

# User Manual

## **2A-100W**

**Dual input 100W  
Stereo Amplifier  
(LAN, RS232 & IR control)**

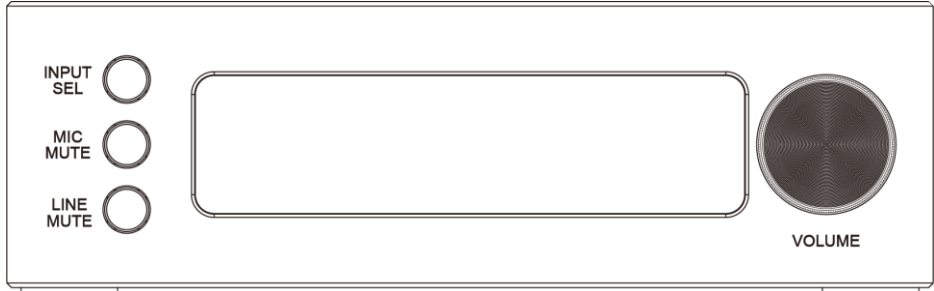
Thank you for purchasing the SY-2A-100W amplifier. This amplifier is capable of delivering 100W of output power with three selectable output modes for stereo, mono or bridge configurations. Two selectable inputs for analogue line-level stereo L+R or TosLink optical are provided by this amplifier with an optional talk-over microphone input with selectable 48V phantom power, as well as unpowered microphone and line level inputs.

## Features

- 100W output power in stereo, mono or bridge configurations
- Analogue Stereo or Optical Toslink audio inputs
- Microphone input with 48V phantom power, mic level or line level modes
- Loop out option that can feed to another SY-2A-100W
- OLED front panel display
- LAN control
- RS232 control
- IR control
- 24V DC PSU

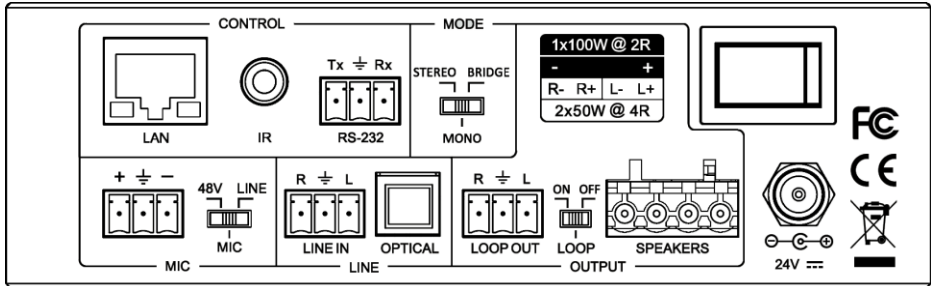
## Panel Descriptions

### Front Panel



Item	Description
<b>INPUT SEL</b>	Select either Line (LIN) or Optical (OPT) Inputs
<b>MIC MUTE</b>	Mute or Unmute the Microphone input
<b>LINE MUTE</b>	Mute or Unmute the selected input
<b>Display</b>	Shows the current status and volume levels
<b>VOLUME</b>	Press to mute output. Change Line or Mic volume level input. (see page 7 "Volume Control" for details)

## Rear Panel



Item	Description
LAN	LAN control port
IR	IR control port
RS-232	RS232 control port
MODE Switch	Select the amplifier output mode: Stereo, Mono or Bridge
Power Switch	Switches the amplifier on or off
MIC Connector	MIC/LINE input as selected by MIC switch
MIC Switch	Select the operating mode for the MIC input type
LINE IN	Analogue line level input for L+R only
OPTICAL	Toslink optical fibre input
LOOP OUT	Output the amplifier signal to connect to another amplifier
LOOP MODE	Selects whether the loop mode is on or off
SPEAKERS	Speaker outputs. Connect in accordance with the MODE switch

## System Connection

### Connection Procedure

- Set the switches on the rear of the amplifier to the correct positions according to the installation requirements.
- Connect the audio source to the relevant connector on the rear of the amplifier.
- Connect speaker / speakers to the SKEAPERS output connector (see below for proper wiring details)
- Connect the 24V PSU to the DC input connector.
- Switch on the amplifier.

# Using the SY-2A-100W

## Note:

- Before turning on the amplifier, check that the **MIC** input mode switch and the speaker **MODE** switch are both set correctly to ensure proper operation of the amplifier and prevent damage to either the microphone or the speakers.
- After turning on the amplifier, always allow a few seconds for it to complete its start-up process before using the controls.
- When the display shows **PROTECT**, immediately switch off the amplifier and rectify the condition that caused the amplifier to enter its protection mode before switching it back on.

