

OCEANEARS.COM



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OCEANEARS ACOUSTIC DIVER RECALL SYSTEM

MODEL NUMBER: DRS-8-003/SA430 PATRIOT
SA-430-10F Siren/Amplifier
DRS-8 Underwater speaker MOD 002

WARNING: Always inspect the underwater speaker cable for nicks, cuts, etc. prior to using the underwater speaker for any diving operations. If nicks, cuts, etc. are found in the underwater speaker cable; the cable must be replaced PRIOR to using the underwater speaker.

WARNING: DO NOT OPERATE THE DIVER RECALL SYSTEM IN ANY OF THE SIREN MODES WHEN DIVERS ARE WITHIN 25 FEET OF UNDERWATER SPEAKER and UNDERWATER SPEAKER CABLE!

EQUIPMENT SETUP, OPERATION AND SERVICE MANUAL

Dec. 1, 2016

SECTION I

GENERAL DESCRIPTION

I. SIREN/AMPLIFIER UNIT -- MODEL NUMBER: SA-430-10F PATRIOT

INTRODUCTION: The electronic siren/amplifier has been developed utilizing the latest solid state components and is designed around silicon power transistors and a output transformer. The amplifier will operate one acoustic transducer from the 12 volt DC Negative Ground Battery. The amplifier Output Power may be 100 Watts. The battery source may vary from 11 to 16 volts without damage to the amplifier.

The siren/amplifier is designed to allow easy access to the controls, with a back-lighted front panel for night visibility. A 6-Position Rotary Function Switch is provided to select the output tone or operating mode. The operating modes available are PHASER, YELP, WAIL, MANUAL, HORN, and RADIO. A permanently mounted noise cancelling PA Microphone with front panel volume control overrides all modes except RADIO. An internal Control is used to adjust Radio volume. The power is controlled by a rocker switch. A Manual Mode Control (RED) Button is provided for control of the output tone when in the Manual Mode, and control of Horn and Yelp Overrides, depending on the function switch setting.

The compact size of the Diver Recall System, along with the wide operating temperature range allows for maximum location use flexibility. The unit may be operated close to heating and air-conditioning vents with no effect on performance. The Diver Recall System is **splash proof** and need NOT be stored in a DRY, well protected location free from water spray and is waterproof when the **PELICAN 2200 STORM Case lid is closed**. The unit can be used on open inflatable dive boats for maximum operational use.

The siren/amplifier is designed with many protection features to provide exceptional field service. High voltage detection (above 16 volts) will disable siren output to protect both the amplifier and Transducer. Amplifier design provides inherent protection against damage from accidental shorting or opening of the output leads. Protection is also provided against REVERSE POLARITY of input power. These protection features will NOT guard against overload or inadequate wiring.

II. ACOUSTIC TRANSDUCER -- MODEL NUMBER: DRS-8 MOD 2

INTRODUCTION: The Acoustic Transducer is a STATE of the ART Design using Piezoelectric Technology. The Transducer comes standard with 25 feet of 3 conductor 18 AWG Transducer cable but the unit will function with longer transducer cables. The transducer is depth rated to 100 feet but the best performance occurs in the 20-30 foot depth range. All materials exposed to the water are non-conducting plastic (PVC) and epoxy encapsulating material. The only opening to the transducer is the compression gland seal thru which the transducer cable exits the transducer housing. The transducer cable can be replaced in the field with minimal support equipment if the cable should become damaged.

SECTION II

SPECIFICATIONS

I. SIREN/AMPLIFIER UNIT -- MODEL NUMBER: SA-430-10F

INPUT VOLTAGE: 11 - 16 Volts DC (Red leads are POSITIVE)

OUTPUT: One Transducer -- 105 Watts RMS (15 VDC)

SIREN FREQUENCY: 700 Hz - 1500 Hz (Nominal)
Two Tone and Horn: 435Hz & 585Hz

SWEEP RATE: WAIL -- 13 cycles/min. $\pm 10\%$
YELP -- 190 cycles/min. $\pm 10\%$
PHASER -- 15 cycles/sec. $\pm 10\%$
Two Tone -- 60 cpm

AUDIO RESPONSE: 200 Hz - 10 KHz ± 3 dB
Harmonic Distortion less than 3% at 1 KHz.

AUDIO INPUT SENSITIVITY: 0.75 VAC for 40 Watts RMS Output to one underwater speaker. (400 Ohm Input)

OPERATING TEMPERATURE: -15 Degrees to +140 Degrees F.

