GB

HAUG®

Operating instructions
Ion-Air mini

Keep for future use!

Ident number: 04.0353.000

Air Line

Table of contents

1 Scope of delivery

- Ion-Air mini
- Wide input power pack 100 – 240 VAC with connecting cable and connector
- Mains cable
- Connector with interconnecting stranded wires for connection to 24 VDC
- Brown and white stranded wires for external monitoring (optional)
- Clamp (assembled)
- Screwdriver
- Operating instructions D-0277-GB

2 Operator instructions

Make sure you read the complete operating instructions before installing and commissioning the **"Ion-Air mini"**. They form a constituent part of the **"Ion-Air mini"** and must be retained for later use or a subsequent owner. Safety instructions must be observed and followed at all times.

The **"Ion-Air mini"** is an ionizing unit.

The ionizing unit is safe to operate if used as intended.

Symbols

⚠ WARNUNG

If this safety instruction is ignored, consequences may include fatal or critical injuries.

⚠ VORSICHT

If this safety instruction is ignored, consequences may include slight injuries.

ACHTUNG

If this safety instruction is ignored, consequences may include damage to assets.

NOTE: *Important notes and additional information.*

Do not dispose of with household garbage.

3 Safety

All activities must be performed only by persons authorized by the owner.

The installer must

- be a trained electrician.
- have read and understood the operator instructions.

Users must

- have read and understood the operator instructions.

Before commencing work on the ionizing unit, the supply power must be switched off and protected against inadvertent switch on. Never remove the protective screen.

Interference with pacemaker.
The electric high voltage in the ionizing unit results in an electric alternating field of 50 Hz which may influence the function of the heart pacemaker. Malfunction of the heart pacemaker may result in ventricular fibrillation or cardiac arrest.

- Persons wearing heart pacemakers must maintain a safety distance of more than 50 cm from the ionizing unit.
- The operator must mark the danger zone around the ionizing unit by means of a warning sign.
- The accident prevention regulations according to BGV A8 must be observed.
- An expert study on the influence of ionization systems on implanted heart pacemakers is available from HAUG GmbH & Co. KG.

Electric shocks due to manipulated or faulty ionizing units.
In the case of unauthorized conversions, wetness, moisture, or damage to the ionizing unit, there is a risk of electric shock.

- The ionizing unit does not contain any repairable parts.
- Unauthorized conversions and modifications of the ionizing unit are prohibited for safety reasons.
- Immediately take the ionizing unit out of operation in the event of visible damage and suspected electrical failure, and protect against reuse (refer page 20).
- Never operate the ionizing unit when your hands are wet.
- Never place or drop into liquids.
- Protect the ionizing unit from wetness and moisture.
- Clean any wetness off the ionizing unit carefully and allow to dry.
- Never introduce electrically conductive or other objects into the ionizing unit.

Physical complaints due to an excess of ozone.
During operation, small amounts of ozone are generated by the ionizing unit.
A very high ozone concentration and prolonged continuous exposure times may result in headache, irritation to the eyes, circulatory problems etc.

- To ensure that the maximum permissible ozone concentration at the workplace is not exceeded, adequate ventilation must be provided during operation of the ionizing units.
- An expert study on ozone emissions of ionization systems is available from HAUG GmbH & Co. KG.

4 Intended use

Risk of explosion in areas with potentially explosive atmospheres.
The ionizing units may generate ignitable sparks which may ignite gases, dust or similar substances.

- Do not install or use the ionizing units in area with potentially explosive atmosphere.

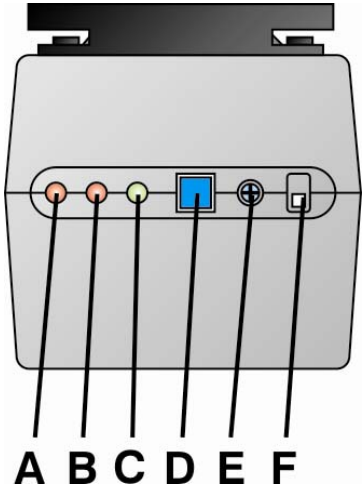
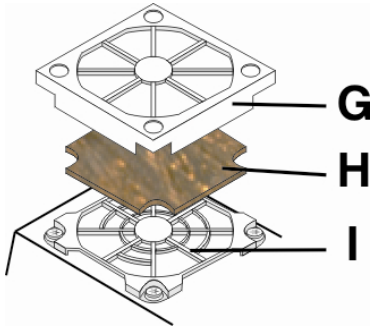
The ionizing unit is intended to eliminate electrostatic charges in industrial production.
The air stream is used for conveying the ions.
The ionizing unit is particularly suited for:

- ESD protection in the production of electronic devices
- photo and film processing
- electronic production and precision engineering
- construction of measuring and switching equipment
- PCB production and insertion
- Pad printing
- Feed and sorting technology
- Optical production

The ionizing unit can be set up, screw-fastened or attached at the point of use by clamping.
The unit allows external monitoring by connection of the connector plug. A signal is then output via this connector if the fan stops or the high voltage fails.

