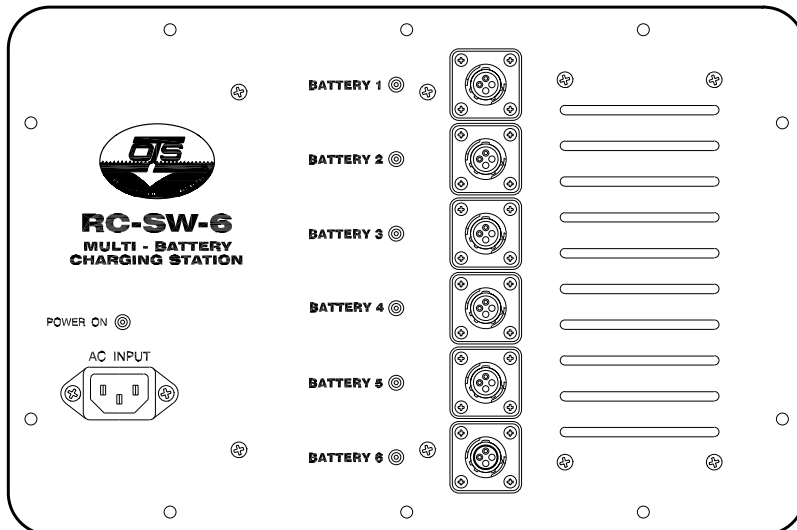


Ocean Technology Systems



# RC-SW-6

Universal Input  
Multi-Battery Charging Station



*“Technology in Depth”*

Undersea Systems International, Inc.  
*dba*  
**Ocean Technology Systems**

**- IMPORTANT SAFETY NOTICE -**

*(Please read before using product.)*

It is absolutely essential that all users be properly trained and equipped and fully understand this owner's manual before attempting to use the RC-SW-6.

**- NOTE -**

This manual and the information contained herein are provided for use as a maintenance and operation guide. No license or rights to manufacture, reproduce, and/or sell either the manual or articles described herein are given. Ocean Technology Systems reserves the right to change specifications without notice.

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Refer to the Library page of our Web site, [www.otscomm.com](http://www.otscomm.com), for a list of any changes made to this manual since its publication.

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P/N 506089-000 rev. B

## SECTION 1

### INTRODUCTION

Congratulations! You have just purchased the finest state-of-the-art battery charging system available. The RC-SW-6 charger is designed to charge simultaneously up to six RB-14 nickel-metal hydride batteries. Due to the smart computer-controlled algorithm and related circuitry, a depleted RB-14 battery can be fully charged in as little as three-and-a-half hours.

There are two charging modes, *fast* and *trickle*. LEDs assigned to each charging station (1–6) illuminate when a battery is connected and is charging in the fast-charge mode. When a battery is fully charged, charging reverts to a trickle rate, and the LED is extinguished.

The battery is charged while inside the transceiver housing via the unit's earphone-microphone (E/M) cable. Therefore, there is never a need to open the unit. That means the o-ring seal is not compromised, reducing the possibility of flooding of the transceiver housing.

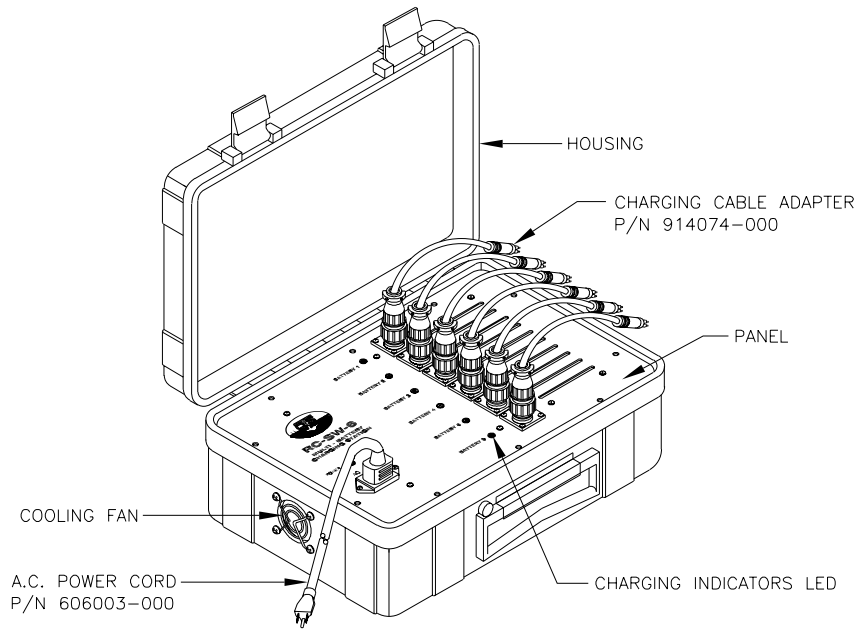
The RC-SW-6 should be used only with compatible diver communications systems. See the diver communications system's user's manual for information on compatible chargers.

#### 1.1 GENERAL INFORMATION

This manual contains information about the RC-SW-6 battery charger. Section 1 discusses the functions of the RC-SW-6 battery charger and provides a table of specifications. The RC-SW-6 with its accessories is illustrated in Figure 1.

