

**580252.HO(1XA500EN)**

**High Efficiency Power Amplifier**

**User Manual**

M\_2000061263\_EN\_1.0

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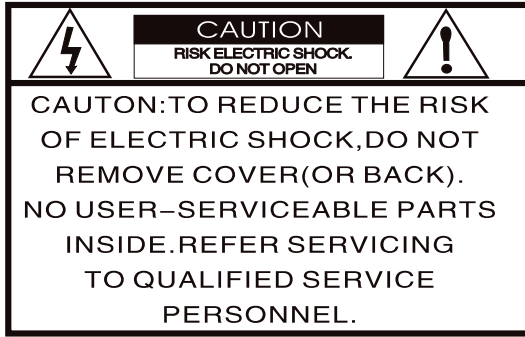
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This sign means to alert the user that there are non-insulated materials within the enclosure, which pose threats of electrocution if mishandled.



This sign means to alert the user of important operation and maintenance instructions.

Caution: To avoid electrocution, do not use polarized plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.

Caution: Do not block ventilation openings and stack other equipment on top.



## Suggestions for Safety

For the installation, operation, and use of this product, please carefully read the following precautions.

### Electrical Safety

- The product installation and use must comply with local electrical safety regulations.
- Honeywell assumes no liability for user errors or misuse that result in a fire or an electrical shock.

### Transportation Safety

- During transportation, do not violently shake the appliance or expose it to corrosive liquids.

### Environmental Regulations

- Do not install the appliance in an environment with extreme temperatures or excessive amounts of dust.
- The appliance should be placed away from direct sunlight in a well-ventilated, clean, and stable environment without vibrations or shocks.
- The required appliance power supply voltage is AC100-240V (-10% ~ +10%) / 50 ~ 60 Hz. If the voltage is too high, too low, or fluctuates too drastically, it is recommended to install a stable AC power source.
- The appliance is not waterproof. Do not expose the appliance to rain or moisture, and avoid splashing it with water. Do not place any items filled with liquid on top of the product (such as a flower vase) to avoid damage.
- Place the appliance away from sources of heat and ensure adequate ventilation space.
- Place the appliance on a level, stabilized surface or rack.
- Do not place other items on top of the appliance.

### Safe Use Precautions

- Install the equipment under the guidance of qualified technicians.
- Before using the appliance, make sure that the power cables are not damaged. The power cables must clearly show quality and safety inspection labels.
- The power plug and outlet prong configuration must match. If the plug outlet does not match the prong configuration of the plug, the outlet must be replaced with one that matches the plug.
- The appliance must have a sufficient power source and an independent grounding wire.

- Note that the equipment must be properly grounded. Otherwise, the equipment could fail to work properly or be damaged.
- When the power is turned on, high voltage runs through the power lines and the appliance. Do not open the appliance to prevent an electric shock.
- When installing the appliance, make sure the wires and cables are configured correctly to avoid damage to the equipment.
- When the power is turned on, do not touch power terminals with lightning safety logos to prevent an electric shock.
- When the power is turned on, do not physically alter the appliance to avoid damaging the equipment.
- Honeywell assumes no liability for appliance malfunctions. Please consult qualified technicians for repairs.

## Manual Labels and Information

- Please note the product labels, product categories, power requirements, and other information.
- Read this manual thoroughly and use the equipment in accordance with the provided instructions. This manual can be used as a reference for other components related to this product. For more specific information, contact Honeywell.
- Keep this manual for future reference.

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## Preface

Thank you for purchasing the 580252.HO(1XA500EN) High Efficiency Power Amplifier. Please read this manual carefully before using the 580252.HO(1XA500EN) High Efficiency Power Amplifier to ensure proper use of the system.

