

**NEW**

# Low profile / High power Rack-mount type HV power supply


WIDE RANGE OF LINEUP

FULL OF REMOTE FUNCTIONS

ULTRA LOW PROFILE / SPACE SAVING

## AU series

- ▶ 1kV to 120kV
- ▶ 0.25mA to 2200mA
- ▶ 30W to 2200W

 \*up to 300W models  
\*excluding 1.5kV



# AU series

Best & Long Seller  
of Rack-mount type  
HV power supply!

Maximum 2.2kW

output power  
in this ultra low  
profile design

2200W  
models



1 to 60kV / 600W, 1200W models

80 to 120kV / 30W to 1200W models



1 to 60kV / 30W to 300W models



AU series is a high performance, high-reliability and high-quality DC high voltage power supply as a result of our high-voltage power technology built up over the years. High efficiency and ultra miniaturization is realized with our switching and voltage isolation technology.

With wide lineup of over 300 models and various options the best suitable model for your application can be selected from the output range of 1kV to 120kV / 30W to 2.2kW. AU series has various remote control and monitor functions as standard, and by adding digital control interface it will contribute to the extensibility for ATE (Automatic Test Equipment) system as well as to various high-voltage experiments and to evaluations of inverters and power devices. AU series is only a third to a half size of conventional power supplies and dedicated to compactness of device and saving space of facilities. Double and triple protections are added for even safer operation. With new master-slave option higher power output operation is now possible.

# LINEUP

Output Voltage	Output Current (mA)	Output Power (W)	MODEL
1kV	30	30	★ AU-1*30
	60	60	★ AU-1*60
	100	100	★ AU-1*100
	150	150	★ AU-1*150
	300	300	★ AU-1*300
	600	600	AU-1*600
	1200	1200	AU-1*1200
	2200	2200	AU-1*2200
1.5kV	200	300	AU-1.5*200
	400	600	AU-1.5*400
	800	1200	AU-1.5*800
	1460	2200	AU-1.5*1460
2kV	15	30	★ AU-2*15
	30	60	★ AU-2*30
	50	100	★ AU-2*50
	75	150	★ AU-2*75
	150	300	★ AU-2*150
	300	600	AU-2*300
	600	1200	AU-2*600
	1100	2200	AU-2*1100
3kV	10	30	★ AU-3*10
	20	60	★ AU-3*20
	33	100	★ AU-3*33
	50	150	★ AU-3*50
	100	300	★ AU-3*100
	200	600	AU-3*200
	400	1200	AU-3*400
733	2200	AU-3*733	
5kV	6	30	★ AU-5*6
	12	60	★ AU-5*12
	20	100	★ AU-5*20
	30	150	★ AU-5*30
	60	300	★ AU-5*60
	120	600	AU-5*120
	240	1200	AU-5*240
440	2200	AU-5*440	
6kV	5	30	★ AU-6*5
	10	60	★ AU-6*10
	16	100	★ AU-6*16
	25	150	★ AU-6*25
	50	300	★ AU-6*50
	100	600	AU-6*100
	200	1200	AU-6*200
366	2200	AU-6*366	
10kV	3	30	★ AU-10*3
	6	60	★ AU-10*6
	10	100	★ AU-10*10
	15	150	★ AU-10*15
	30	300	★ AU-10*30
	60	600	AU-10*60
	120	1200	AU-10*120
220	2200	AU-10*220	
15kV	2	30	★ AU-15*2
	4	60	★ AU-15*4
	6.6	100	★ AU-15*6.6
	10	150	★ AU-15*10
	20	300	★ AU-15*20
	40	600	AU-15*40
	80	1200	AU-15*80
146	2200	AU-15*146	

