

High speed

## High Voltage Amplifier



AMS-AMT series is a rack mountable type, fast response high voltage operational amplifier. It gives quick response as fast as 100kHz and provides high voltage outputs in reference to its input wave forms such as Sine, Triangle, Saw Tooth, Square Wave Forms and more.

13 different models are available as a standard unit. They are all solid state. Output voltage ranges from  $\pm 600\text{V}$  to  $\pm 20\text{kV}$ .

## FEATURES

- Output  $\pm 600\text{V}$  to  $\pm 20\text{kV}$
- High speed response  $360\text{V} / \mu\text{sec}$  (AMT)
- Various types of output wave forms according to the input wave
- DC bias function
- DC output voltage monitor (3.5-digit digital meter)

## APPLICATIONS

- Beam deflection
- Corona discharge
- Electrostatic chuck
- Electrophotography process
- Breakdown voltage testing
- Electroviscosity fluid
- Lighting discharge tube
- Various electrostatic testing

## LINEUP

## &lt; AMS series : High Speed model &gt;

| Output voltage (Vdc) | Output current (mA) | MODEL      | Slew Rate           | Frequency Response(-3dB)* |                   |
|----------------------|---------------------|------------|---------------------|---------------------------|-------------------|
|                      |                     |            |                     | full scale                | 10% of full scale |
| -600 to +600         | 50                  | AMS-0.6B50 | 30V / $\mu\text{s}$ | DC to 15kHz               | DC to 30kHz       |
| -1k to +1k           | 30                  | AMS-1B30   |                     | DC to 10kHz               | DC to 20kHz       |
| -1.5k to +1.5k       | 20                  | AMS-1.5B20 |                     | DC to 6kHz                | DC to 12kHz       |
| -3k to +3k           | 10                  | AMS-3B10   |                     | DC to 3kHz                | DC to 6kHz        |
| -5k to +5k           | 6                   | AMS-5B6    |                     | DC to 2kHz                | DC to 4kHz        |
| -10k to +10k         | 2                   | AMS-10B2   |                     | DC to 1kHz                | DC to 2kHz        |

## &lt; AMT series : Ultra High Speed · High Power model &gt;

| Output voltage (Vdc) | Output current (mA) | MODEL       | Slew Rate            | Frequency Response(-3dB)* |                   |
|----------------------|---------------------|-------------|----------------------|---------------------------|-------------------|
|                      |                     |             |                      | full scale                | 10% of full scale |
| -600 to +600         | 100                 | AMT-0.6B100 | 250V / $\mu\text{s}$ | DC to 100kHz              | DC to 100kHz      |
| -1k to +1k           | 60                  | AMT-1B60    |                      | DC to 60kHz               |                   |
| -1.5k to +1.5k       | 40                  | AMT-1.5B40  |                      | DC to 40kHz               | DC to 80kHz       |
| -3k to +3k           | 20                  | AMT-3B20    | 360V / $\mu\text{s}$ | DC to 30kHz               | DC to 60kHz       |
| -5k to +5k           |                     | AMT-5B20    |                      | DC to 20kHz               | DC to 40kHz       |
| -10k to +10k         |                     | AMT-10B10   |                      | DC to 10kHz               | DC to 20kHz       |
| -20k to +20k         | 10                  | AMT-20B10   |                      | DC to 5kHz                | DC to 10kHz       |

\* Typical value at sine wave.

## SPECIFICATIONS

**Input voltage** 115VAC  $\pm 10\%$  50 / 60Hz single phase

**Output control** External voltage control  
Vcon-in -10V to +10V \*1  
(input impedance :  $\geq 10\text{k}\Omega$ )

**DC Bias** Front panel 10-turn potentiometer enables setting between -100% and +100%

**Regulation** Line :  $\pm 0.05\%$  ( $\pm 10\%$  line change)  
Load : 0.05% (10 to 100% load change) \*2

**Ripple** AMS :  $\leq 0.1\%$  p-p \*2  
AMT :  $\leq 0.02\% + 1\text{Vp-p}$  \*2

**Stability** 0.016% / Hr typ. \*2

**Digital Panel Meter** 3.5-digit display \*3

**Voltage Monitor** -10V to +10V from BNC connector on front panel.  
(output impedance 1k $\Omega$ )

**Remote ON/OFF** Enable to output ON/OFF by external contact signal  
(short:ON, open:OFF)

**Protection** Protection against over current by cutting of HV output.  
Output short circuit and over voltage.  
Arc protection and blackout protection.

