G85495 Spacesaver EHT Power Supply NFU 506

Purpose
For electrostatics experiments including ionisation, and for driving vacuum devices such as the Deflection e/m Tube.

Output:
0 to 5000 volts dc, adjusted by rotary control, limited to 2mA, with a second output limited to 50µA, by a 50MΩ safety resistor.
A 6.3V ac output is provided for the heater/filament of vacuum devices, maximum current 3A.

Meter:
3 digit, backlit display of voltage, in kV.

Ratings
230V ac +/-10% 50Hz 72VA
Fuse: T250mA time delay
Temperature range: 10 to 40°C Humidity: 10 to 90% RH
Mass: 4.8kg

EMC:
This equipment is Class A according to the EMC standard EN 55011 and is intended for use in a non-domestic environment only. Interference from nearby sources of RFI (radio frequency interference) my affect the accuracy of the display. Likewise, this power supply may interfere with nearby PCs, laptops, tablets and mobile phones. If problems are experienced, the items should be separated or switched off.

Warnings
For your safety, this product should be used in accordance with these instructions, otherwise the protection provided may be impaired.

Do not open or remove covers or panels. Repairs and service may only be carried out by our repair agent, otherwise the warranty may be void.

Use only the 3-core mains cable supplied with the unit. If the mains cable is replaced, the rating of the replacement must be the same or better than the original.

The unit must be earthed at all times. The unit is earthed/grounded through the 3-core mains lead, so no additional earth connection is required.

Always position the power supply so that it can be disconnected from the mains, if an emergency arises.

This unit is intended for use in DRY conditions. Avoid spillage of water and other liquids on to the unit. If spillage occurs, disconnect the mains supply.

There is no specific requirement for insulation of external circuits as they cannot become hazardous live, as a result of connection to this unit. Limit the length of any connecting leads to 3 metres.

Shrouded plugs may be connected to the front panel sockets, to give extra protection from shocks, to users.

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Caution, possibility of electric shock symbol

Earth (ground) terminal symbol

Caution

The high voltages produced by this unit are capable of giving shocks to careless users, but the maximum current is limited to 2mA, as recommended by CLEAPSS and SSERC. It is sensible for teachers and students with pacemakers or cochlear implants to take extra care, or avoid using the unit.

Continuous use

This power supply is intended for school experiments in electrostatics, to power simple spectrum tubes, eg Geissler tubes, and for work with Teltron tubes where a low voltage heater/filament must also be powered. If the power supply is used continuously at full load, then we advise a maximum period of 60 minutes, followed by cooling for the same period. Similarly, if it is used at full load (3 amps) for 10 minutes, a cooling period of 10 minutes is advised.

Features

- EHT output continuously variable by rotary control, 0 to 5kV dc at up to 2mA
- 6.3V ac output maximum current 3A
- 3 digit LCD indication of the output voltage
- Sockets accept standard 4mm plugs and shrouded plugs
- Illuminated mains on/off switch, prominently displayed.
- Internal fan for cool-running
- Time-delay fuse protection for transformer primary
- Additional thermal trip protection for transformer

Outputs

The EHT and ac outputs may be used simultaneously, as required by the apparatus connected.
The continuously variable 5kV output is fully isolated (floating).

The black socket used with the left-hand red socket, gives up to 2mA at 5kV.

The black socket used with the right-hand red socket, is limited to approximately 50µA at 5kV, by the internal safety resistor.

An earth terminal provides the facility to earth the negative or positive side of the output as required, allowing users to set up positive or negative potential differences with respect to earth (0V).

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Overload

If the EHT output is short circuited the voltage will “collapse” to zero and the short circuit should be removed as soon as possible. Certain vacuum tubes require more than 2mA to drive them. These cannot be used with this EHT supply. Attempts to draw more than 2mA result in the output voltage collapsing.

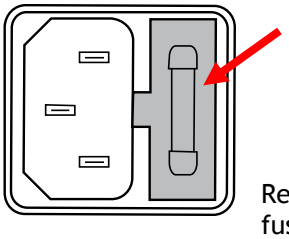
Mains lead and fuse replacement

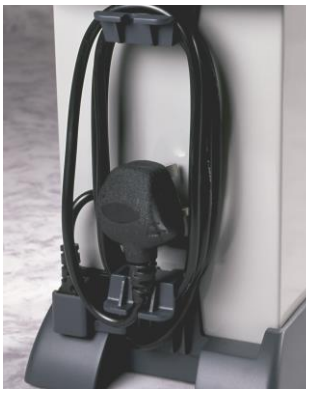
The mains cable stows on the back of the unit with a wind and clip feature. The mains cable retainer can be removed to allow the cable to be stored separately. Simply remove the screw and retainer from the base of the unit. The IEC cable is now detachable.

In the unlikely event of the fuse blowing, the retainer and mains cable must be removed to gain access to the fuse carrier.

The carrier can be removed with a fingernail or tip of a screwdriver.

A spare fuse is provided in the carrier.





Replacement fuses must be 20mm cartridge time-delay fuses, of the correct rating: T250mA

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Cooling
Spacesaver power supplies have built-in, quiet-running fans. Ventilation is provided through slots in the base and top of the unit. These should not be obstructed. Under conditions of continuous use at full load and high ambient temperatures, the thermal trip may operate. Reducing the load and/or ambient temperature will allow the supply to operate after a delay.

Cleaning
The front panel membrane conceals and protects switches and LEDs. It may be wiped clean using a damp cloth. Be sure to disconnect the unit from the mains before cleaning, and do not use any abrasive cleaners or organic solvents.

Periodic testing:
Check the mains lead and plugs at both ends for any damage.

Periodically check the earth bonding and insulation, by performing a Portable Appliance Test (**PAT**). Most schools and local authorities have a regular schedule for such testing.

Check that the fuse in the mains plug (5A recommended) and the two fuses (active and spare) in the IEC socket on the back panel are all of the correct rating.

Warranty, repairs and spare parts
The power supply is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorized modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to Customer Services.

In the event of a fault, apart from replacing the instrument fuse in the IEC socket, the power supply should be referred to the Philip Harris recommended repair agent.

Please contact Customer Services or techsupport@philipharris.co.uk for advice

Instructions for authorized service technicians
Ensure that any replaceable mains cord is of the correct rating.
Ensure that all earth conductors and protective earth bonding is maintained after service work.
Please refer to the detailed service procedures, safe servicing and continued safety – contact techsupport@philipharris.co.uk for advice.
For any manufacturer specific parts please refer to our recommended repairer.
Please refer to product specific risks that may affect service personnel, the protective measures and verification of the safe state after repair.

Supplier details
Philip Harris Education, 2 Gregory Street, Hyde, Cheshire SK14 4RH

Orders and Information Tel: 0845 120 4521
Fax: 0800 138 8881
Repairs Tel: 0845 120 3211

E-mail: techsupport@philipharris.co.uk

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