Matsusada Precision

Low Profile Rack-mount HV Power Supply

AK Series

NEW

High Power 6.4kW

Compact Rack-mount HV Power Supply

1kV to 120kV / 3.0kW to 6.4kW AK series

www.matsusada.com

AK series

- High Power : 6.4kW / 120kV
- Wide Lineup : over 100 models
- Various Remote Control Functions

AK series is a high-performance high voltage power supply with high power output of 120kV / 6.4kW in 19” rack. User can select the best suitable model for each application among the wide lineup of more than 100 models to save the cost.
In addition to its low noise and stable HV outputs, AK series features various remote control options and complete protections to make it an easy-to-operate and highly reliable power supply for variety of applications.
AK series is a reliable HV power supply for voltage withstand testing for various electrical components such as IGBT or breaker which are used in next generation power supply systems including DC power delivery or smart grid.

FEATURES

- Wide range of output from 1kV to 120kV and 3.0kW to 6.4kW
- Local and remote operation with various remote function
- Remote and front panel monitoring of DC output voltage and current
- Automatic protection against overload, short circuit and arc
- PC programmable via USB, Ethernet, RS-232C, RS-485 and GPIB (option)

APPLICATION

- The inspection and evaluation of inverter and the power device
- Ion Beam
- Electron Beam
- X-ray Tube
- Capacitor Charging
- Ion Implantation
- Insulator Testing
- ATE (Automatic Test Equipment)
- All kinds of High-Voltage Testing

LINEUP

Output voltage (kV)	Output current	Output power	MODEL	Dimensions (See p.5)
1	3A	3.0	AK-1∗3000	A
	4A	4.0	AK-1∗4000	A
1.5	2A	3.0	AK-1.5∗2000	A
	2.66A	4.0	AK-1.5∗2660	A
	4.25A	6.4	AK-1.5∗4250	B
2	1.5A	3.0	AK-2∗1500	A
	2A	4.0	AK-2∗2000	A
	3.2A	6.4	AK-2∗3200	B
3	1A	3.0	AK-3∗1000	A
	1.06A	3.2	AK-3∗1060	A
	1.33A	4.0	AK-3∗1330	A
	2.1A	6.4	AK-3∗2100	B
3.6	1.3A	4.6	AK-3.6∗1300	B
5	600mA	3.0	AK-5∗600	A
	800mA	4.0	AK-5∗800	A
	1.28A	6.4	AK-5∗1280	B
6	500mA	3.0	AK-6∗500	A
	670mA	4.0	AK-6∗670	A
	1.06A	6.4	AK-6∗1060	B
10	300mA	3.0	AK-10∗300	A
	400mA	4.0	AK-10∗400	A
	640mA	6.4	AK-10∗640	B
12	500mA	6.0	AK-12∗500	B
	530mA	6.4	AK-12∗530	B
15	200mA	3.0	AK-15∗200	A
	267mA	4.0	AK-15∗267	A
	420mA	6.4	AK-15∗420	B

Output voltage (kV)	Output current	Output power	MODEL	Dimensions (See p.5)
20	150mA	3.0	AK-20∗150	A
	200mA	4.0	AK-20∗200	A
	320mA	6.4	AK-20∗320	B
30	100mA	3.0	AK-30∗100	A
	133mA	4.0	AK-30∗133	A
	210mA	6.4	AK-30∗210	B
40	75mA	3.0	AK-40∗75	A
	100mA	4.0	AK-40∗100	A
	160mA	6.4	AK-40∗160	B
50	60mA	3.0	AK-50∗60	A
	80mA	4.0	AK-50∗80	A
	125mA	6.4	AK-50∗125	B
60	50mA	3.0	AK-60∗50	A
	67mA	4.0	AK-60∗67	A
	105mA	6.4	AK-60∗105	B
70	90mA	6.4	AK-70∗90	B
80	37.5mA	3.0	AK-80∗37.5	B
	50mA	4.0	AK-80∗50	B
	80mA	6.4	AK-80∗80	B
100	30mA	3.0	AK-100∗30	B
	40mA	4.0	AK-100∗40	B
	64mA	6.4	AK-100∗64	B
120	25mA	3.0	AK-120∗25	B
	33mA	4.0	AK-120∗33	B
	53mA	6.4	AK-120∗53	B

∗··· P : Positive polar output N : Negative polar output

Following lineups are also available beside above.
■AU series : 1kV to 120kV / 30W to 2.2kW
■AKP series : 1kV to 120kV / 12kW, 13kW
■REH series : 750V to 1.2kV / 1kW to 15kW

