NPP Power Co., Ltd



NSFE200Q10 24V200Ah

LiFePO₄ Lithium Battery

Longer Cycle Life: Offers up to 15 times longer cycle life and 5 times longer float/calendar life than lead acid battery.

Lighter Weight: About 40% weight of a comparable lead acid battery, save up to 60% in weight.

Quick Charge: Short charge time compared with lead acid battery.

Low Self-Discharge: Lower self-discharge compared with lead acid battery, longer storage time without recharging.

Superior Safety: Multi-protection methods built inside to protect the battery from overcharge, over discharge and short circuit situation.

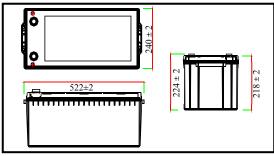
High Efficient: Higher round-trip energy efficiency of the average (92%) than lead acid battery 80% (discharge from 100% to 0% and back to 100% charged).



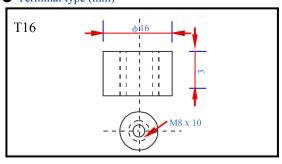
Specifications

Nominal voltage		24V
Nominal capacity		200Ah
Dimensions	Length	522±2mm (20.94inch)
	Width	240±2mm (9.37inch)
	Height	218±2mm (8.74inch)
	Total height	224±2mm (8.82inch)
Approx. weight		39.90kg (87.96lbs)±4%

Outer dimensions (mm)



• Terminal type (mm)



