Installation and Operation Manual

TX24-5 Intelligent PSU

Contents

1 Overview

TX24-5 Power Supply Unit (PSU) is designed for onsite power supply of 132.5W (26.5VDC/5A). It is used to transform 220VAC to 26.5VDC, with both backup power supply & charge function. This unit can supply an output of 24VDC/7Ah when the mains cut off to extend the operation & activation of the onsite equipments. The PSU offers comprehensive displays including output voltage, output current, mains fault, battery fault and line fault as well as the protection function for overload, over-current and short circuit.

TX24-5 PSU is networkable with T&A linkage type of intelligent control panel to provide the control panel with relevant linkage fault information. TX3606 loop interface board is optional and it's needed to realize the networking communication between the unit and the networking control panel.

2 Main Features

2.1 Intelligent PSU
2.2 Wall mount, networkable
2.3 Digital display showing output voltage and load current
2.4 Overload, overcharge and over usage protection
2.5 Fully Monitored with Self-test function

3 Technical Specifications

3.1 Output Power: 132.5W (26.5VDC/5A)
3.2 Operating Environment:
Temperature: 0℃~+40℃
Relative Humidity: ≤95%, non-condensing
Atmosphere: 86~106KPa
3.3 Power Supply:
Mains: AC(187-242V),＜130W
Backup: 24VDC/7Ah sealed lead-acid battery (Not included)
3.4 Dimension: 400mm x 320mm x 120mm
3.5 IP Grade: IP20
3.6 Mains and backup switching time:＜50ms

4 Operation Principle and Functions

4.1 Operation Principle

A. Current Output and Protection

This PSU uses an AC-DC switching module to transform 220VAC to 24VDC and provides voltage on the control board. After power supply management MCU outputs driving signal to activate the relay, 24VDC will have an output. The control board is equipped with a charging module circuit to carry out the charging for the backup battery.

B. Backup Battery Management

I) Over discharge protection

To prevent battery from over discharge, when the battery voltage is lower than its protection threshold (20VDC), the PSU will stop the battery's output by cutting off the output relay.

II) Charge for Battery

When the battery is connected with the mains while mains is on, mains will charge the battery with a constant current and it will automatically change to the floating charge state when the battery is getting nearly fully charged.

III) Mains and Backup Switch

When mains cut off, MCU will output a signal to drive the relay and switch the backup battery to 24VDC output. Once the mains resumed, the PSU automatically switches back to mains supply and starts charging for the battery.

Note: The switching has an interval and the switching time from Mains to battery is＜50ms

4.2 Functions

A. Dynamic digital display for output voltage and current; LED indicators show the PSU's running state, including System Operation, Main Fault, Battery Fault and Line Fault; the built-in buzzer alarms when any one of the above mentioned faults happens.

B. The power supply can alarm mains, backup and line fault. Alarm mains fault when input mains voltage less than 120VAC; alarm backup fault when backup less than 12VDC; alarm line fault when output short circuit, over current or fuse broken.

