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NO. : SP69-010926

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SUNSTAR

## HUMIDITY SENSOR

# SC0056

## SPECIFICATIONS



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## 1、 Scope of application

This specifications are applicable to the humidity sensor SC0056.

## 2、 Type.

SC0056 Humidity sensor HPR-NQ-N3 with the filter

## 3、 Configuration of the humidity sensor unit is shown on the attached drawing Sp69-910926-1(SC0056).

## 4、 Electrical characteristics

(4-1) Rated voltage: AC 1.4V (Naximum peak value. Sine wave)

(4-2) Rated power : AC0.2mw (naximum peak value. Sine wave)

(4-3) Operating temperature range : 0 ~ 60

(4-4) Operating humidity range: 90%RH or less

(4-5) Storable tcmperature range: -20 ~ 85

(4-6) Storable humidity range: 95%RH or less

(4-7) Standard characteristic: 31k (at 25 60%RH)

See Attached Drawing SP64-87064-1

(4-8) Humidity Accuracy:  $\pm 5\%$ RH(at 25 60%RH)

(4-9) Humdity response characteristic:winthin 1 minutes

(time constant when RLL changes from 40 to 80%RH in the air flow at 2.5m/s)

(4-10)Temperature charocteristic:See Attached Drawing SP64-860405-4B

(4-11)Frequency characteristics:See Attached Drawing SP64860450-2B

(Note)(4-10) and (4-11) are reference values as the characteristics of a humidity sensor itself.

## 5、 Mechanical characteristics

### (5-1) Shock tesistance

Not to be abnormal in the appearance and electrical characteristics after having been naturally let to drop down 3 times at random onto a hard wooden plate from the height of 75cm.

### (5-2) Vibration resistance

Not to be abnormal in the appearance and electrical characteristics after having been vibration-tested for 2 hours each in the directions of X-Y-Z. at the frequency of 10 ~ 55llz.and amplitude of 1.5mm(10-55-10)

## 6、 Reliability

### (6-1) Heat resistance

Leave for 1000 hours in the environment of 85 and 30%RH or less.

Then, further leave for 60 minutes under the normal temperature and humidity.

Thereafter, to be within  $\pm 5\%$ RH of change in the humidity.

(6-2)Cool resistance

Leave for 1000 hours in the environment of - 25 and 70%RH or less. Then, further leave for 60 minutes under the normal temperature and humidity. Thereafter, to be within  $\pm 5\%$  RH of change in the humidity.

(6-3)humidity resistance

Leave for 1000 hours in the environment of 40 , 90%RH or less Then, further leave for 60 minutes under the normal temperature and humidity. Thereafter, to be within  $\pm 5\%$  RH or less of change in humidity.

(6-4)temperature cycle

HERE, one cycle shall be to leave for 30 minutes under 0 , continue to leave for 30 minutes while raising the temperature to 50 , leave for 30 minutes under 50 , and further leave for 30 minutes while lowering the temperature to 0 , repeat 300 such cycles, then, leave for 60 minutes under the normal temperature and humidity. Thereafter, to be within  $\pm 5\%$  RH or less of change in humidity.

(6-5)humidity cycle

Here, one cycle shall be to leave for 30 minutes under 25 , 10%RH, continue to leave for 30 minutes while raising to 90%RH, leave for 30 minutes under 90%RH. and further leave for 30 minutes while lowering to 10%RH. Repeat 300 such cycles. Then leave for 60 minutes under the normal temperature and humidity. Thereafter, to be within  $\pm 5\%$  RH of change in humidity.

7、 Remarks on using

(1)Positively don't impress DC to the humidity sensor.

(2)Avoid dewness and drenching.

(3)Use in relatively clean air. Take full care of using in the atmosphere of the below gas.

(a)Salt

(b)Nonorganic gas.....Sulfide dioxide chlorine ammonium

(c)Organic gas.....Alcohols. Glycols, aldehydes, etc.

8、 Change in specifications content

Whenever there arises any necessity for change in or addition to the content of these specifications. It shall be decided upon through mutual consultation.

