Pixsys
ELECTRONICS

SONDA DI UMIDITA' E TEMPERATURA serie RH96
TRANSMITTER FOR HUMIDITY AND TEMPERATURE Cod. RH96

1 Descrizione generale / *General description*

La sonda di umidità RH96 è un dispositivo in grado di misurare l'umidità e di fornire in uscita una tensione variabile da 0 a 10 V proporzionale al valore di umidità misurato. RH96 integra inoltre, un sensore di temperatura PT100 a tre fili, che consente anche la misurazione della temperatura dell'ambiente in cui si trova la sonda. La sonda può essere collegata ad un termoregolatore oppure ad un PLC settato per acquisire in ingresso una tensione variabile da 0..10 V. La clip in plastica fornita nella confezione, permette il fissaggio della sonda in qualsiasi tipo di parete. Per ottenere una misurazione precisa dell'umidità presente in un ambiente, è necessario lasciare per del tempo la sonda nell'atmosfera da misurare.

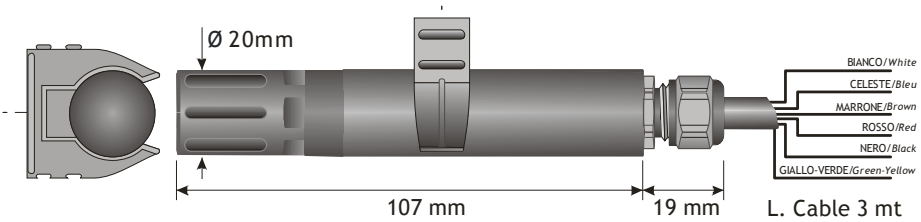
RH96 probe is conceived for humidity measurement, providing an output voltage ranging from 0 to 10 Volt proportional to measured humidity. RH96 can also include a three-wire PT100 temperature sensor, which also allows the measurement of environmental temperature. The probe may be connected to 0…10Volt input of any controller or PLC. The plastic clips provided in the package allow to fix the probe to any type of wall. To achieve accurate, reliable measurement, the probe should be priorly kept for some time in the same environment where humidity must be read.

2 Composizione Sigla / *Ordering Code*

RH96-	☐	☐	☐	☐	
Lunghezza cavo /*Cable length*	**3**				metri / *meters*
Tipo cappuccio sensore / *Type of sensor cap*		G			Griglia / *Grid*
		B			Ottone sinterizzato / *Sintered brass*
Funzionamento sonda / *Type of output signal*			A		RH in mA (4..20mA)
			V		RH in Volt (0..10V)
Temperatura / *Temperature sensor*				P	PT100 passiva 3 fili/*PT100passive,3wires*
CODICE / *CODE*	**DESCRIZIONE / *DESCRIPTION***				
2000.50.020	0..10V cappuccio con griglia e PT100 / *0..10V cap with grid and PT100*				
2000.50.021	0..10V cappuccio ottone sinterizzatoe PT100 / *0..10V sintered brass cap and PT100*				

3 Caratteristiche / *Features*

Montaggio: *Mounting:*	Usare la clip fornita nella confezione *Using clips provided in the package*
Dimensioni (mm): *Size (mm):*	126 x 20 (mm) L x d
Tensione d'alimentazione: *Power supply:*	12...30 VCC
Assorbimento: *Consumption:*	Max. 3,5 mA
Temperatura di lavoro: *Working temperature:*	-10...60 °C
Range di misurazione umidità: *Moisture measuring:*	6...100 %RH
Output: *Output Range:*	0..10 V = 0...100 %RH
Tempo di risposta a 25 °C: *Response time at 25 °C:*	2 secondi
Tempo di saturazione: *Saturation time:*	75 secondi (25 ℃ RH 50%)
Numero di connessioni: *Connections:*	3 per la sonda umidità 3 per la PT100 *3 for humidity probe, 3 for PT100*
Accuratezza a 25 °C: *Accuracy to 25 °C:*	±5 %RH (15..90 %RH)
Grado di protezione: *Sealing:*	IP21 cappuccino con griglia, IP50 cappuccio ottone sinterizzato *IP21 cap with grid, IP50 sintered cap*
Temperatura di stocaggio: *Storage temperature:*	-40..+100℃



4 Montaggio e collegamenti elettrici / Installation and electrical connections

L'umidità risulta essere una grandezza fisica facilmente variabile in un ambiente, specie se questo non è chiuso o soggetto a continui e repentini sbalzi di temperatura. Per questi motivi il luogo e la posizione in cui andrà installata e fissata la sonda di umidità deve essere il più adeguato possibile al fine di ottenere una corretta misurazione. Si consiglia per tanto di installare la sonda con il cappuccio (zona con il sensore) rivolto verso l'alto, di proteggere il sensore da eventuali spruzzi d'acqua ed evitare che il sensore sia in presenza di correnti d'aria. Una volta fissata la sonda bisogna collegarla ad uno strumento, quale un PLC o un termoregolatore, in grado di acquisire in ingresso una tensione variabile da 0 a 10 V. I fili Rosso e Nero sono l'alimentazione della sonda e rispettivamente Rosso alimentazione e nero massa. Il filo Giallo Verde è il segnale di uscita variabile in tensione della sonda. Nel caso in cui la sonda sia fornita anche del sensore di temperatura (PT100 a tre fili) i restanti tre fili (Celeste/Bianco/Marrone) sono riservati ad essa. Per altri dettagli fare riferimento all'esempio di collegamento sotto riportato.

