EE850

CO_2 and Temperature Transmitter for Duct Mounting

The EE850 is designed for use in building management applications. A multiple point CO_2 and temperature factory adjustment procedure leads to excellent CO_2 measurement accuracy over the entire temperature working range.

The EE850 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.

Installed into a duct, a small amount of air will flow through the divided probe into the transmitter housing, where the CO_2 sensing cell is located, and back into the duct. The temperature sensor is located inside the probe.

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The CO_2 concentration up to 10,000ppm and the temperature are available on the voltage or current analogue outputs. The EE850 offers an additional option for a passive temperature sensor output with 2-wires connection. An optional kit facilitates easy configuration and adjustment of EE850.

Typical Applications

Building management
Demand controlled ventilation
Process control

Key Features

CO_2 Autocalibration
Outstanding long-term stability
Temperature compensation
Easy installation
IP65 / NEMA 4 enclosure

Technical Data

Measuring Values

CO_2

Measurement principle	dual wavelength non-dispersive infrared technology (NDIR)
Measuring range	0...2000 / 5000 / 10000ppm
Accuracy at 25°C (77°F) and 1013mbar (14.7psi)	0...2000ppm: < ± (50ppm +2% of measured value)
	0...5000ppm: < ± (50ppm +3% of measured value)
	0...10000ppm: < ± (100ppm +5% of measured value)
Response time τ_{63}	< 100s at 3m/s (590ft/min) air speed in the duct
Temperature dependency	typ. 1ppm CO_2/°C (-20...45°C) (-4...113°F)
Calibration interval [1]	>5 years
Sample rate	approx. 15s

Temperature

Working range	-20...60°C (-4...140°F); scaling see ordering guide
Accuracy at 20°C (68°F)	±0.3°C (±0.54°F)
Response time τ_{63}	< 50s

Outputs

Analogue Output

CO_2: 0...2000 / 5000 / 10000ppm	0 - 5 / 0 - 10V	-1mA < I_L < 1mA
T: according ordering guide	4 - 20mA	R_L < 500 Ohm

Passive T-Output

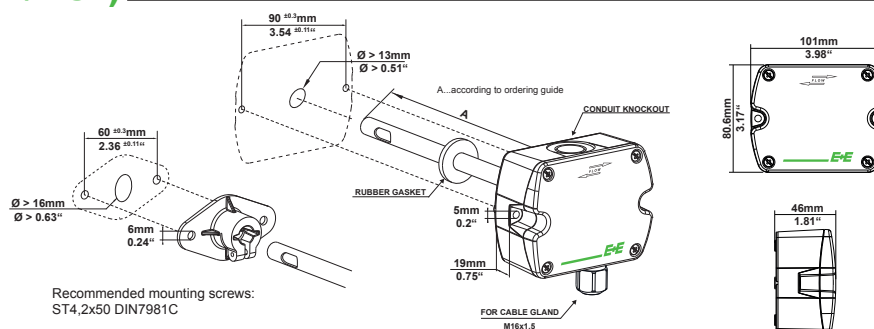|	
2-wire	see ordering guide
Wires resistance (terminal - sensor)	typ. 0.4 Ohm

General

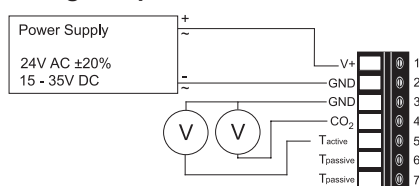|	
Supply voltage	24V AC ±20% 15 - 35V DC
Current consumption	typ. 15mA + output current
	max. 350mA for 0.3s
Min. flow speed	1m/s (196ft/min) recommended
Housing material	Polycarbonate, UL94V-0 approved
Protection class	Enclosure: IP65 / NEMA 4, probe: IP20
Cable gland	M16 x 1.5
Electrical connection	screw terminals max. 2.5 mm² (AWG 14)
Electromagnetic compatibility	EN61326-1 EN61326-2-3 Industrial Environment
	FCC Part 15 ICES-003 ClassB
Working and storage conditions	-20...60°C (-4...140°F) 0...95% RH (non-condensing)

[1] under normal operating conditions
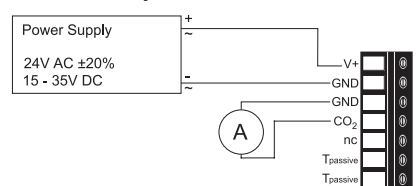
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Dimensions (mm/inch)

90 ±0.3mm
3.54 ±0.11"

Ø > 13mm
Ø > 0.51"

A...according to ordering guide

CONDUIT KNOCKOUT

60 ±0.3mm
2.36 ±0.11"

RUBBER GASKET

Ø > 16mm
Ø > 0.63"

6mm
0.24"

5mm
0.2"

19mm
0.75"

Recommended mounting screws:
ST4,2x50 DIN7981C

FOR CABLE GLAND
M16x1,5

101mm
3.98"

80.6mm
3.17"

46mm
1.81"

Connection Diagram

Voltage output

Power Supply

24V AC ±20%
15 - 35V DC

V+	1
GND	2
GND	3
CO₂	4
T active	5
T passive	6
T passive	7

Current output

Power Supply

24V AC ±20%
15 - 35V DC

V+	1
GND	2
GND	3
CO₂	4
nc	5
T passive	6
T passive	7

Ordering Guide

Voltage output

MODEL		ANALOGUE		DIGITAL		PASSIVE T-SENSOR[1]		PROBE LENGHT (see dimensions „A")		HOUSING	
CO₂	(C)	0-5V	(2)	none	(x)	Pt1000A	(C)	50mm (1.97")	(B)	standard	(P)
CO₂+T	(CT)	0-10V	(3)			NTC10k	(E)	200mm (7.87")	(F)		
						Ni1000, TK6180	(J)				
						none	(x)				
EE850-											

1) only available for CT model

Current output

MODEL		ANALOGUE		DIGITAL		PASSIVE T-SENSOR		PROBE LENGHT (see dimensions „A")		HOUSING	
CO₂	(C)	4-20mA	(6)	none	(x)	Pt1000A	(C)	50mm (1.97")	(B)	standard	(P)
						NTC10k	(E)	200mm (7.87")	(F)		
						Ni1000, TK6180	(J)				
						none	(x)				
EE850-											

OUTPUT 1		OUTPUT 2					
CO2 SCALING		**PARAMETER**		**SCALING[1]**		**UNIT**	
0...2000ppm	(002)	Temperature	(T)	0...50	(004)	metric	(M)
0...5000ppm	(005)			-5...55	(031)	non-metric	(N)
0...10000ppm	(010)			0...40	(055)		
				20...120	(015)		
				32...122	(076)		
				32...132	(096)		

1) other scaling upon request

Odering Example

EE850-CT3xCFP-002T031M

Model:	CO₂ + T	Output 1	
Analog:	0-10V	CO₂ scaling:	0...2000ppm
Passive T-sensor:	Pt1000A	Output 2	
Probe lenght:	200mm	Parameter:	Temperature
Housing:	standard	Scaling:	-5..55
		Unit:	metric

Accessories (see data sheet „Accessories")

Product configuration adapter	see data sheet EE-PCA
Product configuration software	EE-PCS (free download: www.epluse.com/EE850)
Power supply adapter	V03

Support Literature

www.epluse.com/EE850