DESCRIPTION

The SEM1500/TC is a universal thermocouple input DIN rail mounted transmitter designed to accept most common thermocouple types and to isolate and convert them to the industry standard 4-20 mA transmission signal. Automatic cold junction compensation is provided. The unit can also accept milli-volt inputs between -5 and +50 milli-volts from, for example, strain gauges.

The small size of the unit (only 12.5mm wide) enables many more units to be fitted in a smaller space than was previously possible. The output signal is galvanically isolated from the thermo-couple by 500 volts DC to remove the effects of earth loops or earth leakage.

APPROVALS

Tested to:
- IEC 801-2 Susceptability to electrostatic discharge
- IEC 801-3 Radiated Susceptability
- IEC 801-4 Susceptability to conducted interference
- EN 55022 Radiated emissions

Compliant with EN 50081-1 and EN 50082-1

SPECIFICATIONS @ 20°C

INPUT

- T/C type: J.K.N.R.S.T
- Milli volt: -5 to 50 mV signals
- Isolation: INPUT to OUTPUT 500 VDC (Flash tested to 1Kv)
- Burn Out: UP scale standard (DOWN scale to order)
- Impedance: > 1M ohm
- Cold Junction: Automatic compensation may be selected for use with the T/C types indicated or fixed zero compensation may be selected for mV or differential T/C measurement.
- CJ Accuracy: ±0.2°C @ 20°C ±0.05°C/C Typical

OUTPUT

- Type: Passive 2 wire current output
- Range: 4-20 mA (30 mA MAX.)
- Linearity: mV input linearity ±0.005%
- T/C ranges are cold junction compensated and directly referenced to T/C mV values
- Protection: Reverse connection plus over voltage

GENERAL

- Supply: 10-30 V DC
- Load: 700 ohms @24V
- Thermal Stability: 2µV °C
cold junction errors
- Ripple: <40µA/V (measured at 1V ripple 50Hz)
- Response time: 200 mSecs to reach 70% of final value
- Operating ambient temperature 0-50°C RH 10-95% Non-condensing

ENCLOSURE

- Case Material: Polyamide (Grey)
- Case Flammability: To UL94-VO VDE 0304 Part 3 Level III
- Mounting: Top Hat rail to DIN EN 50022-35
- Protection: IP20
- Connections: Captive screw connections
- Cable Size: 4mm sq solid/2.5mm sq stranded
STANDARD RANGES

The SEM1500/TC may be purchased pre-ranged to any of the following standard ranges.

<table>
<thead>
<tr>
<th>Range °C</th>
<th>THERMOCOUPLE TYPE</th>
<th>milli volt</th>
</tr>
</thead>
<tbody>
<tr>
<td>from</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>400</td>
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<tr>
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<td>800</td>
<td></td>
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<tr>
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<td>1000</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>0</td>
<td>1600</td>
<td></td>
</tr>
<tr>
<td>Range mV</td>
<td>0</td>
<td>50mV</td>
</tr>
</tbody>
</table>

NON STANDARD RANGES

Units can be supplied set up to other non-standard ranges for a small extra charge or alternatively the unit can be re-ranged as follows;

ADJUSTMENTS
- Range selection GAIN and OFFSET
- Coarse settings are made by two 16 position rotary screw adjustment switches on the side of the unit.
- Fine adjustment is by front access potentiometers.
- Full re-calibration details are supplied with each transmitter.

ORDER CODE single units standard range

Example: SEM1500 / K / 0 / 1000 For “K” type thermocouple range 0-1000°C

Also available in packs of 10 set to the default range of type K, 0-1000°C

ORDER CODE 10 PACK = SEM1500 / K / 0 / 1000-PK10

Also available in DIN rail format:-

SEM1100 series ISOLATORS
SEM1300 POWER SUPPLY
SEM1400 series TRIP AMPLIFIERS/ALARMS
SEM1500/P Pt-100 TRANSMITTER

Please contact Status Instruments for further information and any additions to the 1000 series.

Every effort has been taken to ensure the accuracy of this specification, however we do not accept responsibility for damage, injury, loss or expense resulting from errors and omissions, and we reserve the right of amendment without notice.