

## HMZ-435C Humidity module specifications

### 1. Application range :

The HMZ-435C module consist of an HCZ-H6A sensor and integrated circuit to provide a linear DC Voltage for 0-100%RH to enable easy user application of the HCZ-H6A 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 :

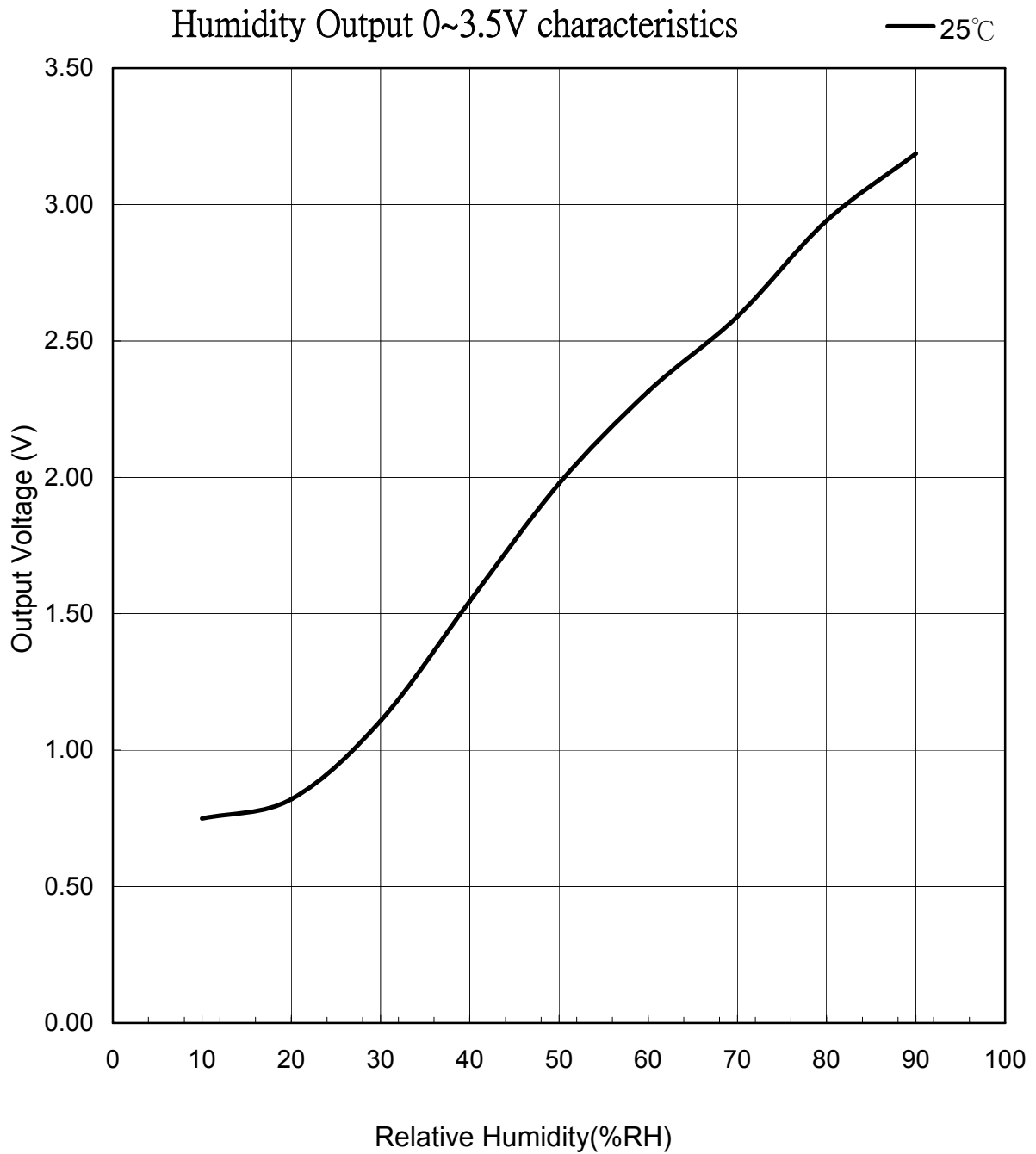
- 2.1 Sensing element (Humidity) : HMZ-435C Humidity sensor “ GHITRON HCZ-H6A“
- 2.2 Supply Voltage(Vin) : 5VDC±5%
- 2.3 Current Consumption : 5mA max :(2mA avg.)
- 2.4 Operating Range
  - Temperature : 0 to 60°C
  - Humidity : 95%RH or less
- 2.5 Storage
  - Temperature : -20 to 60°C
  - Humidity : 95%RH or less
- 2.6 Humidity transmitting
  - Range : 10 to 90%RH
- 2.7 Accuracy :
  - Temperature : Resistance(1%) : 50±0.5KΩ (at 25±0.2°C)
  - Humidity : ±5%RH (at 25°C , 60%RH, Vin=5.00VDC)
- 2.8 Humidity Output 0~3.3V
  - Signal(Reference) : (Output Impedance approx:5KΩ)

