Potential amplitude: 25 V or less
Rapid neutralization of static electricity: Fastest time: 0.1 seconds

Note 1) IZS42, Installation height: 300 mm
Note 2) Conditions/With feedback sensor, Discharge time from 1000 V to 100 V
Discharged object: Charged plate (150 mm x 150 mm, capacitance 20 pF)
Installation distance: 200 mm (Tungsten emitter with air purge)
Potential amplitude is reduced with SMC independent Dual AC type sensor. Static neutralization in consideration of damage to a device which is sensitive to electrostatic discharge (ESD) can be achieved. Potential amplitude generated in the applicable workpiece is reduced even if it the workpiece is mounted within close proximity of the ionizer.

Potential amplitude: 25 V or less 80% reduction compared to the current model
(Compared to the IZS31 series at the installation height of 300 mm)

Independent Dual AC type is implemented.

Discharges + ions and − ions at the same time to allow the + and − ions to reach the workpiece evenly, thereby reducing the potential amplitude.

+ ion and − ion layers reach the workpiece alternately, which increases the potential amplitude.

Neutralizing static electricity on a glass substrate
Prevents the breakage of glass substrates due to the static electricity which is generated when the substrate is lifted from the surface plate.

Neutralizing static electricity on an electric substrate
Prevents the breakage of electric substrates due to the static electricity which is generated when the substrates are picked up after dicing.

Standard type IZS40 Series

Simple operation: Can be controlled by powering the ionizer ON.

Discharge time = 3.2 seconds (41% shortened) when installed at long distance (1000 mm)
Feedback sensor type IZS41 Series

Rapid neutralization of static electricity by a feedback sensor
The discharge speed has been increased by detecting the workpiece’s electrostatic potential by the feedback sensor (option) and continuously emitting ions with a reverse polarity.

Run mode after static neutralization (when electrostatic potential: within ±30 V) can be selected.
- **Energy saving run mode** Stops generating ions after static neutralization to reduce power consumption.
- **Continuous static neutralization run mode** After static neutralization, the ionizer continues to neutralize static electricity in AC mode while maintaining the electrostatic potential within ±30 V.

Continuous static neutralization run mode

<table>
<thead>
<tr>
<th>Mode</th>
<th>Ion emission waveform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing AC</td>
<td></td>
</tr>
<tr>
<td>Energy saving run</td>
<td>-</td>
</tr>
<tr>
<td>Continuous static neutralization run</td>
<td>-</td>
</tr>
<tr>
<td>AC (Without sensor)</td>
<td>-</td>
</tr>
<tr>
<td>Workpiece electrification</td>
<td>-</td>
</tr>
<tr>
<td>Static neutralization completion</td>
<td>-</td>
</tr>
</tbody>
</table>

Suitable for static neutralization of resin and rubber pieces (small parts).

- Prevents adhesion of dust.
- Prevents element disruption due to discharge.
- Prevents breakage due to adhesion and discharge.

· AC adapter power supply is available.

E-con connector is used.

Neutralizing static electricity on molded goods
- Improves detachability of molded goods from a die.
IZS40/41/42 Series

Reduction of adjustment and maintenance labor by auto balance sensor

**Built-in type (Standard)**

The sensor is installed within the ionizer body and may be mounted anywhere. The offset voltage (ion balance) in the static neutralization area is controlled so that the voltage is maintained at a constant value by monitoring the ions emitted from the ionizer using the ground line, and adjusting the + and - ion supply rate.

**High accuracy type (Option)**

- The ion balance near the workpiece is accurately adjusted.
- Reduces the variation in the offset voltage of the static neutralization area due to the effect from the installation height and disturbance.

**Effect of autobalance sensor (Image)**

<table>
<thead>
<tr>
<th>Offset voltage (V)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>-30</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

*Built-in sensor OFF*

*Built-in sensor ON*

Always controls offset voltage

**Low maintenance emitter cartridges are used.**

- Minimizes contamination of emitters by discharging compressed air at the surface of the emitters.
- 2 types of emitter materials
  - General-purpose emitter
  - Emitter specialized in static neutralization of silicon wafers

**Emitter materials**

- Tungsten
  - (Emitter cartridge color: White)
- Silicon
  - (Emitter cartridge color: Gray)

**IZS40/41/42 Series**
The mode can be selected from “Manual Run” mode which performs adjustment only when connected, and “Automatic Run” mode which always performs adjustment while connected.

Effect of autobalance sensor (Image)

- The sensor is installed within the ionizer body and may be mounted anywhere.
- Built-in type (Standard)
- The ion balance near the workpiece is accurately adjusted.
- High accuracy type (Option)
- Ions are transferred to the workpieces efficiently by using two pneumatic nozzles to improve the static neutralization performance.

Transition wiring may be used.
- Total number of ionizers that may be connected IZS41: Max. 8 units. IZS42: Max. 5 units.
- <Conditions> Bar length 340 to 2500 mm, Power supply cable 3 m, Transition wiring cable 2 m
- Reduces man hours required for connecting wires to the power supply.

Safety functions
- Emitter cartridge drop prevention function
- Locking by double-action
- Drop prevention cover
- Can even more reliably prevent emitter cartridges from dropping off.

High speed static neutralization cartridges and energy saving static neutralization cartridges are available.

