



HVS-100

High Voltage Power Supply

Technical Description



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Chapter 1

DEVICE LAYOUT

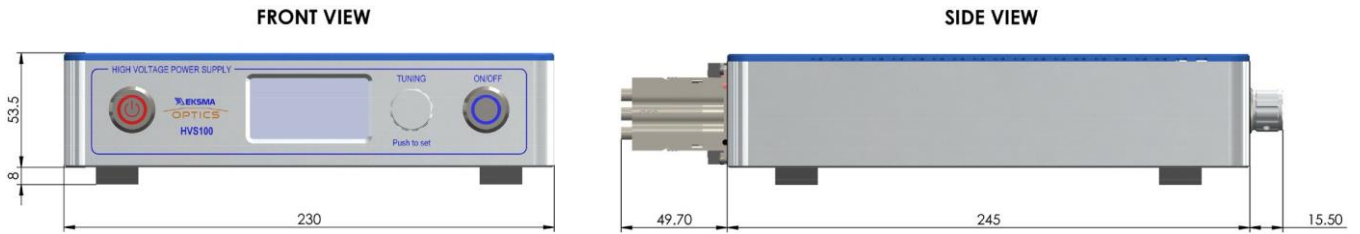


Figure 1. Outline drawing and dimensions of the HV supply

Table 1. CONTROLS AND CONNECTIONS OF THE HV SUPPLY

NO.	DESCRIPTION
1	ON/OFF power button: It has priority over all operations for safety.
2	OLED screen interface: Used to display voltage of HV output. Indicates the current consumed from HV output.
3	HV output tuning encoder with button: Used for voltage tuning of HV output. Press to set the tuned value.
4	HV output ON/OFF button with LED: Used to turn ON/OFF the HV output. LED indicates if HV output is active.
5	AC power input connector.
6	GND terminal.
7	USB connector. Used to control the device via “CAN Browser” application.
8, 9	24V output connectors.
10	HV output connector. -HV output is only available for HVS100-2x60 model.

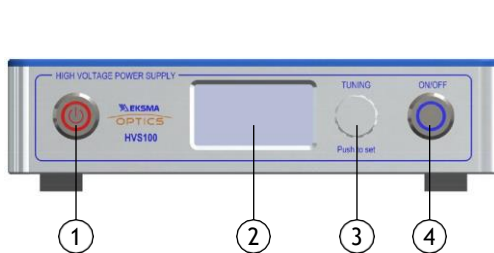


Figure 2. Front view of the HV supply

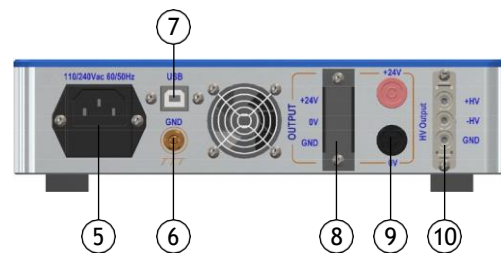



Figure 3. Back view of the HV supply

1.1. SYMBOLS AND ABBREVIATIONS

 Symbol for device power switch

 Symbol for chassis earth, potential safety earth.

HV – high voltage.

GND – ground.

AC – alternating current.

DC – direct current.

LED – light-emitting diode.

OLED – organic light-emitting diode.

Chapter 2 QUICK START GUIDE

2.1. INSTALLATION AND CONNECTING

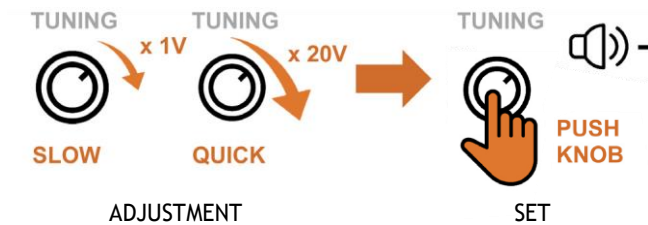
- > Ground the HV supply.
- > Connect the device to the AC power source.
- > Connect the load.

ATTENTION

For safety reasons, do not connect/disconnect the load when the supply is powered and switched on.

2.2. OPERATION

2.2.1. PRECISE HIGH VOLTAGE (HV) ADJUSTMENT



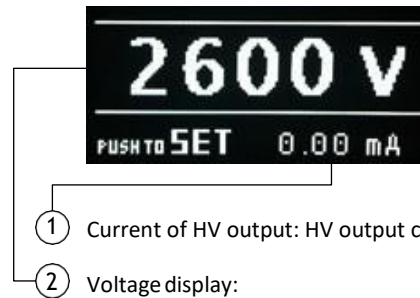
Turn knob till the required voltage value is achieved. Push knob until buzzer sound is heard to set the required voltage value.

