

Technical documentation
Last changed on: 2025-11-13

High Voltage Test Equipment

for precise voltage and current measurement

- HV Distribution Box with three HV-outputs for loads, divider or a ripple box and a current measurement output
- Test Loads



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Document history

Version	Date	Major changes
1.0	2016-11-08	Initial version
2.0	2025-11-13	Restructured, added data and schematics for HV-Distribution Box, HV-Divider and HV-Load

Disclaimer / Copyright

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This document is under copyright of iseg Spezialelektronik GmbH, Germany. It is forbidden to copy, extract parts, duplicate for any kind of publication without a written permission of iseg Spezialelektronik GmbH. This information has been prepared for assisting operation and maintenance personnel to enable efficient use.

The information in this manual is subject to change without notice. We take no responsibility for any mistake in the document. We reserve the right to make changes in the product design without reservation and without notification to the users. We decline all responsibility for damages and injuries caused by an improper use of the device.

Safety

This section contains important security information for the installation and operation of the device. Failure to follow safety instructions and warnings can result in serious injury or death and property damage.

Safety and operating instructions must be read carefully before starting any operation.

We decline all responsibility for damages and injuries caused which may arise from improper use of our equipment.

Depiction of safety instructions

DANGER!



"Danger!" indicates a severe injury hazard. The non-observance of safety instructions marked as "Danger!" will lead to possible injury or death.

WARNING!



"Warning!" indicates an injury hazard. The non-observance of safety instructions marked as "Warning!" could lead to possible injury or death.

CAUTION!



Advices marked as "Caution!" describe actions to avoid possible damages to property

INFORMATION



Advices marked as "Information" give important information.

Intended use

The device may only be operated within the limits specified in the data sheet. The permissible ambient conditions (temperature, humidity) must be observed. The device is designed exclusively to control and communicate with iseg high voltage devices as specified in the data sheet. Any other use not specified by the manufacturer is not intended. The manufacturer is not liable for any damage resulting from improper use.

Qualification of personnel

A qualified person is someone who is able to assess the work assigned to him, recognize possible dangers and take suitable safety measures on the basis of his technical training, his knowledge and experience as well as his knowledge of the relevant regulations.

General safety instructions

- Observe the valid regulations for accident prevention and environmental protection.
- Observe the safety regulations of the country in which the product is used.
- Observe the technical data and environmental conditions specified in the product documentation.
- You may only put the product into operation after it has been established that the device complies with the country-specific regulations, safety regulations and standards of the application.
- The high-voltage power supply unit may only be installed by qualified personnel.

1. General description

This test equipment is intended for testing and evaluating HV-sources up to 8kV for voltage and current stability and the precision of the measurement.

2. Technical Data

2.1. HV-Distribution Box

SPECIFICATIONS		HV-Distribution Box
Maximum input voltage		8 kV
Maximum load current		15 mA
Leakage current of HV distribution box		<200 pA (after 30s at stable voltage)
HV connector		SHV
Current probe connector		BNC
Operating temperature		0 – 40 °C
Storage temperature		-20 – 60 °C

Table 1: Technical data: Specifications for HV Distribution Box

CONFIGURATIONS HV-DISTRIBUTION BOX				
Type	Maximum input voltage	Maximum load current	HV connector	Item code
HV-Distribution Box				
HV-Distribution Box	8 kV	15 mA	SHV	Z585671

Table 2: Technical data: Configurations HV-Distribution Box

2.2. HV-Divider

SPECIFICATIONS	HV-Divider
Maximum input voltage	8 kV
HV division ratio	1:1000
Resistance	500 MΩ
HV connector	SHV
Operating temperature	0 – 40 °C
Storage temperature	-20 – 60 °C

Table 3: Technical data: Specifications for HV Divider

CONFIGURATIONS HV-DIVIDER				
Type	Maximum input voltage	Resistance	HV connector	Item code
HV-Divider				
HV-Divider	8 kV	500 MΩ	SHV	Z585689

Table 4: Technical data: Configurations HV-Divider

2.3. HV-Load

SPECIFICATIONS	HV-Load
Maximum input voltage	140 V – 6 kV
Maximum load current	15 mA
Resistance	10 k Ω – 100 M Ω
HV connector	SHV
Operating temperature	0 – 40 °C
Storage temperature	-20 – 60 °C

