

**RR+M SERIES**  
AMPLIFIER



**HIGH-PERFORMANCE  
CAR- AMPLIFIER**

**OWNER'S MANUAL**

M 75.4

M 130.2

R 100.4

R 190.2

DESIGNED AND ENGINEERED BY AUDIO SYSTEM GERMANY

Congratulations on your purchase of your new

## **R**SERIES / **M**SERIES amplifeier

Before installation your power amplifier, we recommend to read the manual's owner carefully and to follow the instructions regarding connection and fitting exactly.

We advice to accomplish the installation by an authorized service center, because a professional fitting and connection is the requirement for further warranty adjustments.

### **R+M**SERIES AMPLIFIER **FEATURES**

#### **R 190.2 / M 130.2**

- \* 2-Channel High Power Class-AB amplifier with SMD technology
- \* MOS-FET Power Supply
- \* Stable into 2 ohm stereo per channel and 4 ohm bridged mode
- \* Variable switchable Low Pass Filter from 50 to 300 Hz
- \* Variable switchable High Pass Filter from 25 to 175 Hz
- \* Variable switchable Band Pass Filter from 25 to 175 Hz and from 50 to 300 Hz (LPF)
- \* FSA Front Stage adjuster for analog phase correction for the left front channel
- \* High-Level-Input with automatically „TURN ON“
- \* Input Sensitivity: variable 200 mV maximum to 8 V minimum
- \* **Multi-Way Protection Circuitry**: overhead, over current, short circuitry and speaker DC protection
- \* Operating Voltage: DC 10 ~ 16 V Power Input
- \* Massive heavy aluminum-heatsink with fan cooling on top
- \* Wired Remote Controller **RTC** (Optional)

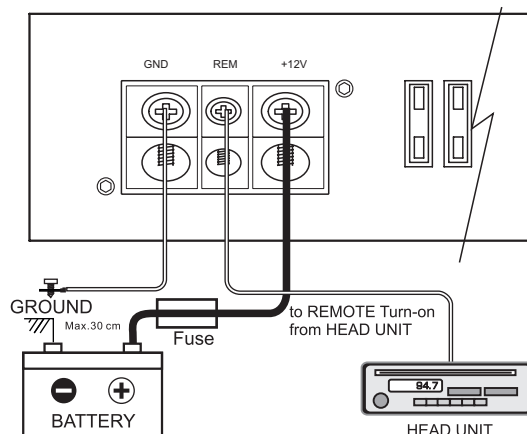
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#### **R 100.4 / M 75.4**

- \* 4-Channel High Power Class-AB amplifier with SMD technology
- \* MOS-FET Power Supply
- \* Stable into 2 ohm stereo per channel and 4 ohm bridged mode
- \* Variable switchable Low Pass Filter from 50 to 300 Hz
- \* Variable switchable High Pass Filter from 25 to 175 Hz
- \* Variable switchable Band Pass Filter from 25 to 175 Hz and from 50 to 300 Hz (LPF)
- \* FSA Front Stage adjuster for analog phase correction for the left front channel
- \* High-Level-Input with automatically „TURN ON“
- \* 2CH / 4CH input mode selectable button
- \* Input Sensitivity: variable 200 mV maximum to 8 V minimum
- \* **Multi-Way Protection Circuitry**: overhead, over current, short circuitry and speaker DC protection
- \* Operating Voltage: DC 10 ~ 16 V Power Input
- \* Massive heavy aluminum-heatsink with fan cooling on top
- \* Wired Remote Controller **RTC** (Optional)

## POWER CONNECTION R+M SERIES AMPLIFIER

R 100.4 / R 190.2 / M 75.4 / M 130.2



### 1. Battery disconnection

First, disconnect the power supply of the vehicle by REMOVING the ground cable of the battery.

### 2. Ground connection

Connect the GND (ground) connection of the amplifier with the car chassis. Keep this cable as short as possible (not longer than 50 cm) and use a suitable cross section (AWG size 7-5). Make sure, that the connection with the vehicle chassis is free of paint, dirt and dust.

### 3. +12 V Power connection

Connect the +12 V contact of the amplifier with the supply cable via a fuse directly to the vehicle battery. Keep in mind, that the length of the cable from fuseholder to vehicle battery has to be maximum 30cm. For the amplifier to function at its best, use a high quality fuse holder and suitable cable preferably AWG 7-5 cable. This fuse protects the amplifier and the vehicle against the possibility of a short circuit in the power cable.

