

EE160

Humidity and Temperature Transmitter for HVAC Applications

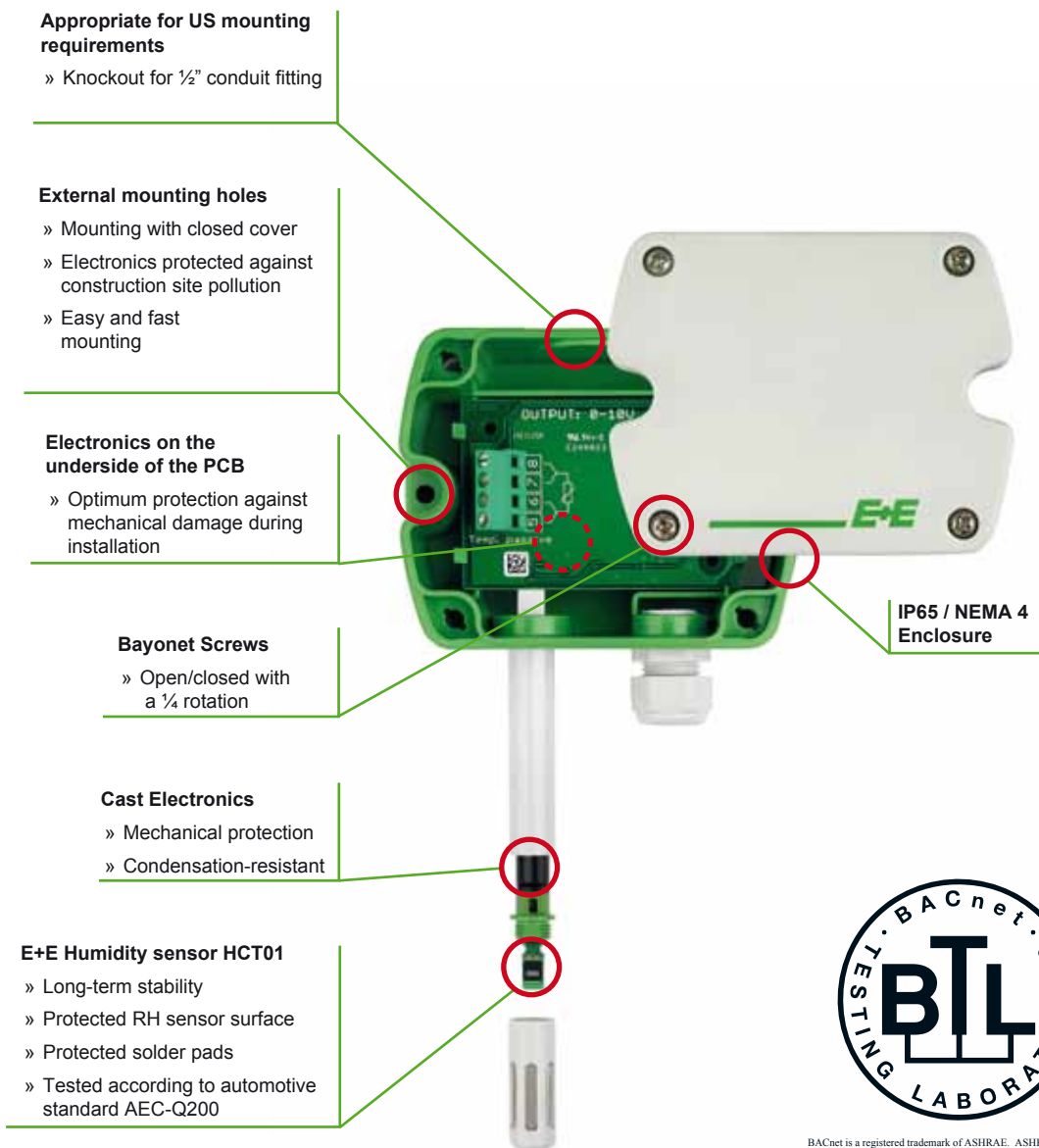
Specially designed for HVAC, the EE160 sensor by E+E Elektronik is a cost-effective, highly accurate and reliable solution for measuring relative air humidity and temperature.

