

# SEM206P IN HEAD TEMPERATURE TRANSMITTER

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- SUITABLE FOR PT100 TEMPERATURE SENSORS
- (4 to 20) mA OUTPUT
- PC PROGRAMMABLE TEMPERATURE RANGE
- HIGH STABILITY
- FREE CONFIGURATION SOFTWARE

## ➤ INTRODUCTION

The SEM206P is a cost effective “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.

PC configuration allows the user to select Range, units and Burnout direction, without requiring calibration equipment. Configuration is performed quickly using our USB port driven configurator by simply connecting two clips to the SEM206P loop terminals and following the software instructions. Calibration set up may be saved as a file on the PC for later use.

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 and upscale burnout

## ➤ FEATURE HIGHLIGHTS

### SENSOR REFERENCING

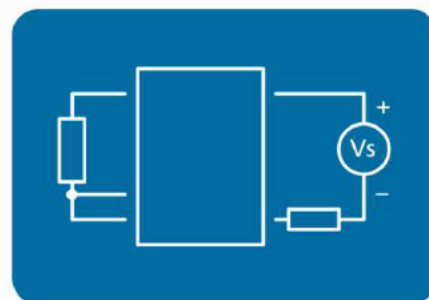
The SEM206P sensor referencing via the Windows based USBSpeedlink software allows for close matching to a known reference sensor eliminating possible sensor errors.

### SENSOR BURN OUT DETECTION

If a sensor wire is broken or becomes disconnected the SEM206P output will automatically go to its user defined level upscale or downscale and the LED illuminates.

### STABILITY

The SEM206P in head transmitter incorporates the latest digital technology to ensure accurate, low drift performance.



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| INPUT                                                                                                        |                                           | SPECIFICATIONS @20 °C           |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|
| Type/ Function                                                                                               | Range/ Description                        | Accuracy/ Stability             |
| PT100 2 or 3 wire                                                                                            | (-200 to 850) °C                          | ± 0.2 °C ± 0.05 % of reading *2 |
| Thermal drift                                                                                                | Zero at 20 °C                             | ±0.02 °C/ °C                    |
| Minimum span                                                                                                 | 25 °C *1                                  |                                 |
| Linearization                                                                                                | B5 EN 60751(IEC 751) standard / JISC 1604 |                                 |
| Excitation current                                                                                           | Approximately                             | 1 mA                            |
| Lead resistance effect                                                                                       | 0.002 °C / Ohms                           |                                 |
| Maximum lead resistance                                                                                      | 20 Ohms per leg                           |                                 |
| *1 Any span may be selected; full accuracy is only guaranteed for spans greater than the minimum recommended |                                           |                                 |
| *2 Basic measurement accuracy includes the effects of calibration, linearization and repeatability           |                                           |                                 |

| OUTPUT                 |                         | SPECIFICATIONS @20 °C                                |
|------------------------|-------------------------|------------------------------------------------------|
| Type/ Function         | Range/ Description      | Accuracy/ Stability/ Notes                           |
| Two wire current       | (4 to 20) mA            | (mA output /2000) or 5 uA (Whichever is the greater) |
| Thermal drift          | Zero at 20 °C           | 2 uA / °C                                            |
| Maximum output current | 21.5 mA                 | In high burnout condition                            |
| Minimum output current | < 3.9 mA                | In low burnout condition                             |
| Loop voltage effect    | 0.2 uA / V              |                                                      |
| Maximum output load    | [(V supply - 10)/20] KΩ | 700 Ω @ 24 V DC                                      |
| Loop supply            | (10 to 30) V DC         | SELV                                                 |

| USB USER INTERFACE      |                                                                                       |                                                                 |
|-------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Type/ Function          | Range/ Description                                                                    | Notes                                                           |
| Configuration hardware  | USB configuration module                                                              | USB-CONFIG-MKII                                                 |
| Configuration software  | USBSpeedLink                                                                          | Download <a href="http://www.status.co.uk">www.status.co.uk</a> |
| Sensor configuration    | Temperature range for (4 to 20) mA retransmission<br>Sensor offset<br>Burnout current | °C or °F<br>°C or °F<br>Upscale or downscale                    |
| Read live data          | Temperature<br>Output                                                                 | °C or °F<br>mA                                                  |
| Save/Open configuration | From file                                                                             |                                                                 |

| GENERAL               |                                           |
|-----------------------|-------------------------------------------|
| Function              | Description                               |
| Update time           | 500 ms                                    |
| Response time         | 1 second                                  |
| Start-up time         | 4 seconds (mA out < 4 mA during start up) |
| Warm up time          | 60 s to full accuracy                     |
| Default configuration | PT100 (0 to 100) °C , upscale burnout     |

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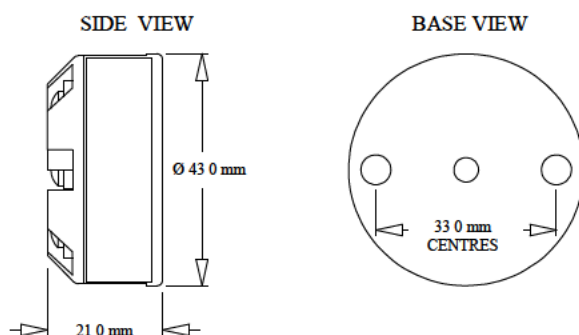
| ENVIRONMENTAL             |                                                                               |
|---------------------------|-------------------------------------------------------------------------------|
| Function                  | Description                                                                   |
| Ambient temperature       | Operating/Storage (-40 to 85) °C<br>Full accuracy only between (-30 to 75) °C |
| Ambient Humidity          | Operating/Storage (10 to 90) %RH non-condensing                               |
| Protection requirement    | >= IP65 recommended                                                           |
| USB configuration ambient | (10 to 30) °C                                                                 |

| MECHANICAL     |                                 |
|----------------|---------------------------------|
| Function       | Description                     |
| Dimensions     | 43 mm diameter; 21 mm height    |
| Fixing centres | 2 x 5 mm holes on 33 mm centres |
| Centre hole    | 4.5 mm hole for wiring aid      |
| Weight         | 31 g (encapsulated)             |

| APPROVALS          |                                                                      |
|--------------------|----------------------------------------------------------------------|
| EMC                | BS EN 61326: Note - Sensor input wires to be less than 3 m to comply |
| Ingress protection | BS EN 60529                                                          |
| ROHS               | Directive 2011/65/EU                                                 |
|                    |                                                                      |
|                    |                                                                      |

| ORDER CODE | SEM206P |
|------------|---------|
|------------|---------|

### MECHANICAL



Fixing holes 2 x Ø5.5 mm, Centre hole Ø4.5 mm