

EE80 series set new standards in CO<sub>2</sub> measurements for HVAC. The transmitters resp. switches combine CO<sub>2</sub>, relative humidity (RH) and temperature (T) measurement in one modern and user-friendly housing.

The basic EE80 version for CO<sub>2</sub> and T can be easily extended with a RH plug-in module.

The CO<sub>2</sub> 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.



## Typical Applications

building management for residential and office areas  
ventilation control

## Features

CO<sub>2</sub> / 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

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

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) and 1013mbar	0...2000ppm:	< ± (50ppm +2% of measuring value)
	0...5000ppm:	< ± (50ppm +3% of measuring value)
Response time t <sub>95</sub>	< 195s	
Temperature dependence	typ. 2ppm CO <sub>2</sub> /°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 <sup>1)</sup>	10...90% RH	
Accuracy at 20°C (68°F)	±3% RH (30...70% RH)	±5% (10...90% RH)

#### Temperature (passive output)

Type of T-Sensor	please see ordering guide	
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### Outputs

#### Analogue Output

0...2000 / 5000ppm /	0 - 5V	-1mA < I <sub>L</sub> < 1mA
0...100% RH / 0...50°C (32...122°F)	0 - 10V	-1mA < I <sub>L</sub> < 1mA
	4 - 20mA	R <sub>L</sub> < 500 Ohm

#### Switching Output

Max. switching voltage	50V AC / 60V DC	
Max. switching load	0.7A at 50V AC	1A at 24V DC
Min. switching load	1mA at 5V DC	
Contact material	Ag+Au clad	

### General

Supply voltage	24V AC ±20%	15 - 35V DC
Current consumption	typ. 10mA + output current max. 0.5A for 0.3s	
Warm up time <sup>2)</sup>	< 5 min	

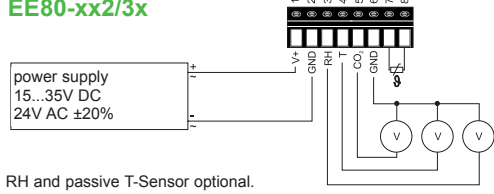
Display	LC display: alternating CO <sub>2</sub> (ppm) / T (°C or °F) / RH (% RH)
Electrical connection	screw terminals max. 1.5 mm <sup>2</sup> (AWG16)
Electromagnetic compatibility	EN61326-1 FCC Part 15
	EN61326-2-3 ICES-003 ClassB
Working temperature range	0...90% RH (non condensing) / -20...60°C (-4...140°F)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

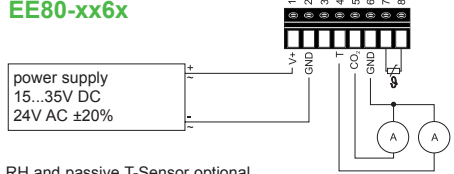
### Analogue Output

#### EE80-xx2/3x



RH and passive T-Sensor optional.

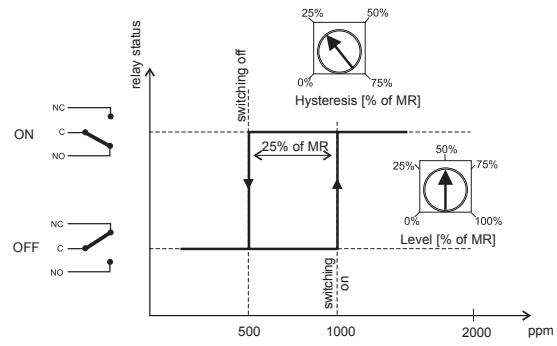
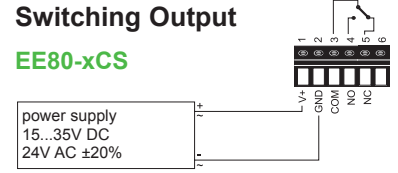
#### EE80-xx6x



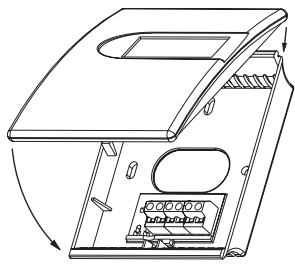
RH and passive T-Sensor optional.

### 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	T-SENSOR (only passive)	DISPLAY	T-UNIT	T-SCALE
0...2000ppm (2)	CO <sub>2</sub> + T (CT)	0-5V (2)	Pt 100 DIN A (A)	ohne Display (-)	°C (-)	0...50 (T04)
0...5000ppm (5)	CO <sub>2</sub> + T <sub>passiv</sub> (CP)	0-10V (3)	Pt 1000 DIN A (C)	mit Display (D04)	°F (E01)	-5...55 (T31)
	CO <sub>2</sub> + T + rF (CTF)	4-20mA <sup>3)</sup> (6)				0...40 (T55)
						andere (Txx)
<b>EE80-</b>						

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

### EE80 switching output:

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

## Order Example

### EE80-2CT3D04-T04

Version with voltage output:  
 Working range: 0...2000ppm  
 Model: CO<sub>2</sub> + T  
 Output: 0-10V  
 Display: with display  
 T-Unit: °C  
 T-Scale: 0...50°C (32...122°F)

## Accessories

- humidity plug-in module (HA011003)