

Class AB
Full Frequency
Car Amplifier

ICE-150.2
ICE-150.4
OWNERS MANUAL

INTRODUCTION

SPL Dynamics new ICE - series Class AB full frequency amplifiers provide high sound performance reinforcement for your car audio system without compromise.

To achieve optimum performance, it is highly recommended that you read this Owner's Manual before installation. Check also our web-pages to have more information about different system configurations.

WARNING

High power audio systems in the vehicle are capable of generating "Live Concert" high levels of sound pressure. Continued exposure to excessively high volume sound levels may cause hearing loss or damage. Also operation of motor vehicle while listening to audio equipment at high volume levels may impair your ability to hear external sounds as horns, warning or emergency vehicles. For safety driving Consumer Electronics recommends at lower sound levels while driving.

MOUNTING YOUR AMPLIFIER

The mounting position your amplifier has a great effect on its ability to dissipate heat generated during normal operation. It has a large heat sink for removing heat and also designed with a thermal shut-down circuit. Any configuration, which allows moving air to be directed over the cooling fins will improve cooling feature dramatically. DO NOT enclose the amplifier in a small box or cover it that air cannot flow around the fins.

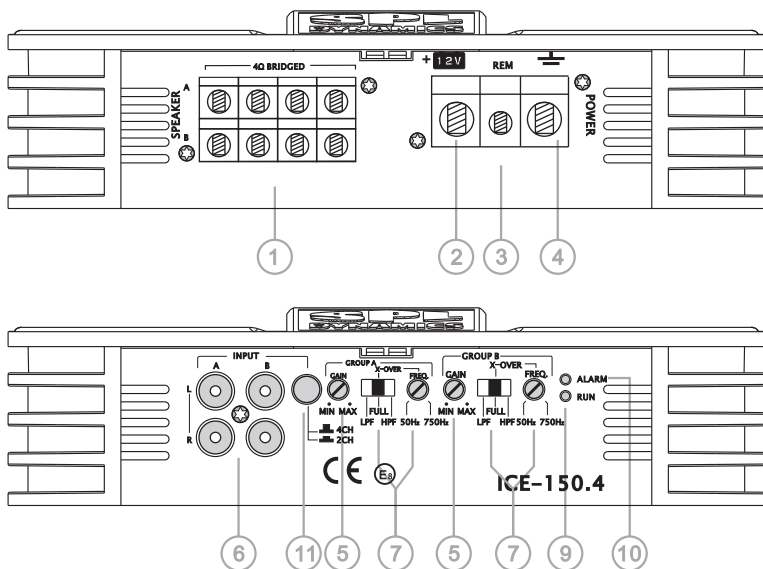
Temperatures in the car trunks have been measured as high as 79 degrees Celsius in the summer. To achieve maximum flow in enclosed trunk, mount the car amplifier to vertical position.

DESIGN FEATURES

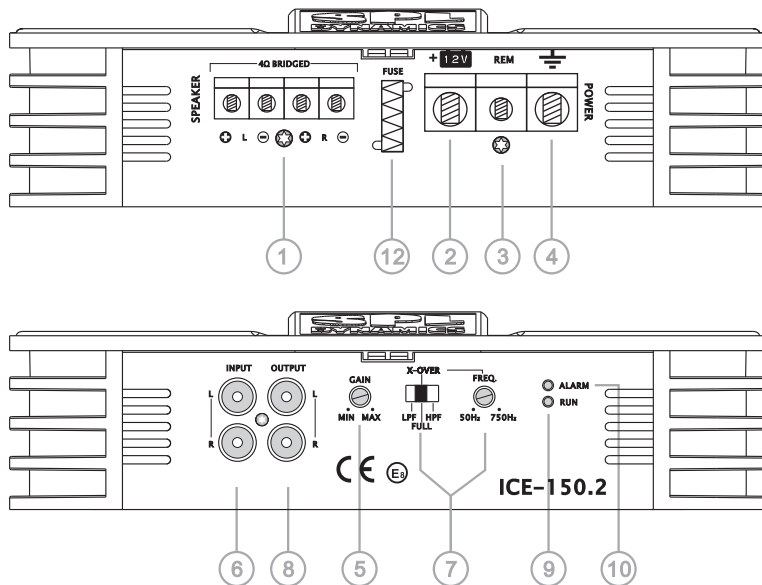
- High quality SMD components, high accurate resistors and capacitors
- Double side FR-4 PCB
- Full MOSFET circuit design
- Super noise rejection circuit
- Frequency response 12Hz~25000Hz, THD<0.04%
- Overload, shortcircuit, thermal, low voltage protection
- Gold-plated terminals
- Passed RoHS, E-mark certification

