

# Instruction Manual

Pencil type ionizer

## 【 Piezonizer Model ANZ-SC3 】

Thank you for purchasing the Piezonizer ANZ-SC3. As to the use of this equipment, you must have sufficient considerations after reading this manual carefully because it deals with alternating currents with high voltage of 2500V, although the products is not stipulated as high-voltage equipment in the electric equipment standard. Please read this manual before using the product in order to fully understand its functions. Also make sure to store this manual so that it can be referred to in the future.

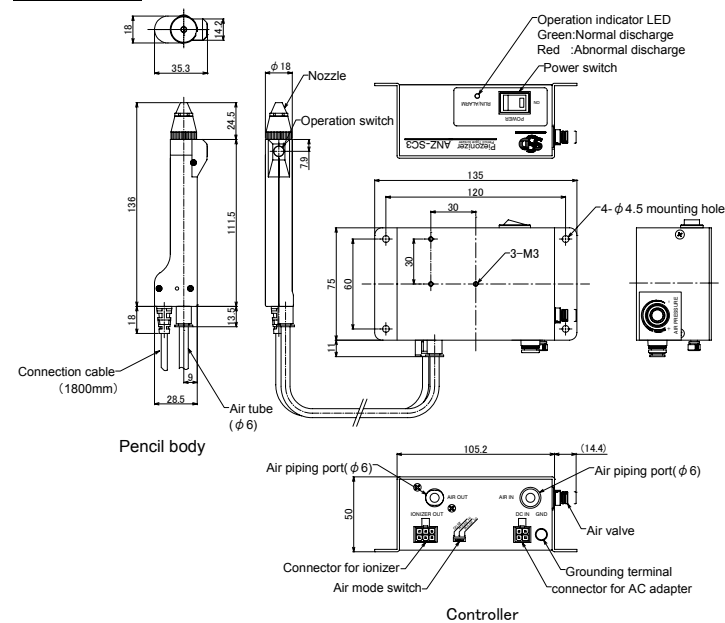
### Warning

- This Product is not specified as an Explosion-proof Type. Do not use this unit at a location or an atmosphere, in which combustible gas or solvent is handled, or else ignition or explosion may occur.
- A high voltage is applied to the discharge needle. Do not allow any conductive material, including your finger, any part of your body, wire or any tool to get close to the needle, or an electrical shock accident or a malfunction of the Unit may occur.
- The tip of the discharge needle is sharp, be careful not to touch the discharge needle.

### 1. Outline

- By holding the pencil-type and air nozzle in hand, the user can blow the ionized air on a charged object to neutralize the static electricity, and it removes dust sticking to a charged body by static electricity and prevent a contamination.
- It can coordinate pressure of the air with a controller. The Controller setting can be configured for continuous or intermittent (5Hz or 10Hz) blowing of ion air.

