

# EE08

## High-Precision Miniature Humidity / Temperature Transmitter

Accurate humidity / temperature measurement over a wide working range, fitted in a small-sized housing and high flexibility have been the main goals for the development of the EE08 series.

Low power consumption and short start-up time support efficient energy management for battery operated systems. For this application an additional version (V10) with supply voltage 4.5-15 V DC has been developed.

Calibration data and other relevant functions like linearization or temperature compensation are stored in the probe. This feature, together with the optional connector, allows for easy replacement of the probe without a need for re-adjustment of the reading device (interchangeability).

The humidity and temperature measurement are available as analogue outputs (0-1/2.5/5 V) and as a digital interface (E2-interface). Easy implementation and data processing is warranted. Humidity and temperature reading can be re-adjusted using the calibration software; available as an accessory. The configuration equipment allows humidity and temperature adjustment of the sensor.



### Typical Applications

- meteorology / weather stations
- humidity / temperature data logging
- incubators
- fermentation chambers
- green houses
- snow machines
- dry storage facilities

### Features

- small dimensions
- wide working range, high accuracy
- traceable calibration
- customer adjustment possible
- interchangeable in seconds
- low power consumption / short start-up time
- analogue outputs / digital interface

### Technical Data

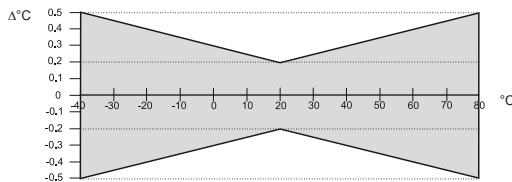
#### Measuring values

##### Relative Humidity

Sensor	HC101	
Working range <sup>1)</sup>	0...100 % RH	
Digital output (2 wire) <sup>2)</sup>	output value: 0.00...100.00 % RH	
Analogue output 0...100 % RH	0-1/2.5/5/10 V	-0.2 mA < I <sub>L</sub> < 0.2 mA
Accuracy at 20 °C (68 °F) and 12 V DC <sup>3)</sup>	±2 % RH (0...90 % RH)	±3 % RH (90...100 % RH)
Temperature dependence	typ. 0.03 % RH/°C (typ. 0.02 % RH/°F)	

##### Temperature

Sensor	Pt 1000 (DIN A)	
Digital output (2 wire) <sup>2)</sup>	output value: -40.00...+80.00 °C (-40...176 °F)	
Analogue output	0-1/2.5/5/10 V	-0.2mA < I <sub>L</sub> < 0.2 mA
Accuracy at 12/24V DC		



#### General

Supply voltage	output 0-1 V / 0-2.5 V	4.5-15 V DC or 7-30 V DC
	output 0-5 V	7-30 V DC
	output 0-10 V	12-30 V DC
Current consumption	typ. < 1.3 mA	
Digital interface	E2-interface	level = 3.3 V / ±0.1 V
Housing	polycarbonate / IP65	
Sensor protection	metal grid filter	
Electromagnetic compatibility	EN61326-1	EN61326-2-3
	Industrial Environment	
Temperature ranges	working temperature: -40...80 °C (-40...176 °F)	
	storage temperature: -40...80 °C (-40...176 °F)	

<sup>1)</sup> refer to the working range of the humidity sensor HC101

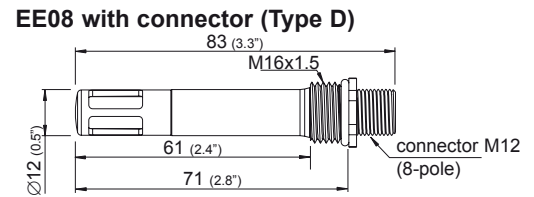
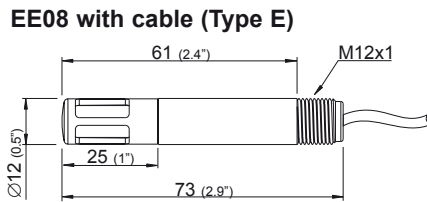
<sup>2)</sup> serial protocol refer to www.epluse.com

<sup>3)</sup> The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).

The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).



## Dimensions (mm)



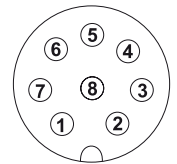
## Connection Diagram

### Type E:

	Temp. active	Temp. passive, 4-wire
T-passive	white (not connected)	white, black
T-passive	blue (not connected)	blue, violet
GND	pink	pink
T-out	grey	grey (not connected)
RH-out	yellow	yellow
SCL } E2-interface	green	green
SDA }	brown	brown
+UB	red	red

### Type D:

1	T-passive
2	SDA
3	SCL
4	RH-out
5	T-out
6	GND
7	T-passive
8	+UB



## Ordering Guide

HOUSING	MODEL	OUTPUT	SUPPLY	T-SENSOR <sup>3)</sup> (passive, 4-wire)	TYPE
polycarbonate (P)	humidity active / temperature active (FT)	0 - 1 V <sup>1)</sup> (1)	4.5 - 15 V DC (V10)	Pt 100 DIN A (A)	with connector (D)
	humidity active / temperature passive (FP)	0 - 2.5 V <sup>1)</sup> (7)	7 - 30 V DC (V11)	Pt 1000 DIN A (C)	with cable (E)
		0 - 5 V <sup>2)</sup> (2)			
		0 - 10 V <sup>2)</sup> (3)			

EE08-	FILTER	COATING	CABLE LENGTH (Type E only)	T-UNIT	T-SCALING
	metal grid filter (6)	without coating (no code) with coating (HC01)	1 m (3.3ft) (01) 2 m (6.6ft) (02) 5 m (16.4ft) (05)	metric (no code) non metric (E01)	-40...80 (T22) -40...60 (T02) -30...70 (T08) -20...80 (T24) -20...50 (T48) other (Txx)

1) possible with supply 4.5 - 15 V DC (V10) or 7 - 30 V DC (V11)  
2) possible with supply 7 - 30 V DC (V11) only  
3) T-Sensor details see [www.epluse.com/R-T\\_Characteristics](http://www.epluse.com/R-T_Characteristics)

## Order Example

### EE08-PFT2V11E602T22

housing: polycarbonate  
model: humidity active / temp. active  
output: 0 - 5V  
supply: 7 - 30V DC  
type: with cable

filter: metal grid filter  
coating: without  
cable length: 2m (6.6ft)  
T-unit: metric  
T-scaling: -40...80°C

## Scope of Supply

- EE08 Transmitter according to ordering guide
- Inspection certificate according to DIN EN10204 - 3.1

## Accessories / Replacement Parts

- M12 connection cable for type D, length 1.5 m (5 ft) (HA010322)
- M12 connection cable for type D, length 3 m (10 ft) (HA010323)
- M12 connection cable for type D, length 5 m (16.4 ft) (HA010324)
- M12 connection cable for type D, length 10 m (32.8 ft) (HA010325)
- Radiation shield for Type E (HA010502)
- Radiation shield for Type D (HA010506)
- Protection cap for 12 mm probe (HA010783)
- M12 female socket with wires (HA010703)
- M12 female cable connector assembly possible (HA010704)
- metal grid filter (HA010113)

**Configuration equipment:** The configuration equipment allows humidity and temperature adjustment of the sensor.

- configuration cable (HA011005)
- configuration software: free download under [www.epluse.com/EE08](http://www.epluse.com/EE08)

