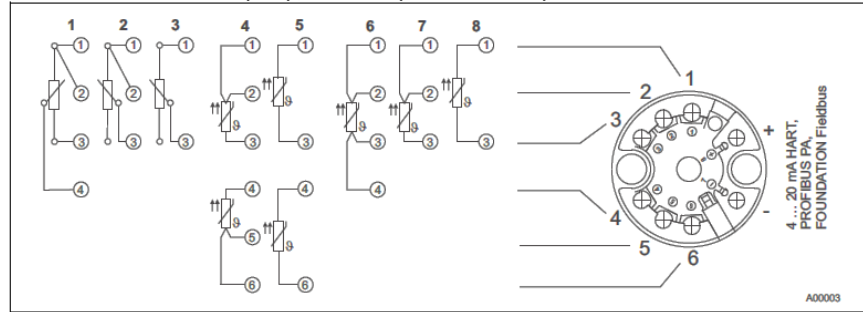


Head mounted Temperature Transmitter

HART, Pt100 (RTD), Thermocouple, Electrical

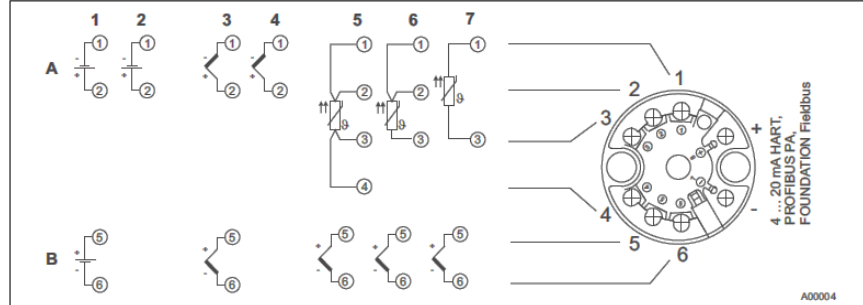
Electrical Connections

Resistance Thermometers (RTD) / Resistors (Potentiometers)



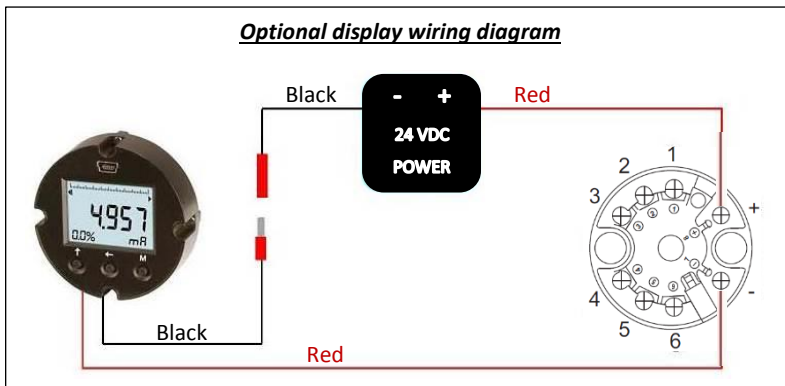
- 1 Potentiometer, four-wire circuit
 - 2 Potentiometer, three-wire circuit
 - 3 Potentiometer, two-wire circuit
 - 4 2 x RTD, three-wire circuit¹⁾
 - 5 2 x RTD, two-wire circuit¹⁾
 - 6 RTD, four-wire circuit
 - 7 RTD, three-wire circuit
 - 8 RTD, two-wire circuit
- 1) Sensor backup/redundancy, sensor drift monitoring, mean measurement or differential measurement

Thermocouple / Voltage and Resistance Thermometers (RTD) / thermocouple combinations



