

## NEW TROLLEYBUSES for BIG CITIES



*Project “New appearance of the city”*

Based on the trolleybuses **ELECTROLAZ 12 & ELECTROLAZ 20**

# Content:



## LAZ Structure



## ElectroLAZ 12 & ElectroLAZ 20: **General data**



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## General informaton

# LAZ Structure



# Meet: *ELECTROLAZ 12*



- Noiseless
- Environmentally friendly
- 100% low floor
- Low energy consumption
- Passenger's capacity – 120, including 32 seats
- Length: 12 meter
- Drive: electric motor, 1x180 kW
- Maximum speed 65 km/h
- Axles and Steering: ZF

# Meet: *ELECTROLAZ 20*



- Noiseless
- Environmentally friendly
- 100% low floor
- Low energy consumption
- Passenger's capacity – 210, including 46 seats
- Length: 18,8 meter articulated
- Drive: electric motor, 1x180 kW
- Maximum speed 65 km/h
- Two driving axles: middle and rear

# Traction equipment for **AC** motor



# Indication and diagnostics system

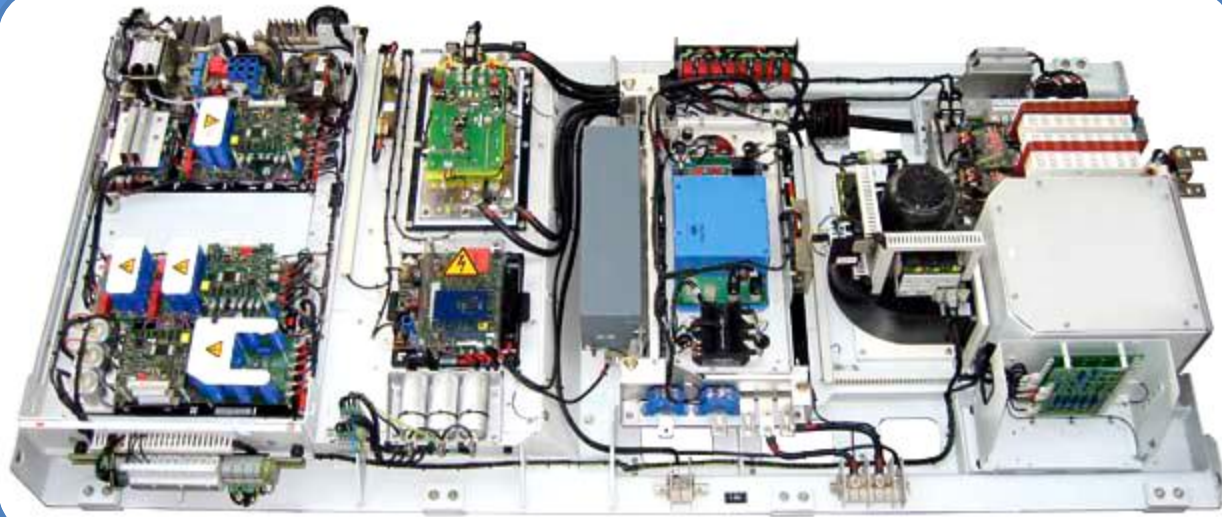


# Traction equipment for **AC motor**



Components

# Traction equipment for AC motor




Traction container







## Main advantages of the trolleybus electronic management system




- Vector management of AC motor




- Regulation by acceleration, excluding skidding and towing




- High smoothness of movement and even load



- Free-running on standard batteries



- Absence of closing relays in the power scheme of electric motor due to integration of power rectifier with regeneration transistors into the inverter



- Electrical braking provides full stoppage of the trolleybus and keeps the vehicle steady on the slope

## Main advantages of the trolleybus electronic management system

- The trolleybus can move in the off-line mode from the battery with the voltage not more than 24V and capacity not more than 120 A\*h
- The electric drive contains minimal quantity of constructional units, joined by power circuits at the shortest distances, the quantity of low-voltage circuits is minimized due to information transfer by serial interface
- **Usage of recuperation system.** The pole of recuperation is saving of energy. When braking the electric energy is generated and used in the contact line by other trolleybuses. Due to recuperation the consumption of energy is reduced for 42%.
- The developed system of diagnostics and emergency display allows to decrease maintenance and repair to 20-30 minutes

## Exterior design



## Exterior design

- **Big windows** create atmosphere of esthetical pleasure during trolleybus movement
- **Big panoramic windshield** and spherical mirrors provide full situation control on the road
- **Low floor.** Due to 100% low floor and door opening the time for drop-on and drop-off of the passengers will be reduced by **50 %**
- The trolleybus has **special equipment (entrance ramp)** for children's prams and wheel-chairs for disabled people
- **The pneumatic suspension** absorbs all road's defects and provides smooth movement of the trolleybus



# Exterior Design





# Interior



# Interior (design)

City trolleybuse ElectroLAZ 12 and ElectroLAZ 20 have big spacious passenger's compartment



The spacious passenger's compartment with low floor along the full length



The ventilation in the passenger's compartment is provided by cooling-heating climate-control system & window vents and additional roof hatches



Comfortably arranged ergonomic seats are covered with antiwear and antivandalic fabric

# Interior





# Interior



# General Information

## LAZ trolleybuses in Europe







**Thank You For Attention!**