

Compact and handy HV power supply with simple operation!!

ES series

- Low ripple, High Stability
- Compact bench top units
- Reversible polarity available
- 1kV to 5kV, 6W and 15W
- Remote analog programmable
- GPIB interface(option)
- Short circuit and arc protected

《 GPIB 》 《 RS-232C 》 《 RS-485 》 《 USB 》



APPLICATIONS

- PMT(Photomultiplier)
- MCP(Micro channel plate)
- Geiger counter
- Nuclear device
- For Biasing
- Electrostatic testing
- Breakdown voltage test
- General HV Testing



ULTRA-LOW RIPPLE • HIGH STABILITY

ES series is a high voltage power supply with compact design and simple operation. In addition to those features, the output ripple noise is as small as 5mVp-p, so ideal solution for such applications as PMT or Geiger counter, which are vulnerable to faint noise.



OUTSTANDING OPERABILITY

Simple design with only power switch and voltage meter for standard operation, and no complicated setting or operation is required. Simple but the potentiometer is 10-turn and the digital meter is 3.5 digit for "certain setting".



WIDE RANGE OF LINEUP

Wide output range from 1kV to 5kV, total 27 different models. No need to chose a product with over specifications hence avoiding wasted investment.

LINEUP

Output Voltage (kV)dc	Output Current (mA)	Output Power (W)	MODEL			Ripple (mVp-p)
			Positive Polar Output	Negative Polar Output	Reversible Polar Output	
0 to 1	6	6	ES-1P6	ES-1N6	ES-1R6	5
	15	15	ES-1P15	ES-1N15	ES-1R15	10
0 to 1.5	4	6	ES-1.5P4	ES-1.5N4	ES-1.5R4	5
	10	15	ES-1.5P10	ES-1.5N10	ES-1.5R10	10
0 to 2	3	6	ES-2P3	ES-2N3	ES-2R3	5
	7.5	15	ES-2P7.5	ES-2N7.5	ES-2R7.5	10
0 to 3	2	6	ES-3P2	ES-3N2	ES-3R2	10
	5	15	ES-3P5	ES-3N5	ES-3R5	20
0 to 5	1.2	6	ES-5P1.2	ES-5N1.2	ES-5R1.2	20

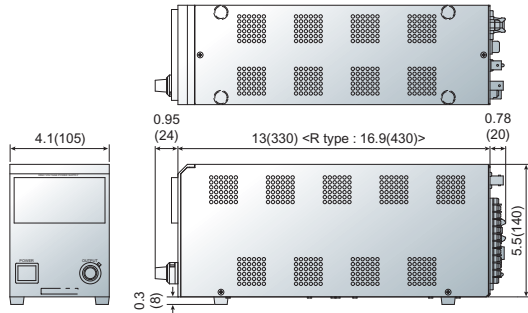
SPECIFICATIONS

Input voltage	115Vac ±10%, 50-60Hz, 1Ø 0.5A typ
Output polarity	Negative, Positive, Reversible polarity
Output voltage control	Front panel 10-turn potentiometer
Voltage Regulation	Line : ±0.005% of maximum voltage for ±10% input line change Load : 0.005% of maximum voltage for full load change
Stability	0.005%/Hr, 0.01%/8Hr
Temperature coef.	0.005%/°C

Protection	Automatic protection against overload, short and arc by cutting off the output
Metering	3½-digit voltage meter, accuracy : 1% of maximum output
Temperature	Operating : 0 to + 45°C Storage : -20 to + 75°C
Accessory	AC input cable(8.2ft, 2.5m length) Shielded HV output cable(8.2ft, 2.5m length)

*Specifications are at the maximum output after a warm-up period.

DIMENSIONS inch(mm)



INPUT, OUTPUT CONNECTOR AND CABLE

INPUT	Standard		with 3-pin plug
	220Vac input option		Flying lead
OUTPUT	See P.15		CN-BNC-HVP

OTHER FUNCTIONS

External-interlock
Enable to cut off HV output with external switch

Remote 0 to 10V programmable
(Input impedance is greater than 10kΩ)

Remote ON/OFF : GND = ON, OPEN = OFF

Current monitor 10V max, BNC connector

Voltage monitor 10V max, BNC connector

OPTIONS

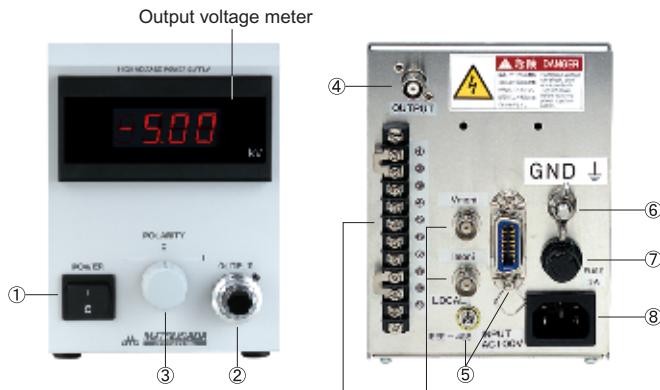
LG GPIB connection

L(230V) Input Voltage 200-240Vac ±10% 50/60Hz 1Ø

When ordering, please suffix L mark (option mark) to the model number.
<e.g.> ES-1P6-LG

FUNCTION

Normal operation: Output ①→②, conversely to stop operation.



① POWER ON/OFF switch:

Enable the output. Remote ON/OFF switch works only when front panel ON/OFF switch is on. This switch also reset the cut off mode.

② Output voltage setting potentiometer(10-turn lockable)

③ Polarity change switch(for R type):

Change shall be made when POWER switch is off. Changing polarity with high voltage output can affect the performance of power supply.

④ HV output connector BNC-HV(MHV) receptacle

⑤ Connector for GPIB adapter select switch(optional)

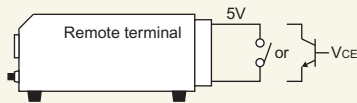
⑥ GND terminal M6

⑦ Fuse

⑧ AC inlet

REMOTE TERMINAL

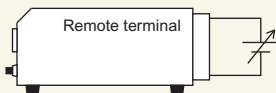
● REMOTE SWITCH ON/OFF *



Output	External relay	Open collector
ON	Short	$V_{CE} \leq 0.4V$
OFF	Open	$V_{CE} \geq 2V$

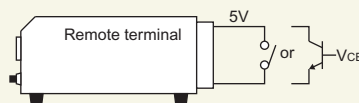
Sink Current $\geq 10mA$

● OUTPUT CONTROL *



Output Voltage	Vcon
0 to MAX	0V to 10V Input imp $\geq 10k\Omega$

● DOOR SWITCH

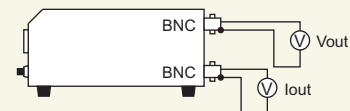


Sink Current $\geq 10mA$

It is possible to output in external relay short or a status of V_{CE} less than 0.4V. Output will be cut off when open or 2V or more. To resume the output again, turn OUTPUT switch ON after resetting by turning OUTPUT switch OFF in a status of short or less than 0.4V.

*LG option: When switch ⑤ is on IEEE-488 side, remote switch and output control is not enable from remote terminal, but from only IEEE-488 operation.

● OUTPUT MONITOR BNC receptacle*



Vout: 0V to ±10V (0 to +10V)

[standard] Monitor polarity equals output polarity.
[LG option] Positive polarity regardless of HV polarity.

Iout: 0V to +10V

Output Imp is 1kΩ.

*LG option: Generates output no matter switch ⑤ is on or off.