





Highly stable output HV power supply

# SEM, Semiconductor Inspection System Power Supply

## **AES/AESS** series

Output Voltage: 5 kV to 30 kV Output Current: 500 µA to 6 mA



## AES/AESS series



#### **FEATURES**

- Ultra Low Ripple and High stability
- Low temperature coefficient, 25 ppm/°C <AESS> (Below 10 ppm/°C model is available)
- With Voltage and current monitor
- - Please contact our sales representative for detail.

#### **APPLICATIONS**

- SEM (Scanning Electron Microscope)
- CD-SEM (Critical Dimension SEM)
- E-Beam lithography
- FIB (Focused Ion Beam)
- AES (Auger electron spectroscopy)

#### **SUMMARY**

AES/AESS series are high voltage power supplies with quite stable output for various high voltage applications, which require precise outputs.

The low ripple and temperature coefficient secure you the quite stable output voltage.

4-digits digital meter and digital interface will secure more precise monitoring and setting.

#### **LINEUP**

			······································		,
Output Voltage	Output Current	MODEL	Ripple	MODEL	Ripple
0 to 5 kV	3 mA	AES-5*3	100 mVp-p	AESS-5*3	10 mVp-p
	6 mA	AES-5*6	100 mVp-p	AESS-5*6	10 mVp-p
0 to 10 kV	1.5 mA	AES-10*1.5	200 mVp-p	AESS-10*1.5	20 mVp-p
	3 mA	AES-10*3	200 mVp-p	AESS-10*3	20 mVp-p
0 to 15 kV	1 mA	AES-15*1	300 mVp-p	AESS-15*1	30 mVp-p
	2 mA	AES-15*2	300 mVp-p	AESS-15*2	30 mVp-p
0 to 30 kV	500 μΑ	AES-30*0.5	500 mVp-p	AESS-30*0.5	50 mVp-p
	1 mA	AES-30*1	500 mVp-p	AESS-30*1	50 mVp-p

\*: P... Positive polar output N... Negative polar output

#### **SPECIFICATIONS**

Input voltage 85 to 264 VAC 50 to 60 Hz single phase

Output control Local : Rotary encoder on front panel
Remote : External control voltage 0 V to10 Vdc

Input impedance 1 MΩ

Setting accuracy ±0.5% Full scale

RS-232C Interface : Optical fiber cable

Speed: Asynchronous 19200 bps

Data length: 8 bit Parity: None Step bit: 1 bit Flow control: None Setting resolution: 16 bit

Line: 0.005% of maximum voltage for ±10% input line change Load: 0.005% of maximum voltage for 10 to 100% load change

Regulation Load: 0.005 % of maximum voltage for 10 to 100 % lo Stability AES 20 ppm/h, 50 ppm/8 h

AESS 10 ppm/h, 25 ppm/8 h (Consult us for greater stability)

**Temperature** AES 50 ppm/°C **Coef.** AESS 25 ppm/°C

Voltage

(below 10 ppm/°C model is available)

Warm Up 8 h warm up is required.

Output display Voltage: 4-digit meter (Accuracy: ±1 % Full Scale)

Current: 4-digit meter (Accuracy: ±1 % Full Scale)

Monitor Output [Analog] Voltage monitor : 10 V/maximum output voltage

(output impedance 1 k $\Omega$ , accuracy ±1 % Full Scale)

Current monitor: 10 V/maximum output current (output impedance 1 kΩ, accuracy ±1 % Full Scale)

(output impedance 1 k $\Omega$ , accuracy ±1 % Full Si [RS-232C] Voltage monitor : Resolution 16 bit

Current monitor : Resolution 16 bit

**Protection** Over voltage protection

Output voltage is to be limited at rated maximum output voltage at local / RS-232C Control, limited at 105 % of rated maximum output at remote control.

Over current protection

Output current is to be limited at approx.105 % of rated maximum output

current with voltage drop down.

Protection against short circuit and arc

Blackout protection

When recovered from blackout the power supply become stand-by mode.

Output cut off when interlock terminal on rear panel is open.

Interlock
Operating temp.

Storage

Output cut off when +15 °C to +35 °C

temp. −20 °C to +60 °C

**Humidity** 0 to 80 %RH (no condensation)

Output connector N

Matsusada's low noise connector and cable (detachable)

Accessory HV output cable 2.5 m (1)

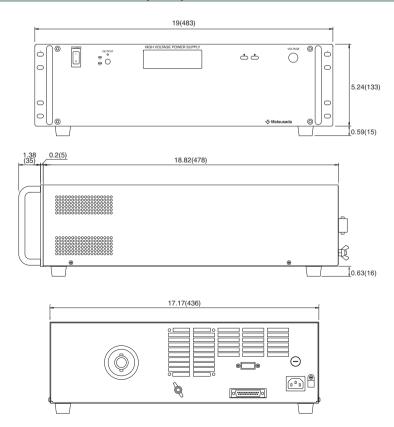
5 kV models : CN-SHV-HVP \
10 kV models : CSSP-10
15, 30 kV models : CSSP-30

AC input cable (1) CO-OPT cable 3 m (1)

CO-OPT2-25 (optical RS-232C Module) (1)

Instruction manual (1)

### **DIMENSIONS** inch(mm)





USA/Canada: +1-888-652-8651

other countries: +81-6-6150-5089

### Customer Inquiry Sheet (AES/AESS series)

Please copy this page and above fax number after filling out form below.

■ I would like							
☐ A quotation ☐ An explanation of product	☐ A demonstration	☐ To purchase					
Other (	)						
Give us your requirement / comment							
■ Please fill in below.							
Address:							
Company:							
Dept.:	Title:						
Name:							
Tel:	Fax:						
iei.	FdX.						
E-mail:							

#### Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the "Products") are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply product in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A "Return Merchandise Authorization" is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, incl

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog. PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS https://www.matsusada.com/site/warranty.html

Copyright © 2019 Matsusada Precision Inc. All righits reserved.

