

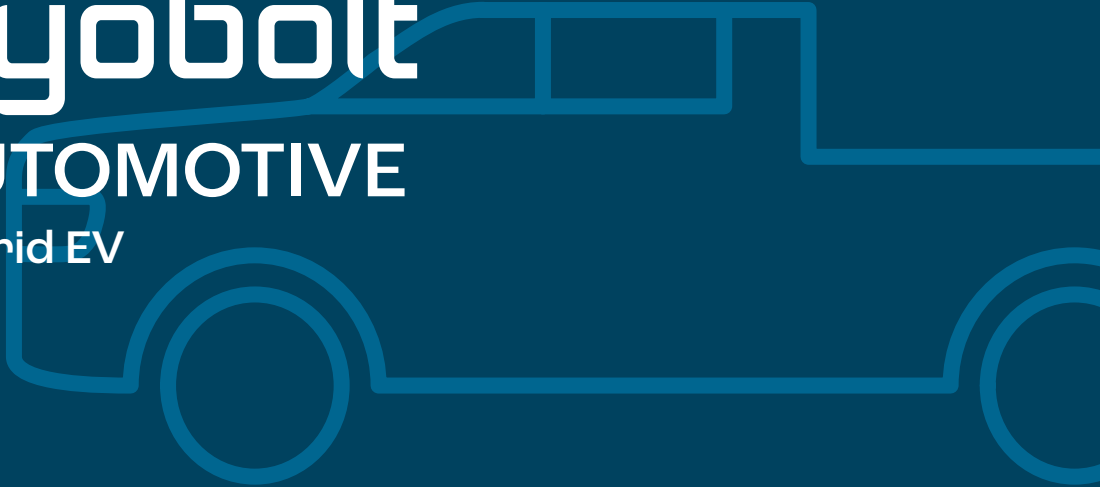
PRODUCT SHEET 2.2 | v2024-07



nyobolt

AUTOMOTIVE

Hybrid EV



Nyobolt ULTRA modules deliver unprecedented power density with symmetrical charge and discharge capability, raising the bar on operational performance and lifestyle convenience. The module has a continuous regen rate of 10-12C and high peak regen of 20-30C, with 4,000 full charge cycles to 80% state of health (SOH).



Key Features

- The module has integrated cell voltage and temperature monitoring with passive balancing and isolated SPI communication allowing it to be daisy chained.
- Customisable module configuration that can be connected together in series and parallel to form a high power battery up to 1000V.
- The module is liquid cooled via a coldplate that can be supplied as an integrated assembly.

Use in Hybrid EV applications:



High charge/regen capability to maximise energy recuperation



High power to weight ratio suiting performance applications



Symmetrical discharge capability ensuring high power assist to the wheels

Specification

HPMOD-ULTRA-365-6S2P

Cell Type	25Ah Pouch
Cell Dimensions	302mm x 87mm x 9.4mm
Cell Weight	473g
Module Configuration	6S2P
Rated Capacity / Energy	50 Ah / 1.1 kWh
Nominal Voltage	22.2 V
Max Voltage	25.2 V
Min Voltage	16.2 V
Peak 2 second charge / discharge power	17kW / 17kW
Peak 10 second charge / discharge power	15kW / 15kW
Continuous charge / discharge power	11kW / 11kW
Power Density	> 2kW/kg
Cycle Life	> 4000 fast charge cycles to 80% SOH
Weight (excluding coldplate)	7.9 kg
Dimensions	L365 x W132 x H90 mm (4.3L)
Cooling	Coldplate water-glycol (optionally integrated)
Operating Temperature	-10 to +40 °C
Protection	IP40
Certification	Certified and tested to ECE R100.2 and UN38.3

Example Applications

The ULTRA module is scalable in series and parallel to support a range of batteries from 48V to 1000V. This supports application areas such as factory robots and forklift trucks through to electric vehicles for commercial, off-highway and marine.