CASE: PELICAN/STORM 2200
COLOR: BLACK
DIMENSIONS: 17" x 13" x 7"
WEIGHT: 19.4 lbs.

II. ACOUSTIC TRANSDUCER/UNDERWATER SPEAKER -- MODEL NUMBER DRS-8 MOD 2

SIZE: 8-1/2" Diameter x 3.1" Axial Length

WEIGHT: 8.0 lbs. in Air without cable.

CABLE LENGTH: 25 Feet ± 5 Feet

TRANSDUCER CONNECTOR: AMPHENOL AEROSPACE
PT06E-12-3P (SR) Connector. Pin A(+); Pin B(-); Pin C(Not Used)

COMPRESSION GLAND SEAL: 1/2" NPT Connector, Liquid tight Type
For use with Flexible Cord; Nylon Material and neoprene grommet.
0.20 - 0.35 cable diameter.

DEPTH RATING: 100 Feet

TYPE: Piezoelectric Flexural Disk Technology

CONSTRUCTION MATERIAL: PVC and Epoxy encapsulating material.

COLOR: Grey PVC with Black Epoxy.

WIRING COLOR CODE: BLACK Wire is - (NEGATIVE). (Pin B)
WHITE Wire is + (POSITIVE). (Pin A)
NOT USED (Pin C)

CABLE TYPE: 18 AWG/3 Conductor ---- SOOW

INPUT IMPEDANCE: 5.5 Ohms

OPERATING FREQUENCY RANGE: 200 Hz - 15 KHz

BEAMPATTERN AT 2 KHz: Omni-Directional

MAXIMUM INPUT DRIVE VOLTAGE: 35 Volts AC Peak to Peak

**SPECIFICATIONS AND INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE.**

SECTION III

EQUIPMENT SETUP

- (1) PA VOL Control Knob set to FULL Clockwise direction.
- (2) Attach the transducer cable (THREE pins) to the Diver Recall System at the connector labeled "**UNDERWATER SPEAKER**" on the LEFT FRONT of the Series 2200 PELICAN Case. The transducer/underwater speaker comes with 25 feet of cable.
- (3) Connect the Radio, CD Player or cassette recorder to the Diver Recall System using the AUDIO INPUT Adapter Cable connected To the 4 Pin Amphenol Connector labeled "**AUDIO INPUT**". Pin A(signal +) and Pin B(signal -).
- (4) Turn on the toggle switch labeled "MAIN POWER ON"..
- (5) Turn on the power with the Toggle Switch on the SA-430-10F Remote Head.
- (6) CHECK that ALL functions are operational before starting any diving operations.
- (7) Brief ALL Divers as to the meaning of the recall tones prior to starting any diving operations.
- (8) Hang the transducer over the side of the boat to the desired depth (unit supplied with 25 feet of cable).

WARNING: DO NOT OPERATE THE DIVER RECALL SYSTEM AT 100 WATTS IN ANY OF THE SIREN MODES WHEN SUBMERGED DIVERS ARE WITHIN 25 FEET OF THE UNDERWATER SPEAKER.

WARNING: BE SURE TO REMOVE THE TRANSDUCER FROM THE WATER BEFORE GETTING UNDERWAY AS THE TRANSDUCER COULD BE SUCKED INTO THE PROPELLER RESULTING IN SEVERE DAMAGE TO OR LOSS OF THE TRANSDUCER AND DIVER RECALL SYSTEM.

CAUTION: HEARING PROTECTION SHOULD ALWAYS BE USED WHEN TESTING ANY SIREN, ESPECIALLY INDOORS. THE SOUND LEVELS PRODUCED BY THE TRANSDUCER MAY CAUSE HEARING LOSS.

THE FOLLOWING PROCEDURE SHOULD BE USED TO TEST THE SIREN:

- (1) With the function selector switch set to HORN Mode, turn on the power switch. A sharp "CLICK" should be heard from the transducer.
- (2) Press the RED Manual Control Button. The transducer should emit a simulated horn sound while the button is pressed. The horn sound should stop when the button is released.

SIREN/AMPLIFIER/DIVER RECALL SYSTEM TESTING:

ALL of the Acoustic Diver Recall Systems FUNCTIONS should be tested PRIOR to any diving operations to insure that everything is working and that there are no malfunctions. After testing is complete, provide a copy of this manual to all operating personnel for review.

NOTE: The Transducer for the Diver Recall System comes with 25 feet \pm 5 feet of cable so the Diver Recall System must be placed as near the side of the boat as possible to enable the transducer to be put over the side of the boat into the water.

