

Ultra High Speed HV Amplifier

Additional output ranges for solar battery panel evaluations!



AMP series is an ultra high speed high voltage amplifier. It realized as fast as 700V / us even with load, and approximately 2 times faster than existing models. With the capability of peak current output of 3 times, it suppress the distortion of waveform when with capacitive load.

For measuring voltage and / or current

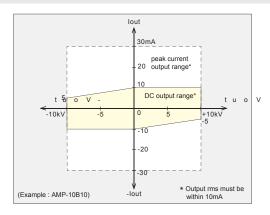
When the voltage at load is lower than the rated maximum output of AMP series, constant voltage and high speed operation is possible by sinking the output current with current sink feature.

As example of solar battery application, cell / panel voltage and current data can be obtained by logging the change of current sink by changing the voltage to solar battery cell / panel gradually. At that time with its high slew rate of 300v / µs AMP can get more detailed sampling. AMP is a bi-polar power supply with 0 crossing, and so, it can measure the output short current at OV. Moreover, it can output peak current of 3 times more than rated current(at DC). (see right chart)

Suitable for the trend to higher voltage for cell / panel evaluation

Voltage rating required for solar battery(panel) evaluation is getting higher and higher. AMP series added more lineups raging from ±600V to ±30kV to meet the demand for evaluation of higher voltage solar battery panel as well as evaluation of cell / panel with wider output range.

OUTPUT RANGE

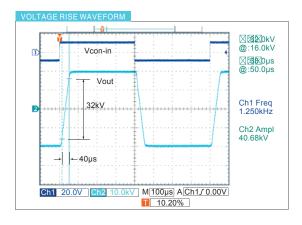


APPLICATION

- Solar battery panel evaluations Beam deflection
- Corona discharge
- Electrophotography process
- · Electroviscocity fluid
- · Various electrostatic testing
- Electrostatic chuck
- · Breakdown voltage testing
- · Lighting discharge tube

High speed response of slew rate 700V/µs *

*Change model to model



Slew rate with actual load is as high as 700v / µs, and solve the problem of "When actual operation with load, the response become slow."

Ideal for higher speed printer or material evaluation testing.

Example of waveform: model AMP-20B20 Operation condition: Vcon-in=±10V Vout=±20kV RL=1M Ω F=1.25kHz

Slew rate: $SR=32kV / 40\mu s > 700V / \mu s$

LINEUP

Output Voltage	Output Current (DC+AC)	Max. output power	MODEL	Slew Rate	Frequency Response(-3db)*1	
					Full scale *2	Small bandwidth (10% of full scale)
-600V to +600Vdc	±2000mA max and ±4000mApk 1mS max	1200W	AMP-0.6B2000	≧ 300V / µs	DC to 40kHz	DC to 60kHz
-1kV to +1kVdc	±1200mA max and ±2400mApk 1mS max	1200W	AMP-1B1200		DC to 30kHz	DC to 50kHz
-2kV to +2kVdc	±200mA max and ±400mApk 1mS max	400W	AMP-2B200	≧ 700V / μs	DC to 20kHz	DC to 50kHz
-5kV to +5kVdc	±80mA max and ±160mApk 1mS max	400W	AMP-5B80		DC to 10kHz	DC to 30kHz
-10kV to +10kVdc	±10mA max and ±30mApk 1mS max	100W	*3 AMP-10B10		DC to 7kHz	DC to 25kHz
	±40mA max and ±120mApk 1mS max	400W	AMP-10B40			
-20kV to +20kVdc	±20mA max and ±60mApk 1mS max	400W	AMP-20B20		DC to 4kHz	DC to 20kHz
-30kV to +30kVdc	±10mA max and ±30mApk 1mS max	300W	AMP-30B10	- ≧ 360V / μs	DC to 1kHz	DC to 5kHz
-40kV to +40kVdc	±20mA max and ±40mApk 1mS max	800W	AMP-40B20		DC to 1kHz	DC to 5kHz

^{*1} Typical value at sine wave operation with resistive load.

