E E ELEKTRONIK EE871 CO2 Sensing Probe for the EE240 Wireless Sensor Network User Guide

Contents

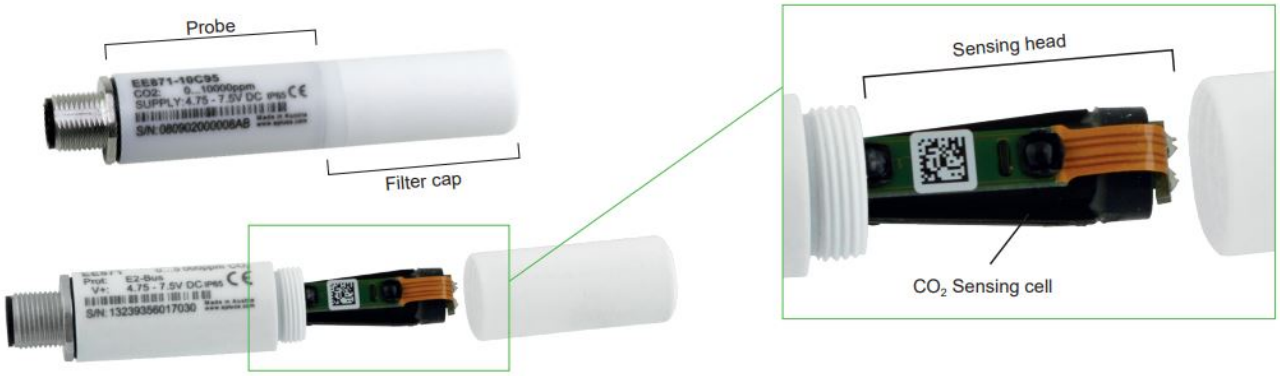
E E ELEKTRONIK EE871 CO2 Sensing Probe for the EE240 Wireless Sensor Network

GENERAL

The E+E CO2 probe EE871 is designed for use in harsh, demanding applications. It incorporates the dual wavelength NDIR CO2 sensor, which compensates for ageing effects, is highly insensitive to pollution and stands for outstanding long term stability.
A multiple point CO2 and temperature factory adjustment leads to excellent CO2 measurement accuracy over the entire temperature working range.
The measured data range of up to 10 000 ppm CO2 is available on E2 digital interface.
For use in special applications do not hesitate to contact E+E Elektronik or a local distributor.

CAUTION

- The device shall not be exposed to extreme mechanical stress. The sensing head and mostly the sensing cell might not be exposed to any mechanical stress.



- The device must be operated with the filter cap on at all times. Do not touch the sensing cell or electronics inside the sensing head.
- A long response time indicates a dirty filter cap, as it might happen in polluted applications. Do not attempt to clean the filter cap; it would only cause its clogging. Replace the filter cap by an E+E original one, order no. HA010116.
- While replacing the filter cap take utmost care to not touch the sensing cell and the electronics.
- This device is not appropriate for safety, emergency stop or other critical applications where device malfunction

or failure could cause injury to human beings.

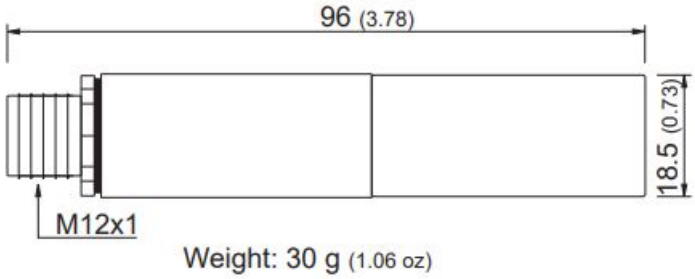
CONNECTION DIAGRAM

Important note:
The manufacturer cannot be held responsible for personal injuries or damage to property as a result of incorrect handling, installation, wiring, power supply and maintenance of the device.

	E2
1...	GND
2...	+UB
3...	DATA
4...	CLOCK

E2	
GND	brown
+UB	white
DATA	blue
CLOCK	black
Shielding	grey

DIMENSIONS mm (inch)



TECHNICAL DATA

Measurands
CO2

- **Measurement principle** Dual wavelength (non-dispersive infrared technology) NDIR
- **Measuring range** 0…2 000 ppm: < ± (50 ppm + 2 % from the measured value)
- **Accuracy** at 25 °C 0…5 000 ppm: < ± (50 ppm + 3 % from the measured value)and 1 013 mbar1) (77 °F… 14,69 psi) 0…10 000 ppm: < ± (100 ppm + 5 % from the measured value)
- **Response time t63** 105 s with measured data averaging (smooth output)
  60 s without measured data averaging
- **Temperature dependency** 0…2 000 ppm: (-20…45 °C) (-4…113 °F) 0…5 000 ppm: typ. ± (1 + CO2 concentration [ppm] / 1 000) ppm/°C
  0…10 000 ppm:
- **Transmission interval** Adjustable from 1 s to 1 h by the EE242 base station

