



# GRANITE VOLT 116

16- or 32-Channel 5V Analog Input Module



## Ultimate Analog Measurement Expansion Tool

Ideal for concentrated or distributed measurements

### Overview

The GRANITE™ VOLT 116 easily expands the channel count on your data-acquisition system. It has 16 differential or 32 single-ended input channels, as well as four excitation channels. It provides programmable, precision excitation for

standard sensor measurements and power outputs for controlling sensors and peripherals. The VOLT 116 features a 24-bit, analog-to-digital converter with low-noise performance for superior analog measurements.

### Benefits and Features

- › 24-bit ADC and low-noise inputs for increased measurement quality
- › Distributed data acquisition
- › Channel count expansion via the CPI bus on Campbell Scientific data loggers
- › Easier to program than traditional multiplexers
- › Programmable noise rejection
- › CANbus 2.0 A/B output available with the Extended Duty (-XD) version
- › USB 2.0 interface for PC-based operation with Campbell Scientific Surveyor software

### Specifications

Mounting	Standard 1-in. grid (DIN rail mounting available)
Operating Temperature Range	› -40° to +70°C (standard) › -55° to +85°C (extended)
Power Requirements	9.6 to 32 Vdc voltage
Accuracy	› ±(0.06% of reading + offset) -40° to +70°C › ±(0.08% of reading + offset) -55° to +85°C › ±(0.04% of reading + offset) 0° to 40°C
Number of Channels	16 differential or 32 single-ended inputs

Analog Inputs	32 single-ended or 16 differential (with ±5000 mV, ±1000 mV, ±200 mV ranges 24 bit ADC)
Maximum Scan Rate	› 1 channel at 1 kHz › 16 channels at 167 Hz
Input Range	±5000 mV, ±1000 mV, and ±200 mV
Period Averaging	Traditional period averaging on analog input channels
CPI	For data logger connection. Baud rate selectable from 50 kbps to 1 Mbps. (Allowable cable length varies depending

	on baud rate, number of nodes, cable quality, and noise environment, but can be as long as 700 m under proper conditions.)
USB	USB 2.0 full speed connection available for attaching to a PC. (Port is used to configure the module and download updates via our Device Configuration Utility.)
Warranty	One year against defects in materials and workmanship
Dimensions	20.3 x 12.7 x 5.1 cm (8 x 5 x 2 in.)
Weight	0.9 kg (1.95 lb)

### Typical Current Drain

Sleep	<1 mA
Active 1 Hz Scan	2 mA (estimated) Assumes one single-ended measurement with the first notch frequency ( $f_{N1}$ ) at 30 kHz Note: Any sensor excitation or switched power loads will be additive to this value.
Active 20 Hz Scan	20 mA Assumes one single-ended measurement with the first notch frequency ( $f_{N1}$ ) at 30 kHz

Note: Any sensor excitation or switched power loads will be additive to this value.

Active 1 kHz Scan	67 mA Note: Any sensor excitation or switched power loads will be additive to this value.
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### Voltage/Current Excitation Outputs

Voltage Excitation	$\pm 5$ V (@ 50 mA)
Current Excitation	$\pm 2.5$ mA ( $\pm 5$ V compliance voltage)
Number of Voltage/Current Excitation Outputs	4

### General Purpose Outputs

Number of SW5V Outputs	4
SW5V Output Resistance	30 $\Omega$
Number of SW12V Outputs	2
Typical Limit of SW12V Outputs	200 mA
Minimum Limit of SW12V Outputs	180 mA
Number of 12V Outputs	2
Typical Limit of 12V Outputs	200 mA
Minimum Limit of 12V Outputs	180 mA

For comprehensive details, visit: [www.campbellsci.eu/volt116](http://www.campbellsci.eu/volt116) 

