

- E ENGLISH**
- panel or wall mounting (according to the model)
 - 24 VAC/12... 30 VDC power supply not insulated
 - 3.5 in colour touch-screen TFT graphic display
 - clock
 - alarm buzzer
 - 1 or 2 RS-485 MODBUS ports (according to the model)
 - 1 CAN port (according to the model)
 - **device for indoor applications**
 - **the device must be programmed with version 3.24 of UNI-PRO 3 or higher**

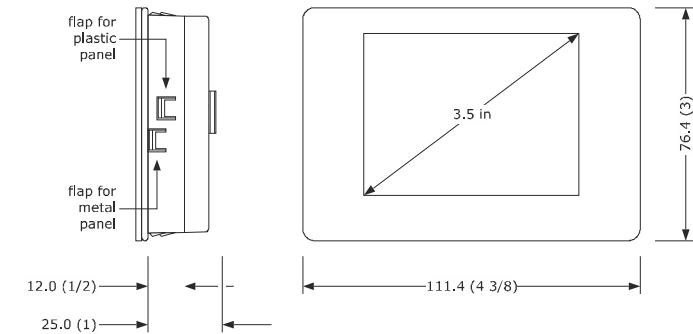
Available models					
Purchasing code	Installation mode	Front colour	RS-485 MODBUS ports	CAN port	Incorporated sensors
EPJC940U4	by panel	black	1	yes	-
EPJC940U4EXSB	by panel	black	2	no	-
EPJC940U4VWCW	by wall	white	1	yes	-
EPJC940U4VWSW	by wall	white	2	no	-
EPJC950U4VWCW	by wall	white	1	yes	temperature
EPJC950U4VWSW	by wall	white	2	no	temperature
EPJC960U4VWCB	by wall	black	1	yes	temperature and humidity
EPJC960U4VWCW	by wall	white	1	yes	temperature and humidity
EPJC960U4VWSB	by wall	black	2	no	temperature and humidity
EPJC960U4VWSW	by wall	white	2	no	temperature and humidity

1 MEASUREMENTS AND INSTALLATION | Measurements in mm (in)

1.1 Models for panel mounting

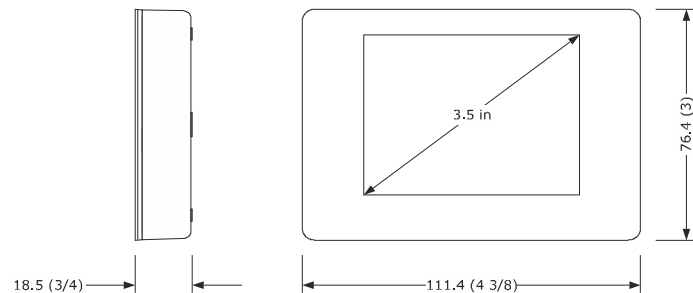
- N.B.**
- the thickness of a metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in), while that for a plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in)
 - the measurements of drilling template must be 107.6 x 72.6 mm (3 15/16 x 2 7/8 in), with rounded corners R 3.0 mm (1/8 in).

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

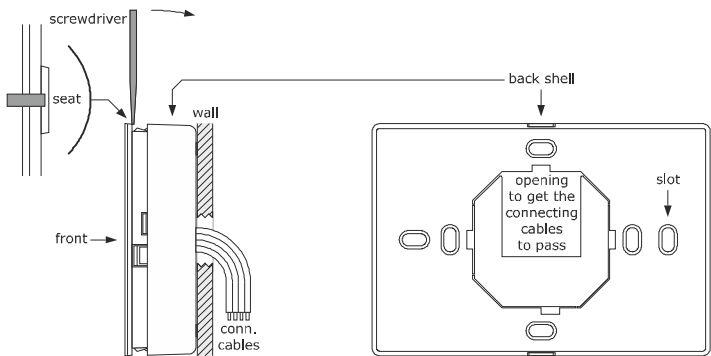


1.2 Models for wall mounting

Wall mounting (with bolts and fastening screws) or in the most common flush mounting boxes (with fastening screws).



