

HMZ-433BY Humidity module specifications

1. Application range :

The HMZ-433BY module consist of an HCZ sensor and integrated circuit to provide a linear DC Voltage for 0-100%RH to enable easy user application of the HCZ sensor. They are specifically designed for use appliances and controllers.

Feature	Application
Wide humidity operation range	Air condition ,humidifier, Dehumidifier.
Linear DC Output	Humidity controller, Humidity transmitter.
Easy operation	Hygrometer, Hygro-recorder.
Long-term stability	Copying machine.
Small and economical	Clock ,Weather-forecast barometer.

2. Electrical characteristics :

2.1 Sensing element (Humidity) : HMZ-433BY Humidity sensor “ GHITRON HCZ sensor“

2.2 Supply Voltage(Vin) : 5VDC±5%

2.3 Current Consumption : 5mA max:(2mA avg.)

2.4 Operating Range

Temperature : 0 to 60°C

Humidity : 95%RH or less

2.5 Storage

Temperature : -20 to 60°C

Humidity : 95%RH or less

2.6 Humidity transmitting

Range : 20 to 90%RH

2.7 Accuracy :

Temperature : Resistance(1%) : 10±0.1KΩ (at 25±0.2°C)

Humidity : ±5%RH (at 25°C , 60%RH, Vin=5.00VDC)

2.8 Humidity Output 0~3.3V

At 25 ,Vin=5.00VDC

Signal(Reference) : (Output Impedance approx:5KΩ)

Humidity(%RH)	20	30	40	50	60	70	80	90
Output Voltage(V)	0.85	1.12	1.51	1.86	2.19	2.46	2.71	2.84

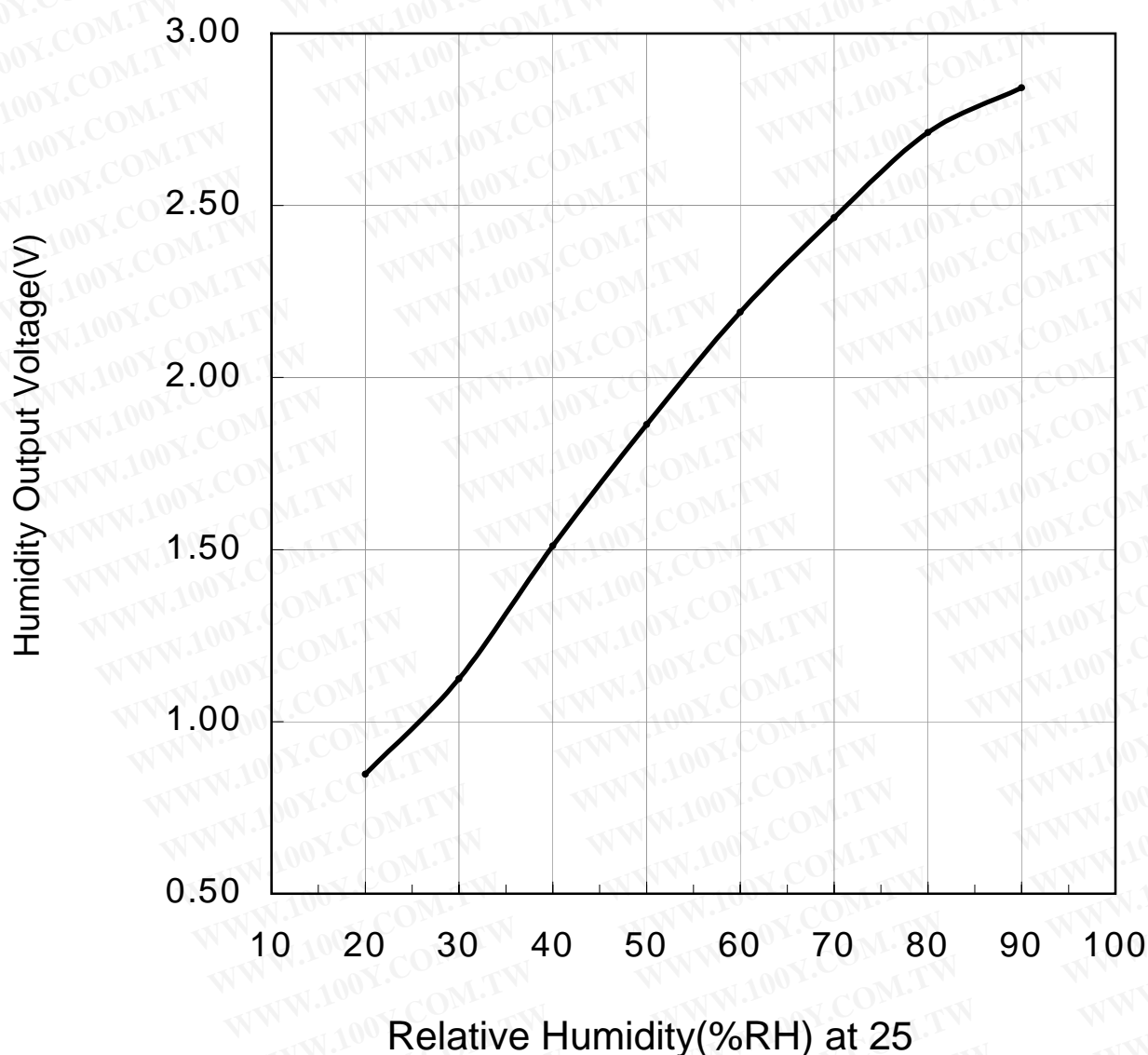
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2.9 Temperature Output Using thermistor 103 R(25°C)=10KΩ±1%,
Signal(Reference) : B(25/85)=3970K±1%(NTS-A5-104F)

