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Current source

LOW I/HIGH R PRODUCTS

220

Programmable Current Source



- ±0.5pA to ±101mA DC output
- $10^{14}\Omega$ output resistance
- ±1V to ±105V programmable V-LIMIT
- Hardware Trigger IN/OUT
- IEEE-488 (GPIB)
- 100-point source memory
- Programmable Digital I/O

Ordering Information

220 Programmable Current Source

Extended warranty, service, and calibration contracts are available.

Accessories Supplied

Instruction manual, programming guide, Model 6011 Input Leads, 1.5m (5 ft), Triax to Clips

The Model 220 Current Source is an economical, programmable solution for precision sourcing of DC current. Constant current sources are needed when a device or material is best characterized by controlling the current through it, rather than the voltage across it. Examples are biasing transistor gates with fixed current, making hall effect measurements, and measuring low and high resistances. The Model 220 provides high accuracy and low noise in measurements where currents between 1pA and 100mA are required and programmability is needed.

ACCESSORIES AVAILABLE

TEST LEADS

6011	Input Leads, 2-Slot Male Triax to Alligator Clips, 1.5m (5 ft)
6011-10	Input Leads, 2-Slot Male Triax to Alligator Clips, 3m (10 ft)

CABLES

7008-*	IEEE-488 Digital Cable
7024-*	Low Noise Triax Cable

RACK MOUNT KITS

1019A-1	Single Fixed Rack Kit
1019A-2	Dual Fixed Rack Kit
4288-4	Rack Mount Kit

ADAPTERS

6146	Triax Tee Adapter
6147	2-Slot Male Triax to Female BNC Adapter
6167	Guarded Input Adapter
6172	2-Slot Male to 3-Lug Female Triax Adapter

RANGE	MAXIMUM OUTPUT	ACCURACY (1 Year) 18°–28°C	STEP SIZE	TEMPERATURE COEFFICIENT/°C 0°–18°C & 28°–50°C	NOISE (pk-pk of range)	3dB BANDWIDTH
100 mA	±101.00 mA	0.1 % + 50 µA	50 µA	0.01 % + 2 µA	100 ppm	0.1 Hz to 30 kHz
10 mA	±19.995 mA	0.05% + 10 µA	5 µA	0.005 % + 200 nA	100 ppm	0.1 Hz to 100 Hz
1 mA	±1.9995 mA	0.05% + 1 µA	500 nA	0.005 % + 20 nA	100 ppm	0.1 Hz to 100 Hz
100 µA	±199.95 µA	0.05% + 100 nA	50 nA	0.005 % + 2 nA	100 ppm	0.1 Hz to 100 Hz
10 µA	±19.995 µA	0.05% + 10 nA	5 nA	0.005 % + 200 pA	100 ppm	0.1 Hz to 100 Hz
1 µA	±1.9995 µA	0.1 % + 1 nA	500 pA	0.01 % + 20 pA	100 ppm	0.1 Hz to 100 Hz
100 nA	±199.95 nA	0.3 % + 100 pA	50 pA	0.02 % + 2 pA	100 ppm	0.1 Hz to 100 Hz
10 nA	±19.995 nA	0.3 % + 10 pA	5 pA	0.02 % + 200 fA	200 ppm	0.1 Hz to 10 Hz
1 nA	±1.9995 nA	0.4 % + 2 pA	500 fA	0.02 % + 200 fA	400 ppm	0.1 Hz to 10 Hz

OUTPUT CAPACITANCE: <20pF.
VOLTAGE LIMIT: Bipolar, 1V to 105V in 1V programmable steps.
RESPONSE TIME, TRANSIENT RECOVERY TIME: <3ms.
GUARD OUTPUT:
Maximum Load Capacitance: 10nF.
Maximum Load Current: Absolute total (Output + Guard) not to exceed 105mA.
Accuracy: ±1mV (excluding output lead voltage drop).
OUTPUT LOAD: Output load must be non-inductive.

PROGRAM MEMORY:
Number of Locations: 100.
Range of Dwell Times: 3ms to 999.9s.
EXTERNAL TRIGGER: TTL-compatible EXTERNAL TRIGGER INPUT and OUTPUT.
OUTPUT CONNECTIONS: 2-lug triax for output; five-way binding posts for GUARD, OUTPUT COMMON, and CHASSIS; BNC for EXTERNAL TRIGGER INPUT and OUTPUT, printed circuit digital I/O port.

GENERAL

SYSTEMS COMPATIBILITY: IEEE-488-1978.
MAXIMUM COMMON MODE VOLTAGE: 250V rms, DC to 60Hz.
EMC: Conforms to European Union Directive 89/336/EEC.
SAFETY: Conforms to European Union Directive 73/23/EEC (meets EN61010-1/IEC 1010).
WARMUP: 1 hour to rated accuracy.
POWER: 105–125 or 210–250VAC, 50 or 60Hz (80VA). 90–105 or 180–210V AC operation available.
ENVIRONMENTAL LIMITS: Operating: 0°–50°C; up to 35°C at 70% non-condensing relative humidity.
Storage: –25° to 70°C.
DIMENSIONS, WEIGHT: 127mm high × 216mm wide × 359mm deep (5 in × 8½ in × 14⅛ in). Net weight 4.4kg (9 lb 11 oz).

1.888.KEITHLEY (U.S. only)

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