HAUG GB®

Power Pack
EN SL / EN SL LC / EN SL RLC

Keep for future use!

Operating instructions

Static Line

Table of contents

Types and order numbers

EN SL without thermal cutout:
01.7780.200, 01.7780.208, 01.7780.220, 01.7781.200, 01.7781.208, 01.7781.220

EN SL with thermal cutout:
01.7830.000, 01.7831.000

EN SL LC with thermal cutout and signalling lamp:
01.7833.000, 01.7833.050, 01.7834.000, 01.7834.050

EN SL RLC with thermal cutout, signalling lamp and signalling socket:
01.7835.100, 01.7835.150, 01.7836.100, 01.7836.150

1 Operator instructions

These operator instructions must be read completely before installation and commissioning of the power pack. They form a part of the power pack and must be retained for later use or subsequent owners.
Safety instructions must be observed and followed at all times.

The power pack is operationally safe, provided that it is operated in accordance with its intended use.

The power pack is maintenance-free.

The following signal words are used:

WARNING!

If ignored

- severe personal injury.
- or death may result.

ATTENTION!

If ignored

- light property damage with damage to the power pack may result.

NOTE: *Important notes and additional information.*

2 Safety

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

- be qualified in electrical engineering.
- have read and understood the operator instructions.

Switch off the power supply before commencing work on the power pack, and secure against inadvertent switching on.

With the exception of the fuse, the power pack does not include any parts which can be repaired by the operator. For reasons of safety, unauthorized conversions and modifications of the power pack are not permitted.

Any damage to the power pack may result in the risk of electric shocks. In the event of any visible damage or suspected electrical defects, take the power pack out of operation immediately and secure against reuse.

⚠ WARNING!

Risk of electric shock.
High electric voltage in power pack.
Risk of electric shock when touching live parts within power pack.

- Do not open the power pack.

ATTENTION!

Risk of short circuit.
Spark-overs and leakage paths at the high-voltage terminals can occur as a result of moisture and wetness.
Short circuits within the power pack are the likely consequence.

- Protect the power pack from wetness and moisture.
- Close unused high-voltage terminals with the red blind plugs.

Risk of spark-over.
When the power pack is switched on, contact or separation spark-overs may occur when the ionizing unit is plugged in or unplugged at the high-voltage socket.
This may result in damage to the power pack or defects.

- Only plug in/unplug the ionizing unit at the high-voltage socket when the power pack is switched off.

3 Intended use

The power pack is intended exclusively for the supply of alternating high voltage to HAUG ionizing units with X - 2000 connector.

Only HAUG ionizing units with X - 2000 connectors must be connected with the power pack and operated.
The warranty only covers units and accessories of HAUG GmbH & Co. KG.

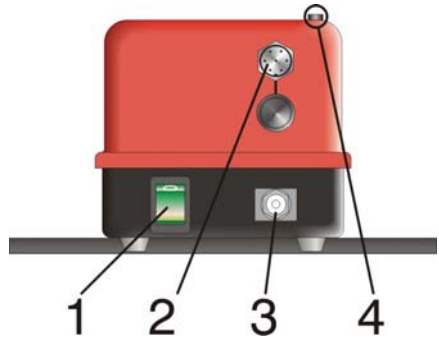
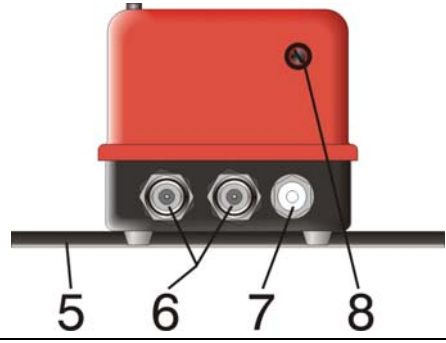
The installation and operating conditions indicated in these Operating Instructions must be adhered to.

WARNING!

Risk of explosion!
Ignitable sparks may form at the power pack.

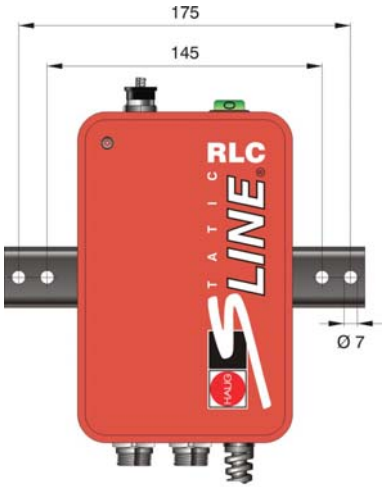
- Do not install or use the power pack in areas subject to explosion hazards.

