

INPUT

Complete Specifications are listed in the T142 Manual available at www.pyromation.com/TechInfo/Docs/aspix or scan QR code



Resistance Thermometer (RTD)

AS PER STANDARD	DESIGNATION	MEASURING RANGE LIMITS	MINIMUM SPAN
IEC 60751:2008	Pt100 ($\alpha = 0.00385\text{ }^{\circ}\text{C}^{-1}$) Pt1000 ($\alpha = 0.00385\text{ }^{\circ}\text{C}^{-1}$)	(-200 to 850) °C [-328 to 1562] °F (-200 to 250) °C [-328 to 482] °F	(10) °C [18] °F (10) °C [18] °F
JIS C1604:1984	Pt100 ($\alpha = 0.00392\text{ }^{\circ}\text{C}^{-1}$)	(-200 to 510) °C [-328 to 950] °F	(10) °C [18] °F
	Pt100 (Callendar van Dusen)	The measuring range limits are specified by entering the limit values that depend on the coefficients A to C and R0.	(10) °C [18] °F
	Connection Type: 2-, 3- or 4-wire connection, sensor current: $\leq 0.3\text{ mA}$ With 2-wire circuit, compensation of wire resistance possible (0 to 30 Ω) With 3- and 4-wire connection, sensor wire resistance up to maximum 50 Ω per wire		
Resistance Transmitter	Resistance Ω	(10 to 400) Ω (10 to 2000) Ω	10 Ω 10 Ω

Thermocouples (TC)

AS PER STANDARD	DESIGNATION	MEASURING RANGE LIMITS	RECOMMENDED TEMPERATURE RANGE	MINIMUM SPAN
IEC 60584-1, ASTM E230-2003	B (PtRh30-PtRh6) E (NiCr-CuNi) J (Fe-CuNi) K (NiCr-Ni) N (NiCrSi-NiSi) R (PtRh13-Pt) S (PtRh10-Pt) T (Cu-CuNi)	(40 to 1820) °C [104 to 3308] °F (-250 to 1000) °C [-482 to 1832] °F (-210 to 1200) °C [-346 to 2192] °F (-270 to 1372) °C [-454 to 2501] °F (-270 to 1300) °C [-454 to 2372] °F (-50 to 1768) °C [-58 to 3214] °F (-50 to 1768) °C [-58 to 3214] °F (-200 to 400) °C [-328 to 752] °F	(500 to 1820) °C [932 to 3308] °F (-150 to 1000) °C [-238 to 1832] °F (-150 to 1200) °C [-238 to 2192] °F (-150 to 1200) °C [-238 to 2192] °F (-150 to 1300) °C [-238 to 2372] °F (50 to 1768) °C [122 to 3214] °F (50 to 1768) °C [122 to 3214] °F (-150 to 400) °C [-238 to 752] °F	(50) °C [90] °F (50) °C [90] °F (50) °C [90] °F (50) °C [90] °F (50) °C [90] °F (50) °C [90] °F (50) °C [90] °F (50) °C [90] °F
DIN 43710	U (Cu-CuNi)	(-200 to 600) °C [-328 to 1112] °F	(-150 to 600) °C [-238 to 1112] °F	(50) °C [90] °F
	Internal reference junction (Pt100) External preset value: Configurable value (-40 to 85) °C [-40 to 185] °F Maximum sensor wire resistance 10 k Ω (If the sensor wire resistance is greater than 10 k Ω , an error message is output in accordance with NAMUR NE89.)			
Voltage transmitter (mV)	Millivolt transmitter (mV)	(-20 to 100) mV	-	5 mV

OUTPUT

Output Signal

Analog Output	(4 to 20) mA or (20 to 4) mA (can be inverted)
Transmission as	Temperature linear, resistance linear, voltage linear
Filter 1st	1st order digital filter: (0 to 120) s
Current Consumption	3.6 to 23 mA
-	Minimum Current Consumption 3.5 mA
-	Current Limit $\leq 23\text{ mA}$
Switch on delay	• $\leq 2\text{ s}$ until the start of HART® Communication • $\leq 7\text{ s}$, until the first valid measured value signal is present at the current output While switch-on delay = $I_a \leq 3.8\text{ mA}$
Electronic response time	1 s

Failure Mode per NAMUR NE43

Undershooting measurement range	Linear decrease from 4.0 to 3.8 mA
Exceeding measurement range	Linear increase from 20.0 to 20.5 mA
Sensor breakage/short circuit ^[1]	$\leq 3.6\text{ mA}$ or $\geq 21.0\text{ mA}$

Electrical Connection

Supply Voltage ^[1]	Values for non-hazardous areas, protected against polarity reversal: $U = 11\text{ to }36\text{ V}_{\text{DC}}$ Standard
Galvanic isolation (In/out)	$\hat{U} = 2\text{ kV AC}$ for 1 minute (input/output)

[1] Values for hazardous area, see Ex Documentation

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