



LITHIUM-ION 6T VEHICLE BATTERY

For lower system & through life costs

The Denchi Group Lithium-ion 6T Battery is a revolutionary battery design that includes an integrated charger and the latest Lithium-ion technology. Drawing on Denchi's experience in creating batteries for extreme conditions and their understanding of military needs, this new battery utilises high power cells and impressive energy density to deliver optimal performance for armoured vehicles of all sizes and capabilities.

Designed specifically for armoured vehicle Starting, Lighting & Ignition (SLI) and auxiliary power needs, the 6T lithium-ion battery offers deep cycle capability for demanding levels of silent watch operations. The built-in heaters ensure reliable engine start in even the coldest conditions, making it suitable for Main Battle Tanks (MBTs) and Light Armoured Vehicles (LAVs).

PART NUMBER:
430935

CHEMISTRY:
NMC



One of the key benefits of the 6T lithium-ion battery is its flexibility and convenience in charging. The fully managed internal charger electronics can handle a wide input voltage range, ensuring the lithium cells are charged safely and efficiently. This eliminates the need for specific charge control within the vehicle system, reducing costs and simplifying integration.

Constructed with a robust aluminium case, the Denchi 6T is durable, lightweight, and offers flexible operating characteristics. It provides a reliable power source for vehicle mounting with a low hazard severity level, reinforcing Denchi's commitment to delivering safe and powerful solutions to the military and defence sectors.

TECHNICAL DATA

Technology	Lithium-ion
Nominal Capacity (Energy)	85Ah (2.142kWh)
Nominal Voltage	25.2 V
Discharge Voltage Range	21.0 V to 28.7 V
Charging Voltage Range	
Integrated Charger	29.5V to 35V
Bypass mode	21.0 V to 28.7 V
Operating Temperature *	-40 °C to +60 °C
Storage Temperature *	-46 °C to +71 °C
Cold Cranking Amps	1,100 A
Maximum Cont. Discharge Current	350 A
Max Charge Rate	
Integrated Charger **	45 A (Factory Configured option)
Bypass mode	270 A
Length x Width x Height	269 x 256 x 230 mm (NATO 6T)
Weight	25 Kg
SoC / SoH Indicator	5 bar LED / 1 bar LED
Cycle Life	
100% DoD	3,500 cycles
70% DoD	>4,000 cycles

* Reduced battery life for operating or storage at high temperatures for long duration
** Charge rate adjusted by battery automatically to ensure safe charging at high or low temperatures. Built-in heaters operate automatically at low temperature.

FEATURES & BENEFITS

- Integrated Battery Charger
- Significant weight saving compared to SLA
- Fewer batteries required in the field
- Reduced environmental footprint at point of disposal
- Reduced inventory, logistics & spares management required
- Communications via CAN Bus
- Comprehensive Battery Management System
 - Over & under voltage
 - Over current
 - Over Temperature
 - Self balancing
- Built-in self-test facility
- State-of Charge/Health indicators
- Compatible with:
 - MIL-PRF-32143B—physical characteristics
 - MIL-STD-1275E—charge voltage and surge
 - DEF-STAN-00-35—environmental testing
 - DEF-STAN-59-411—EMC testing
 - T/SG/AC.10/11/Rev.5—UN transport
 - SAE J1939—CAN messaging format

BENEFITS OVER LEAD ACID

- Low total lifetime cost of ownership
- Key information displayed – giving the commander immediate operational status
- Increased silent watch periods – increasing the commander's flexibility
- Full capacity accessible for high rate and deep discharge cycles
- Built-in heater for operation down to -40 °C, without a 'Cold Start Kit'
- Maintenance free
- Batteries eliminated from the Logistics Supply Chain
- Engine Start capability at low temperature and SoC
- Reduced weight increasing vehicle pay load capability
- Lead Acid state of charge is an approximation only. Li-ion fuel gauging is accurate to within 1%.

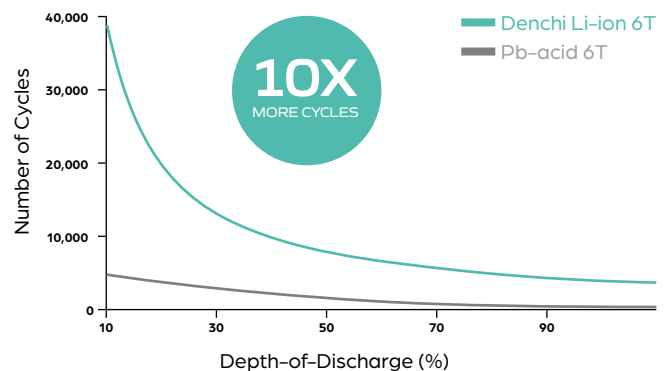
CHARGING MODES

The 6T with two charging modes offers maximum flexibility for charging whilst minimising the overhead for the system integrator.

- Integrated Charger mode
 - Removes the requirement for an external charge control
 - Battery controls charging
 - Charge rate limited to 45A max.
 - Charge rate reduces at higher temp.
 - Requires a regulated current source
- Bypass mode (Factory configuration option)
 - Allows the cells to be charged directly
 - Useful for fast charging
 - Charge rates up to 270A
 - Absorbs energy during turret braking
 - Bypass mode can sink energy pulse up to 500A for 5s.

In Built-in-Charger and Bypass mode, the battery will safely manage charge and discharge to within the battery specification.

GRAPHICAL DATA[‡]



[‡]Silent Watch Capability: Cycle Life*** (28.7V charge voltage, 'C' rate discharge and +20 °C)
*** Standard 24V-2 battery set (2 x Pb-acid series VS. Li-ion in parallel)