EVJ LCD — Remote user interfaces (with INTRABUS or RS-485 port)

EVCO

device for **INDOOR APPLICATIONS**

PLEASE READ CAREFULLY and save this document
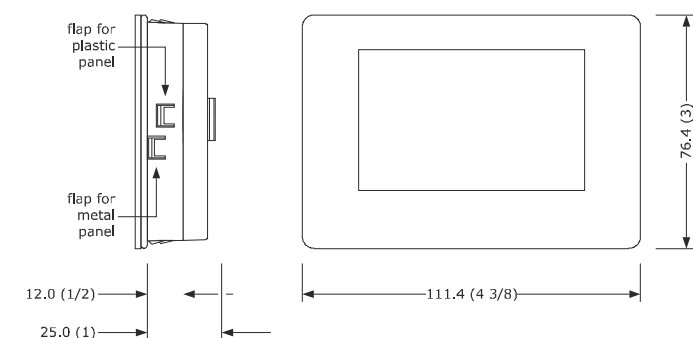CONSIDER THE ENVIRONMENT

EN ENGLISH

- panel or wall mounting with or without back-slot for in-wall box (according to the model)
- 12 VAC/DC power supply not insulated or 115... 230 VAC power supply (according to the model)
- one or two NTC external analog inputs (according to the model)
- two digital outputs rated 1 res. A @ 250 VAC (according to the model)
- alarm buzzer
- incorporated temperature and humidity sensor (according to the model)
- incorporated Bluetooth Low Energy sensor (according to the model)
- INTRABUS port or RS-485 port with INTRABUS or MODBUS communication protocol (according to the model)
- **device for indoor applications**.

Purchasing codes	Installation mode	Power supply	External analog inputs	Digital outputs	Incorporated temperature and humidity sensor	Incorporated Bluetooth Low Energy sensor
EVJD900N2	panel mounted (black front)	12 VAC/DC	no	no	no	no
EVJD900N2VW	wall mounted (white front)	12 VAC/DC	1	no	no	no
EVJD900N2VWTX [1]			1	no		no
EVJD900N2VWIV			1	no		yes
EVJD920N2VW			1	no	yes	no
EVJD920N2VWSX [2]			1	no		no
EVJD920N2VWIV			1	no		yes
EVJD902N9VP	wall mounted with back-slot for flush mounting box (white front)	115... 230 VAC	2	2	no	no
EVJD902N9VPIV			2	2		yes
EVJD922N9VP			2	2	yes	no
EVJD922N9VPIV			2	2		yes

[1] with RS-485 port with INTRABUS communication protocol
[2] with RS-485 port with MODBUS communication protocol

1 MEASUREMENTS AND INSTALLATION | Measurements in mm (in)

1.1 Models for panel mounting

flap for plastic panel
flap for metal panel
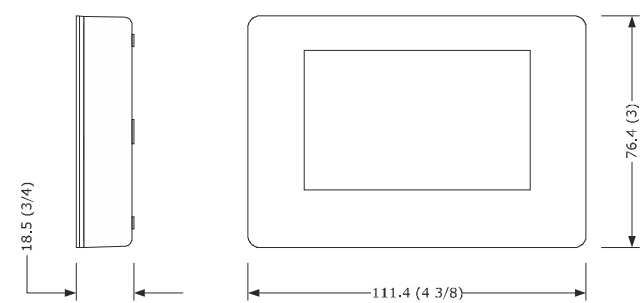12.0 (1/2)
25.0 (1)
111.4 (4 3/8)
76.4 (3)

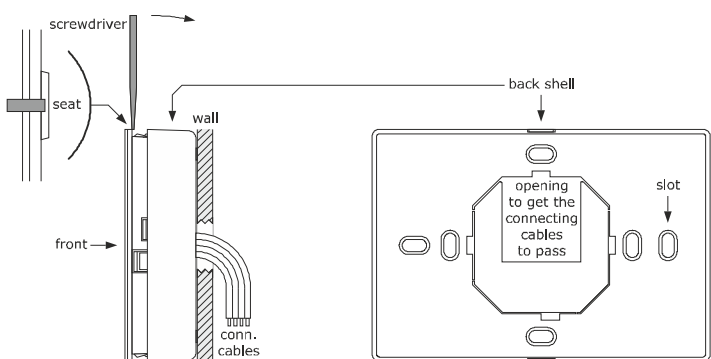To be fitted to a panel, with elastic holding flaps.

