

# SMART PUSH BUTTON IN HEAD THERMISTOR TEMPERATURE TRANSMITTER

## SEM206TH

- ACCEPTS MULTIPLE THERMISTOR TYPES
- PC CONFIGURATION AND DIAGNOSTICS
- SENSOR OFFSET CORRECTION
- MANUAL PUSH BUTTON RANGE CONFIGURATION
- CUSTOM THERMISTORS AVAILABLE



## INTRODUCTION

The **SEM206TH** is a “smart” in head transmitter that accepts thermistor temperature sensors and converts sensor output over a configured range to a standard industrial 4 to 20mA transmission signal. The output signal is linear to temperature. A variety of thermistor types are available when using our FREE USB\_Speed\_Link software. Please consult sales office for custom thermistors.

In addition to the PC configuration feature, simple push button operation allows the user to select the desired temperature range manually, by either simulating the thermistor temperature with a resistance box or setting the thermistor sensor to the required calibration point and pressing the button to store both the 4mA and 20mA points.

The **SEM206TH** 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, eliminating the need for user configuration. If the range is not specified then the transmitter will be shipped with the factory default range. In either case the transmitter’s temperature range that is equivalent to the 4 to 20mA output is field configurable.

## PUSH BUTTON CONFIGURATION

A single push button and LED indicator allows the user to configure the transmitter range against a manually set input. A red LED is included to help guide the user. The LED also operates as a sensor error indicator.

## PC CONFIGURATION

PC configuration requires USB\_Speed\_Link software together with a USB configuration kit. The software allows the operator to select from a variety of thermistor types, and then set the required temperature range for a 4 to 20mA output. For diagnostic purposes the software is capable of reading or logging live data information.

## SPECIFICATIONS @ 68°F

### GENERAL

Response Time	1 second
Start-up Time	2 seconds (I out < 4 mA during start-up)
Warm-up Time	1 minute to full accuracy
Power Supply	10 to 30 VDC

### INPUT

Sensor Type	Thermistor
Sensor Connection	Screw Terminal
Minimum Span	10°F
Accuracy (typical)	± 0.36°F ± 0.2% of reading
Thermal Drift	± 0.02% / °C

### OUTPUT

Output	2-wire, 4 to 20mA Current Loop
Output Range	4.0 to 20.0mA
Output Connection	Screw Terminal
Maximum Output	21.5mA
Minimum Output	< 3.75mA
Accuracy	(mA output / 2000) or 5µA (whichever is greater)
Loop Voltage Effect	0.2µA / V
Thermal Drift	± 2µA / °C
Maximum Output Load	[(Vsupply-10)/21]K Ohms (Example: 666 Ohms @ 24V)

## THERMISTOR TYPES

Please refer to USB\_Speed\_Link software for complete up to date list.

“B” Curve: 2252Ω (44004, 44033), 3KΩ (44005, 44030), 5KΩ (44007, 44034), 10KΩ (44016, 44036)

“H” Curve: 10KΩ (44006, 44031), 30KΩ (44008)

## ENVIRONMENTAL

**Ambient Operating Range** -40 to +185 °F  
**Ambient Storage Temperature** -58 to +194 °F  
**Ambient Humidity Range** 10 to 90% RH non condensing

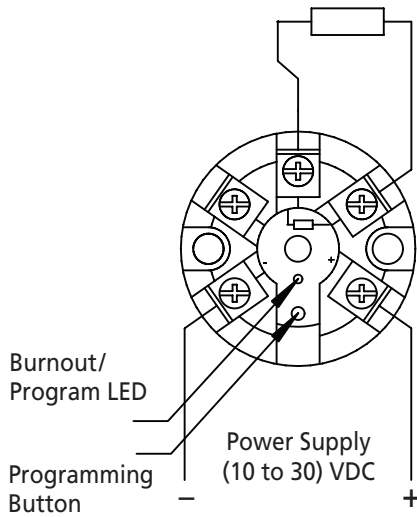
## PHYSICAL

**Dimensions** 1.68" diameter; 0.83" height  
**Weight** 31 grams (encapsulated)

## APPROVALS

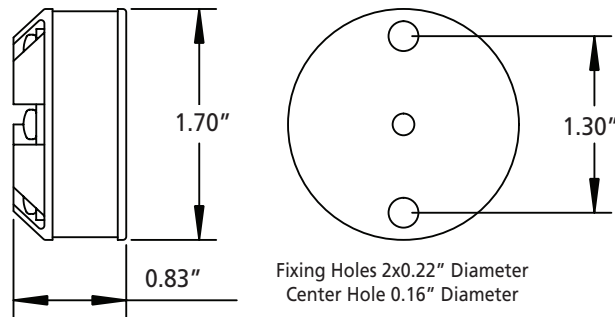
**EMC – BS EN 61326** Electrical equipment for measurement control and laboratory use.  
**ANNEX A** Immunity test requirements for equipment intended for use in industrial locations.  
**ANNEX F** Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.  
**IEC 6100-4-2** Electrostatic discharge  
**IEC 6100-4-3** EM Field  
**IEC 6100-4-4** Transient Burst (output)  
**IEC 6100-4-5** Surge (output)

**Note** – Sensor input wires must be less than 3 meters long to comply.



**SEM206TH**

## PHYSICAL DIMENSIONS



## ORDER CODES:

**SEM206TH** THERMISTOR INPUT / mA OUTPUT

### Accessories

**USB KIT** USB CONFIGURATION KIT  
**RMK-2** DIN Rail Adapter Clip

### Associated Products

**SEM206P** RTD INPUT / mA OUTPUT  
**SEM206TC** THERMOCOUPLE INPUT / mA OUTPUT  
**SEM203TC** T/C INPUT / mA OUTPUT (PUSH BUTTON CAL)  
**SEM203P** RTD INPUT / mA OUTPUT (PUSH BUTTON CAL)  
**SEM203P-500** 500Ω Platinum RTD INPUT / mA OUTPUT  
**SEM203P-1000** 1000Ω Platinum RTD INPUT / mA OUTPUT  
**SEM203N** 120Ω Nickel RTD INPUT / mA OUTPUT  
**DM700I** Loop Powered LED Indicator

Local Representation



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