Ionizer Nozzle type
IZN10 Series

Dust removal and static neutralization by air blow
- Eliminates dust clinging to lamp cover.

Spot type static neutralization
- Prevents electrostatic breakdown of electric parts.
- Prevents detachment failure.

Offset voltage $\pm 10 \, \text{v}$ (In case of energy saving static neutralization nozzle)

Slim design: Thickness dimension 16 mm

RoHS compliant

1. Maintenance detector
   Always outputs LED display and signal when contamination or wear of the emitter is detected.
   Detects optimal maintenance time, reduced labor for maintenance.

2. Built-in high-voltage power supply
   Installation of external high-voltage power supply and high-voltage power supply cable are unnecessary.

IZS IZN IZF ZVB IZD IZE IZH
Nozzle type can be selected according to applications.

**Short range static neutralization, Design focuses on offset voltage.**

**Offset voltage:** ±10 V

Increases flow volume by external air intake

Static neutralization is possible with minimal air consumption.

In the case of the same air consumption, the discharge time is reduced to half. (Supply pressure 0.3 MPa)

<table>
<thead>
<tr>
<th>External air inlet</th>
<th>None</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air consumption flow rate L/min (ANR)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Discharge time* sec</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>Ionized air flow velocity* m/s</td>
<td>0.4</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* At 300 mm distance

Neutralizing static electricity from an electric substrate

• Prevents electrostatic breakdown of electric parts.

Neutralizing static electricity from lens

• Removes dust from lens.
• Prevents adhesion of dust.

Neutralizing static electricity from packing films

• Prevents static electricity charging when opening bags.
• Prevents static electricity cling on the inside of candy bags.

**High flow static neutralization nozzle**

**Long range static neutralization and dust removal**

**Ionized air assisted by the compressed air**

• Improved dust removal performance by the energy of compressed air.
• Suitable for static neutralization at a long distance (max. 500 mm).

**Offset voltage:** ±15 V

Neutralizing static electricity from molded goods

• Prevents problems with the separation of molded plastic goods.

Neutralizing static electricity from plastic cups

• Removes dust clinging to cup interiors.

Neutralizing static electricity from parts feeder

• Prevents clogging of parts feeder.
External switch input function (2 inputs)

- Prevents static neutralization trouble due to pressure drop of compressed air.
  Emission of static electricity is suspended when abnormal purge air pressure is detected by pressure switch.

- Energy saving with electrostatic sensor
  Emission of static electricity is suspended when an electrostatic sensor detects that static neutralization is completed.

![Diagram showing pressure switch and ionizer](image)

Easy maintenance

- Possible to conduct maintenance on the emitter without removal of body.
- No need to readjust the nozzle angle when the ionizer is restarted.

![Diagram showing body and cartridge](image)

Intermittent control timer

- **IZE110-X238**
  - A digital timer that can control ON/OFF switches of valves etc.
  - Improved dust removal effect under low air consumption by intermittent ion blowing

![Diagram showing intermittent control timer, ionizer, and 2 port solenoid valve](image)
Mounting variations

**Direct mount**
- Top through-hole mounting
- Bottom tapped mounting

**Bracket mount**
- L-bracket
- Pivoting bracket
- DIN rail mounting bracket

**Nozzle variations**
- Circular diffusion nozzle
- Flat diffusion nozzle
- Bar nozzle (straight type)
- Circumferential jet bar nozzle (straight type)
- Bender tube nozzle
- Long nozzle

For the ionizer, please select a female thread type (RC1/8) for the piping.

*The L-bracket and the DIN rail mounting bracket can be used with the manifold.*
**Nozzle Variations**

**Ionizer/Nozzle Type**

*With Right Angles*

- **Slim design**

- **360° rotation**

- **Installation distance**: 100 mm

---

**2 types of nozzles**

**Energy saving static neutralization nozzle with right angles**

- Short range static neutralization, Design focuses on offset voltage.
- Offset voltage: Within $\pm 10 \text{ V}^*$
- Increases air blow flow rate by external air intake
- Static neutralization is possible with minimal air consumption.

**High flow rate nozzle with right angles**

- Long range static neutralization and dust removal
- Ionized air assisted by the compressed air
- *Improved dust removal performance by the energy of compressed air.*
- *Suitable for static neutralization at a long distance (max. 500 mm).*
- Offset voltage: Within $\pm 30 \text{ V}^*$

---

**Static neutralization from narrow conveyor space**

- Obstacle at upper portion of equipment
IZN10 Series
Technical Data

Static Neutralization Characteristics
(Discharge Time from 1000 V to 100 V)

(1) Energy saving static neutralization nozzle/IZN10-01

(2) High flow rate nozzle/IZN10-02

(3) Female threads for piping/IZN10-11 With Stainless steel 316 One-touch fitting + Anti-static tubing

Tube I.D.: 4 mm

Tube I.D.: 5 mm

Note 1) Refer to “Cautions when using the IZN10-11 (female threads for piping)” on page 448.
Note 2) The ionizer generates a small amount of ozone. Select ozone-resistant fittings for the female threads for piping. Also, regularly check there is no deterioration due to ozone.

Note: Static neutralization features are based on the data using the charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the U.S. ANSI standards (ANSI/ESD, STM3, 1-2006). Use this as a guideline purpose only for model selection because the value varies depending on the material and/or size of a subject.

Discharge time [s] vs. Distance [mm]

Discharge time [s] vs. Tube length [mm]

Maximum operating pressure is 0.1 MPa, Note 1

Maximum operating pressure is 0.3 MPa, Note 1
Blow Velocity Distribution (Supply Pressure: 0.3 MPa)

(1) Energy saving static neutralization nozzle/IZN10-01

(2) High flow rate nozzle/IZN10-02
Flow Rate Characteristics

(1) Energy saving static neutralization nozzle/IZN10-01
(2) High flow rate nozzle/IZN10-02

(3) Female threads for piping/IZN10-11
   With Stainless steel 316 One-touch fitting
   + Anti-static tubing

Note) When a pressure above each line is used, the maintenance detector may work and turn on the LED. Refer to “Cautions when using the IZN10-11-□□-□ (female threads for piping)” on page 448.

