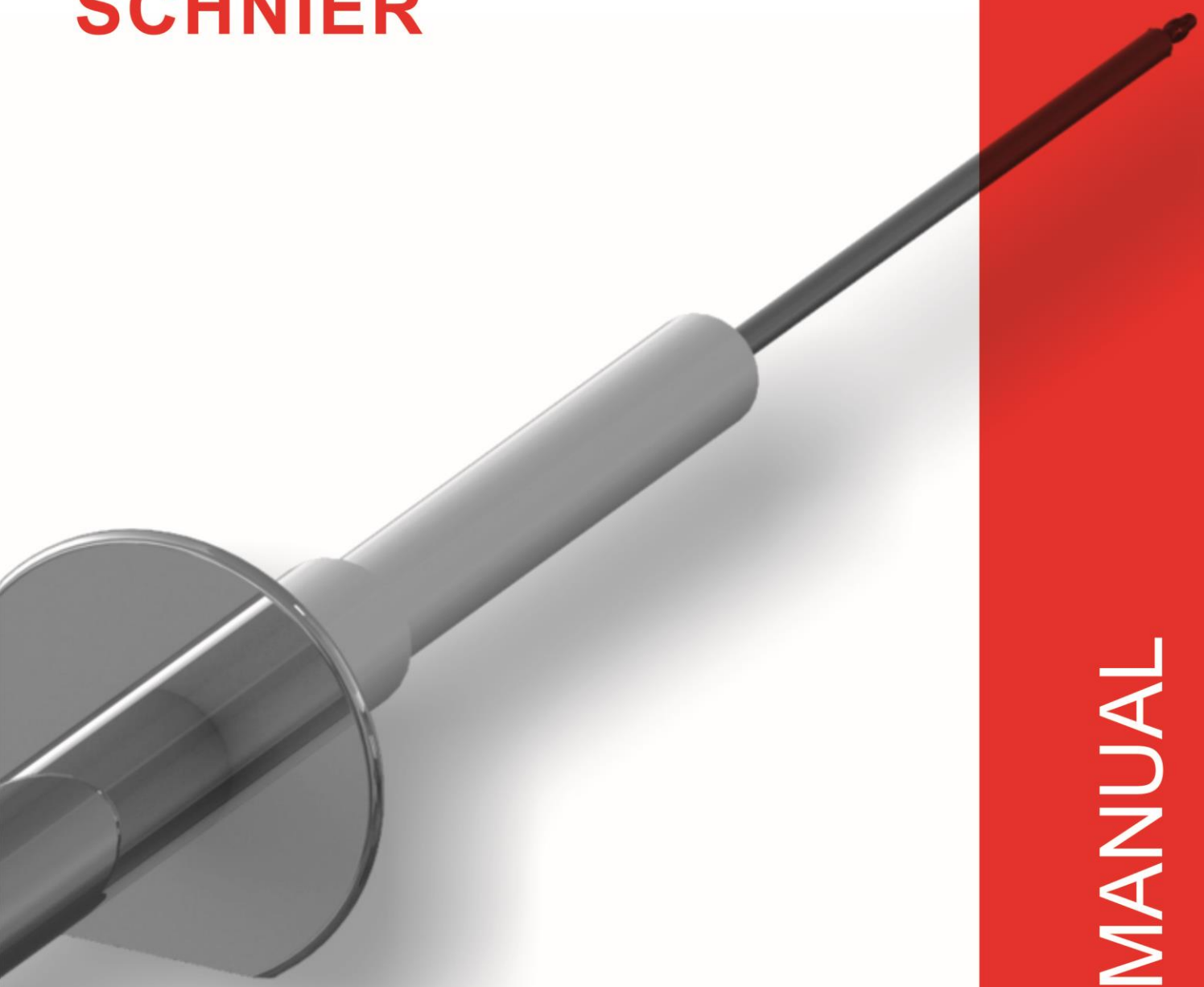
SCHNIER



HMG 04/02 + 08/04

HIGH-VOLTAGE-MEASURE

Part. N°: 810268 110 kV, 810275/001 160 kV

OPERATING MANUAL

Content

1. Product and Manufacturer

1.1. Product description

The HV-measuring lance is suitable for the measuring of D.C.- voltages in the range of 0 – 110kV, resp. 160kV, of positive and of negative polarity. The measuring is done either with the lance tip directly at the high voltage electrode or with a high voltage cable which instead of the measuring tip is plugged into the measuring lance.

The HV-measuring lance, type HMG 04/02, resp. HMG 08/04, may only be used in the area of electrostatic coating- and material separating plants.

