



EVFTFT818

Controller in split execution for temperature-controlled blast chillers with capacitive touch-key user interface, which can be integrated into the unit



ENGLISH

INSTALLER MANUAL ver. 2.1

CODE 144FTFT818E214

Important

Important

Read this document thoroughly before installation and before use of the device and follow all recommendations; keep this document with the device for future consultation.

The following symbols support reading of the document:

💡 indicates a suggestion

⚠ indicates a warning.

The device must be disposed of in compliance with local Standards regarding the collection of electric and electronic equipment.



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1 INTRODUCTION

1.1 Introduction

EVFTFT818 is a digital controller studied to manage temperature-controlled blast chillers, which can be mechanically and aesthetically integrated into the unit.

The controller is fitted with:

- clock
- signal buzzer and alarm
- 6 analogue inputs (cabinet probe, "multipoint" needle probe with up to three sensors, evaporator probe and condenser probe) for PTC/NTC probes
- 4 digital inputs (door micro switch, high pressure, low pressure and compressor circuit breaker protection)
- 1 PWM analogue output for management of the evaporator fan
- 8 digital outputs (electromechanical relays), 1 x 16 A res. @ 250 VAC for compressor management, 1 x 16 A res. @ 250 VAC for management of needle probe heating, 6 x 8 A res. @ 250 VAC for management of defrosting, evaporator fan, condenser fan, door heating elements, of a seventh utility that can be set for the cabinet light or UV light and an eighth utility that can be configured for pump down valve or alarm output.
- RS-48 serial port with MODBUS communication protocol
- USB port (according to the model).

The device can manage both temperature-controlled and timed and hard and soft blast chilling and storage cycles and deep freezing and storage cycles, with intensity management via the use of a PWM analogue output and phase cut speed regulator for EVDFAN1 single phase fans.

Every operating cycle can be preceded by pre-cooling. The temperature-controlled cycles are also preceded by a test for checking the correct connection of the needle probe, with "multipoint" probes management (up to three sensors).

The device is available in "split" execution (user interface + control module).

The user interface is behind a Plexiglas sheet and is made up from a 320 x 240 pixel colour TFT graphic display (3.5") and 11 capacitive touch-keys; installation is envisioned on rear of panel with studs.

The control module is without cover and installation is envisioned on flat surface with spacers.

The "programs" function can be used to memorise some settings in a program and start an operating cycle with the settings it has memorised.

Via the "HACCP" function, up to 9 events can be memorised for each of the 3 HACCP alarms (temperature-controlled blast chilling or deep freezing not concluded within the maximum duration alarm, maximum temperature during storage alarm and power cut during storage alarm); the critical value, date and time at which the alarm occurred and the duration can be memorised for each HACCP alarm.

It is possible to connect the controller to the Parameters Manager set-up software system, to the monitoring and surveillance system of the RICS plants, to the data recording device and to download the recorded data (via USB) EVUSBREC01.

Some of them have an USB communication port; through this port it is possible to make the upload and the download of the configuration parameters and of the programs and make the download of the information relative to the HACCP alarms.

The following are indicated among the many other features:

- IP65 protection rating of the user interface
- memorisation of the defrosting interval
- management of temperature alarms
- compressor operating hours count
- "keyboard lock" function.

1.2 Summary table of the main features and the models available

The following table illustrates the main features of the device and the models available.

"/" indicates the feature can be set via a configuration parameter.

User interface (without cover)	EVFTFT818	
200.0 x 135.0 mm (7.874 x 13.498 cm; L x H)	•	•
320 x 240 pixel (3.5 inch) colour TFT graphics display	•	•
number of keys (capacitive touch-key type)	11	11
Control module (without cover)	EVFTFT818	
166.0 x 116.0 mm (6.535 x 11.598 cm; L x H)	•	•
Connections	EVFTFT818	
removable screw terminal board	•	•
Power supply	EVFTFT818	
230 VAC	•	•
Analogue inputs	EVFTFT818	
cabinet probe	PTC/NTC	PTC/NTC
needle probe 1	PTC/NTC	PTC/NTC
needle probe 2	PTC/NTC	PTC/NTC
needle probe 3	PTC/NTC	PTC/NTC
evaporator probe	PTC/NTC	PTC/NTC
condenser probe	PTC/NTC	PTC/NTC
Digital inputs (for NO/NC contact)	EVFTFT818	
door micro switch	•	•
high pressure	•	•
low pressure	•	•

compressor circuit breaker protection	•	•
Analogue outputs (PWM)	EVFTFT818	
evaporator fan	(1)	(1)
Digital outputs (electromechanical relays; A res. @ 250 VAC)	EVFTFT818	
compressor	16 A	16 A
defrosting	8 A	8 A
evaporator fan	(1)	(1)
condenser fan	8 A	8 A
door heating elements	8 A	8 A
needle probe heating	16 A	16 A
cabinet light/UV light	8 A	8 A
pump down valve/alarm	8 A	8 A
Communication port	EVFTFT818	
RS-485 serial port with MODBUS communication protocol	•	•
USB serial port		•
Other features	EVFTFT818	
IP65 protection rating of the user interface	IP65	IP65
clock	•	•
signal buzzer and alarm	•	•
management of blast chilling and storage/deep freezing and storage cycles	•	•
management of temperature/time controlled operation cycles	•	•
hard/soft operating cycles management	•	•
management of the test regarding correct insertion of the needle probe	•	•

memorisation of the defrosting interval	•	•
management of temperature alarms	•	•
compressor operating hours count	•	•
"programs" function	•	•
"HACCP" function	•	•
"keyboard lock" function	•	•
configuration parameters access password	•	•
restoring the factory settings	•	•
Codes	EVFTFT818	
codes	EVFTFT818P7	EVFTFT818P7U

Notes:

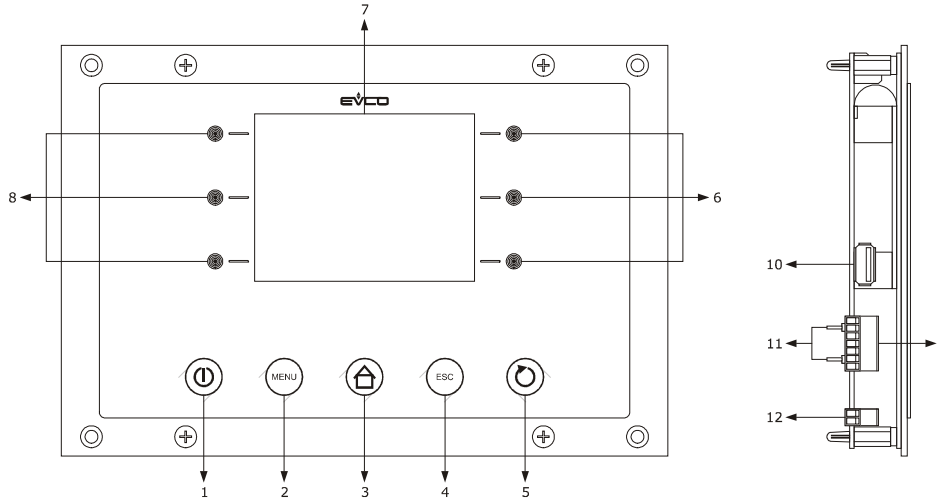
(1) The evaporator fan control signal can be analogue or digital.

For further information, see chapter 15 "TECHNICAL DATA"; for other models contact the EVCO sales network.

2 DESCRIPTION

2.1 Description of the user interface

The following drawing illustrates the aspect of the EVFTFT818 user interface.



The following table illustrates the meaning of EVFTFT818 user interface parts.

Part	Meaning
1	on/off key, herein called also "ON/STAND-BY key"
2	options key, hereon call "MENU key"
3	pre-selection key, hereon call "HOME key"
4	annul key, hereon call "ESCAPE key"
5	cycle start/cycle cut-off key, hereon called "START/STOP key"
6	interactive keys
7	display
8	interactive keys
9	RS-485 serial port with MODBUS communication protocol and communication port with control module (signal and power supply)
10	USB serial port (only available in the model EVFTFT818P7U)
11	jumper for the insertion of the terminating resistor of the user interface-control module communication port and of the RS-485 serial port

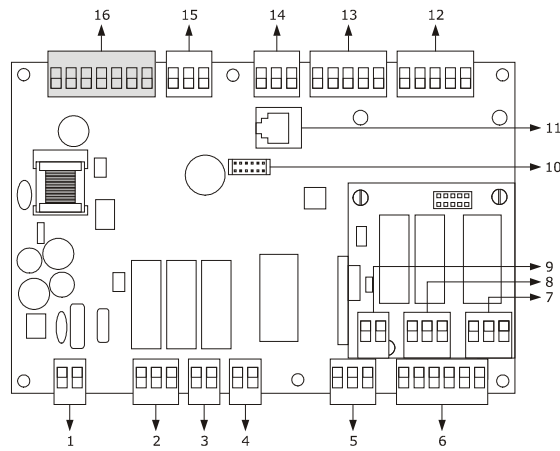
12

grounding

For further information, see the next chapters.

2.2 Description of the control module

The following drawing illustrates the aspect of the EVFTFT818 control module.



The following table illustrates the meaning of EVFTFT818 control module parts.

Part	Meaning
1	power supply
2	digital outputs K3 and K4
3	digital output K2
4	digital output K1
5	digital output K5
6	digital inputs
7	digital output K6
8	digital outputs K7 and K8
9	reserved
10	reserved
11	reserved
12	analog inputs (cabinet probe, evaporator probe and condenser probe)
13	analog inputs (needle probe 1, needle probe 2 and needle probe 3)
14	reserved

15	PWM analogue output
16	communication port with the user interface (signal and power supply)

For further information, see the next chapters.

3.3 User interface installation

Back panel via studs.

3.4 Control module installation

On flat surface, with spacers.

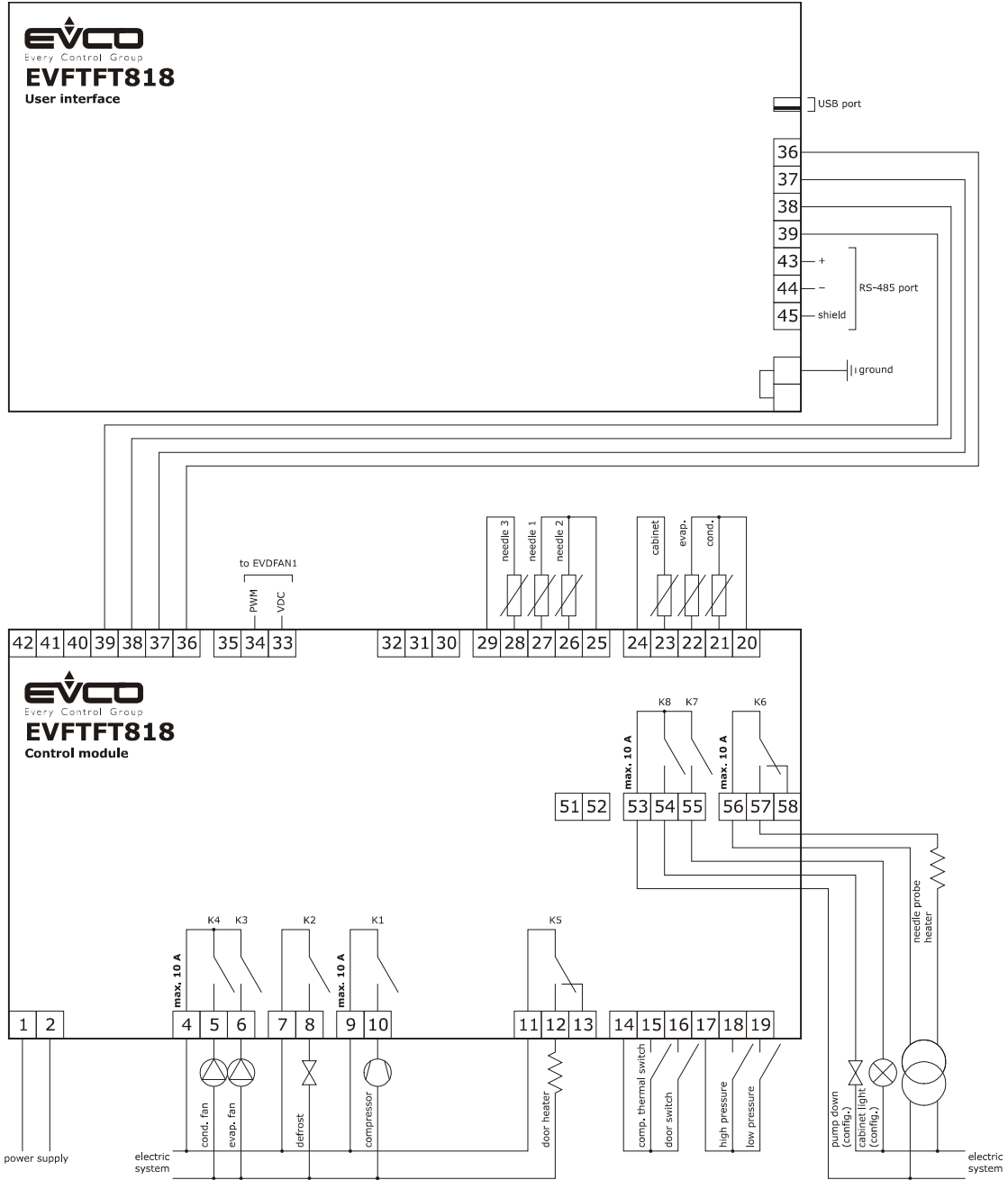
3.5 Installation warnings

- make sure that the device work conditions (temperature of use, humidity, etc.) lie within the limits indicated; see chapter 15 "TECHNICAL DATA"
- do not install the device near to any heat sources (heating elements, hot air ducts etc.), equipment containing powerful magnets (large diffusers, etc), areas affected by direct sunlight, rain, humidity, excessive dust, mechanical vibrations or shocks.
- any metal parts in proximity of the control module must be at a distance such that they do not compromise the safety distances; possible wirings must be located at 2 cm (0.787 in) at least
- in compliance with Safety Standards, the device must be installed correctly and in a way to protect against any contact with electric parts; all parts that ensure protection must be fixed in a way that they cannot be removed without the use of tools.

4 ELECTRIC CONNECTION

4.1 Electric connection

The following drawing illustrates the EVFTFT818 electric connection.



⚠ The utility managed by the K7 output, depends on parameter u11, as follows:

- cabinet light (u11 = 0, pre-defined setting)
- UV light (u11 = 1).

For the settings relative to the parameters, see chapter 10 "CONFIGURATION".

⚠ The utility managed by the K8 output, depends on parameter u1, as follows:

- pump down valve (u1 = 0, per-defined setting)
- alarm (u1 = 1).

For the settings relative to the parameters, see chapter 10 "CONFIGURATION".

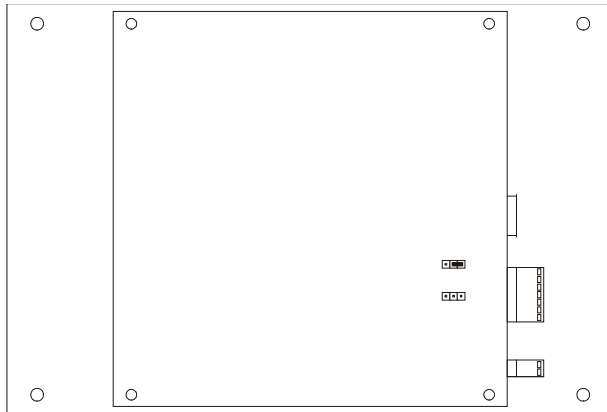
- ⚠ The RS-485 port is for the connection of the controller to the following additional products:
- Parameters Manager set-up software system
 - RICS plants monitoring and surveillance systems
 - device for recording data and to download recorded data (via USB) EVUSBREC01.

The port must not be used simultaneously with more than one of these products.

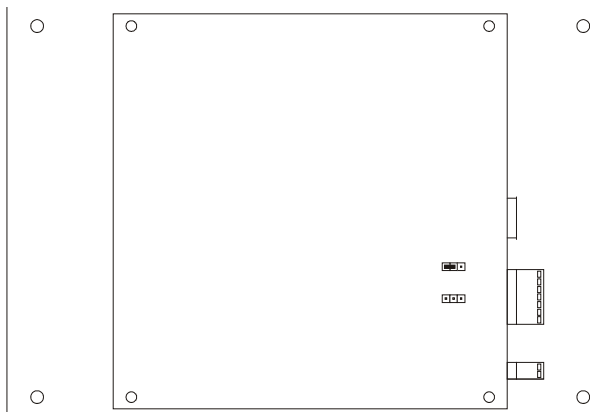
4.1.1 Insertion of the user interface-control module terminating resistor

The terminating resistor must be connected in order to reduce the reflections on the signal transmitted along the cables that connect the user interface to the control model.

To connect the terminating resistors, position the jumper as illustrated in the following drawing.



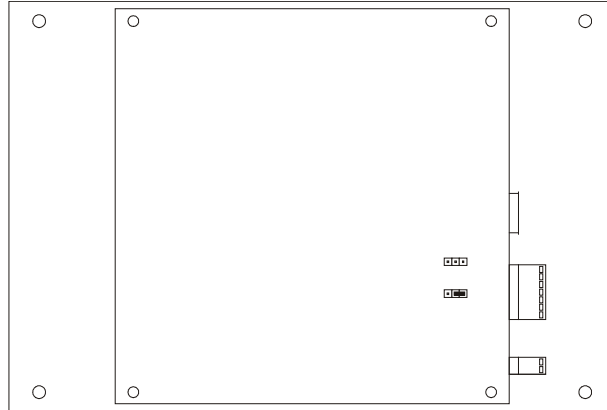
To disconnect the terminating resistors, position the jumper as illustrated in the following drawing.



