



# **SPECIFICATIONS FOR APPROVAL**

**MODEL NO : Humidity Sensor Module ( HSM-1 )**

 **PARTSNIC**

# Relative Humidity Module

# HSM-1

Based on the PNC-HC-1 impedance humidity sensor, HSM-1 convert the relative humidity to the output voltage.

## ▷ Features and Applications

Feature	Application
Wide humidity operating range	Air-conditioner, Humidifier, Dehumidifier
Easy operation	Humidity transmitter
Long term stability	Humidity controller
Small and economical	Hygrometer
Stable characteristics with temperature	Weather forecast barometer

## ▷ Standard Humidity Output Signal

at 25°C,  $V_{in} = 5.0V$  DC

Humidity ( %RH )	10	20	30	40	50	60	70	80	90
Output Voltage ( V )	0.74	0.95	1.31	1.68	2.02	2.37	2.69	2.99	3.19

## ▷ Standard Temperature Output Signal

Temperature ( °C )	0	10	20	25	30	40	50	60
Resistance ( kΩ )	165.9	100.4	62.63	50.00	40.19	26.46	17.85	12.31

-  $R(25^{\circ}C) = 50k\Omega \pm 5\%$

- B-value (25/50) =  $3970K \pm 2\%$

# Relative Humidity Module

# HSM-1

## ▷ Specifications

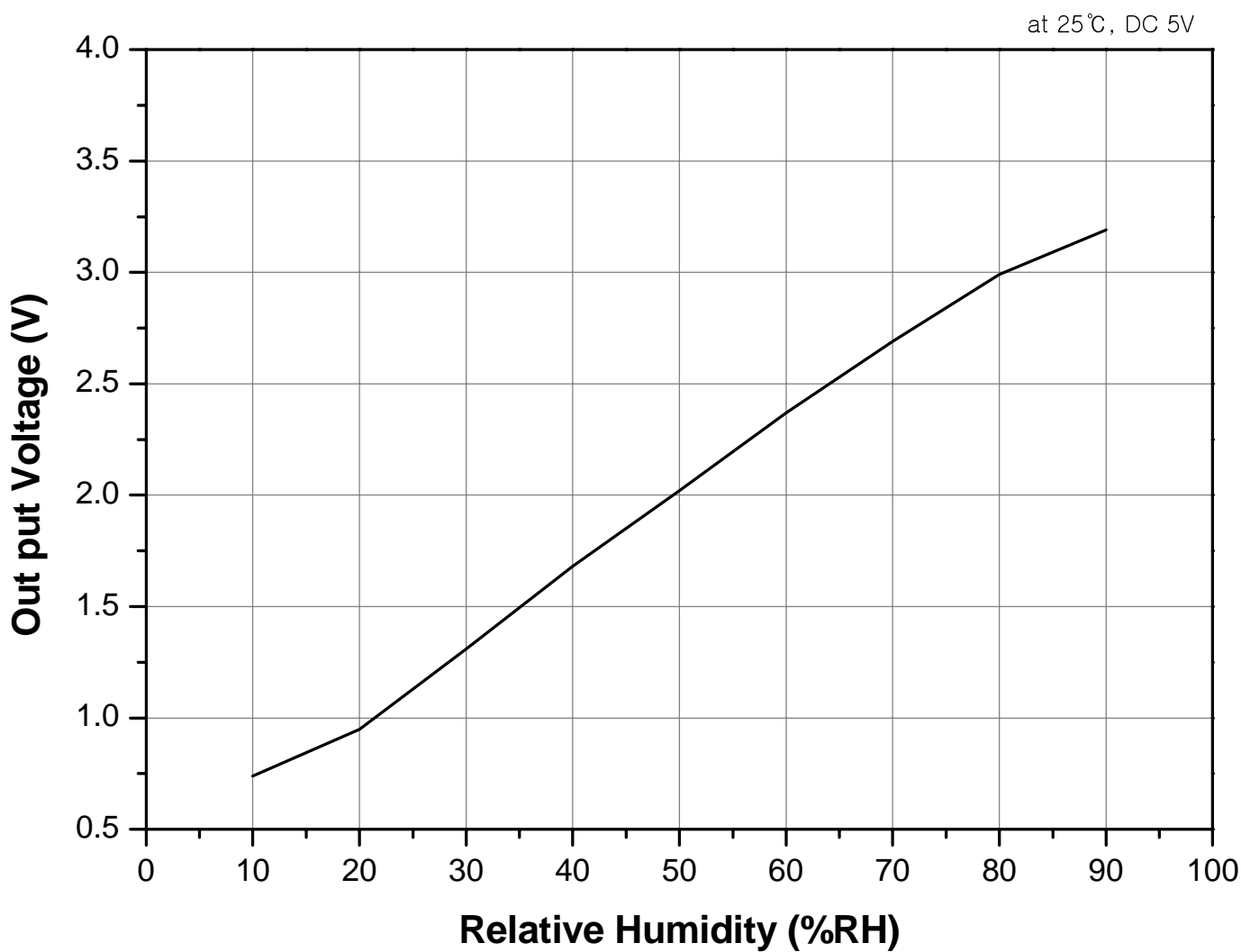
Items	HSM-1
Rated Voltage	DC 5.0V ( $\pm 5\%$ )
Current Consumption	2mA (5mA max.)
Operating Temperature	0 ~ 60°C
Operating Humidity	10 ~ 95%RH
Storage Temperature	-10 ~ 70°C
Storage Humidity	Within 95%RH
Accuracy	$\pm 5\%$ RH (at 25°C, 60%RH)
Voltage Range	DC 2.30~2.53V (at 25°C, 60%RH)

