

# SIEMENS

*Ingenuity for life*

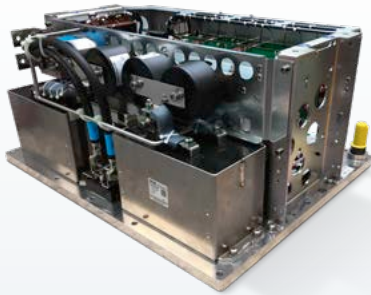
More than  
15,000 APS  
worldwide  
for railways  
in service



## Auxiliary Power Supply for commuter rail vehicles

160 kVA AC / 15 kW DC

[siemens.com/mobility](https://www.siemens.com/mobility)



### Your advantages

- + High power in compact dimensions
- + Comprehensively tested APS modules
- + Easy-to-integrate power modules
- + Reduced conduction losses due to short connections
- + Faster commissioning phase
- + Flexible control unit
- + Input and output always isolated
- + Reduced one-time project costs
- + External control by CANbus interface
- + Option to locate HVU and LVU separately, resulting in a flexible container design
- + EMC-tested units
- + Market-relevant certifications and standards
- + Global service network, long-term spare part and service concepts
- + Advance design rules and application support



**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 optimized solutions for onboard electrical supply (Auxiliary Power Supply: APS) in any type of newly built or refurbished commuter rail vehicles. Our technology is based on the IGBT power modules, diagnosis-friendly Sibas® ICU2 microprocessor controls, and more than 70 years of global experience in APS engineering, production, and service.

We provide low-voltage and high-voltage modules to be integrated or a complete APS containers that house all the components needed to supply the onboard power system load, including the battery charger.

This housing can be mounted upright or overhead. The system is designed for an input voltage of DC 1,500 V. It provides 160 kVA 380 VA to 480 V AC output and 15 kW 110 V DC for battery charging.

## Technical data

Nominal power / battery charger	160 kVA / 15 kW
DC input voltage	1,500 V DC
Temperature range	−40° C to +45° C
Installation / mounting	Upright / overhead
Weight	240 kg
Cooling type	Forced-air cooling or water-cooled (on request)

## Step-up converter + inverter

Nominal power	180 kW @ +45° C
Nominal input voltage	1,500 V DC*
Input voltage range (static)	1,000 V DC ... 2,100 V DC
Input voltage range (dynamic)	450 V DC ... 2,200 V DC
Output voltage, isolated	750 V DC

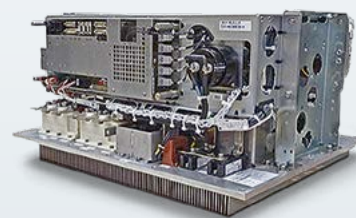
\*Connected to the traction link filter, not directly connected to the line supply

## Pulse inverter

Input voltage range (static)	670 V DC ... 750 V DC
Input voltage range (dynamic)	400 V DC ... 820 V DC
Nominal output voltage	380 V AC ... 480 V AC
Output voltage, static tolerance	+ / −5%
Output voltage, dynamic tolerance	+ / −15%
Output voltage frequency	50 / 60 Hz
Power	160 kVA
Asymmetric load	10%
Output current, thermal	243 A
Pulse inverter frequency	3 kHz
Power factor	0.98
Distortion factor	≤ 8%
Overload 1 / 200 ms	395 A (rms)
Overload 2 / 10 s	365 A (rms)

## Battery charger

Power	15 kW
Nominal output voltage	110 V DC
Output power range	77 V DC ... 137.5 V DC
Max. current	136 A
Battery charger pulse frequency	20 kHz

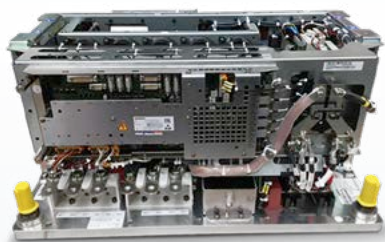


## Mechanical data

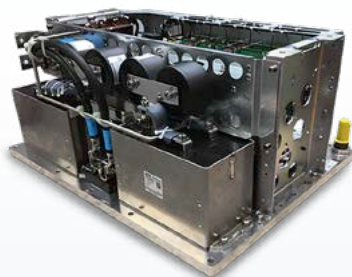
Dimensions (each HVU/LVU)	750 mm x 600 mm x 401 mm
Weight HVU and LVU (sum)	240 kg
Protection class	IP00
Shock and vibration	According to EN 61373
Preferred mounting position	Upright, overhead

## Thermal

Cooling	Forced-air cooling (must be externally provided) Water-cooled version on request
Temperature of forced-cooling air	-40° C ... +45° C
Flow rate	2 x 400 l/s

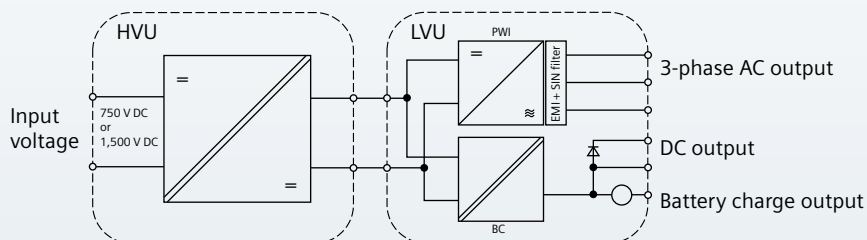


Low-voltage unit



High-voltage unit

## Commuter rail



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