

SEM210X

Temperature Transmitter

Temperature Transmitters



The SEM 210X is an ATEX approved head-mounted programmable transmitter suitable for RTD and Thermocouple inputs. The transmitter is loop powered and converts the input signal into a 4 to 20mA current output. The SEM 210 provides 500VAC isolation, removing all ground loop effects as the input is electrically and physically isolated from the loop power supply.

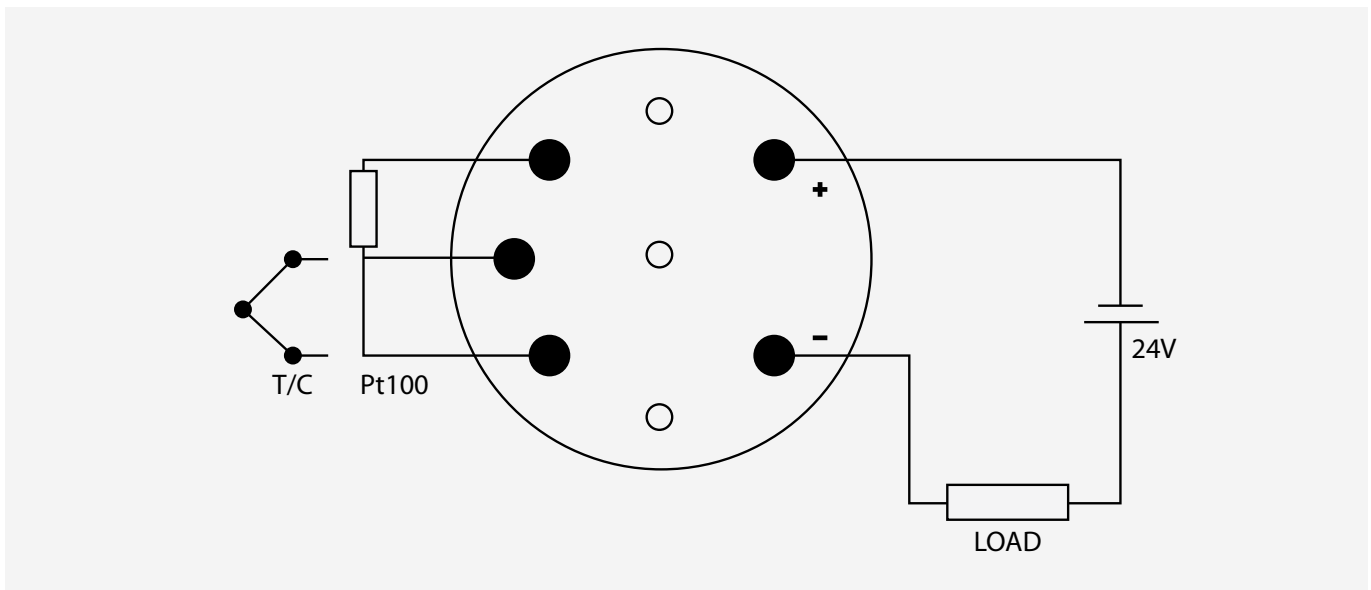
Connections:

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 to 100) °C
Ambient Humidity Range	(10 to 90) % RH noncondensing

Mechanical Specifications

Dimensions	Ø43.0 mm x 21.3 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
Minimum Span	25°C
Linearisation	BS - EN60751 BS1904 DIN43760 JISC 1604
Basic Measurement Accuracy	± 0.01% FRI ± 0.05% reading
FRI =	Full Range Input
Thermal Drift	Zero 0.008 °C/°C Span 0.01 %/°C
Excitation Current	(300 to 550) µA
Maximum Lead Resistance	50 Ω / leg
Lead Resistance Effect	0.002 °C/Ω

Thermocouple

Basic Measurement Accuracy	± 0.04 % FRI ± 0.04% reading or 0.5 °C (whichever is greater)
Linearisation	BS 4937 / EC 584-3
Cold Junction Error	± 0.5 °C
Cold Junction Tracking	0.05 °C / °C
Cold Junction Range	-40°C to +85 °C
Thermal Drift	Zero 0.1 µV /°C Span 0.01 %/°C

Output Specifications

Output Range	(< 3.8 to > 20.2) mA
Maximum Output	23 mA
Accuracy	± 5 µA
Voltage Effect	0.2 µA / V
Thermal Drift	1 µA / °C
Supply Voltage	(10 to 35) V
Maximum Output Load	[(V supply - 10)/20] K Ω (700 Ω @ 24 V)

Approvals

EMC	EN 61326
ATEX	II 1G EEx ia IIC T4-T6
FM (IS Version)	IS/1/1/ABCD/T4