

SWE SeaSafe 37V Battery Module Charger

Datasheet Rev 1.1

SWE PN 24093710.3317



Specifications : 37V Module Match

Charger Voltage Input (VAC):

- MAX 250
- MIN 110
- VAC@ 47-63 Hz

Charge Voltage Output (VDC):

- MAX 42.0 V
- MIN 21.0 V

Charge Current Output:

- MAX – 10.0 A (Continuous)
- MIN – 5.7 A (Continuous)

Operating Temperature:

- Charge
 - 10 °C to 50 °C
- Storage
 - -20 °C to 60 °C

Charger Case Dimensions:

- 14.3 ± 0.1 inches
- 11.1 ± 0.1 inches
- 4.7 ± 0.1 inches

Charger Weight:

- ~ 10.5 lbs. (4.76 kg)
- Not including Cables

Description

The SWE SeaSafe Battery Module Charger is designed to provide an easy to use charger that matches to either the SWE SeaSafe II® or SWE SeaSafe Direct® 37 Volt Smart Battery Modules. It is a rugged, water-resistant packaged design to allow for in-shop or on-site charging of SeaSafe module. It provides SeaSafe Battery Module matching Constant Current/Constant Voltage (CC/CV) charge at the appropriate charge voltage pre-configured to specific SeaSafe II or SeaSafe Direct Battery Modules. These “it just works” features matching to SeaSafe Battery Modules makes this SeaSafe Battery Module charger a very easy to use and system matched accessory that should be in every SeaSafe based battery development lab or operations kit.

Features

Ease of Use - Direct Connect to either SeaSafe II or SeaSafe Direct Battery Modules

- Select proper Charger Harness Kit to mate to your specific SeaSafe Battery model.
- Standard A/C plug in – 110VAC or 220/240VAC (with customer supplied adapter plug)
- Charge Power is ON when A/C is plugged in.
- Green LED Charger ON light.

Ease of Use – Simple connection and charge process

- All charge voltages and charge currents are pre-configured to work directly with your selected SeaSafe II or SeaSafe Direct Battery Module
- Connect the SeaSafe Charger to your specific SeaSafe Battery Module with the Module Specific Charger Harness. (Separate selected item specific to SeaSafe battery type...see following section SeaSafe Charger Harness Kit).
- Plug in the A/C power cord.
- SeaSafe II or SeaSafe Direct Battery Module will begin charging at proper charge voltage and current rates.

Safe to Use - Connect it and forget it

- The SeaSafe II or SeaSafe Direct Battery Module will automatically turn off its charging input when it reaches full State of Charge (SOC)...typically configured as 90% SOC.
- You can leave the charger connected to the SeaSafe Battery Module and come back to it when convenient to remove the charged battery module.

Charging Details if Desired – Monitor Battery Charge Status using SeaSafe Observer:

- If desired, one can monitor the charge status, charge current rate, State of Charge, and other information as desired using the optional SeaSafe Observer software (sold separately) running on a Windows based PC.
- The RS485 Modbus to USB transceiver cable is included in the SeaSafe Battery specific Charger Cable Kit sold separately. Select the Kit that matches your SeaSafe II or SeaSafe Direct Battery Module type.

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SeaSafe Charger Harness Kit Reference: (Charge Power Harness and Communications Transceiver Harness):

- The SeaSafe Charger Harness Kit (CHK) is a reference for a set of cables to order to work directly with the specific SeaSafe Battery Module and Charger you chose to easily mate the charger directly to your specific SeaSafe Battery Module.
- The CHK reference also contains an RS485 Modbus to USB transceiver to use for your SeaSafe Observer communications with the module and your Windows PC running SeaSafe Observer.
- As such, there is one CHK reference for each of four different SeaSafe Battery Module types available today: (where xx = 30 or 24 or 37)

○ SeaSafe Direct	CHK.3302	Works with Module PNs 4679xx28.3302
○ SeaSafe II	CHK.3311	Works with Module PNs 4679xx28.3311
○ SeaSafe II-Daisy Chain	CHK.3312	Works with Module PNs 4679xx28.3312
○ SeaSafe II-High Current	CHK.0230	Works with Module PN 46790230
- Select the CHK that matches your SeaSafe Battery Module type and order the cables directly by part number that are referenced by that CHK.

Module Charge Control:

- Each SeaSafe II or SeaSafe Direct Battery Module contains a Battery Management System (BMS) that contains a charge control circuit that allows a simple, current-limited, Constant-Current/Constant Voltage (CC/CV) DC power source, such as the appropriately set Charge voltage and Charge current SeaSafe Battery Module Charger to be connected to the battery module or serially connected string of modules to charge the battery system unattended. Autonomous charge control completely interrupts charge current when full State of Charge (SOC) is achieved or safety thresholds are triggered to assure that no cell within the module can be over-charged even when charge power is connected and unattended.

