

AI·SONIC

Finnish audio design

OWNERS MANUAL

Model:

S2-A60.4 S2-A100.4
S2-A65.2 S2-A150.2
S2-A1000.1 S2-A500.1
S2-A2200.1



S-SERIES CAR AMPLIFIER

SPECIFICATIONS

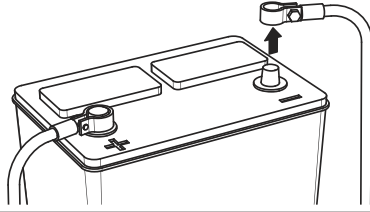
MODEL	S2-A500.1	S2-A1000.1	S2-A2200.1
POWER VOLTAGE	10-16V	10-16V	10-16V
RMS POWER (1Ω)	500W	1000W	2200W
RMS POWER (2Ω)	350W	650W	1400W
RMS POWER (4Ω)	220W	380W	750W
BRIDGED POWER(2Ω)	N/A	N/A	4400W
BRIDGED POWER(4Ω)	N/A	N/A	2800W
T.H.D	<0.5%	<0.5%	<0.5%
BANDWIDTH	10-200Hz	10-200Hz	10-200Hz
S/N RATIO (A-WEIGHTED)	>90dB	>90dB	>90dB
CHANNEL SEPARATION	N/A	N/A	N/A
INPUT SENSITIVITY	0.35-6V	0.35-6V	0.35-6V
INPUT IMPEDANCE	20K	20K	20K
LOW PASS	50-200Hz	50-200Hz	50-200Hz
HIGH PASS	N/A	N/A	N/A
SUBSONIC	10-50Hz	10-50Hz	10-50Hz
CROSSOVER SLOPE	12dB/24dB/oct	12dB/24dB/oct	12dB/24dB/oct
BASS BOOST	0-12dB(@45Hz)	0-12dB(@45Hz)	0-12dB(@45Hz)
POWER FUSE	30A*2	40A*3	External 225A
DIMENSIONS W:	183mm(7.2IN)	183mm(7.2IN)	183mm(7.2IN)
H:	60mm(2.4IN)	60mm(2.4IN)	60mm(2.4IN)
L:	274mm(10.8IN)	344mm(13.5IN)	524mm(20.6IN)

MODEL	S2-A65.2	S2-A150.2	S2-A60.4	S2-A100.4
POWER VOLTAGE	10-16V	10-16V	10-16V	10-16V
RMS POWER (1Ω)	/	/	/	/
RMS POWER (2Ω)	2×105W	2×225W	4×105W	4×165W
RMS POWER (4Ω)	2×70W	2×150W	4×70W	4×110W
BRIDGED POWER(2Ω)	/	/	/	/
BRIDGED POWER(4Ω)	1×210W	1×450W	2×210W	2×330W
T.H.D	< 0.05%	< 0.05%	< 0.05%	< 0.05%
BANDWIDTH	10Hz-40KHz	10Hz-40KHz	10Hz-40KHz	10Hz-40KHz
S/N RATIO (A-WEIGHTED)	>90dB	>90dB	>90dB	>90dB
CHANNEL SEPARATION	>45dB	>45dB	>45dB	>45dB
INPUT SENSITIVITY	0.5-6V	0.5-6V	0.5-6V	0.5-6V
INPUT IMPEDANCE	13K	13K	13K	13K
LOW PASS	×1: 50Hz-500Hz; ×10: 500Hz-5KHz	×1: 50Hz-500Hz; ×10: 500Hz-5KHz	×1: 50Hz-500Hz; ×10: 500Hz-5KHz	×1: 50Hz-500Hz ×10: 500Hz-5KHz
HIGH PASS	×1: 12Hz-250Hz ×20: 250Hz-5KHz	×1: 12Hz-250Hz ×20: 250Hz-5KHz	×1: 12Hz-250Hz (FRONT) ×20: 250Hz-5KHz(FRONT) ×1: 50Hz-500Hz(REAR) ×10: 500Hz-5KHz(REAR)	×1: 12Hz-250Hz (FRONT) ×20: 250Hz-5KHz (FRONT) ×1: 50Hz-500Hz(REAR) ×10: 500Hz-5KHz(REAR)
Band PASS(FRONT)	12Hz-5KHz	12Hz-5KHz	12Hz-5KHz	12Hz-5KHz
CROSSOVER SLOPE	12dB/oct	12dB/oct	12dB/oct	12dB/oct
BASS BOOST	0/6dB(@45Hz)	0/6dB(@45Hz)	0/6dB(@45Hz)	0/6dB(@45Hz)
MODE	/	/	2CH/4CH	2CH/4CH
POWER FUSE	1×30A	2×30A	2×25A	2×40A
DIMENSIONS W:	183mm(7.2IN)	183mm(7.2IN)	183mm(7.2IN)	183mm(7.2IN)
H:	60mm(2.4IN)	60mm(2.4IN)	60mm(2.4IN)	60mm(2.4IN)
L:	274mm(10.8IN)	374mm(14.7IN)	304mm(12.0IN)	444mm(17.5IN)

