

# TEMPERATURE - HUMIDITY

*ELEKTRONIK EE08*





SENSOR MEASURE	SIGNAL OUTPUT	ELECTRICAL SUPPLY	MODEL IN EOL MANAGER
Temperature	0...1 V	12...24 V	<b>EE8 / ROTRONIC</b>
Humidity	0...1 V	12...24 V	<b>EE8 / ROTRONIC</b>

**APPLICATION**

- Meteorology / Weather stations
- Humidity / Temperature data logging
- Incubators
- Fermentation chambers
- Green houses
- Snow machines
- Dry storage facilities

**FEATURES**

- Small dimensions
- Wide working range, high accuracy
- Traceable calibration
- Customer adjustment possible
- Interchangeable in seconds
- Low power consumption / Short start-up time
- Analogue outputs / Digital interface

**CONSTRUCTION AND MODE OF OPERATION**

Accurate humidity / temperature measurement over a wide working range, fitted in a small-sized housing and high flexibility have been the main goals for the development of the EE08 series.

Low power consumption and short start-up time support efficient energy management for battery operated systems. For this application an additional version (V10) with supply voltage 4.5 to 15V DC has been developed.

Calibration data and other relevant functions like linearization or temperature compensation are stored in the probe. This feature, together with the optional connector, allows for easy replacement of the probe without a need for re-adjustment of the reading device (interchangeability).

The humidity and temperature measurement are available as analogue outputs (0 to 1/2.5/5V) and as a digital interface (E2-interface). Easy implementation and data processing is warranted. Humidity and temperature reading can be re-adjusted using the calibration software; available as an accessory. The configuration equipment allows humidity and temperature adjustment of the sensor.

## TECHNICAL DATA

HUMIDITY	
CHARACTERISTIC	DESCRIPTION / VALUE
Sensor	HC101
Measurement range	0...100% RH
Analoge output 0...100% RH	0...1V -0.2mA<IL<0.2mA
Accuracy at 20°C (12 VDC)	±2% RH (0...90% RH) ±3% RH (90...100% RH) Traceable to intern. standards, administrated by NIST, PTB, BEV...
Temperature dependence	typ. 0.03% RH/°C

