Line Regulation					
Voltage Current	⩽0.01%+3mV ⩽0.1%+3mA	⩽0.01%+3mV ⩽0.1%+3mA	⩽0.01%+3mV ⩽0.1%+3mA	⩽0.01%+3mV ⩽0.1%+3mA	⩽0.01%+3mV ⩽0.1%+3mA
Setup Resolution					
Voltage Current	10mV 1mA	10mV 1mA	10mV 1mA	10mV 1mA	10mV 1mA
Setup Accuracy (25°C to -5°C)					
Voltage Current	⩽0.5%+20mV ⩽0.5%+5mA	⩽0.5%+20mV ⩽0.5%+10mA	⩽0.5%+30mV ⩽0.5%+5mA	⩽0.5%+20mV ⩽0.5%+20mA	⩽0.5%+30mV ⩽0.5%+10mA
Ripple (20-20m)					
Voltage Current	⩽1mVrms ⩽3mArms	⩽2mVrms ⩽3mArms	⩽1mVrms ⩽3mVrms	⩽2mVrms ⩽5mVrms	⩽1mVrms ⩽3mVrms
Temperature Coeffcient					
Voltage Current	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm
Read Back Accuracy					
Voltage Current	10mV 1mA	10mV 1mA	10mV 1mA	10mV 1mA	10mV 1mA
Read Back Temperature Coeffcient					
Voltage Current	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm	⩽150ppm ⩽150ppm
Reaction Time					
Voltage Rise Voltage Drop	⩽100mS ⩽100mS (10% rated load)	⩽100mS ⩽100mS (10% rated load)	⩽100mS ⩽100mS (10% rated load)	⩽100mS ⩽100mS (10% rated load)	⩽100mS ⩽100mS (10% rated load)
Interface: Interfaces (for programmable models only): RS232, USB					
Accessories: User manual and power cord					

Model	Dimensions	Weight
72-10480 / 72-2535	285x110x165mm	3.6kg
72-2540 / 72-2545	285x110x165mm	4.3kg
72-2550	285x110x165mm	4.8kg
72-2925 / 72-2930	305x110x165	8.3kg
72-2935 / 72-2940	305x110x165	8.0kg

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 & Electronics 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.

Made in China. PR2 9PP

TENMA®

Digital-Control and Programmable DC Power Supply

Models: 72-2535, 72-2540, 72-2545, 72-2550, 72-2925, 72-2930, 72-2935, 72-2940 & 72-10480

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IMPORTANT SAFETY INFORMATION

Please read these instructions carefully before use and retain for future reference.

The following safety symbols may appear in this manual or on the series:

Symbol	Meaning
	Warning
	Danger - High Voltage
	Earth (Ground) terminal

- Do not block or obstruct the opening to the cooling fan vent.
- Avoid severe impacts or rough handling as it could lead to damage.
- Do not discharge static electricity.
- Do not disassemble unless you are qualifed as service personnel.

AC INPUT

- AC input voltage: 110V / 120V / 220V / 230V, 50/60Hz.
- Connect the protective grounding conductor of the AC power cord to an earth ground, in order to avoid electrical shock.

OPERATION ENVIRONMENT

Location	Indoor, no direct sunlight, dust free, almost non-conductive pollution
Relative Humidity	<80%
Altitude	<2000m
Temperature	0-40°C

STORAGE ENVIRONMENT

Location	Indoor
Relative Humidity	<70%
Temperature	-10 - 70°C

FUSE

Model	110V / 120V	220V / 230V
72-10480	T4A/250V (20x5mm)	T2A/250V (20x5mm)
72-2535	T5A/250V (20x5mm)	T2A/250V (20x5mm)
72-2540	T5A/250V (20x5mm)	T3A/250V (20x5mm)
72-2545	T5A/250V (20x5mm)	T3A/250V (20x5mm)
72-2550	T5A/250V (20x5mm)	T3A/250V (20x5mm)
72-2925	T10A/250V (20x5mm)	T5A/250V (20x5mm)
72-2930	T10A/250V (20x5mm)	T5A/250V (20x5mm)
72-2935	T10A/250V (20x5mm)	T5A/250V (20x5mm)
72-2940	T10A/250V (20x5mm)	T5A/250V (20x5mm)

- Avoid the risk of fire by only replacing the fuse with the specified type and rating.
- Disconnect the power before replacing the fuse.
- Make sure the cause of the fuse blowout is fixed before replacing the fuse.

REMOTE CONTROL

All models can be connected to a computer through interfaces USB/RS232 on the back of the machine and controlled by the remote control.