- Unhook the back shell from the front through a screwdriver and the proper seat.
- In case of wall mounting:
 - Lean the back shell against the wall in a position suitable to get the connecting cable to pass through the proper opening.
 - 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.
 - Insert the bolts in the holes drilled in the wall.
 - Fasten the back shell at the wall with 4 screws.
Countersunk head screws are suggested.
- In case of flush mounting box, fasten the back shell at the box with 4 screws.
Countersunk head screws are suggested.
- Make the electrical connection as shown in the section *ELECTRICAL CONNECTION* without powering up the device.
- Fasten the front of the device at the back shell.



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.

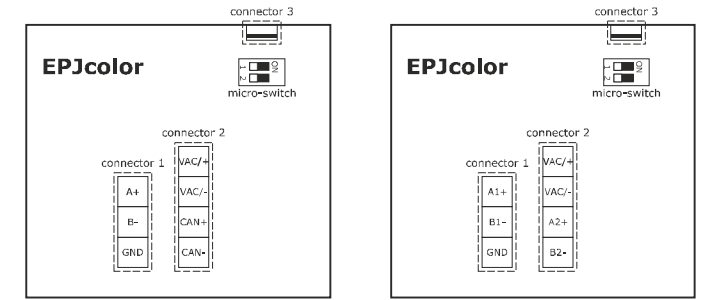
2 ELECTRICAL CONNECTION

- 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 a CAN network and RS-485 network by using a twisted pair.

2.1 Models for panel mounting

2.1.1 Connectors and parts

- on the left for model EPJC940U4
- on the right for model EPJC940U4EXSB.



Connector 1

N.	DESCRIPTION
GND	reference RS-485 MODBUS port (master/slave)
B-	RS-485 MODBUS port reference - (master/slave)
A+	RS-485 MODBUS port reference + (master/slave)

N.	DESCRIPTION
GND	reference RS-485 MODBUS port 1 (master/slave)
B1-	RS-485 MODBUS port 1 reference - (master/slave)
A1+	RS-485 MODBUS port 1 reference + (master/slave)

Connector 2

N.	DESCRIPTION
CAN-	CAN port reference -
CAN+	CAN port reference +
VAC/-	device power supply (24 VAC/12... 30 VDC). If the device is fed by DC power, connect terminal minus
VAC/+	device power supply (24 VAC/12... 30 VDC). If the device is fed by DC power, connect terminal plus

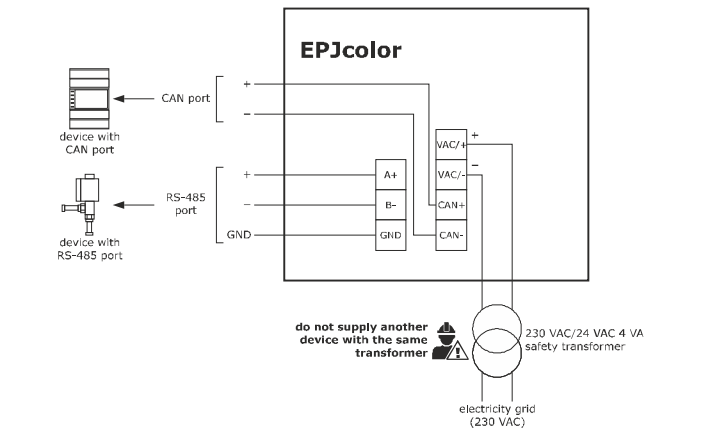
N.	DESCRIPTION
B2-	RS-485 MODBUS port 2 reference - (slave)
A2+	RS-485 MODBUS port 2 reference + (slave)

Connector 3: Micro-USB port, for programming the device.

Micro-switch:

- to insert the RS-485 MODBUS port termination resistor.
- to insert termination resistor of the CAN port or of the second RS-485 MODBUS port.