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## Introduction

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This manual describes the 580252.HO(1XA500EN) High Efficiency Power Amplifier features, functions, applications, user interfaces, technical specifications, and installation procedures. This manual includes the following sections:

### **Chapter 1: Introduction**

Introduction of the 580252.HO(1XA500EN) High Efficiency Power Amplifier features, functions, and applications

### **Chapter 2: Package Contents**

Package content details of the 580252.HO(1XA500EN) High Efficiency Power Amplifier

### **Chapter 3: User Interface**

580252.HO(1XA500EN) High Efficiency Power Amplifier front and rear panel controls, indicator lights, and cable connection ports

### **Chapter 4: Installation**

580252.HO(1XA500EN) High Efficiency Power Amplifier installation preparation instructions, hardware installation procedures, and other related information

### **Chapter 5: Technical Specifications**

580252.HO(1XA500EN) High Efficiency Power Amplifier technical specifications

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## Audience

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This manual is primarily intended for personnel who require information regarding the installation, operation, and maintenance of the 580252.HO(1XA500EN) High Efficiency Power Amplifier.

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## How to Use This Manual

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- Pictures in this manual are for reference only. Please see the actual items depicted for details.
- This product is subject to change when upgraded and will be done so without notice.
- Users should read this manual carefully before using the 580252.HO(1XA500EN) High Efficiency Power Amplifier, and pay close attention to all warnings and instructions.
- Keep this manual for later use and reference.
- This manual has been reviewed to ensure its accuracy. If there is any uncertainty or disputes regarding the manual contents, please contact Honeywell.
- Honeywell does not take any responsibility for consequences caused by the misunderstanding of this manual or for incorrect product operation or use.

## 1 Introduction

This chapter introduces the 580252.HO(1XA500EN) High Efficiency Power Amplifier features and functions. The 580252.HO(1XA500EN) High Efficiency Power Amplifier is referred to as “DA” throughout the remainder of this manual.

The DA amplifies audio signal power it receives from audio input devices to maintain clarity and volume when broadcast over many speakers.

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### Features

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The DA includes the following features:

- A CLASS-D power amplifier with high efficiency and energy conservation
- Support 24V power supply backup
- The rated output power is 500W
- Channel has 100V or 70V of output
- Supports balanced or unbalanced audio input
- Heat radiation through forced air-cooling mode
- Able to automatically limit output voltage

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### Functions

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The DA includes the following main functions:

- Power Supply Protection
- Temperature Regulation
- Overload and Short Circuit Protection
- Fault Detection and Fault Logs

### Power Supply Protection

If a power supply fault occurs, the DA automatically disconnects the main power supply.

## Overheating Protection

When the DA internal temperature reaches 45°C, the cooling fan turns on. At temperatures below 40°C, the fan turns off.

If the temperature surpasses 75°C, the power supply is disconnected and a fault is signaled to prevent overheating. When the temperature returns to safe levels under 70°C, the DA resumes functioning.

Each output channel is protected against such overheating and can signal a fault if temperatures become too high.

## Overload and Short Circuit Protection

When the DA power supply detects a circuit overload or if a short circuit occurs, the DA automatically disconnects the power. The DA remains protected and signals a fault until the problem is fixed.

The DA is capable of detecting faults for each individual channel.

## Fault Detection and Fault Logs

The main power supply of the DA can detect power failures and overheating to protect it from short circuits and circuit overloads. When the DA detects a failure, a fault is signaled until the problem is fixed.

The current state of the DA is shown on the front panel, and if a fault is signaled it is displayed.

