EVY Cold MEDIUM

Controllers for refrigerated cabinets and display units

EN ENGLISH

- controllers for normal or low temperature units
- power supply 12... 24 Vdc
- 3 analogue inputs for configurable PTC, NTC or Pt 1000 probes
- door switch digital input
- 4 multi-purpose digital inputs
- management of variable capacity PWM compressors (Embraco, Secop and Tecumseh), rather than variable capacity compressors or 0-10 V modulating fans
- 8 digital outputs (electro-mechanical relays)
- main relay 16 A res. @ 250 Vac or 30 A res. @ 250 Vac (according to the model)
- 2 outputs 12... 24 Vdc max. 2.5 A
- sealed relays compliant with the standard EN 60079-15
- alarm buzzer
- TTL MODBUS slave port for the EVconnect app or the EPoCA remote monitoring system
- type C USB port
- hot or cold mode regulation

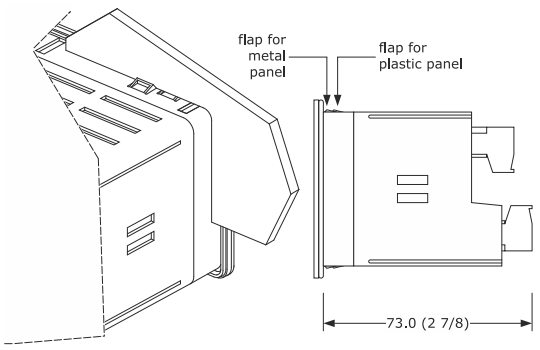
Models available

Purchasing code	Number of relays	Capacity of main relay	Manag. of remote indicator
EVY218DN3	8	16 A res. @ 250 Vac	no
EVY238DN3	8	30 A res. @ 250 Vac	no
EVY238DN3PFT	8	30 A res. @ 250 VAC	yes

1 MEASUREMENTS AND INSTALLATION

Measurements are expressed in mm (inches). Front installation on a plastic or metal panel (with elastic holding flaps).

N.B.
- the metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in) thick, while the plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in)
- make sure the product used to clean the device is not classified as aggressive



INSTALLATION PRECAUTIONS
- ensure that the working conditions are within the limits stated in the *TECHNICAL SPECIFICATIONS* section
- do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations or shocks
- in compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

3 FIRST-TIME USE

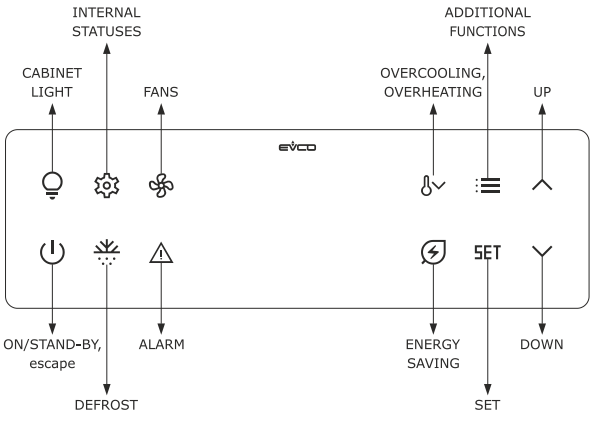
1. Carry out the installation following the instructions given in the section *MEASUREMENTS AND INSTALLATION*.
2. Power up the device: an internal test will start up.
   The test normally takes a few seconds; when it is finished, the display will switch off.
3. Configure the device as shown in the section *Setting configuration parameters*.
   Recommended configuration parameters for first-time use:

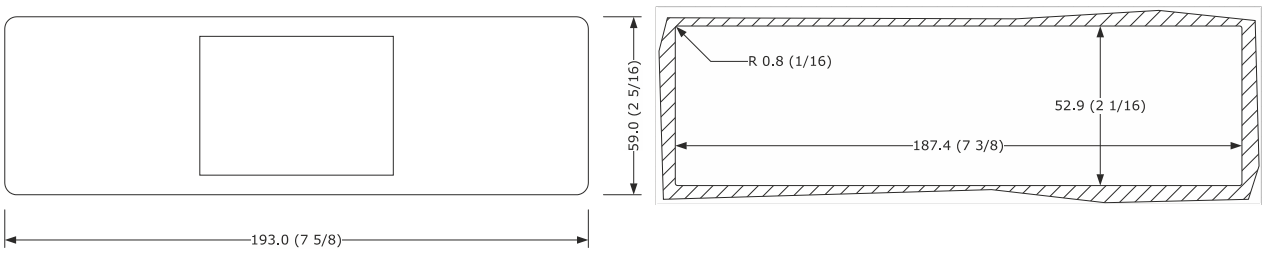
PAR.	DEF.	PARAMETER	MIN... MAX.
SP	**0.0**	setpoint	r1... r2
P0	**1**	type of probe	0 = PTC 1 = NTC 2 = Pt 1000
P2	**0**	temperature measurement unit	0 = °C 1 = °F
d1	**0**	type of defrost	0 = electric 1 = hot gas 2 = compressor stopped

   Next check that the remaining settings are appropriate; see the section *CONFIGURATION PARAMETERS*.
4. Disconnect the device from the mains.
5. Make the electrical connection as shown in the section *ELECTRICAL CONNECTION,* without powering up the device.
6. To perform the configuration upload or download, connect the EVJKEY programming key.
   To activate real-time functions, connect the EVlinking RS-485 EVIF23TSX converter.
   To control the device using the EVconnect app, connect the EVlinking BLE EVIF25TBX module then synchronise it with the app.
   To control the device using the EPoCA monitoring system or a third-party MODBUS TCP system:
   - connect the EVlinking Wi-Fi EVIF25TWX module to the device and then to a local Wi-Fi network
   - connect the EVlinking RS-485 EVIF24TSX converter to the device then to an IoT EV3 Web gateway or EVD Web. Next connect this to a free Ethernet port of a router or an Ethernet hub connected to a local network.
7. Power up the device again.