The humidity is a physical environmental value which can easily change, especially if environment is not closed or if subject to continuous and sudden temperature changes. For these reasons, the location and position where the humidity probe will be installed must be the most appropriate in order to obtain a correct measurement. It is recommended to install the probe with the cap (zone with sensor) facing up, to protect the sensor from splashing water and from air flows. Once the probe is installed and fixed, it must be connected to an instrument such as a PLC or a controller, which will read the 0..10 Volt output signal. The Red and Black wires are the power supply of the probe, respectively Red is power and Black is ground. The Yellow Green wire is the variable output signal in voltage of the probe. In case the probe is provided with temperature sensor (PT100-three wires) the remaining three wires (Blue / White / Brown) are reserved to it. For more details refer to the example below.

5 Avvertenze / Disclaimers

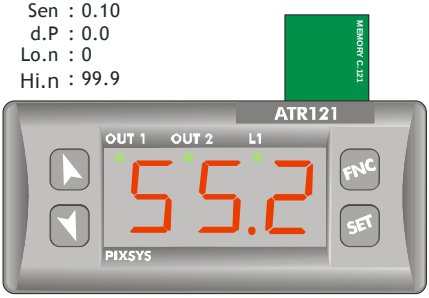
Per questioni di sicurezza non utilizzare il sensore per scopi diversi da quelli per cui è stato progettato. Proteggere il sensore dall'acqua. Ampi sbalzi di temperatura possono compromettere temporaneamente la misurazione, specie nel caso in cui si passi da una temperatura fredda ad una calda. In questo caso può formarsi della condensa all'interno del sensore alterando momentaneamente la lettura dell'umidità, questo fenomeno però, non provoca nessun danno alla sonda. Non aprire il contenitore e non manomettere la meccanica in caso contrario la misurazione dell'umidità potrà avvenire in modo errato.

For security reasons do not use the sensor for other purposes than those for which it was designed. Protect the sensor from the water. Wide temperature fluctuations can temporarily affect the measurement, particularly when switching from cold to hot temperatures. In this case condensation can be formed inside the sensor, temporarily altering the reading of moisture, this does not cause any damage to the probe. Do not open and do not tamper the enclosure, otherwise the measurement could be altered.

6 Controllo umidità e temperatura con strumenti RH96 / ATR121-AD
Humidity + temperature control with RH96 / ATR121-AD

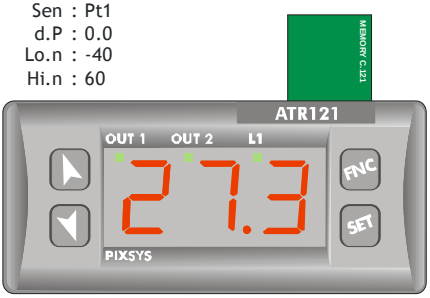
Regolatore / *Controller*
Mod./*Model* : ATR121-AD
Configurato per UMIDITÀ
Configuration for humidity sensor

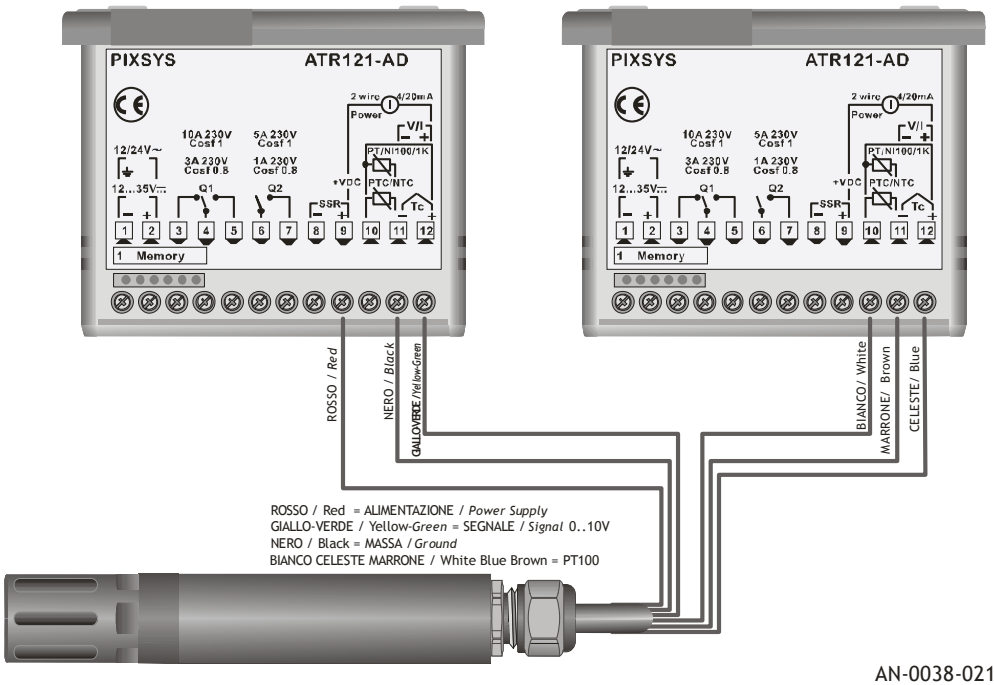
Sen : 0.10
d.P : 0.0
Lo.n : 0
Hi.n : 99.9



Regolatore / *Controller*
Mod./*Model* : ATR121-AD
Configurato per TEMPERATURA
Configuration for temperature sensor

Sen : Pt1
d.P : 0.0
Lo.n : -40
Hi.n : 60





ROSSO / Red = ALIMENTAZIONE / *Power Supply*
GIALLO-VERDE / Yellow-*Green* = SEGNALE / *Signal* 0..10V
NERO / Black = MASSA / *Ground*
BIANCO CELESTE MARRONE / White Blue Brown = PT100

AN-0038-0211

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EE06 Series

Small Size Humidity / Temperature Transmitter for OEM Applications

The analogue humidity output provides according to model type, a current signal with 4-20mA or a voltage signal with 0-1V. A passive temperature output signal is available for both versions.
The voltage version can be ordered also with an active output.