- High speed de-ionizing cartridge
- Energy saving type de-ionizing cartridge
- The flow rate consumption of the energy-saving static neutralization cartridge is approximately 50% less than that of the high speed static neutralization cartridge.
- The discharge speed is reduced by approximately 20 to 30%.
### Ionizer IZS40/41/42 Series

#### Models and Functions

<table>
<thead>
<tr>
<th>Method of applying voltage</th>
<th>IZS42</th>
<th>IZS41</th>
<th>IZS40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual AC</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC, Sensing AC, DC</td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>AC, DC</td>
<td></td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>

| Auto balance sensor       |       |       |       |
| Built-in type (Standard)  | ●     |       |       |
| High accuracy type (Option)|      | ●     |       |

| Feedback sensor (Option)  |       | ●     |       |

| I/O                        |       | ●     |       |

| Transition wiring may be used, Note 1) |       | ●     |       |

| Maintenance detector       |       | ●     |       |

| Incorrect high voltage warning |       | ●     |       |

| Low maintenance emitter    |       | ●     |       |

| Emitter cartridge          |       | ●     |       |
| Energy saving type de-ionizing |       | ●     |       |
| High speed de-ionizing     |       | ●     |       |

| With One-touch fitting (ø6, ø8, ø10) |       | ●     |       |

| Bracket mount              |       | ●     |       |

| Non-standard bar length (Made to Order) |       | ●     |       |

#### Accessories sold separately (per series)

<table>
<thead>
<tr>
<th>Series</th>
<th>IZS42</th>
<th>IZS41</th>
<th>IZS40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote controller</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC adapter</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drop prevention cover</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning kit</td>
<td>●</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Order transition wiring separately.
Application Examples

Neutralizing static electricity from films
· Prevents adhesion of dust. · Prevents winding failure due to wrinkles etc.

Neutralizing static electricity on film molded goods
· Prevents attaching to conveyer. · Prevents dispersion of finished goods.

Neutralizing static electricity during wafer transfer
· Prevents breakage due to discharge between wafers and hands.

Neutralizing static electricity from packing films
· Prevents the filled substance from adhering to the packing film. · Reduces packing mistakes.

Neutralizing static electricity from lens
· Removes dust from lens. · Prevents adhesion of dust.

Neutralizing static electricity from parts feeder
· Prevents clogging of parts feeder.
IZS40/41/42 Series
Technical Data

Static Neutralization Characteristics

1) Installation Distance and Discharge Time (Discharge Time from 1000 V to 100 V)

IZS40, 41

1) Without air purge

2) With high speed de-ionizing cartridge, With air purge

3) With energy saving type de-ionizing cartridge, With air purge

Supply pressure: 0.1 MPa (8.6 L/min [ANR] per cartridge)

Supply pressure: 0.3 MPa (17.6 L/min [ANR] per cartridge)

Supply pressure: 0.5 MPa (26.4 L/min [ANR] per cartridge)

Supply pressure: 0.1 MPa (4.3 L/min [ANR] per cartridge)

Supply pressure: 0.3 MPa (8.6 L/min [ANR] per cartridge)

Supply pressure: 0.5 MPa (13.3 L/min [ANR] per cartridge)

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). For “Sensing AC” mode, the installation height of the sensor is 25 mm. Use this as a guideline purpose only for model selection because the value varies depending on the material and/or size of a subject.
IZS42

1) Without air purge

2) With high speed de-ionizing cartridge, With air purge

Supply pressure: 0.1 MPa (8.6 L/min [ANR] per cartridge)

3) With energy saving type de-ionizing cartridge, With air purge

Supply pressure: 0.1 MPa (4.3 L/min [ANR] per cartridge)

Supply pressure: 0.3 MPa (17.6 L/min [ANR] per cartridge)

Supply pressure: 0.3 MPa (8.6 L/min [ANR] per cartridge)

Supply pressure: 0.5 MPa (26.4 L/min [ANR] per cartridge)

Supply pressure: 0.5 MPa (13.3 L/min [ANR] per cartridge)
IZS40/41/42 Series

Static Neutralization Characteristics

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.

2) Static Neutralization Range

IZS40, 41
Frequency: 30 Hz

1) Supply pressure: 0 MPa

2) With high speed de-ionizing cartridge, Supply pressure: 0.3 MPa

3) With energy saving type de-ionizing cartridge, Supply pressure: 0.3 MPa
IZS42

Frequency: 30 Hz

1) Supply pressure: 0 MPa

2) With high speed de-ionizing cartridge, Supply pressure: 0.3 MPa

3) With energy saving type de-ionizing cartridge, Supply pressure: 0.3 MPa
IZS40/41/42 Series

Static Neutralization Characteristics

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.

3. Potential Amplitude

IZS40, 41
Supply pressure: 0.3 MPa

With high speed de-ionizing cartridge

IZS42
Supply pressure: 0.3 MPa

With high speed de-ionizing cartridge
4 Flow Rate — Pressure Characteristics

How to measure

a) Single side air supply (Connecting tube: O.D. ø6 x I.D. ø4)
   (IZS4□-340, 400, 460, 580, 640)

Air supply measurement

b) Both sides air supply (Connecting tube: O.D. ø6 x I.D. ø4)
   (IZS4□-820, 1120, 1300)

Air supply measurement

Pressure measurement

Pressure measurement

Pressure measurement

How to measure

c) Both sides air supply (Connecting tube: O.D. ø8 x I.D. ø5)
   (IZS4□-1600, 1900, 2320, 2500)

Pressure measurement

Pressure measurement

Pressure measurement

Feedback Sensor Detection Range

The relationship between the feedback sensor’s installation distance and the detection range is as follows:

<table>
<thead>
<tr>
<th>Installation distance (mm)</th>
<th>Detection range (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>50</td>
<td>180</td>
</tr>
</tbody>
</table>
**Ionizer**

