

EE160

Humidity and Temperature Transmitter for HVAC Applications

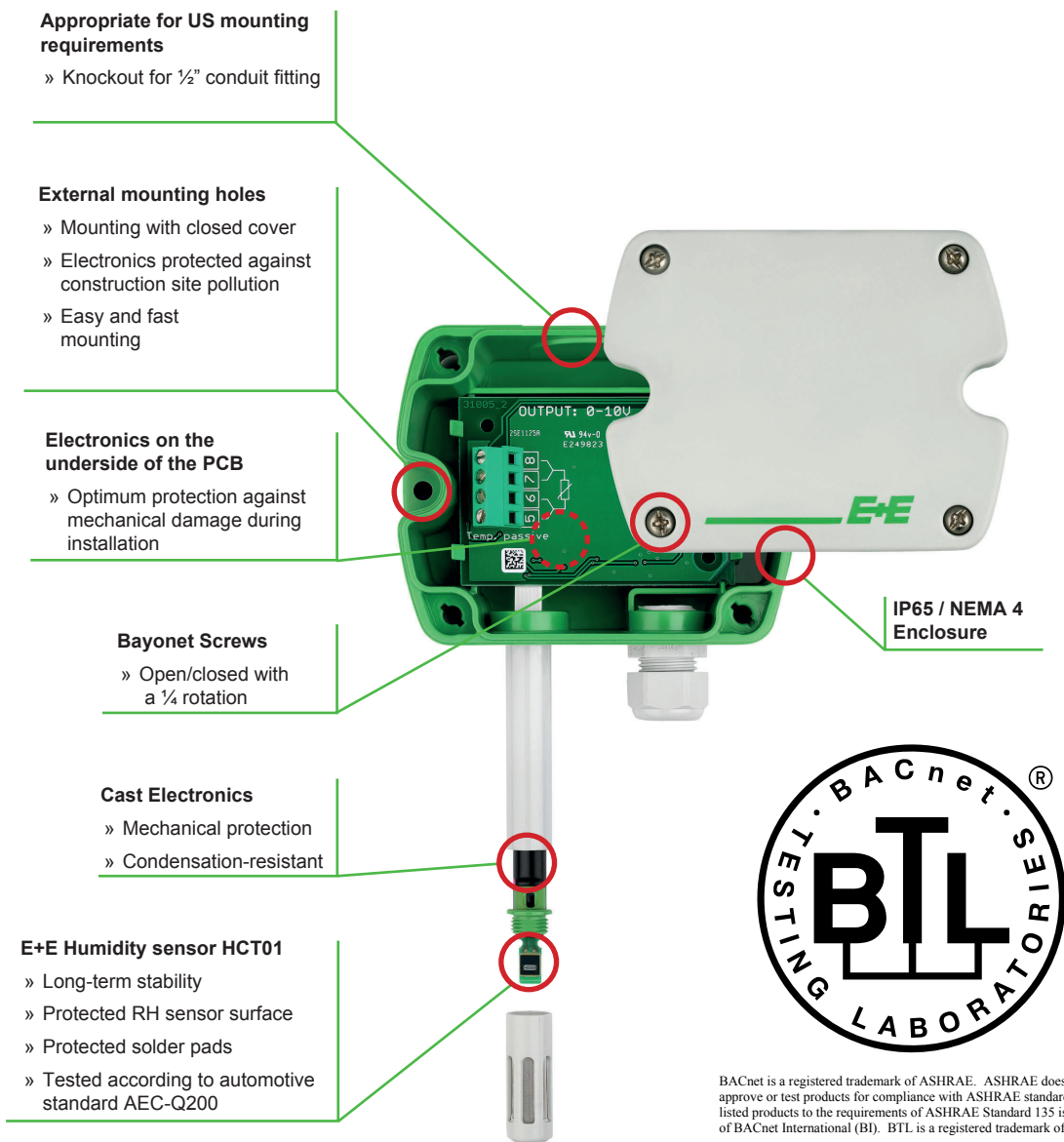
Specially designed for HVAC, the EE160 sensor by E+E Elektronik is a cost-effective, highly accurate and reliable solution for measuring relative air humidity and temperature.