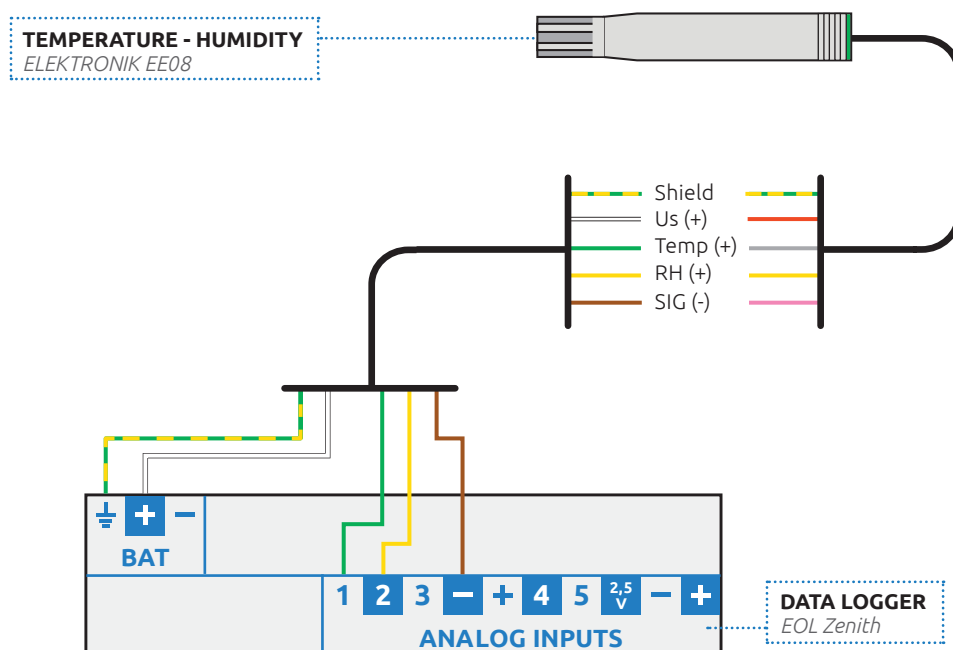
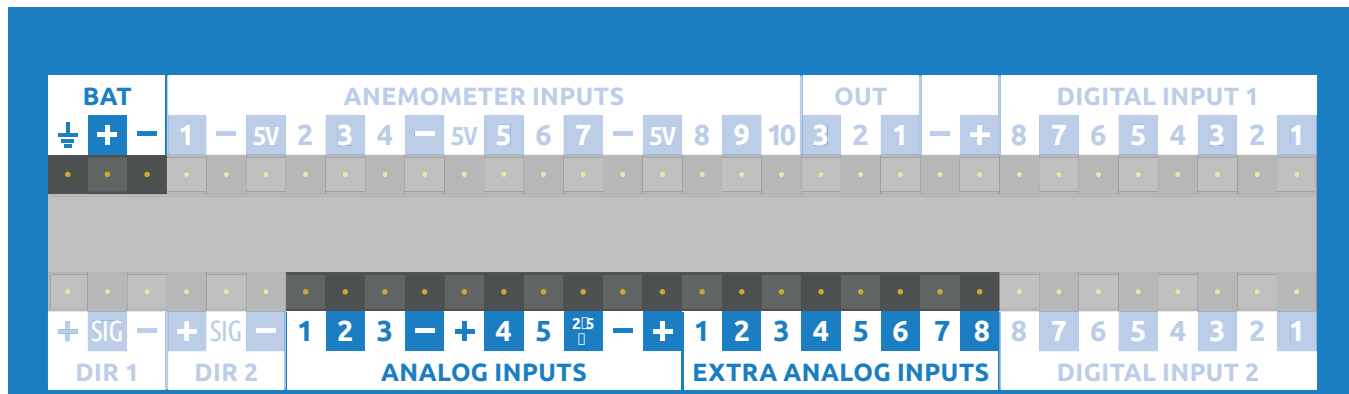
TEMPERATURE	
CHARACTERISTIC	DESCRIPTION / VALUE
Sensor	Pt 1000 (DIN A)
Analoge output	0...1V -0.2mA<IL<0.2mA (other options: 0...2.5V / 0...10V)
Accuracy at 12/24 VDC	<p>The graph illustrates the temperature accuracy of the sensor. The vertical axis represents the error in degrees Celsius (<math>\Delta^\circ\text{C}</math>), ranging from -0.5 to 0.5. The horizontal axis represents the temperature in degrees Celsius (<math>^\circ\text{C}</math>), ranging from -40 to 80. The error band is widest at the extremes of -40°C and 80°C, reaching approximately ±0.45°C, and narrows to about ±0.15°C at 20°C.</p>

OTHER DATA	
CHARACTERISTIC	DESCRIPTION / VALUE
Supply voltage (output 0...1V)	7...30 VDC
Current consumption	typ. <1.3mA
Digital interface	E2-interface level = 3.3V / ±0.1V
Housing	Polycarbonate / IP65
Sensor protection	Metal grid filter
Electromagnetic compatibility	EN61326-1 EN61326-2-3 Industrial Environment
Temperature ranges	Working temperature: -40...80°C (-40...176°F) Storage temperature: -40...80°C (-40...176°F)

**INSTRUCTIONS**

Use the following input channels on the logger to connect this sensor. See highlighted input channels marked here below. The wire colors used in the connection diagram below only applies in case the cable is supplied by Kintech Engineering.

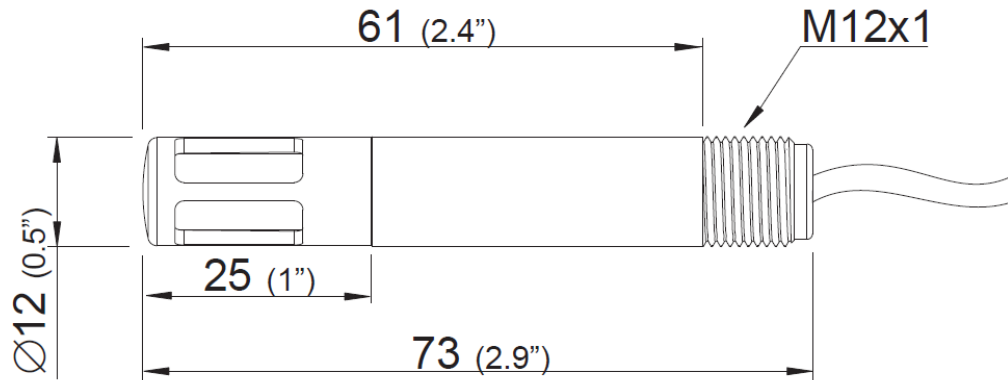
**For additional wiring & shielding information see the chapter "IMPORTANT" at the end of this dataheet.**



