IZ-SMW29EN

Installation and Maintenance Manual

Bar Type Ionizer

Series IZS40/41/42

1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard by label of “Caution”, “Warning” or “Danger”, followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

⚠ **Caution**	Indicates a hazard with a low level of risk, which if not avoided, could result in minor or moderate injury.
⚠ **Warning**	Indicates a hazard with a medium level of risk, which if not avoided, could result in death or serious injury.
⚠ **Danger**	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

⚠ Warning

- **The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**
  Since the products specified here can be used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet specific requirements.
- **Only trained personnel should operate pneumatically operated machinery and equipment.**
  Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced personnel.
- **Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
  1) Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
  2) When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
  3) Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Supply air into the system gradually to create back pressure, i.e. incorporate a soft-start valve).
- **Do not use this product outside of the specifications. Contact SMC if it is to be used in any of the following conditions:**
  1) Conditions and environments beyond the given specifications, or if the product is to be used outdoors.
  2) Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
  3) An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

1.1 Selection

⚠ Warning

- **These products are intended for use in general factory automation equipment.**
  Consult SMC before hand when using this product for other intentions.
- **Use within the specified voltage and temperature range.**
  Operation with a voltage other than that specified can cause malfunction, damage to the product, electric shock or fire.
- **Use clean compressed air as fluid.**
  Never use flammable or explosive gas as fluid. This may lead to fire or explosion. If fluid other than compressed air is used, consult SMC.

1 Safety Instructions (Continued)

- **The product is not designed to be explosion proof.**
  Never use in an atmosphere of potential dust explosion, flammable gas or explosive gas. It may cause fire.

⚠ Caution

- **Clean specification is not available with this product.**
  This product has not been cleaned. When using this product in a clean room environment, flush and confirm the product’s purification level before use. A minute amount of particles are generated due to wearing of the electrodes while the ionizer is operating.

1.2 Installation

⚠ Warning

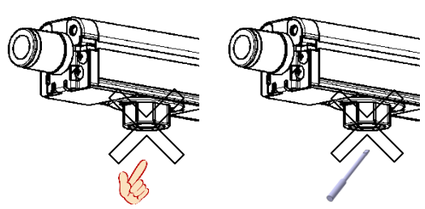
- **Secure enough space for maintenance, inspection and wiring.**
  When routing cables and tubings, secure sufficient maintenance space for the installation and removal of connector and One-touch fitting. Consider the minimum bending radius of the cables and tubings and avoid bending them at an acute angle so that unreasonable stress is not applied to the mounting parts of the connectors and One-touch fittings. Position the connectors and One-touch fittings as close as possible.
  Routing of the wiring and cables in unreasonable positions may cause malfunction, broken cables, and fire.

  [Minimum bending radius] Power supply cable: 38mm
  Transition wiring cable: 38mm
  Sensor cable: 25mm

  Note: This is the minimum bend radius at 20°C. If the installation is at a lower temperature, the radium will be higher. When the cables are bent at a lower temperature than 20 °C, it may cause unreasonable force to be applied to the connectors.
  Refer to the tubing operation manual for minimum bending radius of tubing.
- **Mount to a flat surface.**
  Mounting on an uneven surface will apply excessive force to the housing and bracket, which may lead to damage or failure. Do not drop the product or subject it to a strong impact. This may cause an injury or accident.
- **Install the product so that the entire bar does not have an excessive deflection.**
  For a bar length of 820mm 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.
- **Avoid using in a place where noise (electromagnetic wave and surge) is generated.**
  It may cause malfunction, deterioration or damage to internal components. Take measures to prevent noise at its source and avoid power and signal lines from coming into close contact.
- **Use a correct tightening torque.**
  If the screws are tightened in excessive of the specified torque range, it may damage the mounting screws, mounting brackets, etc. If the tightening torque is insufficient, the mounting screws and brackets may become loose.
- **Do not directly touch the electrodes with your finger or tools.**
  Do not directly touch the electrode with your finger. If the electrode sticks to your finger, or electrical shock makes an instantaneous rapid body motion to escape from the shock, your body may touch the equipment around you, causing injury. If electrode or cartridge is damaged by tools, etc., it may interfere with the specified function and performance, and may also cause operation failure and accident.

  High voltage caution

  High voltage is applied to the electrodes. Never touch the electrodes. Inserting foreign matter into the cartridge or touching electrode may cause electrical shock and instantaneous rapid body motion to escape from the shock. Your body may then touch the equipment around you, causing injury.

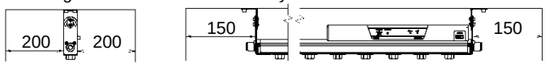


1 Safety Instructions (Continued)

- **Do not adhere tape or sticker onto the product body.**
  If the tape or sticker contains conductive adhesive or reflective paint, it is possible that due to the dielectric effect, charge could build up causing an electro-static discharge or electrical leakage.
- **Be sure to remove power supply and air supply to the product before starting the product installation.**

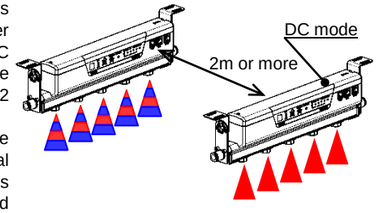
⚠ Caution

- **Install the IZS4∗ series ionizer maintaining distance from a wall, etc. as shown in the Fig. below.**
  When there is a wall or an object within the area shown in the Fig. below, generated ions may not reach the workpiece effectively, resulting in deterioration of efficiency.