4 USER INTERFACE AND MAIN FUNCTIONS

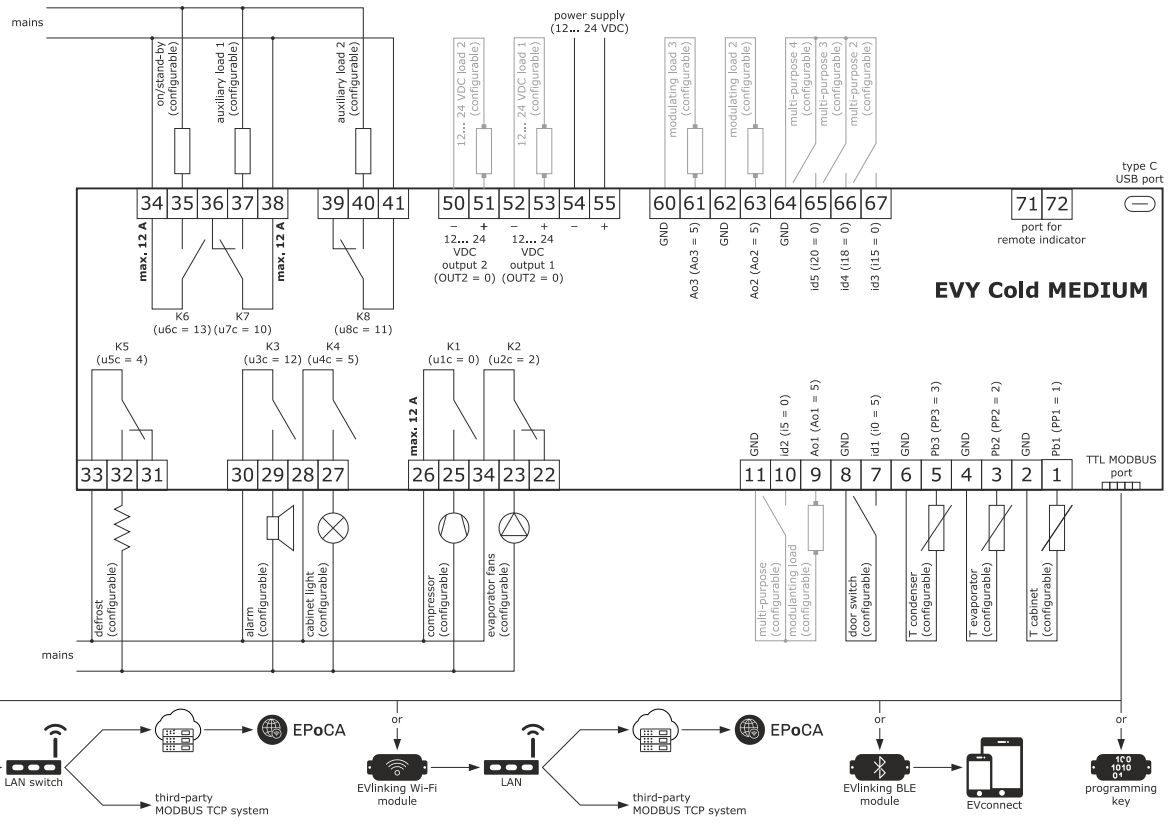
4.1 Keypad





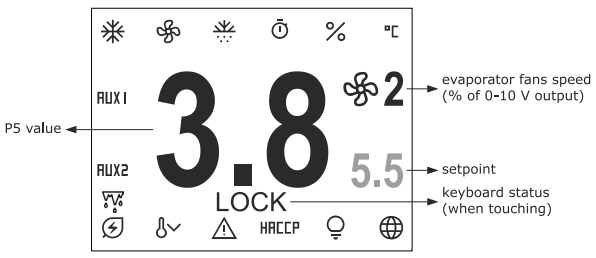
2 ELECTRICAL CONNECTION

N.B.
- use cables of an adequate section for the current running through them
- **in some cases the temperature on the terminal blocks can reach 105 °C (221 °F): use cables with adequate insulation**
- to reduce any electromagnetic interference, locate the power cables as far away as possible from the signal cables
- **the 0-10 V analogue outputs operate properly provided that the device is powered by at least 11 VDC**
- **if the device has a power supply of 12 Vdc, the outputs 12... 24 Vdc will each deliver 12 Vdc max. 2.5 A; if the device has a power supply of 24 Vdc, the outputs 12... 24 Vdc will each deliver 24 Vdc max. 2.5 A**
- **the maximum total current allowed on the loads is 32 A**
- port for remote indicator is only available in model EVY238DN3PFT



PRECAUTIONS FOR ELECTRICAL CONNECTION
- if using an electrical or pneumatic screwdriver, adjust the tightening torque
- if the device is moved from a cold to a warm place, humidity may cause condensation to form inside. Wait for about an hour before switching on the power
- make sure that the supply voltage, electrical frequency and power are within the set limits. See the section *TECHNICAL SPECIFICATIONS*
- disconnect the power supply before carrying out any type of maintenance
- do not use the device as a safety device
- for repairs and further information, contact the EVCO sales network

4.2 Display



4.3 Switching the device on/off

1. ⏻ — If POF = 1 (default), touch the ON/STAND-BY key for 4 s

If the device is switched on, the display will show the P5 value (default "cabinet or product temperature"); if the LED alarm is on, see the section *ALARMS*.

LED	ON	OFF	FLASHING
❄	compressor on	compressor off	compressor protection active
≋	heating active	heating not active	demisting on or door heaters on
✣	evaporator fans on	evaporator fans off	evaporator fans off active
❄	defrost or pre-drip active	defrost or pre-drip not active	- defrost delay active - dripping active
◷	clock active	clock not active	-
%	active humidity level displayed	-	-
°C	temperature displayed in Celsius	-	-
°F	temperature displayed in Fahrenheit	-	-
⚡	energy saving active	energy saving not active	-
🌡	overcooling or overheating active	overcooling or overheating not active	-
⚠	alarm active	alarm not active	compressor maintenance request
HACCP	saved HACCP alarm not displayed	no HACCP alarm saved or no saved HACCP alarm not displayed	new HACCP alarm saved
💡	cabinet light on	cabinet light off	cabinet light on from digital input
🌐	connection with EVconnect app or EPoCA remote monitoring system	no connection	-
	-	thawing not active	thawing active
AUX1	auxiliary load 1 on	auxiliary load 1 off	-
AUX2	auxiliary load 2 on	auxiliary load 2 off	-

If Loc = 1 (default) and 30 s have elapsed without the keys being pressed, the display will show the "**LOCK**" label and the keypad will lock automatically.

4.4 Unlocking the keypad

Touch a key for 1 s: the display will show the label "**UNLOCK**".

4.5 Setting the setpoint (if r3 = 0, default)

Check that the keypad is not locked.

1.	SET	Touch the SET key
2	∧ ∨	Touch the UP or DOWN key within 15 s to set the value within the limits r1 and r2 (default "-40... 50")
3.	SET	Touch the SET key (or take no action for 15 s)

4.6 Setting the 0-10 V evaporator fan speed for normal operation (percentage 0-10 V output; available if Ao1... Ao3 = 3 and F30 = 0)

Check that the keypad is not locked.

1.	✣	Touch the FAN key
2.	∧ ∨	Touch the UP or DOWN key within 15 s to set the value within the limits F31 and F32 (default "50... 100")
3.	SET	Touch the SET key (or take no action for 15 s)

4.7 Activating/deactivating manual defrost (if r5 = 0, default)

Check that the keypad is not locked and that overcooling is not active.

1.	❄	Touch the DEFROST key for 2 s

If P3 = 1 (default), defrost is activated provided that the evaporator temperature is lower than the d2 or d2b threshold.

4.8 Activating/deactivating manual energy saving

Check that the keypad is not locked.

1.	⚡	Touch the ENERGY SAVING key

FUNCTION	CONDITION	CONSEQUENCE
energy saving	r5 = 0	the setpoint becomes "setpoint + r4", for the HE2 time at the most

If u1c... u8c = 16, the evaporator fans will operate at this speed during the energy-saving function.
If u1c... u8c = 18, the condenser fans will operate at this speed during the energy-saving function.

4.9 Activating/deactivating overcooling and overheating

Check that the keypad is not locked.

1.	🌡	Touch the OVERCOOLING/OVERHEATING key

FUNCTION	CONDITION	CONSEQUENCE
overcooling	r5 = 0 and defrosting not activated	the setpoint becomes "setpoint - r6", for the r7 time
overheating	r5 = 1	the setpoint becomes "setpoint + r6", for the r7 time

4.10 Manually switching the cabinet light on/off (if u1c... u8c = 5)

1.	💡	Touch the CABINET LIGHT key

4.11 Silencing the buzzer (if u9 = 1, default)

Touch a key.
If u1c... u8c = 11 and u4 = 1, the alarm output is deactivated.

