

6430

Sub-Femtoamp Remote SourceMeter® Instrument



- **0.4fA p-p (4E-16A) noise**
- **Remote PreAmp can be located at the signal source to minimize cable noise**
- **>10¹⁶Ω input resistance on voltage measurements**
- **High speed – up to 2000 readings/second**
- **Up to 6½-digit resolution**
- **Fast characterization of components with programmable digital I/O and interfaces**

source/measure readings per second into internal memory. Currents can be measured in as little as 5ms on the 100nA range, decreasing to just a few hundred microseconds on the higher ranges.

The Model 6430's distinguishing features include its excellent low current sensitivity and the Remote PreAmp, which makes this sensitivity useful by eliminating long input cables. The Remote PreAmp is an integral part of the Model 6430's feedback measuring system that cannot be operated independently from the measurement mainframe, although it can be separated from the mainframe by up to four meters of connection cable carrying high level signals.

Applications

The Model 6430's capabilities make it equally useful for research work and for evaluating sophisticated components in test labs for low-current, high-resistance, or sensitive semiconductor measurements made at higher levels with other SourceMeter instruments or SMUs. The low noise and drift performance of the Model 6430 also makes it well suited for research studies of high resistive nanowires and other high resistance nanomaterials.

High Speed Data Handling

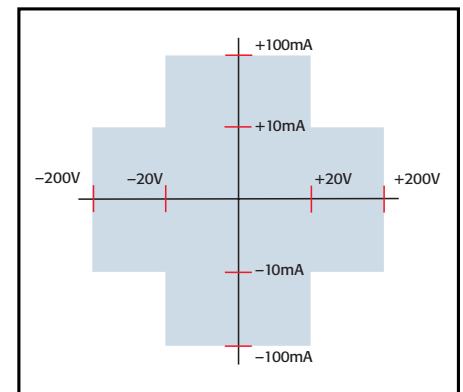
The Model 6430 can read more than 2000 readings per second into its internal memory buffer. The IEEE-488 bus output can transmit up to 75 source/measure readings per second to an external computer controller, including pass/fail indication.

ACCESSORIES AVAILABLE

7078-TRX-6IN 3-Slot, Low-Noise, 0.15m (0.5 ft) Guarded Triax Cable

The Model 6430 Sub-Femtoamp Remote SourceMeter combines the voltage and current sourcing and measurement functions of Keithley's popular SourceMeter and Source-Measure Unit (SMU) products with sensitivity, noise, and input resistance specifications superior to electrometers. This unique combination of broad functionality and exceptional measurement integrity is made possible by the Model 6430's Remote PreAmp, which offers a very sensitive bi-directional amplifier with sensitive feedback elements for measuring or sourcing currents at the device being tested. The high level signals output by the Remote PreAmp are sent to the controlling mainframe via a two-meter cable. This allows the user to make a direct or very short connection to the signal, minimizing the effects of cable noise.

The Model 6430 makes voltage, current, and resistance measurements at speeds no electrometer can match. It can read up to 2000



The Model 6430 provides four-quadrant sourcing of up to 2.2W, as well as measurement sensitivity down to sub-femtoamp and microvolt levels. It can measure currents from the 1pA range (with just 0.4fA p-p noise) up to the 100mA range at up to 20V. Voltage ranges from 200mV to 200V are available. Current and voltage range settings define the maximum source or sink voltage or current.

Combines broad functionality with exceptional measurement integrity

SOURCE AND MEASURE

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Ordering Information

6430 Sub-Femtoamp Remote SourceMeter

Extended warranty, service, and calibration contracts are available.

Accessories Supplied:

6430-322-1A Low Noise Triax Cable, 3-slot triax to alligator clips, 20cm (8 in)

8607 Safety High Voltage Dual Test Leads

CA-176-1E PreAmp Cable, 2m (6.6 ft)

