

## EE07-02

## Low Power Humidity / Temperature Probe with Digital Output

EE07-02 is a version of the well-proven EE07 humidity (RH) and temperature (T) probe, optimized for very low power consumption and ideal for battery powered measurement devices. It is available in polycarbonate or metal enclosure and features the well-proven E+E HC105 humidity sensor.

The wide T working range, the T compensation and the choice of filter caps make EE07-02 appropriate for both indoor and outdoor use. The E+E proprietary coating protects the humidity sensor 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 probe replacement within seconds. The user can perform the RH and T adjustment of the probe with the optional configuration kit.



### Typical Applications

Battery powered measurement devices  
Data loggers  
Hand held meters

### Features

Very low power consumption  
Outstanding RH and T Accuracy  
Excellent long term stability  
Pluggable and interchangeable

### Technical Data

#### Measured values

##### Relative Humidity

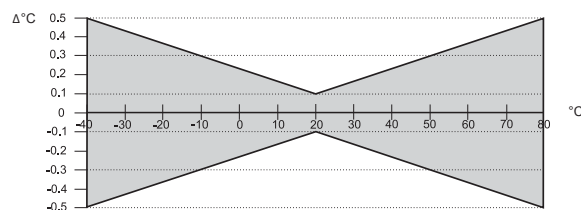
Sensor element	E+E HC105	
Digital output (2 wire E2 interface) <sup>1)</sup>	output value: 0.00...100.00 % RH	
Working range	0...100 % RH	
Accuracy incl. hysteresis and nonlinearity	±2 % RH (0...90 % RH)	±3 % RH (90...100 % RH)
	Traceable to intern. standards, administrated by NIST, PTB, BEV...	
Supply voltage dependency at UB < 3.3 V DC	typ. -0.0026 % RH/mV	
Temperature dependence	< (0.025 + 0.0003 x RH) [ $\frac{\%RH}{^{\circ}C}$ ]	

##### Temperature


Sensor element	Pt1000 (tolerance class A, DIN EN 60751)
Digital output (2 wire E2 interface) <sup>1)</sup>	output value: -40.00...+80.00 °C (-40...176 °F)

##### Accuracy

(at 20 °C (68 °F): ±0.1 °C (±0.18 °F))



#### General

Supply voltage (Class III) 	2.7 V DC - 5.5 V DC	
Voltage level digital interface	≤ Supply voltage, but max 3.5 V	
Current consumption	< 6 μA, in sleep mode	
	1.5 - 2.5 mA during measurement (150 ms)	
Average current consumption	< 200 μA at sampling rate 1 s	
Housing	polycarbonate or stainless steel / IP65	
Electromagnetic compatibility <sup>2)</sup>	EN 61326-1 EN 61326-2-3	
Temperature range	working temperature:	-40...80 °C (-40...176 °F)
	storage temperature:	-40...60 °C (-40...140 °F)
Max. cable length <sup>3)</sup>	30 m (98.4 ft)	

<sup>1)</sup> See details at support literature at [www.epluse.com/EE07](http://www.epluse.com/EE07)

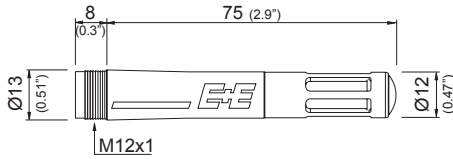
<sup>3)</sup> Depends on the bus frequency

<sup>2)</sup> No protection against surge

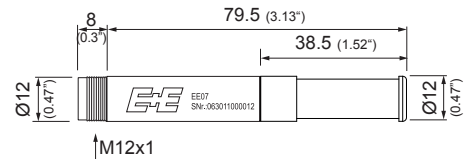


## Dimensions (mm/inch)

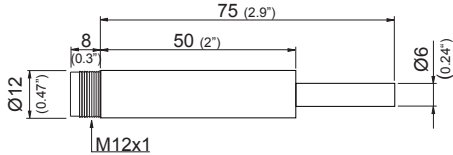
### EE07-02-P



### EE07-02-MFTx



### EE07-02-MT



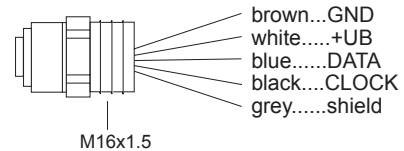
## Connection Diagram

### EE07-02:



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

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



## E+E Sensor Coating

The E+E proprietary sensor coating is a protective layer applied to the sensing elements. The coating extends substantially the lifetime and the measurement performance of EE07-02 in **corrosive environment**. Additionally, it improves relevantly the long term stability in **dusty, dirty or oily applications** by preventing stray impedances caused by deposits on the active sensor surface.

## Ordering Guide

HOUSING	MODEL	FILTER	COATING <sup>1)</sup>
metal <sup>2)</sup> (M)	humidity and temperature (FT)	membrane (1)	without (no code)
polycarbonate (P)	temperature (T)	metal grid (6)	with (HC01)
		stainless steel grid <sup>2)</sup> (9)	
<b>EE07-02-</b>			

1) Only available for model humidity & temperature (FT).

2) The metal housing (M) is only available with stainless steel grid filter (9). The stainless steel grid filter (9) is only available with metal housing (M).

## Order Example

### EE07-02-PFT6

Housing: Polycarbonate  
Model: Humidity and temperature  
Filter: Metal grid  
Coating: without

### EE07-02-MT

Housing: Metal  
Model: Temperature

## Scope of Supply

- EE07-02 probe according to ordering guide
- Inspection certificate according to DIN EN10204 - 3.1

## Accessories (See data sheet "Accessories")

- M12x1 flange coupling with 50 mm (2") flying leads
- Connecting cable M12x1 - flying leads (1.5 m (59.1") / 5 m (196.9") / 10 m (393.7"))
- Filter caps
- Radiation shield with cable gland (M20x1.5)
- Configuration adapter

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