230

Programmable Voltage Source

- ±2mA, ±20mA, ±100mA programmable I-LIMIT
- Remote sensing
- 100-point source memory
- Programmable Digital I/O

Ordering Information

230 Programmable Voltage Source

Extended warranty, service, and calibration contracts are available.

The Model 230 Voltage Source is a programmable solution for precision sourcing of low-level DC voltage.

RANGE	MAXIMUM OUTPUT	ACCURACY (1 Year) 18°–28°C	STEP SIZE	TEMPERATURE COEFFICIENT/°C 0°–18°C & 28°–50°C
100 V	±101.00 V	0.05 % + 50mV	50 mV	0.005% + 0.5 mV
10 V	±19.995 V	0.05 % + 10mV	5 mV	0.005% + 100 µV
1 V	±1.9995 V	0.05 % + 1mV	500 µV	0.005% + 25 µV
100 mV	±199.9 mV	0.075% + 300µV	50 µV	0.01 % + 25 µV

SELECTABLE CURRENT LIMIT: ±100mA, ±20mA, ±2mA (–0, +20%).

NOISE: (150µV + 50ppm range) p-p, 0.1Hz to 300Hz; 5mV p-p, 0.1Hz to 300kHz. Specification applies for local sensing only, typical.

RESPONSE TIME, TRANSIENT RECOVERY TIME: <3ms.

OUTPUT IMPEDANCE: 1mΩ.

EXTERNAL TRIGGER: TTL-compatible.

OUTPUT CONNECTIONS: Five-way binding posts for OUTPUT, OUTPUT SENSE, COMMON, COMMON SENSE, and CHASSIS GROUND; BNC for EXTERNAL TRIGGER INPUT and OUTPUT.

ACCESSORIES AVAILABLE

7008-*	IEEE-488 Digital Cable
1019A-*	Single or Dual Fixed Rack Kit
4288-4	Rack Mount Kit

GENERAL

SYSTEMS COMPATIBILITY: IEEE-488-1978.

MAXIMUM COMMON MODE VOLTAGE: 250V rms, DC to 60Hz.

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

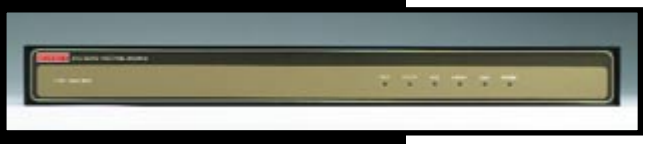
SAFETY: Conforms to European Union Directive 73/23/EEC (meets EN61010-1/IEC 1010).

POWER: 105–125 or 210–250VAC, 50 or 60Hz (80VA). 90–105 or 180–210V AC operation available.

DIMENSIONS, WEIGHT: 127mm high × 216mm wide × 359mm deep (5 in × 8½ in × 14⅛ in). Net weight 4.4kg (9 lb 11 oz).

213

Quad Voltage Source



- GPIB controlled
- Autoranging or programmable ±1V, ±5V, or ±10V ranges
- 10mA output current per channel
- Fast waveform buffers

Ordering Information

213 Quad Voltage Source

Extended warranty, service, and calibration contracts are available.

The Model 213 Quad Voltage Source (QVS) is a convenient and cost-effective instrument for sourcing voltage. Each of four fully independent and stackable channels provides up to ±10V of bias at 10mA.

Digital I/O with 100mA Drive Current

The Model 213 QVS also provides 8 bits each of TTL compatible digital input and output on a DB25 female connector for driving relays and similar applications.

VOLTAGE RANGE	MAXIMUM OUTPUT	STEP SIZE	ACCURACY 18°- 28°C I_{OUT} = 1mA	NOISE (p-p, typical) 0.1–10Hz
1 V	±1.02375 V	250 µV	±(0.05% + 1 mV)	<5ppm of range
5 V	±5.11875 V	1.25 mV	±(0.05% + 3 mV)	<3ppm of range
10 V	±10.2375 V	2.5 mV	±(0.05% + 10 mV)	<3ppm of range

TEMPERATURE COEFFICIENT OF ACCURACY (0°-18°C & 28°-50°C): ±(0.002% of setting + 100µV)/°C.

INTERNAL BUFFER: An 8192-location internal buffer is used to store values for waveform generation as fast as 1ms per point.

DIGITAL I/O: 8 TTL compatible level sensitive inputs. 8 outputs, internally selectable TTL compatible or open collector with 100mA drive and capable of withstanding 50V (for driving relays or other devices from an external voltage supply).

RANGING: Autorange or select one of three fixed ranges.

OUTPUT RESISTANCE: <500mΩ, typical.

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

ACCESSORIES AVAILABLE

213-CON	Analog Output Connector
C126-1	DB25 Male to DB25 Female with 1.5m (5 ft) Cable
CS-400	DB25 Male Solder Cup

GENERAL

CHANNEL-TO-CHANNEL, CHANNEL TO DIGITAL LOW ISOLATION: 500V or 105V·Hz, whichever is less.

POWER: 90–125 or 180–250V AC (internally switch selectable); 50–60Hz, 70VA max.

DIMENSIONS, WEIGHT: 425mm wide × 45mm high × 309mm deep (16¾ in × 1¾ in × 12 in). Net weight 3.52kg (7.75 lb).