Wide temperature and supply voltage ranges, excellent long term stability and the optional sensor coating allow the use in many applications.


EE06

Typical Applications

stables
green houses
humidifiers and dehumidifiers
monitoring of storage rooms

Features

very small dimensions
excellent price/performance ratio
very good long term stability
easy installation
optional sensor coating

Technical Data

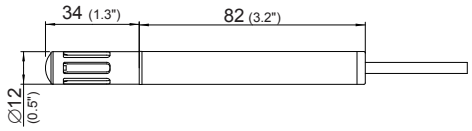
Measuring values	EE06-x1 (voltage output)	EE061-x6 (current output)
Relative humidity		
Sensor	HC101	HC105
Working range[1)]	0...100% RH	0...100% RH
Analogue output 0...100% RH	0-1 V -0.2 mA < I_L < 0.2 mA	4...20mA (two wire) R_L<500Ohm
Accuracy at 20°C (68°F), 12V DC	±3% RH (10...90% RH) ±5% RH (<10% RH and >90% RH)	±3% RH (10...90% RH) ±5% RH (<10% RH and >90% RH)
Temperature dependence [% RH/°C]	model F/FT: -0.00035 x RH x (T-20°C) model FP: typ. (-0.003 x RH + 0.01) x (T-20°C)	model F/FP: typ. ±0.03
Temperature active		
Sensor	Pt1000 (class A, DIN EN 60751)	
Analogue output -40...60°C (-40...140°F)	0-1 V -0.2 mA < I_L < 0.2 mA	
Accuracy at 12V DC, 20°C (68°F)	±0.3°C (±0.5°F)	
Temperature passive		
Output	resistive, 2 wire	resistive, 4 wire
Type of T-Sensor	refer to ordering guide	refer to ordering guide
General		
Supply voltage	4.5V DC - 30V DC	9V DC - 28V DC
Current consumption	typ. 1.5 mA	
Electrical connection	cable with 0.5m (1.6ft) or 3m (9.8ft)	cable with 0.5m (1.6ft) or 3m (9.8ft)
Housing	polycarbonate / IP65 in vertical mounting (filter cap upside)	polycarbonate IP65
Sensor protection	membrane filter, metal grid filter	membrane filter, metal grid filter
Electromagnetic compatibility	EN61326-1 EN61326-2-3	EN61326-1 EN61326-2-3
Temperature ranges	working temperature: -40...60°C (-40...140°F) storage temperature: -40...65°C (-40...149°F)	working temperature: -40...60°C (-40...140°F) storage temperature: -40...70°C (-40...158°F)

1) Refer to the working range of the humidity sensor

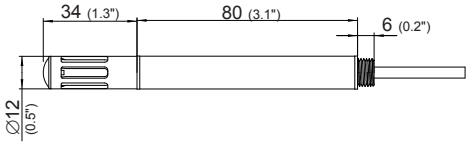
Dimensions (mm)

EE06-x1 (voltage output)

Type A:

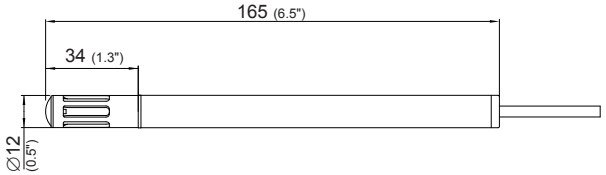


Type C:



EE061-x6 (current output)

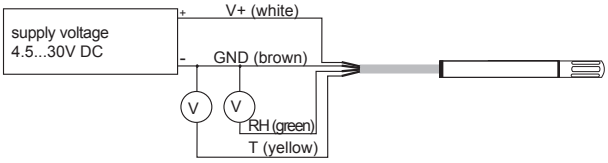
Type A:



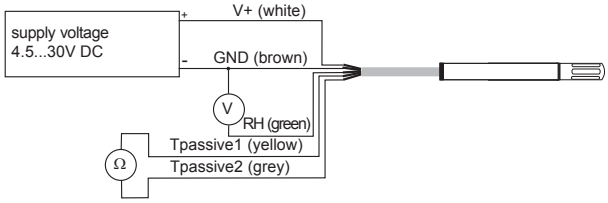
Connection Diagram

EE06-x1 (voltage output):

with active T-output:

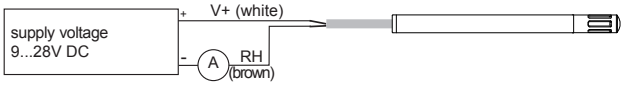


with passive T-sensor:

