KEITHLEY
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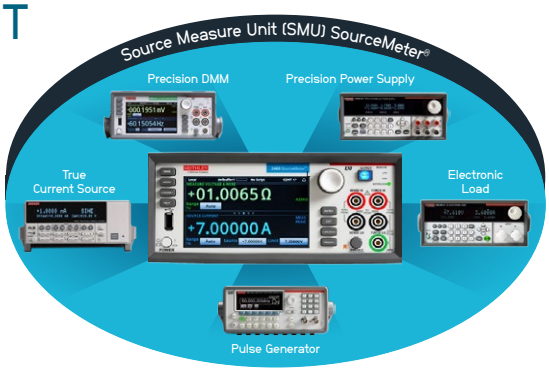
Mess- und Prüftechnik. Die Experten.

SOURCE MEASURE UNITS

The Broadest Choice of SMU Instruments Available

Selector Guide

MAKE MULTIPLE MEASUREMENTS ACCURATELY USING A SINGLE INSTRUMENT



A source measure unit (SMU) instrument is a five-in-one tool. It combines the useful features of a digital multimeter (DMM), power supply, current source, electronic load and pulse generator, all in a compact form factor. This empowers you to:

- Precisely source and measure voltage and/or current at the same time
- Measure resistance vs. current/voltage directly or indirectly
- Source and measure across a very broad range of current (100 aA to 50 A) and voltage (100 nV to 3 kV) with 6½ digits of measurement resolution
- Run production tests 60% faster and gain up to 10X more throughput
- Save time, maximize speed and get jobs done quickly.

WHY A KEITHLEY SOURCE MEASURE UNIT?

For more than 70 years, Tektronix — the manufacturer of Keithley SMUs — has been designing, manufacturing and marketing advanced electrical test instruments and systems for the specialized needs of electronics manufacturers in high performance production testing, process monitoring, product development and research.

- Repeatability Guaranteed
- High Accuracy and Sensitivity
- Fast and Precise
- Broadest Choices

KEITHLEY'S WIDE SELECTION OF SOURCE MEASURE UNIT SMU INSTRUMENTS

Touch, Test, Invent™ with a Graphical Touchscreen SMU

Standard Performance SMUs for the Most Basic Needs

High Speed System SMUs for Demanding Applications

High Power SMUs with Unprecedented Power, Precision, and Speed

High Density, More Channels in a Smaller Form Factor

Specialty SMUs for Very Low Current and Optoelectronics Testing

TOUCH, TEST, INVENT WITH A GRAPHICAL TOUCHSCREEN SMU

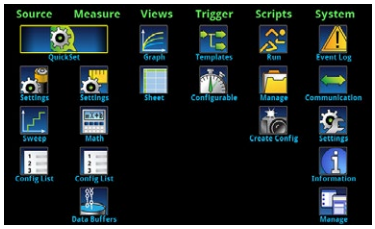
2450, 2460, 2461, and 2470 SourceMeter SMU Instruments

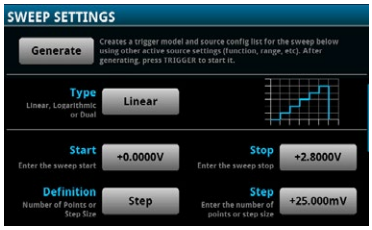
- Five-inch, high resolution capacitive touchscreen GUI
- 0.012% basic measure accuracy with 6½-digit resolution
- Wide coverage up to 1100 V, 7 A DC, 10 A pulse, 1000 W max.
- Source and sink (4-quadrant) operation
- Dual 1 MS/s digitizers for fast sampling measurements (2461 only)
- Enhanced sensitivity with 20 mV and 10 nA source/measure ranges (2450 only)
- Built-in, context-sensitive front panel help
- SCPI and Test Script Processor (TSP®) programming modes
- Front-panel USB 2.0 memory I/O port for transferring data, test scripts, or test configurations