Table 5: Technical data: Specifications for HV Load

CONFIGURATIONS HV-LOAD					
Type	Maximum input voltage	Resistance	HV connector	Cable Length	Item code
HV-Load					
HV-Load 10 k Ω	140 V	10 k Ω	SHV	0.5 m	Z587305
HV-Load 16.6 k Ω	200 V	16.6 k Ω	SHV	0.5 m	Z587306
HV-Load 500 k Ω	2 kV	500 k Ω	SHV	0.5 m	Z587307
HV-Load 5 M Ω	2.5 kV	5 M Ω	SHV	0.5 m	Z587308
HV-Load 100 M Ω	6 kV	100 M Ω	SHV	0.5 m	Z587309

Table 6: Technical data: Configurations HV-Load

3. Usage



Figure 1: front view

NUMBER		DESCRIPTION	DETAILED EXPLANATION IN CHAPTER
[1]	SHV	HV-Out	
[2]	SHV	HV-Out	
[3]	SHV	HV-Out	
[4]	SHV	HV-In	
[5]	BNC	Current probe point	

3.1. HV distribution box

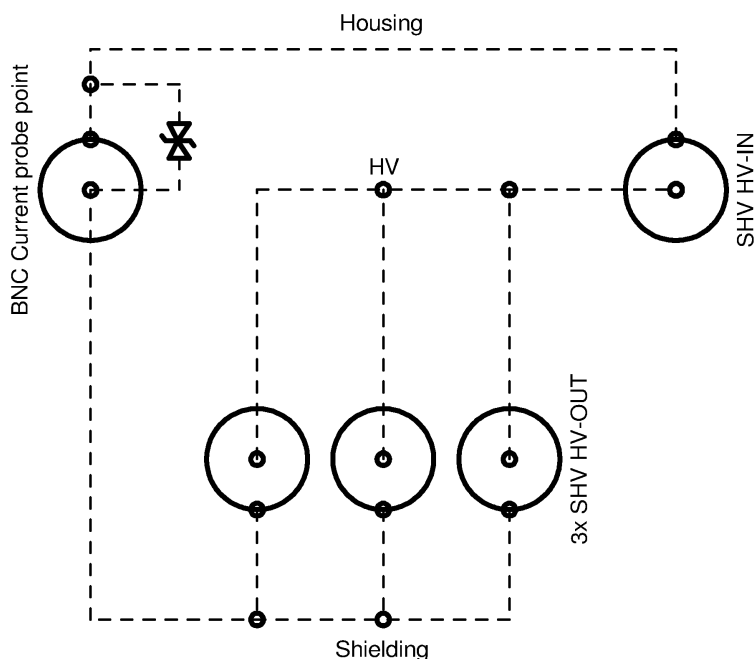


Figure 2: Schematic of the HV distribution box

The HV source must be connected to **HV-IN**. The **HV-OUT** connectors can be connected to the provided HV-loads, user loads, the voltage divider and/or a ripple box.

The current through all connected loads can be measured at the **Current probe point**.

INFORMATION



For a correct current measurement it must be ensured that the HV return of the HV source (**GND_SOURCE**) is isolated from the shielding of the HV-OUT connectors (**GND_LOAD**). The housing of the distribution box is connected to **GND_SOURCE**, while housings of attached loads are connected to **GND_LOAD**.

INFORMATION



Do not operate the distribution box with an open current probe point – it should either be connected to a current meter or shorted with the provided 0Ω-plug.

