EVCO EV3294 Controllers and Displays Owner's Manual

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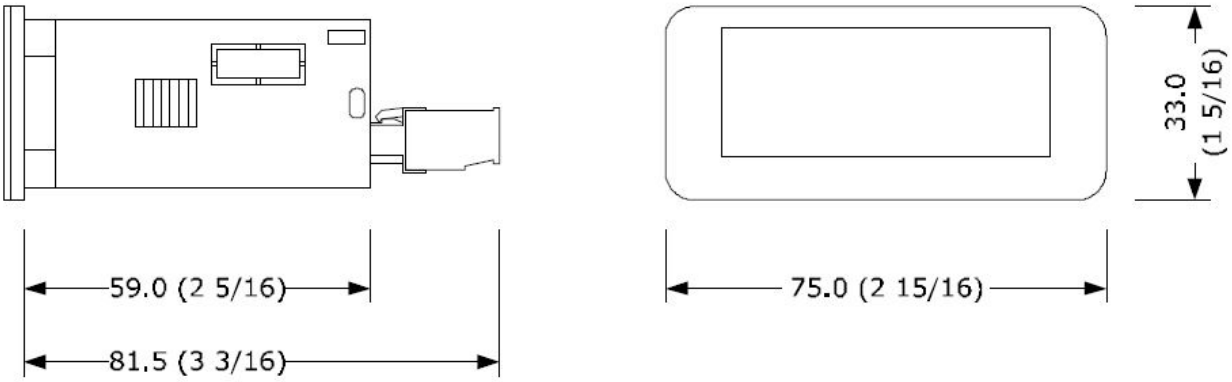
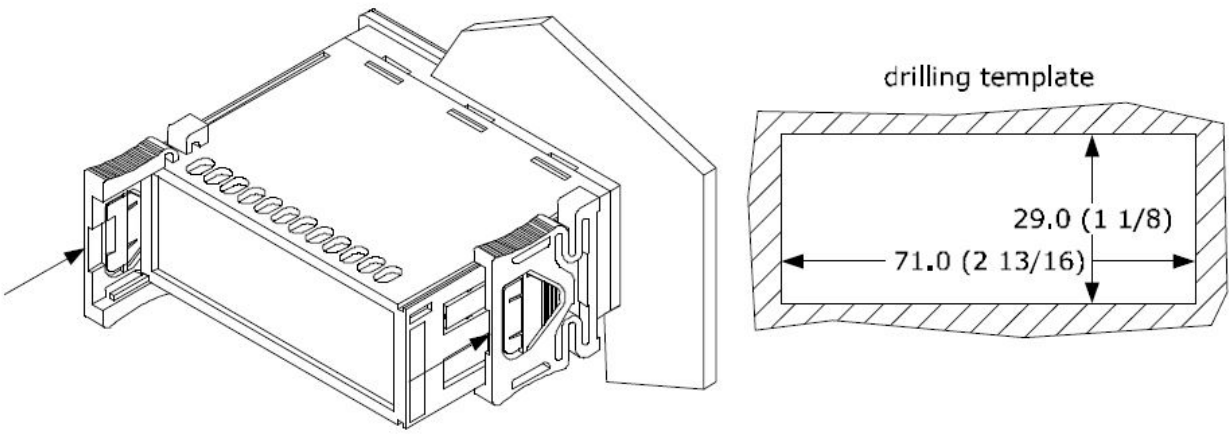
EVCO EV3294 Controllers and Displays

- Controllers for low temperature units.
- Power supply 115… 230 VAC or 12-24 VAC/DC according to the model.
- Incorporated clock according to the model.
- Cabinet probe and evaporator probe PTC/NTC.
- Door switch input.
- Compressor relay 16 Ares 250 VAC.
- Alarm buzzer.
- Incorporated Bluetooth Low Energy sensor according to the model.
- TTL MODBUS slave port for EVconnect app, EPoCA remote monitoring system or for BMS according to the model.
- Cooling or heating operation.