1.2. Product designation

High Voltage Measuring Lance
Type/Part.N°.: HMG 04/02 (110kV) 810268
HMG 08/04 (160kV) 810275/001

1.3. Specifications

	HMG 04/02 (110 kV)	HMG 08/04 (160 kV)
Measuring resistor	10G Ohm	20 GOhm
Dimensions ø/L	40 (120) mm / 750 mm	40 (120) mm / 950 mm
Weight	ca. 1200 g	ca. 2000 g
Environmental Conditions	+10°C bis +40°C, max. 80% r.F.	
Protection class	IP 40	
Length of Measur. cable	3 m	
Length of grounding cable	3 m	
Measuring range	0-110 kV	0-160 kV
Measuring output	4mm plug to connect with common voltage measuring instrument with 10M-Ohm inside resistance. 10V conforms to 100kV. Recommendation: FLUKE 114 (SCHNIER-Part.N°.:810258/001)	

1.4. Labeling

1.5. Warranty

All warranties are void if the device is opened, modified, parts not replaced with the original parts or if this operating manual is not observed.

1.6. Manufacturer

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Managing director: Olav Schnier
Head office: Reutlingen
HRB 354 513
VAT ID No.: DE 146 481 986
ISO 9001:2008 certified

2. Guide to this Operating Manual

This operating manual must be read, understood and observed in all points by all persons that have responsibility for the devices and electrostatic systems. Only with knowledge of this operating manual can errors be avoided and operation that is safe and free of malfunctions can be guaranteed. SCHNIER Elektrostatik GmbH assumes no liability for damage that occurs due to non-compliance with this operating manual!

This operating manual is valid for:

Installation and service personnel (e.g., machine installers, IT specialists, electrically qualified persons), who are trained by the manufacturer or operating company regarding this manual and the corresponding safety regulations.

Operating personnel (e.g., machine installers, IT specialists, persons with electrical qualifications), who are trained by the manufacturer or operating company regarding this manual and the corresponding safety regulations.

2.1. Accessibility to the operating manual / Storing

The operating manual must always be available and easily accessible at the unit for the responsible specialist personnel (operators, service and maintenance personnel).

The operating manual must be kept by the operating company during the entire service life of the unit. In case of a resale of the unit or of unit parts, the operating manual must be handed over to the new owner, since it is a part of the system.

2.2. Industrial safety symbols and phrases

Note: The phrase "parts under live power" or "active parts" in this operating manual stand for "parts, which have a high-voltage potential during normal operation".

Symbol	Effect
	This symbol warns against potential hazardous situations that can lead to **death or injury** if they are not prevented.
	This symbol warns against potential hazardous electrical shocks that can lead to **death or injury** if they are not prevented.
	Warning of damage to the system or operational malfunctions.
	Hints for easy, rational proceeding.

3. Intended Use

These devices are intended for use in stationary electrostatic application equipment for coating to product standards:

EN 50176:2009 Stationary electrostatic application equipment for ignitable liquid coating material

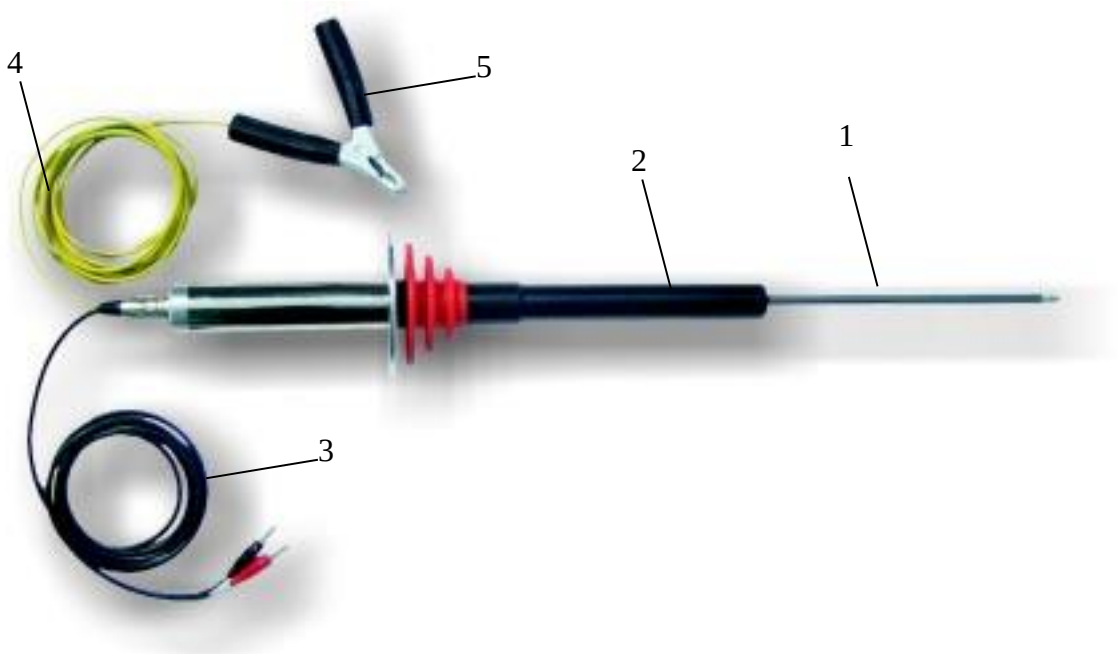
EN 50177:2009 Stationary electrostatic application equipment for ignitable coating powders

