

JLC International Phone: 215-340-2650 Fax: 215-340-3670

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.

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

Technical Data

Measuring Quantities

	Relative Humidity						
	Humidity sensor	HC103					
	Working range	095%RH with coating 0100%	095%RH with coating 0100%				
	Accuracy at 25°C (77°F)	± 3%RH (4060%RH) ± 5%RH (095%RH)					
	Humidity output	linear analogue voltage 0100%RH. <u>∧</u> 0.1xU _v 0.9xU _v					
		e.g.: for U _v = 5VDC : 0100%RH = 0.5V4.5V (50%	6RH = 2.5V)				
	Load resistor R _{Load}	> 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 r	esistor (10kOhm)				
	Calculation $T_{[^\circC]}$ out of output voltage	$R_{NTC} = \frac{10000 \times U_V}{U_{Out}} - 10000 \qquad T_{[K]} = \frac{3496}{11,726 + \ln\left(\frac{R_{NTC}}{10000}\right)}$	T _[°C] = T _[K] - 273,15				
	Calculation output voltage out of $T_{[^{\circ}C]}$	$T_{[K]} = T_{[^{\circ}C]} + 273,15$ $R_{NTC} = 10000 \text{ x e} \left(\frac{3496}{T_{[K]}} - 11,726\right)$	$U_{Out} = \frac{10000 \times U_{v}}{(R_{NTC} + 10000)}$				
	Working temperature	-4085°C (-40185°F)					
Gen	eral Data						
	Voltage supply (U _v)	5V DC ±10%					
	Current consumption	typical 1.4mA without load					
< 3.5mA at maximal load							
	CE compatibility according ¹⁾	EN 50081-1	(6				
		EN 61000-6-2					
	 EE04 is not protected against surge 						

EE04



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Dimensions (mm)



1 mm = 0.03937" / 1" = 25.4 mm

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 $5V \pm 10\%$.



Ordering Guide_____

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

Accessories

connection cable 2m (6.6ft) 5m (16.4ft)

(HA010305) (HA010306)

EE04-FTB4A3-HC model: Type: output: T-sensor:

filter: coating:

Order Example

humidity and temperature duct linear 0.1 - 0.9 x $U_{\rm v}$ NTC only grid, no filter with coating

EE04