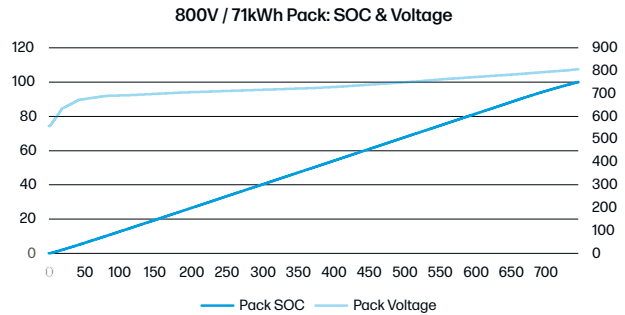
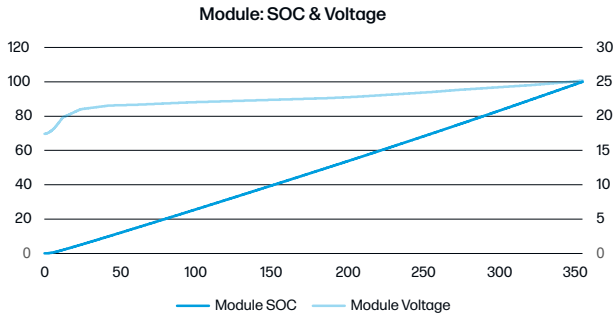
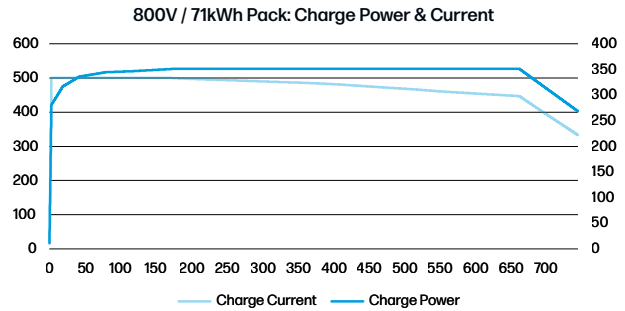
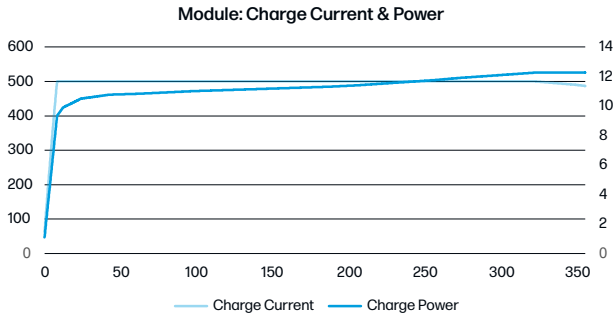
It can be used with the Nyobolt battery management system with its integrated cell monitor interface and power distribution unit. The battery management system has advanced monitoring and software algorithms for tracking the status and health of the battery through its life. The safety architecture comprises a main micro and safety micro to conform with requirements such as ISO 26262 to ASIL-C.

A maximum of 64 modules can be connected to each cell monitor interface which communicates with the battery management system over CAN. The battery management system can support connection of up to 2 cell monitor interfaces to give capability for monitoring up to a total of 768 series cells.

Example specifications for a 400V and 800V battery pack:

	400V xEV	800V xEV
Number of Series Modules	16	32
Number of Parallel Modules	2	2
Rated Capacity / Energy	100 Ah / 35 kWh	100 Ah / 71 kWh
Usable Energy	32 kWh	64 kWh
Nominal Voltage	355 V	710 V
Max Voltage	403 V	806 V
Min Voltage	259 V	518 V
Peak 2 second charge / discharge power	540kW / 540kW	1MW / 1MW
Peak 10 second charge / discharge power	470kW / 470kW	960kW / 960kW
Continuous charge / discharge power	350kW / 350kW	710kW / 710kW
10%-90% Charge time with 500A/350kW Charger	< 6-minutes	< 6-minutes

Module and Pack Charge profiles, limited to 350kW/500A charger:





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More power in less time

To find out more visit
www.nyobolt.com

Or contact us at
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