ARMADA™

DE2-EAMSAA200

200W COMPACT SIREN W/PA FUNCTION

TECHNICAL SPECIFICATIONS	
Overall Dimensions Remote Switch Panel: Amplifier: Microphone:	 2.1"H x 1"W x 3.6"D 2.5"H x 5.8"W x 6.3"D 1.0"H x 1.5"W x 4.0"D
Input Voltage:	11 - 16Vdc (negative ground)
Operating Temperature:	-30°C to +65°C
Siren	
Input Current	25 Amps @ 13.6 VDC (Dual 100W Speakers)
Standby Current:	<160mA
Output Voltage:	Max 200W @ 12VDC (Dual 100W speakers)

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General
The Armada A200 siren is designed to work with the personnel of law enforcement, fire fight/rescue and EMS (Emergency Medical Service) who is driving an emergency vehicle and requesting the right-of-way. With easy to use, state-of-the-art and compact size of design, Armada will contribute to minimize the detraction other than the traffic circumstance, help to pass congested traffic effectively and reduce the time of installation.

The A200 siren also has been designed to meet the special needs of motorcycle applications. This siren incorporates a rugged waterproof enclosure along with microprocessor based circuitry and MOSFET technology.

In addition, the siren is made up of an amplifier and a remote switch panel and a microphone. A current-sensing circuit built onto the PCB eliminates the unexpected damage with speaker overload. With remotely mounted, handheld controller and microprocessor driven tone generator. Armada provides a highly versatile electronic siren system.

The Armada A200 siren is waterproof. It may be installed under the seat, in the truck or on the dash of any vehicles with 12 volts, negative ground chassis system.

The A200 siren can drive one or two 11-ohm impedance (100W) speakers When two speakers are used, which will generate total 200W output, they must always be connected in parallel and in phase.

Overview

Warning
Failure to follow the safety precautions below may result in property damage, serious injury, or death to you, to passengers, or to others.

Sound Hazards
Your hearing and others', in or close to your vehicle with Armada AS200 siren equipped, could be damaged by the loud sound. This can occur from exposures to loud siren sounds. All sounds generated by Armada may, in certain situations, cause permanent hearing loss. You should minimize your exposure times and wearing proper hearing protection, for hearing conservation guidance, refer to federal, state or local recommendations.

Detraction Warning
If the unique combination of emergency vehicle equipment installed in your vehicle has resulted in the siren controls being installed in the position that requires the eyes of the driver detracted from traffic, operate controls only while your vehicle is stopped. It is necessary to watch traffic while driving and recommended to control A200 by touch only.

Sound Efficiency Warning
It may not alert everyone although Armada is operating properly in your vehicle. People may not hear the siren sound so you MUST continue driving cautiously. Frequently inspect the speaker to ensure that it is clear of any obstruction, such as snow or mud. Improper use of the speaker or of its installation will reduce the efficiency of sound output, which results in degrading the alert effectiveness. Be also aware that the use of A200 does not give you the right to force your way through traffic. Your siren sound, the actis is requesting the right of way only.

A200 comes standard with a remote control head and a noise-cancelling microphone for PA use. The amplifier box contains all intelligence to generate siren sound amplification. Three rocker switches consist of the remote switch panel. The left switch of the three on the panel is siren power switch. The middle switch of the three on the panel is used to control various siren functions. The other switch on the right side of the panel enables the AUX function. A noise-cancelling microphone provides high quality voice reproduction without feedback (squeal). The microphone push-to-talk switch overrides any siren signal for instant PA use. The knob that is on the microphone can adjust the volume of the PA.

A current-sensing circuit protecting the amplifier from overload is built in. Upon a short circuit/ overload such as overheat inside the speaker, or improper vibration of speaker diaphragm, is sensed, the amplifier will be disabled to minimize possible damage of the amplifier. A regular fuse of 10 amperes is also installed outside the amplifier to protect the siren system.

When the vehicle horn ring switch is operated, the siren will produce either Air Horn or Manual siren sound. With the power of the siren turned off, the horn ring switch closure will perform the regular vehicle horn sound.

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.

⚠ 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.