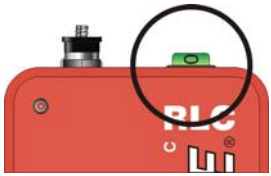
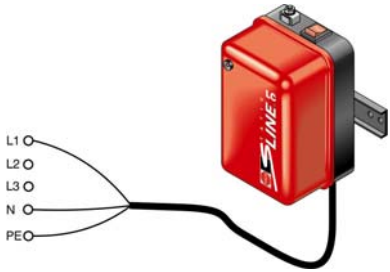
4 Description of unit

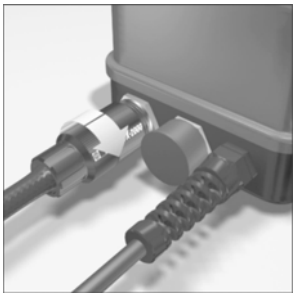
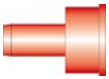
1) Mains switch • Green light in switch illuminates when power pack is on. 2) Signalling socket (RLC types only) 3) Ground connection (terminal) 4) Signalling lamp (LC and RLC types only)	
5) Bracket 6) High-voltage terminals 7) Mains supply 8) Fuse holder with fuse (for replacement, refer to page 16, Chapter 7.1).	

5 Installation

Do not place the power pack on a surface generating or radiating heat. Avoid installation location exposed to direct sunlight.

1. Check the model plate of the power pack against the ordering data. In the event of damage to the power pack, contact HAUG GmbH & Co. KG.	
2. Before connecting, check to ensure that the power pack is suitable for the local mains voltage. • The voltage is indicated on the model plate attached at the side of the power pack. • An incorrect mains voltage may result in damage to the power pack.	
3. Use the enclosed bracket to install the power pack at the desired location. • The operation of the power pack is not affected by the position in which it is installed. • We recommend installing the power pack with the high-voltage terminals pointing downwards (to protect them from moisture, oil and dirt).	

4. Ensure that the power pack is switched off.	
5. Connect the ground socket of the power pack with the machine ground connection.	
6. Connect the power pack to the mains. Connect the PE conductor (green-yellow) with the protective earth of the mains. • Connecting the PE conductor via parts of a machine body is insufficient. • L1 = brown conductor • N = blue conductor • PE = green/yellow conductor	

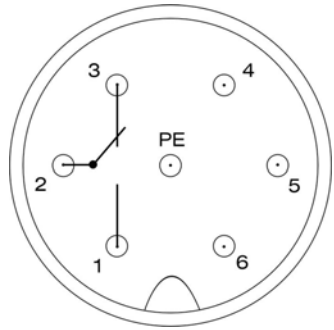
ATTENTION!	
Risk of overheating. If the maximum permissible connected length is exceeded, the power pack will overheat during operation. This may result in damage to power packs not equipped with thermal cutout and cause a fault. • The maximum permissible connected length must not be exceeded. • For connected lengths for the power pack, refer to page 23.	
7. Connect the ionizing unit to the high-voltage terminal. • Plug the high-voltage connector of the ionizing unit into the high-voltage socket of the power pack and push at the high-voltage cable until the stop is reached. • Screw the screw cap onto the high-voltage socket and tighten by hand.	
NOTE: *Protect unused high-voltage terminals against the ingress of environmental substances using the red blind plugs.*	

RLC types only

8. If required – if an error message needs to be evaluated, connect the signalling line to the signalling socket.

Configuration of the signalling socket.

Pin 1: Switching contact
Pin 2: Joint connection relay
Pin 3: NC contact
Pin 4: Not assigned
Pin 5: Not assigned
Pin 6: Not assigned
PE: Shield ground



Switching status table for signalling socket.

	Mains voltage	High-voltage	Contacts closed					
			1	2	3	4	5	6
Normal operation	yes	yes	x	x				
Mains failure	no	no		x	x			
High voltage failure	yes	no		x	x			

9. The power pack is ready for operation.

6 Application

Preconditions:
The power pack and the ionizing unit must be connected and installed as specified in the operator instructions.

1. Switch on the power pack using the mains switch.
   - The mains switch will illuminate to confirm.
2. The power pack is in operating mode.
3. In the event of an operating fault, the signalling lamp will flash.
   - Only applies to LC and RLC types.
   - In the case of RLC type, a signal will be output at the signalling socket.
   - To remedy the fault, carry out the troubleshooting procedure.

NOTE: *Types with thermal cutout will switch off when overheated. The signalling lamp will flash. Determine and remove the cause of overheating by carrying out the troubleshooting procedure.*

7 Troubleshooting

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

Error	Cause	Measure for elimination
No ionization	Mains failure	Check mains fuse.
	No high voltage	Check fuse in power pack.
		Check connections in power pack.
		Check high-voltage output using the Combicheck (see accessories).
	Only applies to types with thermal cutout: A short circuit will result in the power pack overheating. The installed thermal cutout will switch the power pack off.	Replace faulty ionizing unit and allow the power pack to cool down for at least 15 min.
	Only applies to types with thermal cutout: Exceeding the permitted connected length will result in the power pack overheating. The installed thermal cutout will switch the power pack off.	Check the connected length and allow the power pack to cool down for at least 15 min. For permissible connected lengths, refer to page 23.

