SPECIFICATIONS

(HSM-20S)

Advanced Leader of All Materials

The module of HSM-20S is essential for those applications where the relative humidity can be converted to standard voltage output.

▶ APPLICATIONS

1) Humidifiers & dehumidifiers
2) Air-conditioner
3) Humidity data loggers
4) Automotive climate control
5) Other applications

▶ SPECIFICATIONS

Characteristics		HSM-20S
Input voltage range		DC 5.0±0.2 V
Output voltage range		DC 0 - 3.3 V
Measurement Accuracy		±5% RH
Operating Current (Maximum)		2mA
Storage RH Range		0 to 99% RH
Operating RH Range		10 to 95% (100% RH intermittent)
Transient Condensation		< 3%RH
Temperature Range	Storage	-20℃ to 70℃
	Operating	0℃ to 50℃
Hysteresis (RH @ 25℃)		MAX 2%RH
Long Term Stability (typical drift per year)		±1.5%
Linearity		Linearity
Time Response (63% step change)		1 min
Dimensions (L*W)		34mm*22mm

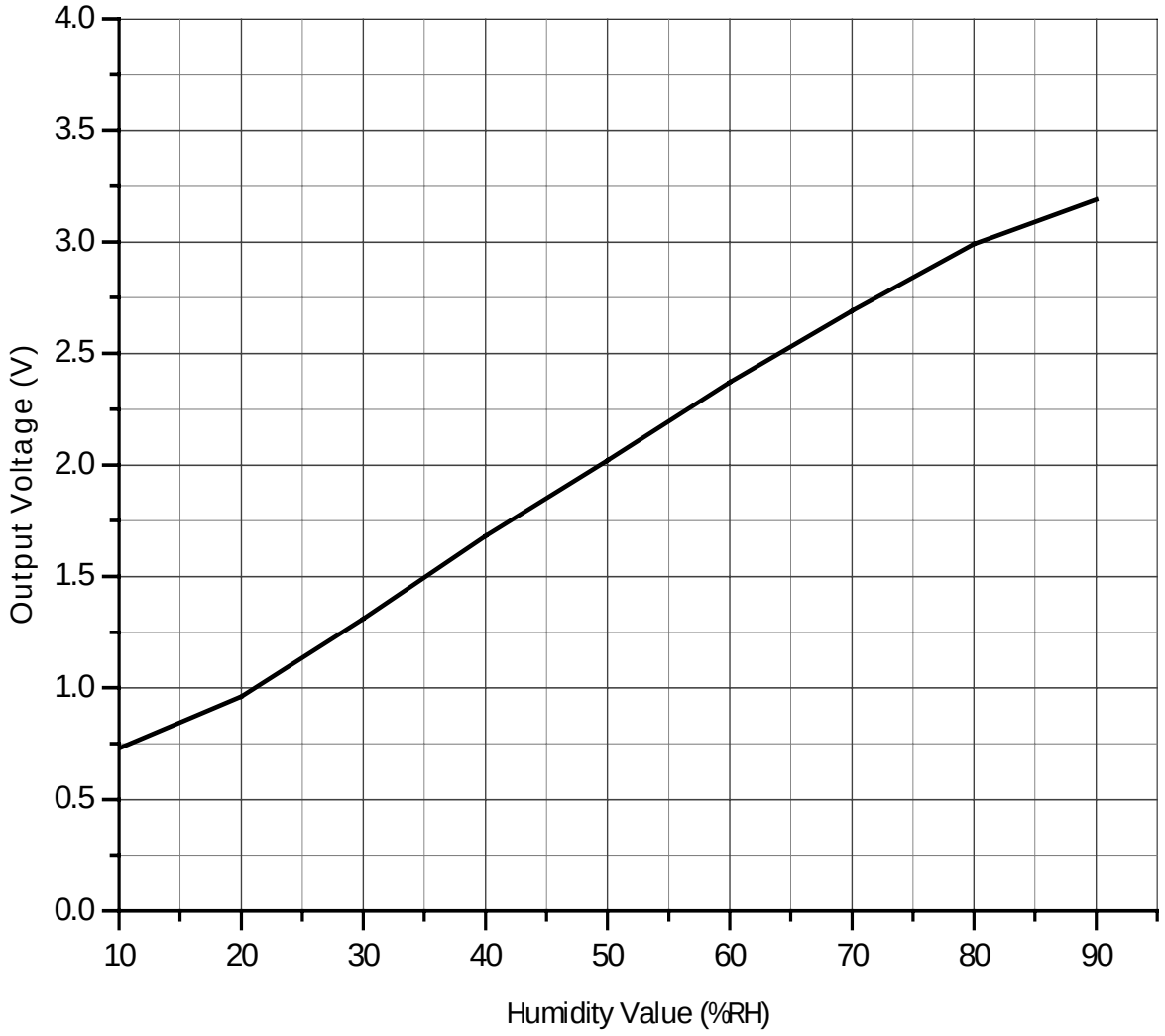
▶ RELIABILITY TEST

No	Item	Method	Requirement
1	Impact test	To drop module 3times at random on to a hard wooden plate from 1meter above high	No breakge, nor racks Should be electrically normal
2	Vibration test	Vibration test in X-Y-Z axis for 30min .under 10 – 55Hz frequency,1.5mm (10-55-10Hz)	Within ±5%RH
3	Heat Resistance	To leave module in an ambient of 55℃ and 30%RH max. for 48hours.	Within ±5%RH
4	Cool Resistance	To leave module in an ambient of-10℃ and 30%RH max. for 48hours.	Within ±5%RH
5	Humidity Resistance	To leave in an ambient of 40℃ and 95%RH for 48hours.	Within ±5%RH
6	Temperature cycle test	5cycles.1cycle stands for leaving module under -10℃ for next 1hour. Then ,leave it another 1hours ,and lower temp. to-10℃ for next 1hour.	Within ±5%RH

Remark :

- All standard figures are based on humidity variation under 60%RH (at 25 ℃)
- Upon completion of all test, module will be left over under nominal environment and humidity for 24hours.

