

Selector Guide

Low Current/High Resistance Measurements

Selector Guide: Picoammeters, Electrometers, Source Measure Unit (SMU) Instruments (Measurement)

	Picoammeters				Electrometers		Source Measure Unit (SMU) Instruments
MODEL	6482	6485	6487	2502	6514	6517B	6430
CURRENT MEASURE							
From ¹	20 fA	20 fA	20 fA	15 fA	<1 fA	<1 fA	400 nA
To	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	100 mA
VOLTAGE MEASURE							
From ²					10 μ V	10 μ V	10 μ V
To					200 V	200 V	200 V
RESISTANCE MEASURE⁴							
From ⁵	10 Ω				10 Ω	100 Ω	100 $\mu\Omega$
To ⁶	1 P Ω				200 G Ω	10 P Ω ³	10 P Ω ³
CHARGE MEASURE							
From ²					10 fC	10 fC	
To					20 μ C	2 μ C	
FEATURES							
Input Connection	3 Slot Triax	BNC	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax
IEEE-488	•	•	•	•	•	•	•
RS-232	•	•	•	•	•	•	•
Guard					•	•	•
CE	•	•	•	•	•	•	•
Other	6½ digits. Dual \pm 30V bias sources.	5½ digits. Autoranging. 1000 rdg/s.	5½ digits. Built-in 500V source. Alternating voltage method for HI-R sweeps.	5½ digits. Dual channel. Built-in 100V source per channel.	5½ digits. Replaces Models 6512, 617-HIQ.	5½ digits. Built-in \pm 1kV source. Temperature, RH measurements. Alternating polarity method for HI-R. Plug-in switch cards available. Replaces 6517A.	SourceMeter with Remote PreAmp to minimize cable noise.

NOTES

1. Includes noise.
2. Digital resolution limit. Noise may have to be added.
3. P Ω (Petaohms) = 10¹⁵ Ω .
4. Resistance is measured with the Model 237 using Source V/Measure I or Source I/Measure V, but not directly displayed.
5. Lowest resistance measurable with better than 1% accuracy.
6. Highest resistance measurable with better than 10% accuracy.

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Selector Guide: Sources and Source Measure Unit (SMU) Instruments (*Sourcing*)

MODEL	Current Sources		Voltage Source	Source Measure Unit (SMU) Instruments	
	6220	6221	248	2657A	6430
Current Source	•	•		120 mA	•
Voltage Source			•	3000 V	•
Sink	•	•	•	180 W	•
CURRENT OUTPUT					
Accuracy ¹	2 pA	2 pA DC 4 pA AC		0.03%	10 fA
Resolution ²	100 fA	100 fA (DC & AC)		1 fA	50 aA
Maximum	±105 mA	±105 mA		±120 mA	±105 mA
VOLTAGE OUTPUT					
From			±1.5 V	±100 μV	±5 μV
To			±5000 V	±3000 V	±210 V
POWER OUTPUT	11 W	11 W	25 W	180 W	2.2 W
CURRENT LIMIT			5.25 mA	120 mA	1 fA to 105 mA
VOLTAGE LIMIT	105 V	105 V	0 to 5000 V	3000 V	0.2 mV to 210 V
ACCURACY (±Setting)					
I	0.05%	0.05%		0.03%	0.03%
V			0.01%	0.03%	0.02%
FEATURES					
Output Connector	3 Slot Triax	3 Slot Triax	SHV High Voltage Coax	HV Triax	3 Slot Triax
Ethernet		•		LXI compliant	
RS-232	•	•			•
IEEE-488	•	•	•	•	•
Memory	65,000 pt.	65,000 pt.		250K readings	2500 pt.
Remote Sense				•	•
Current Source Guard	•	•		•	•
CE	•	•	•	•	•
Other	Controls 2182A for low-power resistance and I-V measurements.	AC and DC current source. ARB waveforms up to 100kHz. Controls 2182A like 6220, adds pulsed I-V	Voltage monitor output. Programmable voltage limit.	Source/measure capability. Pulse mode. USB port.	

1. Best absolute accuracy of source.
2. Resolution for lowest range, smallest change in current that source can provide.

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