5 Structures

5.1 The appearance and dimension of the PSU are shown in the Fig.1

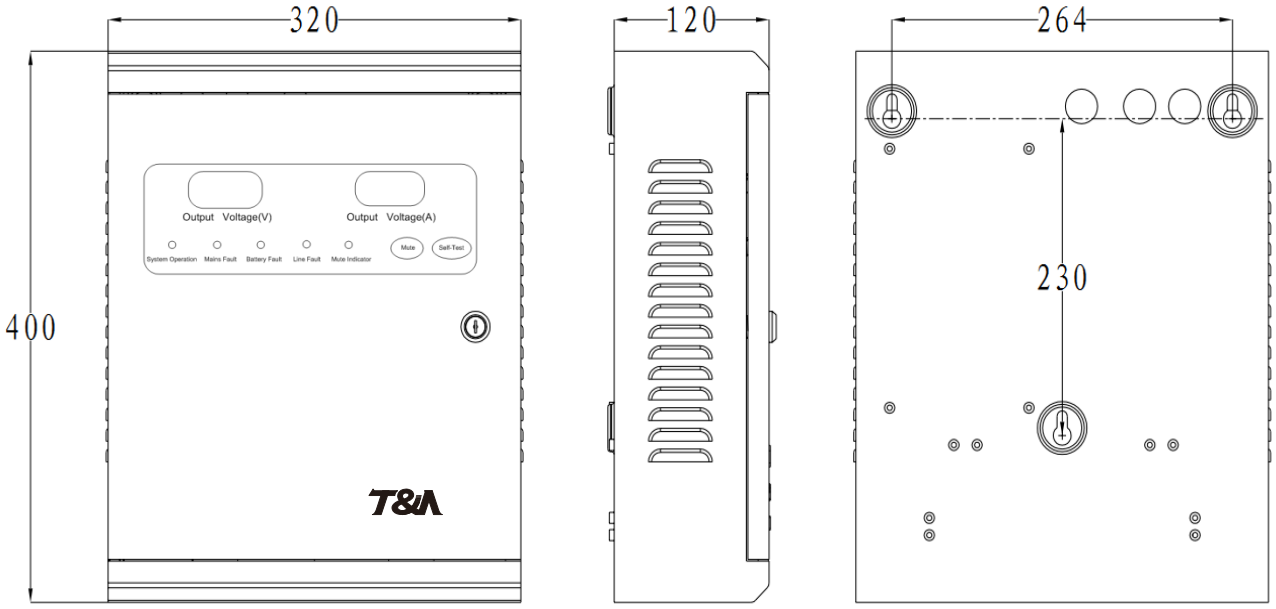

Fig 1 Appearance & Dimension

5.2 Front panel of PSU is shown in Fig.2

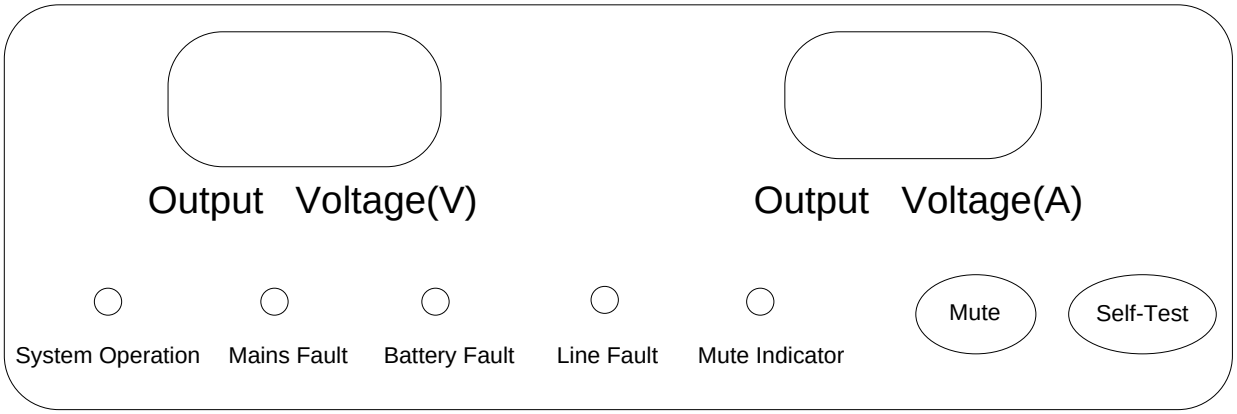

Fig 2 Front Panel Mute Indicator

5.3 Front Panel Display and Keys Descriptions

a) Mute: No effect at normal operation. Pressing “Mute” can stop sound output when the PSU is failure. This key can also be used to switch between “Mute” and “Non-Mute” Status.

b) Self-Test: Pressing this key will start automatic testing for the status of all the displays and sound

c) System Operation: Green stays on when mains or backup is connected.

d) Mains Fault: Yellow, stays on when power is lower than 120VAC, and buzzer alarms.

e) Backup Fault: Yellow, stays on when battery voltage is lower than 21VDC, and buzzer alarms.

f) Line Fault: Yellow, stays on when output is short, over current and under voltage or fuse is broken, and buzzer alarms.

g) Digital Voltage Display: Display output voltage at normal operation but “Err” when output voltage is lower than 16V or higher than 30V.

h) Digital Current Display: Display output current at normal operation but “Err” when the output current is over 6.3A.

