

EE871 CO₂ Sensing Probe for the EE240 Wireless Sensor Network

The EE871 is designed for use in harsh, demanding applications. The measured data range up to 10 000 ppm CO₂ is available on the E2 digital interface. A multiple point CO₂ and temperature factory adjustment leads to excellent CO₂ measurement accuracy over the entire temperature working range. EE871 incorporates the dual wavelength NDIR CO₂ sensor, which automatically compensates for ageing effects and is highly insensitive to pollution.

The transmission (= measurement) interval is set by the base station of the EE240 wireless sensor network whereby the average current consumption can be reduced to 120 µA for 1 h transmission interval.

The IP65 enclosure and the replaceable filter offer excellent protection in harsh, polluted environment. The compact size, the M12 connector and the optional mounting flange allow for fast probe installation or replacement. With the optional radiation shield, EE871 can be also used outdoors.



Typical Applications

- Greenhouses and livestock barns
- Fruit and vegetable storage
- Hatchers and incubators
- Outdoor CO₂ monitoring

Key Features

- Auto-calibration
- Outstanding long-term stability
- Temperature compensation
- Very low current consumption
- IP65 enclosure

Technical Data

Measurands

CO₂

Measurement principle	Dual wavelength (non-dispersive infrared technology) NDIR
Measuring range	0...5000 ppm: $\pm 3\%$ (50 ppm + 3 % from the measured value)
Accuracy at 25 °C and 1013 mbar ¹⁾ (77 °F...14,69 psi)	0...10000 ppm: $\pm 5\%$ (100 ppm + 5 % from the measured value)
Response time t_{63}	105 s with measured data averaging (smooth output) 60 s without measured data averaging
Temperature dependency, typ. (-20...45 °C) (-4...113 °F)	$\pm (1 + \text{CO}_2 \text{ concentration [ppm]} / 1000) \text{ ppm}/^\circ\text{C}$
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 $\diamond >2)$	4.75 - 7.5 V DC
Average current consumption ³⁾	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 (Industrial environment)	EN 61326-1 EN 61326-2-3



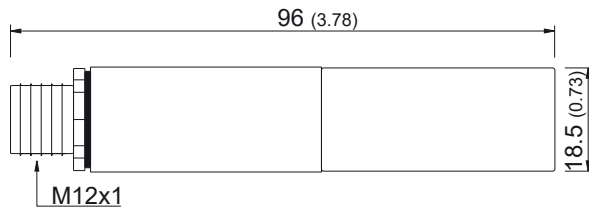
Operating conditions -40...60 °C (-40...140 °F) 0...100 %RH (non-condensing) 85...110 kPa (12.33...15.95 psi)

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

- 1) For averaging output.
- 2) USA & Canada class 2 supply required, max. supply voltage 30 V DC.
- 3) The average current consumption depends on the measurement interval.

Dimensions

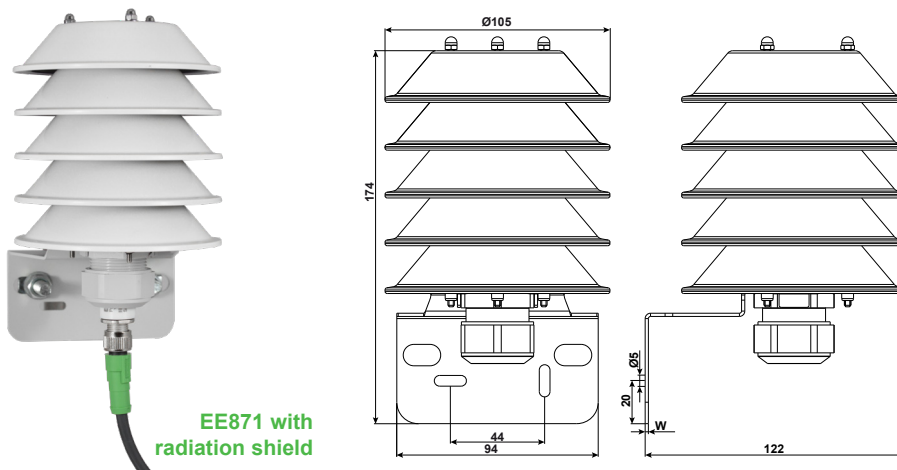
Values in mm (inch)



Weight: 30 g (1.06 oz)

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.



EE871 with radiation shield

Scope of Supply

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

Ordering Guide

		EE871
Measuring range	0...5000 ppm	HV2
	0...10000 ppm	HV3
Digital Output	E2	J2

Ordering Example

EE871-HV3J2

Measuring range: 0...10 000 ppm
Digital Output: E2

Accessories

(for further information, see data sheet "Accessories")

Mounting flange	HA010212
Connecting cable M12 - flying leads (1.5 m (4.9 ft) / 5 m (16.4 ft) / 10 m (32.8 ft))	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