



It is recommended that only persons who have sufficient knowledge and experience such as system designers and responsible persons deal with this product after carefully reading the product manual.

1 The matters of safety

WARNING

- * If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- * Do not let the water touch the product.
It may cause electric shock or fire due to malfunction.
- * When you check or maintain the product, make it sure you turn off the power.
It may cause electric shock or fire due to malfunction.
- * Secure the product firmly when you want to secure it.
There is a possibility of accident due to fall-over or malfunction, etc.
- * Secure working space when you install the product. If working space is not secured, the checking or maintenance of the product is made impossible leading to failure of the product.
- * Do not use the product at the place where dangerous material such as inflammable or ignitable material exists. This product is not the product of anti-explosive type.
- * This device is made only for industrial uses. You need to ground the device beforehand. Otherwise, there are in case of malfunction, electric shock, or fire damage.

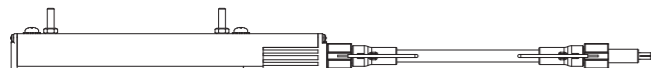
CAUTION

- * Do not contact the discharge needle or terminal with power applied.
There is a possibility of electric shock or malfunction.
- * Handle the discharge needle with care as its tip is very sharp.
- * Connect wires referring to the product manual. Wrong connection can cause failures.
- * Take precautions as cables of the adaptor, the power line and communication line of each product may disconnect. If the cable is damaged, replace it immediately.
- * Do not install the device where the vibration can be detected. Any minor impact or vibration on the device, the malfunction or danger of accident might happen.
- * Do not use the product for the purpose outside of the range of the product use.
If the product is used for the purpose outside of the range of the use, it can result in the trouble or the shortened service life. Or an unexpected problem may occur.
- * The ionizer generates ozone(below 0.05ppm).
If you sense the smell of ozone, ventilate the air.
- * When installing or transporting the ion bar, be prepare not to bend the item during the process.

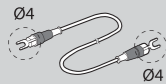
2 Check the package contents

Product compositions

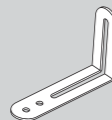
The package includes the following products composition.



Ion Bar
SSBN Series
1ea



* Ground Cable
SGC-MT-2-003
Ø4 - Ø4 / 4m / 1ea



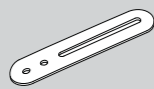
* 90° Angle Mount Bracket
SBR-SB-1-001

Option

If you require extra functions with the basic accessories we provided, you need to purchase optional items in below for further assistant.

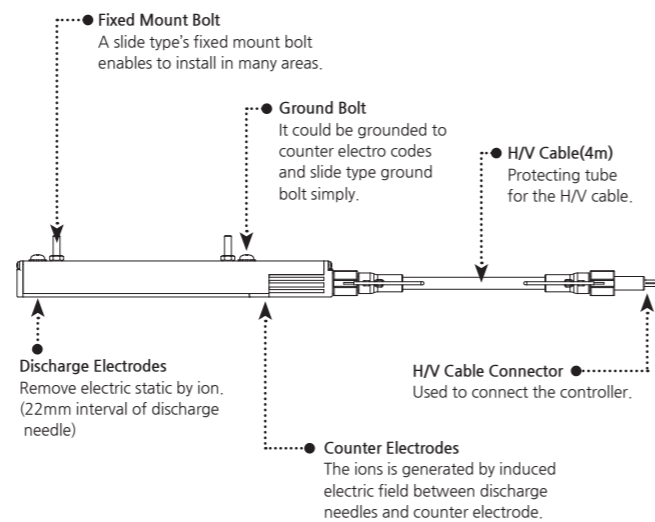


* Clamp
SCL-SB-1-001



* Straight Mount Bracket
SBR-SB-2-001

3 Nomenclatures of parts



4 Installation and connection

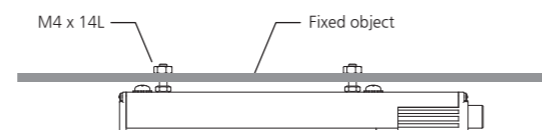
Ion bar installation

When you install SSBN Series, please check the distance between ion bar and object.
* Please, handle with care when you carry or install not to break or bend an ion bar.

