OMRON

ZJ-BAS

Digital Bar Type Ionizer

Instruction Sheet

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.
Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product.

TRACEABILITY INFORMATION:

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Manufacturer
Omron Corporation
Sensing Devices&Components Div.H.Q.,
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Shiokoji Horikawa, Shimogyo-ku
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NOTICE:
This product meets CISPR11 class A. The intended use of product is in an industrial environment only.

OMRON Corporation

 Rev.B

PRECAUTIONS ON SAFETY

Meanings of Signal Words

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally, there may be significant property damage.

Alert Statements in This Instruction Sheet

⚠ WARNING

When screw-fastening the body for use by the mounting bracket, vibration or the body`s own weight may cause it to fall, and cause injury if the screws are not sufficiently tightened.
Install the body using M4 screws at a tightening torque of 1.2N.m.

Water droplets entering the body and coming into contact with the electrical circuit may cause the circuit to ignite.
Do not use the product in locations subjected to condensation or in highly humid atmospheres.

PRECAUTIONS FOR SAFE USE

Please observe the following precautions for safe use of the product.

1. Installation Environment
- Do not use the product in environments where it can be exposed to inflammable / explosive gas.
- In order to secure the safety of operation and maintenance, do not install the product close to high-voltage devices and power devices.

2. Power Supply and Wiring
- Use the power supply within the specified voltage range.
- Be sure to use the exclusive power supply (AC Adapter type). Also, use the exclusive modular cable for wiring the exclusive power supply to the ionizer.
- Do not use damaged, broken or modified power cables. Doing so may cause electric shock, fire or damage to the product.
- The output load should not be short-circuited.
- High-voltage lines and power lines must be wired separately from this product. Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or damage.
- Avoid connecting or disconnecting connectors while the product is powered on. Failure to do so may damage the product.

3. Other
- Do not bring your fingers or metal objects into close contact with the discharge needles. Doing so may cause electric shock or damage the product.
- Use only the specified types of batteries for the exclusive remote control. Also, be sure to thoroughly read the precautions provided by the manufacturer to ensure correct use.
- Do not disassemble, repair, or modify this product.
- Dispose of this product as industrial waste.

PRECAUTIONS FOR CORRECT USE

Please observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on the product performance.

1. Installation Site

Do not install this product in locations subjected to the following conditions:
- Ambient temperature outside the rating
- Ambient humidity outside the rating
- Presence of corrosive or flammable gas
- Presence of dust, salt, or iron particles
- Direct vibration or shock
- Direct sunlight
- Water, oil, or chemical fumes or spray
- Strong magnetic or electric field
- Devices (e.g. precision equipment) susceptible to the influence or peripheral noise.

2. Power Supply and Wiring
- Be sure to connect the AC power supply to a grounded 3-pin power supply. Failure to do so may cause electric shock, preventing the ion balance control from functioning properly.
- The maximum number of ionizers that can be connected to each of the exclusive power supplies is already determined. Be sure to observe these limitations.
- For the DC power supply, use a power supply that prevents leakage of high voltage (safety low voltage power supply circuit) or a UL Class 2.
- If surge currents are present in the power lines, connect surge absorbers that suit the operating environment.
- When connecting the I/O signal lines, pay attention to the polarity of the lines. The supply voltage and current must be within the rated ranges.

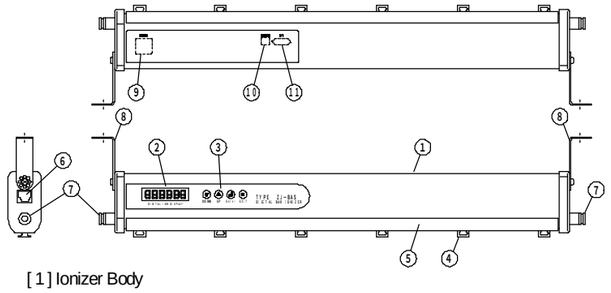
3. Maintenance and Inspection
- Periodically clean the discharge needles as dirt on these needles causes the amount of generated ions to fall or the ion balance to deviate.
- Before cleaning or removing/installing the discharge needles, be sure to turn the power off.
- Do not touch the discharge needles directly with your hands.
- Use alcohol for cleaning the discharge needles. Do not uses paint thinner, benzene , acetone or kerosene.

