

PUSH BUTTON CALIBRATION 

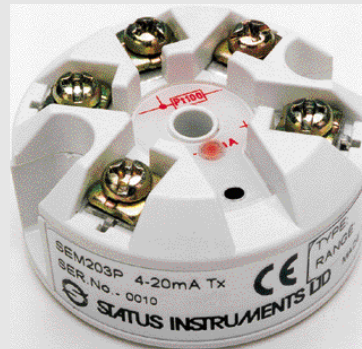
RTD SENSOR INPUT 

IN-HEAD MOUNTING 

DRIFT FREE LINEARISATION 

RE-RANGEABLE WITHOUT A PC 

LED OVER-RANGE INDICATION 



TRANSMITTERS



PUSH BUTTON TEMPERATURE TRANSMITTER SEM203P

INTRODUCTION

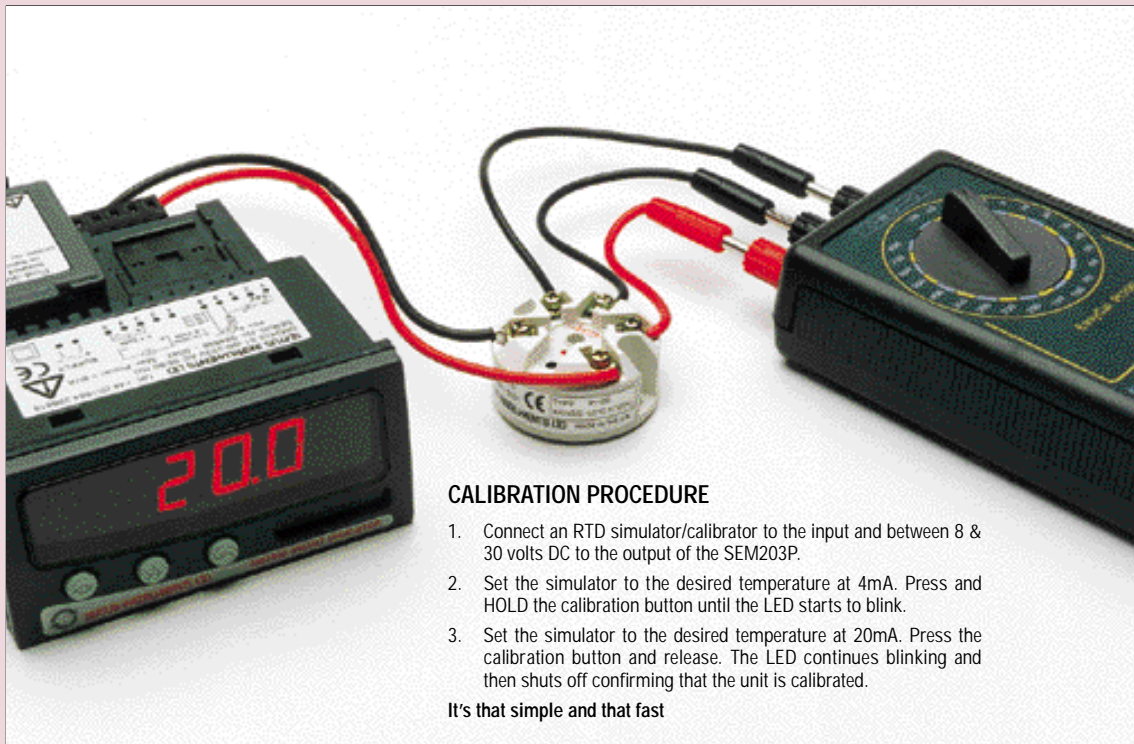
A simple push button operation ranges and calibrates the **SEM203P** 4-20mA temperature transmitter, eliminating the need for soldering links, potentiometers or PC's.

The **SEM203P** in-head transmitter incorporates the latest digital technology to ensure accurate drift free linearisation. It connects to any standard RTD temperature sensor and converts the output to a linear 4-20mA output signal, providing a level of performance at a cost that was not possible with earlier analogue types.

High accuracy and stability coupled with the flexibility of reduced stock holding and the quick and easy way of bench re-ranging makes the **SEM203P** the ideal choice for the majority of RTD sensing requirements.

The **SEM203P** is linearised to comply with all common RTD sensor standards i.e 0.00385, 0.003916 etc without affecting accuracy as the ZERO & SPAN are set to a particular sensor type.

