

Lithium Iron Phosphate (LFP)



Features

- Simple installation and load/charge system integration (Pos/Neg termination)
- Advanced intelligent lithium battery management technology
- Energy transfer patented technology provides high cell utilization efficiency for prolong system operational life.
- Configuration flexibility, support parallel connection expansion up to 4 modules
- Integrated heating for cold temperature operation

Compliance

- UL1642, Standard for Lithium Batteries
- UL2054, Standard for Household and Commercial Batteries
- UL1973
- EN 61000-6-1:2007, Electromagnetic compatibility (EMC)
- EN 61000-6-3:2007+A1:2011, Electromagnetic compatibility (EMC)
- IEC 62133:2012, Battery Safety Testing
- UN 38.3
- IP65

BMS – Alarming - Communication

- System monitoring of voltage, current, temperature of cells and module. Built in protection against over-current on discharge and recharge, over-temperature, low temperature, low and high voltage, and short circuit
- BMS maintenance and service communication via RS485 along with Modbus for simple interface with Inverters and other equipment

Narada MPL FEN series 48V LFP (Li-Ion) battery system are designed to IP65 requirements and ideally suited for OSP, Telecom, 5G, CATV, Rail and any outdoor application. They can be install in parallel up to 4 Batteries max.

FEN series offer long cycle life, small size, reduced weight, and simplified installation for mounting to pole or enclosure. Batteries can be paralleled up to 200Ah. LFP chemistry makes it one of the safest technologies, suitable for high and low temperature operation and capable of .5C and higher discharge rates.

Dimensions and Specifications

Width		Depth		Height	
(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
310	12.2	448	17.6	238	9.37

Rack Units	Weight		Terminal
	(kg)	(lbs.)	
N/A	34.0	75.0	N/A

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Parallel Operation / Discharge Rate

FEN4850	0.5C to 1C up to 4 Strings
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BMS/Battery Operating Parameters

Parameters	Units	Value
Capacity	Ah	50
Rated Voltage	V	48
Charge voltage	V	54.5 ± 0.5
No Equalization Required	V	NA
Nominal charge current	A	10
Charge current limitation	A	50
LVBD (Low voltage battery disconnect)	V	> 40.5

Operating Environment Limits

Maximum Recommended Temperature Range (°C)	Discharge	-20 ~ +60
	Charge	0 ~ +60
	Storage	0 ~ +40
Recommended Temperature (°C)	Discharge	+15 ~ +35
	Charge	+15 ~ +35
	Storage	+15 ~ +30
Humidity	5% ~ 95%	

Constant Current Discharge Rate @25C for 1 Module

Current	5A	10A	15A	25A	40A	50A
Time	Hours					
End Voltage						
46.5 V	9.73	4.85	2.93	1.90	1.15	0.90
45.0V	9.92	4.96	3.00	1.96	1.20	0.93
43.5V	10.05	5.03	3.05	2.00	1.23	0.96
42.0 V	10.13	5.07	3.08	2.02	1.25	0.98
40.5 V	10.18	5.10	3.09	2.03	1.26	1.00

Cycles - Temperature vs. Depth of Discharge

Temp C	Depth of Discharge				
	100%	80%	60%	40%	20%
25	2500	3100	4200	6300	11500
35	2000	2500	3350	5000	8200
45	1400	1750	2300	3300	5400

Discharge Data with Constant Power @25C for 1 Module

Power (W)	240	480	790	1200	1900	2200
Time	Hours					
End Voltage						
46.5 V	9.83	4.89	2.92	1.85	1.05	0.82
45.0V	10.02	4.99	3.01	1.91	1.11	0.86
43.5V	10.13	5.05	3.05	1.95	1.15	0.90
42.0 V	10.21	5.09	3.08	1.98	1.18	0.93
40.5 V	10.25	5.12	3.09	2.00	1.20	0.95

FEN4850 Accessories

Part No.	Description
FEN4850-CBLComMod	Module to Module Com Cable
FEN4850-CBLComPC	Comms to PC/laptop Cable
FEN4850-CBLComRec	Comms to Rectifier Cable (no connector at Rectifier end)
FEN4850-CBLDCPow	DC Power Cable
FEN4850-PMK	FEN4850 Pole and Wall Mount Kit