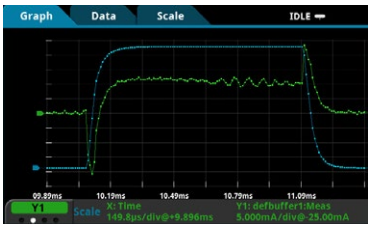
Model	2450	2460	2461	2470
Max Current Source/Measure Range	1 A	7 A	10 A	1 A
Max Voltage Source/Measure Range	200 V	100 V	100 V	1000 V
Measurement Resolution (Current / Voltage)	10 fA / 10 nV	10 pA / 100 nV	1 pA / 100 nV	10 fA / 100 nV
Max Output Power	20 W	100 W	1000 W	20 W
	2450 LEARN MORE	2460 LEARN MORE	2461 LEARN MORE	2470 LEARN MORE

Save Time, Maximize Speed, and Get Jobs Done Quickly

SMU models that use familiar graphical interfaces, like icon-based menu structures, are easier to use for all experience levels. You'll make measurements faster by reducing the learning curve and configuration steps, enabling you to **learn faster, work smarter, and invent easier.**







STANDARD PERFORMANCE SMUS FOR THE MOST BASIC NEEDS

Series 2400 SourceMeter SMU Instruments

- Five models: 20–100 W DC, 1100 V to 1 µV; single channel
- Source and sink (4-quadrant) operation
- 0.012% basic measure accuracy with 6½-digit resolution
- 2-, 4-, and 6-wire remote V-source and measure sensing
- 1700 readings/second at 4½ digits via GPIB
- Pass/Fail comparator for fast sorting/binning
- Programmable DIO port for automation/handler/ prober control (except 2401)
- Standard SCPI GPIB, RS-232 and Keithley Trigger Link interfaces

2400 LEARN MORE

Model	2400	2401	2410	2420*	2440*
Max Current Source/Measure Range	1 A	1 A	1 A	3 A	5 A
Max Voltage Source/Measure Range	200 V	20 V	1100 V	60 V	40 V
Measurement Resolution (Current/Voltage)	1 pA / 100 nV	1 pA / 100 nV	1 pA / 100 nV	10 pA / 100 nV	10 pA / 100 nV
Max Output Power	20 W	20 W	20 W	60 W	50 W

* Limited Supply Available until August 31, 2022 or when supplies are exhausted. Consider using the newer 2460 or 2461 Graphical High Current SourceMeter in your application or design for a longer return on your investment.

MORE USEFUL THAN THE COMBINATION OF INDIVIDUAL INSTRUMENTS

SMU VS. POWER SUPPLIES

- SMUs can automatically sweep voltage or current to and from negative and positive outputs when the source crosses zero.
- During these operations, there is no need to change test leads.
- Output of a SMU can settle to within 0.01% of the specified accuracy in as little as 50 ms.
- SMU has higher precision and wider operating ranges.
- SMU is a more flexible option

SMU VS. THE DMM AND POWER SUPPLY COMBO

- SMU tightly integrates the source and measure capability into one instrument, eliminating the need for a separate DMM and power supply.
- Improves test times, simplifies overall test system design and increases usability
- SMUs can outperform the DMM and Power Supply Combo on current vs. voltage (IV) measurements for a variety of applications.

HIGH SPEED SYSTEM SMUS FOR DEMANDING APPLICATIONS

Series 2600B System SourceMeter SMU Instruments

- Tightly integrated, 4-quadrant voltage/current source and measure instruments offer best-in-class performance with 6½-digit resolution
- Family of models offers industry's widest dynamic range:
- 10 A pulse to 0.1 fA and 200 V to 100 nV
- TSP technology embeds complete test programs inside the instrument for best-in-class system-level throughput
- TSP-Link® expansion technology for multi-channel parallel test without a mainframe
- Complete production test without sacrificing footprint
- USB 2.0, LXI-C, GPIB, RS-232, and digital I/O interfaces

