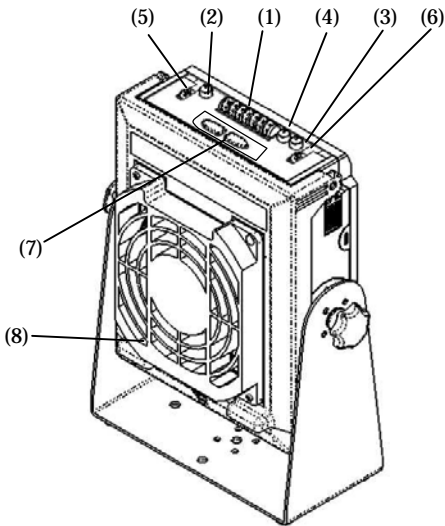


- * 清掃後も性能が復帰しない場合は、放電針、エアフィルタの交換を行ってください（必ず下記の当社指定のものをご購入ください）。
- 別売品 放電針：形 **ZJ9-NDT08**（8本入り）
エアフィルタ：形 **ZJ9-FL92**（10枚入り）
- * パーティクルの少ないクリーンルームにおいても、空气中に混在しているガスが、放電針の先端で起こるコロナ放電により粒子化し、放電針に付着して一定量になると飛散します。飛散したパーティクルが製品にダメージを与える工程においては、必ず一定周期の清掃を行ってください。
- * クリーンルームなどのパーテーションやフィルタのシール材に使用されているシリコンシーライト剤が、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。

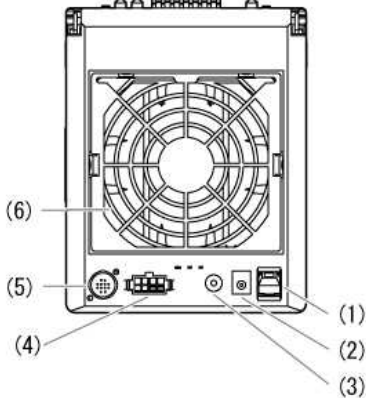
各部の名称と機能

・ 前面



- (1)インジケータ
モード切替スイッチ、インジケータ表示選択スイッチを切替えることによって、帯電状態/イオンバランス/風量を表示します。
- (2)電源ランプ
電源 ON 時、緑色に点灯します。
- (3)クリーニング予告／警告灯
放電針が汚れて、除電能力が低下し始める前に予告として橙色に点灯します。
放電針をクリーニングしなければ除電能力を保てなくなったとき、赤色に点灯します。
- (4)エラー表示灯
異常放電時、赤色に点灯します。
- (5)モード切替スイッチ
モードの切替えを行います。
RUN モード：帯電量もしくはイオンバランスを表示するときに選択します。
バランス調整モード：イオンバランスの調整をするときに選択します。
風量調整モード：風量の表示や調整をするときに選択します。
- (6)インジケータ表示選択スイッチ
RUN モード時のインジケータの表示内容を選択します。
帯電状態（内蔵センサ）/帯電状態（静電気センサ）/イオンバランスを選択できます。
- (7)調整キー
風量、イオンバランスを調整します。
- (8)センサ電極（内側）
対象物の帯電量や極性、イオナイザから吹き出されるイオンのバランスを検出します。