MEASUREMENTS AND INSTALLATION

Measurements in mm inches. To be fitted to a panel, snap-in brackets provided





INSTALLATION PRECAUTIONS
The thickness of the panel must be between 0.8 and 2.0 mm 1/32 and 1/16 in.Ensure that the working conditions are within the limits stated in the TECHNICAL

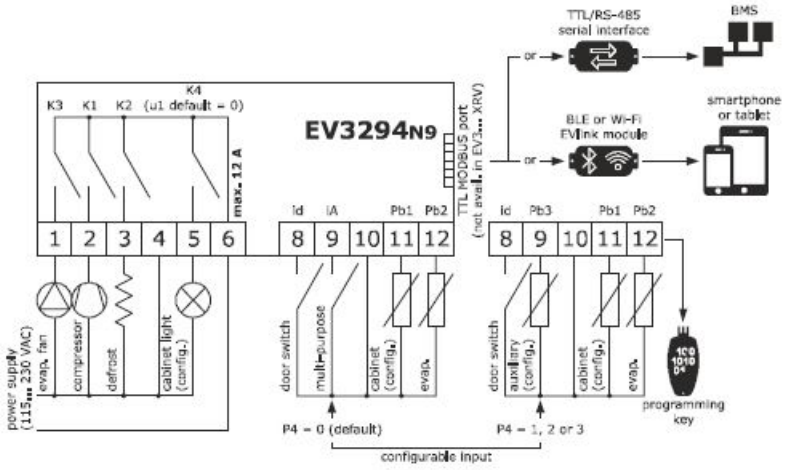
SPECIFICATIONS section

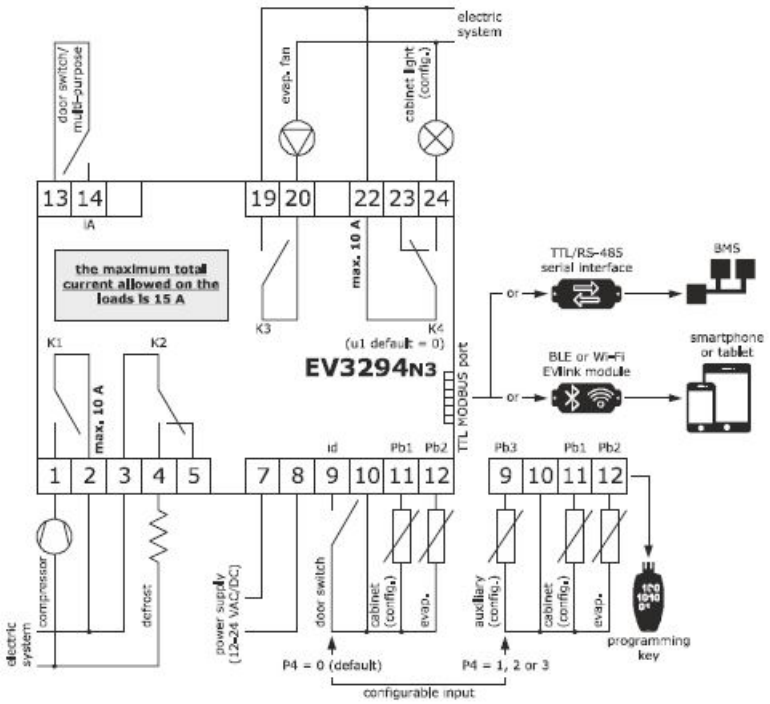
Do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations
or shocks. In compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

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. 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.

