![E+E ELEKTRONIK logo] **E+E** *YOUR PARTNER IN SENSOR TECHNOLOGY* **ELEKTRONIK** ® *Ges.m.b.H.*

EE08

High-Precision Miniature Humidity and Temperature Probe

The EE08 reliably measures the relative humidity (RH) and the temperature (T) in indoor and outdoor applications. Outstanding temperature compensation leads to excellent accuracy over the wide working range 0...100 % RH and -40...80 °C (-40...176 °F).

Versatility
EE08 features analogue outputs for RH and T, passive T output and E2 digital interface. The small size, the choice of M12 connector or fix mounted cable and the very wide voltage supply range facilitate the EE08 integration in most of the applications.

Long Term Performance
The long term accuracy and stability of the EE08 rest on the high end E+E humidity sensing elements manufactured in state of the art thin film technology. The E+E proprietary coating leads to best long term performance even in dirty, dusty and corrosive environment.

Energy Efficiency
Due to very low power consumption, voltage supply range down to 4.5 V DC and short start-up time, the EE08 is suitable for battery powered devices.

Outdoor Use
For meteorology and other outdoor use, the EE08 can be fitted with radiation shields appropriate for the product version with connector or with fix mounted cable.

User Configurable and Adjustable
An optional configuration adapter and the free EE-PCS Product Configuration Software facilitate the configuration and adjustment of the EE08.

Features

Measurement Performance
» Accurate and long-term stable RH and T measurement
» Wide temperature range -40...+80 °C

Sensing Elements
» Protected by
  - E+E proprietary coating
  - Metal grid filter
» Active or passive T measurement

Enclosure and Connection
» Small dimensions
» IP65, polycarbonate
» M12x1 connector, 8 poles
» Cable up to 5 m

Electronics
» Output 0 - 1 / 2.5 / 5 / 10 V
» E2 interface
» Low power consumption and short start up time
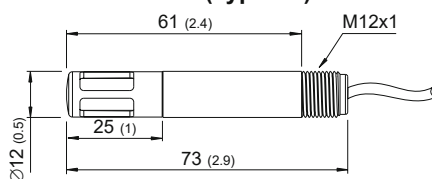» Supply voltage down to 4.5 V
» User adjustable with EE-PCS
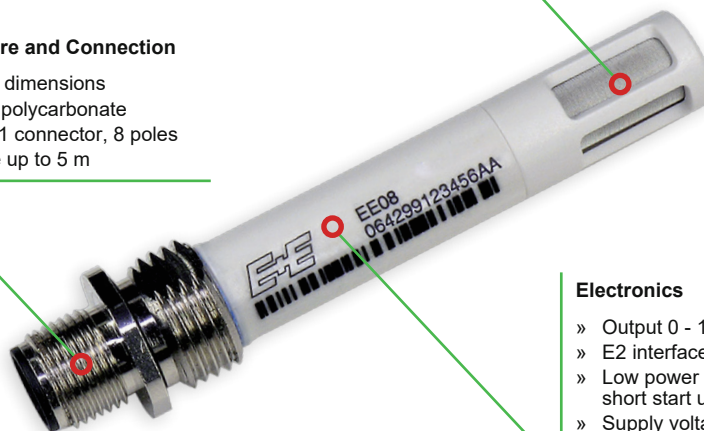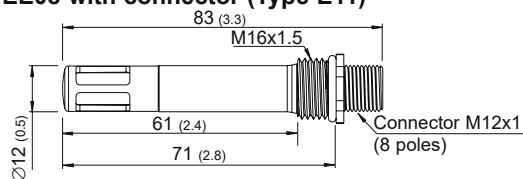
Inspection certificate according DIN EN 10204-3.1

Dimensions
Values in mm (inch)

EE08 with cable (Type E8)

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

EE08 with connector (Type E11)

83 (3.3) M16x1.5
61 (2.4)
71 (2.8)
Ø12 (0.5)
Connector M12x1 (8 poles)

Protective Sensor Coating

The E+E proprietary sensor coating is a hygroscopic layer applied to the sensing elements, their leads and soldering points. The coating substantially extends sensor life-time and ensures optimal measurement performance in corrosive environments (salts, off-shore applications). Additionally, it improves the long term stability of E+E sensors in dusty, dirty or oily applications by preventing stray impedance caused by deposits on the active sensor surface or on the electrical connections.
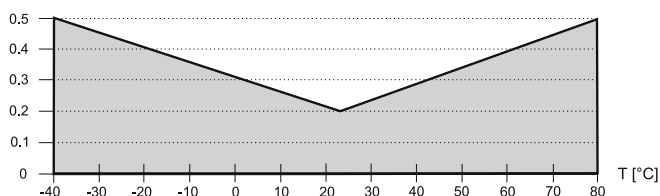
Technical Data