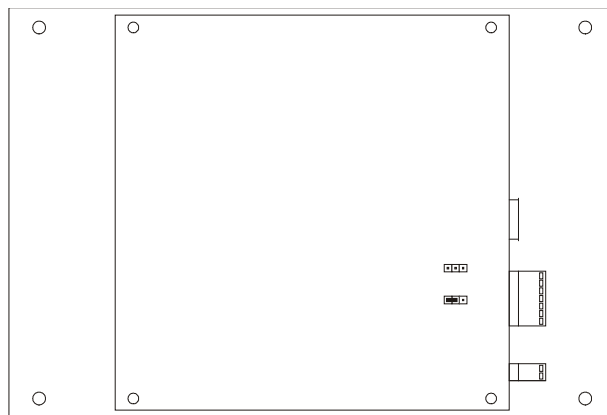
4.1.2 Insertion of the RS-485 serial port terminating resistor

The terminating resistor must be inserted in order to reduce the reflections on the signal transmitted along the cables that connect the RS-485 serial port to other EVCO products.

To connect the terminating resistors, position the jumper as illustrated in the following drawing.



To disconnect the terminating resistors, position the jumper as illustrated in the following drawing.



4.2 Warnings for the electric connection

- do not use electric or pneumatic screwdrivers on the device terminal board
- if the device has been taken from a cold to hot place, humidity could condense inside; wait about 1 hour before powering it
- make sure that the power supply voltage, the frequency and the operational electric power of the device, correspond with those of the local power supply; see chapter 15 "TECHNICAL DATA"
- disconnect the device power supply before proceeding with any type of maintenance
- do not use this device as a safety device
- for repairs and information regarding the device, contact the EVCO sales network.

5 USER INTERFACE

5.1 Foreword

The following operating status exist:

- the "off" status (the device is not powered)
- the "stand-by" status (the device is powered and is off)
- the "on" status (the device is powered, is on and is in stand-by for the start-up of an operating cycle)
- the "run" status (the device is powered, is on and an operating cycle is in progress).

Hereon, the term "device switch-on" means the passage from the "stand-by" status to the "on" status. the term "switch-off" means passage from the "on" status to the "stand-by" status.

If a power cut occurs during the "stand-by" status or during the "on" status, the device will re-propose the same status when the power supply is restored.

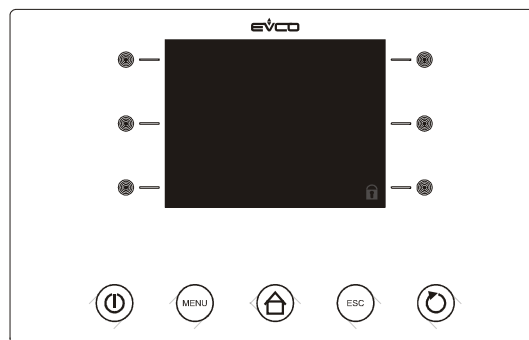
If a power cut occurs during the "run" status, the device will operate as follows when this is restored:

- if a temperature-controlled blast chilling or deep freezing operation was in progress, these will be started again from the beginning
- if a timed-controlled blast chilling or deep freezing operation was in progress, these will be started again from the moment the power supply was cut-off
- if storage was in progress, this will be re-proposed.

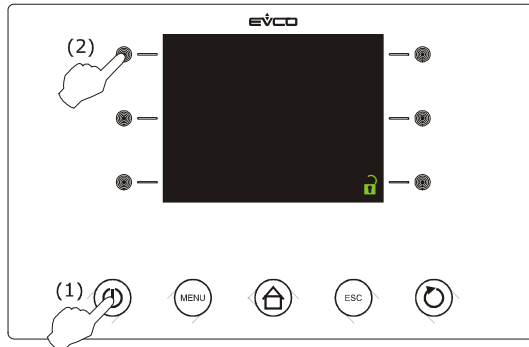
5.2 Device commissioning

Operate as follows:

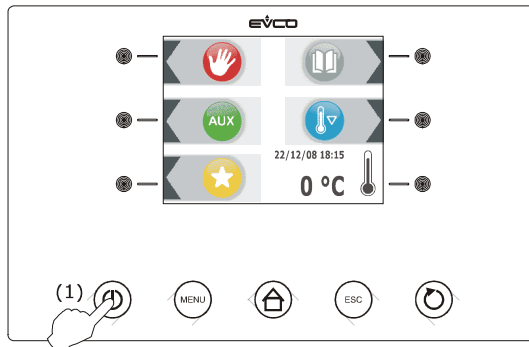
1. Connect the device power supply. if parameter E9 is set at 1, the device will display the EVCO splash screen for 10 s, after which it will go to the "stand-by" status.



2. Press and release the ON/STAND-BY key (1) and then press the highest interactive key on the left (2) to unlock the keyboard.



3. Press and release the ON/STAND-BY (1) key.



⚠ If the duration of the power cut has been such to cause the clock error ("rtc" code), the real day and time will have to be reset; see paragraph 10.1 "Setting the real day and time".

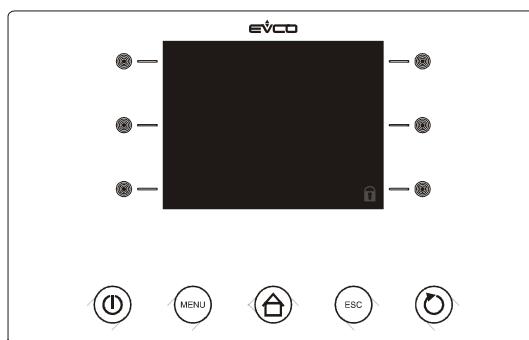
5.3 Switching the device on/off

Operate as follows:

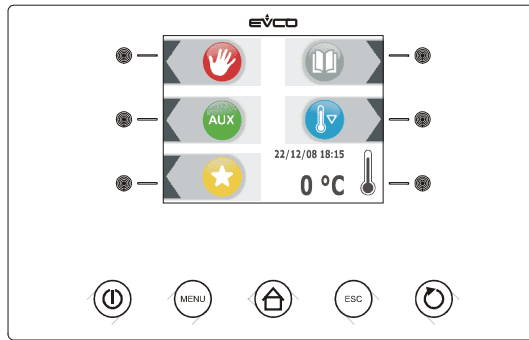
1. Make sure that the keyboard is not locked and that no procedure is in progress.
2. Press and release the ON/STAND-BY key.

5.4 The display

The display is off during the "off" status and during the "stand-by" status.

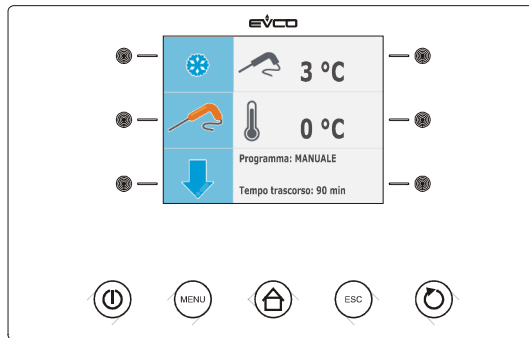


During the "on" status, the device will display the real day and time and the temperature of the cabinet.

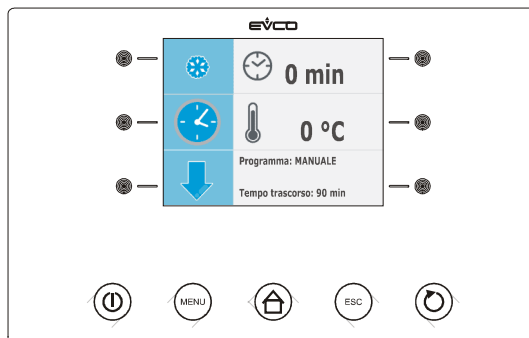


During the "run" state the device will display:

- if a temperature-controlled blast chilling or deep freezing operation is in progress, the temperature detected by the needle probe, the temperature of the cabinet, the name of the program, (if envisioned) and the time passed from the start of blast chilling or deep freezing.




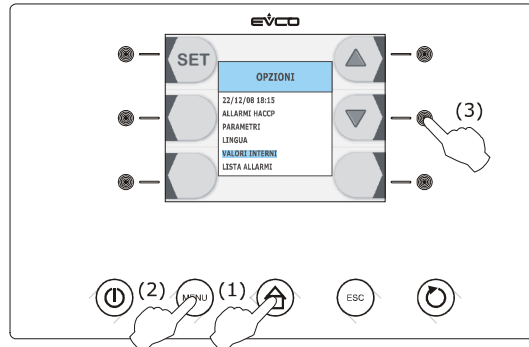
- if a time-controlled blast chilling or deep freezing operation is in progress, the residual duration of the blast chilling or deep freezing, the temperature of the cabinet, the name of the program, (if envisioned) and the time passed from the start of blast chilling or deep freezing






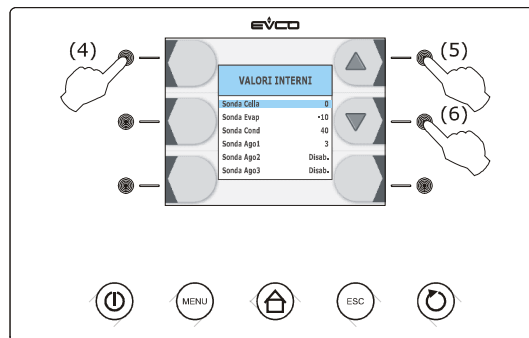
5.5 Display of inputs and outputs status

Operate as follows:

1. Make sure that the instrument is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the "**INTERNAL VALUES**".



4. Press and release the  key (4) and then repeatedly press and release the  key (5) or the  key (6) to select the input or the output.





Operate as follows to exit the procedure:

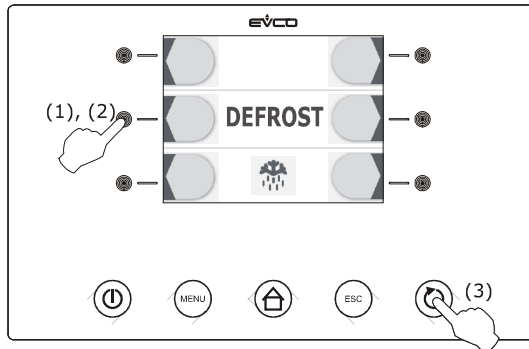
5. Press and release the ESCAPE key or do not operate for 60 s.

5.6 Defrosting activation in manual mode

Operate as follows:

1. Make sure the device is in the "on" status, that pre-cooling or storage cycle is in progress.
2. Make sure that the keyboard is not locked and that no procedure is in progress.

- Press and release the  key (1), press and release the  key (2) and then press and release the START / STOP (3) key.

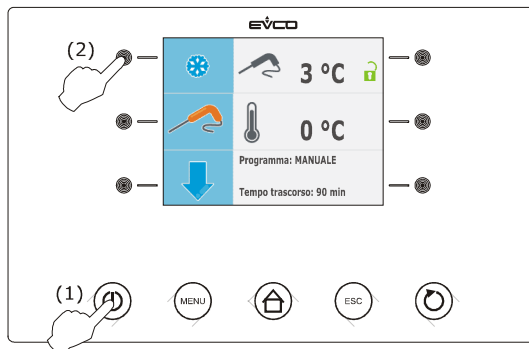


If the evaporator probe is enabled, i.e. the parameter P4 is set at 1 and on activation of defrosting the evaporator temperature is above that established with parameter d2, defrosting will not be activated.

5.7 Locking/unlocking of the keyboard

Operate as follows to lock the keyboard:

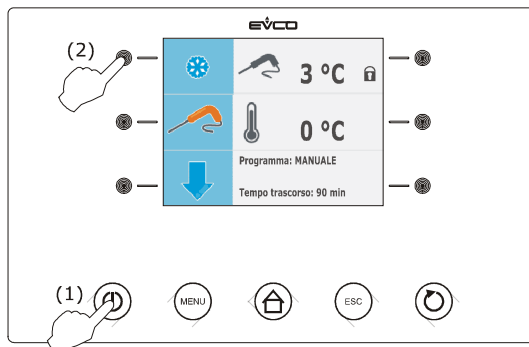
- Make sure parameter E8 is set to 1 and no procedures are in progress.
- Press and release the ON/STAND-BY key (1) and then press the highest interactive key on the left (2).



If parameter E8 is set to 2, on expiry of 60 s the keyboard will automatically lock.

Operate as follows to unlock the keyboard:

- Make sure no procedures are in progress
- Press and release the ON/STAND-BY key (1) and then press the highest interactive key on the left (2).



Silencing the buzzer

Operate as follows:

1. Make sure no procedures are in progress
2. Press and release the key.

6 OPERATION

6.1 Foreword

The device can manage the following operating cycles:

- temperature-controlled blast chilling and storage
- temperature-controlled hard blast chilling and storage
- time-controlled blast chilling and storage
- time-controlled hard blast chilling and storage
- continuous blast chilling
- temperature-controlled deep freezing and storage
- temperature-controlled soft deep freezing and storage
- time-controlled deep freezing and storage
- time-controlled soft deep freezing and storage
- continuous deep freezing

For further information, see the next paragraphs

Every operating cycle can be preceded by pre-cooling; see paragraph 6.13 "Pre-cooling start-up".

The temperature-controlled cycles are preceded by a test to verify the correct insertion of the needle probe; see paragraph 6.14 " Test for verification of the correct insertion of the needle probe".

If the needle probe is not enabled, i.e. if parameter P3 is set at 0, the temperature-controlled cycles will be started with time-control.

The following functions can also be used:

- switching on sterilisation cycle UV light
- heating the needle probe.

For further information, see the next paragraphs

6.1.1 Foreword regarding needle probe

The device can manage "multipoint" needle probes (with up to three sensors).

Parameter P3 establishes the number of needle probe sensors as indicated:

- if parameter P3 is set at 0, the needle probe will not be enabled
- if parameter P3 is set at 1, there will be one sensor (needle probe 1)
- if parameter P3 is set at 2, there will be 2 sensors (needle probe 1 and needle probe 2)
- if parameter P3 is set at 3, there will be 3 sensors (needle probe 1 and needle probe 2 and needle probe 3).

If parameter P3 is set at values different to 0, the temperature-controlled cycles will be preceded by a test to verify the correct insertion of the needle probe; see paragraph 6.14 " Test for verification of the correct insertion of the needle probe".

On conclusion of the test, the device will operate as indicated:

- the sensor that has detected the lowest temperature is then used as the reference temperature for heating the needle probe.
- the sensor that has detected the highest temperature is then used as the reference for the temperature-controlled cycles
- the sensors for which the test is not completed successfully are not used successively.




6.2 Temperature-controlled blast chilling and storage

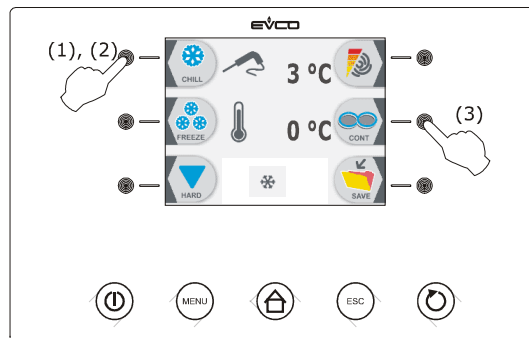
The temperature-controlled blast chilling and storage cycle is divided into the following two phases:





- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

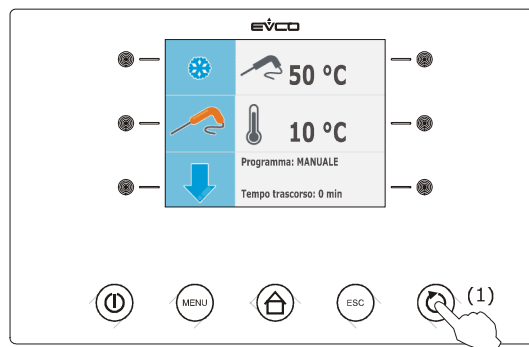
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3). the device will display the blast chilling end temperature and the work set-point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling end temperature and the work set-point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r3 and r7.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started; see paragraph 6.14 "Test for verification of the correct insertion of the needle probe".
 - 5.1 If the test is completed successfully, the cycle will be started.
The maximum blast chilling duration count is started on condition that the temperature detected by the needle probe is below that established with parameter r15.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed-control; see paragraph 6.4 "Time-controlled blast chilling and storage".

During blast chilling the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

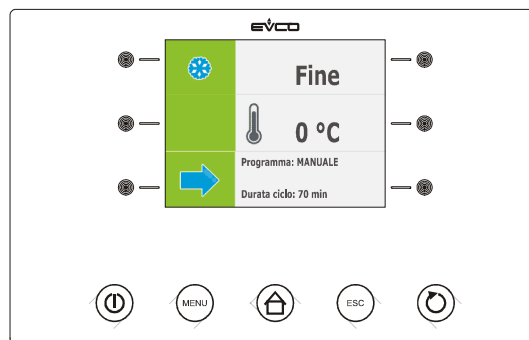
The successive parameters establish the following values:

- parameter r3 establishes the blast chilling end temperature
- parameter r5 establishes the maximum blast chilling duration
- parameter r7 establishes the work set-point during blast chilling.

If the temperature detected by the needle probe reaches the blast chilling end temperature within the maximum blast chilling duration, it means that blast chilling has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established with parameter AA.

Press and release a key to silence the buzzer.

During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete blast chilling successfully.

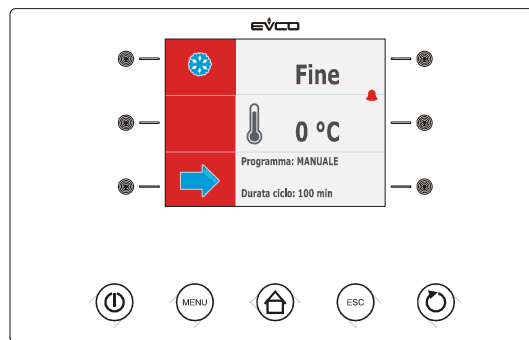


Parameter r10 establishes the work set-point during storage.

If the temperature detected by the needle probe does not reach the blast chilling end temperature within the maximum blast chilling duration, blast chilling will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the blast chilling end temperature, the device automatically passes to storage in the same way as illustrated previously.