AMPLIFIER FUNCTIONS

ICE-150.4



ICE-150.2



1 Speaker connection

Connect your speakers correctly which means plus to plus and minus to minus. Never connect speaker cables with chassis ground directly. It may destroy your amplifier. We recommend minimum AWG 15# (1,5mm²) speaker cable. The detailed connection ways are shown in page 7~9.

2 +12V Battery Terminal

The +12 Volt power cable must be connected with a fuse in line near the battery+ terminal. Please see the table 1 in page 6 to select cable and fuse.

3 REM

Remote terminal. The remote cable must be connected with source unit remote terminal so that the amplifier will switch on and off automatically with source unit. If there are two or more amplifiers connected to this terminal it might be necessary to add an additional relay.

4 GND

Chassis ground terminal. The chassis ground cable must be connected very tight on a nearby massive and electric conductive place. Please connect chassis ground near amplifier with same gauge as power cable.

5 Gain

Gain control regulates the sensitivity of amplifier to match the signal output voltage of your source unit. The gain control is not a volume adjustment. Use high quality CD music and increase the volume of your source unit to 75%. Position the gain at the minimum and then increase gain slowly (clockwise). Stop at the first sign of distortion, then lower the gain a little (counter clockwise) to achieve clear undistorted music at the maximum level.

6 RCA audio-input

These RCA audio-inputs connect with your source unit RCA outputs. Please use car audio RCA cables, otherwise it may be disturbed. Keep these cables as short as possible. To avoid disturbances from your car electronics, please don't close the existing car cables when you install the RCA cables. If your source unit has only one set output, please use a suitable Y-RCA adaptor. If your source unit has only speaker outputs, you should use a HIGH-LOW level adaptor.

7 LPF/FULL/HPF selector & frequency adjustable knob

This switch and knob control Low Pass Filter, High Pass Filter and Full pass function. When set to LPF, the amplifier will cut off high frequencies and should be used driving subwoofers. When set to HPF, the amplifier will cut off low frequencies and should be used driving full range speakers or tweeter. When set to Full, Full range of frequencies are reproduced and output to the speakers. In another words the filters are "OFF"

8 RCA audio output

This RCA Jack output buffered inputs signal. This buffered output signal is easy to use for daisy chain amplifier installation.

9 Run Indicator

This LED will light up when amplifier work properly. It will flash or shut down once amplifier in self-testing or malfunction.

10 Alarm Indicator

This LED will light up when amplifier detect a fault or shut down to protect itself from permanent damage. This may caused by one of the following: excessive heat, reverse polarity, short circuit or overload. If this happens please shut off the amplifier and check problem.

11 4CH/2CH Switch (ICE-150.4 only)

This knob switch 2ch / 4ch input mode. When press in, amplifier works at 2ch input mode, CH-B input will be paralleled to CH-A, CH-B input jack will be dummy. When pressed knob out, amplifier will work at 4ch mode.

12 Fuse (ICE-150.2 only)

To protect amplifier when current drawn is more than rated. Never replace a fuse with a higher amp fuse. Never replace a burnt fuse before checking the system when there is a malfunction.

PRE INSTALLATION

- Please prepare sufficiently to layout your car space before installation. We recommend to have the installation done by an Autho rized SPL Dynamics Dealer.
- Use good insulated power cable to endure longterm use with high electric current. The +12 Volt power cable must be connected with a fuse in line near 20cm of battery+ terminal. Required current, power cable and proper external fuse listed as following.

