



## TEM213 Temperature Transmitters

The Tempatron TEM213 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 TEM213P accepts RTD inputs (including PT100, Ni or Cu sensors) and the TEM213T accepts seven common thermocouple types or a DC mV signal. The signal conditioners are housed in a compact DIN rail mounting enclosure and are loop powered from 10 to 30Vdc.

The transmitters can be configured by a simple push button procedure enabling selection of RTD or thermocouple type, fixed range, burnout direction and trimming of 4mA and 20mA outputs.

### Models Available

**TEM213P** RTD or Resistance Input Temperature Transmitter

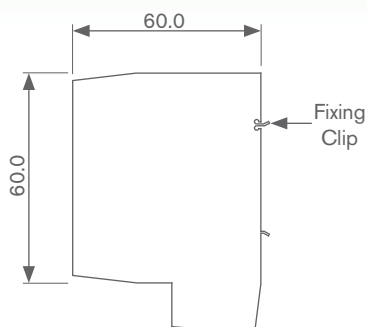
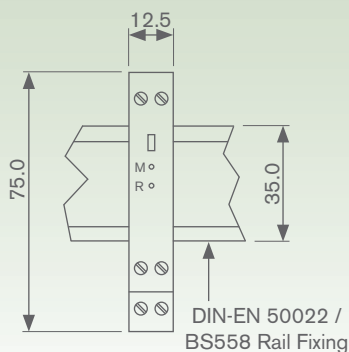
**TEM213T** Thermocouple or DC mV Input Temperature Transmitter

### Product Features

- RTD (PT100, Ni100/120, Cu100/53) or resistance 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
- Slimline 12.5mm wide enclosure
- DIN rail mounting
- Screw type fingerproof terminals

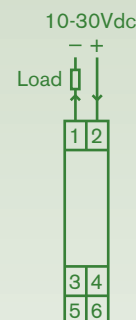
## For converting/isolating temperature or DC mV into a 4-20mA process signal

### Dimensions



All dimensions in mm

### Connections



#### TEM213P

PT100 RTD  
Input



#### TEM213T

Thermocouple (mV)  
Input



**Ordering information**

| Model          | Code           | Description   |
|----------------|----------------|---|
|                | TEM213P        | RTD Temperature Transmitter<br>PT100 (-200 to 850°C), Ni100 (-60 to 180°C)<br>Ni120 (-80 to 260°C), Cu100 (-80 to 260°C)<br>Cu53 (-50 to 180°C), Resistance (10 to 400ohms)   |
|                | TEM213T        | Thermocouple Temperature Transmitter<br>Thermocouples: K Type (-200 to 1370°C)<br>J Type (-100 to 1200°C), E Type (-200 to 1000°C)<br>N Type (-180 to 1300°C), T Type (-200 to 400°C)<br>R & S Type (-10 to 1760°C), mV (-10 to 70mV) |
| <b>Example</b> | <b>TEM213P</b> |   |

**SEM213P Fixed Ranges****SEM213T Fixed Ranges**

|   | PT100<br>Inputs<br>(°C) | Ni100 /<br>Cu53<br>Inputs<br>(°C) | Ni120 /<br>Cu100<br>Inputs<br>(°C) | Resistance<br>Inputs<br>ohms | K, J, E & N<br>Type T/C<br>Inputs<br>(°C) | T Type<br>T/C<br>Inputs<br>(°C) | R & S Type<br>T/C<br>Inputs (°C) | mV<br>Inputs |
|---|-------------------------|-----------------------------------|------------------------------------|------------------------------|---|---------------------------------|----------------------------------|--------------|
| 1 | User                    | User                              | User                               | User                         | User                                      | User                            | User                             | User         |
| 2 | 0 to 50                 | 0 to 50                           | 0 to 50                            | 0 to 50                      | 0 to 1000                                 | 0 to 400                        | 800 to 1760                      | 0 to 70      |
| 3 | 0 to 100                | 0 to 100                          | 0 to 100                           | 0 to 100                     | 0 to 1200                                 | 0 to 250                        | 800 to 1600                      | 0 to 5       |
| 4 | 0 to 150                | 0 to 150                          | 0 to 150                           | 0 to 150                     | 0 to 600                                  | 0 to 200                        | 800 to 1400                      | 0 to 10      |
| 5 | 0 to 200                | 0 to 180                          | 0 to 260                           | 0 to 200                     | 0 to 500                                  | 0 to 150                        | 1000 to 1760                     | 0 to 20      |
| 6 | -20 to 30               | -20 to 30                         | -20 to 30                          | 0 to 250                     | 0 to 250                                  | 0 to 100                        | 1000 to 1600                     | 0 to 25      |
| 7 | -30 to 70               | -30 to 70                         | -30 to 70                          | 0 to 300                     | 0 to 100                                  | 0 to 50                         | 1000 to 1400                     | 0 to 50      |
| 8 | -100 to 100             | -100 to 100                       | -100 to 100                        | 0 to 400                     | -100 to 100                               | -100 to 150                     | 0 to 1600                        | -10 to 10    |

**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
- 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

**Specification****Accuracy:**

- mA output / 2000 or 5µA  
(whichever is greater)

**Power Supply Voltage:**

- 10 to 30Vdc

**TEM213P Input Sensor:**

- 3 wire RTD (PT100, Ni100, Ni120, Cu100, Cu53)
- 10 to 400ohms

**TEM213T 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:**

- -20°C to 70°C
- 10% to 90% rH (non-condensing)

**Enclosure:**

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

**Weight:**

- 70g

**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.

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# TEMPATRON

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