

Press Release

Munich/Düsseldorf, October 18, 2019

New at Busworld: Kiepe Traction Inverter (KTI) is latest addition to electric mobility component range

- **The Kiepe Traction Inverter (KTI) is a traction converter for electric buses and electric commercial vehicles**
- **The KTI combines the power electronics for the traction system and for charging the battery in a single system**
- **The Kiepe Traction Control (KTC) system enhances powertrain performance through state-of-the-art motor control**
- **Kiepe Fleet Management (KFM) is the digital solution for predictive maintenance and repairs**

Munich/Düsseldorf, October 18, 2019 – Kiepe Electric, a subsidiary of Knorr-Bremse, the global market leader for braking systems and a leading supplier of other rail and commercial vehicle subsystems, presents the Kiepe Traction Inverter (KTI), a brand-new converter for electric vehicles that combines the power electronics for the traction system and for charging the battery in a single system. The KTI will be unveiled at Busworld Europe in Brussels (October 18-23, 2019).

“Our range of harmonized electric mobility components continues to grow – our electrical systems expertise is really paying dividends in this market. The multifunctional KTI can be used for both the traction system and for charging the battery. Our smart Kiepe Traction Control system also raises the bar, delivering enhanced efficiency, driving stability and ease of maintenance,” says Kiepe Electric Managing Director, Dr. Heiko Asum. Designed for use on electric buses and electric commercial vehicles, and featuring the highest power density currently on the market, pilot testing of the KTI is scheduled to begin in mid-2020.

KTI available in single and dual output versions

Available in single and dual output versions, and suitable for decentralized installation throughout the entire vehicle, the KTI is fully compliant with the ISO 26262 standard for safety-related electrical systems in road vehicles. Featuring 2 x 200 kW outputs in a compact design, the dual KTI can supply power to two motors from a single 25 kg unit. This gives it the ability to drive two axles with average power requirements. The smart control system drives both asynchronous and synchronous (PSM) motors, with all the performance benefits offered by the KTC.

The KTI is supplied together with the traction control unit (TCU), and includes the software for functions such as brake blending and individually controllable axle torque. In addition, Kiepe Electric’s energy management system optimizes onboard electrical system efficiency through the Energy Control Unit (ECU). These core components of Kiepe Electric’s new E-Kit can be scaled up to a subsystem or even a complete electrical system for any electric vehicle.

Real benefits for fleet operators

“Vehicle operators benefit from enhanced performance and safety for their sustainable, resource-efficient electric vehicle fleets. This can significantly reduce life cycle costs,” explains Dr. Ludger Schülting, Head of Development at Kiepe Electric.

- **High torque dynamics:** the KTI's smart control system makes it possible to increase potential torque by up to 30% using the same motor configuration.
- **Lower energy consumption:** the smart control system increases powertrain efficiency by 4.5%.
- **Lower maintenance costs:** highly dynamic active damping of powertrain torsional vibrations not only cuts maintenance costs and noise emissions but also reduces axle and transmission wear by delivering a smoother ride.
- **Faster acceleration with anti-skid protection:** up to 50% faster acceleration is achieved through optimized torque compensation when the vehicle slides or skids. This technology improves driving stability and reduces tire wear.
- **High gradeability:** the KTI optimizes hill start acceleration. The system has already been tested on gradients of 22%.

KTI supports the Kiepe Fleet Management and Smart Fleet Management systems

Smart Fleet Management (SFM) is Kiepe Electric's groundbreaking energy management system for the latest generation of Kiepe Electric traction equipment for electric vehicles. In addition to the new Kiepe Electric Traction Inverter (KTI) and the smart Kiepe Traction Control (KTC) system, it also includes the Kiepe Fleet Management (KFM) system. KFM ensures trouble-free operation by providing preventive and predictive maintenance and repair management in a cloud-based solution.

Knorr-Bremse (ISIN: DE000KBX1006, Ticker symbol: KBX) is the global market leader for braking systems and a leading supplier of other safety-critical rail and commercial vehicle systems. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world. About 28,500 employees at over 100 sites in more than 30 countries use their competence and motivation to satisfy customers worldwide with products and services. In 2018, Knorr-Bremse's two divisions together generated revenues of EUR 6.6 billion (IFRS). For more than 114 years the company has been the industry innovator, driving innovation in mobility and transportation technologies with an edge in connected system solutions. Knorr-Bremse is one of Germany's most successful industrial companies and profits from the key global megatrends: Urbanization, eco-efficiency, digitization and automated driving.

Knorr-Bremse subsidiary **Kiepe Electric**, based in Düsseldorf, Germany, is a globally active supplier of electrical systems to the leading rail vehicle and bus manufacturers. The company offers efficient solutions and ecologically sustainable concepts for low-emission public transportation with eco-friendly electrical equipment for light rail vehicles, metros and regional rail networks as well as for battery, trolley and In Motion Charging (IMC) buses.

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