

LOW COST TEMPERATURE TRANSMITTER

SEM104 SERIES

- LOW COST
- USER RE-RANGEABLE
- Pt100 INPUT
- THERMOCOUPLE INPUT K, T OR J
- TWO WIRE (4 TO 20) mA OUTPUT
- 2 YEAR WARRANTY



INTRODUCTION

The SEM104 series is a (4 to 20) mA temperature sensor transmitter which can be housed in a head mount DIN standard connector. The SEM104P for Pt100 and SEM104TC for Thermocouple inputs are field rangeable if necessary by links on the printed circuit board and the use of on board SPAN and ZERO potentiometers. A wide selection of compatible probe assemblies are available with various immersion lengths and process connections.

SPECIFICATIONS @ 20 °C

Output		(4 to 20) mA loop powered, maximum 30 mA
Loop Supply		(10 to 30) VDC reverse connection protected
Max. Loop Load		$(V_{Supply} - 10)$ 0.020
Loop Volts Sensitivity		10 μ A/V
Temp. Stability	Zero	Drift type. 0.02 %/°C FRO
	Span	Type. 0.005 %/C FRO
Ambient Temperature*		(0 to 70) °C operating (*at 24 V supply 250 Ω load)
Ambient RH		(0 to 95) % RH non condensing
EMC Compatibility		BS EN61326

RANGE °C	SEM104P	SEM104K	SEM104T	SEM104J
-30 to 35	•			
-25 to 75	•			
0 to 50	•			
0 to 100	•	•	•	•
0 to 150	•	•	•	•
0 to 200	•	•	•	•
0 to 400	•	•	•	•
0 to 600		•		•
0 to 800		•		
0 to 1000		•		

Other ranges can be configured by the use of links on the SEM PCB, full details are supplied with each transmitter.

SEM104P PLATINUM RESISTANCE SENSOR

Pt100 Input	BS EN 60751, DIN43760
Accuracy	± 0.2 °C plus ± 0.2 % rdg
Response	100 ms to reach 70 % of final value
Offset Adjustment	Range dependant
Span Adjustment	(25 to 500) °C

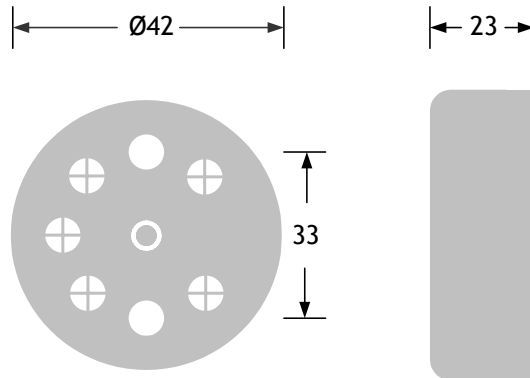
SEM104K, T OR J THERMOCOUPLE SENSOR (ISOLATED JUNCTION)

Output	(4 to 20) mA (directly proportional to mV input)
Accuracy	± 0.1 %FS plus cold junction errors non-linearised
Response	100 ms to reach 70 % of final value
Offset Adjustment	± 100 °C, solder link and potentiometer
Span Adjustment	(100 to 1000) °C
Impedance	> 1 M Ω
Burn Out	Up scale standard. Downscale by link
Cold Junction	Automatic (0 to 70) °C Accuracy 0.2 °C @ 20 °C Tracking + 0.05 °C/°C

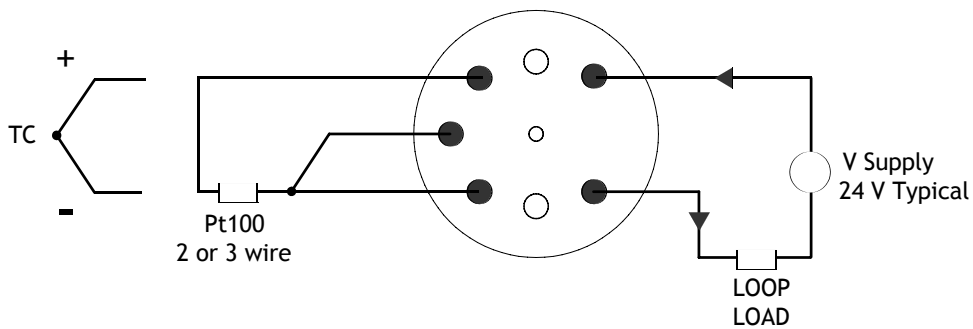
LOW COST TEMPERATURE TRANSMITTER

MECHANICAL DETAILS

(All dimensions in mm)



CONNECTIONS



ORDER CODE

SEM104	SENSOR /	Lo /	Hi
Platinum Resistance Sensor Pt100	P	@ 4 mA	@ 20 mA
Chromel/Alumel™ Thermocouple	K		
Copper/Constantan Thermocouple	T		
Iron/Constantan Thermocouple	J		

ACCESSORIES:

RMK/1/G	"G" DIN rail profile mounting kit
RMK/3-T	Top Hat DIN rail profile mounting kit