**IZS40/41/42 Series**

How to Order

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Contents</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>-X10</td>
<td>Non-standard bar length</td>
<td>Symbol for producible bar length: 460 + 60 x n (n: Integer from 1 to 34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(For 2, 3, 6, 11, 14, 19, 24, 31 and 34 for n, use a standard model.)</td>
</tr>
</tbody>
</table>

Ordering example:

IZS 40 - 1660 [ ] [ ] - 10B - X10

IZS 42 - 1660 [ ] [ ] - 10B - X10

**Made to Order**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Contents</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>-X14</td>
<td>Model with drop prevention cover</td>
<td>The main unit is shipped fitted with a drop prevention cover available as an option.</td>
</tr>
</tbody>
</table>
Specifications

<table>
<thead>
<tr>
<th>Ionizer model</th>
<th>IZS40</th>
<th>IZS41-□□□ (NPN)</th>
<th>IZS41-□□□P (PNP)</th>
<th>IZS42-□□□ (NPN)</th>
<th>IZS42-□□□P (PNP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ion generation method</td>
<td>Corona discharge type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method of applying voltage</td>
<td>AC, DC</td>
<td>AC, Sensing AC, DC</td>
<td>Dual AC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applied voltage</td>
<td>±7,000 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offset voltage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air purge</td>
<td>Fluid</td>
<td>Air (Clean dry air)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating pressure</td>
<td>0.5 MPa or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof pressure</td>
<td>0.7 MPa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecting tube O.D.</td>
<td>ø6, ø8, ø10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>330 mA or less</td>
<td>440 mA or less (Sensing AC)</td>
<td>700 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>21.6 to 26.4 VDC (Within 24 VDC ±10%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage in a transition wiring</td>
<td>—</td>
<td>24 VDC to 26.4 VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input signal</td>
<td>Discharge stop signal</td>
<td>—</td>
<td>Connected to 0 V</td>
<td>Connected to +24 V</td>
<td>Connected to 0 V</td>
</tr>
<tr>
<td></td>
<td>Voltage range: 5 V DC or less</td>
<td>Voltage range: 19 V DC to supply voltage</td>
<td>Voltage range: 5 V DC or less</td>
<td>Voltage range: 19 V DC to supply voltage</td>
<td>Voltage range: 5 V DC or less</td>
</tr>
<tr>
<td></td>
<td>Current consumption: 5 mA or less</td>
<td>Current consumption: 5 mA or less</td>
<td>Current consumption: 5 mA or less</td>
<td>Current consumption: 5 mA or less</td>
<td>Current consumption: 5 mA or less</td>
</tr>
<tr>
<td>Output signal</td>
<td>Maintenance detection signal</td>
<td>—</td>
<td>Max. load current: 100 mA</td>
<td>Max. load current: 100 mA</td>
<td>Max. load current: 100 mA</td>
</tr>
<tr>
<td></td>
<td>Max. residual voltage 1 V or less</td>
<td>Max. residual voltage 1 V or less</td>
<td>Max. residual voltage 1 V or less</td>
<td>Max. residual voltage 1 V or less</td>
<td>Max. residual voltage 1 V or less</td>
</tr>
<tr>
<td></td>
<td>Load current at 100 mA</td>
<td>Load current at 100 mA</td>
<td>Load current at 100 mA</td>
<td>Load current at 100 mA</td>
<td>Load current at 100 mA</td>
</tr>
<tr>
<td></td>
<td>Max. applied voltage: 26.4 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error signal</td>
<td>Incorrect high voltage ion discharge detection</td>
<td>Offset voltage control with the built-in sensor, maintenance detection, incorrect high voltage ion discharge detection</td>
<td>(Discharge stops during detection, ion discharge stop input, transition wiring, remote controller (sold separately), external sensor connection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective de-IONizing distance</td>
<td>50 to 2000 mm</td>
<td>50 to 2000 mm (Sensing AC mode: 200 to 2000 mm, Manual run/Manual run: 100 to 2000 mm)</td>
<td>50 to 2000 mm (Manual run/Automatic run: 100 to 2000 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>0 to 50°C</td>
<td>35 to 80% RH (with no condensation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 80% RH (with no condensation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 to 40°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Body cover: ABS, Emitter cartridge: PBT, Emitter: Tungsten, Single crystal silicon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact resistance</td>
<td>100 m/s²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of emitter cartridges/Bar weight

<table>
<thead>
<tr>
<th>Bar length symbol</th>
<th>340</th>
<th>400</th>
<th>460</th>
<th>580</th>
<th>640</th>
<th>820</th>
<th>1120</th>
<th>1300</th>
<th>1600</th>
<th>1900</th>
<th>2320</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (g)</td>
<td>IZS40</td>
<td>590</td>
<td>640</td>
<td>690</td>
<td>790</td>
<td>830</td>
<td>980</td>
<td>1220</td>
<td>1360</td>
<td>1600</td>
<td>1840</td>
<td>2170</td>
</tr>
<tr>
<td></td>
<td>IZS41</td>
<td>740</td>
<td>790</td>
<td>840</td>
<td>940</td>
<td>980</td>
<td>1130</td>
<td>1370</td>
<td>1510</td>
<td>1750</td>
<td>1990</td>
<td>2320</td>
</tr>
<tr>
<td></td>
<td>IZS42</td>
<td>860</td>
<td>910</td>
<td>960</td>
<td>1060</td>
<td>1100</td>
<td>1250</td>
<td>1490</td>
<td>1630</td>
<td>1870</td>
<td>2110</td>
<td>2240</td>
</tr>
</tbody>
</table>