Fig. 1: Flow rate characteristics measuring circuit
## Ozone Concentration

<table>
<thead>
<tr>
<th>Concentration [ppm]</th>
<th>Supply pressure [MPa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.03</td>
</tr>
<tr>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>0.03</td>
<td>0.01</td>
</tr>
</tbody>
</table>

**Note:** Ozone condensation can increase in an enclosed space. Check the ozone condensation of the operating environment before using.

**Fig. 2:** Ozone condensation measuring circuit
**Note** Nozzle shape: When using the female thread for the piping, connect the fitting and the tube or nozzle to the female thread.

**without maintenance detector X194**

**made to order**

**symbol**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Energy saving static neutralization nozzle</td>
</tr>
<tr>
<td>02</td>
<td>High flow rate nozzle</td>
</tr>
<tr>
<td>11</td>
<td>Female threads for piping</td>
</tr>
</tbody>
</table>

*Note: Nozzle shape: When using the female thread for the piping, connect the fitting and the tube or nozzle to the female thread.*

**output specification**

<table>
<thead>
<tr>
<th>Nil</th>
<th>NPN output</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>PNP output</td>
</tr>
</tbody>
</table>

**port size**

| 06  | ø6: Metric size |
| 07  | ø6.35 (1/4”): Inch size |
| 16  | ø6: Metric size (Elbow) |
| 17  | ø6.35 (1/4”): Inch size (Elbow) |

**without bracket**

- Without maintenance detector

**Brackets**

- Nil
- B1: With L-bracket
- B2: With pivoting bracket
- B3: With DIN rail mounting bracket

**Power supply cable**

- Nil: With power supply cable (3 m)
- Z: With power supply cable (10 m)
- N: Without power supply cable

**Cautions when using the IZN10-11 [female threads for piping]**

- Connect the various Made-to-Order nozzles or fittings & tubing to the female threads.
- When connecting, pay attention to the supply pressure and the activation of the maintenance detector.
- In the ionizer which uses the high-frequency AC voltage application method, when the pressure around the emitter (Refer to the figure.) in the ionizer which generates ions is increased during the generation of ions, the ion generation efficiency deteriorates and activates the maintenance detector (outputs signal and turns ON maintenance detection LED).
- If a nozzle with a discharge port diameter of less than 4 mm, or a tube with less than a 4 mm inner diameter is connected to the nozzle with female threads for the piping to supply pressure exceeding 0.1 MPa, the ionized air cannot be discharged efficiently, and the pressure around the emitter increases which deteriorates the efficiency of the ion generation.
- The following shows a guide of the upper limit of the supply pressure when various Made-to-Order nozzles and tubes are connected. It is recommend that the ionizer be used within the specified values.

<table>
<thead>
<tr>
<th>Made-to-Order nozzle product names/Piping examples</th>
<th>Made-to-Order nozzle part no.</th>
<th>Supply pressure specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circular diffusion nozzle</td>
<td>IZN10-G-X198</td>
<td>0.05 to 0.1 MPa</td>
</tr>
<tr>
<td>Flat diffusion nozzle</td>
<td>IZN10-G-X199</td>
<td>0.05 to 0.1 MPa</td>
</tr>
<tr>
<td>Bar nozzle (straight type)</td>
<td>IZN10-G-2X216</td>
<td>0.05 to 0.1 MPa</td>
</tr>
<tr>
<td>Circumferential jet bar nozzle (straight type)</td>
<td>IZN10-G-X278</td>
<td>0.05 to 0.15 MPa</td>
</tr>
<tr>
<td>Bender tube nozzle</td>
<td>IZN10-G-2X205</td>
<td>0.05 to 0.15 MPa</td>
</tr>
<tr>
<td>Long nozzle</td>
<td>IZN10-G-2X226</td>
<td>0.05 to 0.15 MPa</td>
</tr>
<tr>
<td>Fitting (Applicable tube O.D. 6 mm) + Tube (O.D. 6 mm, I.D. 4 mm)</td>
<td>—</td>
<td>0.05 to 0.1 MPa</td>
</tr>
<tr>
<td>Fitting (Applicable tube O.D. 8 mm) + Tube (O.D. 8 mm, I.D. 5 mm)</td>
<td>—</td>
<td>0.05 to 0.3 MPa</td>
</tr>
</tbody>
</table>

*Note 1) When connecting the tubing, use a length of tubing less than 500 mm for the connection, regardless of the inside diameter size.*

- Ion continues to generate even in the range beyond the above supply pressure specification where the maintenance detector activates, therefore the customer may be able to use the ionizer depending on the usage conditions. If the maintenance detector is not required, consider using the “Without maintenance detector”. (Refer to “Made to Order” on page 449.)
- When using piping materials prepared by the customer, secure a sectional area of at least 3 mm² or more for the air passage of the piping, and if using tubing, ensure a minimum bending radius.
- Similarly, if the maintenance alarm detection function is not required depending on the usage conditions of the customer, please consider the use of the “Without maintenance detector”.
- Also confirm the static neutralization performance, when connecting the tubing and using piping materials prepared by the customer.

**Fig. Sectional view of the nozzle**
Made to Order

- **Without maintenance detector**

<table>
<thead>
<tr>
<th>How to Order</th>
<th>Contents/Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZN10-11-□□□-X194</td>
<td>With this specification, the maintenance detector is not activated when the pressure around the emitter increases due to the connection of the tubing, etc. This specification is recommended when the tube needs to be extended.</td>
</tr>
</tbody>
</table>

  Fill in the standard model type shown above.

