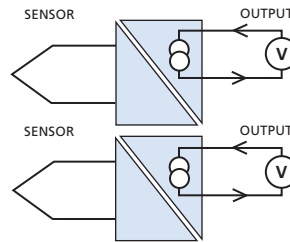


THERMOCOUPLE INTRINSICALLY SAFE TRANSMITTER

SEM1801XTC, SEM1802XTC

- K, J, N, E, T, R, S, L, U, B, C(W5), D(W3), G(W)
- ATEX and IECEx APPROVED
- SINGLE and DUAL CHANNEL VERSIONS
- 4 to 20mA LOOP POWERED
- ISOLATION BETWEEN INPUT and OUTPUT
- SENSOR OFFSET and OUTPUT ALIGNMENT
- ADJUSTABLE INPUT FILTER
- PROGRAMMABLE BURNOUT
- DIN RAIL MOUNT

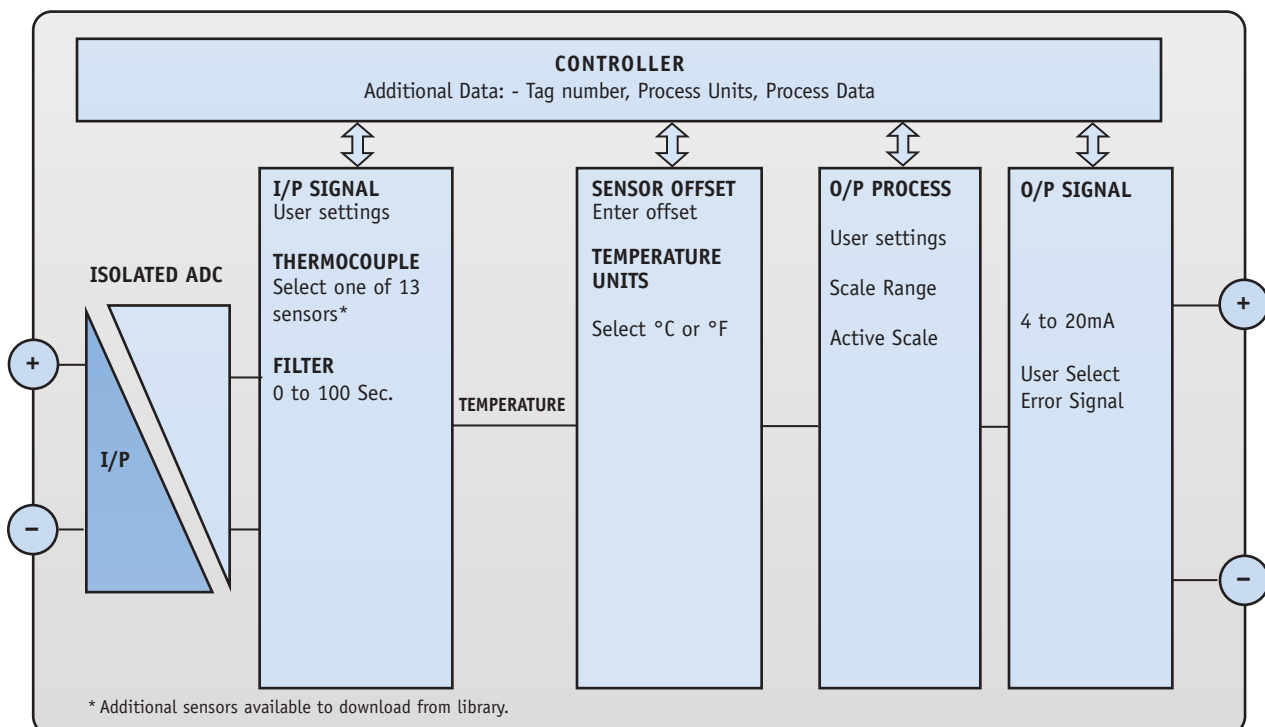


INTRODUCTION

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

PC configuration (in the safe area) 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 default range of 0 to 1000 °C for type "K" thermocouple.



