

# SEM206TC IN HEAD TEMPERATURE TRANSMITTER

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- **SUITABLE FOR THERMOCOUPLE SENSORS**

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- **(4 to 20) mA OUTPUT**

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- **PC PROGRAMMABLE INPUT TYPE AND RANGE**

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- **HIGH STABILITY**

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- **FREE CONFIGURATION SOFTWARE**

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## ➤ **INTRODUCTION**

The SEM206TC is a cost effective “smart” in head transmitter that accepts thermocouple 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 TC type, Range, units and Burnout direction, without requiring calibration equipment. Configuration is performed quickly using a our new USB port driven configurator by simply connecting two clips to the SEM206TC 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 1000) °C type K

## ➤ **FEATURE HIGHLIGHTS**

### **SENSOR REFERENCING**

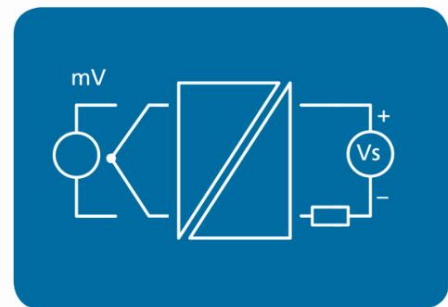
The SEM206TC sensor referencing via the Windows based USBSpeedlink software allows for close matching to a known reference sensor eliminating possible sensor errors.

### **SENSOR BURN OUT DETECTION**

If a sensor wire is broken or becomes disconnected the SEM206TC output will automatically go to its user defined level upscale or downscale.

### **STABILITY**

The SEM206TC in head transmitter incorporates the latest digital technology to ensure accurate, low drift performance.



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TC SENSOR INPUT		SPECIFICATIONS @20 °C
Type/ Function	Range/ Description	Accuracy/ Stability/ Notes
K	(-200 to 1370) °C	± 0.1% of F.S. ± 0.5 °C *1
J	(-100 to 1200) °C	± 0.1% of F.S. ± 0.5 °C *1
E	(-200 to 1000) °C	± 0.1% of F.S. ± 0.5 °C *1
N	(-180 to 1300) °C	± 0.1% of F.S. ± 0.5 °C *1
T	(-200 to 400) °C	± 0.2% of F.S. ± 0.5 °C *1
R	(-10 to 1760) °C	± 0.1% of F.S. ± 0.5 °C *1 over the range (800 to 1600) °C
S	(-10 to 1760) °C	± 0.1% of F.S. ± 0.5 °C *1 over the range (800 to 1600) °C
mV	(-10 to 70) mV	± 0.02 % of full scale
Thermal drift	(-20 to 70) °C	( ± 0.15 °C / °C at zero ) + ( ± 0.1 °C / °C at span )
	(-40 to -20) and (70 to 85) °C	Typically as above
Any span may be selected; full accuracy is only guaranteed for spans greater 25 °C		
Basic measurement accuracy includes the effects of calibration, linearization and repeatability		
*1 plus any sensor error		

COLD JUNCTION		SPECIFICATIONS @20 °C
Type	Range °C	Accuracy/ Stability
Thermistor bead	(-40 to 85) °C	± 0.5 °C
Thermal drift	Zero at 20 °C	± 0.05 °C / °C

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	Input type Temperature (4 to 20) mA Sensor offset Burnout current	K, J, E, N, T, R, S, mV °C or °F °C or °F, no offset for mV Upscale or downscale
Read live data	Temperature Output	°C or °F mA
Save/Open configuration	From file	

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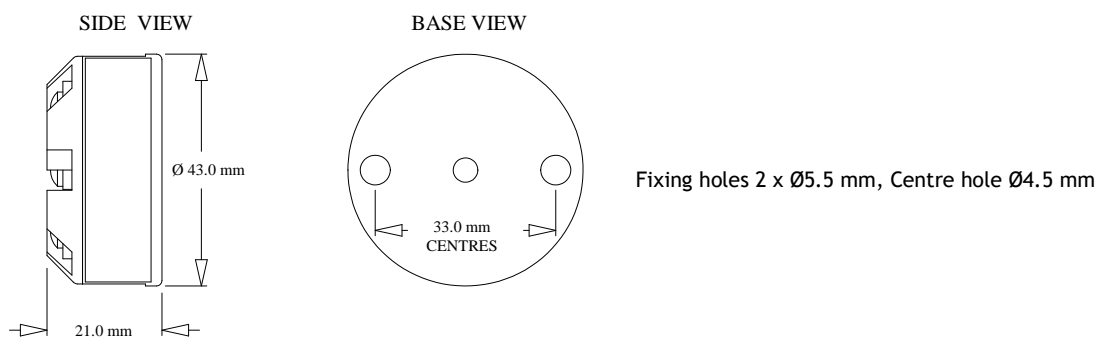
GENERAL	
Function	Description
Update time	500 ms
Response time	1 second
Start-up time	4 seconds (mA out < 4 mA during start up)
Warm up time	60 s to full accuracy

ENVIRONMENTAL	
Function	Description
Ambient temperature	Operating/Storage (-40 to 85) °C / 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
EAC	Please refer to <a href="http://www.statinst.com">www.statinst.com</a>
DNV	Please refer to <a href="http://www.statinst.com">www.statinst.com</a>

<b>ORDER CODE</b>	<b>SEM206TC</b>
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ACCESSORIES	
Configuration software	USBSpeedLink (free of charge from <a href="http://www.statinst.com">www.statinst.com</a> )
Configuration device	USB-CONFIG-MKII
Head options	Please refer to <a href="http://www.statinst.com">www.statinst.com</a>
Probe options	Please refer to <a href="http://www.statinst.com">www.statinst.com</a>

To maintain full accuracy annual calibration is required contact [sales@statinst.com](mailto:sales@statinst.com) for details  
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