EN 50223:2015 Stationary electrostatic application equipment for ignitable flock material

EN 50348:2010 + Cor:2010 Stationary electrostatic application equipment for nonignitable liquid coating material

4. Structure of the device

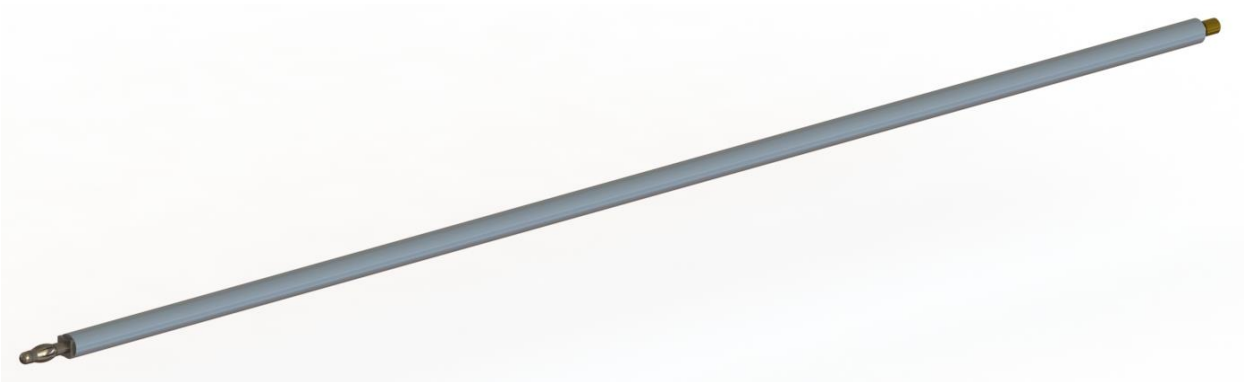
4.1. Over view



1 Measuring tip (Part.N°.: 810236) 2 Measuring lance (Part.N°.: 800039/001
3 Meas. cable (Part.N°.: 140059/001) 4 Grounding cable (Part.N°.: 140059/001)
5 Grounding clamp (Part.N°.: 140059/001)

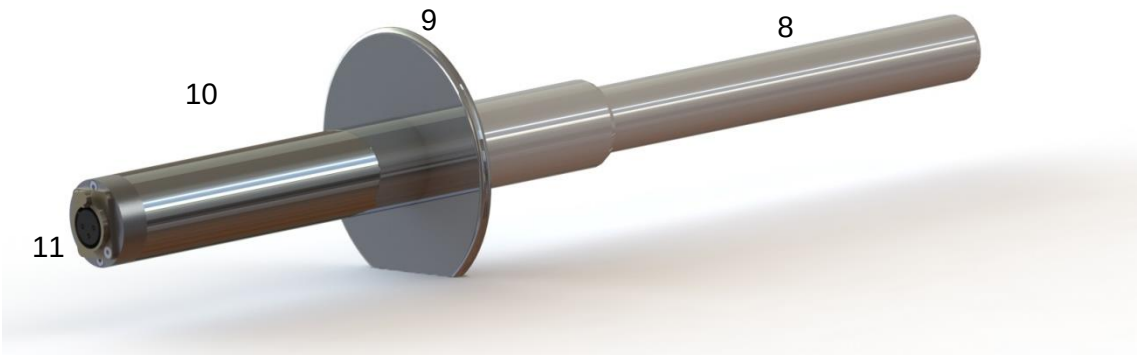
4.2. Description

4.2.1. Measuring tip
(Part.N°.: 810236)



The measuring tip consists of a measuring stick with insulating bushel and a 4 mm bundle plug at the end. The measuring tip serves to measure the high voltage directly at the HV-electrode. It is screwed onto the measuring lance via a M4-thread. Instead of the measuring tip, a HV-cable with 4mm bundle- or banana plug may be plugged in directly

4.2.1. Measuring lance
(Part.N°.: 800039/001)



The measuring lance consists of the handle (10), the safety disk (9), the anode pipe (8) and the measuring connection bushel (11). The precision HV-measuring resistor is built into the handle (10) and fully protected against the influence of the electrostatic fields by the earthed metal bushel. The safety disk (9) saves the operator from shorts. Either the measuring tip or a HV-cable with 4mm plug may be installed into the anode pipe (8). The measuring cable (3) is plugged into the measuring connection socket (11). The earth cable (4) is also connected in the plug of the measuring cable (3).

