



## AUXILIARY POWER SUPPLY FOR MASS TRANSIT (METRO)

### 45kVA /10kW CHICAGO TRANSIT AUTHORITY (CTA) 5000 SERIES CARS

#### Key Technical Features

- ✓ Carbon Steel Enclosure rated at IP65
- ✓ Naturally cooled design
- ✓ Soft start circuit
- ✓ DC Input filter
- ✓ Inverter for producing AC 3phase power
- ✓ Inverter for producing AC single phase power
- ✓ Low voltage power supply (LVPS) / Battery Charger
- ✓ Battery Charging Controller
- ✓ Dead battery start system
- ✓ AC Output filtering
- ✓ AC Three phase synchronisation
- ✓ Magnetic components are vacuum impregnated and potted for harsh environmental conditions
- ✓ Comprehensive monitoring and reporting
- ✓ Design compliant to all relevant EN and IEC Standards
- ✓ Lockable, hinged covers to facilitate easy replacement of internal components
- ✓ Modular construction: Independent LVPS and Battery Charger units
- ✓ DC-DC Galvanic Isolation option available



#### Key Benefits to Transit Authorities

- ✓ Designed and built for harsh environments
- ✓ High reliability (700,000 miles MDBCF)
- ✓ Designed for longevity i.e. life of 30 years
- ✓ Reliable under extreme weather i.e. -40°C to +50°C and 100% humidity
- ✓ Over load protection including current, voltage and harmonics
- ✓ High efficiency in operation i.e. 94% at full load
- ✓ Greener in operation for e.g. the LVPS only consumes 195W of power
- ✓ Reduced maintenance cost due to naturally cooled design
- ✓ Quiet in operation < 68 dBA at 15ft
- ✓ Ease of maintenance to improve train availability



Input Voltage	600 Vdc
Input Voltage Range	400 Vdc to 1200 Vdc at full load
Input isolation to earth	2.65kV AC rms for 1 minute
Output Voltage 3phase Inverter	230 Vac $\pm 5\%$ at 60Hz $\pm 5\%$
Rated Power	45kVA
Short term overload	250% for 2 seconds
Motor Starts	Direct on line (DOL) motor starts can be used
Single Phase Output	120 Vac $\pm 5\%$ rated at 5kVA
Low Voltage DC	37.5 Vdc $\pm 1\%$ rated at 9kW
Battery Charger DC	37.5 Vdc $\pm 1\%$ rated at 3.75kW
Protection	Electronic short-circuit and overload protection
Battery Protection and Monitoring	Yes, reverse battery protection and battery voltage monitoring
Efficiency	> 94% at full load
Weight	873 Kgs
Dimensions	1710mm (L) x 995mm (W) x 769mm (H)
Reliability	> 100,000 hrs MTBF
Design Life	30 years
Operating temperature and Humidity	-40 <sup>0</sup> C to +50 <sup>0</sup> C and relative humidity at maximum of 100%
Cooling	Natural air-cooled heatsinks
Portable Test Equipment (PTE)	Available – remote condition and fault monitoring

TPS has worked with Bombardier and CTA for over a decade on the 5000 series project and over 800 units have been successfully designed, delivered and entered into revenue service. TPS was chosen for this project due to its long standing pedigree of delivering high quality power conversion solutions for the North American market. Some of our prestigious projects include power conversion solutions for Montreal Metro, JFK Airport Express, MARTA – Metro Atlanta, Toronto Transit Commission – T1, S1, H6 fleet and Toronto Rocket.

We believe that dedicated after sales support is key to the sustainability of rail projects and living to this promise we have deployed a tiered support structure in North America. For first line maintenance our customers can use our after sales representative based in Atlanta, Georgia. Further engineering advisory support is also available either via telephone or onsite support that could be organized within a reasonable time frame.

With over 40 years rail pedigree, a team of highly skilled engineers and technicians, and a track record in creating world-class power electronics, why go anywhere else for your auxiliary power supply?

To discuss your project or for any further information please contact our marketing department at [marketing@turbopowersystems.com](mailto:marketing@turbopowersystems.com) or +44 (0) 0191 482 9288/9251/9278.



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