

**AP&T**®

Shanghai Anping Static Technology Co.,Ltd

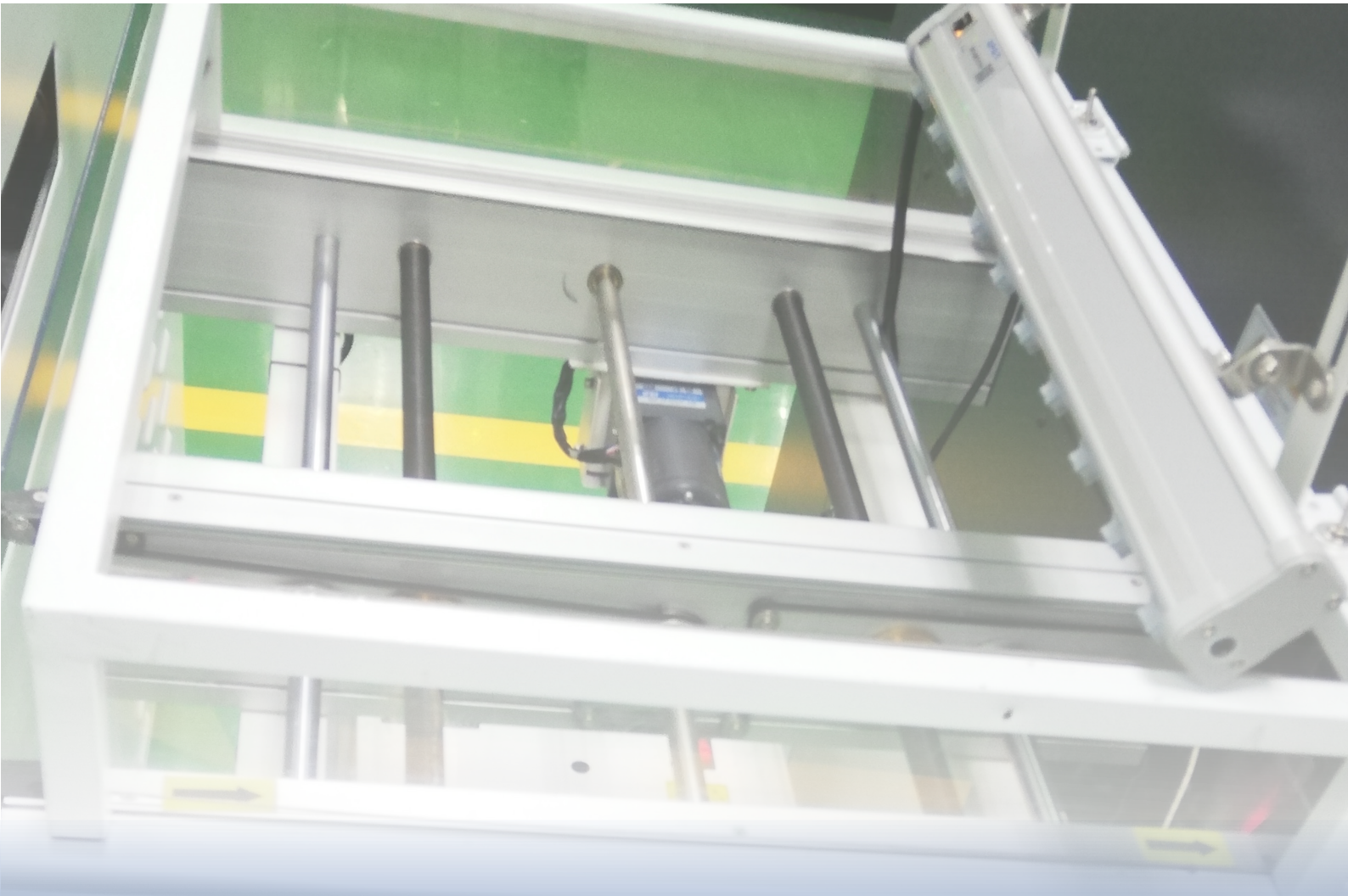
High Efficient Electroshock-proof

Intelligent Ion Bar

AP-AB1218



—AP&T—

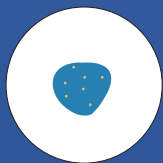


Widely used in electronics, optoelectronics, semiconductor and other industries

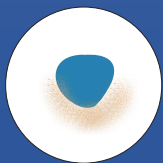
Effectively solve the problem caused by static electricity



