

# SourceMeter® SMU instruments selector guide



Feature	2651A / 2657A High Current / High Voltage	2634B / 2635B / 2636B Low Current	2602B / 2612B Dual Channel	2601B / 2611B Single Channel	2604B / 2614B Dual Channel Benchtop
# of Channels	1 (optional expansion to 32 via TSP-Link®)	1 – 2 (optional expansion to 64 via TSP Link for 2635B/2636B)	2 (optional expansion to 64 via TSP-Link)	1 (optional expansion to 32 via TSP-Link)	2
Current Max / Min	2651A: 50A pulse/100fA 2657A: 120mA/1fA	2634B: 10A pulse/1fA 2636B, 2635B: 10A pulse/0.1fA	10A pulse/100fA	10A pulse/100fA	10A pulse/100 fA
Voltage Max / Min	2651A: 40V/100nV 2657A: 3,000V/100nV	200V/100nV	40V/100nV for 2602B 200V/100nV for 2612B	40V/100nV for 2601B 200V/100nV for 2611B	40V/100nV for 2604B 200V/100nV for 2614B
System-Level Automation	Digital I/O, TSP-Link, Contact Check	Digital I/O, TSP-Link, Contact Check (not available on 2634B)	Digital I/O, TSP-Link, Contact Check	Digital I/O, TSP-Link, Contact Check	N/A
Max readings / sec	38,500 1µSec/pt., 18-bit digitizer	20,000	20,000	20,000	20,000
Computer Interface	GPIO, LAN (LXI), RS-232	GPIO, LAN (LXI), RS-232, USB	GPIO, LAN (LXI), RS-232, USB	GPIO, LAN (LXI), RS-232, USB	GPIO, LAN (LXI), RS-232, USB
Connectors/Cabling	2651A: Screw terminal, adaptors for banana 2657A: HV triax, SHV	Triax	Screw terminal, adaptors for banana or triax	Screw terminal, adaptors for banana or triax	Screw terminal, adaptors for banana or triax



Feature	6430 Low I SourceMeter	2430 High Power SourceMeter Instrument	2410 High V SourceMeter Instrument	2420 / 2425 / 2440 High I SourceMeter Instruments	2400 / 2401 Low Power SourceMeter Instruments	2450 Advanced Touchscreen SourceMeter Instruments
Current Max / Min	105mA / 10aA	10.5A pulse / 100pA	1.05A / 10pA	5.25A/ 100pA	1.05A / 10pA	1.05A/10fA
Voltage Max / Min	200V / 1uV	200V / 1uV	1100V / 1uV	100V / 1uV	200V / 1uV	200V/20mV
Power	2W	1100W	22W	110W	22W	20W
Max readings / sec	256	2,000	2,000	2,000	2,000	3,100
Interface	GPIO, RS-232, Digital I/O, Trigger Link Trigger Bus	GPIO, RS-232, Digital I/O, Trigger Link Trigger Bus	GPIO, RS-232, Digital I/O, Trigger Link Trigger Bus	GPIO, RS-232, Digital I/O, Trigger Link Trigger Bus	GPIO, RS-232, Digital I/O, Trigger Link Trigger Bus	GPIO, USB 2.0, LAN/LXI, Digital I/O, TSP-Link
Connectors	Triax	Banana (front / rear)	Banana (front / rear)	Banana (front / rear)	Banana (front / rear)	Banana (front) Triax (rear)

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### 20-100W BENCH SMU INSTRUMENTS

MODEL	2400, 2401 2400-C 2400-LV	2410 2410-C	2420 2420-C	2425 2425-C	2440 2440-C	2450
Page	43	43	43	43	43	36
POWER OUTPUT	22 W	22 W	66 W	110W	55 W	20 W
<b>CURRENT CAPABILITY</b>						
Min.	±1 pA	±1 pA	±10 pA	±10 pA	±10 pA	±10 fA
Max	±1.05 A	±1.05 A	±3.15 A	±3.15 A	±5.25 A	±1.05 A
<b>VOLTAGE CAPABILITY</b>						
Min.	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±10 nV
Max.	±21/±210 V <sup>2</sup>	±1100 V	±63 V	±105 V	±42 V	±210 V
OHMS RANGE <sup>3</sup>	<0.2 Ω to >200 MΩ	<0.2 Ω to >200 MΩ	<0.2 Ω to >200 MΩ	<0.2 Ω to >200 MΩ	<2.0 Ω to >200 MΩ	<2.0 Ω to >200 MΩ
<b>BASIC ACCURACY</b>						
I	0.035%	0.035%	0.035%	0.035%	0.035%	0.020%
V	0.015%	0.015%	0.015%	0.015%	0.015%	0.012%
Ω	0.06 %	0.07 %	0.06 %	0.06 %	0.06 %	0.043%
READING SPEED	2,081 rdgs/s	2,081 rdgs/s	2,081 rdgs/s	2,081 rdgs/s	2,081 rdgs/s	3,130 rdgs/s
<b>FEATURE SUMMARY</b>						
Pulse Mode	No	No	No	No	No	No
Embedded Scripting/Execution	Source-Memory List	Source-Memory List	Source-Memory List	Source-Memory List	Source-Memory List	Source-Memory List, Config List, Test Script Processor (TSP®) Technology
Contact Check	-C version	-C version	-C version	-C version	-C version	No
Selectable Front/Rear Inputs	Yes	Yes	Yes	Yes	Yes	Yes
Test Leads/Cables	Banana	Banana	Banana	Banana	Banana	Front: Banana Rear: Triax
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 Core, IEEE-488
Digital I/O	1 In/4 Out with built-in component handler interfaces (except Model 2401).	1 In/4 Out with built-in component handler interfaces.	1 In/4 Out with built-in component handler interfaces.	1 In/4 Out with built-in component handler interfaces.	1 In/4 Out with built-in component handler interfaces.	6 digital I/O-trigger lines
Other	6½-digit resolution. 6 wire ohms mode. LabView drivers.	6½-digit resolution. 6 wire ohms mode. LabView drivers.	6½-digit resolution. 6 wire ohms mode. LabView drivers.	6½-digit resolution. 6 wire ohms mode. LabView drivers.	6½-digit resolution. 6 wire ohms mode. LabView drivers.	5 inch capacitive touchscreen. 6½-digit resolution. Built-in "Quickset" configuration modes. Context-sensitive help. Scalable to 32 channels with TSP-Link Technology. KickStart out-of-the box software. LabView drivers. IVI drivers.
Compliance	CE, UL	CE	CE	CE	CE	CE, NRTL listed