Unit: mm

- **Make sure to confirm the effect of de-ionization after installation.**
  The effect of the ionizer varies depending on the surrounding installation and operating conditions. Confirm the effect of static electricity elimination after installation.
- **When installing 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 IZS41 or IZS42 is used close to an ionizer which operates in DC mode, separate the ionizers at least 2 meters.
  Ion balance may not be adjusted by the internal sensor due to the ions which are discharged from the DC mode ionizer.



1.3 Wiring and Piping

⚠ Warning

- **Ensure that the power supply capacity is large enough, and that voltage is within specification before wiring.**
- **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.**
- **To maintain the product performance, ground the product with an earth ground cable with a resistance of 100 ohm or less according to this manual.**
- **Remove the power supply before wiring (including the connector plug in/out).**
- **Use a cable with sensor for connection of the ionizer, feedback sensor or auto balance sensor (high accuracy type), and do NOT disassemble or retrofit.**
- **Ensure the safety of wiring and surrounding conditions before supplying power.**
- **Do not connect or disconnect the connectors (including power source) while the power is being supplied. The ionizer may malfunction.**
- **Malfunctions induced by noise may occur if the wire is installed in the same route as that of power or high-voltage cable. Wire the ionizer independently.**
- **Confirm that there is no error in wiring before operation. Incorrect wiring will lead to a malfunction or breakage of the product.**
- **Flush the piping before connecting. Verify that all dust, moisture, oil, etc. are eliminated from the piping before connecting.**

1.4 Operating and Storage Environment

⚠ Warning

- **Operate the product in the specified fluid temperature range 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. Avoid sudden temperature change even within specified temperature range, as it may cause condensation.

1 Safety Instructions (Continued)

- **Do not use this product in an enclosed space.**
  This product utilizes the corona discharge phenomenon. Although the amount is very small, Ozone and NOx are generated. Do not use in an enclosed space.
- **Environments to avoid**
  Never use or store under the following conditions, as these cause product failure.
  a. Areas where ambient temperature exceeds the operating temperature range.
  b. Areas Where ambient humidity exceeds the operating humidity range.
  c. Areas where abrupt temperature changes may cause condensation.
  d. Areas where corrosive gas, flammable gas or other volatile flammable substances are stored.
  e. Areas where the product may be exposed to conductive powder such as iron powder or dust, oil mist, salt, organic solvent, machining chips, particles or cutting oil (including water and any liquids), etc.
  f. Paths of direct air flow, such as air conditioners.
  g. Enclosed or poorly ventilated areas.
  h. Locations that are exposed to direct sunlight or heat radiation.
  i. Areas where strong electromagnetic noise is generated, such as strong electrical and magnetic fields or supply voltage spikes.
  j. Areas where the product is exposed to static electricity discharge.
  k. Locations where strong high frequency is generated.
  l. Locations that are subject to potential lightning strikes.
  m. Areas where the product may be exposed to direct impact or vibration.
  n. Areas where the product may be subjected to forces or weight that could cause physical deformation.
- **Do not use air containing mist and/or dust.**
  Air containing mist and/or dust may cause performance deterioration, and reduce the maintenance cycle.
  Install a dryer (IDF series), air filter (AF/AFF series), 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).
- **Ionizer, feedback sensor, auto balance sensor (high accuracy type), remote controller, and AC adapter are not resistant to lightening surge.**

1.5 Maintenance and Inspection

⚠ Warning

- **Perform maintenance regularly to keep the electrodes clean.**
  Perform regular maintenance of the product to prevent undetected failures. The maintenance must be carried out by an operator who has sufficient knowledge and experience. If the product is used for an extended period of time with dust is present on the electrodes, the product’s ability to eliminate static electricity will be reduced.
  If the electrodes become worn and the product’s ability to eliminate static electricity is not restored after cleaning, replace the cartridge.
- **Make sure to remove power and air supply from the product before cleaning the electrodes or replacing the cartridges.**
  If the electrodes are touched while the product is energized, this may cause an electric shock or accident.
  If an attempt to replace the cartridges is performed before removing air supply, the cartridges may eject unexpectedly due to presence of the supply air. Remove air supply before replacing the cartridges. If 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 cartridges referencing the instructions shown below.
- **Perform contamination detection of the electrode without workpiece. (IZS41 and IZS42)**
  While electrode detects contamination, ionizer discharges positive ions and negative ions for contamination detection.

  High voltage caution

  A high voltage generating circuit is mounted onto this product. Make sure to check that the power supply is stopped when performing maintenance. Never disassemble or modify the product, as this can cause loss of product functionality, and there is also a risk of electric shock and earth leakage.
- **Do not disassemble or modify the product.**
  This may lead to accidents such as electric shock, failure, fire or etc. If the product is disassembled and/or modified, the functions and performance in the specifications may not be achieved and the product will not be guaranteed.
- **Do not operate the product with wet hands.**
  This may cause an electric shock or accident.

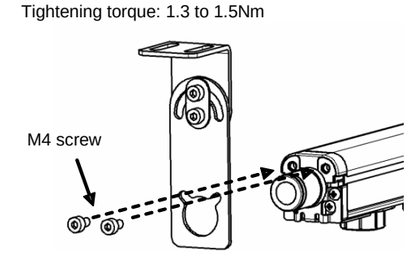
2 Installation

2.1 Mounting and installation of the bracket

1) End bracket

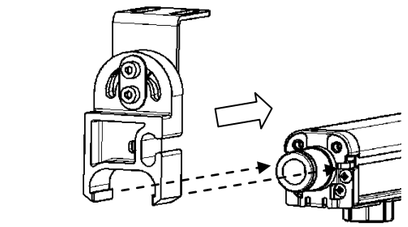
Mount an end bracket to both ends of the ionizer body using the M4 screws supplied as accessories.