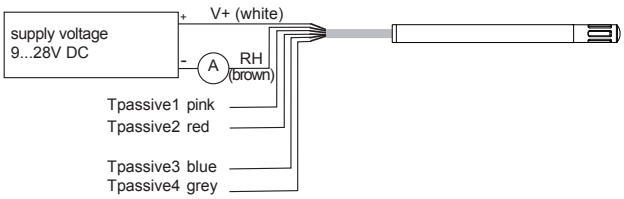


EE061-x6 (current output):

with active humidity output:



with active humidity output and passive T-sensor:



Ordering Guide

Voltage Output:

MODEL	OUTPUT	T-SENSOR (passive only)	TYPE	FILTER	COATING	CABLE LENGTH
humidity + temperature (FT) humidity (F) humidity+temperature passive (FP)	0 - 1V (1)	Pt 100 DIN A (A) Pt 1000 DIN A (C) NTC 10K at 25°C (E)	with housing (A) with thread (C)	membrane filter (1) metal grid filter (6)	without coating (no code) with coating (HC01)	0.5m (1.6ft) (co code) 3m (9.8ft) (K300)
EE06-						

Current Output:

MODEL	OUTPUT	T-SENSOR (passive only)	FILTER	COATING	CABLE LENGTH
humidity (F) humidity+temperature passive (FP)	4 - 20mA (6)	Pt 100 DIN A (A) Pt 1000 DIN A (C) NTC 10K at 25°C (E)	membrane filter (1) metal grid filter (6)	without coating (no code) with coating (HC01)	0.5m (1.6ft) (co code) 3m (9.8ft) (K300)
EE061-					

Order Example

EE061-FP6A6HC01K300

model: humidity+temperature passive
output: 4 - 20mA
T-sensor: Pt 100 DIN A
filter: metal grid filter
coating: with coating
cable length: 3m

Accessories

For more information please refer to data sheet "Accessories"

EE06

EE160

HVAC Humidity and Temperature Transmitter

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 ±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 ½" conduit fitting

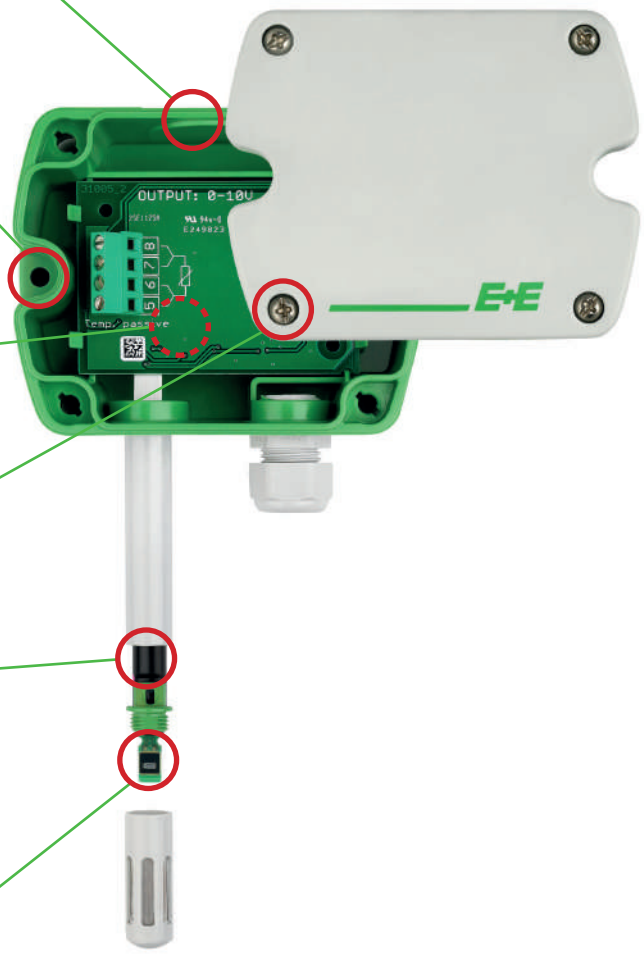
External mounting holes
» Mounting with closed cover
» Electronics protected against construction site pollution
» Easy and fast mounting

Electronics on the Underside of the PCB
» Optimum protection against mechanical damage during installation

Bayonet Screws
» Open/closed with a ¼ rotation

Cast Electronics
» Mechanical protection
» Condensation-resistant

E+E 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	E+E 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 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[1)]	0-10 V
	4-20 mA
Digital output*	Modbus RTU
T-Accuracy at 20°C	±0.3°C
passive T-output	see ordering code

