

Lithium-ion marine battery

Mastervolt (Netherlands) has announced that a 12-V, 2,5-kW battery called MLI Ultra 12/2500 is now available as part of their Ultra series of lithium-ion marine batteries. Each battery can be linked to the rest of the boat's electrical system by the Master-Bus network, which is CAN-based.

THE MODEL IS THE SAME HEIGHT AND WIDTH as its 12-V and 24-V, 5-kW big sisters, but just half the length, which makes it 339 mm x 197 mm x 355 mm at 31 kg. The latest model will share all the attributes of the larger 5-kW versions, particularly the improvements in cell balancing. Keeping all the cells at the same level of charge is vital to extend the life of the battery, but rival products use a process called passive balancing, where overcharged cells shed their surplus energy as heat, whilst lesser-charged cells have to continue to draw from the charger. The battery's active-cell balancing system shuttles energy from higher charged cells into lesser charged ones instead, resulting in very quick charge times and a battery life in excess of 2000 recharge cycles at 80 % depth of discharge. Another advantage of the series is that each battery can be repeatedly discharged by 80 % of its total capacity without any ill effects, compared with just 50 % for lead-acid, and because of the very low density of lithium ion phosphate, the power-to-weight density is just 30 % of an equivalent bank of lead-acid cells. Each battery can be linked to the rest of the boat's electrical system by the Master-Bus network, a single plug and play cable that allows the battery to 'talk' to the various recharging systems available. The series is also compatible with other communication protocols such as IEC 61162-3 (formerly: NMEA2000).



(Photo: Mastervolt)

Master-Bus is a decentralized data network for communication between the different Mastervolt system devices. It is a CAN-based communication network and used as power management system for all connected devices, such as the inverter, battery charger, generator, and many more. This facilitates communication between the connected devices, for instance to start the generator when the batteries are low. In a Master-Bus network, all system components are chained together. For this purpose every device is equipped with two data ports. When two or more devices are connected through these data ports, they become a local data network, called the Master-Bus. For central monitoring and control of the connected devices, a range of panels, which show full status information of an electrical system, are available. All monitoring panels can be used for monitoring, control and configuration of all connected equipment. Devices can be added to the existing network by extending the network. Batteries can also be linked in series and parallel with the management systems automatically adapting.

"The 12/2500 is ideal for the owners of smaller yachts and motorboats who want all the advantages of a deep-cycle lithium-ion, but on a 12-V system," said Daan Hobbelen, Product Manager Power Conversion & Storage. "We have distilled years of practical experience in the field to develop the Ultra range, and this new battery is a great performer. When compared with equivalent lead-acid versions, especially Li-Ion's incredible light weight, deep-cycle ability and long service life, plus the savings in installation costs thanks to newly integrated electronics, the Ultra series represents a very cost-effective and dependable alternative." Mastervolt was the first company to bring a full-size 24 V lithium-ion battery to market, a product that not only made use of the lightweight and deep-cycle properties of lithium ion, but also carried electronics to enhance the battery's efficiency and lifespan.