### 4. Remote connection

Connect the REM-terminal of the amplifier to the remote-output (automatic 12 V antenna-output) of the head unit. Use a 0,5 - 1,5 mm power cable.

### 5. HI/LOW selectable button

If the radio (normally original radio) has no RCA output and remote output (automatic 12 V antenna output) it is possible to connect the speaker output from headunit direct in RCA input. The HI/LOW button must be switched to „HI“ (picture on page 4). If the X SERIES amplifier get a signal from head unit output, the amplifier will turn on.

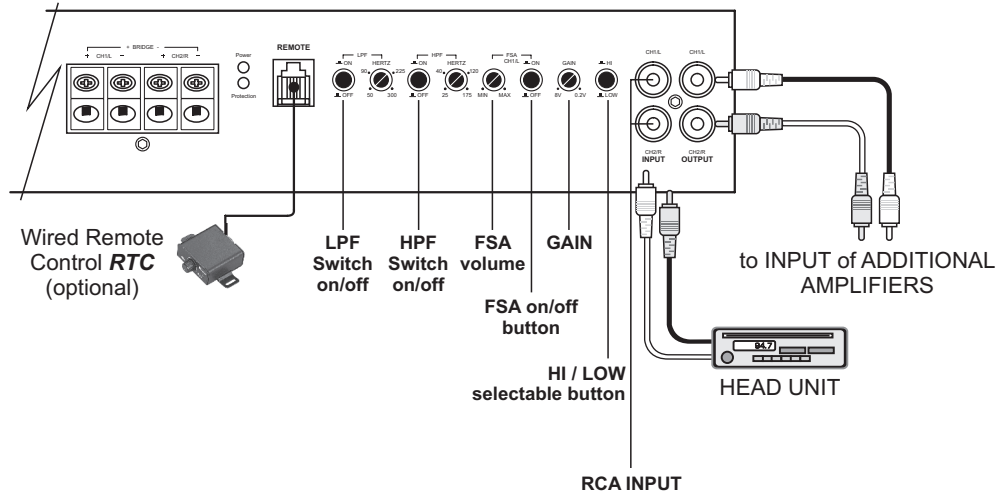
## ⚠ Caution ⚠

Please take the following precautions when installing your amplifier:

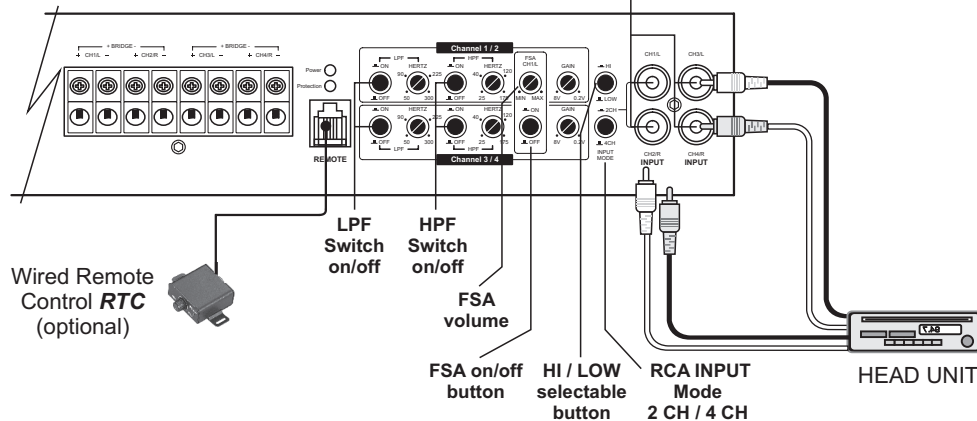
- Take extra care when making the connections. Make sure that no electrical cable, gas tank, hydraulic brakes or other components get damaged.
- Allow enough cooling and air circulation and avoid installing the unit in small closed boxes or close to parts that heats up easily.
- Keep the amplifier away from liquid, moisture, heat and foreign materials.
- This amplifier can only be used in vehicles with 12V DC power supply.
- Never install the power supply cable with other original vehicle wires (gas cables), fan motors, control modules etc.
- Install the signal cable (cinch cable) as well as speaker cable far away from the power cables to avoid interference with music signals.
- To avoid dangers of cables binding, squeezing or breaking, use the cables supplied with your amplifier.

## R+M SERIES AMPLIFIER RCA CONNECTION

R 190.2 / M 130.2



R 100.4 / M 75.4



The R/M SERIES amplifier offers RCA-Inputs, which are connected through cinch cables with the preamplifier-outputs of the head unit. The RCA-outputs provide the possibility to transfer the signal of the head unit to a 2. amplifier via a cinch cable (only R 190.2 und M 130.2).

