



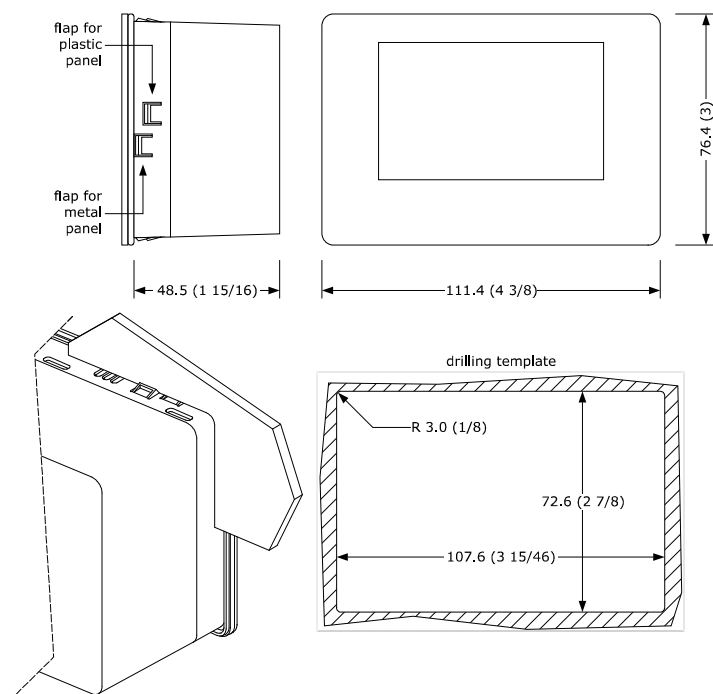
EN ENGLISH

- Controller for low temperature units.
- Power supply 12 VAC/DC.
- Cabinet probe and evaporator probe (PTC/NTC/Pt 1000).
- Door switch input.
- Compressor relay 30 A res. @ 250 VAC (16 A by request).
- Alarm buzzer.
- Alarm buzzer.
- TTL MODBUS slave port for EVconnect app, EPoCA remote monitoring system or for BMS.

1 MEASUREMENTS AND INSTALLATION

Measurements in mm (inches); to be fitted to a panel, with elastic holding flaps.

N.B.
The thickness of a metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in), while that for a plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in).

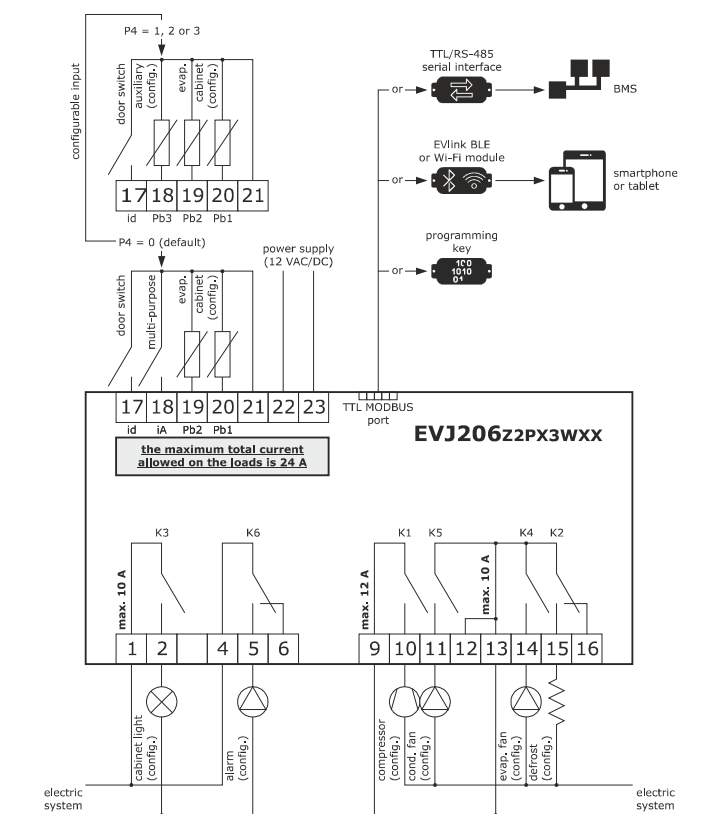


INSTALLATION PRECAUTIONS

- 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.

2 ELECTRICAL CONNECTION

- N.B.**
- Use cables of an adequate section for the current running through them.
 - To reduce any electromagnetic interference connect the power cables as far away as possible from the signal cables.