5.4 Internal Structure is shown in Fig 3

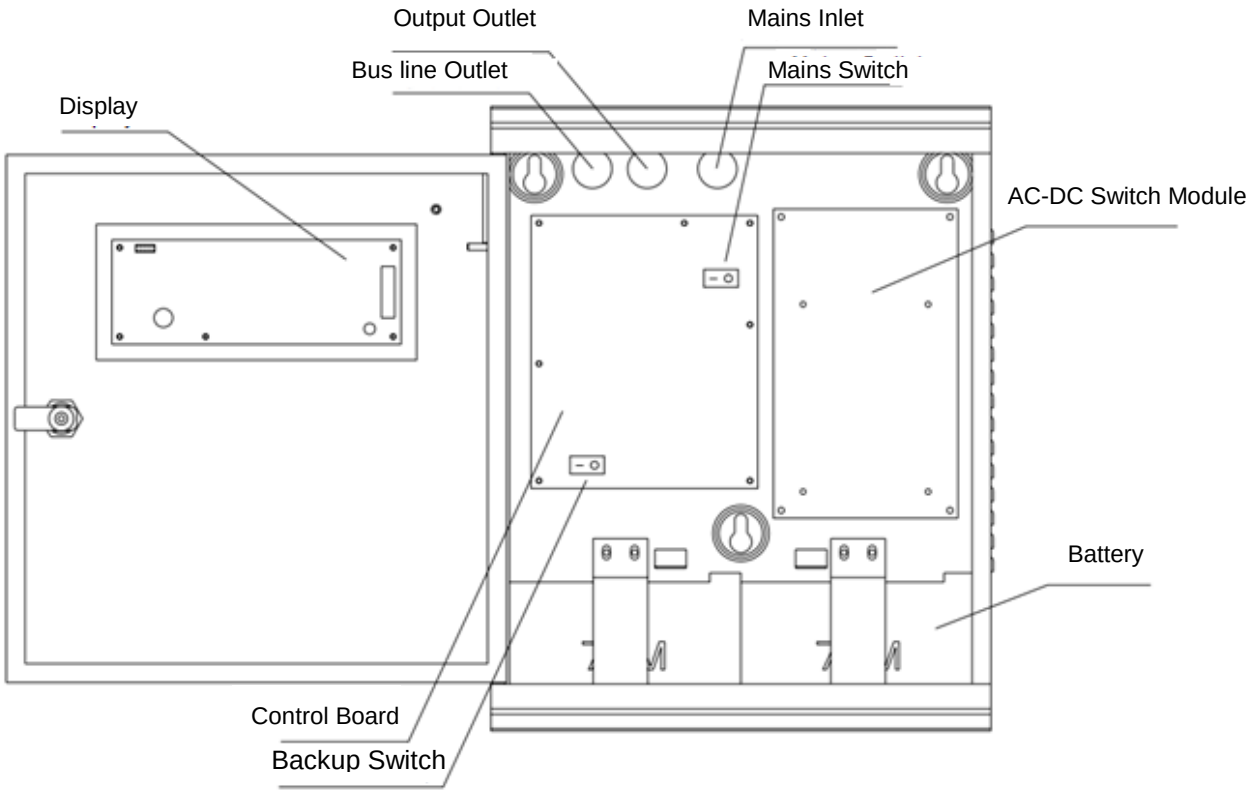

Fig 3 Internal Structure

5.5 Internal Wiring is shown in Fig 4

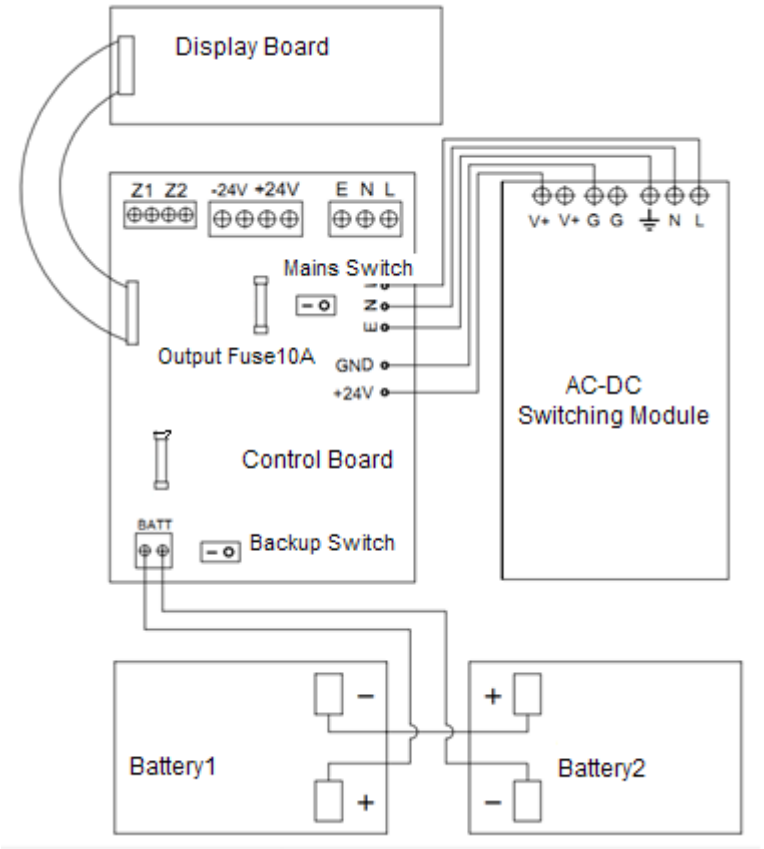

Fig 4 Internal Wiring

6 Installations and Wiring

1. Drill on the wall the two φ12 mounting holes with a center-to-center distance of 264mm.
2. Mount the PSU on the wall by use of two M10 expansion screws going through the corresponding mounting holes of the PSU.
3. Wiring: Connect the power cable to the wiring terminals through the knock-off holes on the top side or back side of the PSU. The wiring terminals are described in Fig 5.

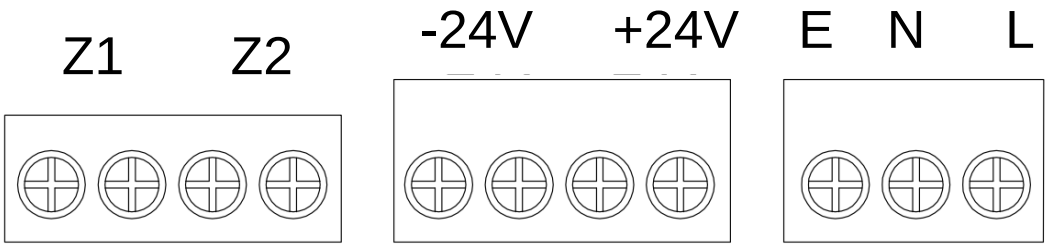

Fig 5 Wiring Terminal

Terminal Description：

L, N, E：220VAC Input Terminals (“E” for Earthing)

