

Instruction Manual

SUNJE

SIB5S Series

(Eng)

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.
- * Always use either one of the following materials for air supply: CDA(Celan Dry Air) or N2. If there are any water or oil contamination in the air supply, it will cause malfunction or cause of accident.
- * 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 when you use more than two units, ventilate the air.
- * When installing or transporting the ion bar, be prepare not to bend the item during the process.

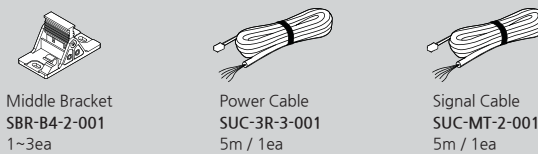
2 Check the package contents

Product compositions

The package includes the following products composition.



Ion Bar
SIB5S
1ea



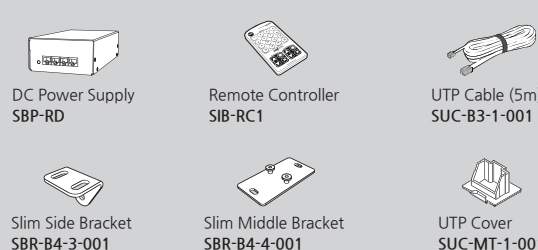
Middle Bracket
SBR-B4-2-001
1~3ea

Power Cable
SUC-3R-3-001
5m / 1ea

Signal Cable
SUC-MT-2-001
5m / 1ea

Option

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



DC Power Supply
SBP-RD

Remote Controller
SIB-RC1

UTP Cable (5m)
SUC-B3-1-001

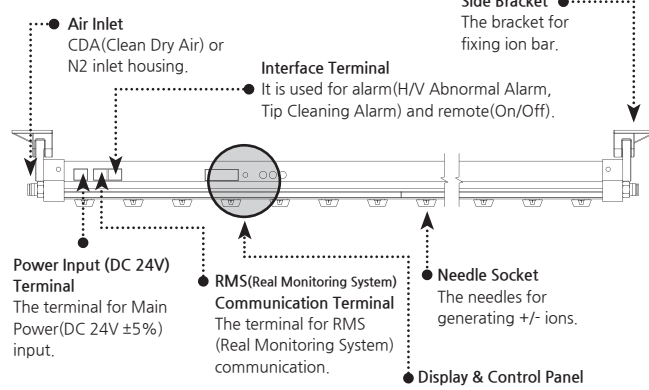
Slim Side Bracket
SBR-B4-3-001

Slim Middle Bracket
SBR-B4-4-001

UTP Cover
SUC-MT-1-001

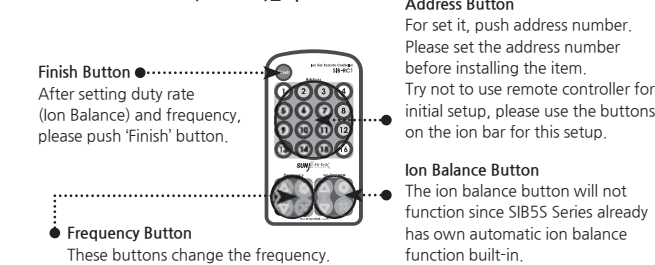
3 Nomenclatures of parts

Ion Bar (SIB5S Series)



NO	Name	function
1	TX/RX (LED)	The LED for RMS(Real Monitoring System) operating.
2	TIP (LED)	It indicates when tip cleaning alarm is set.
3	H/V (LED)	When H/V unit has some problem to generate high-voltage, H/V LED is turned on. <A-01 ~ 16> : Address <AL-1> : High Voltage output error of POS, NEG <AL1P> : High voltage output error of POS <ALIN> : High voltage output error of NEG <AL-2> : When tip cleaning setting time is over.
4	FND Display	
5	POS+ (LED)	(+) High voltage normal operating signal.
6	NEG- (LED)	(-) High voltage normal operating signal.
7	IR Receiver	The receiver for signal between remote controller and ion bar.
8	SET Button	It is for changing the address, frequency, high voltage, alarm ignore and tip clean mode.
9	Up / Down Button	