FIRST TIME

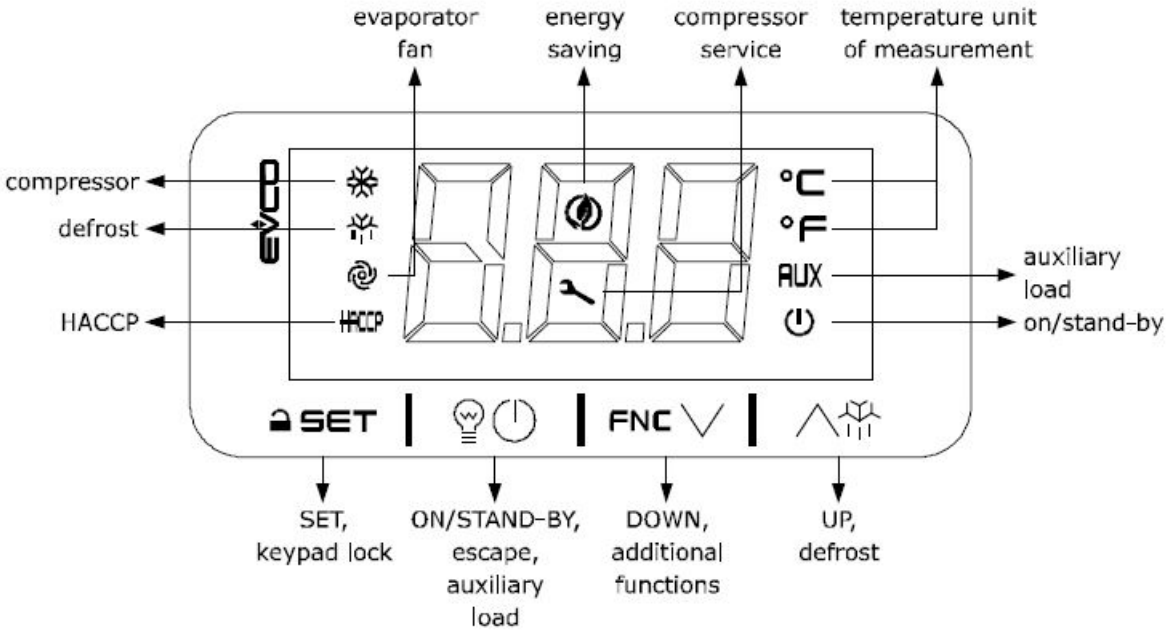
1. Install following the instructions given in the section MEASUREMENTS AND INSTALLATION.
2. Power up the device as shown in the section ELECTRICAL CONNECTION and an internal test will be run.
3. The test normally takes a few seconds, when it is finished the display will switch off.
4. Configure the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

PAR.	DEF.	PARAMETER	MIN… MAX.
SP	**0.0**	setpoint	r1..r2
P0	1	probe type	0 = PTC 1 = NTC
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.

- Disconnect the device from the mains.
- Make the electrical connection as shown in the section ELECTRICAL CONNECTION without powering up the device.
- 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 APP EVconnect connect the interface EVIF25TBX or use EV3… XRV.
- To use the device with the EPoCA remote monitoring system, connect the EVIF25TWX module; see the relevant instruction sheets.
- EVIF22TSX or EVIF23TSX is used, set parameter bLE to 0.
- Power up the device.

USER INTERFACE AND MAIN FUNCTIONS



Switching the device on/off

LED	ON	OFF	FLASHING
	compressor on	compressor off	Compressor protection active set point setting active
	defrost or pre-dripping active		Defrost delay active dripping active
	evaporator fan on	evaporator fan off	Evaporator fan stop active
HACCP	saved HACCP alarm in EVlink		
	energy saving active		
	Request for compressor service		Settings active access to additional functions active operation with EVconnect APP active
°C/°F	View temperature		overcooling or overheating active
AUX	auxiliary load on	auxiliary load off	auxiliary load on by digital input auxiliary load delay active
	device off	device on	device on/off active

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

Unlock keypad

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

Set the setpoint

Check that the keypad is not locked.

1.		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 -50… 50
3.		Touch the SET key or do not operate for 15 s.

Activate manual defrost if r5 = 0, default

Check that the keypad is not locked and that overcooling is not active.Touch the UP key for 2 s. If P3 = 1 (default), defrost is activated provided that the evaporator temperature is lower than the d2 threshold.

Cabinet light on/off if u1 = 0, default

Touch the ON/STAND-BY key if u1 = 1, the demisting switch on for the duration if u1 = 2 and the keypad is not locked, the button-operated load switches on/off.