External sensor

<table>
<thead>
<tr>
<th>Sensor model</th>
<th>IZS31-DF (Feedback sensor)</th>
<th>IZS31-DG (Auto balance sensor) [High accuracy type]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>0 to 50°C</td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 80% RH (with no condensation)</td>
<td></td>
</tr>
<tr>
<td>Case material</td>
<td>ABS</td>
<td>ABS, Stainless steel</td>
</tr>
<tr>
<td>Impact resistance</td>
<td>100 m/s²</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>200 g (including cable weight)</td>
<td>220 g (including cable weight)</td>
</tr>
<tr>
<td>Installation distance</td>
<td>10 to 50 mm (Recommended)</td>
<td></td>
</tr>
<tr>
<td>Standards/Directive</td>
<td>CE, UL, CSA</td>
<td></td>
</tr>
</tbody>
</table>

AC adapter (Sold separately)

<table>
<thead>
<tr>
<th>Model</th>
<th>IZF10-CG□, IZS41-CG□</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>100 VAC to 240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Output current</td>
<td>1 A</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 to 40°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 65% RH (with no condensation)</td>
</tr>
<tr>
<td>Weight</td>
<td>220 g</td>
</tr>
<tr>
<td>Standards/Directive</td>
<td>CE, UL, CSA</td>
</tr>
</tbody>
</table>

Remote controller (Sold separately)

<table>
<thead>
<tr>
<th>Model</th>
<th>IZS41-RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Infrared ray type</td>
</tr>
<tr>
<td>Transmission capacity</td>
<td>5 m [Note 1]</td>
</tr>
<tr>
<td>Power supply</td>
<td>2 AAA sized batteries (sold separately) [Note 2]</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 to 45°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 80% RH (with no condensation)</td>
</tr>
<tr>
<td>Weight</td>
<td>33 g (excluding dry cell batteries)</td>
</tr>
<tr>
<td>Standards/Directive</td>
<td>CE</td>
</tr>
</tbody>
</table>

Note 1) Varies depending on the operating conditions and environment.
Note 2) Batteries are not supplied.
Note 3) Refer to the operation manual for handling of the remote controller.

Construction

IZS40 series

IZS41/42 series

Model No. Description
1. Ionizer
2. Emitter cartridge
3. One-touch fitting
4. End bracket
5. Intermediate bracket
6. Feedback sensor
7. Auto balance sensor [High accuracy type]
8. Power supply cable (for IZS40)
9. Power supply cable (for IZS41/42)
IZS40/41/42 Series

Accessories (for Individual Parts)

Feedback sensor  
IZS31-DF

Auto balance sensor [High accuracy type]  
IZS31-DG

Power supply cable  
- IZS40-CP (3 m)  
- IZS40-CPZ (10 m)  
- IZS41-CP (3 m)  
- IZS41-CPZ (10 m)

Made to Order

<table>
<thead>
<tr>
<th>How to Order</th>
<th>Type</th>
<th>Power supply cable full length</th>
</tr>
</thead>
<tbody>
<tr>
<td>IZS</td>
<td>CP</td>
<td>X13</td>
</tr>
<tr>
<td>40</td>
<td>For IZS40</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>For IZS41/42</td>
<td></td>
</tr>
</tbody>
</table>

Model with Made-to-order power supply cable  
Available in 1 m increments from 1 m to 20 m.  
Note 1) 11 m or longer power cables are not CE Marking-compliant.  
Note 2) Use standard power supply cables for 3 m and 10 m lengths.

End bracket/IZS40-BE  
Intermediate bracket/IZS40-BM

How to Order

| 01 | 1 m |
| 02 | 2 m |
| 19 | 19 m |
| 20 | 20 m |

High speed de-ionizing cartridge  
- IZS40-NT (Emitter material: Tungsten)  
- IZS40-NC (Emitter material: Silicon)  
Energy saving type de-ionizing cartridge  
- IZS40-NJ (Emitter material: Tungsten)  
- IZS40-NK (Emitter material: Silicon)

End bracket

Intermediate bracket

Note) Ionizer mounting screws attached, M4 x 8, 2 pcs.

Note) The number of intermediate brackets required, as listed below, depends on the bar length.  
Two end brackets are always required regardless of the bar length.

<table>
<thead>
<tr>
<th>Bar length symbol</th>
<th>End bracket</th>
<th>Intermediate bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>340 to 760</td>
<td>With 2 pcs.</td>
<td>None</td>
</tr>
<tr>
<td>820 to 1600</td>
<td>With 1 pc.</td>
<td>With 1 pc.</td>
</tr>
<tr>
<td>1660 to 2380</td>
<td>With 2 pcs.</td>
<td>With 2 pcs.</td>
</tr>
<tr>
<td>2440 to 2500</td>
<td>With 3 pcs.</td>
<td>With 3 pcs.</td>
</tr>
</tbody>
</table>

Note) The model number is for a single bracket.
Sold Separately

Drop prevention cover

IZS40 – E 3

Specify “-X14” at the end of the standard model number when ordering a drop prevention cover attached to the body.

