



RS-WS-*-5

Wall-mounted temperature and humidity transmitter Instruction Manual (Analog Type)



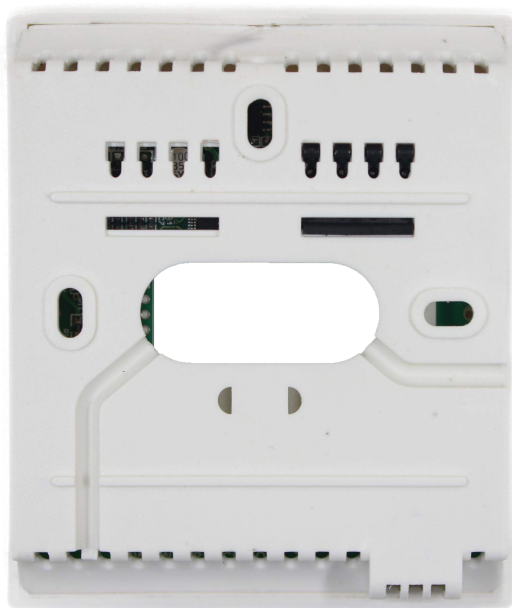




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1. product description

1.1 product description

RS-WS-*-5 series temperature and humidity transmitter adopts imported high-precision temperature and humidity measuring unit, which has high stability, low drift and high repeatability. It is widely used in building automation, HVAC, archives and libraries. Places with temperature and humidity monitoring or automatic control. It is safe and reliable, beautiful in appearance and easy to install.

1.2 Features

1. Original Swiss imported measuring unit, accurate measurement.
2. Adopt dedicated analog quantity circuit, wide application range.
3. 10~30V DC wide voltage range power supply.
4. It can be applied to four-wire and three-wire connection at the same time.

1.3 Main Specifications

DC power supply (default)	10~30V DC	
Maximum power consumption	Current output	1.2W
	Voltage output	1.2W
Precision (default)	humidity	$\pm 3\%RH(60\%RH, 25^{\circ}C)$
	temperature	$\pm 0.5^{\circ}C (25^{\circ}C)$
Transmitter circuit operating temperature	$-40^{\circ}C \sim +60^{\circ}C$, 0%RH~80%RH	
Probe working temperature	$-40^{\circ}C \sim +120^{\circ}C$, default $-40^{\circ}C \sim +80^{\circ}C$	
Probe working humidity	0%RH-100%RH	
Long-term stability	humidity	$\leq 1\%RH/y$
	temperature	$\leq 0.1^{\circ}C/y$
Response time	humidity	$\leq 8s(1m/s \text{ Wind speed})$
	temperature	$\leq 25s(1m/s \text{ Wind speed})$
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. product model

RS-			Company code
	WS-		Temperature and humidity transmission, sensor
		I20-	4~20 mA current output
		V05-	0~5V voltage output
		V10-	0~10V voltage output
			5 Wall-mounted shell

3. Equipment installation instructions

3.1 Inspection before equipment installation

1 transmitter equipment

2.Certificate of conformity, warranty card, calibration report, etc.

3.2 Adjust temperature range (default -40~80℃)

Open the shell, you can see the DIP switch. The transmitter can set the temperature range through the DIP switch as follows:

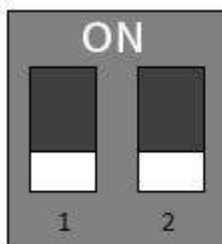


figure 1

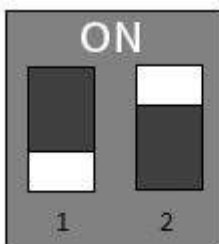


figure 2

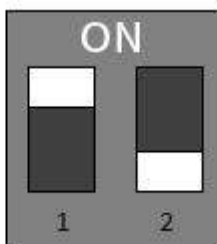


figure 3

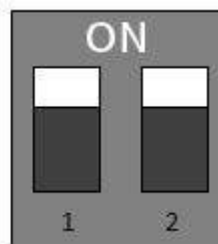


figure 4

As shown in Figure 1: DIP switch corresponds to the temperature measurement range of -40~80℃

As shown in Figure 2: DIP switch corresponds to the temperature measurement range of -20~80℃

As shown in Figure 3: DIP switch corresponds to the temperature measurement range of -40~60℃

As shown in Figure 4: DIP switch corresponds to the temperature measurement range of 0~50℃

If the temperature range is not within the above range, you can contact our company for customization.