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)
- the measurements of drilling template must be 107.6 x 72.6 mm (3 15/16 x 2 7/8 in), with rounded corners R 3.0 mm (1/8 in).

1.2 Models for wall mounting
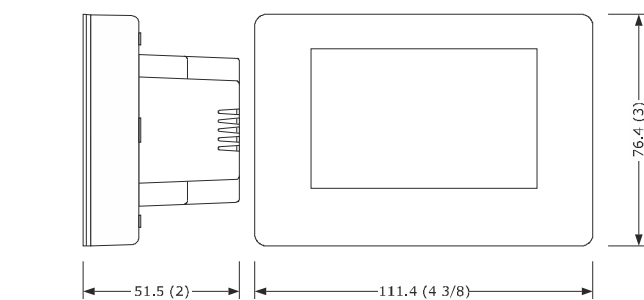

18.5 (3/4)
76.4 (3)
111.4 (4 3/8)

Wall mounting (with bolts and fastening screws) or in the most common flush mounting boxes (with fastening screws).
1. Unhook the back shell from the front through a screwdriver and the proper seat.
2.1 In case of wall mounting:
   2.1.1 Lean the back shell against the wall in a position suitable to get the connecting cable to pass through the proper opening.
   2.1.2 Use the slots of the back shell as template to drill 4 holes having a diameter suitable to the bolt.
      5.0 mm (3/16 in) diameter bolts are suggested.
   2.1.3 Insert the bolts in the holes drilled in the wall.
   2.1.4 Fasten the back shell at the wall with 4 screws.
      Countersunk head screws are suggested.
2.2 In case of flush mounting box, fasten the back shell at the box with 4 screws.
   Countersunk head screws are suggested.
3. Make the electrical connection as shown in the section *ELECTRICAL CONNECTION* without powering up the device.
4. Fasten the front of the device at the back shell.

screwdriver
seat
wall
front
back shell
opening to get the connecting cables to pass
slot
conn. cables

1.3 Models for wall mounting with back-slot for in-wall box

51.5 (2)
111.4 (4 3/8)
76.4 (3)

Wall mounting in the most common flush mounting boxes (with fastening screws).
1. Unhook the back shell from the front through a screwdriver and the proper seat.
2. Fasten the back shell at the box with 4 screws.
   Countersunk head screws are suggested.
3. Make the electrical connection as shown in the section *ELECTRICAL CONNECTION* without powering up the device.
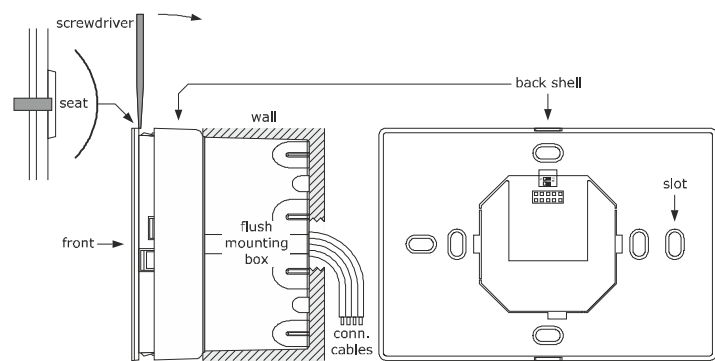4. Fasten the front of the device at the back shell.

screwdriver
seat
front
wall
flush mounting box
conn. cables
back shell
slot

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.
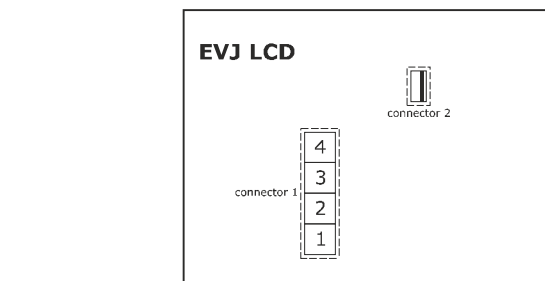
2 ELECTRICAL CONNECTION

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 and connect to an INTRABUS network by using a twisted pair.