Output Voltage	Output Current (mA)	Output Power (W)	MODEL
20kV	1.5	30	★ AU-20*1.5
	3	60	★ AU-20*3
	5	100	★ AU-20*5
	7.5	150	★ AU-20*7.5
	15	300	★ AU-20*15
	30	600	AU-20*30
	60	1200	AU-20*60
	110	2200	AU-20*110
	30kV	1	30
2		60	★ AU-30*2
3.3		100	★ AU-30*3.3
5		150	★ AU-30*5
10		300	★ AU-30*10
20		600	AU-30*20
40		1200	AU-30*40
73.3	2200	AU-30*73.3	
40kV	0.75	30	★ AU-40*0.75
	1.5	60	★ AU-40*1.5
	2.5	100	★ AU-40*2.5
	3.75	150	★ AU-40*3.75
	7.5	300	★ AU-40*7.5
	15	600	AU-40*15
	30	1200	AU-40*30
55	2200	AU-40*55	
50kV	0.6	30	★ AU-50*0.6
	1.2	60	★ AU-50*1.2
	2	100	★ AU-50*2
	3	150	★ AU-50*3
	6	300	★ AU-50*6
	12	600	AU-50*12
	24	1200	AU-50*24
44	2200	AU-50*44	
60kV	0.5	30	★ AU-60*0.5
	1	60	★ AU-60*1
	1.6	100	★ AU-60*1.6
	2.5	150	★ AU-60*2.5
	5	300	★ AU-60*5
	10	600	AU-60*10
	20	1200	AU-60*20
36.6	2200	AU-60*36.6	
80kV	0.37	30	★ AU-80*0.37
	0.75	60	★ AU-80*0.75
	1.25	100	★ AU-80*1.25
	1.87	150	★ AU-80*1.87
	3.75	300	★ AU-80*3.75
	7.5	600	AU-80*7.5
	15	1200	AU-80*15
27.5	2200	AU-80*27.5	
100kV	0.3	30	★ AU-100*0.3
	0.6	60	★ AU-100*0.6
	1	100	★ AU-100*1
	1.5	150	★ AU-100*1.5
	3	300	★ AU-100*3
	6	600	AU-100*6
	12	1200	AU-100*12
22	2200	AU-100*22	
120kV	0.25	30	★ AU-120*0.25
	0.5	60	★ AU-120*0.5
	0.83	100	★ AU-120*0.83
	1.25	150	★ AU-120*1.25
	2.5	300	★ AU-120*2.5
	5	600	AU-120*5
	10	1200	AU-120*10
	18.3	2200	AU-120*18.3

★ P--Positive output N--Negative output R--Reversible output  
 <e.g.> AU-1R30 : 0V to ±1kV / 0A to 30mA  
 Positive, negative or reversible high voltage with respect to chassis ground.  
 Units from 1kV to 6kV, the polarity may be reversed by swapping the internal cables.  
 Units from 10kV to 120kV, by swapping the internal high voltage module.

★ : CE marking models.  
 They correspond to Low Voltage Directive and EMC Directive.  
 As for CE marking, the models which have not yet acquired CE marking at present are going to acquire them in the near future.  
 If you need the latest information about the status of the acquisition, please contact the nearest sales office.

## ■ FEATURES

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### WIDE RANGE OF LINEUP

The best output range and function from abundance of lineup of 1kV to 120kV / 30W to 2.2kW, over 300 models can be selected. Therefore no need to choose a product with over output or specifications avoiding wasted investment.

AU series has -LC option for automatic switch of constant voltage / constant current modes as well as other various options such as different input voltage or slow ramp up are available.

### FULL OF REMOTE FUNCTIONS

High-voltage output voltage and output current (output cut off value for standard type, and current limit value for AU with -LC option) can be controlled. Also equipped with output ON / OFF, monitor output for voltage / current and status output of high voltage is equipped and door switch is standard as a safety function.

Also interface of GPIB, RS-232C, RS-485 and USB can be added as an option for computer control. A system integration with other measuring instruments or control devices can be constructed for faster testing and development. It's easy to build a system up with the combination of our DC (low voltage) power supplies or AC power supplies.

### ULTRA LOW PROFILE / SPACE SAVING



Panel height is only 1.73" (models less than 1kV to 60kV / 30W to 300W models) and 19-inch standard rack mount type. Miniaturization and high reliability that are conflicting themes for high-voltage power supplies are cleared by our high voltage insulation technology.

AU series has been receiving good reputation for applications requires space saving such as inspection system of production line, or requires combination several power supplies.