Measurands
Relative Humidity

Measuring range		0...100 % RH
Accuracy *at 23 °C (73 °F)*	for RH ≤ 90 %	±2 % RH
and nominal voltage[1]	for RH > 90 %	±3 % RH
Temperature dependence, typ.		0.03 % RH/°C (0.02 % RH/°F)

Temperature

Measuring range	-40...80 °C (-40...176 °F)
Accuracy	
at nominal voltage[1]	

ΔT [°C]

0.5
0.4
0.3
0.2
0.1
0

-40 -30 -20 -10 0 10 20 30 40 50 60 70 80 T [°C]

Outputs

Analogue	0 - 1 V / 0 - 2.5 V / 0 - 5 V / 0 - 10 V	-0.2mA < I_L < 0.2 mA
Digital interface	E2 interface[2]	

General

Supply voltage *for output 0 - 1 V / 0 - 2.5 V*	V1: 4.5 - 15 V DC	V2: 7 - 30 V DC
for output 0 - 5 V		V2: 7 - 30 V DC
for output 0 - 10 V		V2: 12 - 30 V DC
Current consumption, typ.	< 1.3 mA	
Electrical connection	M12x1, 8 poles	
	Cable PVC 8 x 0.14 mm² (M1 models)	
	Cable PVC 10 x 0.14 mm² (M6 models)	
Filter	Metal grid	
Protection rating	IP65	
Enclosure material	Polycarbonate	
Electromagnetic compatibility *(Industrial Environment)*	EN 61326-1 EN 61326-2-3	
Operating and storage conditions	-40...80 °C (-40...176 °F)	
	0...100 % RH (operation)	
	0...95 % RH non-condensing (storage)	
Adjustment	With EE-PCS (Product Configuration Software, free download)	
	and configuration adapter	

CE

1) 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); nominal voltage V1 = 12 V DC, V2 = 24 V DC
2) For further support literature refer to www.epluse.com/ee08.

Ordering Guide

			EE08-			
Hardware Configuuration	**Model**	RH + T active	M1			
		RH + T passive			M6	
	Output	0 - 1 V [1]	A1			
		0 - 2.5 V [1]	A8			
		0 - 5 V [2]	A2			
		0 - 10 V [2]	A3			
	Power supply	4.5 - 15 V DC	V1			
		7 - 30 V DC	V2			
	T sensor passive [3]	Pt100 DIN A			TP1	
		Pt1000 DIN A			TP3	
	Filter	Metal grid	no code			
	Electrical connection	M12 plug, 8 poles	E11		E11	
		Cable		E8		E8
	Cable length	1 m (3.3 ft)		KL100		KL100
		2 m (6.6 ft)		KL200		KL200
		5 m (16.4 ft)		KL500		KL500
	Coating	Without coating	no code			
		With coating	C1			
Setup analogue outputs	**Relative humidity**	RH, 0...100 % RH	no code			
	Temperature	T [°C]	no code			
		T [°F]	MB2			
	Scaling	Low	SBL*Value*			
		High	SBH*Value*			

1) With supply 4.5 - 15 V DC (V1) or 7 - 30 V DC (V2)
2) Only with supply 7 - 30 V DC (V2)
3) T Sensor details see www.epluse.com/R-T_Characteristics

Order Example

EE08-M1A2V2E8KL200SBL-40SBH80

Model:	RH + T active	Output RH:	0...100 %RH
Output:	0 - 5 V	Output T:	T [°C]
Supply:	7 - 30 V DC	Scale T low:	-40
Filter:	Metal grid	Scale T high:	80
Electrical connection:	Cable		
Cable length: 2 m (6.6 ft)			

Accessories
(for further information, see data sheet "Accessories")

- M12 connection cable for type E11, length 1.5 m (5 ft)   HA010322
- M12 connection cable for type E11, length 3 m (10 ft)   HA010323
- M12 connection cable for type E11, length 5 m (16.4 ft)   HA010324
- M12 connection cable for type E11, length 10 m (32.8 ft)   HA010325
- Radiation shield for type E8   HA010502
- Radiation shield for type E11   HA010506
- Wall mounting clip Ø12 mm   HA010211
- Protection cap for Ø12 mm probe   HA010783
- M12x1 flange coupling with flying leads   HA010703
- M12 female cable connector for self assembly   HA010704
- Metal grid filter   HA010113
- E+E Product Configuration Software   EE-PCS
- Configuration adapter   HA011005

HA011005

PC