## MIC Switch

This switch provides three modes of operation:

1. **48V** – for phantom powered condenser microphones
2. **MIC** – for dynamic or self-powered electret microphones
3. **LINE** – for any line level audio signal or pre-amplified (radio) microphones

Each of these settings can be wired for either the balanced or unbalanced input signals.

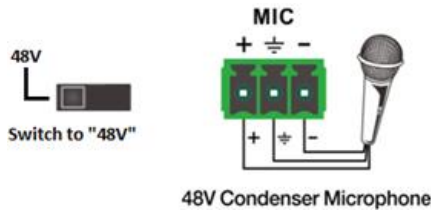


Figure 1 - Wiring Details for 48V Balanced Mode

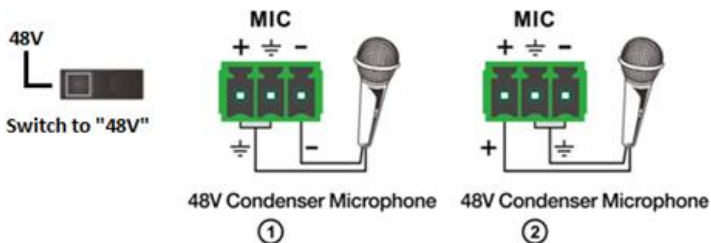


Figure 2 - Wiring Details for 48V Unbalanced Mode

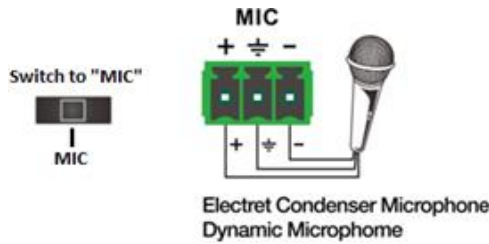


Figure 3 - Balanced Dynamic / Electret Microphone Wiring Details

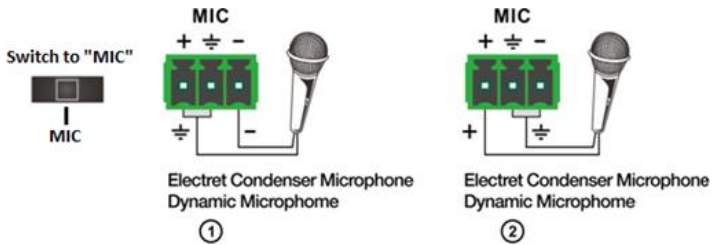


Figure 4 - Unbalanced Dynamic / Electret Microphone Wiring Details

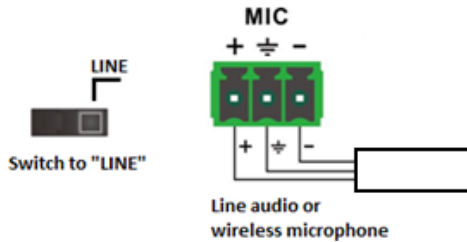


Figure 5 - Balanced Line Level Wiring Details

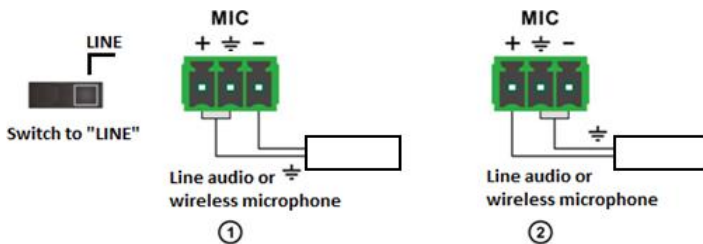


Figure 6 - Unbalanced Line Level Wiring Details

## Speaker Mode Switch

The speaker mode switch should be set to match speaker wiring before the amplifier is switched on. The SY-2A-100W has three speaker configurations:

1. **STEREO** – Use two 50W 4R speakers, one each across the **L+/L-** and **R+/R-** for the left and right speakers. Each speaker will output their respective stereo signal.

2. **MONO** – Use two 50W 4R speakers, one each across the **L+/L-** and **R+/R-** for the left and right speakers. Both speakers output the same audio signal in this mode.
3. **BRIDGE** – Use one 100W 2R speaker between the **R-** and **L+** terminals only. The **R+** and **L-** terminals are not used in Bridge mode.