## ■ APPLICATIONS

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- Evaluation for inverters or power devices (IGBT, MOS-FET)
- ATE (Automatic Test Equipment)
- Electron Beams
- Ion Beams
- X-ray tube
- Aging of electronic components
- Capacitor Charging
- Insulator Testing
- All kinds of High-Voltage Testing

## SPECIFICATIONS

We take special requirements for each specification such as ripple or temperature coef. Contact to local sales office for details.

**Input Voltage** 30W to 300W 100VAC to 120VAC  $\pm 10\%$  50/60Hz single phase  
 600W to 2200W 200VAC to 240VAC  $\pm 10\%$  50/60Hz single phase  
 2200W 200VAC to 240VAC  $\pm 10\%$  50/60Hz three-phase(option)

### AC input power(MAX) \*option

AC input voltage \ Output power	100V to 120V	200V to 240V
30W	90VA	* 90VA
60W	130VA	* 130VA
100W	200VA	* 200VA
150W	270VA	* 270VA
300W	520VA	* 520VA
600W	* 1300VA	1300VA
1200W	————	2600VA
2200W(1 $\emptyset$ )	————	2800VA
*2200W(3 $\emptyset$ )	————	2800VA

### Rush current

AC input voltage \ Output power	100V to 120V	200V to 240V
30 to 1200W	30A( $\leq 10$ ms)	30A( $\leq 10$ ms)

AC input voltage \ Output power	1 $\emptyset$ 200V to 240V	3 $\emptyset$ 200V to 240V
2200W	50A( $\leq 10$ ms)	50A( $\leq 10$ ms)

**Output Voltage Control** Local : 10-turn potentiometer on front panel  
 Remote : External control voltage 0 to 10Vdc(input impedance more than 1M $\Omega$ ) or by external 5k $\Omega$  potentiometer

**Voltage Regulation** Line :  $\pm 50$ ppm for  $\pm 10\%$  input line change  
 Load : 50ppm for 10% to 100% load change / 50ppm +400mV for 10% to 100% load change (2200W models)

**Ripple** less than 0.1%p-p  
 0.3%p-p+1Vrms(2200W models)  
 0.1%p-p+1Vrms(2200W models with -L(200V3P) option)

**Stability** 0.01% / Hr

**Temperature Coef.** 0.01% /  $^{\circ}$ C

**Output Display** Output voltage : 3.5-digit digital meter  $\pm 1999$   
 Output current : 3.5-digit digital meter 1999

**Monitor Output** Voltage monitor : 10V / maximum output voltage (output impedance 1k $\Omega$ )  
 Current monitor : 10V / maximum output current (output impedance 1k $\Omega$ )

**Protections** Over voltage protection. (Cut-off when 110% of rating, manual recovery)  
 Over current protection. (high-voltage cut-off, manual recovery or recovery by remote set)  
 Protection against output short-circuit and arc discharge.

Over temperature protection. (output cut-off, manual recovery)

**Other Functions** Remote switch ON / OFF(by external relay)\*1  
 The output will be on only when both output switch on front panel and remote switch are ON.

Door switch(by external relay)  
 Output status signal output(by internal relay)  
 Remote reset (Over current cut-off protection mode shall be reset by remote signal.)

**Temperature** Operating temp. 0 to +50 $^{\circ}$ C  
 Storage temp. -20 $^{\circ}$ C to +70 $^{\circ}$ C  
 Humidity 20% to 80%RH (no condensation)

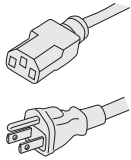
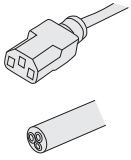
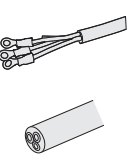
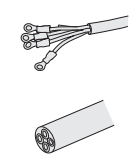
**Accessories** AC line input cable 2.5m(1)  
 Shielded HV output cable 2.5m (flying lead)(1)\*2  
 Instruction manual(1)

\*1 : If you will frequently turn ON / OFF of output by a remote switch, please contact us before purchasing.

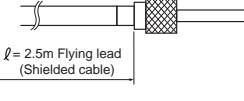
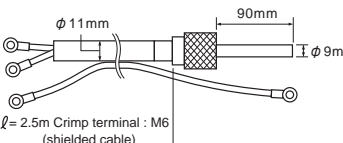
\*2 : When you need to extend the length of the cable, please choose -L(3m), -L(5m) or -L(7m) option ( $\rightarrow$ P.7). Or, please ask us for production separately.

