

Liebherr-Components presents newly developed power modules and frequency inverter system

- Two new power modules offer a total of eight power classes up to 1,000 kW
- Further standardised components allow the power modules to be extended to form individually configured frequency inverter systems

Biberach / Riss (Germany), November 2015 – Liebherr will be presenting its new LCU-A and LCU-C power modules for low voltage applications at the SPS IPC Drives 2015 electrical automation exhibition in Nuremberg, Germany from 24 to 26 November. These can be integrated into a modular control cabinet frequency inverter system. The power modules provide an output range of 110 kW to 1,000 kW.

Robust power modules for low voltage applications

The power modules for low voltage applications between 380 and 500 V and between 500 and 690 V can be employed for both single- and multi-axle operations. The liquid-cooled modules have an extremely compact design and a high power density. The temperature range of minus 20°C to plus 50°C and the robust mechanical design make the modules suitable for use in both mobile and stationary applications. The power modules are designed for operation as motor inverter modules or as active rectifier units.

The LCU-C compact inverter module is available in five output classes between 110 and 315 kW (multi-axle operation). It features an integrated dual-circuit capacitor unit. Semiconductor fuses can be integrated as an option. Wall mounting is also possible instead of control cabinet mounting. The larger LCU-A inverter module is available in three power versions with 500, 710 or 1,000 kW, all of which use the same housing. Not only does this make integration into the control system easier, it also makes it possible to change from one output class to another. On this model, the intermediate capacitor is separate from the inverter unit to make handling easier. The module can thus be exchanged in a very short time.

Modular frequency inverter system

The power modules can also be used individually in special housings and systems for specific applications, but they only develop their full potential in conjunction with the modular frequency inverter system. Two LCU-A inverter modules or four LCU-C compact inverter modules can be integrated in a control cabinet unit. Together with other standardised individual components such as control and regulation electronics, capacitor units, motor/power supply connection units and the cooling system they create flexible control cabinet units. Several of these can be coupled to form complete frequency inverter systems which can be individually configured and which are characterised by a high degree of modularity. The inverter systems feature a high level of equipment protection with DC bus fusing, and are compliant with protection class IP54.

The use of a common DC link and a common liquid cooling circuit provide for high levels of efficiency and economy. Energy from a drive which is not needed can be used by other drive units, or even returned to the supply network. Output can be increased by connecting the power modules in parallel.

User-orientated solutions

During the development of the power modules and inverter systems, great value was given to a user-friendly design and simple integration into machines and systems. The housing dimensions are standardised, the cable connections and assemblies are easily accessible and the individual components can easily be exchanged when necessary. Programming, commissioning, monitoring and diagnosis can be performed with OPAL, an intuitive software with all the functions needed. OPAL allows several function units to be managed in a single project. Process data from the different function units are recorded simultaneously and up to eight parameter sets per unit can be configured. All process parameters can be changed online.

Captions

liebherr-power-modules-MFC-B-and-MFC-A-300dpi.jpg

Two new power modules offer a total of eight power classes up to 1,000 kW

liebherr-frequency-converter-system-300dpi.jpg

Modular frequency inverter system based on individually configured control cabinet units

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