- **Nozzle Variations (P.459)**

  Various nozzles are available according to the installation conditions or applications.
  - Circular diffusion nozzle
  - Flat diffusion nozzle
  - Bar nozzle (straight type)
  - Bender tube nozzle
  - Circumferential jet bar nozzle (straight type)
  - Long nozzle

- **Intermittent control timer (P.460)**

  It is possible to perform the intermittent ion blow through the ON/OFF control of the valve, etc.
IZN10 Series

Accessories

Bracket
- L-bracket/IZN10-B1
- Pivoting bracket/IZN10-B2

Power supply cable
[Standard length]
- IZN10-CP (3 m)
- IZN10-CPZ (10 m)

[Non-standard length]
- IZN10-CP 01-X13

Cable length

<table>
<thead>
<tr>
<th>Length</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 m</td>
<td>01</td>
</tr>
<tr>
<td>2 m</td>
<td>02</td>
</tr>
<tr>
<td>20 m</td>
<td>20</td>
</tr>
</tbody>
</table>

• DIN rail mounting bracket/IZN10-B3

Repair Parts

Emitter assembly/IZN10-NT

Body assembly: IZN10-A002-01-06

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Type</th>
<th>Nozzle type</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Energy saving static neutralization nozzle</td>
<td>ø6: Metric size</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>High flow rate nozzle</td>
<td>ø6.35 (1/4&quot;)</td>
<td>Inch size</td>
</tr>
<tr>
<td>11</td>
<td>Female threads for piping Rc1/8</td>
<td>ø6: Metric size (Elbow)</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td></td>
<td></td>
<td>ø6.35 (1/4&quot;)</td>
</tr>
</tbody>
</table>

Cartridge assembly: IZN10-A003-
Options

Manifold mounting parts set
This set consists of a hexagon socket head cap screw, spacer, hexagon nut and shield sheet.

Note 1) The ionizer, L-bracket and DIN rail mounting bracket need to be prepared separately.

Note 2) Be sure to attach the provided shield sheet, as there is a possibility of malfunctions of the output (signal and LED) due to high-voltage generation substrate noise of adjacent ionizers.

How to Order
IZN10 – ES

Mounting pitch
Symbol Pitch
ES 17 mm

Mounting stations
Symbol Stations
2 2
3 3
4 4

Shield sheet/IZN10-A004
This is an individual shield sheet for the manifold mounting parts set/IZN10-ES.

Part no. L1 L2 Number of spacers
IZN10-ES2 37 40 4
IZN10-ES3 54 60 6
IZN10-ES4 71 75 8

AC adapter
How to Order
IZN10 – F X196

Output signal specifications
Nil For NPN output
P For PNP output

Cleaning kit/IZS30-M2

Manifold mounting parts set
This set consists of a hexagon socket head cap screw, spacer, hexagon nut and shield sheet.

Note 1) The ionizer, L-bracket and DIN rail mounting bracket need to be prepared separately.

Note 2) Be sure to attach the provided shield sheet, as there is a possibility of malfunctions of the output (signal and LED) due to high-voltage generation substrate noise of adjacent ionizers.

How to Order
IZN10 – ES

Mounting pitch
Symbol Pitch
ES 17 mm

Mounting stations
Symbol Stations
2 2
3 3
4 4

Shield sheet/IZN10-A004
This is an individual shield sheet for the manifold mounting parts set/IZN10-ES.

Part no. L1 L2 Number of spacers
IZN10-ES2 37 40 4
IZN10-ES3 54 60 6
IZN10-ES4 71 75 8

AC adapter
How to Order
IZN10 – F X196

Output signal specifications
Nil For NPN output
P For PNP output

Cleaning kit/IZS30-M2
## Specifications

<table>
<thead>
<tr>
<th>Ionizer model</th>
<th>IZN10-□□ (NPN specification)</th>
<th>IZN10-□□P (PNP specification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ion generation method</td>
<td>Corona discharge type</td>
<td>Corona discharge type</td>
</tr>
<tr>
<td>Method of applying voltage</td>
<td>High frequency AC type</td>
<td>High frequency AC type</td>
</tr>
<tr>
<td>Discharge output</td>
<td>2.5 kVAC</td>
<td>2.5 kVAC</td>
</tr>
<tr>
<td>Offset voltage</td>
<td>Within ±10 V</td>
<td>Within ±15 V</td>
</tr>
<tr>
<td>Energy saving static neutralization nozzle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High flow rate nozzle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ozone generation</td>
<td>0.03 ppm (0.05 ppm for energy saving static neutralization nozzle)</td>
<td></td>
</tr>
<tr>
<td>Air purge</td>
<td>Air (Clean dry air)</td>
<td>Air (Clean dry air)</td>
</tr>
<tr>
<td>Operating pressure</td>
<td>0.05 MPa to 0.7 MPa</td>
<td>0.05 MPa to 0.7 MPa</td>
</tr>
<tr>
<td>Connecting tube size</td>
<td>ø6, ø1/4 inch</td>
<td>ø6, ø1/4 inch</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>24 VDC ±10%</td>
<td>24 VDC ±10%</td>
</tr>
<tr>
<td>Current consumption</td>
<td>80 mA or less</td>
<td>80 mA or less</td>
</tr>
<tr>
<td>Input signal</td>
<td>Discharge stop signal (ON voltage: 0 V, OFF voltage: 19 V or more)</td>
<td>Connected to 0 V</td>
</tr>
<tr>
<td></td>
<td>Reset signal</td>
<td>Current consumption: 5 mA or less</td>
</tr>
<tr>
<td></td>
<td>External switch signal</td>
<td>Connected to +24 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ON voltage: Between +19 V and power supply voltage, OFF voltage: 0.6 V or less)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current consumption: 5 mA or less</td>
</tr>
<tr>
<td>Output signal</td>
<td>Discharge signal</td>
<td>Max. load current: 40 mA</td>
</tr>
<tr>
<td></td>
<td>Error signal</td>
<td>Residual voltage: 1 V or less</td>
</tr>
<tr>
<td></td>
<td>Maintenance detection signal</td>
<td>(load current at 40 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. applied voltage: 28 VDC</td>
</tr>
<tr>
<td>Effective static neutralization distance</td>
<td>20 mm to 500 mm</td>
<td>20 mm to 500 mm</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>0 to 55°C</td>
<td>0 to 55°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 65%Rh</td>
<td>35 to 65%Rh</td>
</tr>
<tr>
<td>Material</td>
<td>Housing: ABS, Stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nozzle: Stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emitter: Tungsten</td>
<td></td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>Durability: 50 Hz, Amplitude: 1 mm, XYZ each 2 hours</td>
<td>Durability: 50 Hz, Amplitude: 1 mm, XYZ each 2 hours</td>
</tr>
<tr>
<td>Impact resistance</td>
<td>10 G</td>
<td>10 G</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
<td>120 g</td>
</tr>
</tbody>
</table>

