

NEW

High Voltage High Power up to 120kV/6.4kW

High Power CV/CC Power Supply

AK series

1kV~120kV/3.0kW~6.4kW

- Automatic switching between CV mode and CC mode
- Expandable up to 18kW in master-slave connection
- Best suited to evaluations on inverters and power device products



4TECT

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AK series

- ▶ High Power: 6.4kW/120kV
- ▶ Wide Lineup: Over 100models
- ▶ 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-inch 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 LAN, USB, RS-232C, RS-485, and GPIB (sold separately)

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 [mA]	Output power [kW]	MODEL	Dimensions (Refer to p.5)	Weight [kg] (approx.)
1	3000	3.0	AK-1*3000	A	25
	4000	4.0	AK-1*4000	A	25
1.5	2000	3.0	AK-1.5*2000	A	25
	2660	4.0	AK-1.5*2660	A	25
	4250	6.4	AK-1.5*4250	B	40
2	1500	3.0	AK-2*1500	A	25
	2000	4.0	AK-2*2000	A	25
	3200	6.4	AK-2*3200	B	40
3	1000	3.0	AK-3*1000	A	25
	1060	3.2	AK-3*1060	A	25
	1330	4.0	AK-3*1330	A	25
	2100	6.4	AK-3*2100	B	40
3.6	1300	4.6	AK-3.6*1300	B	40
5	600	3.0	AK-5*600	A	25
	800	4.0	AK-5*800	A	25
	1280	6.4	AK-5*1280	B	40
6	500	3.0	AK-6*500	A	25
	670	4.0	AK-6*670	A	25
	1060	6.4	AK-6*1060	B	40
10	300	3.0	AK-10*300	A	25
	400	4.0	AK-10*400	A	25
	640	6.4	AK-10*640	B	40
12	500	6.0	AK-12*500	B	40
	530	6.4	AK-12*530	B	40
15	200	3.0	AK-15*200	A	25
	267	4.0	AK-15*267	A	25
	420	6.4	AK-15*420	B	40

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

* P: Positive polarity output N: Negative polarity output

Following lineups are also available beside above.
 ■ AU series: 1 kV to 120 kV/30 W to 2200 W
 ■ AKP series: 1 kV to 120 kV/12 kW, 13 kW
 ■ REH series: 750 V to 1200 V/1 kW to 15 kW

Specifications

These specifications, unless otherwise specified, at maximum rated output after warm up, and scope of application is between 10% and 100% of maximum rated output.

Input voltage	208 Vac \pm 10%, three phase, 50 Hz/60 Hz	
Input current	Output power	Input current
	3.0 kW	10.5 A typ.
	3.2 kW	
	4.0 kW	
	4.6 kW	15 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 Ω) or by external 5 k Ω potentiometer Current: external voltage source 0 to 10 Vdc (Input impedance greater than 1 M Ω) or by external 5 k Ω 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 μ A for load change of 10% to 100%	
Ripple	0.1%pp +1 Vrms	
Temperature coef.	0.01%/ $^{\circ}$ 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 Ω) Current: 10 V/Maximum output current (output impedance 1 k Ω)	
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)	
Operating temperature	0 to +40 $^{\circ}$ C	
Storage temperature	-20 $^{\circ}$ C to +70 $^{\circ}$ C	
Relative humidity	30% to 80%, non condensing	
Accessories	- Shielded HV output cable 2.5 meter (flying lead) \times 1	
	- Instruction manual \times 1	

Input/Output cable

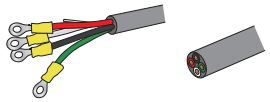
Input cable

Sold separately

4 kW or less models

CABLE TYPE 6

250 Vac/25A



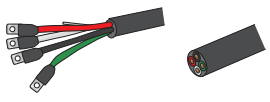
Input cable

Sold separately

6.4 kW model

CABLE TYPE 7

250 Vac/75A

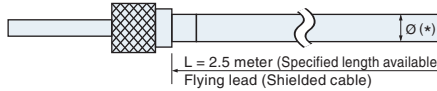


Output cable

Standard

- 3 kW models, 4 kW models (3 kV to 15 kV)
- 6.4 kW models (3.6 kV to 15 kV)
- 20 kV to 60 kV models

CN-□-MHVP



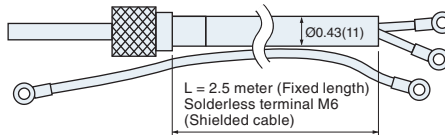
L = 2.5 meter (Specified length available)
Flying lead (Shielded cable)

* Depending on output voltage, length will be varied.
Please contact nearby sales office for details.