CA-186-1B Banana Lead to Screw Terminal Adapter

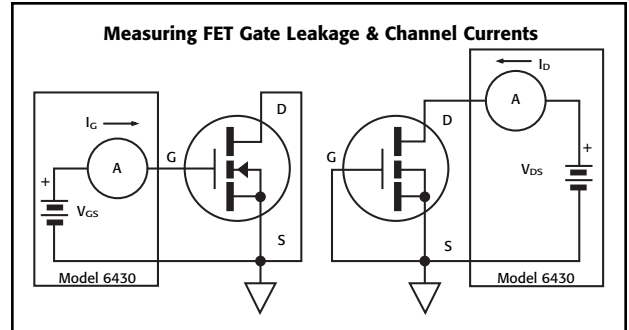
CAP-31 3-Lug Protective Cap (2) Instruction Manual

Sub-Femtoamp Remote SourceMeter® Instrument

Typical applications:

Semiconductor measurements

Gate leakage or channel leakage in FET-based components can generate errors in MOSFETs, JFETs, analog switches, and many other circuits. By allowing researchers to measure extremely low-level currents and voltages, the Model 6430 can help them understand the design limitations of these components, and investigate alternative device structures or materials.

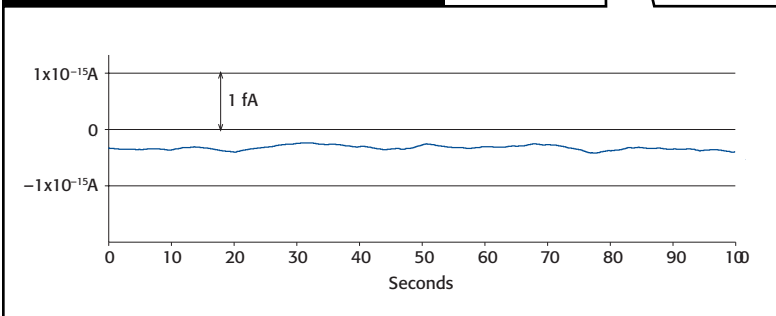
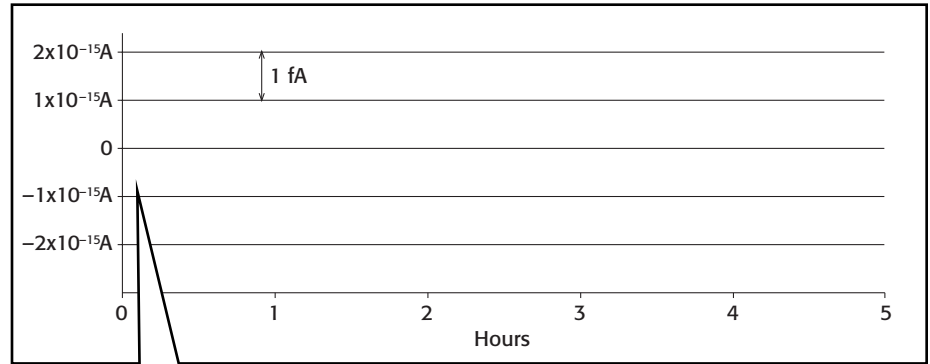


SET research

The Model 6430's superior low current measurement ability ($<0.4\text{fA p-p}$) makes it extremely useful for single electron transistor (SET) and quantum-dot research. Using a technique similar to a lock-in, the 6430 can measure currents with 1aA sensitivity ($10^{-18}\text{A} = 6e^-/\text{sec}$).

The measurement industry's lowest noise and drift

This data illustrates the Model 6430's impressive stability over a five-hour period, as well as its low short-term noise performance. This signal trace was acquired using the instrument's AUTOFILTER with a 5-second rise time on the 1pA range. The inset close-up is a snapshot of the filtered signal, showing the Model 6430's low noise (just 200aA p-p) during the first 100-second period. The data was taken in a laboratory environment where temperature varied about 1°C , with the instrument's IN/OUT HI and SENSE leads capped.



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CONDENSED MEASURE SPECIFICATIONS 1

VOLTAGE MEASUREMENT ACCURACY (4-WIRE SENSE)³

RANGE	MAX. RESOLUTION	INPUT ² RESISTANCE	ACCURACY (23°C ± 5°C) 1 Year, ±(%rdg + volts)
200.000 mV	1 μV	>10 ¹⁶ Ω	0.012% + 350 μV
2.00000 V	10 μV	>10 ¹⁶ Ω	0.012% + 350 μV
20.0000 V	100 μV	>10 ¹⁶ Ω	0.015% + 1.5 mV
200.000 V	1 mV	>10 ¹⁶ Ω	0.015% + 10 mV

TEMPERATURE COEFFICIENT (0°–18°C & 28°–40°C): ±(0.15 × accuracy specification)/°C.