Note 1) Measured with a probe of 1000 MΩ and 5 pF.
Note 2) Measured with a distance of 100 mm between the charged object and ionizer at an air purge pressure of 0.3 MPa.
Note 4) Static electricity cannot be neutralized without air purge.
Also, failure of air purge can increase internal ozone condensation, adversely affecting the ionizer and peripheral equipment. Be sure to perform air purge while energizing the ionizer.
When the air purge is stopped temporarily during operation of the ionizer, the discharge is stopped with the discharge stop signal input turned OFF to avoid increase in internal ion concentration.

Note 5) Refer to the cautions on page 448 when using the IZN10-11 (female threads for piping).
Functions

1. Maintenance detection output
   Detects lowered static neutralization performance due to contamination or wear of the emitter. The maintenance detection LED lights up and maintenance signal is generated.

2. Signal inputs by external switch
   There are 2 ports for external switch signal inputs.

   **Example**
   Emission of static electricity is suspended when abnormal purge air pressure is detected by pressure switch.
   - Prevents static neutralization trouble due to pressure drop of compressed air.

   **Example**
   An electrostatic meter is connected to stop discharge when static neutralization is completed.
   - Energy can be saved by stopping discharge when static neutralization is completed.

3. Description of LEDs

<table>
<thead>
<tr>
<th>Description</th>
<th>Symbol</th>
<th>Color</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply display</td>
<td>PWR</td>
<td>Green</td>
<td>Lights up when the power supply is turned on.</td>
</tr>
<tr>
<td>Discharge</td>
<td>ION</td>
<td>Green</td>
<td>Lights up when static electricity is discharged.</td>
</tr>
<tr>
<td>Irregular high voltage display</td>
<td>HV</td>
<td>Red</td>
<td>Lights up when an irregular current flows on an emitter.</td>
</tr>
<tr>
<td>Maintenance detection display</td>
<td>NDL</td>
<td>Orange</td>
<td>Lights up when emitter contamination is detected.</td>
</tr>
</tbody>
</table>

   **Behavior of LEDs**

<table>
<thead>
<tr>
<th>Items</th>
<th>PWR</th>
<th>ION</th>
<th>HV</th>
<th>NDL</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal operation (with discharge stop signal on)</td>
<td>○</td>
<td>○</td>
<td></td>
<td></td>
<td>Ions are being generated.</td>
</tr>
<tr>
<td>Normal operation (with discharge stop signal off)</td>
<td>○</td>
<td></td>
<td></td>
<td></td>
<td>Discharge stops.</td>
</tr>
<tr>
<td>Abnormal high voltage detected</td>
<td>○</td>
<td></td>
<td>○</td>
<td></td>
<td>Discharge stops when error is detected.</td>
</tr>
<tr>
<td>External switch signal 1</td>
<td></td>
<td>○</td>
<td>○</td>
<td></td>
<td>Discharge stops when the signal is turned on.</td>
</tr>
<tr>
<td>External switch signal 2</td>
<td>○</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance detection activated</td>
<td></td>
<td></td>
<td>○</td>
<td>○</td>
<td>Ions keep being generated even after the contamination is detected.</td>
</tr>
</tbody>
</table>

4. Alarm

<table>
<thead>
<tr>
<th>Alarm item</th>
<th>Description</th>
<th>Corrective actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High voltage error</td>
<td>Gives notification of the occurrence of an irregular current, such as high-voltage leakage. The ionizer stops discharging, turns on the HV LED. When error occurred, the signal output is turned off.</td>
<td>Turn off the power, solve the problem, then turn the power on again. If the error is solved during operation, turn the reset signal off and then on.</td>
</tr>
<tr>
<td>Maintenance detection</td>
<td>Gives notification that emitter maintenance is necessary. The NDL LED turns on and a maintenance output signal is turned on.</td>
<td>Turn off the power, clean the emitters, and turn the power on again.</td>
</tr>
</tbody>
</table>
IZN10 Series

Wiring

<table>
<thead>
<tr>
<th>No.</th>
<th>Cable color</th>
<th>Description</th>
<th>I/O</th>
<th>Wiring requirement</th>
<th>I/O</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brown</td>
<td>+24 VDC</td>
<td>–</td>
<td>○</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Blue</td>
<td>0 V</td>
<td>–</td>
<td>○</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>Orange</td>
<td>Discharge stop signal</td>
<td>Input</td>
<td>○</td>
<td>Input</td>
<td>When the signal is turned off, discharge stops.</td>
</tr>
<tr>
<td>4</td>
<td>Pink</td>
<td>Reset signal</td>
<td>Input</td>
<td>○</td>
<td>Input</td>
<td>When the signal is turned on and then off, the error signal is reset.</td>
</tr>
<tr>
<td>5</td>
<td>White</td>
<td>Discharge signal</td>
<td>Output</td>
<td></td>
<td>Output</td>
<td>The signal stays on during discharge</td>
</tr>
<tr>
<td>6</td>
<td>Purple</td>
<td>Error signal</td>
<td>Output</td>
<td></td>
<td>Output</td>
<td>The signal is turned off when an error occurs</td>
</tr>
<tr>
<td>7</td>
<td>Yellow</td>
<td>Maintenance detection signal</td>
<td>Output</td>
<td></td>
<td>Output</td>
<td>The signal is turned on when maintenance is due.</td>
</tr>
<tr>
<td>8</td>
<td>Gray</td>
<td>External switch signal 1</td>
<td>Input</td>
<td></td>
<td>Input</td>
<td>When the signal is turned on, discharge stops.</td>
</tr>
<tr>
<td>9</td>
<td>Light blue</td>
<td>External switch signal 2</td>
<td>Input</td>
<td></td>
<td>Input</td>
<td>When the signal is turned on, discharge stops.</td>
</tr>
</tbody>
</table>

Note: Wiring requirement
○: Minimum wiring requirement for ionizer operation.

