



600kW Pantograph-based Station DC Charger

Comparing to light electric vehicles, electrically powered heavy vehicles (such as electric buses and trucks) have higher rating of electrical energy requirements. Therefore, utilizing of higher power rating of the charging infrastructures is necessary to charge them in as little time as possible. Plug-in charging systems are now reaching their limits, since the amount of power they can transmit is limited by wire gage and weight.

Special features

- ◆ Safe and reliable fully automated connection
- ◆ Industrial grade power cabinets with indoor/outdoor application capability
- ◆ Remote management, support, and update
- ◆ Galvanic isolation for load protection
- ◆ Redundancy-based architecture and modular structure
- ◆ Possibility to offer in various power ratings according to customer order

Use cases



Electric bus depot station



Electric bus stations

Pantograph-based charging infrastructures can provide relief. A pantograph with charge transferring capacity up to multi-hundred kW, is a movable set of scissor-like contact arms hanged to a stationary pole and can transfer electrical energy from power conversion cabinets. This moving up and down mechanism performed by commands to an electric motor mounted in the pantograph structure, without human intervention.

600kW pantograph-based station DC charger constructed by HKD can be applied in various places on the electric buses route. An electric bus can be charged in about 15-30 minutes by this charging infrastructure (depends on the battery pack capacity).

Separating of the power conversion cabinets and the pole and pantograph in this class of the HKD chargers cause to reduction of noise and occupied place near the electric buses.

User authentication at the start of charging process and also supporting by a back office protocol (based on OCPP 1.6) are another features of the HKD pantograph-based station DC charger. This product is supported by OppCharge charging protocol.

The HKD pantograph-based station DC charger can be offer in 450 kW and 600kW power ratings.

Technical specification

Input specifications

Input voltage range	260VAC~530VAC
Input frequency range	45Hz~65Hz
Input AC connection	3P + PE
Rated input current & power	920A @ 600kW
Power factor (nominal load)	≥0.99
THD	≤5%

Output specifications

Rated output power	600kW
Output voltage range	150VDC~1000VDC
Maximum output current	900A
Efficiency	>95% (nominal load)
Charging protocol	OppCharge
DC connection standard	IEC 61851-23/ISO 15118
Connection method between charger and bus	Pantograph (4-pole automatic connection system)
Upstream communication protocol	OCPP 1.6 JSON
Network connection	LAN, WiFi, GSM/3G/4G

Mechanical and environmental specifications

Dimensions (H*D*W)	Power cabinet: 2000mm*800mm*1000mm Charging pole: 5000mm*4200mm*1500mm
Protection	Power cabinet: IP54 & IK10 Charging pole: IP65 & IK10
Allowable humidity range	≤95% RH, without condensation
Operating temperature	-30°C~70°C, derating from 55°C
Storage temperature	-40°C~85°C
Pressure/Altitude	79kPa~106kPa/2000m
Distance between power cabinet and charging pole	Up to 30m

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