## INPUT / OUTPUT CABLE

### Input cable

CABLE TYPE 1 125V / 10A	CABLE TYPE 3 250V / 10A	CABLE TYPE 5 250V / 25A	CABLE TYPE 6 * 250V / 25A
for 30W to 300W models	for 30W to 300W models (with -L(220V) option)	for 600W, 1200W, 2200W models	for 2200W models (with -L(200V3P) option)
			

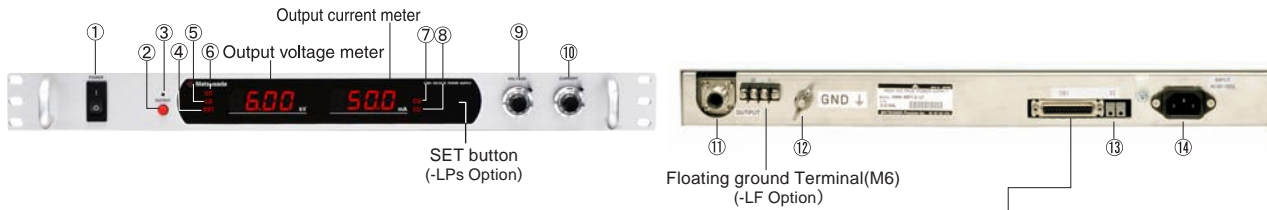
### Output cable

CN-□-MHVP	CN-15PR -MHVP
for 30W to 1200W / 2200W( $\geq 2$ kV) models	for 2200W (1kV, 1.5kV) models
	
Depending on output voltage, length will be varied. Please contact nearby sales office for details.	

\*Please purchase it separately.

# FUNCTIONS

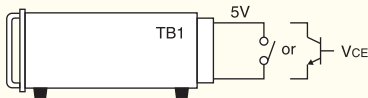
**Normal operation** Output ①→②→⑨→⑩, conversely to stop operation.



- ① **POWER ON / OFF switch** : This has priority over all operations for safety.
  - ② **OUTPUT ON / OFF button** : Used for urgent OFF or resume the output when remote mode as well as output ON / OFF when local mode. Also used for manual recovery of protection function. (Output is possible only when OUTPUT button is ON even when remote)
  - ③ **OUTPUT ON display LED** : Lights up in a status when output is possible or when output. (Goes off when cut off by protection circuit)
  - ④ **External control display** : Lights up during external control.
  - ⑤ **Door switch display LED** : Lights up when door switch operates.(output cut off during the light is on)
  - ⑥ **Over temperature protection display LED** : Lights up when internal part reaches excess temperature by abnormal heating.
  - ⑦ **Operation mode display LED** : Lights up during operation of constant voltage.
  - ⑧ **Operation mode display LED** : Lights up when over current is cut off. Lights up during operation of constant current (unit with -LC option).
  - ⑨ **Output Voltage adjustable potentiometer(10-turn,lockable)**
  - ⑩ **Output Current adjustable potentiometer(10-turn,lockable)**
- ⑪ **Output connector** (Matsusada's property)
  - ⑫ **GND Terminal(M6)**
  - ⑬ **S2 switch**
  - ⑭ **AC input connector**  
up to 300W models : Inlet  
600W to 2.2kW models : Terminal(M4)

## REMOTE CONTROL CONNECTOR (TB1) D-Sub 25pin female (mating connector enclosed). Use for GPIB connection too.

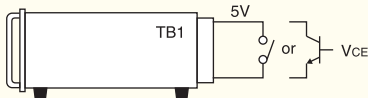
### ● REMOTE/LOCAL change



Mode	Output relay	Open collector
REMOTE	SHORT	$V_{CE} \leq 0.4V$
LOCAL	OPEN	$V_{CE} \geq 2V$

Sink Current  $\geq 10mA$

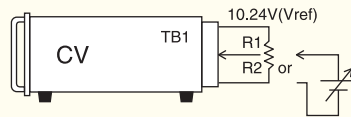
### ● REMOTE HV ON/OFF



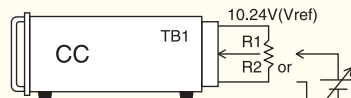
Output	Output relay	Open collector
ON	SHORT	$V_{CE} \leq 0.4V$
OFF	OPEN	$V_{CE} \geq 2V$