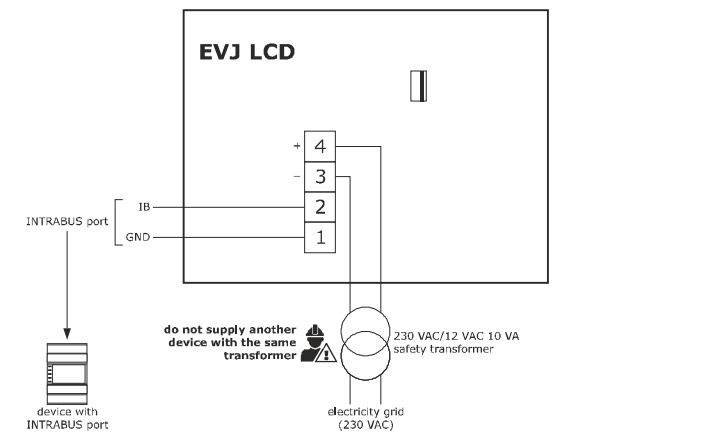### 2.1 Models for panel mounting
2.1.1 Connectors and parts

EVJ LCD
connector 2
connector 1
4
3
2
1

Connector 1

N.	DESCRIPTION
1	INTRABUS port reference (GND)
2	INTRABUS port data (IB)
3	device power supply (12 VAC/DC). If the device is fed by DC power, connect terminal minus
4	device power supply (12 VAC/DC). If the device is fed by DC power, connect terminal plus

Connector 2: reserved EVCO.

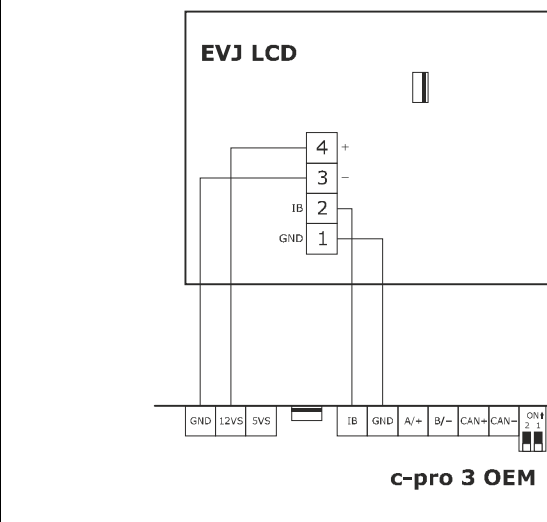### 2.1.2 Electrical connection with independent power supply

N.B.
- Do not supply another device with the same transformer
- The maximum permitted length for connection cables of the INTRABUS port is 30 m (98.4 ft).

EVJ LCD
INTRABUS port
IB
GND
4
3
2
1
do not supply another device with the same transformer
230 VAC/12 VAC 10 VA safety transformer
device with INTRABUS port
electricity grid (230 VAC)

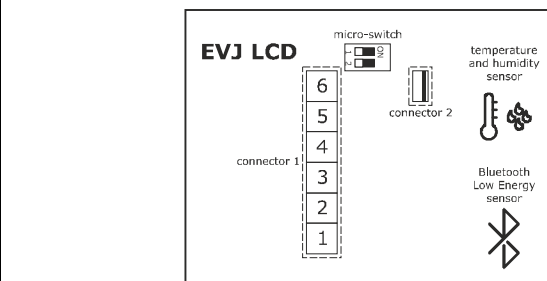### 2.1.3 Electrical connection with device powered by a controller (for example c-pro 3 OEM)

N.B.
- Make sure that the current supplied by the controller is within the limits stated in the *TECHNICAL SPECIFICATIONS* section
- The maximum permitted length for connection cables of the INTRABUS port is 10 m (32.8 ft).