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OPERATION

-REMOTE CONTROL HEAD-
All controls utilized during normal operation of the A200 siren are located on the remote control head.

1. OFF switch – the rocker switch on the left side of the panel. It activates the power of the siren system.

2. SCROLL switch – The momentary switch on the middle of the panel. The siren tone will change each time the control switch is pressed (Wail, Yelp, PHSR). The siren will change to "Air Horn" mode if the control switch is held. From the Standby mode a short momentary push on the control switch will produce the wail siren tone. With each successive momentary signal on the remote input line, the siren scrolls to the next tone. The normal sequence of tones is: Wail, Yelp and PHSR. Holding the switch for a prolonged period will produce "Air Horn". Each push on the vehicles horn switch will also sound vehicles horn as wired in Figure 1 on pg. 3.

3. AUX switch – It is recommended that customers use auxiliary switch and horn transfer relay (both optional equipment).

-HORN TAP FEATURE-
The HORN-TAP feature allows the driver to enable and change the audible siren sound via the vehicle's horn ring. All functions available through the switch "SCROLL/HORN" will also be available through the horn ring switch once the wire is connected. To use HORN-TAP feature, the SCROLL/HORN on the amplifier box should connect to the vehicle's horn ring switch. See figure 1 - Wiring Diagram and Installation section, Electrical Installation e. 4 for instructions of wiring on SCROLL/HORN.

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INSTALLATION

-UNPACKING-
After unpacking the A200, examine it for damage that may have occurred during transit. File a claim immediately with the carrier stating the extent of the damage if the siren has been damaged. Carefully check all enveloped, shipping labels and tags before removing or destroying them.

MOUNTING

-AMPLIFIER INSTALLATION-
1. The A200 amplifier is waterproof. It may be mounted under the vehicle's hood, in the trunk, under the rear deck, under the front seat or in the equipment cabinet. It must be installed in an adequately ventilated area. Do not install near heater ducts. Keep in mind that the control cable is 3 meter (9.8 feet) long.

2. Using the mounting holes on the amplifier as a template, scribe four drill position marks at the mounting locations. Be sure that both sides of the mounting surface are clear of parts that may be damaged.

3. The siren accessory kit with mounting hardware supplied provides the siren user with a choice of mounting hardware. Secure the amplifier to the mounting surface, using the mounting hardware, including lock washers.

-REMOTE CONTROL HEAD INSTALLATION-
1. Although the control head can be laid on any place in the cab, it sometimes needs to be fastened in a certain place. The installer then should ensure that the equipment is installed only in the areas recommended by the vehicle manufacturer. Failure to observe this warning will reduce the effectiveness of some safety equipment, such as the air bag, or damage the air bag, causing serious injury or death to you or others.

2. The location selected to mount the control head and its holder must not impair the driver's ability to safely drive the vehicle as he/she operates the siren. The selected location should afford good visibility and free accessibility to the control head.

⚠ 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.

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-ELECTRICAL INSTALLATION-

1. Be cautious of any hot wire (+12V) shorts to vehicle frame. High current conductors can cause hazardous sparks resulting in electrical fires or molten metal. It is recommended to disconnect the cable on the negative end of the battery before performing installation.

2. Do not connect the A200 system to vehicle battery until all other electrical connections are made and mounting of all components is complete. Verify the polarities of the cable once again and ensure that no short circuits exist, before connecting to the battery terminals.

3. Using 16-gauge red and black wires are required for positive (+) and negative (-) connections. Using 18-gauge wires are required for the speaker. Using 20-gauge wires are required for door/park-siren-off input, scroll/horn, power, ground connections.

4. If routing the wires require drilling a hole in sheet metal or other material, drill a 5/8 diameter hole in the material. Install a 5/8 diameter grommet (not supplied) or similar protective devices in the hole, to protect the cable from damage by sharp edges.