PRECAUTIONS FOR ELECTRICAL CONNECTION

- If using an electrical or pneumatic screwdriver, adjust the tightening torque.
- If the device has been moved from a cold to a warm place, the humidity may have caused condensation to form inside. Wait 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 doing any type of maintenance.
- Do not use the device as safety device.
- For repairs and for further information, contact the EVCO sales network.

3 FIRST-TIME USE

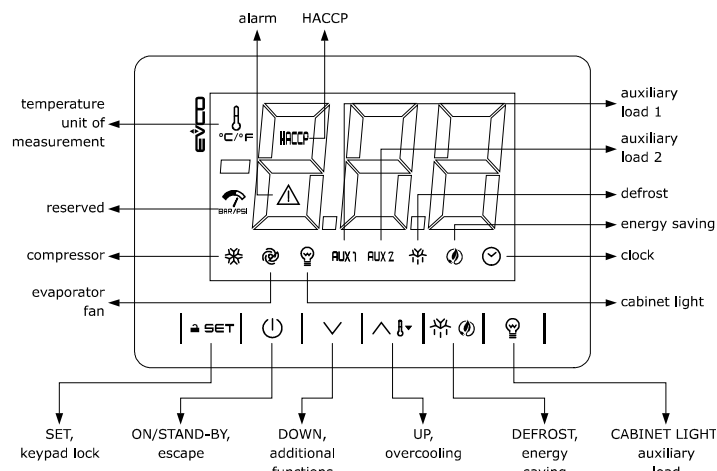
1. Install following the instructions given in the section **MEASUREMENTS AND INSTALLATION**.
2. Power up the device and an internal test will be run. The test normally takes a few seconds, when it is finished the display will switch off.
3. Configure the device as shown in the section **Setting configuration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

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

Then 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. For the connection in an RS-485 network connect the interface EVIF22TSX or EVIF23TSX, to activate real time functions connect the module EVIF23TSX, to use the device with the EPoCA remote monitoring system, connect the EVIF25TWX module, to use the device with the Android APP EVconnect connect the interface EVIF25TBX; see the relevant instruction sheets. **If EVIF22TSX or EVIF23TSX is used, set parameter bLE to 0.**
7. Power up the device.

4 USER INTERFACE AND MAIN FUNCTIONS



4.1 Switching the device on and off

1. If POF = 1 (default), touch the ON/STAND-BY key for 2s.

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

LED	ON	OFF	FLASHING
☀	compressor on	compressor off	- compressor protection active - setpoint being set
🌀	evaporator fan on	evaporator fan off	evaporator fan stop active
💡	cabinet light on	cabinet light off	cabinet light on by digital input
AUX 1	auxiliary function 1 on	auxiliary function 1 off	- auxiliary function 1 on by digital input - auxiliary function 1 delay active
AUX 2	auxiliary function 2 on	auxiliary function 2 off	- auxiliary function 2 on by digital input - auxiliary function 2 delay active
❄	defrost or pre-drip active	-	- defrost delay active - dripping active
⚡	- energy saving active - low consumption active	-	-
🕒	view time	-	set date, time and day of the current week
🌡	view temperature	-	overcooling or overheating active
HACCP	saved HACCP alarm	-	new HACCP alarm saved
⚠	alarm active	-	-

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

4.2 Unlock keypad

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

4.3 Set the setpoint (if r3 = 0, default)

Check that the keypad is not locked.

1. Touch the SET key.
2. Touch the UP or DOWN key within 15s to set the value within the limits r1 and r2 (default "-40... 50").
3. Touch the SET key (or do not operate for 15s).

4.4 Activate 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 2s.

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

4.5 Cabinet light on/off (if u1c... u6c = 5)

1. Touch the CABINET LIGHT key.

4.6 Button-operated load on/off (if u1c... u6c = 10 or 11)

1. Touch the CABINET LIGHT key (for 2s if u1c... u6c = 5).

If u1c... u6c = 6, the **demisting** switch on for the u6 duration.

4.7 Silence buzzer (if u9 = 1, default)

Touch a key.

If u1c... u6c = 11 and u4 = 1, the alarm output is deactivated.

5 ADDITIONAL FUNCTIONS

5.1 Activate/deactivate overcooling and overheating

Check that the keypad is not locked.

