

# TENMA®



## Switch Mode Bench PSU

Model: 72-8340A, 72-8345A and 72-8350A

## **IMPORTANT SAFETY INFORMATION**

**When using electrical appliances, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons or property.**

**Read all instructions before using the appliance and retain for future reference.**

- Check that the voltage indicated on the rating plate corresponds with that of the local network before connecting the appliance to the mains power supply.
- Do not operate this appliance with a damaged plug or cord, after a malfunction or after being dropped or damaged in any way.
- Check the product before use for any damage. Should you notice any damage on the cable or casing, do not use.
- This appliance contained no user-serviceable parts. All repairs should only be carried out by a qualified engineer. Improper repairs may place the user at risk of harm.
- This product must be grounded through the earth connection in the mains lead for safe operation and to reduce ripple and noise.
- This product is for indoor use only.
- Avoid touching the exposed metal of the output terminals.
- Do not block or obstruct any cooling vent opening.
- Avoid severe impacts or rough handling that leads to damage.
- Do not discharge static electricity.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children should be supervised to ensure that they do not play with the appliance.
- Always disconnect from the mains when the product is not in use or before cleaning.
- Do not use the appliance for any purpose other than that for which it is designed.
- Do not operate or store in an environment of high humidity or where moisture may enter the product as this can reduce insulation and lead to electric shock.

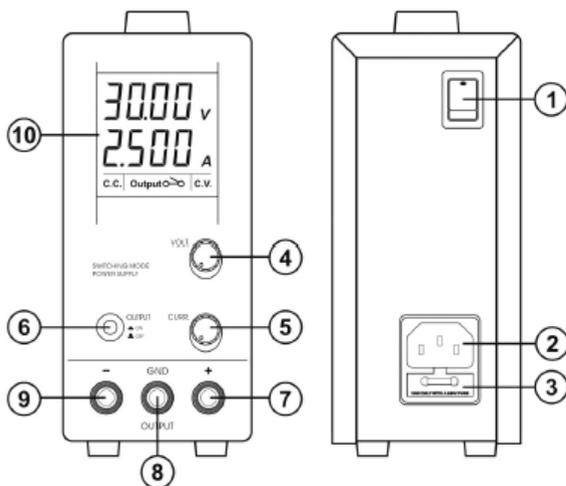
## **WHAT'S INCLUDED**

- Power Supply Unit
- Mains power lead
- User Manual

## **PRODUCT OVERVIEW**

### **Main Features**

- Constant voltage or constant current
- Current limiting control
- High accuracy
- Auto switching between voltage and current operation



## Front panel controls

1. Power switch
2. Mains socket
3. Fuse
4. Output voltage control
5. Output current control
6. Output on/off switch
7. Positive output terminal
8. Ground terminal
9. Negative output terminal
10. LCD display

## OPERATION

### Connection and Operation Procedure

1. After checking with the rating label plug in to AC mains.
2. Switch on the power supply and the LCD display should illuminate
3. The (CV) icon should be shown on the display.
4. Turn to current control to maximum if you do not require lower current limiting value, otherwise do the preset the (CC) limiting procedure.
5. Set your desired output voltage and then turn off the output.
6. Connect to your load positive to positive and negative to negative.
7. Turn on the output terminal again and check if display shows (CV).

**Note** If display shows (CC), either your preset current limiting value is too low or your load requires more voltage and current. Increase the voltage or current accordingly until (CV) appears.

### Ground Connection

- Depending on the application, the power supply output terminals can be grounded in any one of the following grounding conditions :
- Negative ground – black (-) negative terminal is shorted with green GND terminal.
- Positive ground – red (+) positive terminal is shorted with green GND terminal.
- Floating ground – green terminal is not shorted with any of the output terminals.

### Notes

- When operating this power supply as a floating ground, high impedance leakage can exist between the power supply circuitry and the chassis ground.