Sink Current  $\geq 10mA$

### ● OUTPUT CONTROL Remote analog programming



Output Voltage	LRv	Vcon
0 to MAX	R2: 0Ω to 5kΩ	0V to 10V Input imp $\geq 1M\Omega$

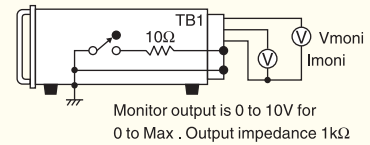


*Output Current	LRC	Icon
0 to MAX	R2: 0Ω to 5kΩ	0V to 10V Input imp over 1MΩ

\*Model with -LC

- It is possible to conduct control with the combination of Vcon and output current setting potentiometer ⑩ of front panel.
- Open circuit (fixed at MAX value) is possible by entering Vref.

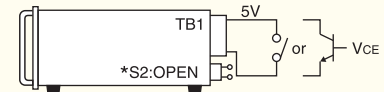
### ● OUTPUT MONITOR and STATUS



Monitor output is 0 to 10V for 0 to Max . Output impedance 1kΩ

Internal relay of status output turns ON in a status when output is possible or when output (entrained to OUTPUT ON display LED). Contact open-circuit voltage 30V, permissible current 100mA max.

### ● DOOR SWITCH

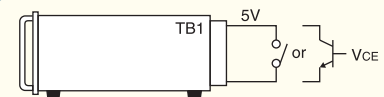


**It is possible to output in external relay short or a status of VCE less than 0.4V. Output will be cut off when open or 2V or more. To resume the output again, turn OUTPUT button ON after resetting by turning OUTPUT button OFF in a status of short or less than 0.4V.**

Sink Current  $\geq 10mA$

\*Door switch become effective when S2 terminal is open

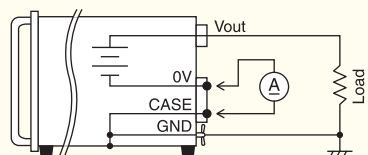
### ● REMOTE RESET



Output relay	Open collector	Timing
OPEN	$V_{CE} \geq 2V$	
SHORT	$V_{CE} \leq 0.4V$	

Sink Current  $\geq 10mA$

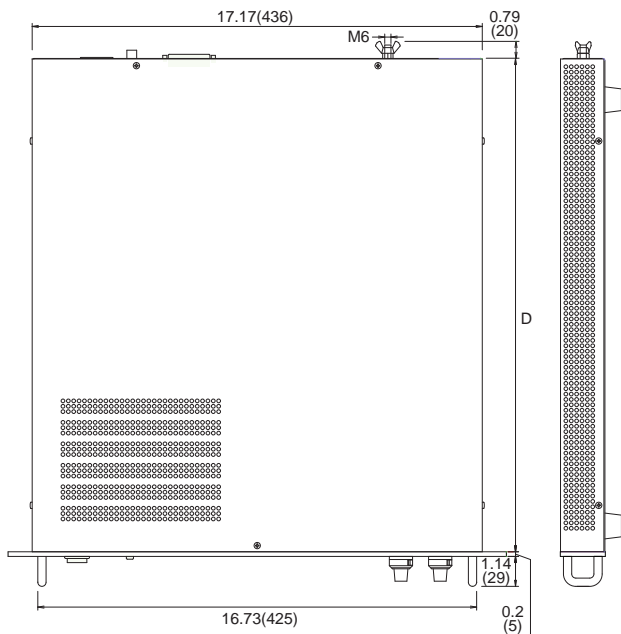
## -LF option : FLOATING GROUND TERMINAL (M3)



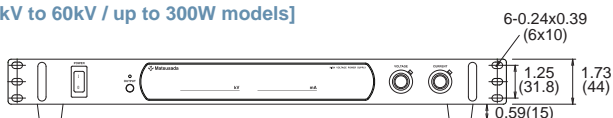
Case GND"CASE" and power supply GND"0V" can be isolated up to 50V. Minimal current in load can be measured by measuring the current between these 2 points to avoid the effect of ground noise.