SENSOR PIN DESCRIPTION			DATA LOGGER INPUT CHANNEL	
Us (+)	Us (+)	Supply (+)	BAT	(+)
Temp (+)	Temp (+)	Temperature (+)	ANALOG INPUTS	1
RH (-)	RH (+)	Rel. Humidity (+)	ANALOG INPUTS	2
SIG (-)	SIG (-)	Reference	ANALOG INPUTS	(-)
		<b>Do not connect!</b>		
		<b>Do not connect!</b>		
		<b>Do not connect!</b>		
		<b>Do not connect!</b>		
Shield	-	Shield	BAT	GND

KINTECH COLOR CODES		MANUFACTURER COLOR CODES	
○	White	●	Red
●	Green	●	Grey
●	Yellow	●	Yellow
●	Brown	●	Pink
		○	White
		●	Blue
		●	Green
		●	Brown
●	Yellow - Green	●	Yellow - Green

SENSOR DIMENSIONS



ORDERING GUIDE: EE08-PFT1V11E601T02

<b>HOUSING</b>	Polycarbonate (P)
<b>MODEL</b>	RH active / Temp active (FT) RH active / Temp passive (FP)
<b>OUTPUT</b>	0...1 V (1) 0...2.5 V (7) 0...5 V (2) 0...10 V (3)
<b>SUPPLY</b>	4.5...15 VDC (V10) 7...30 VDC (V11)
<b>T-SENSOR</b>	Pt 100 DIN A (A) Pt 1000 DIN A (C)
<b>TYPE</b>	With connector (D) With cable (E)
<b>FILTER</b>	Metal grid filter (6)
<b>COATING</b>	without coating (no code) with coating (HC01)
<b>CABLE</b>	1m (01) 2m (02) 5m (05)
<b>T-UNIT</b>	Metric (no code) Non metric (E01)
<b>T-SCALING</b>	-40...+80 °C (T22) -40...+60 °C (T02) -30...+70 °C (T08) -20...+80 °C (T24) -20...+50 °C (T48) Other (Txx)

## HOW TO CONFIGURE THIS SENSOR IN EOL MANAGER

Open EOL Manager and go to the data logger you are working on. Open the “inputs” tab and select the following type and model:

- **Section:** Analog Inputs
- **Type1:** Temperature
- **Model:** EE8 /ROTRONIC
- **Type2:** Rel.Humidity
- **Model:** EE8 /ROTRONIC

**Calibration values:** Tick the “Std Cal” to use this sensors standard slope and offset. If you have an independent calibration certificate for this sensor insert the slope and offset values from this certificate.

### IMPORTANT

- After configuring the sensor in EOL Manager make sure to upload the configuration file to your EOL Zenith data logger. See the “Quick User Guide” how to upload configuration files to the data logger.
- All sensor wire shields must be connected to the data logger GND terminal.
- The data logger should always be connected to a separated ground rod. **Not** to the lightning rod of the tower.
- To store data such as Std Dev, Max and Min you should tick the corresponding boxes next to each anemometer channel when setting up your site file. Otherwise these parameters will not be stored.
- The “Temp (+)” wire and the “RH (+)” wire from the sensor should be connected to two separate “ANALOG” channels.

- Description example diagram shown before:

TEMPERATURE - HUMIDITY VAISALA HMP155	DATA LOGGER EOL ZENITH
Temp (+)	ANL 1
RH (+)	ANL 2

They can however be distributed on all “ANALOG” and “EXTRA ANALOG” channels according to needs.

- Sensor accuracy is ±2% RH at 20 °C (0...90% RH). Recorded data outside of this mentioned measuring range might be invalid.
- Depending on the temperature range, please use the below Slope and Offsets when configuring the sensor in EOL Manager:

OUTPUT SIGNAL	TEMP. RANGE	RH. RANGE	SLOPE	OFFSET
0...1 V	-40...+60°C (Std. Cal.)		100	-40
	-20...+80°C		100	-20
		0...100% RH	100	0

- Cable recommendation:

Sensor	Signal cable 4x0.5 mm <sup>2</sup>
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**KINTECH ENGINEERING**

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