5 ADDITIONAL FUNCTIONS

5.1 Setting the date and time (available when the EVlinking RS-485 EVIF23TSX converter, the EVlinking BLE EVIF25TBX module or the EVlinking Wi-Fi EVIF25TWX module is connected)

CAUTION
- do not disconnect the device from the mains in the two minutes after setting the date, time and day of the week
- if the device communicates with the EVconnect app or the EPoCA remote monitoring system, it is possible to force the date and time synchronization with those of the smartphone, tablet or Personal Computer from which you are operating

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Clock**"
5.	SET	Touch the SET key
6.	SET	Touch the SET key again
7.		Touch the UP or DOWN key within 15 s to set the year
8.	SET	Touch the SET key
9.		Touch the UP or DOWN key within 15 s to set the month (01... 12)
10.	SET	Touch the SET key
11.		Touch the UP or DOWN key within 15 s to set the day (01... 31)
12.	SET	Touch the SET key
13.		Touch the UP or DOWN key within 15 s to set the time (00... 23)
14.	SET	Touch the SET key
15.		Touch the UP or DOWN key within 15 s to set the minute (00... 59)
16.		Touch the ON/STAND-BY key a few times to exit the procedure

5.2 Switching on/off the demisting function (if u1c... u6c = 8), auxiliary load 1 (if u1c... u8c = 10) and auxiliary load 2 (if u1c... u8c = 11)

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2		Touch the UP or DOWN key within 15 s to select an option
3.	SET	Touch the SET key: the display will show a message

OPTION	DESCRIPTION	MESSAGE
AUX 1	auxiliary load 1	**AUX 1 switch ON/OFF SET To Confirm**
AUX 2	auxiliary load 2	**AUX 2 switch ON/OFF SET To Confirm**
Demisting	demisting	**Switch on/off Demisting SET To Confirm**

4.	SET	Touch the SET key: the device will exit the procedure

The demisting function stays on at full power for the duration of u6 at the most.

5.3 Setting the humidity level (if F0 = 5)

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Humidity Level**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to set the value
5.	SET	Touch the SET key: the device will exit the procedure

If u1c... u8c = 16, the evaporator fans will operate at this speed during low humidity function.

5.4 Activating/deactivating thawing

Check that the keypad is not locked and that overcooling is not active.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Thawing**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key to select an option

OPTION	DESCRIPTION
LIGHT LOAD	light load
MEDIUM LOAD	medium load
FULL LOAD	full load

5.	SET	Touch the SET key: the device will exit the procedure
6.	SET	Touch the SET key for 2 s to deactivate thawing

FUNCTION	CONDITION	CONSEQUENCE
thawing	u1c... u8c = 8	- if **LIGHT LOAD** selected, main function of r19, r22 and r25, defrost disabled - if **MEDIUM LOAD** selected, main function of r20, r23 and r26, defrost disabled - if **HIGH LOAD** selected, main function of r21, r24 and r27, defrost disabled

When thawing is complete, a buzzer will sound for the duration of u10 and the device will go into conservation phase (main function of r28). The evaporator fan stays on.
If the door is opened during thawing, the function is deactivated.

5.5 Deleting HACCP alarm information

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Reset HACCP Alarms**"
5.	SET	Touch the SET key
6.	SET	Touch the SET key again
7.		Touch the UP or DOWN key to set "**149**"
8.	SET	Touch the SET key: the display will show the message "**..DONE..**".
9.		Touch the ON/STAND-BY key a few times to exit the procedure

5.6 Deleting compressor operation days

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Reset Compressor Working Hours**"
5.	SET	Touch the SET key
6.	SET	Touch the SET key again
7.		Touch the UP or DOWN key to set "**149**"
8.	SET	Touch the SET key: the display will show the message "**..DONE..**".
9.		Touch the ON/STAND-BY key a few times to exit the procedure

5.7 Setting the language

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Language**"
5.	SET	Touch the SET key
6.		Touch the UP or DOWN key within 15 s to set the language
7.	SET	Touch the SET key
8.		Touch the ON/STAND-BY key a few times to exit the procedure

5.8 Rebooting the EVlinking Wi-Fi module

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Reboot EVlinking**"
5.	SET	Touch the SET key for 2 s: the device will exit the procedure

6 INTERNAL STATUS

6.1 Viewing HACCP alarm information

Check that the keypad is not locked.

1.		Touch the INTERNAL STATUS key
2.		Touch the UP or DOWN key within 15 s to select the option "**HACCP**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key to select an option

OPTION	DESCRIPTION
Low Temperature	low temperature alarm
High Temperature	high temperature alarm
Door Open	door open alarm (if i4 = 1)
Power Failure	power failure alarm (available when the EVlinking RS-485 EVIF23TSX converter, the EVlinking BLE EVIF25TBX module or the EVlinking Wi-Fi EVIF25TWX module is connected)

5.	SET	Touch the SET key: the display will show: - the date and time of the alarm (available when the EVlinking RS-485 EVIF23TSX converter, the EVlinking BLE EVIF25TBX module or the EVlinking Wi-Fi EVIF25TWX module is connected) - the duration of the alarm - the critical value
6.		Touch the ON/STAND-BY key a few times to exit the procedure

6.2 Viewing internal status

Check that the keypad is not locked.

1.		Touch the INTERNAL STATUS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Internal Values**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key to select an option

OPTION	DESCRIPTION
Cabinet T	cabinet temperature (visible if PP1... PP4 = 0 and PP1... PP4 ≠ 5)
Evaporator T	evaporator temperature (visible if PP1... PP4 = 2)
Condenser T	condenser temperature (visible if PP1... PP4 = 3)
Critical Temp.	critical temperature (visible if PP1... PP4 = 4)
Outgoing Air T.	outgoing air temperature (visible if PP1... PP4 = 6)
Evaporator 2 Temp.	evaporator 2 temperature (visible if PP1... PP4 = 7)
CPT Value	product temperature (visible if PP1... PP4 = 5)
Compressor Speed	percentage of power supplied by the analogue output to the compressor (visible if Ao1... Ao3 = 1)
Condenser Fan Speed	percentage of power supplied by the analogue output to the condenser fan (visible if Ao1... Ao3 = 2)
Evaporator Fan Speed	percentage of power supplied by the analogue output to the evaporator fan (visible if Ao1... Ao3 = 3)
Minimum Temperature	minimum temperature saved in the last 72 hours
Maximum Temperature	maximum temperature saved in the last 72 hours
Comp. Days	compressor operation days
No. Comp. Activations	number of compressor switch-ons
No. Door Openings	number of door openings

5.		Touch the ON/STAND-BY key a few times to exit the procedure

As regards the minimum and maximum temperatures saved in the last 72 hours, the device saves the rEt value (default "temperature of the cabinet or the product, not during defrost, predrip or dripping and with the fans off").
When the device is switched on/off, these temperatures are deleted.

7 SETTINGS

7.1 Setting configuration parameters

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Parameters**"
5.	SET	Touch the SET key
6.	SET	Touch the SET key again
7.		Touch the UP or DOWN key within 15 s to set the PAS value (default "**-19**")
8.	SET	Touch the SET key
9.		Touch the UP or DOWN key to select a parameter
10.	SET	Touch the SET key
11.		Touch the UP or DOWN key within 15 s to set the value
12.	SET	Touch the SET key (or take no action for 15 s)
13.		Touch the ON/STAND-BY key a few times to exit the procedure

7.2 Restoring factory settings

N.B.
Check that the factory settings are appropriate; see the section *CONFIGURATION PARAMETERS*

Check that the keypad is not locked.

