Cegelec Alva

New line of electrical equipment

The Cegelec Alva is a completely new line of electrical equipment intended for railway applications, including trolleybuses. The AC drive traction converter can be complemented by an auxiliary converter and a device box and be included in a single container. When used in atrolleybus, the converter is designed to take into account the double insulation requirements of the equipment. The traction section in the basic design uses IGBT transistors, whereas the static converter employs SiC transistors (Silicon Carbide) which increase the overall efficiency and provide a significant weight reduction.

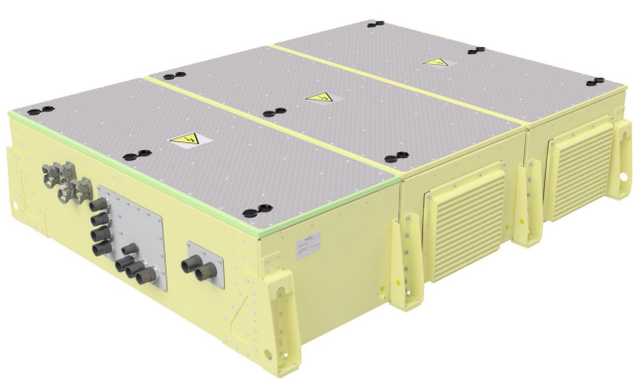
Compared to the older generation, the new solution of an integrated container is by almost 35 % smaller in volume and by 25 % lighter. This reflects positively on the possibility of increased occupancy and lower electricity consumption. The integrated container can be accessed through three covers which can be entirely removed, if necessary, thus opening the upper section of the container.

The Cegelec Alva line replaces the existing TV Progress and TV Europulse equipment in the production. Its modular design allows the control of one or more drives in various power parameters of up to 500 kW according to the customer's needs. The Cegelec Alva is a modern solution of electrical equipment for both new and refurbished trams, trolleybuses, Stadtbahn, and subways, securing the benefits of high operational reliability, low weight, high efficiency, easy maintenance, and low noise level.

The modular system enables numerous drive configurations, either single of multiple motor with individual motor control. The system also integrates the charging of a traction battery if present (trolleybuses with traction batteries, independent running of a tram). The auxiliary drive converter section includes a reversible 24V converter of the on-board network power supply and independently controlled inverters for drives of auxiliary units (servo steering, air compressor, air-conditioning). The reversible converter provides backup power supply of critical drives from the 24V on-board network when other power sources are not available.

An example of the new Cegelec Alva equipment is the Integra 5000 model for the use in trolleybuses of 12 and 18 m.

Selected technical parameters of the Integra 5000 converters for the trolleybus	
Traction section	
Traction network according to EN 50163	600/750 V DC, both polarities
Power of the traction inverter	up to 250 kW
Power of the traction battery charging device	up to 250 A
Auxiliary drive converter	
DC output (on-board network)	max. 28 V (adjustable according to on-board battery)
output power / current	10 kW / 400 A, battery current limit
reverser power	6 kW
AC outputs 3 x 400 V	4 to 6 independently controlled outputs for dedicated drives
Total power of the AC networks	30 kW (configuration for a trolleybus of 12 m)
	45 kW (configuration for a trolleybus of 18 m)



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