KEITHLEY

2500

The Keithley 2500 Dual-Channel Photodiode Meter is a high-speed, low-current instrument designed for optoelectronic testing, laser diode characterization, and active fiber-to-waveguide alignment. It integrates two independent measurement channels with dual built-in bias sources up to 100 V and fast analog outputs for automated alignment applications.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2), RS-232, Digital I/O, Trigger Link
Warm-up Time	1 hour to rated specifications
Calibration Interval	1 Year (recommended)

Physical

Power Supply	100 V to 240 V AC, 50 Hz / 60 Hz, 100 VA max
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	213 mm × 89 mm × 370 mm mm
Form Factor	Half-rack benchtop / rackmountable
Rackmount EIA Height	2U
Cooling Method	Convection cooled (no internal fan)
Enclosure Material	Metal

Measurement Capabilities

Measurement Channels	2 independent, isolated channels
Measurement Ranges	2 nA, 20 nA, 200 nA, 2 µA, 20 µA, 200 µA, 2 mA, 20 mA
Measurement Speed	Up to 3000 readings/second (to internal buffer)
Internal Buffer Size	3000 readings

Current Measurement Resolution

Resolution @ 2 nA Range	10 fA
Resolution @ 20 nA Range	100 fA
Resolution @ 200 nA Range	1 pA
Resolution @ 2 µA Range	10 pA
Resolution @ 20 µA Range	100 pA
Resolution @ 200 µA Range	1 nA
Resolution @ 2 mA Range	10 nA
Resolution @ 20 mA Range	100 nA

Current Measurement

Voltage Burden (2 nA to 2 mA ranges)	< 1 mV
Voltage Burden (20 mA range)	< 3 mV
Input Protection	100 V maximum (pins 1 to 2, 2 to 3)
Maximum Input Current	20 mA

Bias Voltage Source

Bias Voltage Range	0 to ±100 V (independent for each channel)
Bias Voltage Resolution	10 mV
Bias Voltage Accuracy	±(0.15% of setting + 5 mV)
Bias Voltage Maximum Current	20 mA
Bias Voltage Noise	< 1.5 mV p-p (0.1 Hz to 10 Hz)

Analog Outputs

Analog Outputs	2 channels (one for each measurement channel)
Analog Output Voltage Range	±10 V
Analog Output Impedance	1 kΩ nominal
Analog Output Bandwidth	10 kHz (typical on 20 µA to 20 mA ranges)

Connectivity

Primary Input Connectors	Dual 3-slot Triaxial connectors (rear panel)
Analog Output Connectors	Dual BNC connectors (rear panel)
Digital I/O Port	9-pin DB-9 female connector, 4 input/output lines
Trigger Link	8-pin micro DIN

User Interface & Software

Programming Language Compatibility	SCPI (Standard Commands for Programmable Instruments)

Environmental

Storage Temperature Range	-25 °C to 65 °C
Operating Humidity	Maximum 70% RH at 35 °C (non-condensing)
Storage Humidity	Maximum 90% RH at 35 °C (non-condensing)
Maximum Operating Altitude	2000 meters above sea level
Vibration Specification	MIL-PRF-28800F Class 3 Random

Current Measurement Accuracy

2 nA Range Accuracy	±(0.10% of reading + 2 pA)
20 nA Range Accuracy	±(0.10% of reading + 5 pA)
200 nA Range Accuracy	±(0.10% of reading + 50 pA)
2 µA Range Accuracy	±(0.10% of reading + 500 pA)
20 µA Range Accuracy	±(0.10% of reading + 5 nA)
200 µA Range Accuracy	±(0.10% of reading + 50 nA)
2 mA Range Accuracy	±(0.10% of reading + 500 nA)
20 mA Range Accuracy	±(0.10% of reading + 5 µA)

Current Measurement Temp. Coefficient

2 nA Range Temperature Coefficient	±(0.015% of reading + 0.2 pA)/°C
20 nA Range Temperature Coefficient	±(0.015% of reading + 0.5 pA)/°C
200 nA Range Temperature Coefficient	±(0.015% of reading + 5 pA)/°C
2 µA Range Temperature Coefficient	±(0.015% of reading + 50 pA)/°C
20 µA Range Temperature Coefficient	±(0.015% of reading + 500 pA)/°C
200 µA Range Temperature Coefficient	±(0.015% of reading + 5 nA)/°C
2 mA Range Temperature Coefficient	±(0.015% of reading + 50 nA)/°C
20 mA Range Temperature Coefficient	±(0.015% of reading + 500 nA)/°C

Analog Output

Analog Output Accuracy	±(2.5% of output + 5 mV)

General Specifications

Maximum Common Mode Voltage	42 V Peak
Maximum Voltage Between Channels	42 V Peak

Power Supply

Maximum Power Consumption	60 VA

Compliance & Safety

Safety Standards	EN 61010-1
EMC Standards	EN 61326-1

TECHNOLOGY

Dual-Channel Picoammeter / Photodiode Meter

APPLICATIONS

Laser diode testing, photodiode characterization, active fiber alignment, low-current measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.