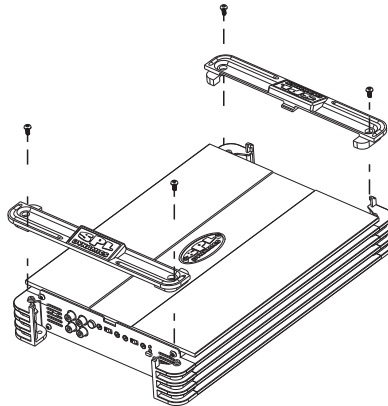
Model	Fuse	Cable
ICE-150.2	40A	20mm ² (AWG 4-5)
ICE-150.4	80A	20mm ² (AWG 4)

- Please use car audio RCA cables, otherwise it may be disturbed. Keep these cables as short as possible. To avoid disturbances from your car electronics, please don't close the existing car cables when you install the RCA cables.
- Don't expose any cables out of car. Please take care insulated cables to avoid be damaged when cables pass through metal, rubber and plastic etc. Don't install cables too tight.

- The ground wire should be connected directly with the chassis of your vehicle which should be metal to metal ground point connection.
- The amplifier must be mounted securely at a solid, dry and low vibration surface in the trunk or passenger area. Fix the amplifier in an open air area to insure proper heat dissipation. Fix the amplifier in a place where can access easily to set input controllers.

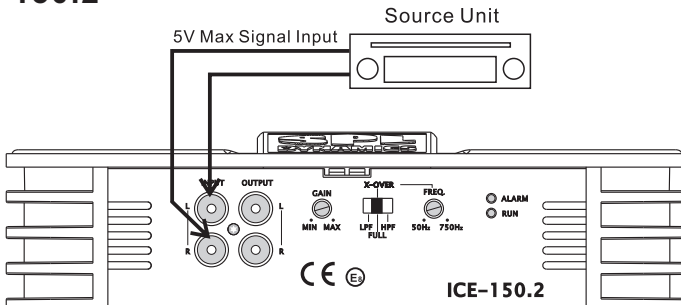
INSTALLATION

1. Choosing a flat and good condition for heating place to install amplifier.
2. Using attached hexagon wrench to remove the end cap on the amplifier as below picture showing.
3. Using attached screws to fix the amplifier to the chosen place.
4. Connecting power and speaker referring to Output Wiring Diagram.
5. Reset the end cap to the amplifier.