COM setting

Set up the COM port inside the computer according to the following list:

- Baud rate: 9600
- Parity bit: None
- Data bit: 8
- Stop bit: 1
- Data fow control: None

Functionality Check

- Run this query command via the terminal application, such as MTTTY (Multi-threaded TTY).
- This should return the idenitifcation information: Manufacturer, model name, serial number, TENMA 72-2535 SN:xxxxxxxx Vx.xx

Entering the Remote Control Mode:

- Connect the USB.
- The power supply will automatically connect. After a normal connection, there will be a beep from the power supply itself.
- The panel keys are locked, so the power supply can only rely on the remote control.

Exiting from the Remote Control Mode:

- Close the remote control software.
- Disconnect the USB from the back.
- The power supply disconnects. You will hear a beep, which hints that the remote control mode has been exited.
- The power supply automatically comes in the panel control mode.

SPECIFICATIONS

Note: The specifications in the table below have all been tested in temperatures ranging from 25°C down to -5°C, and after being warmed up for 20 minutes.

Model	72-10480/ 72-2535	72-2540	72-2545/ 72-2550	72-2925/ 72-2930	72-2935/ 72-2940
Voltage Range	0-30V	0-30V	0-60V	0-30V	0-60V
Current Range	0-3A	0-5A	0-2A (72-2545) 0-3A (72-2550)	0-10A	0-5A
Load Regulation					
Voltage Current	⩽0.01%+2mV ⩽0.1%+5mA ⩽0.1%+10mA (72-2535)	⩽0.01%+2mV ⩽0.1%+5mA	⩽0.01%+2mV ⩽0.1%+5mA	⩽0.01%+3mV ⩽0.1%+20mA	⩽0.01%+2mV ⩽0.1%+10mA

BEEP ON/OFF

- By default, the beep sound is enabled.
- To turn off the beep, press the OCP (BEEP) key for two seconds.
- A beep sounds, meaning the beep setting will be turned off.
- To enable the beep, press the OCP (BEEP) key for two seconds again.

FRONT PANEL LOCK

Press the LOCK key to lock the front panel key operation. The key LED will turn on. To unlock, press and hold the LOCK key for two seconds.

OUTPUT SETUP

Panel Operation

- Connect the load to the front port, CH1 +/-.
- Press the Voltage/Current key to switch between the voltage adjustment and current adjustment. Adjust the voltage and current with the Voltage/Current adjustment knob.
- By default, the voltage and current knob work in coarse mode. In order to activate in fine mode, press the key to choose between coarse or fine mode.
- Turning on the output and pressing the output key will turn on the key LED and display CV or CC mode.

SAVE SETUP

Background	The front panel settings can be stored into one of the four internal memories.
Contents	The following list shows the setup contents: • Fine/coarse knob editing mode • Beep on/off • Output voltage/current level The following settings are always saved as “off”: • Output on/off • Front panel lock on/off
Panel Operation	Press one of the four buttons (M1, M2, M3, M4) and the LED light turns on accordingly. After adjusting the value, it is automatically saved, once the LED light stops blinking.

RECALL SETUP

The front panel settings can be recalled from one of the four internal memories.

Press any button of M1 to M4.
For example, the memory of the panel setting is recalled in M1.
After you recall M4, rotate the shuttle knob and then M5 is recalled.

If the memory indicator is lit on the panel of lights, then the current memory is recalled.
Note: When a setting is recalled the output automatically turns off.

SERIES LINEUP/MAIN FEATURES

Model	V Meter	A Meter	USB	Reolution
72-10480	4 digit	4 digit	No	10mV/1mA
72-2535	4 digit	4 digit	Yes	10mV/1mA
72-2540	4 digit	4 digit	Yes	10mV/1mA
72-2545	4 digit	4 digit	Yes	10mV/1mA
72-2550	4 digit	4 digit	Yes	10mV/1mA
72-2925	4 digit	4 digit	No	10mV/1mA
72-2930	4 digit	4 digit	Yes	10mV/1mA
72-2935	4 digit	4 digit	No	10mV/1mA
72-2940	4 digit	4 digit	Yes	10mV/1mA

Performance

- Low noise: cooling fan controlled by heatsink temperature.
- Compact size, light weight.

Operation

- Constant voltage/constant current operation.
- Output on/off control.
- Digital panel control.
- 4 pairs of panel setup save/recall.
- Coarse and fine voltage/current control.
- Software calibration.
- Beep output.
- Key lock function.

