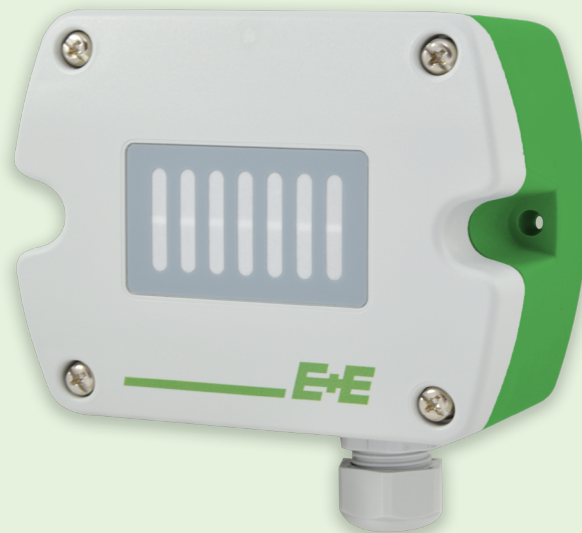




—
your partner
in sensor
technology.

+ Datasheet EE820

CO₂ Sensor for Demanding Applications



EE820

CO₂ Sensor for Demanding Applications

The EE820 CO₂ sensor is optimised for demanding and harsh environments, such as hatchers, incubators, livestock barns or greenhouses.

Outstanding Accuracy

A multiple point factory adjustment of CO₂ and temperature ensures excellent CO₂ measurement accuracy across the entire temperature working range, enabling reliable use even outdoors.

Long-term Stability

The sensor features E+E's dual-wavelength NDIR technology, which compensates for ageing effects, provides high resistance to contamination, and guarantees exceptional long-term stability.

High Pollution Resistance

Thanks to its robust, functional IP54 enclosure with a special filter, the EE820 delivers dependable performance even in harsh and contaminated environments.

Analogue Output

CO₂ concentrations up to 10 000 ppm are provided via an analogue output as a current or voltage signal.

Easy Configuration and Adjustment

An optional stick and the free PCS10 Product Configuration Software allow fast and user-friendly configuration and adjustment of the EE820.



EE820 with cable gland



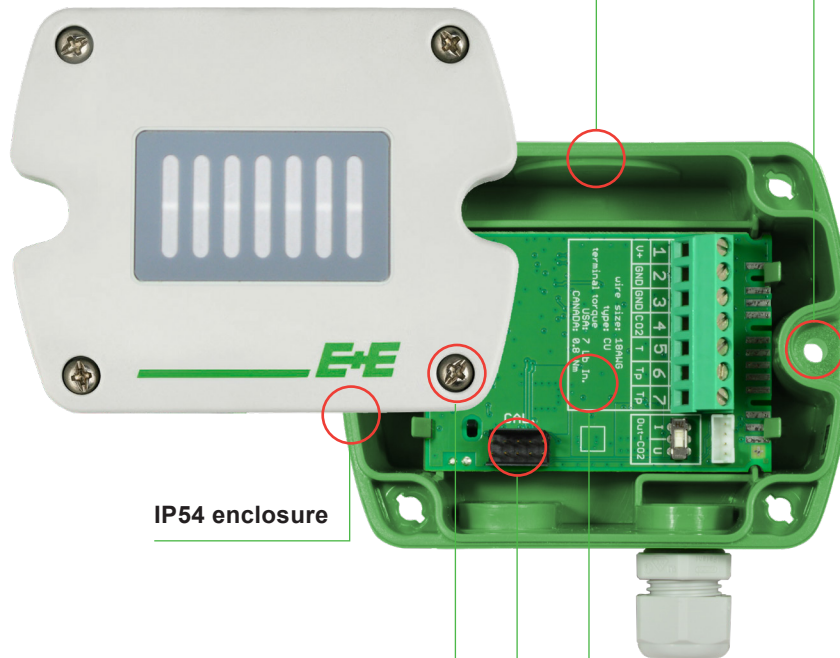
EE820 with M12x1 plug

Features

External mounting holes

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

Knockout for 1/2" conduit fitting (US)



