

Precautions

● Meaning of Signal Words



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in minor, moderate, serious, or fatal injury. Additionally, there may be severe property damage.

● Meaning of Alert Symbols



WARNING

Tighten the M5 Unit screws to a torque of 2.3 to 2.8 N · m. Loose screws may cause the Unit to fall due to vibration and the Unit's own weight, resulting in injury.



Always turn OFF the power supply before cleaning or replacing the discharger and make sure that the fan has stopped rotating before opening the panel. Inserting a hand before the internal fan has stopped rotating may result in injury.



Do not use the Product in locations subject to condensation or high humidity. Fire may result if water droplets come in contact with the internal circuits of the Unit.



Precautions for Safe Use

Be sure to observe the following precautions for safe use of the Product.

(1) Installation Environment

- Do not use the Product in environments with flammable or explosive gases.
- Install the Product as far away as possible from high voltage and power devices to ensure safe operation and maintenance.

(2) Power Supply and Wiring

- Do not supply power at the same time from the AC adapter and power supply terminals.
- Do not use an AC power supply or voltage that exceeds the rated voltage.
- Do not reverse the power supply connections.
- Do not short-circuit the output load.
- To avoid inductive noise, keep the wiring for the Product separate from high-voltage lines or power lines, and do not wire power lines together with or in the same duct as the product wiring. Doing so may result in malfunction or damage to the equipment.
- Do not remove or connect connectors while the power is ON. Doing so will cause damage to the Product.

(3) Other Precautions

- Do not attempt to disassemble, repair, or modify the Product.
- Dispose of the Product as industrial waste.

This document provides information mainly for selecting suitable models. Please read the document Instruction Sheet carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.

Note: Do not use this document to operate the Unit.

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Note: Specifications subject to change without notice. Cat. No. E372-E1-01

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Precautions for Correct Use

Be sure to observe the following precautions to prevent failure, malfunction, or adverse effects on the performance and functionality of the Product.

(1) Installation Location

Do not install the Product in the following locations.

- Locations subject to ambient temperatures outside the rated range
- Locations subject to extreme temperature changes or condensation
- Locations subject to ambient humidity outside the rated range
- Locations exposed to corrosive or flammable gases
- Locations exposed to dust, salts, or iron powder
- Locations subject to direct shock or vibration
- Locations exposed to direct sunlight
- Locations exposed to droplets or sprays of water, oil, or chemical agents
- Locations exposed to strong magnetic fields or electrical fields

The front panel guard functions as the ion balance sensor. Make sure that there are no charged objects within 150 mm of the Product. Having charged objects in the vicinity of the Product may prevent ion balance control.

(2) Power Supply and Wiring

- Always use the AC adapter provided with the Product when an AC adapter is required.
- Connect a surge absorber suitable for the operating environment if the power line is affected by surge.
- Make sure that the correct polarity is used when connecting the power supply terminals and output terminals. Do not apply a voltage that exceeds the rated voltage.
- Do not short-circuit the power supply when connecting the power supply terminals.
- When the output terminal are connected, do not allow a current that exceeds the ratings to be imposed on them.

(3) Inspection and Maintenance

- Be sure to clean the discharger regularly. An unclean discharger may cause the ion levels to drop or result in an inaccurate ion balance.
- Always turn OFF the power supply before cleaning, disconnecting, or connecting the discharger.
- Do not touch the discharger with bare hands.
- Do not use products containing thinner, benzene, acetone, or kerosene to clean the discharger.

