

## EE03

## Humidity and Temperature Module with Digital Interface

EE03 is a cost effective, highly accurate temperature and humidity module with digital interface. It features a well-proven, long term stable E+E humidity sensing element. The EE03 is optimized for best thermal coupling with a plane surface, which is paramount for accurate measurement of surface moisture. Besides ambient humidity measurement, the EE03 can be employed also as condensation monitor, and indicates the danger of condensation just before it occurs.

The E+E proprietary sensor coating is a protective layer applied to the sensing element. The coating substantially extends the life-time and the measurement performance of EE03 in corrosive environment. Additionally, it improves the long term stability in dusty, dirty or oily conditions by preventing stray impedances caused by deposits on the active sensor surface.

The E2 digital protocol allows for easy design in. An E2-RS232 convertor facilitates the testing of EE03 during the design in process.



### Typical Applications

Condensation monitoring  
 Surface moisture measurement  
 Home appliances  
 Humidifiers and dehumidifiers  
 HVAC, OEM

### Features

Compact design  
 Interchangeable and pluggable  
 Sensor protection for harsh environments  
 Low power consumption

### Technical Data

#### Measurands

##### Relative Humidity

Measuring range 0...100 %RH

Accuracy

at 23 °C (73 °F) and  $V_+ = 3.3 \text{ V DC}^{1)}$   $\pm 3 \text{ \% RH}$

Temperature dependence  $\pm 0.00035 \times \text{RH} \times (T - 23 \text{ °C})$  (T-68 °F)

##### Temperature

Measuring range -40...+85 °C (-40...+185 °F)

Accuracy

at 23 °C (73 °F) and  $V_+ = 3.3 \text{ V DC}$   $\pm 0.3 \text{ °C}$  ( $\pm 0.54 \text{ °F}$ )

#### Outputs

Digital interface E2<sup>2)</sup>

#### General

Supply voltage (Class III)  $\diamond$  2.5 V DC - 5.5 V DC, max. ripple 20 mV

Voltage level digital interface  $\leq$  Supply voltage, max 3.5 V DC

Current consumption at 5 V DC, typ.  
 average value: 0.30 mA  
 peak, every 3 s: 1.70 mA

Electrical connections  
 Appropriate for female connectors: AMP/TYCO / 0-0280359-0 (4 pins)  
 and female crimp contacts: AMP/TYCO / 181270-1

Maximum cable length 10 m (32.8 ft)

Enclosure material PC/ABS

Protection rating IP20

Operation and storage conditions -40...85 °C (-40...185 °F)

with coating: 0...100 %RH (operation)

without coating: 0...95 %RH (operation)

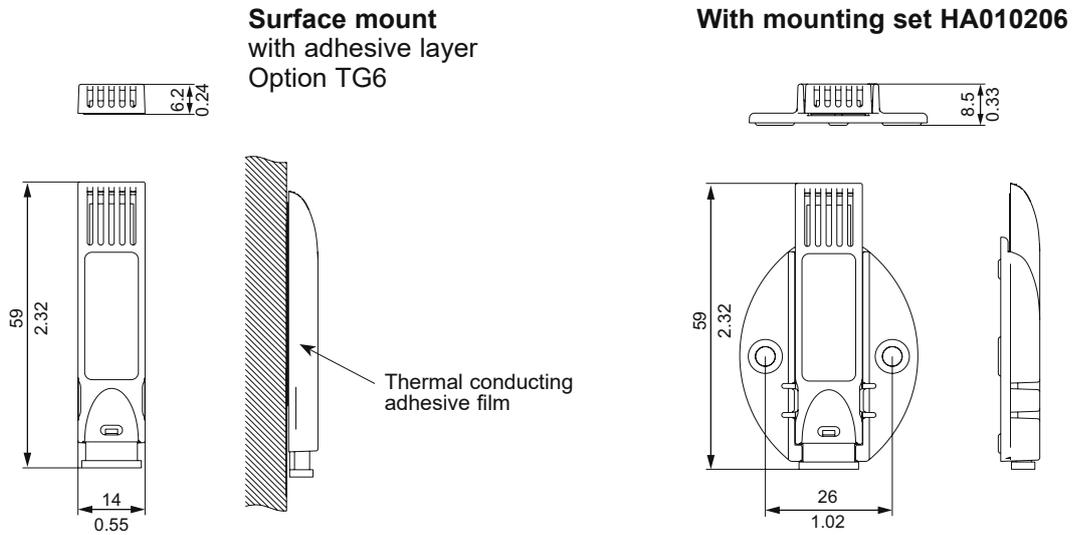
0...95 %RH non-condensing (storage)

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/EE03](http://www.epluse.com/EE03)

## Dimensions

Values in mm/inch



## Ordering Guide

			EE03-
Hardware Configuration	Model	RH + T	M1
	Mounting	Standard	no code
		With adhesive film	TG6
	Sensing element protection	Without	no code
With E+E proprietary coating		C1	

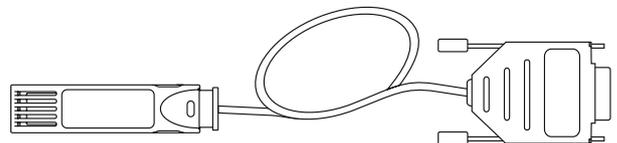
## Order Example

EE03-M1TG6C1

Model: RH + T  
 Mounting: With adhesive film  
 Sensing element protection: With E+E proprietary coating

## Accessories

- E2-RS232 converter for test purposes HA011002
- EE03 mounting set HA010206
- Connection cable 2 m (6.6 ft) HA010307
- 5 m (16.4 ft) HA010308



E2 - RS232 test converter