### Appearance



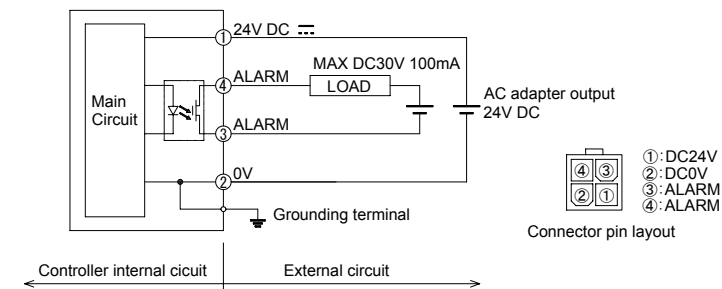
### 2. Specifications

List of Specifications	
Model No.	ANZ-SC3
Discharge Method	High frequency AC corona discharge method
Power-supply voltage	Accessory AC adapter input: 100 V to 240V AC, 50/60Hz (Output: 24V DC)
Input voltage	24 V DC ± 5%
Capacity	10VA
High voltage output	AC 2,500V approx. (3pF, 100MΩ)
Applicable fluid	Air (dried clean air)
Air pressure range	0.05 to 0.60 MPa
Supplied air flow	190 l/min(ANR) or less
Dimensions: (mm)	Pencil body: φ18 x 154L Controller: 135W x 50H x 75D (Not including protruding parts)
Weight	Pencil body: 95g approx. Controller: 570g approx.
Ambient temperature	0 to 40°C
Ambient humidity	65% or less( No condensation allowed )
Indicator LED	Indication on Controller. Green: Normal discharging / Red: Abnormal discharging
Abnormality output	MOS FET relay output (B contact) maximum allowed current: 100 mA Applied voltage: 30 V DC or less
Buzzer output	Buzzer ON at abnormal discharging
Quantity of produced ozone	0.04 ppm or less(150mm apart from the nozzle outlet)
Ion balance	± 15 V or less
Material	Pencil body: PBT, Controller: SECC
Accessories	Instruction manual, AC adapter, Grounding lead wire, Holder(4 pieces), Air tube(2500mm), Contact pin(5pieces)

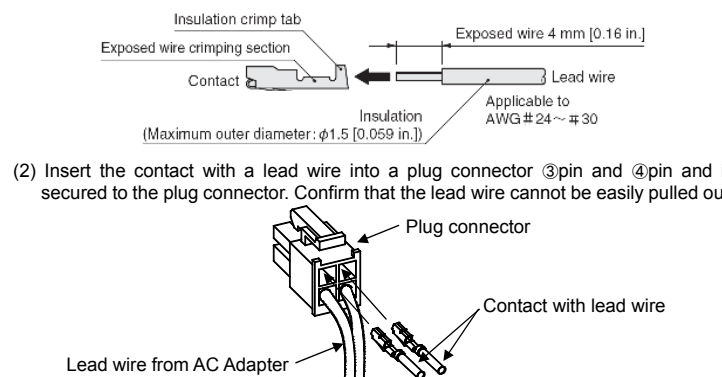
Air flow rate	0.1	0.2	0.3	0.4	0.5	0.6
Air pressure [MPa]	47	73	103	136	165	190
Air flow rate [l/min(ANR)]						

(Note1): Measured according to the air mode switch "CONT (continuous operation)".

### 5. I/O Circuit Diagram



- ①pin and ⑤pin are connected to the AC adapter.
  - If the abnormality output are to be used, attaching plug connector and contact as follow.
- (1) To crimp lead wires into contacts, strip off 4 mm [0.16 in.] of the insulation from the end of the lead wire, insert it into the contact, and crimp it. Be sure to avoid catching the insulation on the exposed wire crimping section.



- Abnormality output works as follows. The terminal MOSFET relay is rated for a maximum current of 100 mA and 30 V DC.

	POWER OFF	POWER ON	Abnormal discharging (red LED light)
Abnormality output	OPEN	CLOSE	OPEN
Buzzer output	OFF	OFF	ON

### 6. Wiring and piping

#### Warning

- Be sure to turn OFF the power and air before installing, wiring, or piping the product.

#### Caution

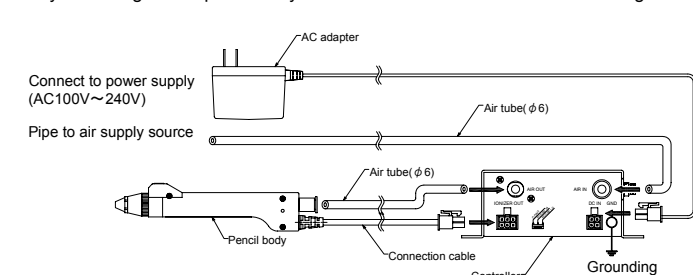
- For installation of the unit, pay attention to the contamination by oil/water, high temperatures or high humidity. Especially, avoid a place subject to dew condensation.
- If the air includes water and oil, the electrode gets dirty, the ability to remove electricity is lowered, or causing deterioration of the electrode
- Be sure to carry out the grounding procedure (according to the class D procedure). Otherwise, an electric shock accident or a malfunction of the unit may occur. In addition, this product may not be able to work up to the full performance.

