TG7300

Power Amplifier
Installation and Operation Manual

☐150W ☐300W ☐500W

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1 Introduction

1.1 Overview

TG7300 Series Power Amplifier is an important part of emergency broadcast system, including TG7300（150W）, TG7301（300W） andTG7302（500W）.

TG7300 Series Power Amplifier is a new-generation product designed by Tanda complying with national standard GB16806-2006 Automatic Control System for Fire Protection (containing Modification No.1). It can carry out emergency broadcast together with TG7100 Broadcast Control panel and loudspeakers.

1.2 Features

- Self-check is available
- Auto/Manual mode
- The monitor can be muted automatically to eliminate audio return while the microphone is used to broadcast
- As it receives the emergency signal, the power amplifier can automatically adjust audio to preset position not controlled by the volume potentiometer, eliminating the influence of human operation
- Automatically switching between the main power and the standby power
- Fault uploading
- Over heat protection
- Providing 24VDC off-set for local audio output line and line-checking module
- Communicate with TG7100 Broadcast Control Panel through RS485

1.3 Technical Specification

Compliance	GB 16806-2006(containing Modification No.1)
The Main Power	220VAC（187V~242V）50Hz
Standby Power	220VAC（187V~242V）50Hz
Local Address	1~10（binary code, no repeated codes）
Input Resistance	10KΩ
Input Level	775mV
Stable Voltage Output	120V
Frequency Response	80Hz～8KHz（90V～145V）
Harmonic Distortion	≤5%
Noise Level	＜37mV
Dimension Lx W x H	483.0mm×330.0mm×88.5mm
Weight	6.5 Kg
Operating Temperature	-10°C to +40°C
Relative Humidity	≤95% Relative Humidity, Non condensing

2 Structure

2.1Appearance

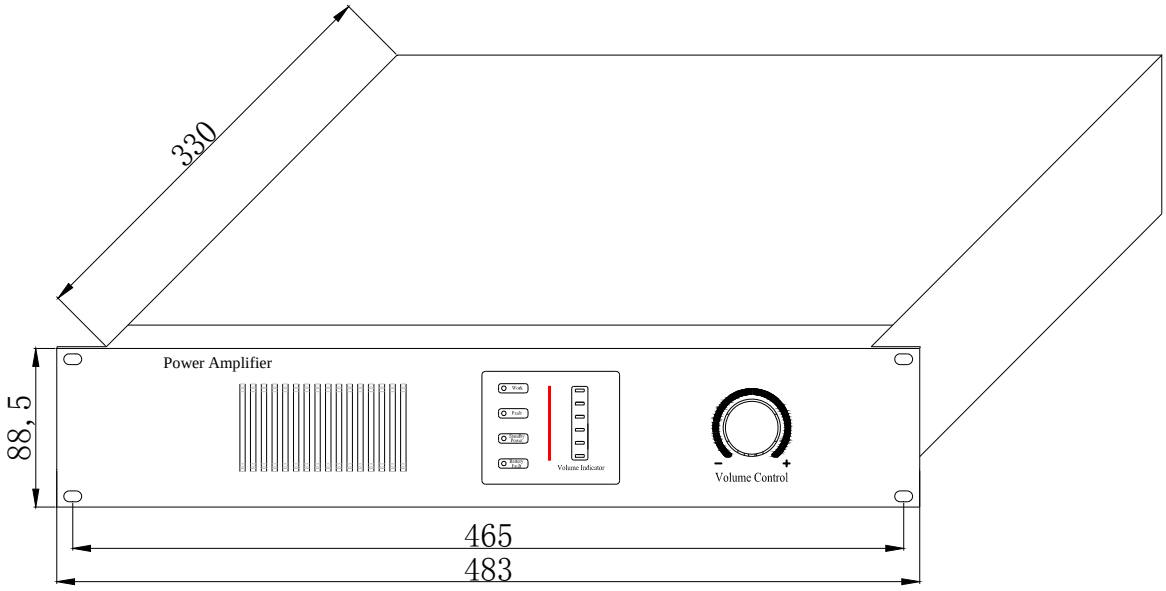

Fig. 1-1

Power Amplifier is plugged into a rack-type or console-type fire alarm control panel.