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OMRON

Ionizer ZJ-FA Series

Fan Type

High-speed & High-performance Ionization SPEED & EASY

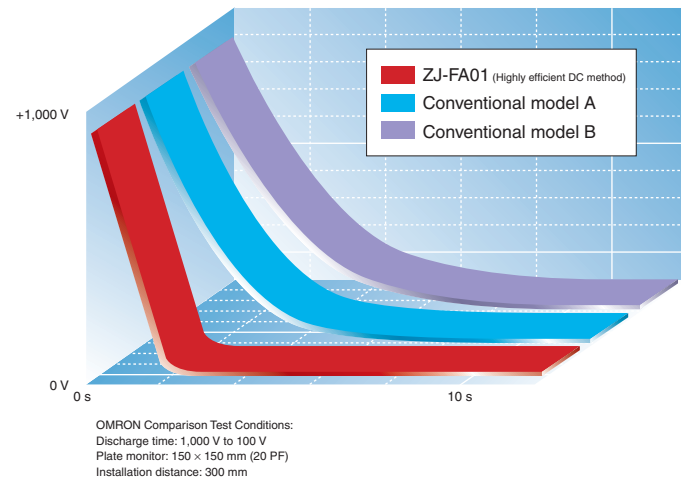


Improved Productivity with High-speed, High-performance Ionization

The effectiveness of static neutralization has emerged in various stages of onsite production of electronic components, such as cellular phones and digital home appliances. OMRON's Ionizer utilizes a highly efficient DC method and large-capacity fan to quickly eliminate static electricity at the production site. Effective neutralization of static charge at the factory assists in reducing complaints and boosting yield.

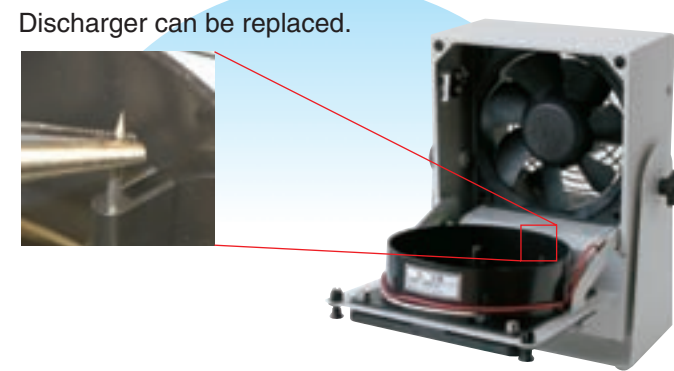
Speed Ionizing DC Method and High-speed Ionization

- High-speed ionization achieved using highly efficient DC method and maximum air flow in its class.
- DC Ionizer achieves highest ion balance level in its class through a unique discharger and fan placement.



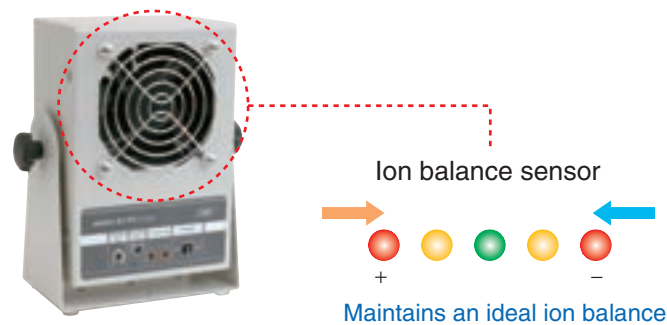
Easy Maintenance Cleaning is Easy

- The rear panel opens, making cleaning of the discharger and fan easy.
- The discharger can be replaced using the pin connector.
- Includes a safety mechanism that is activated by the interlock when the rear panel is opened.



Auto Balance Control Maintain a Constantly Ideal Ion Balance

- The front panel section functions as a sensor for monitoring the ion balance.
- Feedback from the sensor is used to constantly control the ion balance and maintain a zero balance.