EVJ LCD
4 +
3 −
IB 2
GND 1
GND 12VS SVS IB GND A/+ B/− CAN+ CAN− ON
c-pro 3 OEM

2.2 Models for wall mounting
2.2.1 Connectors and parts

EVJ LCD
micro-switch
temperature and humidity sensor
connector 2
connector 1
6
5
4
3
2
1
Bluetooth Low Energy sensor

Connector 1

No.	DESCRIPTION
1	INTRABUS port reference (GND) or RS-485 signal B (-) (according to the model)
2	INTRABUS port data (IB) or RS-485 signal A (+) (according to the model)
3	device power supply (12 VAC/DC). If the device is fed by DC power, connect terminal minus
4	device power supply (12 VAC/DC). If the device is fed by DC power, connect terminal plus
5	AI4 analog input (NTC)
6	AI4 analog input reference (GND)

Connector 2: reserved EVCO.

Micro-switch: in models with RS-485 port, to insert the RS-485 port termination resistor (not present otherwise).
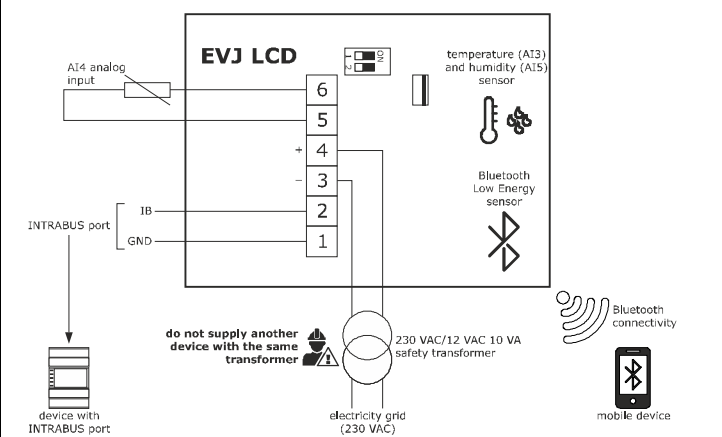
Temperature (AI3) and humidity (AI5) sensor: according to the model.

Bluetooth Low Energy sensor: according to the model.

2.2.2 Electrical connection with independent power supply
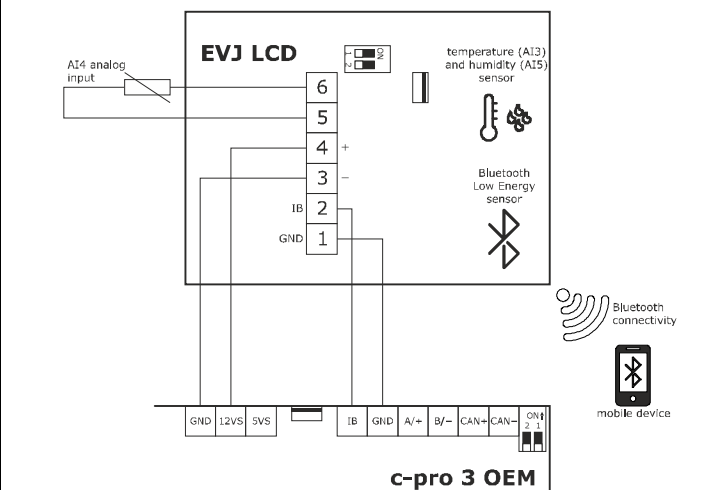
N.B.
- Do not supply another device with the same transformer
- The maximum permitted length for connection cables of the INTRABUS port is 30 m (98.4 ft), 1,000 m (3,280 ft) in models with RS-485 with INTRABUS or MODBUS communication protocol.

EVJ LCD
AI4 analog input
temperature (AI3) and humidity (AI5) sensor
6
5
+ 4
− 3
INTRABUS port
IB 2
GND 1
Bluetooth Low Energy sensor
do not supply another device with the same transformer
230 VAC/12 VAC 10 VA safety transformer
device with INTRABUS port
electricity grid (230 VAC)
Bluetooth connectivity
mobile device

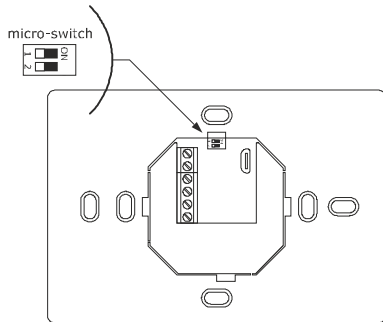### 2.2.3 Electrical connection with device powered by a controller (for example c-pro 3 OEM)

N.B.
- Make sure that the current supplied by the controller is within the limits stated in the *TECHNICAL SPECIFICATIONS* section
- The maximum permitted length for connection cables of the INTRABUS port is 10 m (32.8 ft).