2.2 Front Panel

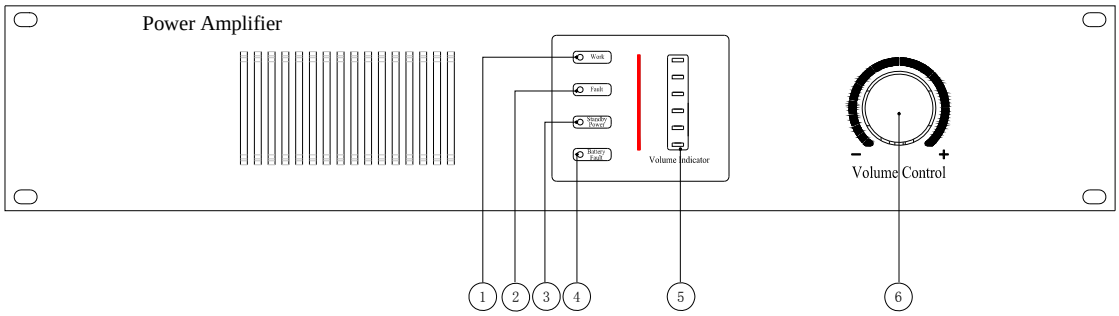

Fig. 1-2

①Work LED ② Fault LED ③ BAT LED ④ BAT Fault LED ⑤ Volume LED ⑥ Volume Control

2.3 Back panel

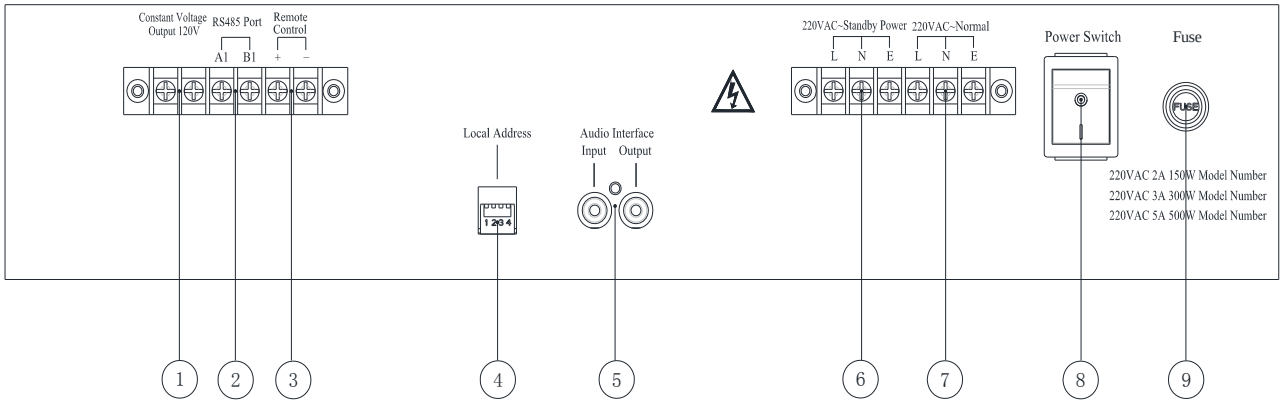

Fig. 1-3

① Audio Output ② RS485 ③ Remote Control ④ Local Address ⑤ Audio Port ⑥ Batteries ⑦ Main Power ⑧ Switch ⑨ Fuse

2.4 Indicators

- Work LED：It lights green as the power is switched on.
- Fault LED：It lights yellow in fault.
- BAT LED：It lights green as the standby power is connected.
- BAT Fault LED：It lights yellow in standby power fault.
- Volume LED：Dynamic indicator for volume

Note: After the fault is removed, you need to restart the power supply or the associated control panel sends a reset command to turn off the fault indicator.

2.5 Knob, Switch and Fuse

- Volume Knob：Turn the volume up and down
- Power Switch：Switch on or off the power of the power amplifier. It is invalid as there is emergency signal.
- Fuse：TG7300 Power Amplifier uses 2A slow blow fuse（Φ5×20）
  TG7301 Power Amplifier uses 3A slow blow fuse（Φ5×20）
  TG7302 Power Amplifier uses 5A slow blow fuse（Φ5×20）

3 Operation

3.1 Function

Device Register

Local Address：Address code (binary code) for the local device is different from other devices communication addresses of RS485. Address range is between 0 and 10.

