



Auxilliary converter for LRVs and metro trains.

Two completely redundant systems have been installed in the PCS Rail AU 5124 for maximising the availability of the auxiliary converters. These are typically used by driverless vehicles of special significance or by vehicles that operate in tunnels which require the maximum availability of the energy supply system.

The concept of the auxiliary converter PCS Rail AU 5124 is based on the use of modern IGBT technology. The AC outputs can be synchronised and connected in parallel.

The main functions are the generation of a DC voltage, which charges a vehicle battery and supplies the 24 V consumer loads, and the provision of an AC voltage 3 x 400 V/50 Hz and 230 V/50 Hz for supplying the AC consumer loads, such as air-conditioning and fans.

The electrical insulation between the inputs and the output is realised by two medium-frequency transformers in each system.

The PCS Rail AU 5124 is conceived as an underfloor application. The cooling involves forced-air cooling and is also redundant in design. It is achieved by using one electronically commutated DC fan each.

The PCS Rail AU 5124 contains an emergency supply which enables starting if the battery is at a low state of charge. At the same time, it serves as a parallel supply of the electronics, due to the fact that it functions continuously. The supply for the electronics is normally ensured via the battery voltage with downstream converter.

Properties

Medium-frequency potential insulation of the AC and DC output

Internal AC synchronisation

Emergency supply for start if battery is in low charge state

Robust and compact design

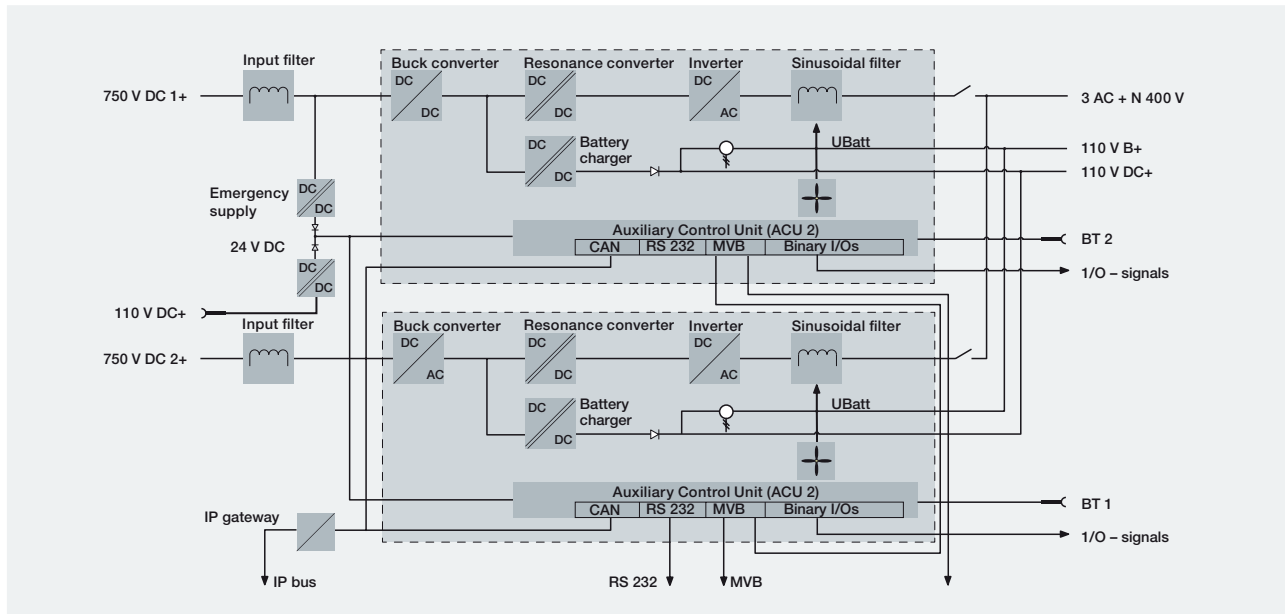
High efficiency and low weight

Short-circuit and overvoltage monitoring

Electronically controlled ventilation



PCS Rail AU 5124 V1 Underfloor container



Technical data PCS Rail AU 5124:

Technical data

Type	PCS Rail AU 5124 V1
Mass (kg)	648
Dimensions (L/B/H mm)	1350/2080/500
Application	Underfloor

Input voltage	600 V/750 V DC
Input voltage range	420 V to 975 V DC
Ambient temperature	-30 °C to +45 °C
Storage temperature	-40 °C to +85 °C
Communication	MVB, Ethernet (IPT Com), CAN, RS 232

AC Output

Output power	120 kVA (cos phi = 0.8) 2 x 60 kVA synchronised
3 AC nominal current	173 A
Max. 3 AC current	260 A for 10 s
Single-phase current	22 A

DC Output

Output power	14 kW (2 x 7 kW parallel)
Output current	120 A
Output voltage range	110 V to 132 V
Charge current (adjustable)	10 A to 100 A

The central Auxiliary Controller Unit (ACU 2) performs various internal functions for each system: It controls the power electronics and fan for the magnetic components, records events as well as faults and also enables communication with the vehicle control system.

Both systems communicate within the auxiliary converter via a CAN bus. The service access is enabled via a CAN/IP gateway, the connection to the vehicle control system using the MVB.

Options

AC output protection
DC decoupling diode
AC-phase failure monitoring
AC synchronisation
Fault current monitoring

Reference projects

Bombardier Movia metro trains:
Metro DTL (Singapore)

PCS has for decades developed highly reliable power converters and electrical equipment. Take advantage of state-of-the-art solutions plus project management and service.