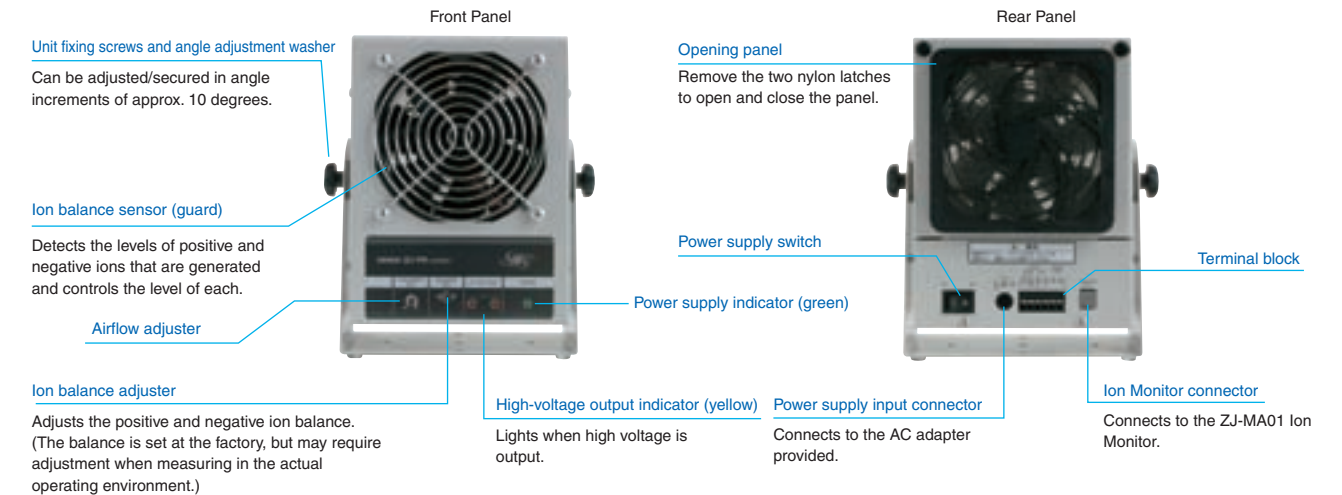
Ion Monitoring Monitoring Provides a Constantly Clean Environment

- The optional ZJ-MA01 Ion Monitor can be connected.
- The ion balance is indicated using five levels, and notification when cleaning is required is also provided.
- The cleaning signal can be sent as an external output.

