

- J.K.N.R.S.T/T/C
- GALVANICALLY ISOLATED
- SMALL SIZE
- 4-20 mA OUTPUT
- HIGH PERFORMANCE



## ISOLATING THERMOCOUPLE TRANSMITTER SEM1500/TC

### 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

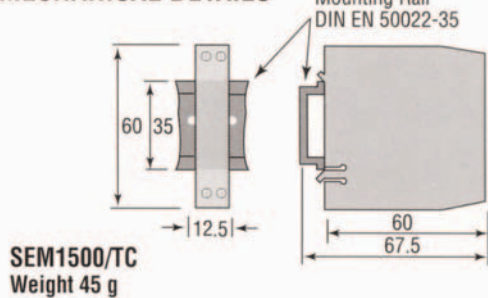
Tested to:

- IEC 801-2 Susceptibility to electrostatic discharge
  - IEC 801-3 Radiated Susceptibility
  - IEC 801-4 Susceptibility to conducted interference
  - EN 55022 Radiated emissions
- Compliant with EN 50081-1 and EN 50082-1

### SPECIFICATIONS @ 20°C

<b>INPUT</b>	
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) UP scale standard (DOWN scale to order)
Burn Out	> 1M ohm
Impedance	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.
Cold Junction	±0.2°C @ 20°C ±0.05°C/°C Typical
CJ Accuracy	
<b>OUTPUT</b>	
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
<b>GENERAL</b>	
Supply	10-30 V DC
Load	700 ohms @24V
Thermal Stability	2µV/°C plus 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

### MECHANICAL DETAILS



### ENCLOSURE

Case Material	Polyamide (Grey)
Case Flammability	To UL94-V0 VDE 0304 Part 3 Level IIIA
Mounting	Top Hat rail to DIN EN 50022-35
Protection	IP20
Connections	Captive screw connections
Cable Size	4mm sq solid/2.5mm sq stranded



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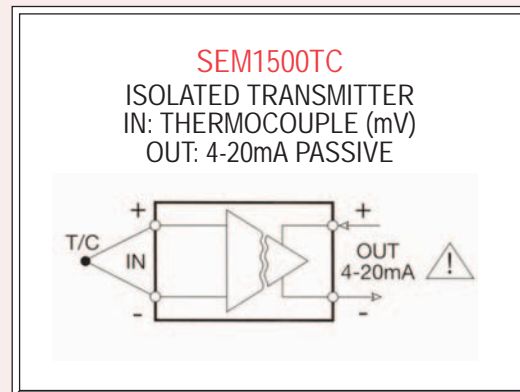
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## STANDARD RANGES

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

Range °C		THERMOCOUPLE TYPE						milli volt
from	to	N	K	T	J	R	S	V
0	100	.	.	.	.			
0	200	.	.	.	.			
0	400	.	.	.	.			
0	600	.	.	.	.			
0	800	.	.	.	.			
0	1000	.	.			.	.	
0	1200	.	.			.	.	
0	1600	.	.			.	.	
Range mV								
0	50mV							.

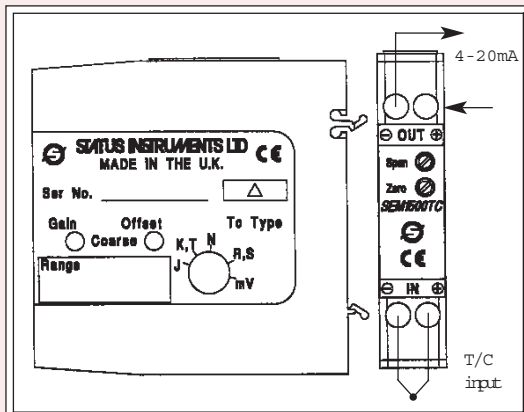
## CONNECTION DIAGRAM



## 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.



INPUT type	OFFSET RANGE °C	GAIN RANGE °C
	4mA	4-20mA
K T/C	-200 to 400	100 to 1200
T T/C	-200 to 300	100 to 400
J T/C	-200 to 400	70 to 750
N T/C	200 to 400	150 to 1200
R T/C	0 to 1000	500 to 1700
S T/C	0 to 1000	500 to 1760
V m/V	-5 to +15 mV	3 to 50 mV

## ORDER CODE single units standard range

SEM1500 / Input type

/ value @ 4 mA

/ value @ 20 mA

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:-

SEM1000 series

ISOLATORS

SEM1100

POWERED ISOLATING CONVERTOR

SEM1300

POWER SUPPLY

SEM215

UNIVERSAL TEMPERATURE/TRANSMITTER

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.