



**Midaswei Trading Co., Ltd.**

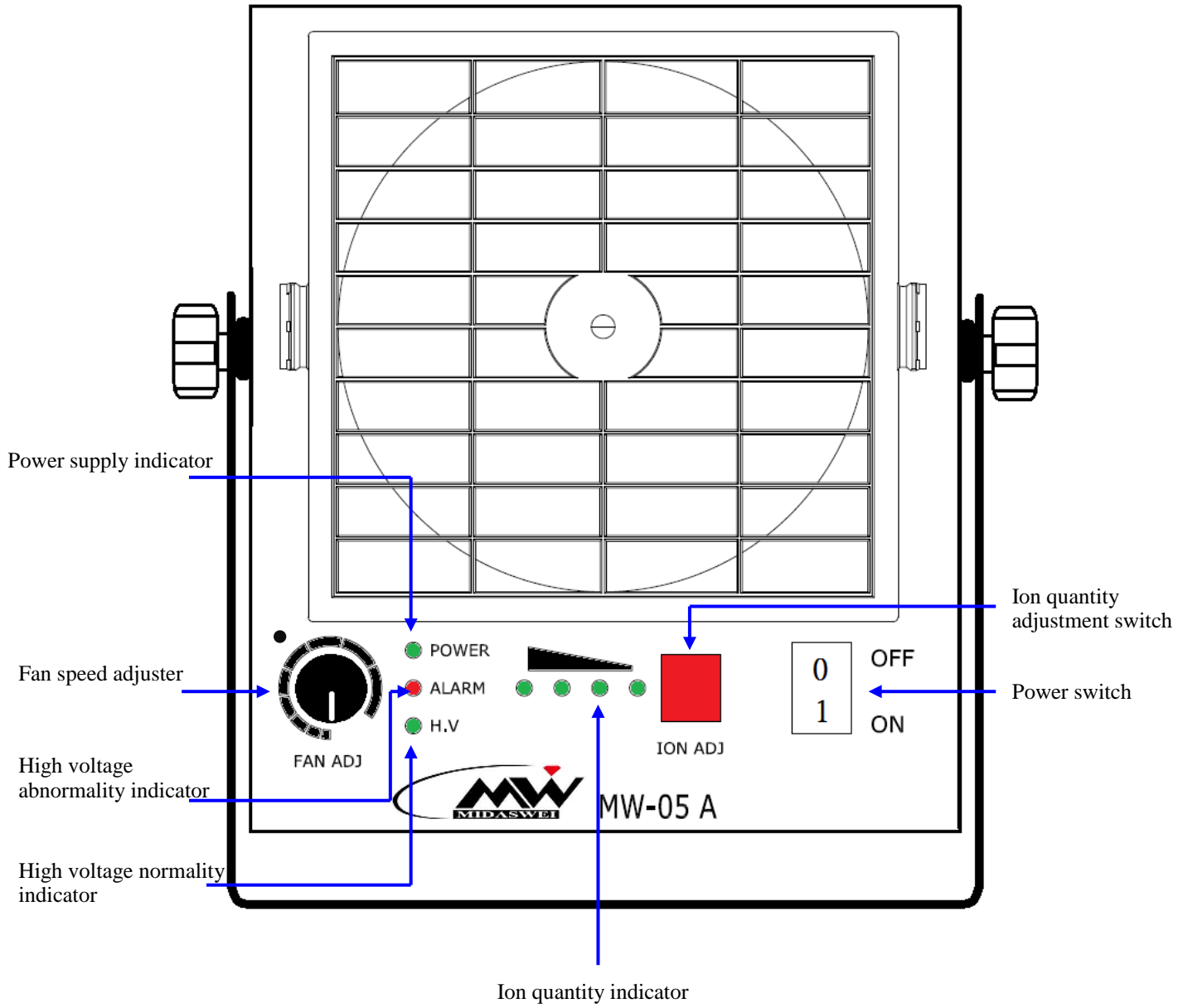
**Midaswei MW-05A Ionizer Fan  
Instruction Manual**

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## A. Overview



## B. Operating instructions

MW-05A is an ionizer fan with five-stage adjustable ions quantity, Adjustable air volume and a protection of high voltage output abnormal. By using with the accessory AC adapter, MW-05A is suitable for 110Vac/220Vac supply voltage.