- **Input signal**
  
  NPN: The signal is turned on when the power supply 0 V is connected, and turned off when disconnected.
  
  PNP: The signal is turned on when the power supply +24 VDC is connected, and turned off when disconnected.

- **Output signal**
  
  NPN: The signal is turned on when the output transistor is energized (by the power supply GND inside the ionizer), and turned off when de-energized.
  
  PNP: The signal is turned on when the output transistor is energized (by the 24 V power supply inside the ionizer), and turned off when de-energized.

**Provide Grounding.**

1. Ground the tap for ground wiring or metal (shaded) parts around the external face of the ionizer with a ground resistance of 100 Ω or less.
   
   If grounding is not provided or is incomplete, the ionizer will not be able to achieve its specified static neutralization performance. Also, as the generated amount of ions decreases, the maintenance detector may be activated.

2. If the product is used under the conditions that the pressure around the emitter becomes 0.1 MPa or more depending on the piping conditions as stated on page 448, avoid to mount the grounded base or workpiece on the resin part (shaded) at locations marked with an asterisk shown in the Fig. below. If the grounded base or workpiece is mounted on the resin part (shaded) under these operating conditions, the ozone concentration around the high-voltage generation substrate inside the ionizer chassis increases, causing the substrate to break. For details about the dimensions of the resin part (shaded), refer to the dimensions on page 456.
Ground the external metal parts with a ground resistance of 100 Ω or less. (no electrical connection to internal circuit)

Timing Chart

<table>
<thead>
<tr>
<th><strong>Power supply</strong></th>
<th><strong>Input</strong></th>
<th><strong>ON</strong></th>
<th><strong>OFF</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discharge stop signal</strong></td>
<td><strong>Input</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Reset signal</strong></td>
<td><strong>Input</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Discharge signal</strong> (on when ions are being generated)</td>
<td><strong>Output</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Error signal</strong></td>
<td><strong>Output</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>Maintenance detection signal</strong></td>
<td><strong>Output</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
<tr>
<td><strong>External switch signal 1, 2</strong></td>
<td><strong>Input</strong></td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
</tr>
</tbody>
</table>

**Power supply on** | **High voltage error** | **Maintenance required** | **External switch on** | **Note**

Discharge starts when the signal is turned on.

The error signal can be reset by turning the reset signal on and then off.

When an error occurs, the signal is turned off.

Ions are still generated even when the maintenance detection signal is turned on.

Requirement for maintenance detected.
IZN10 Series

Dimensions

Energy saving static neutralization nozzle/IZN10-01 06
High flow rate nozzle/IZN10-02 06

Elbow for piping port/IZN10-16

Female threads for piping (Rc1/8)/IZN10-11

Note 1) Dimensions of the resin part stated in “Provide Grounding” on page 454.
IZN10 Series

Dimensions

DIN rail mounting bracket/IZN10-B3

Power supply cable/IZN10-CP

Cable Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>L [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZN10-CP</td>
<td>3000</td>
</tr>
<tr>
<td>IZN10-CPZ</td>
<td>9800</td>
</tr>
</tbody>
</table>

No. of cable wire/Size: 9 cores/AWG26

Conductor: Material cross section: 0.15 mm²
Outside diameter: 0.5 mm

Insulator: Outside diameter: 0.95 mm Brown, Blue, Orange, Pink, White, Purple, Yellow, Gray, Light blue

Sheath: Material: Lead-free PVC
Outside diameter: 5 mm
IZN10 Series
Made to Order 1
This product is an individually applicable product. For details about the delivery time and price, please consult with SMC representative.

Nozzle Variations

**Circular diffusion nozzle**
- Electricity removal range
- Ionized air

**Flat diffusion nozzle**
- Electricity removal range
- Ionized air

**Bar nozzle (straight type)**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Bar length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZN10-G-100-X216</td>
<td>100</td>
</tr>
<tr>
<td>IZN10-G-200-X216</td>
<td>200</td>
</tr>
<tr>
<td>IZN10-G-300-X216</td>
<td>300</td>
</tr>
<tr>
<td>IZN10-G-400-X216</td>
<td>400</td>
</tr>
<tr>
<td>IZN10-G-500-X216</td>
<td>500</td>
</tr>
<tr>
<td>IZN10-G-600-X216</td>
<td>600</td>
</tr>
</tbody>
</table>

Recommended supply pressure: 0.05 to 0.1 MPa

**Circumferential jet bar nozzle (straight type)**

**Bender tube nozzle**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Bar length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZN10-G-100-X205</td>
<td>100</td>
</tr>
<tr>
<td>IZN10-G-200-X205</td>
<td>200</td>
</tr>
<tr>
<td>IZN10-G-300-X205</td>
<td>300</td>
</tr>
<tr>
<td>IZN10-G-400-X205</td>
<td>400</td>
</tr>
<tr>
<td>IZN10-G-500-X205</td>
<td>500</td>
</tr>
<tr>
<td>IZN10-G-600-X205</td>
<td>600</td>
</tr>
</tbody>
</table>