6.3 Temperature-controlled hard blast chilling and storage





The temperature-controlled hard blast chilling and storage cycle is divided into the following three phases:

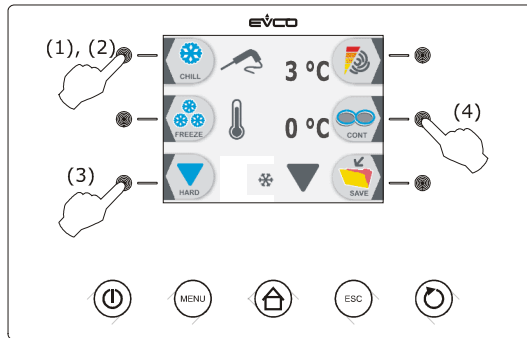
- blast chilling hard phase
- blast chilling
- storage.





On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

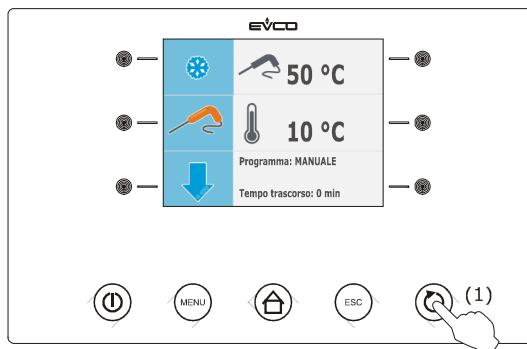
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.

3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) and finally press and release the  key (4): the device will display the blast chilling end temperature and the work set-point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling end temperature and the work set-point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r3 and r7.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started; see paragraph 6.14 " Test for verification of the correct insertion of the needle probe".
 - 5.1 If the test is completed successfully, the cycle will be started.
The maximum blast chilling duration count is started on condition that the temperature detected by the needle probe is below that established with parameter r15.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed-control; see paragraph 6.4 "Time-controlled hard blast chilling and storage".

During hard blast chilling phase the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of blast chilling .



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

The successive parameters establish the following values:

- parameter r5 establishes the maximum blast chilling duration
- parameter r9 establishes the work set-point during the blast chilling hard phase
- parameter r13 establishes blast chilling hard phase end temperature.

When the temperature detected by the needle probe reaches the hard blast chilling phase end temperature, the device automatically passes to blast chilling mode.

During blast chilling the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of blast chilling.

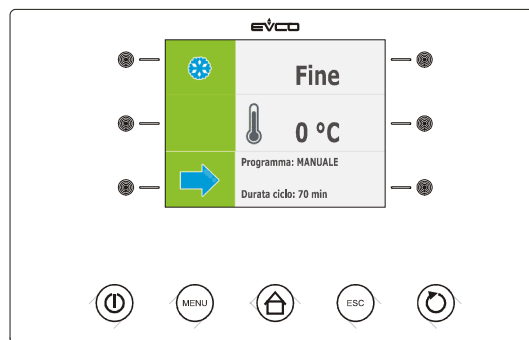
The successive parameters establish the following values:

- parameter r3 establishes the blast chilling end temperature
- parameter r5 establishes the maximum blast chilling duration
- parameter r7 establishes the work set-point during blast chilling.

If the temperature detected by the needle probe reaches the blast chilling end temperature within the maximum blast chilling duration, it means that blast chilling has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established with parameter AA.

Press and release a key to silence the buzzer.

During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete blast chilling successfully.

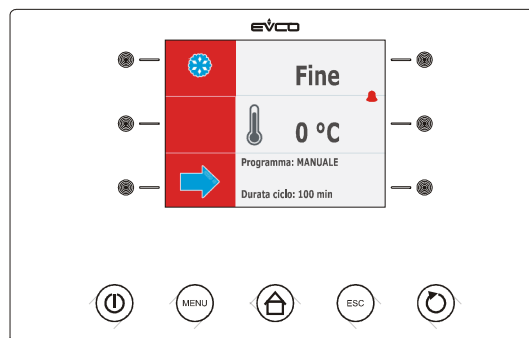


Parameter r10 establishes the work set-point during storage.

If the temperature detected by the needle probe does not reach the blast chilling end temperature within the maximum blast chilling duration, blast chilling will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the blast chilling end temperature, the device automatically passes to storage in the same way as illustrated previously.



6.4 Time-controlled blast chilling and storage



The time-controlled blast chilling and storage cycle is divided into the following two phases:

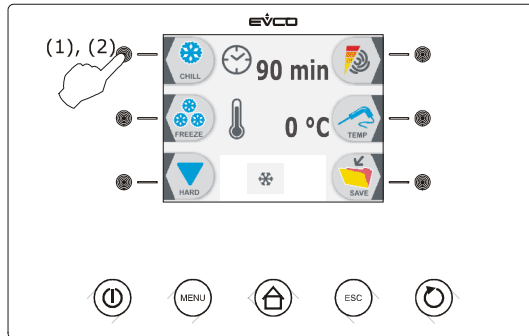
- blast chilling
- storage.





On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

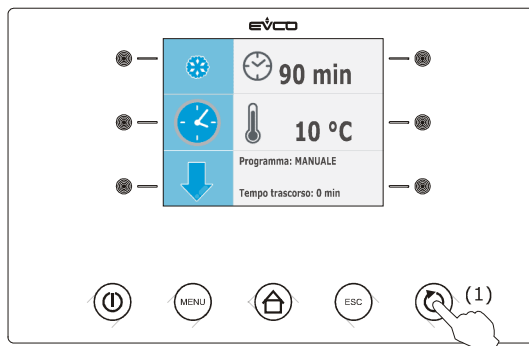
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.

3. Press and release the  key (1) and then press and release the  key (2): the device will display the blast chilling duration and the work set-point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling duration and the work set-point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r1 and r7.
5. Press and release the START/STOP key (1): the cycle will be started.

During blast chilling the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

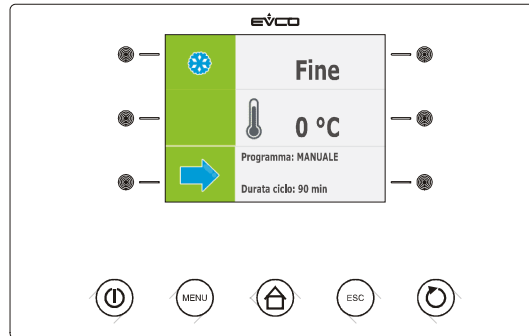
The successive parameters establish the following values:

- parameter r1 establishes blast chilling duration
- parameter r7 establishes the work set-point during blast chilling.

On expiry of the blast chilling duration, the device automatically passes to storage mode and the buzzer is activated for the time period established with parameter AA.

Press and release a key to silence the buzzer.

During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of blast chilling.



Parameter r10 establishes the work set-point during storage.

6.5 Time-controlled hard blast chilling and storage

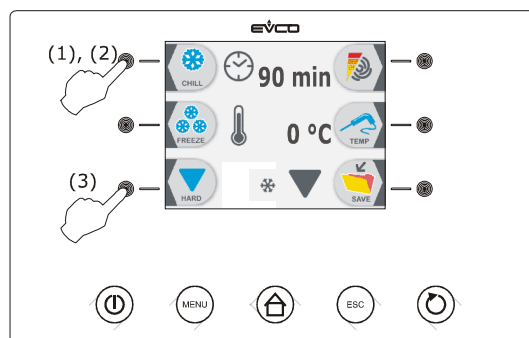
The time-controlled hard blast chilling and storage cycle is divided into the following three phases:

- blast chilling hard phase
- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

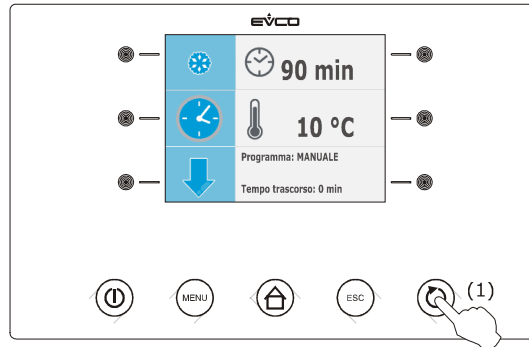
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the key (1), press and release the key (2) and then press and release the key (3). the device will display the blast chilling duration and the work set-point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the key or the key to select the blast chilling duration and the work set-point during blast chilling.
- 4.2 Press and release the key or the key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r1 and r7.
5. Press and release the START/STOP key (1): the cycle will be started.

During hard blast chilling the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

The successive parameters establish the following values:

- parameter r9 establishes the work set-point during the blast chilling hard phase
- parameter r14 establishes blast chilling hard phase duration.

On expiry of the hard blast chilling phase duration, the device automatically passes to blast chilling.

During blast chilling the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.

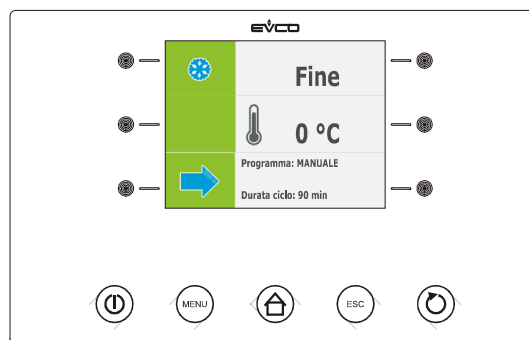
The successive parameters establish the following values:

- parameter r1 establishes blast chilling duration
- parameter r7 establishes the work set-point during blast chilling.

On expiry of the blast chilling duration, the device automatically passes to storage mode and the buzzer is activated for the time period established with parameter AA.

Press and release a key to silence the buzzer.




During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of blast chilling.

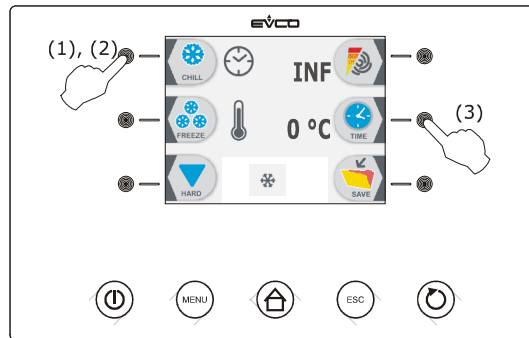






Parameter r10 establishes the work set-point during storage.

6.6 Continuous blast chilling

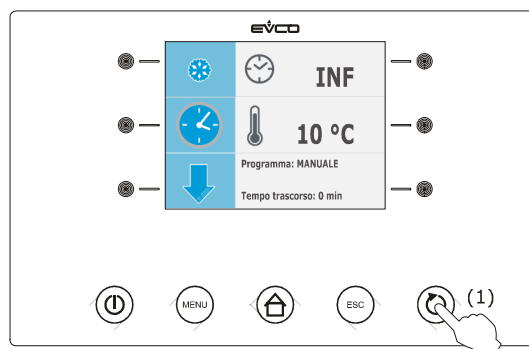
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) twice. The device will display the work set-point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the work set-point during blast chilling.
- 4.2 Press and release the  key or the  key to modify this value and then the ESCAPE key to memorise it; this value can also be memorised through parameters r1 and r7.
5. Press and release the START/STOP key (1): the cycle will be started.

During blast chilling the device displays the temperature of the cabinet, the program name (if envisioned) and the time passed since the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.
Parameter r7 establishes the work set-point during blast chilling.





6.7 Temperature-controlled deep freezing and storage

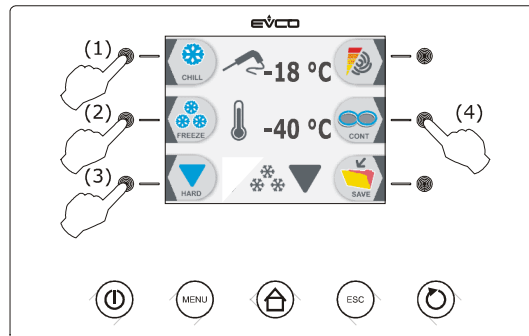
The temperature-controlled deep freezing and storage cycle is divided into the following two phases:





- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

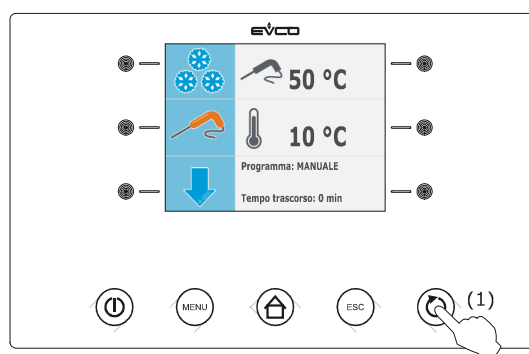
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) and finally press and release the  key (4): the device will display the deep freezing end temperature and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the deep freezing end temperature and the work set-point during deep freezing.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r4 and r8.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started; see paragraph 6.14 "Test for verification of the correct insertion of the needle probe".
 - 5.1 If the test is completed successfully, the cycle will be started.
The maximum deep freezing duration count is started on condition that the temperature detected by the needle probe is below that established with parameter r15.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed-control; see paragraph 6.9 "Time-controlled deep freezing and storage".

During deep freezing the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

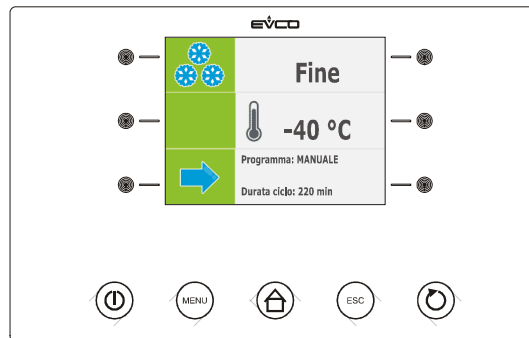
The successive parameters establish the following values:

- parameter r4 establishes the deep freezing end temperature
- parameter r6 establishes the maximum deep freezing duration
- parameter r8 establishes the work set-point during deep freezing.

If the temperature detected by the needle probe reaches the deep freezing end temperature within the maximum deep freezing duration, it means that deep freezing has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established with parameter AA.

Press and release a key to silence the buzzer.

During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete deep freezing successfully.

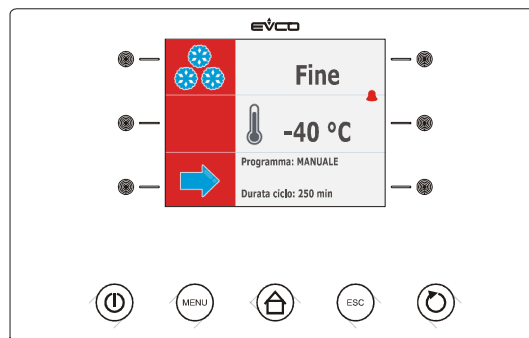


Parameter r11 establishes the work set-point during storage.

If the temperature detected by the needle probe does not reach the deep freezing end temperature within the maximum deep freezing duration, deep freezing will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the deep freezing end temperature, the device automatically passes to storage in the same way as illustrated previously.






6.8 Temperature-controlled soft deep freezing and storage

The temperature-controlled soft deep freezing and storage cycle is divided into the following three phases:

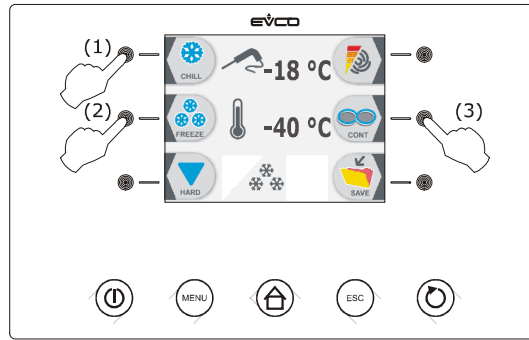
- deep freezing soft phase
- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

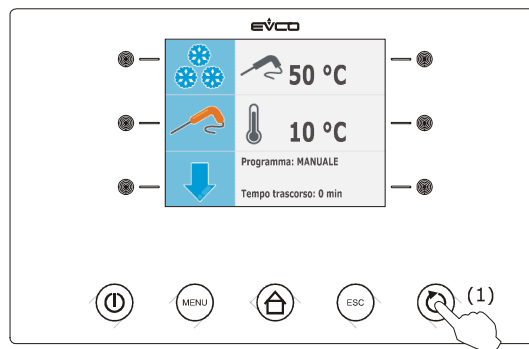
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3).

The device will display the deep freezing end temperature and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the key or the key to select the deep freezing end temperature and the work set-point during deep freezing.
- 4.2 Press and release the key or the key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r4 and r8.
- 5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started; see paragraph 6.14 " Test for verification of the correct insertion of the needle probe".
 - 5.1 If the test is completed successfully, the cycle will be started.
The maximum deep freezing duration count is started on condition that the temperature detected by the needle probe is below that established with parameter r15.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed-control; see paragraph 6.10 "Time-controlled soft deep freezing and storage".

During the soft deep freezing phase the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.



Operate as indicated to stop the cycle:

- 6. Press and hold the START/STOP key 3 s.

The successive parameters establish the following values:

- parameter r3 establishes deep freezing soft phase end temperature.
- parameter r6 establishes the maximum deep freezing duration
- parameter r7 establishes the work set-point during the deep freezing soft phase.

When the temperature detected by the needle probe reaches the end temperature of the soft deep freezing phase, the device automatically passes to deep freezing.

During deep freezing the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.

The successive parameters establish the following values:

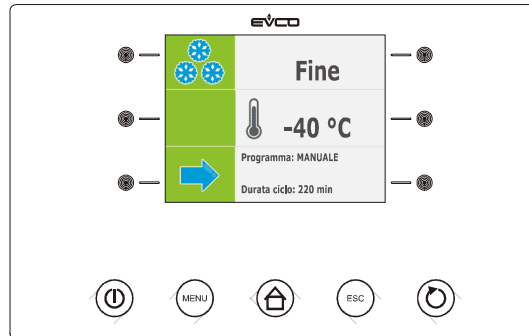
- parameter r4 establishes the deep freezing end temperature
- parameter r6 establishes the maximum deep freezing duration

- parameter r8 establishes the work set-point during deep freezing.

