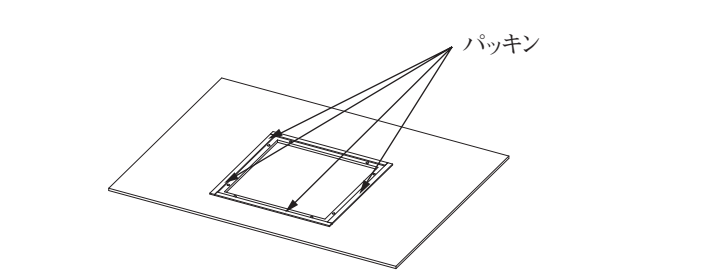
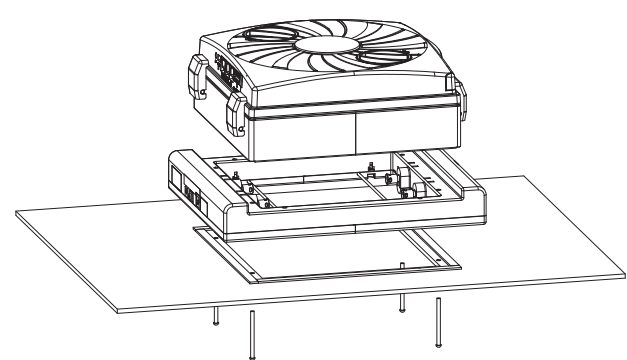


■設置方法

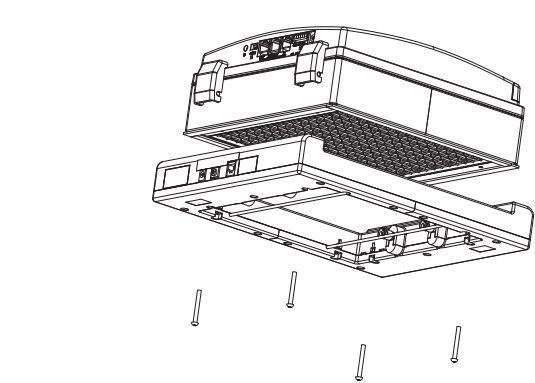
- 空気もれ防止に付属のパッキンを貼り付けます。



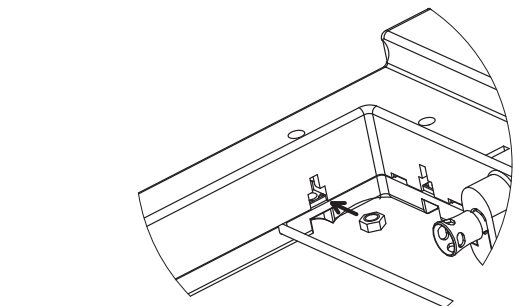
- エアクリーンユニットと同時に設置する場合
下図のようにエアクリーンユニットとクリーンブースパネルで挟み込むようにねじ止めしてください。付属ねじ M4×50 を 4 本使用し、締め付けトルク 1.2 ～ 1.6N.m で取り付けてください。適用できるパネル厚みは 12mm 以下です。



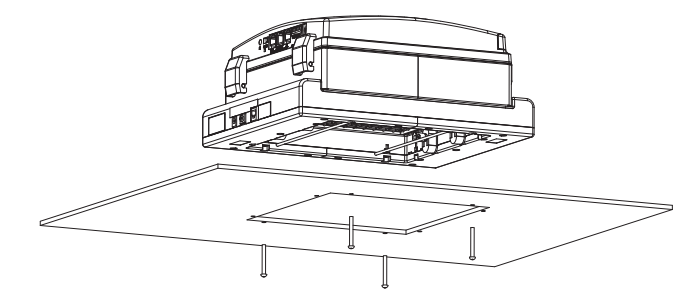
- アクリーンユニットとねじ止めた後、ブースパネルとねじ止めする場合
エアクリーンユニットとねじ締めしてください。付属ねじ M4×35 を 4 本使用し、締め付けトルク 1.2 ～ 1.6N.m で取り付けてください。



