HIGH VOLTAGE POWER SUPPLY HiVo
USER MANUAL

Rel. 01.01.0002
(Hardware code: HiVo-N)

CONCEIVING
PLANNING
DEVELOPMENT
IN SCIENTIFIC
ELECTRONICS

This manual in English is the original version.

Printed in Italy

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[1] With the exclusion of shipping costs for and from IPSES's development office.

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WARNING!
ELECTRICAL DEVICES COULD DAMAGE EQUIPMENT OR PROPERTY OR CAUSE PERSONAL INJURY

This guide contains instructions and technical features of the HIGH VOLTAGE POWER SUPPLY HiVo.
Read with attention before attempting to install.
It is the responsibility of the technician to undertake all the safety rules provided by the law during the installation and the use of this device.
For any information which is not contained in this guide, please contact:

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REVISION HISTORY

Manual revision history

Revision/ Date	Change description	Author
01.00.0000 January, 2004	First version Released	Mancuso C.
01.01.0000 February, 2008	Second version, according to new upgrade	Pizzocolo / Barbera
01.01.0001 June, 2011	Minor changes	Mancuso C.
01.01.0002 June, 2015	Update document layout	Bottaccioli M.

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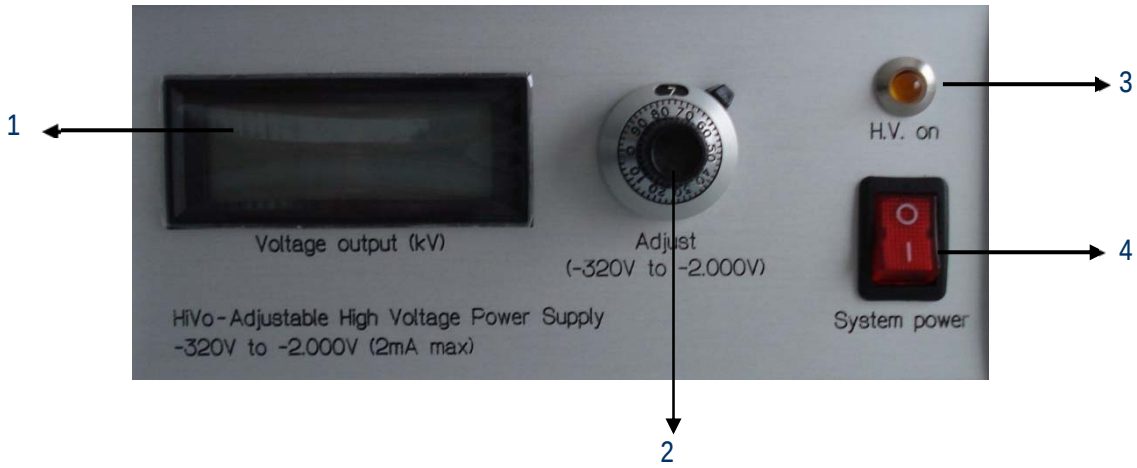
GENERAL FEATURES

HiVo is a device especially conceived to provide an adjustable elevated voltage between 320V and 1.995V, with a maximum current up to 2 mA.
For this HiVo is the right instrument to power photomultipliers and to polarize any device needing high voltage and low current supply.
HiVo is equipped with a 3.5 digit LCD display showing the output voltage.
A 10-turn potentiometer sets the voltage and assures precision and stability..
Besides, HiVo is equipped with an *interlock* circuit which can be used to stop the power supply if the load is not correctly connected or the photomultiplier is not correctly placed.

FRONT PANEL



Elements present on the front panel:

1. 3.5 digit LCD display (*Voltage output*) showing the output voltage set by the user. This value may range approximately from 320V to 1.995V.
2. 10-turn potentiometer (*Adjust*) to set the output voltage.
3. Yellow LED (*H.V. on*): when this led is lit, the power supply exit is enabled.
4. System power switch with indicative light (*System power*).

CAUTION!
When the yellow LED "H.V. on" is lit, there is a high voltage on the output connector and on the connected devices. Warning: this voltage could damage equipment or cause personal injury.

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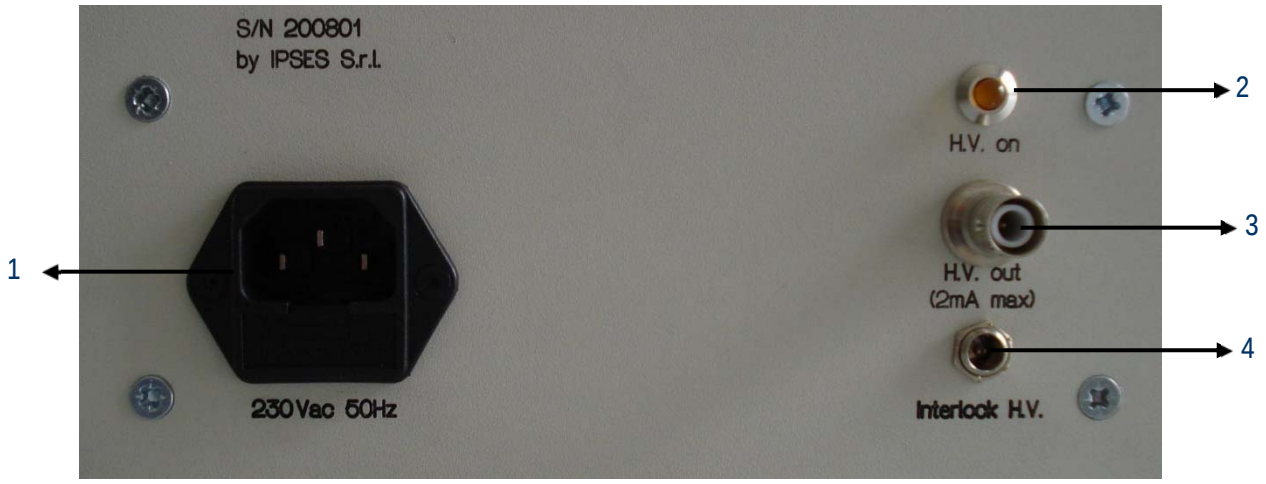
REAR PANEL



