

**Sodium Nickel Technology for Energy Storage Application:
FZSoNick Energy Spring 1-64 620 V 1.4 MWh 400 kW**



Energy Spring 164 System

- + 620 VDC Battery System for Energy Storage
- + Suitable for On-Grid and Off-Grid applications as well as Micro-Grid
- + 20' high cube containerized solution with 64 battery ST523 for medium voltage applications
- + 100% maintenance free in operation
- + System does not need to be shut down to replace energy modules (increased uptime, system remains in operation)

Application

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

Applicable Standards

- + CEI EN60435
- + CEI EN64-8/5
- + UNI 9795:2010
- + UNI EN12100:2010
- + EN 61000-6-1

FIAMM Manufacturing

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

Energy Spring 164 Benefits



SAFETY

- + Zero ambient emission
- + No hazardous components
- + All access from outside: no internal walking



MODULARITY

- + Scalable with parallel operation (from 32 up to 64 batteries)
- + Compact footprint: high energy density and design
- + Compatible with DC power supply and bidirectional inverters



FLEXIBILITY OF INSTALLATION

- + Suitable for any place of installation
- + Ambient temperature (standard condition): -20°C to +60°C
- + Approved for marine transportation

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

Energy Spring 164 Technical Specification for configuration of 64 ST523

Battery / Chemistry Type	NaNiCl ₂
Constant Power Discharge (Rated)	400 kW for 3 hours
Nominal Energy Capacity	1.4 MWh (100% DOD)
System Rating (Voltage, Current Capacity)	Nom. 620 VDC, Nom. 2432 Ah
Min / Max Operative System Voltages	500 VDC / 700 VDC
Standard Charge / Discharge hours	8 hours of charge, 3 hours of discharge
Standard Circuit Design	Up to 64 battery modules connected in parallel
Enclosure Dimensions	L: 6058 mm / 238.5 in H: 2896 mm / 114 in W: 2438 mm / 96 in
Weight (metric ton)	25 t (with battery modules), 10 t (without battery modules)
Heater Consumption during floating	<10 kW
Ventilation	Air Conditioning not needed, only forced-air ventilation for power electronics
Design Cycle Life	4500 Cycles at 80% DOD
Product / Material Specifications	Please refer to ST523 battery specifications
BMS Characteristics	Please refer to ST523 battery specifications



Technical features for BESS Application

- + No cooling system required
- + 100% maintenance free in operation