

Subsea Technologies for the marine environment

Li-Ion Standard PowerPack™

High capacity, reliable and safe Li-Ion technology



14.4V to 50.4V	666Wh to 3.5kWh	300m to 6000m	7A to 50A
 Highest capac Highest safety Highest reliab Maintenance for the second second	ity ility free water Gas approved	A REAL PROPERTY AND	Especies of the second se
Subsea InstruiLong-time dep	mentation ployments	ROV/AUV VehCondition More	icle Power nitoring



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Specification	"Long-John" 90 mm battery					
	14.4V	25.2V	46.8V	50.4V		
Capacity	47Ah 26Ah		16Ah	16Ah		
Energy	674Wh	655Wh	730Wh	768Wh		
Current (see below)	7A	7A	3A	3A		
2000m	Ø 90 mm x 512mm 8.5kg in air, 5.1kg in	length. sea water	Ø 90 mm x 560mm le 8.9kg in air, 5.2kg in s	ength. sea water		
4000m	Ø 90 mm x 512mm 9.3kg in air, 5.8kg in	length. I sea water	Ø 90 mm x 560mm le 9.6kg in air, 6kg in se	ength. a water		
6000m	Ø 90 mm x 512mm 8.5kg in air, 5.1kg in	length. sea water	Ø 90 mm x 560mm le 8.9kg in air, 5.2kg in s	ength. sea water		
Notes: no high current o	output for Long-John batteri	es. High peaks on demand, i	please specify.			

Optional: BMS with data interface, remote on/off input, DC/DC regulated outputs (the length is increased up to 150mm) The yellow marked batteries are UN T38.3 tested to simplify shipping (still dangerous goods!)

Specification		"Big Jim" 168/180 mm battery						
		Grand Li-Ion PowerPack						
	14.	4V	25.	2V	46	.8V	50.	.4V
Туре	Standard	XL	Standard	XL	Standard	XL	Standard	XL
Capacity	140Ah	280Ah	70Ah	140Ah	34Ah	70Ah	34Ah	70Ah
Energy	2020Wh	4040Wh	1769Wh	3538Wh	1582Wh	3285Wh	1704Wh	3538Wh
Current (see below)	Тур. 1	Тур. 10-20А Тур. 10-14А Тур. 5-10А Тур. 5-10А						5-10A
300m	Std.: Ø XL: Ø	Std.:Ø 168 mm x 372mm length.Weight: 17kg in air, 9kg in sea waterXL:Ø 168 mm x 638mm length.Weight: 29kg in air, 5kg in sea water						
2000m	Std.:Ø 180 mm x 390mm length.Weight: 24kg in air, 14kg in sea waterXL:Ø 180 mm x 630mm length.Weight: 38kg in air, 22kg in sea water							
4000m	Std.:Ø 180 mm x 390mm length.Weight: 25kg in air, 15kg in sea waterXL:Ø 180 mm x 630mm length.Weight: 41kg in air, 25kg in sea water							
6000m	Std.: Ø XL: Ø	ð 180 mm > ð 180 mm >	390mm len 630mm len	gth. We gth. We	ight: 25kg i ight: 41kg i	n air, 15kg ir n air, 25kg ir	n sea water n sea water	

Notes: continuously high current output is limited. For high-power applications, please use our industrial subsea product line. Optional: BMS with data interface, remote on/off input, DC/DC regulated outputs (the length is increased up to 150mm)

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Our new "A" type batteries incorporate our well known AUV (Autonomous Underwater Vehicle) battery cell for highest capacity. After usage only for high-sophisticated AUV battery systems up to 100 kWh and 400 V we provide this special Li-Ion technology now for our standard product portfolio.

The special features from the MNP technology are:

- * Internal Temperature Coefficient Device (PTC) to protect over-heating on cell level
- Current Interrupt Device (CID) to protect over current on cell level
- Heat Resistance Layer (HRL) to protect over-heating and internal short-circuit

Specification	NEW "	Long-John"	"A" type high capacity battery		
	14.4V	25.2V	46.8V	50.4V	
Capacity	60Ah	33Ah	20Ah	20Ah	
Energy	868Wh	844Wh	941Wh	1013Wh	
All other specifications a	s above.				