残りの取り付け穴 4 箇所にナットを挿入してください。

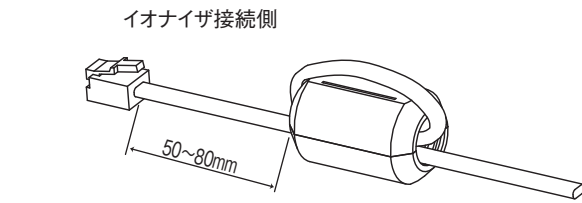


付属ねじ M4×35 を 4 本使用し、締め付けトルク 1.2 ～ 1.6N.m で取り付けてください。

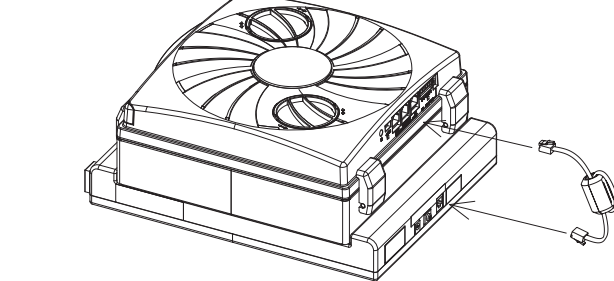


■電源を接続する方法

本製品を CE 適合品として使用する場合には、エアクリーンユニット接続ケーブルまたは入出力ケーブルに付属のフェライトコアを 1 重に巻きつけてください。



- 下記の方法で電源を接続してください。
 - エアクリーンユニットと接続する場合
下図のように形 ZN-J25A に付属の専用のケーブルで接続してください。



- 入出力ケーブルを使用する場合
電源入力／信号出力コネクタに付属の入出力ケーブルを接続してください。白：24V、黒：0V を接続してください。

■機能

- マニュアルイオンバランス調整
下記の手順でイオンバランスの調整ができます。イオンバランスの調整には、チャージプレートモニタなどの測定器が必要です。
 - ①調整モードに入ります。
イオンバランス調整ボタン（以下ボタン）の+とー両方のボタンを 3 秒以上押します。調整モードに入ると表示灯 3 種（電源表示灯、クリーニング予告／警告灯、高圧異常表示灯）が 3 回点滅します。
* 調整モードに入るとイオンバランス調整値は、工場出荷時の状態に初期化されます。
 - ②イオンバランスを調整します。
チャージプレートモニタを見ながらボタンを押してください。+ボタンを押すとイオンバランスが+に変化します。+ボタンを押すごとに高圧異常表示灯が 1 回点滅します。ーボタンを押すとイオンバランスがーに変化します。ーボタンを押すごとに電源表示灯が 1 回点滅します。調整限界になるとボタンを押しても表示灯が点滅しなくなります。
 - ③調整ロックモード
調整モードに入って約 10 秒間ボタンの押下がないと表示灯 3 種（電源表示灯、クリーニング予告／警告灯、高圧異常表示灯）が 3 回点滅し調整ロックモードになります。調整ロックモードでは、ボタンを押してもイオンバランスは変化しません。調整ロックモードでは、ボタンを押すと電源表示灯と高圧異常表示灯が同時に 2 回点滅します。