4. Other
- Do not touch the stainless steel counter electrode or allow it to come into contact with other objects while the product is powered on. Doing so affects the ion balance performance.
- Be sure to use dry air that has passed through an air dryer. Limit the air pressure to max. 0.3MPa (3kg / cm^2)

■ Outline and Features

- This product is a AC discharge type, ion balance auto-control bar ionizer. The frequency for discharge can be set in 11 stages to ensure neutralizing over a wide range from near to far distances.
- This product allows neutralizing at high speed even in poor air flow locations since it uses an air purge system.
- Neutralizing can be performed over various ranges by coupling together more than two air bars of six different lengths.
- The high-voltage generator, controller and display are all integrated into the body, and operations can be performed on the body or by remote control (option)
  * The remote control receiver is needed to use the remote control.
- The discharge module can be removed or installed by turning it to 45º.

■ Part Names and Functions



[1] Ionizer Body
[2] Menu Display
Used for displaying menus and states
[3] Setting Panel
Used for setting menu functions and detailed operations
[4] Discharge Needle Module (Air Purge Construction)
Electrodes for generating plus and minus ions
Air is sprayed from around the discharge needles to discharge generated ions.
[5] Counter Electrode / Sensor
Used for detecting the ion balance of plus and minus ions
[6] 24VDC power connector
Used for connecting to the exclusive power supply by the modular cable
[7] Air intake duct (one-touch joint)
Bodies of length 370 to 770mm are attached on one side, and bodies of length 1170 to 1140 are attached on both sides. Used for connecting the 6mm dia. Airtube
[8] Mounting Bracket
[9] DC24V power supply connector for connection.
Power supply connector to connect 2 ionizing air bars. Connect the power cable (option) for connection.
[10] Remote Control Connector
Used for connecting the exclusive infra-red remote control receiver (option)
[11] I/O Connector
Used for alarm, cleaning and power ON / OFF output and discharge stop input.

* A concealer seal is attached to [9] to [11]. Remove the seal when using the product.

■ Specifications

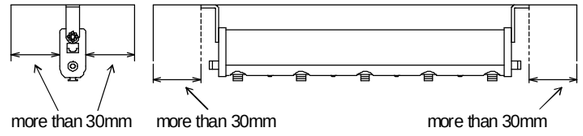
Item \ Type	ZJ-BAS 050	ZJ-BAS 058	ZJ-BAS 074	ZJ-BAS 090	ZJ-BAS 130	ZJ-BAS 154
Supply Voltage	DC24V ±10% Ripple (P-P) 10% or less					
Current Consumption	500mA max (Discharge Frequency 0.08 ~ 3Hz : 400A (typ.) , 5 ~ 10Hz : 350mA (typ.), 20 ~ 40Hz : 300mA (typ.))					
Ion Generation method	Sensing Variable AC method					
Output Voltage	±6.5kV					
Installation Distance	50~2000mm					
Power Connector	8Pin - Modular type (both ends)					
Air Intake Duct	6Φ one touch joint (both sides)					
Air Flow Rate	1L / min 1hole (standard) 0.3MPa max					
Material	Body : ABS Resin Counter Electrode : Stainless Discharge Needle : Tungsten					
Main Functions	7- segment LED display , Ion Balance Control Cleaning Display and Signal Out Alarm Display and Signal Output Power Output Signal, Discharge stop input					
Ambient Temperature	Operating : 10℃~ 40℃, Storage : 0℃~40℃ (With no icing or condensation)					
Ambient Humidity	Operating : 35% ~ 65%RH , Storage : 35% ~85%RH (With no condensation)					
Weight (Kg)	Approx 0.58	Approx 0.64	Approx 0.80	Approx 0.94	Approx 1.28	Approx 1.5
Accessories	Mounting Bracket 2pcs Screw (M4 Seamless Screw) 2pcs Plug *Only BAS050 , 058 , 074 , 090 1pcs Mounting Bracket * Only BA130 , 154 2pcs Instruction Sheet					

■ Installation and Connection

1. Installation

(1) Installation Precautions

[1] Installation Site
- Allow at least 30mm between the body and the wall.



