

EE99-1

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.

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 means a significant improvement of the long-term stability of the transmitter in very dirty and aggressive environments.



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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°C (-58...356°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 ²⁾ (including hysteresis, non-linearity and repeatability, traceable to intern. standards, administrated by NIST, PTB, BEV...)	
-15...40°C (5...104°F) $\leq 90\%$ RH	$\pm (1.3 + 0.3\% \cdot mv) \% RH$
-15...40°C (5...104°F) $> 90\%$ RH	$\pm 2.3\% RH$
-25...70°C (-13...158°F)	$\pm (1.4 + 1\% \cdot mv) \% RH$
-50...180°C (-40...356°F)	$\pm (1.5 + 1.5\% \cdot mv) \% RH$

Output signal	4 - 20mA (3-wire)
Response time with filter at 20°C (68°F) / t_{90}	< 15 sec.

Temperature

Temperature sensor element ³⁾	Pt100 resp. Pt1000 (class A, DIN EN 60751) see Ordering Guide
Working range	-50...180°C (-58...356°F) / up to 200°C (392°F) short term

General Data

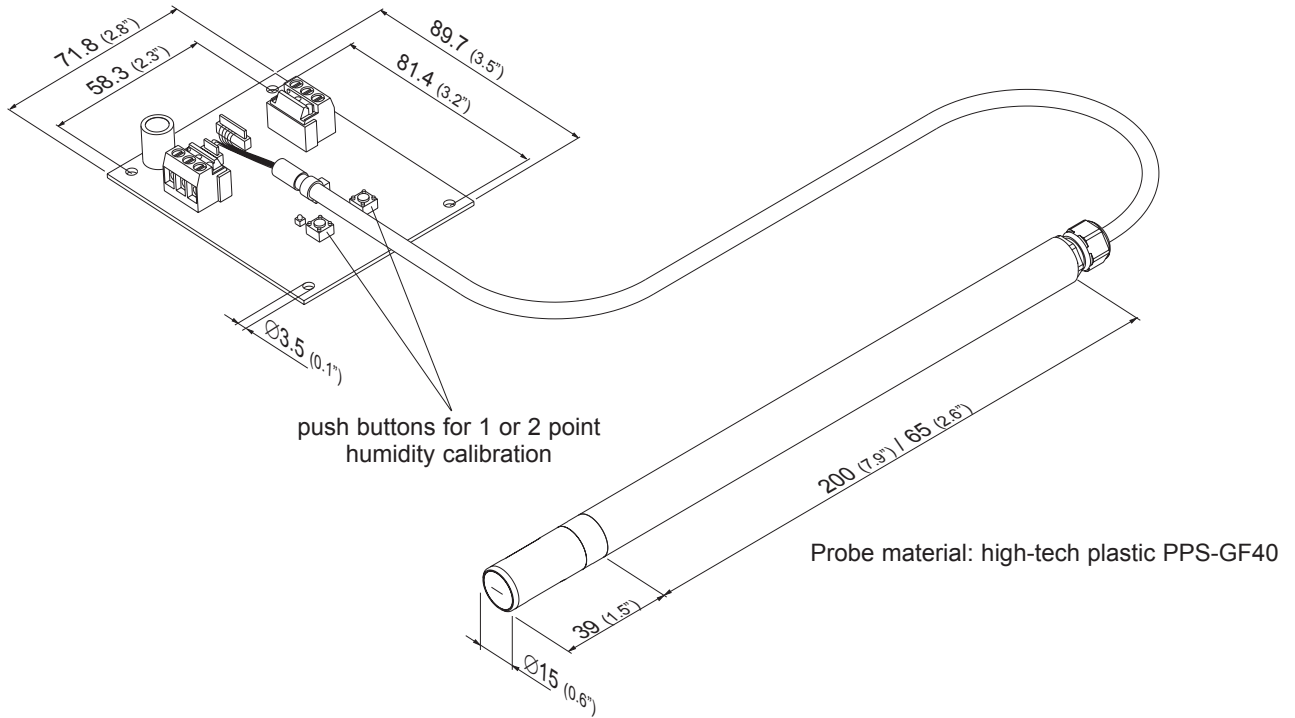
Supply voltage	10 - 35V DC or 10 - 28V AC
Load resistor for 4 - 20 mA output	10 - 35V DC $R_L < \frac{U_v - 5V}{0.02 A} [\Omega]$ (max. 350 Ω)
	10 - 28V AC $R_L < 350 \Omega$
Current consumption	for DC supply < 32mA for AC supply < 60mA _{eff}
Working temperature range electronics	-40...60°C (-40...140°F)
Storage temperature range	-40...60°C (-40...140°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

3) max. power dissipation 1mW

2) 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).

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) Pt1000 DIN A (C)	remote sensing probe (D)	stainless steel grid filter (8)	2m (6.6ft) (02) 5m (16.4ft) (05) 10m (32.8ft) (10)
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PROBE LENGTH	
200mm (7.9")	(5)
65mm (2.6")	(2)

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")

Accessories

Metal grid filter (HA010108)