Remote Controller (SIB-RC1)_Option

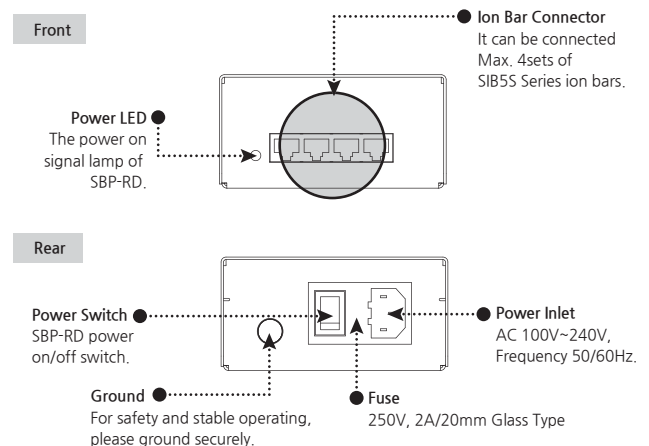


▲	UP	Use it when you increase frequency level.
▼	DOWN	Use it when you decrease frequency level.
⊙	SET	Use it when setting modified frequency.
✕	CANCEL	Use it when cancelling the set frequency.

※ After setting frequency, take a test for the performance using the CPM.

DC Power Supply (SBP-RD)_Option

The SBP-RD is a DC 24V power supply for SIB5S Series. When there is not a power source for DC 24V on an installation point or equipment, it can supply DC 24V to SIB5S Series and be connected up to Max. 4sets.



4 Installation and connection

Ion bar installation

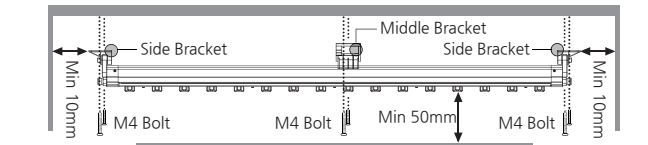
When you install the ion bar, please check the distance between ion bar and object.
※ Please, handle with care when you carry or install not to break or bend an ion bar.

CAUTION

- * The radius of curvature of the air hose is install with R10mm or more for operation. (Due to excessive bending of the air hose The product may be damaged.)

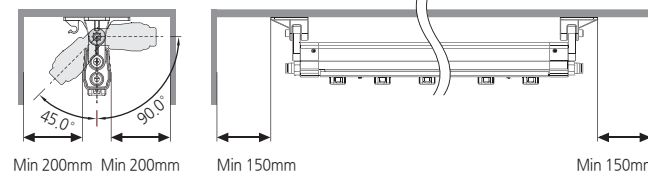
Basic Installation

Please, firmly fix to wall or rack and brackets and middle bracket which are provided as accessories by M4 or M5 bolts.



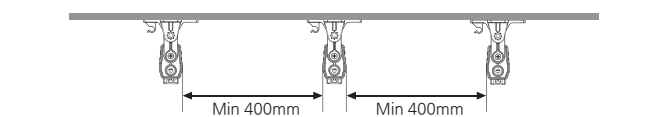
Interference by Grounding Matters

If there is any conductive object close to ion bar, SIB5S Series may not operate properly. Please install it with reference to figure below.



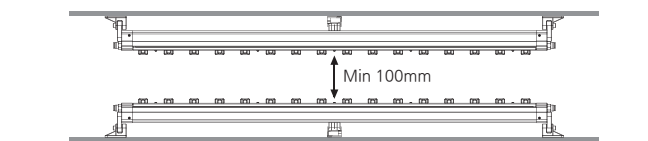
Side to Side Installation

When the more than two ion bars are installed, to avoid interference, the range between two ion bars should be more than 400mm.



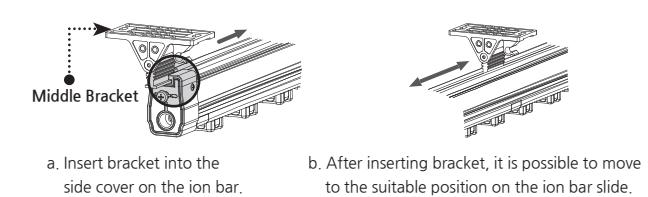
Face to Face Installation

When two ion bars are installed face to face, to avoid interference, the range between two ion bars should be more than 100mm. (Air Pressure Under 0.1MPa)



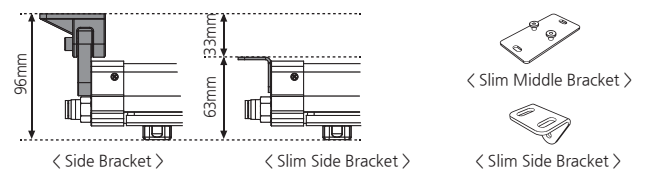
Installation by Middle Brackets

The middle bracket is used to protect bending problem by the weight of ion bar. Please fix the middle bracket with M4 or M5 bolts. The number of supporting middle bracket will differ from the models.