\*Not for floating applications  
\*All equipments that connect to Remote Control Connector (TB1) must be on floating ground in case this feature is intended to use.

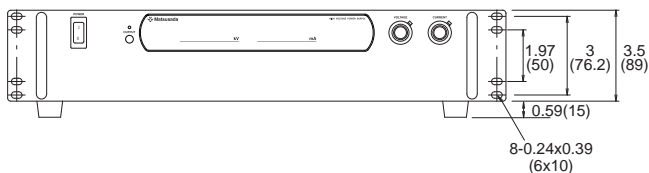
## DIMENSIONS inch(mm)



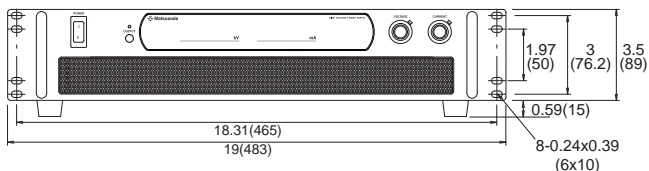
[1kV to 60kV / up to 300W models]



[1kV to 60kV / 600W, 1200W models]  
[80kV to 120kV / 30W to 1200W models]



[2200W models]



MODEL	D
1kV to 60kV	18.82(478)
80kV to 120kV	23.86(606)

## OPTIONS

- LStc Constant Current status signal**  
Constant Current mode or when OCP(Over Current Protection) activated, the open collector will turn on.(Vce > 2V)
- LStv Constant Voltage status signal**  
When operation mode is Constant Voltage mode, the open collector will turn on.(Vce > 2V)
- LC Constant voltage and constant current\*2**  
Current regulation 0.05%  
(-LC option eliminates Overload Trip function)
- LF Floating ground(withstanding voltage of 50Vdc)\*1**  
Used when measuring minimal current in load.  
All equipments that connect to Remote Control Connector (TB1) must be on floating ground in case this feature is intended to use.  
(Cannot be used for the purpose of floating high-voltage power supply.)
- LMs Master slave control (600W, 1.2kW and 2.2kW models only)\*1\*2\*3**  
Maximum of 4 slave units can be controlled with one master unit.
- LW Slow start\*1**  
Takes about 10 seconds to reach a set voltage from when OUTPUT switch, remote switch and remote switch are turned on.
- L(220V) 200VAC to 240VAC single phase input.(30W to 300W models only)**
- L(115V) 100VAC to 120VAC single phase input.(600W models only)**
- L(U) Input voltage switch over 100VAC to 120VAC/200VAC to 240VAC single phase input.**  
Internal switch over.(30W to 300W models only)
- L(200V3P) three-phase input (2200W models only)**
- 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 ≤ 40kV models)
- L(7m) The length of HV output shielded cable is changed to 7m.**  
(only for ≤ 15kV models)
- LPs Setting value display**  
The set voltage value and the set current value are displayed on the meter, while you pressing the SET button on the front panel.  
(This button is attached only when -LPs option is chosen.)

\*1 In case selecting -LMs option with -LF option or -LW option, all AU power supplies which connected as Master-Slave, need to equip -LF option or -LW option.

\*2 In case power supply operate as cut off the output when overcurrent with Master-Slave connection, do not select -LC option for Master unit(the other options can be selected), and select -LC option for only Slave unit(the other options can be also selected together). Combinations other than above, cut off the output when overcurrent will not work.  
And also, Slave unit is equipped with -LC option, therefore, if Slave unit is used individually, out will be either CV or CC.

\*3 In case you operate power supplies with CV/CC mode under Master-Slave connection, select -LC option for Master unit and all Slave units (the other options can be also selected together). Combinations other than above, CV/CC will not work.  
And also, Master unit and each Slave unit equipped with -LC option, therefore, if each unit is used individually, out will be either CV or CC.

When ordering, suffix the above option mark to the model number.

<e.g> AU-15P80-LCFMsPsStcStvW(7m)  
AU-30N10-LCFStcStvW(U)(5m)  
AU-100R22-LCFMsStcStvW(200V3P)(3m)

Alphabetical, input voltage and cable length order

\*Digital control option is available with combination of CO series.