3.2 HV-Divider

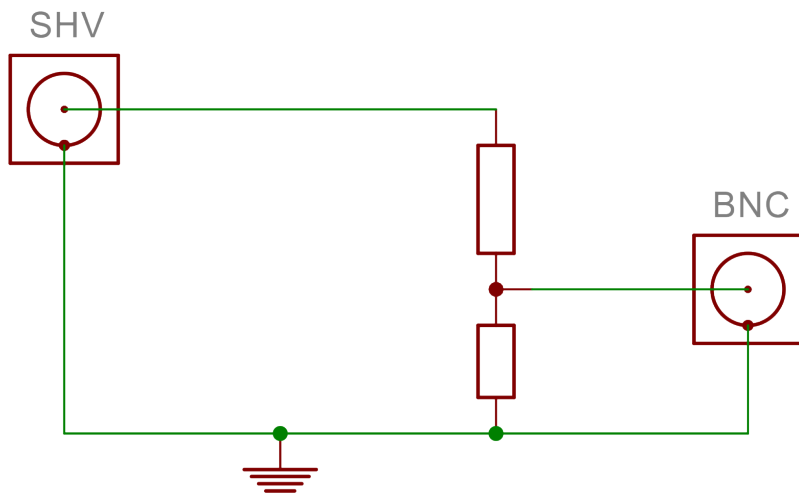


Figure 3: Schematic of the HV-Divider

3.3. HV-Load

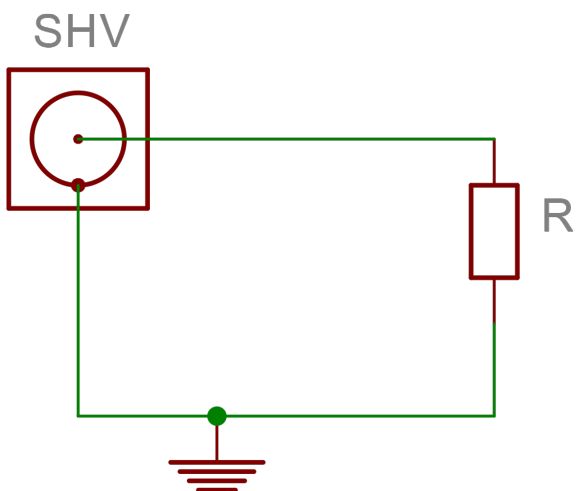


Figure 4: Schematic of the HV-Load

4. Dimensional drawings

4.1. HV-Distribution Box

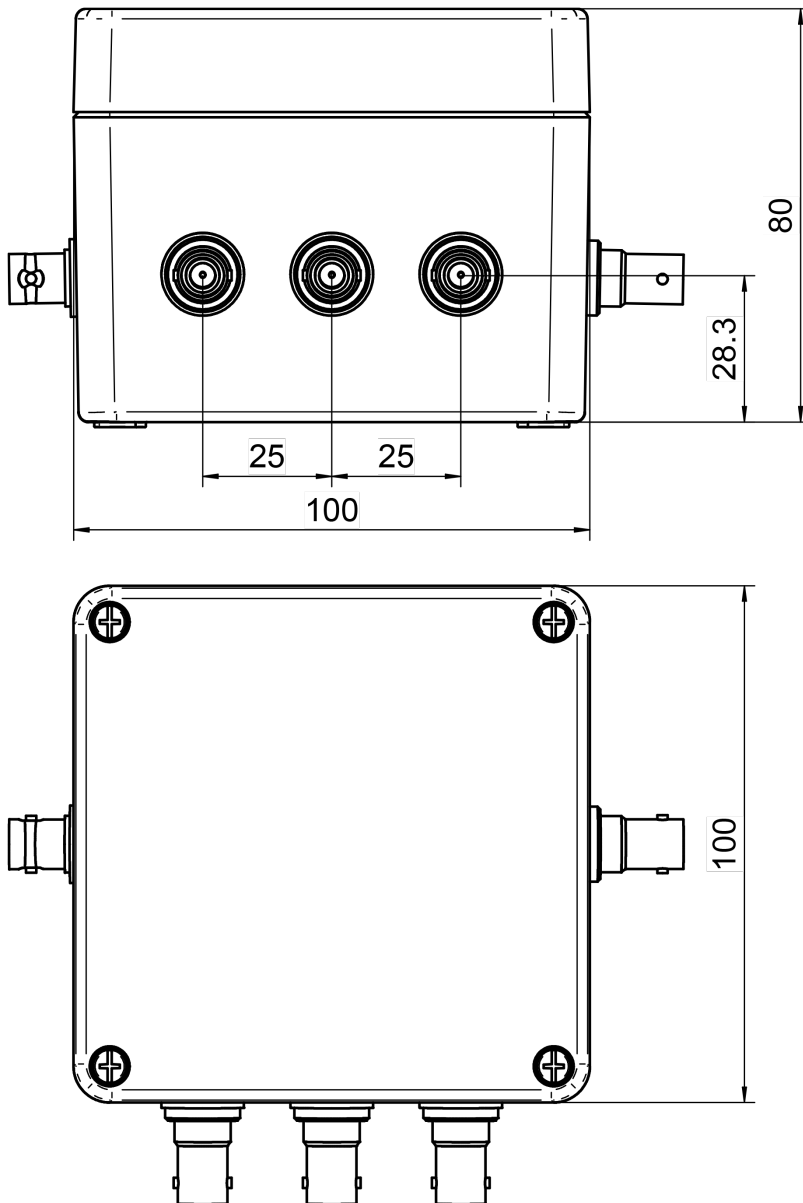


Figure 5: Dimensional drawing HV-Distribution Box

4.2 HV-Divider

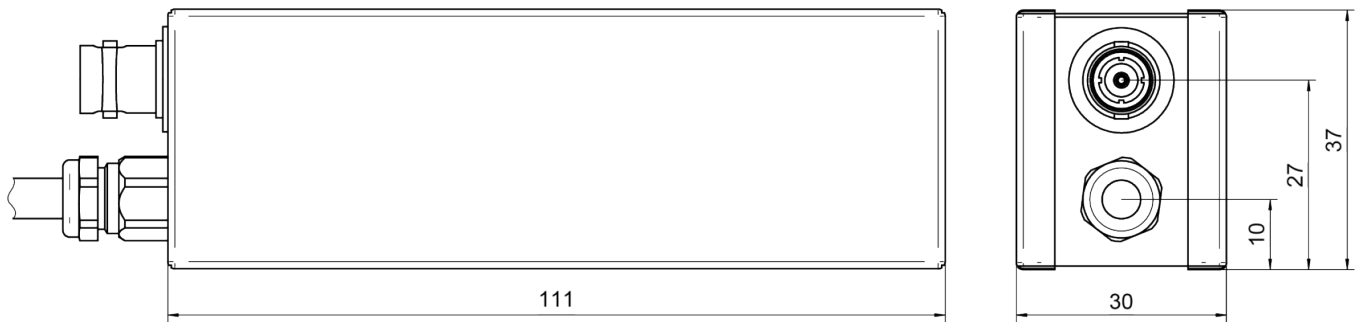


Figure 6: Dimensional drawing HV-Divider

4.3. HV-Load

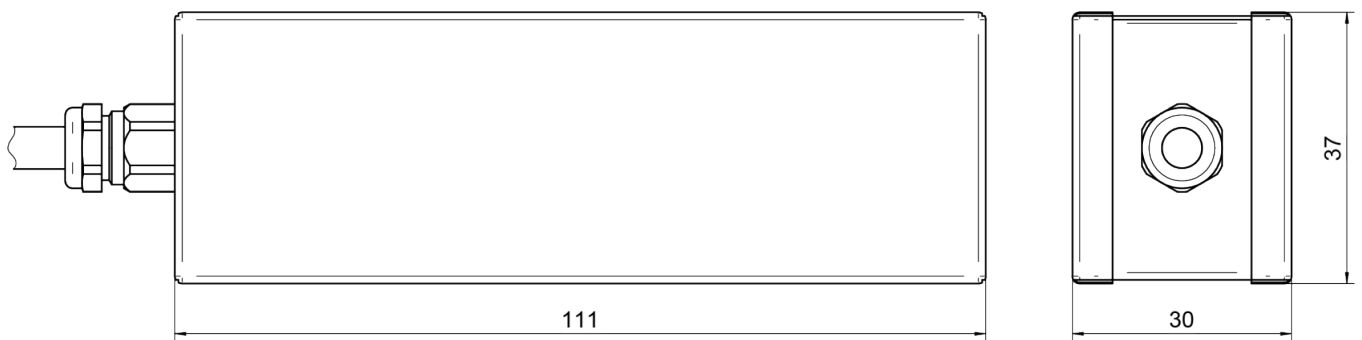


Figure 7: Dimensional drawing HV-Load

5. Appendix

For more information please use the following download links:

This document
http://kb.iseg-hv.com/books/high-voltage-test-equipment/export/pdf

6. Warranty & Service

This device is made with high care and quality assurance methods. The standard factory warranty is 36 months. Please contact the iseg sales department if you wish to extend the warranty.

CAUTION!



Repair and maintenance may only be performed by trained and authorized personnel.
For repair please follow the RMA instructions on our website: www.iseg-hv.com/en/support/rma

7. Disposal

INFORMATION



All high-voltage equipment and integrated components are largely made of recyclable materials. Do not dispose the device with regular residual waste. Please use the recycling and disposal facilities for electrical and electronic equipment available in your country.

This device is only intended for professional use or as an built-in component for devices in the research/development sector and is sold exclusively B2B (only to commercial end customers). The device may only be disposed of properly and not in normal household waste.

As an alternative to proper self-disposal, we offer a free disposal option for the device. Before sending in the device, please send an email to recycling@iseg-hv.de stating the device article and serial number to receive further information on the process.

Further information can be found at <https://iseg-hv.com/en/support/recycling>.

8. Manufacturer contact

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