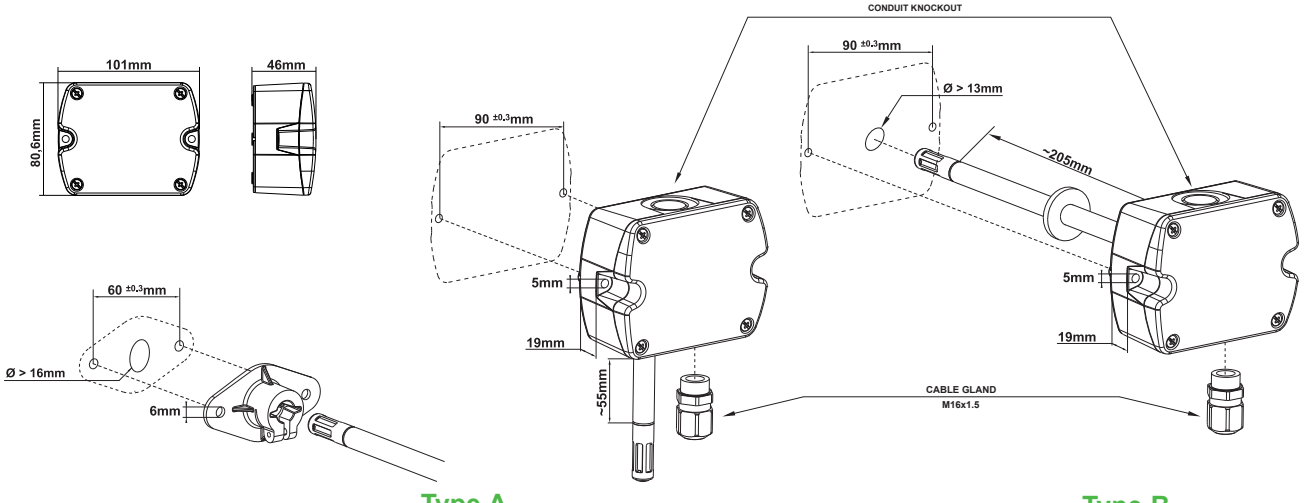
General

Power supply		
for 0 - 10 V / RS485	15 - 35V DC or 24V AC ±20%	
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 AC power supply	typ. 2mA
Connection	Screw terminals, max. 1.5 mm²	
Housing / protection class	Polycarbonate (UL listed) / IP65	
Cable gland	M16 x 1.5	
Sensor protection	membrane filter	
Electromagnetic compatibility	EN61326-1	CE
	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

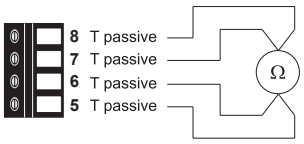
[1)] Output scaling see Ordering Guide

Dimensions (mm)

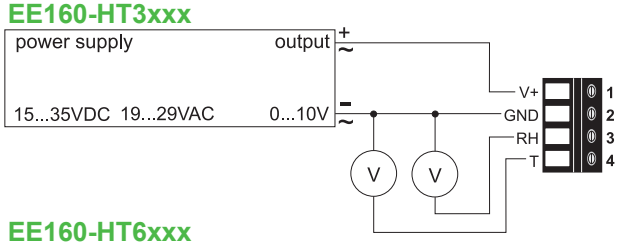


Type A Type B

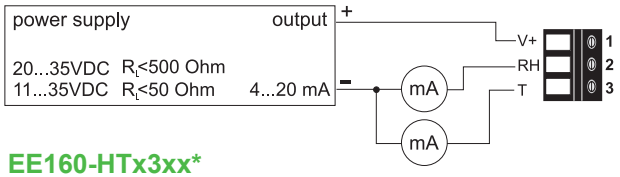
Connection diagram



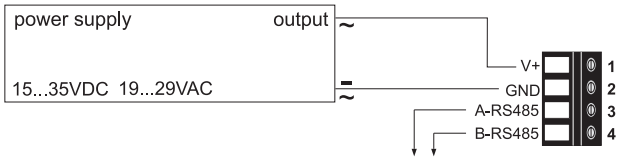
EE160-HT3xxx



EE160-HT6xxx



EE160-HTx3xx*



Ordering Guide

Configuration

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

Interface parameter - analog output

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

Interface parameter - digital output*

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

[1] a combination of analog and digital version is not possible [2] analogue version only
* Available from Q4/2012

Accessories

- EE160 Cable for configuration adapter (HA011059)*
- Configuration adapter (HA011050)

* only for EE160 analog version

Order example

Analog output

EE160-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

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

EE23 Series

Humidity / Temperature Transmitter for Industrial Applications

Calculation of Dew Point and Frost Point Temperature

The EE23 series stands for multifunctionality, highest accuracy, easy mounting and service.
The new IP65 water proof housing concept is based on three modules:
- back module with connectors
- middle module which accommodates the electronics
- cover module with optional display

It offers easy installation and the possibility for fast exchange of the sensor unit for service purposes.

For use in harsh industrial environments all models of the EE23 are available in a robust metal housing.

The EE23 can be employed in all common applications by choosing the appropriate housing combination.

- **Model A / B:** wall / duct mounting
- **Model C:** remote sensing probe has a working temperature range –40...120°C (-40...248°F)
- **Model H**: with remote miniature probe for concealed mounting (e.g. in museums) or in tight spaces.

The high quality HC series humidity sensor elements and newest microprocessor technology are the guarantee for:
- best accuracy over the whole working range
- display and output of relative humidity, temperature, dew point and frost point temperature
- small hysteresis
- excellent long term stability
- highest resistance to pollutants.

Easy configuration of the humidity and temperature outputs is made possible by the innovative design of the EE23 electronics. One can select between various current or voltage output signals.

One can very easily perform a two point humidity and temperature adjustment on site by using two push buttons on the PCB.
The three modules concept makes it also possible to perform a loop calibration according to FDA (Food and Drug Administration) recommendations.

Further options are the integrated display, cable outlets via connectors, sensor coating and an hygrostate output for control and alarm purposes.