Tightening torque: 1.3 to 1.5Nm



2) Intermediate bracket (for bar lengths of 820mm or more)

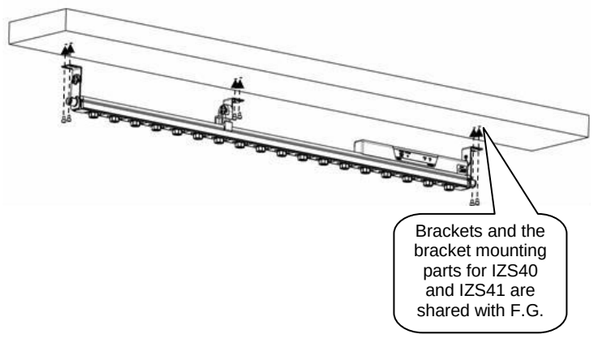
Match the groove of the ionizer body and protrusion of the intermediate bracket, and slide the bracket from the end of the ionizer body. Intermediate brackets should be mounted at the same intervals.



3) Installation of the ionizer (when using brackets)

Tap (M5) screws at the bracket mounting positions for installation of the Ionizer and fix the ionizer body and brackets with M5 screws.

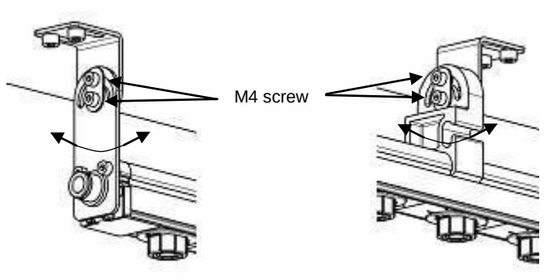
IZS40 and IZS41 are constructed such that the brackets at the bracket mounting positions on both ends of the bar are shared with F.G. Use caution to avoid short-circuit with the +24V power supply when installing and supplying power.



4) Mounting angle adjustment

Adjust the angle of the ionizer body for effective de-ionizing and fix the ionizer with the rotating set screw (M4) at each bracket.

End bracket tightening torque: 1.3 to 1.5 Nm
Intermediate bracket tightening torque: 0.73 to 0.75Nm



2 Installation (continued)

2.2 Installation

⚠ Warning

- Do not install the product unless the safety instructions have been read and understood.

2.3 Piping

⚠ Caution

- Before piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1.5 to 2 threads exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

2.4 Environment

⚠ Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact. Check the product specifications.
- Do not mount in a location exposed to radiant heat.

3 Wiring

Wire cables according to the circuitry and wiring chart.

3.1 Grounding of F.G. cable

Make sure to **ground the F.G. cable (green) with a resistance of 100 ohms or less.**

The F.G. cable is used as a reference electric potential for de-ionization. If the ground terminal F.G. is not grounded, the ionizer will not be able to achieve the optimal ion balance.

3.2 Grounding during operation in DC mode

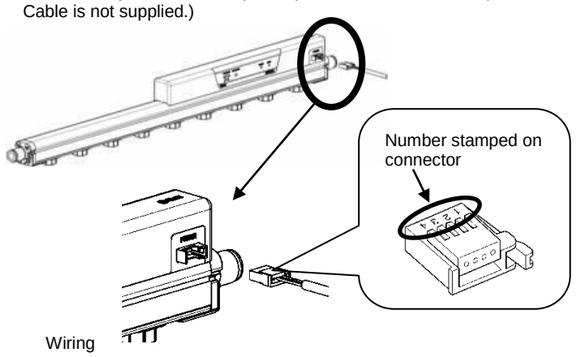
Applicable models:IZS40 and IZS41

When an ionizer is used in DC mode, make sure to ground the F.G. cable (green) and GND cable (blue) of the input power supply **with a resistance of 100 ohms or less.** Without grounding the GND terminal, the ionizers and/or power supply may be damaged.

3.3 Circuit (Wiring of IZS40)

e-con is adopted for the connector of IZS40. Connector with cable or without cable maybe 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.)



Wiring

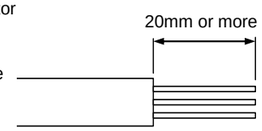
Number stamped on connector	Signal name	Description
1	24VDC	Power supply is connected to operate the ionizer.
2	GND	
3	F.G.	Make sure to ground with a resistance of 100 ohms or less to use it as a reference electric potential for ionizer.
4	—	Unused

3 Wiring (continued)

How to connect the cable of the connector

1) Cut the cable as shown in the Figure to the right.

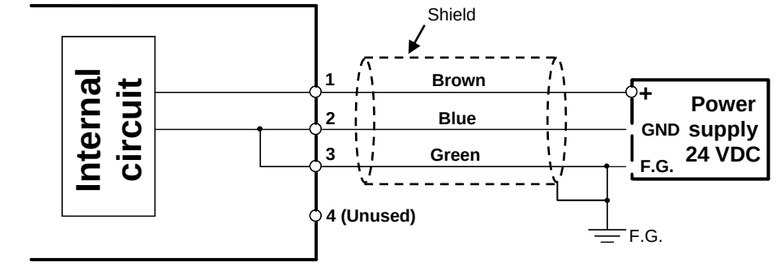
Refer to the following table for the applicable wire size.



