

**NEW**

# High Power 6.4 kW

## Compact Rack-mount HV Power Supply

**AK series**

1 kV to 120 kV / 3.0 kW to 6.4 kW



- Automatic switching between CV mode and CC mode
- Available for expanding to 18 kW with master-slave connection
- Suitable for the inspection and evaluation of inverter and power device

# AK series

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



AK series is a **high-performance high voltage power supply with high power output of 120 kV / 6.4 kW 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 1 kV to 120 kV and 3.0 kW to 6.4 kW
- 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 (kW)	MODEL	Dimensions (See p.5)	Weight (kg approx.)
1	3 A	3.0	AK-1*3000	A	25
	4 A	4.0	AK-1*4000	A	25
1.5	2 A	3.0	AK-1.5*2000	A	25
	2.66 A	4.0	AK-1.5*2660	A	25
	4.25 A	6.4	AK-1.5*4250	B	40
2	1.5 A	3.0	AK-2*1500	A	25
	2 A	4.0	AK-2*2000	A	25
	3.2 A	6.4	AK-2*3200	B	40
3	1 A	3.0	AK-3*1000	A	25
	1.06 A	3.2	AK-3*1060	A	25
	1.33 A	4.0	AK-3*1330	A	25
	2.1 A	6.4	AK-3*2100	B	40
3.6	1.3 A	4.6	AK-3.6*1300	B	40
5	600 mA	3.0	AK-5*600	A	25
	800 mA	4.0	AK-5*800	A	25
	1.28 A	6.4	AK-5*1280	B	40
6	500 mA	3.0	AK-6*500	A	25
	670 mA	4.0	AK-6*670	A	25
	1.06 A	6.4	AK-6*1060	B	40
10	300 mA	3.0	AK-10*300	A	25
	400 mA	4.0	AK-10*400	A	25
	640 mA	6.4	AK-10*640	B	40
12	500 mA	6.0	AK-12*500	B	40
	530 mA	6.4	AK-12*530	B	40
15	200 mA	3.0	AK-15*200	A	25
	267 mA	4.0	AK-15*267	A	25
	420 mA	6.4	AK-15*420	B	40

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

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

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

## SPECIFICATIONS

**Input Voltage** 208 VAC  $\pm 10\%$ , three phase 50 / 60 Hz

**Input Current**

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

**Output Control**

[Local] Voltage : front panel 10-turn potentiometer

Current : front panel 10-turn potentiometer

[Remote] Voltage : external voltage source 0 to 10 Vdc (Input impedance greater than 1 M $\Omega$ )  
or by external 5 k $\Omega$  potentiometer

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

**Voltage Regulation**

Line :  $\pm 0.005\%$  of maximum voltage for  $\pm 10\%$  input line change

Load : 0.005 % of maximum voltage +400 mV for load change of 10 % to 100 %

**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 load change of 10 % to 100 %

**Ripple**

0.1 %p-p +1 Vrms

**Temperature Coef.**

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

**Stability**

0.01 % / Hr

**Output display**

Voltage : 3.5-digit digital meter  $\pm 1999$

Current : 3.5-digit digital meter 1999

**Monitor output**

Voltage : 10 V / Maximum output voltage (output impedance 1 k $\Omega$ )

Current : 10 V / Maximum output current (output impedance 1 k $\Omega$ )

**Protections**

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

Overcurrent (Limiting 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**

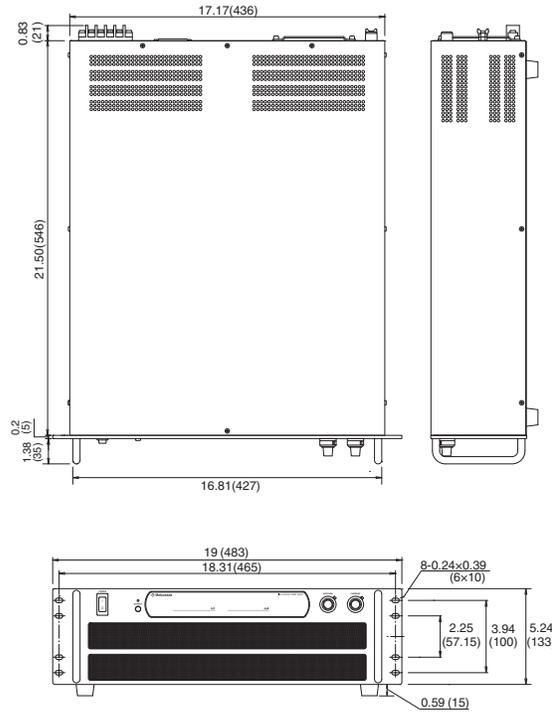
Shielded HV output cable 2.5 m (flying lead) (1)