- A Sensor 1
 - B Sensor 2
 - 1 2 x voltage measurement¹⁾
 - 2 1 x voltage measurement
 - 3 2 x thermocouple¹⁾
 - 4 1 x thermocouple
 - 5 1 x RTD, four-wire circuit and 1 x thermocouple¹⁾
 - 6 1 x RTD, three-wire circuit and 1 x thermocouple¹⁾
 - 7 1 x RTD, two-wire circuit and 1 x thermocouple¹⁾
- 1) Sensor backup/redundancy, sensor drift monitoring, mean measurement or differential measurement

Optional display wiring diagram



JMS-SE TEMPERATURE TRANSMITTER 8I, 8E, 8D (HART) QUICK GUIDE



Specifications - Input

Resistance thermometers / Resistors

Pt100 in accordance with IEC 60751, JIS C1604-81, MIL-T-24388,

Ni in accordance with DIN 43760, Cu

Resistance measurement

0 ... 500 Ω

0 ... 5000 Ω

Sensor connection type

Two-, three-, four-wire circuit

Connecting cable

Maximum sensor line resistance (RW) for each line 50 Ω according to NE 89 (January 2009)

Three-wire circuit: symmetrical sensor line resistances

Two-wire circuit: compensation up to 100 Ω total line resistance

Measurement current

< 300 μA

Sensor short circuit

< 5 Ω (for resistance thermometer)

Sensor wire break

Measuring range: 0 ... 500 Ω > 0.6 ... 10 kΩ

Measuring range: 0 ... 5 kΩ > 5.3 ... 10 kΩ

Corrosion detection in accordance with NE 89

Three-wire resistance measurement > 50 Ω

Four-wire resistance measurement > 50 Ω

Sensor error signaling

Resistance thermometers: Short circuit and wire break

Linear resistance measurement: Wire break

Specifications - Input

Thermocouples / Voltages

Types

B, E, J, K, N, R, S, T in accordance with IEC 60584

U, L in accordance with DIN 43710

C, D in accordance with ASTM E-988

Voltages

-125 ... 125 mV

-125 ... 1,100 mV

Connecting cable

Maximum sensor line resistance (RW) for each line: 1.5 kΩ, total: 3 kΩ

Sensor wire-break monitoring in accordance with NE 89

Pulsed with 1 μA outside measurement interval

Thermocouple measurement 5.3 ... 10 kΩ

Voltage measurement 5.3 ... 10 kΩ

Input resistance

> 10 MΩ

Internal reference point

Pt1000, IEC 60751 Cl. B

(no additional jumpers necessary)

Sensor error signaling

Thermocouple: Wire break

Linear voltage measurement: Wire break

Specifications - Output

HART output

Transmission characteristics

Temperature linear

Resistance linear

Voltage linear

Output signal

Configurable 4 ... 20 mA (standard)

Configurable 20 ... 4 mA

(dynamic range: 3.8 ... 20.5 mA in accordance with NE 43)

Simulation mode

3.5 ... 23.6 mA

Induced current consumption

< 3.5 mA

Maximum output current

23.6 mA

Configurable error current signal

Override 22 mA (20.0 ... 23.6 mA)

Underdrive 3.6 mA (3.5 ... 4.0 mA)

Sensor Type	Range	Minimum Span
Thermocouple K	-270 to 1372 °C	50 °C
Thermocouple J	-210 to 1200 °C	50 °C
Thermocouple T	-270 to 400 °C	50 °C
Thermocouple N	-270 to 1300 °C	50 °C
Thermocouple E	-270 to 100 °C	50 °C
Thermocouple R	-50 to 1768 °C	100 °C
Thermocouple S	-50 to 1768 °C	100 °C
Thermocouple B	0 to 1820 °C	100 °C
Thermocouple L	-200 to 900 °C	50 °C
Thermocouple U	-200 to 600 °C	50 °C
Thermocouple C	0 to 2315 °C	100 °C
Thermocouple D	0 to 2315 °C	100 °C
Pt100	-200 to 850 °C	10 °C
Voltage	-125 to 125mV	2mV
Voltage	-125 to 1100mV	20mV



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