EVJ Basic Split

Split-version controllers for refrigerated units

I ENGLISH

- controllers for normal and low temperature units
- power supply 230 VAC
- cabinet probe and evaporator probe (PTC/NTC)
- door switch and multi-purpose input
- compressor relay 16 A res. @ 250 VAC
- sealed relays compliant with the standard EN 60079-15
- alarm buzzer
- TTL MODBUS slave port for EVJKEY programming key, EVconnect app, EPoCA remote monitoring system or for BMS
- hot or cold mode regulation.

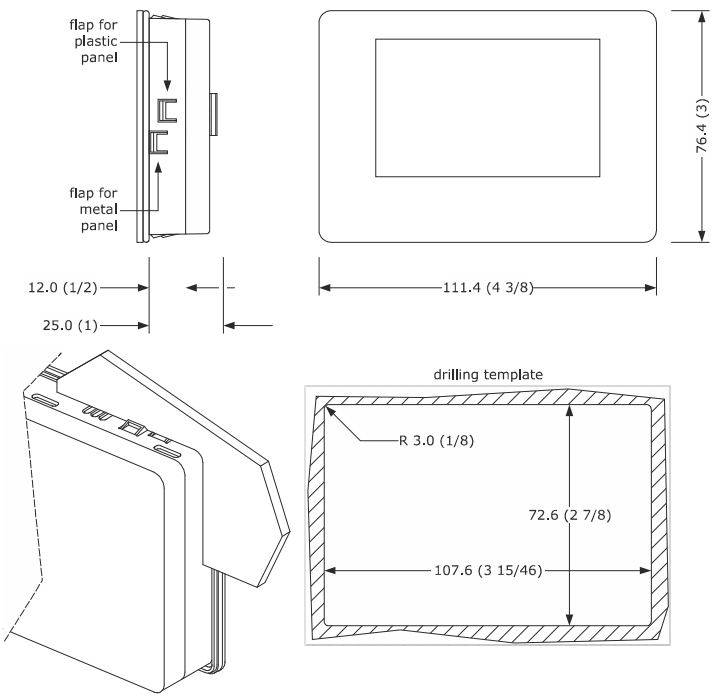
Purchasing code	Number of relays	Power supply
EVJSB24N7	4	230 VAC

1 MEASUREMENTS AND INSTALLATION | Measurements in mm (inches)

1.1 User interface

To be fitted to a plastic or metal panel (with elastic holding flaps).

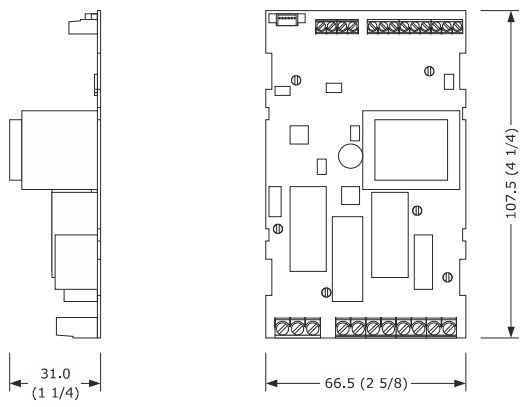
N.B.
The thickness of a metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in), while that for a plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in).



1.2 Control module

To be installed on an electrical panel, on spacers (not provided).

N.B.
Any metal parts must be far enough away so as not to compromise safety distances.

