

# SEM210

- RTD, THERMOCOUPLE & mV INPUT
- GALVANIC ISOLATION
- 4-20 mA OUTPUT
- SENSOR REFERENCING
- IN-HEAD MOUNTING
- PC PROGRAMMABLE
- HIGH ACCURACY & STABILITY



## INTRODUCTION

The SEM210 Smart Temperature Transmitter provides accurate and reproducible conversion of commonly used temperature sensors, slide-wire transducers or millivolt signals to industry standard 4-20 mA output. The versatility of this temperature transmitter makes it the ideal choice for every temperature application, resulting in lower stock holdings and greater operation flexibility.

The transmitter can easily be programmed using a software package running under 'Windows'™. Sensor type, temperature range, filter factor, linearisation scheme, temperature offset, burnout option, temperature unit and the device tag number can be selected without the need for recalibration.

Sensor referencing feature enables the transmitter to be accurately matched to a particular sensor. A user programmable offset is available to remove any system error or to shift the temperature reading in either direction. Four selectable settings are provided to filter and remove any incoming noise from the sensor.

Isolation is also a standard feature, removing all ground loop effects as the input is electrically and physically isolated from the loop power supply. The use of two microprocessor results in error-free data transmission across the isolation barrier.

The transmitter is protected against reverse connection, so that incorrect output wiring results in near zero current flow in the loop.

## SPECIFICATIONS @ 20°C

### RTD (Pt100)

<b>Sensor Range</b>	-200...+850°C
<b>Measuring Accuracy</b>	±0.01% f.s. ± 0.05%reading
<b>Excitation Current</b>	300 µA to 550 µA
<b>Max. Lead Resistance</b>	50 Ω / leg
<b>Lead Resist. Effect</b>	0.002°C / Ω

### THERMOCOUPLE

<b>Input</b>	Types K, J, T, R, S, E, N, F, L
<b>Measuring Accuracy</b>	±0.04% f.s. ± 0.04%reading

### MILLIVOLT

<b>Range</b>	-10 ...+75 mV
<b>Measuring Accuracy</b>	±10 µV ± 0.07%reading

### SLIDE-WIRE

<b>Input</b>	3-Wire potentiometer
<b>Resistance Range</b>	10...390 Ω

### OUTPUT

<b>Output Range</b>	4...20 mA
<b>Max. Output</b>	23 mA
<b>Accuracy</b>	±5 µA
<b>Voltage Effect</b>	0.2 µA / V
<b>Supply Voltage</b>	10...35 VDC
<b>Max. Output Load</b>	700 Ω @ 24 V

### GENERAL

<b>Input/Output Isolation</b>	500 VAC rms
<b>Storage Temperature</b>	-50...+100°C
<b>Dimensions</b>	Dia. = 43 mm; H = 21 mm Fixing Holes (C-C) = 33 mm