



SCHNIER



HES 03/01
HIGH-VOLTAGE-SWITCH

Part. N°: 810232

OPERATING MANUAL

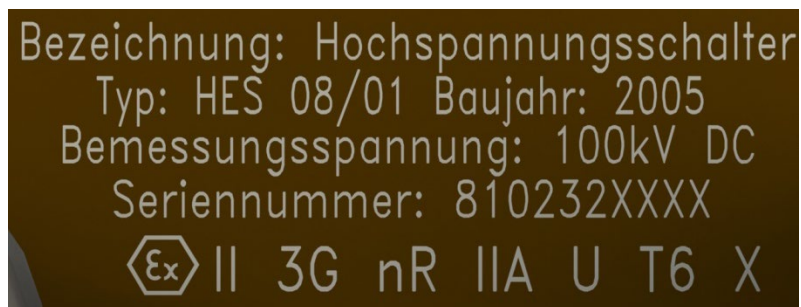
1. Product and Producer

1.1. Product Identification

These operating instructions are part of the device:

Device designation:	High-voltage switch
Type:	HES 08/01
Item number:	810232

1.2. Marking



1.3. Warranty

Any type of warranty will lapse when the device is opened, modified, parts have not been replaced by genuine parts or these operating instructions have not been observed.

1.4. Manufacturer

SCHNIER Elektrostatik GmbH

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Germany

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Headquarters: Reutlingen HBR 354 531

VAT ID: DE 146 481 986

Manager: Olav Schnier

2. Guideline for these Operating Instructions

These operating instructions must be read, understood and observed in all points by all persons who are responsible for the devices and electrostatic systems. Only knowing these operating instructions makes it possible to avoid errors and warrant secure and interference-free operation. SCHNIER does not assume any liability for damage that arises from non-observation of these operating instructions!

2.1. Target Group

These operating instructions are targeted at:

Machine operators (like machine commissioners, electronics masters, IT specialists or locksmiths) who were trained by the producer or operator according to the operating instructions and relevant safety provisions.





Maintenance specialists (like machine commissioners, electronics masters, IT specialists or locksmiths) who were trained by the producer or operator according to the operating instructions and relevant safety provisions.

2.2. Accessibility of the Operating Instructions/Storage

The operating instructions must be available and accessible at the system at all times for the responsible specialists (operating, maintenance, repair staff, etc.).

The operating instructions must be kept by the operator for the entire service life of the system. If the system or parts of it are sold on, the operating instructions must be submitted to the new owner since they are part of the system.

2.1. Icons / Symbols Used


Icon / Symbol	Meaning
	Warning of a danger point used to indicated a directly dangerous situation that, if not avoided, will cause severe injury or death .
	Warning of dangerous electrical voltage used to indicated a directly dangerous situation that, if not avoided, will cause severe injury or death .
	Warning of danger to the system or operating interferences.
	Notice for simple, efficient procedure.

3. Intended Use

3.1. Use




The high-voltage switch type HES 08/01 Product is dedicated only for the use in stationary electrostatic installations which comply with the safety requirements of at least one of this harmonized standards:

EN 50176	“Stationary electrostatic application equipment for ignitable liquid coating material“
EN 50348	“Stationary electrostatic application equipment for non-ignitable liquid coating material“
EN 50177	“Stationary electrostatic application equipment for ignitable liquid coating powders“
EN 50223	“Stationary electrostatic application equipment for ignitable flock material“

	ATTENTION Any commissioning outside of this provision is forbidden.
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This device is **not a finished** part and must only be taken into operation after complete and proper installation and after it has been determined, if required, that the system into which the device was installed complies with at least one of the above standards.