Specification	NEW "Big-Jim" "A" type high capacity battery							
	14.	14.4V 25.2V 46.8V					50.4V	
Туре	Standard	XL	Standard	XL	Standard	XL	Standard	XL
Capacity	180Ah	362Ah	90Ah	181Ah	43Ah	90Ah	43Ah	90Ah
Energy	2605Wh	5210Wh	2279Wh	4559Wh	2038Wh	4233Wh	2195Wh	4559Wh
Notes all other specifica	tions as above	•						

Specification	NEW "Big-Jim" "M" type high capacity battery							
	14.	7V	25.	7V	47	.7V	51.	4V
Туре	Standard	XL	Standard	XL	Standard	XL	Standard	XL
Capacity	172Ah	345Ah	86Ah	172Ah	41Ah	86Ah	41Ah	86Ah
Energy	2536Wh	5073Wh	2220Wh	4439Wh	1984Wh	4122Wh	1984Wh	4439Wh

Notes all other specifications as above.

The yellow marked batteries are UN T38.3 tested to simplify shipping (still dangerous goods!)

Specification	Certifications & approvals (all types)
Certifications	The cells are fully certified for UN/DOT 38.3 and listed at UL.
Production	Production following IPC-A-600 and IPS-A-610 class 2; or class 3 on request.
Environmental	Product testing for temperature, shock and vibration following e.g. MIL-STD 810G on request.
EMC	Our products comply with the IEC EMC directives, single tests on request.
Offshore	Our production and quality management is approved to ISO 13628-6 and API17f
Air cargo	Our standard products are approved by the "Bundesluftfahrtamt" no. LBA B32F/439.50/15
Vendor	We are proved battery manufacturer of the German UBA (Umweltbundesamt) no. 21002655

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Specification	Voltage ranges (all types)					
Battery type	14V	25V	46V	50V		
Charging volt.	16.8V	29.4V	54.6V	58.8V		
Minimal volt.	12V	21V	39V	42V		
Cut-off	10V	17.5V	32.5V	35V		

Notes: the charge voltage is the max. voltage measured at the battery output. The min. voltage guarantees full performance and lifetime. The battery capacity is measured down to this level. More discharge will not provide more capacity. Cut-off protects electronically against under discharge. In case of cut-off our SmartCharger[™] will revive the battery.

Specification	Current options and connectors (High-currents for Big-Jim only)						
Current	7A (standard)	20A	30A (*)	40A (*)	50A (*)		
Connector power only	BH-4F (SeaBattery™ compatible)	BH-4F	BH-10F	BH-12F	BH-16F		
Connector with power+data	BH-8F	BH-8F	BH-10F	BH-12F	BH-16F		

Notes: all connectors are SubConn[®]. The connector BH-4F (e.g. standard 7A, 20A) is SeaBattery[™] compatible. Other connectors on request. **For all current outputs larger than 7A the high-power option is required** (BigJim only; special electronic components and wiring). (*) For high-power applications (charge or discharge), please use our industrial subsea product line.

Specification	General (all types)
Temperature	Max.: -20 +60 °C (operating), >0 +45 °C (charging), -20 +50 °C (storage) Best: -5 +40 °C (operating), +5 +30 °C (charging), +5 +20 °C (storage)
Self discharge	Max. <5 % per year at +25°C, < 2% per year at 0°C
Charge cycles	Standard 500 cycles; optional 3000+ cycles using special adaptions
Protection	Over-charge, under voltage discharge, current limiting / short circuit, over-temperature
Data interface (optional)	BMS (Battery Management System) with RS-232 or RS-485 data interface ASCII NMEA-0183 or binary MODBUS RTU data protocol. Optical isolated and EMC tested.
Remote On/Off (optional)	Remote on/off input pin. Connected to 0V (battery -) to switch the battery on. An open input or any voltage >1.2V up to Vbatt will switch off. The pin is internally connected to Vbatt with 1MOhm.
Charger	Our SmartCharger [™] can be connected all time. Do not open the housing for charging.
Switches (optional)	Remote switches e.g. for ROV (ISO 13628-6 light torque tool) or simple linear magnetic switches e.g. for diver or ROV usage
DC Options (optional)	Customised DC/DC outputs e.g. 5V, 12V, 24V etc. High efficiency and low noise. LED control light, customized e.g. green/red highly visibility and low-power
Transportation	The battery must be transported as dangerous goods class 9. SubCtech is registered as a vendor of batteries. Transported by sea, air or road. We are pleased to advise you.
Storage	Storage at +5 to +20°C, approx. 50%-80% charged. Recharge after 3-6 months. We provide storage/transport boxes with low-power cooling devices and charging.
<u>^</u>	

A Never use other chargers, modify cables or operate outside the specifications, risk of fire or explosion.

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