Recommended supply pressure: 0.05 to 0.1 MPa

**Long nozzle**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Bar length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZN10-G-100-X226</td>
<td>100</td>
</tr>
<tr>
<td>IZN10-G-200-X226</td>
<td>200</td>
</tr>
<tr>
<td>IZN10-G-300-X226</td>
<td>300</td>
</tr>
<tr>
<td>IZN10-G-400-X226</td>
<td>400</td>
</tr>
<tr>
<td>IZN10-G-500-X226</td>
<td>500</td>
</tr>
<tr>
<td>IZN10-G-600-X226</td>
<td>600</td>
</tr>
</tbody>
</table>

Recommended supply pressure: 0.05 to 0.15 MPa

For the ionizer, please select a female thread type (Rc1/8) for the piping. (Refer to “How to Order” on page 448.)
IZN10 Series
Made to Order 2
This product is an individually applicable product. For details about the delivery time and price, please consult with SMC representative.

Intermittent control timer
A digital timer that can control ON/OFF switches of valves etc. Application: Improved dust removal effect under low air consumption by intermittent ion blowing

- Changeable frequency  0.1 to 50.0 Hz
- Set individual ON and OFF times  0.1 to 99.9 seconds
- Display of accumulated number of changes
  It can be used for maintaining valve or cylinder operation.
- Switch output (Output under timer control)
  - 2 types of trigger input
    - Repeat input (ON/OFF operation during trigger input)
      - [Trigger] on
      - [Valve operation] off
    - One-shot input (ON/OFF operation for a time set from trigger input)
      - [Trigger] on
      - [Valve operation] off

- Solenoid valves up to 24 VDC (4W) etc. are controllable.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>IZE110-X238</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>24 VDC±10% (with power supply polarity protection)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>50 mA or less (Single unit only)</td>
</tr>
<tr>
<td>Connection valve</td>
<td>24 VDC 4 W or less</td>
</tr>
<tr>
<td>OUT max</td>
<td>80 mA</td>
</tr>
<tr>
<td>Max. applied voltage</td>
<td>30 VDC</td>
</tr>
<tr>
<td>Residual voltage</td>
<td>1 V or less (At load current 80 mA)</td>
</tr>
<tr>
<td>Short circuit protection</td>
<td>With short circuit protection</td>
</tr>
<tr>
<td>Trigger input</td>
<td>No-voltage input, Low level input 10 ms or more, Low level 0.4 V or less</td>
</tr>
<tr>
<td>Indicator light</td>
<td>(Green/Red)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP40</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>Operating: 0 to 50°C, Stored: –10 to 60°C (with no freezing or condensation)</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>Operating/Store: 35 to 85% RH (with no condensation)</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>1000 VAC for 1 minute between terminals and housing</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>50 MΩ or more (500 VDC measured via megohmmeter), between terminals and housing</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>10 to 150 Hz at whichever is smaller of 1.5 mm amplitude or 20 m/s² acceleration, in X, Y, Z direction for 2 hrs. each (De-energized)</td>
</tr>
<tr>
<td>Impact resistance</td>
<td>100 m/s² in X, Y, Z directions 3 times each (De-energized)</td>
</tr>
</tbody>
</table>

Material: Front case: PBT, Rear case: Denaturated PPE
Weight: 50 g

Note) Do not use a load that generates surge voltage.

Dimensions/Input/Output circuit

- Changeable frequency  0.1 to 50.0 Hz
- Set individual ON and OFF times  0.1 to 99.9 seconds
- Display of accumulated number of changes
  It can be used for maintaining valve or cylinder operation.
- Switch output (Output under timer control)
  - 2 types of trigger input
    - Repeat input (ON/OFF operation during trigger input)
      - [Trigger] on
      - [Valve operation] off
    - One-shot input (ON/OFF operation for a time set from trigger input)
      - [Trigger] on
      - [Valve operation] off

- Solenoid valves up to 24 VDC (4W) etc. are controllable.
IZN10 Series
Made to Order 3
This product is an individually applicable product. For details about the delivery time and price, please consult with SMC representative.

How to Order

IZN10-□□□□□□-□-X367

Nozzle type
- 01: Energy saving static neutralization nozzle
- 02: High flow rate nozzle

Output specification
- N: NPN output
- P: PNP output

Port size
- 06: ø6: Metric size
- 07: ø6.35 (1/4”): Inch size
- 16: ø6: Metric size (Elbow)
- 17: ø6.35 (1/4”): Inch size (Elbow)

- With right angles
  - B1: With L-bracket
  - B2: With pivoting bracket
  - B3: With DIN rail mounting bracket

- With power supply cable
  - Z: With power supply cable (3 m)
  - N: Without power supply cable

