SIEMENS

Ingenuity for life

More than 15,000 APS worldwide for railways in service

Auxiliary Power Supply for metros

120 kVA AC / 40 kW DC or 170 kVA AC / 30 kW DC solutions

siemens.com/mobility

Your advantages

+ Compact, flexible, highly efficient, high-quality, and lightweight stainless-steel construction
+ Catenary or third-rail connection
+ Isolating transformer
+ Latest IGBT technology, silicon carbide power electronics
+ Silicium IGBT technology or SiC (Mosfet)
+ Battery charger integrated
+ Microprocessor-based control and diagnostics
+ 3 AC outputs connected in parallel
+ Integrated transient voltage protection
+ Scalable power range
+ Short-circuit and overload tolerance
+ Redundancy with synchronized 3 AC busbar
+ Solid, reliable performance throughout a long service life
+ Global service network, long-term spare part and service concepts
+ A single container design for both power 120 kVA and 170 kVA and both voltages 750 V and 1,500 V

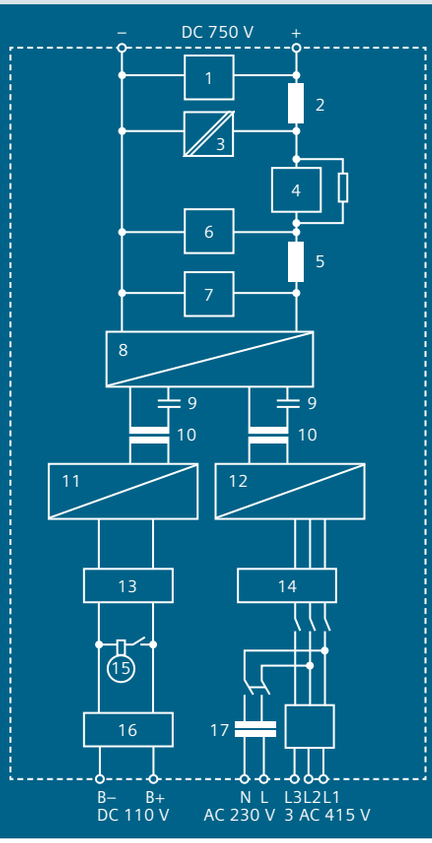
With the ongoing development of rail vehicles, electric and hybrid buses, passenger comfort and information are becoming increasingly important. This emphasizes the key role of the power supply for onboard electrical consumers. Our auxiliary converters are the crucial link between these consumers and the vehicle's power supply.

The technical solution

We offer customized solutions for the onboard electrical supply (Auxiliary Power Supply: APS) in any type of newly built or refurbished metro vehicles. Our technology is based on the very latest IGBT power modules (thyristors with silicon carbide), diagnosis-friendly Sibas® ICU2 microprocessor controls, and more than 70 years of global experience in APS engineering, production, and service. The metro APS contains all components needed to supply the onboard power system load, including the battery charger.

It is housed in the same stainless-steel container for both input voltage 750 V and 1,500 V. The system features two input modules for 750 V and 1,500 V DC (catenary or third rail) and provides either 120 kVA AC / 40 kW DC or 170 kVA AC / 30 kW DC with one output module. This APS with medium frequency galvanic isolation consists of always the same power modules, the variants in power and input voltage being adapted by input and transducer inductivities.

Circuit diagram



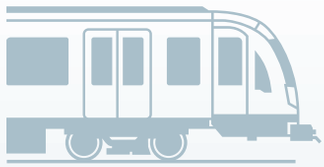
1 High-voltage relay
2 Line filter choke
3 Emergency start system
4 Pre-charge / transient protection
5 Boost converter choke
6 Line filter
7 EMC filter
8 Boost converter / inverter
9 Resonance capacitors
10 Medium frequency inverter
11 Battery charging unit
12 Pulse inverter
13 DC filter
14 Sine filter
15 Main fan
16 EMC filter
17 AC transformer

Technical data

DC input voltage	750 V or 1,500 V
3 AC output	120 kVA or 170 kVA; 400 V / 50 Hz
1 AC output	4.6 kVA; 230 V / 50 Hz
DC output	40 kW or 30 kW / 110 V
Overall efficiency	>92%
Temperature range	–20° C to +45° C
Mounting location	Underfloor
Cooling type	Forced-air cooling
Dimensions (L x W x H)	2,000 x 750 x 570 mm*
Weight	600 kg
IP class	IP65

*without optional mounting space

Metro



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Otto-Hahn-Ring 6
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contact.mobility@siemens.com

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