The installation and operating conditions indicated in these Operating Instructions must be adhered to.

5 Description of unit

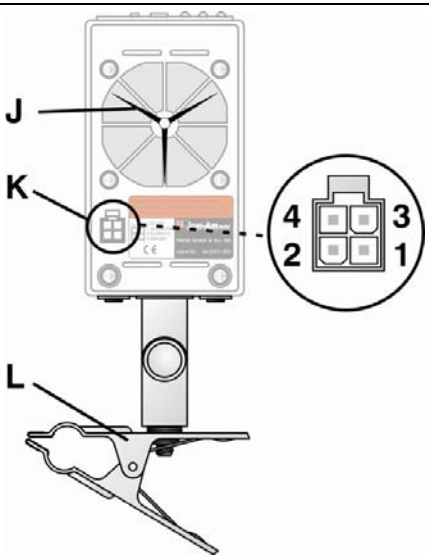
A LED FAN (fault indication fan) B LED HV (fault indication high voltage) C LED POWER (operating status) D Pushbutton ON/OFF • LED POWER illuminates when the ionizing unit is on. E FAN SPEED (fan speed governor) F AUTO/MANL (operating mode switch)	
G Cover grille H Air filter I Protective screen	

J Ionizing pins

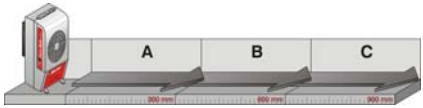
K Connection for supply voltage and monitoring

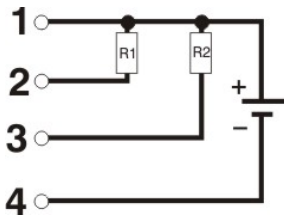
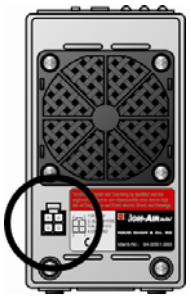
- Connection assignment:
  - 1 24 VDC
  - 2 Error message fan (optional)
  - 3 Error message high voltage (optional)
  - 4 Ground/GND

L Clamp (span 40 mm max.)



6 Installation

1. Select an appropriate place for installation. • Take into account the time needed to eliminate the electrical charge (see right). • Avoid installation location subject to direct sunlight. • Do not place the ionizing unit on a surface generating or emitting heat.	 Measured discharge time from ±1000 V to < ±100 V as a function of the distance: A 2,7 s at 300 mm B 5,9 s at 600 mm C 9,9 s at 900 mm
2. Select the supply voltage. • Local mains in combination with the wide-range power pack for 100 to 240 VAC. • Supply voltage 24 VDC in combination with the connector and stranded wires.	
3. Configure connector for external monitoring. Also refer to the following wiring diagram. • Without external monitoring, leave the connector as it is. • For the fan monitoring, plug in the white stranded wire at position 2. • For high-voltage monitoring, plug in the brown stranded wire at position 3.	

Circuit diagram: 1 24 VDC 2 Error message fan, maximum 20 mA • R1 > 1,2 kOhm 3 Error message high voltage, maximum 20 mA • R2 > 1,2 kOhm 4 Ground / GND	
NOTE: *R1 and R2 may be a resistor, indicator lamp or other load.*	
4. Plug in connector in the supply voltage terminal.	
5. Connect to the supply voltage. • Plug wide input power pack into the local network. • Connect connector with stranded wires to the supply voltage (see circuit diagram above).	
6. The ionizing unit is ready to operate.	

7 Putting into operation

ACHTUNG

The LED HV or LED FAN lights up in the case of an error. If the error messages are ignored, a fault in the ionizing unit may result.

- Immediately act on error messages to remove the defect.
- Carry out troubleshooting as described on page 16.

Connect and install the ionizing unit according to the operating instructions.

Manual operation
Switch on the ionizing unit by pressing the ON/OFF button.

1. Set the operating mode switch to MANL.
2. Press ON/OFF button.
3. LED POWER will light up to confirm.
4. Set fan to the desired air flow rate by turning FAN SPEED using the screwdriver supplied.
5. Adjust the direction of the air flow.

Automatic operation
The ionizing unit is switched on via the power supply.

1. Set operating mode switch to AUTO.
2. Switch on supply voltage to 24 VDC.
3. LED POWER will light up to confirm.
4. Set fan to the desired air flow rate by turning FAN SPEED using the screwdriver supplied.
5. Adjust the direction of the air flow.

NOTE: *After 100 operating hours, the LED POWER will flash. The ionizing pins need cleaning at this stage. For the cleaning procedure, refer to page 14.*

8 Maintenance

ACHTUNG

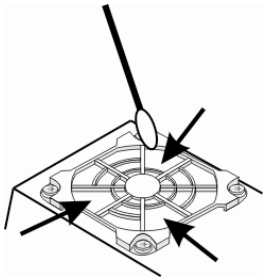
An incorrect cleaning agent may result in damage to the ionizing unit.

- We strongly recommend the exclusive use of cleaning accessories from HAUG GmbH & Co. KG. Refer to page 17 "Accessories".