ADDITIONAL MEASURE SPECIFICATIONS

OUTPUT SETTLING TIME (typical to 10% of final value): <2s, 1pA and 10pA ranges; <50ms, 100pA through 10nA ranges; <5ms, 100nA through 100mA ranges.

CURRENT NOISE: When observed over 1 minute intervals, peak to peak noise will be within 400aA during 90% of the intervals using Autofilter (5s 10% to 90% rise time), with triax connectors capped, Autozero OFF, Source Delay = 0, on the 1pA range for at least 3 minutes.

CURRENT MEASUREMENT ACCURACY (2- OR 4-WIRE SENSE)⁴

RANGE	MAX. RESOLUTION	VOLTAGE BURDEN ⁵	ACCURACY (23°C ± 5°C) 1 Year ±(%rdg + amps)
1.00000 pA	10 aA	< 1mV	1.0 % + 7 fA
10.0000 pA	100 aA	< 1mV	0.50 % + 7 fA
100.000 pA	1 fA	< 1mV	0.15 % + 30 fA
1.00000 nA	10 fA	< 1mV	0.050 % + 200 fA
10.0000 nA	100 fA	< 1mV	0.050 % + 2 pA
100.000 nA	1 pA	< 1mV	0.050 % + 20 pA
1.00000 μA	10 pA	< 1mV	0.050 % + 300 pA
10.0000 μA	100 pA	< 1mV	0.050 % + 2 nA
100.000 μA	1 nA	< 1mV	0.025 % + 6 nA
1.00000 mA	10 nA	< 1mV	0.027 % + 60 nA
10.0000 mA	100 nA	< 1mV	0.035 % + 600 nA
100.000 mA	1 μA	< 1mV	0.055 % + 6 μA

TEMPERATURE COEFFICIENT (0°–18°C & 28°–40°C): ±[(0.15 × accuracy specification) + 1fA]/°C.

INPUT CURRENT: <3fA at 23°C, <40% RH; typically ±0.5fA/°C around 23°C, <40% RH.

RESISTANCE MEASUREMENT ACCURACY (4-WIRE SENSE WITH REMOTE PREAMP)

Source I Mode, Auto Ohms

RANGE	MAX. RESOLUTION	DEFAULT TEST CURRENT	NORMAL ACCURACY (23°C ± 5°C) 1 Year, ±(%rdg + ohms)	ENHANCED ACCURACY (23°C ± 5°C) ⁷ 1 Year, ±(%rdg + ohms)
<2.00000 Ω ⁶	1 μΩ	—	Source I _{ACC} + Measure V _{ACC}	Measure I _{ACC} + Measure V _{ACC}
20.0000 Ω	100 μΩ	100 mA	0.098% + 0.003 Ω	0.068% + 0.001 Ω
200.000 Ω	1 mΩ	10 mA	0.077% + 0.03 Ω	0.048% + 0.01 Ω
2.00000 kΩ	10 mΩ	1 mA	0.066% + 0.3 Ω	0.040% + 0.1 Ω
20.0000 kΩ	100 mΩ	100 μA	0.063% + 3 Ω	0.038% + 1 Ω
200.000 kΩ	1 Ω	10 μA	0.082% + 30 Ω	0.064% + 10 Ω
2.00000 MΩ	10 Ω	1 μA	0.082% + 300 Ω	0.064% + 100 Ω
20.0000 MΩ	100 Ω	1 μA	0.085% + 1 kΩ	0.067% + 500 Ω
200.000 MΩ	1 kΩ	100 nA	0.085% + 10 kΩ	0.068% + 5 kΩ
2.00000 GΩ	10 kΩ	10 nA	0.085% + 100 kΩ	0.070% + 50 kΩ
20.0000 GΩ	100 kΩ	1 nA	0.085% + 1 MΩ	0.070% + 500 kΩ
200.000 GΩ	1 MΩ	100 pA	0.205% + 10 MΩ	0.185% + 5 MΩ
2.00000 TΩ	10 MΩ	10 pA	0.822% + 100 MΩ	0.619% + 50 MΩ
20.0000 TΩ	100 MΩ	1 pA	2.06% + 1 GΩ	1.54% + 500 MΩ
>20.0000 TΩ ⁶	—	—	Source I _{ACC} + Measure V _{ACC}	Measure I _{ACC} + Measure V _{ACC}

TEMPERATURE COEFFICIENT (0°–18°C & 28°–40°C): ±(0.15 × accuracy specification)/°C.

