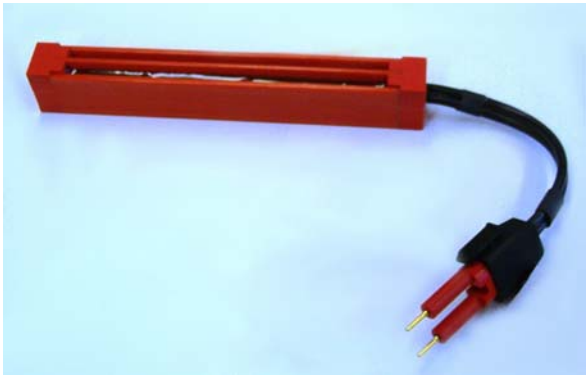
GB

Operating instructions
Ionizing bar EI DC

Keep for future use!



Ident number:
03.5067.000

DC Line

Table of contents

1 Operator instructions

Make sure you read the complete operating instructions before installing and commissioning the "**EI DC**". They are an integral part of the product and must be retained for later use or future owners.
Safety instructions must be observed and followed at all times.

The "**EI DC**" is an ionizing unit.

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

The term “high voltage” is abbreviated **HV** as part of the following expressions:

- HV connection
- HV plug
- HV cable
- HV socket

Symbols used in operating instructions

⚠ WARNING
If this safety information is not observed, severe injuries or death may result.

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

IMPORTANT
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.

Symbols on the ionizing unit

CAUTION!
Do not touch!
The ionizing unit carries high voltage.

CAUTION!
High-voltage

2 Safety

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

The installer must

- have basic knowledge in the field of electrical engineering.
- have basic knowledge in the field of mechanical engineering.
- have read and understood the operator instructions.

The maintenance personnel must

- have read and understood the operator instructions.

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 16).
- Protect the ionizing unit from wetness and moisture.
- Clean any wetness off the ionizing unit carefully and allow to dry.

Danger of injury from ionizing pins.
The ionizing pins are sharp and pointed; when touched, the ionizing pins may lead to stab or tear injuries.
When the discharging power pack is switched on, the ionizing pins will carry high voltage.
When the ionizing pins are touched, a painful electric shock will result. This may cause a psychological shock reaction resulting in further accidents.

- Do not touch the ionizing pins.
- The operator must provide a safety device to prevent contact with 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.

2.1 Intended use

⚠ WARNING

Risk of explosion!
The ionizing units may generate ignitable sparks which may ignite gases, dust or similar substances.

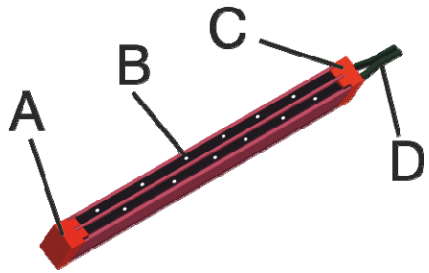
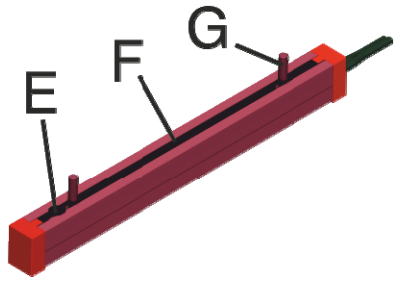
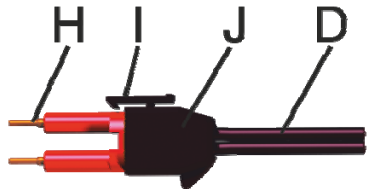
- Do not install or use the ionizing units in area with potentially explosive atmosphere.

The ionizing unit is intended for installation in production processes. It eliminates electrostatic charges in industrial production.

The ionizing unit must only be operated with a suitable discharging power pack supplied by HAUG GmbH & Co. KG. The discharging power pack and ionizing unit work in coordination with each other and ensure safe operation.