Model A


Model B


Model C


Model H

Typical Applications

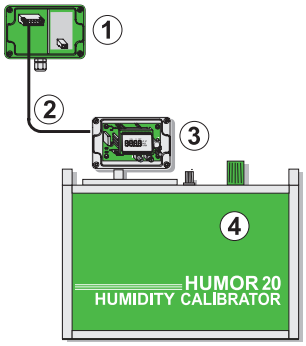
high end HVAC
climate chambers
process technology
dryers
clean rooms
green houses
stocks
meteorology

Features

temperature range -40...120°C (-40...248°F)
traceable calibration
calculation of dew point / frost point temperature
two point humidity and temperature calbration
very easy mounting and maintenance
on site calibration
best accuracy over whole temperature range
remote sensing probe up to 20m (65.6ft)
alarm output

Field Calibration

The three modules housing design allows a fast and easy dismounting of the EE23 for humidity field calibration. No interruption of the measurement is necessary for loop calibration which is essential for the calibration procedure recommended by FDA (Food and Drug Administration).



① EE23 back module mounted on the wall
② EE23 extension cable (can be ordered separately)
③ EE23 middle module mounted in the calibrator
④ Humidity reference system (e.g. HUMOR 20)

Utilization of the extention cable enables the user to perform full loop calibration as recommended by FDA.

Two Point Adjustment

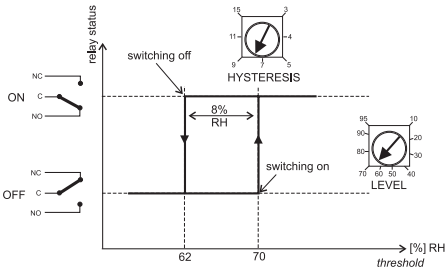
With an easy routine the user can perform a fast and accurate two point adjustment of relative humidity and temperature.

Display

The actual measured data can be indicated on the optional integrated display. It is possible to choose between relative humidity (RH), temperature (T), dew point (Td), frost point (Tf) or an alternating display of two values.

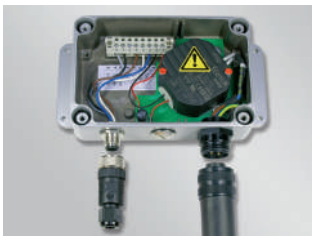
Alarm Output

Simple control applications can be solved by the optional alarm output of the EE23. The user can set threshold and hysteresis by potentiometers.



Integrated power supply

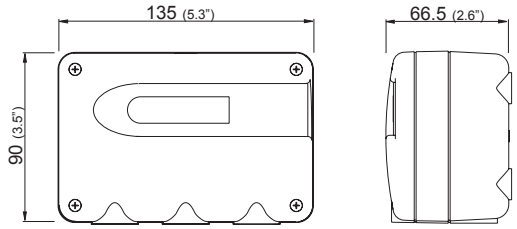
A power supply, integrated in the back module of the housing, can be ordered optionally (100...240V AC, 50/60Hz; ordering code V01). The power supply V01 is available for both polycarbonate and metal housing and comes standard with two plugs for supply and outputs to allow an easy connection.



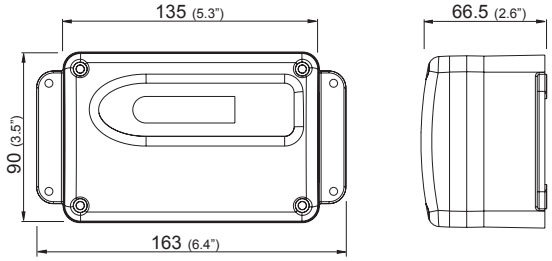
Dimensions in mm

Housing:

polycarbonate housing

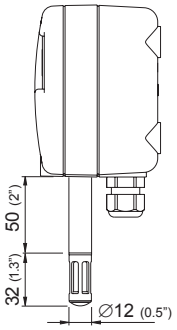


metal housing

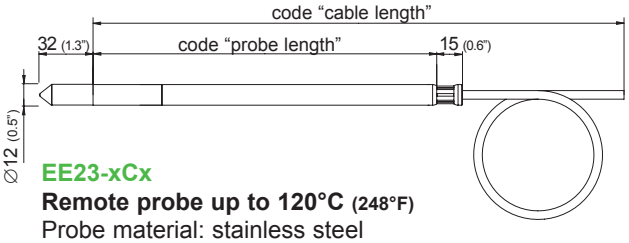


For use in harsh industrial environments all models of the EE23 are available in a robust metal housing.
The very smooth surface and the rounded outlines allow for the use in clean rooms as well.

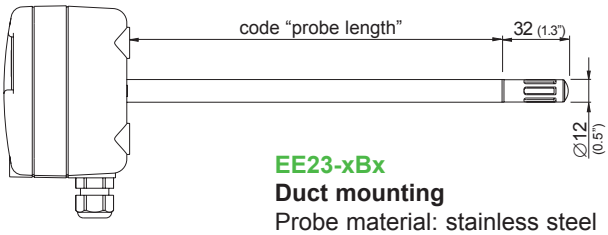
Models:



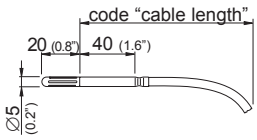
EE23-xAx
Wall mounting
Probe material: PC



EE23-xCx
Remote probe up to 120°C (248°F)
Probe material: stainless steel



EE23-xBx
Duct mounting
Probe material: stainless steel



EE23-xHx
Remote miniature probe
Probe material: stainless steel

Technical Data

Measured quantities

Relative humidity

Humidity sensor[1]	EE23-xA/B/Cx	HC1000-200
	EE23-xHx	HC105
Working range[1]		0...100% RH

Accuracy[2] (including hysteresis, non-linearity and repeatability, traceable to intern. standards, administrated by NIST, PTB, BEV...)