3.3 wiring

3.3.1:Power wiring

Wide voltage 10~30V DC power input. For 0-10V output devices, only 24V power supply can be used.

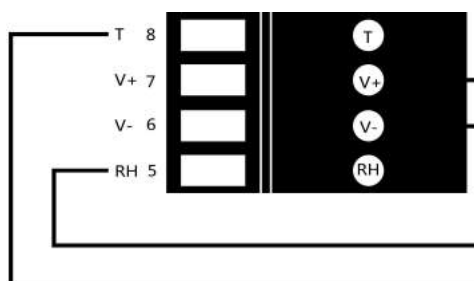
3.3.2: Output interface wiring

The equipment comes standard with 2 independent analog output. Adapt to the three-wire system and the four-wire system at the same time.

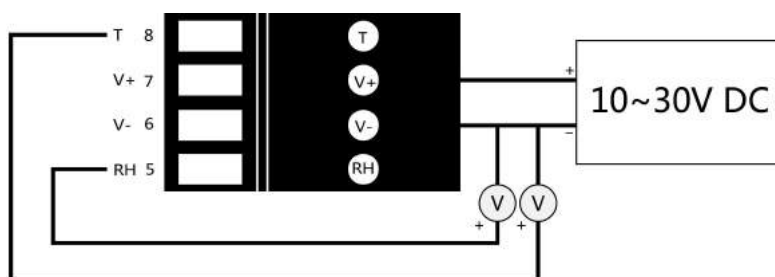
3.3.3: Electrical wiring



Logo	Description	Remarks
T	Temperature analog signal positive	
V+	Power input positive	10~30V DC
V-	Power ground Temperature analog signal negative Humidity analog signal negative	
RH	Humidity analog signal positive	



4~20mA electrical connection diagram



0~5V/0~10V type electrical connection diagram

3.4 Wall installation



Gently press the buckle on the back of the transmitter to open the back cover of the transmitter



Pass the cable to be connected through the hole in the back cover of the transmitter, and screw it to the corresponding terminal with a screwdriver



Fix the back cover on the wall with screws, and install the front cover with a snap



4. Calculation method

4.1 Current output signal conversion calculation

For example, the range is $-40\sim+80$ degrees Celsius, $4\sim20\text{mA}$ output, when the output signal is 12mA , calculate the current temperature value. The span of this temperature range is 120 degrees, expressed by a 16mA current signal, $120\text{ degrees}/16\text{mA}=7.5\text{ degrees}/\text{mA}$, that is, current 1mA represents a temperature change of 7.5 degrees. The measured value is $12\text{mA}-4\text{mA}=8\text{mA}$. $8\text{mA}\times 7.5\text{ degrees}/\text{mA}=60\text{ degrees}$. $60+(-40)=20\text{ degrees}$, the current temperature is 20 degrees.

4.2 Voltage output signal conversion calculation

For example, the range is $-40\sim+80$ degrees Celsius, $0\sim10\text{V}$ output, when the output signal is 5V , calculate the current temperature value. The span of this temperature range is 120 degrees, expressed by a 10V voltage signal, $120\text{ degrees}/10\text{V}=12\text{ degrees}/\text{V}$, that is, voltage 1V represents a temperature change of 12 degrees. The measured value is $5\text{V}-0\text{V}=5\text{V}$. $5\text{V}\times 12\text{ degrees}/\text{V}=60\text{ degrees}$. $60+(-40)=20\text{ degrees}$, the current temperature is 20 degrees.

5. Common problems and solutions

Trouble phenomenon: no output or output error

possible reason:

- 1) The PLC calculation error is caused by the corresponding error of the range. Please refer to the technical indicators in the first part of the range.
- 2) The wiring method is wrong or the wiring sequence is wrong.
- 3) The power supply voltage is wrong (24V power supply for $0\sim10\text{V}$ type).
- 4) The distance between the transmitter and the collector is too long, causing signal disturbance.
- 5) The PLC acquisition port is damaged.
- 6) The equipment is damaged.

6. contact details

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Web QR:



7. Document history

V1.0 document creation.

V2.0 document update.

V2.1 Replace the installation drawing.

V2.2 adds DIP switch description.



8. Shell size

Total measurement: 100×85×26mm