**DIMENSION OF HUMIDITY SENSOR (unit:mm)**

**DWG NO : SP69-9010926-1**

**TYPE: SC0056**

**1:Humidity sensor HPR-NQ-M3**

**2:Filter case fc-5 (material : ABS)**

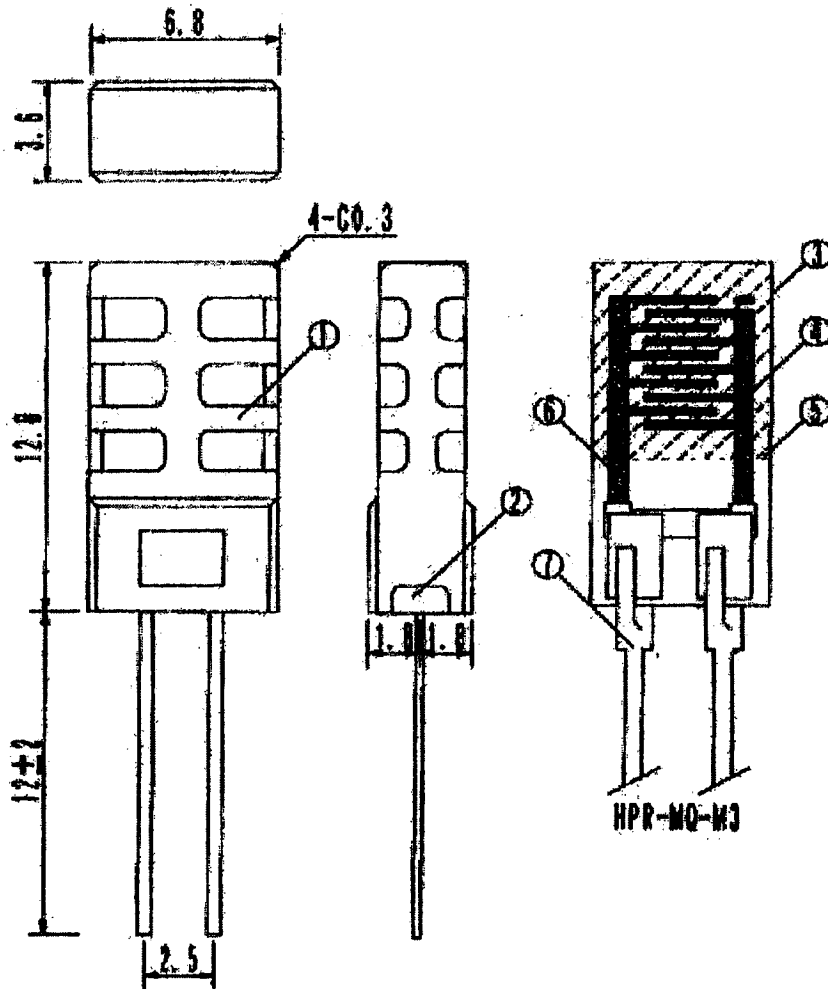
**8-3**

**PRODUCT SPECIFICATIONS**

**SC0056**

**SUNSTAR**

Figure.1 Configuration & Parts.



(UNIT: mm)

**Parts list**

No.	Parts	Remark
1	Sensor case(cover)	Material : ABS
2	Sensor case(base)	Material : ABS
3	Substrate	
4	Humidity sensitive material	
5	Over coating	
6	Gold electrode	
7	Lead frame	

# HUMIDITY SENSOR SPECIFICATION SHEET TYPE NO, SC0056

Our Humidity Sensor "SHINYEI HUMENT" is a Humidity device formed by distributing a Humidity Sensitive material onto an electrode substrate. The resistance of the device varies exponentially with variation in Relative Humidity.

### Features

- ★ Wide Humidity detecting range
- ★ Outstanding reproducibility
- ★ Rapid response
- ★ Low hysteresis
- ★ Small and light-weight

### Applications

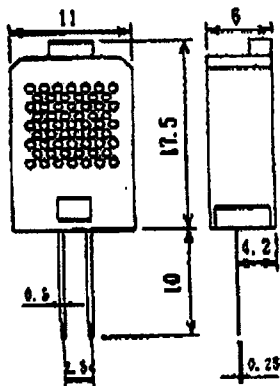
- ★ Airconditioners, Humidifiers, Dehumidifiers
- ★ Controller, Transmitter
- ★ Copying machines
- ★ Clock, Weathermeter
- ★ Hygrometer, Hygrorecorder

### Rating & Characteristics

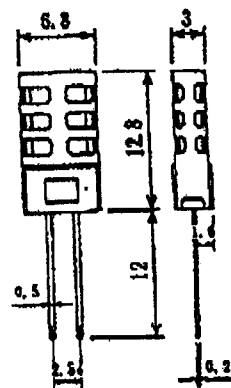
Characteristics	Type no.	SC0056	
Rated Voltage		AC1Vrms	
Rated Power		AC 0.2mW	
Operating Temperature Range		0~60°C	
Operating Humidity Range		Less than 90%RH	
Recommended Storage Condition		10~40°C, 0~60%RH	
Recommended Driving Frequency		500Hz~2KHz	
Standard Humidity Resistance		31KΩ (25°C, 60%RH)	
Humidity Detecting Accuracy		± 5%RH(25°C, 60%RH)	
Temperature Dependence		0.5%RH/°C	
Material of Filter Case		ABS	
Color of Filter Case		Darkgray	Off-White
Dimension		11x27.5x6mm	6.8x24.8x3mm

