SMU-410

4 CHANNEL SMU, ±10V, 200MA PER CHANNEL

- 4 isolated SMU channels
- 4-quadrant operation: ±10 V, ±200 mA
- 7 current ranges, ±200 nA to ±200 mA full scale
- 24-bit ADC's, programmable sampling rate
- 16-bit DAC's for offset and gain adjustments
- Synchronous & asynchronous triggering functions
- Excellent accuracy, from ±0.03% ±2 mV
- Supplied with a full featured API and UI
- PXI hybrid slot compatible

DESCRIPTION

The SMU-410 is a precision 3U PXI module that forces and senses both voltage and current over a range of ±10 V and ±200 mA. Each of the four channels is independent and electrically isolated from the PXI power supply, chassis, and each other. They may be connected in series providing up to ±40 V, or in parallel, providing up to ±800 mA.

FEATURES

The SMU-410 employs 16-bit DACs for the sourcing of voltage and current. There are 7 current ranges in decade steps, ranging from ±200 mA FS to ±200 nA FS. There is a single voltage range of ±10 V. Measurements employ a 24 bit ADC with programmable resolution from 18 to 24 bits. Each output channel includes SMU output connections, Kelvin (sense) connections, and a driven guard connection for low level current measurements.

A dedicated microcontroller for each channel uses nonvolatile memory to store ADC and DAC calibration values as well as the values of each of the 7 current range resistors.

SOFTWARE

The SMU-410 is supplied with a virtual instrument panel, which includes a 32-bit DLL driver. The virtual panel can be used to interactively adjust and control the instrument from a window that displays the instrument's current settings and measurements. Interface files are provided to support a variety of programming tools and languages including ATEasy, Microsoft® and Borland® C/C++, Microsoft Visual Basic®, Borland Delphi, and LabVIEW.

APPLICATIONS

- Semiconductor component test and characterization
- ATE systems
- Board and system level test

SMU-410

SPECIFICATIONS

HARDWARE	
I/O Connections per Channel	SMU input / output (2) Guard Kelvin (2)
Connector	DB 25
Format	PXI, 3U single slot, hybrid slot compatible
SOURCE AND MEASURE SPECIFICATIONS	
Voltage Source	Range: ±10 V Accuracy: 0.03% of programmed value + 2mV
Current Source	Range: ±200 nA to ±200 mA, in decades Accuracy: *±0.05% of programmed value + 0.05% of FS (for ranges 20 mA or less) ±0.08% of programmed value + 0.05% of FS for 200 mA range
Isolation Voltage	±100 V relative to PXI ground
Absolute Maximum Voltage within Channel	±15.5 Volts
Source Noise	20 uV (0.1 Hz to 10 Hz) 25 mV RMS (20 Hz to 20 MHz)
Settling Time	10% of current range: 10 us typical 90% of current range: 100 us typical
Transient Response	Settles to ±20 mV of programmed value after 80% load change, 100 us typical
Voltage Measurement	Range: ±10 V Accuracy: 0.03% of programmed value + 2mV
Current Measurement	Range: ±200 nA to ±200 mA, in decades Accuracy: *±0.05% of programmed value + 0.05% of FS (for ranges 20 mA or less) ±0.08% of programmed value + 0.05% of FS for 200 mA range
Fast DAQ Measurement Functions	AC and DC voltage and current measurements
Measurement Resolution	Programmable, 18 to 24 bits
Measurement Conversion Rate	82 us to 2868 us, based on measurement resolution
ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS	
Temperature Range	Operating: 0 to +55 °C Storage: -20°C to +70 °C
Power	+5 VDC, 2 A +3.3 VDC, 2 A
Connector	DB 25 female

Note: Specifications are subject to change without notice

ORDERING INFORMATION

SMU-410	4 Channel SMU, ±10V, 200mA per Channel

Note: The SMU-410 is supplied by a 3rd party and resold by Geotest.