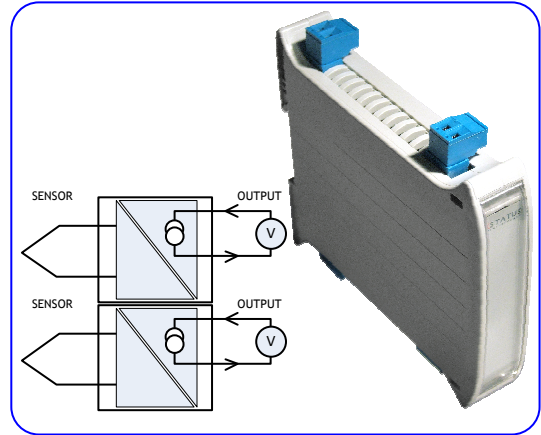


# RAIL MOUNTED I.S. APPROVED THERMOCOUPLE TRANSMITTER

## SEM1801XTC, SEM1802XTC

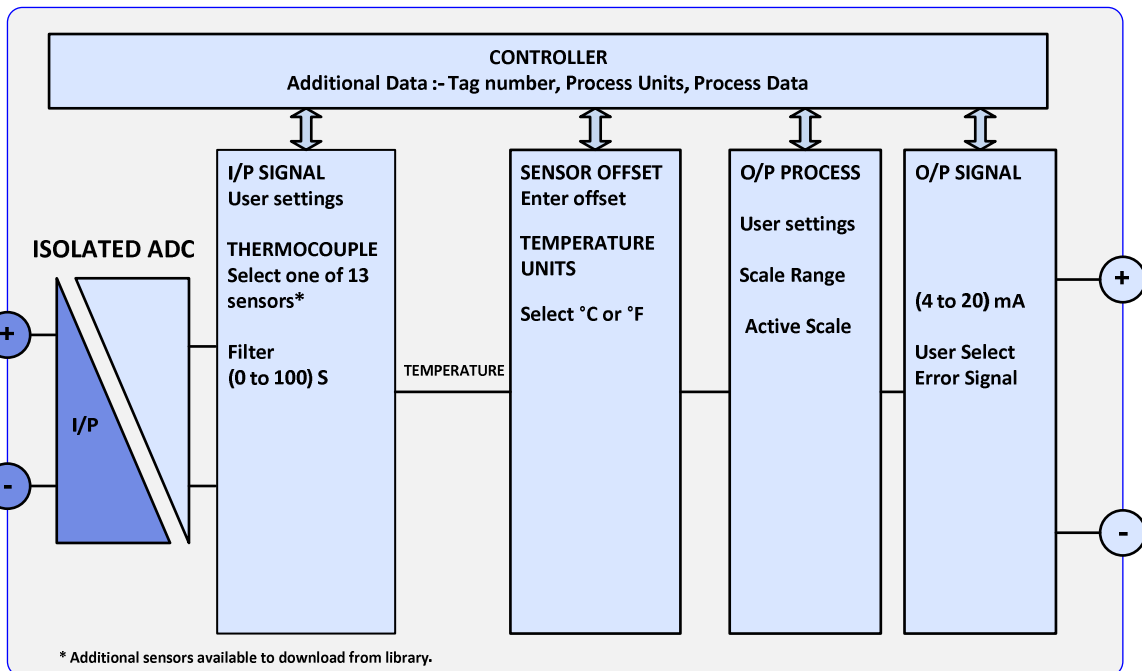
- > K, J, N, E, T, R, S, L, U, B, C(W5), D(W3), G(W)
- > ATEX AND IECEx APPROVED VERSION
- > SINGLE AND DUAL CHANNEL VERSIONS
- > (4 to 20) mA LOOP POWERED
- > SENSOR OFFSET AND OUTPUT ALIGNMENT
- > ISOLATION INPUT TO OUTPUT
- > PROGRAMMABLE BURNOUT
- > INTRODUCTION



The SEM1801/2XTC Din rail temperature transmitter accepts thermocouple temperature sensors and converts the sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal. Two versions are available; single or dual channel ATEX / IECEx approved for hazardous areas.

PC configuration allows the user to select TC type, Range, Filter, units, linearization and Burnout direction, without requiring calibration equipment. Additionally, the user may read live process data when connected to the PC (in the safe area), this allows for sensor offset, and output alignment calibration, where the user can enter values to match the actual process and therefore reducing system errors.

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.



# RAIL MOUNTED I.S. APPROVED THERMOCOUPLE TRANSMITTER

## ➤ SPECIFICATION @20 °C

### THERMOCOUPLE INPUT

Standard TC	Types K, J, E, N, T, R, S, L, U, B, C (w5), D (W3), G (W), library
Thermal Drift	Thermocouple offset 0.1 °C/°C, span 0.05 °C/°C
Cold Junction	Range (-40 to 85) °C, Accuracy ± 0.2 °C, ± 0.05 °C/°C

### THERMOCOUPLE ACCURACY

Accuracy ±0.1 % of full scale ± 0.5 °C (plus sensor error)  
 K (-200 to 1370), J (-100 to 1200), E (-200 to 1000), N (-180 to 1300)  
 L (-100 to 600), U (0 to 600), B (0 to 1800), C - D - W (0 to 2300)

Accuracy ±0.2 % of full scale ± 0.5 °C (plus sensor error)  
 T (-200 to 400)