#### 1.2 SPECIFICATIONS

Mains power:	90 to 240 VAC @ 50/60 Hz
Number of charging stations:	6
Fast charge current per station:	750 milliamps typical
Trickle-charge current per station:	60 milliamps
Housing:	Underwater Kinetics #613 case
Control panel:	6061 T6 brushed aluminum



*Fig. 1. RC-SW-6 Components and Accessories*

## **SECTION 2**

### **DESCRIPTION**

The RC-SW-6 is housed in a sturdy housing designed to be deployed easily in many locations around the world and on-board ship. The control panel is made of corrosion-resistant aluminum, but the charger is to be used indoors or in dry areas when aboard ship.

The internal power supply is designed to accept mains power from virtually all AC power sources found around the world. The unit comes with a universal panel AC connector and power cord for use in the United States and Canada. However, this cord can be modified for use with a different power source by cutting off the American standard plug and replacing it with the appropriate one for the desired mains power. The power supply will automatically detect the mains voltage and phase and adjust itself accordingly.

There are six LEDs, each assigned to one of the six charging connectors. These LEDs indicate when a battery is receiving a fast charge. The LEDs will extinguish when fast charging is complete and the battery is fully charged.

To keep the system cool, the housing contains a fan. This fan draws air through slots in the control panel. The air passes over the main power supply heat sink and across six other heat sinks (one for each charging station), thus keeping both the power supply and the charger circuitry cool.

When mains power is applied without any batteries connected, the only indication that power is on is the illuminated “power on” LED.

There are six charger interface cables included with the charger. These contain an “Amp” connector that mates to the control panel “Amp” connector. The other end contains a “Hi-Use” connector that connects to the diver communication system.

## SECTION 3

### CHARGER OPERATION

The charging procedure is rather simple and straightforward. From one to six diver transceivers can be charged at the same time. Simply connect the charging interface cable to the control panel and the other end to the diver unit's earphone-microphone cable connector.

***Note: It is extremely important not to connect the charging interface cable to the coiled cord intercom cable!***

When the connection is made to the diver unit, you will notice the red LED is illuminated on the charger. Allow the battery to charge fully as indicated when the red LED is extinguished.

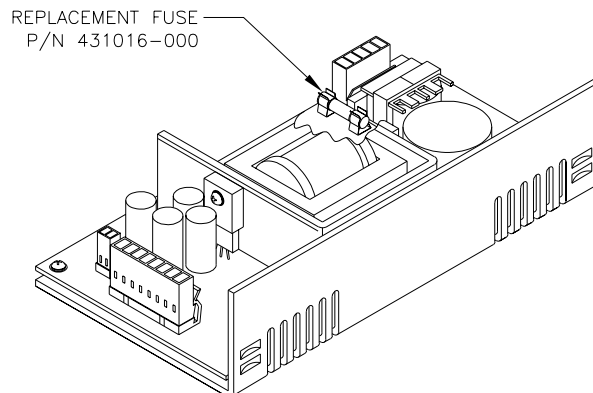
If multiple transceivers are being charged simultaneously, not all batteries will become fully charged at the same time. Some may require only an hour while others require two or three hours. That is the true nature of this charger, in that if a battery is only half depleted, the computer circuitry and algorithm will detect this and terminate fast-charge mode when the battery is again fully charged.

The charger algorithm detects a condition common to all nickel-metal hydride batteries, known as Delta V. When a battery reaches maximum charge, its voltage no longer rises and either stays at steady level or begins to drop. The smart charger algorithm is designed to monitor this voltage and terminate charging when this condition is reached. In this way, the battery is at maximum capacity when charging is terminated.

## SECTION 4

### GENERAL MAINTENANCE TIPS

1. In the event the charger is not functioning, it is possible there is a defective fuse in the power supply. See Figure 2 for the fuse location. The fuse is ceramic, 5 x 20 mm, rated at 4A, 250V, and can be found at any local electronics supply house. You can also order this fuse from OTS (part number 431016-000).
2. Operation in the rain or outdoors is not advised. The housing is not sealed and is designed to be operated indoors only. Severe shock or damage will occur if water or other liquids enter the housing, especially through the cooling slots on the control panel (the mains power supply is located in this area).
3. When cleaning the panel, use only a damp cloth. Do not use a saturated cloth, because water can drip on power supply components.
4. Make sure the Hi-Use connectors on the charge adapter cables remain lubricated with silicone grease.
5. The Amp connectors on the front panel contain a silicone o-ring. Ensure the o-rings are in place, clean, and lubricated with a small amount of silicone grease.



*Fig. 2. Location of Fuse in Power Supply*

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## **LIMITED WARRANTY**

Ocean Technology Systems' RC-SW-6 is fully warranted against defects in materials and workmanship for a period of one year from the time of purchase. Our obligation under this warranty is limited to the replacement of any part or parts that prove to our satisfaction to have been defective and that have not been misused or carelessly handled. Labor is warranted for one year from time of purchase. The complete unit and/or part must be returned to our factory, transportation charges pre-paid. We reserve the right to decline responsibility where repairs have been made or attempted by other than an Ocean Technology Systems factory-trained service center or properly trained personnel. In no event shall Ocean Technology Systems be liable for consequential damages.

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3133 West Harvard Street • Santa Ana, CA • 92704 • USA  
Telephone (714) 754-7848 • Toll-free (800) 550-1984 • Fax (714) 966-1639  
E-mail [ots@otscomm.com](mailto:ots@otscomm.com) • Web [www.otscomm.com](http://www.otscomm.com)

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