

EE180 Series

Humidity / Temperature Transmitter for Meteorological Applications

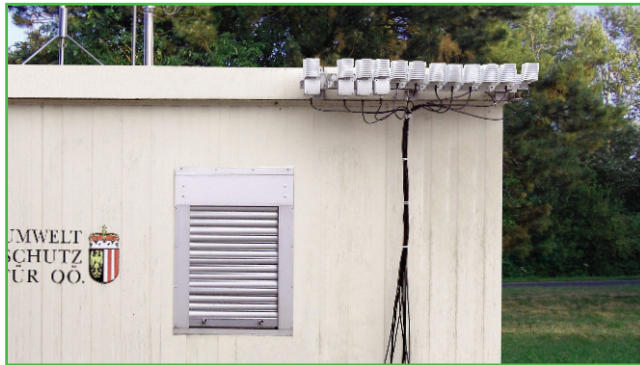
Accurate humidity / temperature measurement over a wide working range and the probe design, make the EE180 the perfect solution for demanding meteorological applications and road weather systems.

With the inimitable E+E sensor coating the measurement cell is even better protected against typical conterminants in outside applications, like dirt, dust or salt.

Low power consumption and short start-up time support efficient energy management for battery operated systems.

The humidity and temperature measurement are available as analogue outputs (0-1/2.5/5V) 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.



Typical Applications

weather stations
road weather instruments
humidity / temperature data logging

Features

low power consumption
analog and digital output
E+E sensor coating
excellent resistance against salt, dust etc.

Technical Data

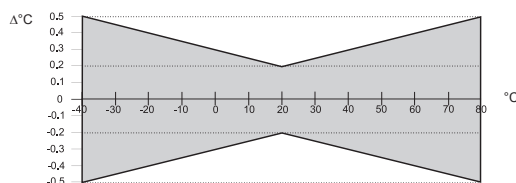
Measuring values

Relative Humidity

| | | |
|--|-------------------------------------|---------------------------------|
| Sensor | HC101 | |
| Working range ¹⁾ | 0...100% RH | |
| Analogue output 0...100% RH | 0-1/2.5/5/10V | -0.2mA < I _L < 0.2mA |
| Digital output (2 wire) ²⁾ | output value: 0.00...100.00% RH | |
| Accuracy ³⁾ (including hysteresis, non-linearity and repeatability, traceable to intern. standards, administrated by NIST, PTB, BEV...) | | |
| -15...40°C (5...104°F) ≤90% RH | ± (1.3 + 0.3%*mv) % RH | |
| -15...40°C (5...104°F) >90% RH | ± 2.3% RH | |
| -25...60°C (-13...140°F) | ± (1.4 + 1%*mv) % RH | |
| -40...60°C (-40...140°F) | ± (1.5 + 1.5%*mv) % RH | |
| Temperature dependence | typ. 0.03% RH/°C (typ. 0.02% RH/°F) | |

Temperature EE180-FTx

| | | |
|---|---|---------------------------------|
| Sensor | Pt 1000 Class A | |
| Analogue output xx...yy°C ³⁾ | 0-1/2.5/5/10V | -0.2mA < I _L < 0.2mA |
| Digital output (2 wire) ²⁾ | output value: -40.00...+80.00°C (-40...176°F) | |
| Accuracy at 10/24V DC | | |



Temperature EE180-FPx

| | |
|--------|-------------------------|
| Output | resistive, 4-wire |
| Sensor | refer to ordering guide |

General

| | | |
|-------------------------------|---|------------------------|
| Supply voltage | output 0-1V / 0-2.5V | 4.5-15V DC or 7-30V DC |
| | output 0-5V | 7-30V DC |
| | output 0-10V | 12-30V DC |
| Current consumption | <0.75mA (V10) | |
| | <1.2mA (V11) | |
| Digital interface | E2-interface | level = 3.3V / ±0.1V |
| Housing | plastic material / IP65 | |
| Weight | 290 g (with 5m cable) | |
| Electromagnetic compatibility | EN 61000-6-3 | |
| | EN 61000-6-2 | |
| Temperature ranges | working temperature: -40...60°C (-40...140°F) | |
| | storage temperature: -40...80°C (-40...176°F) | |



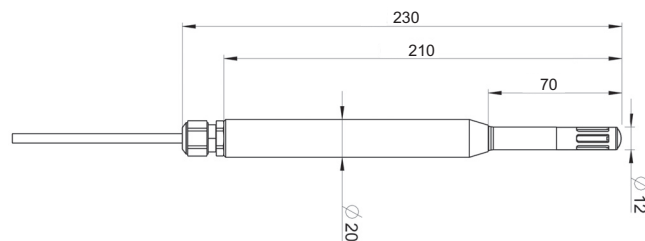
1) refer to the working range of the humidity sensor HC101

2) serial protocol refer to www.epluse.com

3) refer to ordering guide

*) 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).

Dimensions (mm)



Connection Diagram

| | Temp. active | Temp. passive, 4-wire | | Temp. active | Temp. passive, 4-wire |
|-----------|-----------------------|-----------------------|-----------------|--------------|-----------------------|
| T-passive | white (not connected) | white, black | RH-out | yellow | yellow |
| T-passive | blue (not connected) | blue, violet | SCL } E2- | green | green |
| GND | pink | pink | SDA } interface | brown | brown |
| T-out | grey | grey (not connected) | +UB | red | red |

Ordering Guide

| MODEL | | OUTPUT | SUPPLY | T-SENSOR (passive, 4-wire) |
|---------------------------------------|------|------------------------|--------------|-------------------------------|
| humidity active / temperature active | (FT) | 0 - 1V ¹⁾ | 4.5 - 15V DC | Pt 100 1/3 Class B (H) |
| humidity active / temperature passive | (FP) | 0 - 2.5V ¹⁾ | 7 - 30V DC | Pt 1000 1/3 Class B (Q) |
| | | 0 - 5V ²⁾ | | Pt 100 1/5 Class B (P) |
| | | 0 - 10V ²⁾ | | |
| EE180- | | | | |

1) possible with supply 4.5 - 15V DC (V10) or 7 - 30V DC (V11)

2) possible with supply 7 - 30V DC (V11) only

| FILTER | COATING | CABLE LENGTH | T-SCALING (active, T-output) |
|------------------------|-----------------------|--------------------|---------------------------------|
| metal grid filter (E6) | sensor coating (HC01) | 1m (3.3ft) (K100) | -40...60 (T02) |
| | | 3m (9.8ft) (K300) | 0...60 (T07) |
| | | 5m (16.4ft) (K500) | -20...50 (T48) |
| | | | other (Txx) |

Order Example

EE180-FT2V11E6HC01K300T02

model: humidity active / temp. active
 output: 0 - 5V
 supply: 7 - 30V DC
 type: with cable

filter: metal grid filter
 coating: sensor coating
 cable length: 3m (9.8ft)
 T-scaling: -40...60°C

Accessories / Replacement Parts

- metal grid filter (HA010106-6018)

EE180