NOTE: A "DIVER RECALL SYSTEM" IS NOT INTENDED TO BE A LIFE SAVING DEVICE BUT A MEANS OF COMMUNICATING TO THE DIVER THAT THERE IS A PROBLEM ON THE DIVE BOAT OR AT THE DIVE SITE AND THE DIVER MUST RETURN TO THE DIVE BOAT WITHOUT DELAY!

WARNING: WHEN CONNECTING AND DISCONNECTING THE TRANSDUCER FROM THE DIVER RECALL SYSTEM BE SURE TO FIRST TURN OFF THE POWER TO THE SIREN/AMPLIFIER!

CAUTION: BE SURE TO PROTECT THE TRANSDUCER FACE FROM DAMAGE WHEN STOWING THE TRANSDUCER AFTER USE. DO NOT LAY THE TRANSDUCER DOWN WITH THE TRANSDUCER FACE RESTING ON SHARP OBJECTS.

NOTE: RINSE THE TRANSDUCER OFF WITH FRESH WATER AFTER USE.

SECTION IV

OPERATION

- (1) **PA VOL CONTROL** -- Controls the AUDIO LEVEL for the P.A. (PUBLIC ADDRESS) MODE of Operation ONLY. This control does NOT adjust the siren level or RADIO MODE output level.
- (2) **ON/OFF SWITCH** -- Toggle switches to turn the power ON or OFF.
- (3) **SIREN/HORN BUTTON** -- Activates the horn or siren when the Selector Switch is in the "HORN" or "MAN" position respectively. Push the RED button DOWN to activate the switch.
- (4) **PA OVERRIDE** -- The microphone button will switch the amplifier to the P.A. (PUBLIC ADDRESS) MODE and will override all modes of operation except the "RADIO" MODE. The microphone element is NOT WATERPROOF and should be protected.
- (5) **FUSE** -- Located on the rear of the siren/amplifier to protect the electronics from short circuits. Replace with a 20 ampere BLADE FUSE. Inside the case.
- (6) **PA** -- When you key the PTT microphone, you are using the public address system and can transmit voice instructions into the water thru the acoustic transducer. Submerged divers do NOT need any additional equipment to hear the voice transmissions. All voice transmissions and tones are in the AUDIO RANGE of HEARING therefore no receiving equipment is required. The microphone is equipped with a connector for easy removal and replacement if damaged. The microphone is noise cancelling and should be held close to the mouth when talking for optimum performance..
- (7) **SELECTOR SWITCH** -- Selects one of the following MODES of operation:
 - RADIO** -- In this position, any output from a radio, tape or CD player are amplified and sent to the transducer.
 - HORN** -- In this position when you press the **RED** front panel button on the amplifier, the unit produces an "HORN" sound.
 - MAN** -- In this position, you can manually operate the siren by depressing the **RED** front panel button.
 - WAIL** -- One of THREE generated "SIREN" conditions. Sweep rate is 13 cycles/minute $\pm 10\%$
 - YELP** -- One of THREE generated "SIREN" conditions. Sweep rate is 190 cycles/minute $\pm 10\%$

PHASER -- One of THREE generated "SIREN" conditions.
Sweep rate is 15 cycles/second $\pm 10\%$

NOTE: BRIEF ALL DIVERS AS TO THE MEANING OF THE SIREN TONES
PRIOR TO ANY DIVING ACTIVITIES.

**CAUTION: NEVER OPERATE THE DIVER RECALL SYSTEM
IN AN ENCLOSED AREA!**

NOTE: A "DIVER RECALL SYSTEM" IS NOT INTENDED TO BE USED AS A
LIFE SAVING DEVICE BUT AS A MEANS OF COMMUNICATING TO THE
SUBMERGED DIVER THAT THERE IS A PROBLEM ON THE DIVE BOAT
OR AT THE DIVE SITE AND THE DIVER MUST RETURN TO THE DIVE
BOAT WITHOUT DELAY.

SUGGESTED DIVER RECALL MEANINGS

- (1) **SIREN:** SIGNAL TO RECALL ALL DIVERS TO THE SURFACE AND
BACK TO THE DIVE BOAT **IN CASE OF AN EMERGENCY!!!!**
- (2) **YELP:** Signal to tell the divers NOT TO ASCEND and wait for
the "WAIL" SOUND for ALL CLEAR (DIVER TO SURFACE ONLY
IF LOW ON AIR.).
- (3) **WAIL:** Signal to tell the divers to surface (ALL CLEAR)
and that an emergency **DOES NOT** exist.
- (4) **PHASER:** Signal to alert the submerged divers that they are
approaching the NO-DECOMPRESSION LIMIT FOR THE DIVE
AND TO SURFACE TO AVOID DECOMPRESSION.
- (5) **HORN:** Signal to alert the submerged divers that AUDIO TRANSMISSIONS
ARE TO FOLLOW AND TO GET READY TO LISTEN.

