Warranty

Tenma warrants to the original purchaser this product will be free from defects in materials and workmanship for a period of one year. In the event that warranty replacement is required, the unit will be replaced or repaired at the sole discretion of Tenma Test Equipment. Warranty claims must be processed through the dealer in which the product was purchased.

This warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, or improper installation. This warranty is in lieu of all other expressed warranties. If the product is defective in materials or workmanship as warranted above, the purchaser's sole remedy shall be repair or replacement as provided above. In no event will Tenma Test Equipment be liable for any incidental or consequential damages arising from the use of this product.

Tenma Test Equipment
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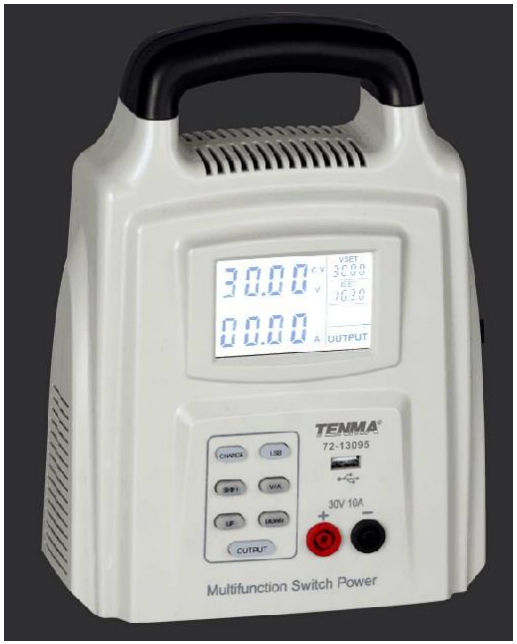
# Multipurpose Switch Mode Power Supply

## Model 72-13095




# User Manual

Keep this manual in a safe place for quick reference at all times. It contains important safety and operation instructions for correct use. Read through the manual and pay special attention to the markings and labels of this unit and equipment to be connected.

Pay special attention to these two types of notices used in this manual.

**WARNING:**

**Failure to observe this warning may cause injury to persons and damage to power supply or connected equipment.**

**CAUTION:**

**Failure to observe this warning may result in damage to equipment and Improper functioning of the power supply.**

**WARNING:**

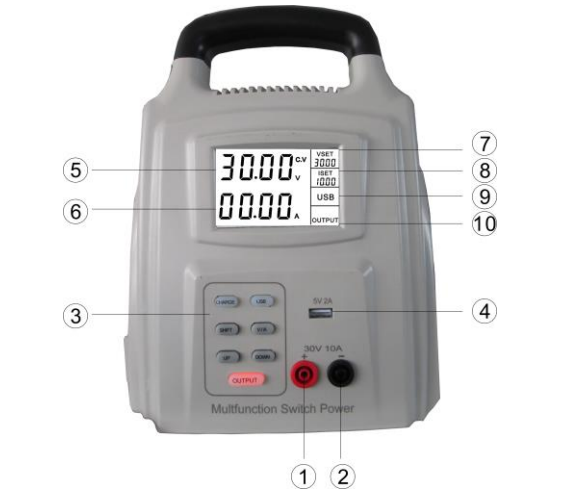
1. Do not use this power supply near water.
2. Do not operate or touch this power supply with wet hands.
3. Do not open power supply case when it is connected to AC power source.
4. Refer all servicing to qualified service personnel only.
5. The power supply is designed for in-door use.
6. This power supply is made to charge only properly sized lead acid batteries.
7. Don't recharging non-rechargeable batteries.
8. Charging other types of battery or under-sized lead acid batteries may cause fire or explosion.
9. Do not use the charger if it has been dropped or damaged.
10. Do not remove casing of the charger, there is no user-serviceable parts inside.
11. Do not charge the battery on boats. Remove the battery and charge on shore.
12. Never attempt to charge a frozen battery
13. Never attempt to charge a damaged battery.
14. Wear protective goggles and turn your face away when connecting disconnecting the battery.
15. Never place the charger on top of a battery.
16. Never smoke, use an open flame, or create sparks near battery or charger during normal charging operation as batteries may give out explosive gas.
17. Do not charge batteries in an enclosure due to possible explosion of entrapped explosive gas.
18. Use of accessory not recommended may cause risk of fire, electric shock.
19. Disconnect the AC supply before connecting or disconnecting the links to the battery.
20. If the charger does not work properly or if it has been damaged, unplug its AC and DC connection.
21. During charging, the battery must be placed in a well ventilated area.
22. If longer output charging cord is required make sure the wire gauge is adequate for the current in given cable length.

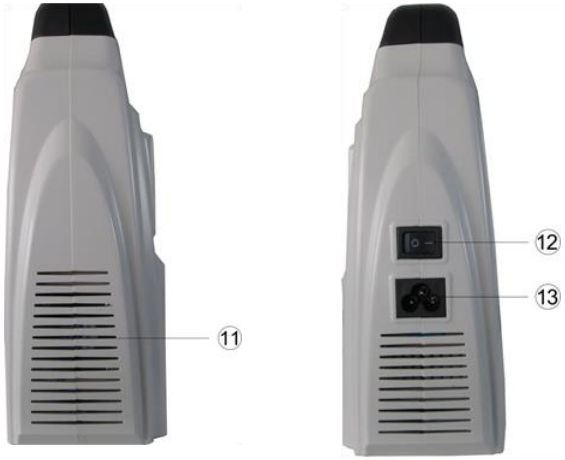
## INTRODUCTION

Congratulations on purchasing our new Digital Multipurpose Switch Mode Power Supply.