2 Interfaces

Front Panel

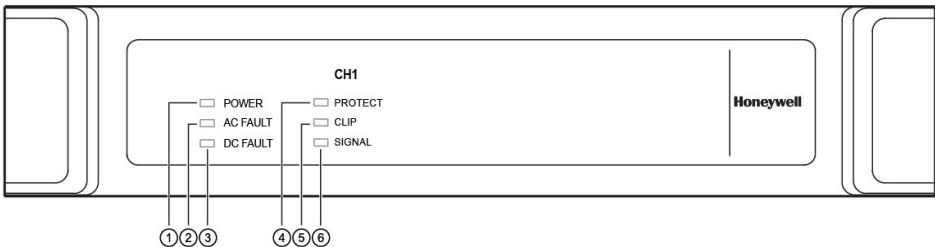
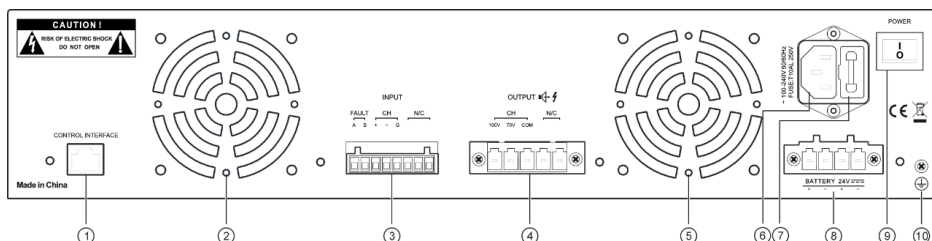


Table 1 Front Panel

NO	Name	Description
1	POWER	Power indicator. The light is green/blue when the DA is working normally.
2	AC FAULT	Indicates the main AC power supply status. If this light is turned off, the main power supply is operating normally. If the light turns yellow, the main power supply has experienced a fault.
2	DC FAULT	Indicates the backup DC power supply status. If this light is turned off, the backup power supply is working normally. If the light turns yellow, backup power supply has experienced a fault.
4	PROTECT	DA protection indicator light. When the DA overheats, experiences over-current, over-voltage, or under-voltage, the DA automatically protects the equipment. In this case, the light turns yellow.
5	CH CLIP	Peak clipping indicator light. When the input signal exceeds the rated peak value, the indicator light turns red.
6	SIGNAL	Signal indicator light. This light turns green and fluctuates depending upon the signal intensity. If the light is off, there is no input signal.

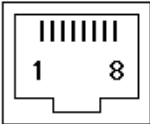
## Rear Panel



**Table 2 Rear Panel**

NO	Name	Description			
1	RJ45 Ethernet port	Connects to an external audio input device. See Table 3 for port PIN descriptions.			
2	Cooling fan				
3	Audio input and control ports	INPUT	FAULT	A B	If a DA fault occurs, it is protected, or it is self-tested, ports A and B experience a short circuit.
				+	Balanced positive input
			CH	-	Balanced negative input
				G	Grounding (Connect to the “-” port if the input is an unbalanced input connection.)
			NC		No connect
4	Audio output ports	OUTPUT	CH	100V	100V high impedance audio output
				70V	70V high impedance audio output
				COM	Common
			NC		No connect
5	Cooling fan				
6	Main power supply power port	Supplies electricity to the main power supply			
7	Fuse	T10AL250V			
8	Backup power supply power port	Supplies electricity to the backup power supply			
9	Power switch	Turns the power on and off			
10	Grounding terminal	Connects the grounding wire			

Table 3 RJ45 Port

PIN	Description	Figure
1	N/A	
2	N/A	
3	DA fault information output <ul style="list-style-type: none"><li>When the DA is working properly, the output voltage is VCC (12V-24V).</li><li>When the DA faults, is protected, or undergoes self-testing, the output voltage is GND (0V).</li></ul>	
4	Balanced positive input	
5	Balanced negative input	
6	GND (0V)	
7	VCC (12V-24V, powered by an external device)	
8	Self-test port <ul style="list-style-type: none"><li>When the DA output voltage is VCC (12V-24V), the DA is being self-tested.</li><li>When the DA has no input voltage, the DA is working normally.</li></ul>	

## 3 Installation

This chapter describes how to install the DA hardware in step-by-step instructions.

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### Preparing for Installation

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Make sure the following are prepared prior to DA installation:

- Tools
- Materials
- Cables and Wires
- Package Inspection

#### Tools

For the installation of the DA, prepare the following tools:

- Anti-static wrist strap
- Anti-static gloves
- Cutting pliers
- Wire cutters
- Electrical cable crimping pliers

#### Materials

For the installation of the DA, prepare the following materials:

- Insulation tape
- Wire buckles
- Wire labels

#### Cables and Wires

For the installation of the DA, prepare the following cables:

- Backup power cable

The backup power cable and main power cable are required to have matching specifications.