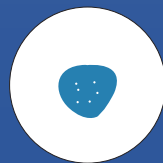
Static removal



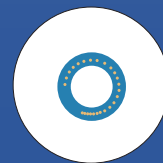
Prevent adhesion of objects



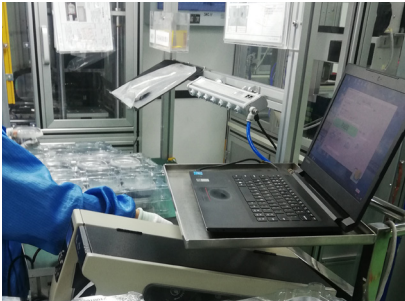
Prevent sticking



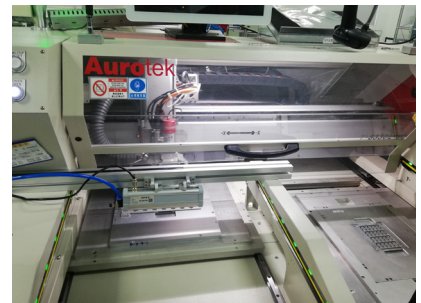
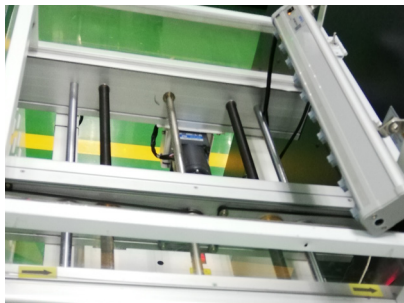
Control ink splashing



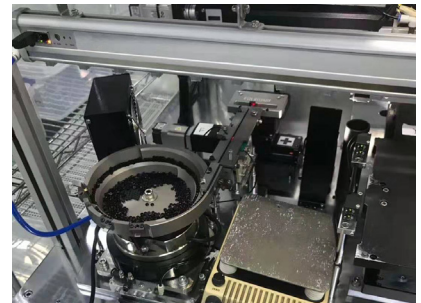
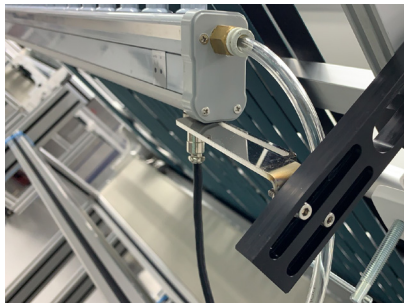
Prevent uneven scattering



High efficient



Safe

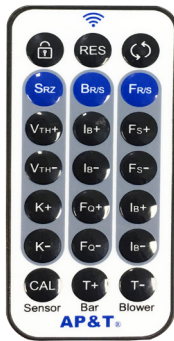


Static removal



# Intelligent Control

Cleaning time /ion balance/  
ion output frequency adjustable



## Remote control button

1. Srz: Reset to Zero
2. Vth+/Vth-: Modify setting value;10V per unit
3. BR/A: Running/Stop
4. CAL+"RES": Calibration
5. Br/s: Running/Stop
6. IB+/IB-:Modify Ion balance(5%-95%,Unit 0.1%)
- 7."FQ+/FQ-":Modify Positive Voltage
8. T+/T-: Modify Cleaning time: Unit: ID=24hours
9. CAL+"RES": Factory setting (50HZ,50%,7D)
10. Fr/s: Running / Stop
11. IB+/IB-: Modify Ion balance(5%-95%,Unit 0.
12. F+/F-:Fan Speed (Level 1.2.3.4.5)
13. T+/T-: Modify Cleaning time: Unit: ID
14. CAL+"RES": Factory setting (150HZ,50%,7D)

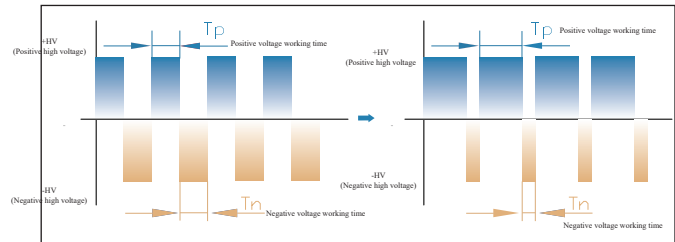
15. Indicate light  
Blue: Infrared, Stop, clean  
Green: Running  
Red: Alarm

NPN function  
High voltage indicate  
Power on indication, clean indication

16. Unlock
1. After unlocking, continue to delay 30S after pressing any button
2. After unlocking, 30s to exit and lock if no button presses
17. Control range: Distance less than 500mm, angel < 20°