Elements present on the rear panel:

1. AC line input equipped with a fuse. The input voltage value will depend on the chosen model of power supply.
2. Yellow LED (*H.V. on*): when this led is lit, the power supply exit is enable.
3. SHV high voltage coaxial connector (*H.V. out*) which the load must be connected to.
4. Interlock connector (*Interlock H.V.*): it will enable the power supply exit when it is in short circuit.

CAUTION!
The load must be connected to the power supply through a high voltage cable equipped with a SHV high voltage coaxial connector: any other connection system could damage equipment or cause personal injury.
We recommend to purchase a connection cable produced by IPSES.

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INSTALLATION INSTRUCTIONS

HiVo must be used and **kept dry in cool conditions**.
Before plugging HiVo to the electric line, we strongly recommend to connect it to the load, so that the SHV coaxial connector will not touch accidentally anything. The interlock connector must be connected immediately after the connection of the load.
Before switching on the device, we recommend to **completely turn the potentiometer (Adjust) anticlockwise**, so that the unit will yield the minimum voltage (about 320V).
After that, it is possible to switch on the device through the power switch: if all the connections have properly been executed, then the **LCD display will show the output voltage value and the yellow LED "H.V. on" will light**.

TECHNICAL FEATURES

- **Input voltage**: 230Vac 50/60Hz (other voltage available on request)
- **Output voltage**: adjustable between -320V and -1.995V (or, on request, between +320V and +2.000V.
- **Output current**: 2mA maximum
- **Output connector**: coaxial high voltage (*SHV*)
- **Ripple Noise** (peak to peak): less than 0.001%
- **Rise time** (from 0% to 99%) : 150ms typ.
- **Temperature coefficient**: +/- 0,01 %/ºC typ.
- **Range of operating temperature**: from 0 up to 40ºC (from 32 up to 104°F)
- **Range of storage temperature**: from -20 up to +60ºC (from -4 up to 140°F)
- **Activation interlock** for the high voltage output swicth on.
- **Size**: about 200 x 100 x 130 mm (7.9 x 3.9 x 5.1 inches)

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MANTEINANCE

Wipe the outside of the device with a clean, dry cloth. Never use harsh or abrasive cleaners or organic solvents on the device or any of its parts.

To clean the LCD display:

1. Blow gently on the LCD display to remove dust and dirt.
2. Moisten the LCD display by lightly breathing on it.
3. Wipe the LCD display gently with a soft, lint-free cloth or an untreated lens-cleaning tissue.

Do not wipe the LCD display with chemically treated eyeglass lens tissue. It may scratch the screen.

Always follow basic safety precautions. To avoid damaging your device, DO NOT expose it to moisture and extreme temperatures. DO NOT allow any chemicals to come into contact with the surface of HiVo. NEVER disassemble or touch the inside of the device. For any maintenance problem, please contact IPSES Operations Office.

OTHER AVAILABLE MODELS

IPSES can realize customized versions of HiVo device to answer to any client demands.
Particularly, it is possible to have HiVo work with any power supply voltage, with positive or negative output voltage, with output current sensing and current display.
Thanks to its customized planning, Hivo is a device which can serve our clients' needs to the best at reasonable prices.

To get more news visit the website *http://www.ipses.com.*

PRODUCT CODE

Code	Description
HiVo	Negative high voltage power supply (-1.995V, 2mA)
HiVo+2000	Positive high voltage power supply (+1.995V, 2mA)
Interlock Cable	Interlock Cable
H.V. Cable	H.V. Cable

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CONTACTS

IPSES S.r.l. conceives, projects and markets electronic and scientific instruments. The customized planning of our devices allows us to answer specific necessities for customers asking for embedded systems. IPSES clients enjoy access to a dedicated project engineering team, available as needed.
Our pool consists of highly competent professionals whose experience in this field is extremely strong. Thanks to constant updating and technical development, IPSES is a leading company, combining the dynamism of a young group into the competence and reliability of a qualified staff.

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SUPPORT INFORMATION

The customer is at liberty to contact the relevant engineer at IPSES S.r.l. directly.

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PROBLEM REPORT

The next page is a standard template used for reporting system problems. It can be copied and send as a fax. Alternative bugs may be reported by emails, in this case please insure that the mail contains similar information listed in the *Engineering Problem Report* form.

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ENGINEERING PROBLEM REPORT

Problem describer

Name			**IPSES s.r.l.** **Via Suor Lazzarotto, 10** **Cesate (MI)** **Italy** **Fax (+39) 02 700403170** **e-mail *support@ipses.com***
Company			
Date	Tel.	Fax	

Product

Name	Version	Serial No.

Report Type (bug, change request or technical problem)

Major bug	☐	Urgency:	
Minor bug	☐	High	☐
Change request	☐	Medium	☐
Technical problem	☐	Low	☐

Problem Description

Reproduction of Problem

IPSES s.r.l. Action notes

Received by	Date	Report No.	Action

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