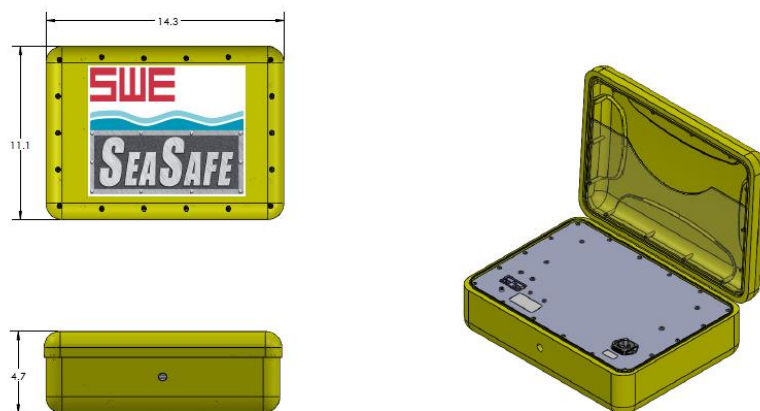


The maximum charge current that can be provided to the charge control circuit by the SeaSafe Battery Module Charger is 10 A.

Battery Module's BMS Communication method:

- Half-Duplex RS-485 on BMS's communication port.
- Communication is via Modbus ASCII or RTU protocol.

SeaSafe Battery Module Charger Drawing:



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SeaSafe Charger A/C Power Cord: (Comes with the Charger)

- NEMA 5-15P to IEC320 C13 Power Cord (18AWG 125V/10A), Black, 5ft



SeaSafe Charger Harness Kits (Reference): (Order Cables by Part Number indicated:

- SeaSafe Direct** **SWE Reference CHK.3302** Works with Module PNs 4679xx28.3302

Part Number 56500990	Harness- SeaSafe Direct IL10M Y cable to Charger SB50 and to SeaSafe Daisy Chain Comm	
Part Number 56500857	Harness/Transceiver- SeaSafe 4P TE Daisy Chain RS485 Modbus Comm to USB	

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• SeaSafe II SWE Reference CHK.3311

Works with Module PNs 4679xx28.3311

Part Number 56501010	Harness- 8P MOLEX TO 4P TE	
Part Number 56500857	Harness/Transceiver- SeaSafe 4P TE Daisy Chain RS485 Modbus Comm to USB	
Part Number 56500980	SeaSafe Module Charger 3ft. Harness SB50 to SeaSafe II PP75	



• SeaSafe II-Daisy Chain SWE Reference CHK.3312 Works with Module PNs 4679xx28.3312

Part Number 56500857	Harness/Transceiver- SeaSafe 4P TE Daisy Chain RS485 Modbus Comm to USB	
Part Number 56500980	SeaSafe Module Charger 3ft. Harness SB50 to PP75	

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- **SeaSafe II-High Current** **SWE PN CHK.0230** Works with Module PN 46790230



Part Number 56500970	SeaSafe Module Charger 3 ft. Harness SB50 to PP180	
Part Number 56500857	Harness/Transceiver- SeaSafe 4P TE Daisy Chain RS485 Modbus Comm to USB	

SeaSafe Charger User Instructions:

The SeaSafe Charger is extremely easy to use to charge your SeaSafe Battery Module. Here are the steps:

1. Plug in the A/C power cord to your charger and 110V A/C power socket. This turns the charger on.
2. Connect your SeaSafe Battery module to the SeaSafe Charger with the appropriate Charger Harness Kit (designated above) as follows:
 - a. Connect the charger cable to the charger with the SB50 connector.
 - b. Connect the charger cable to the SeaSafe Battery module with the SeaSafe battery connector end of the proper cable for your SeaSafe battery (designated above).
3. Wait for your battery to complete charge.
 - a. You can monitor your battery charge rate and charge status with SWE SeaSafe Observer Software running on a Windows PC and hooked to the RS485 Communications port of your SeaSafe battery module using the Harness/Transceiver cable combo (designated above).
 - b. OR you can just wait for at least 4 hours, and it will be full charge then.
4. Disconnect the charger cable from your SeaSafe Battery Module.
5. That is all there is to it! You can now either:
 - a. Charge your next SeaSafe Battery Module, or
 - b. Unplug your SeaSafe Battery charger from the 110 A/C power socket.