## Ion balance adjustment

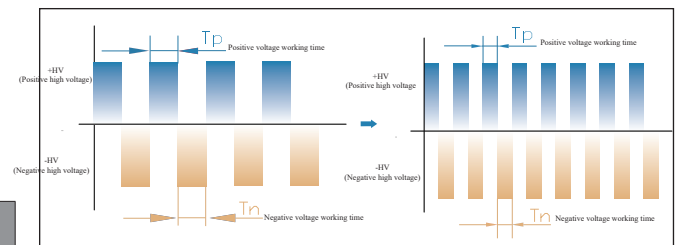
Press "IB-" when positive voltage on plate tester or target object is large or "IB+" when negative voltage on plate tester or target object is large until the ion balance reaches to ideal status. Static removing speed can be raised by adjusting the output ratio of positive and negative ion.



## Output frequency of positive & negative ions adjustment

Adjust the output frequency of positive and negative ions to apply to different elimination distances.

No matter the distance is long or short, it can exert its static elimination ability. The factory setting is 30Hz. A handheld terminal is required or return the ion bar to manufacturer if output frequency need to be adjusted.



| Working frequency (Hz) | Discharge distance (mm) | Application   |
|------------------------|-------------------------|---|
| 50                     | 100-300                 | Low balance requirements such as semiconductor devices  |
| 30                     | 300-450                 | Low balance requirements such as optoelectronic devices |
| 20                     | 450-600                 | Lower balance requirements such as electronic devices   |
| 10                     | 600-750                 | Material filling and transfer                           |
| 5, 3, 1                | 750-1000                | Discharge at a longer distance                          |

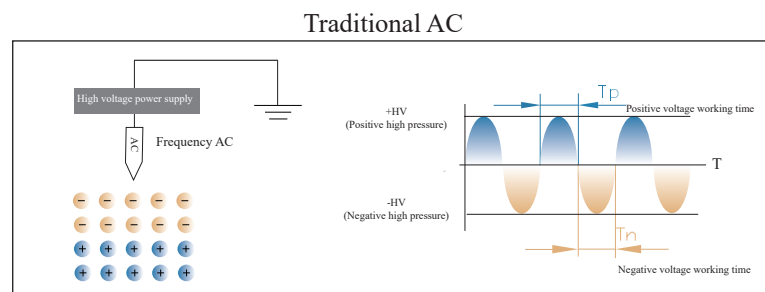
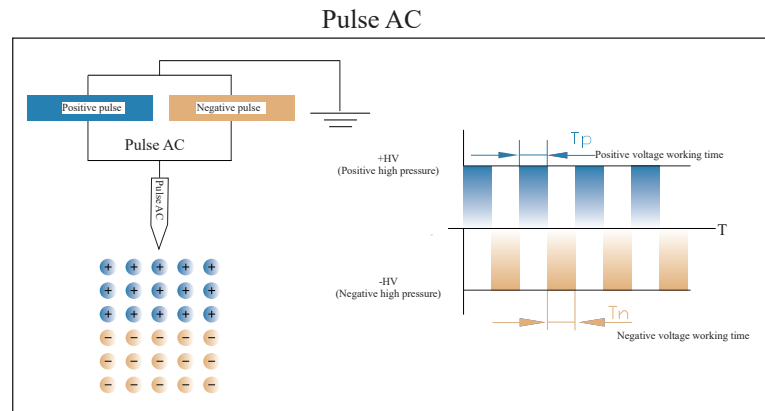
# Pulse AC

The effect of static eliminating is better compare to power frequency AC ion bar

## Comparison with traditional AC

The pulsed AC method alternately applies "+" and "-" high voltage to one electrode needle to generate two polar ions.

Compared with the traditional AC method, the amount of generated ions is increased and no uneven static elimination is found. Static elimination ability fits for both short or long distance.



## 3 situations of static on the surface of the object



Decrease  $T_p$  so that the positive voltage becomes smaller and the acting time becomes shorter. Less positive ions and more negative ions output to neutralize the excess positive charge on the surface of the object.



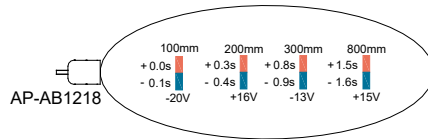
Increase  $T_p$  so that the positive voltage acting capacity becomes greater and the acting time becomes longer. More positive ions and less negative ions output to neutralize and excess negative charge on the surface of the object.



