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Единый адрес: [esu@nt-rt.ru](mailto:esu@nt-rt.ru) | <http://epluse.nt-rt.ru>

## EE04 Series

## Miniature Humidity and Temperature Transmitter

The high quality, compact EE04 humidity and temperature transmitters are optimised for OEM applications. Highest performance with respect to accuracy and long term stability is combined with low costs for large quantities. The SMD humidity sensor HC103 series, state of the art electronics and dedicated housing are offering an excellent price / performance ratio.

An optional filter assures optimal protection against dirt. For use in high pollution or corrosive environment the sensors and electronics can be protected with a special E+E coating. There is an EE04 version model available with extra air slots on the side allowing for very fast response times.

The linear output voltage for relative humidity can easily be processed further. The temperature output signal is provided by a voltage divider with passive NTC sensor. Fast and easy installation is possible by using the provided mounting flange.



EE04-FTB

EE04-FTO  
with extra air slots  
on the side

### Typical Applications

air conditioning in automobiles  
humidifiers and dehumidifiers  
copy machines  
warehouses  
home appliances

### Features

small dimensions  
excellent price / performance ratio  
high long term stability  
easy installation  
low power consumption  
traceable calibration

### Technical Data

#### Measuring Quantities

##### Relative Humidity

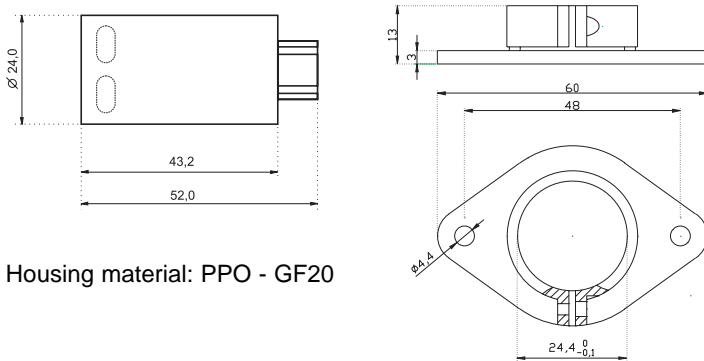
Humidity sensor	HC103	
Working range	0...95%RH	with coating 0...100%
Accuracy at 25°C (77°F)	± 3%RH (40...60%RH)	± 5%RH (0...95%RH)
	Traceable to intern. standards, administrated by NIST, PTB, BEV...	
Humidity output	linear analogue voltage 0...100%RH. $\Delta$ 0.1xU <sub>v</sub> ...0.9xU <sub>v</sub> e.g.: for U <sub>v</sub> = 5VDC : 0...100%RH = 0.5V...4.5V (50%RH = 2.5V)	
Load resistor R <sub>Load</sub>	> 5kOhm	
Response time $\tau_{63}$ at 25°C (77°F)	type B: < 45s (without filter and without coating)	type O: < 30s (without filter and without coating)

##### Temperature

Temperature output	Voltage divider: NTC (10kOhm at 25°C/77°F) with pull down resistor (10kOhm)		
Calculation T <sub>[°C]</sub> out of output voltage	$R_{NTC} = \frac{10000 \times U_v}{U_{Out}} - 10000$	$T_{[K]} = \frac{3496}{11,726 + \ln\left(\frac{R_{NTC}}{10000}\right)}$	$T_{[°C]} = T_{[K]} - 273,15$
Calculation output voltage out of T <sub>[°C]</sub>	$T_{[K]} = T_{[°C]} + 273,15$	$R_{NTC} = 10000 \times e^{\left(\frac{3496}{T_{[K]}} - 11,726\right)}$	$U_{Out} = \frac{10000 \times U_v}{(R_{NTC} + 10000)}$
Working temperature	-40...85°C (-40...185°F)		

## Dimensions (mm)

1 mm = 0.03937" / 1" = 25.4 mm

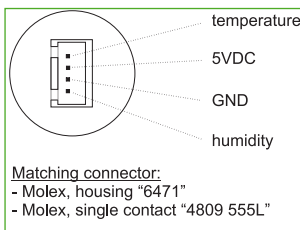


Housing material: PPO - GF20

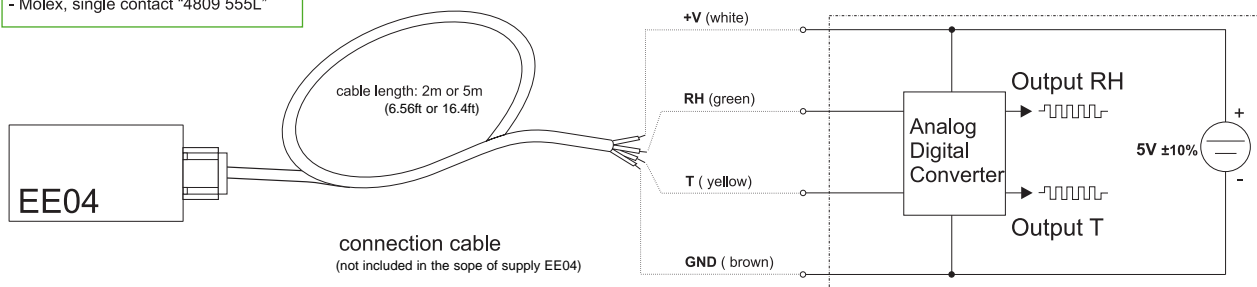
### Protection class:

Sensor side: IP50 (type B)  
IP20 (type B and O)  
Connector side: IP30

## Connection Diagram



The circuitry shows the typical A/D conversion of the analogue output signals. A reference voltage or calibration is not required. The voltage supply can vary in the range 5V ±10%.



## Ordering Guide

MODEL	TYPE	HUMIDITY OUTPUT	T-SENSOR	FILTER (for type B only)	COATING (for (3) only)
humidity+temperature (FT)	duct (B) duct with extra air slots on the side (O)	linear 0,1...0,9 x U <sub>v</sub> (4)	NTC, 10k at 25°C (A)	only grid, no filter (3) metal grid filter above grid (6)	with coating (HC) without coating (-)
<b>EE04-</b>					

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