

CH-07J Digital humidity sensor

CH-07J 3D0A

A. Features

- 1) Anti-interference, over 5 meters available from sensor to the mainframe
- 2) Easy communication, PPM code transmission by only one wire
- 3) Low cost and control by specialized IC, high precision
- 4) Wide range of application

B. Electrical specification

- 1) Humidity sensing element, Japan Hokuriku hygistor (HIS-06-N)
- 2) Connector, single wire serial data, PPM code
- 3) Working voltage, 3.0V-5.5V DC
- 4) Working current, less than 5mA (5.0V DC)
- 5) Working humidity range, 5-95%RH
- 6) Working temperature range, 0-50C
- 7) Temperature detection range, 0-48C
- 8) Humidity detection range 1, 20-99%RH (temperature 25C ± 1C)
- 9) Humidity detection range 2, 5-99%RH (temperature 5C-45C)
- 10) Humidity detection precision, 35-90%RH ± 5%RH(temperature 25C ± 1C)
- 11) Storage temperature range, -20C to 85C
- 12) Storage humidity range, 95%RH below

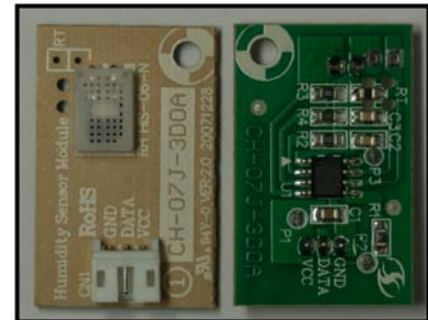
C. Test conditions

- 1) Temperature 25 ± 1C, working voltage 5.0V DC ± 1%
- 2) Under specified conditions, put the sensor inside constant temperature and humidity cabinet and set a constant temperature and humidity, wait for 10 minutes until the output value stable.
- 3) Test equipment,
 - a) High precision constant temperature and humidity cabinet, model KA-1005C
 - b) Temperature and humidity survey meter, FULKE 971 high precision survey meter (± 2.5RH)
 - c) Stabilized voltage supply, KENWOOD, PS36-10
 - d) Other testing equipment, FULKE-87III and AdvanTest TR6847 digital voltmeter

D. Stable reliability testing

Conditions, 1) 80%RH as the standard

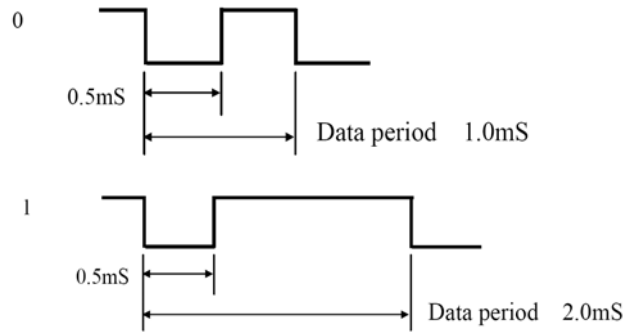
- 2) For each testing step, The sensor is put in the normal temperature and normal humidity environment for 24 hours.



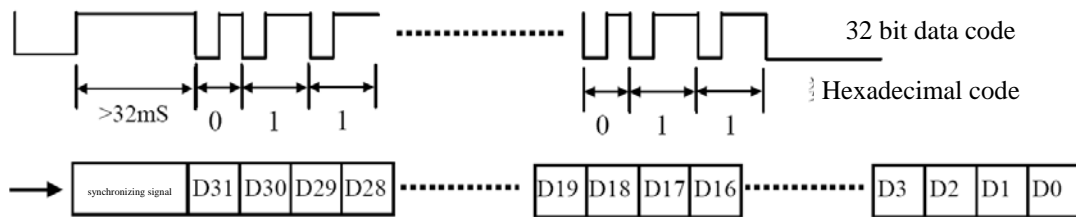
1	Impact resistance	Drop the sensor from 1 meters high (3 times)	With no desoldering
2	Vibration resistance	10-55Hz, amplitude 1.5mm, X-Y-Z (each direction 2 hours)	With no desoldering
3	Heat resistance	Under 80C and 30%RH, storage for 100-1000 hours	Precision within ± 5%RH
4	Cold resistance	Under 10C and 70%RH, storage for 100-1000 hours	Precision within ± 5%RH
5	Humidity resistance	Under 40C and 90% RH, storage for 100-1000 hours	Precision within ± 5%RH
6	Temperature cycling test	Under -10C for 1 hour, change to 55C for 1 hour, then -10C again, repeat 300 times	Precision within ± 5%RH
7	Organic solvent resistance	Under ethyl alcohol gas for 30 minutes, propyl alcohol gas for 30 minutes	Precision within ± 5%RH

E. Code format

1. BIT



2. Data transmission



In the front 16 bits, the lower 8 bits is humidity value, the higher 8 bits is temperature value, the back 16 bits are the complement.

Code calculation, Shortest width of the 32 bits code is $32 * 1mS = 32mS$
Longest width of the 32 bits codes is $32 * 2mS = 64mS$

F. Attention

- 1) Do not connect the DC power directly to the sensor
- 2) Do not storage the sensor under too dry or too humid environment for long time
- 3) Do not storage the sensor under corrosive gas environment for long time

G. Specification (mm, $\pm 0.5mm$)