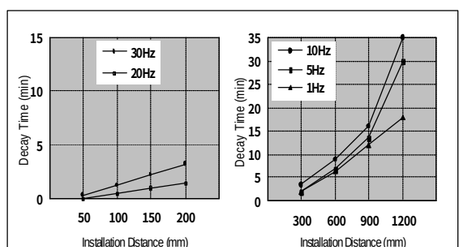
- Charged objects within 100mm of the body but outside of its ion emission range sometimes affect the performance of the product. Ground ungrounded metal objects.
- Note that when other ionizers are used near (in particular, above) the body, the performance of the product sometimes is affected.

[2] Installation Distance
- The recommended distance from the body to the object to be ionized is 50mm to 2000mm.
- Change the frequency according to the installation distance.

Installation Distance	Priority on Quick Deionizing	Priority on Ion Balance
50mm	20Hz	40Hz
100mm	10Hz	30Hz
500mm	5Hz , 3Hz	10Hz
1000mm	1Hz , 0.3Hz	8Hz
2000mm	0.08Hz	1Hz , 0.5Hz

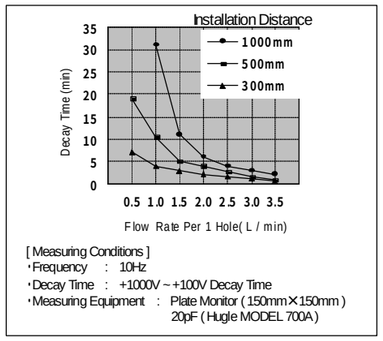
* Neutralizing performance is greatly influenced by the direction of airflow coming from the cleanroom`s down flow. In case where there is no air, please use the product under the laminar down flow.

[3] Neutralizing Performance
- Neutralizing Speed - Installation Distance (for reference)



[Measuring Conditions]
- Air Flow : 1L / min (Per 1 Hole)
- Decay Time : +1000V ~ +100V Decay Time
- Measuring Equipment : Plate Monitor (150mm×150mm) 20pF (Hugle MODEL 700A)

・Deionizing Speed – Air Flow Rate (for reference)

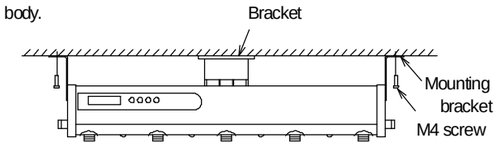


[Measuring Conditions]
・Frequency : 10Hz
・Decay Time : +1000V ~ +100V Decay Time
・Measuring Equipment : Plate Monitor (150mm×150mm)
20pF (Hugle MODEL 700A)

(2) Installation

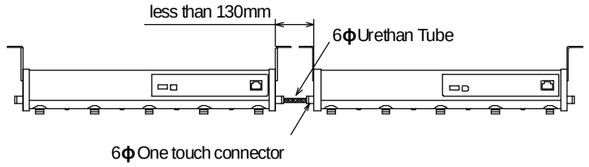
・Body lengths 370mm to 770mm
Fasten the body using the mounting brackets on both ends of the body. (using M4 screws)

・Body lengths 1170mm to 1410mm
In addition to the mounting brackets on both ends of the body, use the intermediate mounting bracket that is installed in the groove at the top of the body.

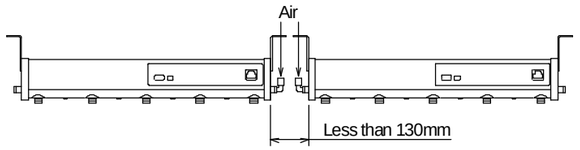


(3) How to Connect the body and the Cable for Connection

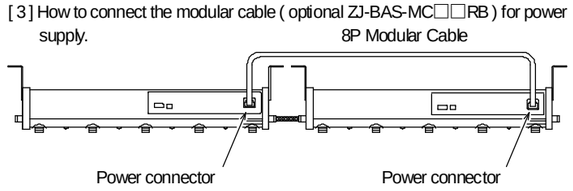
[1] How to Connect



[2] How to Connect (For ZJ-BAS130 / 154)
L type connector is needed. Supply air to both sides of the product.
* L Type connector recommended : KQ2L06-99 (manufacture:SMC)

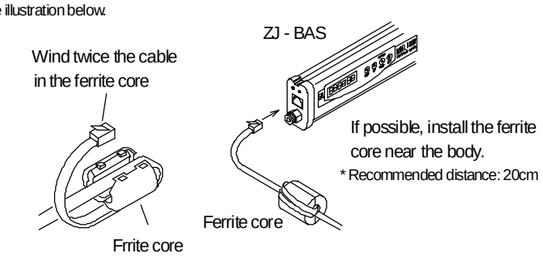


[3] How to connect the modular cable (optional ZJ-BAS-MC□□RB) for power supply.



