

# Installation Guide

## SY-3A-40W

40W Power Amplifier  
70V or 100V line drive mono amplifier with  
two analogue inputs and  
one optical input

The SY-3A-40W is a 40W mono (summed stereo) power amplifier, with both 70V and 100V line speaker outputs. This amplifier can be used with many products such as SY-HD-3.5AD HDMI Audio De-embedder, or even as standalone amplifier. It also features a voice-over capability that will allow its use in presentation applications.

## Features

- Three selectable line level inputs – two analogue audio and one optical input
- Talk-over microphone input
- Talk-over microphone has three operating modes: 48V, MIC level, or LINE level
- Auto muting when no input signal present
- 70V (US) or 100V (EU) line speaker output
- IR control to adjust the amplifier remotely (Optional)
- RS232 control for computer control
- Ducking function on MIC / LINE input

## Connectors and Controls

Front



Name	Description
Input Select	Amplifier input 1, 2 or 3 selection
Adjustment Select	Selects the parameter adjustment for: MIC, LINE, BASS, TREBLE
Decrease Button ▼	Press to decrease the selected parameter value
Increase Button ▲	Press to increase the selected parameter value
Mute Button	Mute the Amplifier output

Rear



Name	Description
24V DC	24V DC Power input – only use the power supply provided
MIC / LINE input connector (3-way terminal)	Balanced / Unbalanced input for microphone or line level output. Can provide 48V phantom power with microphone input setting
MIC / LINE mode switch	Sets the operating mode of the MIC / LINE input connector: MIC level with 48V phantom power MIC level (without phantom power) LINE level (without phantom power)
Line 1 – Phono connectors	Left and Right (summed within the amplifier) line level inputs for LINE 1
Line 2 – Stereo jack (3.5 mm)	Left and Right (summed within the amplifier) line level inputs for LINE 2
Line 3 – Optical input	EIA J optical fibre connector
ID switch	Sets the ID value for RS232 commands
RS232 (3-way terminal)	RS232 Tx and Rx connections
IR	Remote IR detector Input (3.5 mm jack) , used with the IR key pad
Speaker output connector (3-way terminal)	Output terminals for 100V (UK / EU) or 70V (US) line speakers

## Safety Instructions

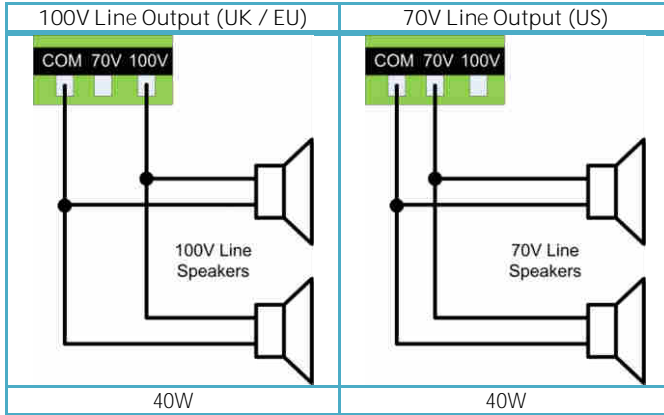
To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

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 this product 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 product should only be carried out by qualified professionals as this product contains sensitive devices that may be damaged by any mistreatment.
5. Ensure that the SY-HD-3.5AD is used in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with this product.

# Using the SY-3A-40W Power Amplifier

## Connecting the Outputs and Inputs

Firstly, decide on the output configuration you require as this affects how the speakers are wired to the SY-3A-40W:



Second, decide on the microphone connector mode. Do not switch to 48V phantom power mode while the SY-3A-40W unit is powered up as this may damage the power amplifier MIC / LINE input, the microphone, or both.

48V phantom power mode should only be used with microphones that require it, such as some condenser microphones.

Where phantom power is not required and the source signal level is not known, always begin with the switch set to LINE and then try the MIC setting if no sound can be heard even after adjusting the controls on the SY-3A-40W unit.