### 1. AC adapter installation

Please connect the plug of the accessory AC Adapter with 110Vac/220Vac power outlet, and insert the output of the AC Adapter into DC IN connector on the back of ion fan. **Note: do NOT use non- accessory AC adapters.**

### 2. Operation

MW-05A is an ionizer fan with sequentially five-stage adjustable ions quantity and adjustable air volume. The operation rule is as follows,

#### 2.1 Initial Stage

Turn the power switch ON, and the fan spins up. 'POWER' LED and 'H.V.' LED become light up. The ion number is zero in initial stage.

#### 2.2 First stage

Push the ion quantity adjustment switch (ION ADJ) in the initial stage, MW-05A will enter into first stage. The fan keeps spinning and the buzzer will beep once. The 'POWER' LED, 'H.V.' LED and four LEDs of ion quantity indicator become light up. The generated ion number is largest in first stage.

#### 2.3 Second stage

Push the ion quantity adjustment switch (ION ADJ) in the first stage, MW-05A will enter into second stage. The fan keeps spinning and the buzzer will beep once. The 'POWER' LED, 'H.V.' LED and right-hand side three LEDs of ion quantity indicator become light up. The generated ion number is secondly large in second stage.

**2.4 Third stage**

Push the ion quantity adjustment switch (ION ADJ) in the second stage, MW-05A will enter into second stage. The fan keeps spinning and the buzzer will beep once. The ‘POWER’ LED, ‘H.V.’ LED and right-hand side two LEDs of ion quantity indicator become light up. The generated ion number is medium in third stage.

**2.5 Fourth stage**




Push the ion quantity adjustment switch (ION ADJ) in the third stage, MW-05A will enter into fourth stage. The fan keeps spinning and the buzzer will beep once. The ‘POWER’ LED, ‘H.V.’ LED and rightmost LEDs of ion quantity indicator become light up. The generated ion number is little in fourth stage.

**2.6 Initial stage**

Push the ion quantity adjustment switch (ION ADJ) in the fourth stage, MW-05A will re-enter into initial stage. The fan keeps spinning and the buzzer will beep once.

**2.7 Air volume control**

The FAN ADJ knob is fan speed control, turn the knob in a clockwise direction can increase air volume, in a counterclockwise direction can decrease air volume, if knob turn to end of the counterclockwise, the fan speed will operation in low speed and minimum air volume.

| Fan Speed          | Knob indication  | Application                               |
|--------------------|--|---|
| Minimum Fan Speed  |  <p>FAN ADJ</p> | Thin wafer inspection, or Re-work station |
| Standard Fan Speed |  <p>FAN ADJ</p> | Wafer inspection, or Re-work station      |
| Maximum Fan Speed  |  <p>FAN ADJ</p> | Wafer inspection, Reel taping, EFEM       |

### 3. Abnormal condition

3.1 When the output high voltage is abnormal, such as the internal cable has poor connection or the discharge needle unit does not discharge, the ‘ALARM’ LED becomes light up and the buzzer sounds. If this abnormal condition is not solved within 1 minute, MW-05A will be locked.

3.2 When the foreign object contacts the discharge needle unit, ‘ALARM’ LED becomes light up and the buzzer sounds. If this abnormal condition is not solved within 1 minute, MW-05A will be also locked.

3.3 Holding the ion quantity adjustment switch (ION ADJ), the buzzer sounds until release the ion quantity adjustment switch.