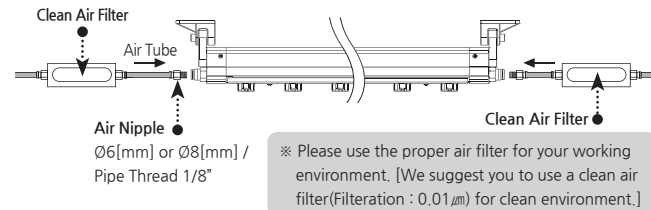
Installation by Slim Brackets (Option)

When you install tiny place, please use slim bracket. But with slim bracket, angle adjust is not available. Quantity and installation method of slim middle bracket is same as standard middle bracket.



Air supply method

- * Air supply is one of the key factors. Please read the followings carefully in advance.
- * Please contact us directly if you periodically switch to use air in/out time after time.
- * If many ion bars are connected to one air line, with air lack of pressure, it may have difficulty to provide proper performance.



Types of Air Use

Please supply air into an ion bar either one of CDA(Clean Dry Air) or N2 if possible. In the clean environment, we suggest you to use a clean air filter(Filteration:0.01μm) in order to pass impurities in the compressed air through the filter when using the ion bar.

Allowed Air Pressure

The maximum air pressure level for SIB5S Series is 0.5MPa. Try not to exceed the maximum level when supplying air. Since the air pressure has some relation with ionization performance, fully consider the proper air pressure level for your environment.

Air Nipple

Please use to connect Ø6[mm] or Ø8[mm] nipple for air inlet, but the standard is Ø8[mm].

CAUTION

- * This Nipple Gender is a clean fitting and should not be used under conditions where the fitting area is rocked or impacted. This may cause damage to the fitting body, tube pullout, or air leakage.
- * Plastic may be degraded by direct sunlight and ultraviolet rays.

Recommended Model (For Clean Nipple)

Material	Shape	Tube Size	Screw Size
Polypropylene (PP)	Straight or Elbow	Ø8 or Ø6[mm]	Taper Screw 01 (R1/8)

The installation with DC Power Supply SBP-RD

The Installation with SBP-RD

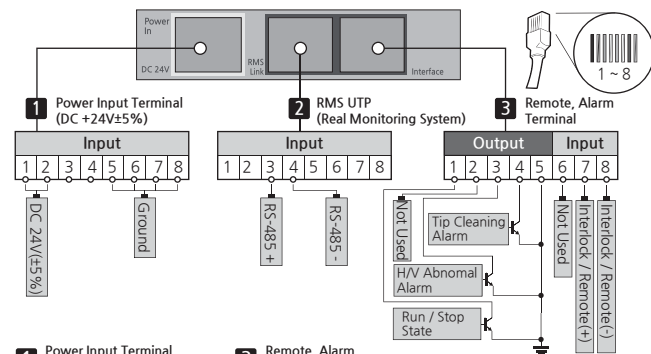
The SBP-RD can supply DC 24V to SIB5S Series and be connected up to Max.4sets. The power cable length is max.5m. It is not able to have normal performance if longer than 5m.

Parallel Power Connection Function

SIB5S Series can be connected up to Max.4 ion bars by parallel power connection function. It can be connected up to Max.5m. If it is not, it might have not normal performance.

※ When supplied power by SBP-RD, regardless of the power connection methods, the total number of ion bars with one SBP-RD should not exceed 4 sets and remainder sockets should be plugged up a cap.

Interface



No	Color	Function
1	Brown	DC 24V (±5%)
2	White & Brown	DC 24V (±5%)
3	Orange	-
4	White & Orange	-
5	Green	-
6	White & Green	-
7	Blue	Ground
8	White & Blue	Ground

No	Color	Descriptions
1	Brown	Not Used
2	White & Brown	Not Used
3	Orange	RS-485+
4	White & Orange	RS-485-
5	Green	Not Used
6	White & Green	Not Used
7	Blue	Not Used
8	White & Blue	Not Used

No	Color	Function	Output	Picture
1	Brown	Run / Stop State	Photo Relay Output (Run-Close, Stop-Open)	Run / Stop
2	White & Brown	-	-	-
3	Orange	High Voltage Abnormal	Photo Relay Output (Normal-Open, Alarm-Close)	Normal / Alarm
4	White & Orange	Tip Cleaning Alarm	Photo Relay Output (Normal- Open, Alarm-Close)	Normal / Alarm
5	Green	Common	-	-
6	White & Green	-	-	-
7	Blue	Remote(+)	DC 24V	-
8	White & Blue	Remote(-)	Ground	-

※ Remote stops when Input signal(DC24V) is applied.

