

## HUME88160 HVAC Humidity and Temperature Transmitter

Specially designed for HVAC, the 88160 sensor 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 88160 employs the new humidity/temperature 8+ sensor element HCT01 with excellent long term stability and resistance against pollutants. In combination with a long calibration experience, the 88160 provides a measurement accuracy of  $\pm 2.5\%RH$  and is available for wall or duct-mounted with current, voltage 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.



### Easily Adapted for the US Market

- » Knockout for 1/2" conduit fitting

### External mounting holes

- » Mounting with closed cover
- » Electronics protected against construction site pollution
- » Easy and fast mounting

### Electronics on the Underside of the PCB

- » Optimum protection against mechanical damage during installation

### Bayonet Screws

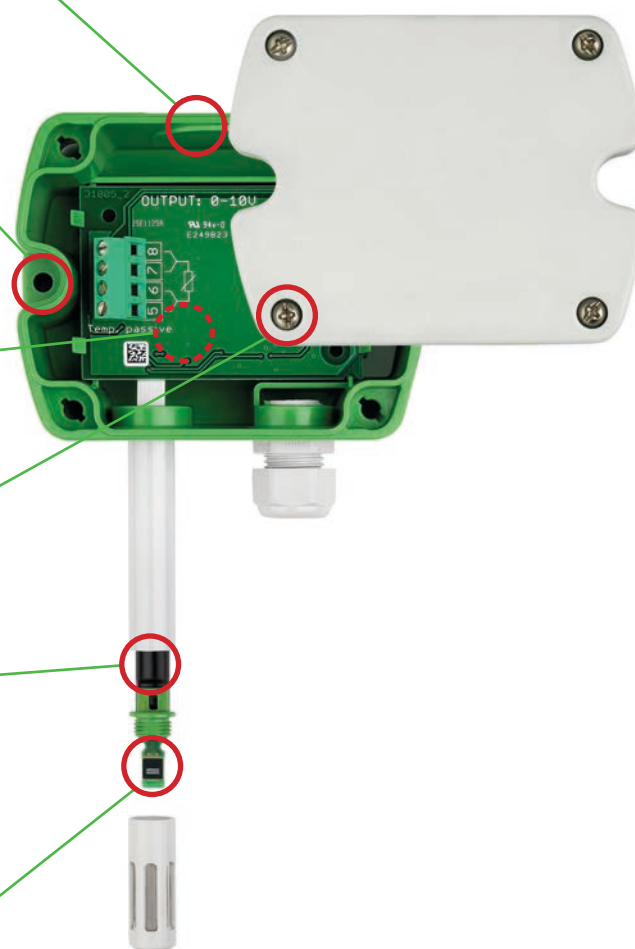
- » Open/closed with a 1/4 rotation

### Cast Electronics

- » Mechanical protection
- » Condensation-resistant

### Humidity sensor HCT01

- » Long-term stability
- » Protected RH sensor surface
- » Protected solder pads
- » Tested according to automotive standard AEC-Q200



## Technical data

### Measured values

#### Relative Humidity

Sensor	Sensor HCT01-00D	
Analog output 0...100% RH	0-10 V	-1 mA < $I_L$ < 1 mA oder
	4-20 mA (two-wire)	$R_L < 500 \text{ Ohm}$

Digital output*	RS485
-----------------	-------

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)
--------	--

Analog output <sup>1)</sup>	0-10 V
-----------------------------	--------

	4-20 mA
--	---------

Digital output*	Modbus RTU
-----------------	------------

T-Accuracy at 20°C	±0.3°C
--------------------	--------

passive T-output	see ordering code
------------------	-------------------

### General

#### Power supply

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

	10V + $R_L \times 20 \text{ mA} < U_V < 35V \text{ DC}$
--	---

for 4 - 20 mA	
---------------	--

#### Current consumption

##### Analog

with DC power supply	typ. 5mA
----------------------	----------

with AC power supply	typ. 13mA <sub>eff</sub>
----------------------	--------------------------