### 4. Indication/Function

| Stage                       | Ion quantity   | LED indication      | Fan       | Buzzer      |
|-----------------------------|----------------|---------------------|-----------|-------------|
| Power ON<br>(Initial stage) | zero           |                     | Operation | Stop        |
| 1 <sup>st</sup> stage       | Largest        |                     | Operation | Beep        |
| 2 <sup>nd</sup> stage       | Secondly large |                     | Operation | Beep        |
| 3 <sup>rd</sup> stage       | Medium         |                     | Operation | Beep        |
| 4 <sup>th</sup> stage       | Little         |                     | Operation | Beep        |
| Hold ION ADJ                |                | Keep original state | Operation | Raise alarm |
| High voltage abnormality    |                |                     | Operation | Raise alarm |

## C. Cleaning and Maintenance

1. Clean the discharge needle by a soft brush at least once a week. Do NOT clean the discharge needle by any hard object, or the needle tip will be damaged.
2. If the needle tip is damaged, replace the discharge needle unit immediately to maintain proper function.
3. The discharge needle may have carbon deposits and consumption due to corona effect. It is recommended to replace the discharge needle unit every 3 months or when the static elimination performance is degraded.
4. Clean both side louvers by a soft brush or compressed air at least once a week.
5. If the filter is used, the filter cotton should be cleaned or replaced per month.

### **CAUTION:**

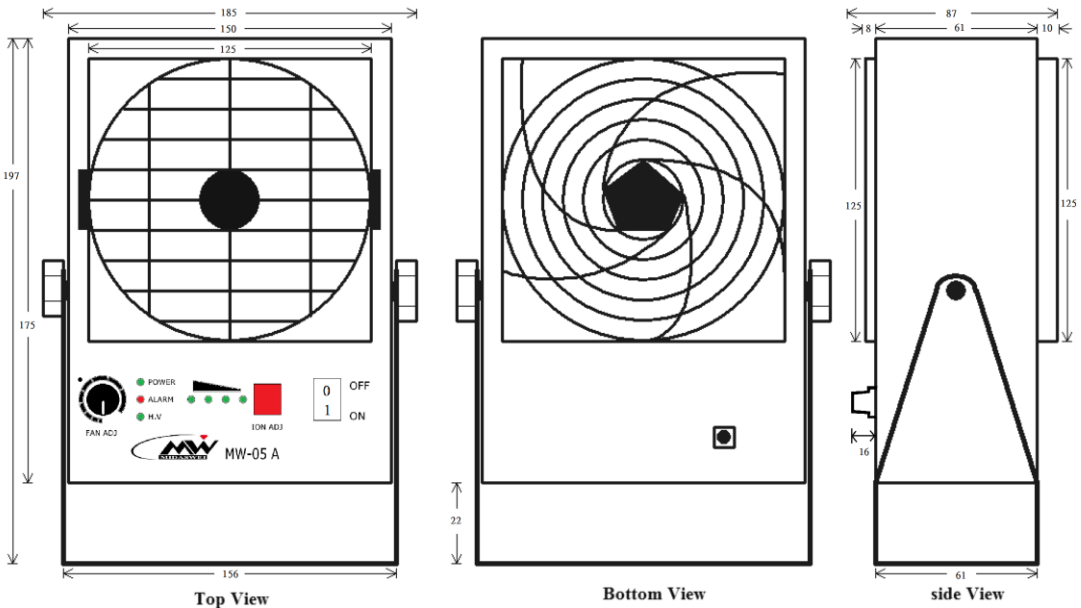
- \* You should always turn OFF the power before maintaining the ionizer fan.
- \* The needle tip is very sharp. Pay attention to avoid being stabbed.

**D. Specification**

|                                   |   |
|-----------------------------------|---|
| Name                              | MW-05A  |
| Power supply voltage              | Accessory AC adapter:<br>Input: 100Vac~240Vac, Output: DC24V        |
| <b>Input power</b>                | <b>15W</b>  |
| High voltage output               | AC 4400V  |
| <b>Static charge removal time</b> | <b>±1KV→±100V within 1 sec at distance of 30cm central position</b> |
| <b>Balance Voltage</b>            | <b>±2V at 30cm central position</b>                                 |
| Maximum Air flow                  | 2.84 m <sup>3</sup> /min  |
| Quantity of produced ozone        | 0.05ppm or less (testing distance 30cm)                             |
| Ambient temperature               | 0~40°C  |
| Ambient humidity                  | 15~65%RH (No condensation)  |
| Dimension                         | 185(L)×87(W)×197(H)mm (including protruding portion)                |
| Weight                            | 1300g approx. (including stand)                                     |
| Noise                             | 50dB(A) @ 1m/maximum air volume.                                    |
| Accessory                         | Instruction manual, AC Adapter and power cable.                     |

Note: Testing instrument is Kleinwachter EFM-022, Performance may be degraded, depending on working conditions and surrounding environment.