Basic Installation

a. Installation by using mount bolt(s) only

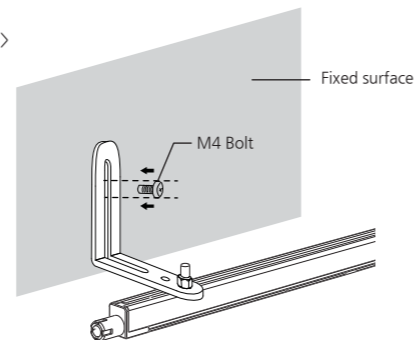
Use the M4 mount bolt(slide type) to the fixed object tightly. You can adjust the length of M4 mount bolt(slide type) in any size. There might be some problem if product's conduction, vibration, or fall. Please install the product(s) tightly.



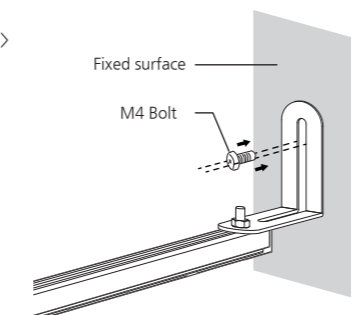
b. Installation by using 90° angle type mount bracket(s) (Standard)

- Find the place where you want to install the unit.
- Install the mount bracket(s) tightly by using M4 mount bolt(s).
- Place the bracket where you want to install.
- Screw M4 bolt(s) on the hole of 90° angle type mount bracket(s) and tighten it. There might be some problem if product's conduction, vibration, or fall. Please install the product(s) tightly.

< Figure - 1 >



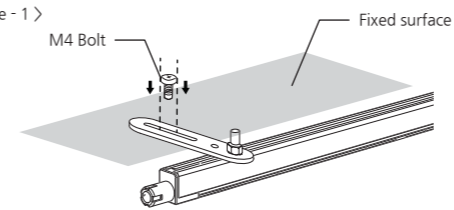
< Figure - 2 >



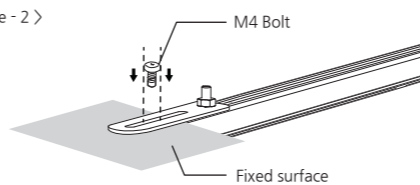
c. Installation by using the straight type mount bracket(s) (Option)

- Find the place where you want to install the unit.
- Install the mount bracket(s) tightly by using M4 mount bolt(s).
- Place the bracket where you want to install.
- Screw M4 bolt(s) on the hole of straight type mount bracket(s) and tighten it. There might be some problem if product's conduction, vibration, or fall. Please install the product(s) tightly.

< Figure - 1 >



< Figure - 2 >



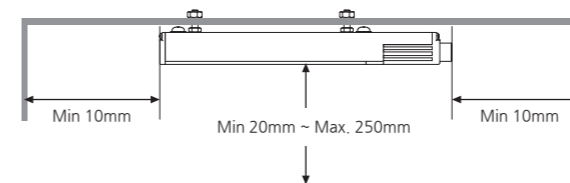
SSBN Series Model's Mount Bolt / Mount Bracket Quantity Requirement

There are total 14 different SSBN Series, and mount bolt & mount bracket quantity requirement is below.

| Model | Mount Bolt / Mount Bracket | Model | Mount Bolt / Mount Bracket | Model | Mount Bolt / Mount Bracket |
|----------|----------------------------|-----------|----------------------------|-----------|----------------------------|
| SSBN-120 | 2ea | SSBN-1100 | 3ea | SSBN-2100 | 4ea |
| SSBN-300 | 2ea | SSBN-1300 | 3ea | SSBN-2300 | 4ea |
| SSBN-500 | 2ea | SSBN-1500 | 3ea | SSBN-2500 | 4ea |
| SSBN-700 | 2ea | SSBN-1700 | 3ea | SSBN-2700 | 4ea |
| SSBN-900 | 2ea | SSBN-1900 | 3ea | | |

