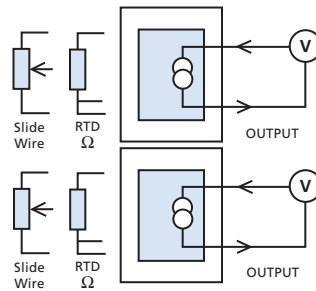


RTD/SLIDE WIRE INTRINSICALLY SAFE TRANSMITTER

SEM1801XR, SEM1802XR

- RTD, SLIDE WIRE, RESISTANCE INPUTS
- ATEX and IECEx APPROVED
- SINGLE and DUAL CHANNEL VERSIONS
- 22 SEGMENT USER LINEARIZATION FOR INPUT
- 4 to 20mA LOOP POWERED
- SENSOR OFFSET and OUTPUT ALIGNMENT
- ADJUSTABLE INPUT FILTER
- PROGRAMMABLE BURNOUT
- DIN RAIL MOUNT

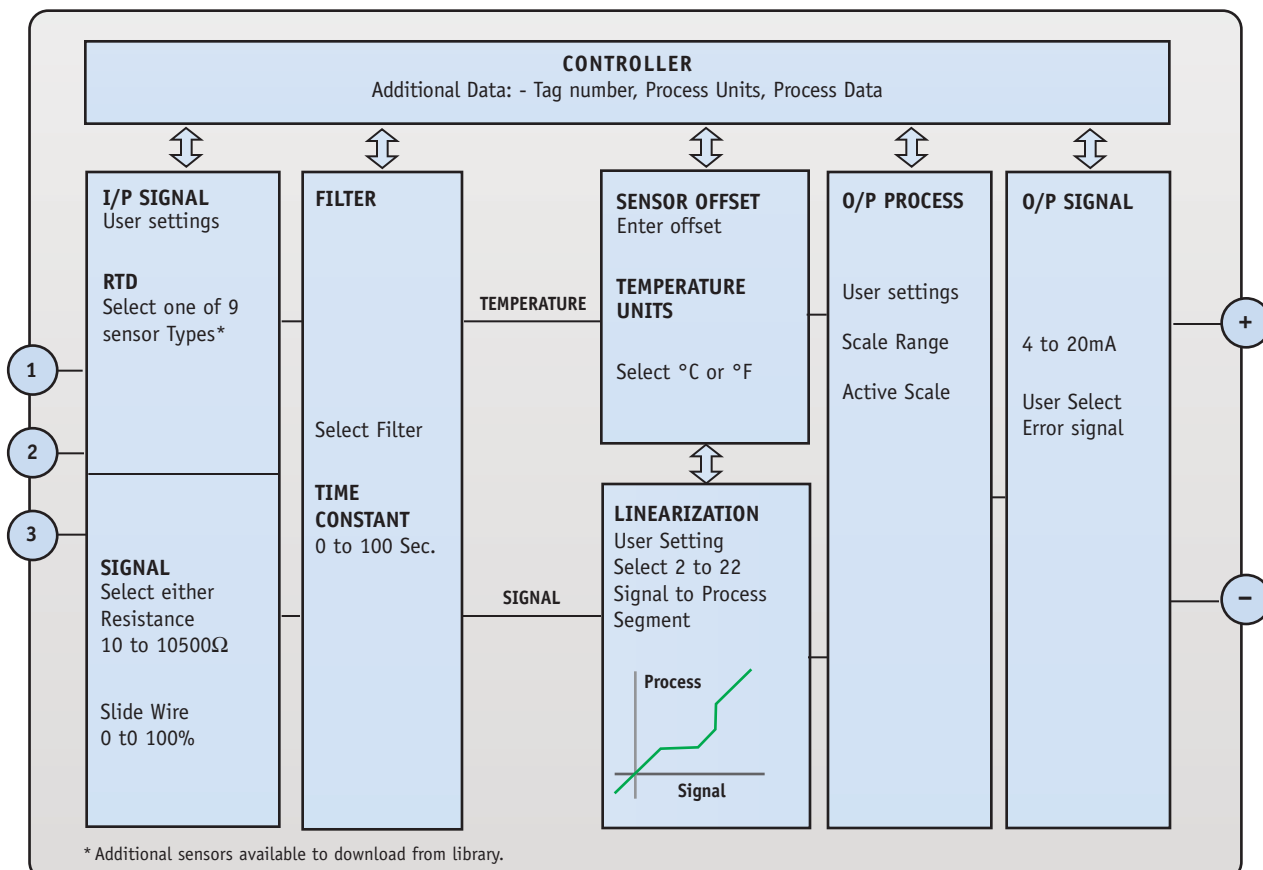


INTRODUCTION

The SEM1801/2XR is a "smart" temperature transmitter that accepts RTD temperature sensors or Slide Wire 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 Sensor type, Range, Filter, Units, Tag, 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 100 °C for Pt 100 RTD.