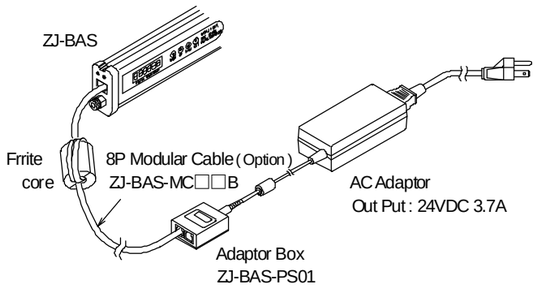
2. Connection

* To use as a CE standards compliant, attach the cable with a ferrite core (included) as shown in the illustration below.



(1) Power Supply Connection

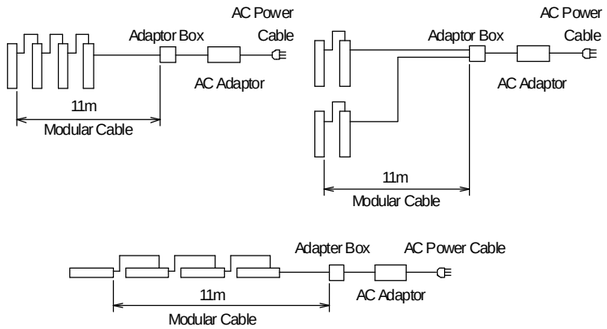
[1] When using the AC Adapter Set
(Option : ZJ-BAS-PS01 : Inclusive of AC Adapter, adaptor box and Cable)
(Maximum of 7 products can be used with 1 set)



・Number of products and Maximum Wire Length
* Whatever the body lengths are, maximum of 7 ionizing bars can be connected.

Number of Products	Maximum Wire Length (Total Length)	Number of Products	Maximum Wire Length (Total Length)
1 unit	45m	5 units	8m
2 units	22m	6 units	7m
3 units	15m	5 units	6m
4 units	11m		

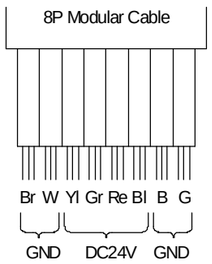
・Connection example



[2] When using an external DC24V power supply.
When using an external power supply, a separately sold 8P Modular Cable is used.

Yellow, Green, Red, Black ⋯ 24V Line
Brown, White, Blue, Gray ⋯ GND Line

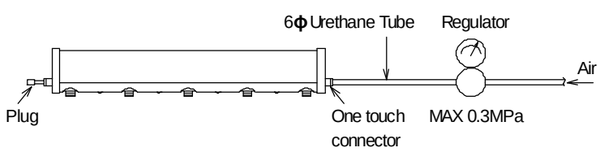
* Current capacity per line is 1A. Please take precautions for connection.



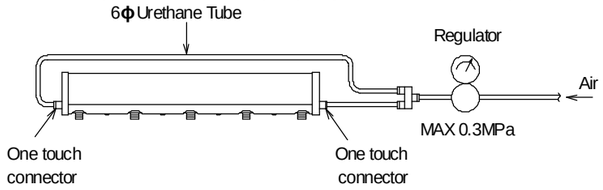
(2) Air Tube Connection * It is recommended to use air filter when air is supplied.

[1] Connection example

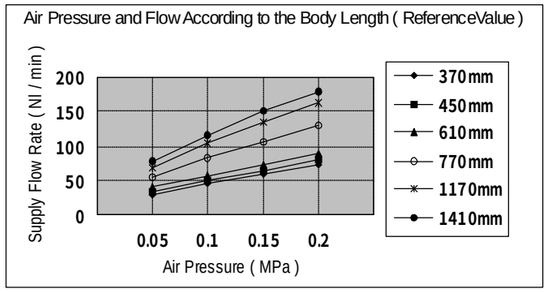
・Air is supplied from the other side (Body length: 370mm to 770mm)



・Air is supplied from both sides (Body length: 1170mm to 1410mm)



[2] Air Pressure and Flow Rate
Air flow rate depends on the body length.