Once the two three-position switches have been set, the remaining audio sources should be connected and the amplifier can be powered up.

## Using the Front Panel Controls

The INPUT SEL switch toggles between the three Line inputs (2 analogue inputs and 1 optical input). In each case, the MIC / LINE input will always be present at the output.

The next switch controls the volume of either the MIC / LINE input or the selected Line input. This switch also provides control for the bass and treble settings for the speaker output.

Use the up (▲) and down (▼) buttons to adjust the value of the selected setting. The LED above the button will flash for each press of the up or down button. If the LED above the button remains solid ON then the maximum or minimum value has been reached.

Setting	Up / Down Buttons Control:
MIC	Volume of the MIC / LINE input
LINE	Volume of the selected LINE input
BASS	Bass response of the output
TREBLE	Treble response of the output

The MUTE button turns off the output when its LED is lit.

## Using IR Remote Controls

Connect the IR sensor to the IR socket and place the detector in sight of the remote control keypad. The keypad controls the same amplifier functions as the front panel buttons:

Button	Function
Input Select 1	Selects line input 1
Input Select 2	Selects line input 2
Input Select 3	Selects line input 3
Mic Mute	Mutes the MIC / LINE input
Line Mute	Mutes the selected line input signal
Speaker	Unmutes both the MIC / LINE and the selected line input.
MIC+ & MIC-	Increase or decrease the MIC / LINE input volume
LINE+ & LINE-	Increase or decrease the selected line input volume
BASS+ & BASS-	Increase or decrease the bass response
TREBLE+ & TREBLE-	Increase or decrease the treble response

## RS232 Control Commands

The following RS232 commands provide control of the SY-HD-S41 from a PC, laptop or programmable control panel. The RS232 settings are: 9600 baud, 8 bits, no parity, and 1 stop bit.

All response values given in the following table are examples only. The actual response values will reflect the changes that the transmitted RS232 command has just made.

Numerical values for the direct setting commands are in decimal only.

Action	Command	Response
Select Line input 1	1A1.	A: 1 -> 1
Select Line input 2	2A1.	A: 2 -> 1
Select Line input 3	3A1.	A: 3 -> 1
Mute MIC / LINE input and Line Out	0A0.	Mute Audio
Mute MIC / LINE input only	1A0.	Mute MIC
Mute Line Out only	2A0.	Mute LINE
Turn all audio output on	0A1.	Unmute Audio

Action	Command	Response
Check the status of the amplifier settings	600%	A: 1 -> 1 Volume : 30 Bass of LINE: 04 Treble of LINE: 04 Ducking Off
Raise MIC / LINE volume	601%	Volume of MIC: 51
Lower MIC / LINE volume	602%	Volume of MIC: 50
Raise LINE volume	603%	Volume of LINE: 51
Lower LINE volume	604%	Volume of LINE: 50
Raise BASS level	605%	Bass of LINE: 04
Lower BASS level	606%	Bass of LINE: 03
Raise TREBLE level	607%	Treble of LINE: 04
Lower TREBLE level	608%	Treble of LINE: 03
Return to default values	609%	Init OK
Toggle ducking mode <sup>(1)</sup>	610%	Ducking On
Direct setting of MIC / LINE volume	5xx% xx is from 00 to 60	Volume of MIC: 50
Direct setting of LINE volume	7xx% xx is from 00 to 60	Volume of LINE: 50
Direct setting of BASS level	8xx% xx is from 00 to 08 (804% gives flat response)	Bass of LINE: 04
Direct setting of TREBLE level	9xx% xx is from 00 to 08 (904% gives flat response)	Treble of LINE: 04

Notes:

1. The response to the Toggle Ducking command (610%) is either **Ducking On** or **Ducking off**, reflecting the new status after sending the command.

## RS232 Commands with ID Values

The 16 position switch sets an ID value for each SY-3A-40W amplifier when they are connected

When the 16 position switch is set to 0, the commands given in the above table are used as stated.