Silence buzzer

Touch a key. If u1 = 3 and u4 = 1, the alarm output switches off.

ADDITIONAL FUNCTIONS

Activate/deactivate overcooling, overheating and manual energy saving

Check that the keypad is not locked.

FUNCTION	CONDITION	CONSEQUENCE
overcooling	r5 = 0, r8 = 1 and defrost not acti ve	the setpoint becomes setpoint r6, for the r 7 duration
overheating	r5 and r8 = 1	the setpoint becomes “setpoint + r6, for th e r7 duration
energy saving	r5 = 0 and r8 = 2	the setpoint becomes setpoint + r4 at maximum for HE2 duration

View/delete compressor functioning hours and view comp start up number

Check that the keypad is not locked

1.		Touch the DOWN key for 4s.
2.		Touch the UP or DOWN key within 15s to select a label.

LAB.	DESCRIPTION
CH	view compressor functioning hours (hundreds)
rCH	delete compressor functioning hours
nS1	compressor start up number thousands

3.		Touch the SET key.
4.		Touch the UP or DOWN key to set 149 when label rCH is selected.

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

View the temperature detected by the probes

Check that the keypad is not locked.

1.		Touch the DOWN key for 4s.
2.		Touch the UP or DOWN key wi thin 15 s to select a label.

	LAB.	DESCRIPTION
	Pb1	cabinet temperature (if P4 = 0, 1 or inlet air temperature if P4 = 3
	Pb2	evaporator temperature if P3 = 1 or 2
	Pb3	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 o r do not operate for 60s to exit t he procedure.

SETTINGS

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 15 s to set the PAS value default 19
4.		Touch the SET key or do not operate for 15 s: the display will show the label S P
5.		Touch the UP or DOWN key to select a parameter.
6.		Touch the SET key.
7.		Touch the UP or DOWN key within 15 s 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.

Set the date, time and day of the week

Available in EV3… XRV or if EVIF23TSX, EVIF25TWX or interface EVIF25TBX is connected. N.B. 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 EVconnect app, 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 4s.
2.		Touch the UP or DOWN key wi thin 15 s to select the label rtc.
3.		Touch the SET key: the display will show the label **yy** followed by the last two figures of the ye ar.
4.		Touch the UP or DOWN key wi thin 15 s to set the year.
5.	Repeat actions 3 and 4 to set the next labels.	

LAB.	DESCRIPTION OF THE NUMBERS FOLLOWING THE LABEL
n	month (01… 12)

	d	day (01… 31)
	h	time (00… 23)
	n	minute (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 15 s 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.

CONFIGURATION PARAMETERS

	N.	PAR.	DEF.	SETPOINT	MIN… MAX.
	1	SP	**0.0**	setpoint	r1… r2
	N.	PAR.	DEF.	ANALOGUE INPUTS	MIN… MAX.
	2	CA1	**0.0**	cabinet probe offset	-25… 25 °C/°F if P4 = 3, air in 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**	probe type	0 = PTC 1 = NTC
	6	P1	**1**	enable °C decimal point	0 = no 1 = yes
	7	P2	**0**	temperature unit of measure- ment	0 = °C 1 = °F
	8	P3	**1**	evaporator probe function	0 = disabled 1 = defrost + fan 2 = fan
	9	P4	**0**	configurable input function	0 = digital input 1 = condenser probe 2 = critical temperature probe 3 = air out probe if P4 = 3, regulation temperature = product temperature (CPT)

	10	P5	**0**	value displayed	0 = regulation temperature 1 = setpoint 2 = evaporator temperature 3 = auxiliary temperature 4 = air in temperature
	11	P7	**5**	air in weight for calculated prod- uct te mperature (CPT)	0… 10 % x 10 CPT = {[(P7 x (air in)] + [(100 – P7) x (air out)] : 100}
	12	P8	**5**	display refresh time	0… 250 s : 10
	N.	PAR.	DEF.	REGULATION	MIN… MAX.
	13	r0	**2.0**	setpoint differential	1… 15 °C/°F
	14	r1	**-50**	minimum setpoint	-99 °C/°F… r2
	15	r2	**50.0**	maximum setpoint	r1… 199 °C/°F
	16	r4	**0.0**	setpoint offset in energy saving	0… 99 °C/°F
	17	r5	**0**	cooling or heating operation	0 = cooling 1 = heating
	18	r6	**0.0**	setpoint offset in overcool- ing/overhea ting	0… 99 °C/°F
	19	r7	**30**	overcooling/overheating duration	0… 240 min

