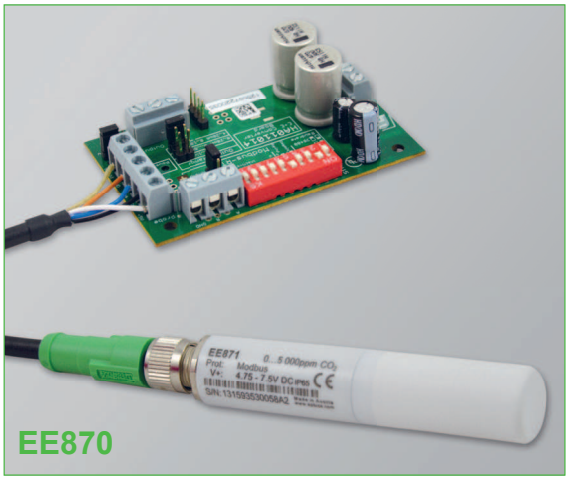
EE870 Modular CO_2 Transmitter for Demanding OEM Applications

The modular E+E CO_2 transmitter EE870 is designed for easy integration into OEM equipment for demanding applications. EE870 consists of a CO_2 sensing probe, a conversion board and a connection cable.



The interchangeable CO_2 probe incorporates the dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability. A multiple point CO_2 and temperature adjustment leads to excellent measurement accuracy over the entire temperature working range, ideal for use in agriculture and outdoors.

The IP65 enclosure of probe and the replaceable PTFE filter offer excellent protection in harsh, polluted environment. The compact size, the M12 connector and the optional mounting flange allow for fast probe installation, replacement or removal during the cleaning of the site, for instance a stable or an incubator. With the optional radiation shield, the probe can be also installed outdoors.

The measured data range of up to 10,000ppm is available on the analog outputs of the conversion board. Several voltage and current ranges can be selected with jumpers. Additionally, the data is available on the Modbus RTU interface, which can be configured by the user with DIP switches on the board.

An optional kit facilitates easy configuration and adjustment of the probe.

Typical Applications

Greenhouses and livestock barns
Fruit and vegetable storage
Hatchers and incubators
Outdoor CO_2 monitoring

Key Features

Auto-calibration
Outstanding long-term stability
Temperature compensation
Interchangeable probe
Easy installation

Technical Data

Digital CO_2 Probe EE871

Measuring principle	Dual wavelength (non-dispersive infrared technology) NDIR
Measurement range	0...2000 / 5000 / 10000 ppm
Accuracy at 25 °C and 1013 mbar[1)] (77 °F and 14.69 psi)	0...2000 ppm: < ± (50 ppm +2 % from the measured value) 0...5000 ppm: < ± (50 ppm +3 % from the measured value) 0...10000 ppm: < ± (100 ppm +5 % from the measured value)
Response time t_{90}	105 s with measured data averaging (smooth output) 60 s without measured data averaging
Temperature dependency	typ. 1 ppm CO_2/°C (-20...45 °C) (-4...113 °F)
Measurement interval	adjustable from 15 s to 1 h (Factory setting 15 s)
Housing / Protection class	Plastic PC / Housing IP65
Cable length	max. 10 m (32 ft)
Electromagnetic compatibility (Industrial enviroment)	EN61326-1 EN61326-2-3

CE

Conversion Board

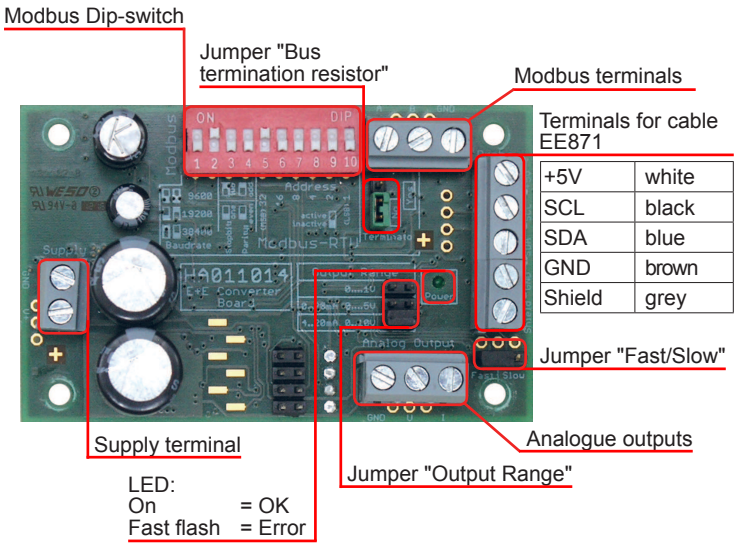
Supply voltage	10-35 VDC / 10-28.8 VAC
Supply current	120 mA at 24 VDC / 300 mA at 10 VDC
Protection class	IP00
Electrical connection	screw terminal size: 2.5 mm²
Analog outputs selectable by jumpers	0-1 V; 0-5 V; 0-10 V -1 mA < I_L < 1 mA 0-20 mA; 4-20 mA R_L < 500 Ohm