INSTALLATION

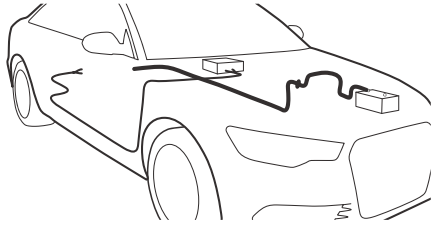
1 Disconnect negative battery terminal

Place terminal in a secure position so that it won't accidentally contact the negative battery post



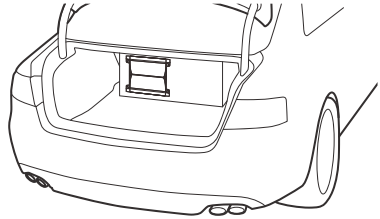
2 Run Cables

Properly route power, speaker and RCA cables through the vehicle.



3 Mount Amplifier

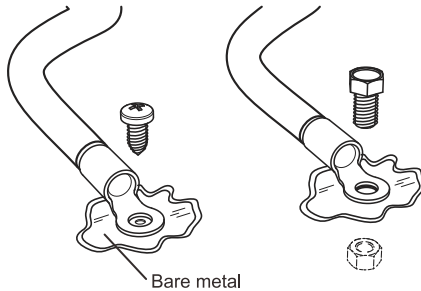
Choose a mounting location that will provide adequate air ventilation. Mount the amplifier to a secure surface. Do not mount the amplifier upside down.



4 Chassis Ground

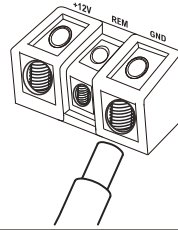


The chassis ground connection is critical to the performance of the amplifier. Choose a location that is close to the amplifier. Completely scrape away the paint and use a nut and bolt if possible. **DO NOT USE AN EXISTING FACTORY BOLT!**



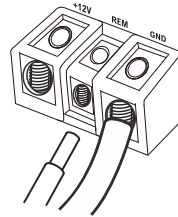
5 Negative Power Connection

Attach the chassis ground cable to the amplifier negative terminal. It is important to make sure this connection is very tight.



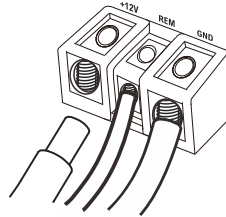
6 Remote Turn-on Connection

Attach the remote turn on wire to the amplifier remote output of the source unit.



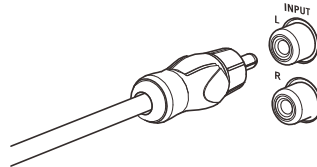
7 Positive Power Connection

Attach the main power cable to the amplifier +12V. The cable must run directly to the battery and be properly fused and be very tight.



8 Signal Input Connection

Connect the RCA cables to the INPUT connectors.



9 Level Control

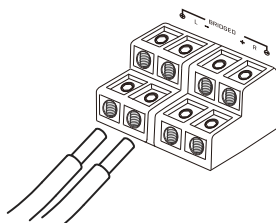


Turn the LEVEL control completely counter-clockwise to minimum.

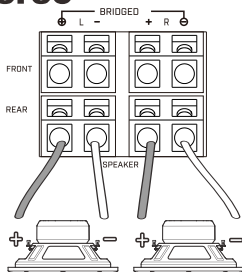


10 Speaker Connections

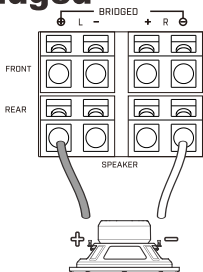
Using spade terminals, connect the speaker cables to the speaker output connectors. Follow the diagram below that best fits your speaker configuration.



