



Applications and Key Benefits

- + 48V sodium nickel chloride energy backup system, specifically designed for telecom application
Ideal for:
 - Telecom central office sites with stringent energy density requirement
 - Telecom outdoor cabinets in locations with elevated or extreme temperature
 - Installation with poor grid connection and frequent power outages
 - Installation in locations where regular on-site maintenance is costly or not possible
- + 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 backup systems
- + Very low total cost of ownership (TCO) compared to other backup technologies
- + No outgassing and zero ambient emission
- + Very long shelf life without maintenance: stores energy indefinitely when not connected

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 device" - 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
- System outside temperature only few degrees above the ambient temperature
- Efficient material usage and 100% recyclable:
stainless steel, nickel, iron, salt, ceramic
- RoHs compliant

Technical Features

- Steel cell case and double stainless steel device case
- Integrated 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
- BMS diagnostics alert on anomalies and disconnect the device in case of serious failure
- Supplementary protection with an independent circuitry in the event of BMS failure
- Integrated low voltage disconnect (LVD)
- **48TL-H models:** optimized insulation to guarantee lowest thermal loss and maximize the system energy efficiency
Ideal for applications that require medium to very long discharge





General Characteristics

| | |
|-----------------------------|--|
| Nominal Voltage | 48 VDC |
| Open Circuit Voltage | 51.6V |
| Bus Voltage Range | 53 to 59 V |
| Faradic Charge Efficiency | 100% |
| Cycles | > 3000 Cycles at 80% DoD |
| Operating Temperature Range | -20°C / + 60°C - -4°F / 140°F continuous |

| Model | Nominal Capacity | Nominal Energy | Gravimetric Energy Density | Volumetric Energy Density | Max Continuous Discharge Current | Warm-up Time to be Operational | Interface |
|-------|------------------|----------------|----------------------------|---------------------------|----------------------------------|--------------------------------|-----------|
| | at C4 to 42V | | | | | | |

48TL range - application with stable or unstable grid connection

| Model | Nominal Capacity | Nominal Energy | Gravimetric Energy Density | Volumetric Energy Density | Max Continuous Discharge Current | Warm-up Time to be Operational | Interface |
|---------|------------------|----------------|----------------------------|---------------------------|----------------------------------|--------------------------------|------------------------------------|
| 48TL80 | 80 Ah | 3650 Wh | 81 Wh / Kg 37 Wh / lb | 80 Wh / liter | 50 Amps | < 20 hours | RS 232 (option RS 485) |
| 48TL120 | 120 Ah | 5700 Wh | 74 Wh / Kg 34 Wh / lb | 64 Wh / liter | 90 Amps | < 14 hours | RS 485 / USB Ethernet / CAN-bus |
| 48TL160 | 160 Ah | 7700 Wh | 85 Wh / Kg 38 Wh / lb | 86 Wh / liter | 120 Amps | < 14 hours | RS 485 / USB Ethernet / CAN-bus |
| 48TL200 | 200 Ah | 9600 Wh | 91 Wh / Kg 42 Wh / lb | 108 Wh / liter | 150 Amps | < 14 hours | RS 485 / USB Ethernet / CAN-bus |

48TL-H range - optimized for hybrid application with renewable energy and/or gen-set

| Model | Nominal Capacity | Nominal Energy | Gravimetric Energy Density | Volumetric Energy Density | Max Continuous Discharge Current | Warm-up Time to be Operational | Interface |
|----------|------------------|----------------|----------------------------|---------------------------|----------------------------------|--------------------------------|------------------------------------|
| 48TL160H | 160 Ah | 7700 Wh | 86 Wh / Kg 39 Wh / lb | 83 Wh / liter | 65 Amps | < 13 hours | RS 485 / USB Ethernet / CAN-bus |

Dimensions

| Model | Front | Depth | Height | Weight |
|----------|--------------------|--------------------|--------------------|-----------------|
| 48TL80 | 260 mm / 10.24 in. | 550 mm / 21.65 in. | 320 mm / 12.60 in. | 45 Kg / 99 lb |
| 48TL120 | 496 mm / 19.53 in. | 558 mm / 21.97 in. | 320 mm / 12.60 in. | 77 Kg / 170 lb |
| 48TL160 | 496 mm / 19.53 in. | 558 mm / 21.97 in. | 320 mm / 12.60 in. | 91 Kg / 201 lb |
| 48TL160H | 496 mm / 19.53 in. | 578 mm / 22.76 in. | 325 mm / 12.80 in. | 90 Kg / 198 lb |
| 48TL200 | 496 mm / 19.53 in. | 558 mm / 21.97 in. | 320 mm / 12.60 in. | 105 Kg / 231 lb |

Applicable Standards

- EN 61000-6-1
- CE
- CAS Nr 7440-02-0 - Nickel specification
- NEBS Level-1 DA-1976
- 48TL200: certified
- 48TL120 - 48TL160 - 48TL160H: designed to comply

FIAMM Manufacturing

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

FIAMM S.p.A.
Industrial Batteries

dealer:
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 Registered Office: Via G. Deledda, 11/7
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