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Company mission and strategy

Archimede Energia develop and produce high energy density batteries (ÆnerBox®), based on **an internally developed** electronic platform (Battery Management System) and the selection of high-performance cells







Battery Management Systems





Our BMS guarantees the control of the cells during charging and discharging phases and the management of other functions dedicated to integration the battery in the guest product





Battery Monitoring Remote Service Tool









The new generation of stationary batteries, in rack 19" (depth 600mm) optimum for cluster structures in energy storage applications



Module rack 48V @	111Ah in 6U rack
Nominal Voltage	48 VDC
Min-Max Voltage	41,6-54,6 VDC
Capacity	111 Ah
Available Energy	5,33 kWh
Charge current	100 A
Discharge current	150 A
	Module rack 48V @ Nominal Voltage Min-Max Voltage Capacity Available Energy Charge current Discharge current

Module rack 48V @ 150Ah in 6U rack
 Nominal Voltage 48 VDC
 Min-Max Voltage 41,6-54,6 VDC
 Capacity 150 Ah
 Available Energy 7,21 kWh
 Charge current 140 A
 Discharge current 200 A







Smart Micro-Grid circuit with storage energy and generator group



ESS Energy Storage Syste Cluster of 24 batteries for a 128kWh energy tank 00x800x2100 (LxPxA mm) □ DC Bus = 577Vdc (459 ÷ 655 Vdc) FU7 300A 6901/ MBMS □ Energy usable = 100kWh (80% of DOD) □ Max. continuous energy = 200kW FU5 50A 690V BMS1 BM S2 FM(□ Max. transient energy = 250kW POWER 뉵 뉵 K4 1P 50 Ado METER 늩 늩 POWER DIESEL GENERATOR 300 kVA - 400 Vac 늩 늩 **Bidirectional inverter (AC/DC/AC)** DIESELI/O -CTRL UNIT OPDE S 250 늩 누 DIESEL INTERNET PLC MOTOR □ Power = 100 kW a 400Vac three phase CAN SP 늩 누 нм PUNTO DI CONNESSIONE □ Current = 280 A max. continuous QUADROAC CAN I/O 누 늒 REMO □ Current of chargers= 170 A max. 늒 누 5 十 肻 T1 400V/250V 110 kVA 뉵 누 600x490x570mm 440 kg TA+TV EVENTUALMENTE TRASFO SU BOX EXTERNO YNd11 뉵 ÷ K3 3P 30K 65A - 400 FU4 10A GG/GL 늒 늩 BT_12 BT_12 וסס K1 3P 110kW 205A - 400V K2 3P 18,5kW 40A - 400V 333 SYNCH ON-GRID _ Kext 315kW Af580 SYNCH FM (FU6 2A GG/GL 400V 24 x BATTERY ARCHIMEDE PJO-048-111-RK1 48.1 Vdc - 111 Ah - 5.34 Wh TA+T 460-655 Vdc 64 kW-128 kWh SYNCH EXT CARICHI Icarica_max=0.8C=0.8*111*2= 178 A



Smart Micro-Grid battery cluster in standard rack 19"cabinet





- **Example 100 Solution** Energy usable = 100 kWh [138 kWh] (80% of DOD)
 - □ Max. continuous energy = 200kW [270kW]
 - □ Max. transient energy = 250kW [340kW]



- Module rack 48V @ 111Ah in 6U rack Nominal Voltage 48 VDC
 Min-Max Voltage 41,6-54,6 VDC
 Capacity 111 Ah
 Available Energy 5,33 kWh
 Charge current 100 A
 Discharge current 150 A
- Module rack 48V @ 150Ah in 6U rack
 Nominal Voltage 48 VDC
 Min-Max Voltage 41,6-54,6 VDC
 Capacity 150 Ah
 Available Energy 7,21 kWh
 Charge current 140 A
 Discharge current 200 A



ESS Energy Storage Sy





Current Project: UPS (Uninterruptible Power Supply) for ICT (Information and Comunications Technology) application in mobile radio bridges



Model 48Vdc 120Ah 5,76kWh



Cluster by 16 batteries for trailer



References on special traction market

DOLOMITECH ADVANCED PROPULSION



Material Handler

- Electric powertrain, and services for a maximum power 200kW (DC Bus = 621,6Vdc)
- 414 kWh energy tank with 24 battery in cluster (4S6P)