	20	r8	**0**	DOWN key additional function	0 = disabled 1 = overcooling/overheating 2 = energy saving

21	r12	**0**	position of the r0 differential	0 = asymmetric 1 = symmetric
N.	PAR.	DEF.	COMPRESSOR	MIN… MAX.
22	C0	**0**	compressor on delay after power-on	0… 240 min
23	C2	**3**	compressor off minimum time	0… 240 min
24	C3	**0**	compressor on minimum time	0… 240 s
25	C4	**10**	compressor off time during cabinet probe alarm	0… 240 min

26	C5	**10**	compressor on time during cabi- net probe alarm	0… 240 min
27	C6	**80.0**	threshold for high condensation warning	0… 199 °C/°F differential = 2 °C/4 °F
28	C7	**90.0**	threshold for high condensation alarm	0… 199 °C/°F
29	C8	**1**	high condensation alarm delay	0… 15 min
30	C10	**0**	compressor hours for service	0… 999 h x 100 0 = disabled
31	C11	**0**	second compressor switch on delay not available in EV3… N3	0… 240 s

	32	C13	**0**	number of start-ups for compres- sor r otation not available in EV3… N3	0… 10 0 = disabled
	N	PAR	DEF	DEFROST (if r5 = 0)	MIN… MAX.
	33	d0	**8**	automatic defrost interval	0… 99 h 0 = only manual if d8 = 3, maximum interval
	34	d1	0	defrost type	0 = electric 1 = hot gas 2 = compressor stopped
	35	d2	8.0	threshold for defrost end	-99… 99 °C/°F
	36	d3	30	defrost duration	0… 99 min se P3 = 1, maximum duration

37	d4	0	enable defrost at power-on	0 = no 1 = yes
38	d5	**0**	defrost dealy after power-on	0… 99 min
39	d6	2	value displayed during defrost	0 = regulation temperature 1 = display locked 2 = dEF label
40	d7	**2**	dripping time	0… 15 min
41	d8	0	defrost interval counting mode	0 = device on hours 1 = compressor on hours 2 = hours evaporator temperature < d9 3 = adaptive 4 = real time

42	d9	C	evaporation threshold for auto- matic defrost interval counting	-99… 99 °C/°F
43	d11	**0**	enable defrost timeout alarm	0 = no 1 = yes
44	d15	**0**	compressor on consecutive time for ho t gas defrost	0… 99 min
45	d16	0	pre-dripping time for hot gas de- frost	0… 99 min
46	d18	40	adaptive defrost interval	0… 999 min if compressor on + evapora- tor te mperature < d22 0 = only manual
47	d19	3.0	threshold for adaptive defrost (relative to optimal evaporation temper ature)	0… 40 °C/°F optimal evaporation tempera- ture – d19

48	d20	180	compressor on consecutive time for defrost	0… 999 min 0 = disabled
49	d21	**200**	compressor on consecutive time for de frost after power-on and overcooling	0… 500 min if regulation temperature setpoint > 10°C/20 °F 0 = disabled
50	d22	-2.0	evaporation threshold for adap- tive de frost interval counting (relative to opti mal evaporation temperature)	-10… 10 °C/°F optimal evaporation tempera- ture + d22
N.	PAR.	DEF.	ALARMS	MIN… MAX.
51	AA	0	select value for high/low temper- ature alarms	0 = regulation temperature 1 = evaporator temperature 2 = auxiliary temperature