SOURCE I MODE, MANUAL OHMS: Total uncertainty = I source accuracy + V measure accuracy (4-wire sense).

SOURCE V MODE: Total uncertainty = V source accuracy + I measure accuracy (4-wire sense).

6-WIRE OHMS MODE: Available using active ohms guard and guard sense (mainframe rear panel ONLY). Max. Guard Output Current: 50 mA. Accuracy is load dependent. Refer to manual for calculation formula.

MAINFRAME GUARD OUTPUT RESISTANCE: 0.1Ω in ohms mode.

NOTES

- Speed = 10 PLC, Autofilter ON, properly zeroed and settled.
- Source I mode, I = 0.
- Voltage measurement accuracy is not affected by the remote preamp.
- Current measurement accuracy is not affected by the remote preamp; however, the 1pA through 100nA ranges are available only when using a preamp.
- 4-wire mode.
- Manual ohms mode only.
- Source readback enabled, offset compensation ON. Source delay must be programmed such that the source is fully settled for each reading.

CONDENSED SYSTEM SPEEDS

MEASUREMENT¹

MAXIMUM RANGE CHANGE RATE: 75/second.

SINGLE READING OPERATION READING RATES (rdg/second) FOR 60Hz (50Hz):

SPEED	NPLC/ TRIGGER ORIGIN	MEASURE TO GPIB	SOURCE- MEASURE ² TO GPIB	SOURCE- MEASURE PASS/FAIL TEST ^{2,3} TO GPIB
Fast	0.01 / internal	256 (256)	83 (83)	83 (83)
Medium	0.10 / internal	181 (166)	73 (70)	73 (70)
Normal	1.00 / internal	49 (42)	35 (31)	34 (30)

CONDENSED SOURCE SPECIFICATIONS⁴VOLTAGE PROGRAMMING ACCURACY (4-WIRE SENSE)⁵

RANGE	PROGRAMMING RESOLUTION	ACCURACY (1 Year) 23°C ±5°C ±% rdg. + volts	NOISE (peak-peak) 0.1Hz – 10Hz
200.000 mV	5 μV	0.02% + 600 μV	5 μV
2.00000 V	50 μV	0.02% + 600 μV	50 μV
20.0000 V	500 μV	0.02% + 2.4 mV	500 μV
200.000 V	5 mV	0.02% + 24 mV	5 mV

TEMPERATURE COEFFICIENT (0°–18°C & 28°–40°C): ±(0.15 × accuracy specification)°C.

MAX. OUTPUT POWER: 2.2W (four quadrant source or sink operation).

SOURCE/SINK LIMITS: ±21V @ ±105mA, ±210V @ ±10.5mA.

VOLTAGE REGULATION: Line: 0.01% of range. Load: 0.01% of range + 100μV

NOISE 10Hz–1MHz (p-p): 10mV

OVER VOLTAGE PROTECTION: User selectable values, 5% tolerance. Factory default = None.

CURRENT LIMIT: Bipolar current limit (compliance) set with single value. Min. 0.1% of range.

CURRENT PROGRAMMING ACCURACY (WITH REMOTE PREAMP)

RANGE	PROGRAMMING RESOLUTION	ACCURACY (1 Year) ⁴ 23°C ±5°C ±% rdg. + amps	NOISE (peak-peak) 0.1Hz – 10Hz
1.00000 pA	50 aA	1.0 % + 10 fA	5 fA
10.0000 pA	500 aA	0.50 % + 30 fA	10 fA
100.000 pA	5 fA	0.15 % + 40 fA	20 fA
1.00000 nA	50 fA	0.050 % + 200 fA	50 fA
10.0000 nA	500 fA	0.050 % + 2 pA	500 fA
100.000 nA	5 pA	0.050 % + 20 pA	3 pA
1.00000 μA	50 pA	0.050 % + 300 pA	20 pA
10.0000 μA	500 pA	0.050 % + 2 nA	200 pA
100.000 μA	5 nA	0.031 % + 20 nA	500 pA
1.00000 mA	50 nA	0.034 % + 200 nA	5 nA
10.0000 mA	500 nA	0.045 % + 2 μA	50 nA
100.000 mA	5 μA	0.066 % + 20 μA	500 nA

TEMPERATURE COEFFICIENT (0°–18°C & 28°–40°C): ±(0.15 × accuracy specification)°C.