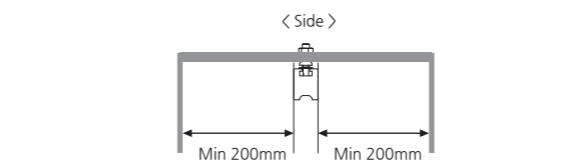
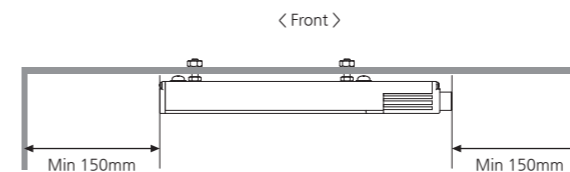
* We provide you the 90° angle type mount bracket. (Straight mount bracket : Option)

Distance for the Basic Installation



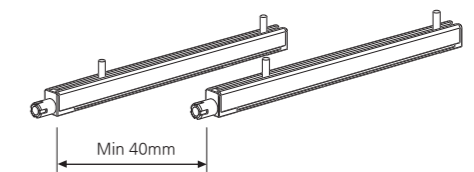
Interference by Grounding Matters

If there is any conductive object close to ion bar, SSBN Series may not operate properly. Please install it with reference to figure below.



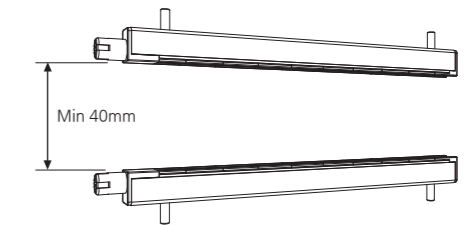
Side to Side Installation

When the more than two ion bars are installed, to avoid interference, the range between two ion bars should be more than 40mm.

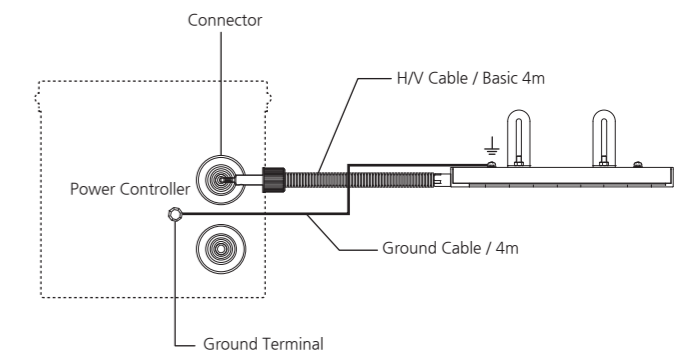


Face to Face Installation

When two ion bars are installed face to face, to avoid interference, the range between two ion bars should be more than 40mm.

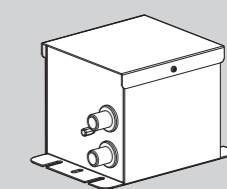


How to connect the power controller

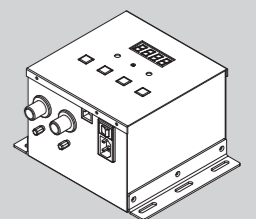


Connectable Power Controller

SSBN Series can be connected to the power controllers as below.



* Power Controller
SBP-25



* Power Controller
SBP-07A2

* H/V Cable Length

SBP-25 : SSBN-120~900 (Max. 5m) / SSBN-1100~1900 (Max. 4m) / SSBN-2100~2700 (Max. 3m)

SBP-07A2 : SSBN-120~2700 (Max. 5m)

* It does not affect to the performance even noise and vibration generated by the commercial frequency from high-voltage power.