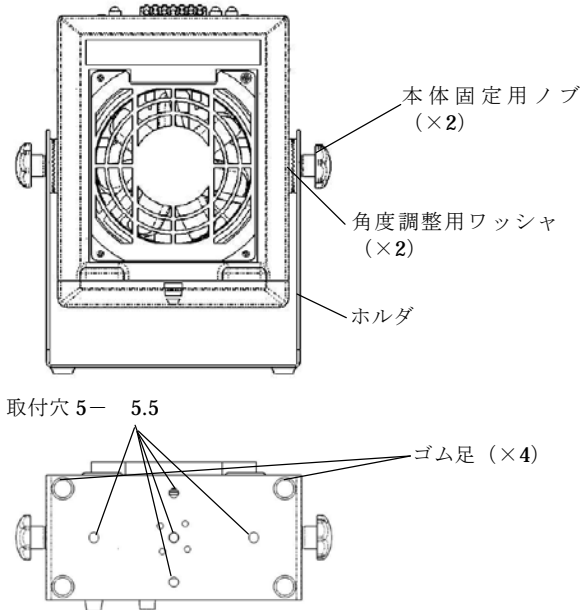
・ 背面



- (1)電源入力切替スイッチ
電源の AC アダプタ/入出力コネクタの入力を選択します。
- (2)AC アダプタコネクタ
AC アダプタを接続します。
- (3)接地端子
必ずこの端子を接地してください。
- (4)入出力コネクタ
付属の入出力ケーブルを接続して、電源入力やクリーニング出力、異常放電出力、帯電量出力を行います。
- (5)静電気センサコネクタ
静電気センサヘッド形 ZJ-SD100（別売）を接続します。
- (6)エアフィルタ
外部からのゴミの侵入を防ぎます。

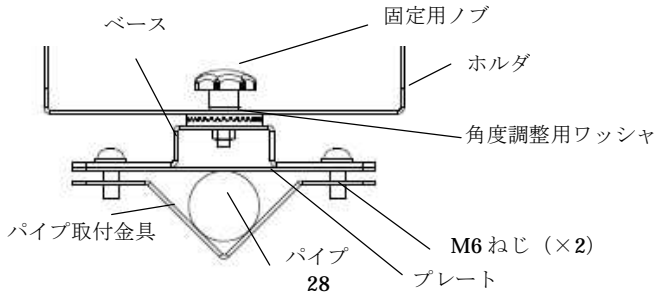
取付金具のご使用方法

1.各部の名称



2.取り付けおよびご使用方法

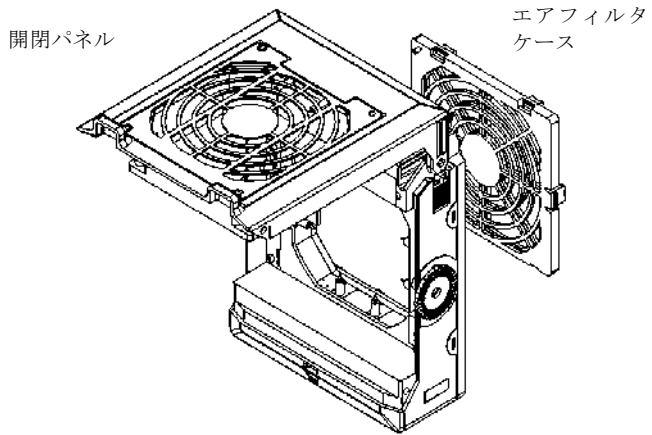
- 卓上で使用する場合
- ①設置場所に応じて、本体固定用ノブをゆるめてイオナイザ本体の角度を調整します。
- ②角度調整後、本体固定用ノブおよびねじをしっかりと締めて固定してください。
- 装置に直接取り付ける場合
- ①ゴム足（4個）をはがしてください。
- ②ホルダの取付穴を利用して取り付けてください。M5 ねじを使用し締め付けトルク 2.3～2.8N.m で取り付けてください。
- パイプ（28）に取り付ける場合（別売りの形 ZJ9-FA-BR01 が必要です。）
- ホルダに角度調整用ワッシャを貼り付けてください。
- 付属の M6 のねじを使用してベース、プレート、パイプ取付金具をパイプに固定してください。
- 角度を調整して固定用ノブをしっかりと締めてください。



機能

- 高電圧回路異常検知機能
- ・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。
- 異常放電検出時の状態
- | | ZJ-FA10V(-D) | ZJ-FA10V-(D)1 |
|-----|--------------|---------------|
| ファン | 停止 | |
| 表示 | 電源ランプ | 点灯 |
| | エラー表示灯 | 点灯 |
| | クリーニング表示灯 | 消灯 |
| | インジケータ | 消灯 |
| 出力 | クリーニング出力 | ON |
| | エラー出力 | OFF |
- ・復帰条件
- 異常放電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。

- 非常停止機能
- ・機能概要
- 動作中に、開閉パネルが開いたりエアフィルタケースが外れた場合、ファンや高圧回路を非常停止します。



非常停止時の状態

	ZJ-FA10V(-D)	ZJ-FA10V-(D)1
ファン	停止	
表示	電源ランプ	点滅
	エラー表示灯	点灯
	クリーニング表示灯	消灯
	インジケータ	消灯
出力	クリーニング出力	ON
	エラー出力	OFF