Specifications

<table>
<thead>
<tr>
<th>Ionizer model</th>
<th>IZN10-□□□□□□-□-X367 (NPN specification)</th>
<th>IZN10-□□□□□□-□-X367 (PNP specification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ion generation method</td>
<td>Corona discharge type</td>
<td>Corona discharge type</td>
</tr>
<tr>
<td>Method of applying voltage</td>
<td>High frequency AC type</td>
<td>High frequency AC type</td>
</tr>
<tr>
<td>Applied voltage (Note 1)</td>
<td>2.5 kVAC</td>
<td>2.5 kVAC</td>
</tr>
<tr>
<td>Offset voltage (Note 2)</td>
<td>Energy saving static neutralization nozzle</td>
<td>Within ±10 V</td>
</tr>
<tr>
<td></td>
<td>High flow rate nozzle</td>
<td>Within ±30 V</td>
</tr>
<tr>
<td>Ozone generation (Note 3)</td>
<td>Energy saving static neutralization nozzle</td>
<td>0.03 ppm (0.05 ppm for energy saving static neutralization nozzle)</td>
</tr>
<tr>
<td>Air purge</td>
<td>Fluid</td>
<td>Air (Clean dry air)</td>
</tr>
<tr>
<td></td>
<td>Operating pressure range (Note 4)</td>
<td>0.05 MPa to 0.7 MPa</td>
</tr>
<tr>
<td></td>
<td>Connecting tube size</td>
<td>ø6, ø1/4 inch</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>24 VDC ±10%</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>80 mA or less</td>
<td></td>
</tr>
<tr>
<td>Input signal</td>
<td>Discharge stop signal</td>
<td>Connected to GND (ON voltage: 0.6 V or less)</td>
</tr>
<tr>
<td></td>
<td>Reset signal</td>
<td>Connected to +24 V (ON voltage: Between +19 V and power supply voltage)</td>
</tr>
<tr>
<td></td>
<td>External switch signal</td>
<td>Current consumption: 5 mA or less (OFF voltage: 0.6 V or less)</td>
</tr>
<tr>
<td>Output signal</td>
<td>Discharge signal</td>
<td>Max. load current: 40 mA</td>
</tr>
<tr>
<td></td>
<td>Error signal</td>
<td>Residual voltage: 1 V or less (load current at 40 mA)</td>
</tr>
<tr>
<td></td>
<td>Maintenance signal</td>
<td>Max. applied voltage: 28 VDC</td>
</tr>
<tr>
<td>Effective static neutralization distance</td>
<td>20 mm to 500 mm</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>0 to 55°C</td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 85% Rh</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Housing: ABS, Stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nozzle: Stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrode needle: Tungsten</td>
<td></td>
</tr>
<tr>
<td>Impact resistance</td>
<td>10 G</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Measured with a probe of 1000 MΩ and 5 pF.
Note 2) Measured with a distance of 100 mm between the charged object and an ionizer at an air purge pressure of 0.3 MPa.
Note 3) Value above background level, measured with a distance of 300 mm from the air blow port at an air purge pressure of 0.3 MPa.
Note 4) Static electricity cannot be neutralized without air purge.

Also, failure of air purge can increase internal ozone condensation, adversely affecting the ionizer and peripheral equipment. Be sure to perform air purge while energizing the ionizer.

When the air purge is stopped temporarily during operation of the ionizer, the discharge is stopped with the discharge stop signal input turned OFF to avoid increase in internal ion concentration.
IZN10-X367

Static Neutralization Characteristics
(Discharge Time from 1000 V to 100 V)

Flow Rate Characteristics

Fig. 1: Flow rate characteristics measuring circuit

Other specifications are the same as the standard type.
Dimensions

High flow rate nozzle with right angles
IZN10-02□□□□-□-X367

Energy saving static neutralization nozzle
with right angles
IZN10-01□□□□-□-X367

Made to Order
IZN10-X367

Refer to page 457 for dimensions of the model with bracket.
IZN10 Series
Specific Product Precautions 1
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions.

⚠️ Warning

1. This product is intended to be used with general factory automation (FA) equipment.
   If considering using the product for other applications (especially those stipulated in 4 on back page 50), please consult with SMC beforehand.

2. Use this product within the specified voltage and temperature range.
   Using outside of the specified voltage can cause a malfunction, damage, electrical shock, or fire.

3. Use clean compressed air for fluid.
   This product is not explosion proof. Never use a flammable gas or an explosive gas as a fluid and never use this product in the presence of such gases.
   Please contact us when fluids other than compressed air are used.

4. This product is not explosion-protected.
   Never use this product in locations where the explosion of dust is likely to occur or flammable or explosive gases are used. This can cause fire.

⚠️ Caution

1. This product is not washed. When bringing into a clean room, flush for several minutes and confirm the required cleanliness before using.

Mounting

⚠️ Warning

3. Do not use this product in an area where noise (electric magnetic field or surge voltage, etc.) are generated.
   Using the ionizer under such conditions may cause it to malfunction or internal devices to deteriorate or break down. Take noise countermeasures and prevent the lines from mixing or coming into contact with each other.

4. Observe the tightening torque requirements when installing the ionizer. Refer to the following table for tightening torques for screws, etc.
   If overtightened with a high torque, the mounting screws or mounting brackets may break. Also, if under tightened with a low torque, the connection may loosen.

<table>
<thead>
<tr>
<th>Thread size</th>
<th>Recommended tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3</td>
<td>0.61 to 0.63 N·m</td>
</tr>
</tbody>
</table>

5. Do not allow foreign matter or tools to enter the nozzle.
   The inside of the nozzle contains emitters. If a metal tool makes contact with the emitters, it can cause electric shock, resulting in a sudden movement by the operator that can cause further injuries such as hitting the body on peripheral equipment. Also, if the tool damages the emitter, the ionizer may fail or cause an accident.

⚠️ Danger High Voltage!

Emitters are under high voltage. Never touch them as there is a danger of electric shock or injury due to an evasive action against a momentary electrical shock caused by inserting foreign matter in the electrode cartridge or touching the emitter.

6. Do not apply moment to the nozzle.
   If a long nozzle is mounted horizontally, moment will be applied to the nozzle. Then if vibration occurs, the nozzle can be damaged. If a moment of 0.05 N·m or more will be applied, mount a support to the middle part of the nozzle so that the moment is not applied to the nozzle.

7. Do not affix any tape or seals to the main unit.
   If the tape or seal contains any conductive adhesive or reflective paint, a dielectric phenomenon may occur due to ions arising from such substances, resulting in electrostatic charging or electric leakage.

8. Installation and adjustment should be conducted after turning off the power supply.
IZN10 Series
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions.

