Temperature & Humidity Transmitter
AW3010A User Manual

1 Product Overview

AW3010A--the voltage temperature and humidity transmitter, adopts the first high quality capacitance digital sensor developed in our company. The AW3010A ensure the excellent measurement performance with high precision, strong anti-jamming ability and strong stability.

The transmitter with wide measuring range, can be applied to most of the industrial environment. Equipped with a large screen, the value of temperature and humidity monitoring displays in real time. The interior design module has alarm function module, which can achieve high/low humidity and temperature sound and light alarm. The temperature output range can be set freely by the system menu. The output signal adopts industrial standard of 4~20mA current output signal. Therefore, the AW3010A achieves an excellent industrial grade temperature and humidity transmitter.

The AW3010A can be widely used in Industrial factory building, telecom base station, communication room, HAVC, intelligent buildings, museums, archives, office, etc, which is the ideal solution for all kinds of application of environment temperature and humidity measurement monitoring.

2 Product highlight

Long-term stability, wide measuring range, high and low temperature and humidity measurement accuracy, small volume, light weight, high precision and fast response.

3 Sensor Performance

3.1 Temperature(℃)

Parameter	Condition	Min	Typ.	Max	Units
Resolution			0.1		℃
Operating range(inner)		-20	±0.3	60	℃
Operating range(outer)		-40	±0.3	80	℃

Drift	Typical		0.1		℃/yr

3.2 Relative Humidity (%RH)

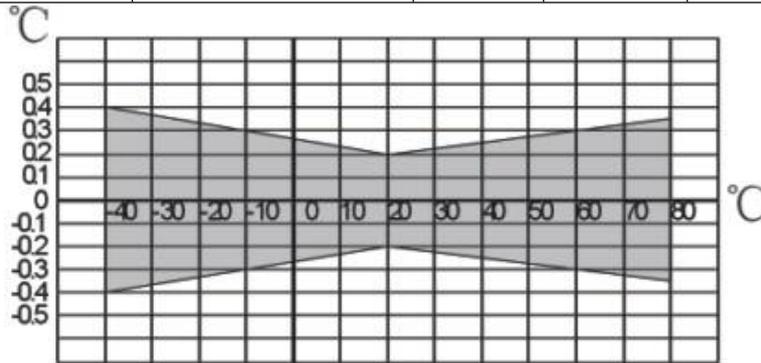| Parameter	Condition	Min	Typ.	Max	Units
Resolution			0.1		%RH
Measuring range	25℃	0	±2	99.9	%RH
Drift	Typical		0.1		%RH/yr

Figure 1 Relative Temperature error

The measured value of the product may be subject to the following factors:

1. The temperature error

◎Placed in a test environment in settling time is too short.

◎Near sources of heat, cold source, or directly at the sun.

2. Pollution

◎In dust or other environmental pollution, the product must be cleaned regularly.

3.3 Other specifications

1) Power consumption: ≤20mA

2) Supply voltage: 15~36VDC(USB 5V)
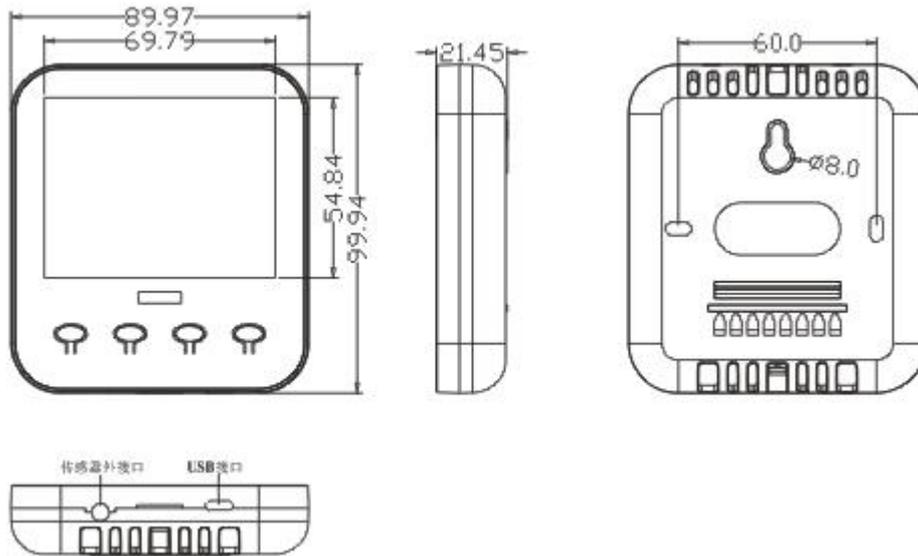
3) Voltaget output: 0~10V/0~5V/0~1V

4 Dimensions

Figure 2 Dimension (Units: mm)

5 Product Installation

5.1 Mechanical installation

1. Open the outer packing carton and take out the transmitter from the plastic bag.

2. Upturn the rear cover to the back of the transmitter, and use fingers or other tools break the plastic buckle below the instrument, then use a screwdriver to insert and move hard upward the square hole of the plastic buckle, then the rear cover is open.

3. Position the transmitter on the wall and mark the three nail holes in the back cover.

4. Use the impact drill to mark three holes on the wall.

5. Take out the three fixed screws in the packing box and unscrew the screws and the plastic nail plug. The plastic nail is plugged into the screw holes drilled on the wall with a hammer.