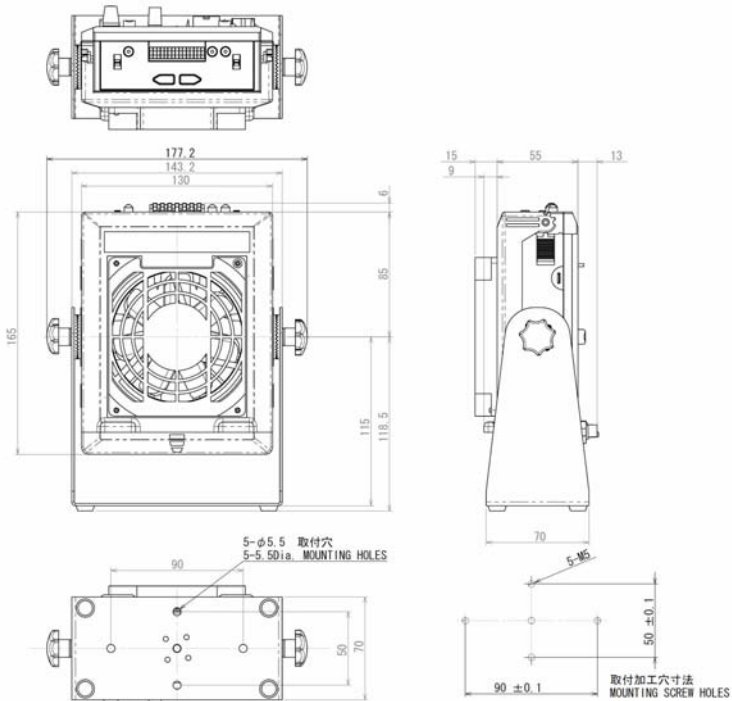
- ・復帰条件
- 非常停止モードからの復帰は、開閉パネルを閉じ、エアフィルタケースを取り付けた状態で、電源再投入することによって行われます。
- 電源を入れた状態で、開閉パネルを閉じ、エアフィルタケースを取り付けても、自動的に通常動作には復帰しません。

- クリーニング表示
- 放電針にホコリや汚れがつき、イオンバランスや除電能力の低下が発生したときに、クリーニング表示灯が点灯します。
- ※表示①：クリーニング予告表示（橙）
- 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

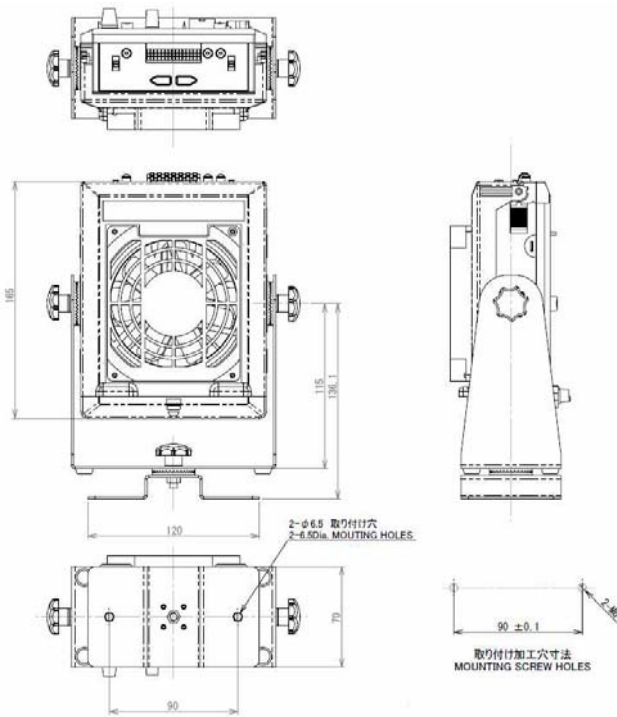
- 表示②：クリーニング警告表示（赤）
- 既に、イオンバランスや除電能力が保持できていない状態

