

## INPUT

## Resistance Thermometer (RTD)

| TYPE                                                                                                                           | STANDARDS                | MEASUREMENT RANGE                                                                                   |                                                                                | MINIMUM RANGE                                                    |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------|
| Pt100 ( $\alpha = 0.00385\text{ }^{\circ}\text{C}^{-1}$ )<br>Pt200<br>Pt500<br>Pt1000                                          | ASTM E1137<br>IEC 60 751 | (-200 to 850) °C<br>(-200 to 850) °C<br>(-200 to 250) °C<br>(-200 to 250) °C                        | [-328 to 1562] °F<br>[-328 to 1562] °F<br>[-328 to 482] °F<br>[-328 to 482] °F | 10 °C [18 °F]<br>10 °C [18 °F]<br>10 °C [18 °F]<br>10 °C [18 °F] |
| Pt100 ( $\alpha = 0.003916$ )                                                                                                  | JIS C1604                | (-200 to 649) °C                                                                                    | [-328 to 1200] °F                                                              | 10 °C [18 °F]                                                    |
| Pt100 ( $\alpha = 0.003923$ )                                                                                                  | SAMA                     | (-100 to 700) °C                                                                                    | [-148 to 1292] °F                                                              | 10 °C [18 °F]                                                    |
| Ni100 ( $\alpha = 0.006180$ )<br>Ni1000 ( $\alpha = 0.006180$ )                                                                | DIN 43 760               | (-60 to 250) °C<br>(-60 to 150) °C                                                                  | [-76 to 482] °F<br>[-76 to 302] °F                                             | 10 °C [18 °F]<br>10 °C [18 °F]                                   |
| Ni120 ( $\alpha = 0.006720$ )<br>Cu10 ( $\alpha = 0.004274$ )                                                                  | Edison Curve             | (-70 to 270) °C<br>(-100 to 260) °C                                                                 | [-94 to 518] °F<br>[-148 to 500] °F                                            | 10 °C [18 °F]<br>10 °C [18 °F]                                   |
| Pt50 ( $\alpha = 0.003911$ )<br>Pt100 ( $\alpha = 0.003911$ )<br>Cu50 ( $\alpha = 0.004278$ )<br>Cu100 ( $\alpha = 0.004278$ ) | GOST                     | (-200 to 1100) °C<br>(-200 to 850) °C<br>(-200 to 200) °C<br>(-200 to 200) °C                       | [-328 to 2012] °F<br>[-328 to 1562] °F<br>[-328 to 392] °F<br>[-328 to 392] °F | 10 °C [18 °F]<br>10 °C [18 °F]<br>10 °C [18 °F]<br>10 °C [18 °F] |
| Polynomial RTD<br>Pt100 (Callendar - van Dusen)                                                                                |                          | (-200 to 850) °C<br>(-200 to 850) °C                                                                | [-328 to 1562] °F<br>[-328 to 1562] °F                                         | 10 °C [18 °F]<br>10 °C [18 °F]                                   |
| Connection type                                                                                                                |                          | 2-, 3- or 4-wire connection cable resistance compensation possible in the 2 wire system (0 to 30) Ω |                                                                                |                                                                  |
| Sensor cable resistance                                                                                                        |                          | 3-wire and 4-wire connection, sensor wire resistance to maximum 50 Ω per wire                       |                                                                                |                                                                  |
| Sensor current                                                                                                                 |                          | ≤ 0.3 mA                                                                                            |                                                                                |                                                                  |

## Resistance (Ω)

| TYPE           | MEASUREMENT RANGE               | MINIMUM RANGE |
|----------------|---------------------------------|---------------|
| Resistance (Ω) | (10 to 400) Ω<br>(10 to 2000) Ω | 10 Ω<br>100 Ω |

## Thermocouples (TC) (ASTM E230)

| TYPE                          | MEASUREMENT RANGE                                        |                   | MINIMUM RANGE   |
|-------------------------------|----------------------------------------------------------|-------------------|-----------------|
| B (PtRh30-PtRh6)              | (0 to 1820) °C                                           | [32 to 3308] °F   | 500 °C [900 °F] |
| C (W5Re-W26Re)                | (0 to 2320) °C                                           | [32 to 4208] °F   | 500 °C [900 °F] |
| D (W3Re-W25Re) <sup>[1]</sup> | (0 to 2495) °C                                           | [32 to 4523] °F   | 500 °C [900 °F] |
| E (NiCr-CuNi)                 | (-270 to 1000) °C                                        | [-454 to 1832] °F | 50 °C [90 °F]   |
| J (Fe-CuNi)                   | (-210 to 1200) °C                                        | [-346 to 2192] °F | 50 °C [90 °F]   |
| K (NiCr-Ni)                   | (-270 to 1372) °C                                        | [-454 to 2501] °F | 50 °C [90 °F]   |
| L (Fe-CuNi) <sup>[2]</sup>    | (-200 to 900) °C                                         | [-328 to 1652] °F | 50 °C [90 °F]   |
| N (NiCrSi-NiSi)               | (-270 to 1300) °C                                        | [-454 to 2372] °F | 50 °C [90 °F]   |
| R (PtRh13-Pt)                 | (-50 to 1768) °C                                         | [-58 to 3214] °F  | 500 °C [900 °F] |
| S (PtRh10-Pt)                 | (-50 to 1768) °C                                         | [-58 to 3214] °F  | 500 °C [900 °F] |
| T (Cu-CuNi)                   | (-270 to 400) °C                                         | [-454 to 752] °F  | 50 °C [90 °F]   |
| U (Cu-CuNi) <sup>[2]</sup>    | (-200 to 600) °C                                         | [-328 to 1112] °F | 50 °C [90 °F]   |
| Cold junction                 | internal (Pt100) or external (0 to 80) °C [32 to 176] °F |                   |                 |
| Cold junction accuracy        | ± 1 °C                                                   |                   |                 |
| Max. sensor resistance        | 10 kΩ                                                    |                   |                 |
| [1] According to ASTM E1751   |                                                          |                   |                 |
| [2] according to DIN 43 710   |                                                          |                   |                 |

## Voltage (mV)

| TYPE           | MEASUREMENT RANGE | MINIMUM RANGE |
|----------------|-------------------|---------------|
| Millivolt (mV) | (-20 to 100) mV   | 5 mV          |

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