5. The unit is supplied with an accessory kit with a twelve-position pluggable connector to accommodate the electrical installation. Strip 1/4" of insulation from the end of the wires. Insert the wire into the green pluggable connector and tighten the screw at the appropriate connector position (see figure 1-Wiring Diagram). The other end of "PTT/PANEL GRND" and "POWER" and "SCROLL/HORN" into the quick-on connector (supplied) and cramp securely with proper tool.

a. POS+ and NEG- – Connect the red wire to "POS +" position and black wire to the "NEG -" position of the green connector on A200. Connect the other ends of the wires directly to the terminals of the vehicle battery after all installation is complete.

b. Speaker: Armada is designed to operate with one 11-ohm impedance speaker (100W) or two 11-ohm impedance speakers (200W). Speakers are not included as part of the siren. Any 11-ohm 100W speakers for use with emergency vehicle may be considered to use. When using two 100W speakers, they must be connected in parallel and in phase. For instance, the pin 1 of the speaker A should combine the pin 1 of the speaker B to the "SPKR COM" position of the connector. The other two leads should connect to "SPKR" position of the connector.

c. Door/Park-Siren-Off input – This input accepts only ground input to deactivate the siren tones. If connected to the PARK/NEUTRAL position on the transmission switch, any siren tone will be deactivated when the vehicle is shifted into PARK. If connected to a door-open switch, siren tone will be deactivated when the door is open. Be noted, it is the installer's responsibility to determine an appropriate location in the vehicle circuitry to connect this wire. It should be determined prior to installation.

d. Scroll/Horn – SCROLL switch or (if connected) the vehicle's horn switch. Connect a wire from "SCROLL/HORN" position on the connector to the vehicle horn switch (if need) and the SCROLL switch S4 on the panel.

e. Power: Connect a wire from "POWER" position on the connector to the switch S1 on the panel.

f. PTT/PANEL GRND – Connect a wire from "PTT/PANEL GRND" position on the connector to the switch S2 and S3 on the panel. At the same time, connect black wire of microphone cable to the "PTT/PANEL GRND" position on the connector.

g. MIC POWER – Connect red wire of microphone cable to the "MIC POWER" position on the connector.

h. PUSH TO TALK – Connect white wire of microphone cable to the "PUSH TO TALK" position on the connector.

i. MIC1 – Connect blue wire of microphone cable to the "MIC1" position on the connector.

j. MIC2 – Connect green wire of microphone cable to the "MIC2" position on the connector.

6. Plug the twelve-position connector into the mating connector on the unit, and apply pressure until it locks into place.

7. Ensure that there are no loose wire strands or other bare wire that may cause a short circuit. All wires must be protected from any sharp edged that could eventually cut through the insulation. Also use an ohmmeter to verify that a short circuit does not exist between the positive (+) leads and the vehicles chassis.

8. Perform visual check of all connections and wiring once more before connecting the red wire to the positive (+) terminal and black wire to the negative (-) terminal of the battery.