CAUTION

* Don't try to connect with the power controller that is not properly specified to install.
It will be causes of malfunction or operation disorder.

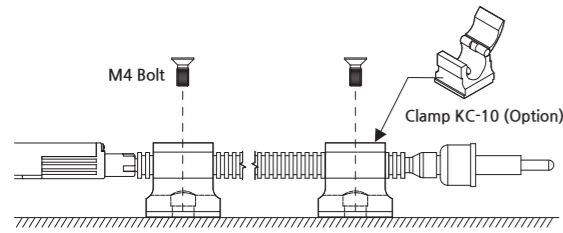
▶ H/V cable connection

CAUTION

- Do not bend the high voltage cable or do not damage its wire when you are install.
- Offered H/V cable is suitable only for our goods. Please do not use any other H/V cable and also do not convert offered H/V cable into any other purpose.
- Please refrain from connecting H/V cable with any other wires or cables because of interference of high electric field. If you connect or set up them to H/V cable closely, it must be wired over than 200mm each other. Also, if you wire H/V cables from more than two controllers which has different frequency or out-put voltage, please do not setup the H/V cable together.

Clamp (Option)

- Manufacturing Company & Model : KODUCT / KC-10B
- It is recommended that clamp is set up every 300mm.
- It is recommended that using M4 bolt.



5 Maintenance

Maintenance is an essential item for maintaining its capacity. Please conduct a routine maintenance according to the below description. The life time of a discharge needle can be a difference depending on using circumstance. SSBN Series needs a routine maintenance and cleaning in case of bad circumstance.(high humidity or dust)

CAUTION

- This device uses the high level of voltage. When operating maintenance, please power off and unplug the device. Otherwise, there might be in case of electric shock or fire damage.
- The discharge needle is very sharp at the edge. Do not physically(directly) touch the discharge needle.

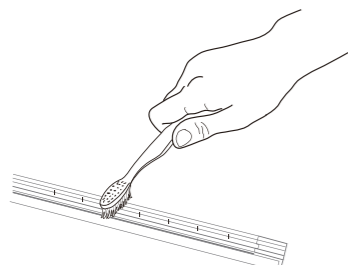
▶ Discharge needle cleaning

The contamination level of discharge needle is different among the areas where the user installs, please maintain own cleaning period that suits your environment.

- Brush Cleaning : Weekly (or after using 168hr)
- Alcohol Cleaning : Once per 3 month (or after using 2,160hr)

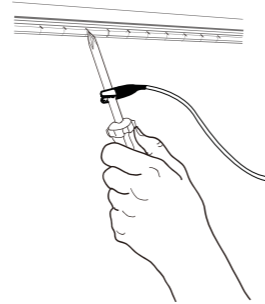
▶ Discharge needle cleaning order

- Be sure to power off before cleaning the ionizer.
- Use brush(nylon) or air compressor to clean the dirt.(E.g. tooth brush)
But, if you are in clean space, use cotton materials to clean.
- When there are any inks or oily dirt, apply alcohol(Methanol) or IPA in the cotton materials to wipe the dirty surface. But, do not forget to dry the cotton materials(first) before applying it.
You need to clean once per every 3 month or after using 2,160 hours.
- After cleaning the controller, you can turn it back on.
- Record the date of you cleaned in the machine.



▶ How to test the machine whether it works or not

- Test period : Non-periodic or anytime it is necessary.
- Put controller's power on.
 - Get the screw driver that has metallic tip on it.
 - Ground the wire on the metallic part of the screw driver.
 - Barely touch the discharge needle from the discharge electrodes.
(Approximately 3mm of the distance between the screw driver and the needle.)
Check the diagram below.



| Type | Arcing | Testing | Cause | Resolution |
|----------------|------------------------------------|---------|---|---|
| Shockless Type | No Arcing | Broken | Due to insulation from bar or cable oxidation, power supply is broken, etc. | Bar or controller needs to be fixed or be replaced. |
| | Approx. 2~3mm of thin white Arcing | Normal | - | - |
| | Approx. 5~8mm of thick red Arcing | Broken | Inner insulation of the bar oxidation. | Bar needs to be replaced. |