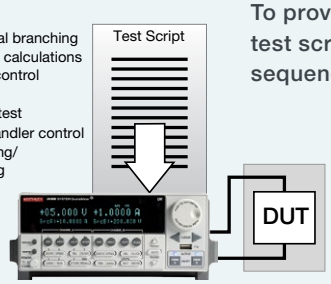
2600B LEARN MORE

Model	2601B	2602B	2604B	2611B	2612B	2614B	2634B	2635B	2636B
Channels	1	2	2	1	2	2	2	1	2
Max Current Source/Measure Range	3 A DC / 10 A Pulse	3 A DC / 10 A Pulse	3 A DC / 10 A Pulse	1.5A DC / 10 A Pulse	1.5A DC / 10 A Pulse	1.5A DC / 10 A Pulse	1.5A DC / 10 A Pulse	1.5A DC / 10 A Pulse	1.5A DC / 10 A Pulse
Max Voltage Source/Measure Range	40 V	40 V	40 V	200 V	200 V	200 V	200 V	200 V	200 V
Measurement Resolution (Current/Voltage)	100 fA / 100 nV	100 fA / 100 nV	100 fA / 100 nV	100 fA / 100 nV	100 fA / 100 nV	100 fA / 100 nV	1 fA / 100 nV	0.1 fA / 100 nV	0.1 fA / 100 nV
Max Output Power	40 W DC / 200 W Pulse	40 W DC / 200 W Pulse	40 W DC / 200 W Pulse	30 W DC / 200 W Pulse	30 W DC / 200 W Pulse	30 WDC / 200 W Pulse	30 W DC / 200 W Pulse	30 W DC / 200 W Pulse	30 W DC / 200 W Pulse

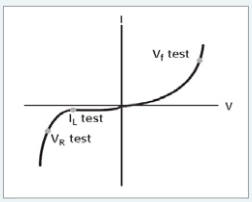
Run Production Tests 60% Faster and Gain Up to 10× More Throughput

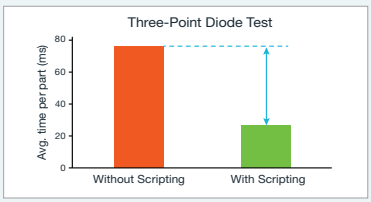
SMUs streamline production testing. The instruments source voltage or current while making measurements — without needing to change connections. SMUs are designed for reliable operation in non-stop production environments.

- Conditional branching
- Advanced calculations and flow control
- Variables
- Pass/Fail test
- Prober/Handler control
- Datalogging/ Formatting



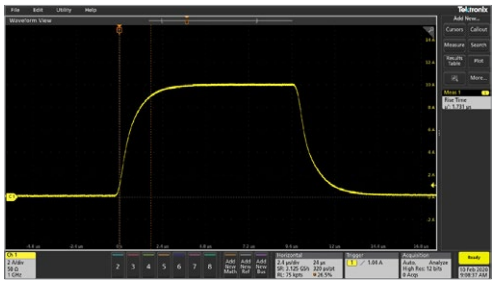
To provide the throughput demanded by production applications, embedded test scripts can be uploaded into the SMU, enabling them to run complex test sequences without computer control or communications slowing things down.





10 A AT 10 V @ 10 µs CURRENT PULSING FOR TESTING NEXT GENERATION DEVICES

Pulse with Confidence, No Overshoot or Ringing



2601B-PULSE LEARN MORE

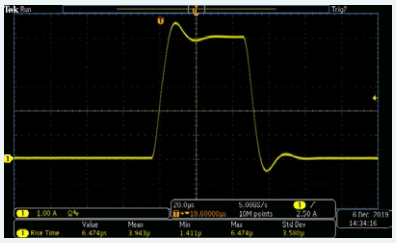
2601B-PULSE System SourceMeter 10 µs Pulser/SMU Instrument

- Industry leading 10 A @ 10 V, 10 microsecond pulse output
- No tuning required for inductive loads up to 3 µH
- Dual 1 Megasample/second digitizers for high speed I/V pulse measurements (pulser function only)
- DC capability up to ±40 V @ ±1.0 A, 40 Watt
- TSP technology embeds complete test programs inside the instrument for best-in-class system-level throughput
- TSP-Link expansion technology for multi-channel parallel test without a mainframe
- USB 2.0, LXI-C, GPIB, RS-232, and digital I/O interfaces
- Supported in the Keithley KickStart non-programming software tool

