



EE820

CO₂ Sensor for Demanding Applications

The EE820 CO₂ sensor is optimized for use in harsh, demanding applications, such as hatchers, incubators, life stock barns or greenhouses.

Outstanding Accuracy

A multiple point CO₂ and temperature factory adjustment procedure leads to excellent CO₂ measurement accuracy over the entire temperature working range, so the EE820 can even be installed outdoors.

Long-term Stability

The EE820 incorporates the E+E dual wavelength NDIR CO₂ sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability.

High Resistance to Pollution

With its robust, functional IP54 enclosure with a special filter the EE820 can be employed even in harsh environment.

Fast Response Time

The fast response time version of EE820 is fitted with a forced air circulation module installed behind the filter.

Analogue and Digital Outputs

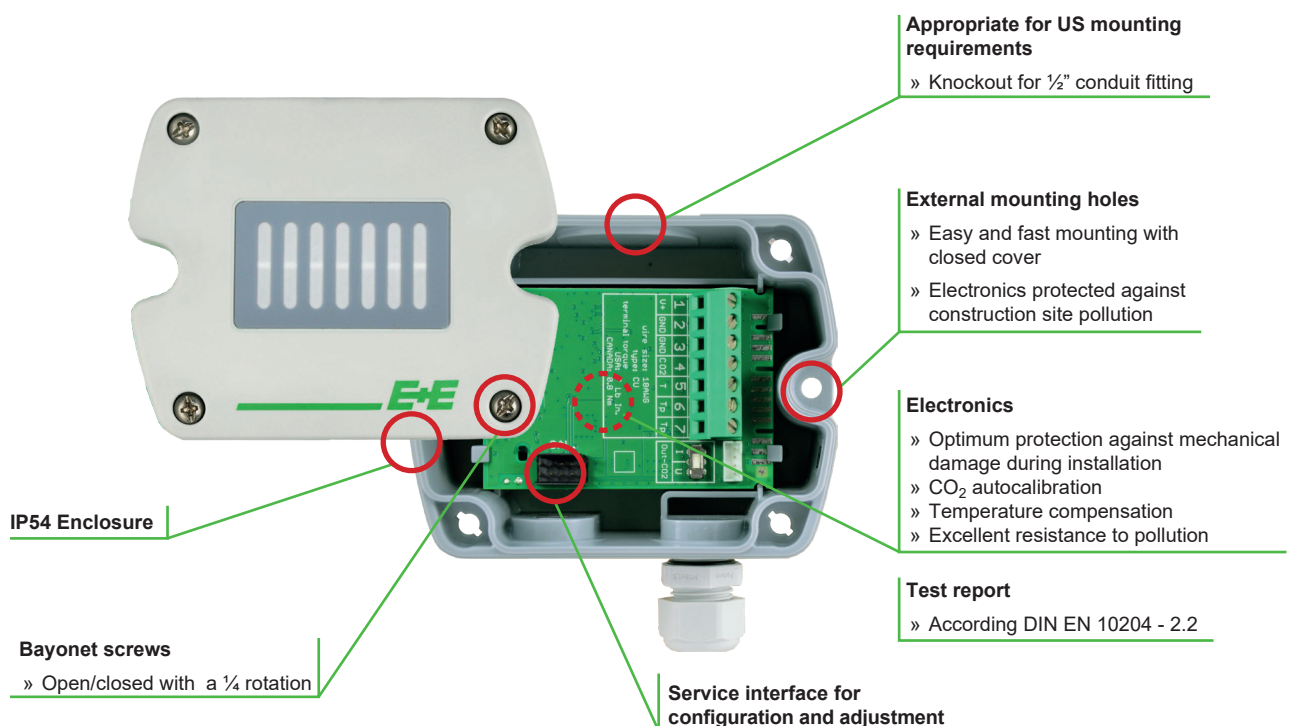
The CO₂ measured data range up to 10000 ppm is available on the analogue output (voltage / current) or on the RS485 interface with Modbus RTU or BACnet MS/TP protocol.

Easy Configuration and Adjustment

An optional adapter and the free EE-PCS Product Configuration Software facilitate the configuration and adjustment of the EE820.



Features



Technical Data

Measured values

Measuring principle	dual wavelength non-dispersive infrared technology (NDIR)		
Measurement range	0...2000 / 5000 / 10000 ppm		
Accuracy at 25 °C (77 °F)	0...2000 ppm:	< ± (50 ppm +2 % of mv)	mv = measured value
and 1013 mbar (14.7 psi)	0...5000 ppm:	< ± (50 ppm +3 % of mv)	
	0...10000 ppm:	< ± (100 ppm +5 % of mv)	
Response time t ₆₃ , typ.	300 s (standard) 140 s (fast, with forced air circulation module)		
Temperature dependency	typ. ± (1 + CO ₂ concentration [ppm] / 1000) ppm/°C (-20...45 °C) (-4...113 °F)		
Sample rate	approx. 15 s		

Output

Analogue

0...2000 / 5000 / 10000 ppm	0-5 / 0-10 V	-1mA < I _L < 1 mA	R _L = load resistance
	4-20 mA	R _L < 500 Ohm	