MAX. OUTPUT POWER: 2.2W (four quadrant source or sink operation).

SOURCE/SINK LIMITS: ±10.5mA @ ±210V ±105mA @ ±21V.

CURRENT REGULATION: Line: 0.01% of range. Load: 0.01% of range + 1fA.

VOLTAGE LIMIT: Bipolar voltage limit (compliance) set with single value. Min. 0.1% of range.

NOTES:

- Reading rates applicable for voltage or current measurements. Auto zero off, autorange off, filter off, display off, trigger delay = 0, source auto clear off, and binary reading format.
- Pass/Fail test performed using one high limit and one low math limit.
- Includes time to re-program source to a new level before making measurement.
- For sink mode, 1pA to 100mA range, accuracy is ±(0.15% + offset*4).
- Voltage source accuracies are not affected by the remote preamp.

GENERAL

NOISE REJECTION:	NPLC	NMRR	CMRR
Fast	0.01	—	80 dB
Medium	0.1	—	80 dB
Normal	1	60 dB	90 dB

LOAD IMPEDANCE: Stable into 20,000pF on the 100mA through 100μA ranges, 470pF on the 10μA and 1μA ranges, and 100pF on the nA and pA ranges.
Refer to the User's Manual for details on measuring large capacitive loads.

COMMON MODE VOLTAGE: ±42VDC maximum.

COMMON MODE ISOLATION: >10⁹Ω, <1000pF.

OVERRANGE: 105% of range, source and measure.

MAX. VOLTAGE DROP BETWEEN INPUT/OUTPUT AND SENSE TERMINALS:
5V (To meet specified accuracy with 4-wire sense, refer to the User's Manual.)

MAX. SENSE LEAD RESISTANCE: 10Ω for rated accuracy.

SENSE INPUT RESISTANCE: 1MΩ.

MAINFRAME GUARD OFFSET VOLTAGE: 300μV typical.

PREAMP GUARD OFFSET VOLTAGE: 1mV typical.

PREAMP GUARD OUTPUT RESISTANCE: 110kΩ.

SOURCE OUTPUT MODES: Fixed DC level, Memory List (mixed function), Stair (linear and log)

SOURCE MEMORY LIST: 100 points max.

MEMORY BUFFER: 5,000 readings @ 5½ digits (two 2,500 point buffers).
Includes selected measured value(s) and time stamp. Lithium battery back-up (3 yr+ battery life).

DIGITAL INTERFACE:

Safety Interlock: Active low input.

Handler Interface: Start of test, end of test, 3 category bits. +5V @ 300mA supply.

Digital I/O: 1 trigger input, 4 TTL/Relay Drive outputs (33V @ 500mA sink, diode clamped).

PROGRAMMABILITY: IEEE-488 (SCPI-1995.0), RS-232, 5 user-definable power-up states plus factory default and *RST.

POWER SUPPLY: 100V–240V rms, 50–60Hz (automatically detected at power up), 100VA max.

WARRANTY: 1 year.

EMC: Conforms with European Union Directive 89/336/EEC EN 55011, EN 50082-1, EN 61000-3-2 and 61000-3-3, FCC part 15 class B.

SAFETY: Conforms with European Union Directive 73/23/EEC EN 61010-1.

VIBRATION: MIL-PRF-28800F, Class 3.

WARM-UP: 1 hour to rated accuracies.

DIMENSIONS: 89mm high × 213mm wide × 370mm deep (3½ in × 8½ in × 14½ in). Bench Configuration (with handle & feet): 104mm high × 238mm wide × 370mm deep (4½ in × 9½ in × 14½ in).

