

EE99-1 Series

OEM - Humidity / Temperature Modules

The EE99-1 OEM - RH/T modules are designed to meet the specific requirements of RH/T monitoring in climate chambers.

High-end E+E humidity sensor elements of the HC series and accurate temperature compensation of the humidity reading result in an excellent accuracy over a broad measurement range.

The analogue output for relative humidity is 4 - 20mA / 3-wire. The passive temperature output can be connected via 3-wire to an external readout.

Easy mounting and service is possible with a plug-in screw terminals block and by push buttons for field calibration.



EE99-1

Sensor Coating

Operation in heavily polluted and/or corrosive environments is typical for many industrial processes and can lead to drift or damage of the humidity sensor and therefore to incorrect measurements. The unique protective coating developed by E+E for the sensing probe (ordering code: - HC01) means a significant improvement of the long-term stability of the transmitter in very dirty and aggressive environments.

Typical Applications

climate chambers
drying chambers

Features

remote sensing probe up to 10m (32.8ft)
accuracy $\pm 2\%$ RH
traceable calibration
working range humidity 0...100% RH
working range temperature $-50...180^{\circ}\text{C}$ ($-58...356^{\circ}\text{F}$) / up to 200°C (392°F) short term
passive 3-wire temperature output
easy field calibration

Technical Data

Measured quantities

Relative humidity

| | | |
|--|---|--|
| Humidity sensor ¹⁾ | HC1000-400 | |
| Working range | 0...100% RH | |
| Accuracy incl. hysteresis and nonlinearity with - special calibration against certified standards - standard calibration | $\pm 1\%$ (0...90% RH) $\pm 2\%$ (0...90% RH) | $\pm 2\%$ (90...100% RH) $\pm 3\%$ (90...100% RH) |
| Output signal | Traceable to intern. standards, administrated by NIST, PTB, BEV... 4 - 20mA (3-wire) | |
| Response time with filter at 20°C (68°F) / t_{90} | < 15 sec. | |

Temperature

| | | |
|--|--|--|
| Temperature sensor element ²⁾ | Pt100 resp. Pt1000 (class A, DIN EN 60751) see Ordering Guide | |
| Working range | $-50...180^{\circ}\text{C}$ ($-58...356^{\circ}\text{F}$) / up to 200°C (392°F) short term | |