Digital Interface

Protocol	RS485	EE820 = 1/10 unit load
	Modbus RTU or BACnet MS/TP	

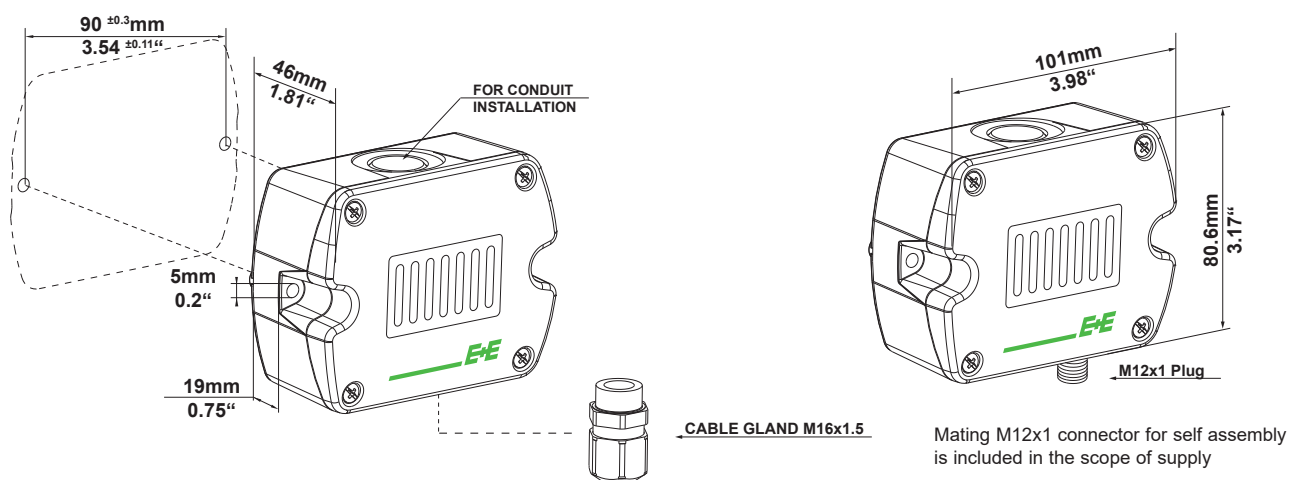
General

Supply voltage	24 V AC ±20%	15 - 35 V DC
Current consumption, typ.	15 mA + output current, for standard response time 60 mA + output current, for fast response time	
Current peak, max.	350 mA for 0.3 s (analogue output) 150 mA for 0.3 s (RS-485 interface)	
Warm up time ¹⁾	< 5 min	
Enclosure material	Polycarbonate, UL94V-0 approved	
Protection class	IP54	
Electrical connection	Screw terminals 2.5 mm² or M12 plug	
Electromagnetic compatibility	EN61326-1 FCC Part 15	EN61326-2-3 ICES-003 ClassB Industrial Environment
Working conditions	-20...60 °C (-4...140 °F)	0...100 % RH (non-condensing)
Storage conditions	-20...60 °C (-4...140 °F)	0...95 % RH (non-condensing)



1) for performance according to specification

Dimensions (mm/inch)





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Ordering Guide

			EE820-	
Hardware configuration	CO ₂ range	0...2000 ppm	HV1	
		0...5000 ppm	HV2	
		0...10 000 ppm	HV3	
	Output	0-5 V	A2	J3
		0-10 V	A3	
		4-20 mA	A6	
		RS485		
Electrical connection	M16 cable gland	E1	E1	
	M12 plug	E9		
Response time	standard	no code		
	fast (with forced air circulation)	AM4		
Setup RS485	Protocol	Modbus RTU ¹⁾		P1
		BACnet MS/TP ²⁾		P3
	Baud rate	9600		BD5
		19200		BD6
		38400		BD7
		57 600 ³⁾		BD8
		76 800 ³⁾		BD9

1) Factory setting: Even Parity, Stopbits 1; Modbus Map and communication setting: See User Guide and Modbus Application Note at www.epluse.com/ee820.2) Factory setting: No Parity, Stopbits 1; Product Implementation Conformance Statement (PICS) available at www.epluse.com/ee820.

3) Only for BACnet MS/TP.

Order Example

EE820-H1A3E9

CO₂ range: 0...2000 ppm
 Output: 0-10 V
 Electrical connection: M12 plug
 Response time: standard

EE820-HV2J3E1AM4P1BD6

CO₂ range: 0...5000 ppm
 Output: RS485
 Electrical connection: M16 cable gland
 Response time: fast
 Protocol: Modbus RTU
 Baud rate: 19200

Accessories (see data sheet „Accessories“)

USB configuration adapter
 Product configuration software
 Mating M12x1 connector for self assembly
 Connection cable M12x1 socket - flying leads
 - 1.5 m (3.3ft)
 - 5 m (16.4 ft)
 - 10 m (32.8 ft)
 Protective cap for female M12 connectors
 Protective cap for male M12 connectors
 Power supply adapter

HA011066
 EE-PCS (free download: www.epluse.com/EE820)
 HA010707

HA010819
 HA010820
 HA010821
 HA010781
 HA010782
 V03

Support Literature