Vprobe

TEMPERATURE AND HUMIDITY SENSOR

WITH CANBUS CONNECTION

ENGLISH

HARDWARE MANUAL ver. 1.00

CODE 114VPROHWE00

Important

Important

Read these instructions carefully before installing and using the instrument and follow all additional information for installation and electrical connection; keep these instructions close to the sensor for future consultations.

The sensor must be disposed according to the local legislation about the collection for electrical and electronic equipment.

Index

1.   INTRODUCTION

1.1.   Introduction

Vprobe is a temperature and humidity sensor for the programmable controllers of the family *c-pro 3*; the values read by these sensors are transmitted via CAN bus, making easier the wiring.

Thanks to its constructive features, Vprobe offers several mounting typologies; this is possible:

- by panel, at the front of units, of machines for refrigeration or for air conditioning, of electrical panels and as well as in all those applications where a frontal protection degree IP65 is required
- built-in by wall, in traditional box (like "506" by BTicino)
- by wall, on the support CPVW00 by Evco (to order separately).

Also the necessity to customize the sensor, in order to integrate it aesthetically in residential and commercial environments, is satisfied by Vprobe since at the front of the sensor one can apply both the plates CPVP* by Evco (to order separately, made in plastic material and available in two different colorations, white and black) and the numerous plates series "Living" and "Light" by BTicino.

1.2. Available models

The following table shows the available models and the respective main features.

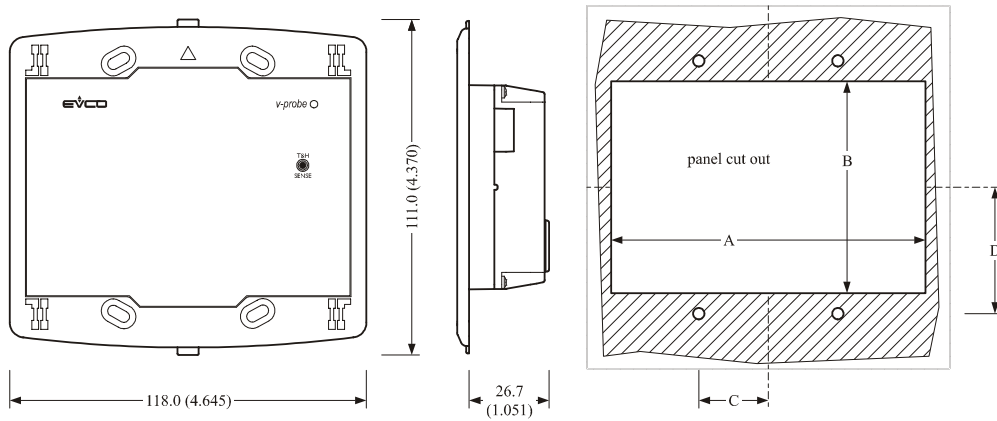| Code	Main features
EPV4P	Not isolated power supply 24 VAC or 20 ... 40 VDC, temperature and humidity sensor
EPV3P	Isolated power supply 12-24 VAC or 15 ... 40 VDC, temperature and humidity sensor

For further models, contact the Evco's sales network Evco at the address sales@evco.it.

2.   SIZE AND INSTALLATION

2.1.   Size

Size in mm (in).

Size	Minimum	Typical	Maximum
A	104.0 (4.094)	104.0 (4.094)	104.8 (4.125)
B	70.0 (2.755)	70.0 (2.755)	70.8 (2.787)
C	22.0 (0.866)	23.0 (0.905)	24.0 (0.944)
D	40.8 (1.606)	41.8 (1.645)	42.8 (1.685)

2.2.   Installation

The installation is possible:

-          by panel

-          built-in by wall, in traditional box (like "506" by BTicino)

-          by wall, on the support CPVW00 by Evco (to order separately); look at chapter 6 (ACCESSORIES).

The following drawing shows the installation by panel, with 4 screws (supplied by the builder).
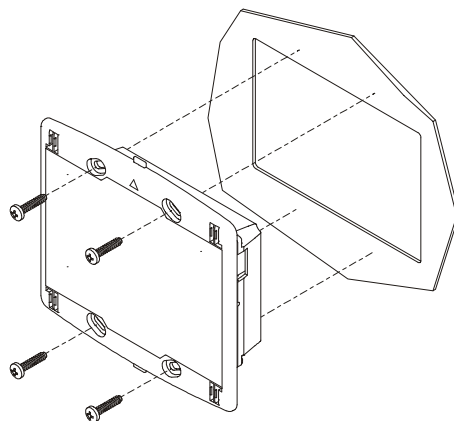
At the front of the sensor one can apply the plates CPVP* by Evco (to order separately, made in plastic material and available in two different colorations, white and black); look at chapter 6 (ACCESSORIES).