Temperature(°C)	0	10	20	25	30	40	50	60
Resistance(KΩ)	33.029	20.027	12.515	10	8.045	5.309	3.590	2.482

2.10 Humidity Output 0~3.3V characteristics :

HMZ-433BY Humidity Output 0~3.3V characteristics



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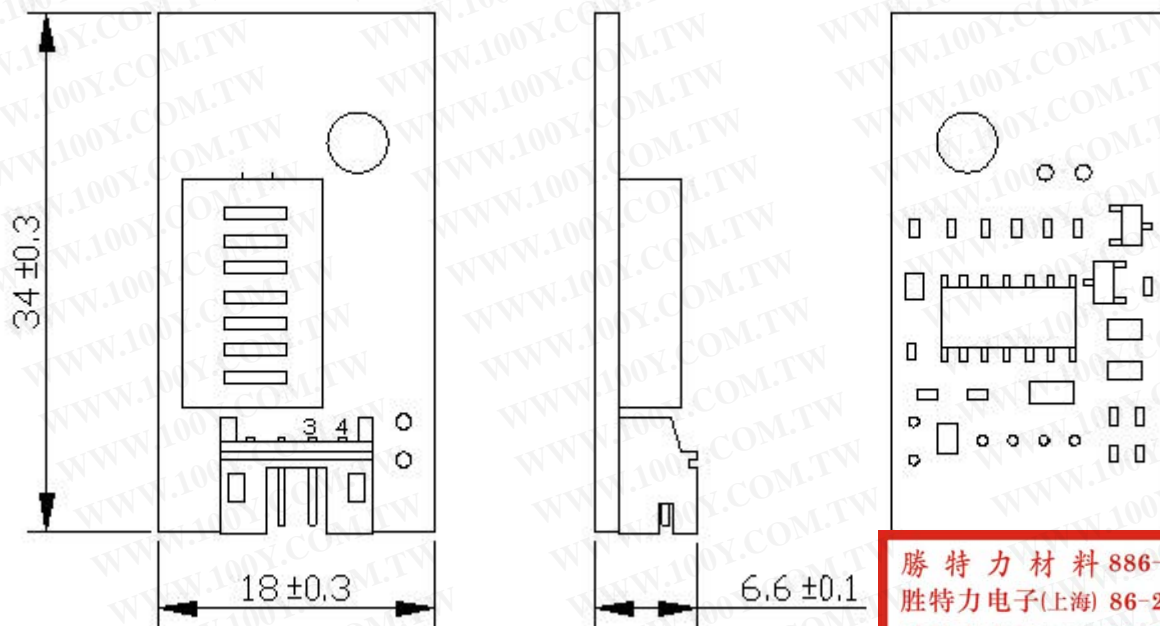
2.11 HMZ module Humidity Output 0~3.3V v.s Temperature characteristics :

	10	15	20	25	30	35	40
20%RH	0.95	0.93	0.92	0.85	0.78	0.76	0.68
30%RH	1.22	1.20	1.19	1.12	1.11	1.12	1.05
40%RH	1.54	1.53	1.55	1.51	1.54	1.54	1.50
50%RH	1.87	1.89	1.92	1.86	1.84	1.90	1.88
60%RH	2.19	2.21	2.24	2.19	2.24	2.24	2.21
70%RH	2.49	2.49	2.53	2.47	2.53	2.55	2.51
80%RH	2.72	2.73	2.73	2.71	2.72	2.73	2.70
90%RH	2.86	2.85	2.86	2.84	2.86	2.83	2.82

Remark : Remark: Accuracy : $\pm 5\%$ RH (at 25 , 60%RH , $V_{in}=5.00VDC$)

Output range : 2.03~2.33V(55%RH~65%RH Output)