52	A1	-10.0	threshold for low temperature alarm	-99… 99 °C/°F
53	A2	**2**	low temperature alarm type	0 = disabled 1 = relative to setpoint 2 = absolute
54	A4	**10.0**	threshold for high temperature alarm	-99… 99 °C/°F
55	A5	**2**	high temperature alarm type	0 = disabled 1 = relative to setpoint 2 = absolute
56	A6	**12**	high temperature alarm delay after power-on	0… 99 min x 10

57	A7	**15**	high/low temperature alarms de- lay	0… 240 min
58	A8	**15**	high temperature alarm delay af- ter defrost	0… 240 min
59	A9	**15**	high temperature alarm delay af- ter door closing	0… 240 min
60	A10	**10**	power failure duration for alarm recording	0… 240 min
61	A11	**2.0**	high/low temperature alarms re- set dif ferential	1… 15 °C/°F

N.	PAR.	DEF.	FANS	MIN… MAX.

62	F0	**1**	evaporator fan mode during normal op eration	0 = off 1 = on 2 = according to F15 and F16 if co mpressor off, on if compressor on 3 = thermoregulated (with F1) 4 = thermoregulated (with F1) if compressor on
63	F1	**-4.0**	threshold for evaporator fan op- eratio n	-99… 99 °C/°F differential = 1 °C/2 °F
64	F2	**0**	evaporator fan mode during de- frost and dripping	0 = off 1 = on 2 = according to F0
65	F3	**2**	evaporator fan off maximum time	0… 15 min
66	F4	**0**	evaporator fan off time during energy s aving	0… 240 s x 10

67	F5	**10**	evaporator fan on time during energy saving	0… 240 s x 10
68	F7	**5.0**	threshold for evaporator fan on after dripping (relative to setpoint)	-99… 99 °C/°F setpoint + F7
69	F9	**0**	evaporator fan off delay after compres sor off	0… 240 s if F0 = 2
70	F11	**15.0**	threshold for condenser fan on	0… 99 °C/°F differential = 2 °C/4 °F
71	F12	**30**	condenser fan off delay after compressor off	0… 240 s if P4 ≠ 1
72	F15	**0**	evaporator fan off time with compressor off	0… 240 s if F0 = 2

	73	F16	**1**	evaporator fan on time with compressor off	0… 240 s if F0 = 2

N.	PAR.	DEF.	DIGITAL INPUTS	MIN… MAX.	
74	i0	**5**	door switch input function	0	disabled
				1	compressor + evaporator fan off evaporator fan off cabinet light on compressor + evaporator fan off, cabinet li ght on evaporator fan off + cabinet light on
				2	
				3	
				4	
				5	
75	i1	**0**	door switch input activation	0	with contact closed
				1	with contact open
76	i2	**30**	open door alarm delay	-1… 120 min	
				-1 = disabled	
77	i3	**15**	regulation inhibition maximum	-1… 120 min	
			time with door open	-1 = until the closing	
78	i5	**2**	door switch/multi-purpose input	0	disabled energy saving iA alarm button operated loa d on device on/off Cth alarm th alarm compressor + evaporator fan off, cabinet light on evaporator fan off + cabinet light on
			function (option s 7 and 8 not available in EV3… N9)	1	
				2	
				3	
				4	
				5	
				6	
				7	
				8	

79	i6	**0**	door switch/multi-purpose input				0	with contact closed
			activation					
80	i7	**0**	multi-purpose input alarm delay				-1… 120 min	
							-1 = disabled	
							if i5 = 5 or 6, compressor on	
							delay after alarm reset	
81	i10	**0**	door closed consecutive time for				0… 999 min	
			energy saving				after regulation temperature	
							< SP	
							0 = disabled	
82	i13	**180**	number of door openings for de-				0… 240	
			frost				0 = disabled	
83	i14	**32**	door open consecutive time for				0… 240 min	
			defrost				0 = disabled	
N.	PAR.	DEF.	DIGITAL OUTPUTS				MIN… MAX.	
84	u1	**0**	auxiliary	output		configuratio n	0	cabinet light
			(option 8 not available in EV3…				1	demisting
			N3)				2	buttonoperated load
							3	alarm
							4	= door heaters
							5	= heater for neutral zone
							6	condenser fan
							7	on/stand-by
							8	second compressor
85	u2	**0**	enable cabinet light and button-				0 no 1 yes	
			operated load in stand-by				manual	
86	u4	**0**	enable alarm output off silencing				0	no 1 yes
			the buzzer					
87	u5	**-1.0**	threshold for door heaters on				-99… 99 °C/°F	
							differential = 2 °C/4 °F	
88	u6	**5**	demisting on duration				1… 120 min	
89	u7	**-5.0**	neutral zone threshold for heat-				-99… 99 °C/°F	