If the temperature detected by the needle probe reaches the deep freezing end temperature within the maximum deep freezing duration, it means that deep freezing has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established with parameter AA.

Press and release a key to silence the buzzer.

During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete deep freezing successfully.

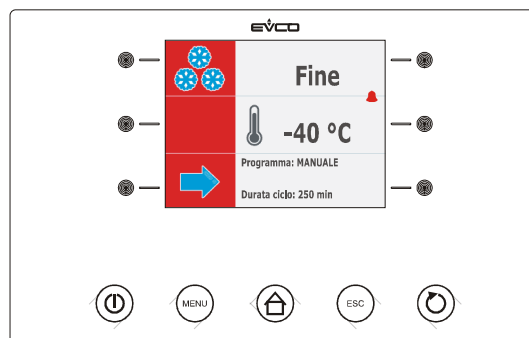


Parameter r11 establishes the work set-point during deep freezing.

If the temperature detected by the needle probe does not reach the deep freezing end temperature within the maximum deep freezing duration, deep freezing will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the deep freezing end temperature, the device automatically passes to storage in the same way as illustrated previously.



6.9 Time-controlled deep freezing and storage




The time-controlled deep freezing and storage cycle is divided into the following two phases:

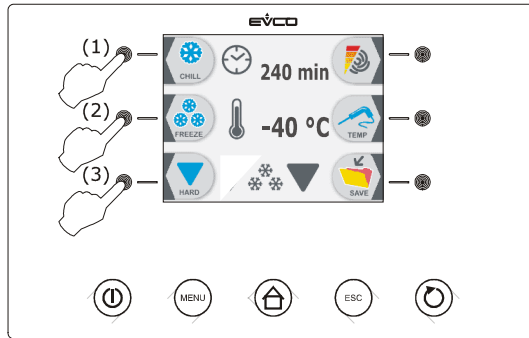
- deep freezing
- storage.





On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

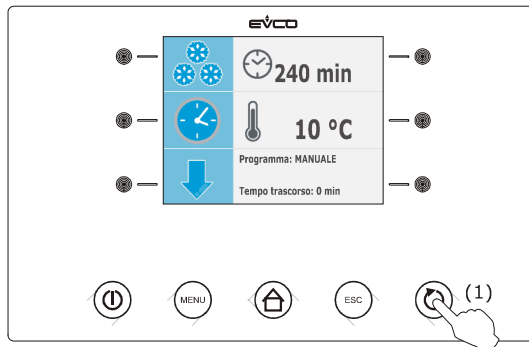
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.

3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3).
The device will display the duration of deep freezing and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the deep freezing duration and the work set-point during deep freezing.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r2 and r8.
5. Press and release the START/STOP key (1): the cycle will be started.

During blast chilling the device displays the residual deep freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

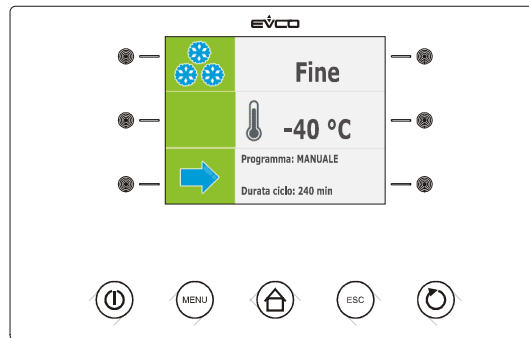
The successive parameters establish the following values:

- parameter r2 establishes deep freezing duration
- parameter r8 establishes the work set-point during deep freezing.

On expiry of the deep freezing duration, the device automatically passes to storage mode and the buzzer is activated for the time period established with parameter AA.

Press and release a key to silence the buzzer.

During deep freezing the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of deep freezing.



Parameter r11 establishes the work set-point during storage.



6.10 Time-controlled soft deep freezing and storage

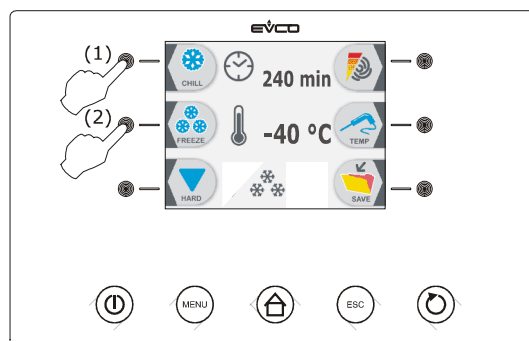
The time-controlled soft deep freezing and storage cycle is divided into the following three phases:





- deep freezing soft phase
- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

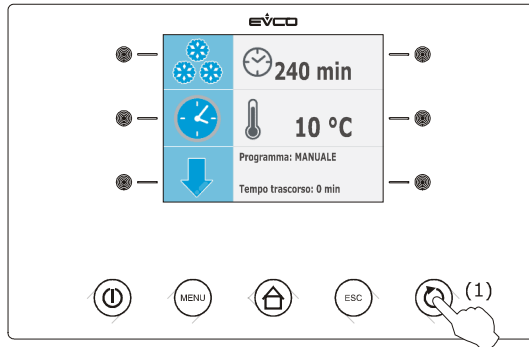
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), and then press and release the  key (2): the device will display the duration of deep freezing and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the deep freezing duration and the work set-point during deep freezing.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them; these values can also be memorised through parameters r2 and r8.
5. Press and release the START/STOP key (1): the cycle will be started.

During soft deep freezing phase, the device displays the residual deep freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

The successive parameters establish the following values:

- parameter r7 establishes the work set-point during the deep freezing soft phase.
- parameter r14 establishes deep freezing soft phase duration.

On expiry of the soft deep freezing phase duration, the device automatically passes to deep freezing.

During deep freezing the device displays the residual deep freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.

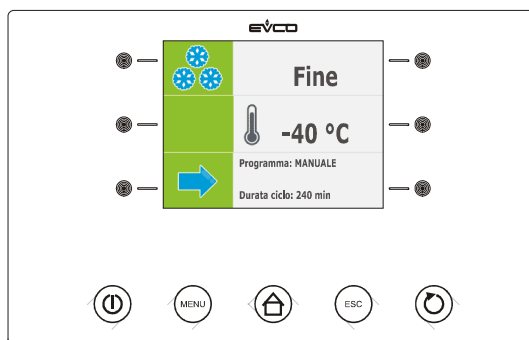
The successive parameters establish the following values:

- parameter r2 establishes deep freezing duration
- parameter r8 establishes the work set-point during deep freezing.

On expiry of the deep freezing duration, the device automatically passes to storage mode and the buzzer is activated for the time period established with parameter AA.

Press and release a key to silence the buzzer.




During storage the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of deep freezing.

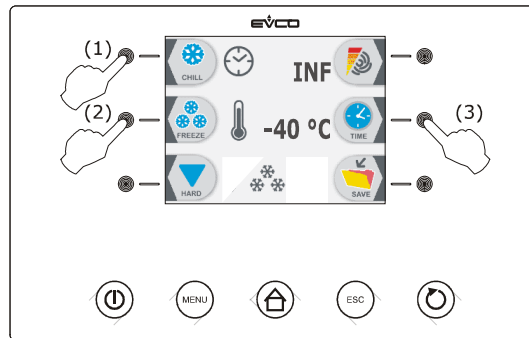






Parameter r11 establishes the work set-point during storage.

6.11 Continuous deep freezing

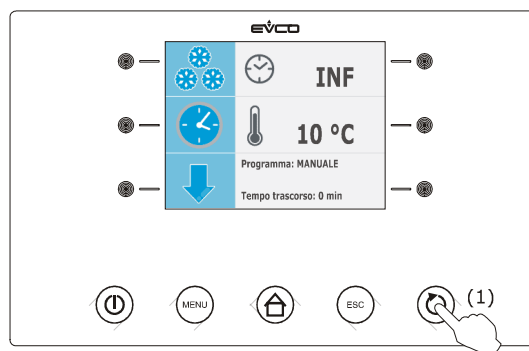
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) twice. The device will display the work set-point during deep freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the work set-point during deep freezing.
- 4.2 Press and release the  key or the  key to modify this value and then the ESCAPE key to memorise it; this value can also be memorised through parameter r8.
5. Press and release the START/STOP key (1): the cycle will be started.

During deep freezing the device displays the temperature of the cabinet, the program name (if envisioned) and the time passed since the start of deep freezing.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

Parameter r8 establishes the work set-point during deep freezing.

6.12 Blast chilling/deep freezing intensity

The device can manage the phase cut speed regulator for EVDFAN1 single phase fans (to be ordered separately); see paragraph 14.4 "phase cut speed regulator for EVDFAN1 single phase fans".

The regulator can be used to manage evaporator fan activities with a single analogue control, i.e. via the PWM analogue output of the device and the regulator phase cut output (the digital output K3 is however activated).

Parameter F0 must be set at 3.

Parameters F18... F22 establish speed 1... 5 of the evaporator speed (intended as a percentage of the maximum speed), parameter F23 establishes the speed at which the evaporator fan is switched on during post blast chilling

storage and parameter F24 establishes the speed at which the evaporator fan is switched on during post deep freezing storage (the latter intended as one of the speeds 1... 5).





The following table illustrates the speeds at which the evaporator fan is switched on during the operating cycles.

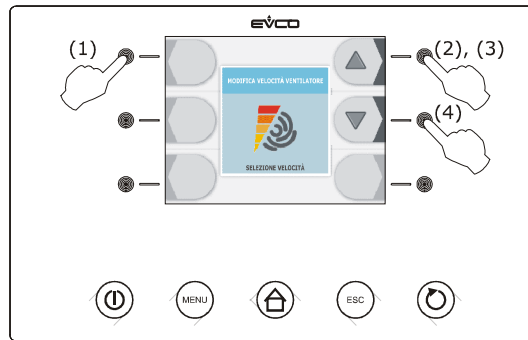
A different speed can be selected using the procedure given in 6.12.1 (intended as one of the speeds 1.. 5) in temporary mode (i.e. if a power cut occurs, on restore of the same the speeds illustrated in the following table will be offered), except if the selection is made before starting a blast chilling and storage cycle or before starting a hard blast chilling and storage cycle or before starting a soft deep freezing and storage cycle (in this case the speeds are memorised instead).

	Blast chilling and storage	Hard blast chilling and storage	Deep freezing and storage	Soft deep freezing and storage
Blast chilling hard phase	-	speed 5	-	-
Blast chilling	speed 1... 5 (can be memorised with the procedure given in paragraph 6.12.1 if selected before starting the operating cycle)	speed 1... 5 (can be memorised with the procedure given in paragraph 6.12.1 if selected before starting the operating cycle)	-	-
Deep freezing soft phase	-	-	-	speed 1... 5 (can be memorised with the procedure given in paragraph 6.12.1 if selected before starting the operating cycle)
Deep freezing	-	-	speed 5	speed 5
Storage	speed established with parameter F23	speed established with parameter F23	speed established with parameter F24	speed established with parameter F24





6.12.1 Selecting the evaporator fan speed

Operate as follows:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) or the  key (4). The LED bars will supply information relative to fan speed (for example, one bar corresponds to speed 1, two bars on correspond to speed 2, three bars on correspond to speed 3, etc.).



Alternatively:

4. Make sure the device is in the "run" status.
5. Make sure that the keyboard is not locked and that no procedure is in progress.
6. Press and release the MENU key and then press and release the  key or the  key to select the evaporator fan speed
7. Press and release the  key or the  key to modify these values and then press the ESCAPE key to memorise it.

Operate as follows to exit the procedure:


8. Press and release the ESCAPE key or do not operate for 60 s.

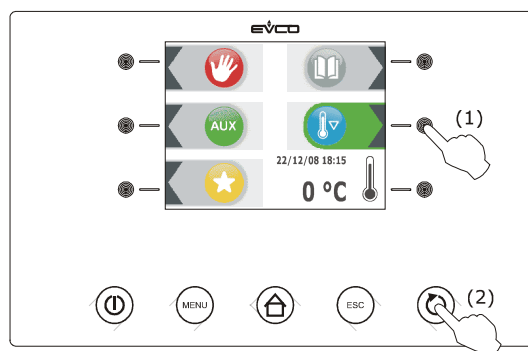
The fan is switched on at the selected speed after 5 s from release of the  key or the  key.

6.13 Pre-cooling start-up

Every operating cycle can be preceded by pre-cooling.

Operate as indicated to start pre-cooling:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1) and then press and release the START/STOP key (2).



Operate as indicated to cut-off pre-cooling:

4. Press and hold the START/STOP key 3 s.

Parameter r120 establishes the work set-point during pre-cooling.

When the cabinet temperature reaches that established with parameter r12, pre-cooling continues and the buzzer is activated for 2 s.

6.14 Management of the test regarding correct insertion of the needle probe



If the needle probe is enabled, i.e. the parameter P3 is set at values different to 0; the temperature-controlled cycles are preceded by a test on two phases for the verification of the correct insertion of the needle probe.

The second phase is only performed if the first is not completed successfully.

The first phase is completed successfully if the "temperature detected by the needle probe - cabinet temperature" difference is greater than the value established with parameter r17 in at least 3 controls out of 5 (the controls are performed at 10 s intervals, consider the difference without sign).

The second phase is completed successfully if the "temperature detected by the needle probe - cabinet temperature" difference is 1°C/1°F higher with respect to the previous control in at least 6 controls out of 8 (the controls are performed at time intervals corresponding to 1/8 of the time established with parameter r18; consider the difference without sign).



If the test is completed successfully, the cycle will be started; if the test is not completed successfully, the buzzer will be activated for 5 s every 10 s and the cycle will be started with timed-control.

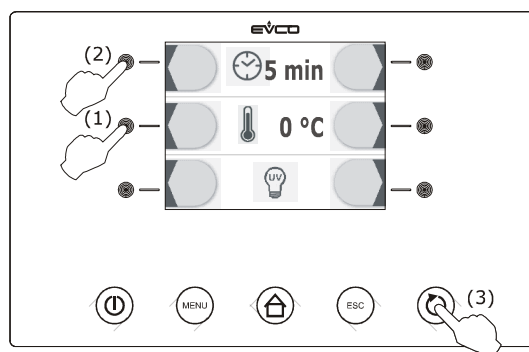
To start the temperature-controlled cycle, press the  key or the  key. After 1 min from the signal that the test has not been completed successfully without having operated, the cycle is started with time control.

If parameter r17 is set at 0, the test will not be carried out (neither first nor second phase).

6.15 Switching on UV light for sterilisation cycle

Operate as follows:

1. Make sure that parameter u11 is set at 2.
2. Make sure the device is in the "on" status and that the door is closed, i.e. the door micro switch is not active.
3. Make sure that the keyboard is not locked and that no procedure is in progress.
4. Press and release the  key (1), press and release the  key (2) and then press and release the START/STOP key (3). The device will display the residual time of the UV light switch-on duration and the cabinet temperature.





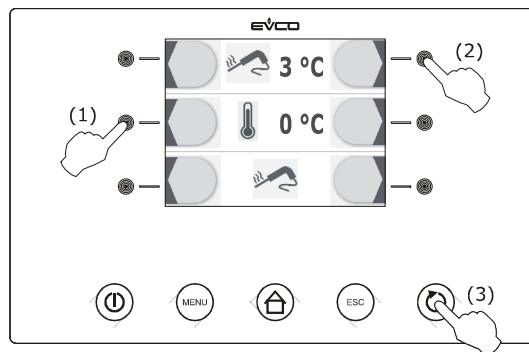
The UV light is switched on for the time period established by parameter u6; opening the door i.e. the activation of the door micro switch cause the light to switch off.

If the UV light is on, it will not be allowed to select or start any operating cycle.

6.16 Heating the needle probe

Operate as follows:

1. Make sure the device is in the "on" status or storage is in progress and that the door is open, i.e. the door micro switch is active.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the START/STOP key (3). The device will display the temperature detected by the needle probe and the cabinet temperature.



Output K6 is activated at maximum for the time established with parameter u8 or until the temperature detected by the needle probe reaches that established with parameter u7; closing the door, i.e. the deactivation of the door micro switch input causes heating to be cut-off.

The buzzer is activated for 2 s on conclusion of heating.



6.17 Fish sanification

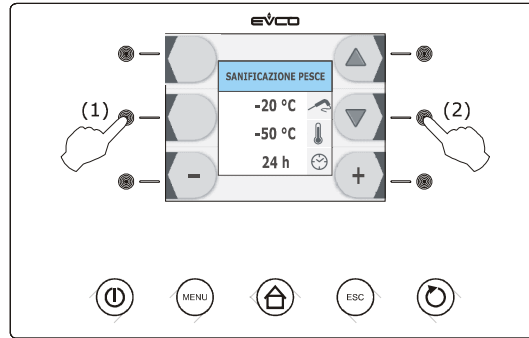
The fish sanification cycle is divided into the following three phases:

- blast chilling
- maintenance
- storage.

On conclusion of a phase, the device passes automatically to the next.

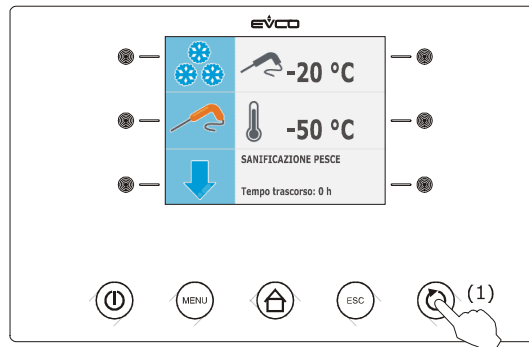
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key (1) and then press and release the  key (2): the device will display the blast chilling end temperature, the work set-point during blast chilling and the duration of maintenance.



