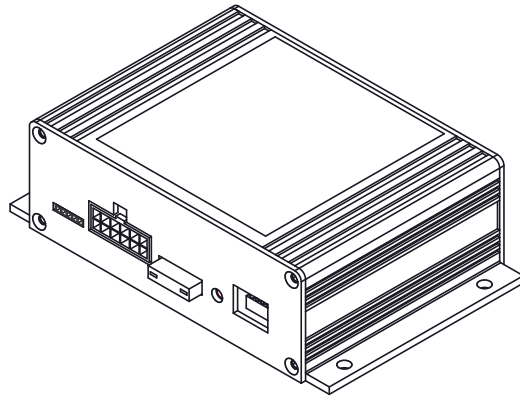


INSTALLATION INSTRUCTIONS

LF AFTERSHOCK 200W AMPLIFIER

200 WATT



SoundOff
Signal ®



DANGER!

- Sirens provide an essential function of an effective audio / visual warning system. However, sirens are only short range secondary devices. The use of a siren does not insure that all drivers can or will abide by or react to an emergency warning signal, especially at high rates of speeds or long distances. The operator of the vehicle must never take the right of way for granted and it is the operator’s responsibility to proceed safely.
- The effectiveness of this siren system is highly dependent on the correct mounting and wiring. The installer must read and follow the manufacturer’s installation instructions and warnings in the manual. The vehicle operator should verify the siren system is securely fastened to the vehicle and properly functioning.
- Effective sirens generate loud sound pressure levels that can potentially cause hearing damage. Installers and those around the vehicle need to be aware of the dangers and wear hearing protection whenever the siren system is operating. Vehicle operators and occupants should assess their exposure to siren noise and determine what steps need to be taken to prevent hearing damage.
- The siren system is intended for use by authorized personnel only. It is the user’s responsibility to ensure they understand and operate the emergency warning devices in compliance with all applicable city, state, and federal laws and regulations. SoundOff Signal assumes no liability for any loss resulting from the use.

⚠ WARNING

- Sirens produce loud sounds that may damage hearing:
 - Roll up windows.
 - Wear hearing protection.
 - Use only for emergency response.
 - Avoid exposure to siren sound outside of vehicle.



IMPORTANT NOTICE TO INSTALLER:

- Make sure to read and understand all instructions and warnings before proceeding with the installation of this product. Ensure the manual and all warning cards are delivered to the end user of this equipment.
- HIGH CURRENT interconnects must be properly terminated. Poor crimp quality can cause heat build-up and fire. Follow crimp connector manufacturer instructions.
- DO NOT install this product or route any wires in the Air Bag Deployment Zone. Refer to vehicle Owner’s Manual for deployment zones.
- DO NOT use system to disconnect headlights, brake lights or other safety equipment.
- Unit may become hot to touch during normal operation.
- Failure to properly install connectors, fuses or wiring may cause vehicle failure or fire.
- Installation must only be performed by trained technician. Installer must determine vehicle wiring configuration and proper integration of system.
- Use proper wire gauge. All power wires connecting to positive (+) or negative (-) battery terminal or local chassis ground (-) must be sized to supply at least 125% of max. current and properly fused at power source.
- Install protective grommets when routing wire through firewall or metal.

⚠ WARNING

- DO NOT install this product or route its wires in the air bag deployment area. Doing so may cause damage to or reduce effectiveness of the air bag, or create projectile that could cause serious injury or death. To determine air bag deployment area refer to vehicle manufacturer's manual.

NOTICE:

- Installers and users must comply with all applicable federal, state and local laws regarding use and installation of warning devices.
- Improper use or installation may void warranty coverage.
- To review our Limited Warranty Statement & Return Policy for this or any SoundOff Signal product, visit our website at www.soundoffsignal.com/tech-services/returns/.
- If you have questions regarding this product, contact Technical Services, Monday - Friday, 8 a.m. to 5 p.m. ET at 1.800.338.7337 (press #4).
- Questions or comments that do not require immediate attention may be emailed to techgroup@soundoffsignal.com.