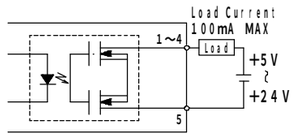
(3) I / O Connecting Circuit

Connector Pin No.		Label	Function
1	Black	POWER Signal Output (MAX 100mA)	Turns ON when the power supply is ON, and OFF when the power supply is OFF.
2	Red	Cleaning Signal Output (MAX 100mA)	Turns ON when discharge needle is dirty and ion generation deteriorates.
3	Orange	Alarm Signal Output (MAX 100mA)	Turns ON when an error has occurred on the product.
4	Yellow	High Voltage Output Signal (MAX 100mA)	Turns ON during ion generation, and OFF when ion generation stops.
5	Blue	COMMON of each signal	Low voltage side of the common line of each signal.
6	White	Discharge Stop Input	Discharge stop / resume is turned ON/OFF by the input signal.

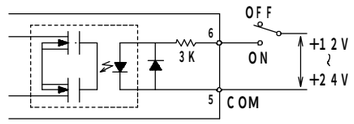
* When I / O cable ZJ-BAS-FC□□A (option) is used, the cable colors are shown in the above chart.

[Compatible Connector]
Connector Part Name : ZER-06V-S (manufacturer : JST)
Contact Part Name and applicable: 5ZE-002T-P0.3, AWG26 to AWG24
5ZE-003T-P0.3, AWG28 to AWG26

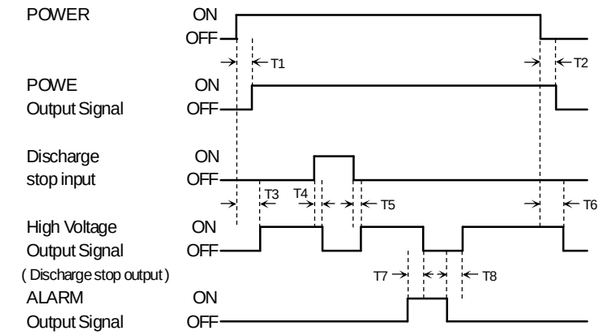
[Output Circuit]



[Input Circuit]



[Timing Chart]



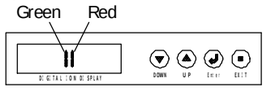
・T1, T2, T5, T6, T7, T8 : below 10ms
・T3 : below 300ms
・T4 : below 50ms * numeric value is guide

■ Display

The following describes the items displayed on the body.

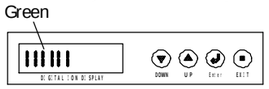
(1) bA : Body (Bar) Number Display
After turning the power supply on, the ID No. is displayed for about five seconds.

(2) Normal Operation Display (Ion Balance Display)
After turning the power supply on, the display changes to the ion balance display (normal display) after about five seconds.

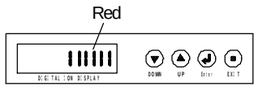


・The red bar display indicates plus ions, and the green bar display indicates minus ions.
・When the red and green bars are in the center position, this in indicated that the ion balance is in good state.
・The display changes as follows when the ion balance deviates.

[When there are disproportionately more minus ions]



[When there are disproportionately more plus ions]



(3) Fr : Frequency Setup Display
This is used for setting and checking the discharge frequency.

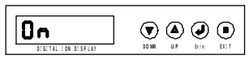
(4) bL : Ion Balance adjustment / setup display
This is used for adjusting the ion balance.

(5) SE : Cleaning Sensitivity Setup Display
This is used for setting the cleaning sensitivity.

(6) OFF : Discharge stop setup display
This is used for stopping the dischaege.

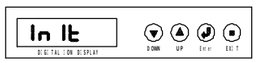
･While discharge is stopped, the red LED at the bottom right of the display flashes.

(7) ON : Discharge Resume Display
This is displayed when resuming discharge.



(8) rESET : Reset Setup Display
This is used for resetting alarm and buzzer.

(9) Inlt : Initialization Display
Returns to all initial settings (pre-setup values).



(10) vEr : Version Information
Displays the product's software version

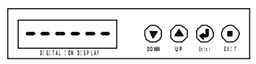
(11) AL : Alarm Display * 001 indicates the bar ID
This is displayed when an error occurs. No.

(12) CL : Cleaning Display * 001 indicates the bar ID No.
Display when the bar is in abnormal status.