IP54 enclosure

Bayonet screws

- Opened/closed with a 1/4 rotation

Electronics

- Optimum protection against mechanical damage during installation
- CO₂ auto-calibration
- Temperature compensation
- Excellent resistance to pollution

Service interface for configuration and adjustment

Test Report

According DIN EN 10204-2.2

Technical Data

Measurands

| CO ₂ | | | | | | | |
|--|--|----------------------|--------------------------------------|----------------------|------------------------------------|-----------------------|--------------------------------------|
| Measurement principle | Dual wavelength non-dispersive infrared technology (NDIR) | | | | | | |
| Measuring range | 0...2 000/5 000/10 000 ppm | | | | | | |
| Accuracy¹⁾ @ 25 °C (77 °F) and 1013 mbar (14.7 psi) | <table border="0"> <tr> <td>0...2 000 ppm</td> <td><±(40 ppm + 1.6 % of measured value)</td> </tr> <tr> <td>0...5 000 ppm</td> <td><±(40 ppm + 2 % of measured value)</td> </tr> <tr> <td>0...10 000 ppm</td> <td><±(80 ppm + 2.5 % of measured value)</td> </tr> </table> | 0...2 000 ppm | <±(40 ppm + 1.6 % of measured value) | 0...5 000 ppm | <±(40 ppm + 2 % of measured value) | 0...10 000 ppm | <±(80 ppm + 2.5 % of measured value) |
| 0...2 000 ppm | <±(40 ppm + 1.6 % of measured value) | | | | | | |
| 0...5 000 ppm | <±(40 ppm + 2 % of measured value) | | | | | | |
| 0...10 000 ppm | <±(80 ppm + 2.5 % of measured value) | | | | | | |
| Factory calibration uncertainty¹⁾ @ 25 °C (77 °F) | ±2.6 % of mv, min ±20 ppm mv = 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 t₆₃, typ. | 300 s | | | | | | |
| Sampling interval, approx. | 15 s | | | | | | |




1) Defined with a coverage factor k=2, corresponding to a confidence level of 95 %.

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 |
|-----------------|------------------------------------|-----------------------|--|---|

General

| | |
|--|---|
| Power supply class 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 time¹⁾ | < 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 | Polycarbonate (PC), UL94 V-0 approved |
| Material Protection rating | IP54 |
| Electromagnetic compatibility | EN 61326-1 EN 61326-2-3 Industrial environment FCC Part15 Class B ICES-003 Class B |
| Conformity |   |
| 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 | | |
|--|---------------------------------|---------------------------------------|--|-----|
| Hardware Configuration | CO ₂ measuring range | EE820- | | |
| | | HV1 | | |
| | | HV2 | | |
| | HV3 | | | |
| | Analogue output | A3 | | |
| | | A6 | | |
| | Electrical connection | M16x1.5 cable gland | E1 | |
| | | M12 connector, 4 poles | | E9 |
| | Accessories | No accessories | | AC0 |
| | | M12x1 cable socket, for self assembly | | AC2 |
| Accredited Traceable Calibration Certificate in accordance with DIN EN ISO/IEC 17025 | | | see www.eplusecal.com | |

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 | |
| PCS10 Product Configuration Software (Free download: www.epluse.com/pcs10) | PCS10 | |
| Sensor connection cable, shielded, 5 poles, M12x1 socket ↔ wire ferrules | 1.5 m (3.3ft) | HA010819 |
| | 5 m (16.4 ft) | HA010820 |
| | 10 m (32.8 ft) | HA010821 |
| | | |
| Protection cap for M12 socket | HA010781 | |
| Protection cap for M12 plug | HA010782 | |
| Power supply adapter 24 V DC | V03 | |



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