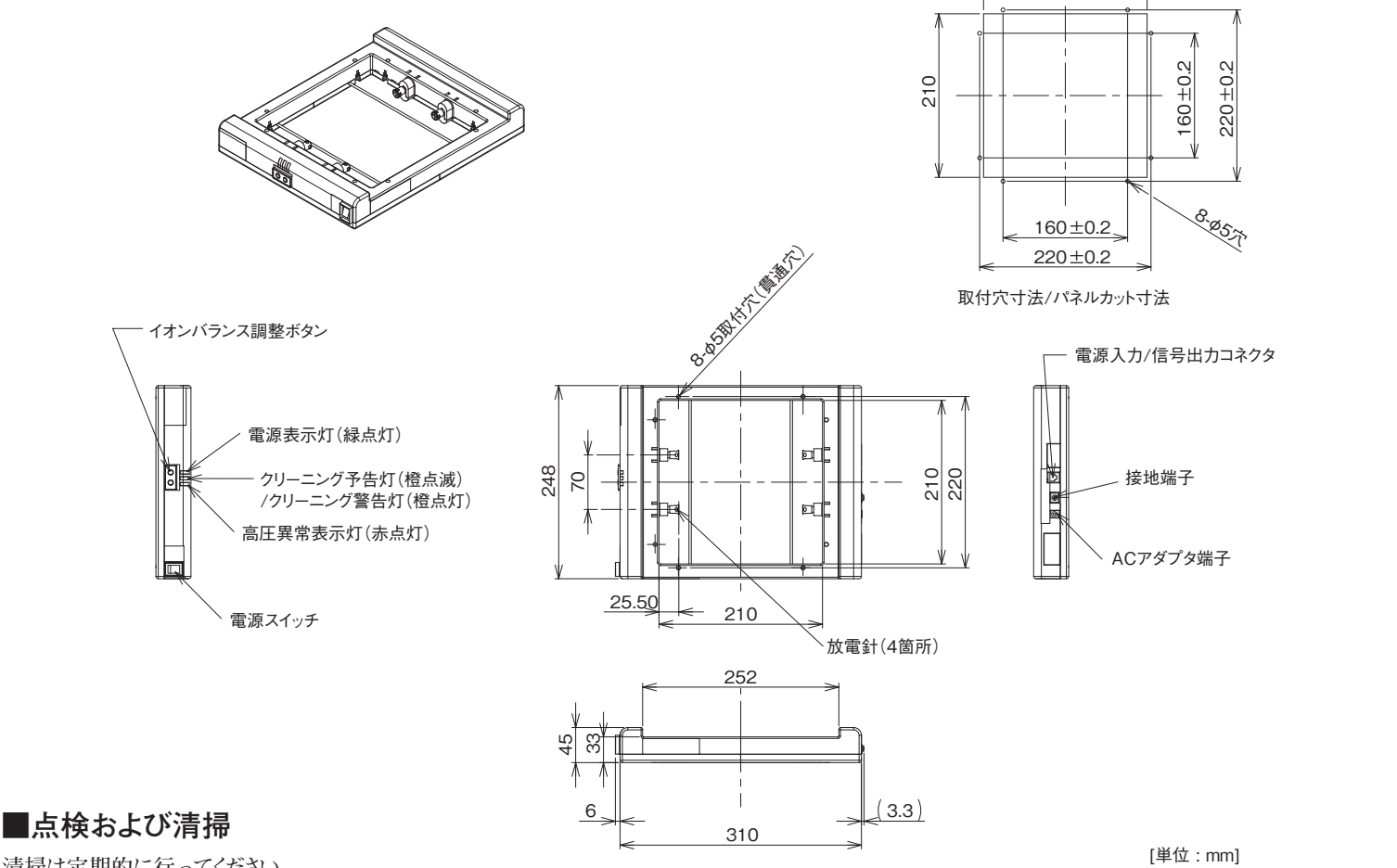
- 高圧異常検知機能
・機能内容
高圧回路の異常を検知し警告表示および動作を停止します。

高圧異常検出時の状態		
表示	電源 ランプ	点灯
	クリーニング予告/警告灯	消灯
出力	高圧異常表示灯	点灯
	クリーニング予告/警告出力	ON
	高圧異常出力	OFF

- ・復帰条件
高圧異常モードからの復帰は、電源再投入することによって行われます。それでも復帰しない場合は、貴社担当オムロン営業員にお知らせください。
- クリーニング表示
放電針にホコリや汚れが付き、イオンバランスや除電能力の低下が発生したときに、クリーニング予告灯が点灯します。
 - 表示①：クリーニング予告表示（橙点滅）
クリーニングをしないと、イオンバランスが保持できない、または、除電能力が低下する恐れがある場合
 - 表示②：クリーニング警告表示（橙点灯）
既に、イオンバランスや除電能力が保持できていない状態