With the aid of the variable high- and lowpassfilter and the gain-controller you are able to adjust the amplifier on to your preferred taste of hearing, the circumstances of the vehicle and to the speakers. Another special feature is the FSA (Front Stage Adjuster). This is an analog phase correction for the left front channel. By adjusting the FSA volume you can set the sound and voices in front of you.

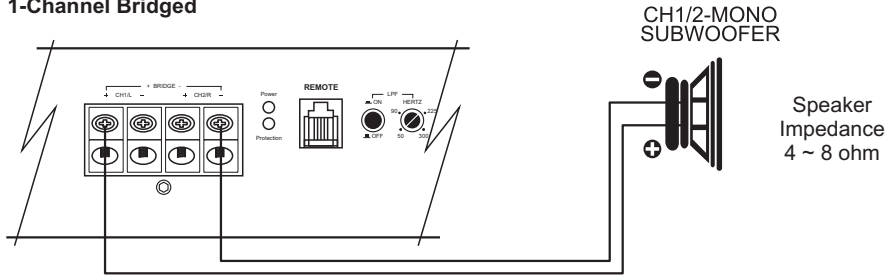
In this regard, **AUDIO SYSTEM GERMANY** recommends to adjust your amplifier through a specialized service center, dealer or a specialist.

Optional the R 100.4 / R 190.2 / M 75.4 / M 130.2 can be installed to a wire remote controller RTC, which allows you to rule the amplifier in front of the car (only if the LPF is switched „ON“).

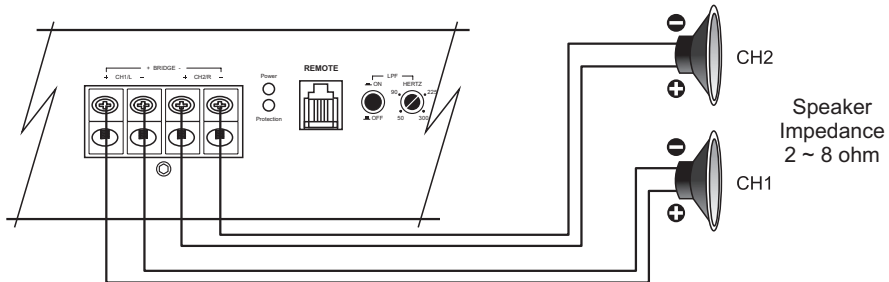
# SPEAKER CONNECTION **R+M** SERIES AMPLIFIER