- 4.1 Press and release the ▲ key or the ▼ key to select these values and press and release the ← key or the → key to modify them.
 - 5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started; see paragraph 6.14 " Test for verification of the correct insertion of the needle probe".
 - 5.1 If the test is completed successfully, the cycle will be started.
 - 5.2 If the test is not completed successfully, the buzzer will be activated, the device will display the indication "ALARM San" and the cycle will be stopped.
- Press and release a key to silence the buzzer.

During blast chilling the device displays the temperature detected by the needle probe, the cabinet temperature and the time passed since the start of blast chilling.



Operate as indicated to stop the cycle:

- 6. Press and hold the START/STOP key 3 s.
- When the temperature detected by the needle probe reaches the blast chilling end temperature, it means that blast chilling has been completed and the device will automatically pass to maintenance.
- During maintenance the the blast chilling end temperature also establishes the work set-point during maintenance.
- On expiry of the duration of maintenance the device automatically passes to storage.
- Parameter r11 establishes the work set-point during storage.

7 "PROGRAMS" FUNCTION


7.1 Foreword

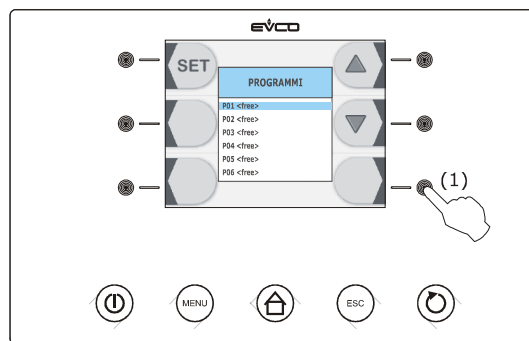
The programs function can be used to memorise some settings in a program and start an operating cycle with the settings it has memorised.



Up to 99 programs can be memorised.

7.2 Memorisation of a program




Operate as follows:

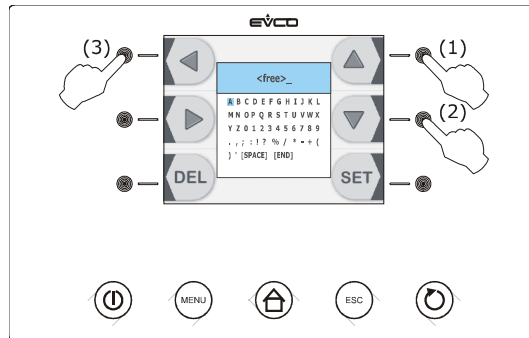
1. Make sure that the keyboard is not locked and that no procedure is in progress.
2. Press and release the  key (1) before starting an operating cycle or during storage: the device will display the number of the first program available.













- 2.1 If the  key is pressed and released before starting an operation cycle, the device will memorise the following settings:
 - type of operating cycle selected
 - blast chilling/deep freezing intensity selected
 - if the key is pressed before starting-up a temperature-controlled cycle:
 - the work set-point during blast chilling and the blast chilling end temperature
 - if the key is pressed before starting-up a time-controlled cycle:
 - the work set-point during blast chilling and the blast chilling duration.
- 2.2 If the  key is pressed and released during storage, the device memorises the following settings:
 - type of operating cycle in progress
 - the duration of blast chilling or deep freezing, i.e. the time taken to successfully complete blast chilling or deep freezing.
 - blast chilling/deep freezing intensity selected before starting an operating cycle.
 - the work set-point selected before starting up an operating cycle.

The execution of a program memorised by pressing and releasing the  key during storage causes the start of a timed cycle.

- Press and release the  key (1) or the  key (2) to select the program number and then press and release the  key (3) in order to associate a name.






- Press and release the  key, the  key, the  key or the  key to select the character and then press and release the  key to confirm it.
- Press and release the  key, the  key, the  key or the  key to select "[END]" and then press and release the  key.

Operate as follows to abandon the procedure indicated:

- Press and release the ESCAPE key or do not operate for 60 s.

7.3 Execution of a program

Operate as follows:

- Make sure the device is in the "on" status.
- Make sure that the keyboard is not locked and that no procedure is in progress.
- Press and release the  key, press and release the  key or the  key to select the program and then press and release the START/STOP key to start it: the operating cycle will be started with the settings memorised in the program.

8 "FAVOURITES" FUNCTION




8.1 Foreword

The favourites function can be used to execute a recently started program.

It is possible to start up to 99 recently started programs

8.2 Execution of a program

Operate as follows:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the  key, press and release the  key or the  key to select the program and then press and release the START/STOP key to start it: the operating cycle will be started with the settings memorised in the program.

9 "HACCP" FUNCTION

9.1 Foreword

Using the "HACCP" function, it is possible to memorise up to 9 events for each of the 3 HACCP alarms, after which the most recent event overwrites the oldest.

The following table illustrates the information relative to the HACCP alarms, which the device can memorise.

Alarm	Code	Critical value	Date and time of occurrence	Duration
temperature-controlled blast chilling or deep freezing not concluded within maximum duration alarm	tiM	the maximum temperature detected by the needle probe after temperature-controlled blast chilling of deep freezing not concluded within maximum duration	yes	from 1 min to 99 h and 59 min, partial if the alarm is in progress
maximum temperature during storage alarm	AH	maximum cabinet temperature during the alarm	yes	from 1 min to 99 h and 59 min, partial if the alarm is in progress
power-cut during storage alarm	PF	the cabinet temperature at restore f power supply	yes	from 1 min to 99 h and 59 min


To prevent repeated memorisation of power cut alarms ("**PF**" code), make sure that the device is in the "stand-by" or "on" status before disconnecting the power supply.

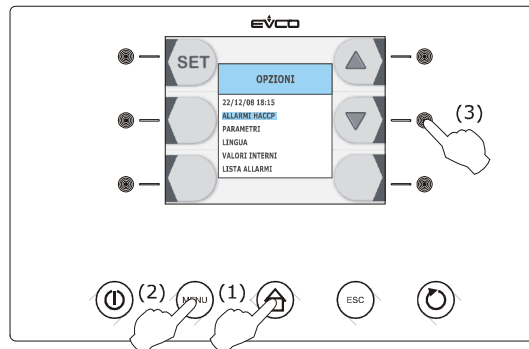
If the duration of the power cut alarm ("**PF**" code) is such to cause a clock error ("**rtc**" code), the device does not memorise the date or time the alarm occurred or its duration.




9.2 Display of information relative to the HACCP alarms

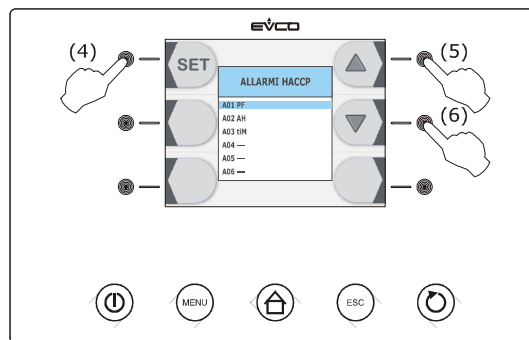
Operate as follows:




1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.

- Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key (3) in order to select the **"HACCP ALARMS"**.



- Press and release the  key (4) and then press and release the  key (5) or the  key (6) to select the alarm (the greater the number that follows the alarm code, the older the alarm).



- Press and release the  key: the device will display the information relative to the alarm.
- Press and release the  key or the  key to display the information of the previous alarm or the successive alarm.


Operate as follows to exit the procedure:

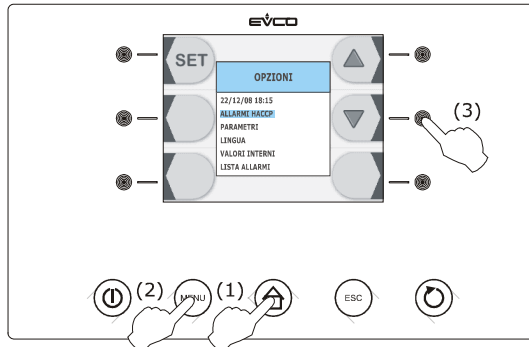
- Press and release the ESCAPE key or do not operate for 60 s.





9.3 Deleting the information relative to the HACCP alarms

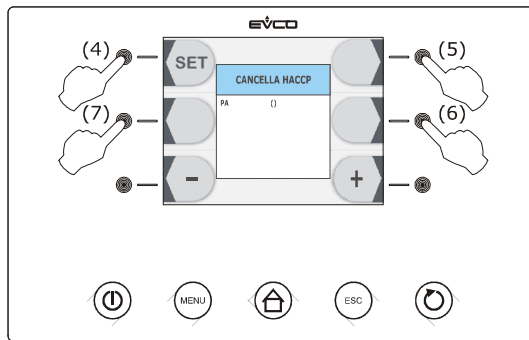
Operate as follows:



- Make sure the device is in the "on" status.
- Make sure that the keyboard is not locked and that no procedure is in progress.

- 3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key (3) in order to select the "HACCP ALARMS".



- 4. Press and release the  key (4), press and release the  key (5) or the  key (6) to select the alarm and then press and release the  key (7).




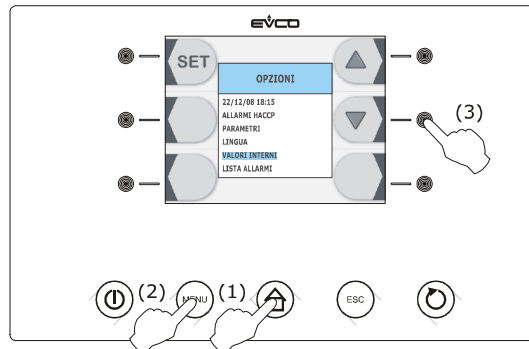
- 5. Repeatedly press and release the  key to set "149" and then press and release the  key. Operate as follows to exit the procedure:
- 6. Press and release the ESCAPE key or do not operate for 60 s.




10 COMPRESSOR OPERATING HOURS COUNT

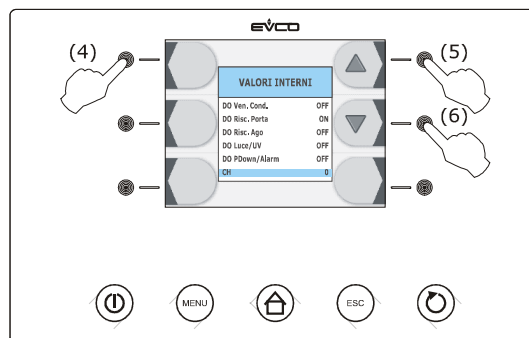
10.1 Display of compressor operating hours

Operate as follows:

1. Make sure that the instrument is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the "INTERNAL VALUES".



4. Press and release the  key (4) and then repeatedly press and release the  key (5) or the  key (6) to select "CH".



Operate as follows to exit the procedure:

5. Press and release the ESCAPE key or do not operate for 60 s.

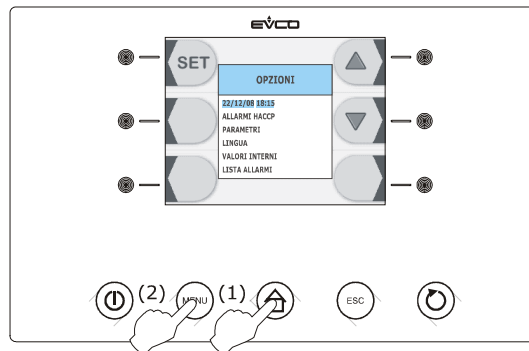
To delete the compressor operating hours, see paragraph 10.3 "Restoring the factory settings".

11 CONFIGURATION

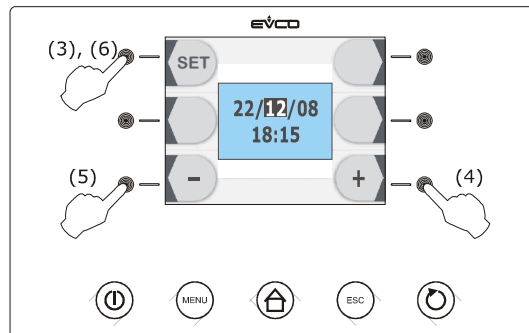
11.1 Setting the real date and time

Operate as follows:

1. Make sure that the instrument is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.
3. Press and release the HOME key (1) and then press and release the MENU key (2).



4. Press and release the **SET** key (3), press and release the **+** key (4) or the **-** key (5) to modify the value and then press and release the **SET** key (6) again to confirm and select the next one.




Operate as follows to exit the procedure:

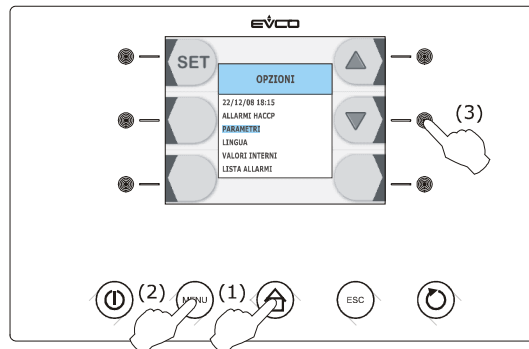
5. Press and release the ESCAPE key or do not operate for 60 s.




11.2 Setting the configuration parameters

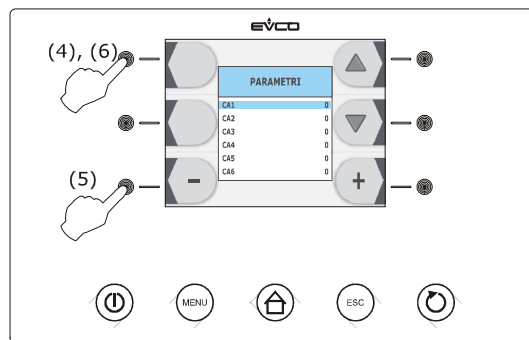
Operate as follows:

1. Make sure that the instrument is in the "on" status.
2. Make sure that the keyboard is not locked and that no procedure is in progress.



- Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the "PARAMETERS".





- Press and release the  key (4), repeatedly press and release the  key (5) to set "-19" and then press and release the  key (6) again.



Operate as follows to select a parameter:

- Press and release the  key or the  key.

Operate as follows to set a parameter:

- Press and release the  key or the  key.

Operate as follows to exit the procedure:

- Press and release the ESCAPE key or do not operate for 60 s.

Cut the device power supply off after setting the configuration parameters.

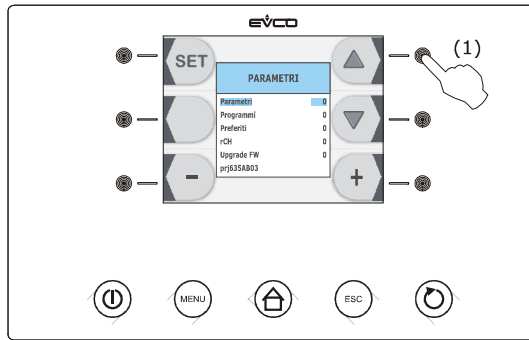
11.3 Restoring the factory settings

11.3.1 Access to the procedure

Operate as follows:

- Make sure that the instrument is in the "stand-by" status.
- Make sure that the keyboard is not locked and that no procedure is in progress.

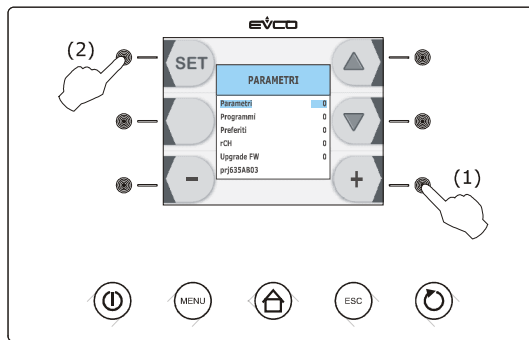
3. Press and release the highest interactive key on the right (1).



11.3.2 Restoring the configuration parameters

Operate as follows:

1. Access to the; see paragraph 10.3.1 "Access to the procedure".
2. Repeatedly press and release the **+** key (1) to set "149" and then press and release the **SET** key (2).



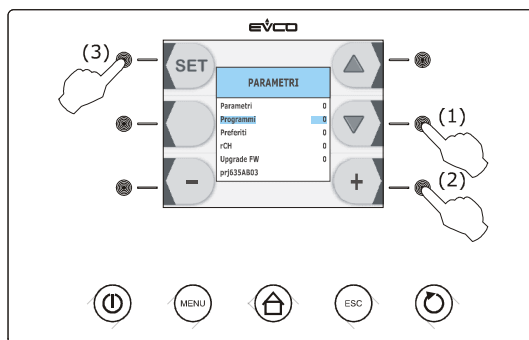
Operate as follows to exit the procedure:

3. Press and release the ESCAPE key or do not operate for 60 s.

11.3.3 Deleting programs

Operate as follows:

1. Access to the; see paragraph 10.3.1 "Access to the procedure".
2. Press and release the **▼** key (1) to select "Programmi", repeatedly press and release the **+** key (2) to set "149" and then press and release the **SET** key (3).






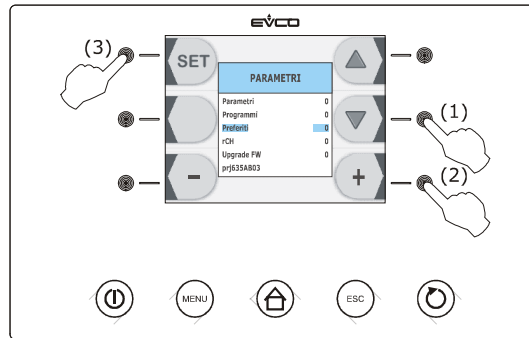
Operate as follows to exit the procedure:

3. Press and release the ESCAPE key or do not operate for 60 s.

11.3.4 Deleting favourites

Operate as follows:

1. Access to the; see paragraph 10.3.1 "Access to the procedure".
2. Press and release the  key (1) to select "Programs", repeatedly press and release the  key (2) to set "149" and then press and release the  key (3).