電源投入から予告・警告表示灯が点灯するまでに数分程度かかることがあります。

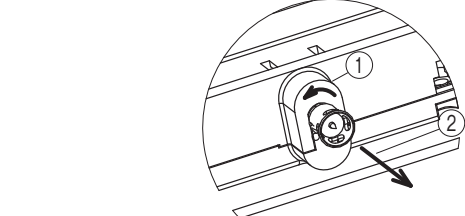
■外形図



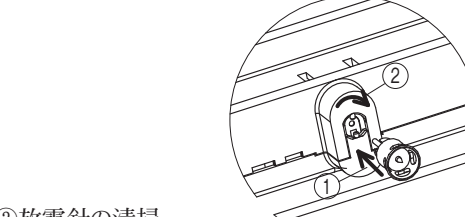
■点検および清掃

清掃は定期的に行ってください。
また、必ず電源を OFF にして 1 分以上たってから行ってください。

- ①放電針ホルダの取外し／取付け
・放電針ホルダを取外すときにはホルダを左に回して、引き抜きます。



- ・放電針ホルダを取付けるときはホルダを奥まで差込み、右に回します。



- ②放電針の清掃
・綿棒などにエタノール、またはイソプロピルアルコールを含ませ、放電針先端部の汚れをふき取ってください。
*放電針ホルダは無理に引き抜こうとしたりしますと破損します。かならず左に回しきってから引き抜いてください。
*放電針の先端は触らないようお願いします。また傷つけたり、曲げたりすると性能が低下します。
*除電性能を維持するために、放電針は当社指定の放電針をご使用ください。
*清掃後も性能が復帰しない場合は、放電針の交換を行ってください（必ず下記の当社指定のものをご使用ください）。
別売品 放電針（針ホルダ付）：形 ZN9-JH04（4 セット入り）
*パーティクルの少ないクリーンブースにおいても、空気中に混在しているガスが、放電針の先端で起こるコロナ放電により粒子化し、放電針に付着して一定量になると飛散します。飛散したパーティクルが製品にダメージを与える工程においては、必ず一定周期の清掃を行ってください。
*クリーンルームなどのパーティションやフィルタのシール材に使用されているシリコンシーラント剤が、コロナ放電により粒子化し、放電針に付着することがあります。従って放電針のクリーニングが必要となります。
*清掃周期につきましては、使用環境により汚れ方が異なりますので、お客様にてお決めください。

ご承諾事項

当社商品は、一般工業製品向けの汎用品として設計製造されています。従いまして、次に掲げる用途での使用を意図しておらず、お客様が当社商品をこれらの用途に使用される際には、当社は当社商品に対して一切保証をいたしません。ただし、次に掲げる用途であっても当社の意図した特別な商品用途の場合や特別の合意がある場合は除きます。
(a) 高い安全性が必要とされる用途 (例:原子力制御設備、燃焼設備、航空・宇宙設備、鉄道設備、昇降設備、娯楽設備、医用機器、安全装置、その他生命・身体に危険が及ぶ用途)
(b) 高い信頼性が必要な用途 (例:ガス・水道・電気等の供給システム、24時間連続運転システム、決済システムほか権利・財産を取扱う用途など)
(c) 厳しい条件または環境での用途 (例:屋外に設置する設備、化学的汚染を被る設備、電磁的妨害を被る設備、振動・衝撃を受ける設備など)
(d) カタログ等に記載のない条件や環境での用途
* (a) から (d) に記載されている他、本カタログ等記載の商品は自動車（二輪車含む。以下同じ）向けではありません。自動車に搭載する用途には利用しないで下さい。自動車搭載用商品については当社営業担当者にご相談ください。
* 上記は適合用途の条件の一部です。当社のベスト、総合カタログ、データシート等最新版のカタログ、マニュアルに記載の保証・免責事項の内容をよく読んでご使用ください。

オムロン株式会社

インダストリアルオートメーションビジネスカンパニー

●製品に関するお問い合わせ先
お客様相談室

フリー
通話

0120-919-066

携帯電話・PHS・IP電話などではご利用いただけませんので、下記の電話番号へおかけください。
電話 055-982-5015 (通話料がかかります)

●オムロンFAクイックチャット
www.fa.omron.co.jp/contact/tech/chat/
技術相談員にチャットでお問い合わせいただけます。
(i-Webメンバーズ限定)

●営業時間：9:00～17:00 (土曜日、日曜日、12月31日～翌年1月3日を除く)

●FAXやWebページでもお問い合わせいただけます。
FAX 055-982-5051 / www.fa.omron.co.jp

●その他のお問い合わせ
納期・価格・サンプル・仕様書は貴社のお取引先、または貴社担当オムロン販売員にご相談ください。
オムロン制御機器販売店やオムロン販売拠点は、Webページでご案内しています。

Aⓧ 2024年12月

OMRON

Model **ZN-J25A**

Air Clean 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. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:

Importer in EU :	Manufacturer:
Omron Europe B.V.	Omron Corporation,
Wegalaan 67-69	Shiokoji Horikawa, Shimogyo-ku,
2132 JD Hoofddorp,	Kyoto 600-8530 JAPAN
The Netherlands	

The following notice applies only to products that carry the CE mark:

Notice:

This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.



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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, vibration or the body's own weight may cause it to fall, and cause an injury if the screws are not sufficiently tightened.

Mount the body using M4 screws tightened to a tightening torque of 1.2 to 1.6 N.m.

	CAUTION
--	----------------

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.

	CAUTION
--	----------------

When this product is used in a closed space, ozone may accumulate, which is harmful to the body.

Ventilate the installation site well during use.

