

## Subsea PowerPack

### Smart Li-Pol Technology for underwater offshore applications

Proven high power Lithium-Polymer rechargeable batteries (Li-Pol) are highly suitable for offshore power supply systems. This type of Li-Pol cells are used in Aircrafts and for Space applications as well. Our Li-Pol cells are especially designed for SubCtech power-module applications by the world market leader for Li-Pol batteries. The sophisticated battery management system (BMS) guarantees highest performance without any risk using high-power Li-Pol systems in Offshore or other rough applications.

*Our approach is sophisticated, proven technology combined with easy handling, even under rough conditions. We will support you with our experienced, dynamic and flexible team to find an optimized solution. We provide excellent after-sales support including training.*



#### Benefits

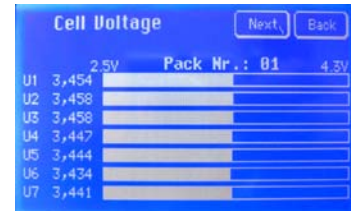
- ▶ high cost minimizing
- ▶ much lower maintenance time and costs
- ▶ much less handling problems
- ▶ much longer operating times

#### Features:

- ▶ Reliably high-power Lithium-Polymer rechargeable battery pack with highest energy density by proofed technology. Our leading engineer cooperates directly with the leading manufactory for professional Li-Pol systems.
- ▶ Lifetime up to 10 years
- ▶ Minimize EMC radiation for military or O&G exploration applications.
- ▶ High overall ROV/AUV safety with triple redundant concept
- ▶ User friendly interface to host system with RS485, optional MODBUS or CAN interface
- ▶ Easy handling by single blocks of 25kg and 48V each for maintenance on-board.
- ▶ Independent and cell balanced charging following internal network control.
- ▶ Automatic detection and adjustment of charger cable length.
- ▶ Independent Bus Interfaces and LCD Display or PC interface for status information
- ▶ Continuous online monitoring of all house-keeping data: voltages, currents, State of charge (SOC), failure status, internal temperatures and user-defined I/O's.



Double 19" Rack-mount charger



Easy-to-use Touch-screen Quick overview of all states



### Application:

a complete 150V 20kWh battery is assembled into a titanium or carbon pressure compartment and can be easily replaced by 6 single modules 25 kg each.

## Technical data

<b>Weight</b>	25kg per single 48V block due to easy handling
<b>Operating depth</b>	Depending on housing. We provide titanium and carbon housing up to 6000m
<b>Temperature</b>	-20 ... +60°C operating, 0 ... +40°C charging, +4 ... +30°C storage (best +5 .. +15°C)
<b>Voltage</b>	48 V typ. per single block, max. 400 V
<b>Capacity</b>	1,6...10 kWh per single block. Full redundant battery concept guaranteed 50% remaining capacity per battery in case of any fatal failure for emergency procedures.
<b>Current</b>	0..100 A continuously. No heat sink necessary.
<b>Life time</b>	10 years expected at +15 °C storage temperature
<b>Protection</b>	Full protection of each cell by its own controller with measuring of voltages, currents and temperatures. Independent supervisor controller and master controller. Over-charge, under voltage discharge, current limiting, short current protection, temperature, water leak detection. <b>Fail-safe and auto-recovery options.</b>
<b>Data interface</b>	RS-485 binary and ASCII data interface. CAN-Bus and MODBUS available. PC diagnostic and parameter upgrade RS-232 port External Bus interface for Charger control. Triple independent safety lines.
<b>Charging time:</b>	4...13 h with 3 kW charger, depending on SOC and balancing
<b>Charger</b>	19" Rack-mount Smart Charger, can be connected all times at any time. Easy to use 2-button Touch-Screen with diagnostics and maintenance support. Available with 3,5 kW and 7 kW. Different cable lengths and connector resistants are considered automatically.