

NEW

High Power 6.4kW

Compact Rack-mount HV Power Supply

1kV to 120kV / 3.0kW to 6.4kW

AK series



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 $\pm 10\%$, 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 1M Ω)
or by external 5k Ω potentiometer

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

Voltage Regulation

Line : $\pm 0.005\%$ of maximum voltage for $\pm 10\%$ input line change
Load : 0.005% of maximum voltage +400mV for full load change

Current Regulation

Line : $\pm 0.05\%$ of maximum current for $\pm 10\%$ input line change
Load : 0.05% of maximum current $\pm 100\mu\text{A}$ for full load change

Ripple

0.1%p-p +1Vrms

Temperature Coef.

0.01% / $^{\circ}\text{C}$

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

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 $^{\circ}\text{C}$
Storage : -20 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$

Humidity

30% to 80%RH (no condensation)

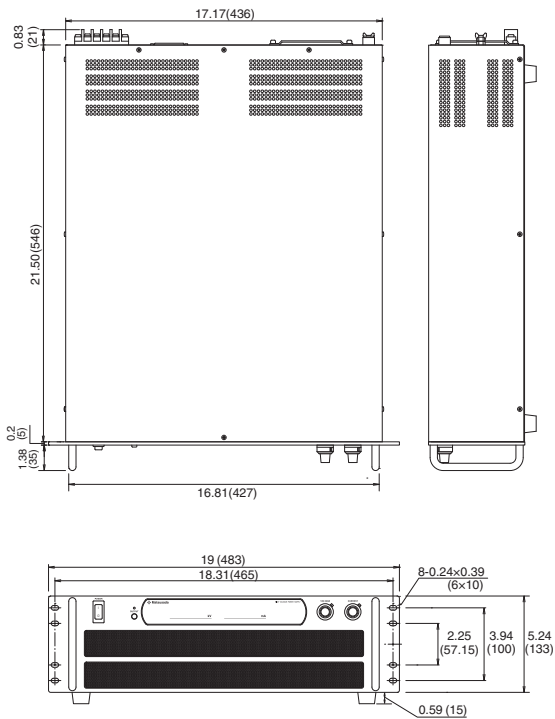
Accessories

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

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

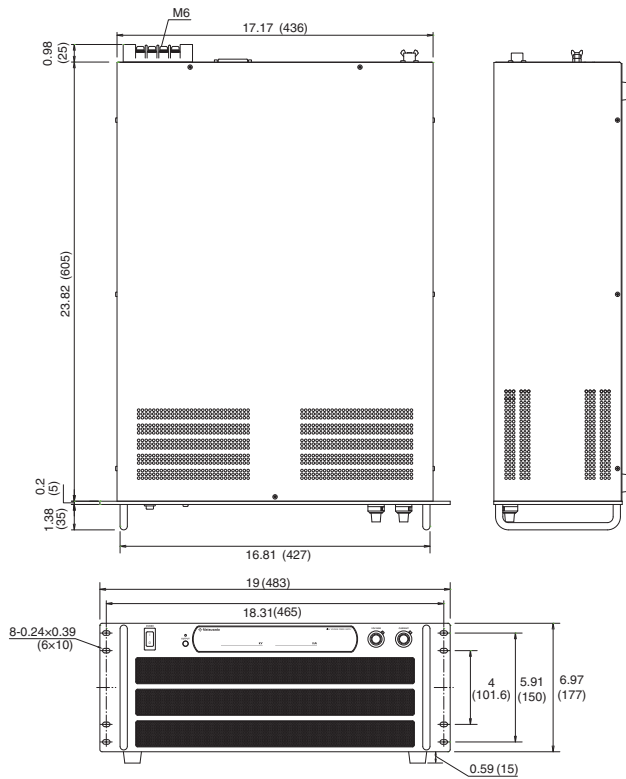
A【3U size】

- 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(*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 current 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 $\pm 10\%$, three-phase (Input current : approx. 105% of AC 208V) |
| -L(220V) | Input Voltage 220VAC $\pm 10\%$, three-phase (Input current : approx. 95% of AC 208V) |
| -L(400V) | Input Voltage 400VAC $\pm 10\%$, three-phase (Input current <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> 3.0kW 3.2kW 4.0kW 4.6kW 6.0kW 6.4kW </div> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;">] 5.5A typ. 8A typ. 8.5A typ. 11A typ. </div> </div> |
| -L(3m) | The length of HV output shielded cable is changed to 3m. |
| -L(5m) | The length of HV output shielded cable is changed to 5m. (only for ≤ 40 kV models) |
| -L(7m) | The length of HV output shielded cable is changed to 7m. (only for ≤ 15 kV models) |

*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.

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When ordering, suffix -L mark to the model number.

〈e.g.〉 AK-15P200-LFOcW(200V) (7m)

AK-120N33-LFM_sW(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.



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.