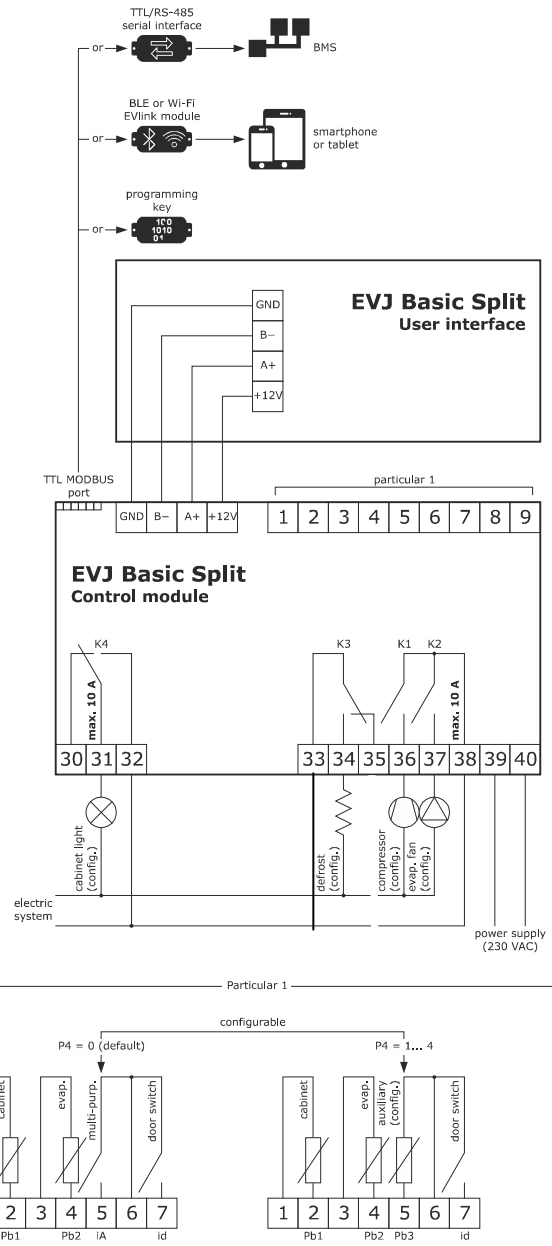


INSTALLATION PRECAUTIONS

- 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, locate 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 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 for further information, contact the EVCO sales network.

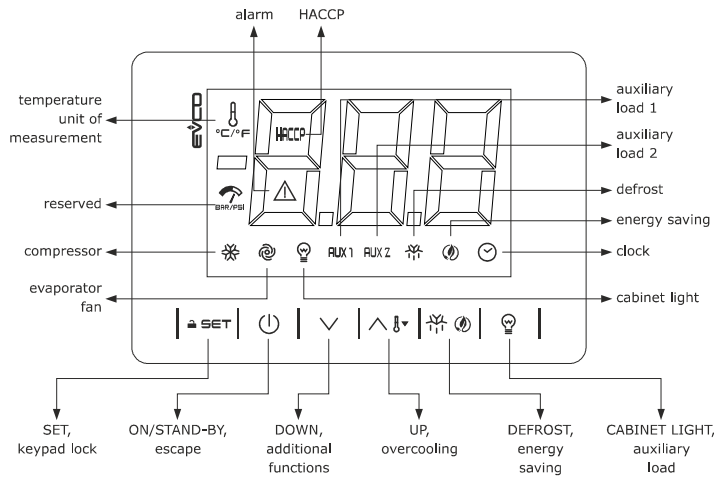
3 FIRST-TIME USE

1. Carry out the installation following the instructions given in the section *MEASUREMENTS AND INSTALLATION*.
2. Power up the device as set out in the section *ELECTRICAL CONNECTION*: 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
P2	**0**	temperature measurement unit	0 = °C 1 = °F
d1	**0**	type of defrost	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. To use the device with the Evconnect app, connect the EVIF25TBX module. To use the device with the EPoCA remote monitoring system, connect the EVIF25TWX module. When connecting to an RS-485 network, connect the EVIF22TSX interface. To activate real-time functions, connect the EVIF23TSX module.
   If using EVIF22TSX or EVIF23TSX, set the bLE parameter to 0.
7. Power up the device.

4 USER INTERFACE AND MAIN FUNCTIONS



4.1 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 ("regulation temperature" default); if the display shows an alarm code, see the section ALARMS.

