

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 E2²⁾

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)

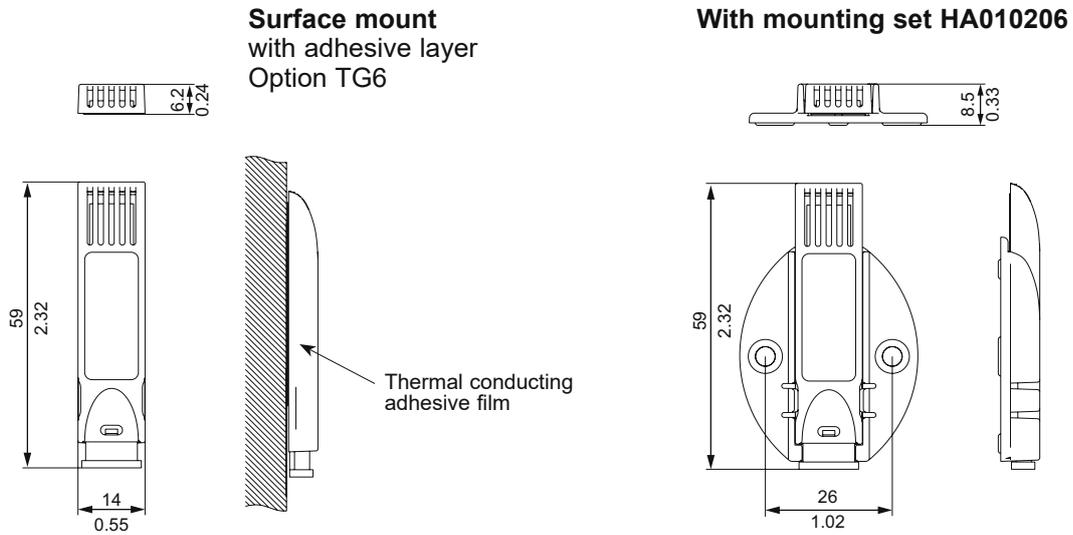
0...95 %RH non-condensing (storage)

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

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	

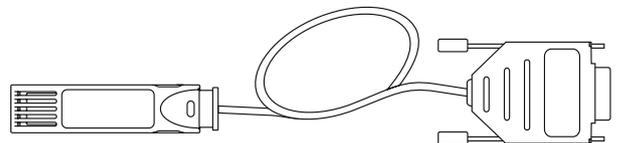
Order Example

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