2.1.2 Example of electrical connection with independent power supply



If the device is supplied by a controller, make sure that the current supplied by the controller is suitable to power the device. Do not supply another device with the same controller.

2.1.3 Insertion of the RS-485 MODBUS ports and CAN port termination resistor

To insert the RS-485 MODBUS port termination resistor, place micro-switch 1 (marked as MBSLT or MBSLT1) in position ON.

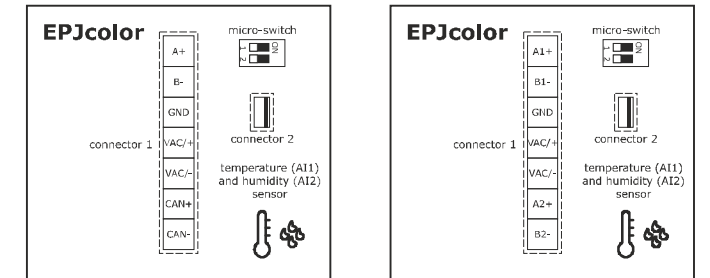
To insert the termination resistor of the CAN port or of the second RS-485 MODBUS port, place micro-switch 2 (marked as CANLT or MBSLT2) in position ON.

The micro-switch is at the back of the device (to access it, remove the back shell from the front before).

2.2 Models for wall mounting

2.2.1 Connectors and parts

- on the left for models EPJC940U4VWCW, EPJC950U4VWCW, EPJC960U4VWCB and EPJC960U4VWCW
- on the right for models EPJC940U4VWSW, EPJC950U4VWSW, EPJC960U4VWSB and EPJC960U4VWSW



Connector 1

N.	DESCRIPTION
CAN-	CAN port reference -
CAN+	CAN port reference +
VAC/-	device power supply (24 VAC/12... 30 VDC). If the device is fed by DC power, connect terminal minus
VAC/+	device power supply (24 VAC/12... 30 VDC). If the device is fed by DC power, connect terminal plus
GND	reference RS-485 MODBUS port (master/slave)

B-	RS-485 MODBUS port reference - (master/slave)
A+	RS-485 MODBUS port reference + (master/slave)

N.	DESCRIPTION
B2-	RS-485 MODBUS port 2 reference - (slave)
A2+	RS-485 MODBUS port 2 reference + (slave)
GND	reference RS-485 MODBUS port 1 (master/slave)
B1-	RS-485 MODBUS port 1 reference - (master/slave)
A1+	RS-485 MODBUS port 1 reference + (master/slave)

Connector 2: Micro-USB port, for programming the device.

Micro-switch:

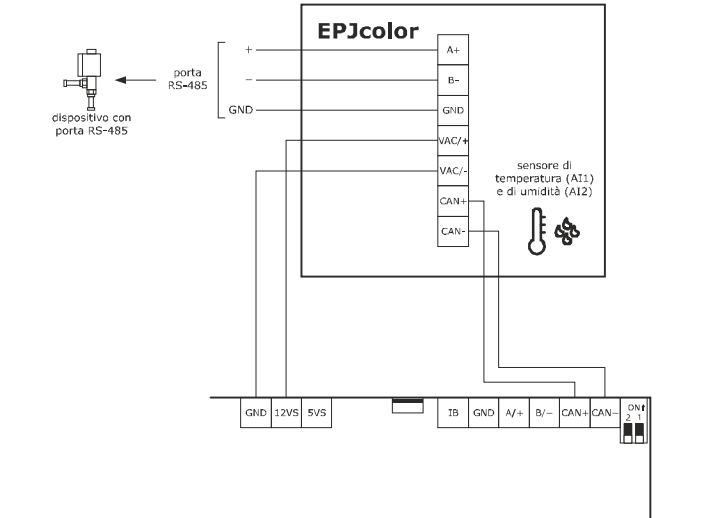
- to insert the RS-485 MODBUS port termination resistor.
- to insert termination resistor of the CAN port or of the second RS-485 MODBUS port.