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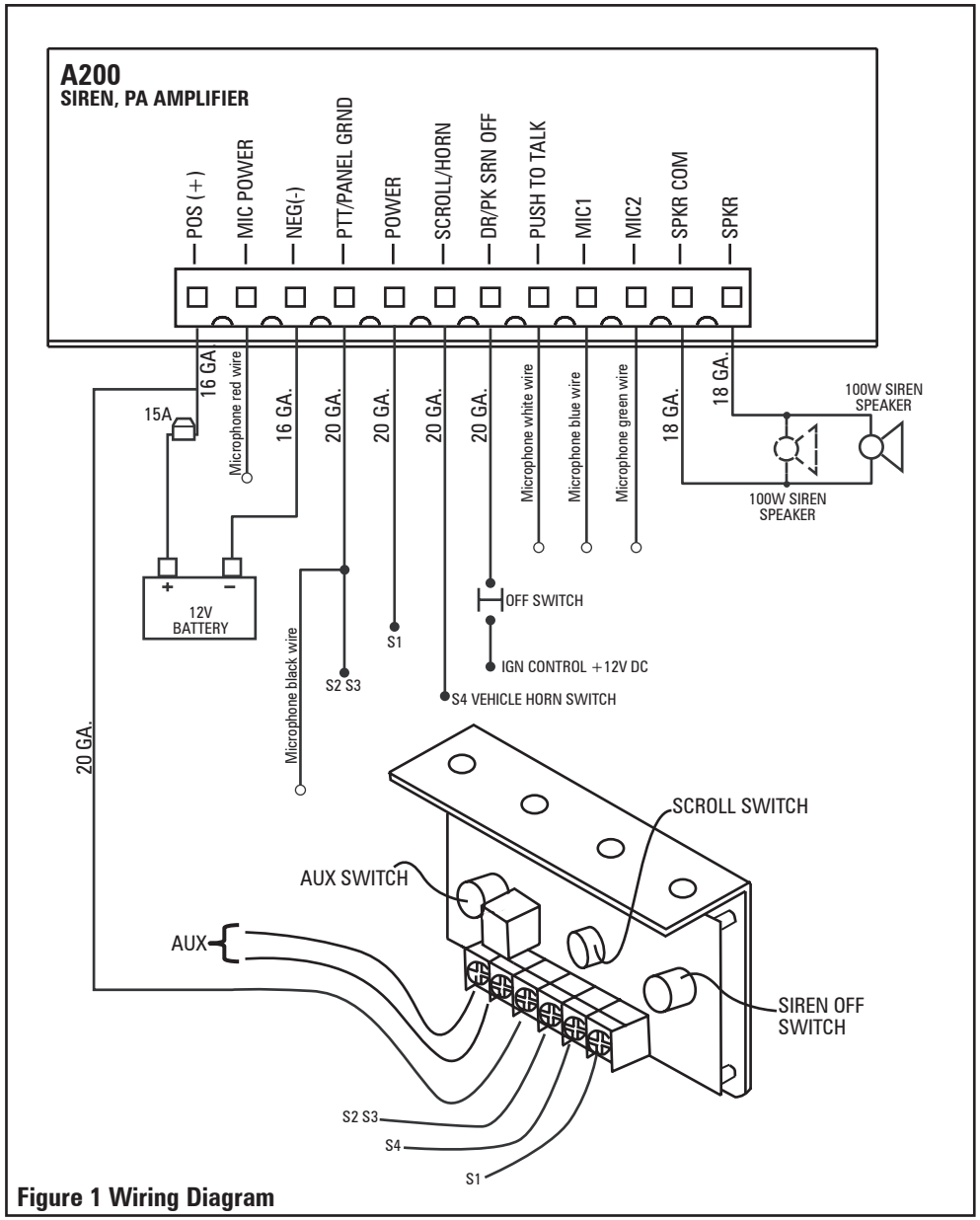

Figure 1 Wiring Diagram

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-TESTING AFTER INSTALLATION-

After installation, test all the functions of A200 including the horn operation or footswitch if used, to ensure that it is operating properly. All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sound and wear hearing protection. After installation and testing is complete provide a copy of this manual to all operating personnel.

-MAINTENANCE-

Your Compact siren has been designed to provide trouble free service. In case of difficulty, see the Troubleshooting Guide. A primary cause of failure is shorted or open wires. The majority of the short/open circuits have been found where wiring passes through firewalls, roofs, etc. If difficulty persists, contact the factory for troubleshooting advice or return instructions, maintain a complete parts inventory and service facility at the factory and will repair or replace (at the factory's discretion) any unit found to be defective under normal use and in warranty. Any attempt to service a unit in warranty by anyone other than a factory authorized technician without the express written consent of the factory, will void the warranty. Units out of warranty can be repaired at the factory on either a flat rate or parts/labor basis. Contact the factory service department for details and return instructions. Our company is not liable for any incidental charges related to the repair or replacement of a unit unless otherwise expressly agreed to in writing by the factory.

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
No speaker output	A. Siren not connected B. Fuse missing/open C. Speaker wires/speaker shorted	A. Check siren wiring & connections B. Replace fuse C. Check siren wiring & connections
Fuse Blows	Power connections reversed	Check power connections
No output from speaker, tones heard inside siren amplifier module	A. Speaker not connected, open circuit in speaker wiring B. Speaker failure	A. Check speaker wiring B. Replace speaker
Siren tones volume too low/garbled	A. Low voltage to siren amplifier B. Defective speaker/high resistance wiring	A. Check wiring for bad connections. Check vehicle charging system B. Check speaker wiring/replace speaker

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