

New power electronics for maritime applications by Liebherr at SMM 2018

Teaser: At SMM 2018, the leading international maritime trade fair, Liebherr unveils the low-voltage frequency converter system Liduro Marine for applications with a drive power of up to 5,000 kW to the professional public.

At SMM 2018, the leading international maritime trade fair, Liebherr presents itself as a strong partner for the maritime industry and showcases its components and solutions for the on and offshore applications to the professional public. A particular focus thereby lies on the new low-voltage frequency converter system Liduro Marine of the LCM 300 series. To exemplify the maritime components portfolio, Liebherr also features a slewing system consisting of a slewing drive and a bearing with an individually matched and specifically designed gearing for slewing under high loads. Further components on display are axial piston pumps and motors for mobile and stationary applications, as well as a common rail injection system 11.5 for engines of up to six litres displacement per cylinder with a power output of up to 5,000 kW.

The main highlight at the booth, however, is the new development in the field of electric drive technology for maritime applications. The low-voltage frequency converter system Liduro Marine features a power range from 110 kW up to 5,000 kW and a voltage range of 380 V to 690 V. The system is ideal for use in main drives and manoeuvring thrusters on ships, as well as in winches and drives on maritime cranes.

The benefits of an electric drive system lie particularly in partial-load operation as a result of its improved efficiency compared to traditional systems. This is much of an advantage in the view of the growing role electrification plays in the maritime industry today. Lower operating costs and considerable emission reduction are major requirements put also on manufacturers and operators of drive systems. Moreover, one further advantage of an electric drive is its higher manoeuvrability, particularly for docking manoeuvres in ports due to its variable-speed and stepless operation.

The core components of the new system are the high-power electronic modules of the new LCU 300 series. The high-efficiency, liquid-cooled modules feature a remarkable performance due to their extraordinary power density of up to 13.5 MW/ m³ and an

extensive power range from 110 kW to 2,000 kW in just two sizes. Fast and reliable protection functions ensure a secure and long service life. The power modules can be configured as drive or regeneration units.

A considerable benefit of this system design is the high flexibility with which individual drive solutions can be realised even in compact installation spaces. This offers a wide range of possibilities for integration and layout within a control room or distribution station. Liebherr energy storage systems, motors and generators can be simply connected to frequency converter cabinets, thereby increasing system efficiency.

The frequency converter systems fulfil the requirements of the International Association of Classification Societies (IACS).

Captions

liebherr-offshore-vessels-maritime-ship-propulsion-application.jpg

Low-voltage frequency converter Liduro Marine for application in the maritime industry

liebherr-liduro-power-electronics-power-modules.jpg

Liebherr Liduro power units of the LCU 300 series of two different sizes

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