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ELECTRIC BUS WITH IN MOTION CHARGING IMC®

DAYTON, USA

Project Characteristics

In 2014 KIEPE delivered the first dual-mode trolley buses to the Greater Dayton Regional Transit Authority (GDRTA). The standard bus from Gillig was first mechanically modified to a trolley bus, the harmonization of electric drive, battery and the charging of the battery is of decisive importance for electric buses.

KIEPE developed a tailored solution with powerful IMC technology. The bus body from Gillig was fitted with the innovative electric bus technology by KIEPE. IMC buses are operated as battery buses in line sections without overhead line and the batteries of the buses are recharged when the buses drive under the overhead line as bus in full service. IMC buses do not have to be parked to charge their batteries. The lithium-titanate-oxide (LTO) traction batteries with a power of 200 kW also allow both powerful acceleration and full air conditioning of the passenger compartment in line sections without overhead lines.

Thanks to the new electric buses the GDRTA has been able to extend a line by 2 x 7.5 miles (2 x 12 km) without overhead line, i.e. without additional investment in infrastructure.

Highlights

- Made in USA
- Buy America compliant
- Altoona tested
- Zero emission electric bus
- Economic: Line extensions without overhead line, i.e. without additional infrastructure costs
- Powerful battery: 67 kWh lithium-titanate-oxide with 200 kW for powerful acceleration
- Dual mode: Range of 15 miles / 25 km in
- battery mode with comfortable air conditioning of the passenger compartment
- Innovation leadership: World's first 12.5 m
- (41 ft) battery bus with IMC

Vehicle Data

Design / model	Low-floor “DMBT” (dual-mode battery trolley) and “IMC” (in-motion charging) bus manufactured by KIEPE
Vehicle size	Length x width x height 41 ft (12.5 m) / 102“ (2.6 m) / 11.7 ft (3.6 m)
Maximum speed	50 mph (80 km/h)
Electric motor	240 kW asynchronous motor
Electric motor control	Air-cooled IGBT inverter
Energy storage unit	Lithium-titanate oxide (LTO) battery with 67 kWh installed energy
Charging concept	In-motion charging (IMC®); 60 kW
On-board power supply	DC 26V to 28.5V with 400A / 35 kVA AC 460V continuous
Current collector system	KIEPE OSA 500 with automatic lifting and lowering

Technical Drawing