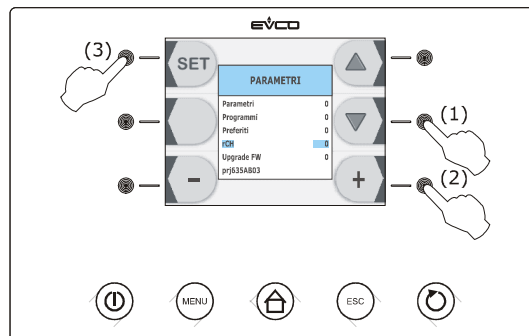
Operate as follows to exit the procedure:

3. Press and release the ESCAPE key or do not operate for 60 s.

11.3.5 Deleting the compressor operating hours

Operate as follows:

1. Access to the; see paragraph 10.3.1 "Access to the procedure".
2. Press and release the  key (1) to select "rCH", repeatedly press and release the  key (2) to set "149" and then press and release the  key (3).



Operate as follows to exit the procedure:

3. Press and release the ESCAPE key or do not operate for 60 s.

11.4 List of configuration parameters

The following table illustrates the meaning of the configuration parameters.

The management of some inputs and outputs is subject to the value set with some parameters, as follows:

- management of the needle probe is only available if parameter P3 is set at values different to 0
- management of the evaporator probe is only available if the parameter P4 is set at 1
- management of the condenser probe is only available if the parameter P5 is set at 1
- management of the cabinet light is only available if the parameter u11 is set at 0
- management of the UV light is only available if parameter u11 is set at 1.
- management of the pump down valve is only available if parameter u1 is set at 0
- management of the alarm output is only available if parameter u1 is set at 1.

The evaporator fan control signal can be analogue (parameter F0 set at 3) or digital (parameter F0 set at values different to 3).

Par.	Min.	Max.	Unit	Default	Analogue inputs
CA1	-25	25	°C/°F (1)	0	cabinet probe offset
CA2	-25	25	°C/°F (1)	0	needle probe offset 1
CA3	-25	25	°C/°F (1)	0	evaporator probe offset
CA4	-25	25	°C/°F (1)	0	condenser probe offset
CA5	-25	25	°C/°F (1)	0	needle probe offset 2
CA6	-25	25	°C/°F (1)	0	needle probe offset 3
P0	0	1	----	0	probe type 0 = PTC 1 = NTC
P2	0	1	----	0	temperature unit of measurement (2) 0 = °C 1 = °F
P3	0	3	----	1	number of needle probe sensors 0 = needle probe not available 1 = 1 (needle probe 1) 2 = 2 (needle probe 1 and needle probe 2) 3 = 3 (needle probe 1, needle probe 2 and needle probe 3)
P4	0	1	----	1	enabling the evaporator probe 1 = yes
P5	0	1	----	1	enabling the condenser probe 1 = yes

P8	0	1	----	1	orientation of the visualization 0 = device located at the top as to the unit 1 = device located at the bottom as to the unit
Par.	Min.	Max.	Unit	Default	Main regulator
r0	1	15	°C/°F (1)	2	parameters differential r7, r8, r9, r10, r11 and r12
r1	1	500	min	90	duration of time-controlled blast chilling
r2	1	500	min	240	duration of time-controlled deep freezing
r3	-99	99	°C/°F (1)	3	temperature-controlled blast chilling end time temperature; also end temperature of the temperature-controlled soft deep freezing phase (temperature detected by the needle probe); see also parameter r5
r4	-99	99	°C/°F (1)	-18	temperature-controlled deep freezing end temperature (temperature detected by the needle probe); see also parameter r6
r5	1	500	min	90	maximum duration of temperature-controlled blast chilling; see parameter r3 also
r6	1	500	min	240	maximum duration of temperature-controlled deep freezing; see parameter r4 also
r7	-99	99	°C/°F (1)	0	work set-point during blast chilling; also work set-point during the soft deep freezing phase (cabinet temperature); see also parameter r0
r8	-99	99	°C/°F (1)	-40	work set-point during deep freezing (cabinet temperature); see also parameter r0
r9	-99	99	°C/°F (1)	-20	work set-point during hard blast chilling phase (cabinet temperature); see also parameter r0
r10	-99	99	°C/°F (1)	2	work set-point during post blast chilling storage (cabinet temperature); see also parameter r0
r11	-99	99	°C/°F (1)	-20	work set-point during post deep freezing storage (cabinet temperature); see also parameter r0
r12	-99	99	°C/°F (1)	5	work set-point during pre-cooling (cabinet temperature); see also parameter r0

r13	-99	99	°C/°F (1)	15	end temperature of the temperature-controlled hard blast chilling phase (temperature detected by the needle probe)
r14	10	100	%	60	duration of the time-controlled hard blast chilling phase (intended as a percentage of the value established with parameter r1); also duration of the time-controlled soft deep freezing phase (intended as a percentage of the value established with parameter r2)
r15	-99	199	°C/°F (1)	65	temperature below which the count of the maximum temperature-controlled blast chilling and maximum temperature-controlled deep freezing is started (temperature detected by the needle probe)
r16	0	2	----	1	type of operating cycle that can be selected 0 = blast chilling and storage 1 = blast chilling and storage or deep freezing and storage 2 = deep freezing and storage
r17	0	99	°C/°F (1)	5	"temperature detected by the needle probe - cabinet temperature" minimum difference such to consider the first phase of the test to verify correct insertion of the needle probe completed successfully (consider the difference without sign) 0 = the test will not be performed (neither first or second phase)
r18	1	99	s	60	duration of the second phase of the test for verification of correct insertion of the needle probe
r19	----	----	----	----	reserved
Par.	Min.	Max.	Unit	Default	Compressor protections
C0	0	240	min	0	minimum time between restoring the power supply after a power cut, occurring during an operating cycle and compressor switch-on
C1	0	240	min	5	minimum time between two consecutive compressor switch-ons (3)
C2	0	240	min	3	minimum time between compressor switch-off and successive switch-on (3)
C3	0	240	s	0	compressor switch-on minimum duration

C4	0	240	min	10	duration of compressor switch-off during the cabinet probe error ("Pr1" code) that occurs during storage; see also parameters C5 and C9
C5	0	240	min	10	duration of compressor switch-on during the cabinet probe error ("Pr1" code) that occurs during post blast chilling storage; see also parameter C4
C6	0	199	°C/°F (1)	80	condenser temperature above which the blocked overheated condenser alarm is activated ("COH" code)
C7	0	199	°C/°F (1)	90	condenser temperature above which the blocked compressor alarm is activated ("CSd" code)
C8	0	15	min	1	blocked compressor alarm delay ("CSd" code) (5)
C9	0	240	min	30	duration of compressor switch-on during the cabinet probe error ("Pr1" code) that occurs during post deep freezing storage; see also parameter C4
Par.	Min.	Max.	Unit	Default	Defrosting (6)
d0	0	99	h	8	defrosting interval (7) 0 = defrosting will never be activated at intervals
d1	0	3	- - - -	1	<p>type of defrosting</p> <p>0 = electrical (the compressor will be switched off during defrosting, the defrosting output will be activated and the evaporator fan will be switched off)</p> <p>1 = hot gas (the compressor will be switched on during defrosting, the defrosting output will be activated and the evaporator fan will be switched off)</p> <p>2 = air (the compressor will be switched off during defrosting and the defrosting output will be activated; the evaporator fan will be switched on, independently from the conditions of the door, i.e. independently from the door micro switch input status)</p> <p>3 = air with door open (the compressor will be switched off during defrosting and the defrosting output will be activated; the evaporator fan will be switched on, on condition that the door is open, i.e. that is on condition that the door micro switch is active and that the parameter i0 is set at values different to 0)</p>

d2	-99	99	°C/°F (1)	2	defrosting end temperature (evaporator temperature); see also parameter d3
d3	0	99	min	30	if parameter P4 is set at 0, duration of defrosting if parameter P4 is set at 1, maximum duration of defrosting; see also parameter d2 0 = defrosting will never be activated
d4	0	1	----	0	defrosting on start-up of blast chilling and deep freezing 1 = yes
d5	0	99	min	30	defrosting delay on start-up of storing 0 = defrosting will be started on expiry of the time established with parameter d0
d7	0	15	min	2	dripping duration (the compressor and the evaporator fan remain off during dripping and the defrosting output will be deactivated)
d15	0	99	min	0	minimum duration of compressor switch-on on activation of defrosting so these can be activated (only if parameter d1 is set at 1) (8)
d16	0	99	min	0	duration of pre-dripping (only if parameter d1 is set at 1; the compressor and evaporator fan will be off during pre-dripping and the defrosting output will remain activated)
Par.	Min.	Max.	Unit	Default	Temperature alarms (9) (10)
A1	0	99	°C/°F (1)	10	cabinet temperature below which the minimum temperature alarm is activated (relative to the work set-point, i.e. "r10 A1" during post blast chilling storage and "r11 - A1" during post deep freezing storage; ("AL" code); see also parameter A11 (4)
A2	0	1	----	1	enabling of minimum temperature alarm ("AL" code) 1 = yes

A4	0	99	°C/°F (1)	10	cabinet temperature above which the maximum temperature alarm is activated (relative to the work set-point, i.e. "r10 +A4" during post blast chilling storage and "r11 +A4" during post deep freezing storage; ("AH" code); see also parameter A11 (4)
A5	0	1	----	1	enabling of maximum temperature alarm ("AH" code) 1 = yes
A7	0	240	min	15	temperature alarm delay("AL" code and "AH" code)
A8	0	240	min	15	maximum temperature alarm delay ("AH" code) from the conclusion of evaporator fan stop and storage start-up
A10	0	240	min	5	duration of a power cut such to cause the power cut alarm to be memorised ("PF" code)when the power is supplied 0 = the alarm will not be signalled
AA	0	240	s	5	duration of buzzer activation on conclusion of blast chilling and deep freezing
A11	1	15	°C/°F (1)	2	parameters A1 and A4 differential
A13	0	1	----	1	memorisation of the temperature-controlled blast chilling or temperature-controlled deep freezing non concluded within maximum duration alarm ("tiM" code) 1 = yes
A14	----	----	----	----	riservato
Par.	Min.	Max.	Unit	Default	Evaporator and condenser fan

F0	0	3	----	1	<p>evaporator fan activity during pre-cooling, blast chilling and deep freezing (if the parameter is set at 3, there will be effect also during storage)</p> <p>0 = off, with digital control signal, i.e. via digital output K3</p> <p>1 = on, with digital control signal, i.e. via the K3 digital output; see also parameters F16 and F17</p> <p>2 = parallel to the compressor, with digital control signal, i.e. via the K3 digital output; see also parameters F9 and F17</p> <p>3 = with analogue control signal, i.e. via the PWM analogue output and the speed regulator phase cut output for EVDfan1 single phase fans (to order separately); see also parameters F18, F19, F20, F21, F22, F23 and F24</p>
F1	-99	99	°C/°F (1)	-1	<p>evaporator temperature above which the evaporator fan is off during storage (only if parameter F0 and/or parameter F2 is set at 3); see also parameter F8 (11)</p>
F2	0	3	----	3	<p>evaporator fan activity during storage (only if parameter F0 is set at values different to 3)</p> <p>0 = off</p> <p>1 = on</p> <p>2 = parallel to the compressor; see also parameter F9</p> <p>3 = on; see also parameter F1</p>
F3	0	15	min	2	<p>duration of evaporator fan standstill (the compressor can be on during evaporator fan standstill, the defrosting output will remain deactivated and the evaporator fan will remain off)</p>
F8	1	15	°C/°F (1)	2	<p>F1, F16 and F17 parameters differential</p>
F9	0	240	s	0	<p>evaporator fan switch-off delay from compressor switch off (only if parameter F0 and/or parameter F2 are set at 2)</p>
F11	0	99	°C/°F (1)	15	<p>condenser temperature above which the condenser fan is switched on (intended as "F11 + differential and on condition the compressor is switched off); see also parameter F12 (4) (12)</p>

F12	0	240	s	30	condenser fan switch-off delay from compressor switch-off (only if parameter P5 is set at 0)
F15	0	240	s	15	evaporator fan delay from door closure, i.e. from the deactivation of the door micro switch input
F16	-99	99	°C/°F (1)	20	evaporator temperature above which the evaporator fan is off during pre-cooling, blast chilling and deep freezing (only if parameter F0 is set at 1); see also parameter F8 (11)
F17	-99	199	°C/°F (1)	90	cabinet temperature above which the evaporator fan is off during pre-cooling, blast chilling and deep freezing (only if parameter F0 is set at 1 or 2); see also parameter F8
F18	0	100	%	20	evaporator fan speed 1 (intended as a percentage of the maximum speed; only if parameter F0 is set at 3); see paragraph 6.12 "Blast chilling/deep freezing intensity"
F19	0	100	%	40	evaporator fan speed 2 (intended as a percentage of the maximum speed; only if parameter F0 is set at 3); see paragraph 6.12 "Blast chilling/deep freezing intensity"
F20	0	100	%	60	evaporator fan speed 3 (intended as a percentage of the maximum speed; only if parameter F0 is set at 3); see paragraph 6.12 "Blast chilling/deep freezing intensity"
F21	0	100	%	80	evaporator fan speed 4 (intended as a percentage of the maximum speed; only if parameter F0 is set at 3); see paragraph 6.12 "Blast chilling/deep freezing intensity"
F22	0	100	%	100	evaporator fan speed 5 (intended as a percentage of the maximum speed; only if parameter F0 is set at 3); see paragraph 6.12 "Blast chilling/deep freezing intensity"

F23	1	5	----	5	<p>speed at which the evaporator fan is switched on during post blast chilling</p> <p>1 = speed established with parameter F18 (speed 1) 2 = speed established with parameter F19 (speed 2) 3 = speed established with parameter F20 (speed 3) 4 = speed established with parameter F21 (speed 1) 5 = speed established with parameter F22 (speed 5)</p>
F24	1	5	----	5	<p>speed at which the evaporator fan is switched on during post deep freezing</p> <p>1 = speed established with parameter F18 (speed 1) 2 = speed established with parameter F19 (speed 2) 3 = speed established with parameter F20 (speed 3) 4 = speed established with parameter F21 (speed 1) 5 = speed established with parameter F22 (speed 5)</p>
F25	0	30	min	0	<p>evaporator fan switch-on delay from compressor switch-on on start-up of blast chilling and at the start-up of deep freezing</p>
Par.	Min.	Max.	Unit	Default	Digital inputs
i0	0	2	----	2	<p>effect caused by opening the door, i.e. by activation of the door micro switch (13)</p> <p>0 = no effect 1 = the compressor and the evaporator fan will be off and the cabinet light will be on. On expiry of the time established with parameter i2, the 3 digit display will show the flashing "id" code and the buzzer will be activated (until the door is closed); see also parameter F15 (14) 2 = the evaporator fan will be off and the cabinet light will be on. On expiry of the time established with parameter i2, the 3 digit display will show the flashing "id" code and the buzzer will be activated (until the door is closed); see also parameter F15</p>
i1	0	1	----	0	<p>type of door micro switch input contact</p> <p>0 = normally open (input active with closed contact) 1 = normally closed (input active with open contact)</p>

i2	-1	120	min	5	door open alarm signalling delay ("id" code); on expiry of the time established with the parameter, the compressor and the evaporator fan will be off -1 = the alarm will not be signalled
i5	0	1	----	1	effect caused by the activation of the high pressure input 0 = no effect 1 = the compressor and the evaporator fan will be off and the condenser fan will be on. On expiry of the time established with parameter i7, the 3 digit display will show the flashing "HP" code and the buzzer will be activated (until the input is deactivated)
i6	0	1	----	0	type of high pressure input 1 0 = normally open (input active with closed contact) 1 = normally closed (input active with open contact)
i7	-1	240	s	5	high pressure alarm signalling delay ("HP" code) -1 = the alarm will not be signalled
i8	0	1	----	0	type of low pressure input 1 0 = normally open (input active with closed contact) 1 = normally closed (input active with open contact)
i9	-1	240	s	5	low pressure alarm signalling delay ("LP" code) -1 = the alarm will not be signalled
i10	0	1	----	0	type of compressor circuit breaker protection input contact 0 = normally open (input active with closed contact) 1 = normally closed (input active with open contact)
i11	-----	-----	----	----	reserved
Par.	Min.	Max.	Unit	Default	Digital outputs
u1	0	1	----	0	utility managed by the output K8 (15) 0 = pump down valve (in this case, parameter u12 will have meaning) 1 = alarm output

u5	-99	99	°C/°F (1)	2	cabinet temperature over which the door heating elements are off (4)
u6	1	240	min	5	switching on UV light for sterilisation cycle duration
u7	-99	199	°C/°F (1)	40	needle probe heating end temperature (temperature detected by the needle probe); see also parameter u8
u8	1	240	min	2	maximum duration of needle probe heating; see also parameter u7
u9	0	1	----	1	needle probe heating on opening of the door, i.e. on activation of the door entry micro switch, which occurs after interruption of a blast chilling and storage cycle or a deep freezing and storage cycle during storage. 1 = yes
u11	0	1	----	0	utility managed by the output K7 (15) 0 = cabinet light (in this case, the DEEP FREEZING key and parameters i0 and u2 will assume significance) 1 = UV light (in this case, the DEEP FREEZING key and parameter u6 will assume significance)
u12	0	999	s	10	compressor switch off delay from pump down valve deactivation (pump down in switch-off) (17)
Par.	Min.	Max.	Unit	Default	Serial communication (RS-485 serial port with MODBUS communication protocol)
L0	----	----	----	----	reserved
L1	1	240	min	5	recording interval during blast chilling and during deep freezing
L2	1	240	min	15	recording interval during storage
LA	1	247	----	247	device address
Lb	0	3	----	2	baud rate 0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud

LP	0	2	----	2	parity 0 = none (no parity) 1 = odd 2 = even
Par.	Min.	Max.	Unit	Default	Various
E8	0	2	----	2	"keyboard lock" function activation mode 0 = function not enabled 1 = manual with permanent effect (to lock the keyboard, make sure no procedure is in progress, after which press and release the ON/STAND-BY key and then press the highest interactive key on the left; to unlock the keyboard repeat the procedure) 2 = automatic with permanent effect (on expiry of 60 s the keyboard will automatically lock; to unlock the keyboard, make sure no procedure is in progress, after which press and release the ON/STAND-BY key and then press the highest interactive key on the left)
E9	0	1	----	1	EVCO splash screen display during passage from the "off" status to the "stand-by" status and restore of the power supply. 1 = yes

Notes:

- (1) the unit of measurement depends on parameter P2
- (2) appropriately set the parameters relative to the regulators after modification of parameter P2
- (3) the time established with the parameter is counted also during the "on" status and during the "stand-by" status
- (4) The parameter differential is 2 °C/4 °F
- (5) on device switch-on (or cycle start), if the condenser temperature is already over that established with parameter C7, parameter C8 will have no effect
- (6) defrosting is only enabled during pre-cooling, on start-up of blast chilling and at the start-up of deep freezing (in these last two cases on condition that parameter d4 is set at 1) and during storage
- (7) the device memorises the defrosting interval count every 30 minutes; the modification of parameter d0 has effect from the conclusion of the previous defrosting interval (or the activation of defrosting in manual mode)
- (8) if on activation of defrosting, the previous compressor switched on at from a time shorter than that established with parameter d15, the compressor will remain on longer for the fraction of time necessary to complete this time period
- (9) the temperature alarms are only enabled during storage
- (10) during defrosting, pre-dripping, dripping and evaporator fan standstill, the temperature alarms are not enabled, on condition that they occurred after activation of defrosting. When the door is open, i.e. if the door micro switch input is active and the parameter i0 is set at values different to 0, the maximum temperature alarm is not enabled, on condition that occurred after the door was opened
- (11) if parameter P4 is set at 0, during pre-cooling, blast chilling and deep freezing the evaporator fan will be on and during storing the device will operate as if parameter F2 it were set at 2
- (12) if parameter P5 is set at 0, the condenser fan will function parallel to the compressor

- (13) the door open is enabled only using the "run" state
- (14) if the door is opened during defrosting or evaporator fan standstill, opening has no effect on the compressor
- (15) modify the parameter during the "stand-by" status to prevent damage to the utility
- (16) the pump down valve is activated when the compressor is switched-on.