Standard

- 3 kW models, 4 kW models (2 kV or less)
- 6.4 kW models (3 kV or less)

CN-15PR-MHVP

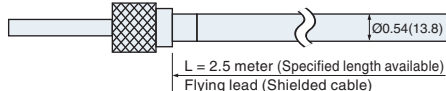


L = 2.5 meter (Fixed length)
Solderless terminal M6
(Shielded cable)

Standard

80 kV or more models

CN-120AR-MHVP

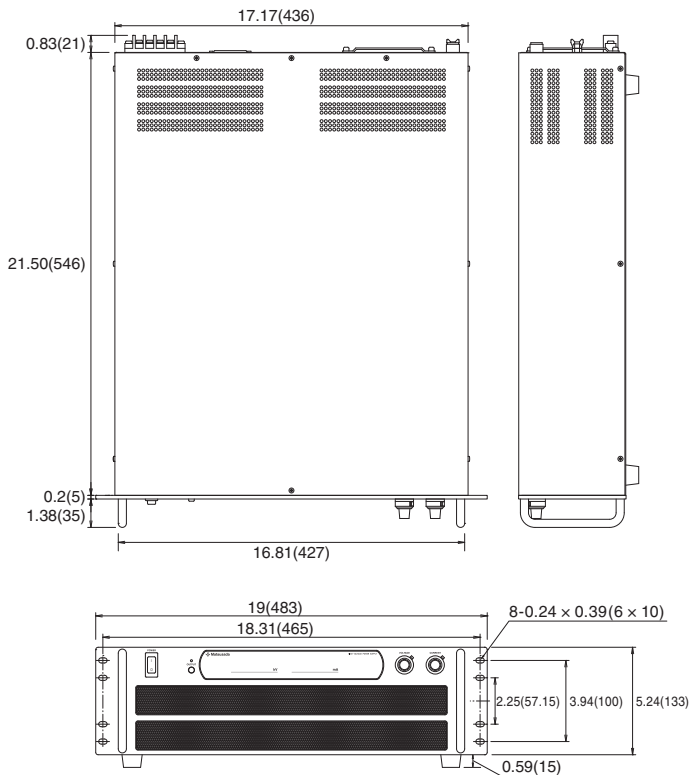


L = 2.5 meter (Specified length available)
Flying lead (Shielded cable)

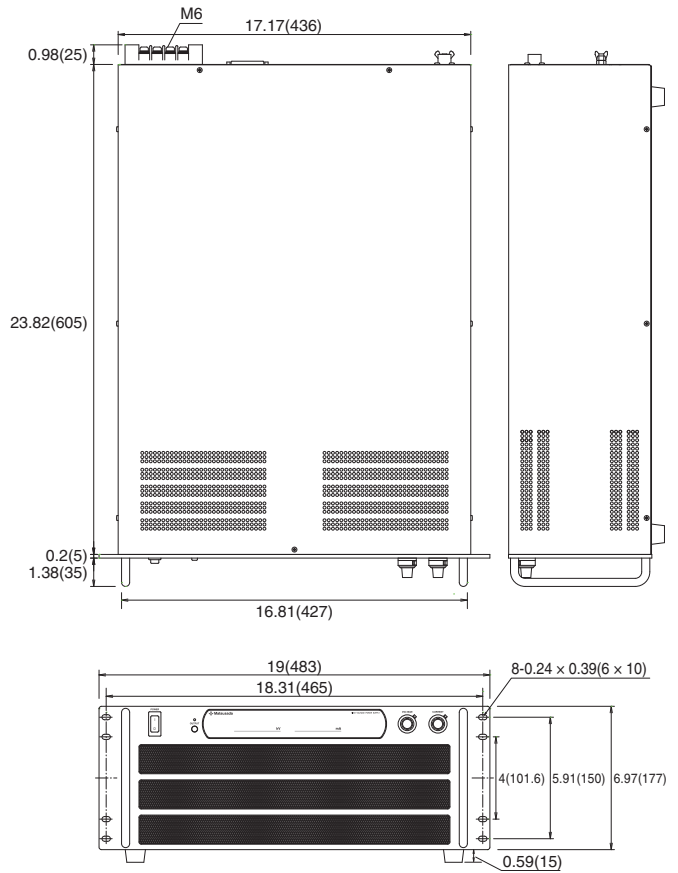
Dimensions [inch (mm)]