Instruction manual (1)

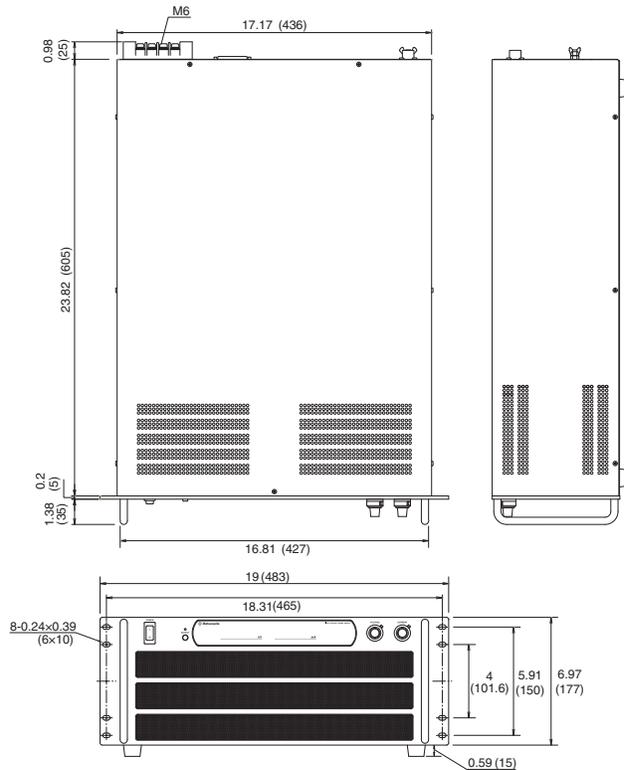
## DIMENSIONS inch(mm)

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

### A [3U size]



### B [4U size]



## ■ OPTIONS

- LF** Floating ground : isolating HV return from chassis ground(50 V max) \*1  
All equipments that are connected 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 18 kW)
- LOc** Cut off the output when overcurrent \*2
- L(200V)** Input Voltage 200 VAC  $\pm 10\%$ , three-phase (Input current : approx. 105 % of AC 208 V)
- L(220V)** Input Voltage 220 VAC  $\pm 10\%$ , three-phase (Input current : approx. 95 % of AC 208 V)
- L(230V)** Input Voltage 230 VAC  $\pm 10\%$ , three-phase (Input current : approx. 90 % of AC 208 V)
- L(400V)** Input Voltage 400 VAC  $\pm 10\%$ , three-phase ( Input current 

3.0 kW	] 5.5 A typ.
3.2 kW	
4.0 kW	] 8 A typ.
4.6 kW	
6.0 kW	] 11 A typ.
6.4 kW	

 )
- L(3m)** The length of HV output shielded cable is changed to 3-meter.
- L(5m)** The length of HV output shielded cable is changed to 5-meter. (only for  $\leq 40$  kV models)
- L(7m)** The length of HV output shielded cable is changed to 7-meter. (only for  $\leq 15$  kV 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

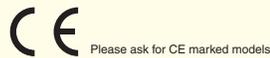
### Ultra low profile / Rack-mount HV power supply AU series

1 kV to 120 kV  
30 W to 2.2 kW

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.



### High power High Voltage Power Supply AKP series

1 kV to 120 kV  
12 kW, 13 kW

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



- The single unit can output power as high as 13 kW and Master / slave function further enables extension at maximum 52 kW.
- 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

750 V to 1.2 kV  
1.1 kW to 15 kW

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 1 kV / 15 kW and stable output are achieved.
- More than 30 kW output is possible by using digital interface option and our digital controller.