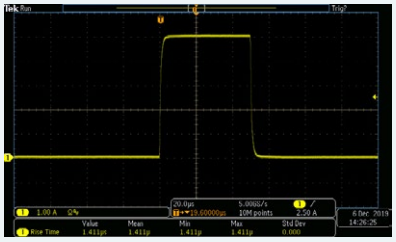
Feature	Performance
Minimum Pulse Width	10 µs
Max Pulse I	10 A
Max DC I	3 A
Max DC Voltage Source/Measure Range	40 V
Max DC Source/Sink Power	40 W
Min DC Current Range	100 nA
Pulse Tuning Required	No

No Tuning of Output Required up to 3 µH. Saves Time and Money

When outputting current pulses, cabling and inductance can be a problem. Inductance can have a limiting effect and could even be damaging. Quite often, the inductance can be different from device to device, even when testing laser diodes on a wafer. The effect of inductance on a current source is that inductance resists changes in current. This can cause the current source to increase the output voltage. The result is overshoot and ringing as the pulse settles. This may not be acceptable in your test. Some solutions require tuning to compensate for these behaviors, which can be time consuming. The 2601B–PULSE's control loop system eliminates the need to tune for load changes up to 3 µH so that your pulse has no overshoot and ringing when outputting pulses from 10 µs up to 500 µs at a current up to 10 amps. This ensures a fast rise time, so your devices are sourced with a current pulse to properly characterize the device or circuit. The images to the right show the performance of a competitive modular SMU outputting a 5 A, 50 µs pulse on a device with an impedance of 3 µH compared to the 2601B–PULSE with PulseMeter technology.



Typical pulse output from a competitive SMU with overshoot and 6.47 µs rise time.



2601B-PULSE output without overshoot and 1.4 µs rise time.

HIGH POWER SMUS WITH UNPRECEDENTED POWER, PRECISION, AND SPEED

2651A 50 Amp High Power System SourceMeter SMU Instrument

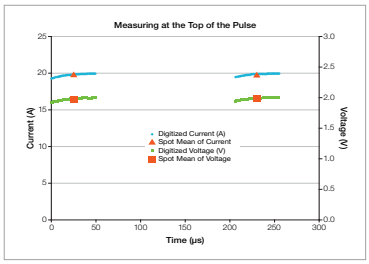
- Source or sink:
  - 2,000 W of pulsed power (±40 V, ±50 A)
  - 200 W of DC power (±10 V @ ±20 A, ±20 V@ ± 10 A, ±40 V @ ±5 A)
- Easily connect two units (in series or parallel) to create solutions up to ±100 A or ±80 V
- 1 pA resolution enables precise measurement of very low leakage currents
- 1 µs per point (1 MHz), 18-bit sampling, accurately characterizes transient behavior
- 1% to 100% pulse duty cycle for pulse width modulated (PWM) drive schemes and device specific drive stimulus

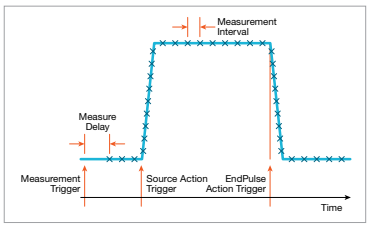
2651A LEARN MORE

2657A 3000 Volt High Power System SourceMeter SMU Instrument

- Source or sink up to 180 W of DC or pulsed power, (±3000 V @ 20 mA, ±1500 V @ 120 mA)
- 1 fA low current resolution
- Dual 22-bit precision ADCs and dual 18-bit 1 µs per point digitizers for high accuracy and high speed transient capture
- Fully TSP® compliant for easy system integration with Series 2600B System SourceMeter models and 24XX Graphical SMUs

2657A LEARN MORE





Achieving Fast Pulse Measurements for Today's High-Power Devices

Green initiatives and energy efficiency standards worldwide have motivated engineers to find ways to design more efficient semiconductor devices and integrated circuits, and measuring the true state of these devices without the effects of self-heating is critical. Pulsed characterization is a solution to this issue. The use of a pulsed stimulus demands faster measurements. For high-speed digitization or waveform capture applications that require these capabilities, Keithley's High Power SourceMeter® Instrument also includes two high-speed ADCs for measuring current and voltage simultaneously. These ADCs use sampling technology like an oscilloscope and take snapshots of the signal over time. Each high-speed ADC samples at a rate of up to 1 MHz with 18-bit resolution, which is much higher than the typical 8-bit resolution of an oscilloscope, resulting in more precise transient characterization in comparable bandwidths. Coupled with the ability to measure asynchronously from the source, this feature makes the 2651A and 2657A ideal for many waveform capture and transient characterization applications.