Compact supply is housed in a lightweight enclosure with integral handle, making it great for benchtop or field use. Tri-mode operation includes standard power supply output, battery-charge mode and USB power/charge modes. The unit provides variable voltage up to 30VDC, with adjustable current limiting to 10A and will operate at full 300W output for up to eight continuous hours. Fixed 5VDC, 2A output is provided via front panel USB jack, variable output provided via standard banana jacks. Separate output ON/OFF control allows settings to be made prior to energizing the connected device.

## CONTROL AND INDICATORS




1. DC Positive Output Terminal
2. DC Negative Output Terminal
3. Keypad
4. USB Charging Ports
5. Voltage Value Display
6. Current Value Display
7. Voltage Setting Indicator
8. Current Setting Indicator
9. USB Output Display
10. Output ON/OFF Indicator
11. Automatic Fan
12. Power Switch
13. AC Power Input

## CONTROL MODE SELECTION

There are 3 modes, Normal, Charge, and USB mode for the power supply.

1. Normal mode

   This is the factory preset mode and the power supply output V (voltage) and I (amperage) are controlled by the (3) Keypad.

1.1. Voltage and Current Setting

1.11. Switch on the power supply

1.12. Push the ***OUTPUT*** button to turn so it is NOT illuminated. This will turn off the output to terminal (1) and (2).

1.13. Push the ***V/A*** button, this will toggle the setting between Volts and Amps shown in the upper right of the display.

1.14. Push the ***SHIFT*** button to move the cursor between digits to be set.

1.15. Push the ***UP*** or ***DOWN*** button the change individual settings.

1.3. Output Switch

Once the desired voltage setting and current limit are set, press the output button. It will illuminate, thus indicating the presence of voltage at the output connections (1) and (2)

Once the ***OUTPUT*** button is lighted, and the output terminals are engaged, the

large primary display will show output voltage. With no load connected, the Amperage will read zero. Once a load is connected, the Amperage drawn by the load will be displayed on the lower Amp digits.

LCD, push ***OUTPUT*** button again to disengage the output.

2. Charge mode

Observe the warnings & safety precautions before installing and operating the charger. Check battery condition, clean battery poles. Secure the battery charger in a well ventilated place, make sure the mounting surface is flat and without soft covering material or loose paper sheet. The air intake is at the left side and air outlet at the right side. Make sure both intake and outlet are not blocked. Never place charger on top of battery. Before connecting or disconnecting the charging cable, unplug AC cord from the mains.

Charging Steps

First connect the Red battery clamp to the battery Positive + Pole.

Then connect the Black battery clamp to the Negative – Pole of the battery.

Make sure all the connections are secured, double check on the correct polarity.

When charging automotive batteries:

With negative ground vehicles, the positive battery terminal should be connected first. Then make the negative connection via the car chassis, away from the battery, any fuel lines or other sources of combustion.

Then connect the charger to the AC power source.

After charging, disconnect the battery charger from the AC power source, Then remove the chassis connection and then the battery connection.

Please ensure clamps are tightly connected to chassis and positive terminal to prevent voltage drop and potential dangerous arcing.

2.1. Battery Voltage Setting

2.11. Switch on the power supply.

2.12. Push the ***CHARGE*** button to open the charging setting and light the ***CHARGE*** button.

2.13. Push the ***V/A*** button, The value position is flickering of voltage setting area.

2.14. Push the ***UP*** button the change the settings (12V or 24v).

2.2. Battery Ah setting

2.21. Push the ***V/A*** button, The value position is flickering of Current setting area.

2.22. Push the ***SHIFT*** button to move the cursors.

2.23. Push the ***UP*** or ***DOWN*** button the change the settings (10Ah-120Ah).

2.3. Output Switch

Once the proper charge mode is set, press the ***OUTPUT*** button to turn on the output and begin charging. This will initiate the automatic charging function.

2.USB mode

The USB ports are suitable for both android mobile phone and IOS phone, with automatic check function. Push and light the ***USB*** button. Push and light the ***OUTPUT*** button to activate output mode.

## SPECIFICATIONS

| | | |
|---|---|---|
| **Input Voltage** | 85VAC – 120VAC, 60Hz | |
| **Input Current** | 1.6A | |
| **Output Rating** | **Voltage range** | 1~30V |
| | **Current range** | 0~10A |
| **Line Regulation ±%of output + offset** | **Voltage** | CV≤1%+3mV |
| **Load Regulation ±%of output + offset** | **Voltage** | CV≤1%+5mV |
| **Measurement Accuracy** | **Voltage** | 10mV |
| | **Current** | 10mA |
| **Measured Value Accuracy @ 25℃ ±%of output + offset** | **Voltage** | ≤0.5%+2 word |
| | **Current** | ≤0.5%+3 word |
| **Setting Value Accuracy @ 25℃ ±%of output + offset** | **Voltage** | ≤0.5%+2 word |
| | **Current** | ≤0.5%+3 word |
| **Ripple and Noise 20HZ-20MHZ** | **Voltage** | ≤100mVp-p |
| **Dimensions** | **170x240x85mm** | |
| **Weight (Net )** | **1.1KG** | |
| **Accessories** | Charging Cable with Battery Clamp | |
| **Recommended Battery Capacity Range** | | 10AH-120AH |