Applicable wire

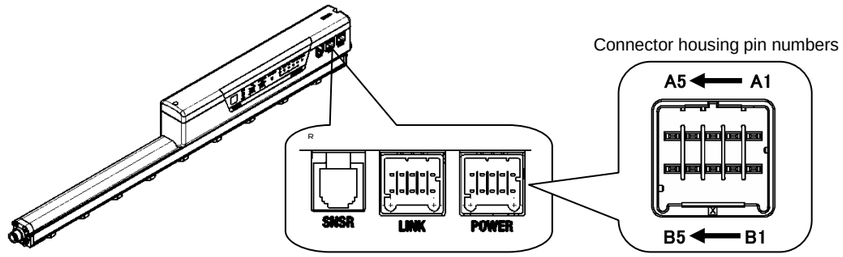
AWG No.	Conductor cross section mm²	Finish O.D. mm	Model
26-24	0.14-0.2	ϕ0.8-ϕ1.0	ZS-28-C

Ionizer (IZS40)



When an ionizer is used in DC mode, make sure to ground the F.G. cable (green) and GND cable (blue) of the input power supply **with a resistance of 100 ohms or less.** Without grounding the GND terminal, the ionizers and/or power supply in connection may be damaged.
If cables are prepared by the user, the cable colors shown in the diagram may change according to the cable colors by the user.

3.4 Circuit (Wiring of IZS41 and IZS42)



Wiring

Connector pin numbers	Cable color	Signal name	Signal direction	Description
A1	Brown	24VDC	IN	Power supply is connected to operate the ionizer.
B1				
A2	Blue	GND	IN	
B2				
A3	Green	F.G.	-	Make sure to ground with a resistance of 100 ohms or less to use it as a reference electric potential for ionizer.
B3	Yellowish Green	Ion discharge stop signal	IN	Signal input to turn ON/ OFF the ion discharge. NPN specification: Stops ion discharge by connecting to GND. (Starts discharging ion when disconnected.) PNP specification: Stops ion discharge by connecting to +24 VDC. (Starts discharging ion when disconnected.)
A4	Gray	Electrode contamination detection signal	IN	Signal to input when finding if maintenance of electrode is necessary.
B4	Yellow	Maintenance signal	OUT (Contact point A)	Turns ON when electrode needs cleaning.
A5	Purple	Error signal	OUT (Contact point B)	Turns OFF when power supply failure, ion discharge error, connected sensor failure, or CPU operation failure. (ON when there is no problem.)
B5	White	Unused	-	-

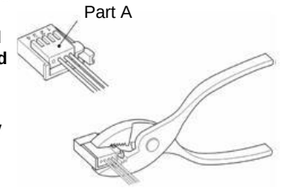
3 Wiring (continued)

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.

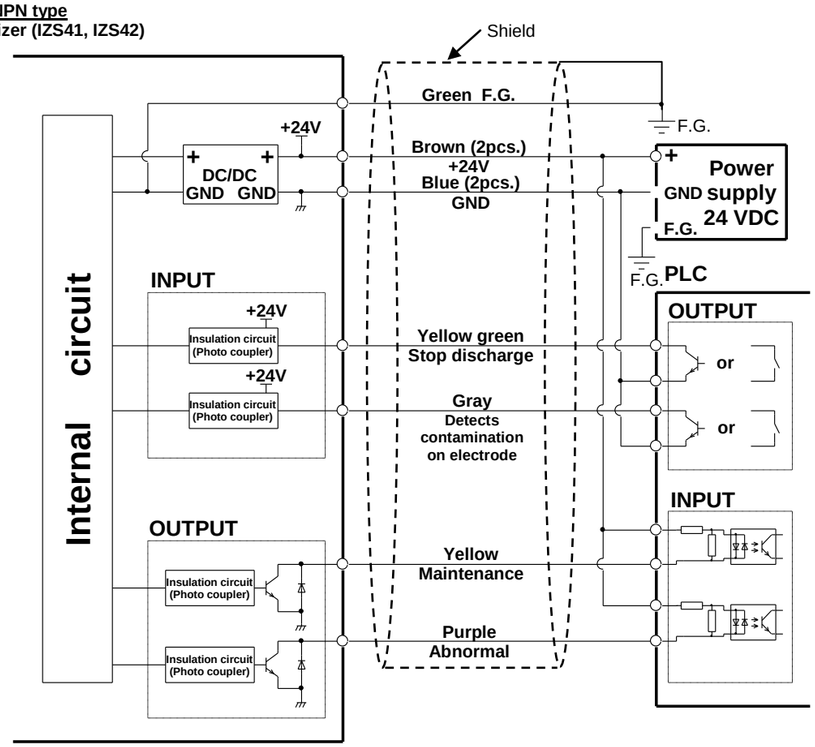
4) Use a tool such as pliers to firmly tighten the center of Part A.

5) The connector cannot be reused once crimped. If cable insertion fails, use a new connector.



