EE85 Series

CO_2 Transmitter and Switches for Duct Mounting

Duct mounted CO_2 transmitters and switches of the EE85 series are designed for HVAC applications. The CO_2 sensing element uses the 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 stream avoids pollution of the CO_2 sensor.
Measuring ranges of 0...2000ppm and 0...5000ppm correspond to an analogue interface of 0 - 5/10V or 4 - 20mA. Selectively a switching output with adjustable switching point and hysteresis is available. The instruments can be easily positioned in the duct with the standard mounting flange.

Typical Applications

building management for residental and office areas
ventilation control

Features

very simple installation
compact housing
auto-calibration
traceable calibration
measuring ranges: 0...2000ppm or 0...5000ppm
analogue or switching output

Technical Data

Measuring Values

CO_2

Measurement principle		Non-Dispersive Infrared Technology (NDIR)
Sensing element		E+E Dual Source Infrared System
Measuring range		0...2000ppm / 0...5000ppm
Accuracy at 20°C (68°F) and 1013mbar	0...2000ppm:	< ± (50ppm +2% of measuring value)
	0...5000ppm:	< ± (50ppm +3% of measuring value)
		Traceable to international standards, administrated by NIST, PTB, BEV...
Response time τ_{63} [1]		< 120s
Temperature dependence		typ. 2ppm CO_2/°C
Long term stability		typ. 20ppm / year
Sample rate		ca. 30s

Outputs

Analogue Outputs

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

Switching Output

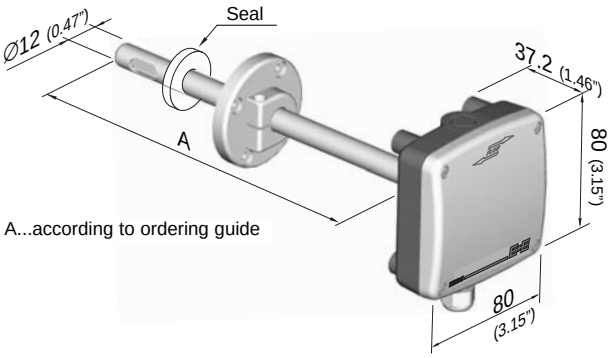
Max. switching voltage	50V AC / 60V DC	
Max. switching load	1A at 50V AC	1A at 24V DC
Min. switching load	1mA at 5V DC	
Contact material	Ag+Au clad	

General

Supply voltage SELV	24V AC ±20%	15 - 35V DC	SELV = Safety Extra Low Voltage
Power requirement	< 3W		
Warm up time [2]	< 5 min		
Housing / protection class	PC / housing: IP65, probe: IP20		
Cable gland	M16 x 1.5	cable Ø 4.5 - 10 mm (0.18 - 0.39")	
Electrical connection	screw terminals max. 1.5 mm^2 (AWG 16)		
Electromagnetic compatibility	EN 61000-6-3	ÖVE EN61326-1+A1+A2:05.2002	CE
	EN 61000-6-1	FCC Part 15 ICES-003 ClassB	
Working temperature and conditions	-5...55°C (23...131°F)	0...95% RH (not condensating)	
Storage temperature and conditions	-20...60°C (-4...140°F)	0...95% RH (not condensating)	

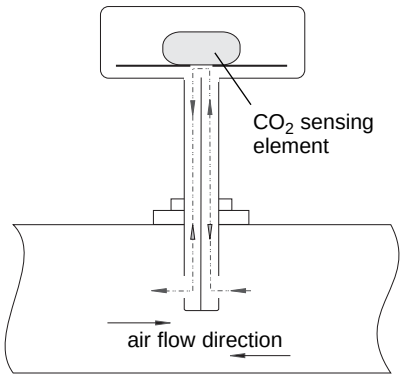
1) minimum flow speed 1m/s (200ft/min)
2) warm up time for performance according to specification

Dimensions (mm)



A...according to ordering guide

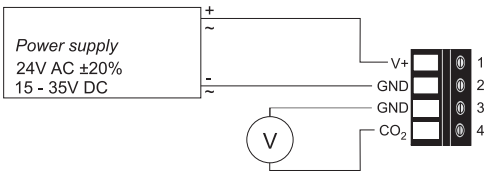
Operation Principle



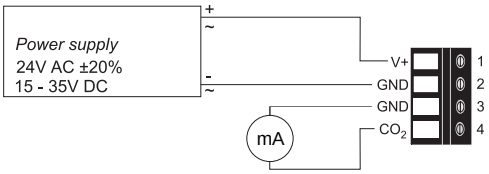
Connection Diagram

Analogue Outputs

EE85-xC2/3x

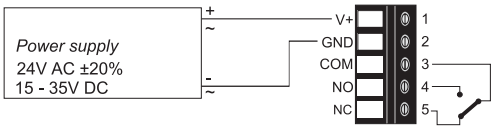


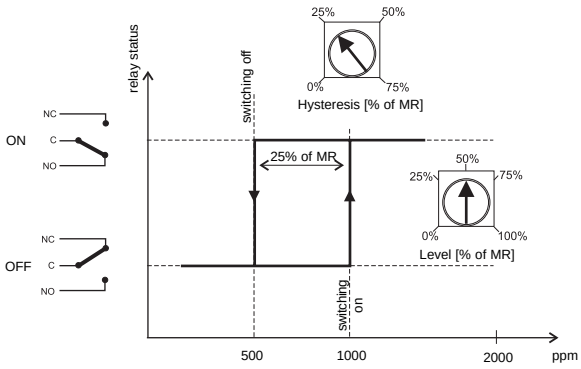
EE85-xC6x



Switching Output

EE85-xCSx





Ordering Guide

MEASURING RANGE	MODEL	OUTPUT	PROBE LENGTH (see dimensions "A")
0...2000ppm (2)	CO_2 (C)	0 - 5V (2)	50mm (2)
0...5000ppm (5)		0 - 10V (3)	200mm (5)
		4 - 20mA (6)	
		switching output (S)	
EE85-			

Order Example

EE85-5C35

measuring range:	0...5000ppm
model:	CO_2
output:	0 - 10V
probe length:	200mm