1. Touch the UP key for 2s.

FUNCTION	CONDITION	CONSEQUENCE
overcooling	r5 = 0 and defrost not active	the setpoint becomes "setpoint - r6", for the r7 duration
overheating	r5 = 1	the setpoint becomes "setpoint + r6", for the r7 duration

5.2 Activate/deactivate energy saving in manual mode (if r5 = 0)

Check that the keypad is not locked.

1. Touch the DEFROST key.

The setpoint becomes "setpoint + r4", at maximum for HE2 duration.

5.3 Activate the high or low humidity functions (if F0 = 5)

Check that the keypad is not locked.

1. Touch the DOWN key for 1s.
2. Touch the UP or DOWN key within 15s to select the label "rH".
3. Touch the SET key for 2s until the display shows the right label for the function (only touch the key to see the function activated).

LAB.	DESCRIPTION
rhL	low humidity function (evaporator fan with F17 and F18 if the compressor is off, on if the compressor is on)
rhH	high humidity function (evaporator fan on)

4. Touch the ON/STAND-BY key (or do not operate for 60s) to exit the procedure.

5.4 View/delete compressor functioning hours

Check that the keypad is not locked.

1. Touch the DOWN key for 1s.
 2. Touch the UP or DOWN key within 15s to select a label.
- | LAB. | DESCRIPTION |
|------|--|
| CH1 | view compressor functioning hundreds of hours |
| CH2 | view second compressor functioning hundreds of hours (if u1c... u6c = 1) |
| rCH | delete compressor and second compressor functioning hours |

3. Touch the SET key.
4. Touch the UP or DOWN key to set "149" (to select rCH).
5. Touch the SET key.
6. Touch the ON/STAND-BY key (or do not operate for 60s) to exit the procedure.

5.5 View the temperature detected by the probes

Check that the keypad is not locked.

1. Touch the DOWN key for 1s.
2. Touch the UP or DOWN key within 15s to select a label.

LAB.	DESCRIPTION
Pb1	cabinet temperature (if P4 = 0, 1 or 2)
Pb2	inlet air temperature (if P4 = 3)
Pb3	evaporator temperature (if P3 = 1 or 2)
Pb4	auxiliary temperature (if P4 = 1, 2 or 3)
Pb4	calculated product temperature (CPT; if P4 = 3)

3. Touch the SET key.
4. Touch the ON/STAND-BY key (or do not operate for 60s) to exit the procedure.

6 SETTINGS

6.1 Setting configuration parameters

1. Touch the SET key for 4s: the display will show the label "PA".
2. Touch the SET key.
3. Touch the UP or DOWN key within 15s to set the PAS value (default "-19").
4. Touch the SET key (or do not operate for 15s): the display will show the label "SP".
5. Touch the UP or DOWN key to select a parameter.
6. Touch the SET key.
7. Touch the UP or DOWN key within 15s to set the value.
8. Touch the SET key (or do not operate for 15s).
9. Touch the SET key for 4s (or do not operate for 60s) to exit the procedure.

6.2 Set the date, time and day of the week (available with interface EVIF25TBX or EVIF25TWX connected)

- N.B.**
- If the device is connected to the interface EVIF25TBX, do not disconnect the device from the mains within two minutes since the setting of the time and day of the week.
 - If the device communicates with the app EVconnect, the date, time and day of the week will automatically be set by the smartphone or tablet.

Check that the keypad is not locked.

1. Touch the DOWN key for 1s.
2. Touch the UP or DOWN key within 15s to select the label "rtc".
3. Touch the SET key: the display will show the label "y" followed by the last two figures of the year.
4. Touch the UP or DOWN key within 15s to set the year.

5. Repeat actions 3 and 4 to set the next labels.

LAB.	MEANING OF THE NUMBERS FOLLOWING THE LABEL
n	month (01... 12)
d	day (01... 31)
h	time (00... 23)
n	minutes (00... 59)

6. Touch the SET key: the display will show the label for the day of the week.
7. Touch the UP or DOWN key within 15s to set the day of the week.