Amplifier: 20mm high × 57mm wide × 97mm deep (0.783 in × 2.225 in × 3.75 in).

WEIGHT: 3.45kg (7.61 lbs).

ENVIRONMENT: Operating: 0°–40°C, 60% R.H. (non-condensing) up to 35°C. Derate 5% R.H./°C, 35°–40°C. Storage: –25°C to 65°C. Non-condensing humidity.

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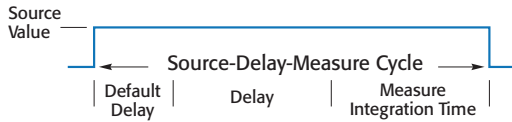
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238

Source-Measure Unit High Voltage Source-Measure Unit High Current Source-Measure Unit

SOURCE-DELAY-MEASURE CYCLE:



Default Delay: Fixed delay for instrument setting.

User Delay: Additional delay for device under test or system capacitance.

MEASURE:

Integration Time

Fast	416 μ s		4-digit resolution
Medium	4 ms		5-digit resolution
Line Cycle	16.67 ms (60 Hz)		5-digit resolution
	20.00 ms (50 Hz)		

EXECUTION SPEED

MINIMUM SOURCE-DELAY-MEASURE CYCLE TIME: 1ms.

RESPONSE TO IEEE-488 COMMAND (as a source): 25ms.

MEASUREMENT RATE: 1ms per point into internal buffer.

CONTINUOUS MEASUREMENT SPEED (source DC value over IEEE-488 bus): 110 readings per second.

TRIGGER LATENCY TIME: <2ms.

GENERAL

LOAD CAPACITANCE: Stable into 20,000pF typical.

REMOTE SENSE: Corrects for up to 2V drop in each output lead. Maximum 1k Ω per sense lead for rated accuracy. Residual output resistance (as a voltage source) is 0.5 Ω .

GUARD: Output Resistance: \leq 12k Ω .

Maximum Output Current: \pm 2mA.

Offset Relative to Output HI: \pm 2mV max.

ISOLATION (Output LO to chassis): Typically >10¹⁰ Ω in parallel with 500pF (650pF on Model 238).

MAXIMUM COMMON MODE VOLTAGE: 200V.

CONNECTORS: Outputs: 3-lug triax.

Trigger Input/Output: BNC.

Interlock: 3-pin miniature DIN.

TEMPERATURE COEFFICIENT (0°–18°C & 28°–50°C): \pm (0.1 \times applicable accuracy specification)/°C.

ENVIRONMENT:

Operating: 0°–50°C, 70% relative humidity up to 35°C. Linearly derate 3% RH/°C, 35°–50°C.

Storage: –25° to 65°C.

EMC: Conforms to European Union Directive 89/336/EEC.

SAFETY: Conforms to European Union Directive 73/23/EEC (meets EN61010-1/IEC 1010).

WARM-UP: One hour to rated accuracy.

COOLING: Internal fan forced air cooling.

POWER: 105–125 or 210–250V AC (external switch selectable), 90–110V and 180–220V version available. 100VA max. (120VA max. on Model 238).

DIMENSIONS, WEIGHT: 89mm high \times 435mm wide \times 448mm deep (3½ in \times 17¼ in \times 17¼ in). Net weight 9kg (19.75 lb).

VOLTAGE

	SOURCE V			MEASURE V		
	RANGE (Max. Value)	STEP SIZE	ACCURACY (1 Year, 18°–28°C)	RESOLUTION 4-Digit	RESOLUTION 5-Digit	ACCURACY (1 Year, 18°–28°C)
236, 237	\pm 1.1000 V	100 μ V	\pm (0.033% + 650 μ V)	100 μ V	10 μ V	\pm (0.028% + 300 μ V)
	\pm 11.000 V	1 mV	\pm (0.033% + 2.4 mV)	1 mV	100 μ V	\pm (0.025% + 1 mV)
	\pm 110.00 V	10 mV	\pm (0.033% + 24mV)	10 mV	1 mV	\pm (0.025% + 10 mV)
237 Only	\pm 1100.0 V	100 mV	\pm (0.04 % + 240 mV)	100 mV	10 mV	\pm (0.035%+100 mV)
238 Only	\pm 1.5000 V	100 μ V	\pm (0.033% + 800 μ V)	100 μ V	10 μ V	\pm (0.028% + 450 μ V)
	\pm 15.000 V	1 mV	\pm (0.033% + 2.7 mV)	1 mV	100 μ V	\pm (0.025% + 1 mV)
	\pm 110.00 V	10 mV	\pm (0.033% + 24 mV)	10 mV	1 mV	\pm (0.025% + 10 mV)

COMPLIANCE: Bipolar current limit set with single value.

