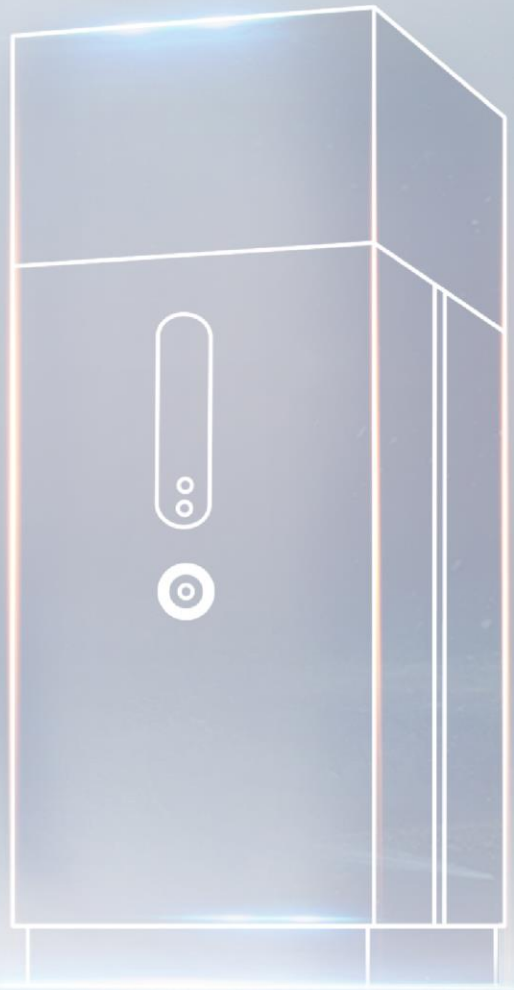
Liquid-Cooled Ultra-Fast Charging Architecture



HUAWEI

Advocating For Sustainable Development of Future-Proof Charging Facility

Enhanced Charging

Fast and Quiet
High Utilization Rate

Superior Quality

Long Lifespan
Low Failure Rate

Flexible Architecture

PV & ESS Convergence
Upgradeable

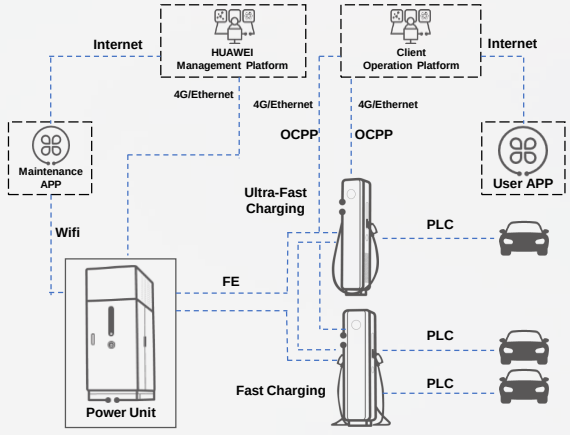
FusionCharge

Grid **Charging** **NEV**

Introduction

Liquid-cooled power unit is the core part of ultra-fast DC charging system for public charging station and other sites demanding multiple fast chargers. Each power unit offers maximum 600kW output supporting up to 12 outputs. With AC/DC and DC/DC modules decoupled, power units can better utilize power capacity and be accessible to DC ESS coupling. An innovative liquid-cooled architecture with DC bus enables enhanced charging, superior quality and flexible architecture.

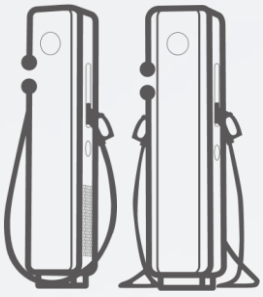
Architecture



Power Unit

Liquid-Cooled Power Unit

Dispenser



Ultra-Fast Charging Dispenser

Fast Charging Dispenser

(By customer/partner)

Product Features

Enhanced Charging

Power Sharing Matrix

Improving power utilization

Low Noise

≤60dB@25℃

Superior Quality

Long Life

10 years lifespan

Low Failure Rate

Module failure rate < 0.5%*

* Theoretical values

Flexible Architecture

DC Bus

AC or DC ESS coupling supported

Modular Design

Multiple dispenser configurations

Power Unit Specification

Basic Specifications	Dimensions (W x D x H)	800 mm × 1700 mm × 2150 mm	
	Model	DS720-720LEUA2	DS720-720LEUA3
	Power Configuration (AC/DC+DC/DC)	600kW+720kW	240kW+360kW
	Installation Mode	Floor-mounted	
	Efficiency (Full load)	94.7%	
	Efficiency (Maximum)*	95.5%	
	Cooling	Liquid cooling	
	IP Rating	IP55	
	Communication Interface	4G, Ethernet (Northbound communication)	
	Standby Power	35W	
Input Specifications	Rated Input Voltage	2 X 400Vac, three-phase five-wire system	
	Rated Frequency	45-66 Hz	
	Rated Input Current	≤931 A (Output: 600kW, Input: 400Vac)	≤373 A (Output: 240kW, Input: 400Vac)
	Input Module	120kW AC/DC liquid-cooled module	
	Power Factor	≥0.99 (Load≥50%)	
	THDi	≤5% (Load≥50%)	
Output Specifications	Output Voltage	200~1000 Vdc	
	Output Module	60kW DC/DC liquid-cooled module	
	Current Ripple	≤ 1.5A @frequency<10Hz; ≤ 6A@frequency<5000Hz; ≤ 9A@frequency<150kHz	
	Voltage Ripple	≤ ±5V	
	Charging Connector Number	Max. 12 (Max. 8 x 500A)	Max. 6 (Max. 4 x 500A)
Environmental Specifications	Operating Temperature	-35°C to +50°C	
	Storage Temperature	-35°C to +70°C	
	Altitude	≤4000m	
	Relative Humidity	5%~95% (Non-condensing)	
	Noise	≤ 55 dB@25℃ (Mute Mode), ≤ 60 dB@25℃ (Standard mode)	
Compliance		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	

*: The test efficiency is the highest in the lab environment.

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