2.3.   Additional information for installation

-        working conditions (working temperature, humidity, etc.) must be between the limits indicated in the technical data

-        do not install the sensor close to heating sources (heaters, hot air ducts, etc.), devices provided with big magnetos (big speakers, etc.), locations subject to direct sunlight, rain, humidity, dust, mechanical vibrations or bumps

-        according to the safety legislation, the protection against electrical parts must be ensured by a correct installation of the sensor; the parts that ensure the protection must be installed so that you can not remove them if not by using a tool.

3. ELECTRICAL CONNECTION

3.1. Electrical connection
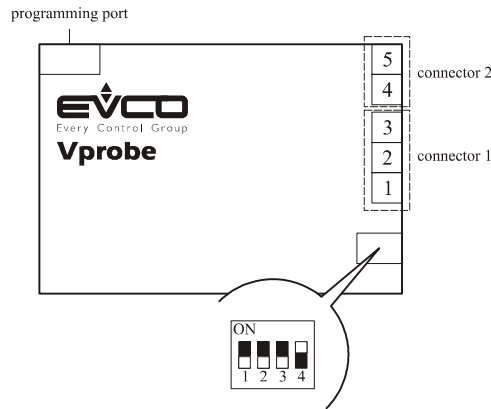
Position micro-switch 4 on position ON to plug in the termination of the CAN port; micro-switches 1, 2 and 3 are reserved.

The following tables show the meaning of the connectors.

Connector 1:　　　CAN port.

Terminal	Meaning
1	ground
2	signal +
3	signal -

⚠ The maximum length of the connecting cables of the CAN port of the sensor depends on the baud rate of the CAN communication, as follows:

- 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.

Connect the CAN port of the interface using a twisted pair.

According to the default settings, the interface recognizes the baud rate automatically, on condition that it is one of the those mentioned above; hereinafter one suggests setting the same baud rate of the others devices in the network.

Connector 2:　　　power supply (not isolated 24 VAC or 20 ... 40 VDC or isolated 12-24 VAC or 15 ... 40 VDC, according to the model).

Terminal	Meaning
4	power supply
5	power supply

⚠️   The maximum length of the connecting cables of the power supply is 10 m (32.8 ft).

In the models with not isolated power supply, this must galvanically be isolated from the one of the other devices connected in the network.

3.2.   Additional information for electrical connection

-        do not operate on the terminal blocks with electrical or pneumatic screwers
-        if the sendor has been moved from a cold location to a warm one, the humidity could condense on the inside; wait about an hour before supplying it
-        test the working power supply voltage, working electrical frequency and working electrical power of the sensor; they must correspond with the local power supply
-        disconnect the local power supply before servicing the sensor
-        do not use the sensor as safety device
-        for repairs and information on the sensor please contact Evco sales network.

4. CONFIGURATION

4.1. Preliminary information

To configure the sensor use the tool *CAN Config*; look at the Software manual of UNI-PRO 3.

💡 According to the default settings, the CAN node's address of a sensor has value *99*.

⚠️ **Switch off the power supply and then switch it on after the modification of the configuration.**

4.2. List of configuration parameters

Submenu	Parameter	Min.	Max.	Unit	Default	Description
Network / CAN	MyNode	1	127	- - -	99	Local (or of the sensor) CAN node's address
Network / CAN	Master	- - -	- - -	- - -	- - -	Reserved
Network / CAN	Baud	- - -	- - -	- - -	Auto	CAN communication baud rate 20K = 20,000 baud 50K = 50,000 baud 125K = 125,000 baud 500K = 500.000 baud Auto = the sensor recognizes the baud rate automatically, on condition that it is one of the those mentioned above One suggests modifying the value of the parameter and assign each device in the network the same baud rate.
Network / CAN	Net Timeout	1	240	s	5	Remote (or of the devices in the network) CAN communication time-out (after this time without CAN communication with a device, this will be excluded by the network)
Network / CAN	NW Node	[1] 1	[32] 127	- - -	- - -	Remote (or of the devices in the network) CAN nodes' address; example for *[1] 2*: *[1]* = node *2* = node's address

5.   SIGNALS

5.1.   Signals

The following table shows the meaning of the LEDS at the back of the sensor.

LED	Meaning
POWER	if it is lit, the sensor will be turned supplied
CAN RX	it provides information on the status of the receiving line of the CAN port
CAN TX	it provides information on the status of the transmitting line of the CAN port

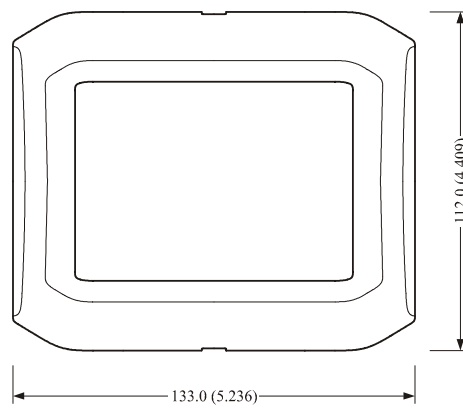# 6.   ACCESSORIES

6.1.   Frontal plates CPVP* by Evco

1.1.1. Available models

The following table shows the available models and the respective main features.