Secure more than 11.81 inch(300 mm) 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.)
- LMs Master/slave control *1 *2**
One Master unit can control up to two slave units (Sum of maximum rating output must be under 18 kW)
- LOc Cut off the output when overcurrent *2**
- LW Slow start *1** Takes around 10 seconds from turning on OUTPUT switch, and remote switch to reach maximum rated voltage (about 5 seconds at half the maximum rated voltage as output voltage).
- L(200V) Input Voltage 200 Vac ±10%, three-phase** Input current: approx. 105% of 208 Vac
- L(220V) Input Voltage 220 Vac ±10%, three-phase** Input current: approx. 95% of 208 Vac
- L(230V) Input Voltage 230 Vac ±10%, three-phase** Input current: approx. 90% of 208 Vac
- L(400V) Input Voltage 400 Vac ±10%, three-phase**
[Input current] 3.0 kW/3.2 kW: 5.5 A typ., 4.0 kW: 8 A typ., 4.6 kW: 8.5 A typ., 6.0 kW/6.4 kW: 11 A typ.
- 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 ≤ 40 kV models)**
- L(7m) The length of HV output shielded cable is changed to 7-meter. (only for ≤ 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.

How to order When ordering, add Option No. in the following order by alphabet, input voltage, and output cable length to Model No.
<Example> **HEP-15P420-LFNOcW(208V) (7m), HEP-120N33-LFMsnW(400V) (3m)**

Accessory (Sold separately)

Optical Communication

Optical isolation adapters, utilize fiber optic cables for the digital communication, which enables extremely reliable communication even in noisy environments such as in factories and for long-distance control. By using optical fibers, they are electrically isolated, so safe operation is possible even in power supply configurations with potential differences.

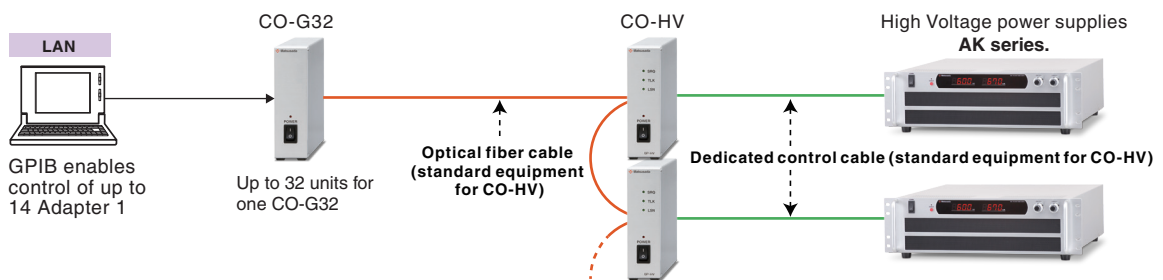
Application Control of high voltage power supplies via LAN, USB, RS-232C, RS-485, or GPIB.

Connection Using fiber optical cables, the adapter for each interface is connected to CO-HV units. And with the dedicated control cable, the CO-HV units are connected to high voltage power supply AU series.

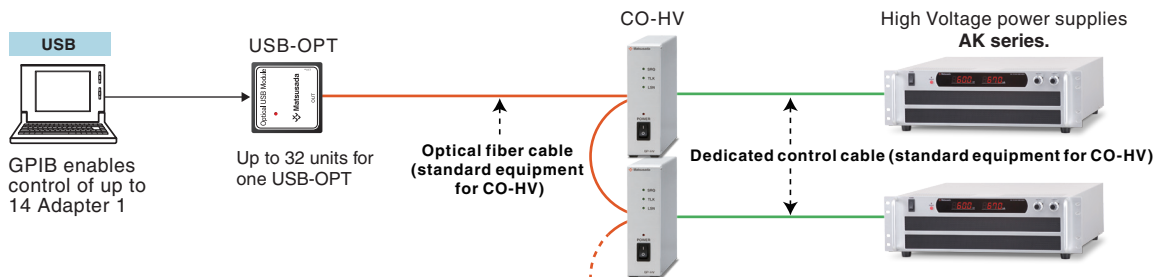
Number of unit Up to 32 pairs with CO-HV unit and high voltage power supply are available. With GPIB, by setting the address, you can connect a maximum of 448 high voltage power supply units (14 addresses x 32 units).

