



RB12

Voltage: 12.8V | Capacity: 12 Ah | Energy: 154 Wh

LITHIUM IRON PHOSPHATE BATTERY LIFEPO4

ELECTRICAL SPECIFICATIONS

Nominal Voltage	12.8 V
Nominal Capacity	12 Ah
Resistance	≤90 mΩ @ 50% SOC
Efficiency	99%
Self Discharge	<3% per Month
Maximum Modules in Series	1

DISCHARGE SPECIFICATIONS	
Maximum Continous Discharge Current	10 A
Peak Discharge Current	20 A (7.5 s ±2.5 s)
BMS Discharge Current Cut-Off	30 A ±5 A (10 ±5 ms)
Recommended Low Voltage Disconnect	11 V
BMS Discharge Voltage Cut-Off	8 V (2.0 ±0.08 vpc) (100 ±50 ms)
Reconnect Voltage	10 V (2.5 ±0.1 vpc)
Short Circuit Protection	200-500 µs

TEMPERATURE SPECIFICATIONS	
Discharge Temperature	-4 to 140 °F (-20 to 60 °C)
Charge Temperature*	-4 to 113 °F (-20 to 45 °C)
Storage Temperature	23 to 95 °F (-5 to 35°C)

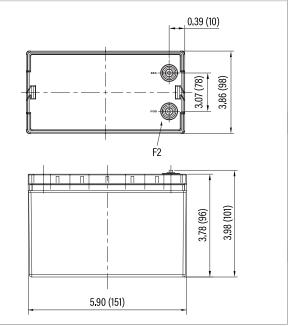
*Refer to charge currents below 32°F (0°C)

MECHANICAL SPECIFICATIONS		
Dimensions (L x W x H)	5.9 x 3.9 x 4.0" 151 x 98 x 101 mm	
Weight	3.6 lbs (1.65 kg)	
Terminal Type	F2 terminal	
Case Material	ABS	
Enclosure Protection	IP66	
Cell Type - Chemistry	Cylindrical - LiFePO ₄	

CHARGE SPECIFICATIONS	
Recommended Charge Current	0.5 A - 5 A
Maximum Charge Current	10 A
Charge Current 14 to 32 °F (-10 to 0 °C)	≤0.1 C
Charge Current -4 to 14 °F (-20 to -10 °C)	≤0.05 C
Recommended Charge Voltage	14.2 V - 14.6 V
BMS Charge Voltage Cut-Off	15.6 V (3.9 ±0.025 vpc) (1.0 ±0.5 s)
Reconnect Voltage	15.2 V (3.8 ±0.05 vpc)

COMPLIANCE SPECIFICATIONS	
Certifications	UN38.3 & CE (battery) UL1642 (cells) (File# MH64523) IEC62133 (cells)
Shipping Classification	UN 3480, CLASS 9

DIMENSIONAL SPECIFICATIONS





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RELI³ON[°] DATA SHEET

LITHIUM IRON PHOSPHATE BATTERY LIFePO4

PERFORMANCE CHARACTERISTICS DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS RATES DISCHARGE 1C 25-C (77°F) 14.5 14.5 14.0 14.0 13.5 13.5 13.0 13.0 12.5 12.5 Voltage (V) Voltage (V) 12.0 12.0 11.5 11.5 11.0 11.0 10.5 10.5 10.0 10.0 45°C (113°F) 60°C (140°F) 9.5 -0.2C 9.5 - 25°C (77°F) - 0°C (32°F) - 10°C (50°F) -10°C (14°F) -0.5C 9.0 9.0 -1C -2C 8.5 8.5 -20°C (-4°F) 8.0 8.0 0% 20% 0% 20% 40% 60% 80% 100% 120% 40% 60% 80% 100% 120% Capacity Capacity CHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES CHARGE VOLTAGE and STATE OF CHARGE (SOC) CHARGE 0.2C CHARGE 0.2C @ 25°C (77°F) 15.0 15.0 140% 14.5 130% 14.5 14.0 14.0 120% 13.5 13.5 110% 13.0 13.0 100% 12.5 90% 12.5 Voltage (V) Voltage (V) SOC 12.0 12.0 80% 11.5 11.0 11.5 70% 60% 11.0 50% 10.5 10.5 10.0 10.0 40% 9.5 9.5 30% 9.0 9.0 20% Voltage 8.5 8.5 10% State of Charge 8.0 8.0 0% 0% 20% 40% 60% 80% 100% 120% 0 50 100 150 200 250 300 350 State of Charge Time (Minutes) CYCLE LIFE vs. DEPTH OF DISCHARGE (DOD) CAPACITY of RELION LiFePO4 vs. LEAD ACID DISCHARGE 0.5C/CHARGE 0.5C @ 25°C (77°F) at VARIOUS RATES OF DISCHARGE 100% 140 130 95% 120 90% 110 85% Remaining Capacity 80% 22% 82% 100 60 65% RELION LIFePO4 - GROUP 31 50 -FLA - GROUP 31 —50% DOD 60% 40 -AGM - GROUP 31 55% 30 -GEL - GROUP 31 -100% DOD 50% 20 0 2000 4000 6000 8000 10000 12000 14000 0 10 20 50 60 70 80 30 40 Cycles Rate (A) FOR THE PLANET UN38.3 CE

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