### Dimensions (unit:mm)

Type no. SC0056-1

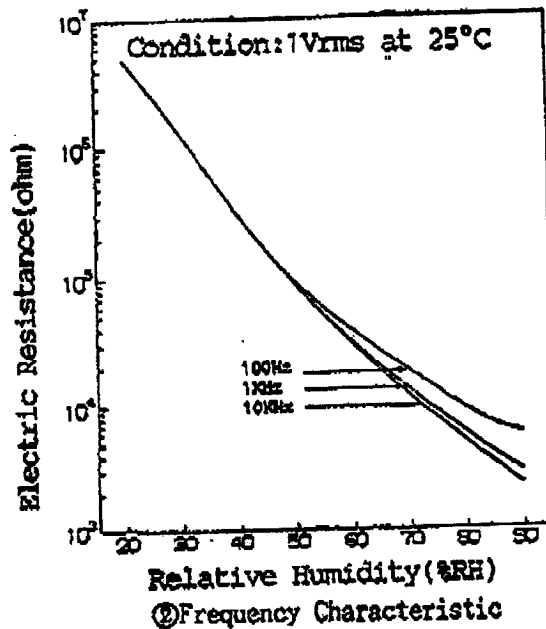
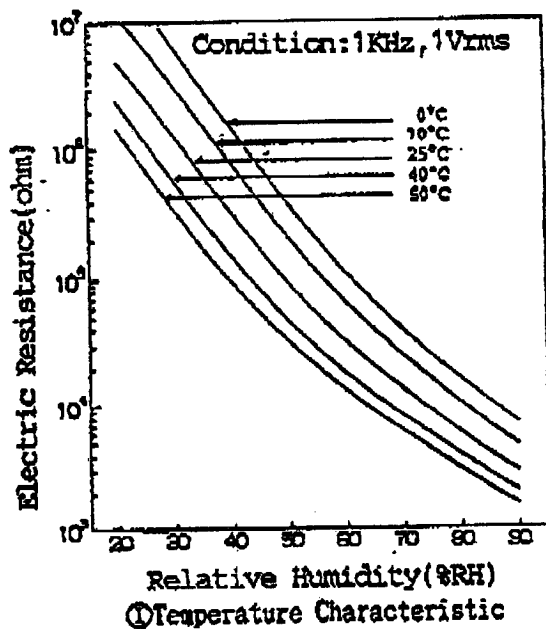


Type no. SC0056-2



TYPE NO. SC0056

### Typical Characteristics



### Remarks on Using

- ★ Avoid input DC voltage to the Humidity Sensor
- ★ Avoid dewing and drenching
- ★ Avoid using the Humidity Sensor in the salt, inorganic gases and organic gases