2.2.2. TURNING ON AND OFF OF HV OUTPUT



Push ON/OFF button until buzzer sound is heard to turn high voltage output ON or OFF.

2.2.3. OLED DISPLAY



① Current of HV output: HV output current meter value.

② Voltage display:

- > With underline and overline: HV tuned value is displayed;
- > No underline and overline: HV output value is displayed (measured with reference to ground). In the case of HVS100-2x60 potential difference between +HV and - HV is doubled.

ATTENTION

Take care not to apply HV of a higher value than your load is certified to handle.

2.3. DISCONNECTING

- > Push the **On/Off** button to off. The **On/Off** LED (4 in Figure 2) should turn off.
- > Turn off the **Power** button (1 in Figure 2).
- > Disconnect the load.

Chapter 3 SPECIFICATIONS

3.1. GENERAL INFORMATION

3.1.1. MODEL

The model number can be found on a label on the bottom side of the high voltage power supply.

3.1.2. MAIN COMPONENTS

Table 2. MAIN COMPONENTS

COMPONENT	QUANTITY
High voltage power supply HVS-100	1
AC power cable / External power supply with AC power cable	1
HV cable of 1.5 m length	1
24V banana jack connector with cable	2
Technical description	1

3.2. TECHNICAL SPECIFICATIONS

Table 3. TECHNICAL SPECIFICATIONS

MODEL	HVS100-2X60	HVS100-120	HVS100-5	HVS100-40	HVS100-80	HVS100-150
Maximal high voltage output options	±1.4kV ±2.5kV	1.8kV 2.6kV 3.1kV 3.6kV	1.8kV 2.8kV 4.0kV 4.4kV 5.0kV	1.3kV 1.8kV 2.5kV 3.6kV 4.0kV	1.8kV 2.6kV 3.1kV 3.6kV 4.0kV 4.4kV	1.8kV 2.6kV 3.1kV 3.6kV 4.0kV 4.4kV
Maximal output power at maximal output voltage	2 × 60 W	120 W	5 W	40 W	80 W	150 W
Voltage control limits	40% U _{max} to U _{max}					
Remaining power at the output of 24 V DC for external needs	55 W	55 W	190 W	150 W	100 W	Not available
Mains voltage	90 to 264 V AC, 47 – 63 Hz					24 V DC
Dimensions (W × L × H)	230 × 245 × 53.5 mm					
Weight	2.5 kg					

Maximal power is proportionally lower by tuning to lower HV output.

Output ripple is 0.5% typically at maximal power for all models of HV power supplies.

4.1. WARRANTY STATEMENT

This HV power supply HVS-100 is protected by one-year warranty covering labor and parts. The warranty enters into validity since the shipment date. Any evidence of improper use or unauthorized attempts at repair leads to warranty cancellation.

4.2. SAFETY

Operating the power supply is allowed to persons acquainted with the operation manual and having permission to deal with voltages over 1000 V.

In order to ensure the safe operation of the product, please follow these warnings and cautions in addition to the other information contained elsewhere in this document.

- › Ensure that nothing, and nobody, will be endangered by this High Voltage before putting the unit into operation!
- › The full dielectric strength of the high voltage connectors is only realized when fully mated together.
- › If possible, familiarize yourself with the equipment being used and the location of its high-voltage points.
- › Make sure that instruments are properly grounded.
- › Before supplying the power to the instrument, make sure that the correct voltage of the AC power source is used.
- › After the power off please wait few seconds before making any connections, in order for capacitors to discharge.
- › The units may only be operated in a clean, dry environment. Please make sure that no objects or liquids can enter the casing through the ventilating aperture. Because of the risk of sparks, the unit should not be operated in the vicinity of flammable gases or fumes.
- › To ensure a adequate cooling, the ambient temperature should not exceed 40 °C. This unit is air cooled. Ensure that nothing is placed near the back of unit which may impede the air-flow. Do not expose the unit directly to solar radiation.
- › Use an insulated floor material or a large, insulated floor mat to stand on, and an insulated work surface on which to place equipment. Make certain such surfaces are not damp or wet.
- › Use the time-proven “one hand in the pocket” technique while handling an instrument probe. Be particularly careful to avoid contact with metal objects that could provide a good ground return path.

4.3. SERVICE CONTACT INFORMATION

In case of service required or any questions on warranty, please notify:

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WARNING

The safety of the system incorporating HV power supply is the responsibility of the assembler of the system.

WARNING

Direct contact with the exposed inner parts of the system when it is powered may cause human injuries or death.