SPECIFICATIONS

Input Voltage 208VAC ±10%, three phase 50 / 60Hz

Input Current

Output power	Input current
3.0kW	10.5A typ.
3.2kW	
4.0kW	15A typ.
4.6kW	16A typ.
6.0kW	21A typ.
6.4kW	

Output Control

[Local] Voltage : front panel 10-turn potentiometer

Current : front panel 10-turn potentiometer

[Remote] Voltage : external voltage source 0 to 10Vdc(Input impedance greater than 1MΩ) or by external 5kΩ potentiometer

Current : external voltage source 0 to 10Vdc(Input impedance greater than 1MΩ) or by external 5kΩ potentiometer

Voltage Regulation

Line : ±0.005% of maximum voltage for ±10% input line change

Load : 0.005% of maximum voltage +400mV for full load change

Current Regulation

Line : ±0.05% of maximum current for ±10% input line change

Load : 0.05% of maximum current ±100μA for full load change

Ripple 0.1%p-p +1Vrms

Temperature Coef. 0.01% / °C

Stability 0.01% / Hr

Output display

Voltage : 3.5-digit digital meter ±1999

Current : 3.5-digit digital meter 1999

Monitor output

Voltage : 10V / Maximum output voltage(output impedance 1kΩ)

Current : 10V / Maximum output current(output impedance 1kΩ)

Protections

Overvoltage (Output cut off at 110% of rated output, manual reset)

Overcurrent (Limit output current with dropping output voltage)

Short circuit, arc protection

Over temperature (Output cut off, manual reset)

Temperature

Operating : 0 to +40°C

Storage : -20°C to +70°C

Humidity 30% to 80%RH (no condensation)

Accessories

Shielded HV output cable 2.5m(flying lead) (1)

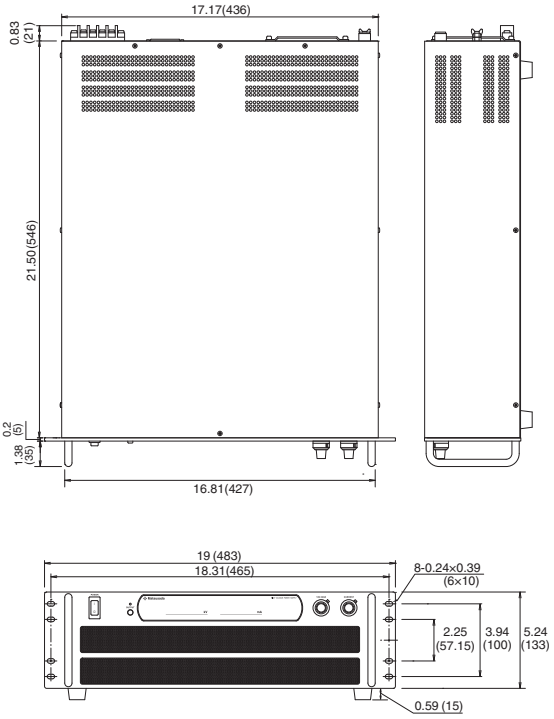
Instruction manual (1)

DIMENSIONS inch(mm)

Secure more than 30cm space from front and rear panel as unit has inhaling and exhausting holes for forced air-cooling.