Maximum: \pm 100mA (except \pm 10mA on 1100V range in Model 237 and \pm 1A on 15V range in Model 238).

Minimum: \pm 1% of range, except 0.5% of 1.1V range.

Accuracy, Step Size: Same as current source.

NOISE (p-p):

RANGE	0.1–10Hz	DC–20MHz
110 V – 1100 V	< 3ppm of range	40 mV
11 V (15 V on 238)	< 3ppm of range	15 mV
1.1 V (1.5 V on 238)	<10ppm of range	15 mV

WIDEBAND NOISE: 0.1 to 20MHz, 8mV p-p typical.

OVERSHOOT: <0.01% (110V step, 10mA range).

SETTLING TIME: <500 μ s to 0.01% (110V step, 10mA range).

NMRR: >60dB at 50 or 60Hz (LINE CYCLE integration time selected).

CMRR: >120dB at DC, 50 or 60Hz (LINE CYCLE integration time selected).

INPUT IMPEDANCE (as a voltmeter): >10¹⁴ Ω paralleled by <20pF.

CURRENT

	SOURCE I			MEASURE I		
	RANGE (Max. Value)	STEP SIZE	ACCURACY (1 Year, 18°–28°C)	RESOLUTION 4-Digit	RESOLUTION 5-Digit	ACCURACY (1 Year, 18°–28°C)
All	\pm 1.0000 nA	100 fA	\pm (0.3 % + 450 fA)	100 fA	10 fA	\pm (0.3 % + 100 fA) ¹
	\pm 10.000 nA	1 pA	\pm (0.3 % + 2 pA)	1 pA	100 fA	\pm (0.3 % + 1 pA)
	\pm 100.00 nA	10 pA	\pm (0.21% + 20 pA)	10 pA	1 pA	\pm (0.21 % + 6 pA)
	\pm 1.0000 μ A	100 pA	\pm (0.05% + 200 pA)	100 pA	10 pA	\pm (0.04 % + 60 pA)
	\pm 10.000 μ A	1 nA	\pm (0.05% + 2 nA)	1 nA	100 pA	\pm (0.035% + 700 pA)
	\pm 100.00 μ A	10 nA	\pm (0.05% + 20 nA)	10 nA	1 nA	\pm (0.035% + 6 nA)
	\pm 1.0000 mA	100 nA	\pm (0.05% + 200 nA)	100 nA	10 nA	\pm (0.035% + 60 nA)
	\pm 10.000 mA	1 μ A	\pm (0.05% + 2 μ A)	1 μ A	100 nA	\pm (0.038% + 600 nA)
	\pm 100.00 mA	10 μ A	\pm (0.1 % + 20 μ A)	10 μ A	1 μ A	\pm (0.1 % + 6 μ A)
	238 Only	\pm 1.0000 A	100 μ A	\pm (0.12% + 700 nA)	100 μ A	10 μ A

COMPLIANCE: Bipolar voltage limit set with single value.

Maximum: \pm 1100V (except \pm 110V in Model 238 and on 100mA range in Model 237).

Minimum: \pm 0.1% of selected current range.

Accuracy, Step Size: Same as voltage source.

NOISE (p-p of range): 0.1–10Hz: <3ppm (<20ppm on 1nA and 10nA ranges and on 1A range in Model 238).

OVERSHOOT: <0.01% typical (10mA step, R_L = 10k Ω).

SETTLING TIME: <500 μ s to 0.01% (10mA step, R_L = 10k Ω).

OUTPUT R, C: >10¹⁴ Ω paralleled by <20pF (on 1nA range).

¹ Offset specification applies for 23°C \pm 1°C with suppression. Temperature coefficient 50fA/°C.

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