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

3 Description of unit

Ionizing bar EI DC: A End cover B Ionizing pins C Connection cover D HV cable	
E Screw insertion F Mounting groove G M5 x 20 PA screws	
HV plug: H Plug-in contacts I Latch J Connector housing D HV cable	

4 Installation

WARNING

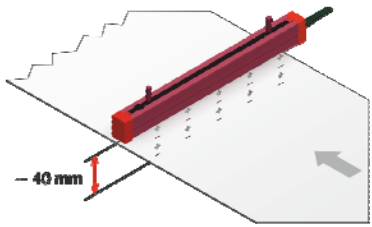
Risk of explosion!
The ionizing units may generate ignitable sparks which may ignite gases, dust or similar substances.

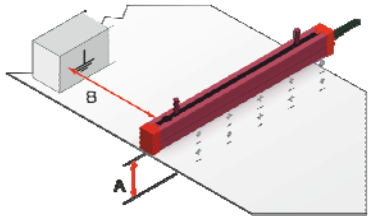
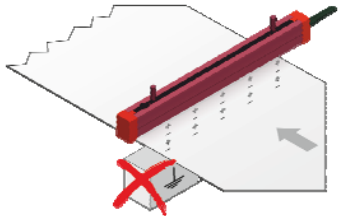
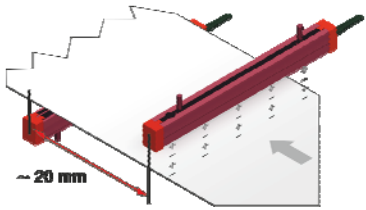
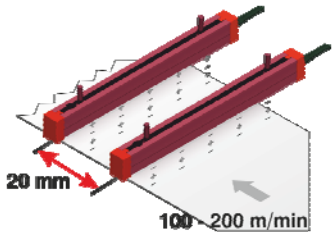
- Do not install or use the ionizing units in area with potentially explosive atmosphere.

IMPORTANT

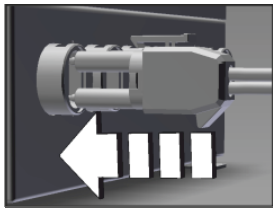
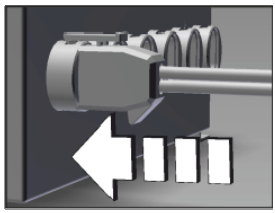
Damage to equipment!
Kinking or bending may damage the HV cable and insulation. This may result in a short-circuit.

- The HV cable must not be kinked.
- When routing around bends, the bending radius must not be smaller than 20 mm.
- Check the HV cable for kinks, cuts etc.

1. Prepare the selected mounting location in the production process with regard to the following parameters.	
The most favourable distance of the ionizing unit to the material to be ionized is approx. 40 mm. The limit values for the ionizing effect are at 20 mm min. and 100 mm max.	

The distance of the ionizing unit to an earthed machine part (B) must be greater than the distance to the material to be ionized (A).	
No earthed machine parts must lie behind the material to be ionized.	
If two ionizing units are used • one ionizing unit each must be installed above and below the material to be ionized. • the ionizing units must not face each other. • the units must be offset by approx. 20 mm.	
If two ionizing units are used with high conveying speeds, • the ionizing units must be installed next to each other. • a distance of approx. 20 mm must be maintained.	

IMPORTANT The ionizing pins of the ionizing unit must not be covered by mounting elements or machine parts. Otherwise, no ionization will take place at this location, and sparks may form. This may cause damage to the ionizing unit and even fire.

2. Install the ionizing unit in the mounting groove in the production process using the M5 screws and fasten.	
3. Route the HV cable to the discharging power pack. 4. Switch off discharging power pack and secure against inadvertent operation. 5. Plug the HV connector of the ionizing unit into the HV socket of the discharging power pack. 6. Push the HV connector into the HV socket until the latch clicks.	 
7. **⚠ CAUTION Electric shock!** During operation, the ionizing unit carries high voltage. Touching the ionizing unit may result in a painful electric shock. This may cause a psychological shock reaction resulting in further accidents. • The operator must provide a safety device to prevent contact with the ionizing unit.	
8. The ionizing unit is ready to operate.	

5 Cleaning

⚠ CAUTION

Risk of injury!
The ionizing pins of the ionizing unit are sharp and pointed. During cleaning there is a risk of injuries to the hand due to needle-pricks, tears or cuts.

- Protective gloves must be worn when working on the ionizing unit (EN 388 3122).

IMPORTANT

Damage to equipment!
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. See Section Accessories

5.1 Cleaning interval

The efficiency of the ionizing unit suffers as a result of contamination of the unit. This can be eliminated by cleaning.

