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).

with cable
with connector

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[1]	0...100 % RH	
Digital output (2 wire)[2]	output value: 0.00...100.00 % RH	
Analogue output 0...100 % RH	0-1/2.5/5/10 V	-0.2 mA $< I_L < 0.2$ mA
Accuracy at 20 °C (68 °F) and 12 V DC[*]	±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)[2]	output value: -40.00...+80.00 °C (-40...176 °F)	
Analogue output	0-1/2.5/5/10 V	-0.2 mA $< I_L < 0.2$ mA
Accuracy at 12/24V DC		
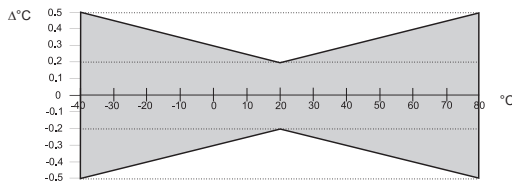
General

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)	

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1) refer to the working range of the humidtiy sensor HC101   2) serial protocol refer to www.epluse.com
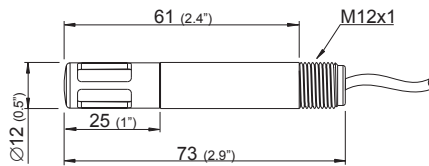*) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).
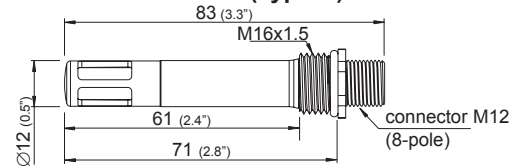 The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).
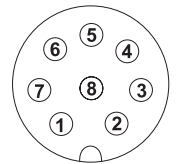
Dimensions (mm)

EE08 with cable (Type E)

61 (2.4")   M12x1
25 (1")
73 (2.9")
Ø12 (0.5")

EE08 with connector (Type D)

83 (3.3")
M16x1.5
61 (2.4")
71 (2.8")
Ø12 (0.5")
connector M12 (8-pole)

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 } E2-interface
3	SCL
4	RH-out
5	T-out
6	GND
7	T-passive
8	+UB

Ordering Guide

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

EE08-

FILTER	COATING		CABLE LENGTH (Type E only)		T-UNIT		T-SCALING	
metal grid filter **(6)**	without coating	**(no code)**	1 m (3.3ft)	**(01)**	metric	**(no code)**	-40...80	**(T22)**
	with coating	**(HC01)**	2 m (6.6ft)	**(02)**	non metric	**(E01)**	-40...60	**(T02)**
			5 m (16.4ft)	**(05)**			-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

Order Example

EE08-PFT2V11E602T22

housing:	polycarbonate	filter:	metal grid filter
model:	humidity active / temp. active	coating:	without
output:	0 - 5V	cable length:	2m (6.6ft)
supply:	7 - 30V DC	T-unit:	metric
type:	with cable	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

PC   HA011005