Clean the ionizing pins of the ionizing units at least every 100 operating hours or when LED POWER flashes during operation.
The cleaning interval should be shortened when working in a heavily contaminated environment. When a deterioration of the cleaning effect is noticed, cleaning can improve ionization.

8.1 Cleaning

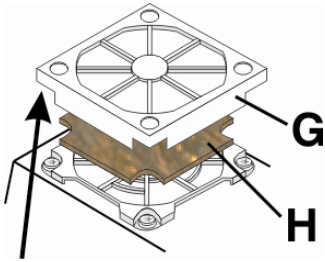
1. Switch off the ionizing unit and protect against inadvertent switching on.
2. Disconnect the ionizing unit from the power supply.
3. Pull off the cover grille with the air filter.
4. Impregnate a cotton swab with the special cleaning agent **SRM1**.
5. ⚠ VORSICHT After switching off, a high residual voltage may be present at the ionizing pins for approx. 1 min.
6. Wait 1 min. and then start cleaning the ionizing pins in the ionizing units.
7. Use the cotton swab to clean the ionizing pins through the protective screen exerting slight pressure.



8. Allow the ionizing unit to dry.
9. Reattach the cover grille with the air filter.
10. Reconnect the ionizing unit to the power supply.
11. When switching on, keep the ON/OFF button depressed for at least 3 sec in order to reset the LED POWER.

8.2 Replacing the air filter

1. Switch off the ionizing unit and protect against inadvertent switching on.
2. Disconnect the ionizing unit from the power supply.
3. Lift cover grille (G) with air filter (H) at one corner and pull off.
4. Replace the air filter.
5. Reattach the cover grille with the air filter.



9 Troubleshooting

⚠ VORSICHT

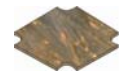
Improper troubleshooting may cause injuries.

- Users must have read and understood the Safety Chapter (see page 6).

Error	Cause	Measure for elimination
LED HV lights up	Short circuit at ionizing pins.	Check for foreign bodies.
		Cleaning of ionizing pins.
LED FAN lights up	Fan is blocked.	Check for foreign bodies.
	Fan does not rotate.	Return the ionizing unit to HAUG GmbH & Co. KG for checking.
LED POWER flashes (cleaning interval)	After 100 operating hours, the LED POWER will start flashing.	Perform Section cleaning. Refer to page 14.

NOTE: *If the defect cannot be eliminated in this way, return the ionizing unit to HAUG GmbH & Co. KG for checking (see back cover for address).*

10 Accessories

Article	**Illustrations**	**Order number**
Special cleaning fluid **SRM1**		10.7220.000
Wide input power pack		06.0353.000
Air filter		X – 1369

11 Technical data

11.1 Characteristics and specification

Reference temperature 23 °C

High-voltage	U = approx. 3,5 kVAC
Maximum power consumption	350 mA
Air flow rate	0,4 – 0,8 m^3/min
Range of effectiveness	approx. 0 – 900 mm

11.2 Supply voltage

Unit type	Nominal value	Operating range	Frequency range	Power input
Ion-Air mini	24 VDC	±5 %	50 - 60 Hz	P_{max} = 40 VA

11.3 Ambient conditions

Do not use in areas with potentially explosive atmospheres.	
Only for inside use.	
Temperature:	
Rated application range	0 °C to +40 °C
Extreme range for storage and transport	-15 °C to +60 °C
Humidity:	
Rated application range	20 % to 65 % RF
Extreme range for storage and transport	0 % to 85 % RF

11.4 Housing

Protection type	IP 20
Protection class	I
Mains cable length	1,8 m
Wide-range power pack cable length	2 x 1,5 m
Dimensions:	
Height	approx. 132,5 mm
Width	approx. 73 mm
Depth	approx. 73 mm
Weight:	approx. 0,5 kg

12 Decommissioning

1. Take the ionizing unit out of operation by pressing the ON/OFF button or switching off the power supply.
2. Disconnect the ionizing unit from the power supply.
3. Remove the ionizing unit from the workplace.

12.1 Storage

Store the ionizing unit at a dry and cool location.

12.2 Disposal

Do not discard electrical applicances with household garbage.
Electrical appliances must be collected separately and recycled in an environmentally responsible way.

All national and regional waste disposal regulations must be observed and complied with during disposal.

If no facilities exist for the proper disposal of electrical appliances, the unit may be retured to HAUG GmbH & Co. KG for environmentally responsible disposal.

NOTES:

made by

HAUG GmbH & Co. KG

Friedrich-List-Straße 18
D-70771 Leinfelden-Echterdingen
Telefon 07 11 / 94 98 - 0
Telefax 07 11 / 94 98 - 298

www.haug.de
E-Mail: info@haug.de

HAUG Biel AG

Postfach
CH-2500 Biel / Bienne 6
Johann-Renfer-Strasse 60
CH-2500 Biel / Bienne 6
Telefon 0 32 / 3 44 96 96
Telefax 0 32 / 3 44 96 97

www.haug.de
E-Mail: info@haug-biel.ch

Ion Air mini v05gb.doc

D – 0277 – GB
V05
2010-12-01