



POWERING POSSIBLE

General Warranty

The power supply is guaranteed for a period of two years 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

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1. General Safety Requirements

Before use, please read the following safety precautions to avoid any possible bodily injury and to prevent this product or any other connected products from damage. To avoid any contingent danger, ensure this product is only used within the ranges specified.

Only a qualified person should perform internal maintenance.

To avoid Fire or Personal Injury:

- **Use Proper Power Cord.** Use only the power cord supplied with the product and certified to use in your country.
- **Product Grounded.** This instrument is grounded through the power cord grounding conductor. To avoid electric shock, the grounding conductor must be grounded. The product must be grounded properly before any connection with its input or output terminals.
- **Do not intentionally short circuit the terminals.** The device will protect against short circuits but to protect the longevity of the device the protection should not be intentionally tripped.
- **Check all Terminal Ratings.** To avoid fire or shock hazard, check all ratings and markings on this product. Refer to the user manual for more information about ratings before connecting to the instrument.
- **Do not operate without covers.** Do not operate the instrument with covers or panels removed.
- **Use the Proper Fuse.** Use only the specified type and rating fuse for this instrument.
- **Avoid exposed circuit.** Be careful when working on exposed circuitry to avoid risk of electric shock or other injury.
- **Do not operate if any damage.** If you suspect damage to the instrument, have it inspected by qualified service personnel before further use.
- **Use your instrument in a well-ventilated area.** Please keep well-ventilated and inspect the intake and fan regularly.
- **Do not operate in damp conditions.** To avoid short circuiting to the interior of the device or electric shock, please do not operate in a humid environment.
- **Do not operate in an explosive atmosphere.** To avoid damages to the device or personal injuries, it is important to operate the device away from an explosive atmosphere.
- **Keep product surfaces clean and dry.** To avoid the influence of dust or moisture in air, please keep the surface of device clean and dry.

2. Safety Terms and Symbols

Symbols on the product. The following symbols may appear on the product:



Hazardous Voltage



Refer to Manual



Protective Earth Terminal



Chassis Ground



Public Ground

3. Panel Review

3.1 Front panel



1 Lock Indicator Light

- When the USB key is removed this light will turn on indicating the upper limit is now locked. When the USB key is inserted, the light will go off and the upper limit can be changed.

2 Overload Indicator Light

- If overload or power limit is exceeded the indicator light will turn on and the device will enter a protection state where the outputs will turn off and won't turn on again until the 'Reset' button is pressed.

3 DC Voltage Display

- Displays the set DC voltage level.

4 DC Button

- Button to select the DC voltage, once pressed the DC voltage can be changed.

5 Reset Button

- Press the reset button to exit the protection state. Only press this button if the fault (short circuit or overload condition) has been cleared first.

6 USB Key Slot

- Insert the USB key into this port to unlock the voltage limiter and set the voltage limit. When the key is removed the maximum voltage is then set.

7 DC Output

- DC output port, 4mm sockets.

8 DC On/Off Button

- This button turns the DC output On or Off.

9 Control Dial

- Rotary dial to change the voltage levels.

10 AC Output

- AC output port, 4mm sockets.

11 AC On/Off Button

- This button turns the AC output On or Off.

12 Power Switch

- This turns the device On/Off.

13 AC Button

- Button to select the AC voltage, once pressed the AC voltage can be changed.

14 AC Voltage Display

- Displays the set AC voltage level.

3.2 Rear panel

**1 Handle/Power Cord Holder**

- Can be used to store the power cable or as a carry handle.

2 AC Power Input

- AC power input. Ensure earth is connected when powering the device.

3 Fuse Holder

- Mains fuse holder, see specification for fuse details.

4 Air Vent

- Air vent allows cooling using an internal fan. Do not obstruct this vent.

4. General Inspection

4.1 Product Inspection

After you get a new power supply, it is recommended that you should make a check on the instrument according to the following steps:

1. Check whether there is any damage caused by transportation.

If it is found that the packaging carton or the foamed plastic protection cushion has suffered serious damage, do not throw it away first till the complete device and its accessories succeed in the electrical and mechanical property tests.

2. Check the Accessories

The supplied accessories have been already described in "Appendix A: Accessories" of this Manual. You can check whether there is any loss of accessories with reference to this description. If it is found that there is any accessory lost or damaged, please contact our Tech Support team.

3. Check the Complete Instrument

If upon delivery of the device it is found that there is damage to the device, or the device cannot work normally, please contact our Tech Support team where we can look to repair or replace the device.

4.2 Output Inspection

The product should be tested before use to ensure proper functionality. Using the power cord provided with the device, connect the power supply to AC power. Ensure the device is connected to earth. Press the power switch and the display screens should illuminate.

