EE820

CO_2 Transmitter for Demanding Applications

The EE820 is designed for use in harsh, demanding applications. 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.

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. With its robust, functional housing with a special integrated filter the EE820 can be installed in polluted applications such as in agriculture and live stock barns.
For fast response time requirements there is an EE820 version with forced air circulation created by a fan installed behind the filter. An optional M12 connector facilitates easy removal of EE820 before site cleaning operations.

The measured data range of up to 10,000ppm is available on the voltage or current analogue outputs. An optional kit facilitates easy configuration and adjustment of the EE820.

Typical Applications

Greenhouses
Fruit and vegetable storage
Stables
Hatchers and Incubators
Vehicles, Trains, Trams

Key Features

Autocalibration
Outstanding long-term stability
Temperature compensation
High resistance to pollution
Easy installation

Technical Data

Measured values

Measuring principle	dual wavelength non-dispersive infrared technology (NDIR)	
Measurement range	0...2000 / 5000 / 10000 ppm	
Accuracy at 25 °C and 1013 mbar (77 °F...14,7 psi)	0...2000 ppm:	< ± (50 ppm +2 % of measured value)
	0...5000 ppm:	< ± (50 ppm +3 % of measured value)
	0...10000 ppm:	< ± (100 ppm +5 % of measured value)
Response time τ_{63}	standard: typ. 300 s	
	fast: typ. 140 s (with a 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

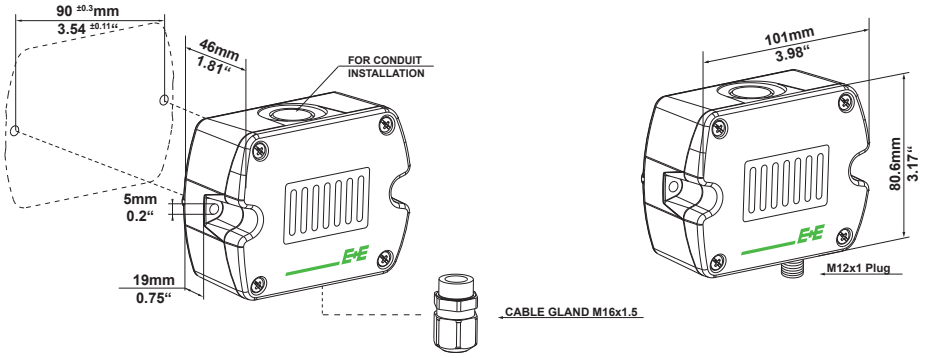
0...2000 / 5000 / 10000 ppm	0 - 5 / 0 - 10 V	-1mA < I_L < 1 mA
	4 - 20 mA	R_L < 500 Ohm

General

Supply voltage	24 V AC ±20%	15 - 35 V DC	
Current consumption	standard: typ. 15 mA + output current		
	fast: typ. 60 mA + output current		
Current peak	max. 350 mA for 0.3 s		
Warm up time[1)]	< 5 min		
Housing material	Polycarbonate, UL94V-0 approved		
Protection class	IP54		
Electrical connection	Screw terminals 2.5 mm² or M12 plug		
Electromagnetic compatibility	EN61326-1	EN61326-2-3	Industrial Environment
	FCC Part 15	ICES-003 ClassB	
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)		

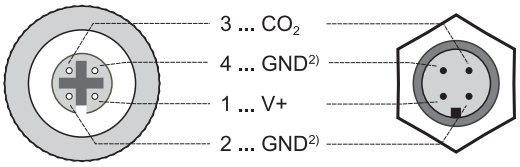
1) for performance according to specification

Dimensions (mm/inch)

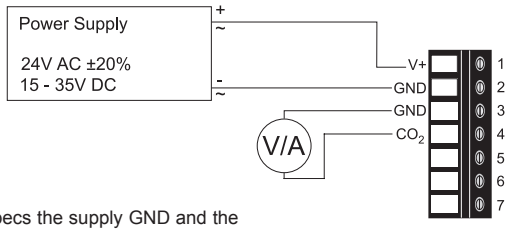


Connection Diagram

EE820 with M12 plug[1)]



EE820 with cable gland



1) Mating M12x1 connector for self assembly is included in the scope of supply
2) ***Very important:*** for failure-free operation and performance according to the specs the supply GND and the measurement GND must be wired separately.

Ordering Guide

MODEL		OUTPUT		HOUSING		CONNECTION		SCALING		RESPONSE TIME	
CO_2	(C)	0-5V	(2x)	standard	(P)	cable gland	(P)	0...2000ppm	(002)	standard	(S)
		0-10V	(3x)			M12 plug	(N)	0...5000ppm	(005)	fast[1)]	(F)
		4-20mA	(6x)					0...10000ppm	(010)		
EE820-											

1) Includes a forced air circulation module.

Order Example

EE820-C6xPP-002S

Model:	CO_2
Analog output:	4-20mA
Housing:	standard
Connection:	cable gland
Scaling:	0...2000ppm
Response time:	standard

Accessories (see data sheet „Accessories“)

Product configuration adapter	see data sheet EE-PCA
Product configuration software	EE-PCS (free download: www.epluse.com/EE820)
Mating connector 4pol. self assembly M12x1	HA010707
Connection cable 5 pins, M12x1 socket - flying leads,shielded, 1,5m (3.3ft)	HA010819
Connection cable 5 pins, M12x1 socket - flying leads,shielded, 5m (16.4ft)	HA010820
Connection cable 5 pins, M12x1 socket - flying leads,shielded, 10m (32.8ft)	HA010821
Protective cap for female M12 connectors	HA010781
Protective cap for male M12 connectors	HA010782
Power supply adapter	V03
Forced air circulation module	EE820-FAC
Replacement cover with filter	EE820-COVER

Scope of Supply

- EE820 Transmitter according to ordering guide
- Cable gland (only for EE820 with cable gland)
- Mounting set (screws and rowlplugs/screw anchors)
- Mating M12x1 connector for self assembly (only for EE820-CxxxNxx with installed M12x1 connector)
- Quick Guide - EE820 Connection Diagram (only for EE820 with M12 connector)
- Test report according to DIN EN 10204 – 2.2

Support Literature

www.epluse.com/EE820