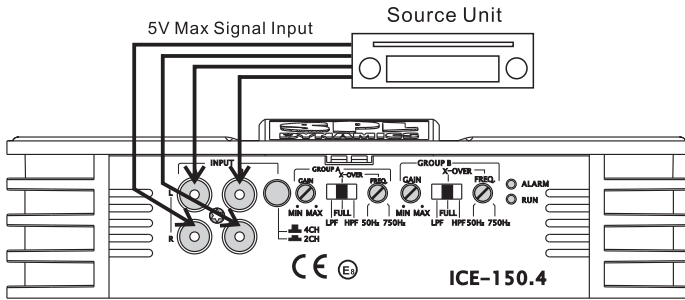


INPUT WIRING CONFIGURATION

ICE-150.2

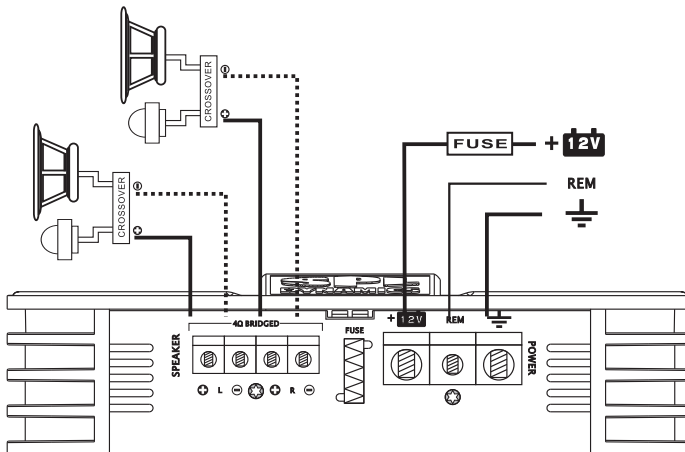


ICE-150.4



OUTPUT WIRING CONFIGURATION

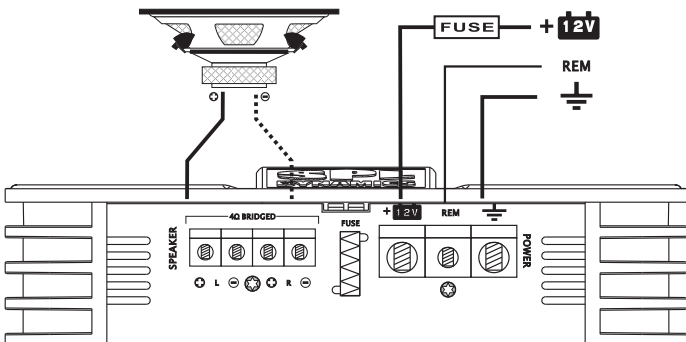
ICE-150.2



4ohm stereo speaker configuration

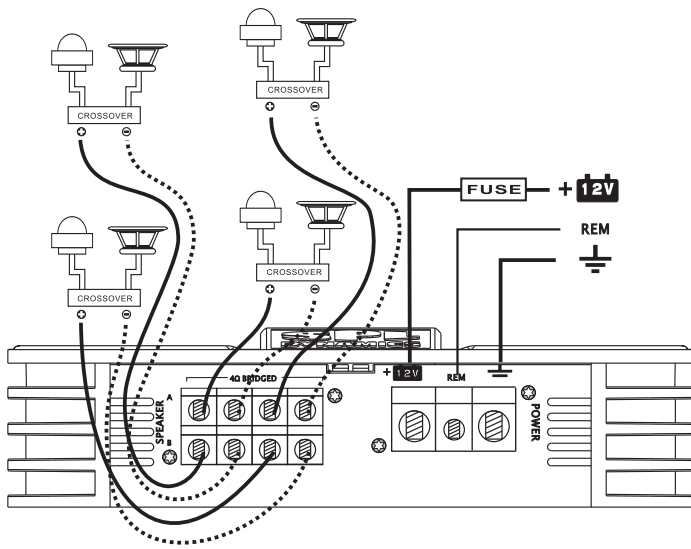
ICE-150.2

Bridged 4 ohm woofer



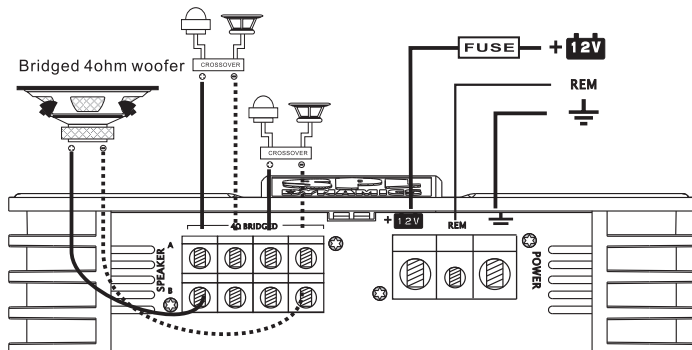
4ohm bridged woofer configuration

ICE-150.4



4ohm 4 channel configuration

ICE-150.4



Three channel model

TROUBLE SHOOTING

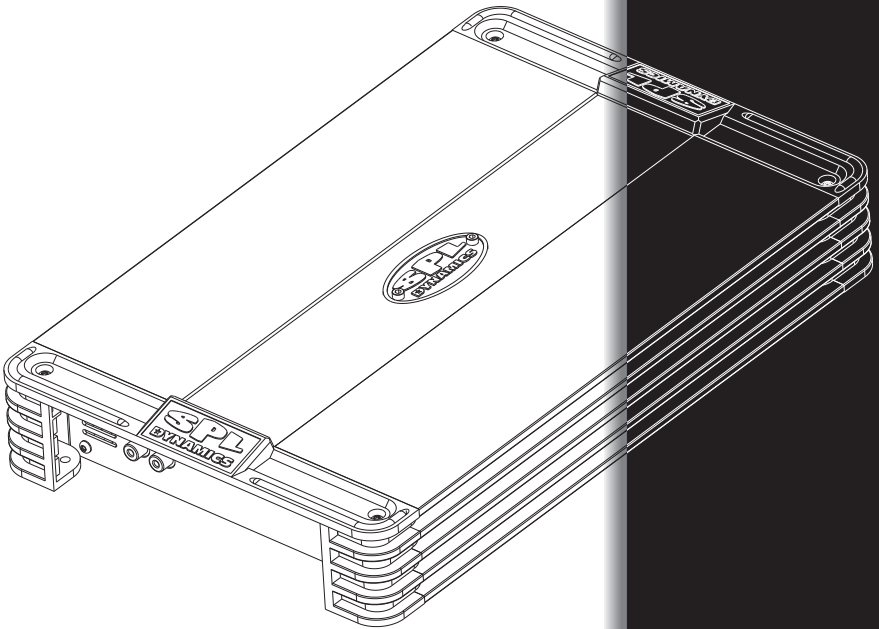
MALFUNCTION	SOLUTION
Power LED off	<ul style="list-style-type: none"> Check connections both at amplifier and at other ends Check positive and negative battery cables Check fuse on amplifier and in-line. Check remote voltage
No Output (Power LED on)	<ul style="list-style-type: none"> Check volume control on the source unit Check GAIN regulator on amplifier Check RCA cables and connections Check speaker cable and connections
One Channel no sound	<ul style="list-style-type: none"> Check RCA connections of this channel Check speaker connection of this channel Balance regulator of source unit do not set in middle Speaker of this channel is damage
Amplifier switches on and off	<ul style="list-style-type: none"> Check chassis ground connection with amplifier Check cable terminals and battery terminals Low voltage from battery Check remote wire connect right
