

## **World Premiere: Liebherr Presents New Air Conditioning System for All Types of Rail Vehicle**

**September 2016 – Liebherr-Transportation Systems has developed an efficient and flexibly configurable HVAC system for all rail vehicle types, featuring a high level of standardization, low weight and low height. Another special highlight is its extremely low energy consumption with a power density approximately 70 percent greater than in conventional systems. The MACS 8.0 (modular air conditioning system) basic module features a cooling performance of 8 kW. Depending on performance requirements, the system can be extended with identical modules – to 32 kW with three additional modules, for example. The MACS 8.0 air conditioning system was presented to the public for the first time at the InnoTrans 2016 in Berlin on 20 September.**

MACS 8.0 is just 220 millimeters high, with each module weighing 125 kilograms. Hence, the modular HVAC system is about 300 kilograms lighter than comparable systems with a cooling performance of 32 kilowatts. MACS 8.0 therefore offers 70 percent more cooling performance per kilogram of weight. As modules are quick and easy to replace thanks to their plug-and-play design, low-cost service concepts are easy to implement, and the downtimes for vehicles are shorter than for conventional systems. MACS 8.0 can be installed as an individual module or in combination with several others. As a result, the cooling and heating performance for the passenger compartment and driver's position can be designed flexibly. It is also multiply redundant for top availability: should a module actually fail, the others continue to run. Dirk Junghans, Managing Director of Liebherr-Transportation Systems and responsible for sales, marketing and customer service is certain: "With MACS 8.0 we are taking the next step with our customers towards the future of HVAC technology."

## **Liebherr-Transportation Systems – Renowned Manufacturer of Railway Technology**

Liebherr-Aerospace & Transportation SAS in Toulouse (France) is one of eleven divisional control companies in the Liebherr Group and coordinates all activities in the fields of transportation and aviation equipment. It employs around 5,200 people worldwide.

Liebherr's transportation systems division deals with air conditioning, hydraulic actuation systems and electronic components for rail vehicles of all kinds, and is backed by many years of experience in the development and manufacture of these technologies. In addition to its own sales and service centers, the division has access to the Group's development and service facilities around the world. This global set-up means that Liebherr-Transportation Systems is there for its customers wherever they may be.

### **Caption**

liebherr-modular-air-conditioning-system-macs8-0.jpg

MACS 8.0 offers 70 percent more cooling per kilogram of weight and can be combined flexibly for any rail vehicle. - © Liebherr

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