LAB.	DESCRIPTION
Mon	Monday
tuE	Tuesday
UEd	Wednesday
Thu	Thursday
Fri	Friday
Sat	Saturday
Sun	Sunday

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

9. Touch the ON/STAND-BY key to exit the procedure beforehand.


N.	PAR.	DEF.	MODBUS	MIN... MAX.
121	LA	247	MODBUS address	1... 247
122	Lb	2	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
123	LP	2	parity	0 = none 1 = odd 2 = even
N.	PAR.	DEF.	BLUETOOTH	MIN... MAX.
124	bLE	1	serial port configuration for connectivity	0 = free 1 = forced for EVconnect or EPoCA 2-99 = EPoCA local network address

8 ALARMS

COD.	DESCRIPTION	RESET	TO CORRECT
Pr1	cabinet probe alarm	automatic	- check P0
Pr2	evaporator probe alarm	automatic	- check probe integrity
Pr3	auxiliary probe alarm	automatic	- check electrical connection
rtc	clock alarm	manual	set date, time and day of the week
AL	low temperature alarm	automatic	check A0, A1 and A2
AH	high temperature alarm	automatic	check A4 and A5
id	open door alarm	automatic	check i0 and i1
PF	power failure alarm	manual	- touch a key - check electrical connection
COH	high condensation warning	automatic	check C6
Csd	high condensation alarm	manual	- switch the device off and on - check C7
ia	multi-purpose input alarm	automatic	check i5 and i6
iSd	high pressure alarm	manual	- switch the device off and on - check i5, i6, i8, i9
LP	low pressure alarm	automatic	check i5 and i6
C1t	compressor thermal switch alarm	automatic	check i5 and i6
C2t	second compressor thermal switch alarm	automatic	check i5 and i6
dFd	defrost timeout alarm	manual	- touch a key - check d2, d3 and d11
FUL	SD card full alarm	manual	free up space on the SD card or replace it
Sd	No SD card inserted alarm	manual	insert the SD card or replace it

9 TECHNICAL SPECIFICATIONS

Purpose of the control device		Function controller	
Construction of the control device		Built-in electronic device	
Container		Black, self-extinguishing	
Category of heat and fire resistance		D	
Measurements		111.4 x 76.4 x 48.0 mm (4 3/8 x 3 x 1 15/16 in)	
Mounting methods for the control device		To be fitted to a panel, with elastic holding flaps	
Degree of protection provided by the covering		IP65 (front), on condition the device is fitted to a metal panel with thickness 0.8 mm (1/32 in)	
Connection method			
Screw terminal blocks for wires up to 2.5 mm ² (removable by request)		Pico-Blade connector	
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)		Digital outputs: 10 m (32.8 ft)	
Operating temperature		From -5 to 55 °C (from 23 to 131 °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	
Conformity			
RoHS 2011/65/CE		WEEE 2012/19/EU	
		REACH (EC) Regulation 1907/2006	
EMC 2014/30/UE		LVD 2014/35/UE	
Power supply			
12 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 4 VA insulated		12 VDC (+10% -15%), max. 3.5 W insulated	
Earthing methods for the control device		None	
Rated impulse-withstand voltage		4 KV	
Over-voltage category		III	
Software class and structure		A	
Analogue inputs		2 for PTC, NTC or Pt 1000 probes (cabinet probe and evaporator probe)	
PTC probes	Sensor type	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	Sensor type	B3435 (10 KΩ @ 25 °C, 77 °F)	
	Measurement field	From -40 to 105 °C (from -40 to 221 °F)	
	Resolution	0.1 °C (1 °F)	
Pt 1000 probes	Measurement field	From -99 to 150 °C (from -146 to 302 °F)	
	Resolution	0.1 °C (1 °F)	
Digital inputs		1 dry contact (door switch)	
Dry contact	Contact type	5 VDC, 2 mA	
	Power supply	None	
	Protection	None	
Other inputs		Input configurable for analogue input (auxiliary probe) or digital input (multi-purpose input)	
Digital outputs		6 with electro-mechanical relay The maximum total current allowed on the loads is 24 A	
Relay K1		SPST, 30 A res. @ 250 VAC (16 A by req.)	
Relay K2		SPDT, 8 A res. @ 250 VAC	
Relay K3		SPST, 16 A res. @ 250 VAC	
Relay K4		SPST, 8 A res. @ 250 VAC	
Relay K5		SPST, 3 A res. @ 250 VAC	
Relay K6		SPDT, 8 A res. @ 250 VAC	
The device guarantees double insulation between each digital output connector and the rest of the components of the device			
Type 1 or Type 2 Actions		Type 1	
Additional features of Type 1 or Type 2 actions		C	
Displays		Custom display, 3 digit, with function icons	
Alarm buzzer		Incorporated	
Communications ports		1 TTL MODBUS slave port for EVconnect app, EPoCA remote monitoring system or for BMS	

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

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