

- For use with photomultiplier tubes, microchannel plates, proportional counters, and Geiger-Mueller tubes
- 0 to ± 3 kV
- 0 to 10 mA
- Digital meter reads output voltage or current
- Overload and short-circuited protected
- External control of output voltage
- 115 or 230 V ac, 47 to 63 Hz input power



The ORTEC Models 556 and 556H High-Voltage Power Supplies provide the noise-free, well-regulated, very stable high voltage necessary for proper operation of photomultipliers, ionization chambers, semiconductor detectors, electron multipliers, and many other devices. The Model 556 is housed in a double-width NIM module (per DOE/ER-0457T). The Model 556H is a stand-alone instrument designed for bench-top operation. The low-noise output is continuously adjustable from ± 10 to ± 3000 V dc with 0 to 10 mA load current. Noise on the output is < 10 mV peak-to-peak, thereby ensuring the highest performance in high-resolution, semiconductor or scintillation spectroscopy systems.

The front-panel digital meter allows visual monitoring of either the output voltage or the output current.

The output voltage can be controlled from ± 10 to ± 3000 V by application of an external input voltage of 0 to ± 6.9 V dc. This feature is desirable for control applications and is standard on all units.

The input power for Models 556 and 556H is taken directly from the ac line, either 115 or 230 V ac, 47 to 63 Hz.

Overload and short-circuit protection networks permit operation into short circuits without damage to the instrument.

Specifications

PERFORMANCE

OUTPUT POLARITY Positive or negative, selected by switch on rear panel.

OUTPUT RANGE 50 to 3000 V; minimum usable voltage 10 V.

OUTPUT LOAD CAPACITY 0 to 10 mA.

REGULATION $\leq 0.0025\%$ variation in output voltage for combined line and load variations within operating range at constant ambient temperature.

TEMPERATURE INSTABILITY $< \pm 50$ ppm/ $^{\circ}$ C after 30-minute warmup; operating range 0 to 50° C.

LONG-TERM DRIFT $< 0.01\%$ /hour and $< 0.03\%$ /24-hour variation in output voltage at constant input line voltage, load, and ambient temperature after 30-minute warmup.

OUTPUT RIPPLE < 10 mV peak-to-peak, 20 Hz to 20 MHz.

OVERLOAD PROTECTION Internal circuitry protects against overloads including short circuits.

RESETTABILITY Output voltage can be reset to within 0.1%.

CONTROLS

POWER Front-panel toggle switch energizes unit when power cord is connected to appropriate source, and an adjacent red LED lamp indicates when power is applied.

OUTPUT VOLTAGE One 6-position switch, one 5-position switch, and one 10-turn precision potentiometer; output voltage is the sum of the 3 settings.

METER Front-panel toggle switch selects display of output voltage in V or load current in mA.

POLARITY Rear-panel switch selects either positive or negative output polarity.

CONTROL Rear-panel locking toggle switch selects the reference source for the output voltage.

INT Selects the internal reference source; the front-panel controls select the output voltage.

EXT Selects the external reference source; output voltage is proportional to magnitude of reference input.

AC VOLTAGE Rear-panel slide switch selects either 115 V or 230 V ac input voltage.

INPUTS

AC POWER 103–129 V or 206–258 V, 47–63 Hz, 70 W nominal at full output power; supplied through international standard IEC power connector on rear panel. Fuse rating: 1.5 A, 250 V fuse for 115 V ac operation or 0.75 A, 250 V fuse for 230 V ac operation.

EXTERNAL CONTROL Full range of output voltage can be based on an external dc reference level furnished through a rear-panel BNC connector; control voltage range is 0 through ± 6.9 V dc; control voltage polarity must be the same polarity as that selected by the rear-panel Polarity switch; this input protected against over-voltages $> \pm 7$ V. Input impedance > 45 k Ω .

OUTPUTS

REGULATED DC OUTPUT The adjusted and regulated voltage, with selected polarity, is furnished simultaneously to the two SHV connectors on the rear panel.

556 and 556H High-Voltage Power Supply

INDICATOR

METER Front-panel LCD display indicates output voltage in kV ± 10 V or load current in mA ± 10 μ A. Load current is sum of external load current and internal load current. Internal load resistance is ~ 5 M Ω .

ELECTRICAL AND MECHANICAL

POWER REQUIREMENTS 115 or 230 V ac, 47–63 Hz, 70 W nominally at maximum output load.

WEIGHTS

Net

- 556 3.6 kg (8.0 lb).
- 556H 5.7 kg (12.6 lb).

Shipping

- 556 4.5 kg (10.0 lb).
- 556H 6.6 kg (14.6 lb).

DIMENSIONS

- 556 Standard double-width NIM module, 6.90 X 22.13 cm (2.70 X 8.714 in.).
- 556H 11.43 X 22.35 X 29.21 cm (4.5 X 8.8 X 11.5 in.).

Ordering Information

To order, specify:

Model	Description
556	High-Voltage Power Supply
556H	High-Voltage Power Supply

OPTIONAL CABLE ACCESSORIES

Model	Description
C-34-12	RG-59A/U 75- Ω Cable with one SHV female plug and one MHV male plug, 12-ft length
C-36-12	RG-59A/U 75- Ω Cable with two SHV female plugs, 12-ft length



556H "Bench-Top" High-Voltage Power Supply.



Specifications subject to change
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