Power Input (DC24V)

Interface terminal for main power(DC 24V ±5%) input. Please make sure that main power has to connect with designated interface terminal.

CAUTION

- * If it connects to RMS LINK or interface, it has malfunction.
- * Power cable cap is yellow.

Remote, Alarm Terminal

Interface terminal for ion bar run/stop, alarm output(H/V Abnormal Alarm, Tip Cleaning Alarm) and remote on/off control.

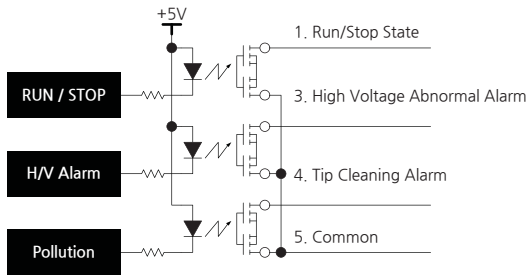
► Connection with PC

It is possible to control the run/stop, alarm and tip cleaning operation of the SIB5S Series by using a computer. (Max.16EA)



► Circuit

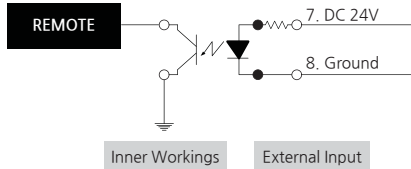
Circuit(Photo Relay Output)



Inner Workings External Output

※ Output : pk AC and DC 350V 120mA

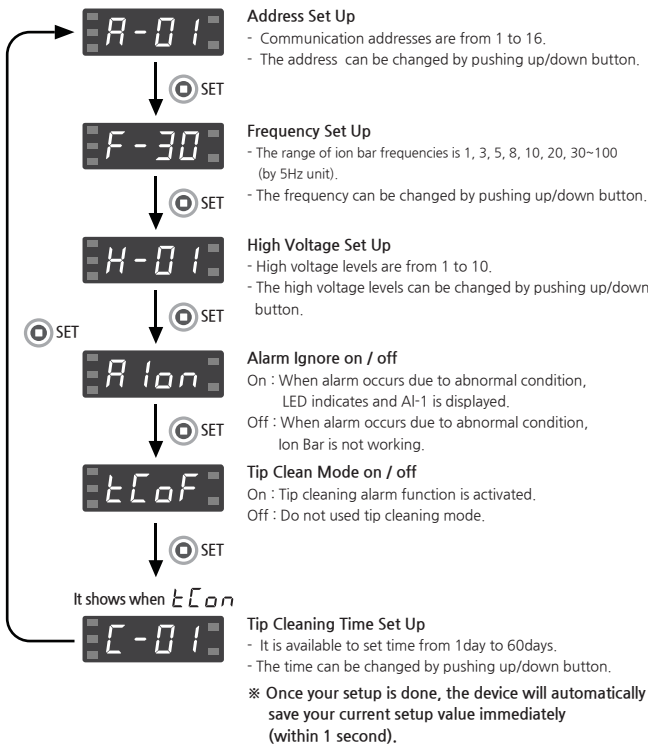
Circuit(DC 24V Input)



5 How to set

Setting Order

In the main body of ion bar, you can easily set address, frequency, high voltage, alarm ignore and tip clean mode.



► Remote Controller

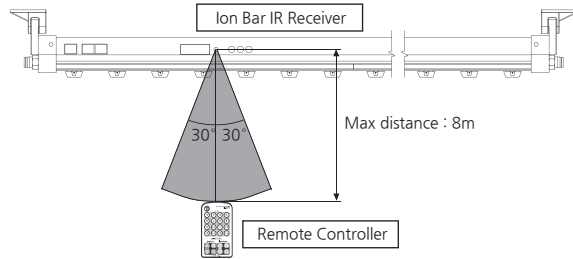
Set the Frequency

You can set frequency in the remote controller. See the following procedure.



