Series 440 Programmable RTD Temperature Transmitter Specifications

Resistance Thermometer Input (RTD)

TYPE	MEASUREMENT RANGE	MINIMUM RANGE
Pt100 (α = 0.003 85 °C^{-1})	(-200 to 650) °C [-328 to 1202] °F	10 ˚C [18 ˚F]
Connection Type	2- or 3-wire connection cable resistance compensation possible in the 2-wire system (0 to 20) Ω	
Sensor cable resistance	maximum 11 Ω per cable	
Sensor current	≤ 0.6 mA	

Output (Analog)

Output signal	(4 to 20) mA or (20 to 4) mA
Transmission as	Temperature linear
Maximum load	($V_{power\ supply}$ - 10 V) / 0.022 A (current output)
Digital filter 1st degree	(0 to 8) s
Induced current required	≤ 3.5 mA
Current limit	≤ 23 mA
Switch on delay	4 s (during power 1_a = 3.8 mA)
Electronic response time	1 s

Failure Mode

Undershooting measurement range	Decrease to 3.8 mA
Exceeding measurement range	Increase to 20.5 mA
Sensor breakage/short circuit	≤ 3.6 mA or ≥ 21.0 mA

Electronic Connection

Power supply	U_b = (10 to 35) V dc, polarity protected
Allowable ripple	U_{ss} ≤ 3 V at U_b ≥ 13 V, f_{max} = 1 kHz

Resistance Thermometer Accuracy (RTD)

TYPE	MEASUREMENT ACCURACY
Pt100	± 0.2 °C or 0.08% [1]
Reference conditions	Calibration temperature (23 ± 5) °C [73 ± 9] °F

General Accuracy

Influence of power supply	± 0.01%/V deviation from 24 V [2]
Load influence	± 0.02%/100 Ω [2]
Temperature drift	T_d = ± (15 ppm/°C × (range end value + 200) + 50 ppm/°C × measurement range) × $\Delta\vartheta$ $\Delta\vartheta$ = deviation of the ambient temperature according to the reference condition
Long term stability	≤ 0.1 °C/year [3] or ≤ 0.05%/year [1][3]

[1] % is related to the adjusted measurement range (the value to be applied is the greater)
[2] All data is related to a measurement end value of 20 mA
[3] Under reference conditions