(13) LOC On : Lock Setting
All setup buttons are non-operational.

(14) LOC OFF : Lock Cancellation Setup
Used to cancel Lock setup.

(15) Setup Completed Display
When setup has been completed, the 6 LED displays blink 3 times.



(16) SCAL : Display during process
This is displayed several seconds after setting the ion balance or initialization.

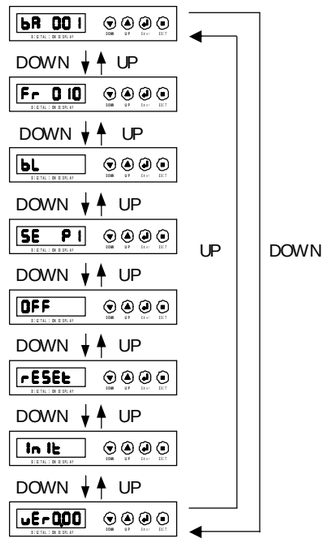
■ Method of Operation

1. Selection of Setting Items

The normal display is shown below.

Green Red

Display the desired setting item by pressing the UP or DOWN button, and press the Enter key.



･EXIT key (Cancel Function)
Pressing the Exit key cancels the setting before it is completed.

2. Setting Items and Setting Method

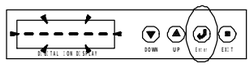
(1) ID No Setting (bA) * Initial Setting : 001
Up to 50 ID No can be set within the range 001 to 050.

[1] Display " bA " , and press the Enter key.

[2] The " bA " display flashes.

[3] Select the ID No using the UP or DOWN key.

[4] Press the Enter key to determine the ID No.
After registration is completed, six bar LEDs flash three times.



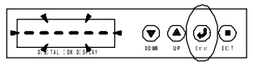
(2) Frequency Setting (Fr) * Initial Setting : 10Hz
The discharge frequency can be set in 11 stages [40Hz, 30Hz, 20Hz, 10Hz, 8Hz, 5Hz, 3Hz, 1Hz, 0.5Hz, 0.3Hz, 0.08Hz].

[1] Display " Fr ", and press the Enter key.

[2] The " Fr " display LED flashes.

[3] Select the frequency using the UP or DOWN key.

[4] Press the Enter key to determine the frequency.
After registration is completed, six bar LEDs flash three times.



(3) Ion Balance Adjustment (bL)
To adjust the ion balance, perform the procedure below while using a Charge Plate Monitor (compliant with EOS / ESD).

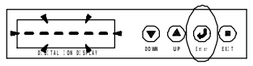
[1] Display the " bL ", and press the Enter key.

[2] The " bL " display flashes.

[3] Adjust the ion balance with the UP or DOWN key with checking the numeric values of the Charge Plate Monitor.
* UP, DOWN keys can display numeric values from 000 to 999 (-999).

UP ･･･ Adjusts value in + direction
DOWN ･･･ Adjusts value in - direction

[4] Press the Enter key to determine the ion balance.
After registration is completed, six bar LEDs flash three times.



[5] Several seconds after the ion balance setting has been completed, "SCAL" will be displayed. While in this status, other settings or keys are non-operational.

* Ion balance default
Frequency : 10Hz , Setting Distance : 300mm , Air Flow Rate : 1L / min per hole the ion balance must be adjusted when the ZJ-BAS is used in different environments or under the different operating conditions.
After the ion balance is registered, other settings cannot be made or switched to for 10 seconds.

[When the Ion Balance Drops during Use]
The display changes as follows when the ion balance drops.

･When there are disproportionately more minus ions

Green

･When there are disproportionately more plus ions

Red

When this happens, adjust the ion balance following the procedure in "Ion Balance adjustment (bL)".

(4) Cleaning Level Setting (SE) * Initial Setting : P3
The cleaning sensitivity is set in three stages [P1, P2, P3].
Setting a higher sensitivity increases the sensitivity for dirt on the needles an shortens the cleaning interval sensitivity level is just guide.

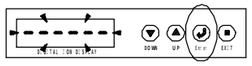
Display	Sensitivity Lev
P1	High
P2	Mid
P3	Low

[1] Display "SE ", and press the Enter key.

[2] The " SE " display flashes.

[3] Select the sensitivity using the UP or DOWN key.