LED	ON	OFF	FLASHING
❄	compressor switched on	compressor switched off	- compressor protection in progress - setpoint being set
🌀	evaporator fan on	evaporator fan off	evaporator fan stop in progress
💡	cabinet light on	cabinet light off	cabinet light on by digital input
AUX 1	auxiliary load 1 on	auxiliary load 1 off	- auxiliary load 1 on by digital input - auxiliary load 1 delay active
AUX 2	auxiliary load 2 on	auxiliary load 2 off	- auxiliary load 2 on by digital input - auxiliary load 2 delay active
❄	defrost or pre-drip active	-	- defrosting delay in progress - dripping active
🍃	energy saving active	-	-
🕒	time display	-	set date, time and day of the current week
°C/°F	temperature display	-	overcooling or overheating active
HACCP	HACCP alarm saved in EVlink	-	-
⚠	alarm active	-	-

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

4.2 Unlocking the keypad

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

4.3 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 keys 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).

4.4 Activating 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 4 s.

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

4.5 Switching the cabinet light on/off (if u1c... u5c = 5)

1. | 💡 | Touch the CABINET LIGHT key.

4.6 Switching the cabinet light on/off (if u1c... u5c = 10 or 11)

1. | 💡 | Touch the CABINET LIGHT key (for 2 s if u1c... u5c = 5).

If u1c... u5c = 6, the **demisting heaters** switch on for u6.

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

Touch a key.
If u1c... u5c = 11 and u4 = 1, the alarm output is deactivated.

5 ADDITIONAL FUNCTIONS

5.1 Activating/deactivating overcooling and overheating

Check that the keypad is not locked.

1. | ∧ / ∨ | Touch the UP key for 2 s.

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

5.2 Activating/deactivating 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" maximum for the HE2 time.

5.3 Activating the high or low humidity function (if F0 = 5)

Check that the keypad is not locked.

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

LAB.	MEANING
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 take no action for 60 s) to exit the procedure.

5.4 Displaying/deleting compressor functioning hours

Check that the keypad is not locked.

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

LAB.	MEANING
CH1	view compressor functioning hours (in hundreds)
CH2	view compressor 2 functioning hours (in hundreds) (if u1c... u5c = 1)
rCH	delete compressor and compressor 2 functioning hours

3.	SET	Touch the SET key.
4.	∧ / ∨	Touch the UP or DOWN key to set "**149**" (to select **rCH**).
5.	SET	Touch the SET key.
6.	⏻	Touch the ON/STAND-BY key (or take no action for 60 s) to exit the procedure.

5.5 Viewing the temperature detected by the probes

Check that the keypad is not locked.

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

LAB.	MEANING
Pb1	cabinet temperature (if P4 = 0, 1, 2 or 4)
	incoming air temperature (if P4 = 3)
Pb2	evaporator temperature (if P3 = 1 or 2)
Pb3	auxiliary temperature (if P4 = 1, 2, 3 or 4)
Pb4	calculated product temperature (CPT; if P4 = 3)

3.	SET	Touch the SET key.

4.	⏻	Touch the ON/STAND-BY key (or take no action for 60 s) to exit the procedure.

6 SETTINGS

6.1 Setting configuration parameters

1.	SET	Touch the SET key for 4 s: the display will show the label "**PA**".
2.	SET	Touch the SET key.
3.	∧ ∨	Touch the UP or DOWN key within 15 s to set the PAS value (default "**-19**").
4.	SET	Touch the SET key (or take no action for 15 s): the display will show the label "**SP**".
5.	∧ ∨	Touch the UP or DOWN key to select a parameter.
6.	SET	Touch the SET key.
7.	∧ ∨	Touch the UP or DOWN key within 15 s to set the value.
8.	SET	Touch the SET key (or take no action for 15 s).
9.	SET	Touch the SET key for 4 s (or take no action for 60 s) to exit the procedure.