PRECAUTIONS FOR SAFE USE

- Please observe the following precautions for safe use of the product.
- Do not use this 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 this product close to high-voltage devices and power devices.
 - Use the power supply within the specified voltage range.
 - Do not disassemble, repair, or modify this product.
 - Dispose of this product as industrial waste.
- Applicable standards
- EN61326-1
 - Electromagnetic environment : Industrial electromagnetic environment (EN/IEC 61326-1 Table 2)

PRECAUTIONS FOR CORRECT USE

- Please observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on product performance.
- 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 gases
 - Presence of dust, salt, or iron particles
 - Presence of particles and dust
 - Direct vibration or shock
 - Direct sunlight
 - Water, oil, or chemical fumes or spray
 - Devices (e.g. precision equipment) susceptible to the influence of peripheral noise
 - Strong magnetic or electric field, and charged objects
 - * Precautions for Installation and Use
 - The two metal bars on the enclosure opening are sensor electrodes. The ion balance can no longer be controlled if charged objects are located around this product. Do not bring charged objected within about 150 mm of this product.
 - Power Supply and Wiring
 - When using a 24 VDC power supply:
 - Connect the 24 VDC power supply to the rear connector using the I/O cable.
 - When supplying power by the I/O cable, do not connect the AC adapter at the same time.
 - Do not ground the 24 VDC terminal.
 - When supplying power from the Air Clean Unit:
 - Connect the power supply to the ZN-J25A using the exclusive cable (provided).
 - Do not connect the AC adapter at the same time.
 - If surge current is present in the power lines, connect surge absorbers that suit the operating environment.
 - When connecting the power and output lines, pay attention to the polarity of the lines.
 - The supply voltage must be within the rated range.
 - When connecting the power line, do not short-circuit the power supply.
 - When connecting the output line, the supply current must be within the rated range.
 - Always ground the GND terminal. Using the product without the GND terminal grounded may cause the ion balance to deviate.
 - 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.
 - 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.
 - Always wait at least one minute after turning the power supply OFF before cleaning or connecting/disconnecting the discharge needles.
 - Do not touch the discharge needles directly with your hands.
 - Use ethanol or isopropyl alcohol to clean the discharge needles. Do not use paint thinner, benzene, acetone or kerosene.

■ Label Replacement

The warning labels written in Japanese are affixed to the body. For countries other than Japan, warning labels must be replaced by English ones (supplied with the product).

■ Outline and Features

- This product neutralizes static electricity on charged objects by ionizing air by corona discharge and spraying ions at charged objects from an Air Clean Unit.
- An Air Clean Unit (ZN-A2502, sold separately) can also be installed and connected to this product at the same time. This eliminates the need for individual installation and wiring of the Ionizer.
- Compared with bar-type ionizers, this product can be installed with minimal blocking of laminar airflow from an Air Clean Unit.
- The Auto Ion Control function keeps the ion balance in an optimum state.

■ Part Names and Functions

-
- (1) Power switch
Turns the power supply ON/OFF.
- (2) Error output indicator
This indicator lights red during an error output.
- (3) Cleaning notice/warning indicator
This indicator flashes orange to notify you that the discharge needles are dirty and the product's neutralizing capabilities are about to drop. This indicator will stop flashing and stay lit when the discharge needles become even dirtier and the product's neutralizing capabilities can no longer be sustained.
- (4) Power indicator
This indicator lights green when the power is ON.
- (5) Ion balance adjustment button
Pressing this button adjusts the ion balance.
-
- (6) Power input/signal output connector
Power can be supplied and output managed via this connector when the Air Clean Unit is connected.
When the Air Clean Unit is not connected, 24 VDC power can be input. The cleaning notice, cleaning warning operation (Unit turned OFF when a warning is output) and error output (Unit turned OFF when an error is output) can be output.
- (7) GND terminal
Terminal for connecting the ground
- (8) AC adapter terminal
nonuse

-
- (9) Discharge needles
Ions are generated by applying a high voltage to these discharge needles and discharging corona.
- (10) Ion balance sensor
This sensor detects the balance of the ions emitted from the discharge needles, and this information is used as feedback to automatically control the ion balance.
- (11) Mount holes
Holes for mounting this product on an Air Clean Unit, clean booth panel or other equipment

