

# EE210 Outdoor

## Humidity and Temperature Transmitter for Outdoor and Meteorological Applications

The EE210 Outdoor transmitter meets the highest requirements in demanding outdoor applications. It measures accurately the relative humidity and temperature, and calculates other parameters such as dew point, frost point or specific enthalpy.

Excellent performance of EE210 Outdoor in polluted environment is ensured by the combination of completely encapsulated measurement electronics inside the sensing probe and long-term stable HCT01 sensor with the E+E proprietary protective coating.

Two of the measured and calculated values are available on the analogue voltage or current outputs. With an optional configuration kit the user can set the output scaling and perform one or two point adjustment for humidity and temperature.

The HA010501 radiation shield can be mounted onto a wall or a mast. It protects the sensing probe from solar radiation and precipitations while providing natural ventilation for short response time.



**EE210 Outdoor with radiation shield**

### Features

**E+E Humidity sensor HCT01**

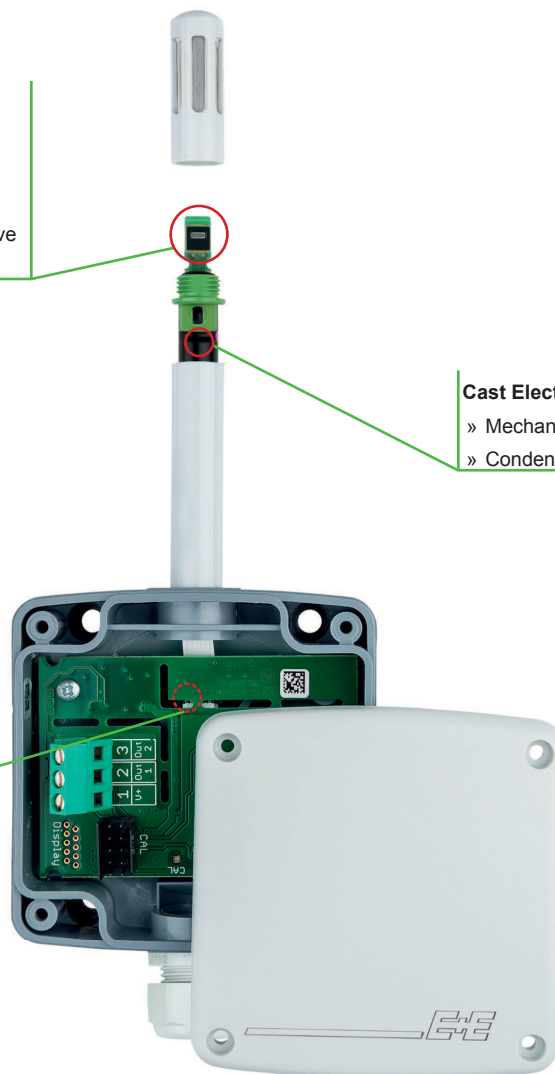
- » Long-term stability
- » Protected RH sensor surface
- » Protected solder pads
- » Tested according to automotive standard AEC-Q200

**Cast Electronics**

- » Mechanical protection
- » Condensation-resistant

**Electronics on the underside of the PCB**

- » Optimum protection against mechanical damage during installation



## Technical Data

### Measured Values

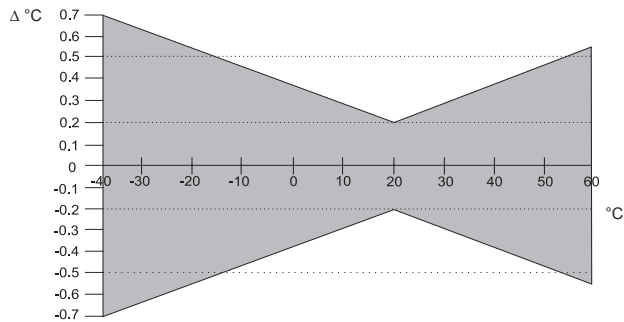
#### Relative Humidity

Sensor	E+E Sensor HCT01-00D	
Working range	0...100% RH	
RH accuracy <sup>1)</sup>		
-15...40°C (5...104°F) ≤ 90% RH	± (1.6 + 0.005*measured value) % RH	
-15...40°C (5...104°F) ≥ 90% RH	± 3 % RH	
-40...60°C (0...140°F)	± (2.3 + 0.008*measured value) % RH	
Temperature dependence electronics	0.06% RH/°C	

#### Temperature

Sensor Pt1000 (tolerance class B, DIN EN 60751) integrated in HCT01

T-accuracy <sup>1)</sup>



### Outputs

<b>Analog output</b>	0-10 V	-1 mA < I <sub>L</sub> < 1 mA
(RH: 0...100%; T: see ordering guide)	4-20 mA (two-wire)	250 ≤ R <sub>L</sub> ≤ 500 Ohm

### General

Power supply	
for 0-10 V	15 - 35V DC <sup>2)</sup> or 24V AC ±20%
for 4-20 mA	24V DC ±10%
Current consumption	
Voltage output	DC supply typ. 3.3mA AC supply typ. 34mA
Current output	DC supply max. 40mA
Connection	Screw terminals, max. 1.5 mm <sup>2</sup>
Housing material	Polycarbonate
Protection class	IP65
Cable gland	M16 x 1.5
Sensor protection	E+E Coating
Electromagnetic compatibility	EN61326-1 EN61326-2-3 Industrial Environment FCC Part 15 Class B ICES-003 Issue 5 Class B
Temperature ranges	Operating temperature: -40...60°C (-40...140°F) Storage temperature: -40...60°C (-40...140°F)