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QTY	COMPONENT
1	LOW FREQUENCY AMPLIFIER
1	HARNESS, LF200 TO 400/500 SERIES ADAPTER
4	0.3" X 0.5" PHILLIPS SELF TAPPING SCREW
1	SIREN WARNING CARD
1	PRODUCT WARNING CARD
1	USER WARNING STICKER
1	INSTALLATION INSTRUCTION SHEET

INTRODUCTION:

The LF200 Low Frequency Siren System was designed as a supplemental warning system for use at high-risk areas such as intersections and other areas close to the emergency vehicle. You must continue to use the Primary siren in connection with the LF200. Failure to follow this warning can reduce the effectiveness of the siren system and cause serious injury.

The low-frequency tones of the LF200 are better able to penetrate other vehicles, thus alerting drivers to the presence of the responding emergency vehicle, these tones may also penetrate into the responding vehicle itself. This could potentially expose the operator to increased noise levels.

To help eliminate overexposure, the LF200 Low Frequency siren has been designed with a built-in time-out feature. The Occupational Safety & Health Administration (OSHA) (www.osha.gov) provides hearing conservation guidance, to determine "Permissible Noise Exposure" see Section 1910.95 (Occupational Noise Exposure). The LF200 should be configured for the minimum time-out setting until safe exposure levels are determined. The operators should take appropriate safety precautions such as wearing hearing protection. **FAILURE TO FOLLOW THIS RECOMMENDATION COULD CAUSE HEARING LOSS!**

MOUNTING INSTALLATION

1. Choose a sturdy location to mount the LF200. (Ensure the siren amplifier / relay unit is mounted in dry, protected environment).
2. Use the LF200 as a template and mark the four holes to be drilled.
3. Use a 1/8" drill bit to drill the mounting holes.
4. Install the Amplifier with the four .3 x .5" Phillips head self tapping screws provided.

AMPLIFIER INSTALLATION

With a SoundOff Signal® 400/500 Series Siren Amplifier:

Insert the LF200 siren amplifier plug directly into the 400/500 series siren speaker connector (CN2-400 or CN8-500.) Plug the original 400/500 speaker harness into the pigtailed connection from the LF200 harness, as shown in the diagram on Page 4.

Without a SoundOff Signal® 400/500 Series Amplifier:

Cut the input and output speaker connectors off of the LF200 harness. Wire these directly to the primary siren amplifier outputs.

TECHNICAL SPECIFICATIONS	
Overall Dimensions:	Height: 4.4cm (1.73") Width: 14.8cm (5.83") Depth: 9.4cm (3.7")
Input Voltage:	9.5 - 16VDC (negative ground)
Operating Temperature:	-40°C to +65°C
Diagnostic LED:	Number and type of flashes help with troubleshooting
Fuse	20 Amp Mini ATO
Input Current	8 Amps @ 13.6Vdc (100W speaker) 16 Amps @ 13.6Vdc (2x 100W speakers)
Standby Current Ignition OFF:	<0.125mA
Output Power:	1x100W RMS Max (8 Ohm speaker) 2x100W RMS Max (8 Ohm speaker)
Output Frequency:	125 Hz - 1 kHz
High Voltage Protection:	Reverse Polarity Protection Voltage Spike to 35V

Configuring Instructions:

There are 2 characteristics that can be configured on the LF200 by changing the DIP switch settings:

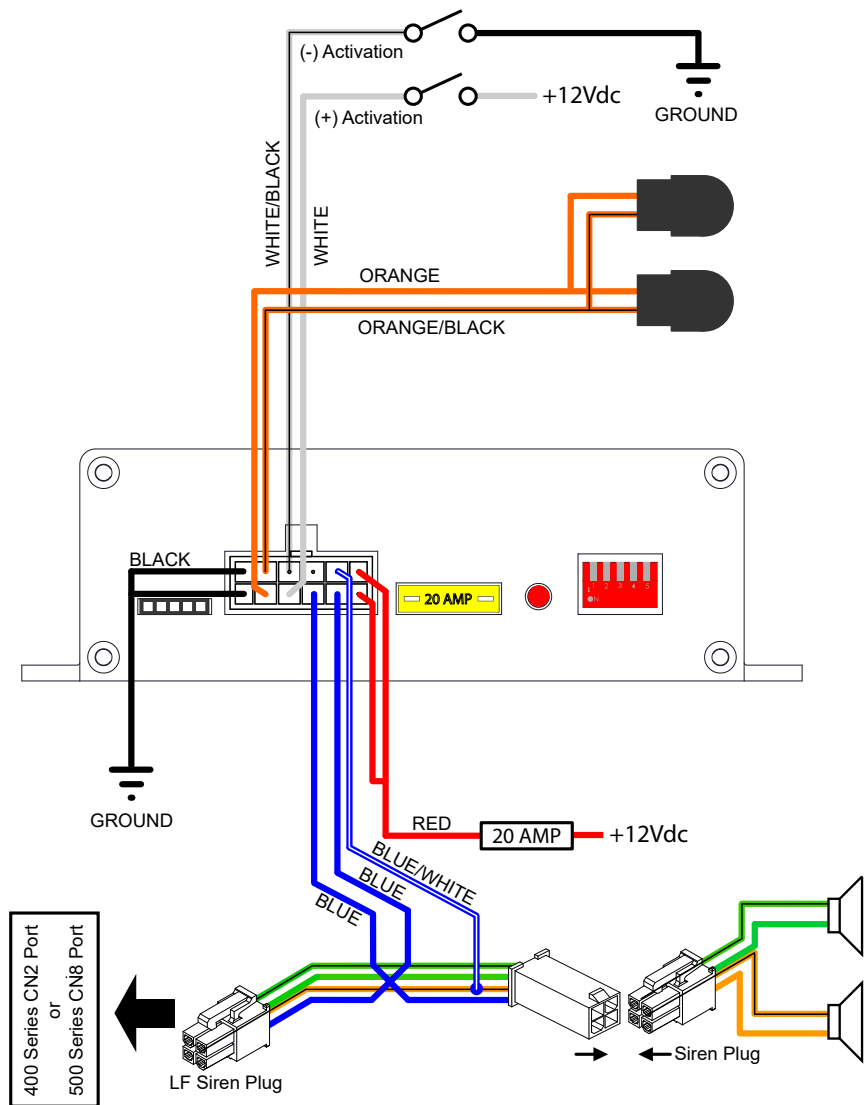
1. Tone Time-out Duration*
2. Tone Frequency

Refer to the table below to adjust the configurable settings:

	SW1	SW2	SW3	SW4	SW5	SETTING
Time-out Selection:	0	0	0			7.5 sec tone timeout (Default)
	0	0	UP			15 sec tone timeout
	0	UP	0			22.5 sec tone timeout
	0	UP	UP			30 sec tone timeout
	UP	0	0			37.5 sec tone timeout
	UP	0	UP			45 sec tone timeout
	UP	UP	0			52.5 sec tone timeout
	UP	UP	UP			60 sec tone timeout
Frequency Divide Selection:				0	0	Divide Main Speaker Signal by 4; ¼ (Default)
				0	UP	Divide Main Speaker Signal by 2; ½
				UP	0	Divide Main Speaker Signal by 4; ¼
				UP	UP	Divide Main Speaker Signal by 4; ¼

*Tone Time-Out Duration is the amount of time that the system remains active once the Activation Wire loses signal. (i.e. – Momentary Press of an Activation button.)

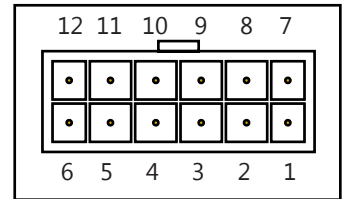
AMPLIFIER ELECTRICAL INSTALLATION



WIRE CAPACITY REQUIREMENTS FOR LOW FREQUENCY SIREN AMPLIFIER (INCOMING POWER) - EACH SUPPLY AND GROUND WIRE:

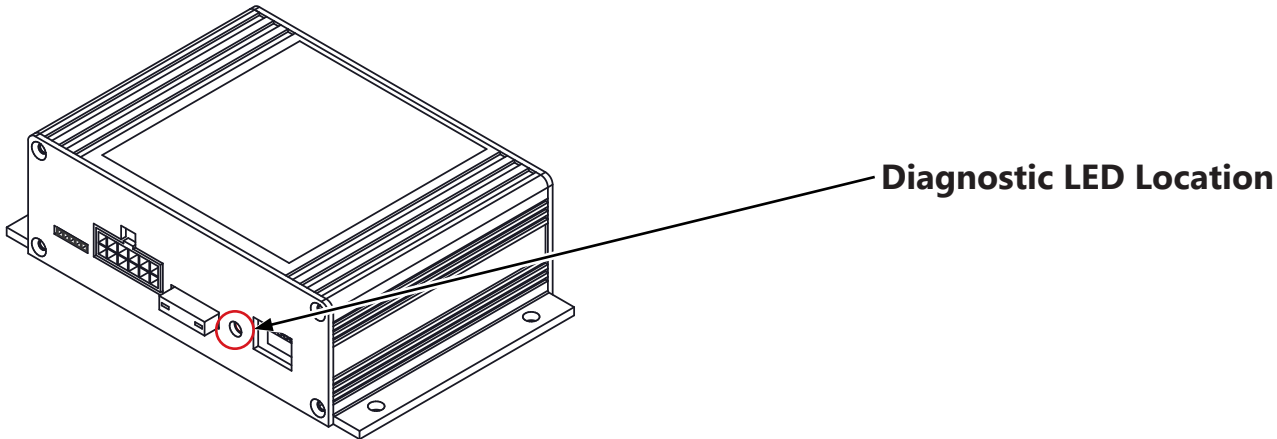
Wire Length	Minimum Wire Gauge
0 - 10 FEET	14 AWG
10 - 20 FEET	12 AWG
20 - 30 FEET	10 AWG
30 + FEET	CONSULT FACTORY