The enclosure minimizes installation costs and provides outstanding protection against contamination and condensation, thus ensuring flawless operation.

The EE160 employs the new humidity/temperature E+E sensor element HCT01 with excellent long term stability and resistance against pollutants. In combination with a long calibration experience, the EE160 provides a measurement accuracy of $\pm 2.5\%RH$ and is available for wall or duct-mounted with current, voltage BACnet MS/TP or Modbus RTU output.



A configurator makes it possible to freely select the scaling of the temperature output and configure the Modbus parameters. The configurator software, which is free of charge, allows additionally for an on-site adjustment of the humidity and temperature.



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Technical data

Measured values

Relative Humidity

Sensor E+E Sensor HCT01-00D

Working range 10...95% RH

Accuracy at 20°C ±2.5% RH

Temperature dependency typ. ±0.03% RH/°C

Temperature

Sensor Pt1000 (tolerance class B, DIN EN 60751)

T-Accuracy at 20°C ±0.3°C

Outputs

Analog output 0-10 V -1 mA < I_L < 1 mA or

(RH: 0...100%; T: see ordering guide) 4-20 mA (two-wire) R_L < 500 Ohm

Digital output RS485 (BACnet MS/TP or Modbus RTU) max. 32 EE160 in one bus

Passiver T-sensor

4-wire see ordering guide

General

Power supply

for 0 - 10 V / RS485 15 - 35V DC or 24V AC ±20%

for 4 - 20 mA 10V + R_L x 20 mA < U_v < 35V DC

Current consumption

Analog with DC power supply typ. 5mA

with AC power supply typ. 13mA_{eff}

Digital with DC power supply typ. 15mA

with AC power supply typ. 25mA_{eff}

Connection

Screw terminals, max. 1.5 mm²

Housing material

Polycarbonate, UL94V-0 approved

Protection class

IP65 / NEMA 4

Cable gland

M16 x 1.5

Sensor protection

membrane filter

Electromagnetic compatibility

EN61326-1

EN61326-2-3

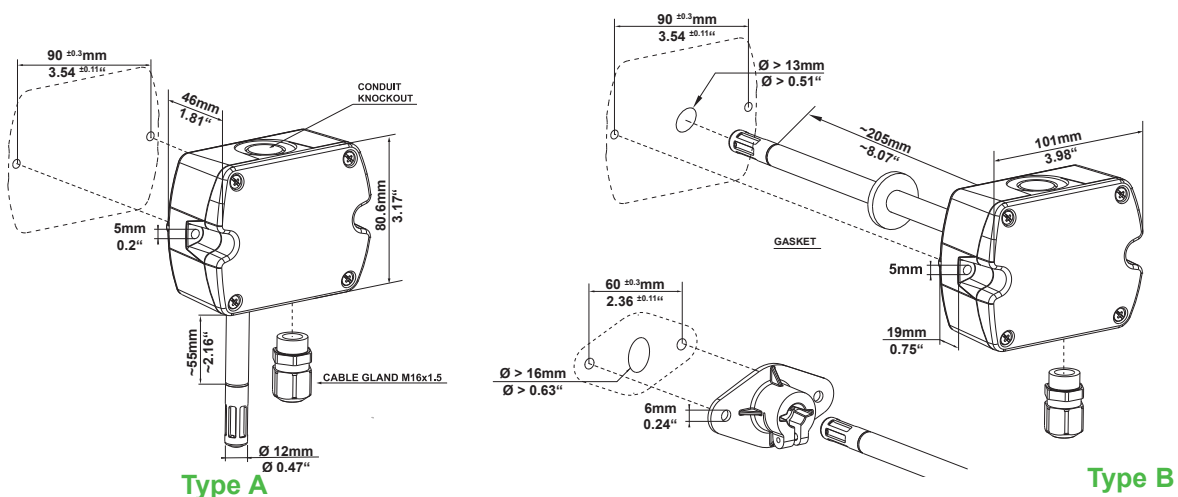


Temperature ranges

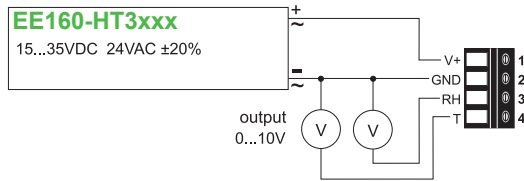
Operating temperature: -15...60°C (-5...140°F)

Storage temperature: -25...60°C (-13...140°F)

