Megawatt Charging System (MCS)

Super Ultra-Fast Charging for Electric Vehicles

The Ohmitron MCS-1000 is a cutting-edge 1.2 MW Megawatt Charging System built on Silicon Carbide (SiC)-based medium voltage architecture, delivering ultra-fast charging for heavy-duty electric vehicles. It can fully charge an 850 kWh battery in under 20 minutes, making it ideal for fleet-scale electrification. Its next-gen compact converters, modular design, and full compliance with ISO 15118-20 and MCS standards make it an industry benchmark for high-power electric mobility infrastructure.

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System Overview	
Parameter	**Description**
Vehicle Charging Pile	User-side unit with MCS charging header and liquid-cooled charging cable
Power Unit	Power electronics unit (2-blocks) with converters, cooling systems, chiller
Charging Standard	Megawatt Charging System (MCS) – ISO 15118-20 compliant
Power Delivery	Up to 1,000 kW DC with high-current liquid-cooled connectors
Key Features	
Max Charging Power	Up to 1.2 MW – Supports High-Current Heavy-Duty EVs
Battery Charging Time	Charges 850 kWh Battery to 100% in under 20 minutes
Power Technology	Medium Voltage SiC-Based Architecture
Liquid Cooling System	Integrated Cooling for both Power Converters and MCS Charging Gun
Charging Standard	Compliant with ISO 15118-20 and Megawatt Charging System (MCS)
Power Conversion Efficiency	> 97% with Compact, Thermally Optimized Converters
Smart User Interface	10” Touchscreen, LED Indicators, RFID Access and Emergency Stop
Communication Protocols	OCPP 2.0.1, Ethernet, Modbus TCP, Optical Fiber
Environmental Durability	Operates from -33°C to +85°C, 97% RH
Protection & Safety	DC Reverse, OVP, UVP, OCP, Insulation Detection, IP65/IP55 Rated
Scalable Modular Design	Power Stack Expandable in 250 kW Modules up to 1.2 MW
EMC & Compliance	Meets IEC, UL, CE, FCC, RoHS and Automotive-Grade EMC Standards

Electrical Specifications		
Parameter	**Units**	**Value/Description**
Input Voltage	Vac	3Φ 4.16 kVac, ±15% (50/60 Hz)
Input Current Rating	A	Max: 200
Max Input Power	kVA	1050
Grid Connection Type	–	3P + N + PE
Current THD	–	< 3%
Power Factor	–	> 0.99
Standby Loss	W	< 50
Power Conversion Efficiency	%	> 97%
Output Voltage Range	V	200 – 1500
Max Output Current	A	1500
AC Charging Efficiency	%	> 95

Communication & Protocols	
OCPP	2.0.1 Compliant (Secure Cloud Communication)
Protocol Support	ISO 15118-20, CAN, Modbus TCP/IP, RS485
Remote Monitoring	Diagnostic Access, Firmware Updates, Load Management
Plug & Charge	Secure Vehicle Authentication via ISO 15118

Charging Pile Specification		
	Parameter	**Value/Description**
1	Design	Clean and Futuristic with Adaptive Strip LED Indicators
2	Dimensions (H x W x D)	1300 × 700 × 500 mm
3	Material	Powder-Doated Aluminum or Steel, IP69 Rated
4	Connector	MCS Liquid-Cooled (1000A, 1000V)
5	Cable Cooling	Liquid-Cooled with insulated Dual-Loop System
6	Display & UI	10” Touchscreen, RFID Reader, Emergency Stop
7	Mounting	Floor Mounted with Bolted Baseplate
8	Communication Interface	ISO 15118 / CAN / Ethernet / RS485
9	Water/Rain Protection	Designed to meet SAE J3271 (MCS Connector)
Charging Pile Specification		
1	Design	Functional Dual-Block Sheet Metal Cabinet
2	Dimensions per Block	2200 × 1000 × 800 mm
3	Weight	Approx. 500 kg total
4	Power Converters	Modular SiC (4 × 250 kW)
5	Cooling System	Liquid (Chiller) + Air (Fans)
6	Cooling Method	Liquid-to-Air Hybrid (Chiller + Fans)
7	Cabinet Features	Hinged Service Doors, Ventilation Grilles, User Interactive Display
8	Chiller Unit	Integrated in One Cabinet Block
9	Thermal Design	Heat Exchanger, Ambient Air Inlets, High CFM Fan Exhaust
10	Input Supply	400/480 Vac, 3-Phase, 50/60Hz
11	Output Capacity	1000 kW, 1000Vdc, 1000A

Environmental Specifications	
Parameter	**Value/Description**
Operating Temperature	-30°C to +55°C
Storage Temperature	-40°C to +70°C
Humidity	5% – 95% (Non-Condensing)
Altitude	≤ 2000 m
Ingress Protection	IP65 (Both Units)
Certifications & Compliance	
IEC 61851-23/24	DC Fast Charging System
IEC 62196-3	MCS Connector
ISO 15118-20	Plug & Charge Communication
UL 2202 / UL 2231	Charging System and Personnel Protection
EN 61000 Series	Electromagnetic Compatibility (EMC)
FCC Part 15	Radio Emission Compliance
RoHS	Restriction of Hazardous Substances
IP65 Certified	Enclosure Dust/Water Resistance
ISO 9001 / 14001	Quality and Environmental Management

- **Ratings subject to change without notice—consult company for further details at given mail.**

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