電源投入から予告・警告表示灯が点灯するまでに約 20 秒程度かかります。

外形図
本体



オプション金具 形 ZJ9-FA-BR02（別売）使用時



ご使用に際してのご承諾事項

- ①安全を確保する目的で直接的または間接的に人体を検出する用途に、本製品を使用しないでください。同用途には、当社センサカタログに掲載している安全センサをご使用ください。
- ②下記用途に使用される場合、当社営業担当者までご相談のうえ仕様書などにより確認いただくとともに、定格・性能に対し余裕を持った使い方や、万一故障があっても危険を最小にする安全回路などの安全対策を講じてください。
- a)屋外の用途、潜在的な化学的汚染あるいは電氣的妨害を被る用途
またはカタログ、取扱説明書等に記載のない条件や環境での使用
- b)原子力制御設備、焼却設備、鉄道・航空・車両設備、医用機械、娯楽機械、安全装置、および行政機関や個別業界の規制に従う設備
- c)人命や財産に危険が及ぶるシステム・機械・装置
- d)ガス、水道、電気の供給システムや24時間連続運転システムなどの高い信頼性が必要な設備
- e)その他、上記 a) ～ d) に準ずる、高度な安全性が必要とされる用途
- *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

- お問い合わせ先
カスタマサポートセンタ
フリーコール **0120-919-066**
携帯電話・PHSなどではご利用いただけませんので、その場合は下記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）
- 〔技術のお問い合わせ時間〕
■営業時間:8:00～21:00
■営業日:365日
■上記フリーコール以外のセンシング機器の技術窓口:
電話 **055-982-5002**（通話料がかかります）
- 〔営業のお問い合わせ時間〕
■営業時間:9:00～12:00・13:00～17:30（土・日・祝祭日は休業）
■営業日:土・日・祝祭日／春期・夏期・年末年始休暇を除く
- FAXによるお問い合わせは下記をご利用ください。
カスタマサポートセンタ お客様相談室 FAX 055-982-5051
- その他のお問い合わせ先
納期・価格・修理・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営業員にご相談ください。
- ④ 2009年10月

OMRON

Model ZJ-FA10V

Advanced Fan 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. For your convenience, keep the sheet at your side.

TRACEABILITY INFORMATION:
Representative in EU: Omron Europe B.V.
Wegalaan 67-69
2132 JD Hoofddorp,
The Netherlands
Manufacturer: Omron Corporation,
Shiokoji Horikawa, Shimogyo-ku,
Kyoto 600-8530 JAPAN
Ayabe Factory
3-2 Narutani, Nakayama-cho,
Ayabe-shi, Kyoto 623-0105 JAPAN

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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A

Precautions on Safety

● Meanings of Alert Statement



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 Statement in this Sheet



● 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. When screw-fastening the body for use, mount the body using M5 screws and tighten them to a tightening torque of 2.3 to 2.8 N·m.



● If you open the access panel and put your hand inside the product before the fan has stopped rotating, you may get injured. Before cleaning or replacing the discharge needles, be sure to turn the product off, make sure that the fan has stopped rotating, and then open the access panel.



● 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:

- Do not use the product in environments where it can be exposed to inflammable/explosive gas.
- Do not install the product close to high-voltage devices and power devices in order to secure the safety of operation and maintenance.
- Use line voltage within the rated voltage.
- Do not disassemble, repair or modify this product.
- Dispose of the product in accordance with the relevant rules and regulations of the country or area where the product is used.
- Use a DC power supply unit that has a countermeasure (Safety Extra-Low Voltage power supply circuit) built-in for preventing high voltages from occurring, or a UL Class 2 DC power supply unit.

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 the product in locations subjected to the following conditions:
 - Ambient temperature beyond the rating
 - Ambient humidity beyond the rating
 - Presence of corrosive or flammable gases
 - 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
 - Precautions for Installation & Use
 - The metal guard of the front panel is a sensor electrode. Do not bring charged objects near to the product. If there is a charged object within roughly 150 mm of the product, the ion balance sometimes can no longer be controlled.
- Power Supply and Wiring
 - When using the AC adapter
 - Be sure to use the AC adapter (That comes with the product.).
 - Connect the adapter and set "Power Input Selection" switch to "AC ADAPTER" on the back before using.
 - When using the 24 VDC power supply
 - Connect the accessory input/output cable to the back panel connector.
 - Set "Power Input Selection" switch to "TERMINAL" on the back before using. Do not ground the 24VDC terminal.
 - If surge currents are present in the power lines, connect surge absorbers that suit the operating environment.
 - When connecting the power and output terminals, pay attention to the polarity of the terminals. Do not apply voltage over the rated range.
 - When connecting the power terminal, make sure the power supply is not short-circuited.
 - When connecting the output terminals, the current must be within the rated range.
 - Be sure to ground the earth terminal on the back.
 - 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.
 - Before cleaning or removing/installing discharge needles, be sure to turn the power off.
 - Do not touch the discharge needles directly with your hands.
 - Do not use paint thinner, benzene, acetone, or kerosene to clean discharge needles.