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

2.9 Temperature Output Using thermistor 503  $R(25^{\circ}\text{C})=50\text{K}\Omega\pm 1\%$ ,  
 Signal(Reference) :  $B(25/85)=3950\text{K}\pm 1\%$

Temperature( $^{\circ}\text{C}$ )	0	10	20	25	30	40	50	60
Resistance( $\text{K}\Omega$ )	160.56	98.714	62.328	50.0	40.356	26.756	18.138	12.554

2.10 Humidity Output 0~3.5V characteristics :



2.11 HMZ module Humidity Output 0~3.5V v.s Temperature characteristics :

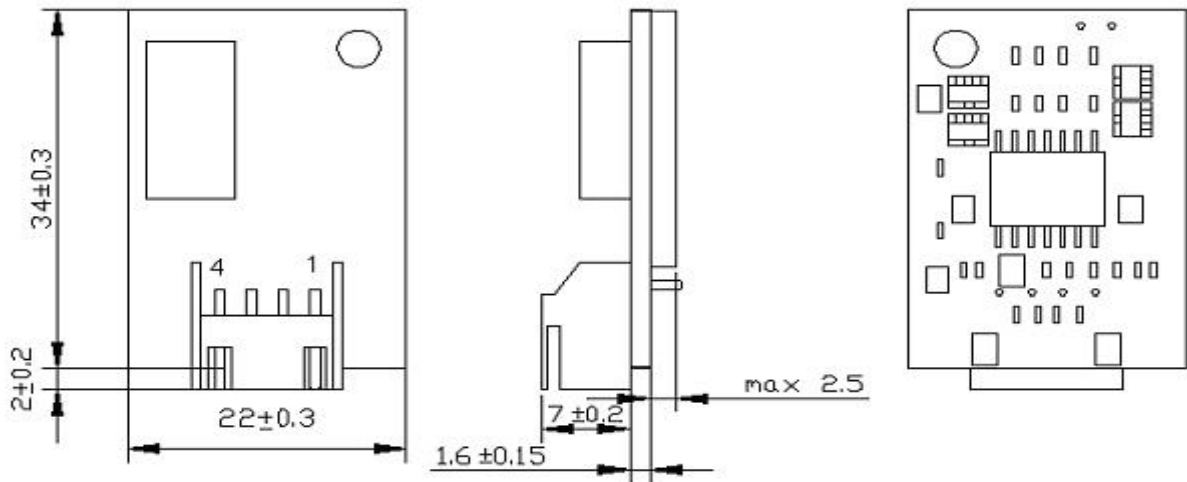
	10°C	15°C	20°C	25°C	30°C	35°C	40°C
90%RH	3.15	3.22	3.05	3.30	2.97	2.89	2.73
80%RH	2.98	2.92	2.87	2.94	2.78	2.73	2.61
70%RH	2.67	2.58	2.54	2.55	2.46	2.40	2.28
60%RH	2.35	2.36	2.32	2.32	2.24	2.15	2.09
50%RH	2.04	2.06	2.00	1.98	1.93	1.89	1.77
40%RH	1.65	1.63	1.60	1.55	1.52	1.45	1.32
30%RH	1.28	1.23	1.18	1.09	1.04	0.95	0.84
20%RH	1.13	1.03	0.93	0.80	0.74	0.61	0.48
10%RH	1.11	0.99	0.88	0.75	0.63	0.50	0.36

Remark : Remark: Accuracy :  $\pm 5\%RH$  (at 25°C, 60%RH, Vin=5.00VDC)