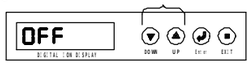
[4] Press the Enter key to determine the sensitivity.
After registration is completed, six bar LEDs flash three times.



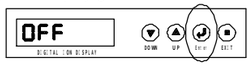
(5) Discharge Stop / resume setting
Stop and resume discharge. Ions are not generated from the needles when discharge is stopped.

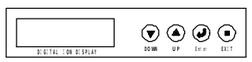
･How to stop discharge

[1] Select " OFF " using the UP or DOWN key.

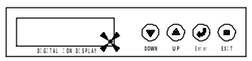


[2] Press the Enter key. The display goes out.





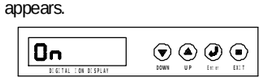
[3] After three seconds, the red LED lights at the bottom right and discharge stops.
(Note, however, that the power supply remains on.)



･How to resume discharge

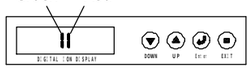
[1] Press the Enter key with the discharge stop display.

[2] The "On " display appears.



[3] The discharge is resumed after about 5 seconds.
(The normal operation display appears to indicate the normal operation state.)

Green Red



(6) How to reset alarms (rESET)　*Operation stops while “AL” is displayed.

[1] When an error occurs, “AL” with ID No is displayed and an alarm tone sounds.

[2] Display “ rESET ” using the UP or DOWN key.

* Sounding of the alarm tone stops while “ rESET ” is displayed.

[3] Press the Enter key. The alarm tone and alarm are cancelled, and the display is switched.

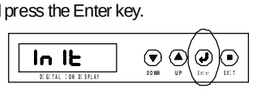
[4] The display changes as follows, and operation is resumed.

* Check the cause of the alarm before resuming the operation.
* The alarm can also be set by turning the product off then back on again. For details, see “(5) Dischage stop / resume.”

(7) Initialization (Inlt)

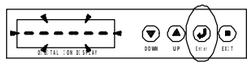
* Pre-setup displays are “bL 001”, “ Fr 010 ”, “ bL 001 ”, and “ SE P3 ”. Returns to pre-set values.

[1] Display “ Inlt ”, and press the Enter key.



[2] The “ In ” display flashes.

[3] Press again the Enter key. It will return to its pre-setup values after the LED displays (6pcs) flashes.



[4] Several seconds after the Initialization setting has been completed, “SCAL” will be displayed. While in this status, other settings or keys are non-operational.

(8) Lock Setting (LOC On)

Setting panel becomes non-operational.

Press the EXIT key for more than 5 seconds. “ LOC On ”will be displayed, and all keys become invalid for operation.

(9) How to Cancel the Lock Setting (LOC OFF)

Cancels lock function on the setting panel.

Press the EXIT key for more than 5 seconds. “ LOC OFF ” will be displayed, and all keys become operational.

■ Maintenance

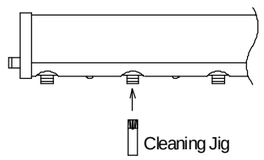
Using an ionizer over a prolonged period of time results in adhesion of particles on the discharge needles and a drop in neutralizing performance due to wear at the needle tips.

* Before cleaning the discharge needles or replacing discharge modules, be sure to turn the product off.

1. Cleaning the discharge needles

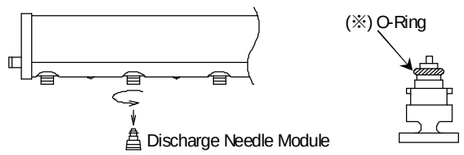
When a discharge needle becomes dirty, clean it with alcohol or the optional cleaning jig ZJ-BA-CT01.

When cleaning the discharge needle with alcohol, prevent the alcohol from getting finside the electrodes into which the discharge needles are inserted. Alcohol in the electrodes affects the ion balance.



2. Replacing the Discharge Needle Module

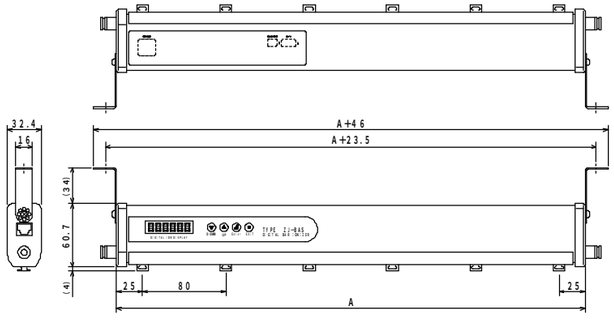
If the discharge needles do not restore neutralizing performance, replace it with a new discharge needle module.