12 USE OF THE USB PORT (ONLY AVAILABLE IN THE MODEL EVFTFT818P7U)

12.1 Foreword

Through the USB port it is possible to make the following operation (from and in a text document):



- upload and download of the configuration parameters
- upload and download of the programs
- download of the information relative to the HACCP alarms.

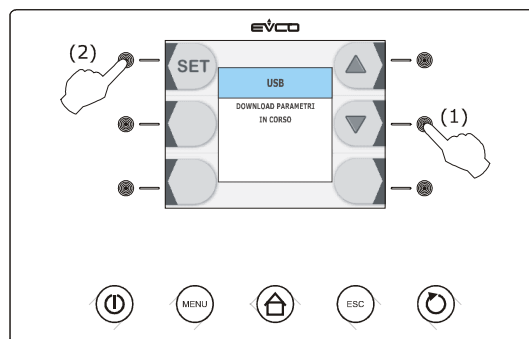
The upload / download procedures are allowed on condition that the firmware of the device of origin and the one of the device (or the devices) of destination are coincident.

The procedures are guaranteed if using the EVCO USB peripheral EVUSB4096M.

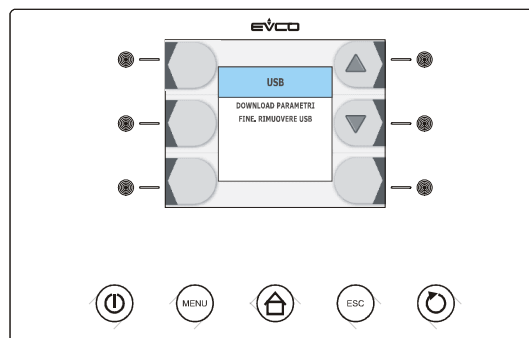
12.2 Upload and download of the configuration parameters

To make the download of the configuration parameters operate as follows:

1. Make sure the device is in the "stand-by" status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the  key (1) to select "**DOWNLOAD PARAMETERS**", then press and release the  key (2): it will automatically be started the writing (into the peripheral) of a text document by name "param.txt" (containing information about the configuration parameters); the writing procedure can take some minutes.





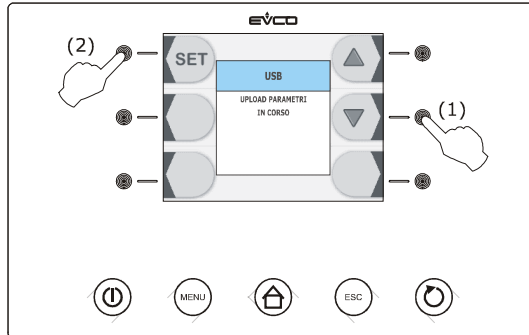
4. To the end of the download remove the USB peripheral from the USB port.



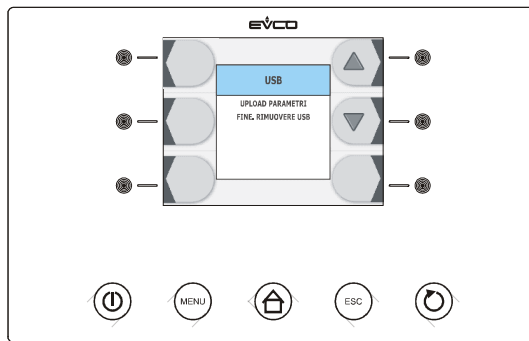
To make the upload of the configuration parameters operate as follows:

5. Make sure the device is in the "stand-by" status.

6. Insert an USB peripheral in the USB serial port; make sure the peripheral contains the text document by name "param.txt" (see point 3).
7. Press and release the  key (1) to select "UPLOAD PARAMETERS", then press and release the  key (2): it will automatically be started the reading (from the peripheral) of the text document by name "param.txt" (containing information about the configuration parameters); the reading procedure can take some minutes.





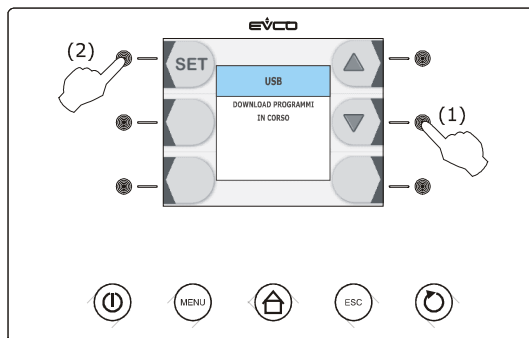
8. To the end of the upload remove the USB peripheral from the USB port.



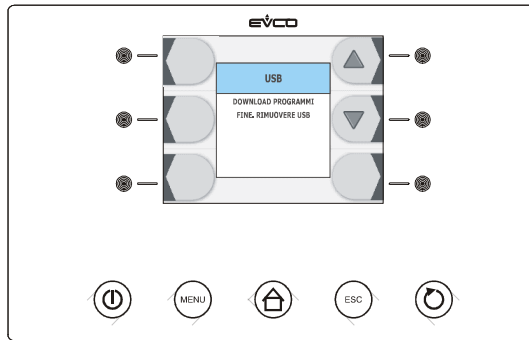
12.3 Upload and download of the programs

To make the download of the programs operate as follows:

1. Make sure the device is in the "stand-by" status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the  key (1) to select "DOWNLOAD PROGRAMMI", then press and release the  key (2): it will automatically be started the writing (into the peripheral) of a text document by name "ricette.txt" (containing information about the programs); the writing procedure can take some minutes.

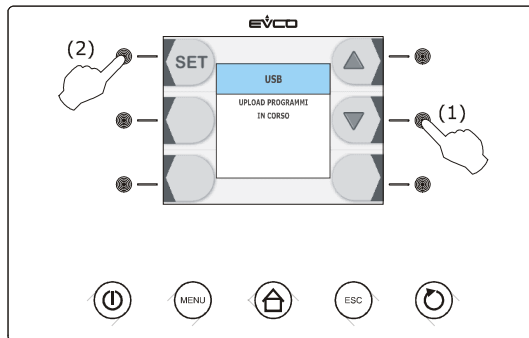


- To the end of the download remove the USB peripheral from the USB port.

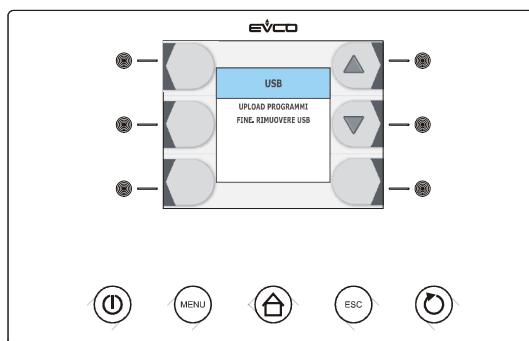


To make the upload of the programs operate as follows:

- Make sure the device is in the "stand-by" status.
- Insert an USB peripheral in the USB serial port; make sure the peripheral contains the text document by name "ricette.txt" (see point 3).
- Press and release the key (1) to select "UPLOAD PROGRAMS", then press and release the key (2): it will automatically be started the reading (from the peripheral) of the text document by name "ricette.txt" (containing information about the programs); the reading procedure can take some minutes.



- To the end of the download remove the USB peripheral from the USB port.



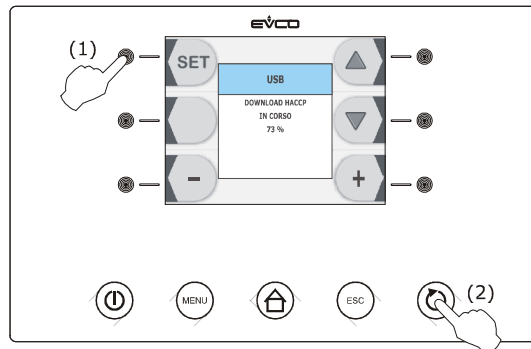
12.4 Download of the information relative to the HACCP alarms

To make the download of the information relative to the HACCP alarms operate as follows:

1. Make sure the device is in the "stand-by" status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the **SET** key (1), the **+** key (2) or the **-** key (3) to set the day and the time from which the information must begin, then press and release the **START / STOP** key (4): it will automatically be started the writing (into the peripheral) of a CSV (Comma Separated Values) document by name (for example) "log247n00001.csv" (containing information relative to the HACCP alarms); the writing procedure can take some minutes.

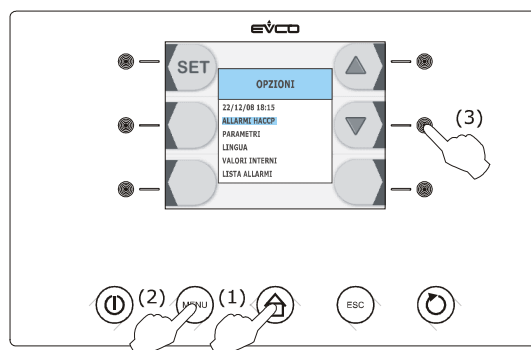
The name of the CSV document is made (with reference to the example) as follows:

- "log": fix field
- "247": value of parameter LA (device address)
- "n": fix field
- "00001": progressive number of downloads of the information relative to the HACCP alarms.

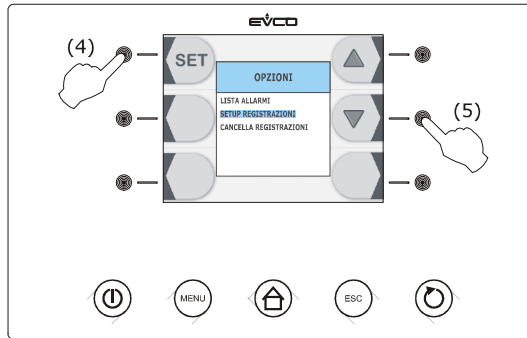


To set the kind of information to be downloaded operate as follows:

- 3.1 Make sure the device is in the "on" status.
- 3.2 Make sure the keyboard is not locked and no procedure is in progress.
- 3.3 Press and release the **HOME** key (1), press and release the **MENU** key (2), then press and release the **▼** key (3) to select "HACCP ALARMS".



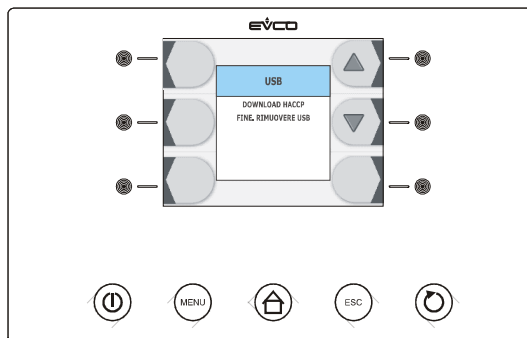
- 3.4 Press and release the **SET** key (4), then press and release the **DOWN** key (5) to select **“SETUP RECORDING”**.



- 3.5 Press and release the **SET** key, press and release the **UP** key or the **DOWN** key to select the information, then press and release the **LEFT** key (or the **RIGHT** key) to add it (or remove it).

Operate as follows to exit the procedure:

- 3.6 Press and release the **ESCAPE** key or do not operate for 60 s.
4. To the end of the download remove the **USB** peripheral from the **USB** port.







To delete the information relative to the HACCP alarms see paragraph 9.3 “Deleting the information relative to the HACCP alarms”.

13 SIGNALS AND INDICATIONS

13.1 Signals

The following table illustrates the meaning of the signalling LEDs.

LED	Meaning
	<p>Blast chilling LED.</p> <p>If it is on:</p> <ul style="list-style-type: none"> - blast chilling will be in progress (or has been performed). <p>If flashing:</p> <ul style="list-style-type: none"> - a blast chilling and storage cycle will have been selected.
	<p>Deep freezing LED.</p> <p>If it is on:</p> <ul style="list-style-type: none"> - a soft deep freezing cycle will be in progress (or has been performed). <p>If flashing:</p> <ul style="list-style-type: none"> - a soft deep freezing and storage cycle will have been selected.
HARD	<p>hard blast chilling/deep freezing LED</p> <p>If it is on:</p> <ul style="list-style-type: none"> - hard blast chilling or deep freezing will be in progress (or has been performed). <p>If flashing:</p> <ul style="list-style-type: none"> - a hard blast chilling and storage cycle or a deep freezing and storage cycle will have been selected.
	<p>temperature-controlled blast chilling/temperature-controlled deep freezing LED.</p> <p>If it is on:</p> <ul style="list-style-type: none"> - a temperature-controlled blast chilling and storage cycle or a temperature-controlled deep freezing and storage cycle will have been performed. - temperature-controlled blast chilling or deep freezing will be in progress. <p>If flashing:</p> <ul style="list-style-type: none"> - a temperature-controlled blast chilling and storage cycle or a temperature-controlled deep freezing and storage cycle will have been selected. - the verification test for the correct insertion of the needle probe will not have been completed successfully - needle probe heating will be in progress.
	<p>time-controlled blast chilling/time-controlled deep freezing LED.</p> <p>If it is on:</p> <ul style="list-style-type: none"> - a time-controlled blast chilling and storage cycle or a time-controlled deep freezing and storage cycle will have been performed. - time-controlled blast chilling or deep freezing will be in progress. <p>If flashing:</p> <ul style="list-style-type: none"> - a time-controlled blast chilling and storage cycle or a time-controlled deep freezing and storage cycle will have been selected. - setting the real date and time will be in progress.

<p>⚡</p>	<p>Storage LED. If it is on:</p> <ul style="list-style-type: none"> - storage will be in progress. <p>If flashing:</p> <ul style="list-style-type: none"> - work set-point modification will be in progress (cabinet temperature).
<p>⚡</p>	<p>Blast chilling/deep freezing intensity LED bars (only if parameter F0 is set at 3). They supply information relative to evaporator fan speed (for example, one bar on corresponds to speed 1, two bars on correspond to speed 2, three bars on correspond to speed 3, etc.).</p>
<p>⚡</p>	<p>Pre-cooling LED. If it is on:</p> <ul style="list-style-type: none"> - pre-cooling will be in progress and the cabinet temperature will have reached that established using parameter r12. <p>If flashing:</p> <ul style="list-style-type: none"> - pre-cooling will be in progress and the cabinet temperature will not have reached that established using parameter r12.
<p>AUX</p>	<p>Auxiliary LED. If it is on:</p> <ul style="list-style-type: none"> - the cabinet light will be on - needle probe heating will be in progress - the UV light will be on.
<p>HACCP</p>	<p>HACCP LED. If it is on:</p> <ul style="list-style-type: none"> - all information regarding HACCP alarms will not have been displayed. <p>If flashing:</p> <ul style="list-style-type: none"> - the device will have memorised at least one new HACCP alarm.
<p>°C</p>	<p>Degree Celsius LED. If it is on:</p> <ul style="list-style-type: none"> - the temperature unit of measurement will be the degree Celsius.
<p>°F</p>	<p>Degree Fahrenheit LED. If it is on:</p> <ul style="list-style-type: none"> - the temperature unit of measurement will be the degree Fahrenheit.
<p>min</p>	<p>minutes LED. If it is on:</p> <ul style="list-style-type: none"> - the time unit of measurement will be the minute.

If the ON/STAND-BY key is on, it means that the device will be in the "stand-by" state.

13.2 Indications

The following table illustrates the meaning of the indication codes.

Code	Meaning
dEF	Defrosting will be in progress.
Loc	The keyboard is locked, see paragraph 5.10 "Lock/unlock the keyboard".
UnL	The keyboard has been locked, see paragraph 5.10 "Lock/unlock the keyboard".

14 ALARMS

14.1 Alarms

The following table illustrates the meaning of the alarm codes.