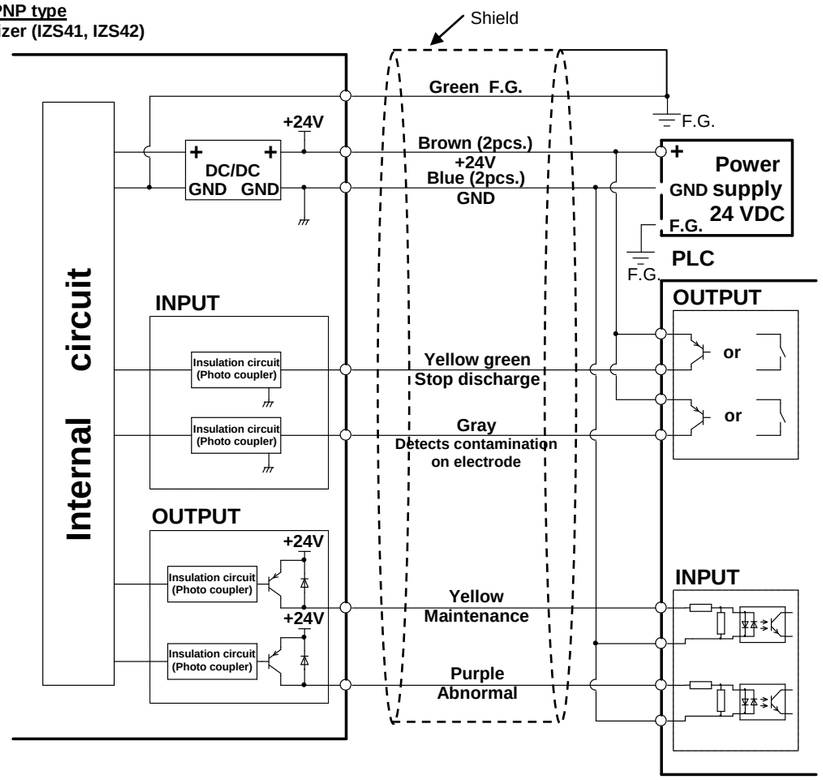
3 Wiring (continued)

1) NPN type
Ionizer (IZS41, IZS42)



When an ionizer (IZS41) is used in DC mode, make sure to ground the F.G. cable (green) and GND cable (blue) of the input power supply **with a resistance of 100 ohms or less.** Without grounding the GND terminal, the ionizers and/or power supply in connection may be damaged.

2) PNP type
Ionizer (IZS41, IZS42)



When an ionizer (IZS41) is used in DC mode, make sure to ground the F.G. cable (green) and GND cable (blue) of the input power supply **with a resistance of 100 ohms or less.** Without grounding the GND terminal, the ionizers and/or power supply in connection may be damaged.

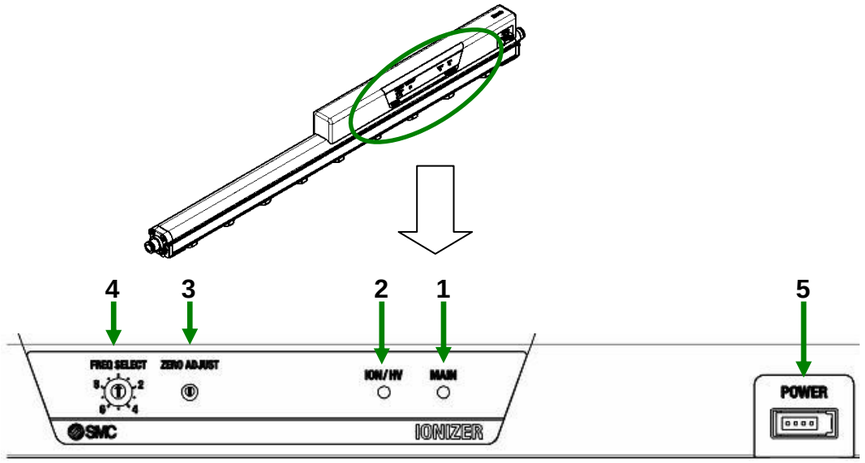
4 Specifications

Refer to the operation manual for this product.

Model		IZS40	IZS41-** (NPN)	IZS41-**P (PNP)	IZS42-** (NPN)	IZS42-**P (PNP)
Ion generating type		Corona discharging type				
Voltage supply type		AC, DC	AC, Sensing AC, DC		Dual AC	
Applied voltage		+/ - 7,000 V			+/ - 6,000 V	
Ion balance		+/ - 30 V				
Air purge	Fluid	Air (Clean and dry)				
	Operating pressure	0.5 MPa or less				
	Proof pressure	0.7 MPa				
	Tube O.D.	ϕ6, ϕ8, ϕ10				
Current consumption		330mA or less	440mA or less (For sensing AC, automatic operation and manual operation modes, 480 mA or less)		700 mA or less (For automatic operation and manual operation modes, 740 mA or less)	
Power supply votage		24 VDC +/ - 10 % (100 to 240 VAC: Optional AC adapter)				
Power supply voltage in a transition wiring		-	24 VDC to 26.4 VDC			
Input signal	Ion discharge stop signal	-	Connect with GND Voltage range: 5 VDC or less Current consumption: 5 mA or less	Connect with +24V Voltage range: 19 VDC to supply voltage Current Consumption: 5 mA or less	Connect with GND Voltage range: 5 VDC or less Current consumption: 5 mA or less	Connect withi +24V Voltage range: 19 VDC to supply voltage Current Consumption: 5 mA or less
	Electrode contamination detection signal					
Output signal	Maintenance signal	-	Maximum load current: 100 mA Residual voltage: 1 V or less (Load current 100 mA) Maximum applied voltage: 26.4 VDC	Maximum load current: 100 mA Residual voltage 1 V or less (Load current 100 mA)	Maximum load current: 100 mA Residual voltage: 1 V or less (Load current 100 mA) Maximum applied voltage: 26.4 VDC	Maximum load current: 100 mA Residual voltage 1 V or less (Load current 100 mA)
	Error signal					
Function		Incorrect high voltage ion discharge detection (Ion discharge stops during detection)	Ion balance control with the built-in sensor, electrode contamination detection, incorrect high voltage ion discharge detection (stops discharge during detection) , ion discharge stop input, transition wiring, remote controller (option) , external sensor connection			
Effective de-ionizing distance		50 to 2000 mm	50 to 2000 mm (Sensing AC mode: 200 to 2000 mm, Manual operation/ Automatic operation modes: 100 to 2000 mm)		50 to 2000 mm (Manual operation/ Automatic operation modes: 100 to 2000 mm)	
Ambient/ Fluid temperature		0 to 40 ^{o}C				
Ambient humidity		35 to 80 %Rh (no condensation)				
Material		Ionizer cover: ABS, Electrode cartridge: PBT, Electrode: Tungsten, Single crystal silicon				
Shock resistance		100 m/ s^2				
Standard/ Directive		CE (EMC directive: 2004/ 108/ EC)				