- Clean the ionizing pins of the ionizing units **at least every 14 days**.
- The cleaning interval should be shortened when working in a heavily contaminated environment.

5.2 Dry cleaning

1. Switch off discharging power pack and secure against inadvertent operation.
2. Disconnect the ionizing unit from the discharging power pack.
3. Brush the ionizing pins of the ionizing unit using special cleaning brush RB3.
4. Blow off the ionizing unit with clean compressed air (max. 6 bar).
5. **IMPORTANT** Contamination can cause short-circuits in the HV connection. Short-circuits cause failures of the discharging power pack and HV plug.
   - Check the HV connections and HV plugs for contamination.
   - The connections must be clean and dry.
6. Reconnect the ionizing unit to the discharging power pack.

NOTE:
If dry cleaning does not yield the desired result, continue by using a wet cleaning process.

5.3 Moist cleaning

1. Switch off discharging power pack and secure against inadvertent operation.
2. Disconnect the ionizing unit from the discharging power pack.
3. Wet the special cleaning brush **RB3** with the special cleaning agent **SRM1**. The special cleaning system **RS2** may also be used for cleaning.
4. Brush the ionizing pins of the ionizing unit.
5. Blow off the ionizing unit with clean compressed air (max. 6 bar) and allow to dry.
6. **IMPORTANT** Contamination can cause short-circuits in the HV connection. Short-circuits cause failures of the discharging power pack and HV plug.
   - Check the HV connections and HV plugs for contamination.
   - The connections must be clean and dry.
7. Reconnect the ionizing unit to the discharging power pack.

6 Troubleshooting

⚠ CAUTION

Risk of injury!
Improper troubleshooting may cause injuries.

- Defects may only be repaired by expert personnel.
- The personnel must have read and understood the chapter on safety (see p. 5).

Error	Cause	Measure for elimination
No ionization	The ionizing unit is dirty.	Clean the ionizing unit (refer to page 11, Chapter 5).
	No high voltage	Check voltage supply
	Error in ionization system.	See troubleshooting of discharging power pack.
Sparkover with discharging power pack switching off.	The ionizing pins are too close to an electrically conductive material.	Increase distance to the cause.
	The ionizing unit is covered with an electrically conductive deposit.	Clean the ionizing unit.
	Fault in the ionizing unit	Shut down the ionizing unit immediately and secure against inadvertent switching on.

NOTE:
If the error cannot be removed in this way, return the discharging power pack and ionizing unit for checking to HAUG GmbH & Co. KG (for address, see reverse).

7 Accessories, spare parts

Article	Illustrations	Order number
Special cleaning fluid **SRM1**		10.7220.000
Special cleaning brush **RB3**		10.7218.003
Special cleaning system **RS2**		10.7218.004
Circular brush for special cleaning system		X – 5677

8 Technical data

8.1 Supply voltage

Electric connection to EN 1 DC HAUG discharging power pack	±5 kVDC

8.2 Ambient conditions

Use in areas with potentially explosive atmospheres is prohibited (refer to page 6)	
Only for inside use	
Temperature:	
Rated application range	+5 °C to +45 °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

8.3 Dimensions

Type	**Cross-section**	**Length**
EI DC	approx. 18 x 25 mm	80 - 2000 mm
High-voltage cable	2 x 1 mm^2	Customer-specific

9 Decommissioning

1. Switch off discharging power pack and secure against inadvertent operation.
2. Disconnect the ionizing unit from the discharging power pack.
3. Remove the ionizing unit from the decommissioned production process.

9.1 Storage

Store the ionizing unit at a dry and cool location.

9.2 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

EIDC v01gb.doc

HAUG GmbH & Co. KG

Friedrich-List-Straße 18
D-70771 Leinfelden-Echterdingen
Telefon: +49 711 / 94 98-0
Telefax: +49 711 / 94 98-298

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

HAUG Biel AG

Johann-Renfer-Strasse 60
CH-2500 Biel-Bienne 6
Telefon: +41 32 / 344 96-96
Telefax: +41 32 / 344 96-97

www.haug-ionisation.com
E-Mail: info@haug-biel.ch

D – 0334 – GB
V01
2012-04-03