

EE80 Series

HVAC Room Transmitter and Switches for CO₂, Relative Humidity and Temperature

EE80 series set new standards in CO₂ measurements for HVAC. The transmitters resp. switches combine CO₂, relative humidity (RH) and temperature (T) measurement in one modern and user-friendly housing.

The basic EE80 version for CO₂ and T can be easily extended with a RH plug-in module.

The CO₂ measurement is based on the infrared principle. A patented auto-calibration procedure compensates for the aging of the infrared source and ensures outstanding long term stability.

EE80 provides analogue outputs (in V or mA). The optional display indicates sequentially the actual measuring data.

As one more option a switching output with adjustable switching point and hysteresis is available.

A wide variety of models ensures an optimal adjustment for customised requirements.



EE80

Typical Applications

building management for residential and office areas
 ventilation control

Features

CO₂ / RH / T measurement in one device
 RH output with plug-in module
 analogue or switching output
 modern design
 optional display
 easiest installation
 long-term stable

Technical Data

Measuring values

CO₂

Measurement principle	Non-Dispersive Infrared Technology (NDIR)	
Sensor	E+E Dual Source Infrared System	
Working range	0...2000 / 5000ppm	
Accuracy at 25°C (77°F)	0...2000ppm:	< ± (50ppm +2% of measuring value)
and 1013mbar	0...5000ppm:	< ± (50ppm +3% of measuring value)
Response time t ₆₃	< 195s	
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)	version with current output 4 - 20mA: ±0.7°C (±1.26°F)
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Relative Humidity

Measurement principle	capacitive	
Sensor element	HC103	
Working range ¹⁾	10...90% RH	
Accuracy at 20°C (68°F)	±3% RH (30...70% RH)	±5% (10...90% RH)

Outputs

Analogue Output

0...2000 / 5000ppm /	0 - 5V	-1mA < I _L < 1mA
0...100% RH / 0...50°C (32...122°F)	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 30V DC
Min. switching load	1mA at 5V DC	
Contact material	Ag+Au clad	

General

Supply voltage	5 - 35V DC	
Current consumption	typ. 10mA + output current max. 0.5A for 0.3s	
Warm up time ²⁾	< 5 min	

Display	LC display: alternating CO ₂ (ppm) / T (°C or °F) / RH (% RH)
Electrical connection	screw terminals max. 1.5 mm ² (AWG16)
Electromagnetic compatibility	EN61326-1 FCC Part 15 EN61326-2-3 ICES-003 ClassB
Working temperature range	0...90% RH (non condensing) / -20...60°C (-4...140°F)
Storage temperature range	0...90% RH (non condensing) / -20...60°C (-4...140°F)

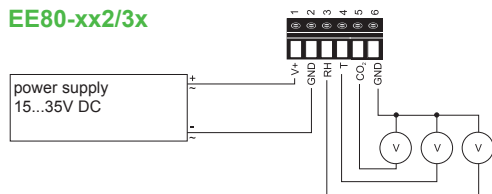
1) refer to the working range of the humidity sensor HC103!
2) warm up time for performance according specification



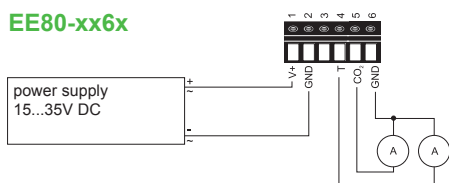
Connection Diagram

Analogue Output

EE80-xx2/3x

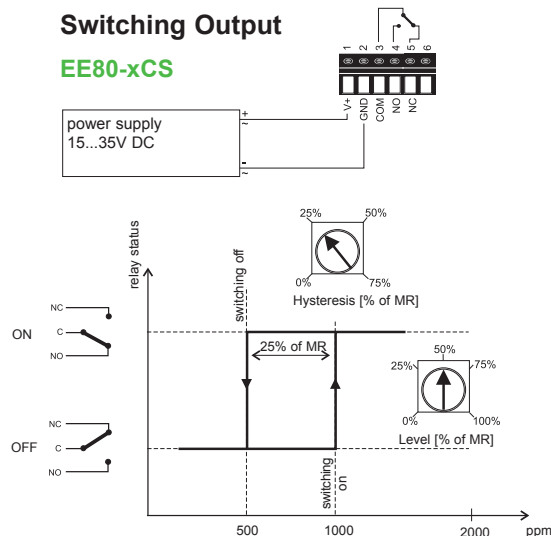


EE80-xx6x

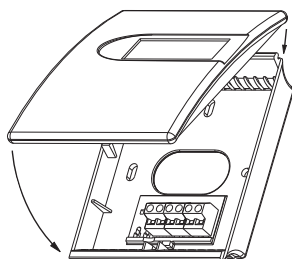


Switching Output

EE80-xCS



Housing Dimensions (mm)



W x H x D = 85 x 100 x 26mm (3.3 x 3.9 x 1")

Material of housing: PC
Protection class: IP30

Colour of housing: Cover: RAL 9003 (signal white)
Back: RAL 7035 (light grey)

Ordering Guide

EE80 voltage / current output:

WORKING RANGE	MODEL	OUTPUT	DISPLAY	T-UNIT	T-SCALE
0...2000ppm (2)	CO ₂ + T (CT)	0-5V (2)	without display (-)	°C (-)	0...50 (T04)
0...5000ppm (5)	CO ₂ + T + RH (CTF)	0-10V (3) 4-20mA ¹⁾ (6)	with display (D04)	°F (E01)	-5...55 (T31) 0...40 (T55) other (Txx)
EE80-					

1) current output (6) not available for model CTF

EE80 switching output:

WORKING RANGE	MODEL	OUTPUT	DISPLAY
0...2000ppm (2)	CO ₂ (C)	switching output (S)	without display (-)
0...5000ppm (5)			with display (D04)
EE80-			

Order Example

EE80-2CT3D04-T04

Version with voltage output:
Working range: 0...2000ppm
Model: CO₂ + T
Output: 0-10V
Display: with display
T-Unit: °C
T-Scale: 0...50°C (32...122°F)

Accessories

- humidity plug-in module (HA011003)