ICTINEU Electrical Energy Storage (EES) System
Large Li-Po Batteries and Chargers

Description

ALL IN ONE SOLUTION: Energy storage, charger, battery-vehicle interface.

CONFIGURABLE: large EES systems based on Li-Po batteries can be tailored based on the standard ICTINEU Li-Po battery module of 10,36 kWh - 148 VDC. The battery modules are paralleled through a junction box which is ready to plug and play to the vehicle/platform.

29, 148 or 300 VDC Li-Po modules can be combined to create 50 kWh EES systems.

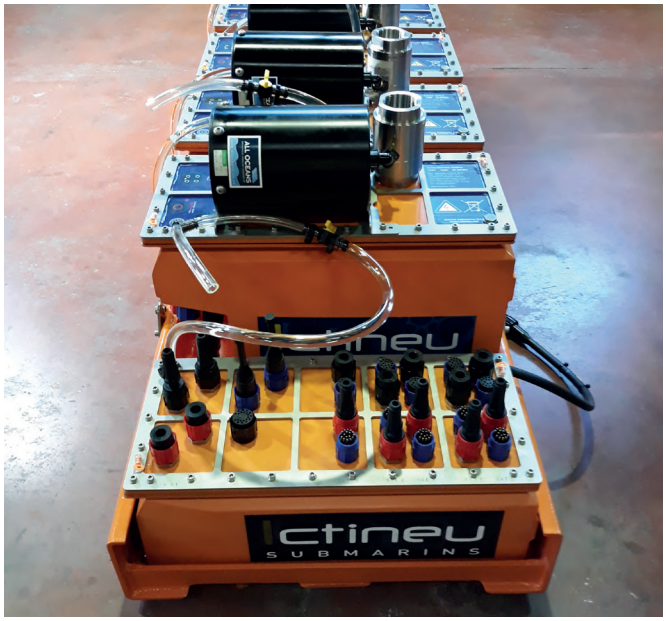
Several EES can be paralleled to have 100 kWh or larger systems.

CERTIFICATION: Complies with DNV rules for EES - Ships & UWT.

CHARGER: a multiple charger allows to safely charge all the modules in the EES within 4 to 6 hours.

SAFETY: Each battery module has built-in a battery management system (BMS), safety elements (relays, fuses, redundant over-charge control) and optional water sensor.

Each EES system has built-in protection diodes and fuses (serviceable by the user), RS485 communication bus (optional).





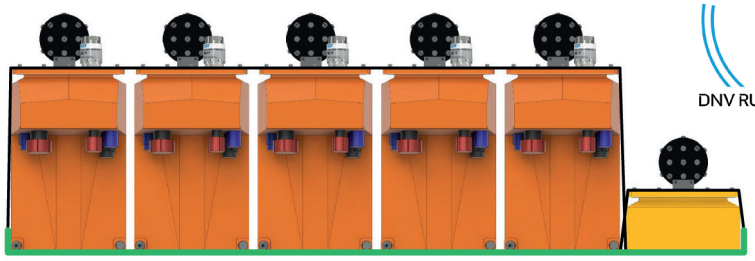
TECHNICAL SPECIFICATIONS FOR A 50kWh EES System, Li-Po battery

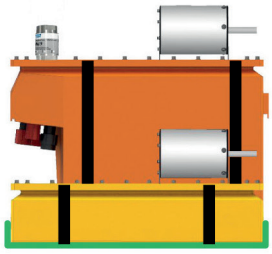
General Electrical Specifications	
Voltage (max / nom / min)	164,4 / 148 / 120 V DC
Max. continuous discharge rated current	250 Ah
Max. continuous discharge rated current per Battery Module	10,36 kWh
Energy	50 kWh
Capacity	75 Ah
Operation temperature	-10 °C to 55 °C
Operational Depth	6000 m
Protections	
Communication	RS485
Protection fuses	Built-in
Protection diodes	Built-in

Geometrical data	
Length / Width / Height	1884 / 673 / 630 mm
Weight in air	698 Kg

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Technical Specifications





Front and side-view example of a 50 kWh EES system: 5 battery modules + junction box on a tray + pressure compensators and safety valve.

Multiple Charge specifications

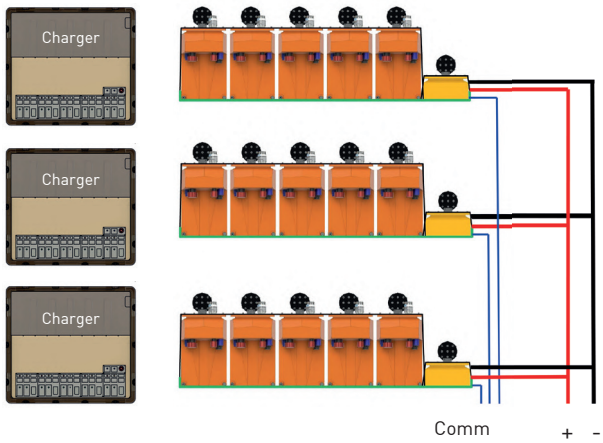
The ICTINEU chargers have been designed for the purpose of safely charging Lithium Polymer batteries.

This multiple charge system has been developed to safely charge an EES system of 5 Li-Po battery modules connected in parallel. Charger and cables are integrated into a robust, watertight rolling case.

It includes an emergency stop, RS232 socket for each module, and status display for Current / Voltage / State of Charge / Fault / High Voltage output / battery On/Off / Charge enable On/Off

The RS232 interface can be used to monitor each battery module and/or to record data, either during charge, discharge or stand-by modes. A graphical user interface is provided.

It is delivered ready to plug and play and is easy to operate. All components are reliable and of high quality. It ensures a safe and proper charge procedure and a longer life for the battery.



Example of a 148 V DC - 150 kWh EES system

Specifications for a 5-Multiple Charger

Electrical Specifications	
Input 1 - AC Power Supply BAT 1 to BAT 5 (5 cable plugs)	
Power supply nominal input voltage *	110 to 264 V AC
Power supply input current	16 A (max)
Input 2 - AC Power Control (1 cable plug)	
Control input	0,58 A@230VAC
	1,14A @ 110VAC
Output - DC Power BAT 1 to BAT 5 (5 cable plugs)	
Output Voltage	0-240 V DC
Output Current	0-20 A DC
Ambient temperature range	0-40ºC
Functionalities	
Protections	
Over-temperature protection	Processor controlled on/off
Over-current protection	Electrical current limit
HVIL and Emergency stop	included
Interface	
LED status indicators: 5	RS-232 DB9 socket
Switch: Power ON, Charge Enable	
Displays: Ampere, Volt, SOC	
Characteristics	
Case protection degree	IP67, MIL-C-4150J (when lid closed)
Material	Polyethilene (LLDPE)
Length / Width / Height	1057 / 956 / 818 mm
Weight	140 kg
The charger case meets the standards	MIL-STD-810H, valve: MIL-STD648C
Charger to battery cables	
Length	5m
Type	SubConn submarine

* The input voltage recommended to obtain the best charging performance is 230 VAC. Below 230 VAC the charge power will be reduced accordingly to input power available.

The back side compartment is intended for cable storage.

Cable plugs are provided by default as per CEE 7/4, other plugs can be installed under request

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