Code	Main features
CPVP00	plastic material, white
CPVP01	plastic material, black

1.1.2. Size

Size in mm (in).

6.2.   Support for wall mounting CPVW00

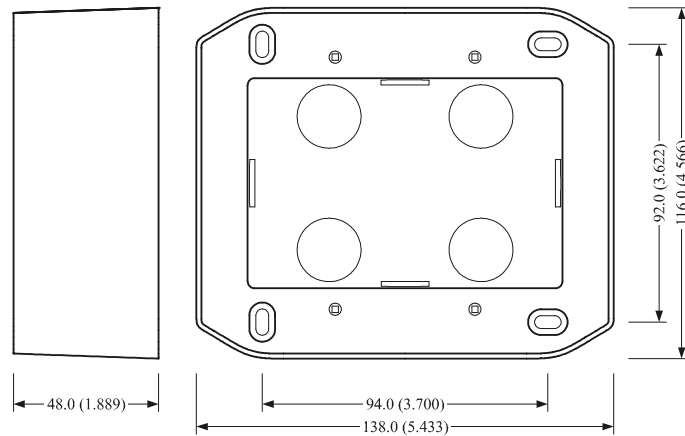### 1.1.3. Available models

The following table shows the available models and the respective main features.

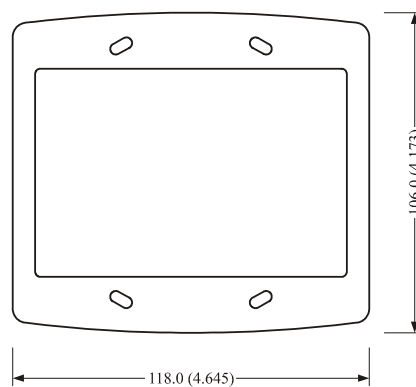| Code	Main features
CPVW00	plastic material, white

1.1.4. Size

Size in mm (in).

6.3. Gasket 0027000007

1.1.5. Available models

The following table shows the available models and the respective main features.

Code	Main features
0027000007	black, to get a frontal protection degree IP65 (only in case of panel mounting)

1.1.6. Size

Size in mm (in).

7. TECHNICAL DATA

7.1. Technical data

Purpose of control:	sensor for programmable controllers.
Construction of control:	electronic device to be incorporated.
Box:	self-extinguishing transparent.
Size:	118.0 x 111.0 x 26.7 mm (4.645 x 4.370 x 1.051 in). Size refers to the sensor with connector 1 and connector 2 properly plugged.
Installation:	the installation is possible: - by panel - built-in by wall, in traditional box (like "506" by BTicino) - by wall, on the support CPVW00 by Evco (to order separately); look at chapter 6 (ACCESSORIES). Fixing screws are always supplied by the builder. At the front of the sensor one can apply the plates CPVP* by Evco (to order separately, made in plastic material and available in two different colorations, white and black); look at chapter 6 (ACCESSORIES).
Frontal protection degree:	IP40 (IP65 for panel mounting with gasket 0027000007, to order separately); look at chapter 6 (ACCESSORIES).
Connections:	extractable male + female terminal blocks (power supply and CAN port), 6 poles telephone connector (programming port). The maximum length of the connecting cables of the CAN port of the sensor depends on the baud rate of the CAN communication, as follows: - 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. According to the default settings, the sensor recognizes the baud rate automatically, on condition that it is one of the those mentioned above.
Working temperature:	from 0 to 50 °C (32 to 120 °F, 10 ... 90% of relative humidity without condensate).
Pollution situation:	2 or more.

Power supply:	according to the model:
	- 12-24 VAC (min. 11.4 VAC, max. 27.6 VAC), 50/60 Hz, 3 VA (approximate) isolated or
	           15 ... 40 VDC, 3 W (approximate) isolated
	- 24 VAC (min. 20.4 VAC, max. 27.6 VAC), 50/60 Hz, 3 VA (approximate) non isolated or
	           20 ... 40 VDC, 2 W (approximate) non isolated
	supplied from a class 2 circuit.
	The maximum length of the connecting cables of the power supply is 10 m (32.8 ft).
	In the models with not isolated power supply, this must galvanically be isolated from the one of the other devices connected in the network.
	Protect the power supply with an UL listed or recognized fuse rated:
	- 80 mA-T if the sensor is powered with 15... 40 VDC
	- 160 mA-T if the sensor is powered with 12... 19 VAC
	- 125 mA-T if the sensor is powered with 19... 24 VAC.

Overvoltage category:	III.
Sensors:	incorporated; temperature and humidity sensor. Temperature sensor Kind of sensor: digital. Working range: from -10 to 70 °C. Accuracy: ±1.5 °C. Humidity sensor Kind of sensor: digital. Working range: from 5 to 95% of relative humidity. Accuracy: ±3% of relative humidity from 20 to 80%, ±5% otherwise.
Communication ports:	2 ports: - 1 non optoisolated CAN port - 1 programming port.

Notes

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