

Programmable Thermocouple or RTD Signal Conditioners Offer Improved Accuracy and Reliability



The SERIES 5900 (isolated) temperature transmitter from Watlow[®] delivers remarkably accurate temperature measurement and improves reliability to reduce downtime and costs.

The 5900 SERIES two-wire signal conditioner uses surface mount and digital technology with non-volatile memory. It is designed to fit directly into universal aluminum or universal iron connection heads with a separate mounting kit.

The transmitter is programmed using a separate connection cable and an easy-to-use Windows[®]-based software program. There is no need to use a separate thermocouple/RTD calibrator or individual resistors.

The SERIES 5900 is isolated to 1500VAC and features full linearization between temperature sensor input signal and the 4-20mA output signal. Isolated transmitters provide isolation from input to output thus eliminating ground loops and signal integrity.

Additional options include insulation resistance monitoring between sensor and ground to prevent inaccurate measurements due to insulation breakdown.

Contact Watlow's customer service department to integrate this transmitter into a Watlow Style AR or AT thermocouple sensor or a Watlow Style RR or RT RTD sensor.

Features and Benefits

Full temperature to thermocouple signal linearization throughout the complete operation temperature span

- Ensures signal accuracy

Full isolation from input to output

- Eliminates ground loops for high data integrity

Fits directly into connection head

- Easy to install

Programmable

- Ensures greater convenience for future changes and inventory efficiency

User selectable input types

- Thermocouple calibration Types B, C, E, J, K, N, R, S and T; RTD Pt100 and Pt1000 including four-wire

Optional insulation resistance monitoring

- Prevents inaccurate measurements due to insulation breakdown

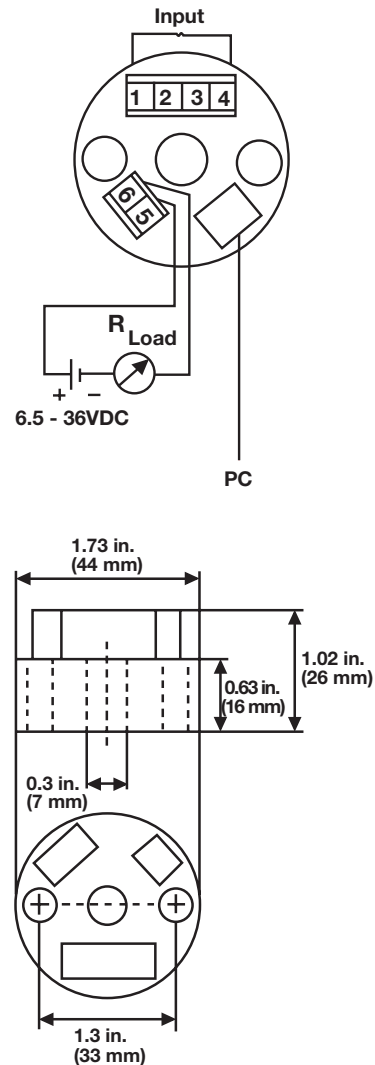
CE marked

- Compliant to electromagnetic interference

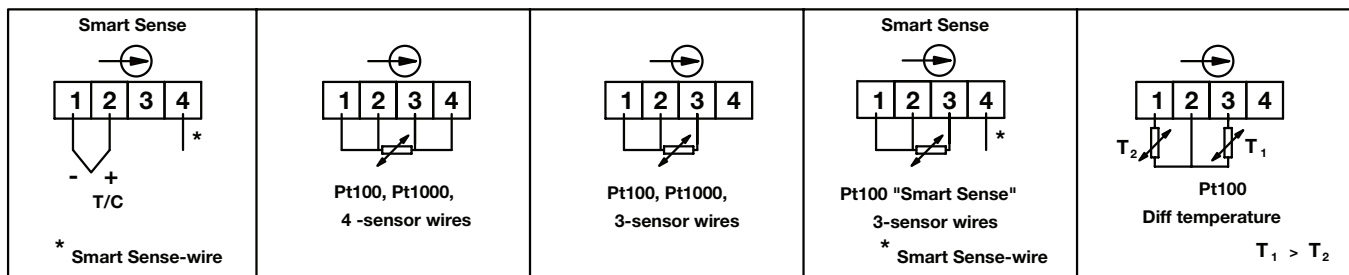
Specifications

- Isolation: 1500VAC for one minute
- Operating voltage: 6.5 to 36 volts (the 5900 is protected against voltage surges and reverse polarity)
- Sensor burn out protection: A pulsed current continuously checks all sensor leads for disconnect. The output will go upscale or downscale.
- Minimum input signal: RTDs: 10°C, Thermocouples: 2mV
- Operating temperature: -40 to 85°C
- Response time approx.: 0.5 seconds
- RFI sensitive: 20 - 1000 MHZ, 10V/m typical <0.1% (of end value)
- Permissible ripple of supply: 4V p-p
- Long term stability: 0.1% per year
- Calibration inaccuracy, thermocouples: max. of 20µ volts or 0.01%
- Temperature effect: cold junction compensation 0.02% C/C
- Housing: PC, ABS/VO connection polyamid / V2
- Mounting: DIN B

Dimensional Drawings



Wiring Diagram



Ordering Information

Part Number

① ② ③ ④	⑤	⑥	⑦ ⑧ ⑨	⑩	⑪ ⑫ ⑬ ⑭	⑮
SERIES	Sensor Type	Low Temp. Sign	Low Temp.	High Temp. Sign	High Temp.	Unit of Measure

① ② ③ ④	SERIES
5900 =	Linearized T/C or RTD
5901 =	1000Ω RTD
5902 =	Isolated, linearized with insulation resistance monitoring

⑤	Sensor Type
B =	Type B T/C
C =	Type C T/C
E =	Type E T/C
J =	Type J T/C
K =	Type K T/C
N =	Type N T/C
R =	Type R T/C
S =	Type S T/C
T =	Type T T/C
0 =	PT100 (IEC 60751, α = 0.00385) 3-wire
1 =	PT100 (JIS C 1604, α = 0.003916) 3-wire
2 =	PT100 (IEC 60751, α = 0.00385) 4-wire
3 =	PT100 (JIS C 1604, α = 0.003916) 4-wire
4* =	PT1000 (IEC 60751, α = 0.00385) 3-wire
5* =	PT1000 (IEC 60751, α = 0.00385) 4-wire
* Only valid options for 5901 SERIES	

⑥	Low Temperature Sign
Enter + or - sign	
⑦ ⑧ ⑨	Low Temperature
Enter lowest limit temperature required	
⑩	High Temperature Sign
Enter + or - sign	
⑪ ⑫ ⑬ ⑭	High Temperature
Enter higher limit temperature required	
⑮	Unit of Measure
Enter °F or °C	

Program cable and software part #5900-CABLE

Note: All accessories are subject to minimum purchase quantities.

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UK	+44 115 964 0777