

Sodium Nickel Technology for Energy Storage Application: FZSoNick ST523 620 V 22.5 kWh



FZSoNick battery for Energy Storage Systems

SoNick ST523 Battery

- + 620 V sodium nickel chloride battery, specifically designed for Community & Industrial and Large sites storage applications
- + Suitable for On-Grid and Off-Grid applications as well as for Micro-Grid
- + 100% maintenance free in operation
- + Allows remote monitoring
- + Use of sodium and nickel as active materials with solid ceramic electrolyte
- + Specific energy: 70% lighter and 30% smaller than conventional batteries
- + Battery outside temperature only few degrees above the ambient temperature
- + Integrated battery monitoring system (BMS) for monitoring, diagnostics and data logging
- + User interface on front panel
- + No memory effect

Key Benefits

- + Increase of own-consumption
- + Higher energy independency
- + Improvement of peak power management without extension of grid power connection

Application

- + Load Levelling
- + Power Quality
- + Renewable Resource Optimization
- + Utility Grid Ancillary Services

Applicable Standards

- + EN 61000-6-1
- + CE
- + COUNCIL DIRECTIVE 2006/95/EC on low voltage equipment safety
- + COUNCIL DIRECTIVE 2004/108/EC on electromagnetic compatibility

SoNick ST523 Benefits



Safety

- + Zero ambient emission
- + No hazardous components
- + Redundant safety features (chemistry, cell, battery module and BMS)



Modularity

- + Scalable with parallel operation
- + Light and compact footprint: high energy density and design
- + Compatible with DC power supply and bidirectional inverters



Flexibility of installation

- + Suitable for any place of installation (IP43)
- + Range of operating temperature in standard conditions: -20°C to 60°C / -4°F to 140°F

FIAMM Manufacturing

- + ISO 9001 Quality Management System
- + ISO 14001 Environmental Management System

SoNick™ Tecnology Overview

- + Long-term safety and reliability with over 15 years of field deployment
- + Multipurpose application: EV, TLC, UPS, Railway
- + Over 100MWh installed globally
- + No auxiliary equipment (air conditioning, generator) needed

ST523 Technical Specification

Electrical Characteristics

Battery / Chemistry Type	NaNiCl ₂
Constant Power Discharge (Rated)	6.25 kW for 3 hours
Total Number of cells	240
Nominal Current Capacity	38 Ah (100% DOD)
Nominal Energy Capacity	22.5 kWh (100% DOD at C/10)
Round Trip Efficiency	90% round trip efficiency (at 6.25 kW constant power discharge 80% DOD & charging maximum power 6.25 kW)
Operation Voltage	Minimum 450 VDC Nominal 620 VDC Maximum 641 VDC
Max Charge Voltage	700 VDC (DC Bus)
Min Discharge	450 VDC (DC Bus)

Operating Conditions

Cooling	Not Needed
Heating from cold to operation temperature	Take up to approximately 15 hours
Design Cycle Life	4500 Cycles at 80% DOD

BMS Characteristics

AUX Power for 24VDC feed	Depends on requirements	
Monitor/Control	<ul style="list-style-type: none"> - SOC - Thermal management - Fault detection 	<ul style="list-style-type: none"> - Over/under voltage - Over/under temperature - Over current
Charge Control	Embedded electronic current control	
Gateway Communications	CAN Open	

Dimensions

Width (W)	624 mm / 24.6 in
Depth (D)	1023 mm / 40.2 in
Height (H)	406 mm / 16 in
Weight	256 kg / 564 lb

