TEMPERATURE TRANSMITTERS

SEM203 P

SUITABLE FOR PT100 SENSORS

UNIQUE PUSH BUTTON CONFIGURATION WITHOUT PC

PUSH BUTTON SENSOR MATCHING

4/20 mA OUTPUT

HIGH STABILITY

PROGRAMMABLE BURNOUT



INTRODUCTION

The SEM203/P is a low cost "smart" in head transmitter that accepts PT100 temperature sensors and converts sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal.

A simple push button operation allows the user to not only select the desire range and burnout direction but also perform user trim at both (4 and 20) mA points.

The SEM203 in head transmitter incorporates the latest digital technology to ensure accurate drift free performance. If required the desired range can be specified at the time of order, removing the need for user configuration. If the range is not specified then the transmitter will be shipped with the default range of (0 to 100) °C set.

PUSH BUTTON CONFIGURATION

A single push button and LED indicator allows the user to navigate a three menus, allowing configuration of the transmitter. The menus are as follow:-

Menu 1 Configure range.

Menu 2 Configure burnout direction.

Menu 3 Trim output current @ either 4 mA or 20

mA.

SPECIFICATIONS @ 20 °C

INPUT

Sensor Type PT100 100R @ 0° C 2 or 3 Wire Sensor Range (-200 to +850) $^{\circ}$ C (18 to 390) Ω

Sensor Connection Screw terminal

Minimum span (*1) 25 °C

Linearisation BS EN 60751(IEC 751) standard /

JISC 1604

Measurement Accuracy (*2) 0.2 °C ± 0.05% of Reading

Thermal Drift 0.0025 % / °C
Excitation current < 200 uA
Lead Resistance effect 0.002 °C / Ohm
Maximum lead Resistance 20 Ohms per leg

OUTPUT

Output Type 2 wire (4 to 20) mA current loop

Output range (4.0 to 20.0) mA
Output Connection Screw Terminal
Maximum output 21.5mA (in high burnout

condition)

Minimum output <3.9 mA (in low burnout condition)

Accuracy (mA output /2000) or 5 uA

(Which ever is the greater)

Maximum output load [(Vsupply-10)/21]K Ohms (Example: 700 Ohms @ 24V)

GENERAL SPECIFICATION

Update time 500 ms Response Time 1 second

Start up time 4 seconds (I out < 4 mA during

start up)

Warm-up time 1 minutes to full accuracy Power Supply (10 to 30) Volts dc



TEMPERATURE TRANSMITTERS

ENVIRONMENTAL

Ambient operating range $\,$ (-40 to +85) $^{\circ}\text{C}$ Ambient storage temperature (-50 to +90) $^{\circ}\text{C}$

Ambient humidity range (10 to 90) % RH non condensing

PHYSICAL

Dimensions 43 mm diameter; 21 mm height

Weight 31 g (encapsulated)

APPROVALS

EMC - BS EN 61326 Electrical equipment for

measurement control and

laboratory use.

ANNEX A Immunity test requirements for

equipment intended for use in

industrial locations

ANNEX F Test configurations, operational

conditions and performance criteria for transducers with integrated or remote signal

conditioning.

IEC 61000-4-2 Electrostatic discharge

IEC 61000-4-3 EM Field

IEC 61000-4-4 Transient Burst (output)

IEC 61000-4-5 Surge (output)

Note - Sensor input wires to be less than 3 metres to comply.

Note *1 Any span may be selected, full accuracy is

only guaranteed for spans greater than

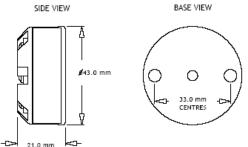
the minimum recommended

Note *2 Basic measurement accuracy includes the

effects of calibration, linearisation and

repeatability

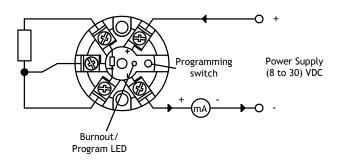
MECHANICAL

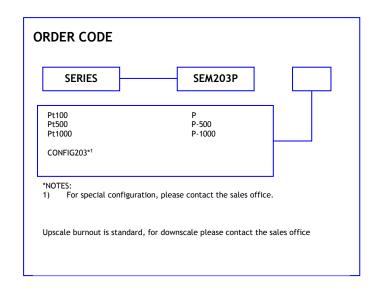


Fixing holes 2 x Ø5.5 mm

Centre hole Ø4.0 mm

WIRING CONNECTIONS







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D2440-01-04 CN4808 SEM203P DATA SHEET (2)