<table>
<thead>
<tr>
<th>Bar length symbol</th>
<th>Number of required drop prevention covers</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>1</td>
</tr>
<tr>
<td>400</td>
<td>2</td>
</tr>
<tr>
<td>460</td>
<td>1</td>
</tr>
<tr>
<td>580</td>
<td>1</td>
</tr>
<tr>
<td>640</td>
<td>2</td>
</tr>
<tr>
<td>820</td>
<td>1</td>
</tr>
<tr>
<td>1120</td>
<td>1</td>
</tr>
<tr>
<td>1300</td>
<td>2</td>
</tr>
<tr>
<td>1600</td>
<td>2</td>
</tr>
<tr>
<td>1900</td>
<td>2</td>
</tr>
<tr>
<td>2320</td>
<td>1</td>
</tr>
<tr>
<td>2500</td>
<td>2</td>
</tr>
</tbody>
</table>

When attached to the body

Remote controller/IZS41-RC

IZS41 – CF

Transition wiring cable

AC adapter

For IZS40

IZF10 – C

AC adapter

G1 AC adapter + AC cord
G2 AC adapter (without AC cord)

AC cord is only for use in Japan. (Rated voltage 125 V, plug JIS C8303, inlet IEC60320-C8) External input and output cannot be used when the AC adapter is being used.

For IZS41/42

IZS41 – C

AC adapter

G1 AC adapter + AC cord
G2 AC adapter (without AC cord)

AC cord is only for use in Japan. (Rated voltage 125 V, plug JIS C8303, inlet IEC60320-C8) External input and output cannot be used when the AC adapter is being used.

Made to Order

How to Order

IZS41 – CF – X13

Transition wiring cable length

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Cable full length</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Full length 2 m</td>
</tr>
<tr>
<td>05</td>
<td>Full length 5 m</td>
</tr>
<tr>
<td>08</td>
<td>Full length 8 m</td>
</tr>
</tbody>
</table>

Cleaning kit/IZS30-M2

Mounted part of emitter cartridge

How to Order

IZS41 – CF – X13

Transition wiring cable length

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Cable full length</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1 m</td>
</tr>
<tr>
<td>03</td>
<td>3 m</td>
</tr>
<tr>
<td>19</td>
<td>19 m</td>
</tr>
<tr>
<td>20</td>
<td>20 m</td>
</tr>
</tbody>
</table>

Model with Made-to-order transition wiring cable

Available in 1 m increments from 1 m to 20 m.

Note 1) 11 m or longer power cables are not CE Marking-compliant.

Note 2) Use standard power supply cables for 2 m, 5 m and 8 m lengths.

Note 3) Transition wiring is not possible for the IZS40.
IZS40/41/42 Series

Wiring/IZS40

Wire cables according to the circuitry and wiring chart.

1. Grounding of F.G. cable
   Make sure to ground the F.G. cable (green) with a ground resistance of 100 Ω or less.
   The F.G. cable is used as a reference electric potential for de-ionization. If the ground terminal is not properly grounded, an optimal offset voltage cannot be acquired and also causes failure of the equipment. Be sure to connect the ground terminal using a ground resistance of 100 Ω or less.

2. Connection circuit (“POWER” connector)
   Wiring of the IZS40
   e-con is adopted for the connector of the IZS40. Connector with cable or without cable may be selected when placing an order for the power supply cable. When only an e-con is required, place an order for it as a part. (Cable is not supplied.)

How to connect the cable of the connector
1) Cut the cable as shown in the figure to the below. Refer to the following table for the applicable wire size.

Applicable wire

<table>
<thead>
<tr>
<th>AWG No.</th>
<th>Conductor cross section</th>
<th>Finish O.D.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-24</td>
<td>0.14-0.2</td>
<td>ø0.8-ø1.0</td>
<td>ZS-28-C</td>
</tr>
</tbody>
</table>

2) Insert the cable which was cut into the back of the connector.
3) Confirm that the cable is inserted into the back of the connector and press part A with your finger to hold tentatively.
4) Use a tool such as pliers to firmly tighten the center of Part A.
5) The connector cannot be reused once crimped. If cable insertion fails, use a new connector.

Connection Circuit/IZS40

Ionizer (IZS40)

If cables are prepared by the user, the cable colors shown in the diagram may change according to the cable colors by the user.
### Wiring

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>Cable color</th>
<th>Cable size</th>
<th>Description</th>
<th>Signal direction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Brown</td>
<td></td>
<td>+24 VDC</td>
<td>IN</td>
<td>Power supply is connected to operate the ionizer.</td>
</tr>
<tr>
<td>B1</td>
<td>Blue</td>
<td></td>
<td>0 V</td>
<td>IN</td>
<td>Power supply is connected to operate the ionizer.</td>
</tr>
<tr>
<td>A2</td>
<td>Green</td>
<td>AWG20</td>
<td>F.G.</td>
<td>—</td>
<td>Make sure to ground with a ground resistance of 100 Ω or less to use it as a reference electric potential for ionizer.</td>
</tr>
<tr>
<td>B2</td>
<td>Light green</td>
<td>AWG28</td>
<td>Discharge stop signal</td>
<td>IN</td>
<td>Signal input to turn ON/OFF the ion discharge. NPN specification: Stops ion discharge by connecting to 0 V. (Starts discharging ion when disconnected.) PNP specification: Stops ion discharge by connecting to +24 VDC. (Starts discharging ion when disconnected.)</td>
</tr>
<tr>
<td>A3</td>
<td>Gray</td>
<td></td>
<td>Maintenance detection signal</td>
<td>IN</td>
<td>Input signal when determining the necessity of electrode needle maintenance.</td>
</tr>
<tr>
<td>B3</td>
<td>Yellow</td>
<td></td>
<td></td>
<td>OUT/Contact point B</td>
<td>Turns ON when electrode needs cleaning.</td>
</tr>
<tr>
<td>A4</td>
<td>Purple</td>
<td></td>
<td>Error signal</td>
<td>OUT/Contact point B</td>
<td>Turns OFF when power supply failure, ion discharge error, connected sensor failure, or CPU operation failure. (ON when there is no problem.)</td>
</tr>
<tr>
<td>B4</td>
<td>White</td>
<td></td>
<td>Unused</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Confirm the power supply cable dimensions on page 434 for the cable specifications.