General

- **Digital interface** E2 (details: **www.epluse.com**)
- **Power supply class III 2)**4.75 – 7.5 V DC
- **Average current consumption3)** 120 µA (at 1 h transmission interval)…4.3 mA (at 15 sec. transmission interval)

- **Current peak, max.** 350 mA for 0.05 s
- **Enclosure / protection rating** Polycarbonate (PC) / enclosure IP65
- **Filter cap** PTFE
- **Electrical connection** Connector M12x1
- **Cable length, max.** 10 m (32.8 ft)
- **Electromagnetic compatibility** EN 61326-1
- **(Industrial enviroment)** EN 61326-2-3
- **Operating conditions**

  -40…60 °C (-40…140 °F) 0…100 %RH (non-condensing) 85…110 kPa (12.33…15.95 psi)
- **Storage conditions**

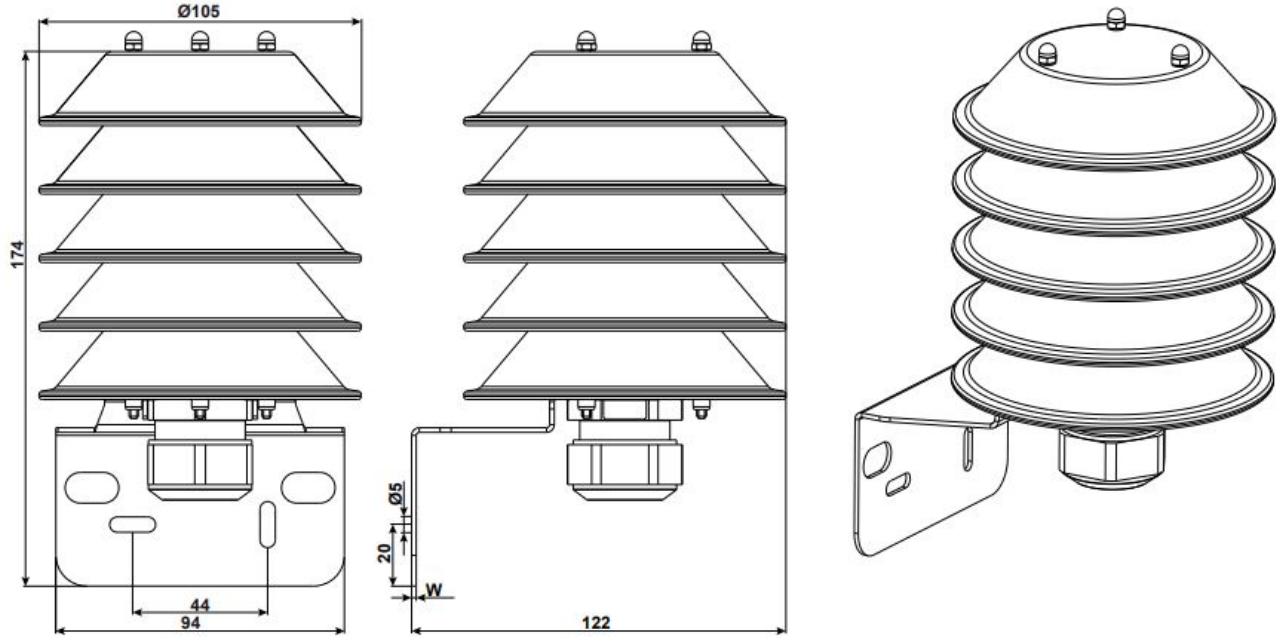
  -40…60 °C (-40…140 °F) 0…100 %RH (non-condensing) 70…110 kPa (10.15…15.95 psi)

E2 INTERFACE

For communication with EE871 via E2 interface please see the support literature at **www.epluse.com/ee240**.

OPERATION OUTDOORS

For outdoor applications EE871 must be used with the radiation shield order no. HA010507, which protects the device against rain, snow, ice, and solar radiation.



REPLACEMENT PARTS / ACCESSORIES

For further information, see data sheet „Accessories“

- **Mounting flange** HA010212
- **Connecting cable M12 – flying leads (1.5 m (59.06″) / 5 m (196.85″) / 10 m (393.70″))** HA010819/20/21
- **PTFE filter cap** HA010116
- **Radiation shield** HA010507
- **Protection cap for the M12 cable socket** HA010781
- **Protection cap for the M12 plug of EE871** HA010782

SCOPE OF SUPPLY

- EE871 probe according to ordering guide
- Test report according to DIN EN 10204-2.2u

FCC notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which thereceiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

INFORMATION

- +43 7235 605 0
- info@epluse.com
- Langwiesen 7
- 4209 Engerwitzdorf
- Austria
- **Tel:** +43 7235 605-0
- **Fax:** +43 7235 605-8
- info@epluse.com
- www.epluse.com

Documents / Resources

	E E ELEKTRONIK EE871 CO2 Sensing Probe for the EE240 Wireless Sensor Network [pdf] User Guide EE871 CO2 Sensing Probe for the EE240 Wireless Sensor Network, EE871, CO2 Sensing Pro be for the EE240 Wireless Sensor Network, Wireless Sensor Network

References

- Sensor Technology: Humidity, CO2, Flow & Temperature Measurement