Temperature sensor (AI1): according to the model.

Humidity sensor (AI2): according to the model.

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

- ATTENZIONE**
- make sure that the current supplied by the controller is suitable to power the device
 - do not supply another device with the same controller.



If the device is supplied with independent power supply, do not supply another device with the same transformer.

2.2.3 Insertion of the RS-485 MODBUS ports and CAN port termination resistor

To insert the RS-485 MODBUS port termination resistor, place micro-switch 1 (marked as MBSLT or MBSLT1) in position ON.

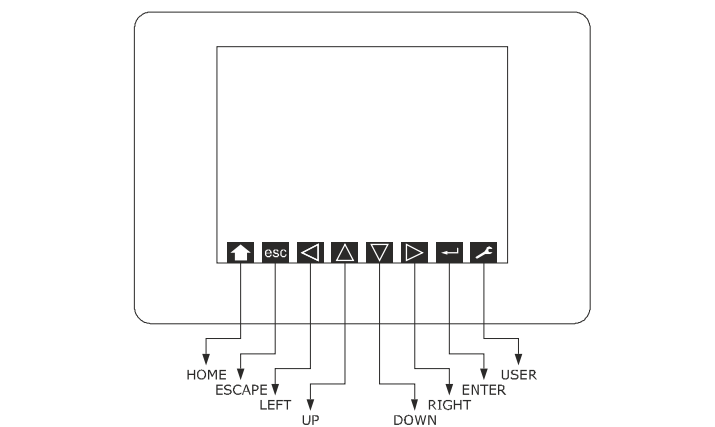
To insert the termination resistor of the CAN port or of the second RS-485 MODBUS port, place micro-switch 2 (marked as CANLT or MBSLT2) in position ON.

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

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



3.1 Switching the device on and off



- Power up the device: an internal test will be run.
- Touch the low part of the display to show the sensitive areas.

4 SETTINGS









4.1 Setting configuration parameters of "Parameters" and "Networks" menu

- N.B.**
- Turn off the power after changing the configuration.








- Touch the low part of the display to show the sensitive areas.
- Touch the USER area: the display will show the frame "Network Status (CAN)".
- Touch the ENTER area: the display will show the frame "V-COLOR BROWS".
- Touch the UP or DOWN area to select a menu.
- Touch the ENTER area to access a menu: the display will show the frame "Input Password".
- Touch the ENTER area again.
- Touch the UP or DOWN area to set "-19".
- Touch the ENTER area: the display will show the frame of the menu.
- Touch the UP or DOWN area to select a parameter.
- Touch the ENTER area.
- Touch the UP or DOWN area to set the value.

12.		Touch the ENTER area.
13.		Touch the ESCAPE area a few times to return to the previous displays.

4.2 Set the date and time


1.		Touch the low part of the display to show the sensitive areas.
2.		Touch the USER area: the display will show the frame "Network Status(CAN)".
3.		Touch the ENTER area: the display will show the frame "V-COLOR BROWS".
4.		Touch the UP or DOWN area to select the date and time.
5.		Touch the ENTER area.
6.		Touch the LEFT or RIGHT area to select a field.
7.		Touch the UP or DOWN area to set the value.
8.		Touch the ENTER area.
9.		Touch the ESCAPE area a few times to return to the previous displays.









4.3 Set the language to show the words of the project (if foreseen and if the device works in "programmable" mode)

1.		Touch the low part of the display to show the sensitive areas.
2.		Touch the USER area: the display will show the frame "Network Status(CAN)".
3.		Touch the ENTER area: the display will show the frame "V-COLOR BROWS".
4.		Touch the UP or DOWN area to select "Languages".
5.		Touch the ENTER area.
6.		Touch the UP or DOWN area to select the language.
7.		Touch the ENTER area.
8.		Touch the ESCAPE area a few times to return to the previous displays.