■ Ratings/Performance

Item	Specifications
Model	ZN-J25A
Available air clean unit	ZN-A2502
Power supply voltage	24 VDC±10% ripple (p-p) 10% max.
Current consumption	300 mA max.
Output voltage	±7kV max.
Discharge method	Variable DC
Neutralizing time (typical) *1	5 sec max.
Ion balance (typical) *2	±30 V max.
Indicators	Power (Green) Cleaning notice (Orange flashing) Cleaning alarm (Orange) Error (Red)
Outputs	Error output, cleaning notice/alarm output: photo MOS relay (30 VDC 300 mA max.)
Functions	Manual Ion balance adjustment, cleaning alarm, error alarm
Ambient temperature	Operating and storage: 0 to 40℃ (with no icing or condensation)
Ambient humidity	Operating and storage: 35 to 65% (with no condensation)
Materials	Case: ABS, Discharge needles: Tungsten
Dimensions	248 (W) × 310 (D) × 45 (H) mm
Weight (packed state)	Approx. 0.6 kg (approx. 1.4 kg)
Accessories	Instruction sheet Sealing parts Mounting screws Connector cable for Air Clean Unit Ferrite core English warning label

- *1 Measurement conditions:
Distance: 300 mm, Air Clean Unit: ZN-A2502 with air level 5, At center of air outlet, Neutralization: From ±1000 V down to ±100 V with Charge Plate monitor (150 x 150 mm, 20 pF)
Temperature: 18℃ to 28℃ Humidity: 35% to 55%
The performance might not be able to be satisfied when there is gas such as solvent gas in the measurement area.
- *2 Measurement conditions:
Distance: 300 mm, Air Clean Unit: ZN-A2502 with air level 5, At center of air outlet, Measurement time: 10 seconds
Temperature: 18℃ to 28℃ Humidity: 35% to 55%
The performance might not be able to be satisfied when there is gas such as solvent gas in the measurement area.

■ I/O and Wiring

The following summarizes the colors and wiring of the I/O cable provided with the ZN-J25, and output specifications.

(1) Wire Colors and Wiring

CN No.	Wire Color	Signal
1	Blue	Error output
2	Yellow	Cleaning warning output
3	Green	Cleaning notice output
4	Red	Common output
5	Black	0 V input
6	White	24 V input

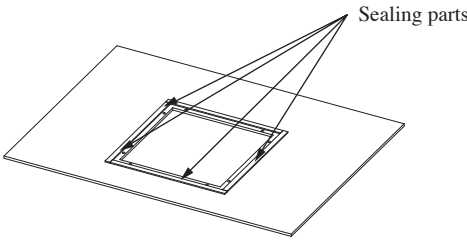
For wire used for a terminal block,consider the following.
Wire length : 30m and less

(2) Output specifications

Output voltage	30 VDC
Load current	300 mA max.
Internal circuit	

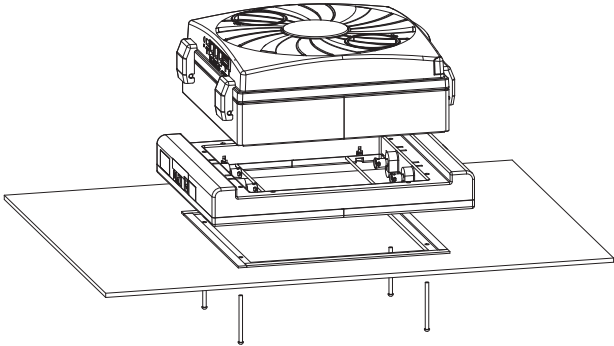
■ Installation Method

- Attach the sealing parts (provided) to prevent air from escaping.



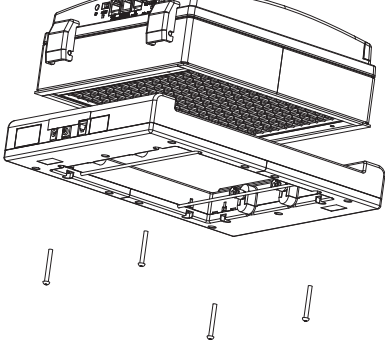
- Combined installation with Air Clean Unit

Screw-fasten the Air Clean Ionizer so that it is fitted between the Air Clean Unit and clean booth panel as shown in the figure below. Install the Air Clean Ionizer using the four M4x50 screws (provided) at a tightening torque of 1.2 to 1.6 N.m. The maximum panel thickness is 12 mm.