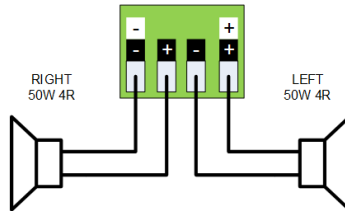


Figure 7 - Wiring Details for Stereo or Mono Configuration

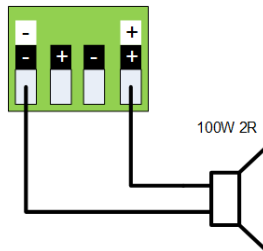


Figure 8 - Wiring Details for Bridge Configuration

## Loop Out

The amplifier output signal is always sent to the LOOP OUT connector. LOOP mode allows for more than one SY-2A-100W amplifier to link to the LINE of next amplifier.

In this mode the first amplifier should have its LOOP switch OFF and all the other amplifiers should have the LOOP switch set to ON. Only the first amplifier will have control of the output volume level and also allows a microphone to be used.

**Note:** The following conditions apply when using the LOOP OUT switch:

LOOP OUT Setting	OFF	ON
<b>Operating Mode</b>	NORMAL	LOCKED
<b>Front Panel Control</b>	All controls will function as described in the next section	The front panel controls are locked and cannot be used.
<b>LINE Input</b>	Either LIN or OPT as previously selected	Only the analogue line (LIN) input is selected
<b>LINE Volume</b>	As previously set by the volume control or Line mute button	Fixed at 100%
<b>MIC Volume</b>	As previously set by the volume control or Mic mute button	Automatically muted

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## Front Panel Operation

To use the front panel controls the LOOP output switch must be set to OFF. When the LOOP output is ON, then the MUSIC level is fixed to 100%, the MIC input is muted and the front panel controls are locked out.

### Input Selection

The INPUT SEL button selects between the analogue Line In connector and the digital Optical input.

### Mic Mute

Press to mute or unmute the Mic input. The current mute status is shown on the display.

### Line Mute

Press to mute or unmute the Line input. The current mute status is shown on the display.

### Volume Control

The volume control is used to change the volume for either the Line input or the Mic input separately as well as muting or unmuting both the Mic and Line inputs at the same time.

- To change the Line input level, the MIC input must be muted.
- To change the Mic input level, the MIC input must not be muted.
- When both Mic and Line are unmuted, then only Mic level control is operational.
- Press the volume knob to mute / unmute the output. Rotating volume knob automatically unmutes the output.

**Note:** The mute state previously set by the input mute buttons is not altered when pressing the volume control.

### Display Panel

The display panel provides the following information:

- The selected audio input: **LIN** or **OPT**.
- The mute status of the Mic and Line inputs. The mute state is indicated by the word **MUT** on the respective input display line.
- The volume level of the Mic and Line inputs, each shown as a percentage of the full output volume level, or **MUT** when set to 0% level.