**WARNING: DO NOT HOLD YOUR BREATH WHILE BREATHING COMPRESSED
AIR WHEN LISTENING FOR VOICE INSTRUCTIONS. REMEMBER,
NEVER HOLD YOUR BREATH WHILE SCUBA DIVING!!!**

SUGGESTED READINGS: PADI DIVEMASTER MANUAL and THE INSTALLATION
MANUAL FOR ELECTRONIC SIREN, MODEL SA-430-10 written by CARSON
Manufacturing Company.

UNDERWATER SPEAKER SUSPENSION TECHNIQUES:

- (1) **NO UNDERWATER CURRENTS** -- When using the underwater speaker in an area where there are **NO STRONG CURRENTS** underwater; the underwater speaker can be hung by the rope connected to the pin on the top. Divers should **NOT** hang onto the cable in this configuration.
- (2) **STRONG UNDERWATER CURRENTS** -- When using the Diver Recall System in an area where **STRONG UNDERWATER CURRENTS** are present; you can attach lead weights to the bottom of the underwater Speaker pin. Hang the assembly over the side of the dive boat and add any additional lead weights to the **BOTTOM** of the speaker until the underwater speaker hangs straight down at the desired water depth (typically 30 feet). Be sure that **ALL** the tension load is on the rope and **NOT** the transducer cable. Divers should **NOT** hang onto the cable in this configuration, either.

OVERRIDE FUNCTIONS:

- (1) **PUBLIC ADDRESS (P.A.) OVERRIDE** -- By pressing the microphone button any siren tone output is turned OFF, allowing the operator to use the siren as a public address amplifier. The siren tone resumes when the microphone button is released (Hold the microphone close to your lips for proper operation.).
- (2) **HORN OVERRIDE** -- By pressing the MANUAL Control Button (RED BUTTON) the siren tone output is replaced by a simulated horn tone. The siren tone resumes when the RED BUTTON is released (This feature is not available in the WAIL MODE Setting.).
- (3) **YELP OVERRIDE** -- Available **ONLY** in the WAIL MODE. By momentarily pressing the MANUAL (RED) Control Button the siren tone output is switched to the YELP TONE. Pressing the RED BUTTON again switches the siren tone output back to the WAIL TONE.

4.1 GENERAL

All controls utilized during normal operation of the Model DRS-8-003/SA430/PATRIOT Acoustic Diver Recall System are located on the front of the SA-430-10F Siren/Amplifier Remote Head.

4.2 POWER SWITCHS (TWO)

The Toggle switch on the front of the SA-430F is used to turn the siren/amplifier power ON and OFF. The siren/amplifier may be left on any time during diving operations.

The power should be turned off when NO diving operations are underway to conserve battery power. The MAIN POWER TOGGLE SWITCH should also be turned OFF when the system is not in use to conserve battery power.

4.3 PA VOL CONTROL

The PA VOL CONTROL is used to control the volume when the siren/amplifier is used in Public Address Mode. Clockwise rotation of the knob increases the voice volume in the public address mode. This control does NOT control the volume of the siren signals or the radio rebroadcast volume level.

4.4 SELECTOR SWITCH

The Selector Switch is a SIX-Position Rotary Switch used to select the mode of operation. The following are positions on the Selector Switch.

- A. RADIO -- This mode is used to reproduce or repeat the output of a radio or tape recorder. The radio, CD Player or tape recorder must be connected as described in the installation section for this mode to function. NO overrides are available in this mode.
- B. HORN -- In this position when you press the **RED** front panel button on the siren/amplifier, the unit produces an "HORN" sound. This is also considered a standby mode. Horn and microphone override are available in this mode.
- C. MANUAL -- The siren tone is controlled by the MANUAL control button. In this position, you can manually operate the siren by depressing the **RED** front panel button. Microphone override is available in this mode.

- D. WAIL -- The siren produces a normal rise-fall tone pattern.
Yelp and Microphone Override are available in this mode.
- E. YELP -- The siren produces a moderate warble tone.
Horn and Microphone Override are available in this mode.
- F. PHASER -- The siren produces a very fast warble tone.
Horn and Microphone Override are available in this mode. Hi-Lo Function can be dip switch selected in place of the PHASER Sound.

