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Find the *Sensoray 118* at our website: *Click HERE*

SENSORAY | embedded electronics

Model 118 | VME 8 Channel Smart A/D

Features

- Measures thermocouple, RTD, strain gage, voltage, 4-20 mA, thermistor, and resistance
- 8 sensor channels with differential inputs
- Provides excitation to passive sensors
- Pulsed sensor excitation minimizes sensor self-heating
- Cold-junction compensation for thermocouples
- Each channel configurable for any supported sensor type
- Fully electronic calibration



Description

Model 118 is an 8-channel Smart A/D that offers a cost-effective way to acquire sensor data for any VME bus system. It features 16-bit resolution from eight input channels, each individually programmable for a different sensor type. Analog-to-digital conversion is performed in under 22 milliseconds, providing a 45 channel per second scan rate.

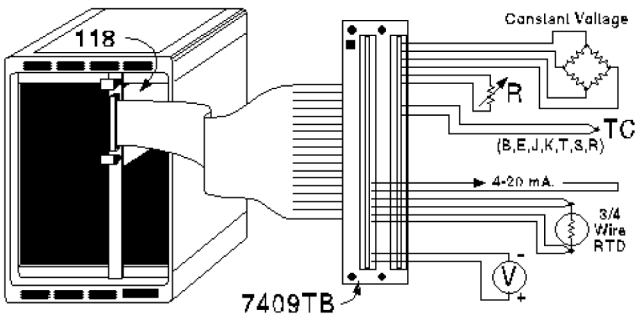
An on-board microcontroller continually scans the sensor channels. Each channel is amplified, digitized, filtered, linearized, converted to engineering units, and stored in on-board memory so it can be instantly read by the host. Signal conditioning is provided for thermistors, RTD's, strain and pressure gauges, and resistance measurements. Standard corrections for non-linear sensors is built in.

A pulsed excitation source is provided for passive resistive sensors to minimize sensor self-heating. Lead loss errors from RTD's, thermistors, and resistors are eliminated with the use of four-wire circuits.

The board periodically samples internal reference standards and uses the sample data to correct offset and gain errors. Factory-calibration data is stored in an EEPROM so that boards may be easily interchanged. Calibration is fully electronic, thereby eliminating trimpots and the need for board access during recalibration.

The 118 board is available with 3U and 6U front panels. Sensor field wiring is accomplished with a 40-conductor flat cable and a remotely mountable screw-termination board.

Example application using external 7409TB breakout board



Specifications

Input resistance	100 MΩ
Maximum input voltage	63 VAC rms
CMRR	95 db/min
Maximum command mode	±5 V
A/D converter	16-bit integrating
Conversion time	22 ms/channel
A/D scan rate	45 samples/second
Operating temperature	-25 to 85 °C
VME interface	A16, D8
Input power	5 V (at 100 mA) 12 V (at 35 mA)

Sensor Types

Thermocouples	J, K, T, S, E, B, N, C, R
Platinum RTD	100 Ω, types 385 and 392
Nickel RTD	120, 200, 1000 Ω
Copper	10 Ω
Thermistors	10 KΩ, YSI type 44006 or 44031
Strain gauges	120 to 4000 Ω

Thermocouples	**0.1 °C**	**°C**
Thermistors	0.01 °C	-55 to 145 °C
Resistors	0.02 Ω 0.125 Ω 31 Ω	0 to 400 Ω 0 to 3 kΩ 0 to 600 kΩ
RTDs	0.05 °C 0.0125 °C	-200 to 800 °C 0 to 400 °C
Strain/pressure	5 µV	±100 mV
DC voltage	5 µV 20 µV 200 µV	±100 mV ±500 mV ±5 V

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