Datasheet EE820

CO$_2$ Sensor for Demanding Applications

EE820

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The EE820 CO$_2$ sensor is optimized for use in harsh, demanding applications, such as hatchers, incubators, life stock barns or greenhouses.

Outstanding Accuracy

A multiple point CO$_2$ and temperature factory adjustment procedure leads to excellent CO$_2$ 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$_2$ 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.

Analogue Output

The CO$_2$ measured data with range up to 10 000 ppm is available on the analogue output (voltage / current).

Easy Configuration and Adjustment

An optional stick and the free PCS10 Product Configuration Software facilitate the configuration and adjustment of the EE820.

EE820 with cable gland

EE820 with M12x1 plug

Features

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

Knockout for ½" conduit fitting (US)
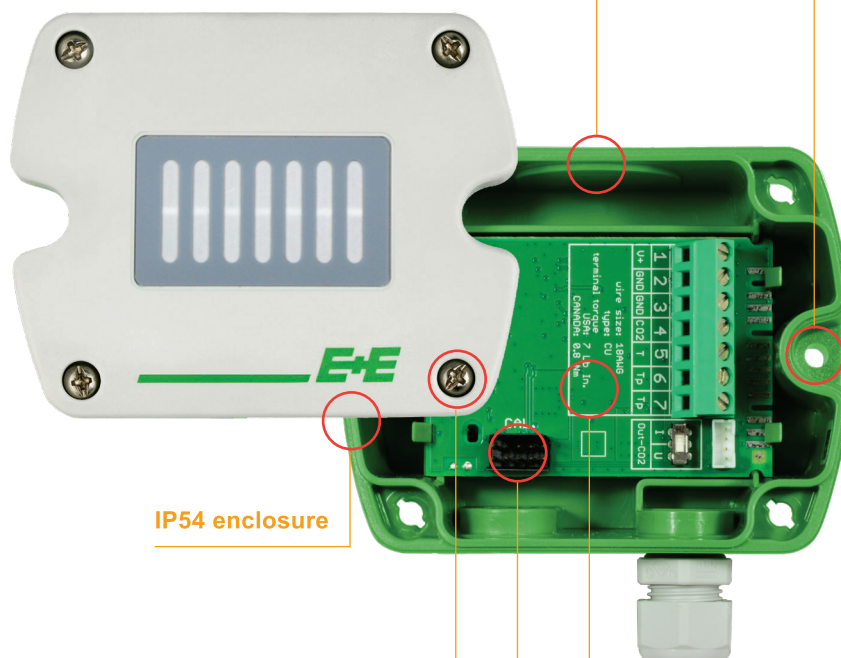
IP54 enclosure

Electronics
- Optimum protection against mechanical damage during installation
- CO_2 auto-calibration
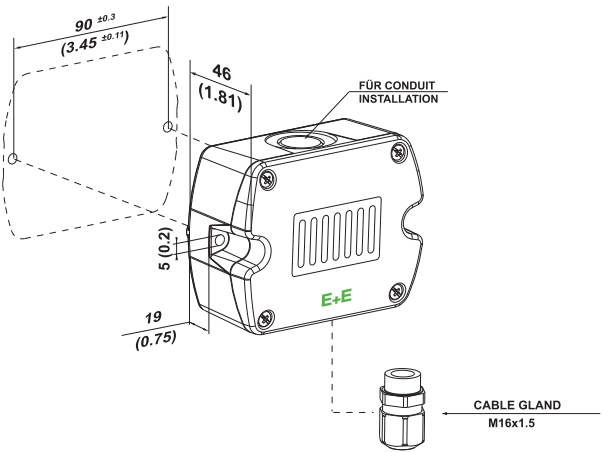- Temperature compensation
- Excellent resistance to pollution

Bayonet screws
- Opened / closed with a ¼ rotation

Service interface for configuration and adjustment

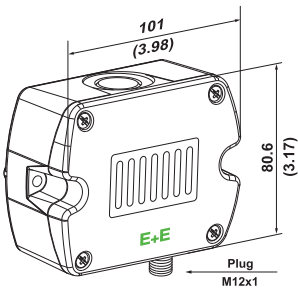**Test Report**
According DIN EN 10204-2.2

Dimensions

Values in mm (inch)

EE820 with cable gland

EE820 with plug

Tecnical Data

Measurands

CO$_2$

Measurement principle	Dual wavelength non-dispersive infrared technology (NDIR)		
Measuring range	0...2 000 / 5 000 / 10 000 ppm		
Accuracy @ 25 °C (77 °F) and 1 013 mbar (14.7 psi) **0...2 000 ppm** **0...5 000 ppm** **0...10 000 ppm**	< ±(50 ppm + 2 % of measured value) < ±(50 ppm + 3 % of measured value) < ±(100 ppm + 5 % of measured value)		
Temperature dependency in the range of -20...45 °C (-4...113 °F)	±(1 + CO$_2$ concentration [ppm] / 1 000) ppm/°C ± 0.556 * (1+ CO$_2$ concentration [ppm] / 1 000) ppm/°F		
Response time t$_{63}$, typ.	300 s		
Sampling interval, approx.	15 s		

Outputs

Analogue

CO$_2$			
0...2 000 / 0...5 000 / 0...10 000 ppm	0 - 10 V 4 - 20 mA	-1mA < I$_L$ < 1 mA R$_L$ ≤ 500 Ω	I$_L$ = load current R$_L$ = load resistance

Tecnical Data

General

Power supply class III ◇III◇ USA & Canada: Class 2 supply necessary, max. voltage 30 V DC	24 V AC ±20 % 15 - 35 V DC
Current consumption, typ.	15 mA + output current
Peak current, max. @ analogue output	350 mA for 0.3 s
Warm-up time[1)]	< 5 min
Electrical connection	Screw terminals max. 2.5 mm^2 or M12 plug
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
Enclosure **Material** **Protection rating**	Polycarbonate (PC), UL94 V-0 approved IP54
Electromagnetic compatibility	EN 61326-1 EN 61326-2-3 Industrial environment FCC Part15 Class B ICES-003 Class B
Conformity	CE UK CA
Configuration and adjustment	PCS10 Product Configuration Software (free download) and USB-C configuration stick

1) For performance according to specification.

Ordering Guide

Feature		Description	Code	
			EE820-	
Hardware Configuration	CO$_2$ measuring range	0...2 000 ppm	HV1	
		0...5 000 ppm	HV2	
		0...10 000 ppm	HV3	
	Analogue output	0 - 10 V	A3	
		4 - 20 mA	A6	
	Electrical connection	M16x1.5 cable gland	E1	
		M12 connector, 4 poles		E9
	Accessories	No accessories		AC0
		M12x1 cable socket, for self assembly		AC2

Order example

EE820-HV2A6E1AC0

Feature	Code	Description
CO$_2$ measuring range	HV2	0...5 000 ppm
Analogue output	A6	4 - 20 mA
Electrical connection	E1	M16 cable gland
Accessories	AC0	No accessories

Accessories

For further information please refer to the Accessories datasheet.

Description	Code
USB-C configuration stick	HA011070
E+E Product Configuration Software (Free download: www.epluse.com/pcs10)	PCS10
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 M12 socket	HA010781
Protective cap for M12 plug	HA010782
Power supply adapter	V03