+24V, -24V：24VDC Output Terminals

Z1, Z2：Loop Wiring Terminals

4. Check whether the installation and wiring are secure and correct.

5. Installation drawing is shown in Fig 6.

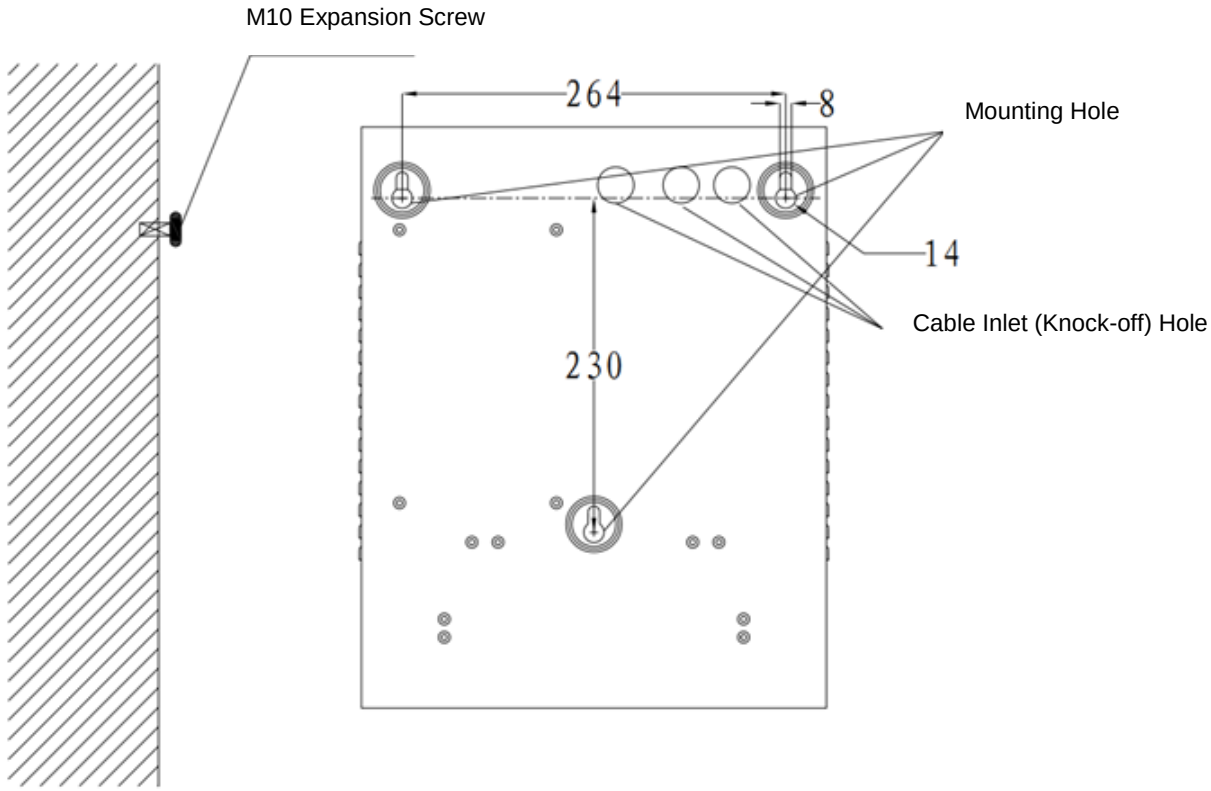

Fig 6 Installation Drawing

7 Troubleshooting

1. If Mains Fault alarms while 220VAC is existing, check for loose connection between internal power supply module and control board.
2. If the output fuse breaks while power is on, check if the output line is short or connected to the incorrect terminals.
3. If no output values are displayed while output is normal, check for loose connection between display board and control board.
4. If battery fault alarms while its voltage is over 21V, check whether the fuse is broken or the battery is connected reversedly.
5. If no output and line fault alarms while both mains and backup battery are normal, check whether the output fuse is broken or re-load mains & backup power.

8 Notes

1. Before power on, it is necessary to check whether there is a wiring problem, such as short circuit, open circuit, wrong connection, etc.
2. This panel can only be operated and maintained by the person who's been well trained.
3. Our company is responsible for the service of the PSU during the warranty period which is two years upon shipment. Please contact us or your local distributor for any problem.