##### Digital\*

with AC power supply	typ. 2mA
----------------------	----------

#### Connection

	Screw terminals, max. 1.5 mm <sup>2</sup>
--	---

#### Housing / protection class

	Polycarbonate (UL listed) / IP65
--	----------------------------------

#### Cable gland

	M16 x 1.5
--	-----------

#### Sensor protection

	membrane filter
--	-----------------

#### Electromagnetic compatibility

	EN61326-1
--	-----------

	EN61326-2-3
--	-------------



#### Temperature ranges

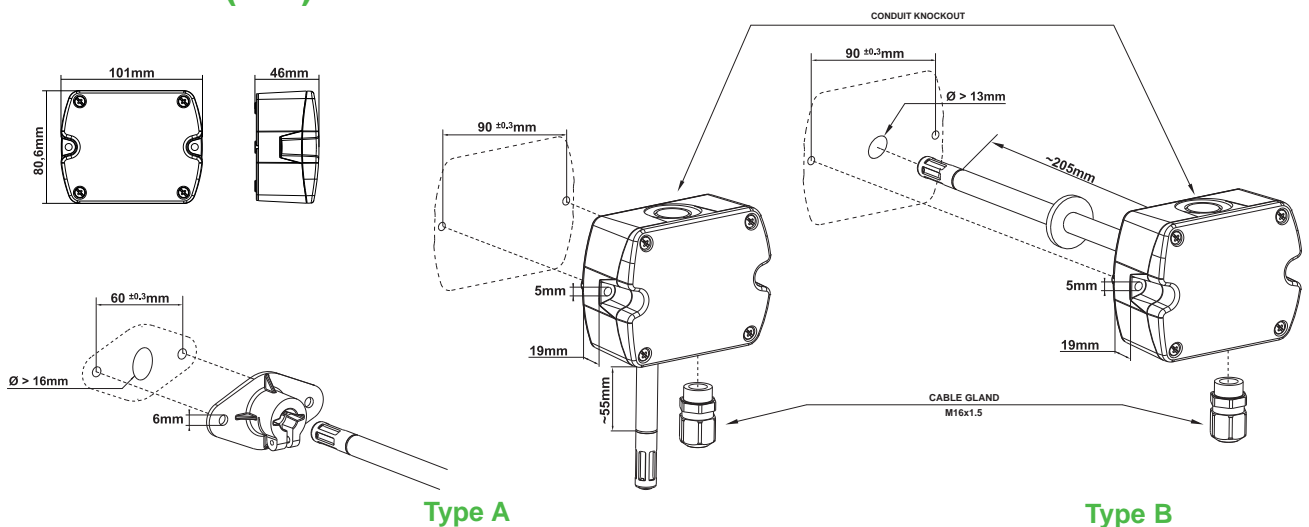
Operating temperature:	-15...60°C ( 5...140°F)
------------------------	-------------------------

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

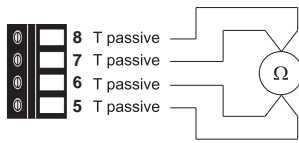
\* Available from Q4/2012

<sup>1)</sup> Output scaling see Ordering Guide

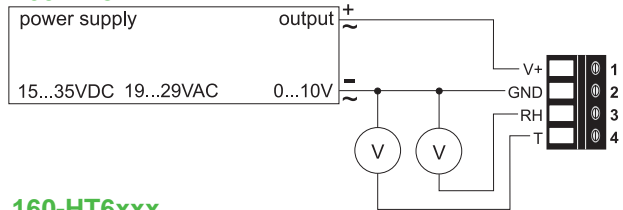
### Dimensions (mm)



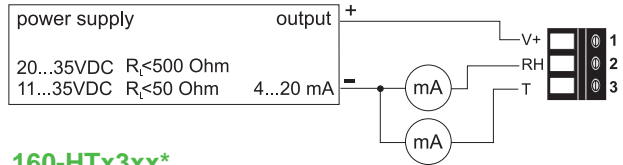
## Connection diagram



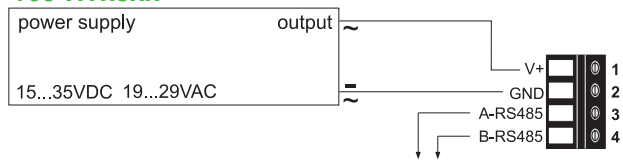
### 160-HT3xxx



### 160-HT6xxx



### 160-HTx3xx\*



## Ordering Guide

### Configuration

MODEL	ANALOG <sup>1)</sup>	DIGITAL <sup>1)*</sup>	PASSIVE T-SENSOR <sup>2)</sup>	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) none (x)	polycarbonate (P)	wall mount (A) duct mount (B)	membrane filter (B)
<b>160-</b>						

### Interface parameter - analog output

OUTPUT SCALING	SCALING	UNIT
temperature (Tx)	-30...40° (001) -40...60° (002) -10...50° (003) 0...50° (004) other (xxx)	metric (M) non-metric (N)

### Interface parameter - digital output\*

PROTOCOL	BAUDRATE	PARITY	STOPBITS	UNIT
modbus (1)	9600 (A) 19200 (B) 38400 (C)	odd (O) even (E) no parity (N)	1 stopbit (1) 2 stopbit (2)	metric (M) non-metric (N)

<sup>1)</sup> a combination of analog and digital version is not possible <sup>2)</sup> analogue version only  
\* Available from Q4/2012

## Accessories

- 160 Cable for configuration adapter (HA011059)\*
  - Configuration adapter (HA011050)
- \* only for 160 analog version

## Order example

### Analog output

#### 160-HT6xAPAB/Tx001M

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: -30...40°  
 Unit: metric

### Digital output

#### 160-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