

CATALOG

Temperature Transmitter Module AW201/AW202



- Isolation type temperature transmitter: input/output signal isolation, meeting 500V electrical isolation (input/output).
- High-performance precision conversion: stable and reliable, long service life.
- Internal/external cold junction compensation can be selected, with linear calibration and testing of various signal types.
- Fast response: the response time is within 500ms.
- It has strong anti-electromagnetic and radio frequency interference capabilities, and complies with IEC/EN61326 standards.
- Diagnostic function: self-fault diagnosis, sensor disconnection short circuit diagnosis, variable upper and lower limit detection and other diagnosis.
- AW201 series supports HART5/7 (optional). Through the HART interface, the temperature transmitter module can be configured and maintained for specific applications.
- AW202 series supports USB interface, which can configure information and maintain temperature transmitter module for specific applications.
- Modular glue-filled packaging treatment, moisture-proof, anti-vibration, large temperature range, suitable for a variety of complex working conditions.
- Intrinsic safety explosion-proof and dust explosion-proof: suitable for explosive site installation and use.

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Product Overview

AW201/AW202 Temperature Transmitter Module

The temperature transmitter converts the field resistance temperature detector (RTD) or thermocouple (TC) signal into a standard current signal of 4 to 20 mA for control and remote transmission. It supplies secondary instruments such as indication alarms, recorders, regulators, and DCS for measurement, indication, and process regulation.



Main Parameters

- Output signal: AW201: 4 to 20mA + HART
AW202: 4 to 20mA
- Nominal voltage: 24 VDC
- Power supply: AW201: 17 to 40 VDC
AW202: 12 to 40 VDC
- Alarm output: $\leq 3.8 \text{ mA}$ or $\geq 20.5 \text{ mA}$
- Cold junction compensation: Support built-in / built-out, accuracy: $\leq 0.5^{\circ}\text{C}$
- Maximum consumption current: $\leq 3.15 \text{ mA}$
- Maximum load resistance: $R = (U_{\text{Power Supply}} - 12) / 0.024$
- Protection rating: IP20
- Galvanic isolation: 500 VAC (Input/Output)
- Insulation resistance: $\geq 50 \Omega$
- Response time: $\leq 500 \text{ ms}$
- Start delay: $\leq 6 \text{ s}$
- Connection type: 2-wire, 3-wire, 4-wire

Usage Environment

- Working temperature: -40°C to $+85^{\circ}\text{C}$
- Storage temperature: -40°C to $+85^{\circ}\text{C}$
- Relative humidity: 5% to 95%
- Atmospheric pressure: 86kPa to 106kPa

Safety Approval

- Explosion-proof grade: Ex ia IIC T4/T6 Ga, Ex ia IIC T85°C/T135°C Db
- Explosion-proof certificate: AW201: GYB23.2660X, AW202: GYB23.2661X
- Certification standard: GB3836.1, GB3836.

Application

- Temperature transmitter, divided into HART® communication and USB version, converts different types of input signals into 4 to 20 mA analog output signals.
- AW201 temperature transmitter with HART® communication features, excellent performance, long-term high stability, and high measurement accuracy, equipped with advanced diagnostic functions.
- Universal input signal: connect resistance temperature detector (RTD), thermocouple (TC).