R 190.2 / M 130.2

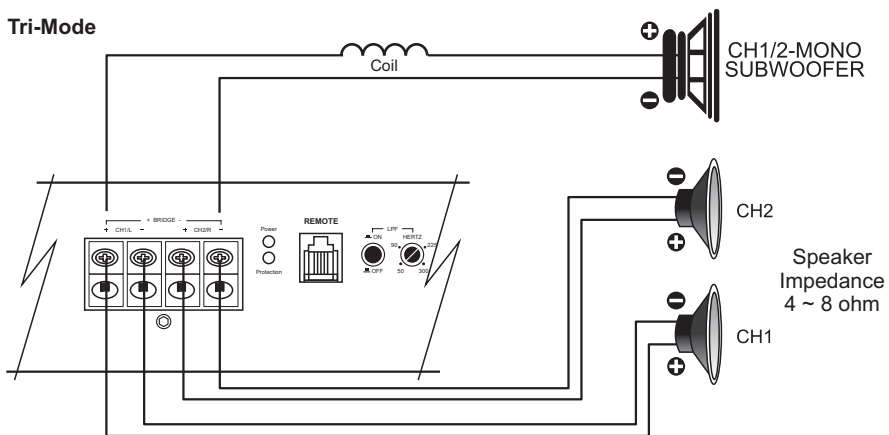
## 1-Channel Bridged



## 2-Channel Stereo



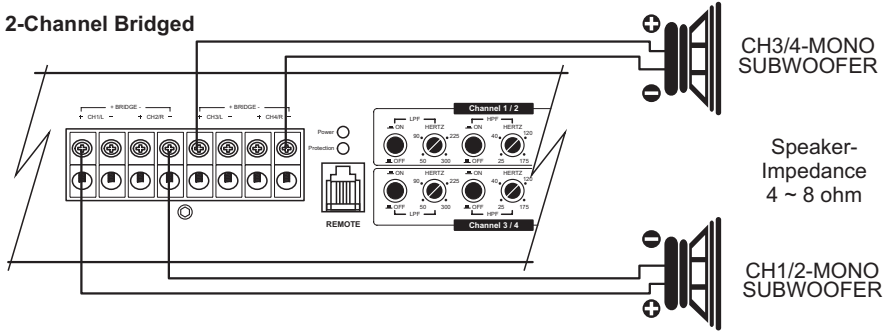
## Tri-Mode



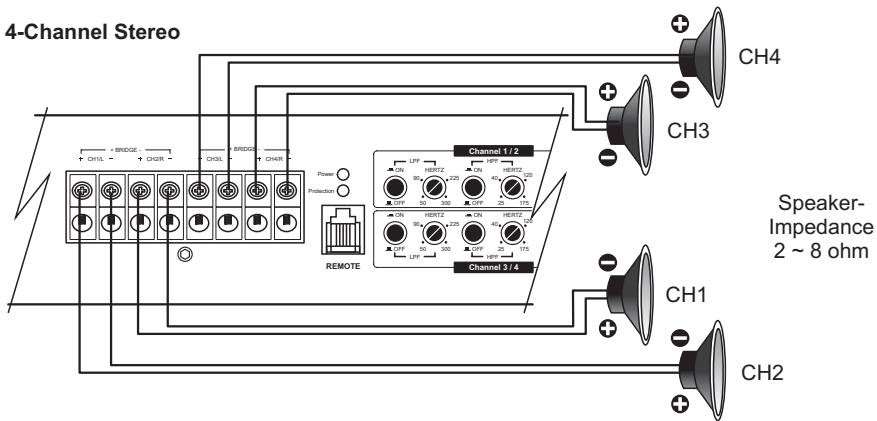
**R+M SERIES** AMPLIFIER **SPEAKER CONNECTION**

R 100.4 / M 75.4

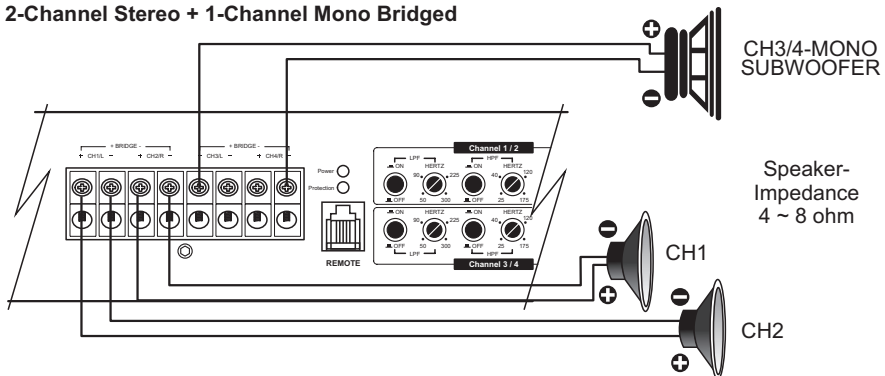
**2-Channel Bridged**



**4-Channel Stereo**



**2-Channel Stereo + 1-Channel Mono Bridged**



## TROUBLE SHOOTING **R+M** SERIES AMPLIFIER

This power amplifier is featured with a efficient protection system to prevent any damages like over-heating, overvoltage, short-circuit and DC at the loudspeaker output.

Occuring an error the protection-LED will light in red.

In order to check the problem, first turn down all levels of the head unit, afterwards turn it off.

