



YOUR PARTNER IN SENSOR TECHNOLOGY

ELEKTRONIK
SINCE 1972

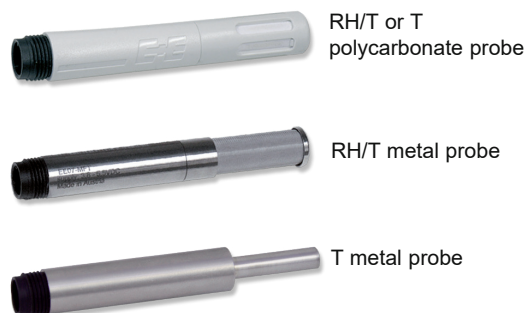
EE07

Interchangeable Humidity / Temperature Probes with Digital Output

EE07 is ideal for demanding climate control and OEM applications and features a well-proven E+E humidity (RH) sensing element. It is available in polycarbonate or metal enclosure, as well as for temperature (T) measurement only. Additionally it features an optimized version for very low power consumption, ideal for battery-powered measurement devices.

The wide T working range, the T compensation and the choice of filter caps make EE07 appropriate for both indoor and outdoor use. Due to the excellent RH and T accuracy, the probe can be employed with the optional radiation shield even in meteorology. The E+E proprietary coating protects the RH sensing element against corrosion and dirt, which leads to best long term stability even in harsh environment.

The measured values are available on the serial E2 interface. The M12 connector allows for EE07 replacement within seconds. The user can perform the RH and T adjustment of the probe with the optional configuration kit.



Typical Applications

Demanding climate control
Outdoor and meteorology
OEM applications
Battery powered measurement devices
Data loggers, handheld devices

Features

Outstanding RH and T accuracy
Excellent long term stability
Digital output
Pluggable and interchangeable
Very low power consumption

Technical Data

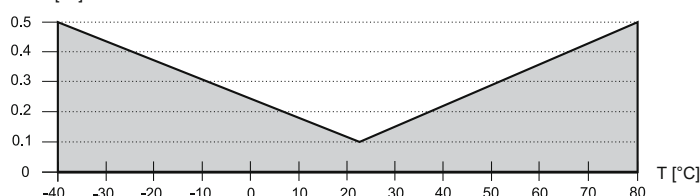
Measurands

Relative Humidity

Measuring range	0...100 %RH
Accuracy ¹⁾	0...90 %RH: ± 2 %RH
@ 23 °C (73 °F)	90...100 %RH: ± 3 %RH
Temperature dependency	$< (0.025 + 0.0003 \times RH) \times (T - 23 \text{ °C}) (73 \text{ °F})$
Supply voltage dependency for option AF4 and $V+ < 3.3 \text{ V DC}$, typ.	-0.0026 % RH/mV

Temperature

Measuring range	-40...+80 °C (-40...+176 °F)
Accuracy	$\pm \Delta T \text{ [°C]}$



Outputs

Digital interface	E2 ²⁾
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General

Supply voltage (Class III)	Standard: 3.8 V DC - 5.5 V DC
	Option AF4: 2.7 V DC - 5.5 V DC
Current consumption	Standard: $< 1.5 \text{ mA}$
	Option AF4: $< 6 \text{ μA}$, in sleep mode
	1.5 - 2.5 mA during measurement (150 ms)
	average: $< 200 \text{ μA}$ at sampling rate = 1 s
Voltage level digital interface	Max. 3.5 V DC, $\leq V+$ for option AF4

Electrical connection	M12x1, 4 poles
Enclosure material	Polycarbonate or stainless steel
Protection rating	IP65
Electromagnetic compatibility ³⁾	EN 61326-1 EN 61326-2-3 FCC Part15 Class A ICES-003 Class A
Maximum cable length ⁴⁾	30 m (98.4 ft)
Operating and storage conditions	-40...80 °C (-40...176 °F)
With coating:	0...100 %RH (operation)
Without coating:	0...95 %RH (operation)
	0...95 %RH non-condensing (storage)



- 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).
- 2) For further support literature refer to www.epluse.com/EE07.
- 3) No protection against surge
- 4) Depends on the bus frequency

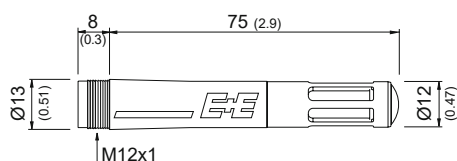
E+E Sensor Coating

The E+E proprietary sensor coating is a hygroscopic layer applied to RH sensing element. 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 in dusty, dirty or oily applications by preventing stray impedance caused by deposits on the active sensor surface or on the electrical connections.

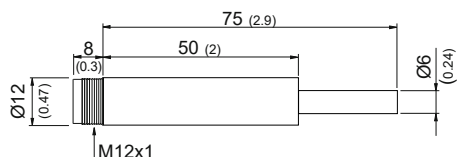
Dimensions

Values in mm (inch)

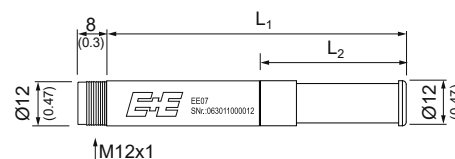
EE07-MxFx



EE07-M3HS2



EE07-M1HS2



Filter	L ₁	L ₂
Metal grid	79.5 mm (3.13")	38.5 mm (1.52")
H ₂ O ₂	73.5 mm (2.89")	33 mm (1.3")

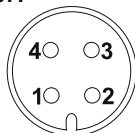
Connection Diagram



Important note:

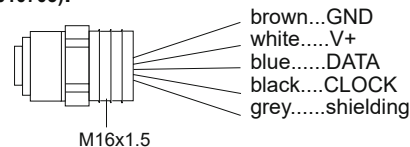
The manufacturer cannot be held responsible for personal injuries or damage to property as a result of incorrect handling, installation, wiring, power supply and maintenance of the device.

EE07:



- 1...GND
2...V+
3...DATA
4...CLOCK

M12x1 flange coupling with 50 mm (2") flying leads (HA010705):





Ordering Guide

			EE07-			
Hardware Configuration	Model	RH + T T	M1		M3	
	Enclosure material	Polycarbonat Stainless steel	no code	HS2	no code	HS2
	Filter	Membrane	F2	F12 F9	F2	-
		PTFE	F5		-	
		Metal grid	F3		-	
		H ₂ O ₂	F12		-	
		Stainless steel - metal grid			-	
	E+E Sensor Coating	Without coating	no code			-
		With coating	C1			-
Additional function	None Energy saving	no code AF4		- AF4		

Order Example

EE07-M1F2C1

Model: RH + T
 Enclosure Material: Polycarbonate
 Filter: Membrane
 Sensing element protection: With coating
 Additional function: None

EE07-M1HS2F12C1AF4

Model: RH + T
 Enclosure Material: Stainless steel
 Filter: H₂O₂
 Sensing element protection: With coating
 Additional function: Energy saving

Scope of Supply

- EE07 probe according to ordering guide
- Inspection certificate according to DIN EN 10204-3.1

Accessories

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

- M12x1 flange coupling with 50 mm (2") flying leads
- Connecting cable M12x1 - flying leads (1.5 m (4.9 ft) / 5 m (16.4 ft) / 10 m (32.8 ft))
- Filter caps
- Radiation shield with cable gland (M20x1.5)
- Protection cap for M12 socket
- Protection cap for M12 plug
- Configuration adapter

HA010705
 HA010819/20/21
 HA0101xx
 HA010502
 HA010781
 HA010782
 see data sheet EE-PCA