Adjust the duty ratio  $[T_p/(T_p+T_n)]$  to an appropriate ratio and send out the same amount of positive and negative ions to neutralize the static charge on the surface of the object.

# Efficiently static removal

Stay away from static electricity & for clean production environment



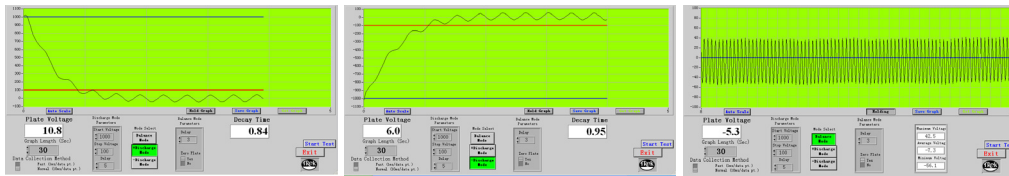
Test standard: ANSI/ESD.STM3.1, SJ/T 11446—2013

Test instrument: Trek157 static tester

Test voltage:  $\pm 1000V \rightarrow \pm 100V$  attenuation

Test environment: humidity  $50 \pm 5\%$ ; temperature  $23 \pm 3^\circ C$

The test data diagram is as follows (test distance: 400mm, ion rod length: 880mm, air flow pressure: 0.3Mpa, working frequency: 30Hz):



## Other test conditions data are as follows

Test diagram

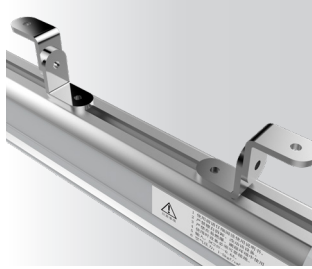
Ion bar length: 375mm; working frequency: 30Hz;

| Test distance (mm) | Air flow pressure (MPa)Remarks: 1* | Duty factor (%) | Discharge speed             |                             |                         |      |       |
|--------------------|------------------------------------|-----------------|-----------------------------|-----------------------------|-------------------------|------|-------|
|                    |                                    |                 | Positive discharge time (S) | Negative discharge time (S) | Ion Balance voltage (V) |      |       |
| 300                | 0.2                                | 49              | -150                        | 2.7                         | 2.9                     | -0.7 |       |
|                    |                                    |                 | 0                           | 0.5                         | 0.5                     | 4.1  |       |
|                    |                                    |                 | 150                         | 2.9                         | 3                       | -0.7 |       |
|                    | 0.4                                | 0.2             | 49                          | -150                        | 1.3                     | 1.5  | -5    |
|                    |                                    |                 |                             | 0                           | 0.2                     | 0.2  | 12.9  |
|                    |                                    |                 |                             | 150                         | 1.6                     | 1.9  | -2.4  |
|                    |                                    | 0.6             | 49                          | -150                        | 1.1                     | 1.2  | -3.8  |
|                    |                                    |                 |                             | 0                           | 0.1                     | 0.2  | -11.6 |
|                    |                                    |                 |                             | 150                         | 1.3                     | 1.2  | 13.1  |
| 500                | 0.2                                | 50              | -150                        | 2.6                         | 3.1                     | -5.6 |       |
|                    |                                    |                 | 0                           | 1.1                         | 1.3                     | -2.6 |       |
|                    |                                    |                 | 150                         | 2.9                         | 3.1                     | 2.2  |       |
|                    | 0.4                                | 0.2             | 49                          | -150                        | 1.5                     | 1.8  | -5.9  |
|                    |                                    |                 |                             | 0                           | 0.6                     | 0.8  | -15   |
|                    |                                    |                 |                             | 150                         | 1.8                     | 1.6  | 11.7  |
|                    |                                    | 0.6             | 49                          | -150                        | 0.9                     | 1.2  | -3.9  |
|                    |                                    |                 |                             | 0                           | 0.4                     | 0.6  | -4.6  |
|                    |                                    |                 |                             | 150                         | 1.2                     | 1.4  | -2.6  |
| 600                | 0.2                                | 50              | -150                        | 1.8                         | 2.4                     | -3.4 |       |
|                    |                                    |                 | 0                           | 1.3                         | 1.7                     | 1.2  |       |
|                    |                                    |                 | 150                         | 2.1                         | 2.6                     | -2.4 |       |
|                    | 0.4                                | 0.2             | 50                          | -150                        | 1.1                     | 1.2  | 9.1   |
|                    |                                    |                 |                             | 0                           | 0.7                     | 1    | -4.6  |
|                    |                                    |                 |                             | 150                         | 1.1                     | 1.4  | -3.7  |
|                    |                                    | 0.6             | 49                          | -150                        | 0.7                     | 0.9  | -3.4  |
|                    |                                    |                 |                             | 0                           | 0.5                     | 0.7  | -6.8  |
|                    |                                    |                 |                             | 150                         | 0.9                     | 1.1  | -1.3  |