5 Settings

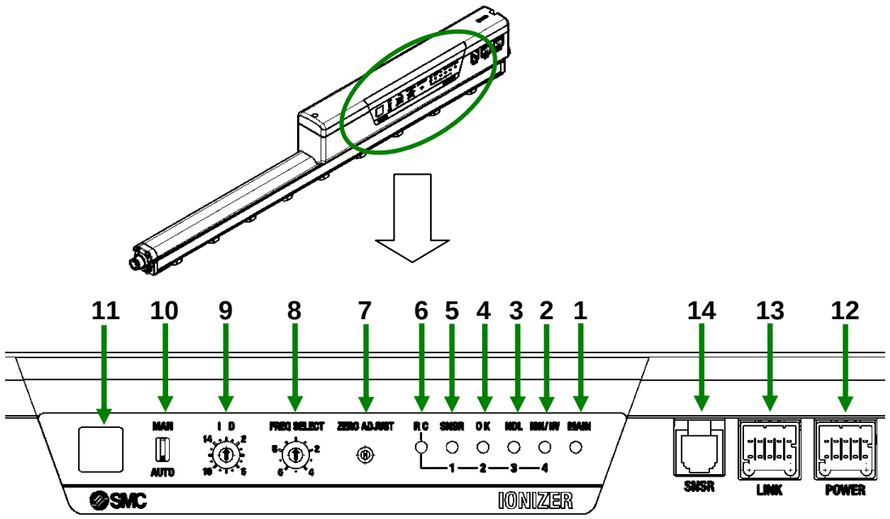
5.1 Descriptions and Functions of the Panel (IZS40)



No.	Description	Panel indication	Type	Operation
1	Power supply LED	MAIN	LED (Green)	Turns ON when power is supplied, and blinks when power supply voltage failure or CPU operation failure.
2	Ion discharge/ Incorrect high Voltage LED	ION/ HV	LED (Green)/ LED (Red)	Turns ON (green) when ions are discharged, and blinks (red) when incorrect ion discharge.
3	Ion balance adjustment	ZERO ADJUST	Trimmer	Used for ion balance adjustment. Rotating this trimmer in clockwise direction increases positive ions, and rotating it in counter-clockwise direction increases negative ions.
4	Frequency Set Switch	FREQ SELECT	Rotary switch	Used to set ion generating frequency.
5	Power supply connector	POWER	Connector (e-con)	Used to supply power for ionizer operation and to connect grounding to obtain reference potential.

5 Settings (continued)

5.2 Descriptions and Functions of the Panel (IZS41, IZS42)



No.	Description	Panel indication	Type	Operation
1	Power supply LED	MAIN	LED (Green)	Turns ON when power is supplied, and blinks when power supply voltage failure or CPU operation failure.
2	Ion discharge/ Incorrect high voltage LED	ION/ HV	LED (Green)/ LED (Red)	Turns ON green when ion discharge, blinks green when over current output, and turn ON red when incorrect ion discharge. Blinks red when CPU operation failure as well.
3	Maintenance LED	NDL	LED (Green)	Turns ON when contamination is detected on the electrode needle. Blinks when CPU operation failure while contamination is being detected.
4	Balance complete LED	OK	LED (Green)	Turns ON when ion balance adjustment is completed in the manual operation mode, or when the ionizer is operating with the data adjusted by the manual operation. Blinks during balance adjustment. It also blinks when the ionizer fails to adjust the ion balance in the manual operation mode, as well as the maintenance LED turns ON and the maintenance output turns ON. It also blinks when CPU operation failure.
5	Sensor LED	SNSR	LED (Green)/ LED (Red)	Turns ON green when feedback sensor or auto balance sensor is connected correctly, and turns ON red when there is any problem. It also blinks red when CPU operation failure.
6	Remote controller enable LED	RC	LED (Green)	Turns ON when remote controller setting is enabled, turns OFF when it is disabled, and blinks when a signal is received. It also blinks when CPU operation failure.
7	Ion balance adjustment	ZERO ADJUST	Trimmer	Used for ion balance adjustment. Rotating this trimmer in clockwise direction increases positive ions, and rotating it in counter-clockwise direction increases negative ions.
8	Frequency Set Switch	FREQ SELECT	Rotary switch	Used to set ion generating frequency.
9	ID number set switch	ID	Rotary switch	When remote controller is used for more than one ionizer, use this switch to set an ID number to identify each ionizer. (16 ionizers maximum can be identified.)
10	Operation Mode Set Switch	MAIN/ AUTO	DIP switch	Sets either manual operation mode (set to MAN) or automatic operation mode (set to AUTO) using auto balance sensor.
11	Receiving part of the remote controller	-	-	Receives infrared rays output from the remote controller (option).
12	Power supply connector	POWER	Connector	It is equipped with input/ output ports to be connected to the ionizer for power supply, grounding and controlling ionizer.
13	LINK connector	LINK	Connector	Connector for transition wiring of ionizer.
14	Sensor connection	SNSR	Modular connector	Connects a modular plug of feedback sensor or auto balance sensor. (Feedback sensor can be connected only to IZS41.)