### **Basic Mode of Operation**

- This power supply is designed to operate as a constant voltage source or as a constant current source. Automatic crossover to either mode of operation occurs when the load condition changes as following :

### **Constant Voltage (CV), Automatic crossover & Constant Current (CC)**

- The power supply functions as a constant voltage source (CV) as long as the load current is less than the preset current limiting value. When the load current is equal to or greater than the preset current limiting value, the power supply will automatically cross over to the constant current mode, voltage will drop, (CC) will show on the LCD display panel and it will operate as a constant current source. When the load current drops below the preset current limiting value, the supply returns to constant voltage (CV) mode.

### **Set the Output Voltage and Presetting Current Limiting Value (CC)**

- Push the control one time to check the preset voltage and current level. Push the control again until the decimal place which you want to adjust. The selected decimal place will flash. Turn the control to adjust your desired value.
- To check the preset voltage and current level, just turn the controls lightly in any direction or just push the controls one time.

### **Tracking Output Over Voltage Protection (OVP)**

- This is to protect the connected load in the event that the output voltage control circuit malfunctions, the maximum output voltage will not exceed 30% of the adjusted voltage value at the time of the operation.

### **Over Temperature Protection**

- When the temperature inside the power supply becomes higher than a pre-determined value, the output voltage and current of the power supply will automatically decrease to zero to prevent damage to power supply. When the temperature inside the power supply returns to about 65°C then the power supply will automatically return to operation again.

## SPECIFICATIONS

	72-8350A	72-8345A	72-8340A
Input Voltage	0 - 130 / 180 - 264Vac 50 / 60Hz~		
Full Load Input Current at 230Vac	0.83A		
Output Voltage Adjustable Range	1.0 - 20Vdc	1.0 – 36Vdc	1.0 - 60Vdc
Output Current Adjustable Range	0 - 5A	0 - 3A	0 - 1.6A
Output Current Adjustable Range			
Load from 10% to 100% Variation	120mV	50mV	50mV
Line from 180 to 264Vac Variation	20mV		
Ripple & Noise in r.m.s.	5mV		8mV
Ripple & Noise (peak to peak)	30mV	50mV	100mV
Current Regulation			
Load from 10% to 100% Variation	20mA		
Line from 180 to 264Vac Variation	20mA		
Ripple & Noise (peak to peak)	70mA	20mA	20mA
Switching Operation Frequency	80KHz to 120KHz		
Power Factor	0.65		
Efficiency at Maximum Power	84%	83%	81%
Volt and Amp Control Type	Rotary Encoder		
Voltmeter and Ammeter Display	4 Digit		
Voltmeter Accuracy	±0.5% +5counts for range V≤5V	±0.5% +5counts for range V≤10V	±0.5% +5counts for range V≤20V
	±0.5% +3counts for range V>5V	±0.5% +3counts for range V>10V	±0.5% +3counts for range V>20V
Ammeter Accuracy	±0.5% +5counts for range I≤2A	±0.5% +5counts for range I≤1A	±0.5% +5counts for range I≤0.5A
	±0.5% +3counts for range I≤2A	±0.5% +3counts for range I≤1A	±0.5% +3counts for range I≤0.5A
LCD Indication	CC, CV, Amp, Volt, Output ON-OFF		
Protection	Short Circuit, Overload, Over Temperature, Tracking OVP		
Cooling System	Natural Convection		
Dimensions in mm (WxHxD)	70 x 150 x 250mm / 2.8 x 6.0 x 9.8in.		
Weight in Kg	2Kgs / 4.4Lbs		

## MAINTENANCE

### Cleaning

- Use a damp cloth and a small amount of liquid detergent if necessary.
- Never submerge the power supply in liquid or allow any liquid to enter the case.
- Do not use any chemicals, abrasives or solvents that could damage the power supply casing.

### Changing the fuse

- Replace the fuse only with one of exactly the same type and rating.
- Disconnect the mains power and unplug the mains lead before replacing the fuse.



### INFORMATION ON WASTE DISPOSAL FOR CONSUMERS OF ELECTRICAL & ELECTRONIC EQUIPMENT.

When this product has reached the end of its life it must be treated as Waste Electrical & Electronic Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Contact your local authority for details of recycling schemes in your area.



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