

Key Characteristics

Suitability	K, J, N, E, T, R, S Thermocouples Plus mV
Configuration	Using USB Port Powered Configurator
Input	Isolated
Over-range	LED Indication
Output	(4 to 20) mA

For more information about our Temperature Assemblies, please [click here](#).



TR206TC Model

Product Description

The TR206TC is a **cost effective “smart” in head transmitter** that accepts **thermocouple** temperature sensors and converts sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal.

PC configuration allows the user to select TC type, range, units and burnout direction, without requiring calibration equipment. Configuration is performed quickly using our new USB port driven configurator by simply connecting two clips to the TR206TC loop terminals and following the software instructions. Calibration set up may be saved as a file on the PC for later use.

The TR206TC in head transmitter incorporates the latest digital technology to ensure accurate drift free performance.

If required the desired range can be specified at the time of order, removing the need for user configuration. If the range is not specified then the transmitter will be shipped with the default range of (0 to 1000) °C type K.

Configuration Method

Equipment

- Computer - Running Windows 7 or later with USB port
- USB configurator suite - Comprising: USB Configurator, Leads and download software

Method

- Load PC with USB_SPEEDLINK software
- Connect USB Configurator to PC USB port using cable
- Connect Tool clips to TR206TC Loop Terminals Red (+) Black (-)
- Run software, set configuration required and save to device

Specification @ 20 ° C

Input

Sensor	Range (°C)	Accuracy
K	-200 to 1370	± 0.1% of F.S. ± 0.5 °C (plus any sensor error)
J	-100 to 1200	± 0.1% of F.S. ± 0.5 °C (plus any sensor error)
E	-200 to 1000	± 0.1% of F.S. ± 0.5 °C (plus any sensor error)
N	-180 to 1300	± 0.1% of F.S. ± 0.5 °C (plus any sensor error)
T	-200 to 400	± 0.2% of F.S. ± 0.5 °C (plus any sensor error)
R	-10 to 1760	± 0.1% of F.S. ± 0.5 °C over the range 800 to 1600 (plus any sensor error)
S	-10 to 1760	± 0.1% of F.S. ± 0.5 °C over the range 800 to 1600 (plus any sensor error)

Range (mV)

mV	-10 to 70	± 0.02% of full scale
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Isolation	Tested to 250 V dc
Sensor Burnout	Either up or down scale output
Cold Junction	Range (-40 to 85) °C; Accuracy ± 0.5 °C Tracking ± 0.05 °C / °C
Stability (-20 to 70)	± 0.15 °C / °C at zero ± 0.1 °C / °C at span

Specification @ 20 ° C

Output

Output Type	2 wire (4 to 20) mA current loop
Output range	4.0 mA to 20.0 mA
Output Connection	Screw Terminal
Maximum output	21.5 mA (in high burnout condition)
Minimum output	3.8 mA (in low burnout condition)
Accuracy	(mA output / 2000) or 5 uA (Which ever is the greater)
Loop Voltage effect	± 0.2 uA / V
Thermal drift	± 1 uA / °C
Maximum output load	$[(V_{supply}-12)/20]$ K Ohms (Example 600 Ohms @ 24 V)

General specification

Update time	500 ms
Response time	1 second
Start up time	Within 8 seconds (Output < 4 mA during start up)
Warm-up time	1 minute to full accuracy
Power Supply	(12 to 30) Volts dc SELV

Environmental

Ambient operating range	(-40 to +85) °C
Ambient storage temperature	(-50 to +90) °C
Ambient humidity range	(10 to 90) % RH non condensing

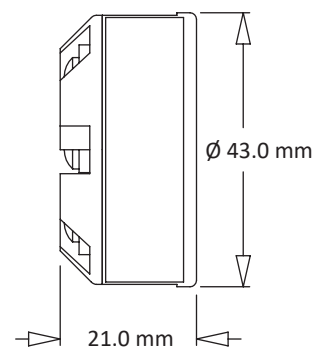
Physical

Dimensions	43 mm diameter; 21 mm height
Weight	31 g (encapsulated)

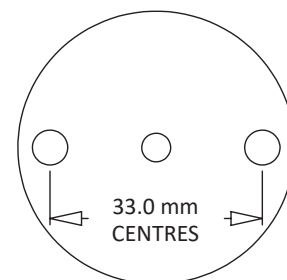
Approvals

EMC - BS EN 61326	Electrical equipment for measurement control and laboratory use.
ANNEX A	Immunity test requirements for equipment intended for use in industrial locations.
ANNEX F	Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.
IEC 61000-4-2	Electrostatic discharge
IEC 61000-4-3	EM Field
IEC 61000-4-4	Transient Burst (output)
IEC 61000-4-5	Surge (output)

Mechanical -Side view

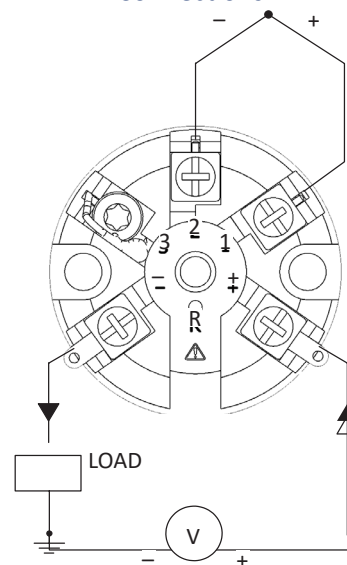


Mechanical - Base view



Fixing holes 2 x Ø 5.5 mm

Electrical - Internal Wiring Connections



Note - Sensor input wires to be less than 3 meters to comply.