MAIN HARNESS PIN LAYOUT



WIRE FUNCTION	WIRE PIN & COLOR	DESCRIPTION
LF Speaker Output	PIN 5 - ORANGE PIN 11 - ORANGE/BLACK	ONLY connect to a Low Frequency Siren Speaker – DO NOT connect to a standard siren speaker. Route the ORANGE and ORANGE/BLACK wires from connector to the low frequency siren speaker. Use a minimum of 18 AWG wire to extend the wires as needed. Connect the ORANGE wire to the speaker WHITE wire. Connect the ORANGE/BLACK wire to the speaker BLACK wire.
Activation (-)	PIN 10 - WHITE/BLACK	Connect to (-) GROUND to activate the low frequency siren tone. A momentary switch will start the built-in timer. The tone will cancel after the configured time-out expires. NOTE: a primary siren signal MUST be active for the low frequency siren to activate.
Activation (+)	PIN 4 - WHITE	Connect to (+) 12 Vdc to activate the low frequency siren tone. A momentary switch will start the built-in timer. The tone will cancel after the configured time-out expires. NOTE: A primary siren signal MUST be active for the low frequency siren to activate.
Main Siren Speaker Input Signal	PIN 8 - BLUE/ WHITE PINS 2 & 3 - BLUE	Connect these wires to the Emergency Vehicle's primary siren speaker, as shown in the diagram above.
	LF200 HARNESS	Connect primary siren amplifier plug directly into the 400/500 series siren speaker connector. Then connect primary speaker plug to speaker harness provided by 400/500 series siren as shown in the diagram to the left.

DIAGNOSTIC LED CODES



FAULT CODE TABLE				
Error Code#	# of Long Flashes	# of Short Flashes	Error Code Description	Troubleshooting Guidance
1	0	1	Input voltage to LF200 is either <9V or >18V	<ul style="list-style-type: none"> • Must provide >9.5V and <18V power to the LF200 Siren. Siren will resume operation as soon as correct voltage is applied.
2	0	2	LF200 Activation was requested, but NO current on primary speaker connection detected.	<ul style="list-style-type: none"> • Activation wire could be active, but no primary siren signal has been provided, (primary siren is OFF). • Primary siren speaker could have failed to an open. If so the LF200 will NOT sound a tone. Replace primary siren speaker.
3	0	3	LF200 Activation was requested, and there is current to the primary siren speaker, but NO voltage was detected on the alternate speaker wire.	<ul style="list-style-type: none"> • Wiring to LF200 from primary siren speaker is defective, check wiring connections.
4	1	1	LF200 speaker output load is open	<ul style="list-style-type: none"> • Wiring to LF100 Speaker could be damaged or disconnected. • LF100 speaker could have failed to an open, replace with new LF100 speaker.
5	1	2	LF200 speaker output load is shorted	<ul style="list-style-type: none"> • Wiring to LF100 Speaker could be shorted together. • LF100 speaker could have failed to a short, replace with new LF100 speaker.
6	1	3	Internal Temperature Sensor is > +80C, Siren will continue operation, but at 60% output level until < +80C condition is met.	<ul style="list-style-type: none"> • Install in a cooler location or allow for greater air flow in installed location. Add risers to the mounting surface to allow for airflow under the LF200 Siren.