6.2 Setting the date, time and day of the week (if the EVIF25TBX, EVIF25TWX or EVIF23TSX module is connected)

N.B.
- 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, the date, time and day of the week will be automatically set by the smartphone or tablet.

Check that the keypad is not locked.

1.	∨	Touch the DOWN key for 4 s.
2.	∧ ∨	Touch the UP or DOWN key within 15 s to select the label "**rtc**".
3.	SET	Touch the SET key: the display will show the label "**yy**" followed by the last two figures of the year.
4.	∧ ∨	Touch the UP or DOWN key within 15 s 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	hour (00… 23)
n	minutes (00… 59)

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

LAB.	MEANING
Mon	Monday
tuE	Tuesday
UEd	Wednesday
thu	Thursday
Fri	Friday
Sat	Saturday
Sun	Sunday

8.	SET	Touch the SET key: the device will exit the procedure.
9.	⏻	Touch the ON/STAND-BY key to exit the procedure beforehand.

6.3 Restoring factory (default) settings and saving customised settings

N.B.
- check that the factory settings are appropriate; see the section *CONFIGURATION PARAMETERS*.
- saving customised settings overwrites the factory settings.

1.	SET	Touch the SET key for 4 s: the display will show the label "**PA**".
2.	SET	Touch the SET key.
3.	FNC ∧ ∨	Touch the UP or DOWN key within 15 s to set the value.

VAL.	MEANING
149	value for restoring the factory information (default)
161	value for saving customised settings

4.	SET	Touch the SET key (or take no action for 15 s): the display will show the label "**dEF**" (for setting the "**149**" value) or the label "**MAP**" (for setting the "**161**" value).
5.	SET	Touch the SET key.
6.	∧ ∨	Touch the UP or DOWN key within 15 s to set "**4**".
7.	SET	Touch the SET key (or take no action for 15 s): the display will show "**- - -**" flashing for 4 s, after which the device will exit the procedure.
8.	Disconnect the device from the power supply.	
9.	SET	Touch the SET key for 2 s before action 6 to exit the procedure beforehand.

