

# SWE SEASAFE AUTONOMOUS SMART BATTERY MODULES

## Higher Performance

- 4X Longer Mission Run Time
- 6X Longer Battery Life Time
- 100% Condition Based Monitoring

## Lower Risk

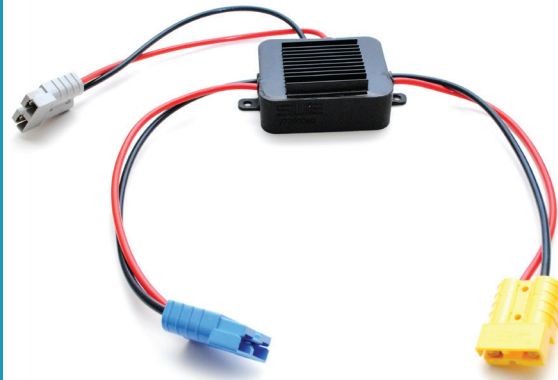
- ABS Certified & 2nd Generation Learned
- 6000 M Pressure Tolerant Tested
- Safety Tested and Patented

## Ease of Use

- No Pressure Vessel Required
- Direct in Water Viable
- Simple Battery Sizing & Operation
- Series String for Voltage
- Parallel String for Capacity & Power

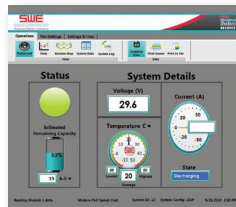
## SWE SeaSafe Diode OR-ing Module

- Parallel connects module strings into battery system
- Parallel integrates module string outputs into a single discharge bus
- Enables increased current and capacity with SeaSafe Battery Modules
- Electrically isolates module string charge inputs into isolated charge busses
- Provides additional battery safety, reliability, and potential for faster charge time
- Supports high voltage – up to 1000 V Battery System



## SWE SeaSafe Observer® Support Software

- Graphical User Interface
- Voltage
- Capacity
- Current
- Temperature
- Status, State of Health



**DIRECT IN WATER**  
30V 28Ah, 24V 28Ah

**PRESSURE BALANCED  
OIL-FILLED CASE**  
30V 28Ah, 24V 28Ah

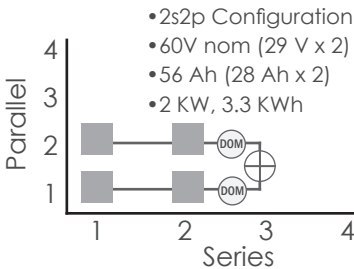
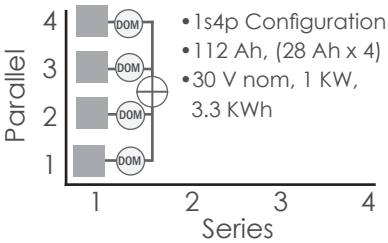
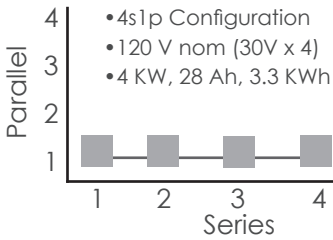
“ Safe, flexible, longer run,  
battery solutions for subsea. ”

## CONFIGURE TO ORDER FLEXIBILITY (V/Ah)

### SeaSafe Smart Module Specifications

		SeaSafe II		SeaSafe Direct	
		30V	24V	30V	24V
Cells in series		8	7	8	7
Dimensions (in)	H	10.0	10.0	10.0	10.0
	W	2.9	2.9	2.9	2.9
	L	9.9	9.9	9.9	9.9
Weight (lbs)	Total Module (air)	19.5	19.0	19.5	19.0
	Total Module (sea)	8.8	8.3	8.8	8.3
Voltage (V)	Min	26.4	23.1	26.4	23.1
	Nom	29.6	25.9	29.6	25.9
	Max	32.4	28.4	32.4	28.4
Current (A)	Max Discharge (continuous)	40	40	10	10
	Max Discharge (20 msec pulse)	52	52	31	31
Power (W)	Discharge (nom)	1184	1036	296	259
Capacity @90% SOC	Ah	28	28	28	28
	Wh	829	725	829	725
Temperature (°C)	Discharge	-20 to 60	-20 to 60	-20 to 60	-20 to 60
	Charge	0 to 45	0 to 45	0 to 45	0 to 45

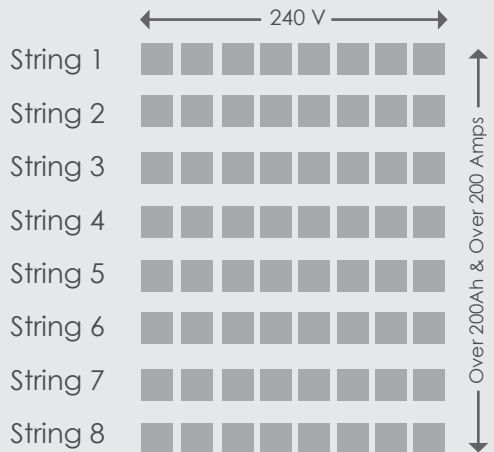
## Examples of 4 Smart Module Battery Systems



## Patented Battery Management System in Each Module

Features	Benefits		
Continuous, Redundant, Safety Protection	●	●	
Automatic, Configurable Charge Control	●	●	●
Three Types of Balancing	●	●	●
SOC/SOH Gas Gauge		●	
Hassle Free Module Replacement			●
Modularity = V, Ah Choice and Redundancy		●	●

## Example of 64 Smart Module Battery System



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