HIGH DENSITY, MORE CHANNELS, SMALLER FORM FACTOR

2606B System SourceMeter SMU Instrument

- Incorporates the capabilities of two industry-leading Keithley 2602B SMUs.
- Four-channel SMU instrument in a single 1U full-rack chassis
- Stackable; no 1U spacing requirements between units
- Tightly integrated voltage/current source and measure instruments offer best-in-class performance with 6½-digit resolution
- 20 V @ 1 A and 6 V @ 3 A power envelopes, 20 watts
- 0.015% DCV basic accuracy

2606B LEARN MORE

TRIPLE THE DENSITY OF A TEST RACK

The Model 2606B form factor (only 1U high) is a perfect fit and improves density by 3×, because there is no need for an additional 1U thermal spacer between units (for air flow).

Most bench source measure units on the market today are 2U high

Lean Factories Are Critical to Manufacturers' Success

Today, manufacturers need to speed products to market, reduce costs, and keep customers happy. That means manufacturers must build lean factories that create seamless flows of people, material and information, and prevent the build-up of inventory and excess equipment.

The Challenge

Yet as demand grows, manufacturers need to increase test capacity for products,

which requires placing additional racks of test equipment on the plant floor.

SPECIALTY SMUS FOR VERY LOW CURRENT AND OPTOELECTRONICS TESTING

6430 Sub-femtoamp Remote SourceMeter SMU Instrument

- 0.4 fA p-p (4E–16A) noise (typical)
- >1016 Ω input resistance on voltage measurements
- High speed — up to 2000 readings/second
- Up to 6½-digit resolution
- 0.012% basic voltage accuracy; 0.025% basic current accuracy

6430 LEARN MORE

2510 and 2510-AT TEC and Autotuning TEC SourceMeter SMU Instruments

- 50 W TEC Controller combined with DC measurement functions
- Fully digital P-I-D control; Autotuning capability for the thermal control loop (2510-AT)
- Designed to control temperature during laser diode module testing
- Wide temperature setpoint range (–50°C to +225°C) and high setpoint resolution (±0.001°C) and stability (±0.005°C)
- Compatible with a variety of temperature sensor inputs: thermistors, RTDs, and IC sensors

2510 LEARN MORE

2520 Pulsed Laser Diode Test System

Remote Electrical Test Head included

- Integrated solution for in-process LIV production testing of laser diodes at the chip or bar level
- Combines high accuracy source and measure capabilities or pulsed and DC testing
- Synchronized DSP-based measurement channels ensure highly accurate light intensity and voltage measurements
- Programmable pulse on time from 500 ns to 5 ms up to 4% duty cycle
- Pulse capability up to 5 A, DC capability up to 1 A
- 14-bit measurement accuracy on three measurement channels (V_F, front photodiode, back photodiode)
- Up to 1000-point sweep stored in buffer memory eliminates GPIB traffic during test, increasing throughput

2520 LEARN MORE

DETERMINE WHICH KEITHLEY SMU IS RIGHT FOR YOU

Need help selecting the SMU that's right for your needs?
Let these selector tables be your guide!