Features The communication system is well suited for such situations where there is a distance between the computer and the high voltage power supply or noisy environments. Also, it is especially ideal for use in combination with DC power supplies. The standard cable length is 2 meters, and it can be optionally extended up to 40 meters.

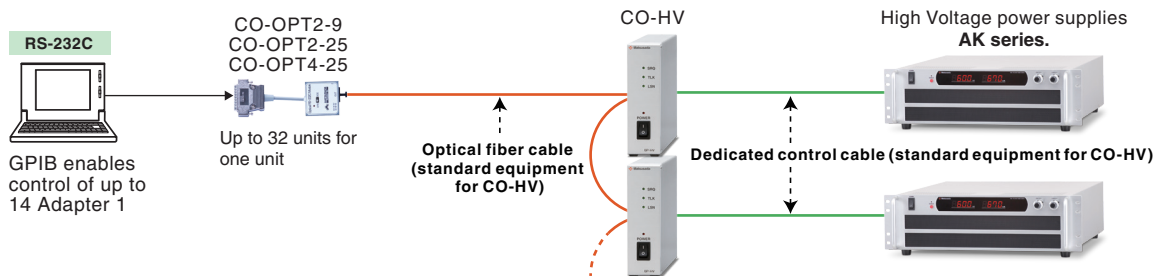
LAN Order both **CO-E32** and **CO-HV (with CO-AR cables)** together.



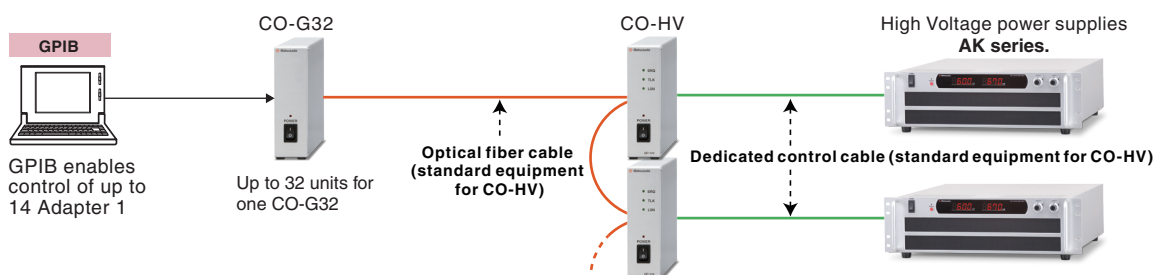
USB Order both **USB-OPT** and **CO-HV (with CO-AR cables)** together.



RS-232C and RS-485 Order **CO-OPT2-9, CO-OPT2-25, or CO-OPT4-25** along with **CO-HV (with CO-AR cables)** together.



GPIB Order both **CO-G32** and **CO-HV (with CO-AR cables)** together.



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 2200 W

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

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, GPIB 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 1200 V
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.

Who We Are

Matsusada Precision Inc. has manufactured High voltage power supplies for more than 50 years in Japan. Recognized by Japanese customers who demand high-quality levels, we have become a high voltage power supply manufacturer which has the highest market share in Japan. Currently, we are developing products not only for high-voltage power supplies, but also for DC power supplies, AC power supplies, electronic loads, high-voltage amplifiers, bipolar power supplies, and X-ray inspection equipment.

We have contributed to customers in various industries such as Semiconductor Production Equipment, Photomultiplier, IGBT, Electrostatic Chuck, Electron Beam, Electrospinning, Plasma, Motor for Electric vehicles, etc.

In addition, we have a direct sales system to respond promptly to customers. Our technical support team with many years of experience will respond promptly from Japan.

Our mission is to deliver products that meet Japan's strict quality standards to customers all over the world. We believe that if you contact us, you will surely find the power supply you need

Matsusada Precision



 **Matsusada Precision Inc.**

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