				ing (relative to setpoint)	differential = 2 °C/4 °F
					setpoint + u7
	N.	PAR.	DEF.	ENERGY SAVING (if r5 = 0)	MIN… MAX.
	90	HE2	**0**	energy saving maximum duration	0… 999 min -1 = until the door opening
	N.	PAR.	DEF.	REAL TIME ENERGY SAVING (if r5 = 0)	MIN… MAX.
	91	H01	**0**	Monday energy saving time	0… 23 h
	92	H02	**0**	Monday energy saving maximum durati on	0… 24 h
	93	H03	**0**	Tuesday energy saving time	0… 23 h
	94	H04	**0**	Tuesday energy saving maximum duration	0… 24 h
	95	H05	**0**	Wednesday energy saving time	0… 23 h
	96	H06	**0**	Wednesday energy saving maxi- mum d uration	0… 24 h
	97	H07	**0**	Thursday energy saving time	0… 23 h
	98	H08	**0**	Thursday energy saving maxi- mum duration	0… 24 h
	99	H09	**0**	Friday energy saving time	0… 23 h
	100	H10	**0**	Friday energy saving maximum duration	0… 24 h
	101	H11	**0**	Saturday energy saving time	0… 23 h
	102	H12	**0**	Saturday energy saving maxi- mum dur ation	0… 24 h
	103	H13	**0**	Sunday energy saving time	0… 23 h
	104	H14	**0**	Sunday energy saving maximum duration	0… 24 h
	N.	PAR.	DEF.	REAL TIME DEFROST (if d8 = 4)	MIN… MAX.
	105	Hd1	**h**	1st daily defrost time	h- = disabled
	106	Hd2	**h**	2nd daily defrost time	h = disabled
	107	Hd3	**h**	3rd daily defrost time	h- = disabled
	108	Hd4	**h**	4th daily defrost time	h = disabled

	109	Hd5	**h**	5th daily defrost time	h = disabled	
	110	Hd6	**h**	6th daily defrost time	h= disabled	
	N.	PAR.	DEF.	SAFETIES	MIN… MAX.	
	111	POF	**0**	enable ON/STAND-BY key	0	= no 1 = yes
	112	PAS	**-19**	password	-99… 999	
	113	PA1	**426**	level 1 password	-99… 999	
	114	PA2	**824**	level 2 password	-99… 999	
	N.	PAR.	DEF.	REAL TIME CLOCK	MIN… MAX.	
	115	Hr0	**0**	enable clock	0	= no 1 = yes
	N.	PAR.	DEF.	DATA-LOGGING EVLINK	MIN… MAX.	
	116	bLE	**1**	enable Bluetooth	0	= no 1 = yes
	117	rE0	**15**	data-logger sampling interval	0… 240 min	
	118	rE1	**1**	recorded temperature	0 2 3 4 5	none 1 = cabinet evaporator auxiliar cabinet and evaporator all
	N.	PAR.	DEF.	MODBUS	MIN… MAX.	
	119	LA	**247**	MODBUS address	1… 247	
	120	Lb	**2**	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud parity even	