- Grip the discharge module between your finger, push it in and turn 45º counterclockwise to remove.
- When inserting a discharge module, push it into the body, and turn 45º clockwise to lock it in place.
- Please be cautioned that when removing the discharge needle module, the attached O-ring might be removed. (※)

■ Dimension

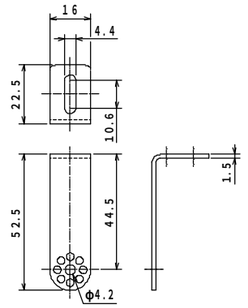
1. ZJ-BAS Body



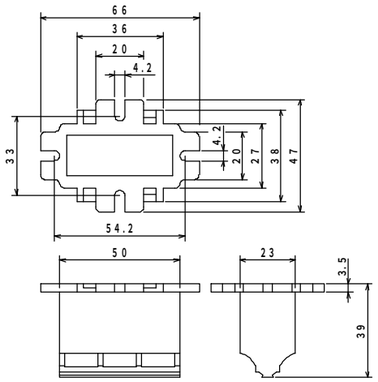
Model	A (mm)	Effective Neutralizing Length(mm) *	Discharge Electrode (pcs)
ZJ - BAS050	370	500	5
ZJ - BAS058	450	580	6
ZJ - BAS074	610	740	8
ZJ - BAS090	770	900	10
ZJ - BAS130	1170	1300	15
ZJ - BAS154	1410	1540	18

* Setting Distance 50mm

2. Mounting Bracket



3. Intermediate Bracket　* For ZJ - BAS130 & ZJ - BAS 154



■ Troubleshooting

Problem	Probable Cause	Possible Countermeasure
Power does not turn on.	Are the AC power supply cable and modular Connectors is connected ?	Correctly connect the AC power supply cable and modular connectors.
	Is the 100 or 240 VAC, or 24 VDC power supply on ?	Check the voltage of the main power supply being used.
The neutralizing speed rapidly slows down.	Is the pressure of the air entering the body 0.3 MPa or more ?	Air pressure exceeding the specified value may cause a breakdown. Contact your OMRON sales representative.
The neutralizing speed rapidly slows down.	Is foreign matter adhering to the tips of the discharge needles ?	Clean the tips of the discharge needles.
Neutralizing is not performed.	Is the normal display on the body ?	Turn the power off then back on again. Or, reset the alarm.
	Is the “ ALARM ” LED lit ?	
“AL*** ”is displayed.	----------	Turn the power off then back on again. Or, reset the alarm.
	The “ALARM” LED lights even if the alarm state is reset.	Contact your OMRON sales representative.
“CL***” is displayed.	Is foreign matter adhering to the tips of the discharge needles ?	Clean the discharge needles.
The ion balance deviates in the normal operation display.	----------	Adjust the ion balance.
Remote control does not work.	Is ID No OK?	Check ID No.
	Does the receiver fix properly ?	Check receiver connection.
	Is the battery voltage low ?	Replace with new batteries.

■ Glossary

Term	Explanation
Sensing Variable AC method	By this method, plus and minus ions is output for alternately from the same discharge needle at the optimum frequency.
Ion Balance	This is the ratio between the amount of plus and minus ions generated by the ZJ-BAS. A “poor ion balance” refers to a disproportionately generated amount of plus and minus ions.
Discharge needle	The needle-shaped part that generates the ions.
Discharge needle module	The part installed with a discharge needle that sprays air.
Air purge	Air introduced from the air intake duct of the body is sprayed from the hole in the center of the discharge needle module. This air carries the plus and minus ions at a high speed to the object to be deionized.
Neutralizing speed	The speed is an indicator of the neutralizing performance of an ionizer. The faster the speed, the higher the neutralizing performance. [Measuring Conditions] 150×150 (20 pF)metal plate is charged to + / - 1000 (V), And sprayed with ions generated by an ionizer. The time (seconds) is measured until the metal plate charge attenuates to -+ / - 100 (V).

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OR PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSE. Please refer to separate catalogs for OMRON`s safety rated products.

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer’s application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.
Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
See also Product catalog for Warranty and Limitation of Liability.

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