Datasheet EE040

OEM Humidity and Temperature Sensor

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The EE040 is designed for cost-effective measurement of the relative humidity (RH) and temperature (T) in OEM applications. It employs the high quality EEH210 RH and T sensing element, which stands for reliable and long term-stable measurement performance.

The electronics board and the components are protected by a special varnish. In addition, the proprietary E+E coating protects the RH sensor against dirt, dust and corrosion, which leads to excellent long-term stability even in polluted environment.

The measured data is available on two analogue voltage outputs.

The EE040 design, the plug connection and the mounting flange included in the scope of supply facilitate the design-in, installation and replacement.

EE040 duct mount

EE040 duct mount with lateral openings

Features

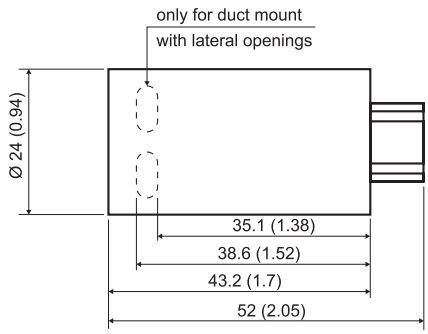
- Compact design
- Easy installation and replacement
- Excellent price / performance ratio

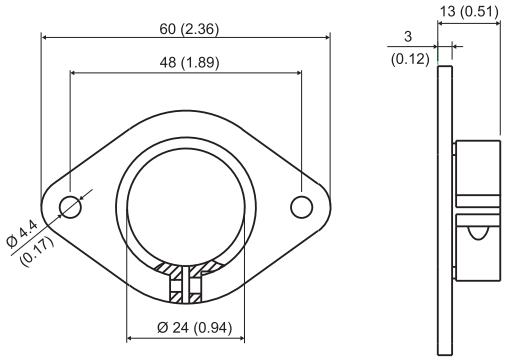
Protective Sensor Coating

The E+E proprietary sensor coating is a protective layer applied to the active surface of the sensing element. The coating substantially extends sensor lifetime and ensures optimal measurement performance in corrosive environment (salts, off-shore applications). Additionally, it improves the sensors' long term stability in dusty, dirty or oily applications by preventing stray impedance caused by deposits on the active sensor surface.

Dimensons

Values in mm (inch)





Technical Data

Measurands

Relative Humidity (RH)

Measuring range	0...100 %RH (non-condensing)
Accuracy[1)] @ 20 °C (68 °F)	
30...70 %RH	±3 %RH
0...95 %RH	±5 %RH
Response time t_{63}	
Duct mount	<45 s
Duct mount with lateral openings	<30 s

1) Traceable to international standards, administrated by NIST, PTB, BEV,...
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).

Temperature (T)

Measuring range	-40…+85 °C (-40…+185 °F)
Accuracy[1)] @ 20 °C (68 °F)	±0.3 °C (±0.54 °F)

1) Traceable to international standards, administrated by NIST, PTB, BEV,...
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).

Outputs

Analogue

RH: 0...100 % **T: -40…+85 °C (-40…+185 °F)**	0 - 2.5 V
Output load	≥5 kΩ

General

Power supply class III USA & Canada: Class 2 supply necessary	5 V DC ±10 %
Current consumption, typ.	
Without load	2 mA
With 5 kΩ load	<3.5 mA
Start-up time, typ.	4 s
Electrical connection	Appropriate for Molex 6471 (4 pins) and female crimp contacts 4809 555L
Storage conditions	-40...+60 °C (-40...+140 °F) 0...95 %RH (non-condensing)
Enclosure material	Polyphenyleneoxide (PPO), GF20, UL94HB approved
Protection rating	
Connector side	IP30
Front side (duct mount)	IP50
Front side (duct mount with lateral openings)	IP20
Electromagnetic compatibility[1)]	EN 61326-1 EN 61326-2-3 Industrial environment FCC Part15 Class A ICES-003 Class A
Conformity	CE UKCA

1) EE040 is not protected against surge.

Ordering Guide

	Feature	Description	Code
Hardware Configuration			EE040-
	Type	Duct mount	T2
		Duct mount with lateral openings	T18
	Filter	Plastic grid, polycarbonate body	F1
		Metal grid, polycarbonate body	F3
Software Setup Analogue Outputs	Output signal	0 - 2.5 V	No code
	Output 1 measurand	Relative humidity RH [%]	No code
	Output 2 measurand	Temperature T [°C]	No code
		Temperature T [°F]	MB2
	Output 2 scaling low	0	No code
		Value	SBL*Value*
	Output 2 scaling high	50	No code
		Value	SBH*Value*

Order Example

EE040-T18F3SBL-20SBH40

Feature	Code	Description
Type	T18	Duct mount with lateral openings
Filter	F3	Metal grid, polycarbonate body
Output 1 measurand	No code	Relative humidity RH [%]
Output 1 scaling low	No code	0
Output 1 scaling high	No code	100
Output 2 measurand	No code	Temperature T [°C]
Output 2 scaling low	SBL-20	-20
Output 2 scaling high	SBH40	40

Accessories

For further information see datasheet Accessories.

Accessories	Code
Connection cable	
2 m (6.6 ft)	HA010305
5 m (16.4 ft)	HA010306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