EVJ LCD
AI4 analog input
temperature (AI3) and humidity (AI5) sensor
6
5
+ 4
− 3
IB 2
GND 1
Bluetooth Low Energy sensor
GND 12VS SVS IB GND A/+ B/− CAN+ CAN− ON
c-pro 3 OEM
Bluetooth connectivity
mobile device

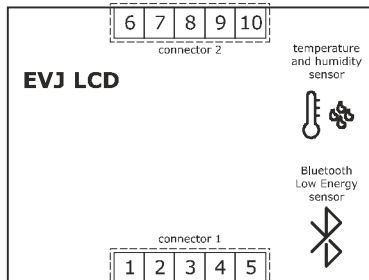## 2.2.4 Insertion of the RS-485 port termination resistor

To insert the RS-485 port termination resistor, place micro-switch 2 in position ON. Micro-switch 1 is reserved EVCO.

The micro-switch is at the back of the device.

2.3 Models for wall mounting with back-slot for in-wall box
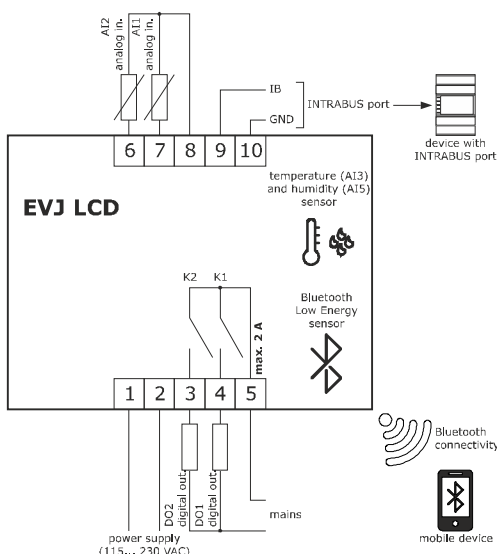
2.3.1 Connectors and parts

Connector 1

No.	DESCRIPTION
1	device power supply (115... 230 VAC)
2	device power supply (115... 230 VAC)
3	DO2 digital output normally open contact (1 A res. @ 250 VAC)
4	DO1 digital output normally open contact (1 A res. @ 250 VAC)
5	DO1 and DO2 digital outputs common contact (max. 2 A)

Connector 2

No.	DESCRIPTION
6	AI2 analog input (NTC)
7	AI1 analog input (NTC)
8	AI1 and AI2 analog inputs reference (GND)
9	INTRABUS port data (IB)
10	INTRABUS port reference (GND)

Temperature (AI3) and humidity (AI5) sensor: according to the model.

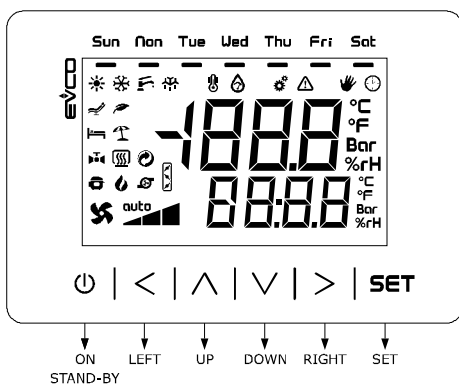Bluetooth Low Energy sensor: according to the model.

2.3.2 Electrical connection

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; possible returns without label data will not be accepted.

3 USER INTERFACE

ON STAND-BY	LEFT	UP	DOWN	RIGHT	SET

3.1 Device configuration

⚙️ N.B.
Turn off the power after changing the configuration.

Accessing the procedure.

1.	**SET**	Touch the SET key for 7 s.

The display will show:
Upper line	**Mnu**
Lower line	**InF**

Accessing the menu.

2.	⬆️⬇️	Touch the UP or DOWN key to select a menu.

The display will show:
Upper line	**Mnu**
Lower line	menu name.

3.	**SET**	Touch the SET key.

The display will show:
Upper line	the parameter
Lower line	the parameter value

Setting configuration parameters of menu "PAr".

3.	**SET**	Touch the SET key.