CAUTION: NEVER OPERATE THE SIREN IN AN ENCLOSED AREA.

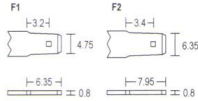
4.5 OVERRIDE FUNCTIONS

- A. AIR-HORN OVERRIDE -- By pressing the MANUAL control button the siren tone output is replaced by a simulated horn tone. The siren tone resumes when the **RED** button is released (This feature is not available in the WAIL Mode setting.).
- B. YELP OVERRIDE -- Available only in the WAIL Mode. By momentarily pressing the MANUAL (**RED**) Control Button the siren tone output is switched to the YELP Tone. Pressing the button again switches the siren tone output back to WAIL.

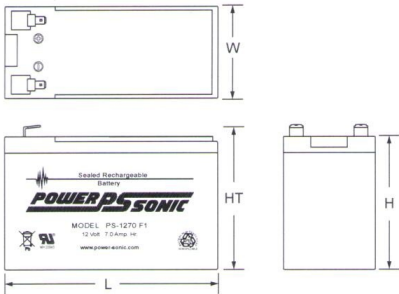


Terminals (mm)

- F1 - Quick disconnect tabs, 0.187" x 0.032" - Mate with AMP, INC. FASTON "187" series
- OR —
- F2 - Quick disconnect tabs, 0.250" x 0.032" - Mate with AMP, INC. FASTON "250" series



Physical Dimensions: in (mm)



L: 5.95 (151) W: 2.56 (65) H: 3.70 (94) HT: 3.86 (98)

Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.

Features

- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

Performance Specifications

Nominal Voltage 12 volts (6 cells)

Nominal Capacity

20-hr. (350mA to 10.50 volts)	7.00 AH
10-hr. (650mA to 10.50 volts)	6.50 AH
5-hr. (1.2A to 10.20 volts)	6.00 AH
1-hr. (4.5A to 9.00 volts)	4.50 AH
15-min. (14A to 9.00 volts)	3.50 AH

Approximate Weight 4.80 lbs. (2.18 kg)

Energy Density (20-hr. rate) 1.49 W-h/in³ (90.95 W-h/l)

Specific Energy (20-hr. rate) 17.50 W-h/lb (38.58 W-h/kg)

Internal Resistance (approx.) 23 milliohms

Max Discharge Current (7 Min.) 21.0 amperes

Max Short-Duration Discharge Current (10 Sec.) 70.0 amperes

Shelf Life (% of nominal capacity at 68° F (20° C))

1 Month	97%
3 Months	91%
6 Months	83%

Operating Temperature Range

Charge	-4° F (-20° C) to 122° F (50° C)
Discharge	-40° F (-40° C) to 140° F (60° C)

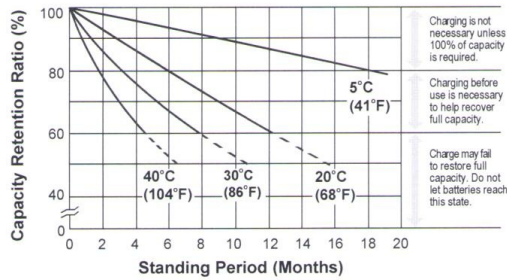
Case ABS Plastic

Power-Sonic Chargers PSC-12800A, 12800A-C

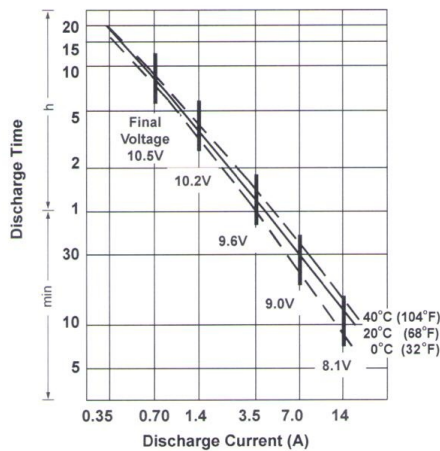
To ensure safe and efficient operation always refer to the latest edition of our Technical Manual, as published on our website.
All data subject to change without notice.

www.power-sonic.com

Shelf Life & Storage



Discharge Time vs. Discharge Current



Charging

Cycle Applications: Limit initial current to 2.1A. Charge until battery voltage (under charge) reaches 14.4 to 14.7 volts at 68°F (20°C). Hold at 14.4 to 14.7 volts until current drops to under 70mA. Battery is fully charged under these conditions, and charger should be disconnected or switched to "float" voltage.