■ Re-labeling upon Export

Be sure replace three kinds of warning labels in Japanese on the body with the attached English ones.

■ Outline and Features

- This ionizer neutralizes static electricity on charged objects by ionizing air by corona discharge and blowing ions on the charged object by a fan.
- To neutralize electricity, proprietary mixing variable DC mechanism is used to materialize quick neutralization and excellent ion balance.
- Its Auto Ion Control function maintains the best ion balance.
- Indicators are equipped so that they should be easily seen from anywhere, allowing you to check operation status such as neutralization status, ion balance, and cleaning alarm anytime.
- Connecting an optional static electricity sensor head (ZJ-SD100) allows you to monitor charged and discharged statues precisely.
- Back panel can be easily opened to clean discharge needles and fan.
- Optional exclusive mounting bracket (ZJ9-FA-BR) allows you to mount this product in a wide variety of styles, such as on a desktop, pipe, or directly on a device or a structure.

■ Specifications

Item	Specification
Model	ZJ-FA10V
Power voltage	24VDC±10% ripple (peak-to-peak) 10% or less
Current consumption	800mA max
Output voltage	±7kV max
Discharge type	Mixing variable DC
Fan speed	2.73m ² /min max
Neutralization time*1	Within 2 seconds (center of blow-off port, at a distance of 300 mm)
Main functions	Fan speed adjustment, manual balance adjustment, charged/neutralization status indication, cleaning indication/output, error indication/output, key lock, external static electricity sensor connection
External output	Error output/cleaning output: Output by photo MOS relay (DC30V 300mA)
External sensor (option)	Static electricity sensor head ZJ-SD100
Ambient temperature	Operating/storage: 0 to 50°C (with no icing or condensation)
Ambient humidity	Operating/storage: 35 to 65%RH (with no condensation)
Weight (Packed)	Approx. 3.0 kg
Materials	Case: ABS, Discharge needles: Tungsten
Accessories	Instruction Sheets, AC adapter*2, Input/output cable, Warning labels

- *1 Measured at center of blow-off port, at a distance of 300 mm.
Time period for the charging plate monitor (150 mm sq., 20 pF) to change from ±1000V to ±100V
- *2 AC adaptor is not attached to ZJ-FA10V-D

■ Output and Wiring

For wire color and specification of accessory input/output cable, see below.

(1) Wire Color and Assignment

CN No.	Color	Assign	CN No.	Color	Assignment
1	Orange	NC	5	Red	Error output
2	Brown	DC24V	6	Gray	Cleaning notice output
3	Black	FG	7	Yellow	Cleaning alarm output
4	Blue	0V	8	White	Output common

(2) Output specification

Output voltage	DC30V
Load current	300mA max.
Internal circuit	

■ Operation, Indication and Output

Operation by adjuster keys and indicator statuses may change based on a combination of mode selection switch and indicator status selection switch as shown below.

See table below to use.

MODE Mode selection switch	DISPLAY Indicator status selection switch	External input	Adjuster key		Indication
			◀ Left	Right ▶	7-level LED
RUN	CHARGE (Charged status)	None	---	---	Charge monitor (Built-in charge sensor)
			Pressing right and left at the same time (3 sec.) Setting lock/release switching (Locked: Center and outermost LEDs ON, Released: All LEDs ON)		
	EXT.SENS (Static electricity sensor)	Static electricity sensor	---	---	Charge monitor (Static electricity sensor)
			Pressing right and left at the same time (3 sec.) Zero teaching		
	BALANCE (Balance status)		---	---	Current balance value
			Pressing right and left at the same time (3 sec.) Setting lock/release switching (Locked: Center and outermost LEDs ON, Released: All LEDs ON)		
Balance adjustment (ADJUST)	---	---	Balance to -	Balance to +	Current balance setting
			Pressing right and left at the same time (3 sec.) Balance setting initialization		
Fan adj. (FAN)	---	---	Fan speed down	Fan speed up	Fan speed indication

■ Inspection and Cleaning

Periodically clean the product.
Be sure to turn the product OFF before starting cleaning.

