



# Ultimate Analog Measurement Expansion Tool

Ideal for concentrated or distributed measurements

## Overview

The GRANITE™ VOLT 116 is an analog input module that allows you to easily expand your Campbell Scientific data acquisition system. The VOLT 116 has 16 differential or 32 single-ended input channels and four excitation channels. It provides two 12 V ports and two switched 12 V ports for powering your peripherals, as well as four switched 5 V ports

for peripheral control. The VOLT 116 features a 24-bit, analog-to-digital converter and a low-noise, analog front-end to provide you with superior analog measurements. This module also supports period average measurements and includes both current and voltage excitation channels.

## Benefits and Features

- › 24-bit ADC and low-noise analog inputs
- › Channel count expansion via the CPI bus
- › Scales up the number of channels without adding measurement time
- › Easier to program than 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

## 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 Multiplexed Sample Rate	3.0 kHz (using fast [100 μs] input setting)
Maximum Burst Sample Rate	30 kHz
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) 



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