

Wall-mounted Temperature and Humidity Transmitter(HT802W) -User Manual



1. Product Introduction

1.1 Product Overview

This transmitter adopts wall-mounted waterproof housing. It is mostly used in the situation of bad outdoor and on-site environment. The applications are usually communication room, warehouse building and automatic control and other places that need temperature monitoring. It adopts standard industrial 4~20mA/0~10V/0~5V analog signal outputs, can be connected to digital display meter, PLC, frequency converter, industrial control host and other equipments.

1.2 Features

The accurate measuring unit is imported from Switzerland with the advantages of dedicated analog circuit, wide range of use, 10~30V wide voltage range, complete in specifications and easy installation. Also, it can be used for four wire system and six wire system simultaneously.

1.3 Main technical parameters

DC Power Supply (default)	10~30V DC	
Maximum Power Consumption	Current Output	1.2W
	Voltage Output	1.2W
Accuracy (default)	Humidity	$\pm 2\%RH$ (0%RH~90%RH, 25℃)
	Temperature	$\pm 0.2^{\circ}C$ at 0~65℃
Operating Temperature of Transmitter Circuit	-40℃~+60℃, 0%RH~80%RH	
Probe Working Temperature	-40℃~+120℃, default -40℃~+80℃	
Probe Working Humidity	0%RH-100%RH	
Long-term Stability	Humidity	$\leq 1\%RH/y$

	Temperature	$\leq 0.1^{\circ}\text{C/y}$
Response Time	Humidity	$\leq 8\text{s}(1\text{m/s wind speed})$
	Temperature	$\leq 25\text{s}(1\text{m/s wind speed})$
Output Signal	Current Output	4~20mA
	Voltage Output	0~5V/0~10V
Load Capacity	Voltage Output	output resistance $\leq 250\ \Omega$
	Current Output	$\leq 600\ \Omega$

2. Installation Instructions

2.1 Check the equipment before installation

Device List:

- 1x temperature and humidity transmitter
- 12V/1A waterproof power supply (optional)
- certificate, warranty card, calibration report, etc
- 2x expanding screws

2.2 Installation Steps

Wall Mounting

2.3 Wiring

2.3.1 Power Wiring

Wide voltage 10~30V DC power input. 0-10V output equipment can only use 24V power supply.

2.3.2: Output Interface Wiring

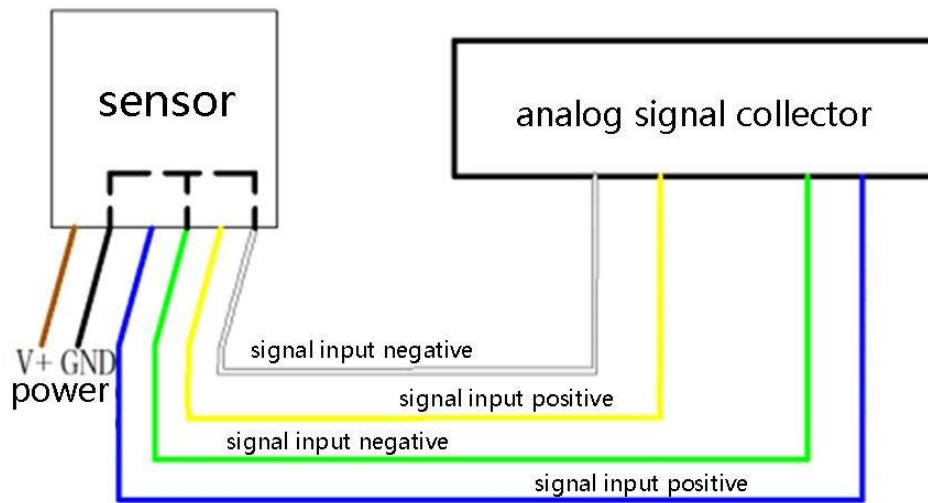
Standard configuration is two-way independent analog output. Adapt to six wire system and four wire system at the same time.

2.4 Specific Wiring

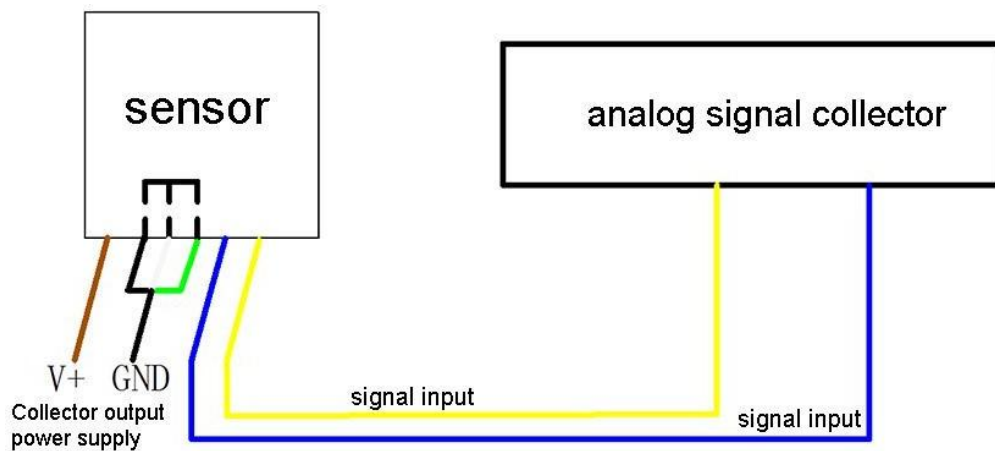
	Wire Color	Explanation
Power	brown	Power +

	black	Power -
Output	blue	humidity signal -
	green	humidity signal +
	yellow	temperature signal +
	white	temperature signal -

2.5 Examples for Wiring



Schematic Diagram of Six-wire Connection System



one to one correspondence for same wire colors

Schematic Diagram of Four-wire Connection System

2. Calculation Methods

3.1 Current Type Output Signal Conversion Calculation

For example, measurement range $-40\sim+80$ degree centigrade, $4\sim20$ mA output, when output signal is 12mA, calculate the current temperature value. This temperature range has a span of 120 degrees, express with a 16mA current signal, $120\text{ degree}/16\text{mA}=7.5\text{ degree}/\text{mA}$. It means an current of 1mA represents a temperature change of 7.5 degrees. $12\text{mA}-4\text{mA}=8\text{mA}$. $8\text{mA}\times 7.5\text{ degree}/\text{mA}=60\text{ degrees}$. $60+(-40)=20\text{ degrees}$, the current temperature is 20 degrees.

3.2 Voltage Type Output Signal Conversion Calculation

For example, measurement range $-40\sim+80$ degree centigrade, $0\sim10$ v output, when output signal is 5V, calculate the current temperature value. This temperature range has a span of 120 degrees, express with a 10V voltage signal, $120\text{ degree}/10\text{V}=12\text{ degree}/\text{V}$, it manes an voltage of 1V represents 12 degrees. $5\text{V}-0\text{V}=5\text{V}$. $5\text{V}\times 12\text{ degrees}/\text{V}=60\text{ degrees}$. $60+(-40)=20\text{ degrees}$, the current temperature is 20 degrees.

4. Frequently Asked Questions and Solutions

-No output or output error

Possible Reasons:

- 1) Measurement range correspondence error leads to PLC calculation error.

-Refer to the technical specification in section 1 for the range;

- 2) Wrong wiring mode or wrong wiring sequence;
- 3) Wrong power supply($0\sim10\text{V}$ type is 24V power supply);
- 4) Distance between transmitter and collector is too long, causing signal disruption;
- 5) PLC collection port damage;
- 6) Equipment trouble.