Remarks: 1\* — Real-time pressure value during gas flow.  
The balance voltage performance of the ion bar varies with the length of the bar, airflow pressure, working frequency, and installation distance; the duty cycle should be adjusted according to the specific use environmental conditions to make the balance performance of the ion bar reach the best state.

# Features

Safe / Easy to use / Durable



No.1

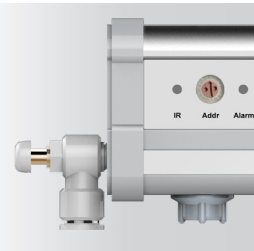
## Easy installation

Provide stainless steel mounting angle and can adapt to various installation environments.

No.2

## Intake throttle valve

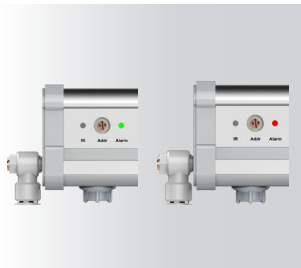
The specification is  $\Phi 8-G1/8$  Grey.



No.3

## Working status visualization

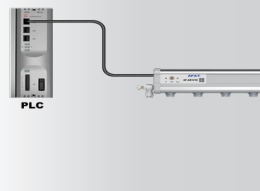
Green light-----working normally  
Red light-----abnormal high voltage



No.4

## External PLC

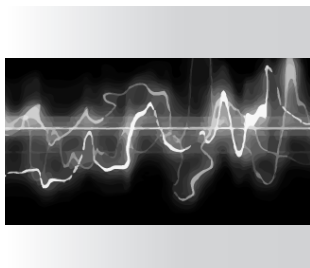
External PLC can carry out high-voltage alarm, power-on indication and cleaning indication monitoring output.



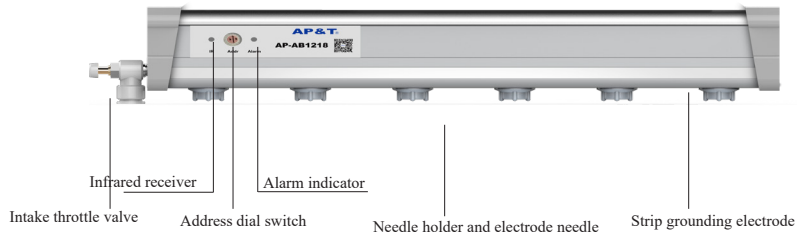
No.5

## CE certification

It can effectively prevent the external electromagnetic interference from affecting the normal operation of the ion bar. This is a static electricity eliminator with high safety and high reliability.