Accuracy ± 0.1 % of full scale plus ± 0.5 °C (range 800 to 1600)  
 R (0 to 1760), S (0 to 1760)

### OUTPUT

Type	Two wire (4 to 20) mA current Loop
Range	(4 to 20) mA ; Upscale burnout 21.5 mA ; Downscale Burnout 3.8 mA
Accuracy	(mA Out / 2000) or 5 uA which ever is the greater, Drift 1 uA/°C
Loop Effect	± 0.2 uA/ V
Max output load	[(Vsupply-10)/20] K Ohms / per channel (Example 700 Ohms @ 24 V)

### SUPPLY

Loop Supply	(10 to 30) VDC per channel
Power	< 1W Full Power per channel

### GENERAL

Response time	Start up 5 seconds, Update 160 mS, Response 500 mS
Warm up	2 minutes.
Isolation	Input to output 500 V dc.
Connections	Screw terminals 2.5 mm Maximum

### USER INTERFACE

Type	USB 2.0
Baud rate	1200 baud
Equipment	PC running windows XP or later, USB configurator.

### USER INTERFACE FUNCTIONS

Scaling	User signal to process value scaling, for simplified setup.
Filter	Adjustable time constant (0 to 100) Seconds.
Process Units	4 Characters (signal input only)
Temperature units	°C or °F (TC inputs only)
Tag Number	20 Characters
Process Output	Range in process units
User offset	Enter sensor offset (Temperature mode only).
Active scaling	Set output process range against active sensor input

### ENVIRONMENT

Operating Ambient	(-40 to 70) °C; (10 to 90) % RH (non condensing)
Storage Ambient	(-50 to 70) °C; (10 to 90) % RH (non condensing)
Configuration Ambient	(10 to 30) °C
Installation Enclosure	>= IP65.

### APPROVALS

CE	BS EN 61326
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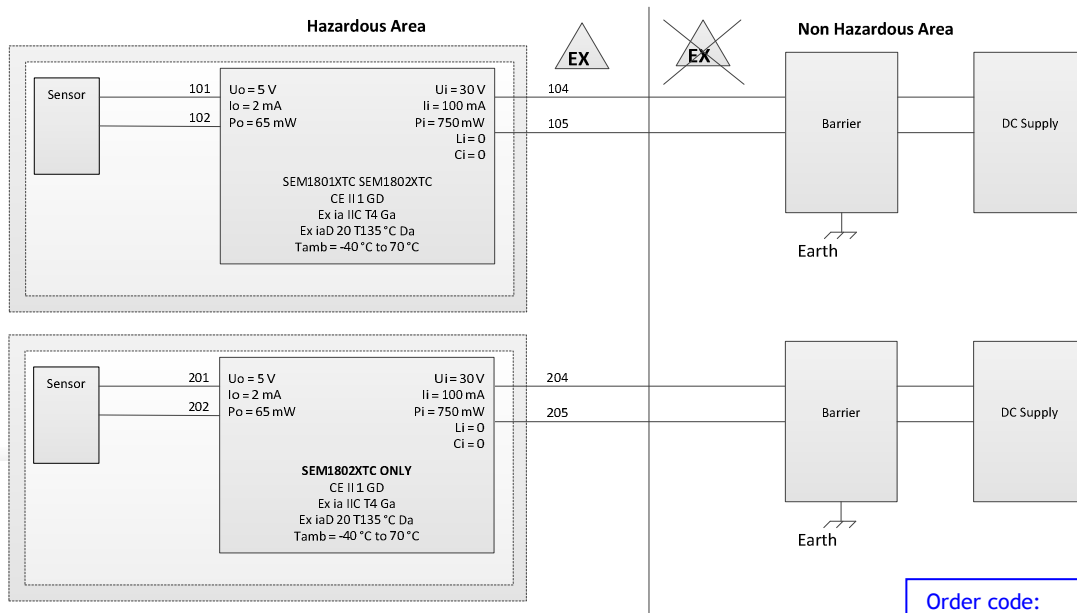
### MECHANICAL

Dimensions	120 mm deep; 107.3 mm height; 22.5 mm wide
Weight	110 g - SEM1801XTC 141 g - SEM1802XTC



SEM1801XTC, SEM1802XTC ATEX / IECEx special conditions for safe use.

- For gas applications, the SEM1801XTC, SEM1802XTC temperature transmitters must be mounted in a metallic enclosure rated for IP54 and located in area where the enclosure will not be subject to impact of friction.
- For dust applications, the SEM1801XTC, SEM1802XTC temperature transmitters must be mounted in a suitably ATEX or IECEx certified enclosure appropriate for the zone of end use .
- The equipment shall only be configured by means of the USB connection outside the hazardous area.
- If the equipment is mounted in an enclosure with separate IS circuits, appropriate segregation shall be provided in accordance with IEC 60079-11 Clause 6.2.1.
- SEM1801XTC, SEM1802XTC - Only for connection to suitable thermocouples. These shall conform to the requirements for simple apparatus as defined in IEC
- The ambient temperature range of the enclosure will limit the permitted ambient range of the overall equipment. Refer to enclosure certification.



Sensor wires must be isolated from earth breakdown voltage 500V dc

Order code:

SEM1801XTC      One Channel

SEM1802XTC      Dual Channel