### Frequencies

<table>
<thead>
<tr>
<th>Frequency set</th>
<th>Frequency (Hz), Remote controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch set no.</td>
<td>IZS40</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>DC+</td>
</tr>
<tr>
<td>9</td>
<td>DC−</td>
</tr>
</tbody>
</table>

* Set when remote controller is used.
IZS40/41/42 Series

Wiring Circuit/IZS41, 42

NPN specification

Ionizer (IZS41, 42)

Input:
- +24 V
- DC/DC
- 0 V
- 0 V

Internal circuit:
- Isolation circuit (Photo coupler)
- +24 V
- Isolation circuit (Photo coupler)
- Isolation circuit (Photo coupler)
- Isolation circuit (Photo coupler)

Output:
- Maintenance detection signal
- Maintenance detection signal
- Discharge stop signal

Shield

+24 V
- Power supply
- 24 V

F.G.

Brown (2 pcs.) +24 VDC
Blue (2 pcs.) 0 V

Green F.G.

Gray

Light green

Maintenance detection signal

Yellow

Maintenance detection signal

Purple

Irregular signal

Ground with a ground resistance of 100 Ω or less.

PNP specification

Ionizer (IZS41, 42)

Input:
- +24 V
- DC/DC
- 0 V
- 0 V

Internal circuit:
- Isolation circuit (Photo coupler)
- Isolation circuit (Photo coupler)
- Isolation circuit (Photo coupler)

Output:
- Maintenance detection signal
- Maintenance detection signal
- Discharge stop signal

Shield

+24 V
- Power supply
- 24 V

F.G.

Brown (2 pcs.) +24 VDC
Blue (2 pcs.) 0 V

Green F.G.

Gray

Light green

Maintenance detection signal

Yellow

Maintenance detection signal

Purple

Irregular signal

Ground with a ground resistance of 100 Ω or less.
Dimensions

Ionizer/IZS40

- **Part no.**
  - 5
  - 6
  - 7
  - 9
  - 10
  - 13
  - 18
  - 21
  - 26
  - 31
  - 38
  - 41
  - 340
  - 400
  - 460
  - 580
  - 640
  - 820
  - 1120
  - 1300
  - 1600
  - 1900
  - 2320
  - 2500

- **L (mm)**
  - IZS40-340
  - IZS40-400
  - IZS40-460
  - IZS40-580
  - IZS40-640
  - IZS40-820
  - IZS40-1120
  - IZS40-1300
  - IZS40-1600
  - IZS40-1900
  - IZS40-2320
  - IZS40-2500

- **A-A section**

**n (Number of emitter cartridges), L Dimension**

<table>
<thead>
<tr>
<th>Applicable tube O.D</th>
<th>A</th>
<th>Part no.</th>
<th>n</th>
<th>L (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>13</td>
<td>IZS40-340</td>
<td>5</td>
<td>340</td>
</tr>
<tr>
<td>08</td>
<td>15</td>
<td>IZS40-400</td>
<td>6</td>
<td>400</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>IZS40-460</td>
<td>7</td>
<td>460</td>
</tr>
<tr>
<td>06</td>
<td>13</td>
<td>IZS40-580</td>
<td>9</td>
<td>580</td>
</tr>
<tr>
<td>08</td>
<td>15</td>
<td>IZS40-640</td>
<td>10</td>
<td>640</td>
</tr>
<tr>
<td>13</td>
<td>17</td>
<td>IZS40-820</td>
<td>13</td>
<td>820</td>
</tr>
<tr>
<td>16</td>
<td>21</td>
<td>IZS40-1120</td>
<td>18</td>
<td>1120</td>
</tr>
<tr>
<td>21</td>
<td>26</td>
<td>IZS40-1300</td>
<td>21</td>
<td>1300</td>
</tr>
<tr>
<td>26</td>
<td>31</td>
<td>IZS40-1600</td>
<td>26</td>
<td>1600</td>
</tr>
<tr>
<td>31</td>
<td>36</td>
<td>IZS40-1900</td>
<td>31</td>
<td>1900</td>
</tr>
<tr>
<td>38</td>
<td>41</td>
<td>IZS40-2320</td>
<td>38</td>
<td>2320</td>
</tr>
<tr>
<td>40</td>
<td>45</td>
<td>IZS40-2500</td>
<td>40</td>
<td>2500</td>
</tr>
</tbody>
</table>

**End bracket/IZS40-BE**

**Intermediate bracket/IZS40-BM**

- **A-A section**
IZS40/41/42 Series

Dimensions

Ionizer/IZS41, 42

End bracket/IZS40-BE

Intermediate bracket/IZS40-BM
### Dimensions

#### Feedback sensor/IZS31-DF

![Diagram of Feedback sensor/IZS31-DF]

**Head**

- SMC
- 19 mm

**Amplifier**

- 3500
- 23 mm

**Sensor**

- 71 mm
- 7.7 mm

**Detection hole**

- 61 mm (7.5)
- 10.5 mm

- 2 x ø3.4
- 1500ø4.8

- ø10.2
- ø6.6

- 2 x Counterbore 6.6, Depth 5.7
- (Height of thread bearing surface 8.8)