Electric Tractor

- Electric powertrain, and services for a maximum power 120kW (DC Bus = 666Vdc)
- 148 kWh energy tank with 9 battery in cluster (3S3P)



Hybrid Modular Transporter

- Electric powertrain, and services for a maximum power 80kW (DC Bus = 666Vdc)
- 50 kWh energy tank with 3 battery in cluster (3S)



29/07/2020



References on generator market (lighting tower)

Current Project:

Hybrid Lighting Tower whith led technology and lithium battery



Module Rack 44,4V @ 111Ah in 5Nominal Voltage44,4 VDCMin-Max Voltage38,4-50,4 VDCCapacity111 AhAvailable Energy4,92 kWh





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References on traction market (light vehicle)





Electric vehicle

- Electric powertrain, and services for a maximum power 4,5kW (DC Bus < 60Vdc)
- 3,28 kWh and 4,92 kWh of energy tank





Electric vehicle

- Electric powertrain, and services for a maximum power 4,5kW (DC Bus < 60Vdc)
- 5,32 kWh and 8,64 kWh of energy tank





References on material handling market (AGV and automatic warehouse)



Electric Shuttle Warehouses

- Electric powertrain, and services for a maximum power 1,2kW (DC Bus = 44,4Vdc)
- 710 Wh of energy tank





ADVANCED MOTION TECHNOLOGY

Automated Guided Vehicle

- Electric powertrain, and service for a maximum power 1,5 kW (DC Bus = 24Vdc)
- 1,53 kWh and 3,07 kWh of energy tank





References for electric users on board the vehicle market



GILETTA a BUCHER company

Electric road salt spreader

- Electric powertrain, and services for a maximum 1,2kW (DC Bus = 48Vdc)
- 710 Wh of energy tank



Feel the Drive

Electric cooler

- Electric powertrain, and service for a maximum power 800 W (DC Bus = 48Vdc)
- 5,33 kWh and 7,2 kWh of energy tank









References on marine market (traction end service)

Hybrid Boat with Generator

- Electric powertrain, and services for a max power 250kW (DC Bus 360Vdc)
- 108,78 kWh of energy tank

Hybrid Boat kit

- Electric powertrain, and services for a max power 20kW (DC Bus 88,8Vdc)
- 13,14 ÷ 26,28 kWh of energy tank Electric

outboard kit

- Electric powertrain, and services for a max power 30kW (DC Bus 222Vdc)
- 11,76 kWh of energy tank

Battery for service power

- 12,8Vdc or 25,6Vdc

29/07/2020

- 1,53 kWh to 72 kWh of energy tank





References for hybrid electric in industrial traction market



Commercial vehicle for refrigerated transport

- Engine 600cc generator 8kVA
- Electric powertrain, and services for a maximum 65kW (DC Bus = 355Vdc)
- 40kWh of energy tank

Electric road sweeping vehicle

- Engine 1300cc generator 15kVA
- Electric powertrain, and services for a maximum 25kW (DC Bus = 120Vdc)
- 17kWh of energy tank







Electric tractor with fifth wheel coupling

- Engine 2800cc generator 40kVA
- Electric powertrain, and services for a maximum 60kW (DC Bus = 355Vdc)
- 42kWh of energy tank







New applications on handling market

Type of guest product:

- Electric stacker forklift
- Electric warehouse forklift
- Electric order picker
- Electric towing cart





Ænerbox LiFePO₄

Nominal Voltage	25,6 Vdc
Min-Max Voltage	21,6 - 29,6 VDC
Capacity	120 Ah
Available Energy	3,07 kWh
Charge current	100 A
Discharge current	150 A
Dimensions (lxwxh)	635 x 135 x 280 mm



New application on charging station (fast recharge)







New application on energy rental (Hybrid CUBO FusteQ)



- □ Out Voltage = 380Vac
- □ Diesel Engine (Stage V) = 24,5hp 3600rpm
- □ Autonomy = 12h UPS and 1,5h Battery mode
- Dimension = 2.500 x 1.130 h1875 cm
- □ Weight = 2380 kg
- Battery energy = 28kWh
- □ Solar inverter = 3 x 24kW









TYPE2 RECHARGER

FOR ELECTRIC CARS (OPTION)