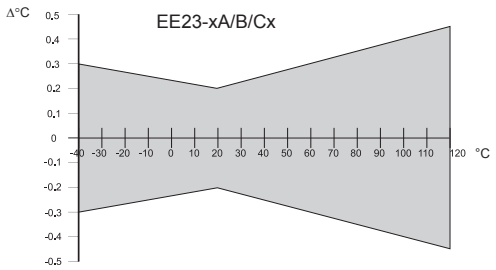
-15...40°C (5...104°F)	≤90% RH	± (1.3 + 0.3%*mv) % RH
-15...40°C (5...104°F)	>90% RH	± 2.3% RH
-25...70°C (-13...158°F)		± (1.4 + 1%*mv) % RH
-40...120°C (-40...248°F)		± (1.5 + 1.5%*mv) % RH

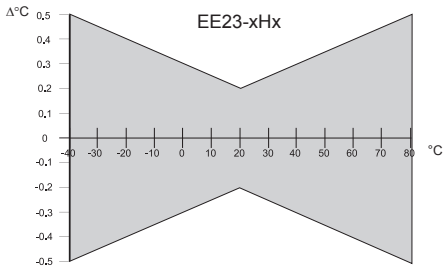
Temperature dependence electronics	typ. ± 0.015% RH/°C
Response time with metal grid filter at 20°C / t_{90}	< 15 sec.

Temperature

Temperature sensor element	EE23-xA/B/Cx	Pt1000 (class A, DIN EN 60751)			
	EE23-xHx	Pt1000 (class B, DIN EN 60751)			
Working range sensing head	EE23-xAx	-40...60°C (-40...140°F)	EE23-xBx	-40...80°C (-40...176°F)	
	EE23-xCx	-40...120°C (-40...248°F)	EE23-xHx	-40...80°C (-40...176°F)	

Accuracy





Temperature dependence of electronics		typ. 0.002°C/°C	
Outputs			
0...100% RH / xx...yy°C[3]		0 - 1 V	-0.5 mA < I_L < 0.5 mA
(temperature output scale adjustable by E+E or		0 - 5 V	-1 mA < I_L < 1 mA
with configuration kit)		0 - 10 V	-1 mA < I_L < 1 mA
		0 - 20mA	R_L < 350 Ohm
		4 - 20 mA	R_L < 350 Ohm

Max. adjustable output scaling[4]

		from	up to *EE23-A*	*EE23-B, H*	*EE23-C*	units
Humidity	RH	0	100	100	100	% RH
Temperature	T	-40 (-40)	60 (140)	80 (176)	120 (248)	°C (°F)
Dew-point temperature	Td	-40 (-40)	60 (140)	80 (176)	100 (212)	°C (°F)
Frost-point temperature	Tf	-40 (-40)	0 (32)	0 (32)	0 (32)	°C (°F)

General

Supply voltage		
for 0 - 5 V outputs	10.5 - 35V DC or 12 - 28V AC	
for 0 - 10 V, 0 - 20 mA and 4-20 mA outputs	15.0 - 35V DC or 15 - 28V AC	(optional 100...240V AC, 50/60Hz)
Current consumption for voltage output		
for DC supply ≤ 25 mA	with alarm module:	for DC supply ≤ 35 mA
for AC supply ≤ 35 mA_{eff}		for AC supply ≤ 60 mA_{eff}
Current consumption for current output		
for DC supply ≤ 50 mA	with alarm module:	for DC supply ≤ 60 mA
for AC supply ≤ 90 mA_{eff}		for AC supply ≤ 110 mA_{eff}
Housing / protection class	PC or Al Si 9 Cu 3 / IP65; Nema 4	
Cable gland[5]	M16x1.5	cable Ø 4.5 - 10 mm (0.18 - 0.39")
Electrical connection[5]	screw terminals max. 1.5 mm² (AWG 16)	
Working temperature range of electronics	-40...60°C (-40...140°F)	
Working temperature range with display	-30...60°C (-22...140°F)	
Storage temperature range	-40...60°C (-40...140°F)	

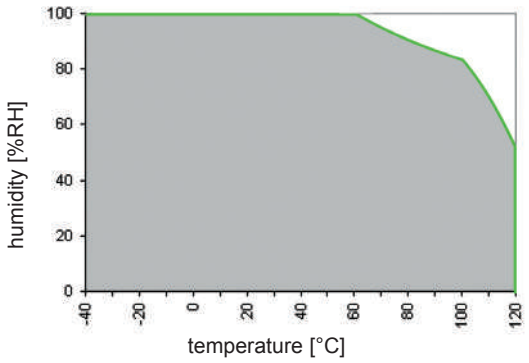
1) Refer to the working range of the humidity sensor
2) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).
3) Refer to ordering guide
4) Refer to accuracies of calculated values (page 152)
5) Connection plugs refer to ordering guide

CE compatibility according	EN61326-1 Industrial Environment	EN61326-2-3	ICES-003 ClassB FCC Part15 ClassB

Alarm Module - optional

Output	SPDT-Switch up to 250V AC/8A or 28V DC/8A	
	threshold	hysteresis
Setting range	10...95% RH	3...15% RH
Setting accuracy	± 3% RH	

Humidity Sensor - Working Range



The working range of the humidity sensor element is shown in terms of humidity / temperature limits.

Although the sensors would not deteriorate beyond the limits, their performance can only be specified within the limits of the working range.

