

# SNCF & LOHR Draisie Project

KIEPE TRACTION INVERTER FOR A BATTERY-ELECTRIC LIGHT TRAIN



Small Railbus Vehicle

The DRAISY project consists in a very light train, 14 meters long, for passenger transport. This railbus is intended to give a new lease of life to small railway lines in rural areas. It meets the needs of nearly 9,000 km of local lines serving rural communities in France.

With three other partners, GCK Battery, Stations-e and the IRT Railenium, SNCF and LOHR are the winners of the “Digitalisation and Decarbonisation of Rail Transport” call for expressions of interest with DRAISY. In the consortium, Lohr provides the rolling stock and KIEPE provides the traction package with the KIEPE Traction Inverter (KTI) and the electrical motor.

DRAISY is a 100% battery-powered electric light train which can be quickly recharged in stations without impacting passenger service. It is expected to have a 50% cost reduction for the operation and the maintenance compared to the actual regional trains. The DRAISY concept includes a large range of components and systems that are already available on the market, such as the traction chain. The vehicle weights only 20 tonnes, which represents approximatively two-thirds of a conventional regional train.

Vehicle Technical Data

Autonomy	100 km
Maximum Speed	100 km/h
Dimensions	14 m x 3 m x 3,5 m
Capacity	80 passengers including 30 seated
Electrical Energy	100% battery powered
Charging Process	Fast charging at the stations
Axle	2 steerable driving axles
Axle Load	10 tonnes
Nominal Weight	20 tonnes
Traction	2 KTI
Motor	2 asynchronous traction e-motors / 100 kW

KIEPE Traction Inverter

The KIEPE Traction Inverter (KTI) is designed for catenaryless battery busses and rail vehicles and perfectly meets the needs of the Draisy vehicle:

- UNIVERSAL – Drives both central motors and wheel-selective motors
- POWERFUL – High-power density due to efficient semiconductor technology
- COMPACT – Flexible mounting due to small dimensions
- ASSEMBLY-FRIENDLY – 100 % tool-free connector-only assembly
- PREVENTIVE – Predictive maintenance with Smart Fleet Management (SFM)
- EFFICIENT – Advanced traction control (KIEPE Traction Control KTC)

## KTI Technical Data

Efficiency	Approx. 98%
Input Voltage	DC 500V to DC 800V
Switching Frequency	4 kHz to 10 kHz
Operating Temperature	-40° C to +85° C
Protection Class	IP6K9K
Cooling	Water cooling (Flow rate: 20l/min)
Communication	CAN, Ethernet
Supply Voltage	DC 24 V
Dimensions	560 mm x 445 mm 110 mm
Weight	25 kg




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