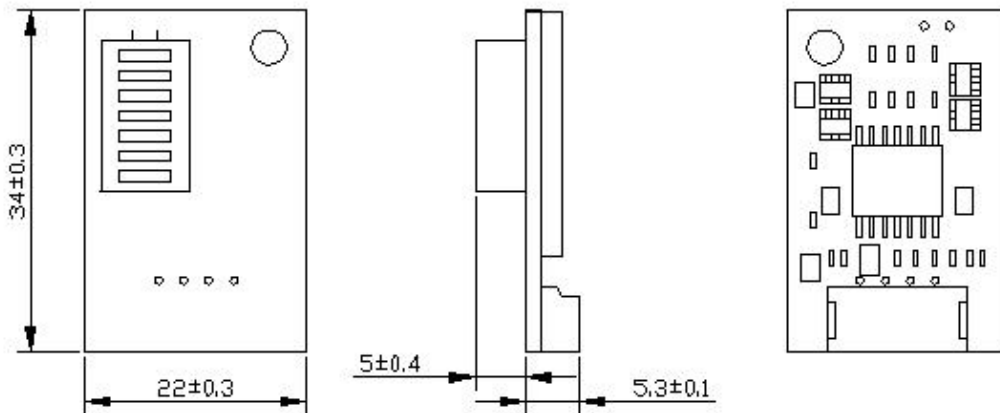
Output range : 2.205~2.535V(0~3.5V Output)

3. Configuration & Dimensions (Units :mm) :

3.1 Model No. HMZ-435C Drawing



3.2 Model No. HMZ-435CS Drawing



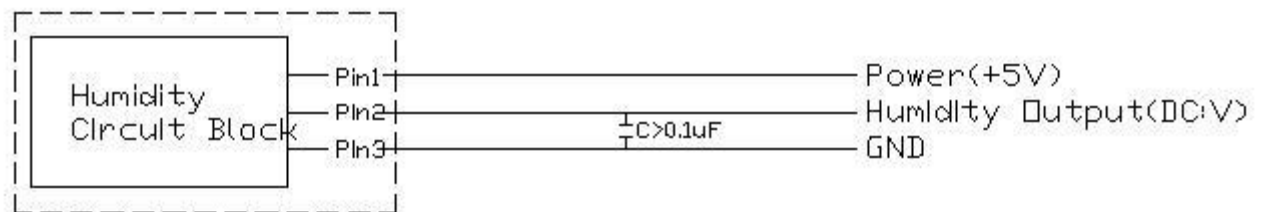
Terminal Connection :

Terminal	Content.
Pin1	Power Source 5V DC.
Pin2	Humidity Output.
Pin3	GND.
Pin4	Temp Output $50k\Omega$ (at $25^{\circ}C$ ).

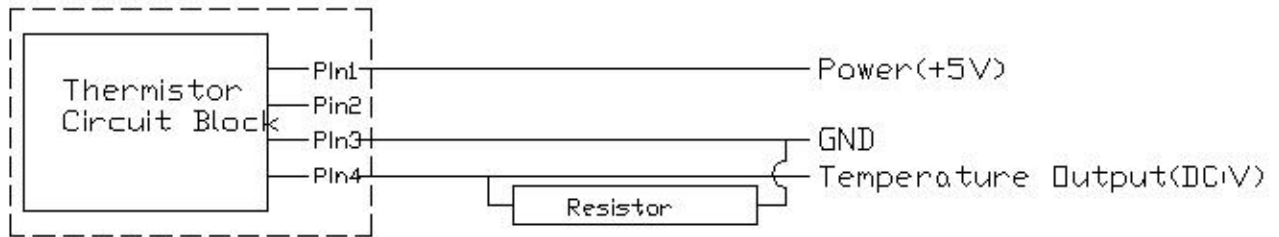
Remark : Please pay attention to the power source and GND polarity position.

4. Typical Applications :

4.1 Pin2 Humidity output (DC:V)



4.2 Pin4 Thermistor output (DC:V) (Over the equipment of ability).



5. Order From :

HMZ-435C is the module with the 0~3.5V voltage output for humidity and temperature output 50K $\Omega$  (at 25 $^{\circ}$ C,.) $\circ$

HMZ-435C Configure of definition.	
Input Voltage	5V
Humidity Output Voltage	0~3.5V
Temperature Output	50k $\Omega$ (at 25 $^{\circ}$ C)
Terminal Connector	HMZ-435C : 2317RJ-04 (4pins , Pitch=2.54mm)
	HMZ-435CS : S4B-ZR-SM3A (4pins , Pitch=1.5 mm)
Accuracy	$\pm$ 5%RH
Sensing element (Humidity) :	Humidity sensor " GHITRON HCZ-H6A"
Output scale(A type)	30~90%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.
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.
6.3	Heat resistance	To leave module in an ambient of -55 $^{\circ}$ C and 30%RH max. for 48hours.	Within $\pm$ 5%RH
6.4	Cool resistance	To leave module in an ambient of -10 $^{\circ}$ C and 30%RH max. for 48hours.	Within $\pm$ 5%RH
6.5	Humidity resistance	To leave module in an ambient of 40 $^{\circ}$ C and 95%RH for 48hours.	Within $\pm$ 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°C

Humidity Range 90%RH or Less.

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

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