1. In pulse mode.  
2. Models 2401 and 2400-LV 21V max.  
3. Ohms measurements on Series 2600 instruments are user-calculated.

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### 20-100W SYSTEM SMU INSTRUMENTS

20-100W SYSTEM SMU INSTRUMENTS		100-200W POWER SMU INSTRUMENTS			LOW CURRENT SMU INSTRUMENTS	
2601B 2602B 2604B	2611B 2612B 2614B	2430 2430-C	2651A	2657A	2634B 2635B 2636B	6430
10	10	43	25	32	10	51
40 W/channel	30 W/channel	1100 W <sup>1</sup>	2,000W pulsed/200W DC	180 W	30 W/channel	2 W
±100 fA	±100 fA	±10 pA	±100 fA	±1 fA	±0.1 fA (2635B, 2636B) ±1 fA (2634B)	±0.01 fA
±3 A DC/10 A pulsed per channel	±1.5 A DC/10 A pulsed per channel	±10.5 A <sup>1</sup>	±50A (±100 A when two units are connected in parallel)	±120 mA	±1.5 A DC/10 A pulsed per channel	±105 mA
±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±100 nV	±1 μV
±40 V	±200 V	±105 V	±40 V	±3000 V	±200 V	±210 V
0.5 μΩ to 40 TΩ	0.5 μΩ to 100 TΩ	<0.2 Ω to >200 MΩ	<0.1 μΩ to 20 TΩ	<0.4 Ω to 100 PΩ	0.5 μΩ to 10 PΩ	<2.0 Ω to >20 TΩ
0.02 %	0.02 %	0.035%	0.02 %	0.02 %	0.02 %	0.035%
0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.012%
Based on V and I range	Based on V and I range	0.06 %	Based on V and I range	Based on V and I range	Based on V and I range	0.063%
20,000 rdgs/s	20,000 rdgs/s	2,081 rdgs/s	38,500 rdgs/s and 1μs per pt digitizer	38,500 rdgs/s and 1μs per pt digitizer	20,000 rdgs/s	256 rdgs/s
Yes	Yes	Yes	Yes	Yes	Yes	No
Test Script Processor (TSP®) Technology	Test Script Processor (TSP®)	Source-Memory List	Test Script Processor (TSP®)	Test Script Processor (TSP®)	Test Script Processor (TSP®)	Source-Memory List
Yes (not available for 2604B)	Yes (not available for 2614B)	-C version	Yes	Yes	Yes (not available for 2634B)	No
Rear only	Rear only	Yes	Rear only	Rear Only	Rear only	Rear and Preamp
Screw terminal; adapters available for banana or triax	Screw terminal; adapters available for banana or triax	Banana	Screw terminal; adapters available for banana or triax	HV triax	Triax	Triax
USB 2.0, LAN/LXI-C, IEEE-488, RS-232	USB 2.0, LAN/LXI-C, IEEE-488, RS-232	IEEE-488, RS-232	LAN/LXI, IEEE-488, RS-232	LAN/LXI-C, IEEE-488, RS-232	USB 2.0, LAN/LXI, IEEE-488, RS-232	IEEE-488, RS-232
14 digital I/O-trigger lines (no digital I/O available for 2604B)	14 digital I/O-trigger lines (no digital I/O available for 2614B)	1 In/4 Out with built-in component handler interfaces (except Model 2401).	14 digital I/O trigger lines	14 digital I/O trigger lines	14 digital I/O-trigger lines (no digital I/O available for 2634B)	1 In/4 Out with built-in component handler interfaces
6½-digit resolution. Scalable to 64 channels with TSP-Link Technology (not available for 2604B). Built-in Web-based characterization software. LabView driver.	6½-digit resolution. Scalable to 64 channels with TSP-Link Technology (not available for 2614B). Built-in Web-based characterization software. LabView driver.	6½-digit resolution. Scalable to 32 channels with TSP-Link Technology. 6 wire ohms mode. LabView drivers.	6½-digit resolution. Scalable to 32 channels with TSP-Link Technology. 6 wire ohms mode. LabView drivers.	6½-digit resolution. Scalable to 32 channels with TSP-Link Technology. 6 wire ohms mode. LabView drivers.	6½-digit measurement resolution. Scalable to 64+ channels with TSP-Link Technology (not available for 2634B). Built-in Web-based characterization software. LabView driver.	6½-digit resolution. 6 wire ohms mode. LabView drivers.
CE, UL	CE, UL	CE	CE, UL	CE, ETL	CE, UL	CE

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