised on closed contact; **1**=Energised on open contact	0	0 / 1
ESC	Exit to Main menu		

InFO Access and information control

		SET	Escale
PAS	Access code (Password)	-	0...99
PU	Program version (Information)		
Pr	Program revision (Information)		
r5	Reset parameters and settings, return to SET		0 (cancel)/ 1 (reset)
ESC	Exit to Main menu		

8 - Guarantee Conditions

This appliance has a three-years guarantee limited to replacement of defective parts.Transport 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 or liquid spills or gaseous emissions.
Reserved the right of modify without prior notice.

Sonder Regulación, S.A.