- (1) Cleaning the discharge needles and inside the product
- Make sure that the fan has stopped rotating, and open the access panel (at angle of 0, 135, or 180 degrees).
 - Wipe off any dirt on the tips of the discharge needles with a cotton wool bud moistened with alcohol.
 - We recommend removing the discharge needles and cleaning them in an ultrasonic bath once every three to six months.
 - Also clean parts that form the air tract (e.g. air intake port, fan and guard on front panel side).

(2) Removing/installing discharge needles

- To remove a discharge needle, grip the needle to be replaced with a long-nose plier or a similar tool and pull it out.
- When installing discharge needles, also use a long-nose plier or a similar tool to insert them.

- * Do not touch the tip of discharge needles. Damaging or bending the tips of discharge needles will impair their performance.
- * To maintain neutralization performance, use only discharge needles specified by OMRON.

(3) Cleaning the air filter

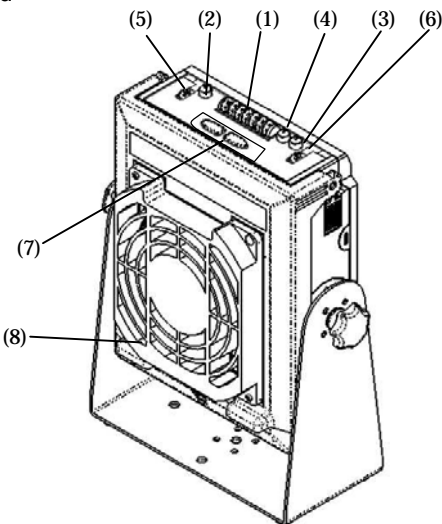
- Remove the air filter frame and use a vacuum cleaner to remove dust from the filter inside.

- * If cleaning does not restore neutralization performance, replace the discharge needles and the air filter (be sure to use the following parts specified by OMRON).

- Options
- Discharge needle: ZJ9-NDT08F (pack of 8)
Air filter: ZJ9-FL92 (pack of 10)
- * Even in clean rooms with few particles, corona discharge that occurs on the tips of the discharge needles causes gas in the air to be turned into particles which stick to the discharge needles. These particles fly off the discharge needles when a certain amount has accumulated. In processes where these particles will damage the product, be sure to periodically clean the discharge needles and air filter.
- * The Silicon element that is used as the sealant on partitions and the filter in a clean room sometimes is turned into particles by corona discharge and sticks to the discharge needles. In this case, too, the discharge needles must be cleaned.
- * The cleaning cycle differs according to the degree of dirt accumulation in each operating environments and must be determined by the user.

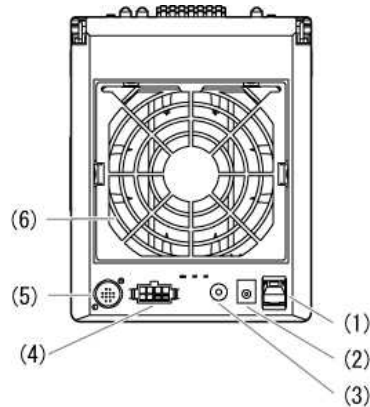
Parts Names and Functions

Front End



- (1) Indicator
Indicates charged status on an object/ion balance/fan speed based on selection by mode selection switch and indicator status selection switch.
- (2) Power lamp
The green lamp turns ON when the power is ON.
- (3) Cleaning notice/alarm lamp
The lamp turns orange as notification when discharge needles get dirty and neutralization performance is degraded.
The lamp turns red when the product no longer works.
- (4) Error lamp
Turns red when an error occurs.
- (5) Mode selection switch
Switches modes.
RUN mode: Select this if you want to see charged status on an object or ion balance.
Balance adjustment mode: Select this if you want to adjust ion balance.
Fan speed adjustment mode: Select this if you want to see or adjust fan speed.
- (6) Indicator status selection switch
Selects indication under RUN mode.
Selection is available from charged status (built-in sensor)/charged status (external static electricity sensor)/ion balance.
- (7) Adjuster keys
Adjusts fan speed and ion balance.
- (8) Sensor electrode
Detects charged status of an object and ion balance blown off from the ionizer.

