Manual 4 x 40W amplifier
Version 2

Technical data:

Supply voltage: 9.6-18V (4S LiPo recommended)
Output power: 4 x 40W at 2 Ohm, THD=10%, 14,4 V
Recommended speaker impedance: 4 Ohm
Dimension : ca. 55 x 50 x 35mm
Weight: about. 40g, incl. heatsink

Allgemeine Hinweise:

- The amplifier is intended to be used at **one to four** 4 Ohm speakers. Speaker Nr. 3 + 4 must be connected by solder connections at the bottom of the PCB.
- The amplifier **MUST** be mounted in airplanes somewhere in the airstream for proper cooling. It can get **VERY** hot at full volume (>100°C) without cooling. Make sure the propeller is running during bench tests !
- Connect all speakers with the same polarity to the amplifier
- Not used outputs must be isolated
- Watch to power supply polarity

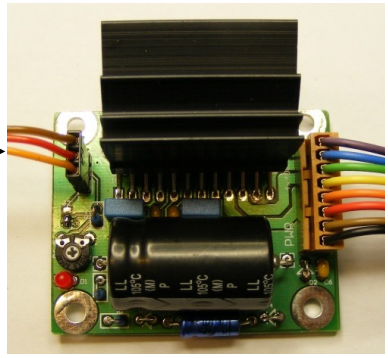
Otherwise the amplifier can be damaged!

Electrical connections:

Audio input (Top to bottom):

Bn: Ground
Rd: Audio In „Low“
Or: Audio In „High“

Volume
LED „Max. Volume“

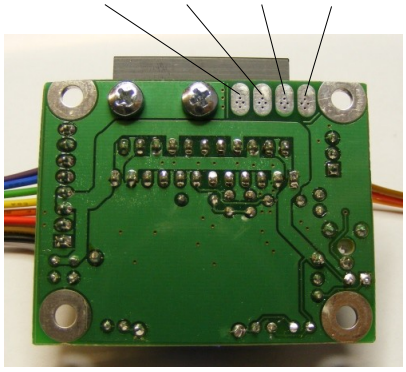


Power connections (top to bottom):

Vl: Speaker 2 -
Bl: Speaker. 2 +
Gn: Speaker. 1 -
Ye: Speaker. 1 +
Or **AND** Rd: Battery +
Bn **AND** Bk: Battery -

Important:
Or **and** Rd must be connected **together** at Battery +
Bn **and** Bk must be connected **together** at Battery -

Bottom solder junctions: LS3+ LS3- LS4- LS4+



Bottom:
Solder connections for speaker 3 (LS3) and speaker 4 (LS4)

Volume setting
According to the ordered speakers, the amplifier is delivered with the volume set at a safe max. level for the speakers. It should not be changed much.

Details for setting the max. volume:
The volume can be increased until the “max. volume Led” flashes permanently.
Short flashes are not critical.
At this point, the max. achievable output power, providable by the amplifier is achieved. This is depending (beside other parameters) on the temperature. It is recommended checking the setting after 5min of operation.
Don't forget running the propeller during bench tests for cooling!

Of course the connected speakers must be able handling this output power!

The following formula is used for calculating the supply current, drawn by the amplifier at the recommended volume.
Measure the supply current by a common multimeter and increase the volume until the calculated current is reached. If the “max. volume Led” starts flashing before, the max. volume is also reached and the volume **must not** increased more.

Max. current[A] = (Speaker power [W] * 0,8) / Supply voltage [V])

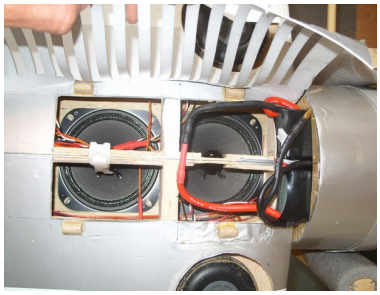
Legend:
Faktor 0,8: Safety factor
Speaker power: **Sum** of sinus power of **ALL** connected speakers
Supply voltage: Battery voltage

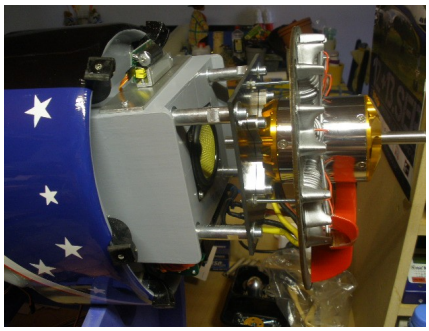
No warranty on damaged speakers !

Recommended speakers for airplanes (Brand: Visaton)

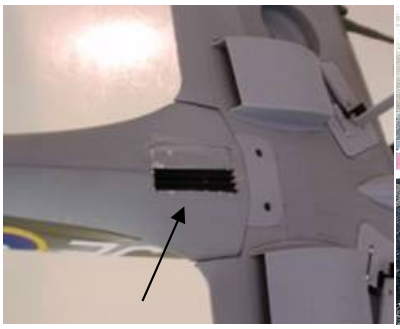
Speaker	Dimension [mm]	Total weight[g]	~ volume [dBA]
2x R10S / 4 Ohm	100x100x38	320	95
2x SPH-30 / 4 Ohm	80x80x40	300	91
(Brand: Monacor)			
Smaller foam planes			
4x K50 / 8 Ohm (jew. 2 parallel)	50x50x20	180	87
2x BF-45 / 4Ohm	55x26	64	90

Examples of speaker installations:






1x SPH-30 4x K50




Amplifier with additional heat sink

Installation videos

http://www.youtube.com/watch?v=DFyKDRZXBLM
http://youtu.be/x7Y5QdarSrc

Technical changes reserved

Not suitable for children under 14 years

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