

# EE850

## CO<sub>2</sub> and Temperature Transmitter for Duct Mounting

The EE850 is designed for use in building management applications. A multiple point CO<sub>2</sub> and temperature factory adjustment procedure leads to excellent CO<sub>2</sub> measurement accuracy over the entire temperature working range.

The EE850 incorporates the E+E dual wavelength NDIR CO<sub>2</sub> 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<sub>2</sub> sensing cell is located, and back into the duct. The temperature sensor is located inside the probe.

The CO<sub>2</sub> 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.



EE850

### Typical Applications

Building management  
 Demand controlled ventilation  
 Process control

### Key Features

CO<sub>2</sub> Autocalibration  
 Outstanding long-term stability  
 Temperature compensation  
 Easy installation

### Technical Data

#### Measuring Values

##### CO<sub>2</sub>

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 measuring value) 0...5000ppm: < ± (50ppm +3% of measuring value) 0...10000ppm: < ± (100ppm +5% of measuring value)

Response time $\tau_{63}$	< 100s at 3m/s (590ft/min) air speed in the duct
Temperature dependency	typ. 1ppm CO <sub>2</sub> /°C (-20...45°C) (-4...113°F)
Sample rate	approx. 15s

##### Temperature active

Accuracy at 20°C (68°F)	±0.3°C (±0.54°F)
Response time $\tau_{63}$	< 50s

#### Outputs

##### Analogue Output

CO <sub>2</sub> : 0...2000 / 5000 / 10000ppm	$\left\{ \begin{array}{l} 0 - 5 / 0 - 10V \quad -1mA < I_L < 1mA \\ 4 - 20mA \quad R_L < 500 \text{ Ohm} \end{array} \right.$
T: according ordering guide	

##### Passive T-Output

2-wire connection, sensor type according ordering guide

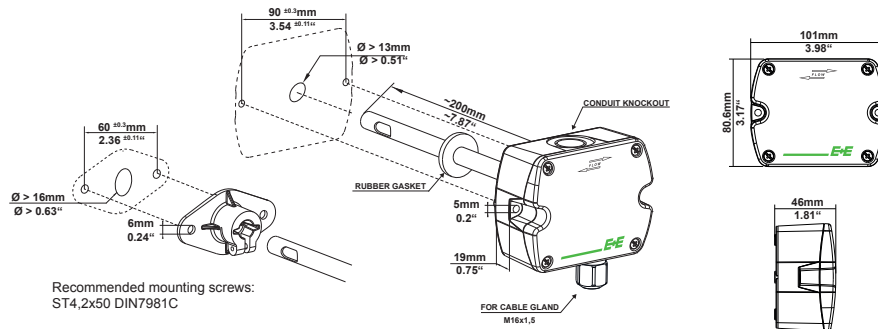
#### General

Supply voltage	24V AC ±20%	15 - 35V DC
Current consumption	typ. 15mA + output current max. 0.5A for 0.3s	
Warm up time <sup>1)</sup>	< 5 min (for CO <sub>2</sub> only)	
Min. flow speed	1m/s (196ft/min) recommended	
Housing material	Polycarbonate, UL94V-0 approved	
Protection class	Enclosure: IP65, probe: IP20	
Cable gland	M16 x 1.5	
Electrical connection	screw terminals max. 2.5 mm <sup>2</sup> (AWG 14)	
Electromagnetic compatibility	EN61326-1	EN61326-2-3 Industrial Environment
	FCC Part 15	ICES-003 ClassB
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) for performance according to specification

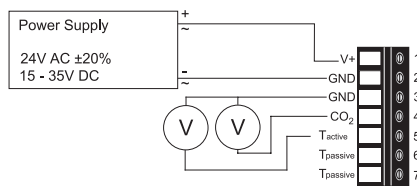


## Dimensions (mm/inch)

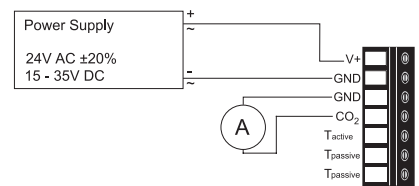


## Connection Diagram

### Voltage output



### Current output



## Ordering Guide

### Voltage output

MODEL	ANALOGUE	DIGITAL	PASSIVE T-SENSOR	PROBE LENGTH	HOUSING
CO <sub>2</sub> (C)	0-5V (2)	none (x)	Pt1000A (C)	200mm (F)	standard (P)
CO <sub>2</sub> +T <sub>active</sub> (CT)	0-10V (3)		NTC10k (E)		
CO <sub>2</sub> +T <sub>active</sub> +T <sub>passive</sub> (CTP)			none (x)		
<b>EE850-</b>					

### Current output

MODEL	ANALOG	DIGITAL	PASSIVE T-SENSOR	PROBE LENGTH	HOUSING
CO <sub>2</sub> (C)	4-20mA (6)	none (x)	Pt1000A (C)	200mm (F)	standard (P)
CO <sub>2</sub> +T <sub>passive</sub> (CP)			NTC10k (E)		
			none (x)		
<b>EE850-</b>					

OUTPUT 1	OUTPUT 2		
CO2 SCALING	PARAMETER	SCALING <sup>1)</sup>	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

## Ordering Example

### EE850-CTP3xCFP-002T031M

Model:	CO <sub>2</sub> + T <sub>active</sub> + T <sub>passive</sub>	Output 1	
Analog:	0-10V	CO <sub>2</sub> scaling:	0...2000ppm
Passive T-sensor:	Pt1000A	Output 2	
Probe length:	200mm	Parameter:	Temperature
Housing:	standard	Scaling:	-5..55
		Unit:	metric

## Accessories

Configurations kit consisting of:

- Product configuration adapter
- Product configuration software
- Connection cable

EE-PCA (data sheet EE-PCA)

EE-PCS (free download: [www.epluse.com/EE850](http://www.epluse.com/EE850))

HA011062

## Support Literature

[www.epluse.com/EE850](http://www.epluse.com/EE850)

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