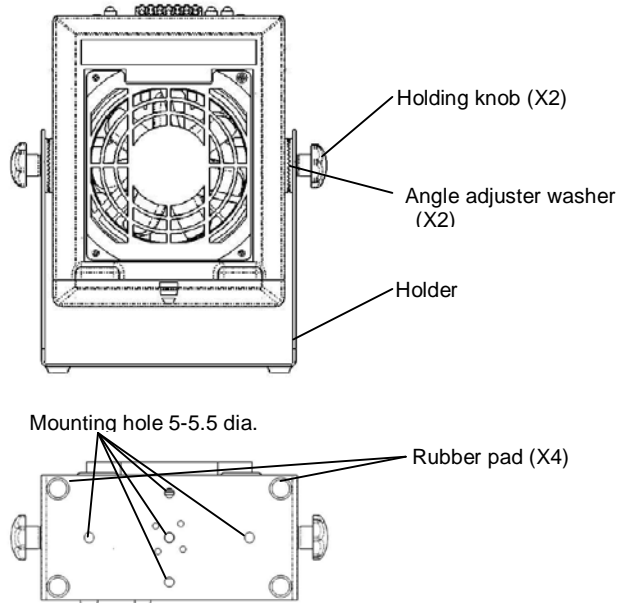
Back End



- (1) Power input selection switch
Selects a power input from the AC adapter or input/output connector.
- (2) AC adapter connector
Provides connection to the AC adapter.
- (3) Ground terminal
Always earth this terminal.
- (4) Input/output connector
Accessory input output cable can be connected to this for power input, cleaning output, abnormal discharge output, and charged status output.
- (5) Static electricity sensor connector
Provides connection with the statis electricity sensor head ZJ-SD100 (option).
- (6) Air filter
Prevents dirt from entering the unit.

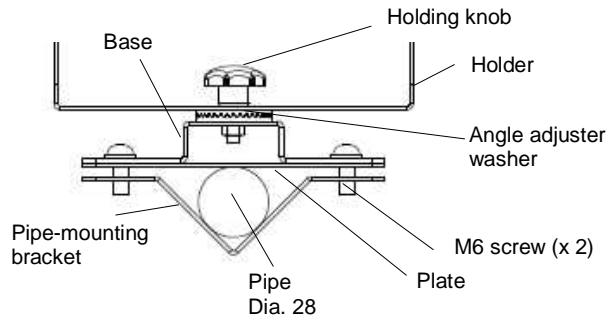
How to Use Mounting Bracket

1. Name of Parts



2. Mounting and Operation

- On desktop
 - (1) Untighten the holding knob and adjust an angle of the ionizer unit as you wish.
 - (2) Tighten the knob and screws after adjusting the angle.
- Attaching directly to a device
 - (1) Remove the 4 rubber pads (4).
 - (2) Mount the unit using mounting holes of the holder. Use M5 screws and tighten them with tightening torque of 2.3 to 2.8Nm.
- Atcting to a pipe (dia. 28) (optional ZJ9-FA-BR01 required)
 - (1) Insert angle adjuster washers to the holder.
 - (2) Use accessory M6 screws to fix the base, plate, and pipe-mounting bracket.
 - (3) Adjust the angle and tighten the holding knob.



Function

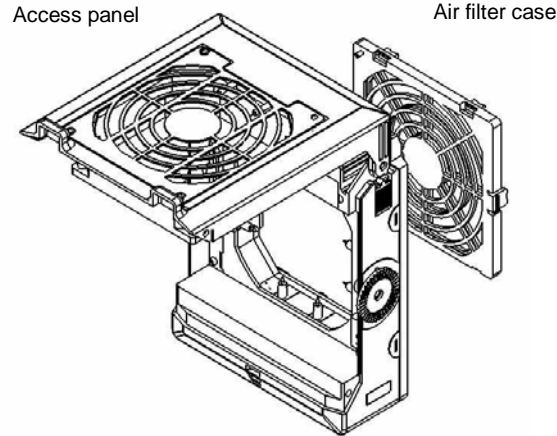
- High voltage circuit failure detection
 - Details
Detects a failure in a high voltage circuit, displays warning, and stops the operation.

Status when abnormal discharge is detected

		ZJ-FA10V(-D)	ZJ-FA10V(-D)1
Fan		Stop	
Display	Power lamp	ON	
	Error lamp	ON	
	Cleaning lamp	OFF	
	Indicator	OFF	
Output	Cleaning output	ON	OFF
	Error output	OFF	ON

- Recovery condition
Recovery from abnormal discharge mode requires turning the power off and on again.
If recovery failed, contact Omron's sales person in charge.