### E. Dimensions



Unit: mm

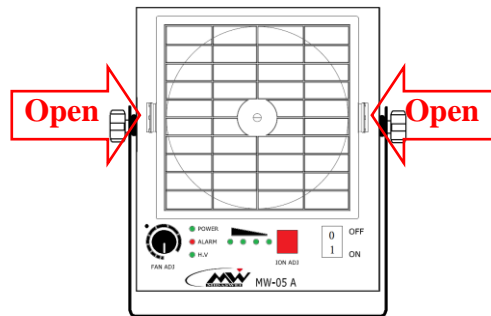


## F. Safety Precaution

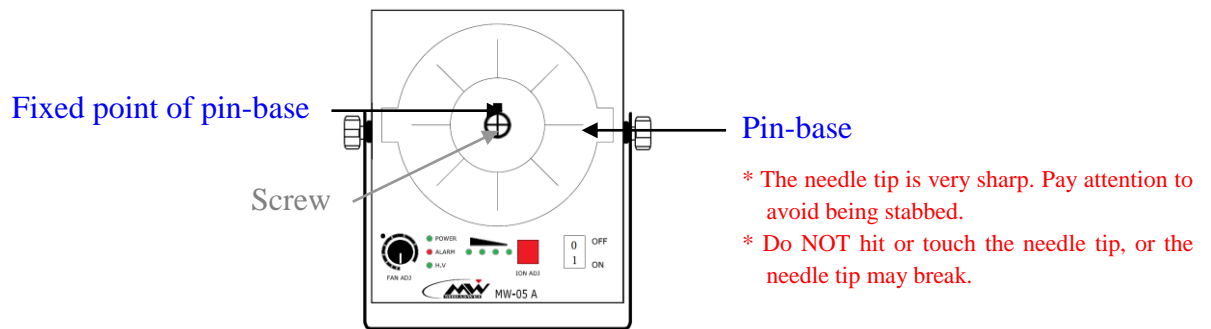
1. Please read the instruction manual before installation.
2. Both side louvers cannot be blocked or inserted by any foreign object.
3. Do NOT use any non-accessories AC adapter.
4. Do NOT use the ionizer fan in a flammable or explosive environment.
5. Do NOT replace any part or attempt to self-repair.
6. Under normal use and proper care, we provide one-year warranty for MW-05 A. However, consumables (discharge needles, filter cotton, etc.) are NOT within warranty.
7. Must use genuine discharge needle hub or discharge needle, or unpredictable dangers may occur.
8. When the ionizer fan is working, it generates a high voltage. Do not use it when each louver is taken off.
9. The ionizer fan generates ozone in operation. Ventilation is required when operating in a confined space.
10. Midaswei ionizer fan is designed for general industrial and indoor use. They are not suitable for outdoor use as well as not suitable for environments that cause life or property safety, such as nuclear power plants, aircrafts, ships or hospitals. Avoid operating the ionizer fan in the following locations: locations with soot, dust, flammable substances, acid-base solvent or gas, vibration, impact, strong magnetism, strong electric fields, and drastic changes in temperature.