1.		Touch the ADDITIONAL FUNCTIONS key
2.		Touch the UP or DOWN key within 15 s to select the option "**Service**"
3.	SET	Touch the SET key
4.		Touch the UP or DOWN key within 15 s to select the option "**Reset Parameters**"
5.	SET	Touch the SET key
6.	SET	Touch the SET key again
7.		Touch the UP or DOWN key to set "**149**"
8.	SET	Touch the SET key: the display will show the message "**..DONE..**".
9.		Touch the ON/STAND-BY key a few times to exit the procedure
10.		Disconnect the device from the power supply

8 CONFIGURATION PARAMETERS

NO.	PAR.	DEF.	SETPOINT	MIN... MAX.
1	SP	**0.0**	setpoint	r1... r2
NO.	PAR.	DEF.	ANALOGUE INPUTS	MIN... MAX.
2	CA1	**0.0**	probe 1 offset	-25... 25 °C/°F
3	CA2	**0.0**	probe 2 offset	-25... 25 °C/°F
4	CA3	**0.0**	probe 3 offset	-25... 25 °C/°F
5	CA4	**0.0**	probe 4 offset	-25... 25 °C/°F
6	P0	**1**	type of probe	0 = PTC 1 = NTC 2 = Pt 1000
7	P1	**1**	enable decimal point °C	0 = no 1 = yes
8	P2	**0**	temperature measurement unit	0 = °C 1 = °F
9	P3	**1**	evaporator probe function	0 = disabled 1 = defrost + fans 2 = fans
10	P5	**0**	value displayed	0 = if PP1... PP4 = 5, product temperature (CPT), otherwise cabinet temperature 1 = setpoint 2 = evaporator temperature 3 = condenser temperature 4 = critical temperature 5 = incoming air temperature 6 = outgoing air temperature 7 = evaporator 2 temperature
11	P5r	**0**	value shown on remote display (when managed)	like P5
12	P7	**50**	incoming air effect to calculate product temperature (CPT)	0... 100% CPT = {[(P7 x (incoming air)] + [(100 - P7) x (outgoing air)] : 100}
13	P8	**5**	display refresh time	0... 250 s: 10
14	PP1	**1**	probe 1 function	0 = disabled 1 = if PP1... PP4 = 5, incoming air temperature probe, otherwise cabinet temperature probe 2 = evaporator temperature probe 3 = condenser temperature probe 4 = critical temperature probe 5 = outgoing air temperature probe 6 = evaporator 2 temperature probe
15	PP2	**2**	probe 2 function	like PP1
16	PP3	**3**	probe 3 function	like PP1
17	PP4	**0**	probe 4 function	0 = disabled (multi-purpose input enabled) like PP1 for the remaining values
NO.	PAR.	DEF.	MAIN REGULATOR	MIN... MAX.
18	r0	**2.0**	setpoint differential	1... 15 °C/°F if Ao1... Ao3 = 0, compressor band off (relative to setpoint, i.e. setpoint - r0)
19	r1	**-40**	minimum setpoint	-99 °C/°F... r2
20	r2	**50.0**	maximum setpoint	r1... 199 °C/°F
21	r3	**0**	enable setpoint lock	0 = no 1 = yes
22	r4	**0.0**	setpoint offset in energy saving	0... 99 °C/°F
23	r5	**0**	hot or cold mode regulation	0 = cold mode 1 = hot mode
24	r6	**0.0**	setpoint offset in overcooling/overheating	0... 99 °C/°F
25	r7	**0**	duration overcooling/overheating	0... 240 min
26	r12	**1**	differential position r0	0 = asymmetrical 1 = symmetrical
27	r13	**25.0**	proportional band with PWM compressor (relative to setpoint)	0... 99 °C/°F setpoint + r13
28	r14	**10**	integral action time with PWM compressor	0... 99 min