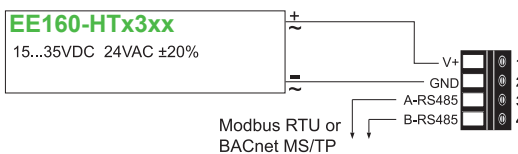
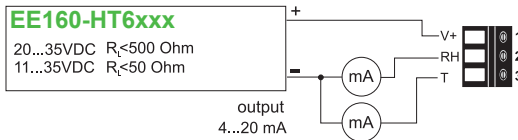
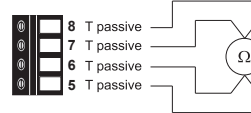
Dimensions (mm)



Connection diagram



T-passive connection for HT3xxx/HT6xxx



Ordering Guide

Hardware configuration

MODEL	ANALOG ¹⁾	DIGITAL ¹⁾	PASSIVE T-SENSOR ²⁾	HOUSING	TYPE	FILTER
humidity + temperature (HT)	0-10V (3) 4-20mA (6) none (x)	RS485 (3) none (x)	Pt 100 DIN A (A) Pt 1000 DIN A (C) NTC 10k (E) Ni1000, TK6180 (J) none (x)	polycarbonate (P)	wall mount (A) duct mount (B)	membrane filter (B)
EE160-						

Analogue outputs setup

OUTPUT SCALING	SCALING ³⁾	UNIT
temperature (Tx)	-20...80 °C (024) -40...60 °C (002) -10...50 °C (003) 0...50 °C (004)	metric (M) non-metric (N)

Digital output setup

PROTOCOL	BAUDRATE	PARITY	STOPBITS	UNIT
Modbus RTU ⁴⁾ (1)	9600 (A)	odd (O)	1 stopbit (1)	metric (M)
BACnet MS/TP ⁵⁾ (3)	19200 (B) 38400 (C) 57600 ⁶⁾ (D) 76800 ⁶⁾ (E) 115200 ⁶⁾ (F)	even (E) no parity (N)	2 stopbit (2)	non-metric (N)

1) A combination of analog and digital version is not possible
 2) Analogue version only
 3) Other scaling upon request

4) Modbus Map and setup instructions: See User Guide and Modbus Application Note at www.epluse.com/EE160
 5) Product Implementation conformance Statement (PICS) available at www.epluse.com/EE160
 6) Only for BACnet

Order example

Analog output

EE160-HT6xAPAB-Tx003M

Model: humidity + temperature transmitter
 Analog output: 4-20mA
 Passive T-Sensor: Pt 100 DIN A
 Housing: polycarbonate
 Type: wall mounting
 Filter: membrane filter

Output scaling: temperature
 Scaling: -10...50°
 Unit: metric

Digital output

EE160-HTx3xPBB-1AE1N

Model: humidity + temperature transmitter
 Digital output: RS485
 Housing: polycarbonat
 Type: duct mounting
 Filter: membrane filter

Protocol: Modbus
 Baudrate: 9600
 Parity: even
 Stopbits: 1
 Unit: non-metric

Accessories

Product configuration adapter [see data sheet EE-PCA](#)
 Product configuration software [EE-PCS](#) (free download: www.epluse.com/EE210)
 Power supply adapter [V03](#) (see data sheet Accessories)