5 CONFIGURATION UPLOAD/DOWNLOAD


5.1 Parameters upload/download (if the device works in "programmable" mode)

	N.B. - configuration upload/download is allowed on condition that parameters of origin coincide with parameters of destination - upload/download normally takes a few seconds.
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1.		Touch the low part of the display to show the sensitive areas.
2.		Touch the USER area: the display will show the frame "Network Status(CAN)".
3.		Touch the ENTER area: the display will show the frame "V-COLOR BROWS".
4.		Touch the UP or DOWN area to select "Backup/Restore".
5.		Touch the ENTER area to access a menu: the display will show the frame "Input Password".
6.		Touch the ENTER area again.
7.		Touch the UP or DOWN area to set "-19".
8.		Touch the ENTER area: the display will show the frame "Backup/Restore".
9.		Touch the LEFT or RIGHT area to select a field.


FIELD	MEANING
USB Key	upload/download from USB flash drive
Backup Memory	upload/ download from device memory


10.		Touch the ENTER area: the display will show the relative frame.
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
11.		Touch the LEFT or RIGHT area to select a field.
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FIELD	MEANING
Application parameters	project parameters
Hardware configuration	configuration parameters

12.		Touch the ENTER area.
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13.		Touch the UP or DOWN area to select "Restore from USB"/"Save on USB" (for field selection "USB Key") or to select "Restore from memory"/ "Save on memory" (for field selection "Backup Memory").
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14.		Touch the ENTER area: the configuration upload/download will be run.
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15.		Touch the ESCAPE area a few times to return to the previous displays.
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6 ADDITIONAL FUNCTIONS

6.1 Access to "Info", "Diagnostic" and "Debug" menu (read only)

1.		Touch the low part of the display to show the sensitive areas.
2.		Touch the USER area: the display will show the frame "Network Status(CAN)".
3.		Touch the ENTER area: the display will show the frame "V-COLOR BROWS".
4.		Touch the UP or DOWN area to select a menu.
5.		Touch the ENTER area.
6.		Touch the ESCAPE area a few times to return to the previous displays.

7 CONFIGURATION PARAMETERS

N.	PARAMETER	DEF.	"Info" MENU (READ ONLY)	MIN... MAX.
1	PROJ	-	project information	-
2	FW	-	firmware information	-
3	HW	-	hardware information	-
4	SW	-	development environment information	-
5	SN	-	serial number information and result of the productive test	-
6	DATE	-	information on data and time last project compiling	-
N.	PARAMETER	DEF.	"Languages" MENU (READ ONLY)	MIN... MAX.
7	English	-	showing in English the project words (if foreseen)	Available if the application software of the connected control foresee the multilan-

8	Italian	-	showing in Italian the project words (if foreseen)	guage management
9	Français	-	showing in French the project words (if foreseen)	
10	Español	-	showing in Spanish the project words (if foreseen)	
11	Deutsch	-	showing in German the project words (if foreseen)	
12	Russian	-	showing in Russian the project words (if foreseen)	
13	Português	-	showing in Portuguese the project words (if foreseen)	

N.	PARAMETER	DEF.	"Parameters" MENU	MIN... MAX.
14	Date Char Separator	-	ASCII character as data separator	-
15	Year format	YY	year format	YY = 2 numbers YYYY = 4 numbers
16	Date format	dd mm yy	data format	yy mm dd = year, month and day mm dd yy = month, day and year dd mm yy = day, month and year

17	Time Char Separator	:	ASCII character as hour separator	-
18	Time With Sec	YES	showing time with seconds	NO = no YES = yes
19	Time AM/PM	NO	time format	NO = 24 h YES = 12 h
20	Backlight Mode	TIME	backlight type	off = off on = on TIME= with Backlight Timeout

21	Backlight Timeout	60	timeout backlight	0... 240 s
22	I/O Timeout	60	delay remote I/O disabling from CAN communication absence	0... 240 s
23	Refresh Timeout	0	update variables timeout	0... 100 ms