29	r15	**3**	type of PWM compressor	1 = Embraco VEM 2 = Embraco VEG 3 = Embraco VNEK and VNEU 4 = Secop VNL 50... 150 Hz (40 Hz when set to off) 5 = Secop 33... 133 Hz 6 = Tecumseh 85... 150 Hz 7 = Embraco VES 8 = Embraco FMX 9 = Embraco VESF
30	r16	**0**	percentage 0-10 V output for compressor with minimum capacity	0 %... r17
31	r17	**100**	percentage 0-10 V output for compressor with maximum capacity	r16... 100%
32	r18	**0**	maximum percentage 0-10 V output for compressor in energy saving mode	0... 100% 0 = disabled
33	r19	**25.0**	initial regulation threshold for light load thawing	-50... 99 °C/°F for r25 : 5 (phase 1) next threshold = { [(r19 - r22) : 4] x 3}, for r25 : 5 (phase 2) next threshold = { [(r19 - r22) : 4] x 2}, for r25 : 5 (phase 3) next threshold = { [(r19 - r22) : 4] x 1}, for r25 : 5 (phase 4)
34	r20	**30.0**	initial regulation threshold for medium load thawing	-50... 99 °C/°F for r26 : 5 (phase 1) next threshold = { [(r20 - r23) : 4] x 3}, for r26 : 5 (phase 2) next threshold = { [(r20 - r23) : 4] x 2}, for r26 : 5 (phase 3) next threshold = { [(r20 - r23) : 4] x 1}, for r26 : 5 (phase 4)
35	r21	**35.0**	initial regulation threshold for full load thawing	-50... 99 °C/°F for r27 : 5 (phase 1) next threshold = { [(r21 - r24) : 4] x 3}, for r27 : 5 (phase 2) next threshold = { [(r21 - r24) : 4] x 2}, for r27 : 5 (phase 3) next threshold = { [(r21 - r24) : 4] x 1}, for r27 : 5 (phase 4)
36	r22	**10.0**	final regulation threshold for light load thawing	-50... 99 °C/°F for r25 : 5 (phase 5)
37	r23	**12.0**	final regulation threshold for medium load thawing	-50... 99 °C/°F for r26 : 5 (phase 5)
38	r24	**15.0**	final regulation threshold for full load thawing	-50... 99 °C/°F for r27 : 5 (phase 5)
39	r25	**240**	light load thawing duration	1... 999 min
40	r26	**480**	medium load thawing duration	1... 999 min
41	r27	**720**	full load thawing duration	1... 999 min
42	r28	**3.0**	regulation threshold during conservation	-50... 99 °C/°F
43	r29	**1.0**	neutral zone threshold for thawing and conservation (relative to current threshold)	0... 10 °C/°F
44	r30	**2.0**	neutral zone threshold differential for thawing and conservation (r29) during heating	1... 25 °C/°F
45	r31	**2.0**	neutral zone threshold differential for thawing and conservation (r29) during cooling	1... 25 °C/°F
46	r32	**45**	heating on cycle time during thawing	1... 600 s
47	r33	**4**	heating on time during thawing	1... 600 s
NO.	PAR.	DEF.	HUMIDITY	MIN... MAX.
48	U01	**0**	evaporator fans on delay from compressor on for humidity level 0	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
49	U02	**0**	evaporator fans off delay from compressor off for humidity level 0	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
50	U03	**60**	time evaporator fans on for humidity level 0	0... 60 s
51	U04	**1**	time evaporator fans off for humidity level 0	0... 59 min
52	U05	**0**	time evaporator fans on if compressor is off for humidity level 0	0... 59 s
53	U11	**0**	evaporator fans on delay from compressor on for humidity level 1	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
54	U12	**0**	evaporator fans off delay from compressor off for humidity level 1	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
55	U13	**60**	time evaporator fans on for humidity level 1	0... 60 s
56	U14	**1**	time evaporator fans off for humidity level 1	0... 59 min
57	U15	**0**	time evaporator fans on if compressor is off for humidity level 1	0... 59 s
58	U21	**0**	evaporator fans on delay from compressor on for humidity level 2	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
59	U22	**0**	evaporator fans off delay from compressor off for humidity level 2	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
60	U23	**60**	time evaporator fans on for humidity level 2	0... 60 s
61	U24	**1**	time evaporator fans off for humidity level 2	0... 59 min
62	U25	**0**	time evaporator fans on if compressor is off for humidity level 2	0... 59 s
63	U31	**0**	evaporator fans on delay from compressor on for humidity level 3	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
64	U32	**0**	evaporator fans off delay from compressor off for humidity level 3	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
65	U33	**60**	time evaporator fans on for humidity level 3	0... 60 s
66	U34	**1**	time evaporator fans off for humidity level 3	0... 59 min
67	U35	**0**	time evaporator fans on if compressor is off for humidity level 3	0... 59 s
68	U41	**0**	evaporator fans on delay from compressor on for humidity level 4	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
69	U42	**0**	evaporator fans off delay from compressor off for humidity level 4	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
70	U43	**60**	time evaporator fans on for humidity level 4	0... 60 s
71	U44	**1**	time evaporator fans off for humidity level 4	0... 59 min
72	U45	**0**	time evaporator fans on if compressor is off for humidity level 4	0... 59 s
73	U51	**0**	evaporator fans on delay from compressor on for humidity level 5	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
74	U52	**0**	evaporator fans off delay from compressor off for humidity level 5	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
75	U53	**60**	time evaporator fans on for humidity level 5	0... 60 s
76	U54	**1**	time evaporator fans off for humidity level 5	0... 59 min
77	U55	**0**	time evaporator fans on if compressor is off for humidity level 5	0... 59 s
78	U61	**0**	evaporator fans on delay from compressor on for humidity level 6	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
79	U62	**0**	evaporator fans off delay from compressor off for humidity level 6	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
80	U63	**60**	time evaporator fans on for humidity level 6	0... 60 s
81	U64	**1**	time evaporator fans off for humidity level 6	0... 59 min
82	U65	**0**	time evaporator fans on if compressor is off for humidity level 6	0... 59 s
83	U71	**0**	evaporator fans on delay from compressor on for humidity level 6	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
84	U72	**0**	evaporator fans off delay from compressor off for humidity level 7	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
85	U73	**60**	time evaporator fans on for humidity level 7	0... 60 s
86	U74	**1**	time evaporator fans off for humidity level 7	0... 59 min
87	U75	**0**	time evaporator fans on if compressor is off for humidity level 7	0... 59 s
88	U81	**0**	evaporator fans on delay from compressor on for humidity level 8	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
89	U82	**0**	evaporator fans off delay from compressor off for humidity level 8	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
90	U83	**60**	time evaporator fans on for humidity level 8	0... 60 s