Once the device is turned on the output should be checked using the following steps:

1. When the instrument is under no load, select AC or DC and ensure the output volt setting for this channel is not at zero.
2. Connect a multimeter to the output and select the appropriate setting on the multimeter (AC or DC voltage).
3. Press the 'On/Off' button to turn on the output and check the multimeter reading matches the display voltage. Repeat this with a few different voltage levels.
4. Check that the output voltage can be adjusted from zero to the maximum rating.

5. Device Operation

5.1 Turn the Device on

- Connect the power supply to a mains supply, ensure the earth is connected.
- Use the power switch on the front panel to turn the device on. The displays should illuminate, showing the voltage levels.
- To turn on either the AC or DC outputs use the 'On/Off' buttons above the terminals.

5.2 AC Output

- Press the 'AC' button to select the AC voltage setting.
- The AC voltage display should now be flashing indicating it is selected and can now be changed.
- Use the dial to change the voltage level.
- Press the 'On/Off' button above the AC terminals to turn on the output. The voltage level can be changed when the output is on or off.

5.3 DC Output

- Press the 'DC' button to select the DC voltage setting.
- The DC voltage display should now be flashing indicating it is selected and can now be changed.
- Use the dial to change the voltage level.
- Press the 'On/Off' button above the DC terminals to turn on the output. The voltage level can be changed when the output is on or off.

5.4 Locking Function

- When the USB key is plugged into the device the maximum voltage can be set.
- Press the AC or DC button and change the voltage level to set the maximum voltage.
- Remove the USB key and the maximum voltage will be locked to the value that was selected.
- Now the voltage can be changed but cannot be increased past the maximum set voltage.
- This is useful for when higher voltages can potentially cause damage to components or the connected circuit.

5.5 Reset Setting

- If there has been a fault at the output (short circuit or overload) then the device will enter a protection state where the output is turned off and the overload LED will be illuminated.
- Check if the fault has been cleared or disconnect the output.
- Press the reset button to clear the protection state and the device will function as normal. If this has been successful, the overload LED will turn off. If the fault is still present, then the overload LED will stay on and the output will turn off. Clear the fault before trying the reset button again.

6. Specification

6.1 Features:

- Output voltage variable up to 24V
- Maximum rated output of 8A AC or DC
- Large clear illuminated display
- Handle/Power cord holder
- Lightweight compact design
- Internal fan for cooling.
- Dual output protection, fast acting short circuit protection and overload protection.

6.2 Technical Specification:

Specification	
Output Voltage Range	0-24V
Output Resolution	0.1V
Smoothed DC	Yes
Regulated output	Yes
Input Voltage	100-230V +/-10%
Maximum Current	8A
Working Temperature Range	0-40°C
Storage Temperature Range	-20-60°C
Humidity	<90%RH No condensation
Fuse	250V, F3AL
Weight	1.7Kg
Dimensions	230mm length, 160mm width, 105mm height

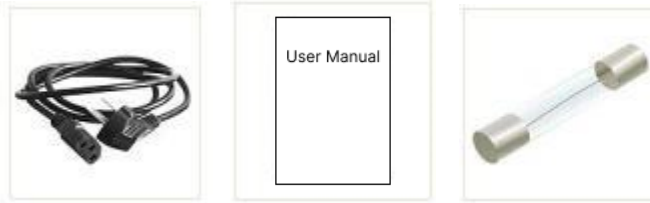
7. Troubleshooting

- **The instrument is powered on but no display.**
 - Check the power is connected properly.
 - Check if the fuse is in good condition or replace it if necessary.
 - Restart the device and ensure earth is connected.
 - If the issue persists then contact our tech support team

- **The output is abnormal**
 - Reset the device by turning the power off and on.
 - Measure the output voltage and check if it matches the set voltage level.
 - If the issue persists then contact our tech support team.

8. Appendix

8.1 Appendix A: Accessories



- Power cord
- User manual
- Fuse
- USB Key

8.2 Appendix B: General Care and Cleaning

General Care

Do not store or leave the instrument where the liquid crystal display could be exposed to direct sunlight for long periods of time.

Caution: To avoid any damage to the instrument, do not expose it to any sprays, liquids, or solvents.

Cleaning

Inspect the instrument as often as operating conditions require. To clean the instrument exterior, perform the following steps:

- Wipe the dust from the instrument surface with a soft cloth. Take care not to scratch the transparent LED protection screen when cleaning.
- Disconnect power before cleaning your instrument. Clean the instrument with a damp soft cloth (not dripping with water). It is recommended to clean with soft detergent or fresh water. To avoid damage to the instrument, do not use any corrosive chemical cleaning agents.
- Before re-applying power ensure the equipment is completely dry to avoid any electric shock hazard because of residual moisture.