

## Product Features

- Programmable input : T/C or RTD
- 2-wire loop powered 4-20mA output
- 2, 3 or 4-wire RTD and thermocouples with linear output
- Configuration on a PC with the TxConfig-HART interface
- Cold junction compensation for thermocouples
- Galvanic isolation: 1.5 KV

## Description

MP300i series is a high performance temperature transmitter which converts RTDs, Thermocouples and voltage signals into a 4-20mA current along with a superimposed HART protocol digital communication.

Complete configuration, calibration and parameters monitoring can be fully achieved through the two-wire current loop by means of a convenient PC software and USB interface called TxConfig-HART.

Sensor type input is fully programmable for most relevant RTDs, thermocouples, variable resistors, and voltage in mV.

High Isolation between input and output drastically improves stability and reliability with greater immunity to electromagnetic noises in extremely harsh industrial environments.

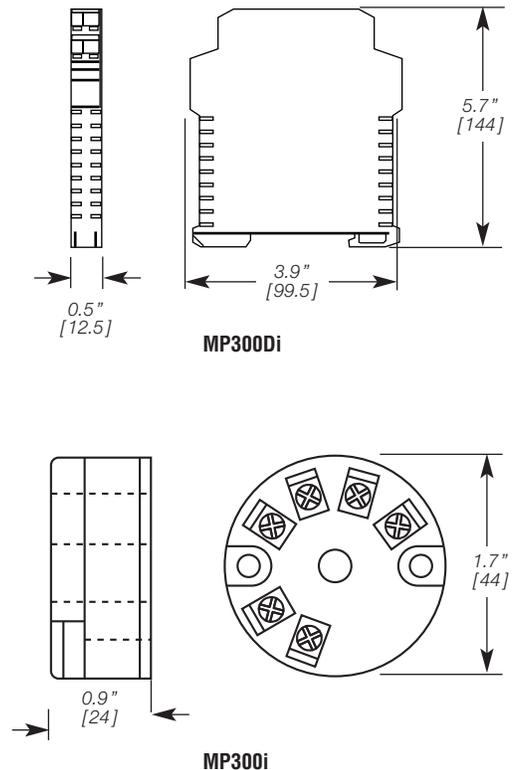


Table 1

| Sensor Type ( Code ) | Range                             | Min. Span |
|----------------------|-----------------------------------|-----------|
| T/C K (K)            | -270 to 1372 °C (-454 to 2502 °F) | 100 °C    |
| T/C J (J)            | -210 to 1200 °C (-346 to 2192 °F) | 50 °C     |
| T/C R (R)            | -50 to 1768 °C (-58 to 3214 °F)   | 500 °C    |
| T/C S (S)            | -50 to 1768 °C (-58 to 3214 °F)   | 500 °C    |
| T/C T (T)            | -270 to 400 °C (-454 to 752 °F)   | 50 °C     |
| T/C N (N)            | -270 to 1300 °C (-454 to 2372 °F) | 50 °C     |
| T/C E (E)            | -270 to 1000 °C (-454 to 1832 °F) | 50 °C     |
| T/C B (B)            | 0 to 1820 °C (32 to 3308 °F)      | 500 °C    |
| Rtd Pt100 (P1)       | -200 to 850 °C (-328 to 1562 °F)  | 20 °C     |
| Rtd Pt500 (P2)       | -200 to 250 °C (-328 to 482 °F)   | 40 °C     |
| Rtd Pt1000 (P3)      | -200 to 250 °C (-328 to 482 °F)   | 40 °C     |
| Rtd Cu50 (C1)        | -50 to 150 °C (-58 to 302 °F)     | 40 °C     |
| Rtd Cu500 (C2)       | -50 to 150 °C (-58 to 302 °F)     | 40 °C     |
| *Rtd Ni100 (N1)      | -60 to 180 °C (-76 to 356 °F)     | 50 °C     |
| *Rtd Ni500 (N2)      | -60 to 180 °C (-76 to 356 °F)     | 20 °C     |
| *Rtd Ni1000 (N3)     | -60 to 150 °C (-76 to 302 °F)     | 20 °C     |
| Voltage (V1)         | -10 to 75 mV                      | 20 mV     |
| Voltage (V2)         | -100 to 100 mV                    | 20 mV     |
| Voltage (V3)         | -100 to 500 mV                    | 20 mV     |
| Voltage (V4)         | -100 to 2000 mV                   | 20 mV     |
| Resistance (R1)      | 0 to 400 Ohms                     | 20 Ohms   |
| Resistance (R2)      | 0 to 2000 Ohms                    | 20 Ohms   |

\*  $\alpha$  = 5000 ppm/K or 6180 ppm/K

## Dimensions



## Specifications

|  |   |
|--|---|
| <b>Sensor input :</b>                  | User defined. The supported sensors are listed in Table 1, along with their maximum ranges. |
| <b>Thermocouples :</b>                 | Types J, K, R, S, T, N, E and B, according to IEC 60584. Impedance >> 1M $\Omega$           |
| <b>Pt100 :</b>                         | Excitation : 0.35 mA. $\alpha = 0.00385$ , according to IEC 60751                           |
| <b>Voltage :</b>                       | 0 to 50mVDC. Impedance >> 1M  |
| <b>Total accuracy :</b>                | Better than 0.3% of the maximum range for thermocouples and 0.2% for Pt100 and voltage      |
| <b>Output :</b>                        | 2-wire 4-20mA, loop powered   |
| <b>Resolution :</b>                    | 0.3 $\mu$ A (12 bits).  |
| <b>Power supply :</b>                  | 12 to 35VDC, across the transmitter   |
| <b>Maximum load (RL) :</b>             | $RL (max.) = (V_{supply} - 7.5) / 0,0208 [\Omega]$  |
| <b>Operating Temperature :</b>         | -40 to 85°C   |
| <b>Humidity :</b>                      | 20 to 90% RH  |
| <b>Protection :</b>                    | MP300Di : IP54<br>MP300i : IP40   |
| <b>Electromagnetic compatibility :</b> | EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6  |
| <b>Dimensions :</b>                    | MP300Di : 14 mm (H) x 99.5 mm (D) x 12.5 mm (W)<br>MP300i : 24 mm (H) x 44 mm (Dia)         |

**Cold Junction Compensation for Thermocouples.**

**Internal protection against polarity inversion in the loop voltage.**

**Recommended wire gauge: 0.14 a 1.5 mm<sup>2</sup>. Torque: 0.8 Nm.**

- Information furnished by Intempco is believed to be accurate and reliable. However, no responsibility is assumed by Intempco for its use.
- Specifications subject to change without notice.

## Custom Builder

| Model   | Input Code  | Range         |
|---------|---|---------------|
| MP300i  | P, V1, V2, V3, V4, K, J, R, S, T, N, E, B, N1, N2, N3, C1, C2, P1, P2, P3 | ( ___ / ___ ) |
| MP300Di | P, V1, V2, V3, V4, K, J, R, S, T, N, E, B, N1, N2, N3, C1, C2, P1, P2, P3 | ( ___ / ___ ) |

Ex.: **MP300i - J - (0/100°C)**