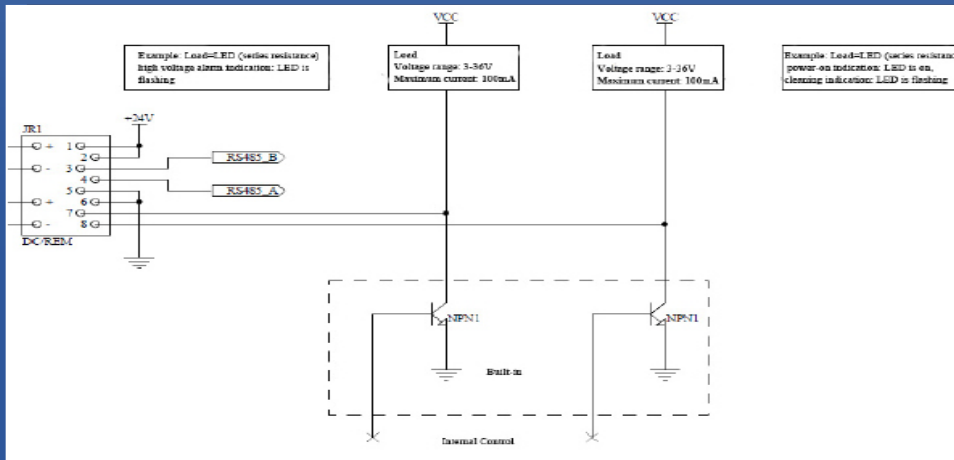
# Details



# Installation

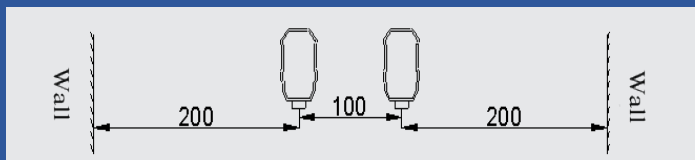
## Installation steps

1. Choose the best position for eliminating electricity and install the bar firmly.
2. Insert one end of the power connection wire into the power adapter socket and the other end into the power socket on the bar body. The wiring and panel descriptions are as shown above.
3. Connect the air source connector on the bar body to the air source generator and turn on the air source switch.
4. The network port indicator light and the ion bar panel indicator light is on green to show the ion bar working. Adjust the appropriate air source pressure and voltage parameters, output positive and negative ions to neutralize the surface static electricity.



## Installation tips

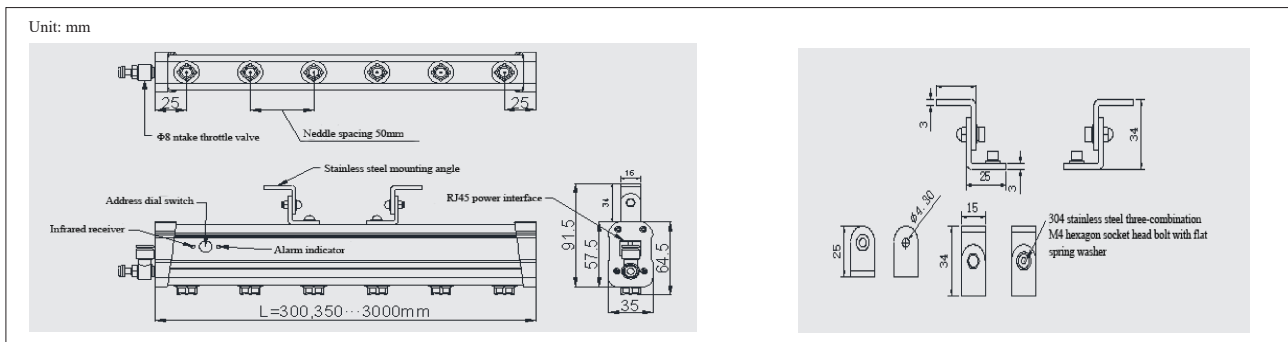
1. When using the ion bar, it should be placed in a static-free working area and the installation angle should be perpendicular to the surface of the charged body.
2. Ion bar should be at least 30mm away from the metal conductor and metal grounding body around the electrode. The bar body must be reliably connected to the grounding wire.
3. Ion bar grounding electrode is not allowed to be covered by other objects.
4. It is better to install two ion bars side by side with an interval of more than 100mm.





# Specification

|                          |   |
|--------------------------|---|
| Model                    | AP-AB1218   |
| Input voltage            | DC 24V  |
| Input Current            | < 600mA   |
| Power                    | 10W   |
| Working voltage          | DC±5KV  |
| Ion emission             | Pulse AC  |
| Emitter electrode        | Tungsten  |
| Discharge structure      | Resistance coupling   |
| Output frequency         | 1,3,5,10,20,30,50Hz; (EX-Work setting: 30Hz)  |
| Duty factor              | 10%—90%   |
| Discharge range          | L*W*H: (300-3000mm)*300*1000mm  |
| Installation distance    | 100→1000mm  |
| Ion balance              | ≤ ±30V  (AVG)   |
| Discharge speed          | ≤2S   |
| Status indicator         | High pressure alarm indicator<br>(green light-----normal operation ; red light-----abnormal high voltage) |
| Communication function   | RS485   |
| Signal output            | Open collector 50V/100mA  |
| Air pressure             | ≤0.6MPa   |
| Compressed air connector | Φ8-G1/8 Grey  |
| Working temperature      | 0°C-50°C  |
| Working humidity         | < 70%   |
| Dimensions               | L*W*H: (300-3000mm)*35*64.5mm   |
| Bar material             | Flame retardant PVC、AL、SUS  |
| Packaging accessories    | 180°rotating installation angle, M5-12*12*4 square nut  |
| Warranty                 | 1 year  |
| Certification            | CE  |



Ion bar size drawing

Mounting bracket size drawing

# AP&T<sup>®</sup>

## Speciality Creates Value

Shanghai Anping Static Technology Co.,Ltd

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