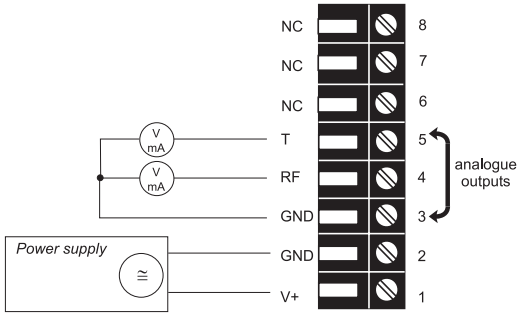
Sensor Coating

Operation in heavily polluted and/or corrosive environments is typical for many industrial processes and can lead to drift or damage of the humidity sensor and thus to false measured values. The unique protective coating developed by E+E for the sensing probe (ordering code: HC01) brings a significant improvement on the long-term stability of the transmitter in very dirty and aggressive environments.

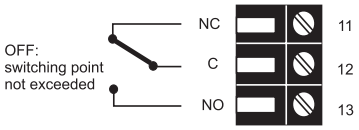
Connecting Diagram

output and supply

with active temperature output



alarm output



Ordering Guide

		EE23-	EE23-
Hardware Configuration			
Housing	metal housing	M	M
	polycarbonate housing	P	P
Type	humidity + temperature	FT	FT
Model	wall mounting	A	
	duct mounting	B	
	remote probe up to 120°C (248°F)	C	
	remote miniature probe		H
Filter	membrane filter 5mm		1
	stainless steel sintered filter	3	
	PTFE filter	5	
	metal grid filter	6	
Cable length (incl. probe length; models C and H only)	2m (6.6ft)	02	02
	5m (16.4ft)	05	05
	10m (32.8ft)	10	10
	20m (65.6ft)	20	20
Probe length (models B and C only)	65mm (2.6")	2	
	200mm (7.9")	5	
	400mm (15.8")	6	
Display (refer to software-code)	no display		
	with display	D03	D03
Alarm output[1] (not available for model F)	no alarm output		
	with alarm output	SW	SW
Plug	standard cable 1 gland M16x1.5; cable Ø 4.5 - 10 mm (0.18 - 0.39")		
	2 glands M16x1.5	C11	C11
	1 plug for supply + outputs	C03	C03
Coating Sensor	no		
	yes	HC01	HC01
Supply voltage	15...35V DC / 15...28V AC		
	integrated power supply 100...240V AC, 50/60Hz[2]	V01	V01

Software Settings						
Physical parameters of outputs	relative humidity	RH	[%]	(A)	Output 1	Select according to Ordering Guide (A - D)
	temperature	T	[°C or °F]	(B)		
	dew-point temperature	Td	[°C or °F]	(C)	Output 2	Select according to Ordering Guide (A - D)
	frost-point temperature	Tf	[°C or °F]	(D)		
Type of output signals	0 - 1V			(1)		Select according to Ordering Guide (1 - 6)
	0 - 5V			(2)		
	0 - 10V			(3)		
	0 - 20mA			(5)		
	4 - 20mA			(6)		
Temperarture unit	°C					E01 / E01
	°F					
Scaling of T-output	-40...60 (T02)	-40...120 (T12)	-40...248 (T78)		Output T	Select according to Ordering Guide (Txx)
Scaling of Td-output	-10...50 (T03)	20...120 (T15)	0...140 (T85)			
Scaling of Tf-output	0...50 (T04)	-30...60 (T20)	0...248 (T87)		Output Td	Select according to Ordering Guide (Tdxx)
in°C or °F	0...100 (T05)	0...80 (T21)	32...120 (T90)			
	0...60 (T07)	-40...80 (T22)	32...140 (T91)		Output Tf	Select according to Ordering Guide (Tfxx)
	-30...70 (T08)	-20...80 (T24)	32...248 (T93)			
	-30...120 (T09)	-20...60 (T25)	32...132 (T96)			Other T/Td/Tf-scaling refer to page 146
	-20...120 (T10)	-30...50 (T45)				
	-10...70 (T11)	-20...50 (T48)				
Display mode	measurand output 1+2 alternating					M12 / M12
	measurand output 1					M01 / M01
	measurand output 2					M02 / M02

1) Combination alarm output and plugs is not possible (with cable glands only) / combination alarm output and integrated power supply is not possible / alarm output for RH only
2) Integrated power supply includes 2 plugs for power supply and outputs / further plug options are not possible

Accessories (additional information see data sheet "Accessories", page 138)

- filter caps (HA0101xx)
- external power supply unit (V02)
- display + housing cover in metal (D03M)
- display + housing cover in polycarbonate (D03P)
- mounting flange (HA010201)
- mounting flange 5mm (for model H only) (HA010208)
- bracket for installation onto mounting rails (HA010203)
- replacement humidity sensors (FE09)
- drip water protection (HA010503)
- calibration set (HA0104xx)
- extension cable for field calibration (HA010302)
- 1% calibration (EE90/3H)
- radiation shield (HA010502)

Order Example

EE23-MFTC6025D03/AC2-Td04-M01

housing:	metal housing
type:	humidity + temperature
model:	remote sensor probe
filter:	metal grid
cable length:	2 m (6.6ft)
probe length:	200 mm (7.9")
display:	with display
output 1:	rF
output 2:	Td
output signal:	0-5V
scaling of T-output:	0...50°C
display mode:	measurand output 1