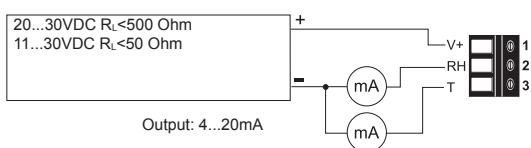
### Radiation Shield

Material	Polystyrene
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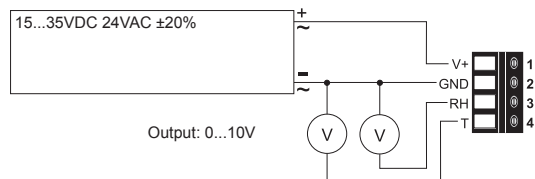
1) At 24V and 250 Ohm incl. hysteresis, non-linearity and repeatability  
2) USA & Canada: class 2 supply required, max. supply voltage 30V

## Connection Diagram

#### EE210-HT6x

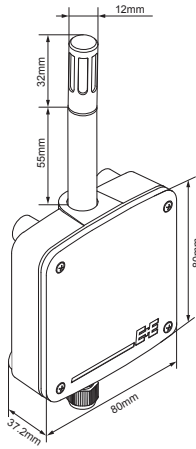


#### EE210-HT3x

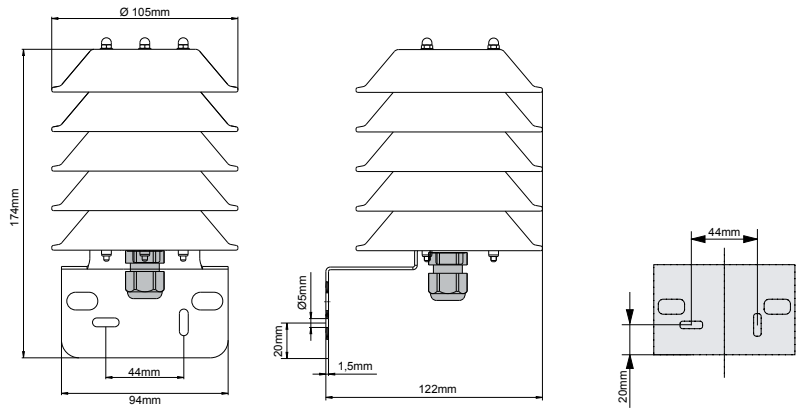


## Dimensions (mm)

### EE210 Outdoor



### Radiation shield HA010501 (ordered separately)



## Ordering Guide

MODEL	ANALOGUE <sup>1)</sup>	TYPE	FILTER
humidity + temperature (HT)	0-10V (3x) 4-20mA (6x)	Outdoor	metal grid (C)
<b>EE210-</b>			

### Analogue outputs setup

OUTPUT 1	SCALING 1 <sup>2)</sup>	OUTPUT 2	SCALING 2 <sup>2)</sup>	UNIT
relative humidity <sup>1)</sup> (Uw)	-40...60 (002)	relative humidity <sup>1)</sup> (Uw)	-40...60 (002)	metric (M)
temperature (Tx)	-10...50 (003)	temperature (Tx)	-10...50 (003)	non-metric (N)
dew point temperature (TD)	0...50 (004)	dew point temperature (TD)	0...50 (004)	
frost point temperature (TF)	32...122 (076)	frost point temperature (TF)	32...122 (076)	
specific enthalpy <sup>1)</sup> (Hx)	-40...140 (083)	specific enthalpy <sup>1)</sup> (Hx)	-40...140 (083)	
water vapour partial pressure <sup>1)</sup> (Ex)		water vapour partial pressure <sup>1)</sup> (Ex)		
mixing ratio <sup>1)</sup> (Rx)		mixing ratio <sup>1)</sup> (Rx)		
absolute humidity <sup>1)</sup> (DV)		absolute humidity <sup>1)</sup> (DV)		

1) Factory Scaling

relative humidity	0...100% RH	
water vapour partial pressure	0...200mbar	0...3psi
mixing ratio	0...425g/kg	0...2900gr/lb
absolute humidity	0...150g/m <sup>3</sup>	0...60gr/ft <sup>3</sup>
specific enthalpy	0...400kJ/kg	0...200BTU/lb

2) For Tx, TD und TF;  
other scaling upon request

## Order Examples

### Position 1:

#### EE210-HT6xQC/UwTx002M

Model: Humidity+Temperature Basic Device  
 Analog output: 4-20mA  
 Housing: Outdoor  
 Filter: metal grid  
 Output scaling 1: relative humidity  
 Scaling 1: 0...100% RH  
 Output scaling 2: temperature  
 Scaling 2: -40...60°C  
 Unit: metric

### Position 2:

#### HA010501

Radiation shield for EE210 Outdoor

## Scope of Supply

- EE210 Transmitter according ordering guide
- Cable gland
- Mounting screws
- Inspection certificate according to DIN EN10204 - 3.1

## Accessories

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