- Audio output cable  
The cable should be unshielded.
- 

**Notice:**

The use of a high-grade, high transmission capacity speaker cable is strongly recommended.

The longer the cable, the thicker it should be to retain transmitted audio quality. Select the appropriate audio cable according to the installation situation and environment.

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## Package Inspection

Check the packaging and make sure all items specified on the Packing list are intact (see Chapter 5). If an item is missing, please contact the appropriate vendor.

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## Connecting the Cables

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These cables include the grounding cable, main and backup power cables, audio input cable and audio output cable.

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**Notice:**

When connecting cables, make sure the DA power switch is turned off.

Plug the cables into the correct ports and tighten the cable terminal screws.

Power and data wires must be separated and not be wrapped in the same cable's insulation.

Keeping the power and data cables separate helps to avoid signal interference.

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## Grounding Cable

The grounding cable connects to the DA grounding cable port.

**Notice:**

Do not connect the grounding output cable with the grounding input cable as this action causes a short circuit to occur.

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## Audio Input Cable

user can select the input method according to the equipment storage environment.

**Use RJ45 Port:**

The See Table 3 for the pin descriptions.

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**Note:**

Do not use the RJ45 port and terminal blocks at same time.

Instead, plug the CAT5 cable into the RJ45 port.

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**Use Terminal blocks:****Notice:**

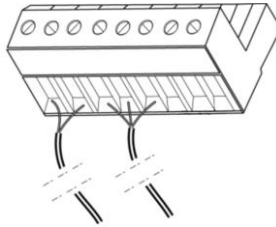
If the audio input cable is supplied by the installation personnel, the cable must be shielded.

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DA has a balanced input connection. A balanced connection is recommended to reduce AC power interference, especially when using a long cable. For short cables that have an unbalanced connection, the signal impedance should be less than 600 ohms.

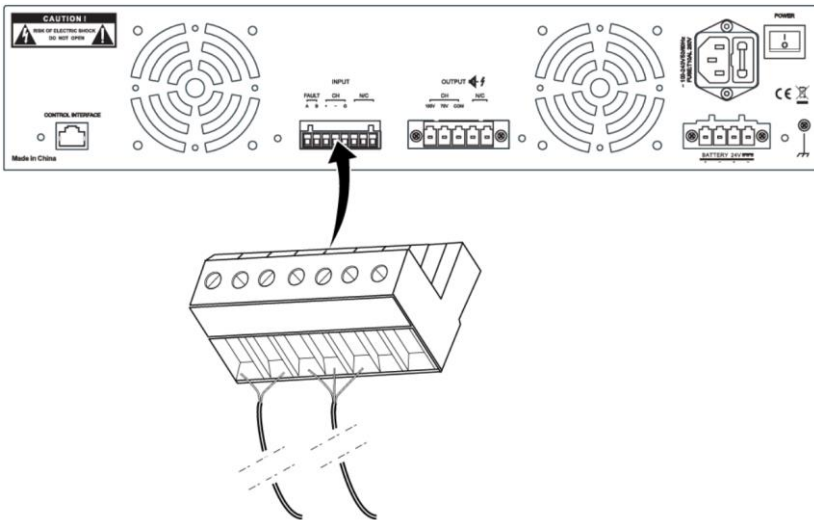
The following steps describe connecting a balanced input connection:

1. Strip 7 mm of the input cable and connect it to the input terminal, and then tighten the screws to secure the wires, as shown in Figure 10. See Figure 1 for port descriptions.



**Figure 1 Connecting the input cables to the input terminal**

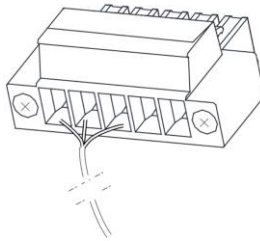
2. Connect the input terminals to their corresponding input ports, as shown in Figure 2.