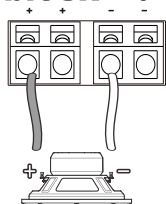
Stereo



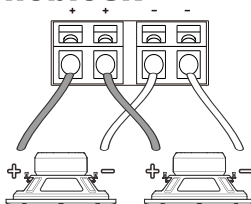
Bridged



Monoblock *single woofer*

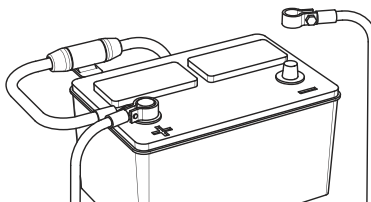


Monoblock *multiple woofers*



11 Positive Battery Connection

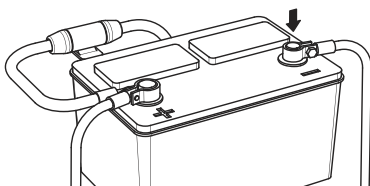
Connect the power cable to the positive battery terminal. The power cable must be fused within 18 inches of the battery terminal.



Be prepared to disarm your vehicle's alarm and to enter your radio / source unit code.

12 Re-connect Negative Battery Terminal

Re-connect the negative battery terminal making sure it is securely tightened.



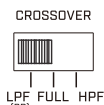
SETUP

A*Mode*

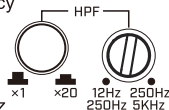
Switch to route input signal stores pective amplifier channels.

**B***Crossover*

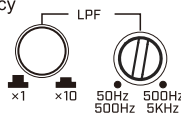
To set up the crossover for the required use of the amplifier.
LPF(BP)-Only low frequencies will be reproduced with subsonic filter.
FULL-Entire frequency range will be reproduced.
HPF-Only mid/high frequencies will be reproduced.

**C***High pass Adjustment*

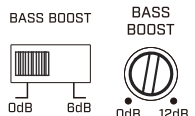
High frequency HPF filter FRONT. The regulator can change the frequency of the high frequency filter.
X1/X20 - factor conversion switch. It allows for an X20 fold increase in shear on the high frequency filter. In the X1 mode, the filtering range is 12Hz-250Hz. In X20 mode, it is 250Hz to 5000Hz.

**D***Low pass Adjustment*

Low frequency LPF filter FRONT. The regulator can change the frequency of the low-frequency filter.
X1/X10 - factor conversion switch. It allows for an X10 fold increase in shear on the low frequency filter. In the X1 mode, the filtering range is 50Hz to 500Hz. In X10 mode, it is 500Hz to 5000Hz

**E***Bass Boost*

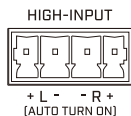
The BASS BOOST or BASS EQ control will increase the output at 45Hz for more pronounced bass. Exercise caution. Increase the level in small amounts until distortion is noticed, then back off a little.

**F***Subsonic*

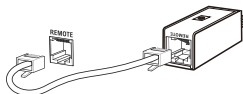
This controller allows you to filter low frequencies in a range between 10Hz and 50Hz. This function reduces the mechanical Xmax and raises the Capacity of the connected subwoofer.

**G***High Input*

Head units without RCA pre-amplifier output signal, can be connected using the high-level input to connect the speaker output of the head unit directly. If used, the amplifier turns on automatically (auto-on feature). The remote input of the power supply terminal remains unused Important note: High-level and RCA inputs should never be used simultaneously! This may cause serious damage to the amplifier.

**H***Remote Level Control*

Some models include a bass remote. Avoid adjusting the bass remote while operating vehicle.

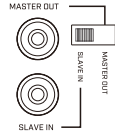


I

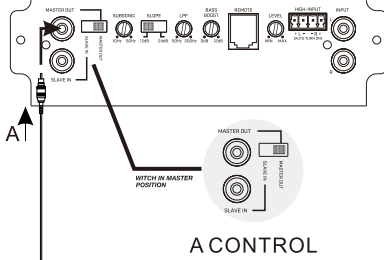
Master&Slave Wiring

Strapping TWO S2-A2200.1 Amplifiers

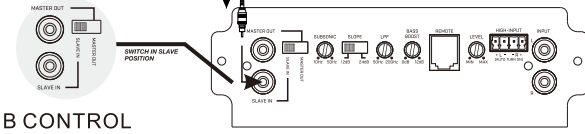
When Strapping two S2-A2200.1 amplifiers, the minimum speaker Impedance is 2ohms.



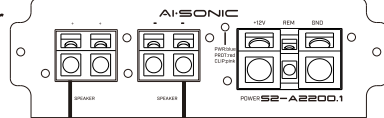
Master



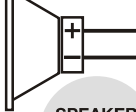
slave B



Master

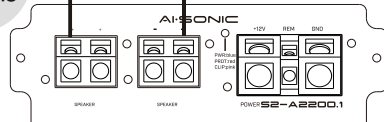


SUBWOOFER Speaker



SPEAKER IMPEDANCE 2-8 OHMS

slave



J**Level Setting**

This is a critical step to insure your amplifier is properly adjusted to match the signal output level of your source unit.