#### Auto balance sensor [High accuracy type]/IZS31-DG

![Diagram of Auto balance sensor/IZS31-DG]

**Head**

- 19 mm

**Amplifier**

- 3500
- 23 mm

**Sensor**

- 71 mm
- 7.7 mm

**Detection hole**

- 61 mm (7.5)
- 10.5 mm

- 2 x ø3.4
- 1500ø4.8

- ø10.2
- ø6.6

- 2 x Counterbore 6.6, Depth 5.7
- (Height of thread bearing surface 8.8)
IZS40/41/42 Series

Dimensions

Power supply cable

IZS40-CP □

IZS41-CP □

Cable Specifications

No. of cable wire/Size

Conductor
Nominal cross section
0.2 mm²

Outside diameter
0.66 mm

Insulator
Outside diameter
1.0 mm

Sheath
Material
Lead-free PVC
Outside diameter
3.8 mm

Remote controller

Infrared rays generating part

2 AAA batteries to be set

Transition wiring cable/IZS41-CF □

Part no. | L (mm) |
---|---|
IZF41-CF02 | 2000 |
IZF41-CF05 | 5000 |
IZF41-CF08 | 8000 |
IZS40/41/42 Series

Specific Product Precautions 1

Be sure to read this before handling the products.

---

**Caution**

1. **Selection**
   - This product is intended to be used with general factory automation (FA) equipment.
     - If considering using the product for other applications (especially those stipulated on Safety Instructions), please contact SMC beforehand.
   - **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.
   - **Use clean compressed air as fluid.** (Air quality Class 2.6.3 specified in ISO 8573-1: 2001 is recommended.)
     - 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.
   - **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.

2. **Mounting**
   - **Warning**
     - **Install the product so that the entire bar does not have an excessive deflection.**
       - For a bar length of 820 mm or more, support the bar at both ends and in the middle by using brackets (IZS40-BM). If the bar is held only at the both ends, self-weight of the bar causes deflection, resulting in damage to the bar.
     - **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.
   - **Observe the tightening torque requirements when installing the ionizer.**
     - 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.
     - Refer to the operation manual for details.

3. **Warning**
   - **Do not touch the emitter directly with fingers or metallic tools.**
     - If a finger is used to touch the emitter, it may get stuck or an injury or electrical shock may occur from touching the surrounding equipment. In addition, if the emitter or cartridge is damaged with a tool, the specification will not be met and damage and/or an accident may occur.

4. **Warning**
   - **Do not affix any tape or seals to the body.**
     - A tape or seal contains any conductive adhesive or reflective paint, a dielectric phenomenon may occur due to the generated ions, resulting in electrostatic charge or electric leakage. Avoid using such tape and seals as it will not only cause difficulties in maintaining the performance of the product, but may also result in the failure of the product.

5. **Warning**
   - **Installation should be conducted after turning off the power supply.**

---

**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 emitter cartridge or touching the emitter.

---

7. **Do not affix any tape or seals to the body.**
   - If a tape or seal contains any conductive adhesive or reflective paint, a dielectric phenomenon may occur due to the generated ions, resulting in electrostatic charge or electric leakage. Avoid using such tape and seals as it will not only cause difficulties in maintaining the performance of the product, but may also result in the failure of the product.

8. **Installation should be conducted after turning off the power supply.**

---

**Caution**

1. **Do not install the IZS40/41/42 series in a location where walls or structures are within the range shown in the following figure.**
   - If structures including walls or conductive items are located close to the unit, the generated ions will not effectively reach the object, and the specification may not be satisfied, or cause failure of the product or electric shock due to dielectricity or electric leakage. Install the product according to the dimensions shown in the following figure, keeping away from structures or conductive items.

---

**Warning**

1. **Mounting**
   - **Mount this product on a plane surface.**
     - If there are irregularities, cracks or height differences, excessive stress will be applied to the housing or brackets, resulting in damage or other trouble. Also, do not drop or apply a strong shock. Otherwise, damage or an accident can occur. Also, do not drop or apply a strong shock. Otherwise, damage or an accident may occur.
IZS40/41/42 Series
Specific Product Precautions 2
Be sure to read this before handling the products.

Caution
2. After installation, be sure to verify the effects of static neutralization.
   The effects vary depending on the ambient conditions, operating conditions, etc. After installation, verify the effects of static neutralization.
3. When installing the IZS41 or IZS42 in proximity with an ionizer which operates in DC mode, they should be positioned at least 2 meters away from each other. When using the IZS41 or IZS42 near the ionizer in DC mode, keep clearance of at least 2 m between them. Offset voltage may not be adjusted by the internal sensor due to the ions which are discharged from the DC mode ionizer.

Warning
1. Confirm that 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. Ground the F.G. wire with 100 Ω or less according to the instructions in this catalog. An incomplete ground or no grounding not only prevents the performance of the product from being maintained, but may also cause failure or damage of the product, or electric shock to the human body.
4. Be sure to turn off the power supply before wiring (including attachment/detachment of the connector).
5. To connect a feedback sensor or auto balance sensor to the ionizer, use the cable included with the sensor. Do not disassemble or modify the ionizer.
6. When applying the power supply, pay special attention to the wiring and/or surrounding environment until the safety is confirmed.
7. Do not connect or remove any connectors including the power supply, while power is being supplied. Otherwise, the ionizer may malfunction.
8. 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.
9. Be sure to confirm that there are no wiring errors before starting this product. Faulty wiring will lead to product damage or malfunction.
10. Flush the piping before using. Before piping this product, exercise caution to prevent particles, water drops, or oil contents from entering the piping.

