



Double-Articulated Electric Bus
with In Motion Charging (IMC)

Lucerne, Switzerland

Vossloh Kiepe – Future meets Experience

Project characteristics

- Sustainable electric bus concept feasible for a whole fleet
- e-BRT (electric Bus Rapid Transit)
- Uninterrupted operation (no downtime due to charging or refuelling)
- Traction batteries up to 5 km wireless operation sections
- Charges the batteries during passenger transportation by In Motion Charging (IMC)
- 4-wheel-drive for stable driving-characteristics
- Fully air condition
- 220 passengers transported quietly, rapidly and reliably

The “tram from Lucerne” unites the advantages of a tram and the advantages of an electric bus.

The elegant lighTram4® manufactured by Hess in Switzerland can comfortably and quietly transport up to 220 passengers. Its air-sprung tyres absorb vibrations, adhere to even steep roads and do not need the implementation of grooved rails into the road.

A 26 kWh traction battery has been implemented as a back up unit (90kW) for up to 5 km wireless operation. Therefore the vehicle can easily bypass e.g. roadworks. The battery gets recharged when driving again under the overhead wires with In Motion Charging (IMC).

Obstacles like accidents or wrong parked cars can easily be passed due to the lateral deflectable current collector poles with continuous contact to the overhead wires.

This combination of proven trolleybus technology and high-tech batteries allows a reliable partly wireless operation.

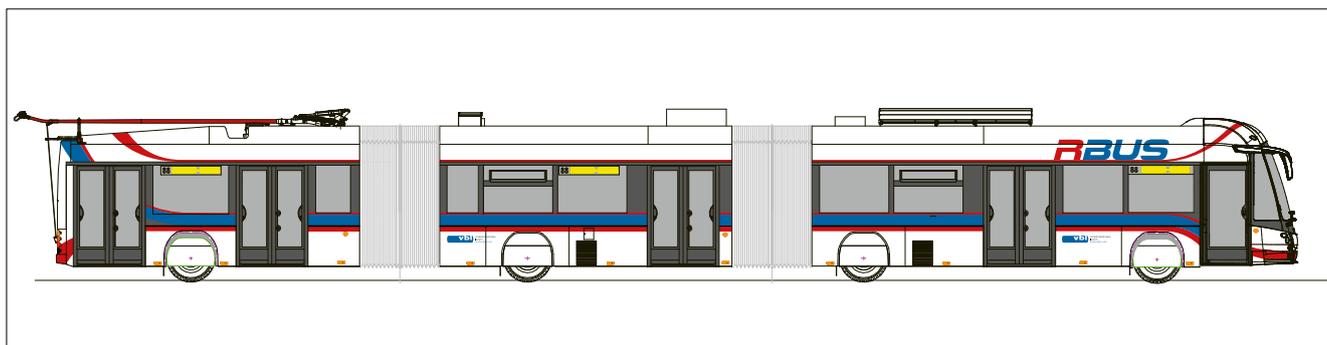
The transport authorities from Lucerne (vbl) called their new trolleybus “R-Bus” where R stands for rapid. The Line 1 became an electrical bus rapid transit (e-BRT). This was so successful, that vbl shortly after operating these 9 R-Busses they purchased further 17 R-Busses for additional lines.

See also www.vvl.ch/planung/rbus

Vossloh Kiepe provides the complete electrical traction equipment, the on-board power supply system, the traction batteries and the automatic current collector system.

This trend-setting system with 25 m long double-articulated buses is a low-cost alternative to tramways.

In cities with tramways electric buses with IMC can extend the existing line network. Then there arise synergies when taking benefit of the already existing substations and skilled electricians for infrastructure and vehicles.

lighTram4®

Vehicle data

Design / model	Double articulated low floor lighTram4® Trolley with Design Cap (Hess / Vossloh Kiepe)
Vehicle size	24.7 m length x 2.55 m width x 3.4 m height
Passenger capacity	220 passengers (56 seats and 23 m ² standing area)
Electric motor	2 x 160 kW asynchronous motors at the 2 nd and 3 rd axles (4 wheel drive)
Electric motor control	Forced air cooled IGBT inverter
Energy storage	Lithium-iron phosphate traction batteries with more than 26 kWh usable energy with 90 kW
Charging concept	In Motion Charging (IMC) with 30 kW
Current collector system	Automatic lowering and rising supported by funnels installed on the overhead line
On-board power supply	8.4 kW 24 V DC / 35 kW 400 V AC

Subject to change without notice

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