SIM922 , SIM923
Temperature Monitors

- Four channels with independent displays
- 1.4 K to 475 K with silicon diodes
- 20 K to 873 K with platinum RTDs
- Memory for 4 calibration curves plus standard curve
- Remote interface

SMALL INSTRUMENTATION MODULES

The SIM922 Diode Temperature Monitor and the SIM923 Platinum RTD Monitor are designed to measure four sensors simultaneously. Based on the modular SIM platform, they provide high performance, multiple channel capability in a small footprint.

SIM922

Each of the four channels in the SIM922 has an independent, precision 10 µA current source to provide sensor excitation. Measurement results can be displayed in either kelvins or volts.

SIM923

The four channels in the SIM923 have independent, stable 1 mA current sources to provide sensor excitation. Sensor resistance is determined ratiometrically, with a half-bridge circuit consisting of the sensor and an internal reference resistor. The current to the sensor can be reversed by the user to test for any offset. Measurement results can be displayed in either kelvins or ohms.

Common Features

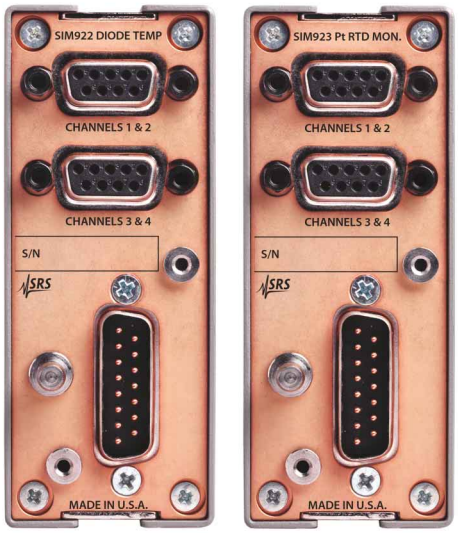
Both the SIM922 and SIM923 employ four-wire measurement circuits (±I excitation leads, ±V sense leads) making the measurements insensitive to series lead resistance.

The four channel excitations are independently controlled and do not switch on or off when the readout is advancing between channels. Sensor excitations can be disabled to reduce power dissipation at sensitive cryogenic stages. This also accelerates readings in the remaining enabled channels. Measurements are performed at rates up to four readings per second.

A factory-standard calibration curve is built in for each model. In addition, each channel has non-volatile memory to store a 256-point custom calibration curve to convert sensor units (V or Ω) to temperature units (K).

Results are displayed on easy to read 4-digit LED displays. Full remote operation is available over the serial interface.

The SIM922 and SIM923 are part of a wide range of modules available for the SIM (Small Instrumentation Modules) platform from Stanford Research Systems. For more information, please contact SRS at 408-744-9040 or visit our web site at www.thinkSRS.com.



SIM922, SIM923 Specifications

	SIM922	SIM923
Number of inputs	4	4
Sensor type	Silicon diode	Platinum RTD, other RTDs
Measurement type	4-wire	4-wire
Excitation	4 constant current sources, 10 µA ±0.01 %, ±5 ppm/°C	4 constant current sources, 1.0 mA ±0.1 %
Sensor units	Volts	Ohms
Input range	0 V to 2.5 V	0 Ω to 1400 Ω (includes excitation lead resistance)
Calibration curves	1 standard, 4 user defined curves, 256 points each	DIN 43760, 4 user defined curves, 256 points each
Temperature range	Sensor dependent, 1.4 K to 475 K typical	Sensor dependent, 20 K to 873 K typical
Display resolution	4 digits	4 digits
Interface resolution	1 µV	1 mΩ
Measurement resolution (RMS)	1.2 µV	1.2 mΩ
Measurement accuracy, (23±1) °C	20 µV + 0.01 % of reading	5 mΩ
Temperature coefficient	±5 ppm/°C	±5 ppm/°C
Operating temperature	0 °C to 40 °C, non-condensing	
Interface	Serial via SIM interface	
Connectors	Two DB9 (F) 4 wire measurement + ground (Ch 1 & 2) 4 wire measurement + ground (Ch 3 & 4) DB15 (M) SIM Interface	
Power	+5 V (250 mA max), ±15 V (50 mA max)	
Dimensions	1.5" W × 3.6" H × 7.0" D	
Weight	1.4 lbs	
Warranty	One year parts & labor against defects in workmanship and materials	

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