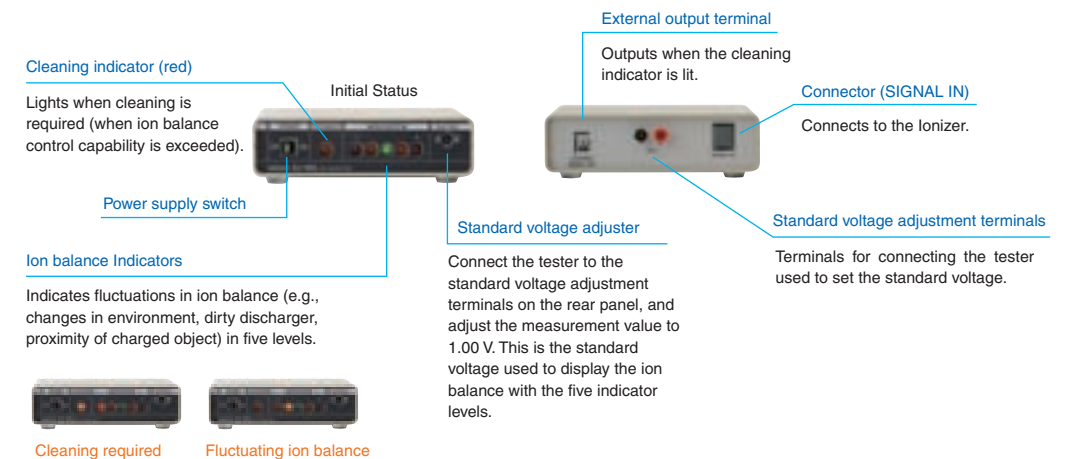


Nomenclature

ZJ-FA01



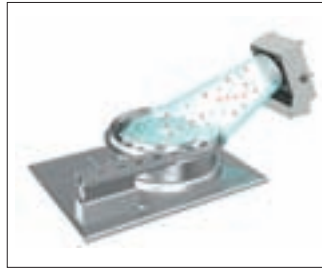
ZJ-MA01



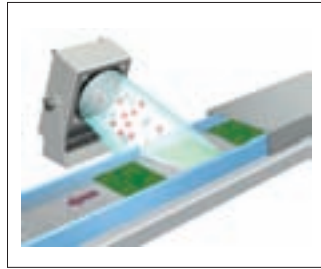
Applications



Preventing foreign particles when labeling



Ionizing resin parts above a parts feeder



Ionizing while conveying PCBs



Cell manufacturing line assembly

Ordering Information

Unit

Ionizer	Airflow	Model
	High	ZJ-FA01
	Medium	ZJ-FA02
Low	ZJ-FA03	
Ion Monitor	---	ZJ-MA01

Ratings and Performance

Unit

Item	Model	ZJ-FA01	ZJ-FA02	ZJ-FA03
Discharge time (See note 1.)		Within 1.5 s (at center of air outlet, and distance of 300 mm)	Within 3.0 s (at center of air outlet, and distance of 300 mm)	Within 3.0 s (at center of air outlet, and distance of 150 mm)
Power supply voltage		24 VDC ±10% Ripple (p-p) 10% max.		
Current consumption (See note 2.)		900 mA max.	600 mA max.	600 mA max.
Output voltage		5.0 KV max.		
Airflow		1.3 to 2.2 m ³ /min	0.47 to 0.8 m ³ /min	0.255 m ³ /min
Ozone generation		0.01 ppm max. (measured at 10 mm from air outlet)		
Ambient temperature		Operating: 5 to 40°C/Storage: 0 to 40°C (with no icing or condensation)		
Ambient humidity		Operating: 35% to 65%/Storage: 35% to 85% (with no condensation)		
Indicators		Power supply indicator: Green High-voltage output operation indicator: Yellow (both positive and negative sides)		
External output		Operation output: Signal output from photo MOS relay (500 mA at 30 VDC)		
Functions		Automatic ion balance adjustment		
		Air filter provided		---
Weight (packed state)		Airflow adjustment		
		Approx. 3.4 kg	Approx. 2.4 kg	Approx. 1.9 kg
Material		Unit: SPCC melamine coating Air channel: ABS Discharger: Tungsten		
Accessories		Instruction manual, AC adapter		

Note 1: The charged plate monitor plate (150 mm × 150 mm, 20 pF) is charged at ±1,000 V and measures the time until the charge reduces to ±100 V (conforms to EOS/ESD-S3.1-1991).

2: Used for connecting ZJ-MA01 Ion Monitor.

Accessories

	Applicable model	Model
Replaceable Filter (See note.)	ZJ-FA01	ZJ9-FL120 (pack of ten)
	ZF-FA02	ZJ9-FL80 (pack of ten)
Replaceable Discharger Needle	ZJ-FA01	ZJ9-NDT06 (pack of six)
	ZJ-FA02/03	ZJ9-NDT04 (pack of four)

Note: The filter replacement uses the F120UL guard/F80UL guard manufactured by Japan Servo Co., Ltd.

AC Adapter (Provided: SA130A-2413V-S by SINO-AMERICAN JAPAN CO., LTD.)

Input voltage	90 to 240 VAC, 50/60 Hz
Input current	0.5 A max.
Output voltage	24 VDC
Output current	1.3 A max.
Ambient operating temperature	0 to 40°C
Ambient operating humidity	20% to 80% (with no condensation)
Weight	250 g (excluding power supply cable)
External dimensions	52 × 35.2 × 119 (W × D × H) mm

