

# UNIVERSAL INPUT DIN RAIL TRANSMITTERS



## SEM1610 & SEM1620

- SIMPLE CONFIGURATION VIA USB PORT
- UNIVERSAL PT100, THERMOCOUPLE, mV, mA Input
- INPUT/OUTPUT ISOLATION
- PUSH BUTTON USER TRIM
- 10 YEAR WARRANTY



## INTRODUCTION

The SEM1610 & SEM1620 are the new generation DIN rail mounted temperature transmitters from Status Instruments. They have been designed to accept most common process and temperature sensor inputs and provide the user with industry standard output signals (SEM1610 – two wire 4 to 20 mA & SEM1620 – three wire voltages). Isolation is provided between input and output and all temperature outputs are linear to temperature.

Designed for ease of use, our latest USB interface is fitted for quick and easy configuration. Just connect a standard USB cable between the SEM1610 or SEM1620 and your PC. Using our free configuration software, your PC will automatically upload the existing configuration data and guide you through any changes you wish to make. To further help save time, the SEM1610 & SEM1620 do not need to be wired to a power supply during the configuration process, they are powered via the USB interface from your PC. The following parameters are configurable:

INPUT TYPE	LOW RANGE	HIGH RANGE	UNITS	BURNOUT	USER TRIM	1610 OUTPUT	1620 OUTPUT
RTD: Pt100	Zero	Span	°F, °C	Up/Scale Down/Scale	On, Off	4 to 20 mA	0 to 10 VDC 2 to 10 VDC 0 to 5 VDC 1 to 5 VDC 0 to 1 VDC
T/C: K, J, E, N, T, R, S			°F, °C				
mV			mV				
mA			Input @ 4 mA				

These units are also provided with user push button trim, allowing trim adjustments (SEM1610 – at both 4 mA and 20 mA & SEM1620 – at both zero and span). The user trim function can be locked during configuration if not required. The range LED indicates out of range input during normal operation, during user trim it is used to indicate the stage of trim.

## INPUTS

INPUT	RANGE	MIN. SPAN	ACCURACY (Note 1)	STABILITY	O/C	CJ Note 3	SENSOR EXCITATION (Note 4)	IMPEDANCE
Pt100	-328 to 1562°F	50°F	±0.18°F/ ±0.05% of Rdg	±0.005% of FSR	N/A	N/A	<450µA	N/A
K	-328 to 2498°F	68°F	±0.1% of FSR ±0.9°F	±0.01% of FSR	Yes	Yes	N/A	1 MΩ (Note 5)
J	-148 to 2192°F							
E	-148 to 1832°F							
N	-292 to 2372°F							
T	-148 to 752°F							
R	14 to 3200°F	392°F	±0.9F ±0.1% of FSR (Note 2)	±0.01% of FSR	N/A	N/A	N/A	2.7R (Note 6)
S	14 to 3200°F		±0.9F ±0.1% of FSR (Note 2)					
mV	-40 to 75mV	1mV	±0.04mV	±0.01% of FSR	N/A	N/A	N/A	N/A
mA	-10 to 25mA	1mA	±0.008mA	±0.01% of FSR	N/A	N/A	N/A	N/A

Key: Rdg = Reading; FSR = Full Scale Range; O/C = Programmable Open Circuit Sensor Detect; CJ = Cold Junction Error

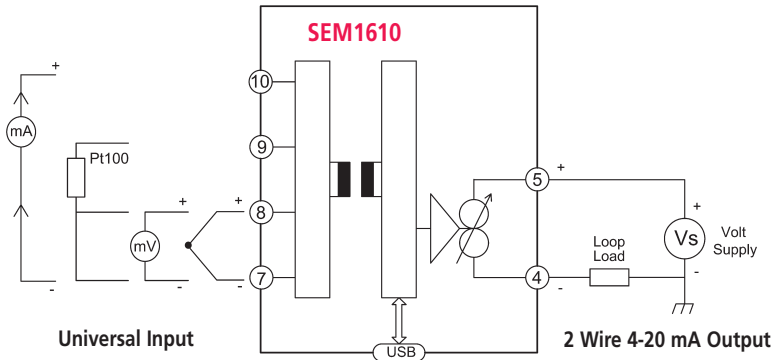
- Notes:
1. Accuracy for Pt100 and T/C do not include sensor and cold junction errors.
  2. Only over the range 1472 to 2912°F.
  3. Cold junction range: -4 to 158°F, Accuracy: ±0.9°F, Tracking: ±0.09°F.
  4. Pt100 Input Maximum lead resistance: 20R, Lead effect: 0.027°F/Ω
  5. Impedance – not including 0.2µA open circuit detect bias current effect.
  6. Maximum current over load: ±100mA

## GENERAL

**Isolation** Input to output tested at 500VDC  
**Ambient** Operating: -4 to 158°F, 10 to 95% RH non-condensing. Storage: -40 to 185°F  
**Approvals** CE tested to BS EN 61326