Distorted Output	<ul style="list-style-type: none"> Source unit gain set too high Amplifier gain set too high Speaker(s) blown
No Output (Protect LED on)	<ul style="list-style-type: none"> Speaker is short circuit or damage Amplifier over heat Amplifier overload Battery is low voltage

If your amplifier is still malfunction after checking through the troubleshooting section, please contact our authorized SPL Dynamics dealer.

SPECIFICATION

MODEL	ICE-150.2	ICE-150.4
RMS @ 4OHM (THD<1%)	140Wx2	140Wx4
RMS @ 2OHM (THD<1%)	190Wx2	190Wx4
RMS @ 4OHM Bridged (THD<1%)	360Wx1	360Wx2
Input Level	0.2~5V	0.2~5V
Channel Input Adjust	YES	YES
CH-A Filter Mode	HP-FULL-LP	HP-FULL-LP
CH-B Filter Mode	HP-FULL-LP	HP-FULL-LP
CH-A LPF	50~750Hz	50~750Hz
CH-A HPF	50~750Hz	50~750Hz
CH-B LPF	NA	50~750Hz
CH-B HPF	NA	50~750Hz
Frequency Response	10Hz~25KHz	10Hz~25KHz
THD at 4ohm load 30% rated power	<0.02%	<0.02%
S/N Ratio	>90dB	>90dB
Channel Separation	>89dB	>89dB
Minimum Load	2Ω	2Ω
Overload Protect system	YES	YES
Overheat protect system	80°C / 176F	80°C / 176F
Gold-plated isolation terminals	YES	YES
Measured with operation voltage	14.4V	14.4V
Hi-END Design	YES	YES
Componenets & PCB	SMT& Double side board	SMT& Double side board
Dimensions (HXWXL) mm	53x228x300	53x228x407

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www.spldynamics.fi