7 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**	cabinet probe offset	-25... 25 °C/°F if P4 = 3, incoming air probe offset
3	CA2	**0.0**	evaporator probe offset	-25... 25 °C/°F
4	CA3	**0.0**	auxiliary probe offset	-25... 25 °C/°F
5	P0	**1**	type of probe	0 = PTC 1 = NTC
6	P1	**1**	enable decimal point °C	0 = no 1 = yes
7	P2	**0**	temperature measurement unit	0 = °C 1 = °F
8	P3	**1**	evaporator probe function	0 = disabled 1 = defrost + fans 2 = fans
9	P4	**0**	configurable input function	0 = digital input 1 = condenser probe 2 = critical temp. probe 3 = outgoing air probe 4 = evaporator probe 2 if P4 = 3, regulation temperature = product temperature (CPT)
10	P5	**0**	value displayed	0 = regulation temperature 1 = setpoint 2 = evaporator temp. 3 = auxiliary temperature 4 = incoming air temperature
11	P7	**50**	incoming air effect to calculate product temperature (CPT)	0... 100 % CPT = {[(P7 x (incoming air)] + [(100 - P7) x (outgoing air)] : 100}
12	P8	**5**	display refresh time	0... 250 s: 10
13	r0	**2.0**	setpoint differential	1... 15 °C/°F if u1c... u5c 1, proportional band
14	r1	**-40**	minimum setpoint	-99 °C/°F... r2
15	r2	**50.0**	maximum setpoint	r1... 199 °C/°F
16	r3	**0**	enable setpoint lock	0 = no 1 = yes
17	r4	**0.0**	setpoint offset in energy saving	0... 99 °C/°F
18	r5	**0**	hot or cold mode regulation	0 = cold mode 1 = hot mode
19	r6	**0.0**	setpoint offset in overcooling/overheating	0... 99 °C/°F
20	r7	**0**	duration overcooling/overheating	0... 240 min
21	r8	**2**	DOWN key additional function	0 = disabled 1 = overcooling/overheating 2 = energy saving
22	r12	**1**	differential position r0	0 = asymmetrical 1 = symmetrical
NO.	PAR.	DEF.	COMPRESSOR	MIN... MAX.
23	C0	**0**	compressor-on delay from power-on	0... 240 min
24	C1	**5**	delay between two compressor switch-ons	0... 240 min
25	C2	**3**	minimum compressor-off time	0... 240 min
26	C3	**0**	minimum compressor-on time	0... 240 s
27	C4	**10**	compressor-off time in cabinet probe alarm	0... 240 min
28	C5	**10**	compressor-on time in cabinet probe alarm	0... 240 min
29	C6	**80.0**	high condensation signal threshold	0... 199 °C/°F differential = 2 °C/4 °F
30	C7	**90.0**	high condensation alarm threshold	0... 199 °C/°F
31	C8	**1**	high condensation alarm delay	0... 15 min
32	C10	**0**	compressor days for maintenance	0... 999 days 0 = disabled
33	C11	**10**	compressor 2 on delay	0... 240 s
34	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)]}
35	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)]}
36	C14	**1**	constraint between compressors	0 = function of C11 1 = function of r0 2 = function of C12 and C13
NO.	PAR.	DEF.	DEFROSTING (if r5 = 0)	MIN... MAX.
37	d00	**0**	enable "b" mode parameters on setpoint threshold	0 = no 1 = yes
38	d01	**1.0**	setpoint threshold to activate "b" mode parameters	r1... r2 activated if setpoint > d01
39	d0	**8**	automatic defrost interval	0... 99 h 0 = manual only if d8 = 3, maximum interval
40	d0b	**6**	automatic defrost interval "b" mode	like d0
41	d1	**0**	type of defrost	0 = electric 1 = hot gas (do not use with regulation with 2 compressors) 2 = compressor stopped
42	d1b	**2**	type of defrost "b" mode	like d1
43	d2	**2.0**	defrost end threshold	-99... 99 °C/°F
44	d2b	**4.0**	defrost end threshold "b" mode	like d2
45	d3	**30**	defrost duration	0... 99 min if P3 = 1, maximum duration
46	d3b	**20**	defrost duration "b" mode	like d3
47	d4	**0**	enable defrost at power-on	0 = no 1 = yes
48	d5	**0**	defrost delay from power-on	0... 99 min
49	d6	**1**	value displayed when defrosting	0 = regulation temperature 1 = locked display 2 = label dEF
50	d7	**0**	dripping time	0... 15 min
51	d7b	**2**	dripping time "b" mode	like d7
52	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
53	d9	**0.0**	evaporation threshold for automatic defrost interval count	-99... 99 °C/°F
54	d11	**0**	enable defrost timeout alarm	0 = no 1 = yes
55	d15	**0**	compressor-on consecutive time for hot gas defrost	-20... 99 min if values are negative, dripping heaters on time
56	d16	**0**	pre-dripping time for hot gas defrost	0... 99 min
57	d18	**40**	adaptive defrost interval	0... 999 min if compressor on + evaporator temperature < d22 0 = manual only
58	d19	**3.0**	adaptive defrost threshold (relative to optimal evaporation temperature)	0... 40 °C/°F optimal evaporation temperature - d19
59	d20	**180**	compressor-on consecutive time for defrost	0... 999 min 0 = disabled
60	d21	**200**	compressor-on consecutive time for defrost from power-on and from overcooling	0... 500 min if (regulation temperature - setpoint) > 10°C/20 °F 0 = disabled
61	d22	**-2.0**	evaporation threshold for adaptive defrost interval count (relative to optimal evaporation temperature)	-10... 10 °C/°F optimal evaporation temperature + d22