Input Parameters

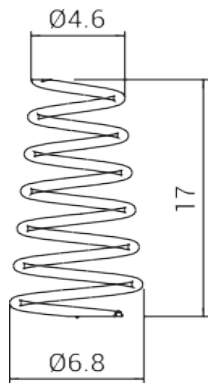
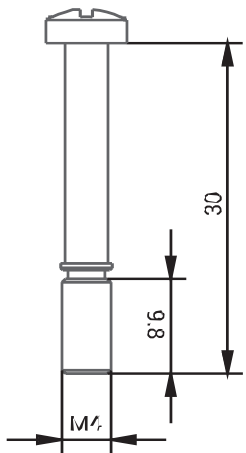
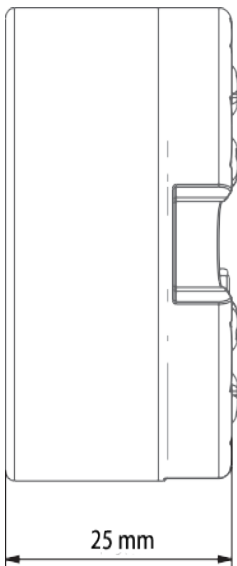
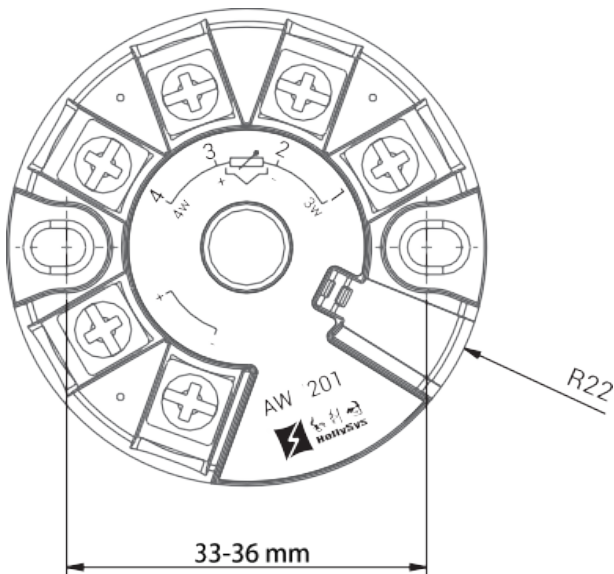
Resistance Temperature Detector	Model	Measurement Range	Measurement Accuracy	
IEC 60751 : 2008 (0.003851)	Pt100	-200 to +850°C	< 100°C, ±0.1°C	≥ 100°C, ± 0.1% F.S
IEC 60751 : 2008 (0.003851)	Pt1000	-200 to +250°C	< 100°C, ±0.15°C	≥ 500°C, ± 0.1% F.S
IEC 60751 : 2008 (0.004280±0.00002)	Cu50	-50 to +150°C	< 100°C, ±0.1°C	≥ 300°C, ± 0.1% F.S
IEC 60751 : 2008 (0.004280±0.00002)	Cu100	-50 to +150°C	< 100°C, ±0.1°C	≥ 300°C, ± 0.1% F.S

Thermocouple	Model	Measurement Range	Measurement Accuracy	
IEC 60854	B	0 to +1820°C	< 500°C, ±0.5°C	≥ 500°C, ± 0.1% F.S
IEC 60854	E	-270 to +1000°C	< 300°C, ±0.3°C	≥ 300°C, ± 0.1% F.S
IEC 60854	J	-200 to +1200°C	< 300°C, ±0.1°C	≥ 300°C, ± 0.1% F.S
IEC 60854	K	-270 to +1300°C	< 300°C, ±0.1°C	≥ 300°C, ± 0.1% F.S
IEC 60854	N	-270 to +1300°C	< 300°C, ±0.3°C	≥ 300°C, ± 0.1% F.S
IEC 60854	R	-50 to +1760°C	< 500°C, ±0.5°C	≥ 500°C, ± 0.1% F.S
IEC 60854	S	-50 to +1750°C	< 500°C, ±0.5°C	≥ 500°C, ± 0.1% F.S
IEC 60854	T	-200 to +400°C	< 300°C, ±0.3°C	≥ 300°C, ± 0.1% F.S
IEC 60854	C	0 to +2315°C	< 500°C, ±0.5°C	≥ 500°C, ± 0.1% F.S
IEC 60854	A	0 to +2500°C	< 500°C, ±0.5°C	≥ 500°C, ± 0.1% F.S

Output Parameters

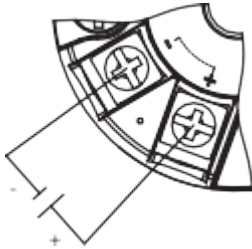
- AW201: 4 to 20 mA + HART
- AW202: 4 to 20 mA

Dimensional Drawing



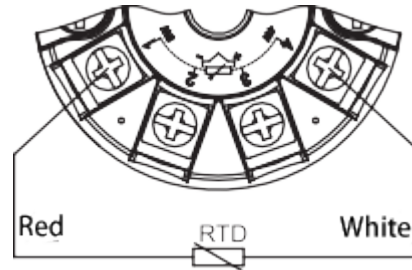
External Interface

■ Power Supply



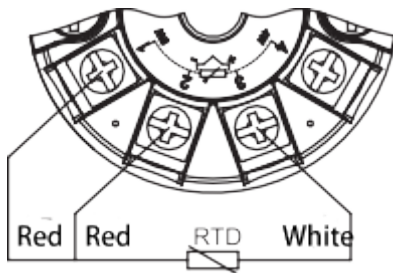
Current loop: 4 to 20mA + HART
Interface positive / negative

