

SP600/240 power converter for air conditioner units in tram cars

Customer:

Minel ELVO, Belgrade, Serbia
(Belgrade City Transportation)

Salient features:

Input voltage: **DC, from 400V up to 700V**
Output voltage: **230V AC, +/-1%, 50Hz**
Rated power: **2500VA continuous, 7500 VA peak**

Product description:

City tram cars are supplied with 600V DC overhead lines. Their HVAC (air conditioners) units are generally designed for 50Hz, 230V supply. Therefore, a SP600/240 converter has to be built on to the roof of the tram. It will draw the power from the overhead line and provide the necessary voltage (230V, 50Hz) for supplying the air conditioning units.

In order to start the compressor motor, comprised within each air conditioner, the SP600/240 converter provides the peak power of 7.7 kVA. Continuous rating is 2.5 kVA. It is based on Cool-FET technology and RISC processor real time control.

Besides standard protections, software includes the thermal model of active and passive components within the power section. In such a way, the operation at the highest possible ambient temperatures is provided without damage to vital components or their accelerated aging. The unit is shipped in several mechanical configurations, suitable for installation on the roof, or inside the vehicle/car. Communication includes RS485 physical layer and the MODBUS protocol.



➤ **involvement:**

Complete hardware and software design. Power section concept & design, design of the power and the control hardware, design of the RISC processor control & communication software. Resolution of railway norms issues.