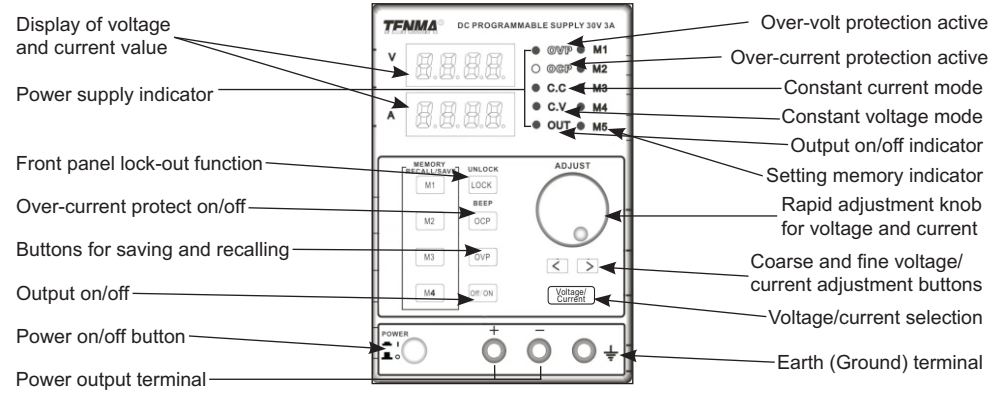
Protection

- Overload protection.
- Reverse polarity protection.
- Short circuit protection.

Interface

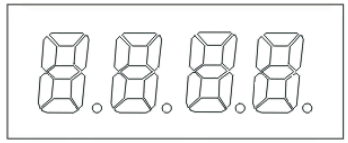
- USB/RS232 for remote control (only for 72-2535, 72-2540, 72-2545, 72-2550, 72-2930 and 72-2940).

FRONT PANEL OVERVIEW



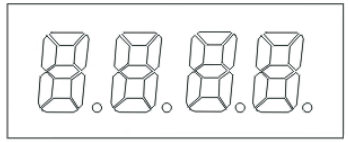
DISPLAY

Voltage level



Voltmeter displays the setup value of output voltage.

Current level



Displays the setup value of the output current.

CONDITION INDICATION

- OVP is the indicator of overvoltage protection.
- When the overvoltage function is turned on the " ● OVP " indicator lights up.
- When the output voltage is higher than the protection setup value, due to unexpected conditions, the output cuts off and the OVP indicator flickers.
- Press the OVP key again and the power supply will recover.

○ OCP	OCP is OCP indicator. When overcurrent function is turned on, the OCP indicator light turns on.
● C.C	C.C is the constant current indicator. When the power supply is in the mode of constant current, the light will be on.
● C.V	C.V is the constant voltage indicator. When the power supply is in the mode of constant voltage, the light will be on.
● OUT	OUT is output indicator. If the light is on then there is a voltage output in the output terminal.

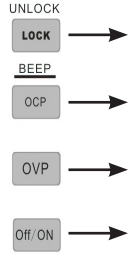
STORAGE INDICATION

- ● M1
- ● M2
- ● M3
- ● M4
- ● M5

- Indication of saving and recalling five setups stored internally.

BRIEF INTRODUCTION OF PANEL OPERATION

- Saves or recalls panel settings. For settings, 1 - 4 are available.

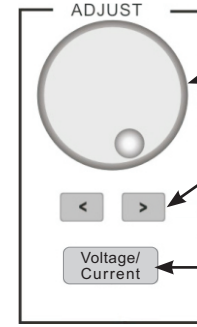


Front panel lock-out function.

Over-current protect on/off.
Pressing this key for more than 2 seconds will turn beep on/off.

Overvoltage protection on/off.

Output on/off.



Voltage-current setting adjustment.

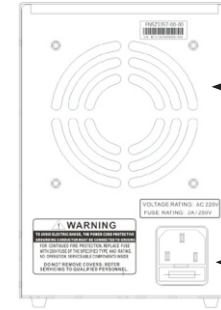
Digit selector buttons.

Select Voltage/Current for adjustment by pressing the key. The volt indicator starts to flicker. When you press it again, the ampere indicator starts to flicker.
Turn the key to ADJUST and the settings of the set voltage or current can be adjusted.

On/Off main power.

Outputs voltage and current.

Connects the ground (earth) terminal.



Fan

Label on voltage and fuse

Power socket

The power cord socket accepts AC values: 115V/230V, 50/60Hz.
Please refer to the fuse parameters on the back of the fuse label, in order to replace the fuse with the specifed fuse.

Ensure the correct type of fuse is installed prior to powering up.

OPERATION

Connect the AC power cord and select the corresponding AC voltage according to the back label, then connect the AC power cord to the socket on the back panel.

Power on

Press the power switch to turn the power on. The display initialises, showing the model of the machine and then the setting level, which is recalled from the last use.

Power off

Press the power switch again to turn the power off.

OUTPUT ON/OFF

Panel Operation

- The key LED will turn on once you have pressed the "output" key to turn output on.
- The key LED will then turn off once you have pressed the "output" key again to turn off output.

Note: If there are any of the following conditions, the output will automatically turn off:

- OVP means there is abnormal high voltage output or input on the output terminal.
- When OCP is on, the output current reaches the setting current value.
- Recalling other setups from the memory.