6 Problem solving

▶ Checklist before all

| Problem | Identifying Problem | Solution |
|--|--|---|
| The product does not work. | Is your power cable still plugged in? | Please re-plug the power cable and then turn the device on again. |
| | Was the proper voltage level applied for this set-up? | Please use the proper level of power input for the device. (AC 100~220V, 50/60Hz) |
| | Is the switch off at back of the controller? | Turn on the power switch. |
| There is no ionization. | Does the installed environment have too high/low level of humidity or temperature? | Please install the device upon the proper working specification. |
| | Can't possibly ground the device? | Please refer to 「Installation & Connection」 for (proper) grounding the device. |
| The ionizing performance has been decreased. | Any damages or cut on the cables? | You need to replace the cables if it gets cut or damaged. |
| | Any contamination on the discharge needle? | Please refer to 「Maintenance」 for cleaning the discharge needle. |

7 Dimensions

▶ Ion Bar (SSBN Series)

| No. | Model No. | Controller | |
|-----|-----------------|------------|----------|
| | | SBP-25 | SBP-07A2 |
| 1 | Standard Length | 4m | |
| 2 | SSBN-120~900 | Max. 5m | |
| 3 | SSBN-1100~1900 | 4m | Max. 5m |
| 4 | SSBN-2100~2700 | 3m | |

| No. | Model No. | Tip Q'ty | A | B | Mount Bolt Q'ty |
|-----|-----------|----------|------|------|-----------------|
| 1 | SSBN-120 | 1 | 118 | - | 2 |
| 2 | SSBN-300 | 9 | 294 | 176 | 2 |
| 3 | SSBN-500 | 18 | 492 | 374 | 2 |
| 4 | SSBN-700 | 27 | 690 | 572 | 2 |
| 5 | SSBN-900 | 37 | 910 | 792 | 2 |
| 6 | SSBN-1100 | 46 | 1108 | 990 | 3 |
| 7 | SSBN-1300 | 55 | 1306 | 1188 | 3 |
| 8 | SSBN-1500 | 64 | 1504 | 1386 | 3 |
| 9 | SSBN-1700 | 73 | 1702 | 1584 | 3 |
| 10 | SSBN-1900 | 82 | 1900 | 1782 | 3 |
| 11 | SSBN-2100 | 91 | 2098 | 1980 | 4 |
| 12 | SSBN-2300 | 100 | 2296 | 2178 | 4 |
| 13 | SSBN-2500 | 109 | 2494 | 2376 | 4 |
| 14 | SSBN-2700 | 118 | 2692 | 2574 | 4 |

▶ Mount Bracket

8 Specification

| Parameter | Description / Value | |
|-------------------------|--|--|
| Compliant Standards | Technical Recommendations of the Research Institute of Industrial Safety | |
| Rated Voltage | AC 7kV ±7% | |
| Structure | Capacitive-Coupled (Shockless Type) | |
| Ozone(O3) Concentration | ≤0.05ppm | |
| Operation Circumstance | 0℃ ~ +50℃(32°F ~ 122°F), 35% ~ 85% RH | |
| Material | Body | PBT (Polybutylene Terephthalate) _Level V0 |
| | Cover | Aluminum |
| | Electrode | SUS 304 |
| | Cable Insulator | PVC (Polyvinyl Chloride) |
| | Flexible Tube | PA (Polyamide) _Level V0 |
| Operating Distance | 20 ~ 250mm (Non Air Pressure) | |
| Mounting Method | Ceiling & Wall Mount | |
| Weight | About 0.6kg/m (Without H/V Cable) | |
| Tip Cleaning Cycle | 1 week (Electrode Cleaning) | |
| Warranty | 1 year | |

※ The appearance and specification of the product may be changed without prior notice for the improvement of the product.

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