Wiring/Piping

11. Transition wiring of ionizer
   For transition wiring of ionizers, use a transition wiring cable for connection between ionizers. Use a power supply cable for connection between ionizer and power supply or external equipment. (Transition wiring is not possible with the IZS40.) The number of ionizers that may be connected using transition wiring varies depending on the power supply cable; the length of the transition wiring cable; the use of external sensor(s) and/or models. Refer to the table shown below “Connectable number of ionizers with transition wiring”.
   The IZS41 and IZS42 can be connected in the same transition wiring, but mixed wiring of the NPN and PNP I/O specifications is not possible.
   Please contact SMC when connecting conditions other than specified in the table below are applied.

---

### Connectable number of ionizers with transition wiring (without external sensor)

<table>
<thead>
<tr>
<th>Bar length symbol</th>
<th>Power supply cable length: 3 m</th>
<th>Power supply cable length: 10 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>580</td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>820</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Connectable number of ionizers with transition wiring (with external sensor)

<table>
<thead>
<tr>
<th>Bar length symbol</th>
<th>Power supply cable length: 3 m</th>
<th>Power supply cable length: 10 m</th>
</tr>
</thead>
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<td>340</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
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<tr>
<td>2500</td>
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</tbody>
</table>

It is recommended that the power supply used to operate the ionizers have a current capacity twice that of the total current consumption of the ionizers to be used. Power supply voltage should be from 24 to 26.4 VDC.

AC adapter must not be used when ionizer is used in a transition wiring. When ionizers are connected with transition wiring, the same input signal serves as input to all the ionizers. When a signal is output from at least one ionizer in the connection, the signal will be output from the power supply cable.

Connect the power supply cable to the “POWER” connector of the 1st ionizer, and connect the “LINK” connector of the 1st ionizer to the “POWER” connector of the 2nd ionizer with a transition wiring cable. Follow the same procedure to connect subsequent ionizer(s) and after with wiring transition cables.
IZS40/41/42 Series
Specific Product Precautions 3
Be sure to read this before handling the products.

Operating Environment/Storage Environment

⚠️ Warning
1. Observe the fluid temperature and ambient temperature range.
Fluid temperature and ambient temperature ranges are: 0 to 40°C for ionizer, 0 to 50°C for feedback sensor and auto balance sensor (high accuracy type), 0 to 40°C for AC adapter, and 0 to 45°C for remote controller. Do not use the sensor in locations where the temperature may change suddenly even if the ambient temperature range is within the specified limits, resulting in condensation.

2. 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.

3. 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.
   b. Avoid using in a place that exceeds an ambient humidity range.
   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 static electricity is discharged to the body.
   k. Avoid using in a place where a strong high frequency occurs.
   l. Avoid using in a place where the 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.

4. 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. Install a dryer (IDF series), air filter (AF/AFF series), and/or mist separator (AFM/AM series) to obtain clean compressed air (air quality of Class 2.6.3 or higher according to ISO 8573-1: 2001 is recommended for operation).

5. Ionizer, feedback sensor, auto balance sensor, remote controller, and AC adapter are not resistant to lightening surge.

6. Effects on implantable medical devices
The electromagnetic waves emitted from this product may interfere with implantable medical devices such as cardiac pacemakers and cardioverter defibrillators, resulting in the malfunction of the medical device or other adverse effects. Please use extreme caution when operating equipment which may have an adverse effect on your implantable medical device. Be sure to thoroughly read the precautions stated in the catalog, operation manual, etc., of your implantable medical device, or contact the manufacturer directly for further details on what types of equipment need to be avoided.

Maintenance

⚠️ Warning
1. Periodically inspect the ionizer and clean the emitters.
Periodically inspect the electrostatic sensor to check if it is operated while being out of order. Only a person having an adequate knowledge and experience about the system is allowed to inspect the sensor. If particles attach to the emitter by using for long periods of time, the static neutralizing performance will be lowered. Replace the emitter cartridge, if the emitters are worn and the static neutralizing performance does not return even after being cleaned.

2. When cleaning the emitter or replacing the emitter cartridge, be sure to turn off the power supply or air supply to the body.
If the emitters are touched while the product is energized, this may cause an electric shock or accident. If an attempt to replace the emitter cartridges is performed before removing air supply, the emitter cartridges may eject unexpectedly due to presence of the supply air. Remove air supply before replacing the cartridges. If emitter cartridges are not securely mounted to the bar, they may eject or release when air is supplied to the product. Securely mount or remove the emitter cartridges referencing the instructions shown below.

Removal of emitter cartridge
1) Rotate the cartridge 90 degrees in the counter-clockwise direction.
2) Pull to remove.

Mounting of emitter cartridge
1) Insert the cartridge into the bar so that the longer side of the cartridge is mounted at a right angle to the bar.
2) Rotate the cartridge 90 degrees in the clockwise direction, and match the markings on the bar to those on the cartridge and secure.

3. Perform the detection procedure in the absence of workpieces. (IZS41, 42)

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.
IZS40/41/42 Series
Specific Product Precautions 4
Be sure to read this before handling the products.

| Handling |

⚠️ Caution

1. **Do not drop, bump or apply excessive impact (100 m/s² 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 installing the product, handle the product so that no moment is applied to the controller and the ends of the bar.**
   Handling the product by holding either end of the bar may cause damage to the product.

3. **When mounting/dismounting the cable, use your finger to pinch the claw of the plug, then attach/detach it correctly.**
   If the modular plug is at a difficult angle to attach/detach, the jack’s mounting section may be damaged and cause a disorder.