SPECIFICATIONS @ 68°F

RESISTANCE INPUT

Standard RTD	Pt100, Pt500, Pt1000, Cu100, Cu1000, Ni100, Ni120, Ni1000, Cu53, Library
Slide Wire Resistance	Pot range 1 to 100KΩ, Signal 0 to 100%, Accuracy 0.1% 10 to 500Ω ± 0.055Ω, 500 to 2500Ω ± 0.5Ω 2500 to 10500Ω ± 10.0Ω
Thermal Drift	10 to 500Ω ± 0.013Ω/°C, 500 to 2500Ω 0.063Ω/°C 2500 to 10500Ω 0.27Ω/°C
Excitation Current	< 200μA
Lead Effect	Max lead resistance 20Ω per leg, Effect 0.002°C/Ω

OUTPUT

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

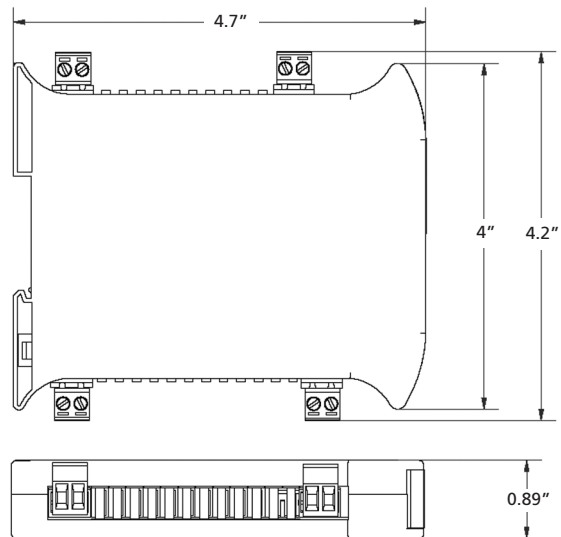
USER INTERFACE FUNCTIONS

Scaling	User signal to process value scaling, for simplified setup. Adjustable time constant 0 to 100 seconds
Filter	2 to 22 segments mV to process.
User Linearization or Profile	4 Characters (signal input only)
Process Units	°C or °F (RTD inputs only).
Temperature Units	20 Characters
Tag Number	Range in process units.
Process Output	Enter sensor offset (temperature mode only).
User Offset	Set output process range against active sensor input.
Active Scaling	

RTD SENSORS

Platinum IEC	Pt100 (-328 to 1562°F), Pt500 (-328 to 1382°F) Pt1000 (-328 to 1112°F)
Platinum IPTS-68	Pt100 (0.00391) + Pt100 (0.00392) (-328 to 1166°F)
Ni100 DIN 0.00618	(-76 to 356°F)
Ni120 0.00672	(-112 to 500°F)
Ni1000	(-76 to 356°F)
Ni1000 Tk5000	(-58 to 302°F)
Ni507.5	(-112 to 680°F)
Ni604	(-328 to 392°F)
Cu53	(-58 to 356°F)
Cu100 0.00427	(-112 to 500°F)
Cu1000	(-112 to 500°F)
Silicon	KTY81-110-120-121-122-150-210-220-221-222-250 (-67 to 347°F) KTY82-110-120-121-122-150-210-220-221-222-250 (-67 to 347°F) KTY81-151,KTY82-151,KTY83-210-220-250-121-122 (-67 to 347°F) KTY84-130-150 (-40 to 572°F)

PHYSICAL DIMENSIONS



MECHANICAL

Dimensions	4.7 in. deep; 4.2 in. height; 0.89 in. wide
Weight	110 grams – SEM1801XR 141 grams – SEM1802XR

ORDER CODES:

SEM1801XR	INTRINSICALLY SAFE ONE CHANNEL RTD / SLIDEWIRE IN / CURRENT OUT
SEM1802XR	INTRINSICALLY SAFE TWO CHANNEL RTD / SLIDEWIRE IN / CURRENT OUT

Accessories

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

Associated Products

SEM1801XTC	INTRINSICALLY SAFE ONE CHANNEL THERMOCOUPLE IN / CURRENT OUT
SEM1802XTC	INTRINSICALLY SAFE TWO CHANNEL THERMOCOUPLE IN / CURRENT OUT
SEM310X	I.S. HART UNIVERSAL INPUT / CURRENT OUT HOCKEY PUCK
SEM315X	I.S. HART UNIVERSAL INPUT / CURRENT OUT DIN RAIL MOUNT

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
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Local Representation



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