

Pt100 or THERMOCOUPLE or mA INPUT DIN RAIL TRANSMITTERS

SEM1603 Series

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



INTRODUCTION

The SEM1603 series is a line of cost effective DIN rail mounted temperature transmitters or a current converter from Status Instruments. The series consists of three versions, the SEM1603P accepts Pt100 inputs, the SEM1603TC accepts seven common thermocouple types plus mV input and the SEM1603I accepts any mA input between -10 to 25 mA.

Configuration is performed quickly using our new USB port driven configurator by simply connecting two leads to the SEM1603 loop terminals and following the instructions from our free software. To further help save time, the SEM1603 units 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:

MODEL	INPUT TYPE	LOW RANGE	HIGH RANGE	UNITS	BURNOUT
SEM1603P	RTD: Pt100	Zero	Span	°F, °C	Up/Scale Down/Scale
SEM1603TC	T/C: K, J, E, N, T, R, S			°F, °C	
	mV			mV	
SEM1603I	mA	Input @ -10 mA	Input @ 25 mA	mA	

INPUTS

MODEL	INPUT	RANGE	ACCURACY (Note 1)	STABILITY	O/C	CJ Note 3	SENSOR EXCITATION (Note 4)	IMPEDANCE
SEM1603P	Pt100	-328 to 1562°F	±0.18°F/ ±0.05% of Rdg	±0.005% of FSR		N/A	<450µA	N/A
SEM1603TC	K	-328 to 2498°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	±0.2% of FSR ±0.9°F					
	R	14 to 3200°F	±0.9F ±0.1% of FSR (Note 2)					
	S	14 to 3200°F	±0.9°F ±0.1% of FSR (Note 2)					
	mV	-40 to 75mV	±0.04mV		N/A			
SEM1603I	mA	-10 to 25mA	±0.008mA	±0.01% of FSR	N/A	N/A	N/A	2.7R (Note 6)

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

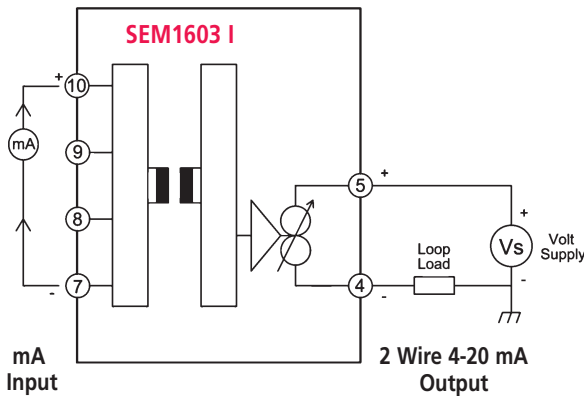
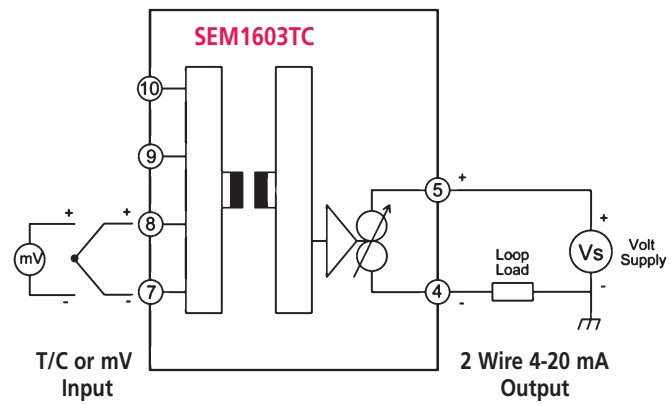
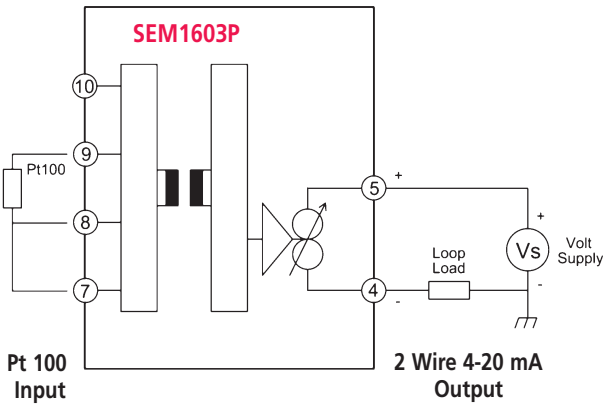
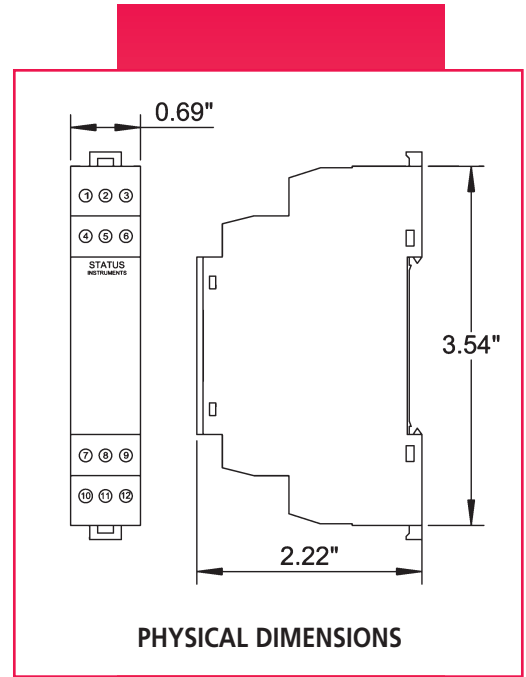
Isolation Input to output tested at 500VDC
Ambient Operating: -4 to 158°F, 10 to 95% RH non condensing.
 Storage: -40 to 185°F
Approvals CE tested to BS EN 61326

MECHANICAL

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

SEM1603 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 ±5µA
Loop Effect Loop ripple: 0.03% of FSR; Supply sensitivity: 0.05µA/°C;
 Supply ripple rejection: <±5µA error @ 1V rms 50 Hz ripple.
Protection Reverse connection and over-voltage protection.
 Max over voltage current: 100mA



ORDER CODES:

- SEM1603P RTD INPUT / CURRENT OUTPUT
- SEM1603TC THERMOCOUPLE INPUT / CURRENT OUTPUT
- SEM1603I CURRENT INPUT / CURRENT OUTPUT

Accessories

- USB KIT USB CONFIGURATION KIT
- M-CONFIG SOFTWARE (FREE FROM INTERNET SITE)

Associated Products

- SEM1610 UNIVERSAL INPUT / CURRENT OUTPUT
- SEM1620 UNIVERSAL INPUT / VOLTAGE OUTPUT
- SEM1630 UNIVERSAL INPUT / DUAL TRIP ALARM

Local Representation



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