

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

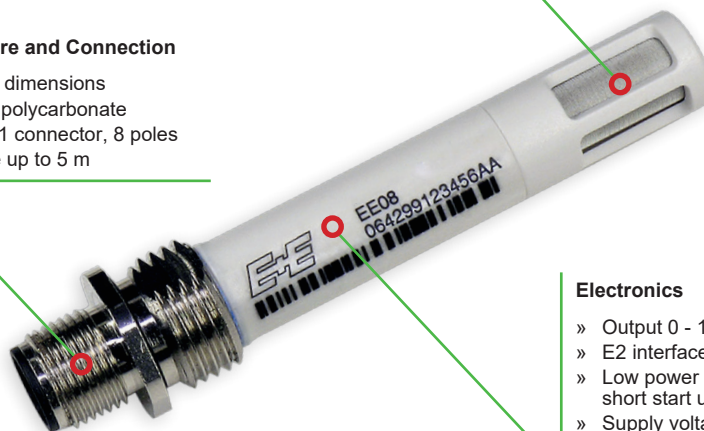
- » Protected by
 - E+E proprietary coating
 - Metal grid filter
- » Active or passive T measurement

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

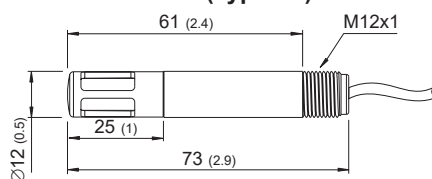


Inspection certificate
 according DIN EN 10204-3.1

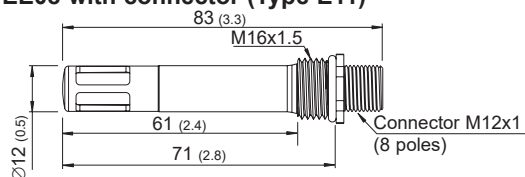
Dimensions

Values in mm (inch)

EE08 with cable (Type E8)



EE08 with connector (Type E11)



Protective Sensor Coating

The E+E proprietary sensor coating is a protective layer applied to the sensing elements, their leads and soldering points. The coating substantially extends sensor lifetime and ensures optimal measurement performance in corrosive environment (salts, off-shore applications). Additionally, it improves the sensors' long term stability 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

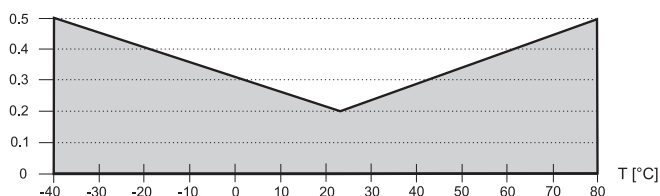
Measurands

Relative Humidity

Measuring range	0...100 % RH
Accuracy at 23 °C (73 °F) and nominal voltage ¹⁾	for RH ≤ 90 % ±2 % RH 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]



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 mm ² (M1 models) Cable PVC 10 x 0.14 mm ² (M6 models)	
Filter	Metal grid	
Protection rating	IP65	
Enclosure material	Polycarbonate	
Electromagnetic compatibility	EN 61326-1 EN 61326-2-3 Industrial Environment FCC Part15 Class B ICES-003 Class B	
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	

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⁾ E2 Voltage Level = 3.3 V / ±0.1 V, for further support literature refer to www.epluse.com/ee08.

Ordering Guide

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