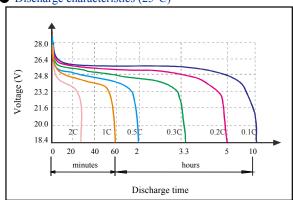
Characteristics

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Electrical Parameters (25°C) Energy S120Wh Months Self Discharge <3% Charge Efficiency 99.5%@ 0.2C Discharge Efficiency 99.5%@ 0.2C Discharge Efficiency 96-99%@ 1C Terminal type T16 Internal resistance (Fully charged, 25°C) ≤200mΩ Cycle life >2500 cycles @ 0.2C 100%D.O.D Capacity affected by temperature 40°C 101% Capacity affected by temperature 25°C 100% Torco 75% Nominal operating temperature 25°C±3°C (77°F±5°F) Operating temperature Charge 0°C~45°C (32°F~113°F) Torco Torco 113°F Torco 75% Nominal operating temperature 25°C±3°C (70°F±5°F) Operating temperature Charge 0°C~45°C (32°F~113°F) Water Dust Resistance 1P65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) 0.2CA Constant Current to 29.2V, then Constant Voltage 29.2V Charge Current 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none) SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Cells 8 Strings	Parameters	Rated Voltage	25.6V
Parameters (25°C)		Rated Capacity (C ₅)	200Ah@25°C
Charge Efficiency 99.5%@ 0.2C Discharge Efficiency 99.5%@ 0.2C Discharge Efficiency 96-99%@ 1C Terminal type T16 Internal resistance (Fully charged, 25°C) ≤200mΩ Cycle life >2500 cycles @ 0.2C 100%D.O.D Capacity affected by temperature 0°C 90% -10°C 75% Nominal operating temperature 25°C±3°C (70°F±5°F) Operating temperature Charge 0°C~45°C (32°F~113°F) Targe Storage 0°C~40°C (32°F~113°F) Water Dust Resistance IP65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) 0.2CA Constant Current to 29.2V, then Constant Voltage 29.2V until the current drops to 0.02CA, before use, rest 30 minutes Charge Current 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none) SMBus/RS485/RS232 SOC (optional) Cells 8 Strings Mechanical Cells 8 Strings		Energy	5120Wh
Discharge Efficiency 96-99%@ 1C Terminal type T16 Internal resistance (Fully charged, 25°C) ≤200mΩ Cycle life >2500 cycles @ 0.2C 100%D.O.D Capacity affected by temperature 0°C 90% -10°C 75% Nominal operating temperature 25°C±3°C (77°F±5°F) Operating temperature Charge 0°C~45°C (32°F~113°F) Trange Storage 0°C~40°C (32°F~113°F) Water Dust Resistance IP65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) 40A Maximum Charge Current 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none) SMBus/RS485/RS232 SOC (optional) Cells 8 Strings		Months Self Discharge	<3%
Terminal type T16 Internal resistance (Fully charged, 25°C) Cycle life V2500 cycles @ 0.2C 100%D.O.D Cycle life V25°C 100% Capacity affected by temperature Capacity affected by temperature Discharge Operating temperature Charge Current Communicate Protocol (optional) Discharge Cells SOC (optional) Application connection Cells P2500 cycles @ 0.2C 100%D.O.D 2200mΩ P2500 cycles @ 0.2C 100%D.O.D 2200mΩ P2500 cycles @ 0.2C 100%D.O.D P2600 C.O.D. P2600 C.O.		Charge Efficiency	99.5%@ 0.2C
Internal resistance (Fully charged, 25°C) ≤200mΩ Cycle life >2500 cycles @ 0.2C 100%D.O.D Cycle life >2500 cycles @ 0.2C 100%D.O.D Cycle life 0°C 90% 100% Cycle life 0°C 25°C± 3°C (77°F± 5°F) Nominal periodic life Charge Cycle down Cycle life Operating Light life Cycle down Cycle life Cycle down Cycle life Operating Light life Cycle down Cycle life Cycle down Cycle life Cycle down Cycle life Cycle down Cycle life Discharge Current Life <td>Discharge Efficiency</td> <td>96-99%@ 1C</td>		Discharge Efficiency	96-99%@ 1C
Cycle life >2500 cycles @ 0.2C 100%D.O.D A0°C	Terminal type		T16
A0°C 101% Capacity affected by temperature 25°C 100% O°C 90% -10°C 75% Nominal operating temperature 25°C±3°C (77°F±5°F) Operating temperature Charge 0°C~60°C (-4°F~140°F) Emperature range Storage 0°C~45°C (32°F~113°F) Water Dust Resistance IP65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) 0.2CA Constant Current to 29.2V, then Constant Voltage 29.2V Until the current drops to 0.02CA, before use, rest 30 minutes Charge Current 100A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 550A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none) SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Strings	Internal resistance (Fully charged, 25°C)		≤200mΩ
Capacity affected by temperature 0°C 90% -10°C 75% Nominal operating temperature 25°C± 3°C (77°F± 5°F) Operating temperature Charge 0°C~ 60°C (-4°F~ 140°F) Water Dust Resistance Charge Voltage Charge Voltage Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Maximum Pulse Current Communicate Protocol (optional) Application connection Cells 8 Strings 100% 90% -10°C 90% 90% 90% 90% 90% 90% 90% 90%	Cycle life		>2500 cycles @ 0.2C 100%D.O.D
affected by temperature	affected by	40°C	101%
temperature 0°C 90% -10°C 75% Nominal operating temperature 25°C± 3°C (77°F± 5°F) Operating temperature Charge 0°C~ 60°C (-4°F~ 140°F) temperature range Storage 0°C~ 45°C (32°F~ 113°F) Water Dust Resistance IP65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) Charge Current 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none) SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical		25°C	100%
Nominal operating temperature Operating temperature Charge Charge O°C~ 60°C (-4°F ~ 140°F) Operating temperature Charge Storage O°C~ 45°C (32°F ~ 113°F) Water Dust Resistance IP65 Charge Voltage Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Maximum Charge Current Charge Current Maximum Pulse Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Discharge Strings O°C~ 40°C (32°F ~ 104°F) O°C~ 45°C (32°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 45°C (32°F ~ 104°F) O°C~ 45°C (32°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 45°C (24°C (32°F ~ 104°F) O°C~ 45°C (24°C		0°C	90%
Operating temperature range Charge Charge Charge O°C~ 45°C (32°F ~ 113°F) Storage O°C~ 40°C (32°F ~ 104°F) Water Dust Resistance IP65 Charge Voltage O.2CA Constant Current to 29.2V, then Constant Voltage 29.2V until the current drops to 0.02CA, before use, rest 30 minutes Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Discharge Curles Cells Strings		-10°C	75%
temperature range Storage Storage O°C~ 45°C (32°F ~ 113°F) Water Dust Resistance IP65 Charge Voltage Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Charge Cuto°C, 32°F ~ 113°F) O°C~ 45°C (32°F ~ 113°F) O°C~ 40°C (32°F ~ 113°F) O°C~ 45°C (32°F ~ 113°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) Until the current to 29.2V until the current drops to 0.02CA, before use, rest 30 minutes 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) O'C~ 40°C (20°F) 100A Maximum Pulse Current 650A (<100ms) O'C~ 40°C (20°F) O'C~ 40°C (20°F) Until the current drops to 0.02CA, before use, rest 30 minutes 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A (default none) SMBus/RS485/RS232	Nominal operating temperature		25°C± 3°C (77°F± 5°F)
temperature range Storage Storage O°C~ 45°C (32°F ~ 113°F) Water Dust Resistance IP65 Charge Voltage 29.2V Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Maximum Pulse Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Charge Storage O°C~ 45°C (32°F ~ 113°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 40°C (23°F ~ 104°F) O°C~ 40°C (32°F ~ 104°F) O°C~ 40°C (23°F ~ 104°F) O°C~ 40°C (24°F) O°C~ 40°F (24°F) O°C~ 40°F (24°F) O°C~ 40°C (24°F) O°C~ 40°C (24°F) O°C~ 40°F (24°F) O°C~ 40°F (24°F) O°C~ 40°F (24°F	Operating	Discharge	- 20°C~ 60°C (-4°F ~ 140°F)
Water Dust Resistance Charge Voltage Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Water Dust Resistance IP65 0.2CA Constant Current to 29.2V, then Constant Voltage 29.2V, until the current drops to 0.02CA, before use, rest 30 minutes 100A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) Application connection 1 string 1 parallel Mechanical	temperature	Charge	0°C~ 45°C (32°F ~ 113°F)
Charge Voltage Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Maximum Charge Current Charge Cut off Voltage Continuous Discharge Current Maximum Pulse Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Cells SCA Constant Current to 29.2V, then Constant Voltage 29.2V until the current drops to 0.02CA, before use, rest 30 minutes 40A 100A 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232	range	Storage	0°C~ 40°C (32°F ~ 104°F)
Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Charge Current Charge Cut off Voltage Continuous Discharge Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Standard Charge Mode (25°C±2°C, <75%RH) (10.2CA Constant Current to 29.2V, then Constant Voltage 29.2V until the current drops to 0.02CA, before use, rest 30 minutes 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) Application connection 1 string 1 parallel Mechanical	Water Dust Resistance		IP65
Standard Charge Mode (25°C±2°C, <75%RH) Charge Current Charge Current Charge Cut off Voltage Continuous Discharge Current Discharge Cut Off Voltage Communicate Protocol (optional) Application connection Standard Charge Aude then Constant Voltage 29.2V until the current drops to 0.02CA, before use, rest 30 minutes 40A Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) Application connection 1 string 1 parallel Mechanical	Charge Voltage		29.2V
Maximum Charge Current 100A Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Cells 8 Strings			then Constant Voltage 29.2V until the current drops to 0.02CA,
Charge Cut off Voltage 29.2V Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Cells 8 Strings	Charge Current		40A
Continuous Discharge Current 100A Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Cells 8 Strings	Maximum Charge Current		100A
Maximum Pulse Current 650A (<100ms) Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Mechanical Cells 8 Strings	Charge Cut off Voltage		29.2V
Discharge Cut Off Voltage 22.4V Communicate Protocol (optional) (default none)SMBus/RS485/RS232 SOC (optional) (default none) LED Application connection 1 string 1 parallel Cells 8 Strings	Continuous Discharge Current		100A
Communicate Protocol (optional) (default none)SMBus/RS485/RS232	Maximum Pulse Current		650A (<100ms)
SOC (optional)	Discharge Cut Off Voltage		22.4V
Application connection 1 string 1 parallel Cells 8 Strings	Communicate Protocol (optional)		(default none)SMBus/RS485/RS232
Mechanical Cells 8 Strings	SOC (optional)		(default none) LED
Mechanical	Application connection		1 string 1 parallel
	Mechanical	Cells	8 Strings
		Container	ABS