4. Installation Notes

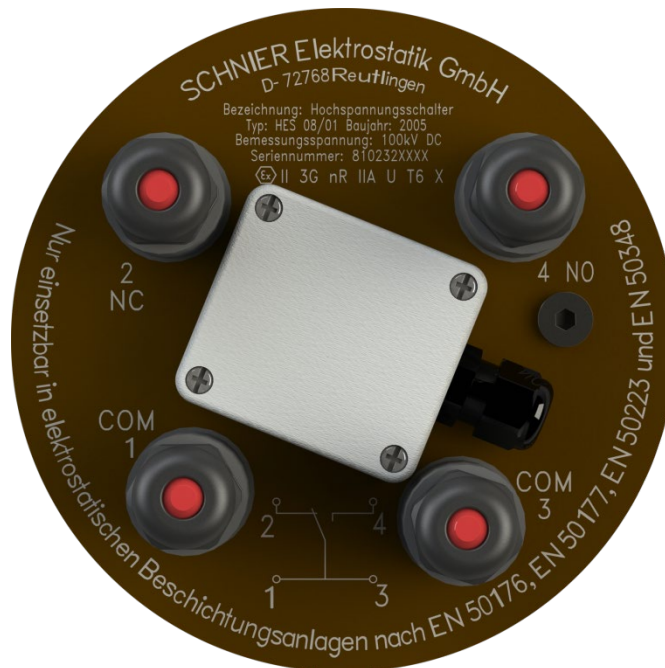
	The HV switch must only be operated vertically. It must be installed in a housing for protection from mechanical and chemical strain. The high-voltage switch is an ATEX device of category 3GD and may be used in potentially explosive areas of zone 2 or 22.
	If the high-voltage switch type HES 08/01 is used as an earthing switch, the earth line must be executed with at least 2 m dampened HV cable, e.g. Hyp HKA 03/01 or HKA 03/02 of company SCHNIER Elektrostatik. It is generally recommended to use dampened HV cables to reduce interference peaks that arise when switching.
	Only ex-cable glands of polyamide must be used, such as: Perfect ex-cable gland item no. 50.612 – 50.663 Producer: Jacob GmbH, 71394 Kernlen The cable glands must be installed with an o-ring, such as: O- Ring 307G – 348 G Producer: Jacob GmbH, 71394 Kernlen The cable glands must be equipped with ex-closure plugs, such as: Ex-closure plugs item no. WJ-D 12-VPAEX Producer: Jacob GmbH, 71394 Kernlen When installing the terminal box, ensure that the lid fits (seal) and the attachment screws are not too long for the lid. Observe that the connection PCB inside the terminal box is secured with 2 screws. These screws must be hand-tightened at all times, or proper mass connection will not be warranted.

5. Setup and Overview

5.1. General

Device designation	High-voltage switch
Type	HES 08/01

5.2. Figure



5.3. Technical Description

The high-voltage switch essentially comprises a high-voltage switching unit that works in isolation oil, an electromechanical drive and the terminal box. The housing is cast from stable isolation resin and the high-voltage connections are designed for dry installation of the high-voltage cables. The high-voltage switch is built so that the opener, closer, converter or earth switches can all work (see connection examples).

Use as earth switch is only permitted with a dampened HV-cable, e.g. item no.: 050028 or 050029 of SCHNIER Elektrostatik GmbH as earth line.

The earth line should be performed with at least 2 m dampened HV cable.

The common switching contact is designed double for connection of measuring or discharge resistors.

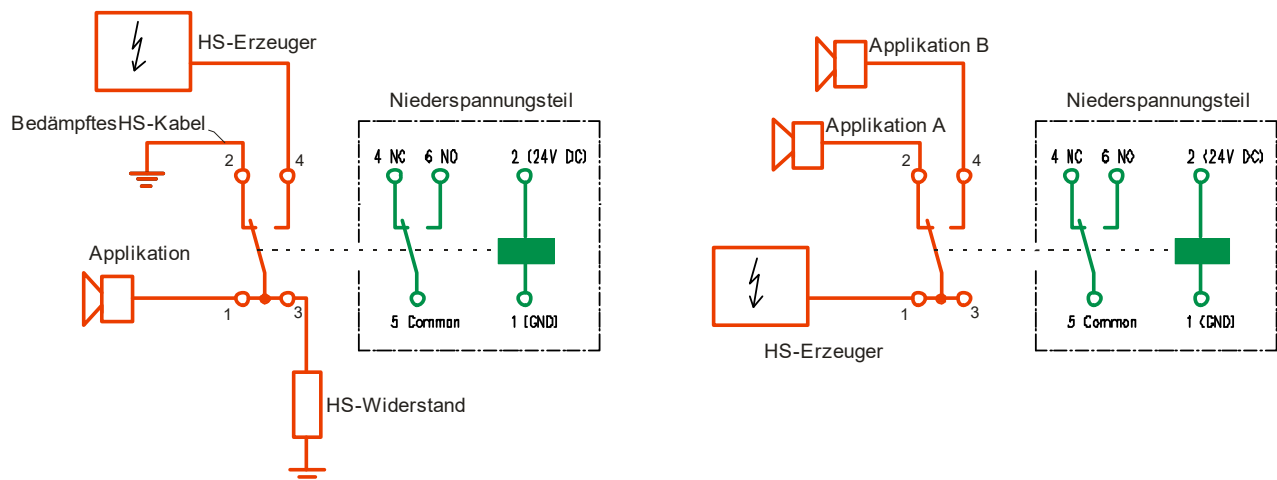
5.4. Special installation conditions

The cord grip must be tightened with a torque of 3.8 Nm. Unused HV connections must be closed with a blanking plug.

