

EE21 Series

High-Precision Humidity / Temperature Transmitter for HVAC Applications

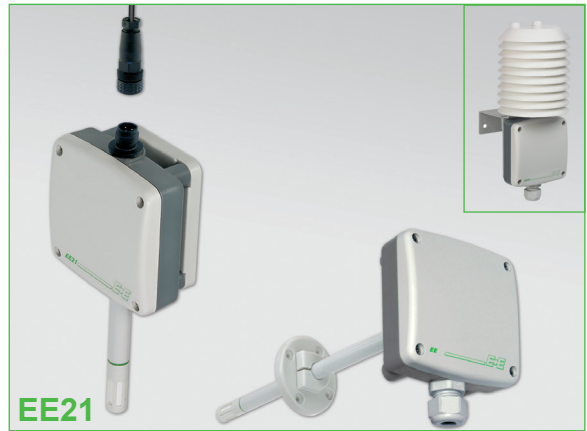
Transmitters of the EE21 series have been developed for high-precision measurement of relative humidity and temperature.

EE21 transmitters are available for wall and duct mounting with or without the very useful snap-in-mounting kit, which allows a quick and easy exchange of the transmitter. Outputs can be selected between voltage and current.

An optional radiation shield providing a forced ventilation is recommended for use in outdoor applications.

Special protection coating for the sensing element (code - HC) permits the permanent use in very polluted environments.

High humidity calibration is recommended for applications in high lasting humidities > 90% RH (Code - CA01).



Humidity Two-point Adjustment

With an easy routine via the push-buttons "UP" and "DOWN" on the circuit board the user can perform a fast and accurate two-point adjustment of relative humidity.



Typical Applications

- green houses
- storage rooms
- swimming halls
- meteorology

Features

- measuring range 0...100% RH
- accuracy $\pm 2\%$ RH
- traceable calibration
- working range $-40...60^{\circ}\text{C}$ ($-40...140^{\circ}\text{F}$)
- wettable
- excellent long term stability

Technical Data

Measuring values

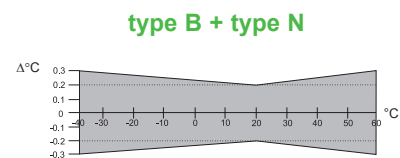
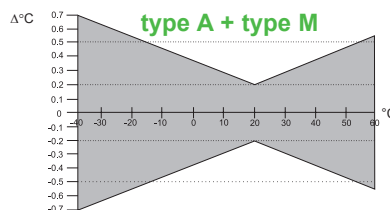
Relative Humidity

| | | |
|---|--|--------------------------------------|
| Sensor | HC1000 or HC1000C (with coating) | |
| Analogue output appropriate 0...100% RH | 0-1V | $-0.5\text{mA} < I_L < 0.5\text{mA}$ |
| | 0-5V / 0-10V | $-1\text{mA} < I_L < 1\text{mA}$ |
| | 4-20mA (two wires) | $R_L < 500 \text{ Ohm}$ |
| Working range ¹⁾ | 0...100% RH | |
| Accuracy at 20°C (68°F) | $\pm 2\%$ RH (0...90%) | $\pm 3\%$ RH (90...100%) |
| | Traceable to international standards, administrated by NIST, PTB, BEV... | |
| Hysteresis 10% - 80% - 10% | < 2% RH | |
| Temperature dependence of electronics | typ. 0.03% RH/°C | (0.02% RH/°F) |
| Temperature dependence of probe | typ. 0.03% RH/°C | (0.02% RH/°F) |

Temperature

| | | |
|--|--|--------------------------------------|
| Sensor | Pt1000 (tolerance class A, DIN EN 60751) | |
| Analogue output $-40...60^{\circ}\text{C}$ ($-40...140^{\circ}\text{F}$) | 0-1V | $-0.5\text{mA} < I_L < 0.5\text{mA}$ |
| | 0-5V / 0-10V | $-1\text{mA} < I_L < 1\text{mA}$ |
| | 4-20mA (two wires) | $R_L < 500 \text{ Ohm}$ |

Accuracy



| | |
|---------------------------------------|------------------|
| Temperature dependence of electronics | typ. 0.01°C / °C |
|---------------------------------------|------------------|