LEVEL

**THIS IS NOT A VOLUME CONTROL!**

1. If possible, with the source unit off, confirm that the primary volume control is turned down (counter clockwise).
2. Turn on the source unit (CD, or MP3 player). Re-confirm that the volume is turned down. Make sure the source unit controls; balance, fader, bass and treble are all set to center or "0" adjustment. Make sure that the green LED on the end of the amplifier is illuminated.
3. Play a clean musical selection of which you are very familiar. CD is preferred. Do not use radio signals for level setting. Hit play and start turning the volume of the source unit up.
4. Stop increasing the source unit volume when you reach 3/4 (about 75%) or until you hear speakers begin to slightly start producing distortion.
5. Increase the amplifier level (clockwise) until distortion is heard, then back the level down (counter clockwise) until the distortion is eliminated. Small adjustments may need to be made to balance the levels of multiple amplifiers.

CONNECTION METHODS

The minimum permissible load impedance at the output of the amplifier is 2 ohm for full rang amp and 1 ohm for mono-block amp. Use these formulas to calculate the load impedance of various types of connections.

SUBWOOFERS WIRING DIAGRAMS

Serial connection

$$\text{Total impedance} = \Omega_{\text{Sub 1}} + \Omega_{\text{Sub 2}} + \Omega_{\text{Sub 3}} \dots$$

Parallel connection

$$\text{Total impedance} = \frac{1}{\frac{1}{\Omega_{\text{Sub 1}}} + \frac{1}{\Omega_{\text{Sub 2}}} + \frac{1}{\Omega_{\text{Sub 3}}} \dots}$$

SCHEMES OF ENABLING THE LOAD OF THE SUBWOOFER

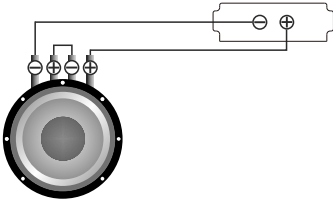
In any case do not expose the amplifier to the loads lower than specified by the manufacturer. Use these schematics to calculate load impedance of different connection types.

Voice coils 1+1, 2+2, 4+4 Ohm

The subwoofer has voice coil D1, D2 or D4.

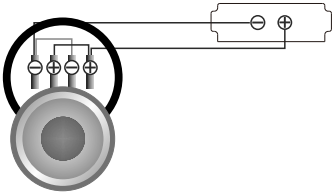


One subwoofer, coils in series



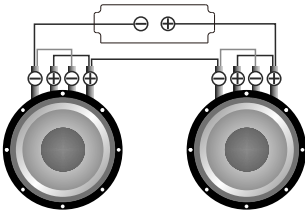
Voice coils	Total impedance
1+1 Ohm	2 Ohm
2+2 Ohm	4 Ohm
4+4 Ohm	8 Ohm