3. Configuration & Dimensions (Units :mm) : Model No. HMZ-433BY Drawing



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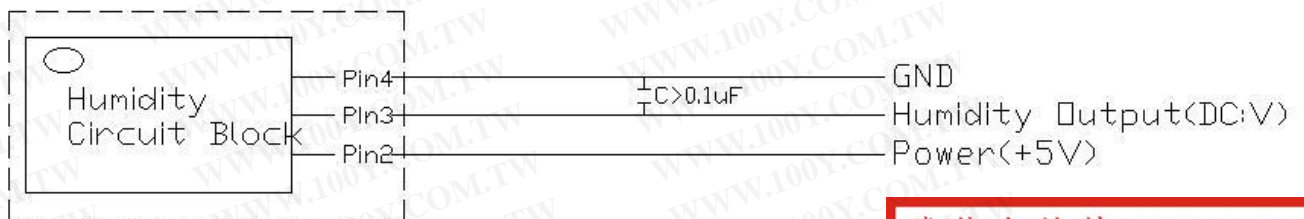
Terminal Connection :

Terminal	Content. (4Pin Pitch : 2.0mm)
Pin1	Temp Output 10k Ω (at 25 $^{\circ}$ C).
Pin2	Power Source 5V DC
Pin3	Humidity Output
Pin4	GND

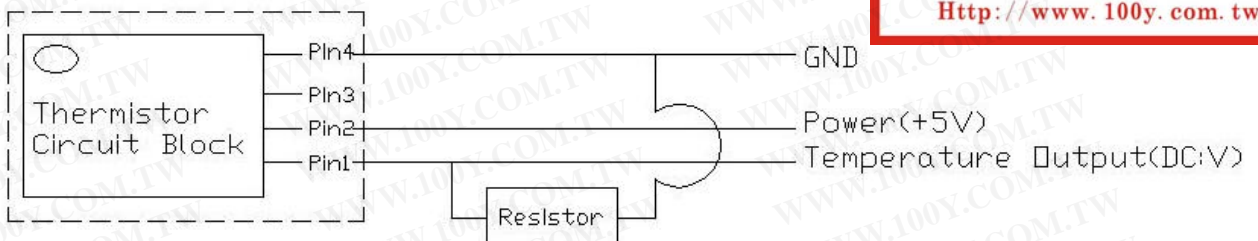
Remark : Please pay attention to the power source and GND polarity position.

4. Typical Applications :

4.1 Pin2 Humidity output (DC:V)



4.2 Pin1 Thermistor output (DC:V)



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5. Order From :

HMZ—433BY is the module with 2417RJ-04 4 pins(pitch=2.0 mm) of terminal Connector of voltage output for humidity and temperature output 10KΩ (at 25℃) .

HMZ-433BY Configure of definition.	
Input Voltage	5V
Humidity Output Voltage	0~3.3V
Temperature Output	NTS-A5-104F : 10kΩ (at 25℃)
Terminal Connector	2417RJ-04 , 4pins(Pitch=2.0 mm) .
Accuracy	±5%RH
Sensing element (Humidity) :	Humidity sensor “ GHITRON HCZ sensor“
Output scale(A type)	20~90%RH

6. Reliability test :

No.	ITEM	METHOD	REQUIREMENT
6.1	Impact test	To drop Module 3time at random on to a hard wooden plate from 1meter above high.	No breakage, nor cracks. Should be electrically normal. Within ±5%RH
6.2	Vibration test	Vibration test in X-Y-Z axis for 30min. under 10-55Hz frequency, 1.5mm(10-55-10Hz)amplitude.	No breakage, nor cracks. Should be electrically normal Within ±5%RH
6.3	Heat resistance	To leave module in an ambient of 55℃ and 30%RH max. for 48hours.	Within ±5%RH

No.	ITEM	METHOD	REQUIREMENT
6.4	Cool resistance	To leave module in an ambient of -10°C and 30%RH max. for 48hours.	Within ±5%RH
6.5	Humidity resistance	To leave module in an ambient of 40°C and 95%RH for 48hours.	Within ±5%RH
6.6	Temperature cycle test	5 cycles. 1cycle stands for leaving module under -10°C for 1hour,and raise ambient temp. up to 55°C for next 1hour.Then,leave it another 1hour,and lower temp. to -10°C for next 1hour.	Within ±5%RH

Remarks :

- (1) All standard figures are based on humidity variation under 60%RH(25°C)
- (2) Upon completion of all tests, The module will be left over under nominal environment and humidity for 24hours.

7. Packing :

There are 50 pieces of modules to be packed in one tray.

8. Caution remarks on operation :

- 8.1 To avoid direct application of DC voltage on humidity sensor.
- 8.2 To protect sensor from dewfall and drenching.
- 8.3 To avoid and operation of humidity sensors in the following environmental ambient.

8.3.1 Salt

8.3.2 Inorganic gas Sulfide dioxide, Chlorine, Ammonium, etc.

8.3.3 Organic gas Alcoholic, Glycols, Aldehydes, etc.

8.4 Recommendable storage condition :

Temperature range 10~40

Humidity Range 90%RH or Less.

- 8.5 Do not store humidity sensors long period of time in an 60 ambient, due to some occasion of degradation on sensor housing case.

Remark : We have the right to revise specification and product configurations without notice.

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