Print

MISO Facility: Deep Sea Batteries & Switches

Enlarge image

A DSPL SeaBattery - side view.

Enlarge image

DSPL SeaBattery - top view showing vent valve, bladder and connector/cable

Enlarge image

DSPL SeaBatteries mounted on the Atlantis TowCam frame.

Deep-Sea 24VDC Batteries

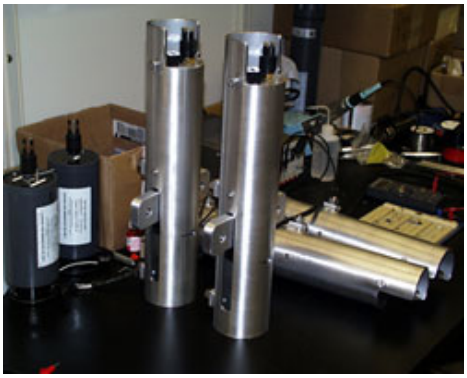
The MISO Facility's Deep Sea Power & Light (DSPL) SeaBatteries are capable of outputting 24 Volts Direct Current (DC) with and average current capacity of 42 Amps/Hour. The pressure is compensated by using Drakeol (mineral oil) in a dual-sealed, urethane diaphragm on the top of the bright-orange polyethylene case.

The four, 24 VDC DSPL SeaBatteries used on each *TowCam* frame each provide an average capacity of 42 amp/hr of current. Each DSPL battery comprises two (2) Pb-acid gel-cell 12 VDC batteries wired in series to produce 24VDC. The batteries are pressure compensated using mineral oil. Even when de-rated at ~40% for operation at ~2-4°C ambient bottom water, these batteries provide more than enough to provide power for the sled's components during a ~10 hour tow. Normal recharge of the DSPL batteries takes no longer than ~3 hours. A bank of 4 chargers is supplied with each *TowCam* to facilitate simultaneous charging of all the *TowCam* batteries.

Inside each case are two Power Sonic (PS) PS-12400 batteries wired in series. The PS-12400 is a lead-acid 12 Volt DC battery with Absorbent Glass Mat (AGM) technology. In an AGM battery such as the PS-12400, saturated boron silicate mats are used instead of liquid electrolytes; unlike batteries with a liquid electrolyte -- which expand in cold environments -- AGM batteries are not damaged by the 2-4°C ambient bottom water temperatures.

The chargers are manufactured by MajorPower and are 24V 8 amp 'smart' chargers consisting of three stage, constant current, constant voltage and proportionally timed systems that provide fast charging and optimal timing of charge currents. Battery chargers provide appropriate power to the battery at each stage of the charge cycle, including trickle charging at the end of the cycle. The chargers have a strip of LEDs that provide confirmation of the charge state of the battery - red is charging, yellow is partly charged, green is charged. A normal charge period for the batteries is ~3-4 hours.

The chargers have a strip of LEDs that allow at-a-glance inspection of the charge state of the battery. A normal recharge of the SeaBatteries takes approximately 3 hours. The chargers are manufactured by MajorPower and are 24V 8 amp 'smart' chargers consisting of three stage, constant current, constant voltage and proportionally timed systems that provide fast charging and optimal timing of charge currents. Battery chargers provide appropriate power to the battery at each stage of the charge cycle, including trickle charging at the end of the cycle.Voltages and currents during recharging is required to ensure an optimal charge. The records also serve as long-term use indicators so that batteries can be replaced periodically.



Enlarge image

Deep Sea Switches

Enlarge image

Last updated: February 18, 2015

Mail: Woods Hole Oceanographic Institution, 266 Woods Hole Road, Woods Hole, MA 02543, USA.
E-Contact: info@whoi.edu; press relations: media@whoi.edu, tel. (508) 457-2000
Problems or questions about the site, please contact webdev@whoi.edu