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IPC Irwin 5kV Power Supply

Part Number IPC-0734-P

User Instructions



INTRODUCTION.

The IPC Irwin 5kVDC Power Supply has been designed to provide EHT voltages for Spark Counters, Teltron Discharge Tubes, Electric Fields apparatus and for use in investigations into charge and current, and electrostatics. The Power Supply also includes a separate 6.3VAC, 2 Amp supply for heating filaments when experimenting with vacuum tubes.

DESCRIPTION.

The 5kV Power Supply provides a continuously variable DC voltage output from 100V to 5kVDC, the output voltage is indicated via a 2 digit, 14mm high, LED display. The EHT circuits are fully floating so that for certain applications the positive or negative terminal may be safely connected to earth. The EHT voltage outputs are taken from Red and Black 4mm shrouded sockets and provide a maximum current of 3mA, or 60uA when using the 50M ohm current limited outputs. A Blue 4mm centre tapped socket is provided to give both positive and negative voltages up to 2.5kVDC. The 6.3VAC, 2 Amps supply is provided via two White 4mm shrouded sockets, used for heating filaments, there is also a separate Green 4mm shrouded earthing terminal.

The rear panel contains an illuminated (green) mains on/off switch and a mains input IEC socket containing an in-built protection fuse. Normally the unit is supplied with a separate UK plug to IEC plug 2.0m mains lead. The instrument itself is enclosed in a robust metal case with a durable powder coated finish.

INSTRUCTIONS.

To operate the 5kVDC Power Supply simply connect a suitable pair of 4mm shrouded test leads

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to the voltage output required (see below) and adjust the voltage level using the voltage control knob. **Note:** the voltage output adjustment begins at approximately 100VDC, for this reason it is advisable to switch off the unit before making any output connection changes.

1. For the full 100V to 5kVDC voltage output at the maximum 3mA current, connect to the top red and black sockets.
2. For the full 100V to 5kVDC voltage output at the maximum limited 60uA current, connect to the bottom red and black sockets.
3. To use the split output voltage (centre tap), connect one lead to the blue socket and the other lead to either of the red sockets for a Positive Voltage, or either of the black sockets for a Negative Voltage.

Note: due to the design of the output voltage control (limiting the maximum output voltage), the final rotations of the control will have no further adjustment of the voltage output.

ADDITIONAL LEADS (Recommended).

5kV Lead Red IPC-0893-P

5kV Lead Black IPC-0492-P

SPECIFICATIONS.

Instrument:-

Electrical Supply	= 220-240VAC, 50-60Hz
Fuse Ratings	= IEC Socket Inlet: F1A, UK Mains Plug: 3A.
DC Voltage Output Range	= 100V to 5kVDC.
DC Voltage Output Resolution	= 100VDC.
Max. DC Output Current	= 3mA DC.
Max. DC Limited Output Current	= 60uA DC.
AC Output Voltage	= 6.3VAC.
Max. AC Output Current	= 2 Amps.
Dimensions	= 255 x 220 x 110mm overall.
Mass	= 3.3kg

Please Note: This Equipment is for Education, Training, or research Purposes Only.

IMPORTANT- ELECTRICAL SAFETY NOTICE

Only connect the product to single phase mains electrical supply (with neutral nominally at each potential), also check that the supply voltage and frequency are within the products stated range. Before connecting to the mains electrical supply, examine the information on the products rating label (the value of the fuse fitted to the product is also stated), ensure that the mains plug or outlet circuit is fitted with an appropriate fuse of higher value.

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WARNING: THIS PRODUCT MUST BE EARTHED

This product is designed for Electrical Safety Class 1.

If a mains lead is not fitted or supplied, connect the wires to a Standard UK, 3-pin plug as follows:-

Green/Yellow wire to the terminal marked: E (Earth) or coloured Green or Green/Yellow.

Brown wire to terminal marked: L (Live) or coloured Brown.

Blue wire to terminal marked: N (Neutral) or coloured Blue.

LIVE PARTS SHOULD NEVER BE EXPOSED UNLESS THE PRODUCT HAS BEEN SWITCHED OFF AND ISOLATED FROM THE MAINS ELECTRICITY SUPPLY.

Thank you for choosing this IPC Irwin product, which has specifically been designed for education and we know it will bring you good service long into the future. This is just one product of a wide range of UK designed and manufactured products to enhance a STEM education, please see www.ipcirwin.com website for more details on the products and service we provide to support teaching and learning in science and technology.

IPC Irwin also provide Portable Appliance Testers and a Calibration service, for more details please go to www.ipcirwin.com or call our sales and technical support line on 015395 58555.



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Declaration of Conformity (In Accordance with EN ISO 17050-1:2010).

Manufacturer: **IPC Irwin, Holker School, Cark-in-Cartmel, Grange-over-Sands, Cumbria, LA11 7PQ, United Kingdom.**

Product/Part No: **5kV Power Supply (230V AC, 50Hz main voltage)/IPC-0734-P**

This conformity certificate approves the compliance of the product with the essential safety requirements of the following UK Standards and Regulations:

SI 2005 No.1803	General Product Safety Regulation (implements Directive 2001/95/EC).
SI 2016/1101	Electrical Equipment (Safety) Regulation (implements Directive 2014 /35/EU.
EN 61010-1: 2010	Electrical Requirements for Laboratory Test & Measurement Equipment.
EN 61000-6-1: 2019	EMC, Generic Standards, Immunity for Residential, Commercial and Light Industrial Environments.
EN 61000-6-3: 2019	EMC, Generic Standards, Emission for Residential, Commercial and Light Industrial Environments.
SI 2012 No. 3032	Restriction on Hazardous Substances (RoHS) in Electrical and Electronic Equipment Regulation, (implements Directive 2011/65/EU).



Mark can be used only in the case of conformity assessment according to all relevant UK Standards and Regulations.

EU Declaration of Conformity (In accordance with European Parliament and Council Decision No: 768/2008/EC Annex III).

This conformity certificate approves the compliance of the product with the essential safety requirements of the following EC/EU Directives (Manufacturer, Product/Part No: as above).

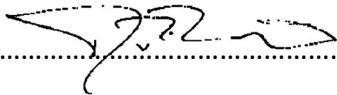
2001/95/EU	General Product Safety Directive.
2014/35/EU	Low Voltage Directive (LVD).
2014/30/EU	Electromagnetic Compatibility (EMC) Directive.
2011/65/EU	Restriction on Hazardous Substances Directive (RoHS).

European harmonised Standards used for conformity assessment and declaration:

EN 61010-1: 2010 **Electrical Requirements for Laboratory Test & Measurement Equipment.**



Mark can be used only in the case of conformity assessment according to all relevant EC/EU Directives.

Dickon Knight (Director):  Date of Issue: 24th May 2023.

In the event of any correspondence concerning this product, please contact your supplying agent quoting the catalogue number and serial number shown on the apparatus rating label, together with the voltage and frequency of the mains electrical supply. This will help us to process your enquiry quickly. Any spare parts which may be required are supplied on the understanding that the replacement of those requiring the exposure of live electrical connections **will** be undertaken by an electrically qualified person.

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