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MODEL V460 16-CHANNEL VME SOURCE/MEASUREMENT UNIT

FEATURES

more VME/VXI



- Includes 16-Channel, multiplexed, programmable constant-current source and precision analog-to-digital converter.
- Capable of measuring nearly any mixture of resistive-, bridge- or semiconductor-type sensors, using 4-wire connections.
- Ideal for cryogenic applications using mixed sensor types.
- Ultrastable programmable constant current source: 1 uA, 10 uA, 100 uA, 1 mA source currents.
- 16-bit ADC includes programmable gain differential amplifier, autozeroing, and programmable digital noise filtering.
- All parameters are fully programmable for each channel.
- Fully self-scanning without processor intervention: conditioned data is presented in transparent dual-port memory registers.
- Reads sensor voltage drop directly; includes engineering unit conversion for common silicon diode and RTD type temperature sensors.
- Standard 6U VME module; register-based B-size VXI module.

The model V460 is a VME-based versatile source/measurement unit. It includes a programmable constant-current source, a precision programmable gain 16-bit analog-to-digital converter, and a 4-wire, 16-channel analog multiplexer. An internal microprocessor supervises channel scanning according to user loaded parameters, reporting sensor voltage drops or, for selected sensor types, engineering-unit data.

The V460 is ideal for precision temperature measurement, using mixed resistive and diode sensor types. The programmable current sources and low duty-cycle scanning assure low sensor self-heating. Programmable digital filtering allows selectable rejection of AC line hum and other noise sources.

The V460 can measure resistances from 5.12 Megohms full scale (with 78-ohm resolution) to 80 ohms full scale (with 1.22 milliohm resolution); voltages from 5.12 volts full scale to 80 mV full scale may be measured, with resolution to 1.22 microvolts. Extensive internal self-tests help assure accurate measurements.

Model V460 VME Source/Measurement Unit Specifications

FUNCTION	16-channel programmable constant-current source and analog-to-digital converter.
CONFORMANCE	ANSI/IEEE 1014-1987 VMEbus specification. VXIC specification, Rev. 1.4.
PACKAGING	Single-width, 6U VME, B-size VXI module.
DEVICE TYPE	Register based slave: A16:D16:D08(EO).
ADDRESSING	128-byte data block in bus A16 address range C000-FF80: bus address is set by onboard dipswitch.
SIGNAL INPUTS	16 channels of 4-wire sensor connections via two front-panel D37 female connectors
CURRENT SOURCE	Per-channel programmable to 0, 1 uA, 10 uA, 100 uA and 1 mA. Accuracy $\pm 0.01\% \pm 25\text{PPM/K}$, except 1 uA current is $\pm 0.04\% \pm 50\text{ PPM/K}$
ADC	16 bits, programmable 0/+5.12 volts or ± 5.12 volts full scale; programmable preamplifier gains of 1, 4, 16, and 64 magnify full-scale span to 80mV (LSB resolution 1.22 uV). Accuracy $\pm 0.01\% \pm 25\text{PPM/K}$. The ADC is monotonic to 16 bits
RESISTANCE	Resistance measurements are accurate to $\pm 0.01\% \pm 30\text{ PPM/K}$ for ISRC > 1 uA
LINEARIZATION	Includes engineering units conversion for Lakeshore cryo-diode sensors and ISO 385 curve platinum RTDs (100 or 1000 ohms)
SCAN RATE	Nominal 20 mSec/channel; scans all 16 channels at least 2.5 times per second
FILTERING	Per-channel programmable digital lowpass filtering provides selectable time constants up to 128 samples. Sample timing and filtering are optimized for 50/60 Hz hum rejection

Highland Technology V460 VME Source/Measurement Unit Data Sheet

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