Code	Meaning
tiM	<p>Temperature-controlled blast chilling or deep freezing not concluded within maximum duration alarm (HACCP alarm).</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the value of parameters r5 and r6 and AA. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device will memorise the alarm - the alarm output will be activated.
AL	<p>Minimum temperature alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the temperature of the cabinet - check the value of parameters A1 and A2. <p>Main consequences:</p> <ul style="list-style-type: none"> - the alarm output will be activated.
AH	<p>Maximum temperature alarm (HACCP alarm).</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the temperature of the cabinet - check the value of parameters A4 and A5. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device will memorise the alarm - the alarm output will be activated.
id	<p>Door open alarm</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the door conditions - check the value of parameters i0 and i1. <p>Main consequences:</p> <ul style="list-style-type: none"> - the effect established with parameter i0 - the alarm output will be activated.
HP	<p>High pressure alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the conditions of the high pressure input - check the value of parameters i5 and i6. <p>Main consequences:</p> <ul style="list-style-type: none"> - the effect established with parameter i5 - the alarm output will be activated.

LP	<p>Low pressure alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the conditions of the low pressure input - check the value of the parameter i8. <p>Main consequences:</p> <ul style="list-style-type: none"> - the compressor and the evaporator fan will be off - the alarm output will be activated.
CtH	<p>Compressor circuit breaker protection alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the conditions of the compressor circuit breaker protection input - check the value of the parameter i10. <p>Main consequences:</p> <ul style="list-style-type: none"> - the compressor will be switched off - the alarm output will be activated.
PF	<p>Power supply cut-off alarm during storage (HACCP).</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the device-power supply connection - check the value of the parameter A10. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device will memorise the alarm - the alarm output will be activated.
COH	<p>Condenser overheated alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the temperature of the condenser - check the value of the parameter C6. <p>Main consequences:</p> <ul style="list-style-type: none"> - the condenser fan will be switched on - the alarm output will be activated.
CSd	<p>Compressor blocked alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the temperature of the condenser - check the value of the parameter C7 - disconnect the device power supply and clean the condenser. <p>Main consequences:</p> <ul style="list-style-type: none"> - if the error occurs during the "stand-by" status, no operating cycles can be selected or started - if the error occurs during an operating cycle, the cycle will be interrupted - the alarm output will be activated.
ALARM San	<p>Sanification alarm.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the correct insertion of the needle probe and check the value of parameters r17 and r18. <p>Main consequences:</p> <ul style="list-style-type: none"> - the cycle of sanification will be stopped.

15 ERRORS

15.1 Errors

The following table illustrates the meaning of the error codes.

Code	Meaning
Pr1	<p>Cabinet probe error.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check the value of the parameter P0 - check the integrity of the probe - check the device-probe connection - check the temperature of the cabinet. <p>Main consequences:</p> <ul style="list-style-type: none"> - if the error occurs during the "stand-by" status, no operating cycles can be selected or started - if the error occurs during blast chilling or deep freezing, the cycle will be interrupted - if the error occurs during storage, compressor activity will depend on parameters C4 and C5 or C9 - defrosting will never be activated - the minimum temperature alarm ("AL" code) will never be activated - the maximum temperature alarm ("AH" code) will never be activated - the door heating elements will never be switched on - the alarm output will be activated.
Pr2	<p>Evaporator probe error.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - the same as the cabinet probe error ("Pr1" code) but relative to the evaporator probe. <p>Main consequences:</p> <ul style="list-style-type: none"> - if parameter P4 is set at 1, defrosting will last for the period of time established with parameter d3 - if parameter F0 is set at 1, parameter F16 will have no effect - if parameter F2 is set at 1, the device will operate as if it were set at 2. - the alarm output will be activated.
Pr3	<p>Condenser probe error.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - the same as the cabinet probe error ("Pr1" code) but relative to the condenser probe. <p>Main consequences:</p> <ul style="list-style-type: none"> - the condenser fan will operate parallel to the compressor - the overheated condenser alarm ("COH" code) will never be activated - the compressor blocked alarm ("CSD" code) will never be activated - the alarm output will be activated.

Pr4	<p>Needle probe error 1.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - the same as the cabinet probe error ("Pr1" code) but relative to the needle probe 1. <p>Main consequences if parameter P3 is set at 1:</p> <ul style="list-style-type: none"> - if the error occurs during the "stand-by" status, temperature-controlled operating cycles will be started by time-control - if the error occurs during temperature-controlled blast chilling, this will have duration of the time set by parameter r1 - if the error occurs during temperature-controlled deep freezing, this will have duration of the time set by parameter r2 - if the error occurs during needle probe heating, this operation will be interrupted. - the alarm output will be activated. <p>Main consequences if parameter P3 is set at 2 or at 3:</p> <ul style="list-style-type: none"> - the device will not use needle probe 1.
Pr5	<p>Needle probe error 2.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - the same as the cabinet probe error ("Pr1" code) but relative to the needle probe 2. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device will not use needle probe 2.
Pr6	<p>Needle probe error 3.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - the same as the cabinet probe error ("Pr1" code) but relative to the needle probe 3. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device will not use needle probe 3.
rtc	<p>Clock error.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - set the real date and time again. <p>Main consequences:</p> <ul style="list-style-type: none"> - the device does not memorise the date or time at which the HACCP alarm occurred or its duration - the alarm output will be activated.
ErC	<p>User interface-control module compatibility.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check that the user interface and the control module are compatible. <p>Main consequences:</p> <ul style="list-style-type: none"> - the control module will continue to operate normally.
ErL	<p>User interface-control module communication error.</p> <p>Solutions:</p> <ul style="list-style-type: none"> - check user interface-control module control module. <p>Main consequences:</p> <ul style="list-style-type: none"> - the control module will continue to operate normally.

16 ACCESSORIES

16.1 Data recording device EVUSBREC01

16.1.1 Introduction

EVUSBREC01 is a data recording device.

Using the device, it is possible to record controller data and their download (via USB, into a text document).

16.1.2 Description

The following drawing illustrates the aspect of the EVUSBREC01.

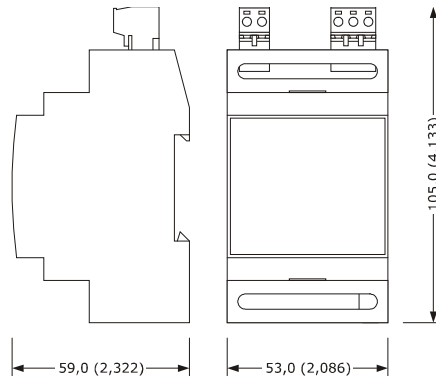


The following table illustrates the meaning of the EVUSBREC01 parts.

Part	Meaning
1	USB type serial port
2	RS-485 type serial port
3	power supply

16.1.3 Dimensions

The following drawing illustrates the EVUSBREC01 dimensions; these are expressed in mm (in).



16.1.4 Connection to the device

Operate as follows:

1. Cut the device power supply off.
2. Cut the EVUSBREC01 power supply off.
3. Connect the device RD-485 serial port to the EVUSBREC01 RS-485 type serial port.
4. Connect the device power supply.
5. Connect the EVUSBREC01 power supply.

For further information, consult the documentation relative to EVUSBREC01.

16.2 Optoisolated RS-485/RS-232 serial interface EVIF21RS7I

16.2.1 Introduction

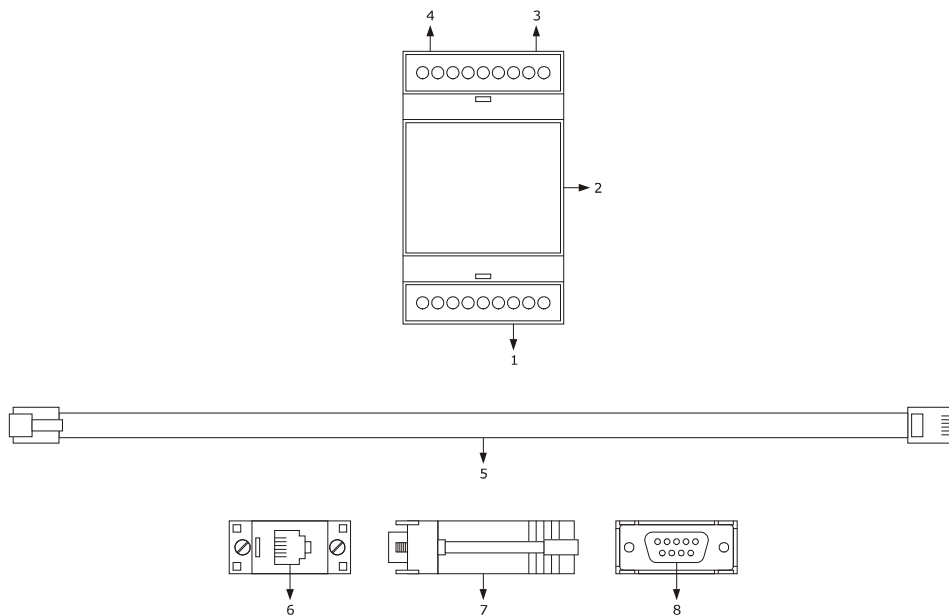
EVIF21RS7I is an optoisolated RS-485/RS-232 serial interface.

The interface can be used to connect the controller to the Parameters Manager set-up software system.

The Personal Computer must have a free COM port; to connect the driver via a USB port, the adapter must also be used from COM to USB 0810500011.

16.2.2 Description

The following drawing illustrates the aspect of the EVIF21RS7I.



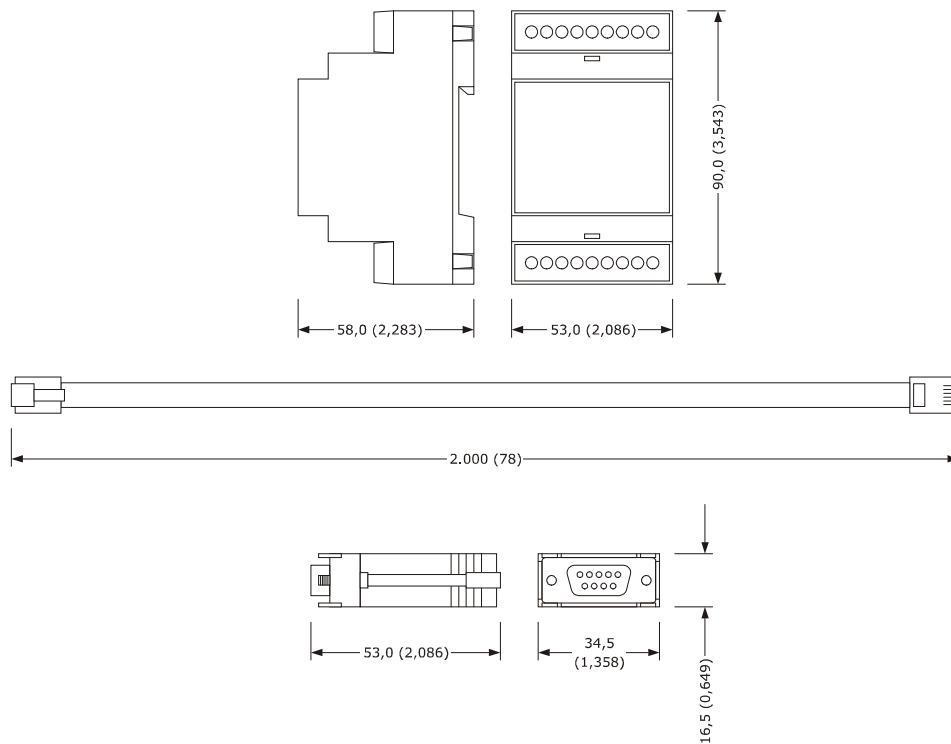
The following table illustrates the meaning of the EVIF21RS7I parts.

Part	Meaning
1	RS-485 type serial port
2	EVIF21RS7I

3	power supply
4	RS-232 type serial port
5	1256800042 telephone cable
6	RJ connector
7	1256800079 adapter
8	DB connector

16.2.3 Dimensions

The following drawing illustrates the EVIF21RS7I dimensions; these are expressed in mm (in).



16.2.4 Connection to the device

Operate as follows:

1. Cut the device power supply off.
2. Connect the device RD-485 serial port to the EVIF21RS7I RS-485 type serial port.
3. Insert one end of the telephone cable 1256800042 into the EVIF21RS7I RS-232 serial port.
4. Insert the other end of the telephone cable 1256800042 into the 1256800079 adapter RJ connector.
5. Connect the 1256800079 adapter DB connector to a Personal Computer COM, in which Parameters Manager is installed.
6. Connect the device power supply.

For further information, consult the documentation relative to Parameters Manager.

16.3 Phase cut speed regulator for single phase fans EVDFAN1

16.3.1 Introduction

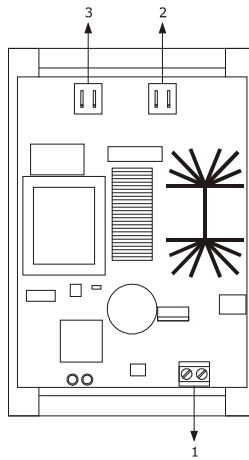
EVDFAN1 is a phase cut speed regulator for single phase fans.

The regulator control signal is the PWM type, the same supplied by the controller analogue output.

The maximum current allowed on the fan is 5 A.

16.3.2 Description

The following drawing illustrates the aspect of the EVDFAN1.

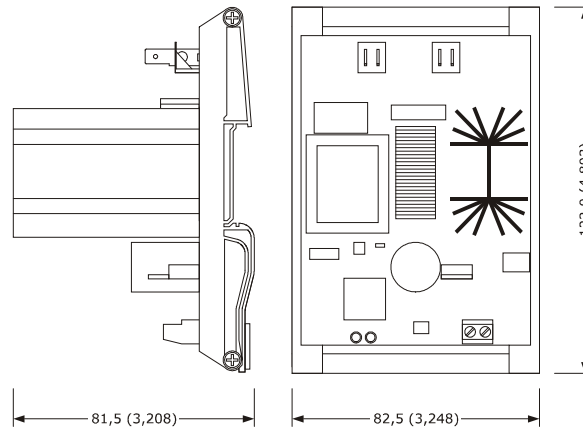


The following table illustrates the meaning of EVDFAN1 parts.

Part	Meaning
1	control signal input
2	power supply
3	phase cut output

16.3.3 Dimensions

The following drawing illustrates the EVDFAN1 dimensions; these are expressed in mm (in).



16.3.4 Connection to the device

Operate as follows:

1. Make sure that parameter F0 is set at 3.
2. Cut the device power supply off.
3. Cut the EVDFAN1 power supply off.
4. Connect the device PWM analogue output to the EVDFAN1 control signal input.
5. Connect the evaporator fan to the EVDFAN1 phase cut output.
6. Connect the device power supply.
7. Connect the EVDFAN1 power supply.

In order to use EVDFAN1, the phase that powers the controller must be the same that powers EVDFAN1.

For further information, consult the documentation relative to EVDFAN1.

17 TECHNICAL DATA

17.1 Technical data

Purpose of the device:	blast chiller controller.	
Execution:	user interface	control module
	board without cover behind a Plexiglas sheet.	board without cover.
Dimensions:	user interface	control module
	200.0 x 135.0 x 28.0 ±0.6 mm (7.874 x 5.314 x 1.102 ±0.023 in; L x H x D).	166.0 x 116.0 x 44.0 mm (6.535 x 4.566 x 1.732 in; L x H x D).
Installation:	user interface	control module
	back panel via studs.	on flat surface, with spacers.
Protection rating:	user interface	control module
	IP65.	IP00.
Connections:	user interface	control module
	removable screw terminal board (control module and RS-485 serial port).	removable screw terminal board (user interface, power supply, inputs, outputs).
	The maximum length of the user interface -control module connection is 10 m (32.808 ft).	
Temperature of use:	from 0 to 55 °C (from 32 to 131 °F).	
Storage temperature:	from -10 to 70 °C (from 14 to 158 F).	
Humidity for use:	from 10% to 90% relative humidity without condensate.	
Pollution situation:	normal.	
Power supply:	user interface	control module
	supplied from the control module.	230 VAC (±15%), 50/60 Hz (±3 Hz), 10 VA max.

Overvoltage category:	integrated control.
Clock:	incorporated (with condenser).
	Battery autonomy in the event of a power-cut: 24 h with battery fully charged.
	Battery charging time: 2 min (the battery is charged by the device power supply).
Signal buzzer and alarm:	incorporated.
Analogue inputs:	6 inputs (cabinet probe, "multipoint" needle probe with up to three sensors, evaporator probe and condenser probe) can be set via configuration parameter for PTC/NTC probes.
	PTC type analogue inputs (990 Ω @ 25°C, 77°F) Type of sensor: KTY 81-121. Field of measurement: from -50 to 150°C (from -58 to 302°F). Resolution: 1 °C (1 °F). Protection: none.
	NTC type analogue inputs (10K Ω @ 25°C, 77°F) Type of sensor: β 3435. Field of measurement: from -40 to 105°C (from -40 to 220 °F). Resolution: 1 °C (1 °F). Protection: none.
	4 inputs (door micro switch, high pressure, low pressure and compressor circuit breaker protection), which can be set via configuration parameter due to normally open contact/normally closed contact (potential-free contact, 5 VDC, 2 mA)
Digital inputs:	Digital inputs Power supply: none. Protection: none.
Displays:	320 x 240 pixel (3.5 inch) colour TFT graphics display
Analogue outputs:	1 PWM output for management of the evaporator fan.

Digital outputs:	8 outputs (electromechanical relays): <ul style="list-style-type: none"> - 1 x 16 A res. output @ 250 VAC SPST type (K1) for compressor management - 6 x 8 A res. outputs @ 250 VAC of which five SPST type for managing defrosting (K2), the evaporator fan (K3), the condenser fan (K4), cabinet light or UV light (K7), the pump down valve or alarm output (K8) and one SPDT type for management of the door heating elements (K5) - 1 x 16 A res. output @ 250 VAC SPDT type (K6) for heating management of the needle probe.
Type of actions and complementary features:	1C.
Communication port:	2 ports: <ul style="list-style-type: none"> - 1 RS-48 serial port with MODBUS communication protocol - 1 USB serial port (only available in the model EVFTFT818P7U).

EVFTFT818

Controller in split execution for temperature-controlled blast chillers with capacitive touch-key user interface, which can be integrated into the unit

Installer manual ver. 2.1

PT - 51 / 12

Code 144FTFT818E214

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