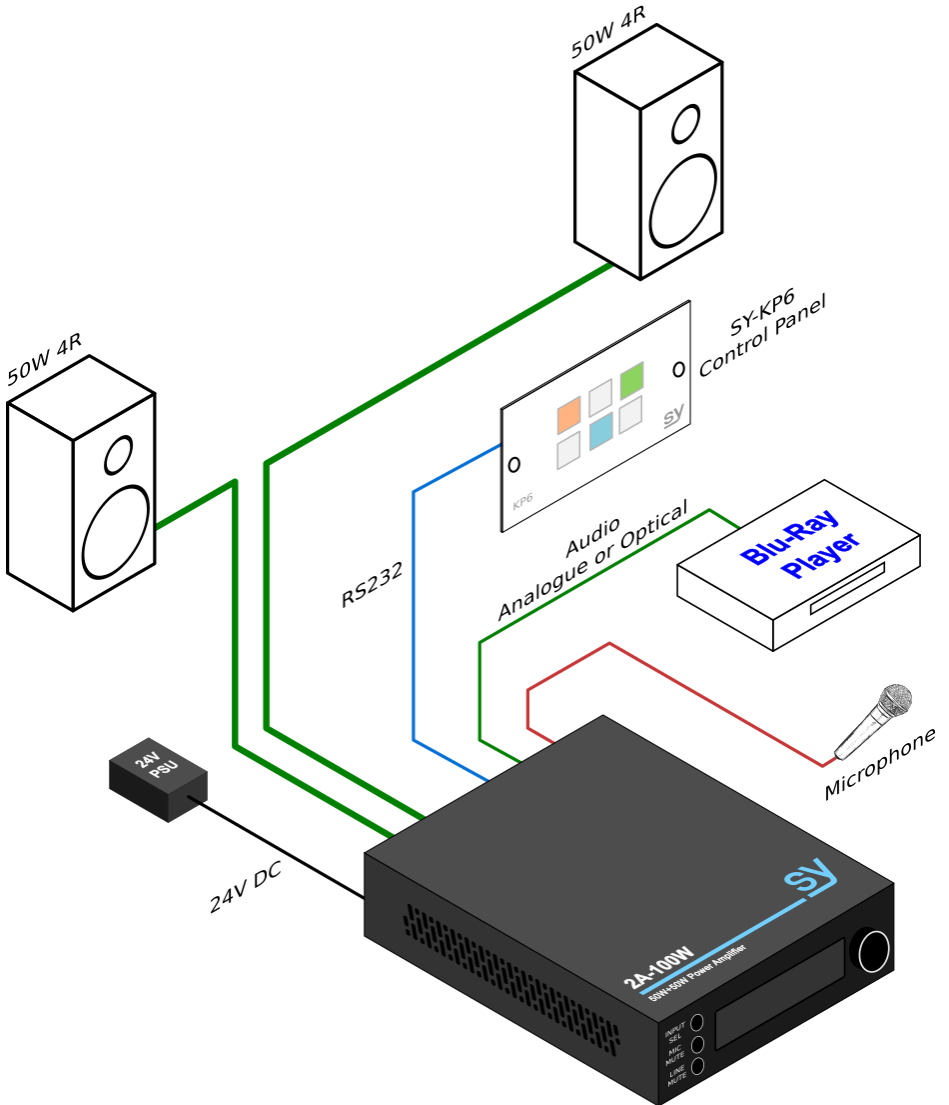
### Special Messages on the Display

#### **PROTECT**

This message will appear when the amplifier has detected a problem and had to shut down to protect itself from damage. When this happens do the following:

1. Switch off the amplifier.
2. Check that ALL the switch settings on the rear panel are correct.
3. Check that the input signal levels are within specification.
4. Check that output speaker wiring and loads are correct and to specification.
5. Only turn on the amplifier when all the above checks have been confirmed as correct.

# System Configuration





# Specifications

## Inputs

Parameter	LINE input	MIC/LINE for LINE	MIC/LINE for MIC
<b>Input Sensitivity</b>	800mV rms	800mV rms	15mV rms
<b>Frequency Response (-3dB)</b>	15Hz – 20kHz	50Hz – 16kHz	100Hz – 20kHz

## Outputs

<b>THD+N</b>	<0.03% (1kHz into 4R 5W) <3.0% (1kHz into 4R 50W) <3.0% (1kHz into 2R 100W)
<b>Power Output</b>	2 x 50W @ 4R in Stereo or Mono modes 1 x 100W @ 2R in Bridge mode
<b>Loop Out</b>	800mV rms max. / 15Hz – 20kHz

## Connections

<b>Signal Inputs</b>	1 x MIC/LINE 1x LINE 1x OPTICAL	3-way screw terminal connector 3-way screw terminal connector TosLink S/PDIF
<b>Control Inputs</b>	1x LAN 1x IR 1x RS-232	RJ45 3.5 mm jack 3-way screw terminal connector
<b>Signal Outputs</b>	1x LOOP 1x SPEAKER	3-way screw terminal connector 4-way screw terminal connector

## Physical

<b>Housing</b>	Aluminium
<b>Colour</b>	Black
<b>Dimensions</b>	193 x 145 x 44 mm (WxDxH)
<b>Weight</b>	746 g
<b>Power Supply</b>	24V @ 3.75A
<b>Power Consumption</b>	85W

## Environmental

<b>Temperature</b>	Operating: 0 ~ 40 °C – Storage: -20 ~ 60 °C
<b>Relative Humidity</b>	20 ~ 90% RH (non-condensing)

## Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

1. Use the power supplies provided. If an alternate supply is required, check Voltage, polarity and that it has sufficient power to supply the device it is connected to.
2. Do not operate either of these products outside the specified temperature and humidity range given in the above specifications.
3. Ensure there is adequate ventilation to allow this product to operate efficiently.
4. Repair of this equipment should only be carried out by qualified professionals as this product contains sensitive devices that may be damaged by any mistreatment.
5. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with this product.

## After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting SY Technical Support.
2. When calling SY Technical Support, the following information should be provided:
  - Product name and model number
  - Product serial number
  - Details of the fault and any conditions under which the fault occurs.
3. This product has a two year standard warranty, beginning from the date of purchase as stated on the sales invoice. For full details please refer to our Terms and Conditions.
4. SY Product warranty is automatically void under any of the following conditions:
  - The product is already outside of its warranty period
  - Damage to the product due to incorrect usage or storage
  - Damage caused by unauthorised repairs
  - Damage caused by mistreatment of the product
5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics

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## NOTES

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