## G. Set-up Pin-base of MW-05A

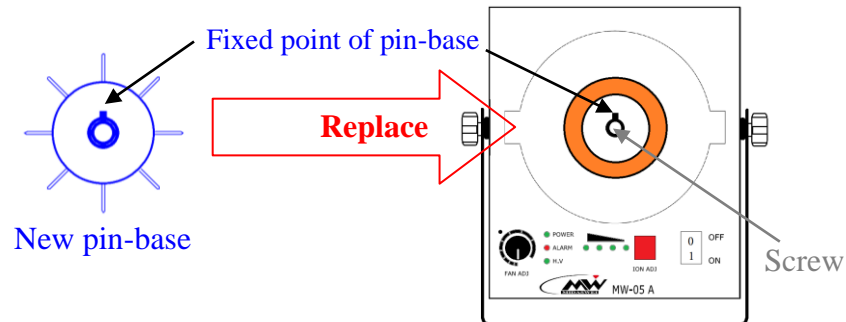
Step 1. Open fan cover



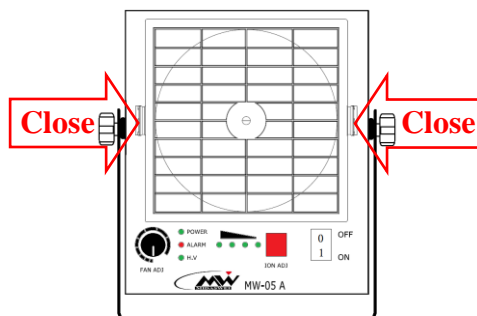
Step 2. Pick-up the screw and pin-base



Step 3. Replace the new pin-base and fix the screw

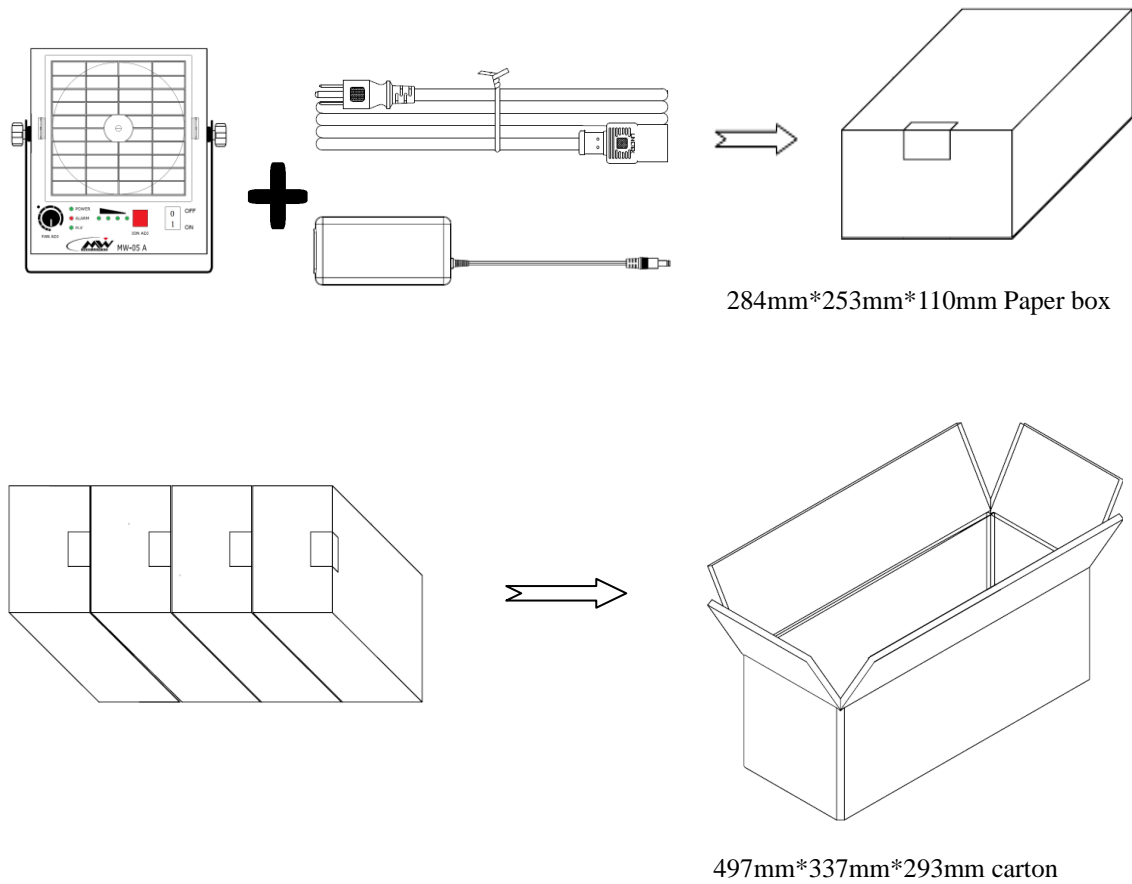


Step 4. Close fan cover



## H. Packaging

1. Each Ionizer set includes a MW-05A, a Power adaptor and a Power cord.
2. Place an Ionizer set in the 284mm\*253mm\*110mm paper box ◦
3. 4 PCS 284mm\*253mm\*110mm paper box is 1 stack ◦
4. 497mm\*337mm\*293mm carton can be put into 4 paper box.



| ITEM | NAME                       | Qty | pcs |
|------|----------------------------|-----|-----|
| 01   | MW-05A,                    | 1   | 1   |
| 02   | POWER ADAPTOR & POWER CORD | 1   | 1   |
| 03   | 284*253*110 mm paper box   | 1   | 1   |
| 04   | 497*337*293 mm carton      | 1   | 4   |

## I. Attachment 1

1. The input voltage and current difference MW-05A and A vendor :

a. The Positive and negative voltage difference :

MW-05A  $\rightarrow \Delta 1V$  ; A vendor  $\rightarrow \Delta 1.2V$  .

b. The Positive and negative current difference :

MW-05A  $\rightarrow \Delta 7.6mA$  ; A vendor  $\rightarrow \Delta 44mA$  .

c. The angle difference : MW-05A  $\rightarrow$  No angle difference ; A vendor  $\rightarrow 76^\circ$  .