When the 16 position switch is set to a value between 1 and F inclusive, then this ID value must be included with any RS232 command. For example, to send the command Set MIC Volume at 60 to unit ID 3, issue the command **3/560%** out of the PC serial port.

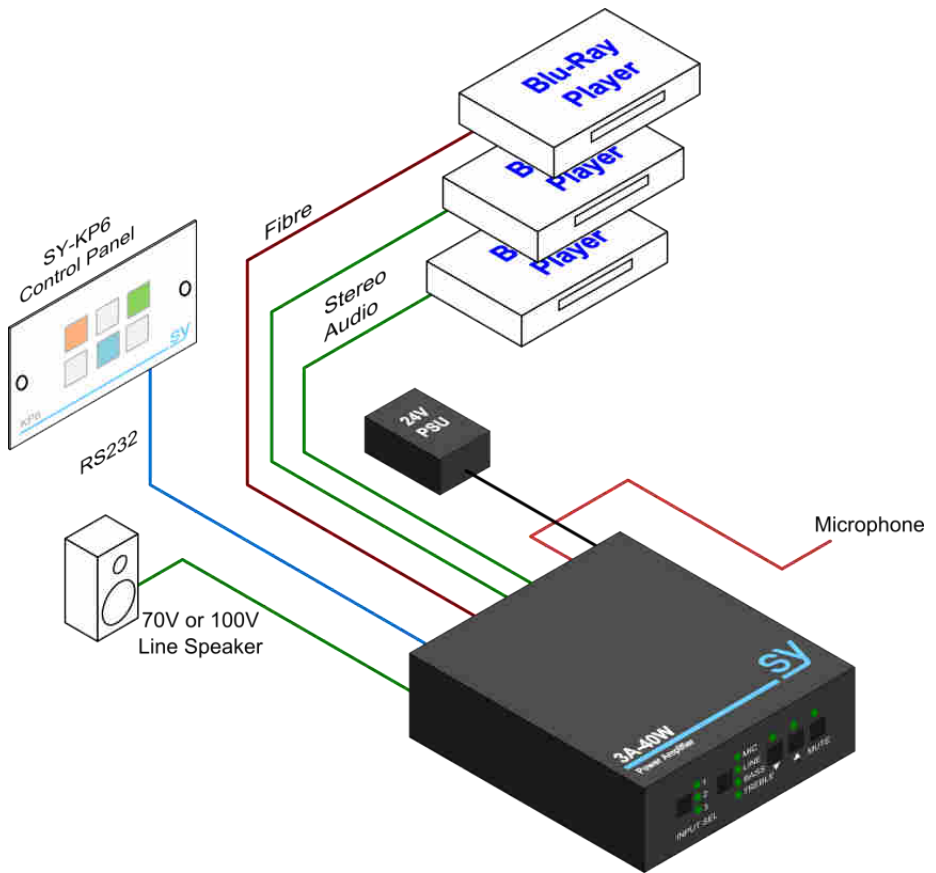


Figure 1 – SY-3A-40W Connection Diagram

# Specifications

## General

Power Supply	24V DC
Power Consumption	1.4 W max (Steady state - No output)
RS232	9600, 8 data bits, 1 stop bit, no parity – No handshaking

## Audio

Frequency Response	20 Hz to 20 kHz
Channel Separation	> 75 dB
Input Impedance (LINE1 & LINE 2)	10 k ohms
Line 3 Input (OPTICAL)	TosLink Optical Fibre
Input Impedance (MIC / LINE)	10 k ohms
Speaker Output	40 W to either 70V or 100V line speakers

## Environmental

Operating Temperature	0 - 40 °C non condensing
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## Physical

Dimensions (W x H x D)	99 x 39 x 86 mm (excluding connectors or flanges)
Weight	270 g

## 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. Online registration of this product is required to activate the full three year extended warranty. 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.