91	U84	**1**	time evaporator fans off for humidity level 8	0... 59 min
92	U85	**0**	time evaporator fans on if compressor is off for humidity level 8	0... 59 s
93	U91	**0**	evaporator fans on delay from compressor on for humidity level 9	-300... 300 s if values are negative, compressor on delay from on request and evaporator fans immediately on
94	U92	**0**	evaporator fans off delay from compressor off for humidity level 9	-300... 300 s if values are negative, compressor off delay from off request and evaporator fans immediately off
95	U93	**60**	time evaporator fans on for humidity level 9	0... 60 s
96	U94	**1**	time evaporator fans off for humidity level 9	0... 59 min
97	U95	**0**	time evaporator fans on if compressor is off for humidity level 9	0... 59 s
NO.	PAR.	DEF.	COMPRESSOR	MIN... MAX.
98	CP0	**0**	85 Hz PWM compressor time from power-on	0... 100 s x 10
99	CP1	**50**	percentage 0-10 V compressor from power-on	0... 100%
100	CP3	**100**	percentage 0-10 V compressor in cabinet probe alarm	0... 100%
101	CP4	**0**	maximum 0-10 V compressor-on time	0... 240 min
102	C0	**0**	compressor-on delay from power-on	0... 240 min
103	C1	**5**	delay between two compressor switch-ons	0... 240 min
104	C2	**3**	minimum compressor-off time	0... 240 min
105	C3	**0**	minimum compressor-on time	0... 240 s
106	C4	**10**	compressor-off time in cabinet probe alarm	0... 240 min
107	C5	**10**	compressor-on time (maximum capacity) in cabinet probe alarm	0... 240 min
108	C9	**5**	cabinet temperature consecutive time within proportional band to operate compressor at max. power	0... 99 h 0 = disabled until cabinet temperature < setpoint
109	C10	**0**	compressor days for maintenance	0... 999 days 0 = disabled
110	C11	**10**	compressor 2 on delay	0... 240 s if C14 = 0
111	C12	**2**	compressor hour value effect to balance hours and switch-ons (BHC)	0... 10 BHC = {[C12 x (compressor hours)] + [C13 x (compressor switch-ons)]} if C14 = 2
112	C13	**1**	compressor switch-ons value effect to balance hours and switch-ons (BHC)	0... 10 BHC = {[C12 x (compressor hours)] + [C13 x (compressor switch-ons)]} if C14 = 2
113	C14	**1**	constraint between compressor and compressor 2	0 = function of C11 1 = function of r0 2 = function of C12 and C13
NO.	PAR.	DEF.	DEFROST (if r5 = 0)	MIN... MAX.
114	d00	**0**	enable "b" mode parameters	0 = no 1 = yes
115	d01	**1.0**	setpoint threshold to activate "b" mode parameters	r1... r2 activated if setpoint > d01
116	d0	**8**	automatic defrost interval	0... 99 h 0 = manual only if d8 = 3, maximum interval
117	d0b	**6**	automatic defrost interval in "b" mode	like d0
118	d1	**0**	type of defrost	0 = electric 1 = hot gas (do not use with regulation with 2 compressors) 2 = compressor stopped
119	d1b	**2**	type of "b" mode defrost	like d1
120	d2	**2.0**	defrost end threshold	-99... 99 °C/°F
121	d2b	**4.0**	"b" mode defrost end threshold	like d2
122	d3	**30**	defrost duration	0... 99 min if P3 = 1, maximum duration
123	d3b	**20**	"b" mode defrost duration	like d3
124	d4	**0**	enable defrost at power-on	0 = no 1 = yes
125	d5	**0**	defrost delay from power-on	0... 99 min
126	d6	**1**	value displayed when defrosting	0 = cabinet or product temperature 1 = locked display 2 = label dEF
127	d7	**2**	drip duration	0... 15 min
128	d7b	**0**	"b" mode drip duration	like d7
129	d8	**0**	defrost interval count mode	0 = hours device on 1 = hours compressor on 2 = hours evaporator temperature < d9 3 = adaptive 4 = in real time
130	d9	**0.0**	evaporator temperature threshold for automatic defrost interval count	-99... 99 °C/°F
131	d11	**0**	enable defrost timeout alarm	0 = no 1 = yes
132	d15	**0**	compressor-on consecutive time for hot gas defrost	-20... 99 min if values are negative, dripping heaters on time
133	d16	**0**	pre-drip duration for hot gas defrost	0... 99 min
134	d18	**40**	adaptive defrost interval	0... 999 min if compressor on + evaporator temperature < d22 0 = manual only
135	d19	**3.0**	adaptive defrost threshold (relative to optimal evaporator temperature)	0... 40 °C/°F optimal evaporator temperature - d19
136	d20	**180**	compressor-on consecutive time for defrost	0... 999 min 0 = disabled
137	d21	**200**	compressor-on consecutive time for defrost from power-on and from overcooling	0... 999 min if (cabinet or product temperature - setpoint) > 10°C/20 °F 0 = disabled
138	d22	**-2.0**	evaporator temperature threshold for adaptive defrost interval count (relative to optimal evaporator temperature)	-10... 10 °C/°F optimal evaporator temperature + d22
139	d25	**0**	enable outgoing air temperature probe for defrost in evaporator probe alarm	0 = no 1 = yes
140	d26	**6**	defrost interval in evaporator probe alarm	0... 99 h 0 = manual only if d25 = 1
NO.	PAR.	DEF.	TEMPERATURE ALARMS	MIN... MAX.
141	A0	**0**	select value for high/low temperature alarms	0 = cabinet or product temperature 1 = evaporator temperature 2 = critical temperature
142	A1	**0.0**	low temperature alarm threshold	-99... 99 °C/°F
143	A2	**0**	type of low temperature alarm	0 = disabled 1 = relative to setpoint (i.e. setpoint + A1) 2 = absolute (A1)
144	A4	**0.0**	high temperature alarm threshold	-99... 99 °C/°F
145	A5	**0**	type of high temperature alarm	0 = disabled 1 = relative to setpoint (i.e. setpoint + A4) 2 = absolute (i.e. A4)
146	A6	**120**	high temperature alarm delay from power-on	0... 240 min
147	A7	**15**	high/low temperature alarm delay	0... 240 min
148	A8	**15**	high temperature alarm delay after defrost	0... 240 min
149	A9	**15**	high temperature alarm delay from door closure	0... 240 min
150	A10	**10**	duration of power failure for saving alarm	0... 240 min 0 = disabled
151	A11	**2.0**	high/low temperature alarm threshold differential (A1 and A4)	1... 15 °C/°F
152	A12	**1**	enable power failure alarm signal	0 = no 1 = yes (label PF, if EVlinking RS-485 EVIF23TSX, EVlinking BLE EEVIF25TBX or EVlinking Wi-Fi EVIF25TWX is connected)
153	A13	**80**	high condensation signal threshold	0... 199 °C/°F differential = 2 °C/4 °F
154	A14	**90**	high condensation alarm threshold	0... 199 °C/°F
155	A15	**1**	high condensation alarm delay	0... 15 min
156	A16	**0**	enable viewing of high/low temperature alarms on remote display	0 = no 1 = yes
NO.	PAR.	DEF.	FANS	MIN... MAX.
157	F0	**1**	evaporator fan mode in normal operation	0 = off 1 = on 2 = on if compressor on 3 = thermostat controlled (with cabinet or product temperature + F1) 4 = thermostat controlled (with cabinet or product temperature + F1) if compressor on 5 = humidity levels function 6 = thermostat controlled (with evaporator temperature + F1) 7 = thermostat controlled (with evaporator temperature + F1) if compressor on
158	F0b	**1**	evaporator fan mode in normal "b" mode operation	like F0