6 How to Order

Refer to the operation manual for this product.

IZS 40 – □□ – □ – □□ – □□ – □

IZS □ – □□ – □ – □ – □□ – □□ – □ – □

Bar type

Model

40	Standard type
41	Feedback sensor type
42	Dual AC type

Bar length

Symbol	Bar length
340	340mm
400	400mm
460	460mm
580	580mm
640	640mm
820	820mm
1120	1120mm
1300	1300mm
1600	1600mm
1900	1900mm
2320	2320mm
2500	2500mm

Electrode cartridge type/ Electrode material

Symbol	Electrode cartridge type	Electrode material
Nil	High speed de-ionizing cartridge	Tungsten
C		Silicon
J	Energy saving type de-ionizing cartridge	Tungsten
K		Silicon

Input/ Output specifications

Nil	NPN
P	PNP

- IZS40: Specify "Nil" as it does not have an output function.

Power supply cable

Nil	With power supply cable (3m)
Z	With power supply cable (10m)
N	Wighout power supply cable

- When only an e-CON connector for IZS40 is required, specify "N", and order a part (Part No.: ZS-28-C) separately.
- To use AC adapter, specify "N", and select AC adapter with the option number. (A cable is attached to the AC adapter)
- Input/ Output function cannot be used when the AC adapter is being used.

Made to Order See table below.

Sensor

Symbol	Sensor	IZS41	IZS42
Nil	Without sensor	Yes	Yes
F	Feedback sensor	Yes	-
G	Auto balance sensor [high accuracy type]	Yes	Yes

- IZS40: Specify "Nil" as it does not have a sensor connecting function.

Bracket

B	With bracket*
Nil	Without bracket

* Number of intermediate bracket depends on the bar length. (See table below)

Number of bracket

Symbol for bar length	End bracket	Intermediate bracket
340 to 760	2 pcs.	None
820 to 1,600		1 pcs.
1,660 to 2,380		2 pcs.
2,440 to 2,500		3 pcs.

One-touch fitting

06	ϕ6 One-touch tube fitting
08	ϕ8 One-touch tube fitting
10	ϕ10 One-touch tube fitting

Refer to the table below for selection of One-touch fittings

Recommended piping bore size

	One-touch fitting		
	ϕ6	ϕ8	ϕ10
Recommended max. bar length for single end piping	640	1,300	2,500
Recommended max. bar length for double ends	1,300	2,500	2,500

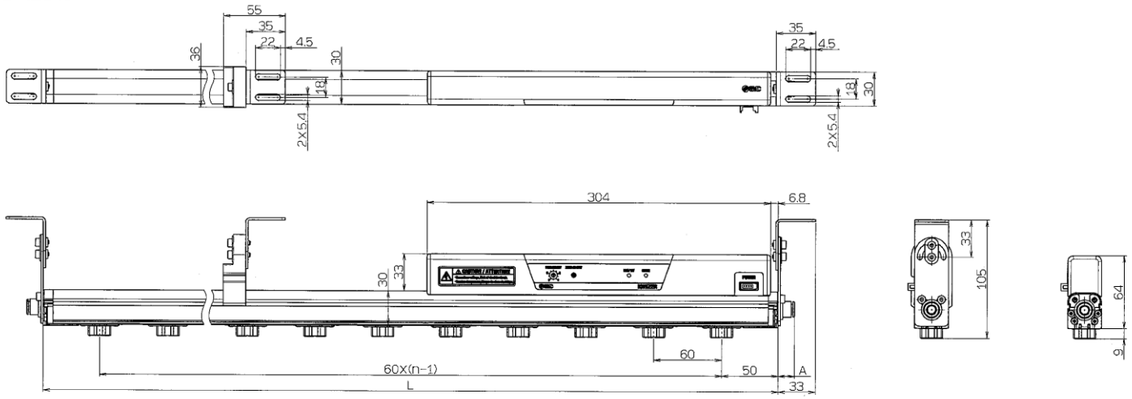
* The ionizer has air supply port at the both ends.

Symbol	Description	Specifications
X10	Non-standard bar length	Symbol for producible bar length: 460 + 60 x n (n: Integer from 1 to 34) (For 2, 3, 6, 11, 14, 19, 24, 31, and 34 for n, use a standard model.)
X14	With electrode cartridge drop preventive cover	An optional electrode cartridge drop preventive cover is mounted to the ionizer as default.

7 Outline Dimensions (mm)

Refer to the operation manual for this product.