**Operating Temp.** 0°C to +40°C

**Storage Temp.** -20°C to +60°C

**Humidity** 20 to 80%RH (no condensation)

**Accessories** Input AC cable 2.5m (1)  
Output HV cable flying lead 1.5m (1)  
Instruction Manual (1)

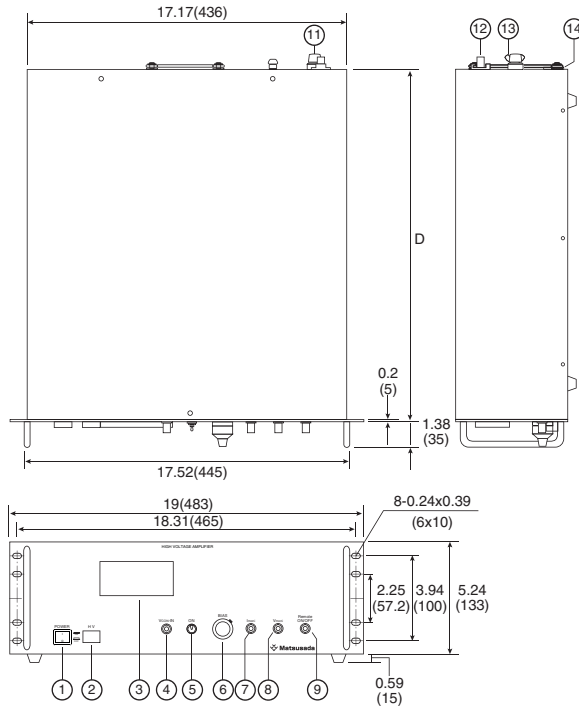
\*1 Offset voltage : within 0.5% of rated output at Vcon-in = 0V

\*2 Value at DC output with resistive load maximum rating

\*3 DC output : DC voltage  
More than 10Hz output : Average voltage

## DIMENSIONS inch(mm)

### AMS, AMT



| Model              | D          | Weight     |
|--------------------|------------|------------|
| AMS : all models   | 19.06(484) | 14 to 18kg |
| AMT : 600V to 10kV | 19.06(484) | 14 to 23kg |
| AMT-20B10          | 24.06(611) | 27kg       |

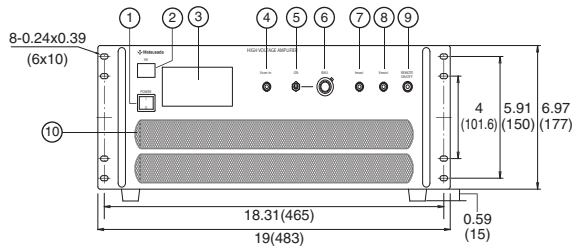
- ① **POWER ON / OFF switch** : Have priority to all other operations for safety reason.
- ② **HV ON/OFF switch** : To be also used to reset output cutoff status due to output over load, output short circuit protection or black out protection. Remote switch operation is possible only when output switch is on.

- ③ **OUTPUT voltage meter**
- ④ **External control voltage (Vcon-in) input connector** : BNC receptacle

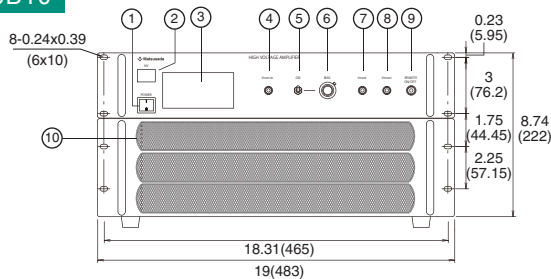
- ⑤ **Bias ON / OFF switch**
- ⑥ **Bias setting dial** : 10-turn potentiometer
- ⑦ **OUTPUT current monitor terminal(option)** BNC receptacle
- ⑧ **OUTPUT voltage monitor terminal** BNC receptacle
- ⑨ **Remote ON/OFF terminal** BNC receptacle
- ⑩ **Air Intake**
- ⑪ **FUSE**
- ⑫ **OUTPUT connector**
- ⑬ **Ground terminal** M6
- ⑭ **AC inlet**

\* Design of rear panel can be slightly different from model to model.  
Please contact our sales office if details are required.

### AMT(±600V to ±10kV models)



### AMT-20B10



## INPUT / OUTPUT CABLE

### Input cable

Input : 115V models      Input : 230V models  
 ➔ **CABLE TYPE1**      ➔ **CABLE TYPE3**

Length is 2.5m for both. (see CABLE series catalog for details)

### Output cable

**CN-40-AHVP**      HV output cable 1.5m (standard)  
**CN-40-AHVP(5)**      HV output cable 5m (-L(5m) option)

## OPTIONS

- LC**      **CURRENT LIMIT**  
Limits the output current at time of overload
- LN**      **Cancellation of blackout protection**
- L1**      **Output current monitor -10V to +10V from BNC connector on front panel(output impedance 1kΩ up to 2kHz bandwidth)**
- L(230V)**      **Input Voltage AC230V ±10% single phase**
- L(5m)**      **HV output cable 5m**  
Please note that using 5-meter long cable may decrease slew rate, response time, and distort output waveforms.  
Please see Page 15 "Capacitive load" for details.

\*When ordering, please suffix -L Mark(option mark) to the model number.  
 <e.g.> AMS-1B30-LC, AMS-1B30-LCN1(230V)(5m)  
 For combined options, please arrange option marks in an alphabetical order.



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