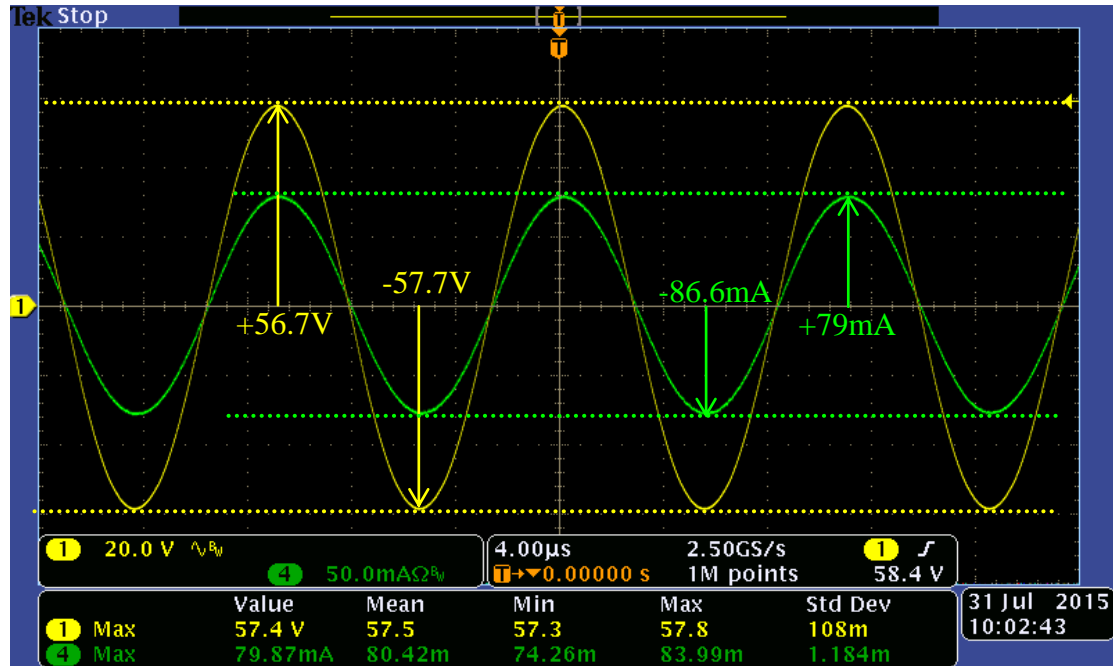


Fig1. MW-05A input voltage and current waveform