24	Print Loading	NO	showing "Loading..." during project page loading	NO = no YES = yes
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25	Password Timeout	60	"Parameters", "Networks" and "Backup/Restore" menu password timeout	0... 240 s
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26	Beep Mode	2	beep type when touching the display	0 = never 1 = always 2 = if the area is sensitive
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27	Print Frame	0	showing frames instead low size pages	0 = no 1 = yes
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N.	PARAMETER	DEF.	"Networks > CAN bus" MENU	MIN... MAX.
28	MyNode	99	CAN address	1... 127

29	Master	-	reserved	-
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30	Baud	Auto	CAN baud rate	20K = 20,000 baud 50K = 50,000 baud 125K = 125,000 baud 500K = 500,000 baud Auto = automatic recognizing of baud rate if one of the previous
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31	Timeout	5	delay exclusion device in CAN network from absence of communication	0... 240 s
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32	Network Node	-	physical node joined to the logic node	[1] 1... [32] 127
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N.	PARAMETER	DEF.	"Networks > CAN bus > CAN status" MENU	MIN... MAX.
33	Cnt Rx	-	number of received packages	0... 9999

34	Cnt Tx	-	number of transmitted packages	0... 9999
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35	Cnt Ovf	-	number of intercepted overflow	0... 9999
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36	Cnt Passive	-	number of intercepted passive	0... 9999
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37	Cnt Bus Off	-	number of intercepted bus off	0... 9999
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38	BufRx Valid	-	number receipts ok	0... 9999
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39	BufTx Valid	-	number of transmissions ok	0... 9999
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40	Cnt Tx Err	-	number of transmissions in error	0... 9999
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41	Cnt Rx Err	-	number of receipts in error	0... 9999
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42	Cnt Stuff	-	number stuff errors	0... 9999
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43	Cnt Form	-	number form errors	0... 9999
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44	Cnt Ack	-	number ack errors	0... 9999
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45	Cnt Bit1	-	number bit1 errors	0... 9999
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46	Cnt Bit0	-	number bit0 errors	0... 9999
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47	Cnt CRC	-	number CRC errors	0... 9999
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N.	PARAMETER	DEF.	"Networks > CAN bus > CAN Bit Timing" MENU	MIN... MAX.
48	BrP	-	reserved	-

49	SJW	-	reserved	-
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50	T.SEG1	-	reserved	-
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51	T.SEG1	-	reserved	-
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N.	PARAMETER	DEF.	"Networks > UART 1/2" MENU	MIN... MAX.
52	Address	1	MODBUS address	1... 247

53	Parity	even	MODBUS parity	none = none odd = odd even = even
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54	Baudrate	9600	MODBUS baud rate	1200 = 1,200 baud 2400 = 2,400 baud 4800 = 4,800 baud 9600 = 9,600 baud 19200 = 19,200 baud 28800 = 28,800 baud 38400 = 38,400 baud 57600 = 57,600 baud
55	Bit Stop	1 bit	MODBUS stop bit	1 bit = 1 bit 2 bit = 2 bit

N.	PARAMETER	DEF.	"Networks > USB" MENU (READ ONLY)	MIN... MAX.
60	USB Status Init Device	-	reserved	-

61	Device Status Idle Init Speed	-	reserved	-
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N.	PARAMETER	DEF.	"Diagnostic" MENU (READ ONLY)	MIN... MAX.
62	EEPROM	-	EEPROM memory status	OK = not in error ERR = in error

63	RTC	-	clock status	OK = not in error ERR = in error LOW = data lost DISAB = not enabled
64	STACK	-	stack status	OK = not in error ERR = in error (for overflow)
65	MATH	-	math status	OK = not in error ERR = in error (for overflow, underflow, division by zero or NaN)
66	KEY PAR	-	result upload/download via USB project and configuration parameters	OK = successfully completed ERR = unsuccessfully completed