One subwoofer, coils in parallel

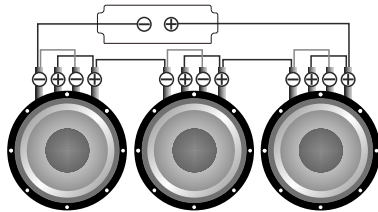


Voice coils	Total impedance
2+2 Ohm	1 Ohm
4+4 Ohm	2 Ohm

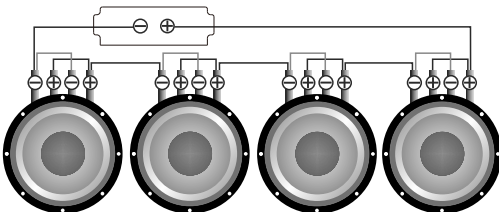
Subwoofers in series, coils in parallel



Voice coils	Total impedance
1+1 Ohm	1 Ohm
2+2 Ohm	2 Ohm
4+4 Ohm	4 Ohm

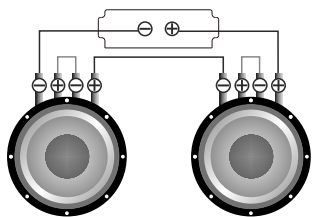


Voice coils	Total impedance
1+1 Ohm	1,5 Ohm
2+2 Ohm	3 Ohm
4+4 Ohm	6 Ohm

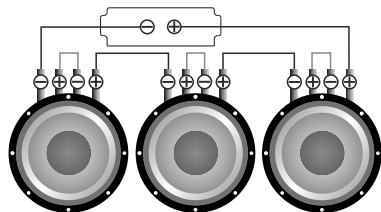


Voice coils	Total impedance
1+1 Ohm	2 Ohm
2+2 Ohm	4 Ohm
4+4 Ohm	8 Ohm

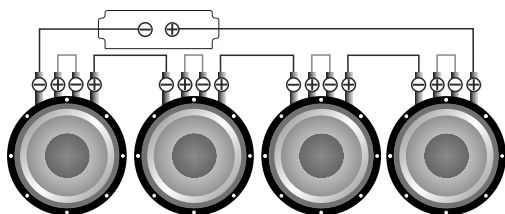
Subwoofer in series, coils in series



Voice coils	Total impedance
1+1 Ohm	4 Ohm
2+2 Ohm	8 Ohm
4+4 Ohm	16 Ohm

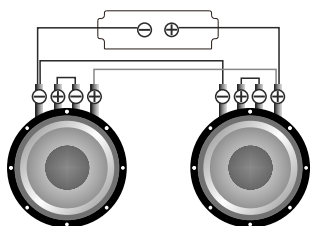


Voice coils	Total impedance
1+1 Ohm	6 Ohm
2+2 Ohm	12 Ohm
4+4 Ohm	24 Ohm

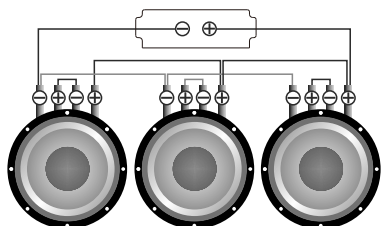


Voice coils	Total impedance
1+1 Ohm	8 Ohm
2+2 Ohm	16 Ohm
4+4 Ohm	32 Ohm

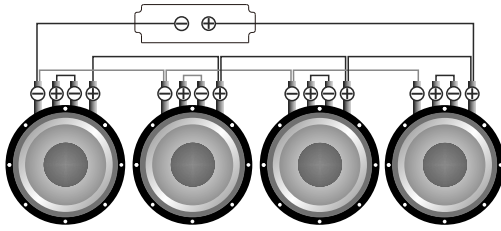
Subwoofers in parallel, coils in series



Voice coils	Total impedance
1+1 Ohm	1 Ohm
2+2 Ohm	2 Ohm
4+4 Ohm	4 Ohm

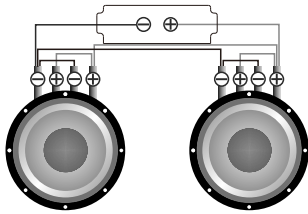


Voice coils	Total impedance
2+2 Ohm	1,33 Ohm
4+4 Ohm	2,66 Ohm



Voice coils	Total impedance
2+2 Ohm	1 Ohm
4+4 Ohm	2 Ohm

Subwoofers in parallel, coils in parallel

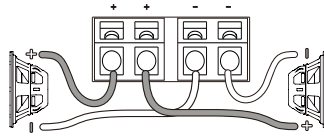
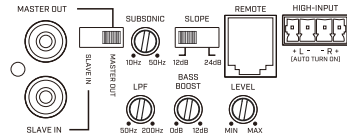


Voice coils	Total impedance
4+4 Ohm	1 Ohm

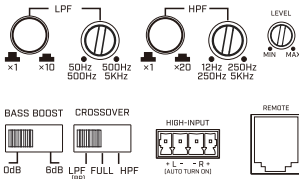
CAUTION!!! High sound pressure can damage your health!
Please use the common sense when controlling volume!

Common System Setup

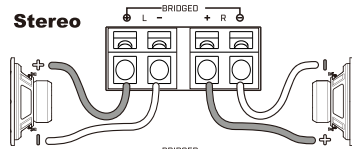
Mono



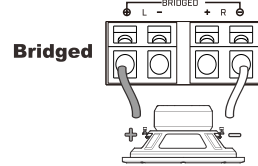
2ch - Full Range



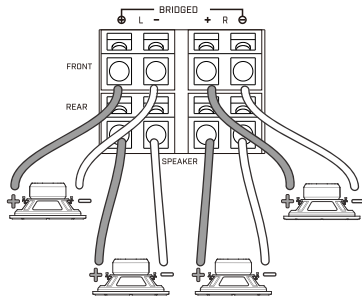
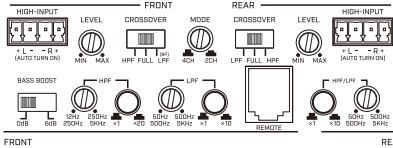
Stereo



Bridged



4ch - Full Range



4ch - Mixed Mono