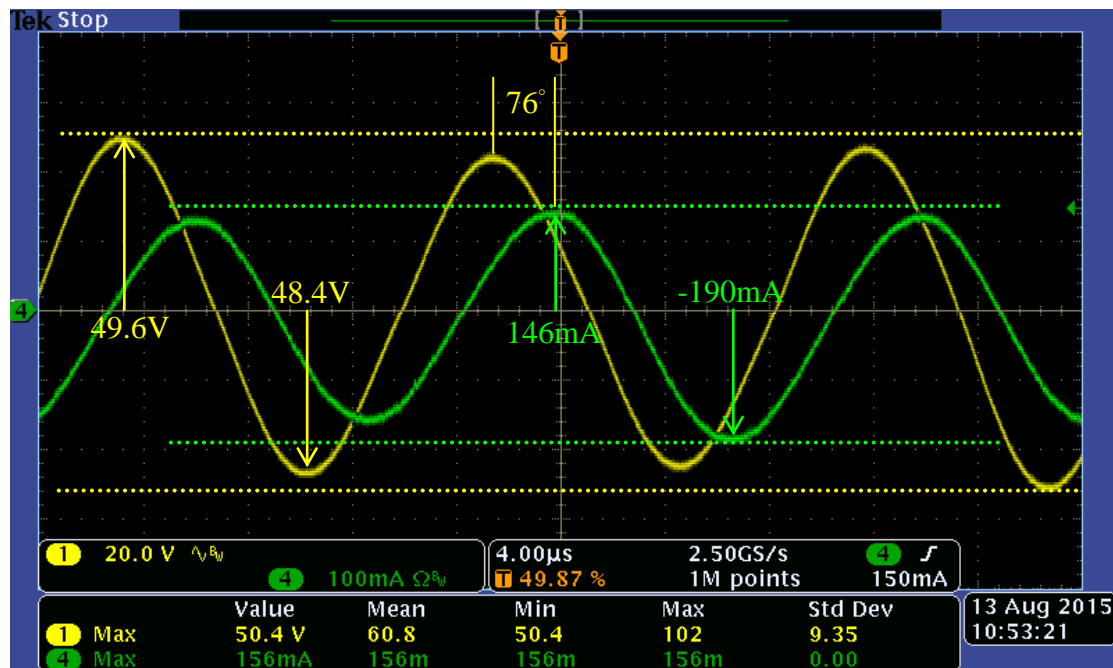
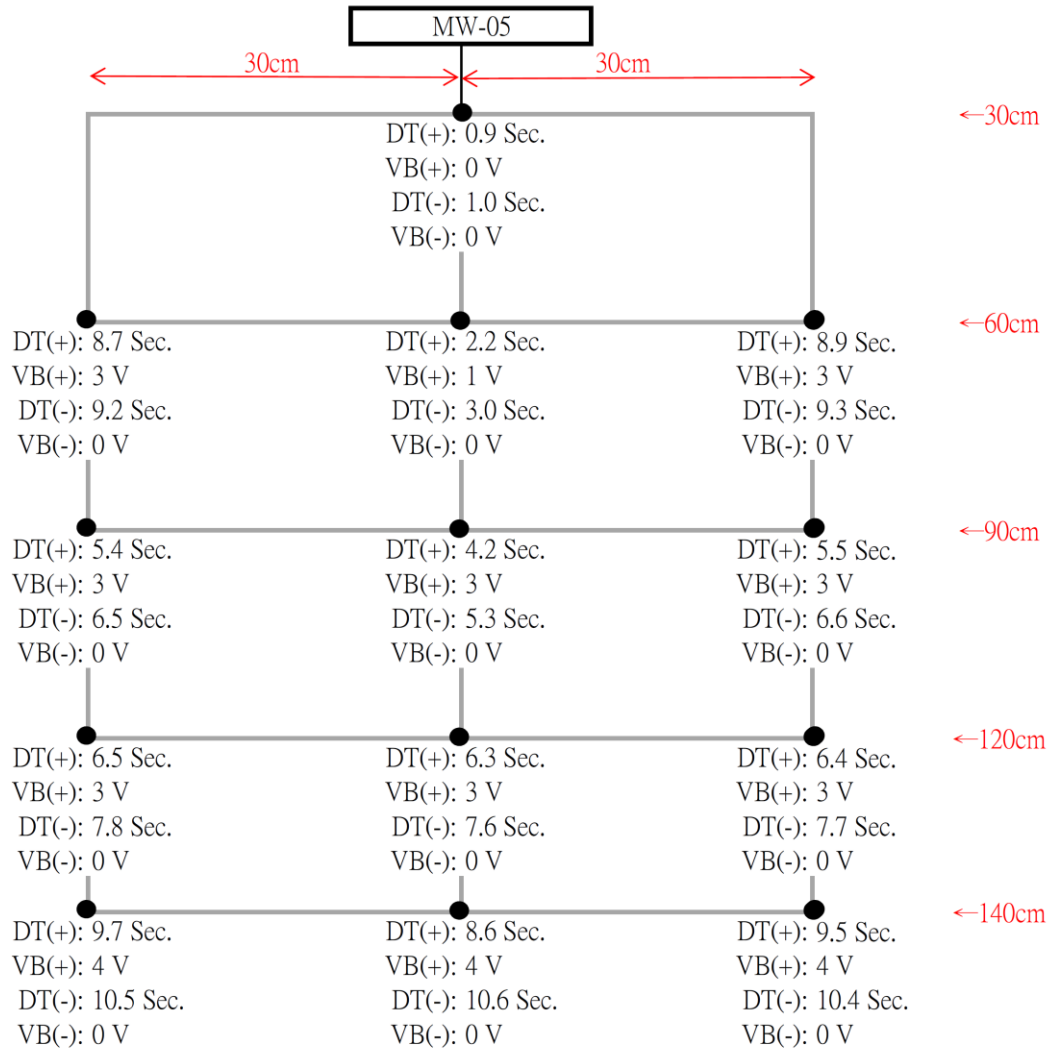