AMPLIFIER IS NOT POWERED UP, NO LED IS LIGHTENING	<ul style="list-style-type: none"> <li>- ground connection professional connected?</li> <li>- +12V powercable professional connected?</li> <li>- remote cable professional connected?</li> <li>- fuses inserted and alright?</li> <li>- analyze voltage on the amplifier.</li> </ul>
PROTECTION LED ILLUMINATES GREEN WHILE AMPLIFIER IS SOUNDLESS	<ul style="list-style-type: none"> <li>- cinch cable alright and professional connected?</li> <li>- loudspeaker professional connected?</li> <li>- head unit all right?</li> </ul>
PROTECTION LED ILLUMINATES RED WHEN AMPLIFIER IS POWERED UP	<ul style="list-style-type: none"> <li>- amplifier too hot?</li> <li>- short-circuit at the loudspeaker output?</li> <li>- short-circuit caused by loudspeaker cable with vehicle chassis (ground)?</li> <li>- input voltage too high (e.g.faulty lighting dynamo)?</li> </ul>
OVERHEATING (PROTECTION LED ILLUMINATES RED WHEN AMPLIFIER IS POWERED UP)	<ul style="list-style-type: none"> <li>- impedance alright?</li> <li>- loudspeaker error?</li> <li>- adequate airflow of the amplifier?</li> </ul> <p style="text-align: center;"><b>! CAUTION !</b></p> <p>After cooling down, the amplifier turns on automatically.</p>
ERROR IN AMPLIFIER FUSE	<ul style="list-style-type: none"> <li>- ground professional connected?</li> <li>- loudspeaker impedance alright?</li> </ul> <p style="text-align: center;"><b>! CAUTION !</b></p> <p>Make sure when changing fuses to use the same value</p>
SOUND TOO LOW OR LOW-DISTORTED SOUND	<ul style="list-style-type: none"> <li>- input level control "GAIN" is set to match the head unit?</li> <li>- output level control of the head unit alright?</li> <li>- loudspeaker error?</li> <li>- loudspeaker cable checked?</li> <li>- crossover frequencies has been properly set? (Check head unit, amplifier, DSP, soundprozessor, equalizer, frequency bandpassfilter...)</li> </ul>
HIGH HISS-ENGINE NOISE IN SPEAKERS	<ul style="list-style-type: none"> <li>- ground connection professional connected?</li> <li>- short-circuit caused by loudspeaker cable with vehicle chassi (ground)?</li> <li>- cinhcable (RCA) and/or loudspeaker cabel installed too close to the power connection cable?</li> <li>- cinch ground (RCA) of the head unit alright?</li> </ul>

### ⚠ **CAUTION** ⚠

Please contact your specialist dealer if the amplifier is still not working after it has been checked with the error list!

For warranty adjustement / repairs the original invoice has to be attached!

**Opening the power amplifier is leading to a lost of warranty in either case!**

## **R+M** SERIES AMPLIFIER **SPECIFICATIONS**

<b>2-CHANNEL AMPLIFIER</b>	<b>R 190.2</b>	<b>M 130.2</b>
Power Supply Voltage .....	10 -16 V	10 -16 V
Rated Power Output at 14,4 V		
-RMS power @ 4 ohm stereo .....	2x 190 W	2x 130 W
-RMS power @ 2 ohm stereo .....	2x 280 W	2x 210 W
-RMS power @ 4 ohm bridged .....	1x 560 W	1x 420 W
Signal to Noise Ratio .....	>90 dB	>90 dB
Low Pass Crossover .....	50 Hz ~ 300 Hz	50 Hz ~ 300 Hz
High Pass Crossover / Subsonic filter .....	25 Hz ~ 175 Hz	25 Hz ~ 175 Hz
Frequency Response .....	10 Hz ~ 60 KHz (+/-1dB)	10 Hz ~ 60 KHz (+/-1dB)
THD@RMS Watts .....	< 0.034%	< 0.037%
Channel Separation .....	75 dB	75 dB
Fuse Rating .....	3x 20 A	2x 25 A
Input Sensitivity .....	200 mV ~ 8V (+/- 5%)	200 mV ~ 8V (+/- 5%)
Dimensions .....	360(W)x 58(H)x 185(L)mm	330(W)x 58(H)x 185(L)mm

<b>4-CHANNEL AMPLIFIER</b>	<b>R 100.4</b>	<b>M 75.4</b>
Power Supply Voltage .....	10 -16 V	10 -16 V
Rated Power Output at 14,4 V		
-RMS power @ 4 ohm stereo .....	4x 100 W	4x 75 W
-RMS power @ 2 ohm stereo .....	4x 180 W	2x 140 W
-RMS power @ 4 ohm bridged .....	2x 360 W	2x 280 W
Signal to Noise Ratio .....	>90 dB	>90 dB
Low Pass Crossover .....	50 Hz ~ 300 Hz	50 Hz ~ 300 Hz
High Pass Crossover / Subsonic filter .....	25 Hz ~ 175 Hz	25 Hz ~ 175 Hz
Frequency Response .....	10 Hz ~ 60 KHz (+/-1dB)	10 Hz ~ 60 KHz (+/-1dB)
THD@RMS Watts .....	< 0.035%	< 0.039%
Channel Separation .....	75 dB	75 dB
Fuse Rating .....	3x 25 A	2x 30 A
Input Sensitivity .....	200 mV ~ 8V (+/- 5%)	200 mV ~ 8V (+/- 5%)
Dimensions .....	360(W)x 58(H)x 185(L)mm	330(W)x 58(H)x 185(L)mm