Ion Monitor

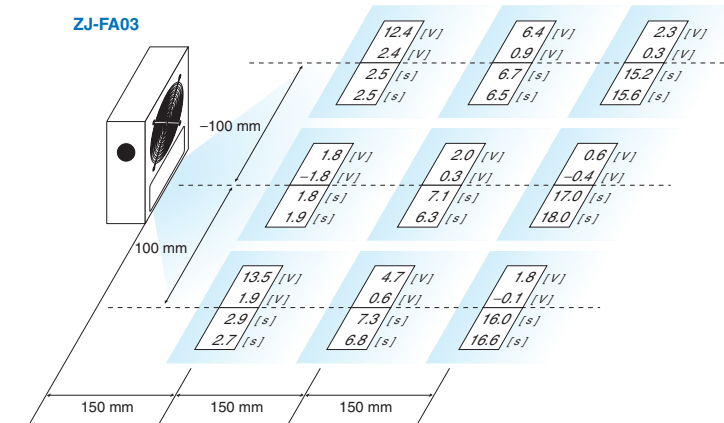
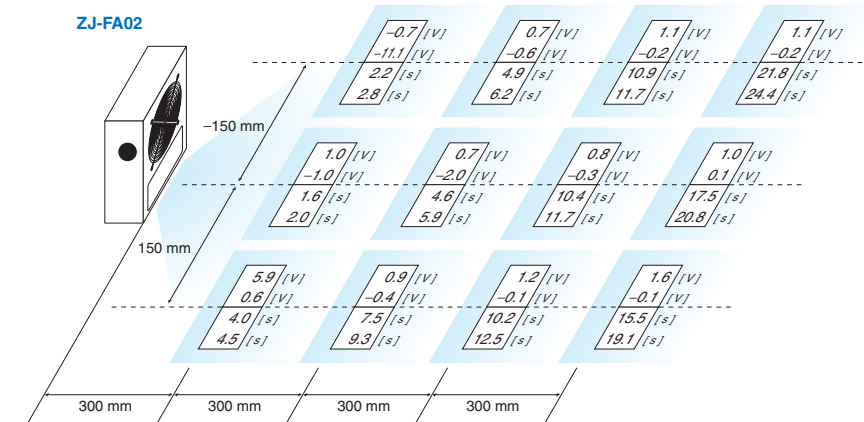
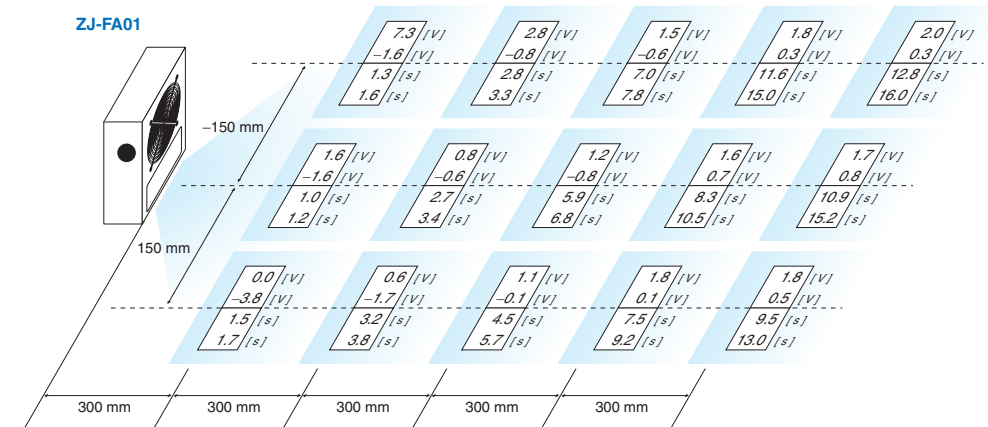
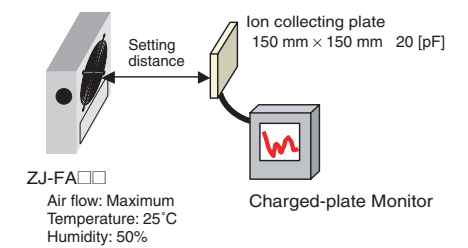
Item	Model	ZJ-MA01
Power supply voltage		Supplied from Ionizer (24 VDC ±10%, ripple (p-p) 10% max.)
Current consumption		100 mA max.
Ambient temperature		Operating: 5 to 40°C/Storage: 0 to 40°C (with no icing or condensation)
Ambient humidity		Operating: 35% to 65%/Storage: 35% to 85% (with no condensation)
Weight (packed state)		Approx. 500 g
Indicators		Power supply indicator: Green Cleaning indicator: Yellow (both positive and negative sides) Ion balance indicator: Red, yellow, green, yellow, red (positive side←center→negative side)
		External output: Cleaning output: Signal output from photo MOS relay (500 mA at 30 VDC)
Material		Unit top and bottom cover: A6063S-505 select ivory coating Unit front and rear panels: SPCC melamine coating
Accessories		Instruction manual, relay cable: 3 m (two ferrite cores provided)