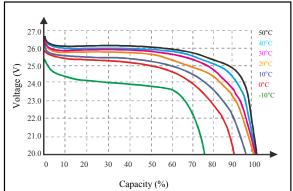
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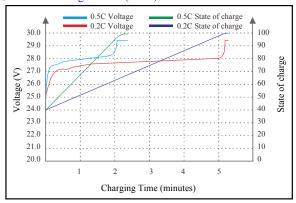
Discharge characteristics (25°C)



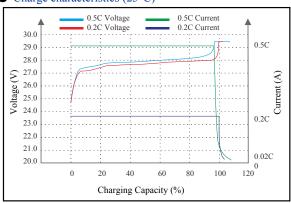




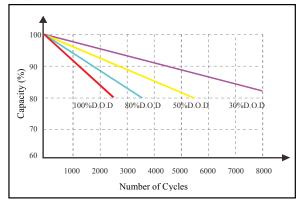
State of Charge Curve (25°C)



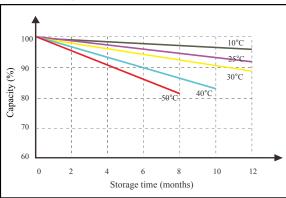
• Charge characteristics (25°C)



• Cycle life on D.O.D (25°C)



Self Discharge Characteristics Curve



Note 2: The above curves are based on laboratory testing data @ 25°C 40%RH.