⚠️ Warning

Wiring/Piping

1. Before wiring confirm if the power supply voltage is enough and that it is within the specifications before wiring.
2. To maintain product performance, a DC power supply shall be connected per UL listed Class 2 certified by National Electric Code (NEC) or evaluated as a limited power source provided by UL60950.
3. Be sure to ground with a ground resistance of 100 Ω or less to maintain the product performance.
   If such grounding is not provided, not only may static electricity removal capability be disrupted but electric shocks may also result and the ionizer or power supply may break down.
4. Be sure to turn off the power supply before wiring (including attachment/detachment of the connector).
5. When applying the power supply, pay special attention to the wiring and/or surrounding environment until the safety is confirmed.
6. Do not connect or remove any connectors including the power supply, while power is being supplied. Otherwise, the ionizer may malfunction.
7. If the power line and high pressure line are routed together, this product may malfunction due to noise. Therefore, use a separate wiring route for this product.
8. Be sure to confirm there are no wiring errors before starting this product.
   Incorrect wiring will lead to damage or malfunction to the product.
9. Flush the piping before using.
   Before using this product, exercise caution to prevent particles, water drop, or oil from entering the piping.

Operating Environment/Storage Environment

⚠️ Warning

1. Do not use this product in an enclosed space.
   This product utilizes a corona discharge phenomenon. Do not use the product in an enclosed space as ozone and nitrogen oxides exist in such places, even though in marginal quantities.
   Also, ozone condensation can increase if used in an enclosed space, which can affect the human body, so ventilation is necessary. Even if ventilation is secured, the use of two more ionizers in a narrow space can increase ozone condensation. Therefore, check that ozone condensation is not more than a standard value of 0.1 ppm in the operating environment while the ionizer is in operation.

2. Take preventative measures against ozone.
   Equipment used around the ionizer should have ozone-prevention measures.
   Also, regularly check that there is no deterioration due to ozone.
3. Be sure to supply air.
   If air is not supplied, not only is the static neutralization effected, but also the ozone and NOx generated in the ion generator accumulates, which causes an adverse effect on the inside of the product, or peripheral equipment. Be sure to supply air during a discharge.
   When an intermittent ion blow is used, a stable corona discharge cannot be acquired easily in the ion generating portion due to the fluctuation of the supply fluid pressure, which will not only cause difficulty in maintaining the offset voltage specification, but also cause damage to the insulating material which controls the discharge. Please consult with SMC when using an intermittent ion blow with an intermittent control timer (IZE110-X238), or frequently turning ON/OFF the supply fluid.
4. Observe the fluid and ambient temperature range.
   Fluid and ambient temperature ranges are 0 to 55°C for the ionizer. Do not use the ionizer in locations subject to sudden temperature changes even if the ambient temperature range is within the specified limits, as condensation may result.
5. Environments to avoid
   Avoid using and storing this product in the following environments since they may cause damage to this product.
   a) Avoid using in a place that exceeds an ambient temperature range of 0 to 55°C.
   b) Avoid using in a place that exceeds an ambient humidity range of 35 to 65% RH.
   c) Avoid using in a place where condensation occurs due to a drastic temperature change.
   d) Avoid using in a place in the presence of corrosive or explosive gas or where there is a volatile combustible.
   e) Avoid using in an atmosphere where there are particles, conductive iron powders, oil mist, salt, solvent, blown dust, cutting oil (water, liquid), etc.
   f) Avoid using in a place where ventilated air from an air conditioner is directly applied to the product.
   g) Avoid using in a closed place without ventilation.
   h) Avoid using in direct sunlight or radiated heat.
   i) Avoid using in a place where there is a strong magnetic noise (strong electric field, strong magnetic field, or surge).
   j) Avoid using in a place where the main body is electro-statically discharged.
   k) Avoid using in a place where a strong high frequency occurs.
   l) Avoid using in a place where this product is likely to be damaged by lightning.
   m) Avoid using in a place where direct vibration or shock is applied to the main body.
   n) Avoid using in a place where there is a force large enough to deform this product or weight is applied to the product.
6. Do not use an air containing mist or dust.
   The air containing mist or dust will cause the performance to decrease and shorten the maintenance cycle.
   Supply clean compressed air by using an air dryer (IDF series), air filter (AF/AFF series), and mist separator (AFM/AM series)
7. This product is not designed to withstand lightning.
IZN10 Series
Specific Product Precautions 3
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions.

Maintenance

⚠️ Warning
1. Periodically (for example, every two weeks) inspect the ionizer and clean the emitters.
   Conduct a regular maintenance to see if the product is run having a disorder. Maintenance should be conducted by a fully knowledgeable and experienced person about the equipment. Using for long periods of time will lower the static neutralization performance, if particles attach to the emitter. Since the energy saving nozzle type is equipped with an ambient air introduction mechanism, it is easier to be affected by the ambient air compared with the high flow type or the female thread type for piping, and dust tends to adhere to the emitter more quickly. Clean the emitter when the maintenance detection LED turns ON. Replace the emitter, if it is worn and the static neutralization performance does not return even after being cleaned.

⚠️ Danger High Voltage!
This product contains a high voltage generation circuit. When performing maintenance inspection, be sure to confirm that the power supply to the ionizer is turned off. Never disassemble or modify the ionizer, as this may not only impair the product’s functionality but could cause an electric shock or electric leakage.

2. The tube and fitting must be treated as consumable parts.
   The tube and fitting that are connected to the female piping ports of the ionizer can deteriorate due to ozone and need to be replaced regularly or use an ozone-resistant type.

3. When cleaning the emitter or replacing the cartridge assembly, be sure to turn off the power supply to the main body.
   Touching an emitter when it is electrified may result in electric shock or other accidents.

4. Do not disassemble or modify this product.
   Otherwise, an electrical shock, damage and/or a fire may occur. Also, the disassembled or modified products may not achieve the performances guaranteed in the specifications, and exercise caution because the product will not be warranted.

5. Do not operate this product with wet hands.
   Otherwise, an electrical shock or accident may occur.

Handling

⚠️ Warning
1. Do not drop, bump or apply excessive impact (10 G or more) while handling.
   Even though it does not appear to be damaged, the internal parts may be damaged and cause a malfunction.

2. When mounting/dismounting the cable, use your finger to pinch the claw of the connector, then attach/detach it correctly. Otherwise, connector mounting section may be damaged and cause a disorder.