62	d25	**0**	enable outgoing air probe for defrost in evaporator probe alarm	0 = no 1 = yes
63	d26	**6**	defrost interval in evaporator probe alarm	0... 99 h 0 = manual only if d25 = 1
NO.	PAR.	DEF.	ALARMS	MIN... MAX.
64	A0	**0**	select value for high/low temperature alarms	0 = regulation temperature 1 = evap. temperature 2 = auxiliary temperature
65	A1	**0.0**	low temperature alarm threshold	-99... 99 °C/°F
66	A2	**0**	type of low temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
67	A4	**0.0**	high temperature alarm threshold	-99... 99 °C/°F
68	A5	**0**	type of high temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
69	A6	**120**	high temperature alarm delay from power-on	0... 999 min
70	A7	**15**	high/low temperature alarm delay	0... 240 min
71	A8	**15**	high temperature alarm delay post-defrosting	0... 240 min
72	A9	**15**	high temperature alarm delay from door closure	0... 240 min
73	A10	**10**	duration of power failure for saving alarm	0... 240 min 0 = disabled
74	A11	**2.0**	high/low temperature alarm reset differential	1... 15 °C/°F
75	A12	**1**	type of power failure alarm signal	0 = LED HACCP 1 = LED HACCP + label PF + buzzer 2 = LED HACCP + label PF + buzzer (if duration > A10)
NO.	PAR.	DEF.	FANS	MIN... MAX.
76	F0	**1**	evaporator fan mode in normal function	0 = off 1 = on 2 = on if compressor on 3 = thermoregulated (with regulation temperature + F1) 4 = thermoregulated (with regulation temperature + F1) if compressor on 5 = function of F6 6 = thermoregulated (with F1) 7 = thermoregulated (with F1) if compressor on
77	F0b	**1**	evaporator fan mode in normal function "b" mode	like F0
78	F1	**-4.0**	evaporator fans regulation threshold	-99... 99 °C/°F
79	F2	**0**	evaporator fan mode in defrost and drip mode	0 = off 1 = on 2 = function of F0
80	F2b	**0**	evaporator fan mode in defrost and drip mode	like F2
81	F3	**2**	maximum time evaporator fans off	0... 15 min
82	F3b	**2**	maximum time evaporator fans off	like F3
83	F4	**30**	time evaporator fans off in energy saving	0... 240 s x 10 if F0 ≠ 5
84	F5	**30**	time evaporator fans on in energy saving	0... 240 s x 10 if F0 ≠ 5
85	F6	**0**	function for high/low humidity	0 = for low humidity (with F17 and F18 if compressor off, on if compressor on) 1 = for high humidity (on)
86	F7	**5.0**	evaporator fans on threshold from dripping (relative to setpoint)	-99... 99 °C/°F setpoint + F7
87	F8	**2.0**	evaporator fans regulation threshold differential	1... 15 °C/°F
88	F9	**10**	evaporator fans off delay from compressor off	0... 240 s if F0 = 2 or 5
89	F11	**15.0**	condenser fans on threshold	0... 99 °C/°F
90	F12	**30**	condenser fans off delay from compressor off	0... 240 s if P4 ≠ 1
NO.	PAR.	DEF.	DIGITAL INPUTS	MIN... MAX.
91	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
92	i1	**0**	door switch input activation	0 = with contact closed 1 = with contact open
93	i2	**30**	door open alarm delay	-1... 120 min -1 = disabled
94	i3	**15**	maximum time for inhibiting regulation with door open	-1... 120 min -1 = until closed
95	i5	**0**	multi-purpose input function	0 = disabled 1 = energy saving 2 = alarm iA 3 = alarm iSd 4 = load 1 operated by on key 5 = load 2 operated by on key 6 = switches device on/off 7 = alarm LP 8 = alarm C1t 9 = alarm C2t
96	i6	**0**	multi-purpose input activation	0 = with contact closed 1 = with contact open
97	i7	**0**	multi-purpose input alarm delay	0... 120 min if i5 = 3 or 7, compressor on delay from alarm reset
98	i8	**0**	number of multi-purpose input activations for high pressure alarm	0... 15 0 = disabled if i5 = 3
99	i9	**240**	counter reset time for high pressure alarm	1... 999 min
100	i10	**0**	door closed consecutive time for energy saving	0... 999 min after cabinet temperature < SP 0 = disabled
101	i13	**180**	number of door openings for defrost	0... 240 0 = disabled
102	i14	**32**	door open consecutive time for defrost	0... 240 min 0 = disabled
NO.	PAR.	DEF.	DIGITAL OUTPUTS	MIN... MAX.
103	u1c	**0**	K1 relay configuration	0 = compressor 1 1 = compressor 2 2 = evaporator fans 3 = condenser fans 4 = defrosting 5 = cabinet light 6 = demisting 7 = door heaters 8 = heaters for neutral zone 9 = dripping heaters 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by 14= evaporator fans 2 15= defrosting 2 16= speed 2 evaporator fans 17= reversible cond. fans 18= speed 2 cond. fans
104	u2c	**2**	K2 relay configuration	like u1c
105	u3c	**4**	K3 relay configuration	like u1c
106	u4c	**5**	K4 relay configuration	like u1c
107	u2	**0**	enable cabinet light and load in stand-by using the key	0 = no 1 = yes in manual mode
108	u3	**0**	alarm relay activation	0 = with alarm not active 1 = with alarm active
109	u4	**1**	enable silencing alarm output	0 = no 1 = yes
110	u5	**-1.0**	door heaters on threshold	-99... 99 °C/°F