SPECIFICATIONS

SPECIFICATIO	NO TO THE PROPERTY OF THE PROP				
Input voltage / current	230VAC±10% 50 / 60Hz single phase 8Atyp(AMP-0.6B2000, AMP-1B1200) 230VAC±10% 50 / 60Hz single phase 5Atyp(AMP-2B200, AMP-5B80, AMP-10B40, AMP-20B20, AMP-30B10) 200V to 240VAC ±10% 50 / 60Hz single phase 10Atyp(AMP-40B20) 100V to 240VAC ±10% 50 / 60Hz single phase 3.5Atyp@100VAC(AMP-10B10)				
Output voltage control	External control voltage Vcon-in = -10V to +10V *1 (Input Impedance greater than $10k\Omega$)				
DC Bias	Front panel 10-turn potentiometer enables setting between -100% and +100%				
Regulation	Line: ±0.05%(115V or 230V ±10% input change) Load: 0.05%(10% to 100% load change) *2				
Ripple	Less than 0.02% +1Vp-p *2				
Stability	0.016% / Hr typ * ²				
DC output voltage display	3.5-digit digital meter *3				
Output voltage monitor	-10V to +10V from front panel BNC terminal (Output impedance $1k\Omega$)				
Output current monitor	-10V to +10V(10Vpeak) from front panel BNC terminal (Output impedance $1k\Omega$. Up to $3kHz$ bandwidth)				
Remote switch ON/OFF	Output ON / OFF with external contact signal (Short : ON, Open : OFF)				
Protection	Over current protection with cut off, over voltage protection output short circuit protection, arc protection and blackout protection.				
Operating Temp.	0°C to +40°C				
Storage Temp.	-20°C to +60°C	*1 Offset voltage at Vcon-in = 0V is less than			
Humidity	20 to 75%RH(no condensation)	0.1% of rated output. *2 At DC operation with resistive load maximum			
Accessories	Input AC cable 2.5m (1) ■With 3-pin connector for 115VAC input ■Flying lead(open end) for 230VAC input	rated output: DC voltage display. At more than 10Hz output: Average voltage display			
	Output LIV coble flying load 1 Em. (1)				

Output HV cable flying lead 1.5m (1)

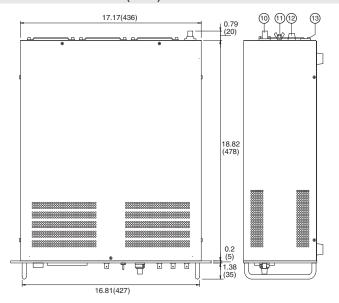
Instruction Manual (1)

^{*2} At frequency of full scale, output voltage may be clipped by power limitation.

*3 CE marking model corresponds to low voltage directive.

AMP series

DIMENSIONS inch(mm)



1 POWER ON / OFF switch

Have priority to all other operations for safety reason.

2 HV ON / OFF switch

To be also used to reset output cutoff status due to output over load, output short circuit protection or black

out protection.

Remote switch operation is possible only when output switch is on.

③ OUTPUT voltage meter

(4) External control voltage (Vcon-in)input connector BNC receptacle

(5) Bias ON/OFF switch

 ${\color{red} 6}$ Bias setting dial

10-turn potentiometer

(7) OUTPUT current monitor terminal

BNC receptacle

® OUTPUT voltage monitor

BNC receptacle

terminal

10 OUTPUT connector

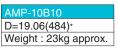
BNC receptacle

(1) Ground terminal

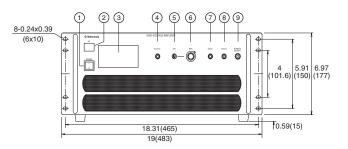
M6

12 FUSE

(13) AC inlet



*Except projection



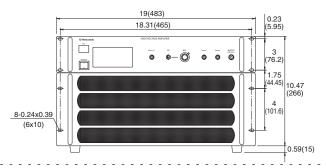
AMP-2B200, AMP-5B80 AMP-10B40, AMP-20B20 D=21.65(550)*

Weight: 28kg approx.