The display will show:
Upper line	**PSU**
Lower line	**0000**

4.	**SET**	Touch the SET key again.

The display will show:
Upper line	**PSU**
Lower line	a value flashing

5.	⬆️⬇️	Touch the UP or DOWN key to set "**-019**".

6.	**SET**	Touch the SET key.

7.	⬆️⬇️	Touch the UP or DOWN key to select a parameter.

The display will show:
Upper line	the parameter
Lower line	the parameter value

8.	**SET**	Touch the SET key.

The display will show:
Upper line	the parameter
Lower line	the parameter value flashing

9.	⬆️⬇️	Touch the UP or DOWN key to set the value.

10.	**SET**	Touch the SET key.

Returning to the previous displays.

11.	⏻	Touch the ON/STAND-BY key a few times.

4 CONFIGURATION PARAMETERS

N.	PAR.	DEF.	"InF" MENU (READ ONLY)	MIN... MAX.
1	Prn	-	project number	-
2	Pru	-	project version	-
3	Prr	-	project revision	-
4	FUu	-	firmware version	-
5	FUr	-	firmware revision	-
6	FUS	-	firmware subversion	-
7	HUu	-	hardware version	-
8	HUr	-	hardware revision	-

N.	PAR.	DEF.	"PAr" MENU	MIN... MAX.
9	bKU	15	backlight intensity	0... 100 fixed value 30 in the models with incorporated temperature and humidity sensor
10	bKt	30	backlight timeout	0... 255 s fixed value 30 in the models with incorporated temperature and humidity sensor
11	bKM	tiME	backlight mode	off = off on = on (not used in the models with incorporated temperature and humidity sensor) tiME = with bKt
12	EU3	OFF	enable compatibility with Vled 3	On... OFF

N.	PAR.	DEF.	"nEt > Itb" MENU (READ ONLY)	MIN... MAX.
13	nOd	4	INTRABUS node	1... 127 if EU3C = On, nOdE = 3
14	StA	-	INTRABUS status communication	OK... Err
15	nrH	-	number of received INTRABUS packages	0... 999
16	ntH	-	number of transmitted INTRABUS packages	0... 999
17	nEr	-	number of INTRABUS receipts in error	0... 999
18	bAu	-	INTRABUS baud rate	19200
19	Stb	1	INTRABUS bit stop number	0... 2
20	PtY	2	INTRABUS parity	0... 2

N.	PAR.	DEF.	"NET > BLE" MENU (READ ONLY; AVAILABLE IN THE MODELS WITH INCORPORATED TEMPERATURE AND HUMIDITY SENSOR)	MIN... MAX.
21	StA	-	enable Bluetooth	On... OFF
22	nrH	-	number of BLE packages received	0... 999
23	ntH	-	number of BLE transmitted received	0... 999
24	nEr	-	number of intercepted BLE errors	0... 999
25	bAu	-	BLE baud rate	19200
26	Stb	1	BLE bit stop number	0... 2
27	PtY	2	BLE parity	0... 2

N.	PAR.	DEF.	"diA" MENU (READ ONLY)	MIN... MAX.
28	MEm	-	EEPROM memory status	OK... Err
29	PSU	-	power supply voltage status	OK... Err

N.	PAR.	DEF.	"dEb" MENU	MIN... MAX.
30	PSU	-	power supply voltage value	-
31	P1U	-	AI1 analog input reading	-
32	P2U	-	AI2 analog input reading	-
33	P3U	-	reserved	-
34	P4U	-	AI4 analog input reading	-
35	tEm	-	incorporated sensor temperature reading (AI3)	-
36	Hr	-	incorporated sensor humidity reading (AI5)	-

N.	PAR.	DEF.	"dEb > unL" MENU	MIN... MAX.
37	dO1	-	DO1 digital output status	On... OFF
38	dO2	-	DO2 digital output status	On... OFF

N.	PAR.	DEF.	"CnF" MENU (READ ONLY)	MIN... MAX.
39	bLE	-	Bluetooth availability	On... OFF
40	iPb	-	incorporated sensor	t rH = temperature and humidity none= no sensor
41	EHt	-	back-slot for flush mounting box	On... OFF