- Select the address number of ion bar you are willing to control via pressing an address button (#1~16).
- The current setup frequency value will be displayed in the ion bar when pressing a "Ⓢ" button.
- If you need to change the frequency level, press a up(▲) or down(▼) button.
- Once you are done with setting, press a "Ⓢ" button to save and exit.
- If you are willing to cancel the setup, press a cancel(X) button.
- Press a finish button if you are ready to use, then the ion bar will operate with set value you just have made.

Remote Controller Range



Receiving angle is 30° and distance is within 8m.

If any obstacle is between remote controller and ion bar, the reception will be poor.

※ The remote controller might not function if the electrical stabilized lamp or three wave length lamps are installed in the surroundings. If you replace the lamps with standardized product(s), the remote will function without any problems.

6 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.

! 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 phsically(directly) touch the discharge needle. * When cleaning the discharge needle using an organic solvent, do not use the organic solvent to clean the socket around 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.

► Discharge needle cleaning order

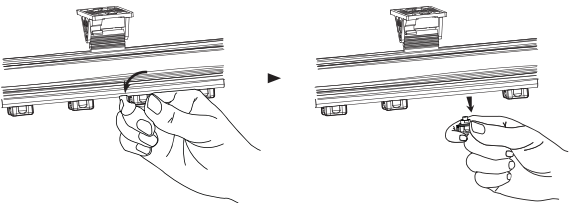
- Be sure to power off before cleaning the ionizer.
- Please clean it as the table below.

※ Cleaning with a cotton swab	
After moistening a cotton swab with alcohol, wipe the discharge needle from side to side with the swab. (do not use acetone)	

- Replace the damaged discharge needle.
- After the cleaning, let the alcohol applied to the discharge needle surface evaporate completely and then operate the Ion Bar.
- Please record the cleaning process as a reference in the file.

► How to replace the needle socket

When replacing, please be careful not to touch the discharge needle. It is very sharp at the edge.



► Discharge needle maintenance

If the discharge needle broken or severely damaged, please replace the needle socket immediately.
The needle socket becomes less durable with product usage time. To maintain the performance of the product, we recommend replacing the needle socket every one year.