#### Installation

- Install the controller on a stable place where it is easy to operate through the mounting holes (4-φ4.5).
- For installation of the unit, pay attention to the contamination by oil/water, high temperatures or high humidity. Especially, avoid a place subject to dew condensation.
- This product emits ozone into an atmosphere. Do not use this product in an enclosed space.

#### Wiring

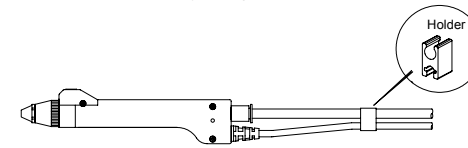
Carry out wiring for the pencil body and the controller in accordance with diagram below.



- Connect the connector at the end of the cable linked to the pencil body to the output connector of the controller.
- Please use the AC adapter supplied with the device to connect the input connector of the oscillator circuit section with the output connector of the controller.
- Connect the grounding terminal with the ground by using the grounding lead wire. Make sure that the grounding lead wire is not damaged.

#### Piping

- Carry out piping for the pencil body and the controller in accordance with diagram above.
- Install an air tube (external diameter 6 mm) to the air inlet of the pencil body and to the air outlet of the controller.
  - Carry out piping between the controller air inlet and the air supply (air compressor, blower) by using an air tube (external diameter: 6 mm). Supply the device with clean air (not containing any water or oil portion).
  - Combine the air tube and cable by using holder.



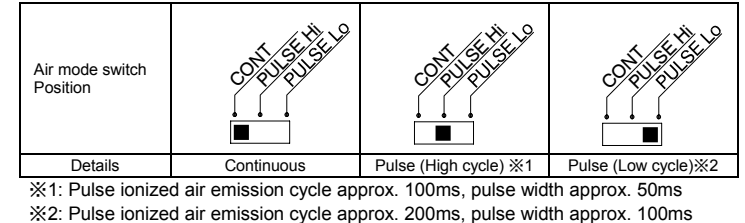
### 7. Operation

#### Warning

- Do not operate the unit by turning the nozzle to human body, especially to the face or to the eye of a person. This may cause serious injury to the person.
- Always supply the power of this product with applying air. Otherwise, the ozone concentrations inside the ionizer would increase due to electric discharge, which may cause detrimental effect on the main body and its surroundings.
- Do not let a nozzle of the pencil body tip touch conductive or live parts, because it is connected to the inside circuit.

- (1) Turn ON the power switch of the controller.
- (2) Open the main valve of the air supply equipment (of your company), and supply the specified air to the air inlet of the controller.
- (3) Operate the pressure regulator of the controller to regulate the supply air pressure. This concludes the preparations required.
- (4) Use the air mode switch to select the required settings.
- (5) Hold the pencil body and rolled with your hand and turn the nozzle tip to the workpiece (the object charged with static electricity to be worked upon). Press the operation switch of the pencil body with your finger to the ON position. Then, the ion air is blown out from the nozzle. This will neutralize and eliminate the static electricity on the charged object, and eliminate the dust adhered to the charged body.
- (6) When you release your finger from the operation switch of the pencil body, the operation switch will be turned off, and the ion air will be shut down.
- (7) When you are shutting down the this product, turn OFF the power switch of the controller, close the main valve of the air supply equipment, and then shut down the power supply to the controller.