7.1 IZS40



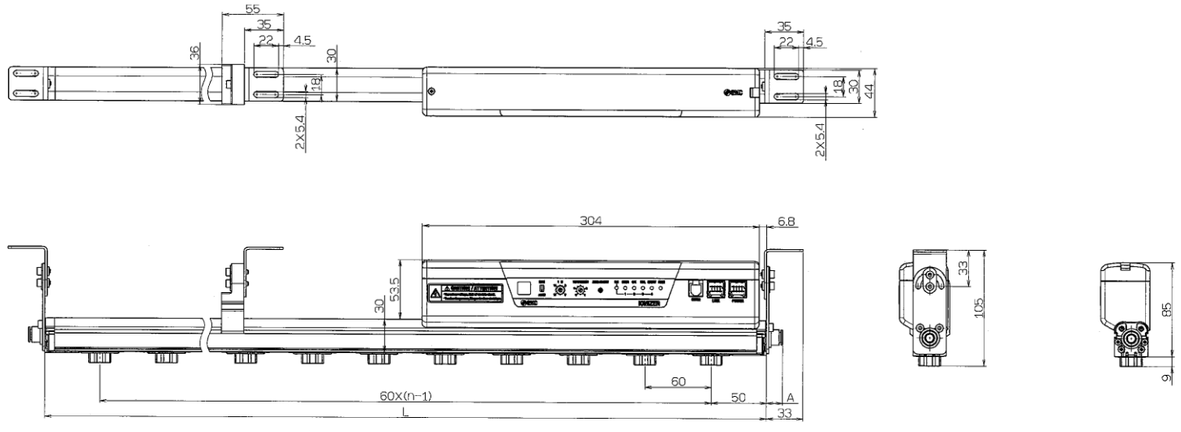
A

Symbol for fitting	A (mm)
06	13
08	15
10	22

n (Number of cartridge), L

Model	Symbol for Bar length	n	L
IZS40	340	5	340
	400	6	400
	460	7	460
	580	9	580
	640	10	640
	820	13	820
	1120	18	1120
	1300	21	1300
	1600	26	1600
	1900	31	1900
	2320	38	2320
	2500	41	2500

7.2 IZS41 / IZS42



A

Symbol for fitting	A (mm)
06	13
08	15
10	22

n (Number of cartridge), L

Model	Symbol for Bar length	n	L
IZS41 IZS42	340	5	340
	400	6	400
	460	7	460
	580	9	580
	640	10	640
	820	13	820
	1120	18	1120
	1300	21	1300
	1600	26	1600
	1900	31	1900
	2320	38	2320
	2500	41	2500

8 Maintenance

8.1 General Maintenance

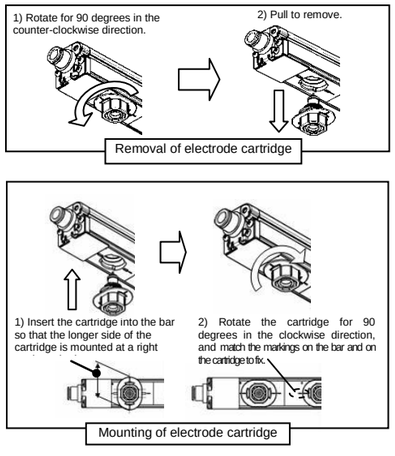
⚠ Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous. Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

8.2 Detection and cleaning of contamination on the electorode

⚠ Caution

- If the ionizer is used for a long time, contamination such as dust can stick to the electrodes, reducing the static electricity elimination performance. For this reason, IZS41 and IZS42 have a contamination detecting function.
- Dirt detection is performed when a contamination detection signal from an electrode is input. When the electrode requires cleaning due to deterioration of de-ionizing ability, the maintenance signal turns ON and maintenance LED also turns ON to notify the timing of cleaning. When the maintenance LED turns ON, make sure to clean the electrode. (Ionizer keeps operating even after the maintenance signal and maintenance LED turn ON.)
- Dirt detection of electrodes should be performed without a workpiece, as it is performed with ions discharged from the ionizer at a regular cycle and this may electrify the workpiece.
- Clean the electrodes with the electrode cleaning kit [IZS30-M2] or a cotton swab soaked in alcohol.
- In cases where the electrode contamination detecting function is not used or when the IZS40 does not have a contamination detecting function,, as contamination on the electrodes may vary depending on the installation environment and supply pressure, etc., confirm the product performance and set a maintenance cycle for a periodic cleaning.
- Make sure to turn OFF the power and air supply before cleaning the electrodes. If the electrodes are touched while the product is energized, it may cause an electric shock or accident. Do not touch the end of the electrodes. As electrodes have a sharp end, touching them directly with your fingers may cause injury.
- If the maintenance signal is output upon completion of cleaning the electrode, it may not have been cleaned sufficiently or it may have been worn or damaged. If wear or damage of the electrode is detected, replace the electrode cartridge with a new one. (If the electrode is worn out or damaged, the static electricity elimination performance will decrease.)
- Refer to the Fig. below for mounting, removal and cleaning of an electrode cartridge.



9 Limitations of Use

⚠ Warning

- **Do not exceed any of the specifications laid out in section 4 of this document or the specific product catalogue.**

10 Disposal information

The remote controller IZS41-RC used for this ionizer is a product sold separately. For this reason it is classified as Waste Electrical or Electronic Equipment according to the WEEE Directive 2012/19 / EU and should not be disposed of as municipal waste, in order to reduce the impact on human health and the environment. Remove and dispose of old batteries and the remaining electrical or electronic equipment according to local environmental regulations.

11 Contacts

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Specifications are subject to change without prior notice from the manufacturer.