	111	u5d	**2.0**	door heaters on threshold differential	1... 25 °C/°F
	112	u6	**5**	duration demisting on	1... 120 min 1 = on/off by pressing key
	113	u7	**-5.0**	neutral zone for heating threshold (relative to setpoint)	-99... 99 °C/°F differential = 2 °C/4 °F setpoint + u7
	114	u9	**1**	enable alarm buzzer	0 = no 1 = yes
	NO.	PAR.	DEF.	CLOCK	MIN... MAX.
	115	Hr0	**0**	enable clock	0 = no 1 = yes
	NO.	PAR.	DEF.	ENERGY SAVING (if r5 = 0)	MIN... MAX.
	116	HE2	**0**	maximum duration energy saving	0... 999 min 0 = until door opened
	NO.	PAR.	DEF.	ENERGY SAVING IN REAL TIME (if r5 = 0; visible if Hr0=1)	MIN... MAX.
	117	H01	**0**	energy saving time	0... 23 h
	118	H02	**0**	maximum duration energy saving	0... 24 h
	NO.	PAR.	DEF.	SWITCHING ON/OFF IN REAL TIME (visible if Hr0=1)	MIN... MAX.
	119	Hon	**h-**	time device switch-on	0... h- h- = disabled
	120	HoF	**h-**	time device switch-off	0... h- h- = disabled
	121	Hc1	**h-**	1st time reversible condenser fans on	0... h- h- = disabled for time F20
	122	Hc2	**h-**	1st time reversible condenser fans on	0... h- h- = disabled for time F20
	NO.	PAR.	DEF.	DEFROSTING IN REAL TIME (if d8 = 4; visible if Hr0=1)	MIN... MAX.
	123	Hd1	**h-**	1st daily defrosting time	0... h- h- = disabled
	124	Hd2	**h-**	2nd daily defrosting time	0... h- h- = disabled
	125	Hd3	**h-**	3rd daily defrosting time	0... h- h- = disabled
	126	Hd4	**h-**	4th daily defrosting time	0... h- h- = disabled
	127	Hd5	**h-**	5th daily defrosting time	0... h- h- = disabled
	128	Hd6	**h-**	6th daily defrosting time	0... h- h- = disabled
	NO.	PAR.	DEF.	SECURITY	MIN... MAX.
	129	POF	**1**	enable ON/STAND-BY key	0 = no 1 = yes
	130	Loc	**1**	enable keypad lock	0 = no 1 = yes
	131	PAS	**-19**	password	-99... 999
	132	PA1	**426**	1st level password	-99... 999
	133	PA2	**824**	2nd level password	-99... 999
	NO.	PAR.	DEF.	EVLINK DATA-LOGGING (visible if Hr0=1)	MIN... MAX.
	134	rE0	**15**	data logger sampling interval	0... 240 min
	135	rE1	**1**	select temperature for data logger	0 = none 1 = cabinet 2 = evaporator 3 = auxiliary 4 = cabinet and evaporator 5 = all
	NO.	PAR.	DEF.	MODBUS	MIN... MAX.
	136	LA	**247**	MODBUS address	1... 247
	137	Lb	**2**	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
	138	LP	**2**	MODBUS parity	0 = none 1 = odd 2 = even
	NO.	PAR.	DEF.	EVLINK	MIN... MAX.
	139	bLE	**1**	activate EVlink	0 = no 1 = yes