An on board LED indicates the successful completion of the range programming and also provides an instant indication of sensor health.



CALIBRATION PROCEDURE

1. Connect an RTD simulator/calibrator to the input and between 8 & 30 volts DC to the output of the SEM203P.
2. Set the simulator to the desired temperature at 4mA. Press and HOLD the calibration button until the LED starts to blink.
3. Set the simulator to the desired temperature at 20mA. Press the calibration button and release. The LED continues blinking and then shuts off confirming that the unit is calibrated.

It's that simple and that fast

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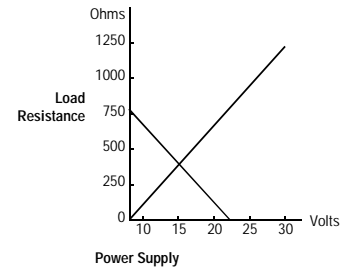
SPECIFICATION @ 20°C @ 24V DC

INPUT

| | |
|--------------------|--|
| Sensor | 3 Wire Pt-100 (Pt-500 or Pt-1000 to order) |
| Linearisation | BS EN 60751 BS 1904 (DIN 43760) (0.00385) JISC 1604 (0.003916) |
| Excitation current | 1 mA maximum |
| Sensor range | -200°C to +850°C |
| Default range | 0 to 100°C (see CONFIG203) |
| Minimum span | 20°C |
| Lead resistance | Max. 10 ohms per leg Effect 0.02% Full Range Output/ohm (plus lead resistance mis-match) |
| Burnout | Red LED indicates when temperature range is exceeded |
| Sensor lead length | < 3 metres to maintain CE compliance |
| Sample rate | 500mS per sample |
| Accuracy | ±0.1°C ±0.1% rdg -100°C to +500°C ±0.2°C ±0.2% rdg -200°C to +850°C |
| Thermal drift | Zero ±0.01°C/°C Span 50ppm |
| Protection | Reverse Polarity Protected |
| Indication | Red LED indicates programming operations and out of range sensor |
| Programming switch | Momentary Push Button |

OUTPUT

| | |
|-----------------|--|
| Output range | 4-20 mA 2 wire loop powered (Can be ranged 20-4mA) Maximum 3.8 to 22mA |
| Supply voltage | 8 to 30 VDC |
| Voltage effect | 0.4µA/Volt |
| Accuracy | ±5µA |
| Burnout | Up-Scale 22mA (Downscale to order) |
| Thermal drift | Zero 0.2µA/°C Span ±5µA/°C |
| Response time | 500mS to reach 70% of Value |
| Loop resistance | Max. 800R at 24VDC |



| | |
|------------------|---------------|
| Loop noise | ±0.1µA p-p |
| Ripple rejection | ±0.002µA/Volt |

APPROVALS

| | | |
|-----|----------------|---------------|
| EMC | Emissions | BS EN 50081-1 |
| | Susceptibility | BS EN 50082-2 |

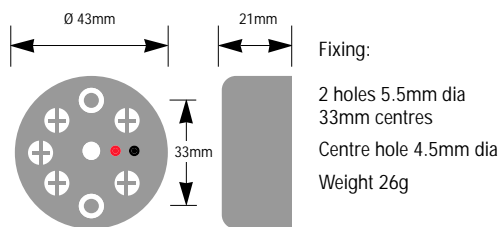
ENVIRONMENTAL

| | |
|-----------------------------|---------------------------|
| Ambient operating range | 0 to 70°C |
| Ambient storage temperature | -40 to 70°C |
| Ambient humidity range | 0 to 95% (non condensing) |

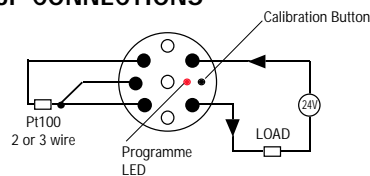
ENCLOSURE

| | |
|--------------|----------|
| Material | ABS |
| Flammability | UL 94 HB |

MECHANICAL DETAILS



SEM203P CONNECTIONS



ORDER CODE

| | |
|--------------|---------------------------------|
| SEM203P | For Pt-100 (Upscale Burnout) *1 |
| SEM203P-500 | For Pt-500 |
| SEM203P-1000 | For Pt-1000 |
| CONFIG203 | *2 (default range 0-100°C) |

Notes

*1 Downscale Burnout. Contact Sales Office

*2 Special configuration. Contact Sales Office

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.