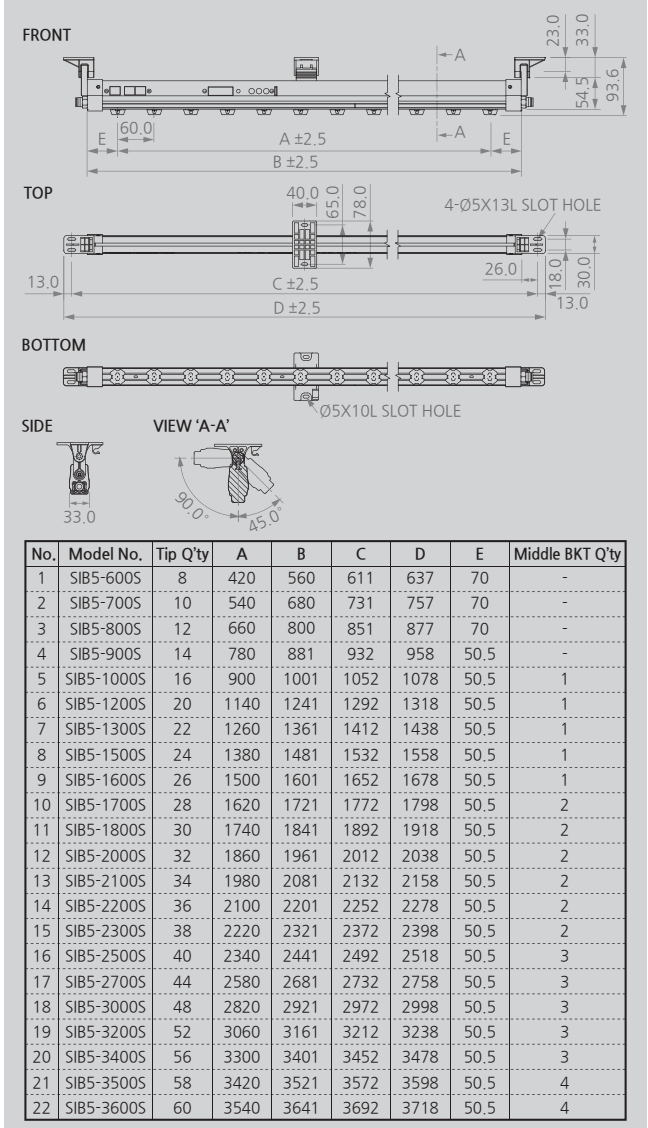
7 Problem solving

► Checklist before called

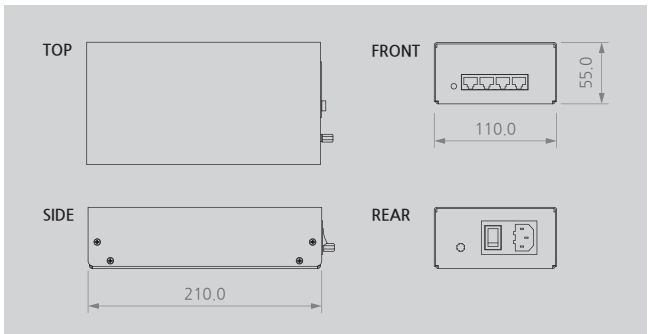
Problem	Identifying Problem	Solution
The product does not work.	Is your power cable still plugged in?	Please re-plug the power cable and then turn the device on again.
	Was the proper voltage level applied for this set-up?	Please use the proper level of power input for the device. (AC 100~240V, 50/60Hz)
	Is the swith off at back of the device?	Turn on the power switch.
There is no ionization.	Is there any conductive material around the device?	Please refer to 'Installation & Connection,' for setting the proper target distance from the device.
	Does the installed environment have too high/low level of humidity or temperature?	Please install the device upon the proper working specification.
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.

8 Dimensions

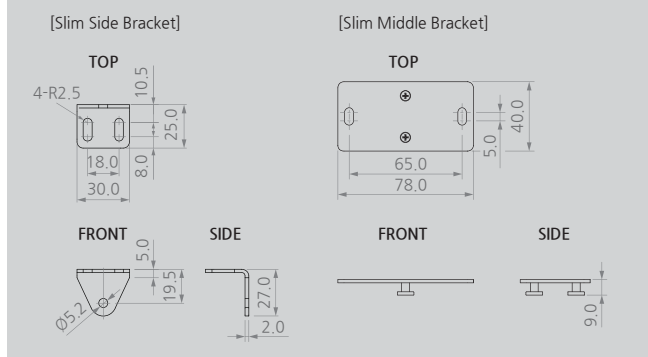
► SIB5S Series



► SBP-RD (Option)



► Slim Bracket (Option)



9 Specification

► SIB5S Series

Parameter	Description / Value
Input Power	DC 24V (±5%)
Power Consumption	Max. 12W
Current Consumption	Max. 500mA (DC 24V)
Ion-Generation Method	Corona Discharge Pulse AC
Air Purge Supply Pressure	0.1 ~ 0.5MPa (CDA, N2)
Air Purge Connection Port	Pipe Thread 1/8"
Ion Balance	Within ±30V (1,000mm)
Ozone(O3) Concentration	≤0.05ppm
Decay Time Characteristics	See the accompanying test document
Main Body Material	Non-Flammable ABS (Level V0)
Electrode Material	Standard: Tungsten Option: Silicon / Titanium
Electrode Replacement	Cartridge type
Operation Circumstance	0 ~ +50℃(32~122°F), 35~85% RH (No condensation)
Dimensions	See the accompanying drawing paper
Mounting Method	Bolt Mounting with Bracket
Function	Remote Control
Adjust Function	Frequency [Hz]: 1, 3, 5, 8, 10, 20, 30~100 (by 5Hz unit) Voltage [Level]: 1 ~ 10
Alarm Function	High Voltage Abnormal Alarm, Tip Cleaning Alarm(Setting)
Interface	Run State, Remote, RS485, Alarm(High Voltage Abnormal, Tip Cleaning)
Operating Distance	50~2,000mm
Option	RMS (Real Monitoring System), SBP-RD (DC Power Supply)
Warranty	1 year

※ Product model number will be differ as the discharge needle specifications.
ex. Tungsten : SIB5-****S / Silicon : SIB5-****S-SI / Titanium : SIB5-****S-TI
※ The appearance and specification of the product may be changed without prior notice for the improvement of the product.

! CAUTION	* Handle with care. Warranty doesn't cover mishandling damage.
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► SBP-RD (Option)

Parameter	Description / Value
Input Power	AC 100~240V, 50/60Hz
Power Consumption	Max. 80W
Weight	1.85kg
Main Body Material	EGI
Operation Circumstance	0℃ ~ +50℃(32°F ~ 122°F), 35% ~ 85% RH
Output Voltage	DC 24V Max. 3A
Output Port	4 Ports
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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