As the address is 0, the power amplifier is in standalone state, not communicating with broadcast control panel. It can automatically amplify and play the sound if audio input exists. As the address is from 1 to 10, the power amplifier can't share the identical code with other devices in the same broadcast system.

Refer to TG7100 Broadcast Control Panel Installation and Operation Manual for device register.

Note：Please set the local address when the power amplifier is powered off. Otherwise the setting is invalid.

3.2 Operation

3.2.1 Auto Control

As the power amplifier enters the emergency broadcast, the start and stop of this device is not controlled by the power switch, and the audio output is not controlled by the volume knob. In this condition, the audio output can be automatically adjusted to the preset position.

3.2.2 Manual Control

As the emergency broadcast doesn't exist, the start and stop of this device is controlled by the power switch. In manual control mode, the sound of audio output can be turned up or down by adjusting the volume knob.

4 Installation and Commission

4.1 Check

4.1.1 Open-package Check

Check the configuration according to packing list. The main items to be examined are: installation and operation manual, fuses and screws, etc.

First check its package to make sure there is no obvious damage after receiving the power amplifier. Then unwrap the package to check items inside according to the packing list. Finally, check the appearance of the power amplifier.

Please contact technical service department of Tanda Company if non-compliance is found.

4.1.2 Start-up Check

Before start-up check, all wires of the power amplifier should be disconnected. Then follow the steps below to install.

- Connecting to the power supply, check if BAT LED lights.
- If the BAT LED lights normally, it means the power amplifier is in good condition. Disconnect the power supply to complete start-up check.

4.2 Installation

4.2.1 Mounting

- The power amplifier should be installed in the place where a person is on duty. In addition, it also should be set far away from electromagnetic interference.
- Plug-in installation, occupying 2U front panel sizes.
- Fasten the power amplifier to the rack using 4 M5×10 cross recessed pan head screws.

4.2.2 Wiring

External terminals of the power amplifier are shown in Fig. 4-1, Fig. 4-2 and Fig. 4-3.

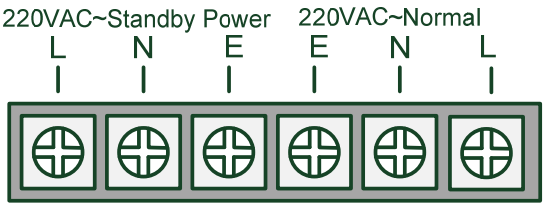

Fig. 4-1

- 220VAC~Standby Power： L,N and E are live wire, zero input and earth end of 220VAC standby power respectively.
- 220VAC~Normal：L,N and E are live wire, zero input and earth end of 220VAC main power respectively.

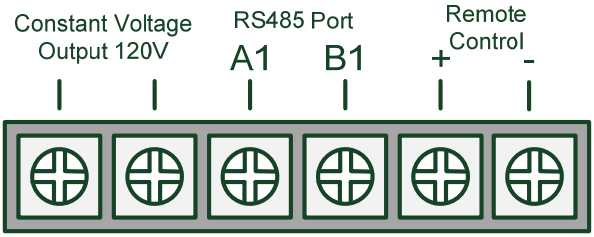

Fig. 4-2

- Constant Voltage Output 120V：Audio output of the power amplifier
- 485 port A1, B1：Connect to the communication terminal of TG7100 Broadcast Control Panel
- Remote Control+, -： （polarized, "+" for "+" and "-" for "-"） 24VDC input, receive association signals from other devices. Connecting to 24VDC, the power amplifier is started automatically to enter in working state. At the same time, audio output is not controlled by the volume potentiometer. As there is no 24VDC signal, the power amplifier can be started by power switch and audio output can be adjusted by the volume potentiometer.

Note：“Remote +,-”：Polarized. The positive pole is connected to 24V_OUT positive pole of TG7100 Broadcast Control Panel. The negative pole is connected to 24V_OUT negative pole of TG7100 Broadcast Control panel. “A1,B1 of RS485”： A1 is connected to A1 of RS485 of TG7100 Broadcast Control Panel.“B1” is connected to B1 of 24V_OUT of TG7100 Broadcast Control Panel.