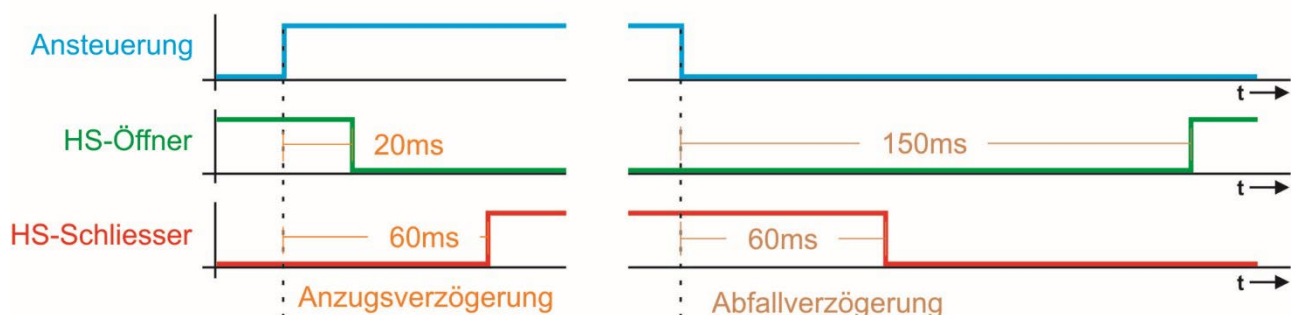
5.5. Technical Data

Max. switching voltage	100 kV DC / minimum testing voltage: 1000 V DC
Max. operating current	1 mA
Control voltage	24 V DC
Start-up current/holding current	Typical: 500 mA for maximum 0,5 s / typical: 150 mA
Ambience conditions	+5°C to 40°C max. 80% r.h.
Dimensions L / Ø	330 / 170 or 190 mm
Weight	6,800 g
Protection type	Drift-proof
Build	Cylindrical, cast with isolation oil filling
Insulating Oil	Approx. 2.4l Shell – Diala S4 ZX-I
Installation conditions	See 2.4 and 4.0
High-voltage connections	Ø Connection pipe 10 mm, 220 mm plug-in depth Ø Contact socket 4 mm
Cycling rates	> 1.000.000
Maintenance	It is recommended that the earth switch be sent for maintenance after 10 ⁶ cycling rates. Maintenance includes oil change, switching the feedback contacts and internal cleaning.

5.6. Connection Examples



Switching Times



EC-COMPLIANCE STATEMENT

Manufacturer:

SCHNIER Elektrostatik GmbH
Bayernstrasse 13
D-72768 Reutlingen

Product designation:
Type / SCHNIER item no.:

High-voltage switch
HES 08/01 / 810232



We hereby state that the device described above corresponds to the following EC directives because of its concept and build and in the version marketed by us:

EC-directive 2014/34/EU (ATEX)
EC-directive 2006/42/EG (machinery directive)
EC-directive 2014/30/EU (EMC directive)

The directive 2014/35/EU (low-voltage directive)
was complied with regarding its protective targets

Applied Harmonised Standards:

- EN 50176 Stationary equipment for electrostatic coating with ignitable liquid coating material - safety requirements
- EN 50177 Stationary equipment for electrostatic coating with ignitable liquid coating powders - safety requirements
- EN 50223 Stationary electrostatic flock systems for ignitable flock material - safety requirements
- EN ISO 12100 Safety of machinery - General principles for design - Risk assessment and risk reduction
- EN 60204-1 Safety of machinery - electrical equipment of machinery - part 1: General requirements
- EN 61000-6-2 Electromagnetic compatibility (EMC) - Part 6-2: Technical basic standards - Interference-resistance for industrial areas
- EN 61000-6-4 Electromagnetic compatibility (EMC) - Part 6-4: Technical basic standards - Interference emission for industrial areas

Rommelsbach August 22 2018



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