8 ALARMS

CODE	MEANING	RESET	TO CORRECT
Pr1	cabinet probe alarm	automatic	- check P0 - check the integrity of the probe - check electrical connection
Pr2	evaporator probe alarm	automatic	
Pr3	auxiliary probe alarm	automatic	
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	door open alarm	automatic	check i0 and i1
PF	power failure alarm	manual	- touch a key - check electrical connection
COH	high condensation signal	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	compressor 2 thermal switch alarm	automatic	check i5 and i6
dFd	defrost timeout alarm	manual	- touch a key - check d2, d3 and d11

9 TECHNICAL SPECIFICATIONS

Purpose of the control device:		function controller.
Construction of the control device:		built-in electronic device.
Housing:		
user interface: black, self-extinguishing		control module: open frame board.
Category of heat and fire resistance:		D.
Measurements:		
user interface: 111.4 x 76.4 x 25.0 mm (4 3/8 x 3 x 1 in)		control module: 66.5 x 107.5 x 31.0 mm (2 5/8 x 4 1/4 x 1 1/4 in).
Mounting methods for the control device:		
user interface: to be fitted to a plastic or metal panel (with elastic holding flaps)		control module: to be installed on an electrical panel, on spacers (not provided).
Degree of protection provided by the casing:		
user interface: IP65 (front)		control module: IP00.
Connection method:		
user interface: plug-in screw terminal blocks for wires up to 2.5 mm²		control module: - fixed screw terminal blocks for wires up to 2.5 mm² - Pico-Blade connector.
Maximum permitted length for connection cables:		
user-interface-control module: 10 m (32.8 ft)		
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 0 to 55 °C (from 32 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.
Compliance:		
RoHS 2011/65/EC	WEEE 2012/19/EU	REACH (EC) Regulation no. 1907/2006
EMC 2014/30/EU		LVD 2014/35/EU.
Power supply:		
user interface: powered by the control module		control module: 230 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 2 VA 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 or NTC probes (cabinet probe and evaporator probe)
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).
Digital inputs:		1 dry contact (door switch).
Other inputs:		1 input can be configured for analogue input (auxiliary probe) or digital input (multi-purpose, dry contact).
Contact dry:	Type of contact:	5 VDC, 1.5 mA
	Power supply:	none
	Protection:	none.
Digital outputs:		4 with sealed electro-mechanical relay in compliance with the EN 60079-15 standard.
K1 relay:		SPST, 16 A res. @ 250 VAC
K2 relay:		SPST, 5 A res. @ 250 VAC
K3 relay:		SPDT, 8 A res. @ 250 VAC
K4 relay:		SPDT, 16 A res. @ 250 VAC.
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:		built-in.
Communications ports:		1 TTL MODBUS slave port for EVJKEY programming key, 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 equipment.

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