1) For averaging output

Technical Data

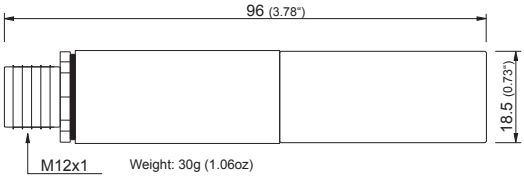
Resolution	12 bit	
Response time t_{90}	60 s or 105 s selectable by jumpers	
Modubs RTU	setup with dip-switches (see operation manual)	
Temperature dependence	Voltage: typ. ±0.2 mV / °C Current: typ. ±1 µA / °C	
EE870 Operating conditions	-40...60 °C (-40...140 °F)	0...95 % RH (not condensating) 85...110 kPa (12.33...15.95 psi)
EE870 Storage condition	-40...60 °C (-40...140 °F)	0...95 % RH (not condensating) 70...110 kPa (10.15...15.95 psi)

Connection

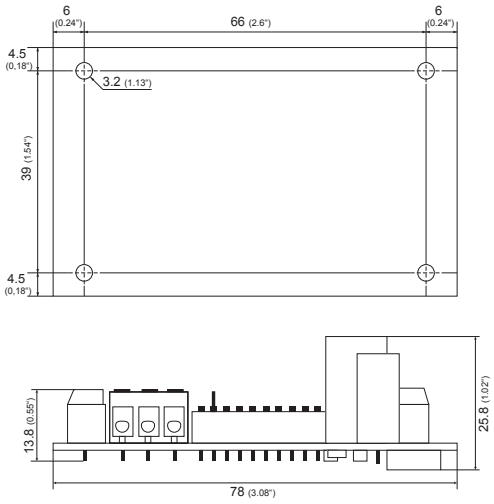


Dimensions (mm/inch)

Digital CO_2 Probe EE871



Conversion Board



Ordering Guide

Configuration

MEASUREMENT RANGE		TYPE		FILTER		CABLE LENGTH	
0...2000ppm	(02)	CO_2	(C)	PTFE-Filter	(E)	1m	(B)
0...5000ppm	(05)					2m	(D)
0...10000ppm	(10)					5m	(G)
						10m	(H)
EE870-							

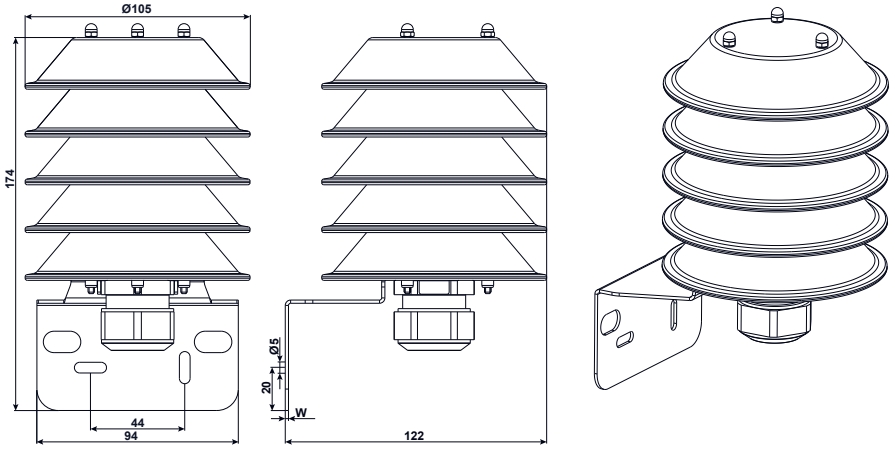
Ordering Example

EE870-02CEG

Measurement range:	0...2000 ppm
Type:	CO_2
Filter:	PTFE
Cable length:	5 m

Operation outdoors

For outdoor applications, the probe of EE870 must be used with the radiation shield order no. HA010507, which protects the device against rain, snow, ice, and solar radiation. The convertor board must protected IP65 (NEMA4) or better.



Accessories (see data sheet "Accessories")

Replacement probe EE871-xC2	see data sheet EE871
Connecting cable M12 - flying leads	HA0108**09**/**10**/**11**/**12**
Probe Mounting Flange	HA010212
Radiation shield	HA010507
PFTE Filter cap	HA010116
Protection cap for M12 female cable connector	HA010781
Protection cap for M12 male probe connector	HA010782

Scope of Supply

Model	EE870
EE871 probe according ordering guide	✓
Test report according to DIN EN10204 - 2.2 for EE871	✓
Conversion board HA011014	✓
Connecting cable HA0108xx	✓
Operation manual	✓
Test report according to DIN EN10204 - 2.2 for Conversion board	✓

Support Literature

www.epluse.com/EE870