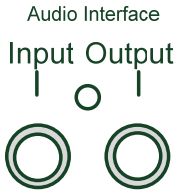

Fig. 4-3

- Audio interface：RCA audio port. "Input" connects to "Audio Output" of TG7100 Broadcast Control panel； "Output" connects to "Audio Input" of the next power amplifier.

4.2.3 Wiring Requirements

- Broadcast Output Line： RVVP-2×1.5mm² or above shielded wire are used, laid through a metal pipe or flame retardant PVC pipe.
- Don't put the broadcast output line, alarm bus and other communication bus in the same multicore cable.

4.3 Commission

4.3.1 Before Commission

After start-up check, DIP switch of the power amplifier should be dialed to the preset address code.

After wiring and checking, switch on the power of the power amplifier (It needs power on for all in 10s when power amplifiers are cascaded）. Please refer to "Chapter 5 Troubleshooting" for judgment and solution if problems are found.

5 Troubleshooting

Simple faults can be solved according to the table below.

No.	Problems	Reasons	Solutions
1	Power LED doesn't light.	Power connection line	Check power connection line with special tools.
		The fuse is blown.	Replace the blown fuse with the same number and type of fuses installed in the equipment. TG7300 Power Amplifier uses 2A slow blow fuse（Φ5×20） TG7301 Power Amplifier uses 3A slow blow fuse（Φ5×20） TG7302 Power Amplifier uses 5A slow blow fuse（Φ5×20）
2	No monitoring sound	Monitor Knob	Turn the knob clockwise to increase the volume.
		Speaker	Replace the broken speaker with a new one.
		Broadcast Mode	In Micro mode, there is no monitor sound from the local power amplifier.
		Device fault LED lights	Check if the audio output line is short.
		Audio device is started or not	If not, start the audio device and choose the correct broadcast mode.
3	No Audio Signal	Audio output line	Check if the audio line is loose
		Broadcast control panel is connected or not	If not, connect to the broadcast control panel and choose related zones.
		External Speaker	Is the external speaker broken or disconnected
4	Audio Distortion	Transient output power exceeds nominal value	Turn the knob anticlockwise to decrease the volume properly.

6 Maintenance

6.1 Cautions

1. Operators should be trained and qualified.
2. People not authorized should not operate keys and buttons.
3. Wiring or wiring modification, plugging and unplugging various connectors can't be done until the power is off.
4. Shipment and Storage： The power amplifier should be well packaged and gently taken to avoid damage while transporting, handling and storing. The environment for storing power amplifiers should be ventilated and dry. However, open storage is not allowed in any way.
5. Used in Projects： After completing the construction of projects, the product can be unpacked and installed for system commission.
6. The ambient environment should be sun screen, heat proof, dust proof and damp proof.
7. The power amplifier should be periodically cleaned with a soft, moist rag that does have neutral cleaning solvent.
8. Don't disassemble the power amplifier by yourself.
9. Don't move this product with power.

6.2 Important Notes

1. People without authorization shouldn't operate this product.
2. The product should be shut down and maintained by a specialist or a person on duty. After ensuring that no fault exists, the product can be started.

7 Statement

This manual carefully introduces features and usage of TG7300 Series Power Amplifier. We work to provide the latest information of our products. However, we still cannot cover all applications or predict all requirements. Therefore, the product may be modified without prior warning. Please contact us if you need further messages.

Besides, please pay attention to the following instructions.

1. As a precise electronic equipment, this product should be kept by a special person. People without authorization shouldn't operate it freely.
2. When using this product actually, the power should not exceed the rated power.
3. Do not increase the installed capacity by yourself after completing acceptance test of the project. If necessary, please contact our technicians for details. At the same time, new equipment needs a new system not affecting the current one.
4. Don't modify internal structure and external wiring of the product after completing acceptance test of the project. If necessary, please contact our technicians for details.
5. After reconstruction of the project site, the system where the equipment is located must be commissioned and inspected by professional staff again. the product can't be used until it has passed the inspection.
6. As the project passing the acceptance test is used, please dispose of it in time if on-site equipment occurs fault.

Tanda Company is not responsible for any losses or damages caused by violation of the above instructions.