159	F1	**-4.0**	evaporator fans regulation threshold	-99... 99 °C/°F
160	F2	**0**	evaporator fan mode in defrost and drip mode	0 = off 1 = on 2 = function of F0
161	F2b	**0**	evaporator fan mode in "b" mode defrost and drip	like F2
162	F3	**2**	maximum time evaporator fans off	0... 15 min
163	F3b	**2**	maximum time evaporator fans off in "b" mode	0... 15 min
164	F4	**30**	time evaporator fans off in energy saving	0... 240 s x 10 if F0 ≠ 5
165	F5	**30**	time evaporator fans on in energy saving	0... 240 s x 10 if F0 ≠ 5
166	F7	**5.0**	evaporator fans on threshold from dripping (relative to setpoint)	-99... 99 °C/°F setpoint + F7
167	F8	**2.0**	evaporator fans regulation threshold differential (F1)	1... 15 °C/°F
168	F9	**10**	evaporator fans off delay from compressor off	0... 240 s if F0 = 2 or 5
169	F10	**1**	condenser fan mode in normal operation	0 = thermostat controlled (with condenser temperature + F11) 1 = thermostat controlled (with condenser temperature + F11) if compressor off, on if compressor on 2 = thermostat controlled (with condenser temperature + F11) if compressor off, on if compressor on, off in defrost, predrip and dripping
170	F11	**15.0**	condenser fans on threshold	0... 99 °C/°F differential = 2 °C/4 °F
171	F12	**30**	condenser fans off delay from compressor off	0... 240 s if PP1... PP4 ≠ 3
172	F13	**2**	condenser fans on threshold differential (F11)	1... 25 °C/°F if Ao1... Ao3 = 2, condenser fans proportional band (relative to F11, i.e. F11 + F13)
173	F14	**10**	100 % start-up time for 0-10 V condenser fans	0... 240 s
174	F15	**100**	maximum percentage 0-10 V condenser fans in energy saving	0... 100%
175	F17	**60**	time evaporator fans off if compressor off	0... 240 s if F0 and/or F0b = 0
176	F18	**10**	time evaporator fans on if compressor off	0... 240 s if F0 and/or F0b = 0
177	F19	**0**	reversible condenser fans on interval	0... 240 h
178	F20	**0**	reversible condenser fans on time	0... 240 min
179	F30	**0**	setting percentage 0-10 V evaporator fan speed in normal operation	0 = touch SET key twice 1 = with F33 2 = automatic with F1, F31, F32 and F36
180	F31	**50**	percentage 0-10 V evaporator fans with minimum capacity	0... 100% if F31>F32, F32 is relevant
181	F32	**100**	percentage 0-10 V evaporator fans with maximum capacity	0... 100% if F32 < F31, F31 is relevant
182	F33	**100**	percentage 0-10 V evaporator fans in normal function	F31... F32
183	F34	**10**	F35 start-up duration 0-10 V evaporator fans	0... 240 s
184	F35	**100**	percentage 0-10 V evaporator fans from power-on	0... 100%
185	F36	**10**	0-10 V evaporator fans proportional band (relative to setpoint)	1... 25 °C/°F setpoint-F36
186	F37	**0**	maximum percentage 0-10 V evaporator fans in energy saving	0... 100%
187	F38	**0**	evaporator fans on delay from door closed	0... 240 s
188	F39	**0**	evaporator fan mode in phase 1 thawing	0 = on if cooling is on and on if heating is on 1 = on
189	F40	**0**	evaporator fan mode in phase 2 thawing	like F39
190	F41	**0**	evaporator fan mode in phase 3 thawing	like F39
191	F42	**0**	evaporator fan mode in phase 4 thawing	like F39
192	F43	**0**	evaporator fan mode in phase 5 thawing	like F39
NO.	PAR.	DEF.	DIGITAL INPUTS	MIN... MAX.
193	i0	**5**	door switch input function	0 = disabled 1 = compressor + evaporator fans off 2 = evaporator fans off 3 = cabinet light on 4 = compressor + evaporator fans off, cabinet light on 5 = evaporator fans off, cabinet light on
194	i1	**0**	door switch input activation	0 = with contact closed 1 = with contact open
195	i2	**30**	door open alarm delay	-1... 120 min -1 = disabled
196	i3	**15**	maximum compressor and evaporator fan off time with door open	-1... 120 min -1 = until closed
197	i4	**0**	enable door open alarm saving	0 = no 1 = yes if i2 ≠ -1 and after i2
198	i5	**0**	multi-purpose input function	0 = disabled 1 = energy saving 2 = multi-purpose input alarm 3 = high pressure alarm 4 = auxiliary load 1 on 5 = auxiliary load 2 on 6 = switch device on/off 7 = low pressure alarm 8 = compressor thermal switch alarm 8 = compressor 2 thermal switch alarm
199	i6	**0**	multi-purpose input activation	0 = with contact closed 1 = with contact open
200	i7	**0**	multi-purpose input alarm delay	0... 120 min if i5, i15 or i18 or i20 = 3 or 7, compressor on delay from alarm reset
201	i8	**0**	number of multi-purpose input activations for high pressure alarm	0... 15 0 = disabled
202	i9	**240**	consecutive time if there are no multi-purpose input activations to reset counter due to high pressure alarm	1... 999 min
203	i10	**0**	door closed consecutive time for energy saving	0... 999 min after cabinet or product temperature < SP 0 = disabled
204	i13	**180**	number of door openings for defrost	0... 240 0 = disabled
205	i14	**32**	door open consecutive time for defrost	0... 240 min 0 = disabled
206	i15	**0**	multi-purpose input 2 function	like i5
207	i16	**0**	multi-purpose input 2 activation	like i6
208	i18	**0**	multi-purpose input 3 function	like i5
209	i19	**0**	multi-purpose input 3 activation	like i6
210	i20	**0**	multi-purpose input 4 function	like i5
211	i21	**0**	multi-purpose input 4 activation	like i6
NO.	PAR.	DEF.	DIGITAL OUTPUTS	MIN... MAX.
212	u1c	**0**	K1 relay configuration	0 = compressor 1 = compressor 2 2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heaters for neutral zone 9 = dripping heaters 10= auxiliary load 1 11= auxiliary load 2 12= alarm 13= on/stand-by 14= evaporator fans 2 15= defrost 2 16= speed 2 evaporator fans 17= reversible condenser fans 18= speed 2 condenser fans
213	u2c	**2**	K2 relay configuration	like u1c
214	u3c	**12**	K3 relay configuration	like u1c
215	u4c	**5**	K4 relay configuration	like u1c
216	u5c	**4**	K5 relay configuration	like u1c
217	u6c	**13**	K6 relay configuration	like u1c
218	u7c	**10**	K5 relay configuration	like u1c
219	u8c	**11**	K6 relay configuration	like u1c
220	u2	**0**	enable cabinet light and auxiliary load 1 and 2 in stand-by	0 = no 1 = yes in manual mode
221	u3	**0**	alarm output activation	0 = with alarm not active 1 = with alarm active
222	u4	**1**	enable deactivation alarm output with silencing buzzer	0 = no 1 = yes
223	u5	**-1.0**	door heaters on threshold	-99... 99 °C/°F
224	u5d	**2.0**	door heaters on threshold differential (u5)	1... 25 °C/°F
225	u6	**5**	maximum duration demisting on	1... 120 min 1 = manual switch on/off
226	u7	**-5.0**	neutral zone for heating threshold (relative to setpoint)	-99... 99 °C/°F differential = 2 °C/4 °F setpoint + u7
227	u9	**1**	enable alarm buzzer	0 = no 1 = yes
228	u10	**5**	duration alarm buzzer at end of thawing	0... 240 s
NO.	PAR.	DEF.	ANALOGUE OUTPUTS	MIN... MAX.
229	Ao1	**5**	analogue output configuration	0 = PWM compressor (r15) 1 = 0-10 V compressor 2 = 0-10 V condenser fans 3 = 0-10 V evaporator fans 4 = disabled 5 = disabled
230	Ao2	**5**	analogue output 2 configuration	like Ao1
231	Ao3	**5**	analogue output 3 configuration	like Ao1
NO.	PAR.	DEF.	CLOCK	MIN... MAX.
231	Hr0	**0**	enable clock	0 = no 1 = yes
NO.	PAR.	DEF.	ENERGY SAVING (if r5 = 0)	MIN... MAX.
232	HE2	**0**	maximum duration energy saving	0... 999 min 0 = until door opened
NO.	PAR.	DEF.	ENERGY SAVING IN REAL TIME (if r5 = 0)	MIN... MAX.
233	H01	**0**	energy saving time	0... 23 h
234	H02	**0**	maximum duration energy saving	0... 24 h
NO.	PAR.	DEF.	SWITCH ON/OFF IN REAL TIME	MIN... MAX.
235	Hon	**h-**	time device switch-on	0... h h = disabled
236	HoF	**h-**	time device switch-off	like HoF
237	Hc1	**h-**	1st time reversible condenser fans on	0... h h = disabled for F20
238	Hc2	**h-**	2nd time reversible condenser fans on	like Hc1
NO.	PAR.	DEF.	REAL-TIME DEFROST	MIN... MAX.
239	Hd1	**h-**	1st daily defrost time	0... h h = disabled
240	Hd2	**h-**	2nd daily defrost time	like Hd1
241	Hd3	**h-**	3rd daily defrost time	like Hd1
242	Hd4	**h-**	4th daily defrost time	like Hd1
243	Hd5	**h-**	5th daily defrost time	like Hd1
244	Hd6	**h-**	6th daily defrost time	like Hd1
NO.	PAR.	DEF.	SECURITY	MIN... MAX.
245	POF	**1**	enable ON/STAND-BY key	0 = no 1 = yes
246	Loc	**1**	enable keypad lock	0 = no 1 = yes (after 30 s)
247	Sen	**100**	keypad sensitivity	40... 240 40= very sensitive
248	PAS	**-19**	password to access settings from keypad	-99... 999
249	PA1	**426**	level 1 password to access settings from EVconnect and EPoCA	-99... 999
250	PA2	**824**	level 2 password to access settings from EVconnect and EPoCA	-99... 999
NO.	PAR.	DEF.	DATA-LOGGING	MIN... MAX.
251	rE0	**15**	EVlinking data logger sampling interval	0... 240 min
252	rE1	**1**	select temperature for EVlinking data logger	0 = none 1 = cabinet 2 = evaporator 3 = condenser 4 = critical 5 = outgoing air 6 = evaporator 2 7 = product 8 = cabinet + evaporator + condenser 5 = all
253	rEt	**0**	select temperature for data logger device in last 72 hours	0 = cabinet or product (not during defrost, pre-dripping, dripping and fan stop) 1 = cabinet or product (also during defrost, pre-dripping, dripping and fan stop) 2 = critical (not during defrost, pre-dripping, dripping and fan stop) 3 = critical (also during defrost, pre-dripping, dripping and fan stop) 4 = cabinet or product (only during defrost, pre-dripping, dripping and fan stop)
NO.	PAR.	DEF.	MODBUS	MIN... MAX.
254	LA	**247**	MODBUS address	1... 247
255	Lb	**3**	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
256	LP	**2**	MODBUS parity	0 = none 1 = odd 2 = even
NO.	PAR.	DEF.	MODBUS USE	MIN... MAX.
257	bLE	**1**	type of use of TTL MODBUS port	0 = for real time functions (with EVlinking RS-485 EVIF23TSX converter) or for MODBUS RTU via RS-485 communication (with EVlinking RS-485 EVIF23TSX or EVIF24TSX converter) 1... 99 = serial communication address - for EVconnect app (with EVlinking BLE module) and for EPoCA monitoring system or for MODBUS TCP via Wi-Fi communication (with EVlinking Wi-Fi EVIF25TWX module), set 1 - for EPoCA monitoring system or for MODBUS TCP via Ethernet communication (wit EVlinking RS-485 EVIF24TSX converter and EV3 Web or EVD Web IoT gateway), please consult the proper manual The communication works with MODBUS baud rate 19,200 and with MODBUS parity even, independently on the value set with parameters Lb and LP
NO.	PAR.	DEF.	OUTPUTS IN DIRECT CURRENT	MIN... MAX.
258	OUT1	**0**	output configuration 1 12... 24 Vdc	0 = disabled 1 = cabinet light 2 = evaporator fans 3 = evaporator fans 2 4 = condenser fans
259	OUT1	**0**	output configuration 2 12... 24 Vdc	like OUT2