**Figure 2 Connecting the input terminals**

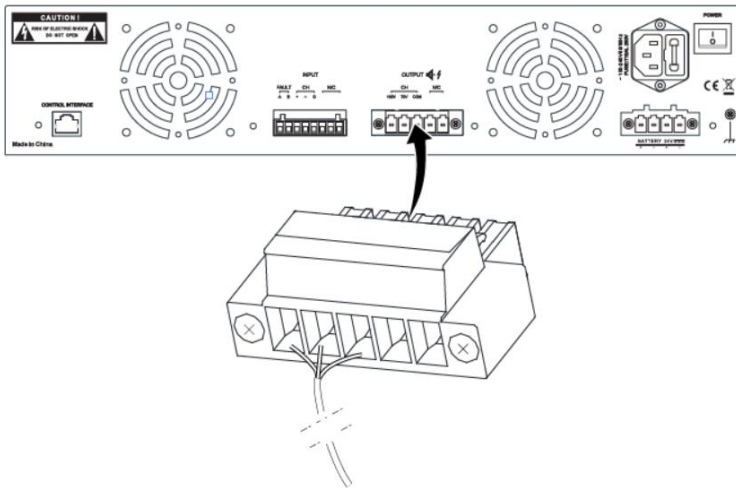
## Output Cable

1. Strip 7 mm of insulation off the output cable, and connect it to the output terminal, as shown in Figure 3.



**Figure 3 Output connection terminal**

2. Connect the prepared output terminal to the DA output port.



**Figure 4 Connecting the output terminals**

## Completing Installation and Commissioning

Once the DA hardware and cables are installed, complete the following commissioning procedures:

1. Set the audio volume to a minimum level.

2. Press the DA front panel power button. The POWER indicator light comes on to show the DA is now turned on and working properly.
3. Optimize the audio volume to an appropriate level. A sound plays through the DA speaker to indicate the DA is working properly.



## Notice:

If either the **PROTECT** indicator light is yellow, there is no output signal. Carefully check the cable connections. More information can be found in the “Connecting the Cables” section.

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## Precautions

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When using the DA, pay particular attention to the following issues.

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## Notice:

Make sure all cables are connected properly before turning on the DA. Refer to the “Connecting the Cables” section for more information.

Pay particular attention to which audio input source is selected and configure the output signal level appropriately, as this can save electricity.

Do not connect the grounding output cable with the grounding input cable as this causes a short circuit to occur.

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## Warning!

Do not alter the circuit board or schematic diagram.

When the **CLIP** indicator light is flashing red, immediately reduce the audio volume. If peak clipping occurs for too long, the DA could be damaged.

If the audio signal or peak clipping signal is too high, the speakers could be damaged.

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## 4 Technical Specifications

Parameter	Value
Nominal output power	1X500W
Main power supply voltage	~ 100V-240V 50/60Hz
Backup power supply voltage	21.5V DC ~ 28.5V DC
Power consumption	< 700W
Main fuse	T10AL 250V
Speaker output	100V / 70V
Frequency response	50Hz~18KHz (+1dB ~ -3dB)
Input sensitivity	0.775V <sub>RMS</sub>
Input impedance	20K ohm
Signal to noise ratio	>100dB (with A-Weight)
Non-linear distortion	<0.05% (at 1/3 rated power, 1kHz)
Indicator lights	1 power indicator light 1 Main power fault light 1 Backup power fault light 1 signal light 1 peak clipping light 1 equipment protection light
Number of channels	1
Operating conditions	95% humidity, 0°C ~+40°C (0~104°F) (no condensation)
Storage temperature	-10°C ~+55°C (14°F~131°F)
Cooling method	Air cooling
Product dimensions (width × height × depth)	482×88×420 mm
Package dimensions (width × height × depth)	580×235×552 mm
Net weight	10.8kg
Gross weight	13.9kg

**5 Packing List**

Name	Quantities
580252.HO(1XA500EN) High Efficiency Power Amplifier	1
Network cable	1
Audio input connector	1
Audio output connector	1
AC power cable	1
DC power connector	1
Product manual	1







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