D=24.02(610)*

Weight: 45kg approx.

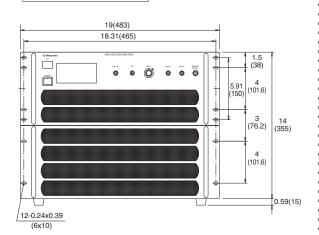
*Except projection



AMP-1B1200 D=24.02(610)*

Weight: 50kg approx.

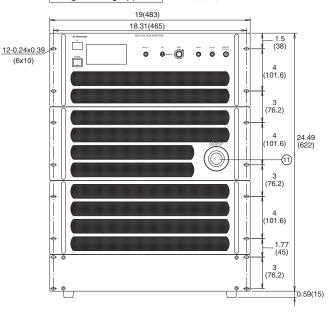
*Except projection



AMP-30B10

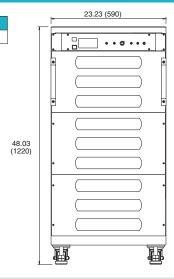
D=21.65(550)* Weight: 50kg approx.

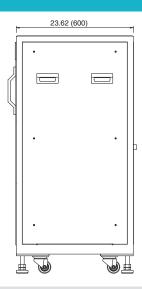
*Except projection



AMP-40B20 Weight : 160kg approx.

*Except projection





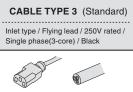
INPUT / OUTPUT CABLE

Input cable

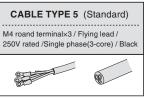
[AMP-10B10]



[300W and 400W models]



[800W,1200W models]



The length is 2.5m for both.(Please see CABLE series catalog for details)

*CABLE TYPE 3 is needed separately when the input voltage is 200V to 240VAC.

Output cable

- 800V to 10kV models
 - → CN-40-AHVP HV output cable 1.5m (standard)
- ⇒ CN-40-AHVP(5) HV output cable 5m (-L(5m) option)
- AMP-20B20
 - → CN-40-AHVP TU* HV output cable 1.5m (standard)
 - → CN-40 AHVP TU(5)* HV output cable 5m (-L(5m) option)
- AMP-30B10, AMP-40B20
 - → CN-50-AHVP HV output cable 3m (standard)
- Less than 600V models
 - using terminal board output line 1.5m (standard)

*TU: With silicon tube

OPTION

-L(5m)

-LOc Adjustable cut-off current setting value *

Limit setting value to trigger to cut off the output current becomes variable by adjusting the potentiometer on the front panel between the range 10% to 105% of the rated current.

-LC Current limit '

Output current will not be cut off but will be regulated by lowering the output voltage at a occurence of overcurrent.

-LCc Variable current limit *

Output current will not be cut off but will be regulated by lowering the output voltage at a occurence of overcurrent. The setting value to trigger to regulate the output current becomes variable by adjusting the potentiometer on the front panel between the range 10% to 105% of the rated current.

-LN Cancellation of blackout protection

HV output cable 5m (more than 1kV models except AMP-30B10 and AMP-40B20)

Please note that using 5-meter long cable may decrease slew rate, response time, and distort output waveforms. Please see "Capacitive load" for details.

^{*} These options cannnot be selected together. Need to be selected either one. When ordering, suffix -L mark(option mark) to the model number. <e.g.> AMP-10B10-LCN(5m), AMP-2B200-LNOc(5m)



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Customer Inquiry Sheet

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:		

Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. 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. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A "Return Merchandise Authorization" is required in case the power supply must be sent back to the factory in Japan for inspection and repair. 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, inc

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog. PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS



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