## ▷ Reliability Test

No	Items	Method	Requirement
1	Humidity Resistance	To leave module in ambient of 40°C and 95%RH for 1000 hours.	Within $\pm 5\%$ RH
2	Heat Resistance	To leave module in ambient of 55°C and 30%RH max. for 1000 hours.	Within $\pm 5\%$ RH
3	Cool Resistance	To leave module in ambient of -10°C and 30%RH max. for 1000 hours.	Within $\pm 5\%$ RH
4	Temperature Cycle Test	300cycles. 1cycle standards for leaving module under -10°C for 1hour, and rise ambient temperature up to 55°C for next 1hour. Then, leave it another 1hour, and lower temperature to -10°C for next 1hour.	Within $\pm 5\%$ RH
5	Impact Test	To drop module 3times at random on to a hard wooden plate from 1meter above high.	No breakage, no crack
6	Vibration Test	Vibration test in X-Y-Z axis for half an hour. Under 10~55Hz frequency, 1.5mm(10~55~10Hz) amplitude.	No breakage, no crack

## ▷ Relative Humidity Voltage Characteristics

The relative humidity and voltage characteristics of this module are shown in the following graph.

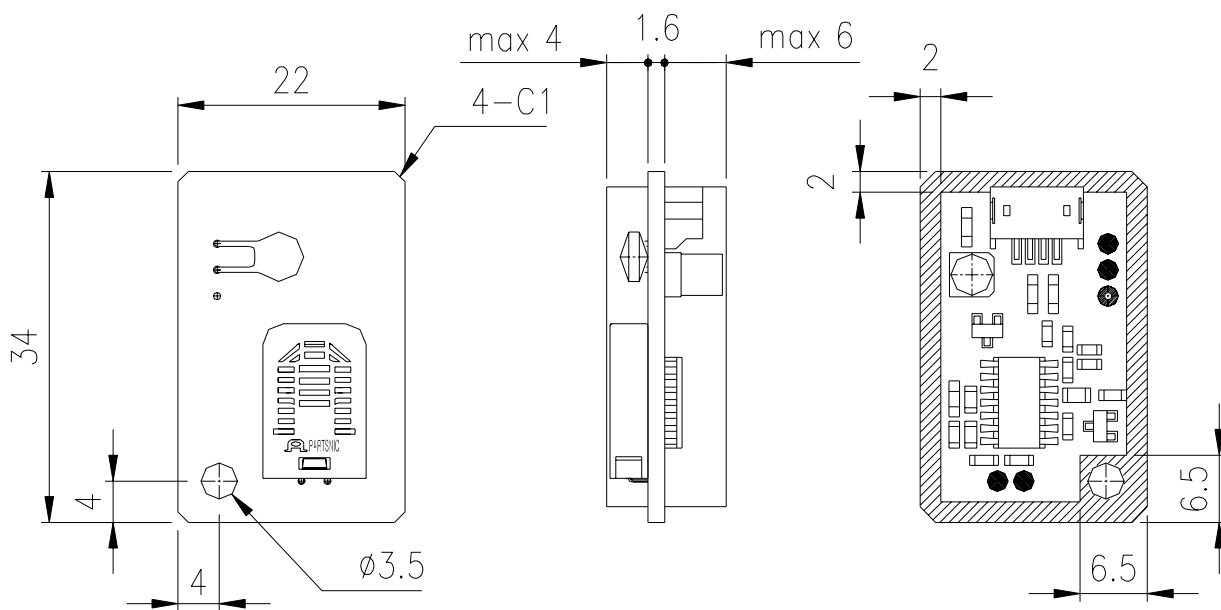


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# HSM-1

## ▷ Configuration

Unit : mm



Tolerance is  $\pm 0.5$ mm unless otherwise specified.

## ▷ Application