## REFERENCES

### HUMIDITY SENSOR SC0056

#### Impedance VS % RH

unit: Ohms

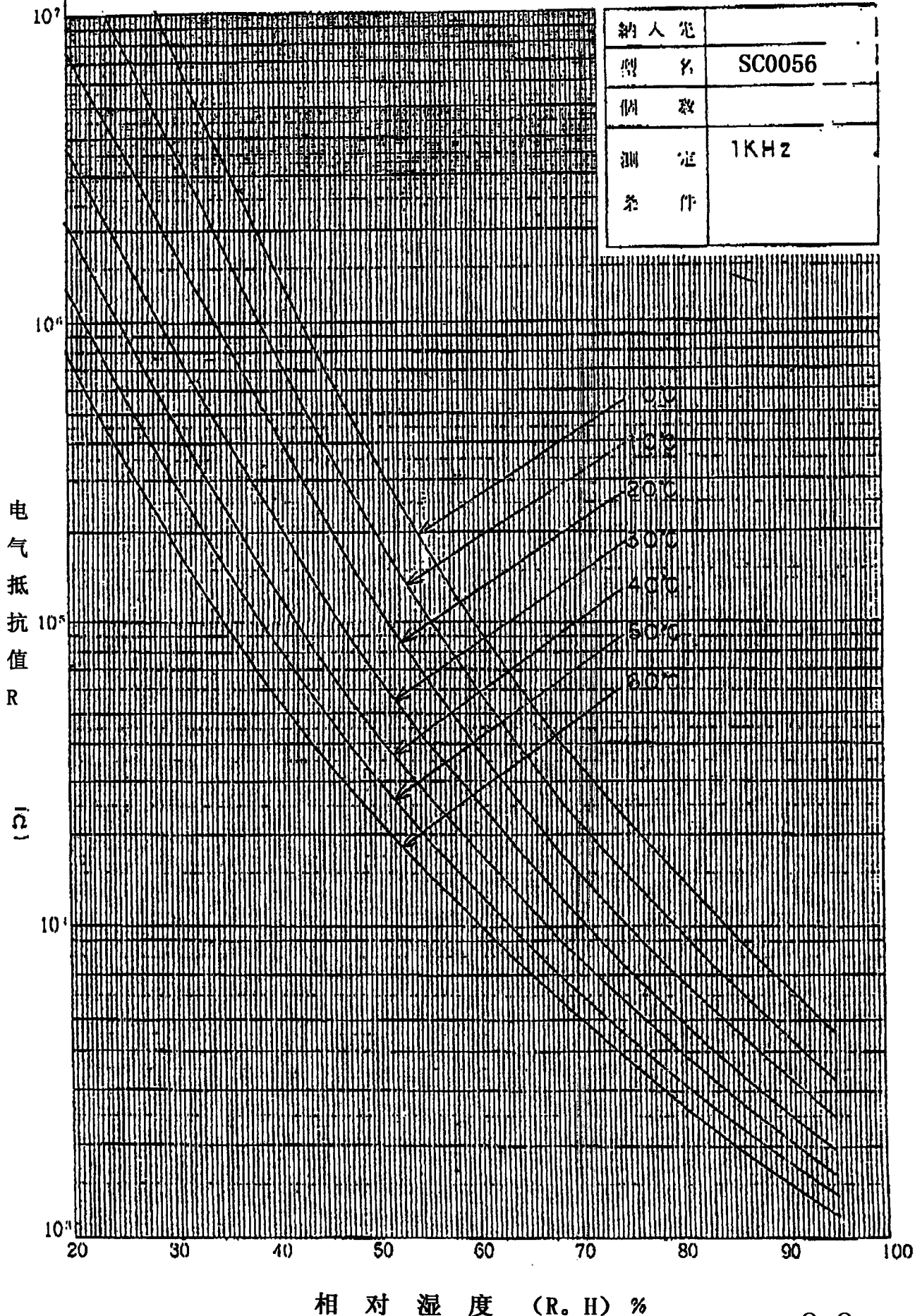
	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
20%RH				10M	6.7M	5.0M	3.9M	3.0M	2.4M	1.75M	1.45M	1.15M	970K
25%RH		10M	7.0M	5.0M	3.4M	2.6M	1.9M	1.5M	1.1M	880K	700K	560K	450K
30%RH	6.4M	4.0M	3.2M	2.3M	1.75M	1.3M	970K	740K	570K	420K	340K	270K	215K
35%RH	2.9M	2.1M	1.5M	1.1M	850K	630K	460K	380K	280K	210K	170K	130K	105K
40%RH	1.4M	1.0M	750K	540K	420K	310K	235K	190K	140K	110K	88K	70K	57K
45%RH	700K	500K	380K	280K	210K	160K	125K	100K	78K	64K	50K	41K	34K
50%RH	370K	260K	200K	150K	115K	87K	69K	56K	45K	38K	31K	25K	21K
55%RH	190K	140K	110K	84K	64K	49K	39K	33K	27K	24K	19.5K	17K	14K
60%RH	105K	80K	62K	50K	39K	31K	25K	20K	17.5K	15K	13K	11K	9.4K
65%RH	62K	48K	37K	30K	24K	19.5K	16K	13K	11.5K	10K	8.6K	7.6K	6.8K
70%RH	38K	30K	24K	19K	15.5K	13K	10.5K	9.0K	8.0K	7.0K	6.0K	5.4K	4.8K
75%RH	23K	18K	15K	12K	10K	8.4K	7.2K	6.2K	5.6K	4.9K	4.2K	3.8K	3.4K
80%RH	15.5K	12.0K	10.0K	8.0K	7.0K	5.7K	5.0K	4.3K	3.9K	3.4K	3.0K	2.7K	2.5K
85%RH	10.5K	8.2K	6.8K	5.5K	4.8K	4.0K	3.5K	3.1K	2.8K	2.4K	2.1K	1.9K	1.8K
90%RH	7.1K	5.3K	4.7K	4.0K	3.3K	2.8K	2.5K	2.2K	2.0K	1.8K	1.55K	1.4K	1.3K

at 1KHz

# 温度特性

SUNSTAR传感与控制 <http://www.sensor-ic.com/> TEL: 0755-83376549 FAX: 0755-83376182 E-MAIL: szss20@163.com

納入范	
型名	SC0056
個数	
測定条件	1KHz



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