9 ALARMS

9.1 Viewing active alarms

Check that the keypad is not locked.

1.		Touch the ALARM key
2.		Touch the UP or DOWN key within 15 s to scroll through the active alarms
3.		Touch the ON/STAND-BY key (or take no action for 60 s) to exit the procedure

9.2 Alarms

ALARM	DESCRIPTION	RESET	TO CORRECT
Cabinet Prb. Failure	cabinet probe alarm	automatic	- check P0 - check the integrity of the probe - check electrical connection
Evaporator Prb. Failure	evaporator probe alarm	automatic	
Condenser Prb. Failure	condenser probe alarm	automatic	
Critical Temp. Prb. Failure	critical temperature probe alarm	automatic	
Outgoing Air Prb. Failure	outgoing air temperature probe alarm	automatic	
Evaporator 2 Prb. Failure	evaporator 2 probe alarm	automatic	
RTC Failure	clock alarm	manual	set the date and time
Low Temperature	low temperature alarm	automatic	check A0, A1 and A2
High Temperature	high temperature alarm	automatic	check A0, A4 and A5
Door Open	door open alarm	automatic	check i0 and i1
Power Failure	power failure alarm	manual	- touch a key - check electrical connection
Cond. Overheat	high condensation signal	automatic	check A13
Comp. Locked	high condensation alarm	manual	- switch the device off and on - check A14
Multi-purpose	multi-purpose input alarm	automatic	check i5, i6, i15, i16, i18, i19, i20 and i21
High Pressure	multi-purpose input alarm	automatic	check i5, i6, i15, i16, i18, i19, i20 and i21
High Pressure Lock	high pressure alarm	manual	switch the device off and on - check i5, i6, i8, i9, i15, i16, i18, i19, i20 and i21
Low Pressure	low pressure alarm	automatic	check i5, i6, i15, i16, i18, i19, i20 and i21
Thermal Switch 1	compressor thermal switch alarm	automatic	check i5, i6, i15, i16, i18, i19, i20 and i21
Thermal Switch 2	compressor 2 thermal switch alarm	automatic	check i5, i6, i15, i16, i18, i19, i20 and i21
Defrost Timeout	defrost timeout alarm	manual	- touch a key - check d2, d2b, d3, d3b and d11

10 TECHNICAL SPECIFICATIONS

Purpose of the control device:			function controller
Construction of the control device:			built-in electronic device
Housing:			black, self-extinguishing
Category of heat and fire resistance:			D
Measurements:			193.0 x 59.0 x 73.0 mm (7 5/8 x 2 5/16 x 2 7/8 in)
Mounting methods for the control device:			front installation on a plastic or metal panel (with elastic holding flaps).
Degree of protection provided by the casing:			IP65 (front), provided that the device is installed on a metal panel from 0.8 to 1.5 mm thick (1/32 to 1/16 in) thick
Connection method:			
plug-in screw terminal blocks for wires up to 1.5 mm² (analogue inputs, digital inputs, analogue outputs and port for remore indicator) and wires up to 2.5 mm² (power supply, digital outputs and outputs 12... 24 Vdc)			
Pico-Blade connector (TTL MODBUS port)			
Maximum permitted length for connection cables:			
power supply: 10 m (32.8 ft)			analogue inputs: 10 m (32.8 ft)
digital inputs: 10 m (32.8 ft)			analogue outputs: 3 m (9.84 ft)
digital outputs: 10 m (32.8 ft)			outputs 12... 24 Vdc: 10 m (32.8 ft)
port for remote indicator: 3 m (9.84 ft)			
Operating temperature:			from -5 to 60 °C (from 23 to 140 °F)
Storage temperature:			from -25 to 70 °C (from -13 to 158 °F)
Operating humidity:			relative humidity without condensate from 10 to 90 %
Pollution status of the control device:			2
Compliance:			
EMC 2014/30/UE			
RoHS 2011/65/EC			WEEE 2012/19/EU
REACH (EC) Regulation no. 1907/2006			LVD 2014/35/EU
Power supply:			12... 24 Vdc (+10 % -15 %), max. 3 W
Earthing methods for the control device:			none
Rated impulse withstand voltage:			4 kV
Overvoltage category:			III
Software class and structure:			A
Analogue inputs:			3 for configurable PTC, NTC or Pt 1000 probes
PTC probes:	Type of sensor:		KTY 81-121 (990 Ω @ 25 °C, 77 °F)
	Measurement field:		from -50 to 150 °C (from -58 to 302 °F)
	Resolution:		0.1 °C (1 °F)
NTC probes:	Type of sensor:		ß3435 (10 kΩ @ 25 °C, 77 °F)
	Measurement field:		from -40 to 105 °C (from -40 to 221 °F)
	Resolution:		0.1 °C (1 °F)
Probes Pt 1000:	Type of sensor:		1 kΩ @ 0 °C, 32 °F
	Measurement field:		from -99 to 199 °C (from -146 to 390 °F)
	Resolution:		0.1 °C (1 °F)
Digital inputs:			5 voltage-free (door switch and multi-purpose)
Voltage-free:		Type of contact:	3.3 Vdc, 1 mA
		Power supply:	none
		Protection:	none
Analogue outputs:			3 configurable PWM or 0-10 V output
PWM output:	Output:		11 Vdc (±15%), 10 mA max
	Frequency:		20... 150 Hz
	Protection:		none
0-10 V output:	Minimum applicable impedance:		1 kΩ
	Resolution:		0.1 V
Digital outputs:			8 with sealed electro-mechanical relays in compliance with the EN 60079-15 standard
K1 relay:			SPST, 16 A res. @ 250 Vac (30 A res. @ 250 Vac in the EVY238DN3 model)
K2 relay:			SPDT, 8 A res. @ 250 Vac
K3 relay:			SPST, 8 A res. @ 250 Vac
K4 relay:			SPST, 8 A res. @ 250 Vac
K5 relay:			SPDT, 8 A res. @ 250 Vac
K6 relay:			SPST, 16 A res. @ 250 Vac
K7 relay:			SPDT, 16 A res. @ 250 Vac
K8 relay:			SPDT, 8 A res. @ 250 Vac
The device guarantees reinforced insulation between the digital outputs (electro-mechanical relays) and the SELV (Safety Extra Low Voltage) circuits			
Outputs 12... 24 Vdc:			two, 2.5 A max. each
If the device has a power supply of 12 Vdc, the outputs 12... 24 Vdc will each deliver 12 Vdc max. 2.5 A; if the device has a power supply of 24 Vdc, the outputs 12... 24 Vdc will each deliver 24 Vdc max. 2.5 A			
Type 1 or Type 2 actions:			type 1
Additional features of Type 1 or Type 2 actions:			C
Displays:			2.4 inch LCD colour graphic display
Alarm buzzer:			built-in
Communications ports:			
1 x TTL MODBUS slave port for the EVconnect app or EPoCA remote monitoring system			1 x type C USB port
1 x remote indicator (according to the model)			

N.B.
The device must be disposed of according to local regulations governing the collection of electrical and electronic equipment.

EVCO S.p.A.
Via Feltre 81, 32036 Sedico (BL) ITALY
tel. +39 0437 8422 | **fax** +39 0437 83648
email info@evco.it | **web** www.evco.it