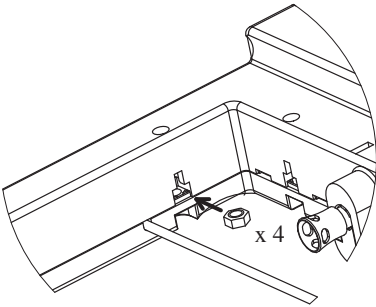


- Screw-fastening onto a clean booth panel after installing the Air Clean Unit

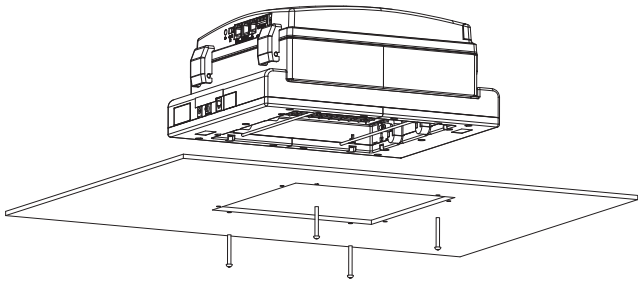
Screw-fasten the Air Clean Ionizer to the Air Clean Unit. Install the Air Clean Ionizer using the four M4x35 screws (provided) at a tightening torque of 1.2 to 1.6 N.m.



Insert the nuts into the remaining four mount holes.

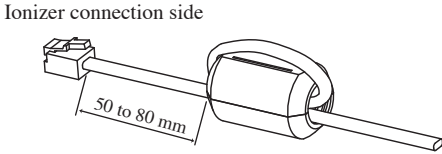


Install the Air Clean Ionizer using the four M4x35 screws (provided) at a tightening torque of 1.2 to 1.6 N.m.



■ Connecting the Power Supply

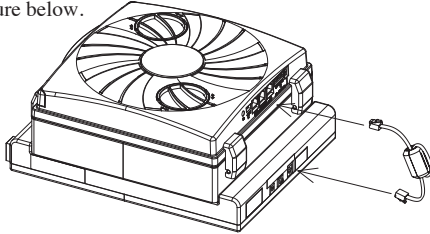
To use this product as a CE-compatible product, loop the Air Clean Unit connector cable or I/O cable once through the ferrite core (provided) as shown in the figure below.



Connect the power supply by one of the following methods.

- When connecting to the Air Clean Unit

Connect the power supply to the ZN-J25A using the exclusive cable (provided) as shown in the figure below.



- When using the I/O cable

Connect the I/O cable (provided) to the power input/signal output connector. Connect the white wire to 24V and the black wire to 0V.

■ Functions

- Manual ion balance adjustment

The ion balance can be adjusted by the following procedure. The Charge Plate monitor and other measuring equipment are required to adjust the ion balance.

- (1) Enter the adjustment mode.
Hold down both of the + and - ion balance adjustment buttons (simply called "buttons" from here on) for at least three seconds. The Unit enters the adjustment mode, and the three indicators (power, cleaning notice/cleaning warning, and error output) flash three times.
* When the Unit enters the adjustment mode, the ion balance adjustment values are initialized to their default settings.
- (2) Adjust the ion balance.
Press the buttons while viewing the Charge Plate monitor. Pressing the + button changes the ion balance in the plus direction. Each press of the + button makes the error output indicator flash once. Pressing the - button changes the ion balance in the minus direction. Each press of the - button makes the power indicator flash once. When adjustment limits are reached, the indicator no longer flashes even if the buttons are pressed.
- (3) Adjustment lock mode
If the buttons are not pressed for about ten seconds of the Unit entering the adjustment mode, the three indicators (power, cleaning notice/cleaning warning, and error output) flash three times, and the Unit enters the adjustment lock mode. In this mode, pressing the buttons will not change the ion balance, and the power and error output indicators will flash twice simultaneously when the buttons are pressed.

- Error Detection Function

- Details
This function indicates a warning and stops Unit operation when an error is detected on the high voltage circuit.

Unit states when an error is detected

Indication	Power indicator	Lit
	Cleaning notice/warning indicator	Out
	Error output indicator	Lit
Output	Cleaning notice/warning output	ON
	Error output	OFF

- Reset conditions
To reset the Unit from the error mode, turn the power supply OFF then back ON again. If this does not remedy the problem, contact your OMRON representative.

- Cleaning indications

When dirt or dust adheres to the discharge needles, causing a change in the ion balance or a drop in the Unit's neutralizing capabilities, the cleaning notice indicator lights.