Error	Cause	Measure for elimination
No ionization	The power pack is damaged.	Shut the power pack down immediately and secure against switching on.
Signalling lamp flashing (EN SL LC and EN SL RLC only)	The ionizing unit is faulty.	Follow work sequence according to the flow chart below.

7.1 Replacing fuse

ATTENTION!
Risk of faults! An incorrect fuse in the power pack may cause a fault. • Only use fuses of the type indicated.

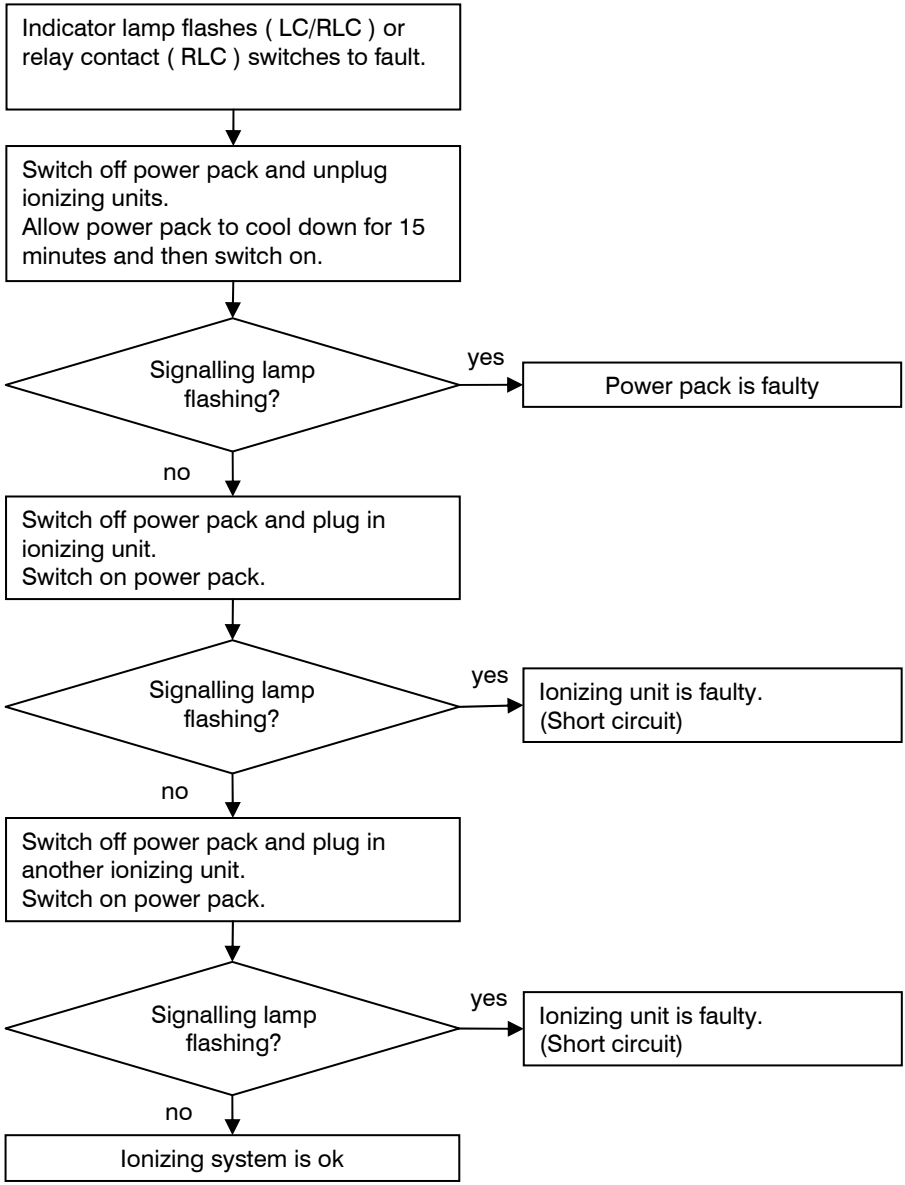
The unit type and the rated voltage are indicated on the nameplate.

1. Disconnect power pack from supply.
2. Determine and remove the cause for the blown fuse.
3. Detach the fuse holder using a screwdriver and lift out.
4. Replace fuse and reattach fuse holder.