	When operating the measuring lance, by all means the earth cable has to be connected to earth.

5. Measuring operation

5.1. General

Exact measurements require respective measuring conditions. Please take note that measurements taken near electro-magnetic, electrostatic fields or near powerful electrical disturbance fields may a negative influence on the measurement result. Especially during high voltage measuring the measuring instrument should be as far away from the electrical field as possible.

5.2. High voltage measurement

The 4mm plug of the measuring cable (3) is to be plugged into the voltage measuring sockets of the voltage measuring instrument (red plug in '+' and black plug in '-'). Please take care that the DC-voltage measuring range is adjusted to the voltage measuring instrument.

!	Please by all means follow the operating manual of the voltage measuring instrument.

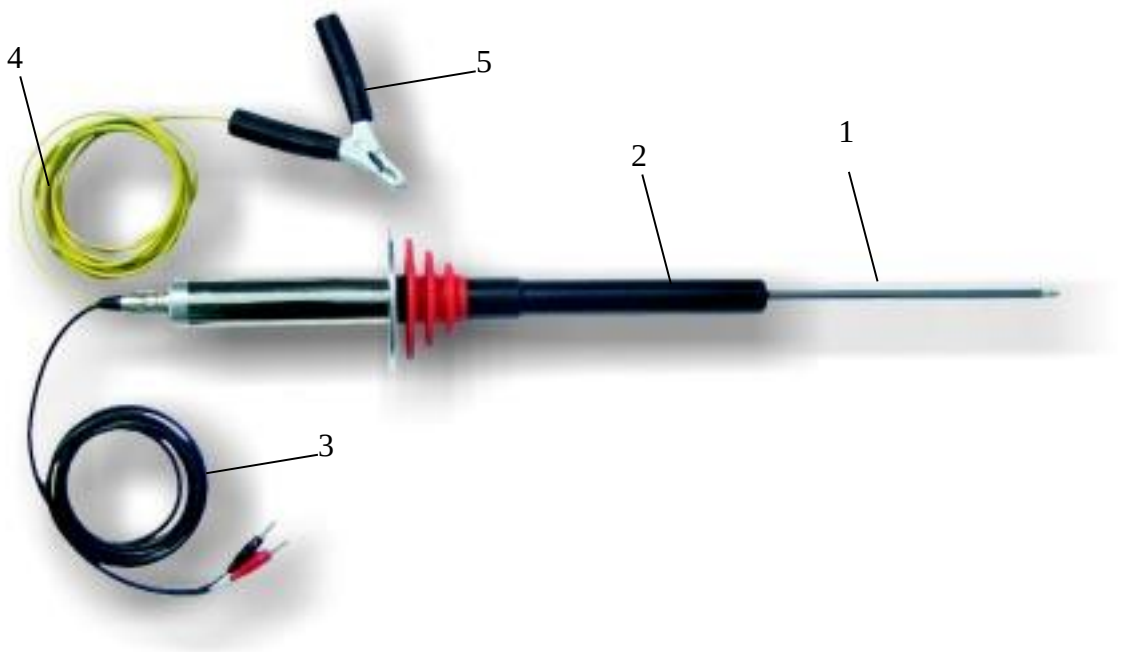
The three-pole plug of the measuring cable is to be plugged into the measuring lance.

	The earth cable has to be connected to earth ! The measuring of high voltage may only be carried out by expert personnel. Only high voltage measurements on electrostatic coating- and / or material separating plants may be carried out. The HV-measuring lance, type HMG 04/02 and HMG 08/04 are NOT suitable for measurements of heavy power current-plants.

The high voltage may be measured either directly at the HV-electrode with the measuring tip or via the HV-cable. With 100kV the indicator shows 10,0V, and with negative high voltage accordingly –10,0V.

6. Spare parts and accessories

6.1. Spare parts



1 Measuring tip (Part.N°.: 810236)

2 Measuring lance for HMG 04/02 (Part.N°.: 800039/001)
Measuring lance for HMG 08/04 (Part.N°.: 800041/002)

3-5 Measuring cable (Part.N°.: 140059/001)

6.2. Accessories

6.2.1. FLUKE 114 True RMS Multi meter
Part.N°.: 810258/001

6.2.2. Robust flight case
Part.N°.: 140061

Robust transport case with aluminium edgings. With sufficient space for the measuring lance, the earth stick, FLUKE 114 and accessories.

6.2.3. Light plastic transport case
Part.N°.: 140087

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