▶ TYPICAL RESPONSE of HSM-20S at 25 ℃



▶ STANDARD CHARACTERISTICS

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

▶ TEMPERATURE OUTPUT SIGNAL

R(25℃) = 50kΩ ± 1%, B(25/85) = 4000 ± 1%

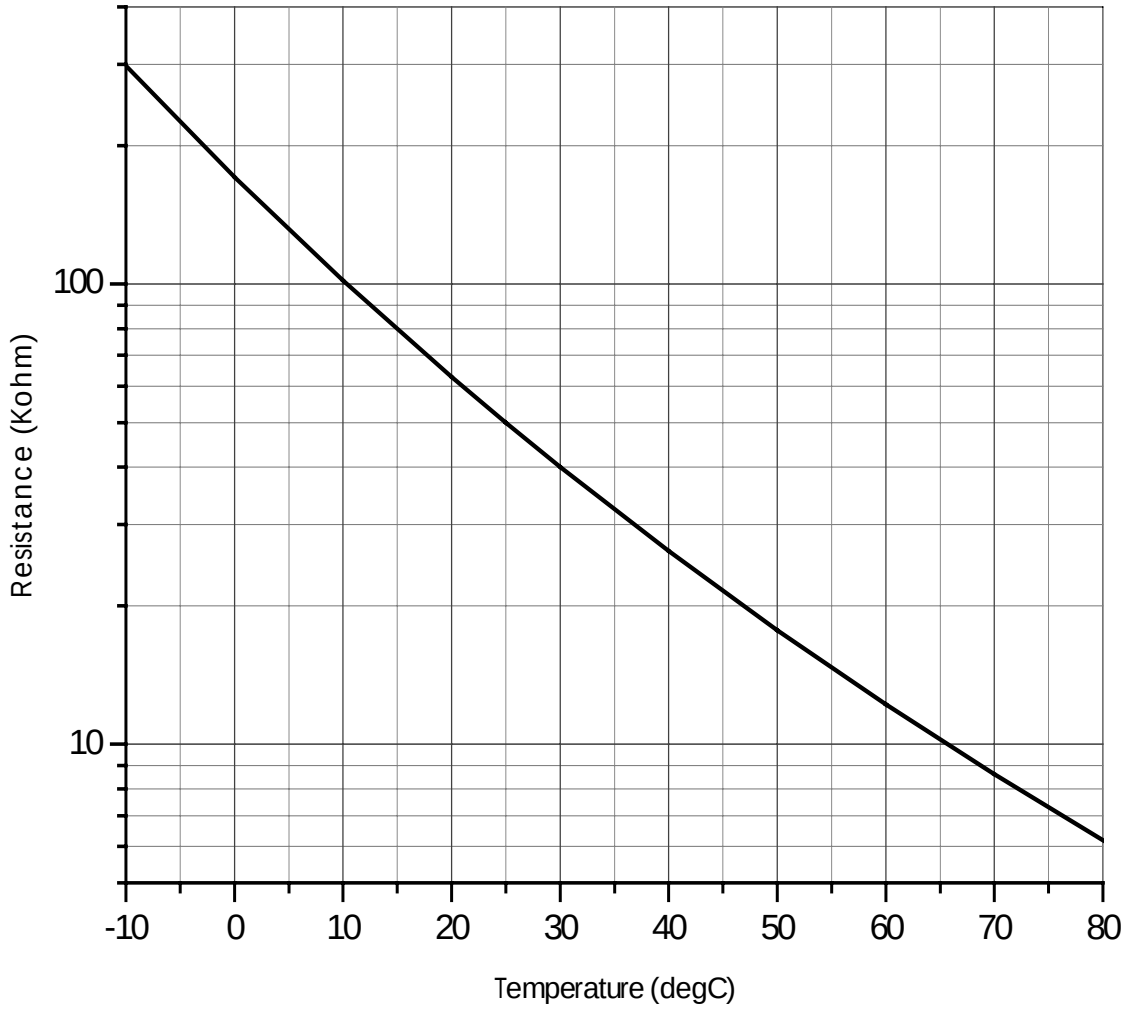
Temperature(℃)	0	10	20	25	30	40	50	60
Resistance(kΩ)	170.70	101.78	62.86	50.00	40.08	26.30	17.71	12.21

