

Selector Guide

Low Current/High Resistance Measurements

Selector Guide: Picoammeters, Electrometers, Source-Measure Units (*Measurement*)

	Current Amplifier	Picoammeters				Electrometers		Source-Measure Units		
MODEL	428-PROG	6485	6487	2502	6514	6517A	6430	236	237	238
Page	211	213	216	220	223	227	188	198	198	198
CURRENT MEASURE										
From ¹	1.2 fA	20 fA	20 fA	15 fA	<1 fA	<1 fA	400 aA	30 fA	30 fA	30 fA
To	10 mA	20 mA	20 mA	20 mA	20 mA	20 mA	100 mA	100 mA	100 mA	1 A
VOLTAGE MEASURE										
From ²					10 μ V	10 μ V	10 μ V	10 μ V	10 μ V	10 μ V
To					200 V	200 V	200 V	110 V	1100 V	110 V
RESISTANCE MEASURE ⁴										
From ⁵			10 Ω		10 Ω	100 Ω	100 $\mu\Omega$	100 $\mu\Omega$	100 $\mu\Omega$	50 $\mu\Omega$
To ⁶			1 P Ω		200 G Ω	10 P Ω ³	10 P Ω ³	0.1 P Ω ³	1 P Ω ³	0.1 P Ω ³
CHARGE MEASURE										
From ²					10 fC	10 fC				
To					20 μ C	2 μ C				
FEATURES										
Input Connection	BNC	BNC	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax	3 Slot Triax
IEEE-488	•	•	•	•	•	•	•	•	•	•
RS-232		•	•	•	•	•	•			
Guard					•	•	•	•	•	•
CE	•	•	•	•	•	•	•	•	•	•
Other	2 μ s rise time. 10 ¹¹ V/A gain.	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.	SourceMeter with Remote PreAmp to minimize cable noise.	Source/measure capability. High speed. 5 digits.		

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 236, 237, and 238 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 Units (*Sourcing*)

MODEL	6220	6221	248	236	237	238	6430
Page	206	206	157	198	198	198	188
Current Source	•	•		•	•	•	•
Voltage Source			•	•	•	•	•
Sink	•	•	•	•	•	•	•
CURRENT OUTPUT							
Accuracy ¹	2 pA	2 pA DC 4 pA AC		450 fA	450 fA	450 fA	10 fA
Resolution ²	100 fA	100 fA (DC & AC)		100 fA	100 fA	100 fA	50 aA
Maximum	±105 mA	±105 mA		±100 mA	±100 mA	±1 A	±105 mA
VOLTAGE OUTPUT							
From			±1.5 V	±100 μ V	±100 μ V	±100 μ V	±5 μ V
To			±5000 V	±110 V	±1100 V	±110 V	±210 V
POWER OUTPUT	11 W	11 W	25 W	11 W	11 W	15 W	2.2 W
CURRENT LIMIT			5.25 mA	1 pA to 100 mA	1 pA to 100 mA	1 pA to 1 A	1 fA to 105 mA
VOLTAGE LIMIT	105 V	105 V	0 to 5000 V	1 mV to 110 V	1 mV to 1100 V	1 mV to 110 V	0.2 mV to 210 V
ACCURACY ($\pm$Setting)							
I	0.05%	0.05%		0.05%	0.05%	0.05%	0.03%
V			0.01%	0.03%	0.03%	0.03%	0.02%
FEATURES							
Output Connector	3 Slot Triax	3 Slot Triax	SHV High Voltage Coax	Two 3 Slot Triax	Two 3 Slot Triax	Two 3 Slot Triax	3 Slot Triax
Ethernet		•					
RS-232	•	•					•
IEEE-488	•	•	•	•	•	•	•
Memory	65,000 pt.	65,000 pt.		1000 pt.	1000 pt.	1000 pt.	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. High speed. Built-in waveforms.			

¹ Best absolute accuracy of source.

² Resolution for lowest range, smallest change in current that source can provide.



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