

Modernization of 2400 Series High- floor Light Rail Vehicles

KÖLNER VERKEHRS-BETRIEBE AG (KVB)



Project characteristics

In the cathedral city of Cologne, Kölner Verkehrs-Betriebe AG (KVB) operates a light rail network covering approximately 200 km.

The light rail network is supported by 380 LRVs and streetcars, transporting approximately 800,000 passengers daily. Some of these vehicles, namely the 28 type B light rail vehicles, are being refurbished and equipped with state-of-the-art technology. The so-called "2100 series," which were built by DUEWAG in 1984/1985, will be re-branded to "2400 series."

After restoration, it will be impossible to tell that these are 30-year-old vehicles as the driver's cab and passenger compartment interiors are being completely renewed.

With the exception of the drive system, the entire electrical system is being replaced, as are the control switches and motor group switches.

In addition to a complete rewire of the vehicle, upgrades to the instrument panels, device panels, on-board power supply, air conditioning converters as well as the temperature controls for the driver's cab and passenger compartment will be completed.

New CAN bus control units with powerful diagnostic software and a vehicle data management system will also be implemented.

- Powerful static vehicle electrical system supply
- Passenger compartment and driver's cab temperature control
- Modular control technology
- Powerful diagnostic capabilities
- New vehicle data management system

Vehicle data

Construction	Six-axle articulated light rail vehicle
Type	B100S, old serial numbering: 2100, new serial numbering: 2400
Track gauge	1,435 mm
Maximum speed	100 km/h
Contact wire voltage	DC 750 V (+20 %, -30 %)
Wheel arrangement	B'[2']B'
Car body length/width	26,850 mm / 2,650 mm
Vehicle weight (empty)	39,600 kg
Wheel diameter (new / worn)	746 / 660 mm
Gear ratio	4,455 : 1
Drive equipment	2 Modular drive control MAS, drive bus converter ABU
Drive motor	2 longitudinal self-ventilated DC series-wound motors 1KB 2021-2 ME02
Drive control	Electronic speed/brake controller EFB 930
Auxiliary power supply	BNU 548 static Kiepe on-board converter in a modular design
Auxiliary power outputs	3/N AC 400/230 V, 100 Hz, 20 kVA and DC 24 V (+20 %, -30 %), 350 A constant
Air conditioning supply	2 static Kiepe air conditioning unit converters KGU 204 in a modular design 3/N AC 400/230 V, 50 Hz, 35 kVA

Subject to change without notice

Technical drawing