#### < Air mode selection >



### 8. Maintenance

#### Warning

- Before care and maintenance of the product, make sure to turn OFF the power and air. Otherwise accidents or problems may occur.
- The tip of the discharge needle is sharp, be careful not to touch the discharge needle.
- If this product was splashed with water, oil, or paint, wipe it out with waste or cloth. Especially, when it stuck to the discharge needle and the nozzle inside, wipe it off immediately.
- Contamination of the discharge needle will deteriorate the static removal effect. If deterioration of the static elimination effect is observed, take off a nozzle from the pencil body, and clean the discharge needle and its surrounding area.
- Clean the discharge needle regularly about once two weeks, otherwise optimum charge removal performance may not be obtained and operating problems may occur.
- When dirt accumulates in the inside of the nozzle, clean it, and removes dirt.
- The discharge needle is a consumable part. It is necessary to change the discharge needle when you use this product for a long term. If operational time is over 20,000 hours, change the discharge needle.
- This product uses the solenoid valve. The operational life of the solenoid valve is about 50,000,000 times (open/close operations). If the solenoid valve becomes the life, stop using the product, and replace the solenoid valve. When the replacement of the solenoid valve is necessary, please contact it to us.

### 9. Troubleshooting

Problem	Main case	Remedy
The power cannot be supplied to the product.	The input power is not supplied.	Check the AC adapter to confirm that it is connected to the power source. Check the power supply to confirm that it is supplied normally.
No ionized air is supplied even when you press the operation switch.	The compressed air is not supplied. The air valve is closed.	Check the compressed air to confirm that it is supplied normally. Check the air valve of the controller is not closed.
Abnormal discharging happens. (red LED lights up.)	Dirt on discharge needle	Clean the discharge needle and its outskirts.
	discharge needle short-circuit	Check that there is not a conductive object near the discharge needle.
	A nozzle touches any grounded article.	Check the nozzle to confirm that it is not touching any grounded article.

### 10. Cautions

- This product was designed and manufactured as parts for use in General Industrial Machinery.
- Do not use this product for any purpose other than charge removal.
- Do not disassemble or remodel the product.
- This product emits ozone into an atmosphere. Do not use this product in an enclosed space.
- Do not insert any foreign objects into the product. Doing so may result in a short circuit or current leakage, and cause fire or electrocution.
- If the product emits any abnormal odors or sounds, smoke, or heat, turn OFF the main power immediately, remove the power cord, and contact your point of purchase. Failure to do so may result in fire or a short circuit.
- Do not directly touch the discharge needle with your hands.
- Do not connect other ionizers to this product.
- Do not turn ON the ionizer immediately after you have turn it OFF, or else an abnormal output is supplied. After turning OFF the ionizer, wait 1 second or more before turning it ON again.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Do not use the supplied cable for AC adapter or power and signal cables included in the products for a moving section. Otherwise, they may break down.
- Avoid scratching the cords of accessory lead wires, etc. Letting the cords be subject to scratching, excessive bending, pulling, rolling up, or being placed under heavy objects or squeezed between two objects, may result in current leaks or defective continuity that lead to fires, electric shocks, or abnormal operation.
- Do not pull out the connectors while the power is ON. Also, do not apply unnecessary stress on the connector. It could result in erratic equipment operation that could lead to personal injury, equipment breakdown, or electrical shocks, etc.
- For safety purposes, power OFF if you plan on not using the product for an extended period of time.

### Letter of Guarantee

1. This product has passed the inspection carried out by our company. This product will be subject to repair or replacement, free of charge, of any failed or broken part, if a failure or a breakage should occur during the guarantee period under the condition of normal use, caused by a defect in the design or manufacture by our company.
2. The Period of Guarantee: One (1) year starting from the date of delivery.
3. Any repair work or replacement for any failure or breakage caused by any of the following reasons will be carried out by the user bearing the cost:
  - (1) Any failure or breakage caused by usage or storage not under the normal condition.
  - (2) Any failure or breakage caused by an unauthorized repair or a modification carried out by other person than our company, or not in accordance with the specifications provided by our company.
  - (3) Any failure or breakage caused by a disaster or force majeure such as fire, natural calamity, or an act of God.
  - (4) Any failure or breakage caused by any other reason that cannot be attributable to our company.

Product Name	Air Ionizer (Brow-type Ionizer)	Model Name	Piezonizer model ANZ-SC3
Serial Number		Date of Delivery	Inspection Seal

**SHISHIDO ELECTROSTATIC, LTD.**

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