SPECIFICATIONS @ 68°F

THERMOCOUPLE INPUT

Standard Thermocouples Types K,J,E,N,T,R,S,L,U,B,C(W5),D(W3),G(W), Library
Thermal Drift Thermocouple offset 0.18 °F/°F, Span 0.09 °F/°F
Cold Junction Range -40 to 185°F, Accuracy ± 0.36°F, ± 0.09 °F/°F

THERMOCOUPLE ACCURACY

Accuracy ± 0.1% of full scale ± 0.9°F (plus sensor error)
K (-328 to 2498°F), J (-148 to 2192°F), E (-328 to 1832°F),
N (-292 to 2372°F), L (-148 to 1112°F), U (32 to 1112°F),
B (32 to 3272°F), C, D, W (32 to 4172°F)

OUTPUT

Type Two Wire 4 to 20mA Current Loop
Range 4 to 20mA;
Upscale Burnout 21.5mA; Downscale Burnout 3.8mA
Accuracy (mA output / 2000) or 5µA (whichever is greater)
Drift 1µA/°C
Loop Effect ± 0.2 µA/V
Max Output Load [(Vsupply - 10)/20]K ohms / per channel
(Example 700 ohms @ 24VDC)

SUPPLY

Loop Supply 10 to 30VDC per Channel
Power < 1W Full Power per Channel

GENERAL

Accuracy 0.2°C + (0.05% of reading) + (sensor)
Response Time Start Up 5 seconds, Update 160ms, Response 500ms
Warm Up 2 minutes
Isolation Input to Output 500VDC
Connections Screw Terminals 2.5mm 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.
Active Scaling Set output process range against active sensor input.

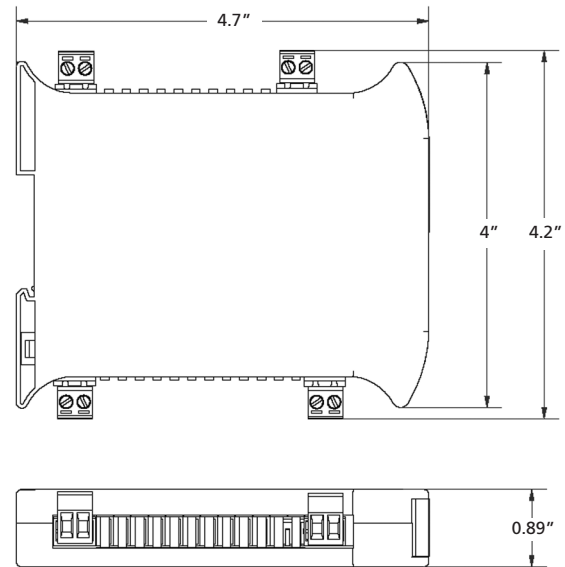
ENVIRONMENTAL

Operating Ambient -40 to +158°F; 10 to 90% RH Non Condensing
Storage Ambient -58 to +158°F; 10 to 90% RH Non Condensing
Configuration Ambient 50 to 86°F
Installation Enclosure DIN rail enclosure offering Protection >= IP65

APPROVALS

CE BS EN 61326

PHYSICAL DIMENSIONS



MECHANICAL

Dimensions 4.7 in. deep; 4.2 in. height; 0.89 in. wide
Weight 110 grams – SEM1801XTC
141 grams – SEM1802XTC

ORDER CODES:

SEM1801XTC INTRINSICALLY SAFE
ONE CHANNEL RTD / SLIDEWIRE IN / CURRENT OUT
SEM1802XTC INTRINSICALLY SAFE
TWO CHANNEL THERMOCOUPLE IN / CURRENT OUT

Accessories
USB KIT USB CONFIGURATION KIT
USB SPEED LINK SOFTWARE (FREE FROM INTERNET SITE)

Associated Products
SEM1801XR INTRINSICALLY SAFE
ONE CHANNEL RTD / SLIDEWIRE IN / CURRENT OUT
SEM1802XR INTRINSICALLY SAFE
TWO CHANNEL RTD / SLIDEWIRE IN / CURRENT OUT
SEM310X I.S. HART UNIVERSAL INPUT / CURRENT OUT
HOCKEY PUCK
SEM315X I.S. HART UNIVERSAL INPUT / CURRENT OUT
DIN RAIL MOUNT

Local Representation



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