6. Screw the screw holes on the back cover with the plastic nail plug nailed on the wall. Screw the three screws respectively into the nail plug. The rear cover of the transmitter is fixed to the wall after tightening.

7. Turn the two plastic buttons on the upper end of the transmitter corresponding to the rear cover, and press it down a little harder so that it is fastened to the fixed back cover.

8. Complete the wall installation of the transmitter.
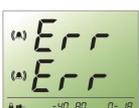
5.2 Application circuit
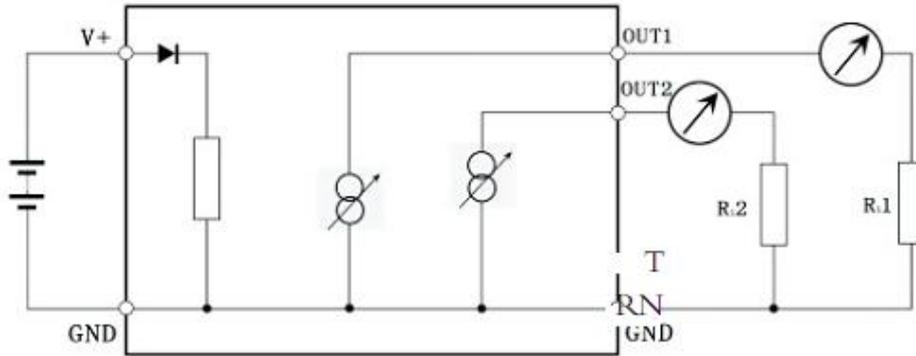
Note:

1. The load impedance RL1, RL2 must be smaller than 10KΩ, otherwise the analog voltage output signal will meet the unexpected error.

2. T is the current output signal of the temperature, and the RH is the current output signal of the humidity.

3. A simple test with a multimeter is used, and RL1 and RL2 can be disconnected.

6 Functional description

Display Item	Key Function	Range and Description of Value	Default Value
1.0H 50	Upper limit value of temperature range	(lower temperature limit value+5)~80℃	50
2.0L 0	Lower limit value of temperature range	-40~(upper temperature limit value-5)℃	0
3.Ar On	Alarm function	ON/OFF (need to open first, when temperature or humidity exceed upper and lower limit value, the alarm function will start)	OFF
4.CH 80.0	Upper limit value of temperature alarm	(low temperature alarm value+1) ~80℃	80.0

5.CL -40	Lower limit value of temperature alarm	-40℃ ~ (high temperature alarm value-1)℃	-40.0
6.HH 99.9	Upper limit value of humidity alarm	(low humidity alarm value+1) ~ 99.9%RH	99.9
7.HL 1.0	Lower limit value of humidity alarm	1.0 ~(high humidity alarm value-1)%RH	1.0
8.CF℃ C	Temperature C/F switch	C/F	C
30 20A	Boot screen display	3020A	3020A
Err Err	Sensor error display		

7 Temperature and humidity measurement settings conversion format

Temperature settings conversion:

$$T(°C)= \frac{\dfrac{\text{actual measurement current（}I_t\text{)-4mA}}{16}}{\text{upper limit value-lower limit value}} + \text{lower temperature limit value}$$

Example:(corresponding to 0 ~ 10V range)

Temperature 0~50℃ setting conversion:

$$T(°C) = \frac{\text{actual measurement current（}I_t\text{)-4mA}}{0.2V / °C}$$

Temperature -20~80℃ setting conversion:

$$T(°C) = \frac{\text{actual measurement current（}I_t\text{)-4mA}}{0.1V / °C} - 20$$

Temperature -40~60℃ setting conversion:

$$T(°C) = \frac{\text{actual measurement current }(I_t)\text{-4mA}}{0.1V / °C} - 40$$

Humidity setting conversion:

$$Humidity\,(\%RH) = \frac{\text{actual measurement current }(I_t)\text{-4mA}}{0.1V / \%RH}$$

8 License Agreement

1) Without the written permission of the company, it shall not copy or disseminate the content of this specification in any form, nor shall it be disclosed to a third party.

2) The company and the third party have the ownership of the software, and the user can only use it after signing the contract or obtaining the software license.

3) The contents of this instruction manual are subject to change without prior notice.

9 Warning and Personal Injury

Do not apply this product to safety protection devices or emergency shutdown devices, and any other applications that may cause personal injury due to the malfunction of the product, unless otherwise authorized. Please refer to the product data sheet and Application guide before installation, processing, use, or maintenance of the product. Failure to comply with the recommendations may result in death and serious bodily harm. The company will not be liable for all damages resulting in personal injury or death, and avoid the company managers and employees, agents, distributors and other subsidiary may have any claim, including all the costs and compensation costs, legal fees etc.

10 Quality Assurance

The company provides quality assurance for 12 months for the original purchaser of the products (calculated from the date of shipment), in accordance with the technical specifications of the data book of the product published by the company. If the product is

proved to have its own quality problems during the warranty period, the company will provide free maintenance or replacement. The user must meet the following conditions:

1) The purchaser must notify the company of the defect in writing within 14 days of discovery.

2) The purchaser shall pay the shipping charges for product mailed back to company.

3) The product should be within the warranty period.

The company is solely responsible for products that are defective in situations where the technical conditions of the product are met. The company applies its products to those special applications without any warranties or statements, as well as any commitment to the reliability of the products applied to products or projects.