- Emergency stop
 - Outline
Fan and high voltage circuit stop when the access panel is opened or the air filter case is removed.



Status at emergency stop

		ZJ-FA10V(-D)	ZJ-FA10V(-D)1
Fan		Stop	
Display	Power lamp	Blink	
	Error lamp	ON	
	Cleaning lamp	OFF	
	Indicator	OFF	
Output	Cleaning output	ON	OFF
	Error output	OFF	ON

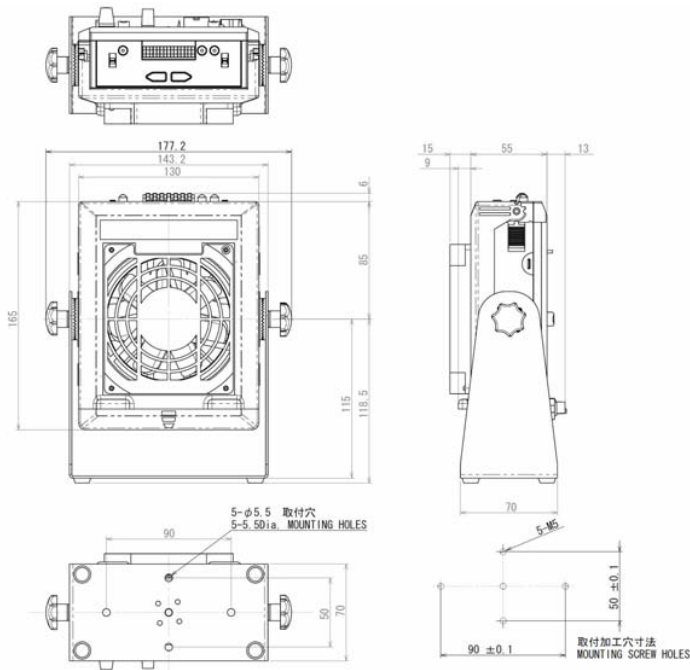
- Recovery condition
Recovery from abnormal discharge mode requires turning the power off and the access panel must be closed and the air filter case must be attached. Then the power needs to be ON
Recovery to a normal status cannot be executed even if the access panel is closed and the air filter case is attached while the power is ON.

- Cleaning indication
The cleaning notice lamp turns ON when discharge needles get dirty and neutralization performance is degraded.
* Indication (1): Cleaning notice lamp (Orange)
When ion balance may not be maintained or deionizing performance may be degraded unless cleaned

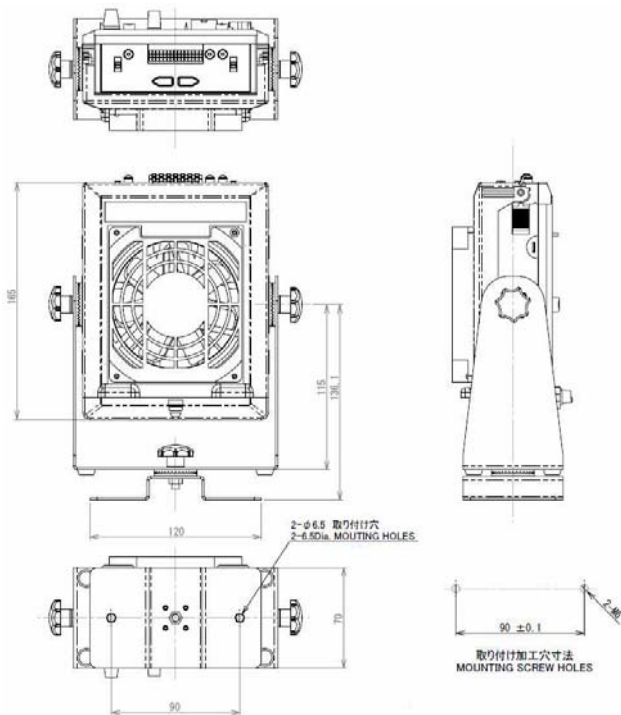
- Indication (2): Cleaning alarm lamp (Red)
When ion balance or deionizing performance cannot be maintained

It takes about 20 seconds from power on to turning on of the alarm lamp.

External Dimensions



When optional bracket ZJ9-FA-BR02 is used



Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. 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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