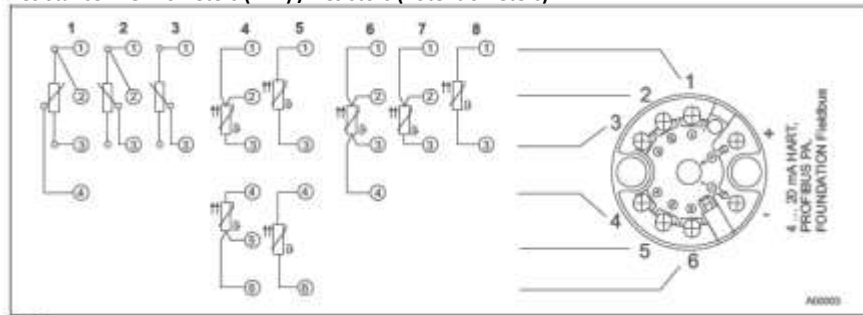


Head mounted Temperature Transmitter

HART, Pt100 (RTD), Thermocouple, Electrical

Electrical Connections

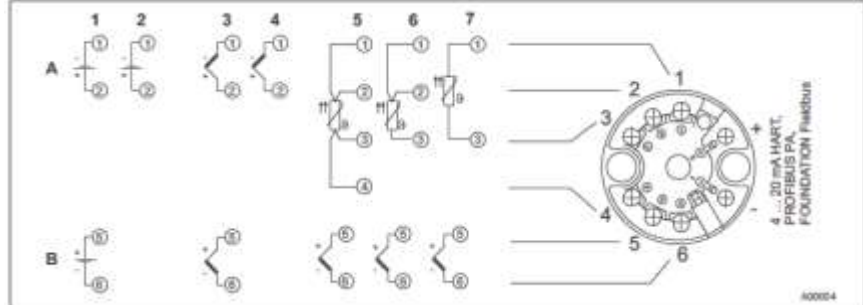
Resistance Thermometers (RTD) / Resistors (Potentiometers)



- 1 Potentiometer, four-wire circuit 4 2x RTD, three-wire circuit¹⁾ 6 RTD, four-wire circuit
 2 Potentiometer, three-wire circuit 5 2x RTD, two-wire circuit¹⁾ 7 RTD, three-wire circuit
 3 Potentiometer, two-wire circuit 8 RTD, two-wire circuit

1) Sensor backup/redundancy, sensor drift monitoring, mean measurement or differential measurement

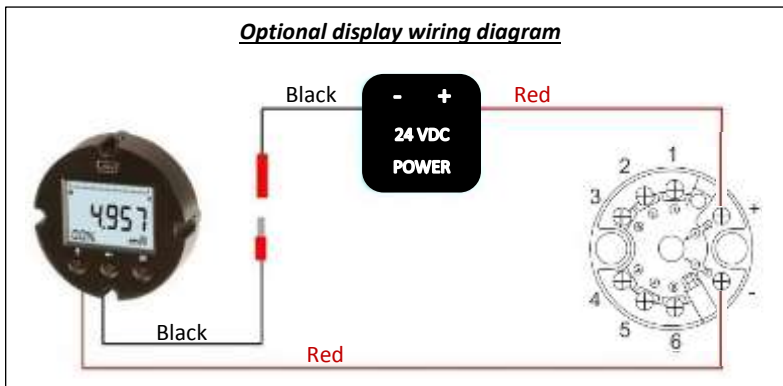
Thermocouple / Voltage and Resistance Thermometers (RTD) / thermocouple combinations



- A Sensor 1 2 1x voltage measurement 5 1x RTD, four-wire circuit and 1x thermocouple¹⁾
 B Sensor 2 3 2x thermocouple¹⁾ 6 1x RTD, three-wire circuit and 1x thermocouple¹⁾
 1 2x voltage measurement¹⁾ 4 1x thermocouple 7 1x RTD, two-wire circuit and 1x 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

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

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)



JMS Southeast, Inc.

105 Temperature Lane

Statesville, NC 28677

Phone: 1-800-873-1835

Fax: 704-878-6166

Email: sensors@jms-se.com / www.jms-se.com