

SEM310

Temperature Transmitter



The SEM310 is a high accuracy head-mounted programmable transmitter suitable for RTD and Thermocouple inputs. The transmitter has HART® Protocol communication and 4 to 20mA current output. Up to 15 transmitters can be connected in a multidrop communication setup. The SEM310 also has sensor burnout detection and the output will automatically go to its user defined level, upscale or downscale.

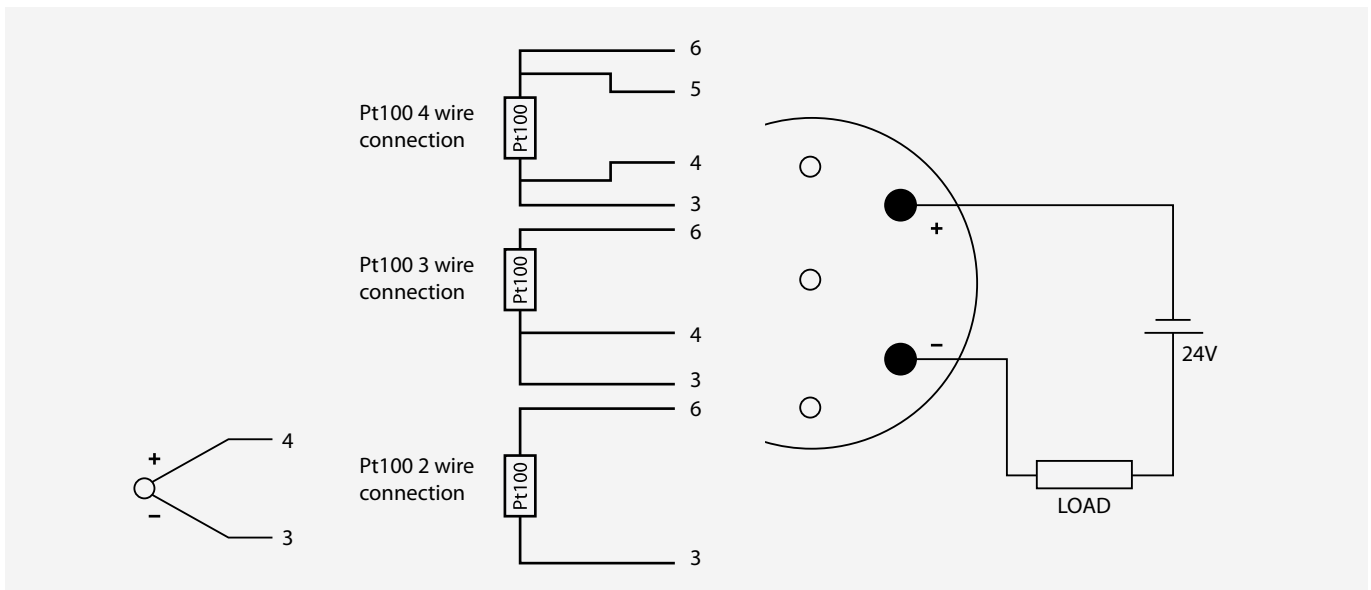
Connections:

Linear Resistance Input:

Type	Min. Value	Max. Value	Min. Span
Pt100	-200°C	+850°C	25°C

Thermocouple Input:

Type	Min. Temp.	Max. Temp.	Min. Span
K	-200°C	+1370°C	50°C
J	-200°C	+1200°C	50°C
E	-200°C	+1000°C	50°C
N	-180°C	+1300°C	50°C
T	-210°C	+400°C	25°C
R	-10°C	+1760°C	100°C
S	-10°C	+1760°C	100°C
L	-200°C	+600°C	50°C



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Environmental Conditions

Specifications range	-40°C to +85°C
Calibration temperature	+20°C
Ambient Storage Temperature	-50 °C to 85°C
Ambient Humidity Range	(0 to 95) % RH noncondensing

Mechanical Specifications

Dimensions	Ø44.0 mm x 24 mm
Weight approx	50 g

Common Specifications

Input/Output Breakdown Isolation	500 V AC rms
Update Time	250 mS maximum
Response Time	(Filter OFF) < 1 s
Filter Factor Programmable:	Off, 2 s, 10 s or Adaptive
Warm up	120 s to full accuracy
Stability	0.1 % FRI or 0.1 °C/year
FRI =	Full Range Input

Input Specifications - RTD (PT100)

Sensor Range	-200°C to +850°C 18 to 390 Ω
Minimum Span *1	25°C
Linearisation	BS - EN60751 BS1904 DIN43760 JISC 1604
Maximum Lead Resistance	50 Ω / leg (balanced for 3 wire)
Basic Measurement Accuracy	± 0.01% FRI ± 0.07% rdg
Excitation Current	(300 to 550) µA
Thermal Drift	Zero 0.008 °C/°C Span 0.01 %/°C

Thermocouple

Basic Measurement Accuracy	± 0.04 % FRI ± 0.04% reading or 0.5 °C (whichever is greater)
Linearisation	BS EN 60584-01 BS 4937 EC 584-3
Cold Junction	± 0.5 °C tracking 0.05 °C / °C
Thermal Drift	Span 0.01 %/°C

Output Specifications

Maximum Output Load	[(V supply - 10)/21.5] KΩ, 250Ω minimum loop lead. Supply voltages over 30 V a minimum loop load of 500 Ω is necessary
Burnout Levels	Low 3.75 mA, High 21.5 mA
Input Out of Range	Low 3.8 mA, High 20.5 mA
Output Range	(4 to 20) mA, Minimum 3.75 mA, Maximum 21.5 mA
Accuracy	± 5 µA
Thermal Drift	1 µA / °C
Supply Voltage	(10 to 40) VDC
Supply Voltage Effect	0.2 µA / V

Approvals

EMC	EN 61326
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