ALARMS

COD.	DESCRIPTION	RESET	REMEDIES
Pr1	cabinet probe alarm	automatic	check P0 check probe integrity 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 AA, A1 and A2
AH	high temperature alarm	automatic	check AA, A4 and A5
id	open door alarm	automatic	check i0 e 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
Cth	compressor thermal switch alarm	automatic	check i5 and i6
th	global thermal switch alarm	manual	switch the device off and on check i5 and i6
dFd	defrost timeout alarm	manual	touch a key check d2, d3 and d11

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	

75.0 x 33.0 x 59.0 mm (2 15/16 x 1 5/16 x 2 5/16 in) with fixed screw terminal blocks; 75.0 x 33.0 x 73.0 mm (2 15/16 x 1 5/16 x 2 7/8 in) in EV3… N3	75.0 x 33.0 x 81.5 mm (2 15/16 x 1 5/16 x 3 3/16 in) with removable screw terminal blocks; 75.0 x 33.0 x 83.0 mm (2 15/16 x 1 5/16 x 3 1/4 in) in EV3… N3
Mounting methods for the control device	To be fitted to a panel, snap-in brackets pro - vided
Degree of protection provided by the cover- ing	IP65 (front)

Connection method		
Fixed screw terminal blocks for wires up to 2,5 mm²	Removable screw terminal blocks for wires up to 2,5 mm²; by request	Micro-MaTch 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 0 to 55 °C (from 32 to 131 °F); from 0 to 50 °C (from 32 a 122 °F) in EV3… N3
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) Regul ation 1907/2006

EMC 2014/30/UE	LVD 2014/35/UE
Power supply	
115… 230 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 3.2 VA insulated in EV3… N9	12-24 VAC/DC +10% -15%, 50/60 Hz ±3 H z max. 4 VA/3 W in EV3… N3, provided by a SELV class 2 source

Earthing methods for the control device		None
Rated impulse-withstand voltage		2,5 KV 4 KV in EV3… N3.
Over-voltage category		III in EV3… N3
Software class and structure		A
Clock		Incorporated secondary lithium batter y available in EV3… XRV
Clock drift		≤ 60 s/month at 25 °C 77 °F
Clock battery autonomy in the absence of a power supply		> 24 h at 25 °C 77 °F
Clock battery charging time		24 h the battery is charged by the power su pply of the device
Analogue inputs		2 for PTC or NTC probes cabinet probe and evaporator probe
PTC probe s	Sensor type	KTY 81-121 990 W 25 °C, 77 °F
	Measurement field	From -50 to 150 °C from -58 to 302 °F
	Resolution	0.1 °C (1 °F)
NTC probe s	Sensor type	ß3435 10 KW 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/multi purpose
Dry co ntact	Contact type	5 VDC, 1.5 m A
	Power supply	None
	Protection	None
Other inputs	Input configurable for analogue input (auxiliary probe or digital input door switch/multi-purpose input	
Digital output s	4 electro mechanical relays compressor, defrost, evaporator fan and auxiliary relay	
Compressor relay (K1)		SPST, 16 A res250 VAC
Defrost relay (K2)		SPST, 8 A res 250 VAC; SPDT, 8 A res 250 VAC in EV3… N3
Evaporator fan relay K3		SPST, 5 A res 250 VAC; SPST, 2 A res 250 VAC 30,000 cycles in EV3… N3
Auxiliary relay (K4)		SPST, 5 A res 250 VAC; SPDT, 16 A res 25 0 VAC in EV3… N3
Type 1 or Type 2 Actions		Type 1

Additional features of Type 1 or Type 2 ac- tions	C
Displays	3 digits custom display, with function icons
Alarm buzzer	Incorporated
Incorporated sensors	Bluetooth Low Energy available in EV3… XRV.
Communication ports	TTL MODBUS slave port for EVconnect ap p, EPoCA remote monitoring system or for BMS not available in EV3… XRV

For EV3… XRV According to European R&TTE Declaration of Conformity this device can beused in the following Countries: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands and The United Kingdom.

N.B.
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Documents / Resources

	EVCO EV3294 Controllers and Displays [pdf] Owner's Manual EV3294, Controllers and Displays, EV3294 Controllers and Displays

References

- EVCO - Advanced Controllers