N.	PARAMETER	DEF.	"Debug" MENU (READ ONLY)	MIN... MAX.
67	Main time	-	main cycle time for software (ms)	-
68	max time main	-	maximum value main cycle time for software	-
69	free stack main	-	minimum free stack of main	-

70	100ms time	-	reserved	-
71	max time 100 ms	-	reserved	-
72	free stack 100 ms	-	reserved	-

N.	PARAMETER	DEF.	"Sensor" MENU (VISIBLE ACCORDING TO THE MODEL)	MIN... MAX.
73	Temperature	-	incorporated sensor temperature reading (AI1)	-

74	Humidity	-	incorporated sensor humidity reading (AI2)	-
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75	Offset	0.0	incorporated sensor temperature reading offset (AI1)	-10.0... 10.0 °C
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76	Offset	0.0	incorporated sensor humidity reading offset (AI2)	-15.0... 15.0 % rH
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N.	PARAMETER	DEF.	"Sensor" MENU (VISIBLE ACCORDING TO THE MODEL)	MIN... MAX.
73	Temperature	-	incorporated sensor temperature reading (AI1)	-
74	Humidity	-	incorporated sensor humidity reading (AI2)	-
75	Offset	0.0	incorporated sensor temperature reading offset (AI1)	-10.0... 10.0 °C
76	Offset	0.0	incorporated sensor humidity reading offset (AI2)	-15.0... 15.0 % rH

8 TECHNICAL DATA

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	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)

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)
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Degree of protection provided by the covering	IP30 (IP65 in case of panel mounting)
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Connection method	Models for panel mounting	Removable screw terminal blocks for wires up to 1 mm²
	Models for wall mounting	Fixed screw terminal blocks for wires up to 1 mm²

Maximum permitted length for connection cables	
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Power supply: 10 m (32.8 ft)	Power supply: 10 m (32.8 ft)
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CAN port:	
- 1,000 m (3,280 ft) with baud rate 20.000 baud	
- 500 m (1,640 ft) with baud rate 50.000 baud	
- 250 m (820 ft) with baud rate 125.000 baud	
- 50 m (164 ft) with baud rate 500.000 baud	
Over 10 m (32.8 ft) use a shielded cable	

Operating temperature	From -10 to 55 °C (from 14 to 131 °F)
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Storage temperature	From -20 to 70 °C (from -4 to 158 °F)
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Operating humidity	Relative humidity without condensate from 5 to 95%
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Pollution status of the control device	2
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Compliance	
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RoHS 2011/65/EC	WEEE 2012/19/EU
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REACH (EC) Regulation N. 1907/2006	EMC 2014/30/UE	RED 2014/53/UE
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Power supply	24 VAC (±15%), 50/60 Hz (±3 Hz), max. 4 VA not insulated or 12... 30 VDC, max. 2 W not insulated (independent power supply or by a controller)
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Earthing methods for the control device	None
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Rated impulse-withstand voltage	I
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Over-voltage category	330 V
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Software class and structure	A
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Clock	with incorporated primary lithium battery
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Clock battery autonomy in the absence of a power supply	3 years at 25 °C (77 °F)
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Displays	Colour touch-screen TFT graphic display
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Alarm buzzer	Built-in
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Incorporated sensors	temperature or temperature and humidity (according to the model)
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Working range incorporated temperature sensor:	0... 40 °C (32... 104 °F); accuracy ±0,5 °C at 25 °C in static air
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Humidity range incorporated temperature sensor:	10... 70 % of relative humidity; accuracy ±5% between 30 % and 70 %
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Temperature and humidity values will be read with the correct compensation after 30 min the device has been switched on.	
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Communications ports		
1 or 2 RS-485 MODBUS port (according to the model)	1 CAN port	1 USB port

	ATTENZIONE Il dispositivo deve essere smaltito secondo le normative locali in merito alla raccolta delle apparecchiature elettriche ed elettroniche.
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