



### Features

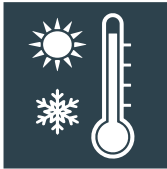
- > 48V Sodium Nickel Chloride batteries
- > External temperature does not affect the lifetime and performance of the battery module
- > Greatest safety among existing high energy density batteries in all conditions: transport, stock and operation
- > Maintenance free
- > Superior cycling capability
- > Up to 80% footprint reduction and 3 times lighter than conventional batteries
- > Free of toxic material and 100% recyclable



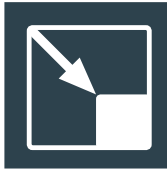
Eco  
Friendly



Extreme  
Temperature



Space  
Reduction



Recyclable



Weight  
Reduction



Smart



Safe



### Key Benefits

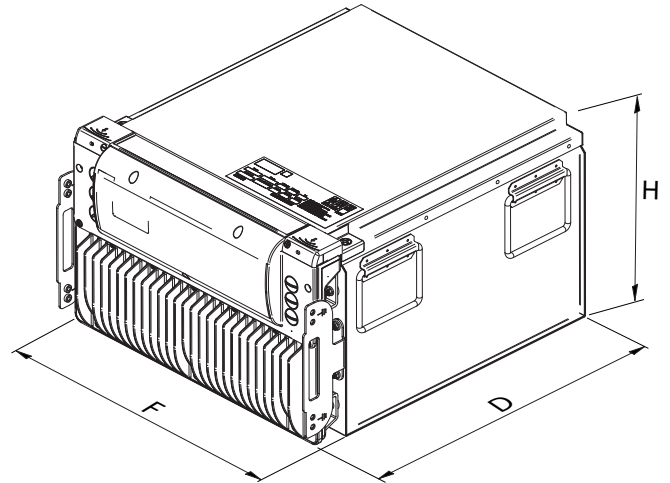
- > No active cooling required.  
Constant performance and 20 years design life at:  
-20°C to +60°C / -4°F to 140°F continuous operation\*  
-40°C to +75°C / -40°F to +167°F peak
- > Zero self-discharge or degradation when stored
- > Zero ageing in floating condition
- > No memory effect
- > Compatible with any standard DC power supply and rectifiers
- > Embedded DC breaker for low voltage disconnect (LVD) and short circuit protection
- > Integrated system (BMS) for monitoring, diagnostics and data logging
- > Allows remote monitoring
- > Status LED and display on front panel
- > Low total cost of ownership (TCO)
- > No risk of explosion even in presence of external fire
- > Effective theft deterrent
- > Robust external steel case
- > No outgassing and zero ambient emission
- > Scalable without limit of modules in parallel
- > Expandable without limitation on battery age
- > Parallel operation with conventional batteries
- > Recycling process in place
- > Configurable re-charge current

\* peaks above 60°C are allowed for limited periods



## General Characteristics

Nominal Voltage	48 VDC
Charge Voltage Range	54 to 59 V
Cycles	>4500 Cycles at 80% DoD
Operating Temperature Range	-20°C / + 60°C - -4°F / 140°F continuous -40°C / + 75°C - -40°F / +167°F peak
Storage duration	Indefinite (-40°/+60°C)
Design life	20 years
Max charging current	Self limited up to 0,2C
IP Protection	IP55



## Dimensions

Model	Front	Depth	Height
48TL80	260 mm / 10.24 in.	550 mm / 21.65 in.	320 mm / 12.60 in.
48TL120	496 mm / 19.53 in.	558 mm / 21.97 in.	320 mm / 12.60 in.
48TL160	496 mm / 19.53 in.	558 mm / 21.97 in.	320 mm / 12.60 in.
48TL200	496 mm / 19.53 in.	558 mm / 21.97 in.	320 mm / 12.60 in.

## Specific Characteristics per Model

Model	Nominal Capacity		Gravimetric Energy Density	Weight	Max Continuous Discharge Current*	Max Charging current	Interface
	at C4 to 42V						
48TL80	80 Ah	3650 Wh	81 Wh / Kg 37 Wh / lb	45 kg / 99 lb	50 Amps	12 Amps	RS 232 / RS 485
48TL120	120 Ah	5700 Wh	74 Wh / Kg 34 Wh / lb	77 kg / 170 lb	90 Amps	24 Amps	RS 485 / USB Ethernet**
48TL160	160 Ah	7700 Wh	85 Wh / Kg 38 Wh / lb	91 kg / 201 lb	120 Amps	32 Amps	RS 485 / USB Ethernet**
48TL200	200 Ah	9600 Wh	91 Wh / Kg 42 Wh / lb	104 kg / 229 lb	150 Amps	40 Amps	RS 485 / USB Ethernet**

\* Higher peak can be tolerated for limited period of time

\*\* Optional external interface

## FZSONICK Manufacturing

- > Made in Switzerland
- > ISO 9001 - Quality Management System
- > ISO 14001 - Environmental Management System
- > Over 20 years experience with Sodium Nickel Chloride technology

## Applicable Standards

- > EN 61000-6-1
- > CE
- > NEBS DA1976 Level 1 and Level 3
- > ROHS
- > UL9540A (Safety)
- > Design to comply with UL1973
- > IEC62984

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TL range - 2019\_05\_20