

DATASHEET



Turntide NMC Battery Pack

(44V, 6.7 kWh)

Turntide’s new lithium-ion modular battery solutions combine high-performance battery packs with system controllers for temperature and voltage measurement and internal cell balancing. The Turntide NMC Battery Pack (44V, 6.7 kWh) is ideal for many off-highway applications from construction and agriculture to marine and material handling.



Features

- Integrated charger controls
- UN38.3 certified: approved for global shipping
- Rated capacity of 6.7 kWh/150 Ah
- Scalable: increase capacity without additional controllers
- High voltage: connect modular packs in series for systems up to 500V
- Environmental protection enclosure: fully plastic case (IP66)
- Battery housing to allow ease of mounting on at least 2 axis
- Natural cooled with an option for liquid cooling

Specifications

Product Details			
Model Number	NMC BPK 44/6.7	Recommended Useable Energy	6.1 kWh
Voltage Nominal	44V	Dimensions (LxWxH)	441 x 484 x 137 mm
Voltage Range Min/Max	37.2V / 49.8V	Weight	38 kg
Charge Current	150 A Continuous* 450 A Peak (10 sec)	Enclosure & Mounting	Plastic, 4xM6 mounting points
Discharge Current	150 A Continuous* 450 A Peak (10 sec)	Gravimetric Density	177 Wh/kg
Stored Energy	6.7 kWh/150 Ah	Volumetric Density	230 Wh/l
*Dynamically de-rated by BMS message over CAN depending on cell condition			
Cells			
Chemistry	Nickel Manganese Cobalt (NMC)	Number of Modules	3 X (3P4S)
Cell Specification	50 Ah Pouch cell	Cell Configuration	3P12S

Details are correct at time of publishing

Environmental			
Enclosure	Sealed plastic case (IP66)		
Operating Temp Range	Charge: -20 °C to +55 °C		Discharge: -30 °C to +55 °C
Storage Conditions	Temperature: -40 °C to +70 °C		Humidity: Below 75%
Battery Management System (BMS)			
Communication Protocol	IsoSPI bus between BCU (Battery Controller Unit) and battery pack, (proprietary message format).		
Reported Information	Cell Temperatures and Voltages, Pack Current, Try-color status LED, Pack Faults and Reset.		
Balancing Method	Actively controlled dissipative balancing		
Multi-Pack Behaviour	Managed by BCU controller		
Control Interface Connectors	2 x M12 5-way male & female		
Power connectors	2x Amphenol SurLok Plus 8mm		
Internal fuse protection	300A, 500V		
Internal EMC	Busbar ferrite filters		
Communication protocol	CAN J1939		
System Configuration			
Max no of packs in series	10	Max Number of Parallel Packs	18
External System Requirements	External Protection Device (e.g. Contactor) controlled by BMS/BCU One External Fuse per series string BCU Enable signal (12-24V)		
Standards			
EMC	Designed to meet: EN61000-6-2:2005 and EN61000-6-3:2007 + A1:2011		
Transport	UN38.3 rev 6	Other	RoHS directive and WEEE directive Standard IEC 62619

## Warranty

### 3 years warranty:

Provided that the Goods are at all times operated and maintained within the following conditions through the Warranty Period:

- Installed and operated in accordance with the user manual.
- Only to be used in applications approved in writing by Turntide.

### Warranty terms:

Battery continuous operate (Charge/discharge) temperature should be within the -10oC to 50oC range.

Maximum charging current should not exceed 100A (4.5kWh)/150A (6.7kWh) – Current depends on SOC and temperature, controlled by BMS.

Maximum discharging current should not exceed 100A (4.5kWh)/150A (6.7kWh) – Current depends on SOC and temperature, controlled by BMS.

Battery voltage should not exceed (overcharge) 50.6V or multiple of series connections (ex. 2 series connection, max voltage – 101.2V)

Battery voltage should not go below (over discharge) 36V or multiple of series connections (ex. 2 series connection, max voltage – 72V)

Battery should not keep fully charge state (100% SOC) for an extended period.

Maximum allowable duration – 48hr to 60hr at ambient temperature of -10oC to 50oC range.

For longer storage, Battery should be store at 40% – 60% SOC.

## Regulatory



UL583 YCFT2.AU3720



The CE mark applies only to the provisions of the low voltage directive. It is the responsibility of the installer to take any precautions necessary to ensure that the assembled equipment is EMC compliant

For further information please contact our team of experts at [electrificationsales@turntide.com](mailto:electrificationsales@turntide.com)

### TURNTIDE TECHNOLOGIES

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries

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