"Float" or "Stand-By" Service: Hold battery across constant voltage source of 13.5 to 13.8 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Note: Due to the self-discharge characteristics of this type of battery, it is imperative that they be charged within 6 months of storage, otherwise permanent loss of capacity might occur as a result of sulfation.

Chargers

Power-Sonic offers a wide range of chargers suitable for batteries up to 100AH. Please refer to the Charger Selection Guide in our specification sheets for "C-Series Switch Mode Chargers" and "Transformer Type A and F Series". Please contact our Technical department for advice if you have difficulty in locating suitable models.

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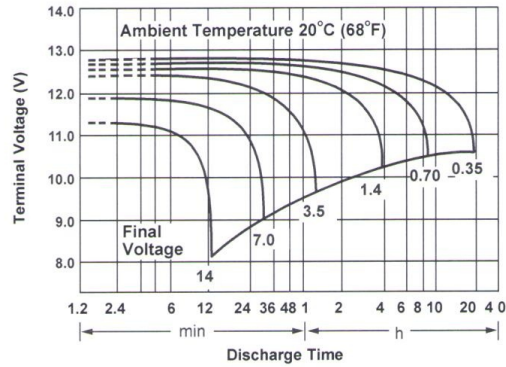
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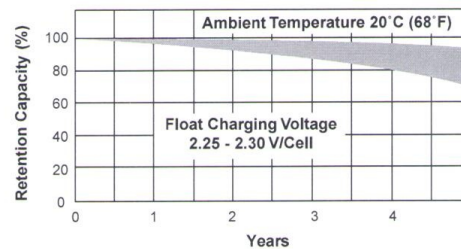
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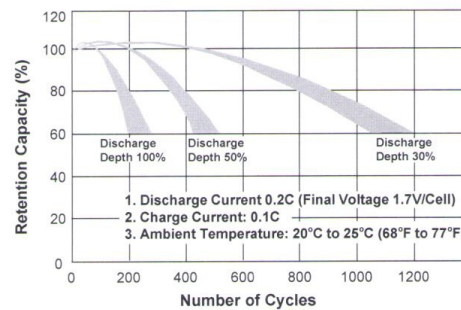
Discharge Characteristics



Life Characteristics in Stand-By Use



Life Characteristics in Cyclic Use



Further Information

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc..

4.6 12VDC 7 Amp Hour Battery

- A. An important part of your Diver Recall System is the maintenance free 12 VDC Battery. This unique approach uses an advanced electrolyte formula. This is not a gelled cell but truly space age technology at its best. The battery delivers 100% of available capacity with each use. Unlike other rechargeable systems your 12 Vdc Battery will never develop a memory. It makes no difference if you use your Diver Recall System for a few moments or many, when recharged your Diver Recall System is 100% ready. No cycling or conditioning is ever required. Other than recharging, your Battery requires no routine maintenance.

BATTERY VOLTAGE METER: The voltage meter monitors the battery voltage of the internal battery and the battery should be charged when the idle voltage falls to 10.8 Volts.

CAUTION: DO NOT TOTALLY DISCHARGE THE 12VDC BATTERY -- SEVERE DAMAGE TO THE BATTERY or CHARGER MAY OCCUR IF THE BATTERY IS DEEP DISCHARGED BELOW 10.8 VOLTS DC.

- B. CHARGER: The standard charger supplied with the Diver Recall System will completely monitor and maintain the 12 VDC Battery. At the end of your diving day simply connect the charger to the Battery Charge Port, then plug the charger into any standard electrical outlet (115/220 VAC/50-60 Hz). There is never a need to disconnect the charger from the Battery Charge Port or unplug the charger until you are ready to use the Diver Recall System again. Whether your next dive is in a few hours or months away, leave the charger connected to the Battery Charge Port and plugged into an electrical outlet. The charging time for a fully depleted 12 VDC Battery is 12 to 14 hours.
- C. CHARGING PROCEDURE:
- (1) Plug the charger into an electrical outlet. Check to see that the unit operates per the instructions in the Manual For the battery charger. If GREEN LED lights up charger is properly connected to power outlet.
 - (2) Plug the charger into the connector on the Diver Recall System labeled "BATTERY CHARGE PORT". If battery needs charging RED LED lights up.
 - (3) When the GREEN LED Lamp comes on; the battery is FULLY charged. You do not need to disconnect the charger. You can leave the Diver Recall System connected To the battery charger until the next time you need to use your Diver Recall System.
 - (4) When the Diver Recall System is needed; unplug the charger from the Power outlet and then unplug the connector from the Battery Charge Port..