■ Two-wire System



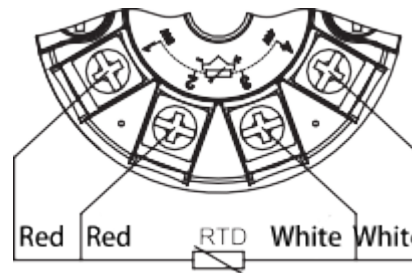
Thermal resistance: 4 (white)+, 1 (red)

■ Three-wire System



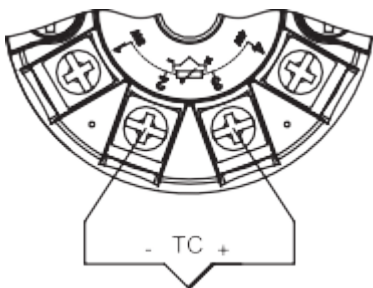
Thermal resistance: 3(white)+, 2 and 1(red)

■ Four-wire System



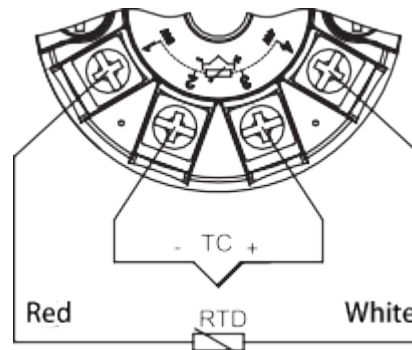
Thermal resistance: 3 and 4 (white) +, 2 and 1 (red)

■ Built-in Cold Junction Compensation



Thermocouples: 3+, 2-

■ With External Pt100 Two-wire System



Thermocouple: 4 (white) +, 1 (red) -

Configuration Software

- HollySys configuration software AWTool is based on Windows operating system, conventional interface, easy to use and friendly interface. Users can use this software to set parameters such as its sensor type and range.
- Operating system: WindowsXP and above
- Hardware interface: AW201: HART5/HART7, AW202: USB interface
- Dedicated adapter: USB-MINI-B for AW202

The screenshot displays the 'Instrument Configure' software window. It features several tabs for configuration:

- Serial Port Settings:** Includes a dropdown for 'AW201' and an 'Open' button.
- Instrument connection:** Contains a 'Connect' button, 'Connection State' indicator, 'Languages' dropdown (set to 'English'), and 'Reset', 'Recovery', and 'Abort' buttons.
- Sensor Settings:**
 - Type: Pt10
 - Units: °C
 - Upper Limit: 850.00
 - Lower Limit: -200.00
 - Comp. R.: 0.000
 - CJC: Intrenal
 - Min Range: 0.00
 - Wiring: 2 wire
 - Buttons: Read, Modify
- Fixed Current Output:**
 - Radio buttons for 3.8, 4, 6, 8, 12, Other, 14, 16, 18, 20, 20.8
 - Other value: 3.8000
 - Buttons: Modify, Close
- Current Trimming:**
 - Current Zero(4mA): 0.0000
 - Current Gain(20mA): 0.0000
 - Buttons: Modify
 - Warning: Please select the fixed current first
- Real-Time Data:**

PV	Currnet	Percentage	CJC Temp
0.00	0.000	0.00	0.00

- Buttons: Start
- Variable settings:**
 - Units: °C
 - URV: 0.00
 - LRV: 0.00
 - Alarm Model: High Alarm
 - Damping: 0.00
 - Initial Resistance: 0.00
 - TC Threshold: 0.00
 - Buttons: Read, Modify
- Equipment information:**
 - Message:
 - Long Tag:
 - Description:
 - Tag:
 - HART Ver.: 0
 - Device Ver.: 0
 - Software Ver.: 0
 - Device Type: 0
 - Last modified: 2000/1/1
 - ASSY: 0
 - Buttons: Read, Modify

Model Code

AW201/AW202 Temperature Transmitter Module


Model Type	Code	Description
Type	AW 201 - A01	4 to 20 mA + HART
	AW 202 - A01	4 to 20 mA + USB interface
Configuration software	+1	Unavailable
	+2	AW Tool
Calibration certificate	A	Unavailable
	B	Five-point calibration certificate
Transient protect	T	Integral transient protector
Input (configuration)	1	Configure according to customer requirements
	2	Pt100, 3-wire, 0 to 100°C
Output	S	4 to 20 mA, 2-wire




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