

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



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 SEM1603 I 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 | |
| SEM1603 I | 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

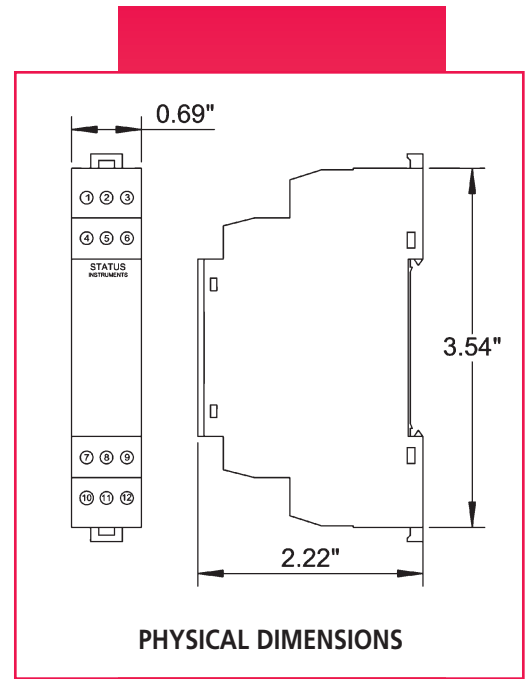
| | |
|------------------|---|
| Isolation | Input to output tested at 500VDC |
| Ambient | Operating: -4 to 158°F, 10 to 95% RH non condensing. Storage: -40 to 185°F |
| Approvals | CE tested to BS EN 61326 |

MECHANICAL

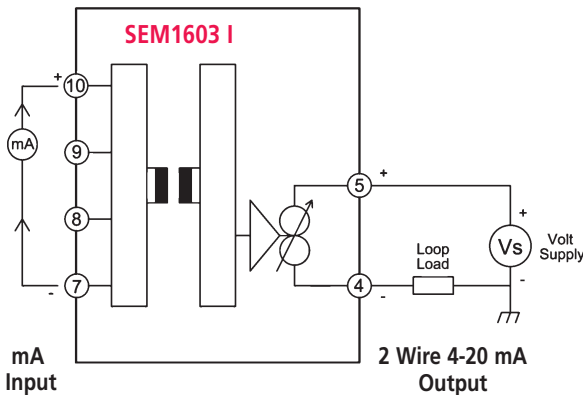
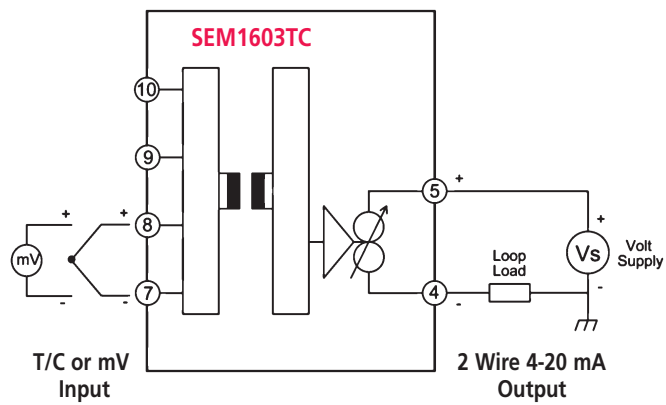
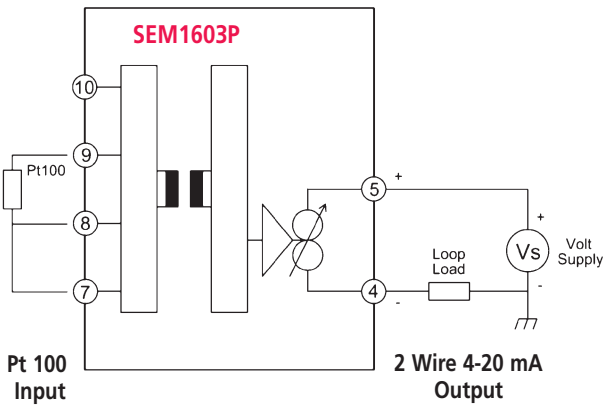
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|------------------|---------------------------------------|
| Material | Grey Polymide 6.6, self extinguishing |
| Terminals | Screw terminals |
| Cable | 2.5 mm maximum |

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 |



PHYSICAL DIMENSIONS



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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