

# EE820

## CO<sub>2</sub> Sensor for Demanding Applications

The EE820 CO<sub>2</sub> sensor is optimized for use in harsh, demanding applications, such as hatchers, incubators, life stock barns or greenhouses.

### Outstanding Accuracy

A multiple point CO<sub>2</sub> and temperature factory adjustment procedure leads to excellent CO<sub>2</sub> 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 CO<sub>2</sub> 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

For an even lower response time, a forced air circulation module is available as an accessory.

### Analogue Output

The CO<sub>2</sub> measured data range up to 10000 ppm is available on the analogue output (voltage / current).

### Easy Configuration and Adjustment

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



## Features

**IP54 Enclosure**

**Bayonet screws**  
 » Open/closed with a ¼ rotation

**Appropriate for US mounting requirements**  
 » Knockout for ½" conduit fitting

**External mounting holes**  
 » Easy and fast mounting with closed cover  
 » Electronics protected against construction site pollution

**Electronics**  
 Optimum protection against mechanical damage during installation  
 » CO<sub>2</sub> autocalibration  
 » Temperature compensation  
 » Excellent resistance to pollution

**Test report**  
 » According DIN EN 10204-2.2

**Service interface for configuration and adjustment**

## Technical Data

### Measurands




Measurement principle	Dual wavelength non-dispersive infrared technology (NDIR)		
Measuring range	0...2000 / 5000 / 10000 ppm		
Accuracy at 25 °C (77 °F) and 1013 mbar (14.7 psi)	0...2000 ppm:	< ± (50 ppm +2 % of mv)	mv = measured value
	0...5000 ppm:	< ± (50 ppm +3 % of mv)	
	0...10000 ppm:	< ± (100 ppm +5 % of mv)	
Response time $t_{63}$ , typ.	300 s		
Temperature dependency, typ.	± (1 + CO <sub>2</sub> concentration [ppm] / 1000) ppm/°C (-20...45 °C) (-4...113 °F)		
Sample rate	Approx. 15 s		

### Output

#### Analogue

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

### General

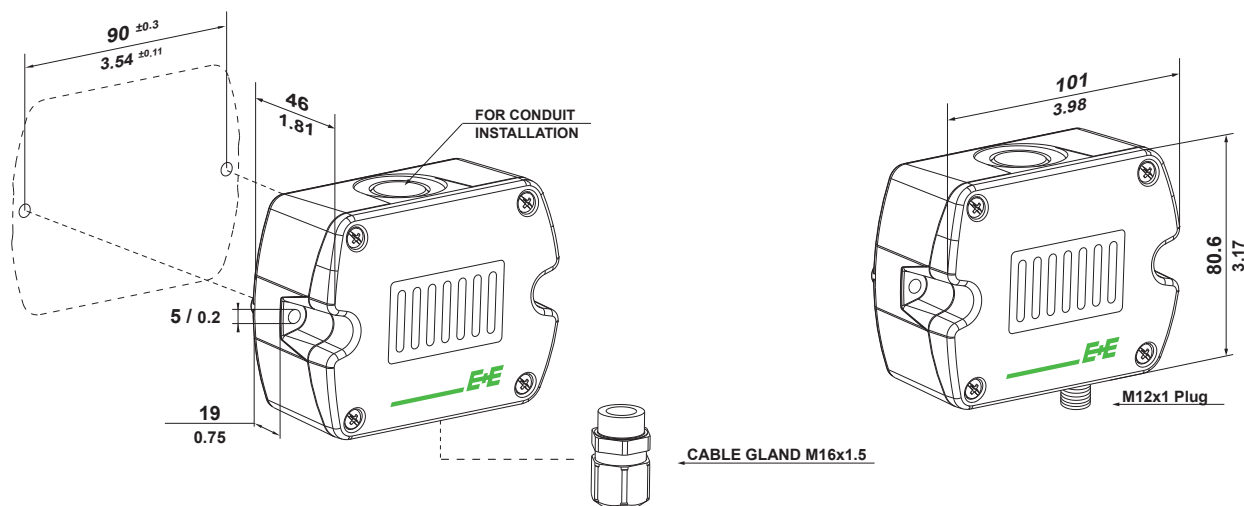
Power supply class III  <sup>1)</sup>	24 V AC ±20%	15 - 35 V DC	
Current consumption, typ.	15 mA + output current		
Current peak, max.	350 mA for 0.3 s (analogue output)		
Warm up time <sup>2)</sup>	< 5 min		
Enclosure material	Polycarbonate, UL94V-0 approved		
Protection class	IP54		
Electrical connection	Screw terminals 2.5 mm <sup>2</sup> or M12 plug		
Electromagnetic compatibility	EN 61326-1 FCC Part 15	EN 61326-2-3 ICES-003 Class B	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) USA & Canada class 2 supply required, max. supply voltage 30 V DC

2) For performance according to specification

## Dimensions

Values in mm/inch



## Ordering Guide

		EE820-	
Measuring range	0...2000 ppm	HV1	
	0...5000 ppm	HV2	
	0...10000 ppm	HV3	
Analogue output	0 - 10 V	A3	
	4 - 20 mA	A6	
Electrical connection	M16 cable gland	E1	
	M12 plug		E9
Accessories	No accessories		AC0
	M12x1 cable socket, for self assembly		AC2

## Order Example

### EE820-HV2A6E1AC0

Measuring range: 0...5000 ppm  
 Output: 4 - 20 mA  
 Electrical connection: M16 cable gland  
 Accessories: No accessories

## Accessories

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

USB configuration adapter	HA011066
Product configuration software (free download: <a href="http://www.epluse.com/ee820">www.epluse.com/ee820</a> )	EE-PCS
EE820-FAC Forced Air Circulation Module	HA011302
Connection cable M12x1 socket - flying leads	
- 1.5 m (3.3ft)	HA010819
- 5 m (16.4 ft)	HA010820
- 10 m (32.8 ft)	HA010821
Protective cap for female M12 connectors	HA010781
Protective cap for male M12 connectors	HA010782
Power supply adapter	V03

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