



TEM203 Temperature Transmitters

The Tempatron TEM203 in-head mounting temperature transmitters isolate and convert temperature measurement signals over a configured range to a 4-20mA process output signal.

The range consists of two versions, the TEM203P accepts PT100 RTD inputs and the TEM203T accepts seven common thermocouple types or a DC mV signal and both are loop powered from 10 to 30Vdc.

The transmitters can be configured by a simple push button procedure enabling selection of thermocouple type (TEM203T only), desired temperature range, burnout direction and trimming of 4mA and 20mA outputs. If required, a desired temperature range can be specified upon ordering.

Models Available

TEM203P PT100 RTD or Resistance Input Temperature Transmitter

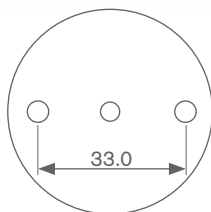
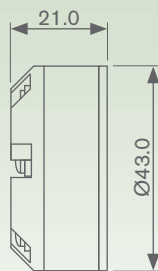
TEM203T Thermocouple or DC mV Input Temperature Transmitter

Product Features

- PT100 RTD input
- J, K, T, N, E, R or S type thermocouple or mV input
- 4-20mA two wire output
- Isolated input
- Simple push button configuration
- 10-30Vdc loop powered
- In-head mounting enclosure
- Programmable burnout
- Screw type fingerproof terminals

For converting/isolating temperature or DC mV into a 4-20mA process signal

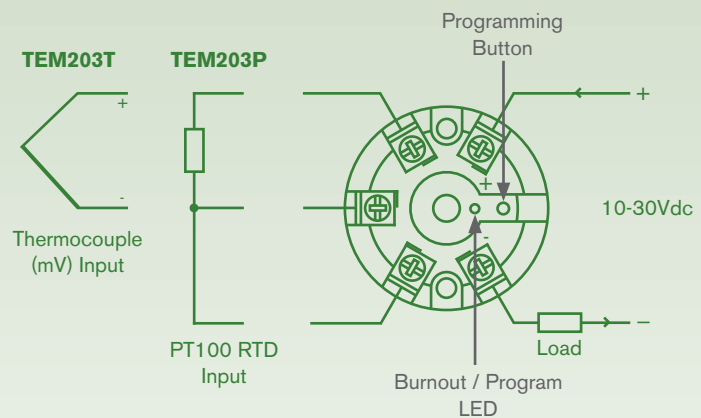
Dimensions



Fixing holes 2 x Ø5.5mm
Centre hole Ø4.0mm

All dimensions in mm

Connections



Ordering information

Model	Code	Description
	TEM203P	RTD Temperature Transmitter PT100 (-200 to 850°C)
	TEM203T	Thermocouple Temperature Transmitter Thermocouples: K Type (-200 to 1370°C) J Type (-100 to 1200°C), E Type (-200 to 1000°C) N Type (-180 to 1300°C), T Type (-200 to 400°C) R & S Type (-10 to 1760°C), mV (-10 to 70mV)

Example	TEM203P
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SEM203T Fixed Ranges

	K, J, E & N Type T/C Inputs (°C)	T Type T/C Inputs (°C)	R & S Type T/C Inputs (°C)	mV Inputs
1	User	User	User	User
2	0 to 1000	0 to 400	800 to 1760	0 to 70
3	0 to 1200	0 to 250	800 to 1600	0 to 5
4	0 to 600	0 to 200	800 to 1400	0 to 10
5	0 to 500	0 to 150	1000 to 1760	0 to 20
6	0 to 250	0 to 100	1000 to 1600	0 to 25
7	0 to 100	0 to 50	1000 to 1400	0 to 50
8	-100 to 100	-100 to 150	0 to 1600	-10 to 10

SEM203P Configuration

A decade box (or resistance equivalent value for the low and high temperature values) will be required for the desired range to be set. A single push button and LED indicator allow the user to navigate three menus, allowing configuration of the transmitter.

The configuration menus are as follows:-

- Menu 1 Configure range.
- Menu 2 Select burnout direction (up or down scale output)
- Menu 3 Trim output current at either 4mA or 20mA

SEM203T Configuration

Two levels of configuration are available to the user, basic and advanced. The first basic level allows the user to re-range the transmitter. This level allows the user to identify the input type by counting the number of program LED flashes on power up. The input type cannot be changed on this level of configuration.

In the advanced configuration level the single push button and two LED indicators are used to allow the user to navigate through a series of five menus, allowing full configuration of the transmitter.

The advanced user configuration menus are as follows:-

- Menu 1 Select input type (K, J, E, N, T, R, S thermocouple or mV)
- Menu 2 Select either a user configured range or select 1 of 7 (per input) fixed ranges
- Menu 3 Select burnout direction (up or down scale output)
- Menu 4 Trim output current at either 4mA or 20mA
- Menu 5 Reset to factory default settings and clear user trim

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TEMPATRON

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Specification**Accuracy:**

- Input: $\pm 0.2^\circ\text{C} \pm 0.05\%$ of reading
- Output: mA output / 2000 or 5 μA (whichever is greater)

Power Supply Voltage:

- 10 to 30Vdc

TEM203P Input Sensor:

- 2 or 3 wire RTD PT100

TEM203P Sensor Range:

- -195 to +845°C (18 to 390ohms)

Minimum Span:

- 25°C

TEM203T Input Sensor:

- K, J, E, N, T, R & S type thermocouples
- -10 to +70mV

Output:

- 2 wire 4-20mA current loop

Maximum & Minimum Output:

- 21.5mA in high burnout condition
- 3.9mA in low burnout condition

Operating Temperature & Humidity:

- -40°C to 85°C (Full accuracy only between -30 and 75°C)
- 10% to 90% rH (non-condensing)

Enclosure:

- Grey polyimide 6.6 self extinguishing
- Screw terminals (2.5mm max.)
- Case IP40

Weight:

- 40g

Approval:

- BS EN 61326

Markings:

- CE marked (meets EN61010-1 low voltage and EN50081-1/50082-1 EMC directives)

Specification subject to change without notice.