Use the following fuse only:

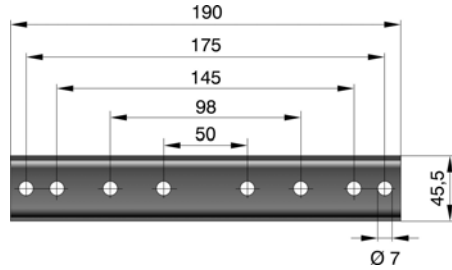
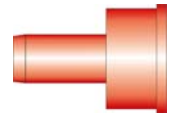
- 115 V = 0,50 A slow, 5 x 20 mm
- 230 V = 0,25 A slow, 5 x 20 mm

7.2 Flow chart



8 Accessories

Article	Illustrations	Order number
Signal plug		X – 7807
5 m shielded signalling line K6 with assembled plug		06.8976.000
10 m shielded signalling line K6 with assembled plug		06.8976.001
20 m shielded signalling line K6 with assembled plug		06.8976.002

Article	Illustrations	Order number
Bracket for power pack		10.0023.000
Blind plug for HV terminals		X – 1080
Combicheck		12.7231.000

9 Technical data

9.1 Characteristics and specification

Reference temperature 23 °C

High-voltage terminals	2 HAUG- High-voltage terminals
Connectable HAUG ionizing units	All HAUG ionizing units fitted with X - 2000 connector
High-voltage	U = approx. 7 - 8 kVAC
Signalling terminal EN SL RLC	Contact load max. 24 VAC/35 VDC, max. 50 mA
Cannot be used in pulsed mode	
Short-circuit current:	
01.7780.220, 01.7781.220	Ik ≤ 3 mA
01.7780.200, 01.7780.208, 01.7781.200, 01.7781.208, 01.7830.000, 01.7831.000, 01.7833.000, 01.7833.050, 01.7834.000, 01.7834.050, 01.7835.100, 01.7835.150, 01.7836.100, 01.7836.150	Ik ≤ 5 mA

9.2 Supply voltage

Unit type	Nominal value	Operating range	Frequency range	Power input
01.7781.208, 01.7834.050, 01.7836.150	100 VAC	±10 %	50 - 60 Hz	P_{max} = 40 VA
01.7781.220	115 VAC	±10 %	50 - 60 Hz	P_{max} = 20 VA
01.7781.200, 01.7831.000, 01.7834.000, 01.7836.100	115 VAC	±10 %	50 - 60 Hz	P_{max} = 40 VA
01.7780.208, 01.7833.050, 01.7835.150	200 VAC	±10 %	50 - 60 Hz	P_{max} = 40 VA
01.7780.220	230 VAC	±10 %	50 - 60 Hz	P_{max} = 20 VA
01.7780.200, 01.7830.000, 01.7833.000, 01.7835.100	230 VAC	±10 %	50 - 60 Hz	P_{max} = 40 VA

9.3 Ambient conditions

Do not use in areas with potentially explosive atmospheres.	
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
Air pressure:	
Rated application range	800 mbar to 1060 mbar
Vibrations:	
Extreme range for storage and transport	max. 1,5 g (10 to 55 Hz), 1 h
Shock	max. 15 g in each direction
Recommended service position:	vertical, supply cable downwards

9.4 Connected lengths

Power Pack	Permissible connected length	Maximum ionizing bar length Type A	Maximum ionizing bar length Type B
01.7780.220, 01.7781.220	5 m	4.7 m	1.4 m
01.7780.200, 01.7780.208, 01.7781.200, 01.7781.208, 01.7830.000, 01.7831.000, 01.7833.000, 01.7833.050, 01.7834.000, 01.7834.050, 01.7835.100, 01.7835.150, 01.7836.100, 01.7836.150	10 m	6 m	3 m

	Ionizing bar
Type A	EI RN, EI RNE, EI RA, EI RAE, EI RNOF, EI RAOF, EI HRN, EI HRA, EI HRE, EI HRAE, EI PS, EI PRX, EI PRV, EI SL, EIW
Type B	EI VS, EI VSE, EI VSA, EI VSAE, EI VC, EI VCA, EI VCE, EI VCAE, EI VSOF, EI VSAOF

Ionizing bar Type A:
The maximum cable length (KL) is the permissible connected length (AL) minus the maximum ionizing bar length (SL).
KL = AL – SL

Ionizing bar Type B:
The maximum cable length (KL) is the permissible connected length (AL) minus 3 x the maximum ionizing bar length (SL).
KL = AL – (3*SL)

9.5 Housing

Protection type	IP 54
Protection class	I
Mains supply	approx. 2,6 m fixed on unit
Dimensions:	
Height	approx. 170 mm
Width	approx. 110 mm
Depth	approx. 100 mm
Weight:	approx. 3.5 kg

10 Decommissioning

1. Switch off the machine and secure against unintended switching on.
2. Switch off power pack and secure against inadvertent operation.
3. Disconnect the ionizing unit from the power pack.
4. Disconnect the power pack from the mains and remove.

11 Disposal

Observe and maintain national and regional waste disposal regulations for the disposal of the power pack.

made by HAUG®

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