▶ TEMPERATURE DEPENDENCE(Reference)

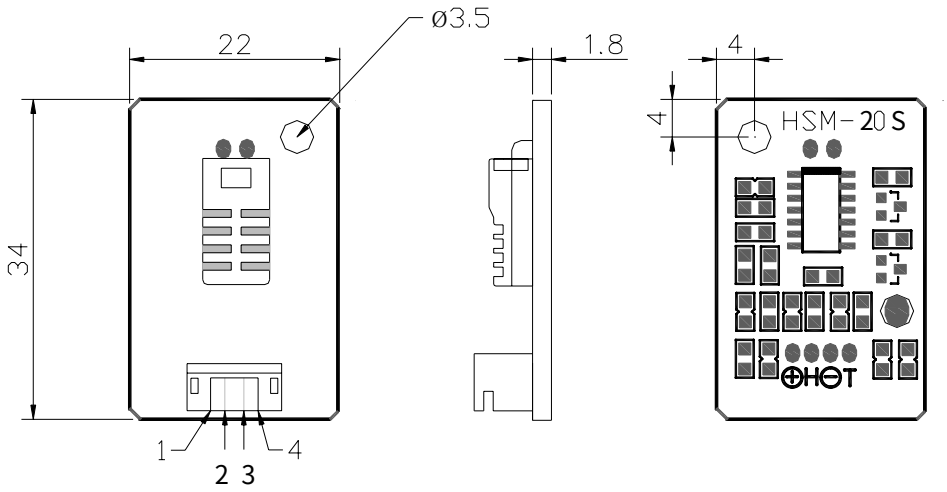
± 5% RH(V in=5V DC, 40~80%RH, Temp Range 10~40℃ (based on 25℃))

▶ VOLTAGE DEPENDENCE(Reference)

± 5% RH(V in=5V DC, 40~80%RH, Voltage Range 4.75~5.25V (based on 5V DC))



▶ CONFIGURATIONS



(Unit :mm)

Terminal	Function
1	Temperature Output
2	GND
3	Humidity Output
4	Vcc (+5V)