EE850

CO_2 / Temperature Transmitter for Duct Mounting

The duct mounted CO_2/T sensors, EE850, are designed for building management, and allow for an accurate, long-term stable, measurement of CO_2 concentration and temperature.
The compact and stylish design allows for very easy mounting, using a simple mounting flange.
The CO_2 sensing element uses Non-Dispersive Infrared Technology (NDIR). A patented auto-calibration procedure compensates for drift caused by the aging of the sensing element and guarantees outstanding long term stability.
Installed into a duct, a small flow of air will be established by convection through the probe into the transmitter housing and back into the duct. Inside the transmitter housing the air will diffuse through a membrane into the CO_2 sensing element.
The operation in closed loop air streams avoids pollution of the CO_2 sensor.

EE850

Typical Applications

building management for residental and office areas
ventilation control

Features

very simple installation
compact housing
excellent long term stability
maintenance free

Technical Data

Measuring Values

CO_2

Measurement principle	Non-Dispersive Infrared Technology (NDIR)	
Sensing element	E+E Dual Detector Infrared System	
Measuring range	0...2000 / 5000 / 10000ppm	
Accuracy at 25°C (77°F) and 1013mbar (14.696psi)	0...2000ppm:	< ± (50ppm +2% of measuring value)
	0...5000ppm:	< ± (50ppm +3% of measuring value)
	0...10000ppm:	< ± (100ppm +5% of measuring value)
Response time τ_{63}	< 250s at 3m/s (590ft/min)	
Temperature dependence	typ. 2ppm CO_2/°C	
Long term stability	typ. 20ppm / year	
Sample rate	approx. 15s	

Temperature

Accuracy at 20°C (68°F)	±0.3°C (±0.54°F)
Response time τ_{63}	< 120s at 3m/s (590ft/min) air velocity

Outputs

Analogue Output

0...2000 / 5000 / 10000ppm	0 - 5V	-1mA < I_L < 1mA
0...50°C	0 - 10V	-1mA < I_L < 1mA

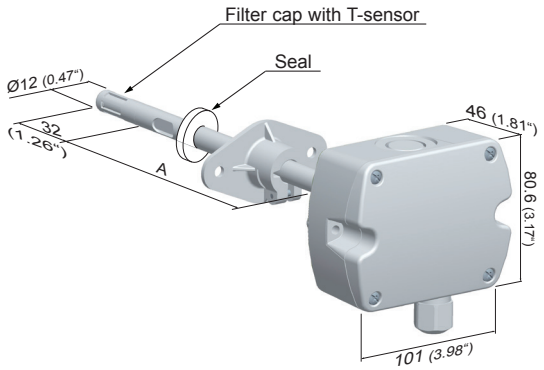
General

Supply voltage	24V AC ±20%	15 - 35V DC
Current consumption	typ. 12mA + output current max. 0.2A for 0.3s	
Warm up time[1)]	< 5 min (for CO_2 only)	
Min. flow speed	1m/s (196ft/min)	
Housing / protection class	plastic PC (RAL7035) / housing: IP65, probe: IP20 housing material: UL94-V0 approved / duct: flammability class UL94-HB	
Cable gland	M16 x 1.5	
Electrical connection	screw terminals max. 1.5 mm^2 (AWG 16)	
Electromagnetic compatibility	EN61326-1 EN61326-2-3	CE
Working temperature and conditions	0...50°C (32...122°F)	0...95% RH (non-condensing)
Storage temperature and conditions	-20...60°C (-4...140°F)	0...95% RH (non-condensing)

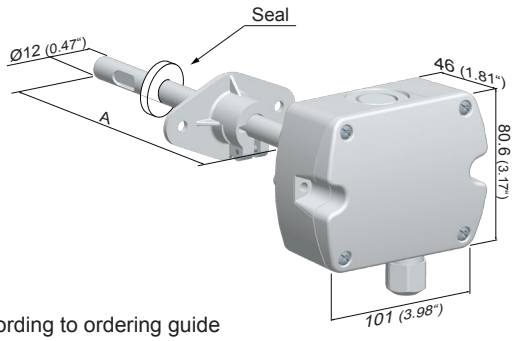
1) warm up time for performance according to specification

Dimensions (mm)

Version with T-sensor

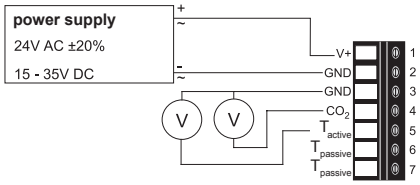


Version without T-sensor



„A"...according to ordering guide

Connection Diagram



Ordering Guide

Configuration

MEASURING RANGE	MEASURANDS	ANALOGUE OUTPUT	DIGITAL OUTPUT	PASSIVE T-SENSOR	PROBE LENGTH	HOUSING	FILTER
0... 2000ppm (02)	CO_2 (Cx)	0-5V (2)	analogue output (x)	Pt1000A (C)	200mm (7.87") (F)	polycarbonate (P)	membrane filter (B)
0... 5000ppm (05)	CO_2+T_{active} (CT)	0-10V (3)		NTC10k (E)			no T-measurement (x)
0... 10000ppm (10)				NTC20k (F)			
				no (x)			
EE850-							

Temperature parameters (for version CO_2+T_{active})

UNIT	SCALING OF OUTPUT	SCALING	
metric (M)	temperature (Tx)	°C	°F
non-metric (N)		-40...60 (002)	0...180 (026)
		-10...50 (003)	+32...122 (076)
		0...50 (004)	-40...140 (083)
		-20...80 (024)	
		further scalings refer to data sheet „Scaling of T-outputs"	

Odering Example

EE850-02Cx2xxFPx

Measuring range:	0...2000ppm
Measurands:	CO_2
Analogue output:	0-5V
Digital output:	no
Passive T-sensor:	no
Probe length:	200mm (7.87")
Housing:	polycarbonate
Filter:	no

EE850-05CT3xCFPB-MTx002

Measuring range:	0...5000ppm
Measurands:	CO_2+temperature active
Analogue output:	0-10V
Digital output:	no
Passive T-sensor:	Pt1000A
Probe length:	200mm (7.87")
Housing:	polycarbonate
Filter:	membrane filter
Unit:	metric
Scaling of output:	temperature
Scaling:	-40...60°C