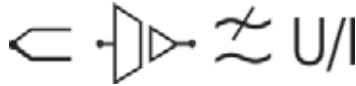


Product information

Signal Conditioning Mounting-Rail Modules

TSA-TC



Characteristics

The **TSA-TC Module** offers signal conditioning of thermocouples (standard types J, K and T). Linearisation is done by the module. Maximum measurement range (type K) is -100°C to 1200°C. The standard module has a fixed range (-100°C to +100°C, or +200°C, +500°C, +1000°C, +1200°C) plus type to be specified with order. Calibration is done for this range. Optionally up to three switchable ranges are selectable. The CJC is integrated in the connector, cable break is indicated by an LED. Depending on the base configuration the module has voltage and current outputs.

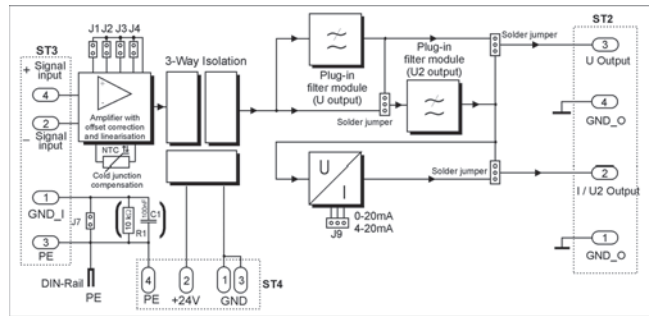
Technical Data

Supply voltage	24 V DC ± 10 %
Power consumption at nominal voltage (without sensor / without load)	90 mA
Electrical isolation (3-way isolation)	1000 V DC
Accuracy^{*1}	0.2 %
Cut-off frequency (standard / maximum)	10 Hz / 5 kHz
Linearity (typical)	0.1 %
Input Thermocouple Input resistance	Type K, J, T ² , R ³ 10 MΩ
Output – Voltage Output range (V1 / V2)	± 10 V / 0..10 V
Output – Current Output range (A1 / A2 / A3)	± 20 mA / 0..20 mA / 4..20 mA
Max. load current (U output)	± 10 mA
Residual ripple @ f _g = 5 kHz	typ. 2 mV _{pp}
Cable break	red LED
Ranges Maximum range Standard ranges (selectable) Minimum range Ranges per module (standard) Maximum numbers	-250°C..+1200°C 200, 500, 1000, 1200°C -100°C..+100°C 1 4
Environmental temperature	0..50 °C
Plug-in filter Standard frequencies in Hz	10, 30, 50, 100, 300, 500, 1 k, 3 k, 5 k, 10 k

Remarks to technical data:

- *¹ Input connector must be attached for 30 minutes to module. A possible offset can be corrected with trimmer ZERO-A
- *² Accuracy for type T is only met up to -230°C with negative range.
- *³ Accuracy for type R is only met with positive range, with negative range deviation is < 1%.

Block Diagram



Dimensions

Housing ME 22.5: 22.5 x 99 x 114.5 mm (WxHxD)

Ordering Code

TSA-TC - - - / - / - /

1. Model	
1	1 output
2	2 outputs
2. Type	
ABC	enter J, K, R, T
	other linearisation
3. Measuring ranges (°C)	
T1	-100..+100
T2	-100..+200
T5	-100..+500
T10	-100..+1000
T12	-100..+1200
	Non-standard value -250..+1200 °C
4. Output filter frequencies (Hz)	
XXX	Enter standard values:10, 30, 50, 100, 300, 500,1k, 3k, 5k, 10k
	Enter non- standard value: 1..30k
5. Filter characteristics	
BW	Butterworth 4th order
BS	Bessel 4th order
BW8	Butterworth 8th order (for 1 output only)
BS8	Bessel 8th order (for 1 output only)
6. Output (not all combinations feasible)	
V1	± 10 V
V2	0..10 V
A1	± 20 mA
A2	0..20 mA
A3	4..20 mA

Example: TSA-TC1-K-T10-10-BW-V1