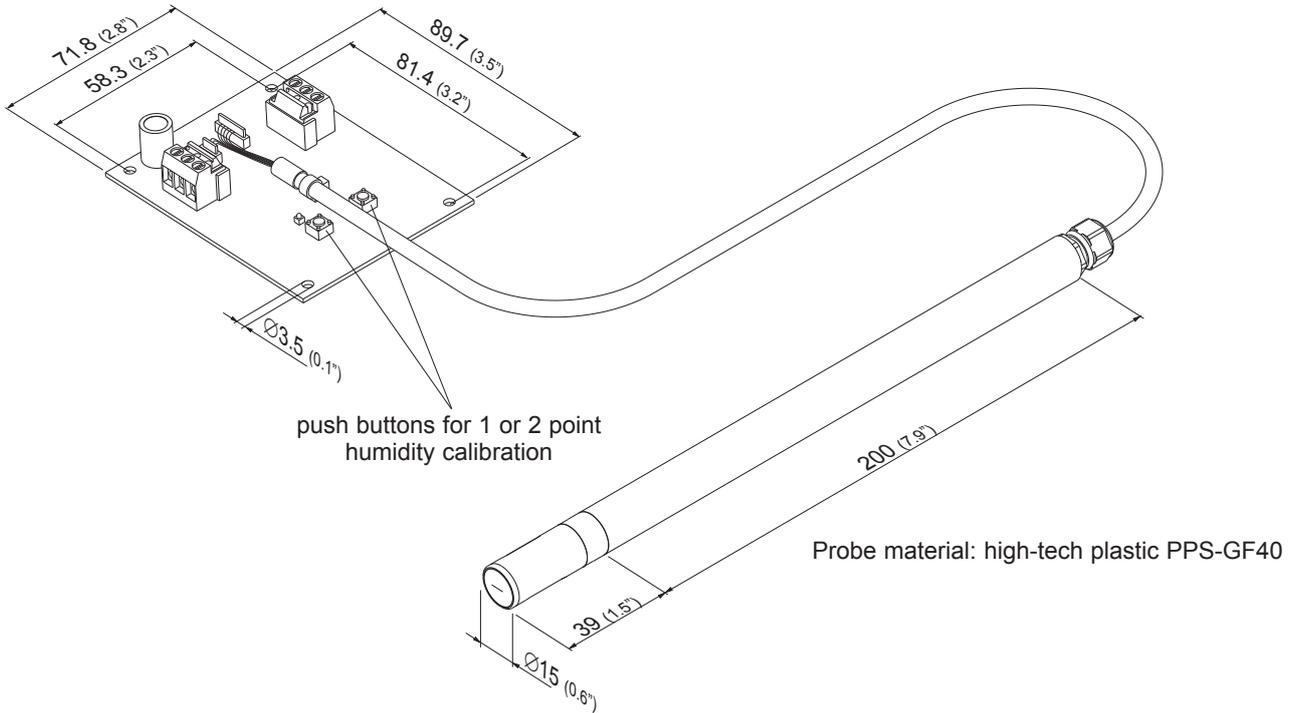
General Data

| | | |
|---------------------------------------|--|---|
| Supply voltage | 10 - 35V DC or 10 - 28V AC | |
| Load resistor for 4 - 20 mA output | 10 - 35V DC | $R_L < \frac{U_V - 5V}{0.02 A}$ [Ω] (max. 350 Ω) |
| | 10 - 28V AC | $R_L < 350 \Omega$ |
| Current consumption | for DC supply < 32mA | for AC supply < 60mA _{eff} |
| Working temperature range electronics | $-40...60^{\circ}\text{C}$ ($-40...140^{\circ}\text{F}$) | |
| Storage temperature range | $-40...60^{\circ}\text{C}$ ($-40...140^{\circ}\text{F}$) | |
| Electrical connection | pluggable screw terminals up to max. 1.5mm ² (AWG 16) | |
| Sensor protection | stainless steel grid filter | |
| Electromagnetic compatibility | Designed for installment in and with other equipment (OEM) Measurements according to EN61000-4-3 and EN61000-4-6 FCC Part15 ClassB ICES-003 ClassB | |

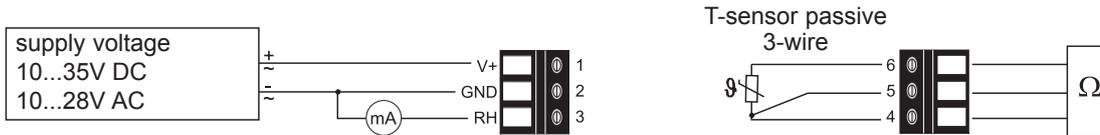
1) Refer to the working range of the humidity sensor

2) max. power dissipation 1mW

Mounting Dimensions (mm)



Connection Diagram



Ordering Guide

| MODEL | OUTPUT | T-SENSOR | VERSION | FILTER | CABLE LENGTH |
|-------------------------------------|---------------|------------------|--------------------------|---------------------------------|-------------------|
| Humidity + Temperature passive (FP) | 4 - 20 mA (6) | Pt100 DIN A (A) | remote sensing probe (D) | stainless steel grid filter (8) | 2m (6.6ft) (02) |
| | | Pt1000 DIN A (C) | | | 5m (16.4ft) (05) |
| | | | | | 10m (32.8ft) (10) |
| EE99-1- | | | | | |

| PROBE LENGTH | SENSOR COATING |
|------------------|--|
| 200mm (7.9") (5) | without coating (-) with coating (HC01) |
| | |

Order Example

EE99-1-FP6AD8025

Model: Humidity + Temperature passive
 Output: 4 - 20mA
 T-Sensor: Pt100 DIN A
 Version: remote sensing probe
 Filter: stainless steel grid filter
 Cable length: 2m (6.6ft)
 Probe length: 200mm (7.9")
 Coating sensor: without coating

Accessories

Metal grid filter (HA010108)