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
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Passiver T-sensor

4-wire	see ordering guide
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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

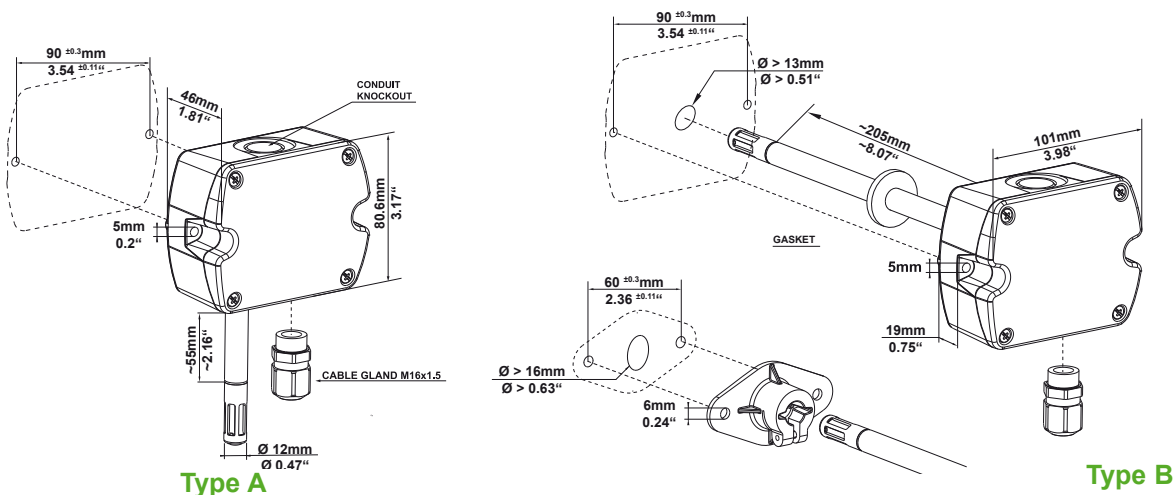
Current consumption

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}

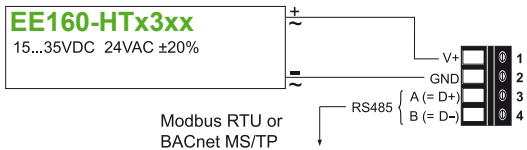
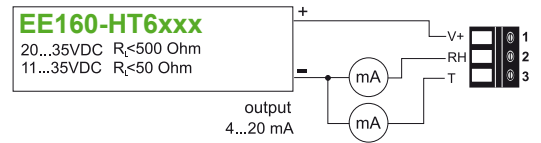
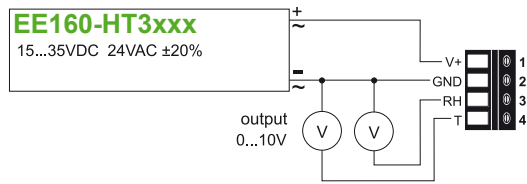
Connection	Screw terminals, max. 1.5 mm ²
Housing material	Polycarbonate, UL94V-0 approved
Protection class	IP65 / NEMA 4
Cable gland	M16 x 1.5
Sensor protection	membrane filter
Electromagnetic compatibility	EN61326-1 EN61326-2-3
Temperature ranges	Operating temperature: -40...60°C (-40...140°F) Storage temperature: -20...60°C (-4...140°F)



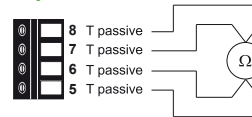
Dimensions (mm)



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)	°C	metric (M) non-metric (N)
	-20...80 (024)	32...122 (076)
	-40...60 (002)	-40...140 (083)
	-10...50 (003)	0...140 (085)
	0...50 (004)	20...120 (015)

Digital output setup

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

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: polycarbonate
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/EE160)
Power supply adapter	V03 (see data sheet Accessories)

Scope of supply

Model	EE160 Wall mount (Type A)	EE160 Duct mount (Type B)	Additionally for all EE160 with RS485 interface
EE160 Transmitter according ordering guide	✓	✓	
Cable gland	✓	✓	✓
Mounting kit	✓	✓	
Mounting flange		✓	
Inspection certificate according to DIN EN10204 - 3.1	✓	✓	
Quick Guide - EE160 RS485 Setup			✓