WARRANTY & RETURN GOODS PROCEDURE

CLEANING & CARE OF YOUR LIGHTBAR:

Keeping the lenses clean and scratch free will optimize the performance of the lightbar. The exterior of the lightbar including lenses should be cleaned with mild soapy water and a soft cotton cloth to remove dirt, grime and insects. Never use window cleaners or harsh chemicals on the lenses; this may cause failure of the lenses or reduce clarity resulting in the reduction of light output.

MOUNTING INTEGRITY:

A review of bolt/hardware/mounting bracket integrity should be performed at the beginning and end of each shift.

WARNING MESSAGES - PLEASE READ: _____

WARNING - DRILLING ANY HOLES INTO THE LIGHTBAR IS NOT RECOMMENDED! THE RISK OF DAMAGING INTERNAL COMPONENTS AND THE RESULTING FAILURE OF THE LIGHTBAR WILL VOID ANY WARRANTY OF THIS PRODUCT.

WARNING - CARE MUST BE TAKEN WHEN DRILLING THROUGH THE ROOF OF THE VEHICLE NOT TO DRILL INTO ANY EXISTING WIRING AND NOT TO DRILL THROUGH THE HEADLINER OR SUPPORT MEMBERS OF THE VEHICLE. CHECK BOTH SIDES OF THE MOUNTING SERVICE PRIOR TO DRILLING. DE-BURR ANY HOLES AND REMOVE ANY METAL SHARDS OR REMNANTS. INSTALL GROMMETS INTO ALL WIRE PASSAGE HOLES.

WARNING - ROUTE WIRES ONLY IN LOCATIONS THAT ARE NOT SUBJECTED TO POTENTIAL WEAR. MAKE SURE TO AVOID ROUTING WIRES IN THE DEPLOYMENT AREA OF YOUR AIR BAG. REFER TO YOUR VEHICLE OWNER'S MANUAL FOR AIR BAG DEPLOYMENT ZONES.

WARNING - ALL CUSTOMER SUPPLIED POWER WIRES CONNECTING TO THE POSITIVE (+) OR NEGATIVE (-) BATTERY TERMINAL OR LOCAL CHASSIS GROUND (-) MUST BE SIZED TO SUPPLY AT LEAST 125% OF THE MAXIMUM CURRENT AND PROPERLY FUSED AT THE POWER SOURCE WITH APPROPRIATELY RATED FUSE.

IMPORTANT: When passing cables through fire wall or other sheet metal, insert grommet to protect the cable!

WARRANTY RETURN PROCESS:

Please scan QR code or visit <https://soundoffsignal.com/support-page/returns/>



Alternatively contact your SoundOff Signal Sales Representative, Customer Services staff or our Technical Department (800.338.7337) for a RMA #, Return Merchandise Authorization Number.

The following information is required for issuance of the RMA #:

- Reason for returning the product*
- Address where replacement product is to be shipped*
- Telephone number where you may be reached*
- SoundOff Signal invoice number on which product was purchased**
- SoundOff Signal part number and serial number**
- E-mail address where RMA # should be e-mailed**
- Fax number where RMA # should be faxed**

* RMA # will not be given without this information.
 ** If available, please provide this information.

SoundOff Signal will NOT accept returns without an RMA #. Each RMA # is good for only one (1) return and will expire (30) days after the date it was issued. Products must be shipped back to SoundOff Signal and the RMA # clearly marked on the outside of the package near the shipping label. Please use the following address on your shipping label:

SoundOff Signal
 ATTN: RMA # / Technical Services
 3900 Central Parkway
 Hudsonville, MI 49426

WARRANTY EXCLUSIONS:

Shipping & Handling, labor and service fees are non-refundable. SoundOff Signal is not liable for any damage due to installation or personal injury as a result of using SoundOff Signal product.

WARRANTY FORFEITURE:

Warranty will not be granted if the Warranty Return Policy & Procedure rules are not strictly followed. Physical damage resulting from customer abuse will void warranty. Warranty will also be voided if any SoundOff Signal and/or manufacturer serial tags, product stickers, seals, or the like, are removed, altered or tampered with. Returned product that is damaged by shipping via the RMA # procedure is not the responsibility of SoundOff Signal.

Document effective date on cover and below supersedes previously dated policies and statements.

There are no other warranties, expressed or implied, including, but not limited to, any implied merchantability or fitness for a particular use. SoundOff Signal reserves the right to modify this warranty statement at any time; or to discontinue, modify, or upgrade any products of its manufacture with design improvements without prior notice.