

- ENCAPSULATED
- SENSOR MATCHING
- EASILY RE-PROGRAMMABLE
- IN LOOP INTERROGATION
- LOW COST
- FM INTRINSICALLY SAFE VERSION



SMART RTD SERIES TEMPERATURE TRANSMITTER SEM205P Series

INTRODUCTION

The **SEM205P** is a microprocessor based temperature transmitter designed to accept an RTD input and provide a 4-20 mA output proportional to temperature. The transmitter is encapsulated to ensure environmental integrity. It can be mounted directly in the connection head of the temperature sensor, in a separate junction box, or on a DIN rail using optional mounting clips.

The **SEM205X** version carries both FM and CENELEC intrinsically safe approvals when used with the appropriate barriers.

Ranges and other parameters are easily programmed using a Windows based software package without the need for re-calibration. If range is not specified at time of order the default settings are 0-100°C, adaptive filtering, DIN 43760, and upscale burnout.

In addition to the standard RTD inputs it is possible to customize the input range and linearization. This is done at the factory using the "X" input option.

The "Adaptive" filter function adjusts the incoming signal to noise ratio in order to achieve the appropriate level of filtration. A slowly changing signal will be heavily filtered until there is a sudden change. The filter then quickly reduces allowing for rapid response. Other filter settings are off, 2 seconds and 10 seconds.

The user programmable offset along with the sensor referencing feature allow the sensor and transmitter to be calibrated together for best performance.

APPROVALS

Designed and manufactured under a Quality Management System to BS.EN.ISO.9001.

EMC Emissions	BS EN 50081
Susceptibility	BS EN 50082
Hazardous Area	IS FM3610 EEx ia IIC T4..T6

ENVIRONMENTAL

Ambient operating range	-40 to 185°F
Ambient storage temperature	-58 to 212°F
Ambient humidity range	0 to 100% RH non condensing

SPECIFICATION

INPUT

Sensor	RTD
	100 ohm at 32°F, 2 or 3 wire
Sensor Range	-328 to +1562°F [18-390ohm]
Minimum Span	50°F
Linearization Standard	JISC 1604-1 (USA Alpha = 00392) BS-EN60751-BS1904-DIN43760 (Alpha = 00385)
Linearization Custom	Consult Sales Office [X] option
Basic Accuracy	±0.18°F (±0.1°C) ±0.1% Rdg
Thermal Drift	Zero 0.008°F/°F
	Span 50 ppm/°F
Excitation current	1 mA max.
Max. lead resistance	50 Ohms/leg
Lead Resistance effect	0.004°F/Ohm

OUTPUT

Output Range	4-20mA (Min 3.8 mA to Max 20.2 mA)
Max Output	23mA
Accuracy	±5µA
Voltage effect	0.2µA/V
Thermal drift	0.05 µA/°F
Supply voltage	10 to 35V
Max. output load	$\frac{(V_{supply} - 10)}{20}$ k ohms eg (700 ohms @ 24V)

GENERAL SPECIFICATION

Update time	1 second to final value
Enclosure	Molded case ABS
Case size	1.7" dia x 0.83"
Filter factor	Programmable. OFF, 2 seconds, 10 seconds or adaptive
Stability	0.1% FRI or 0.2°F/year



STATUS INSTRUMENTS INC.

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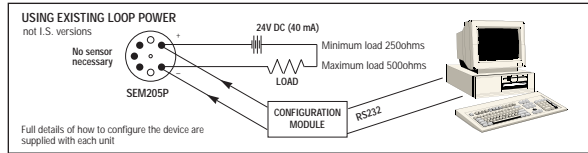
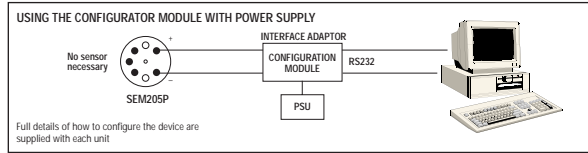
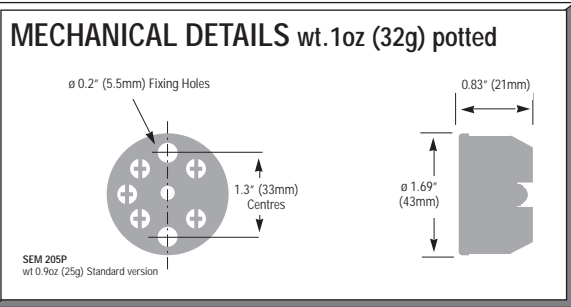


SEM205P 7.02/PDF

COMMUNICATIONS

PC Interface	RS 232 via interface adapter
Comms protocol	ANSI X3.28 1976
Data Rate	1200 baud
Minimum output load	100 ohms for 'In loop' programming
Maximum cable length	3280 feet (1000m)
Configurable Parameters	Sensor type: Burnout: °C /°F: Output: Hi/Lo: Filter: Tag: User offset RCPW

The transmitter is accessed via the comms interface adapter for reprogramming or examination of the process variable and status information. The interface adapter converts the special communications signals on the transmitter power connection cables to the standard RS232 in order to connect directly to a PC serial port. There are two methods of connecting the interface adapter to the transmitter i.e. using the adapter's own power supply or using the power from an existing loop. Power supply must be capable of supplying 40 mA when powered from the loop. RCPW software is available on our web site.



ORDER CODE

SEM205P Standard RTD Input Unit (0 to 100°C)

SEM205X I.S version FM 3610. EEx ia IICT4..T6

RMK-I Din Rail Adapter

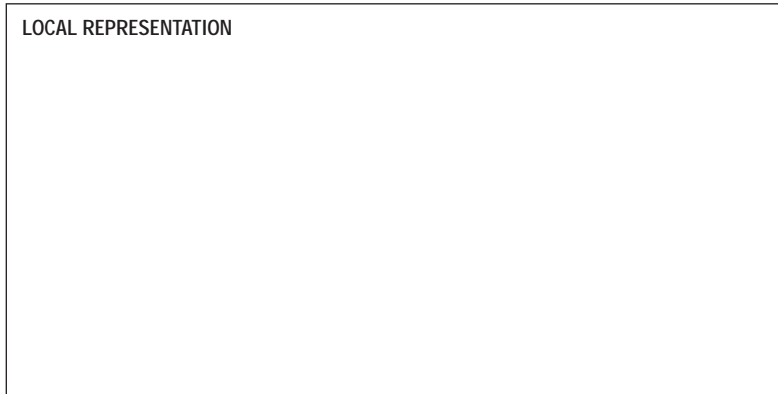
CONFIG 205 Pre Configured to Specified Range (State Range)

CONFIG 205[X] Consult Sales Office for custom linearization

RCPW-KIT Programming kit for SEM205 comprising I/F adapter box, RCPW* software, PSU and carry case. Kit for USA/Canada.

*Free software and manuals available from our web site

LOCAL REPRESENTATION



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Every effort has been taken to ensure the accuracy of this specification, however we do not accept responsibility for damage, injury, loss or expense resulting from errors and omissions, and we reserve the right of amendment without notice.