Indication (1): Cleaning notice indicator (orange flashing)

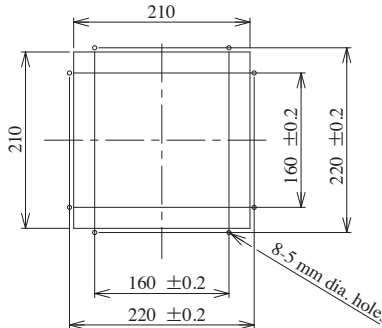
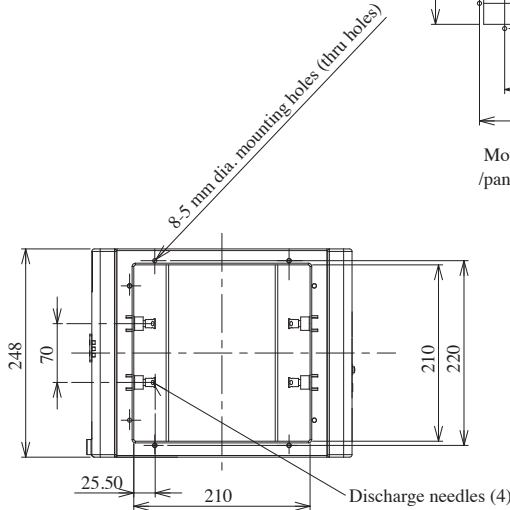
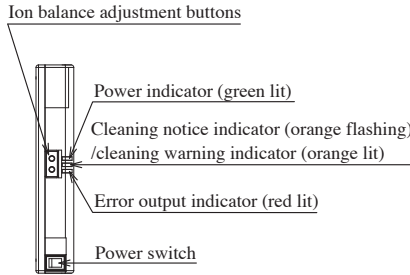
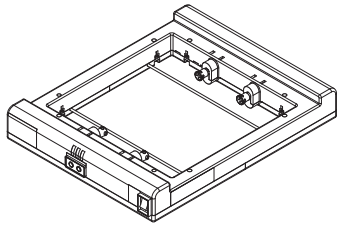
The ion balance cannot be sustained or there is a risk that the Unit's neutralizing capabilities are about to drop if the discharge needles are not cleaned.

Indication (2): Cleaning warning indicator (orange)

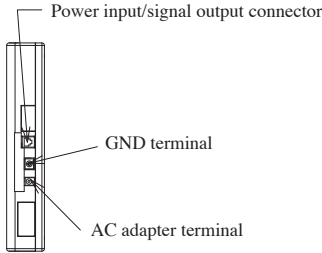
The ion balance or the Unit's neutralizing capabilities can no longer be sustained.

It sometimes takes about several minutes for the cleaning notice/cleaning warning indicator to light after the power supply is turned ON.

■ Dimensions



Mount hole dimensions
/panel cutout dimensions



(unit: mm)

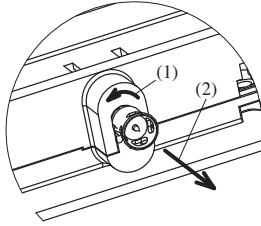
■ Inspection and Cleaning

Periodically clean the Unit.

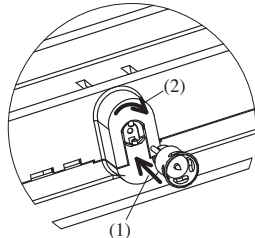
Also, always wait at least one minute after turning the power supply OFF.

- (1) Removing/installing discharge needle holders

- To remove a discharge needle holder, turn it anticlockwise and pull it out.



- To install a discharge needle holder, insert it as far as possible, and turn clockwise.



- (2) Cleaning discharge needles

- Moisten a cotton wool bud, for example, with ethanol or isopropyl alcohol, and wipe off dirt from the tip of the discharge needle.
- * Using unnecessary force to pull out the discharge needle holder will damage it. Always turn the discharge needle holder anticlockwise as far as possible before pulling it out.
- * Take care not to touch the tips of the discharge needles. Also, scratching or bending the tip will cause neutralizing performance to drop.
- * To sustain the Unit's neutralizing performance, use only discharge needles specified by OMRON.
- * If cleaning does not restore the Unit's neutralizing performance, replace the discharge needles. (Always use only discharge needles specified by OMRON.) Sold separately, discharge needle (with needle holder): ZN9-JH04 (pack of 4)
- * Even in minimal particle clean booths, gas in the air is turned into particles by corona discharge at the tips of the discharge needles. These particles stick to the discharge needles and fly off the needle when a fixed amount of particles accumulate. So, always clean the discharge needles periodically in processes where particles flying off the discharge needles will damage products.
- * Corona discharge sometimes causes silicon sealant used in sealing materials in partitions and filters in clean rooms, for example, to turn into particles which stick to the discharge needles. So, the discharge needles must be cleaned in such cases.
- * The customer must determine the cleaning cycle since the operating environment affects how quickly the discharge needles become dirty.

■ Notice for Korea Radio Law

Please see the following URL for Korean KC mark compliance information.
<http://www.rra.go.kr/selfform/OMR-ZN-J>

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