NOTE: Pin C(+) and Pin D(-) on Battery Charger AMPHENOL 4 pin connector.

D. CLEANING PROCEDURE:

- (1) Be sure power switch is turned OFF.
- (2) Wipe entire unit off with a damp cloth after using the system.

SECTION V

SERVICE AND MAINTENANCE

5.1 GENERAL

- A. SIREN/AMPLIFIER -- Most of the component electronic parts used in the Model SA-430 siren/amplifier are standard items that can be obtained from any TV or electronics shop. **O.E. ENTERPRISES/OCEANEARS** recommends that the entire Siren/Amplifier be returned to the Service Department for any warranty service.

If you are unable to return the siren/amplifier to the factory for service; any competent TV repairman or electronic technician should have little difficulty in tracing a malfunction, should any occur. For emergency replacement of any of the small components, care must be used when soldering. Heat easily impairs transistors, capacitors, and circuit boards. It is therefore advisable to use longnose pliers or a similar heat sink on the lead being soldered.

A ruptured fuse may occur in the event of a shorted Underwater Speaker. Once the fuse and underwater speaker are replaced the unit should resume normal function under most conditions. The internal lamp may be replaced by removing the bulb. The 20 Amp blade fuse is available at many automotive supply stores.

THE FOLLOWING CHART CAN BE USED TO SOLVE MOST PROBLEMS THAT ARE NORMALLY ASSOCIATED WITH THE SIREN/AMPLIFIER/DIVER RECALL SYSTEM:

<u>PROBLEM</u>	<u>POSSIBLE CAUSES</u>
NO SOUND	Loose wiring harness connection. POWER ON – OFF/BATTERY Charge Toggle Switch set to OFF High Input Voltage (greater than 16V). Siren/Amplifier Fuse ruptured. 12VDC Battery not charged.
NO SIREN TONES	Defective Transducer/Underwater Speaker. High Input Voltage (greater than 16V). Check Selector Switch position. 12VDC Battery not charged.

PROBLEM**POSSIBLE CAUSES**

DISTORTED SOUND	RADIO INPUT LEVEL set to high. Defective Transducer.
INTERMITTENT	High Input Voltage (greater than 16V). Loose wiring harness connection. Self-resetting breaker overload. Bad solder joint. Battery low (Charge Battery). Bad transducer. Check all cable connections.

If the Diver Recall System still does not work; a competent Electronic Technician using the **SERVICE MANUAL** available from the manufacturer should have little difficulty in tracing a malfunction and repairing the unit. The **SERVICE MANUAL** can be obtained from:

O.E. ENTERPRISES/OCEANEARS

1638 Cottonwood Drive

North Canton, Ohio 44720-1102 USA

TEL: (330) 896-3644 FAX: (330) 896-8816

- B. ACOUSTIC TRANSDUCER -- The Acoustic Transducer, Model # DRS-8 MOD 2 is a **SEALED UNIT** and can NOT be opened. The only repairs that can be made are to replace the transducer cable and the transducer cable connector. The unit must be returned to the factory if the problem is more severe. Any competent Electronic Technician should be able to replace the Amphenol connector on the end of the Underwater speaker cable. The BLACK WIRE is GROUND (-) Pin B and the WHITE WIRE is POSITIVE (+) Pin A is the pin connections For the underwater speaker connector being used. Pin C is not used.

AN ELECTRONIC TECHNICIAN CAN REPLACE THE TRANSDUCER CABLE BY FOLLOWING THESE DIRECTIONS:

- (1) Unscrew the Nylon Compression Nut from the Nylon Body and slide it UP the cable.
- (2) Slide the Neoprene Grommet away from the Nylon Body and slide it UP the cable.
- (3) Unscrew the Nylon Body out of the Transducer Housing (Counter-ClockWise Direction) and slide it UP the cable.
- (4) Pull the transducer cable out of the Transducer Housing until the two solder joints with shrink tubing are exposed.
- (5) Cut the wires as close to the solder joint as possible after removing the shrink tubing.
- (6) Replace damaged cable with similar cable (2 Conductor 18 AWG wire/Type SOOW and solder the cable to the GREEN (GROUND) WIRE and RED (POSITIVE) WIRE. Cover the solder joints with shrink tubing or electrical tape. Be sure to run the replacement cable thru the Nylon Body, Neoprene Grommet and Nylon Compression Nut before soldering.
- (7) Wrap TEFLON TAPE around the threads on the Nylon Body

