FIAMM

Industrial Batteries

SONICK

48TL160H

Applications and Key Benefits

- 48V sodium nickel chloride battery, specifically designed for off-grid or hybrid telecom application
  Ideal for :
  - Use with renewable energy (Wind / Solar)
  - Use in combination with gen-sets
  - Applications that require very long medium and low rate discharge
  - Locations with poor or unavailable grid connection
  - Extreme temperature conditions
  - Installation in remote location
- Lowest thermal loss for best energy efficiency
- Constant performance at -20° to +60°C / -4°F to 140°F
- No cooling required
- >3000 cycles at 80% DoD
- 100% maintenance free in operation
- Allows remote monitoring
- Specific energy 70% lighter and 30% smaller than conventional batteries
- Very low total cost of ownership (TCO) compared to other battery technologies
- Very long shelf life without maintenance
- Capacity to store energy indefinitely when not connected
- No outgassing and zero ambient emission

Sodium Nickel Chloride Technology

- Use of sodium and nickel as active materials, with solid ceramic electrolyte
- Active materials contained in sealed steel sheet cells
- “hot battery” - internal operating temperature around 300°C / 572°F
- Made with 2.58 Volt cells with 140 Wh/kg / 310Wh/lb and 280 Wh/liter specific density
- Proven technology for energy storage and clean powering of electric vehicles

Environment

- Zero ambient emission:
  can be installed in a sealed environment
- Battery outside temperature only few degrees above the ambient temperature
- Efficient material usage and 100% recyclable:
  stainless steel, nickel, iron, salt, ceramic
- Free of toxic materials: no lead or cadmium
- RoHs compliant

Technical Features

- Steel cell case and double stainless steel battery case
- Optimized insulation to guarantee lowest thermal loss and maximize the battery energy efficiency
- Integrated battery monitoring system (BMS) for monitoring, diagnostics and data logging
- User interface on front panel
- Ready for remote diagnostics and monitoring
- Compatible with any DC power supply and standard telecom rectifiers
- Scalable with parallel operation
- No memory effect
- Typical failure mode (internal short) does not develop violent energy release - batteries remain in operation with slight loss of performance
- BMS diagnostics alert on anomalies and disconnect the battery in case of serious failure
- Supplementary protection with an independent circuitry in the event of BMS failure
- Integrated low voltage disconnect (LVD)

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48TL160H Technical Data

Electrical Characteristics

Nominal Voltage	48 VDC
Open Circuit Voltage	51.6V
Bus Voltage Range	53 to 59 V
Nominal Capacity	160 Ah at C4 to 42V
Nominal Energy	7700 Wh at C4 to 42V
Gravimetric Energy Density	86 Wh / Kg - 39 Wh / lb
Volumetric Energy Density	83 Wh / liter
Max Continuous Discharge Current	65 Amps
Faradic Charge Efficiency	100%

Operating Conditions

Operating Temperature Range	-20°C to + 60°C / -4°F to 140°F continuous
Warm-up Time to be Operational	< 13 hours
Thermal Losses in Operation	55 W
Nr of Cycles	> 3000 Cycles at 80% DoD
IP Rating	IP-55

Communication

Data Interface Protocol	RS 485 / USB / Ethernet / CAN-bus
Alarm Dry Contact NO / NC	230 Vac / 2 A

Dimensions

Front	494 mm / 19.5 in.
Depth	578 mm / 22.8 in.
Height	325 mm / 12.8 in.
Weight	90 kg / 198 lb

Applicable Standards

- EN 61000-6-1
- CE
- CAS Nr 7440-02-0 - Nickel specification

FIAMM Manufacturing

- Made in Switzerland -
  Over 10 years experience with sodium nickel chloride technology and application in electric vehicles
- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System

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