5 TECHNICAL SPECIFICATIONS

Purpose of the control device:		Function controller.
Construction of the control device:		Built-in electronic device.
Container:		White or black, self-extinguishing.
Category of heat and fire resistance:		D.
Measurements:	Models for panel mounting	111.4 x 76.4 x 25.0 mm (4 3/8 x 3 x 1 in)
	Models for wall mounting	111.4 x 76.4 x 18.5 mm (4 3/8 x 3 x 3/4 in)
	Models for wall mounting with back-slot for flush mounting box	111.4 x 76.4 x 51.5 mm (4 3/8 x 3 x 2 in).
Mounting methods for the control device:		According to the model, panel mounting (with elastic holding flaps), wall mounting (with bolts and fastening screws) or in the most common flush mounting box (with fastening screws).
Degree of protection provided by the covering:		IP30 (IP65 in case of panel mounting).
Connection method	Models for panel mounting	Removable screw terminal blocks for wires up to 1 mm²
	Models for wall mounting with or without back-slot for in-wall box	Fixed screw terminal blocks for wires up to 1 mm²
Maximum permitted length for connection cables:		
Power supply: 10 m (32.8 ft)		Analogue inputs: 10 m (32.8 ft)
Digital outputs: 10 m (32.8 ft)		INTRABUS port: 10 m (32.8 ft) if the device is powered by a controller, 30 m (98.4 ft) otherwise
RS-485 INTRABUS or MODBUS port: 1,000 m (3,280 ft).		
Operating temperature:		From 0 to 40 °C (from 32 to 104 °F).
Storage temperature:		From -20 to 70 °C (from -4 to 158 °F).
Operating humidity:		Relative humidity without condensate from 5 to 95%.
Pollution status of the control device:		2.
Compliance:		
RoHS 2011/65/EC		WEEE 2012/19/EU
REACH (EC) Regulation no. 1907/2006		RED 2014/53/UE.
Power supply:	Models for panel or wall mounting	12 VAC (±15%), 50/60 Hz (±3 Hz), max. 2 VA not insulated or 12 VDC (±15%), max. 1 W not insulated (independent power supply or by a controller).
	Models for wall mounting with back-slot for flush mounting box	115... 230 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 3 VA insulated.
Earthing methods for the control device:		None.
Rated impulse-withstand voltage:	Models for panel or wall mounting	330 V
	Models for wall mounting with back-slot for flush mounting box	2.5 KV.
Over-voltage category:	Models for panel or wall mounting	I
	Models for wall mounting with back-slot for flush mounting box	II.
Software class and structure:		A.
Analogue inputs:	Models for panel mounting	none
	Models for wall mounting	1 for NTC probes
	Models for wall mounting with back-slot for flush mounting box	2 for NTC probes.
NTC probes:	Measurement field:	from -40 to 110 °C (from -58 to 230 °F)
	Resolution:	0.1 °C (1 °F).
Digital outputs:	Models for panel or wall mounting	none
	Models for wall mounting with back-slot for flush mounting box	2 with electromechanical relay (K1 and K2 relay).
K1 relay:		SPST, 1 res. A @ 250 VAC
K2 relay:		SPST, 1 res. A @ 250 VAC.
Type 1 or Type 2 Actions:		Type 1.
Additional features of Type 1 or Type 2 actions:		C.
Displays:		Two rows and function icons LCD display.
Alarm buzzer:		Built-in.
Incorporated sensors:		
temperature and humidity (according to the model)		Bluetooth Low Energy (according to the model).
Working range incorporated temperature and humidity sensor:		
0... 40 °C (32... 104 °F)		10... 70 % of relative humidity.
Communications ports:		1 INTRABUS port or RS-485 port with INTRABUS or MODBUS communication protocol (according to the model).

6 SIMPLIFIED EU DECLARATION OF CONFORMITY

EVCO S.p.A. declares that the type of radio equipment:
- EVJD900N2VWIV
- EVJD920N2VWIV
- EVJD902N9VPIV
- EVJD922N9VPIV
complies with directive 2014/53/EU and directive 2011/65/EU.

The full text of the EU declaration of conformity is available at the following internet address: https://www.evco.it/en/16283-evj-epj-lcd

According to European R&TTE Declaration of Conformity this device can be used 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.