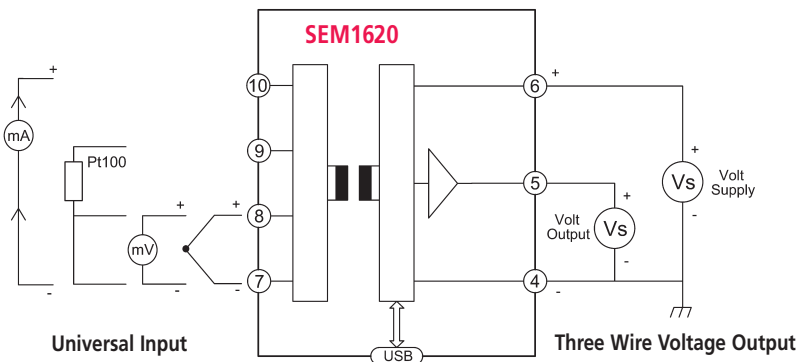
## MECHANICAL

**Material** Grey Polymide 6.6, self extinguishing  
**Terminals** Screw terminals  
**Cable** 2.5 mm maximum



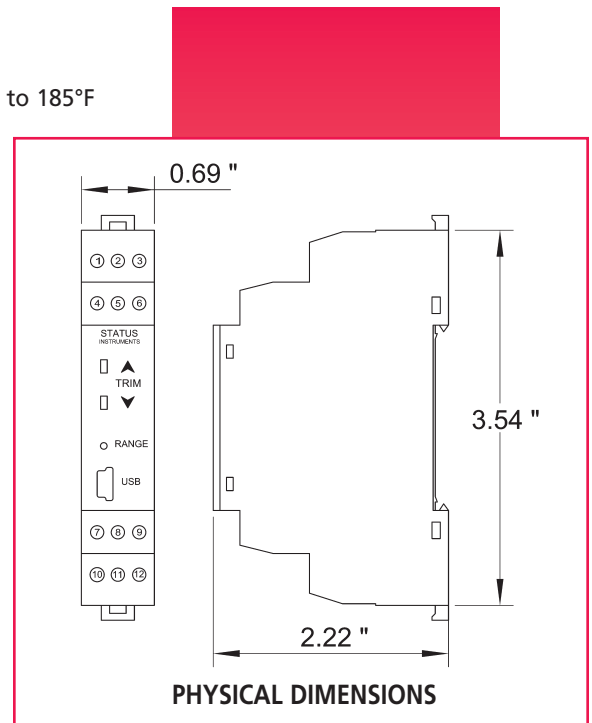
## SEM1610 OUTPUT

**Type** Two wire current sink; Signal range: 4 to 20mA; Full range: 3.8 to 24mA  
**Supply** 11 to 30VDC, 24V nominal giving Max loop load of 600R @ 24V  
**Response Time** <500ms to reach 95% of final value; Start up time: <3s  
**Calibration Rating**  $\pm 5\mu\text{A}$   
**Loop Effect** Loop ripple: 0.03% of FSR; Supply sensitivity:  $0.05\mu\text{A}/^\circ\text{C}$ ; Supply ripple rejection:  $< \pm 5\mu\text{A}$  error @ 1V rms 50 Hz ripple.  
**Protection** Reverse connection and over-voltage protection. Max over voltage current: 100mA  
**User Trim** Raise and lower buttons are active for offset when output is between 3.8 to 6 mA, span between 18 to 22 mA. Trim lock option.



## SEM1620 OUTPUT

**Type** Three wire voltage output with programmable ranges: 0 to 10, 0 to 5, 2 to 10, 1 to 5, and 0 to 1V  
**Supply** 15 to 28 VDC  
**Response Time** <500ms to reach 95% of final value; Start up time: 3s  
**Calibration Rating**  $\pm 5\text{mV}$   
**Output Drive** 2mA driving  $5\text{K}\Omega$  @ 10V  
**Protection** Reverse connection and over-voltage protection. Max over-voltage current: 100mA  
**User Trim** Raise and lower buttons are active for offset when output is between 3.8 to 6 mA, span between 18 to 22 mA. Trim lock option.



**ORDER CODES:**

**SEM1610** UNIVERSAL INPUT / CURRENT OUTPUT  
**SEM1620** UNIVERSAL INPUT / VOLTAGE OUTPUT

**Accessories**  
 USB CABLE USB CABLE A/M TO MINI B/M  
 M-CONFIG SOFTWARE (FREE FROM INTERNET SITE)

**Associated Products**  
**SEM1603P / TC / I** LOW COST SINGLE INPUT DIN RAIL TRANSMITTER  
**SEM1630** UNIVERSAL DIN RAIL TRIP AMPLIFIER

## Local Representation



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