Fig2. A vendor input voltage and current waveform

## J. Attachment 2

The decay ability of MW-05 series measured on 2018/11/13.



- Note: 1. DT(±) : ±1000V--> ±100V Decay Time  
 2. BV(±) : Balance Voltage  
 3. Ambient condition : 23.5°C , 65%RH

2018/11/13



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### K. Attachment 3

The decay capacity compared MW-05 series with Japanese brand.

Test date : 2015/08/27

Test location : Semiconductor plant

Test distance : 100cm

| Test times | Decay | MW-05     |            | Japanese Brand |            |
|------------|-------|-----------|------------|----------------|------------|
|            |       | Time(sec) | Balance(V) | Time(sec)      | Balance(V) |
| #1         | +     | 4.2       | 6          | 3.1            | 13         |
|            | -     | 5.7       | -9         | 3.6            | -11        |
| #2         | +     | 4.1       | 0          | 3.4            | 8          |
|            | -     | 5.7       | -5         | 4.1            | -10        |
| #3         | +     | 3.9       | 0          | 2.8            | 12         |
|            | -     | 4.7       | -9         | 4.1            | -9         |
| #4         | +     | 4.7       | 0          | 3.4            | 12         |
|            | -     | 5.4       | -7         | 4.4            | -15        |
| #5         | +     | 4.4       | 0          | 3.5            | 14         |
|            | -     | 6         | -9         | 5.2            | -11        |

- Note :
1. The decay time of MW-05 than the Japanese brand long, but balance capacity of MW-05 is better than Japanese brand.
  2. Now MW-05 use 3100rpm fan, if replaced 3600rpm fan can improve decay time.