



MEDCOM'S SiC TECHNOLOGY IN THE NEW MODERUS GAMMA TRAMS

Modertrans presented the new Moderus Gamma low-floor tram for Poznań at their headquarters. After the Dragon 2 locomotive, this is yet another vehicle on the Polish market to be equipped by Medcom with power electronic devices using silicon carbide (SiC) technology as standard.

Deliveries are already in progress and include full-SiC technology static converters (PSM-50 SiC), traction inverters using IGBT technology (FT-50-600), and the TCMS. Medcom will equip a total of 50 vehicles manufactured for the city of Poznań, including 30 single-ended and 20 double-ended trams.

Compact and light – silicon carbide (SiC) technology

The primary idea of the project was to create a single compact solution to power traction motors and auxiliary circuits in the tram, and the use of silicon carbide made it possible.

Medcom used SiC technology in the design of the static converters, thanks to which, apart from four FT-50-600 traction inverters, a single container now also holds the optimised PSM-50 SiC converter with 50 kVA of power. Each tram is equipped with two such containers, which have an exceptionally quiet cooling system. The control system features state-of-the-art microcontrollers and proven signal processing algorithms.

*“The Moderus Gamma is yet another project demonstrating the outstanding properties of silicon carbide. The use of SiC technology in the converter allowed us to decrease its weight and dimensions, and mount the devices within a single container, thus lowering the number of cables, reducing the total weight of the device, and saving space on the roof of the vehicle. At the same time, we managed to achieve much better operating parameters in terms of efficiency, operating temperature, switching speed, and output voltage stability. SiC technology constitutes one of the main directions of development in modern public transport, because it considerably improves the efficiency of the devices and limits energy losses in converters, ultimately reducing vehicle operating costs,” says **Piotr Wroński, Vice-President at MEDCOM.***

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