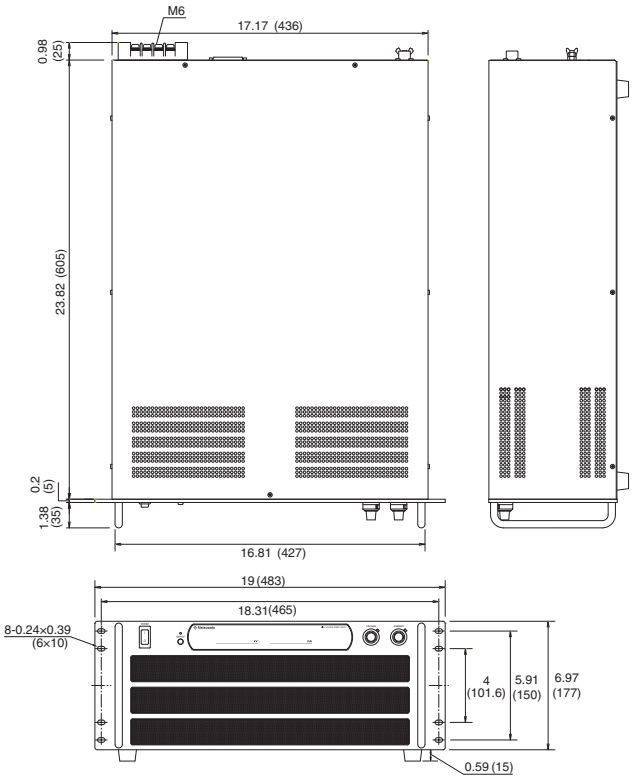
A【3U size】

・3.0kW to 4.0kW models（up to 60kV）



B【4U size】

・3.0kW to 4.0kW models（more than 80kV）
・4.6kW to 6.4kW models



OPTIONS

-LF Floating ground : isolate HV return from chassis ground(50V max) *1
All equipments that connect to Remote Control Connector (TB1) must be on floating ground in case this feature is intended to use. (To be used to measure the curent flow to the load. / This option cannot be used to float a high voltage power supply.)

-LW Slow start : around 10 seconds from output switch or remote switch on to reach setting voltage *1

-LMs Master slave control : 1 Master unit can control up to 2 slave units *1*2
(Sum of maximum rating output must be under 18kW)

-LOc Cut off the output when overcurrent *2

-L(200V) Input Voltage 200VAC ±10%, three-phase (Input current : approx. 105% of AC 208V)

-L(220V) Input Voltage 220VAC ±10%, three-phase (Input current : approx. 95% of AC 208V)

-L(400V) Input Voltage 400VAC ±10%, three-phase (Input current 3.0kW, 3.2kW] 5.5A typ. / 4.0kW 8A typ. / 4.6kW 8.5A typ. / 6.0kW, 6.4kW] 11A typ.)

-L(3m) The length of HV output shielded cable cable is changed to 3m.

-L(5m) The length of HV output shielded cable is changed to 5m. (only for ≦ 40kV models)

-L(7m) The length of HV output shielded cable is changed to 7m. (only for ≦ 15kV models)

*1 In case selecting -LMs option with -LF option or -LW option, all AK power supplies which connected as Master-Slave, need to equip -LF option and -LW option.
*2 In case power supply operate as cut off the output when overcurrent with Master-Slave connection, select -LOc option for only Master unit (the other options can be selected together), and do not select -LOc option for Slave unit. Combinations other than above, cut off the output when overcurrent will not work. And also, Slave unit does not equip -LOc option, therefore, if Slave unit is used individually, out will be either CC or CV as standard features.

When ordering, suffix -L mark to the model number.
〈e.g.〉 AK-15P200-LFOcW(200V) (7m)
AK-120N33-LFMsW(400V) (3m)
(Alphabetical, input voltage and cable length order)

Digital controllers CO series shall be additionally required.
Please contact your local sales office for detail of CO series catalog.

Introduction of other high performance HV power supplies

Ultra low profile / Rack-mount HV power supply AU series

1kV to 120kV
30W to 2.2kW

AU series is a high performance, high-reliability and high-quality high voltage power supply as a result of our high-voltage power technology built up over the years.

- With wide lineup and various options, the best suitable model for your application can be selected.
- Various remote control and monitor functions contributes to the extensibility for your system.
- Double and triple protections are added for even safer operation in this ultra-low profile design.

CE Please ask for CE marked models.

High power High Voltage Power Supply AKP series

1kV to 120kV
12kW, 13kW

AKP series is the high voltage power supply that can output high voltage and high power of 120kV and 13kW at maximum on its own.

- The single unit can output power as high as 13kW and Master / slave function further enables extension at maximum 52kW.
- Compatible with digital control by means of various interfaces including LAN, USB, RS-232C etc.
- The full protective circuits, such as output short-circuit and protection from arc discharge, are included as the standard functions.

Ultra low profile / High power DC power supply REH series

750V to 1.2kV
1.1kW to 15kW

REH series is high power output supply with higher voltage designed with accumulated know-how by Matsusada Precision, a leading manufacturer of high voltage power supply.

- Extensive safety design from high voltage experience and technology.
- Overwhelming small size in its class of 1kV / 15kW and stable output are achieved.
- More than 30kW output is possible by using digital interface option and our digital controller.

FAX

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Customer Inquiry Sheet (AK 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:
E-mail:	

Warranty

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.If any Product is showed to be defective as satisfactory to us, 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, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes. Regarding RoHS compliance, Matsusada Precision Inc. does not intentionally use objectionable substances in the products listed within this catalog. Matsusada Precision Inc. manufactures products using components which, according to our suppliers, are “RoHS compliant parts”. However, Matsusada Precision does not analyze each and every unit to confirm. Therefore, there may be some customized products which do not comply to RoHS. Please contact your nearby sales office for confirmation.

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