Keithley 24xx Standard and Graphical SMUs

MODEL		Keithley 24xx Standard and Graphical SMUs								
		2400	2401	2410	2420	2440	2450	2460	2461	2470
Display		VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	Touchscreen 5 in. (12.7 cm)	Touchscreen 5 in. (12.7 cm)	Touchscreen 5 in. (12.7 cm)	Touchscreen 5 in. (12.7 cm)
Channels		1	1	1	1	1	1	1	1	1
Digits		6½	6½	6½	6½	6½	6½	6½	6½	6½
Quadrants of Operation		4	4	4	4	4	4	4	4	4
Max Output Power		20 W	20 W	20 W	60 W	50 W	20 W	100 W	1000 W Pulse, 100 W DC	20 W
SOURCE / MEASURE										
I	min	±1 pA	±1 pA	±1 pA	±10 pA	±10 pA	±10 fA	±10 pA	±1 pA	±10 fA
	max	±1 A	±1 A	±1 A	±3 A	±5 A	±1 A	±7 A	±10 A Pulse, ±7 A DC	±1 A
V	min	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±10 nV	±100 nV	±100 nV	±100 nV
	max	±200 V	±20 V	±1100 V	±60 V	±40 V	±200 V	±100 V	±100 V	±1100 V
Basic Accuracy	I	0.025%	0.025%	0.025%	0.025%	0.025%	0.020%	0.020%	0.020%	0.020%
	V	0.012%	0.012%	0.012%	0.012%	0.012%	0.012%	0.012%	0.012%	0.012%
GENERAL FEATURES										
Digitizers		No	No	No	No	No	No	No	Dual 18-bit 1 MS/s Digitizers	No
Reading Speed		2,000 rdgs/s	2,000 rdgs/s	2,000 rdgs/s	2,000 rdgs/s	2,000 rdgs/s	3,000 rdgs/s	3,000 rdgs/s	3,000 rdgs/s, 1 MS/s with Digitizer	3,000 rdgs/s
Programming	SCPI	✓	✓	✓	✓	✓	✓ Plus 2400 Emulation	✓	✓ Plus 2420, 2425, 2430, 2440 Emulation	✓
	TSP						✓	✓	✓	✓
TSP-Link		No	No	No	No	No	Yes	Yes	Yes	Yes
Digital I/O		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contact Check		No	No	No	No	No	No	No	Yes	No
Computer Interface		IEEE-488 RS-232	IEEE-488 RS-232	IEEE-488 RS-232	IEEE-488 RS-232	IEEE-488 RS-232	USB 2.0 LAN/LXI 1.4 IEEE-488	USB 2.0 LAN/LXI 1.4 IEEE-488	USB 2.0 LAN/LXI 1.4 IEEE-488	USB 2.0 LAN/LXI 1.4 IEEE-488
Compliance		CE, UL	CE, UL	CE	CE	CE	CE, NRTL listed	CE, NRTL listed	CE, NRTL listed	CE, NRTL listed

SMU SELECTOR TABLE

Keithley 26xxB Series High Speed System SMUs for Demanding Applications

MODEL		Keithley 26xxB Series High Speed System SMUs								
		2601B	2602B	2604B	2611B	2612B	2614B	2634B	2635B	2636B
Display		VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line
Channels		1	2	2	1	2	2	2	1	2
Digits		6½	6½	6½	6½	6½	6½	6½	6½	6½
Quadrants of Operation		4	4	4	4	4	4	4	4	4
Max Output Power		200 W Pulse, 40 W DC	200 W Pulse, 40 W DC / Channel	200 W Pulse, 40 W DC / Channel	200 W Pulse, 30 W DC	200 W Pulse, 30 W DC / Channel	200 W Pulse, 30 W DC / Channel	200 W Pulse, 30 W DC / Channel	200 W Pulse, 30 W DC	200 W Pulse, 30 W DC / Channel
SOURCE / MEASURE										
I	min	±100 fA	±100 fA	±100 fA	±100 fA	±100 fA	±100 fA	±0.1 fA	±0.1 fA	±0.1 fA
	max	±10 A Pulse, ±3 A DC	±10 A Pulse, ±3 A DC	±10 A Pulse, ±3 A DC	±10 A Pulse, ±1.5 A DC	±10 A Pulse, ±1.5 A DC	±10 A Pulse, ±1.5 A DC	±10 A Pulse, ±1.5 A DC	±10 A Pulse, ±1.5 A DC	±10 A Pulse, ±1.5 A DC
V	min	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV
	max	±40 V	±40 V	±40 V	±200 V	±200 V	±200 V	±200 V	±200 V	±200 V
Basic Accuracy	I	0.020%	0.020%	0.020%	0.020%	0.020%	0.020%	0.020%	0.020%	0.020%
	V	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%
GENERAL FEATURES										
Digitizers		No	No	No	No	No	No	No	No	No
Reading Speed		20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s	20,000 rdgs/s
Programming	SCPI									
	TSP	✓	✓	✓	✓	✓	✓	✓	✓	✓
TSP-Link		Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
Digital I/O		Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
Contact Check		Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
Computer Interface		USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232
Compliance		CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL

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Mess- und Prüftechnik. Die Experten.

SMU SELECTOR TABLE

Keithley Specialty SMUs

MODEL		Very Low Current 6430	Fast Pulser/ SMU 2601B-PULSE	High Density SMUs 2606B	High Power SMUs 2651A	High Power SMUs 2657A	Optical SMUs 2510	Optical SMUs 2510-AT	Optical SMUs 2520
Display		VFD, 2 line	VFD, 2 line	no display	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line	VFD, 2 line
Channels		1	1	4	1	1	1	1	1
Digits		6½	6½	6½	6½	6½	5½	5½	4½
Quadrants of Operation		4	4	2	4	4	2	2	1
Max Output Power		2 W	SMU Function: 200 W Pulse, 40 W DC Fast Pulser Function: 3 W	20 W / Channel	2000 W Pulse, 200 W DC	180 W DC	50 W DC	50 W DC	50 W Pulse, 10 W DC
SOURCE / MEASURE									
I	min	±1 aA	SMU Function: ±100 fA Pulser Function: 10 µA	±100 fA	±1 pA	±1 fA	±200 µA	±200 µA	10 µA
	max	±100 mA	SMU Function: ±10 A Pulse, ±3 A DC Pulser Function: ±10 A	±3 A Pulse, ±3 A DC	±50 A Pulse, ±20 A DC	±120 mA	± 5 A	± 5 A	5 A Pulse, 1 A DC
V	min	±100 nV	SMU Function: ±100 nV Pulser Function: 10 µV	±100 nV	±1 µV	±100 µA	±500 µV	±500 µV	330 µV
	max	±200 V	SMU Function: ±40 V Pulser Function: ±10 V	±20 V	±40 V	±3000 V	±10 V	±10 V	10 V
Basic Accuracy	I	0.025%	SMU Function: 0.02% Pulser Function: 0.12%	0.020%	0.020%	0.020%	0.400%	0.400%	0.200%
	V	0.012%	SMU Function: 0.015% Pulser Function: 0.05%	0.015%	0.020%	0.025%	0.100%	0.100%	0.300%
GENERAL FEATURES									
Digitizers		No	Dual 18-bit 1 MS/s Digitizers (Pulser Function Only)	No	Dual 18-bit 1 MS/s Digitizers	Dual 18-bit 1 MS/s Digitizers	No	No	Dual 14-bit 10 MS/s Digitizers
Reading Speed		2,000 rdgs/s	SMU Function: 20,000 rdgs/s Pulser Function: 1 µs on Digitizers	20,000 rdgs/s	20,000 rdgs/s, 1 MS/s with Digitizer	20,000 rdgs/s, 1 MS/s with Digitizer	60 rdgs/s	60 rdgs/s	188 rdgs/s (to memory)
Programming	SCPI	✓					✓	✓	✓
	TSP		✓	✓	✓	✓			
TSP-Link		No	Yes	Yes	Yes	Yes	No	No	No
Digital I/O		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contact Check		No	Yes	Yes	Yes	Yes	No	No	No
Computer Interface		IEEE-488 RS-232	USB 2.0 LAN/LXI-C IEEE-488 RS-232	USB 2.0 LAN/LXI-C only	LAN/LXI-C IEEE-488 RS-232	LAN/LXI-C IEEE-488 RS-232	IEEE-488 RS-230	IEEE-488 RS-231	IEEE-488 RS-232
Compliance		CE	CE, NRTL listed	CE, NRTL listed	CE, NRTL listed	CE, NRTL listed	CE	CE	CE