

# Analog Signal for Temperature

Independent 4-20 ma output can be added to any product



A programmable two-wire transmitter is configured to provide an isolated 4-20ma signal in proportion to the temperature. This device accepts a type T thermocouple and can be tied into the cryogenic control system or can operate as an independent device. The device is also capable of supporting either single or dual inputs where both inputs have an effect on the output. The functions available are Sum, Difference, Average, Higher of the two or Lower of the two. This device can provide an accurate and stable signal to a supervisory control, a data acquisition system and environmental monitoring.

This device uses microprocessor technology that yields higher accuracy and long-term stability with lower power consumption. This transmitter performs frequent self-tests and auto-calibration while in service, resulting in very stable, long-term performance. The stability is greater than .1% of span over 12 months.



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### Input Type

Type T Thermocouple

### General Specifications

Minimum Range	2mV
Output	4-20mA
Supply Voltage	9-40VDC (@ no load), reverse polarity protected
Maximum Load	$R_{\max} = (V_{\text{supply}} - 9V) / 20\text{mA}$
Operating Temperature	-40 to 85°C
Storage Temperature	-55 to +125°C
Humidity	0 to 95% RHNC
Response Time	.3 seconds, to 90% of input (>3 updates per second)
Damping Factors	Programmable 0 to 64 seconds, 0 to 120% of input range
Stability	Better than +/- .1% of span for 12 months
Isolation	2000 VDC, input to output
RFI Protection	<1% effect of span at 20-1000MHz and at field strength of 20V/m

### Performance Specifications

Output Resolution	0.015% of span (2.5uA)
Output Linearity (D/A)	Better than 0.02% of output span
Sensor Linearization	Better than 0.2°C for thermocouple
Cold Junction Compensation	Automatic to within +/- 0.7°C for all thermocouples
Temperature Stability	0.015% / °C combined zero and span
Supply Voltage Effect	< +/- 0.003% per volt
Calibration	Automatic, unit includes all the calibration parameters. The unit performs periodic zero & span self-test and auto calibration.
Input Linearity	Better than 0.01% of span (mV input)