General

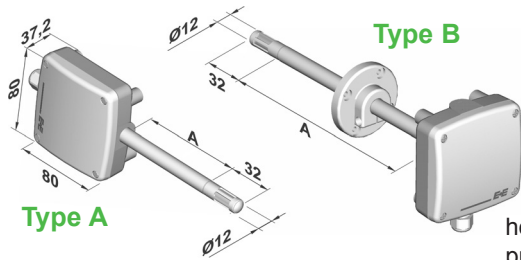
| | | | | |
|-------------------------------|---|--|-------------|--|
| Supply | for 0 - 1V for 0 - 5V for 0 - 10V for 4 - 20mA | 10 - 35V DC 12 - 35V DC 15 - 35V DC 10V + R _L x 0,02 < U _v < 35V DC; R _L < 500 Ohm | or | 9 - 29V AC 15 - 29V AC 15 - 29V AC |
| Current consumption | | for DC supply: typ. 5mA | | for AC supply: typ. 15mA _{eff} |
| Electrical connection | | screw terminals max. 1.5 mm ² (AWG 16) | | |
| Cable gland | | M16x1.5 or connection plug (only snap-in models N + M) cable Ø 4.5 - 10 mm (0.18 - 0.39") | | |
| Sensor protection | | membrane filter, sintered stainless steel filter, metal grid filter, PTFE filter | | |
| Electromagnetic compatibility | | EN61326-1 | EN61326-2-3 | ICES-003 ClassB FCC Part15 ClassB |
| Temperature ranges | | working temperature probe: working temperature electronics: storage temperature: | | -40...60°C (-40...140°F) -40...60°C (-40...140°F) -25...60°C (-13...140°F) |



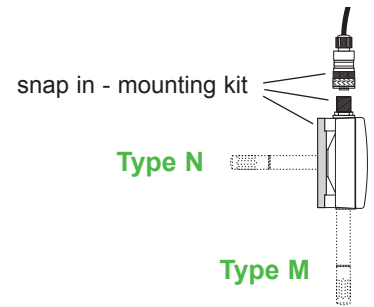
1) Please refer to working range of HC1000!

Dimensions (mm)

1 mm = 0.03937" / 1" = 25.4 mm

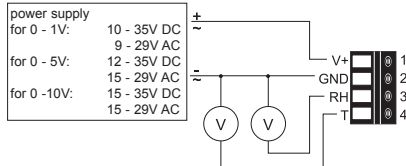


housing: PC
protection class: IP65, Nema 4

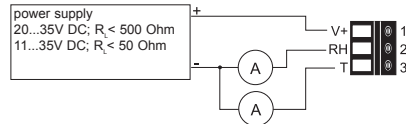


Connection Diagram

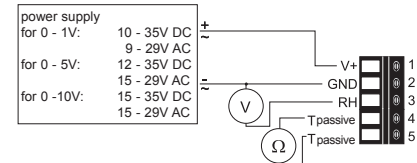
EE21-FT1/2/3xxx / EE21-F1/2/3xxx



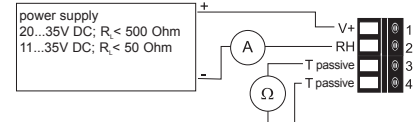
EE21-FT6xxx / EE21-F6xxx



EE21-FP3xxx



EE21-FP6xxx



Ordering Guide

| MODEL | OUTPUT | T-SENSOR | HOUSING TYPE | PROBE LENGTH | FILTER |
|-----------------------------|-------------------------------|-------------------|--|-------------------|-------------------------------------|
| humidity + temperature (FT) | 0 - 1 V (1) | Pt 100 DIN A (A) | wall mounting (A) | 50 mm (1.9") (2) | membrane filter (1) |
| humidity (F) | 0 - 5 V (2) | Pt 1000 DIN A (C) | duct mounting (B) | 200 mm (7.9") (5) | sintered stainless steel filter (3) |
| humidity+temp. passive (FP) | 0 - 10 V (3) 4 - 20 mA (6) | | snap in - wall mounting ¹⁾ (M) snap in - duct mounting ¹⁾ (N) | | metal grid filter (6) |
| EE21- | | | | | |

| COATING | T-UNIT | SCALING OF T-OUTPUT |
|--------------|--------------|--------------------------------|
| no (no code) | °C (no code) | -40...60 (T02) -40...140 (T83) |
| yes (HC01) | °F (E01) | -30...70 (T08) 0...176 (T86) |
| | | -20...80 (T24) 32...132 (T96) |
| | | other (Txx) |

1) Combination snap - in mounting and model FP is not possible

Order Example

EE21-FT3A26/T24

model: RH/T transmitter
output: 0 - 10V
housing type: wall mounting
probe length: 50 mm (7.9")
filter: metal grid filter
sensor coating: no
calibration: standard
T-unit: °C
Scaling of T-output: -20...80°C

Accessories

- radiation shield (HA010501) - filter caps (HA0101xx)