CPC400-C DC Charging Station - Official Commercial C&I Technical Overview & Datasheet

CPC400-C DC CHARGING STATION

OFFICIAL COMMERCIAL TECHNICAL OVERVIEW & DATASHEET

Document Version 2.0 | Effective Date: June 2026

1. EXECUTIVE SUMMARY

The CPC400-C is a next-generation, high-power DC ultra-fast charging station engineered specifically for commercial fleet operations, heavy-load facilities, and high-traffic public infrastructure nodes. Designed as a standalone, grid-interactive unit or as part of a fully integrated PV-Storage-Charging micro-grid, the CPC400-C delivers a maximum output power of 400kW per dual-gun configuration. Utilizing Tier-1 IGBT modules and an advanced active power factor correction topology, the station achieves a peak efficiency of 96.7%, ensuring minimal grid harmonics and superior energy throughput. The platform is future-proofed for 1500V vehicle battery architectures and supports simultaneous CCS2, CHAdeMO, and GB/T interfaces.

2. SYSTEM ARCHITECTURE & SAFETY

The CPC400-C features a modular power distribution cabinet with hot-swappable 40kW rectifier modules (N+1 redundancy). The station incorporates a dual-layer safety protocol: hardware-level galvanic isolation and software-driven real-time insulation monitoring with <0.5 second fault interrupt time. An integrated liquid-cooled cable management system eliminates thermal derating, enabling sustained 400kW output even at 45°C ambient temperature. The outdoor-rated IP54 enclosure includes an integrated emergency stop (E-stop) push-button, surge protection devices (Type I+II), and automatic under-voltage load shedding.

3. KEY FEATURES

- Dynamic Power Sharing: Intelligent algorithm redistributes 400kW across two

guns based on real-time vehicle BMS requests; supports simultaneous charging of two heavy EVs at 200kW each or a single vehicle at full 400kW.

- Dual-Protocol Compatibility: Native support for OCPP 1.6J (and migration to 2.0.1) for seamless integration with any major Charge Point Operator (CPO) platform, plus Modbus TCP for EMS/SCADA integration.

- Thermal Endurance: Smart liquid cooling maintains power electronics junction temperature below 85°C, ensuring full nameplate power from -30°C to +50°C with automatic derating at >55°C.

- 1500V Architecture: Wide output voltage range of 150V-1000V DC (expandable to 1500V DC with future firmware update) accommodating legacy 400V fleets and next-gen 800V/1000V electric trucks.

- V2G Ready: Bi-directional capable power stage supports Vehicle-to-Grid (V2G) and Vehicle-to-Building (V2B) applications with <20ms grid-forming switching time.

4. COMPLIANCE & STANDARDS

Fully certified to global regulatory frameworks: CE (LVD 2014/35/EU, EMC 2014/30/EU), UKCA, and CB Scheme. Compliant with IEC 61851-23 (DC EV charging station), IEC 61851-24 (DC comms protocol), ISO 15118 (Plug & Charge and V2G security), and UL 2202 (for North American variants). Cybersecurity compliant with IEC 62443-3-3 SL2 for encrypted network

communication.

5. TECHNICAL SPECIFICATIONS

Parameter	**Specification**
Max Output Power	400 kW (shared across two guns)
Output Voltage Range	150 – 1000 V DC (upgradeable to 1500V DC)
Max Output Current per Gun	600A (liquid-cooled cable)
Nominal AC Input Voltage	380 – 480 V AC (±15%), 3-phase
Power Factor	>0.99 at 50% load
THDi	<5% at full load
Cooling Method	Integrated liquid cooling (ethylene-glycol circuit)
Protection Rating	IP54 (cabinet), IK10 (impact resistance)

Charger Interfaces: Dual-gun configuration (CCS2 + CCS2 / or CCS2 + CHAdeMO options)

Display: 10.1-inch industrial-grade touchscreen (IP65, anti-glare, operational from -20°C)

Connectivity: 4G/LTE (dual SIM), Ethernet (RJ45), Wi-Fi (802.11ac), RS485, CAN

bus

Metering: Active/Reactive energy metering (Class 0.5S accuracy, MID certified)

User Authentication: RFID (ISO 14443 A/B), QR code scanning, Plug & Charge (ISO 15118)

Grid Input: 3-phase + N + PE, 380V-480V AC ±15%, 50/60Hz ±5Hz, max input current 650A

Efficiency: >96.7% at full load (peak 97.2% at 60% load), standby consumption <15W

Operating Conditions: -30 ° C to +50 ° C (full power), up to 95% RH non-condensing, altitude ≤2000m

Physical Dimensions: (W x D x H) 1200mm x 800mm x 2100mm, approximate weight 750kg

Warranty: 5 years standard (extendable to 8 years with active O&M service contract)

6. INDUSTRIAL DEPLOYMENT

Ideal for: electric bus depots, logistics hubs (port/airport cargo handling), heavy-duty e-truck corridors, and industrial park fleet charging. When paired with the vendor’ s 372 kWh liquid-cooled BESS cabinet (model CPC-LC-372), the CPC400-C forms a grid-independent ultra-fast charging island capable of peak shaving and demand charge mitigation. The station supports ISO 15118 Plug & Charge, enabling automated authentication, billing, and session initiation without RFID or app intervention. Remote diagnostics via the vendor’ s cloud-based CPC-EMS platform allows real-time OTA firmware updates, predictive maintenance alerts, and load balancing across up to 32 charging posts.