Discharge Characteristics (Typical)

Meaning of measured value

1.6 [V]	—	Maximum value of ion balance (10-s measurement)
-1.6 [V]	—	Minimum value of ion balance (10-s measurement)
1.0 [s]	—	Discharge time (from +1000 V to +100 V)
1.2 [s]	—	Discharge time (from -1000 V to -100 V)

Measurement condition

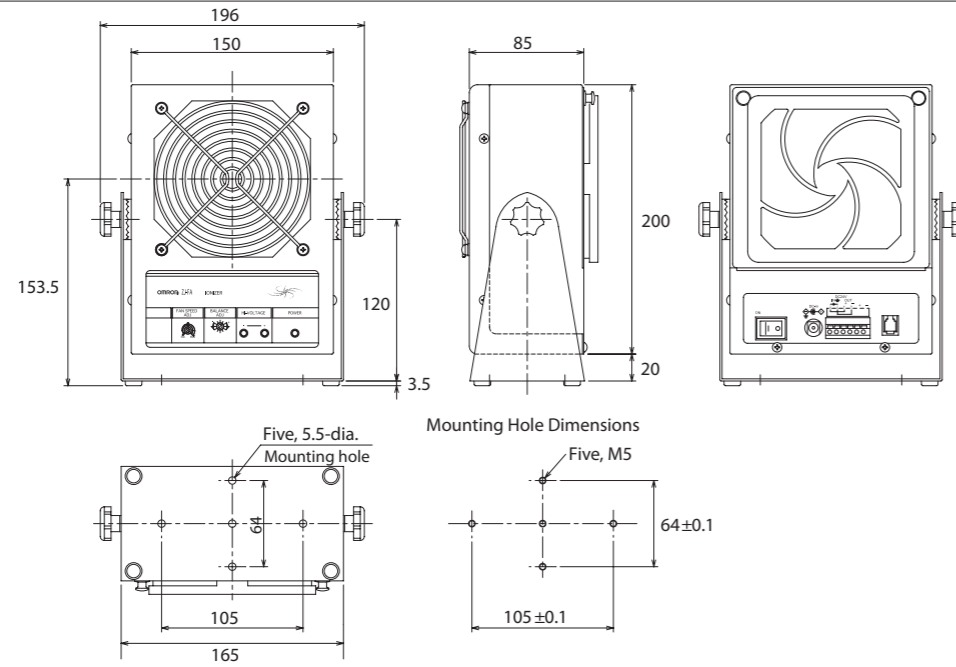


External Dimensions

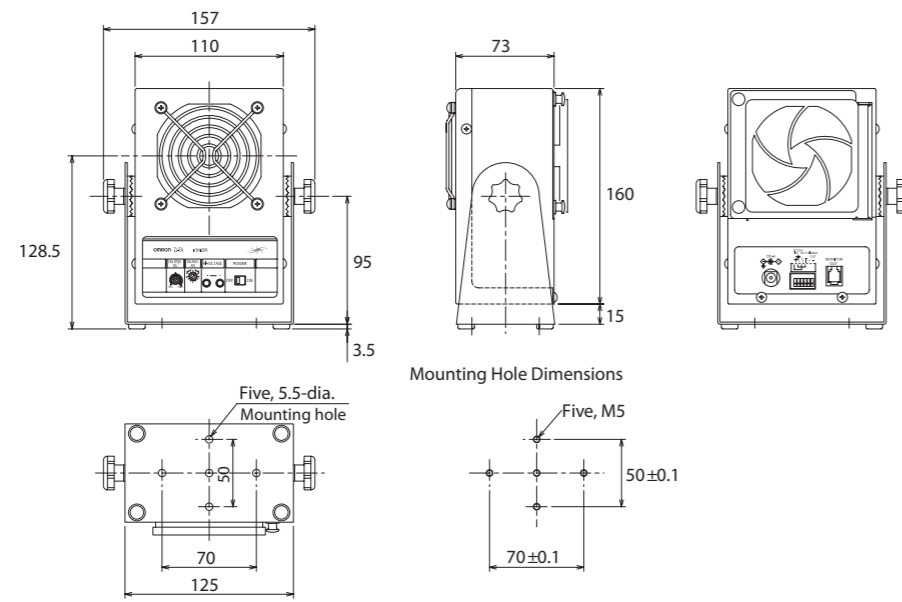
(Unit: mm)

Ionizer Unit

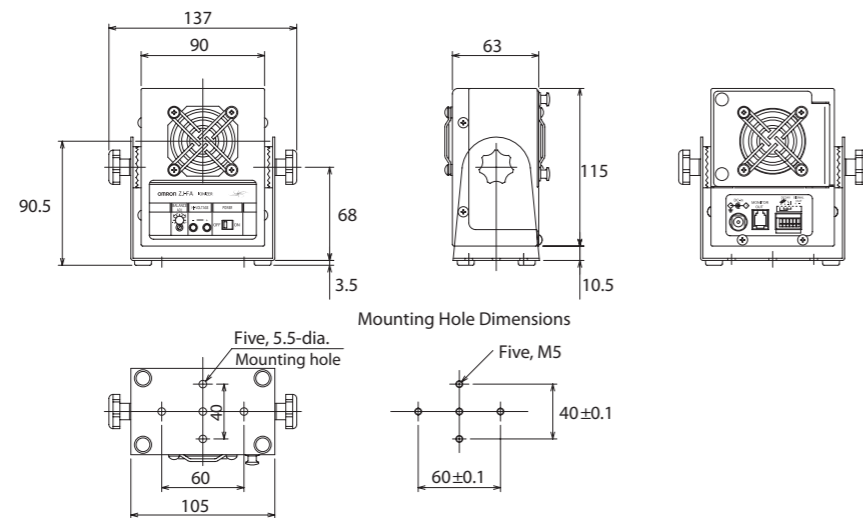
ZJ-FA01



ZJ-FA02

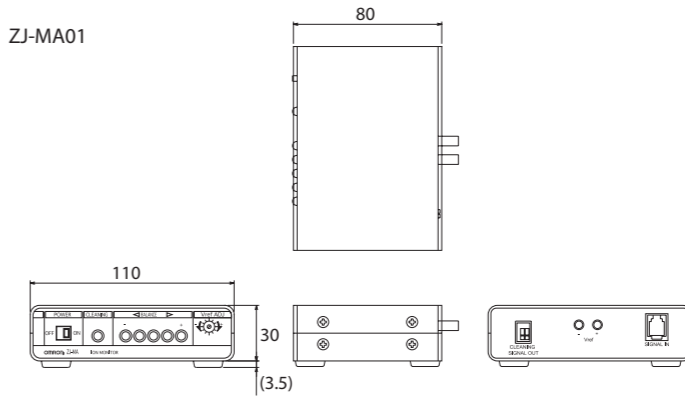



ZJ-FA03



Ion Monitor

ZJ-MA01





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