- and screw the Nylon Body back into the Transducer Housing (Clock Wise Direction) until tight.
- (8) Lubricate the Neoprene Grommet with "O" Ring lubricant and slide it against the Nylon Body.
 - (9) Screw the Nylon Compression Nut onto the Nylon Body until the Compression Nut bottoms out.
 - (10) ELECTRICAL TEST after replacing the cable:
 - (11) If **WATER** has been determined to have leaked into the inside of the Transducer Housing, return the underwater Speaker to the manufacturer for rebuilding - no repairs are Possible in the field if water has leaked into the speaker.

5.2 CLEANING PROCEDURES AFTER USE

- (1) Disconnect the transducer cable from the Diver Recall System and rinse the cable and transducer in freshwater and allow to dry. Do not let the connector get wet.
- (2) Rinse the Diver Recall System Case off with The lid closed with FRESHWATER and dry.

5.3 SIREN/AMPLIFIER REMOVAL FROM THE PELICAN STORM Case

Contact manufacturer for instructions. Call 330-896-3644 and ask for service Assistance.

5.4 SERVICE SUPPORT DOCUMENTATION

- A. SIREN/AMPLIFIER
 - 1. CARSON Manufacturing Company **SERVICE MANUAL** FOR THE SA-430-10F SIREN/AMPLIFIER.
 - 2. SA-430-10F Wiring Schematic
 - 3. Installation and Operation Instructions for Electronic Siren, Model SA-430-10F
 - 4. SA-430-10F Parts List
- B. ELECTRONICS HOUSING
 - 1. PELICAN STORM Series 2200 Case
- C. TRANSDUCER/UNDERWATER SPEAKER -- Model Number DRS-8 MOD 2
 - 1. **COMPANY PROPRIETARY INFORMATION**
 - 2. PELICAN Yellow 1450 Case for speaker storage and transport.

5.5 FACTORY SERVICE INFORMATION

FOR WARRANTY PARTS, SERVICE SUPPORT DOCUMENTATION,
TECHNICAL INFORMATION OR SERVICE CONTACT:

O.E. ENTERPRISES/OCEANEARS
1638 Cottonwood Drive
North Canton, Ohio 44720-1102 USA
TEL: (330) 896-3644
FAX: (330) 896-8816
E-Mail: **Oceaneers@aol.com**

NOTES:

O.E. ENTERPRISES/OCEANEARS

1638 Cottonwood Drive
North Canton, Ohio 44720-1102 USA
TEL: (330) 896-3644 FAX: (330) 896-8816

LIMITED WARRANTY

O.E. ENTERPRISES/OCEANEARS warrants the OCEANEARS ACOUSTIC DIVER RECALL SYSTEM to the ORIGINAL PURCHASER to be free from defects in original workmanship or materials, under NORMAL USE and SERVICE for a period of **(5) FIVE YEARS** from the Date of Purchase for Parts and (1) ONE Year for Labor. If at any time during the warranty period the product is found defective

O.E. ENTERPRISES/OCEANEARS

shall repair or replace the defective item (s) at our option and within a reasonable period of time. A copy of the ORIGINAL Bill of Sale must accompany the claim.

The following are ware items and will NOT be considered for claim: bulbs, lens, fuses, "O" Rings, 12VDC Battery, Battery Charger, cable, or other conditions resulting from misuse, negligence, alteration, accident, flooding, abuse or unauthorized repair.

The expressed warranty set forth herein is in lieu of all other warranties expressed or implied, including without limitation any warranties of merchantability of fitness for a particular purpose, and all such warranties are hereby disclaimed and excluded by the manufacturer. Repair or replacement of defective items as provided above is the sole and exclusive remedy provided hereunder. **O.E. ENTERPRISES/OCEANEARS** will NOT be liable for any further loss, damages, or expenses including incidental or consequential damages, directly or indirectly arising from the sale or use of this product. All products subject to this warranty shall be returned to the manufacturer **PREPAID**.

Warranties related to CUSTOM built products, sub-assemblies and options are as outlined above but are limited to **90 DAYS**. Direct all inquires relating to this product to:

O.E. ENTERPRISES/OCEANEARS
ATTN: Warranty Department
1638 Cottonwood Drive
North Canton, Ohio 44720-1102 USA
TEL: (330) 896-3644 FAX: (330) 896-8816