

## DC power module - CHARX PS-M2/3AC/1000DC/30KW - 1232243

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CHARX power, Fast charging module for setting up DC charging stations, 19" rack mounting, CAN bus, input: 3-phase, output: 150 V DC...1000 V DC / 0 A...100 A

### Product Description

The highly efficient power electronics system for rack mounting from Phoenix Contact features a high degree of investment security. It enables the cost-effective operation of your DC charging infrastructure for the fast charging of electric vehicles. The modular and scalable system is optimized for DC charging with high voltages and currents. Each system cabinet can provide a charging power of up to 360 kW.

### Your advantages

- ✓ Low installation costs with Plug and Play and efficient operation due to the high degree of efficiency
- ✓ Save space with the innovative design and high power density
- ✓ Fast repair due to hot swappable power modules
- ✓ Scalable power for each charging point with the flexible assembly of system cabinets and connection of power modules
- ✓ The operation of large charging parks in the megawatt range is made possible by connecting multiple system cabinets together

### Key Commercial Data

Packing unit	1 pc
GTIN	 4 063151 333171
GTIN	4063151333171
Custom tariff number	85044055
Country of origin	China

### Technical data

#### Dimensions

Width	483 mm
Height	134 mm
Depth	550 mm
Rack unit	3 U

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 75 °C
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### Technical data

#### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Permissible humidity (operation)	≤ 95 % (non-condensing)
Installation height	≤ 4000 m (Derating >2000 m: 10% / 1000 m)
Noise level	< 60 dB (1 m)
Overtemperature protection (OTP)	> 75 °C

#### General

Weight	31 kg
Efficiency	> 95 % (P <sub>Out</sub> >50%)
Housing material	Zn-Al alloy
Mounting type	19" rack mounting
Degree of protection	IP20
Protection class	I
Degree of pollution	2
Hot PLUG connection	No
Ventilation	No
Internal fan	yes
Flow direction	from front to back
Supply system configuration	Star network (TN, TT, IT (PE))
MTBF (IEC 61709, SN 29500)	> 300000 h
Service life	40000 h (40 °C)
	70000 h (Fan)
Electrical isolation between input and output	yes

#### Input data

Input voltage range	3x 340 V AC ... 530 V AC
Nominal input voltage range	3x 400 V AC ... 480 V AC -15 % / +10 %
Input current	3x 54 A (340 V AC)
	3x 35 A (530 V AC)
Input frequency	50 Hz 60 Hz ±10 %
Inrush current limitation	< 60 A
Power factor (cos phi)	0.99
Total distortion (THDi)	< 5 % (50% ... 100% output load)

#### Output data

Output voltage range	150 V DC ... 1000 V DC
Output current range	0 A ... 100 A
Output current residual ripple	≤ 1 %
Nominal power	30 kW

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#### Output data

Power dissipation standby	< 14 W
Protection against overvoltage at the output (OVP)	> 1040 V DC
Derating	> 45 °C ... 55 °C (Derating: 1,2 A/K)
	> 55 °C (Derating: 3,2 A/K)
	> 55 °C (Derating: 1 kW/K)
POWER factor	≥ 0.95 (25 % ... 50 % output load)
	≥ 0.98 (50% ... 100% output load)
	≥ 0.99 (100 % output load)
Control deviation	< 0.5 % (Voltage deviation static load change 20% ... 100%)
	< 1 % (Current deviation Static load change 20 % ... 100 %)
	± 0.2 % (Input voltage change ±20 %)
Switch-on delay	< 8 s
Overshoot behavior	± 3 % (Switch-on procedure)

#### Input connection data

Connection method	Push-lock connection
Conductor cross section solid	2.5 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross section flexible	2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section AWG	12 ... 6 (Cu)

#### Output connection data

Connection method	T-LOX knee lever connection
Conductor cross section solid	10 mm <sup>2</sup> ... 50 mm <sup>2</sup>
Conductor cross section flexible	16 mm <sup>2</sup> ... 50 mm <sup>2</sup>
Conductor cross section AWG	4 ... 1 (Cu)

#### Data Interface

Interface	CAN bus
Number of interfaces	1
Connection method	2x RJ45 (pin assignment, CANopen standard)
Locking	Locking clip
Transmission physics	Twisted-Pair
Topology	Line (daisy-chain connection)
Electrical isolation	yes (primary/secondary)
	no (PE)
Transmission speed	125 kbps
Transmission length	max. 20 m
Termination resistor	120 Ω (Terminating the end device)
Supported protocols	CAN 2.0B

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## Technical data

### Data Interface

Number of power modules as CAN bus devices	max. 48 (within one CHARX control controller)
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### Standards

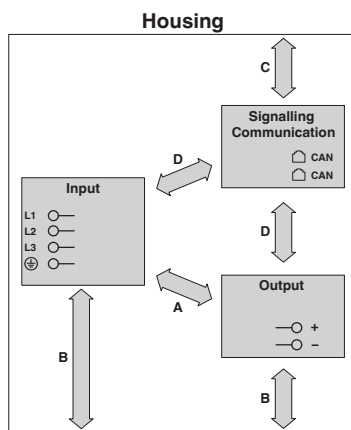
EMC requirements for noise immunity	EN 61000-6-1
EMC requirements for noise emission	EN 61000-6-3
Standard designation	Electric vehicle conductive charging system - Part 1: General requirements
Standards/regulations	IEC 61851-1
Standard designation	Conductive charging systems for electric vehicles – Part 23: DC supply equipment for electric vehicles
Standards/regulations	IEC 61851-23
Standard designation	Standard for Safety for Electric Vehicle (EV) Charging System Equipment
Standards/regulations	ANIS/UL 2202
Overvoltage category IEC 60664-1	II

### Environmental Product Compliance

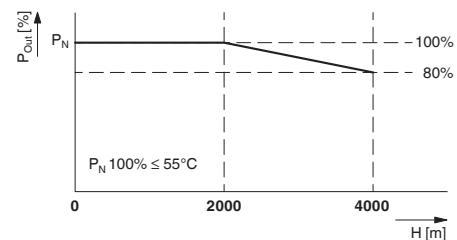
REACH SVHC	Lead 7439-92-1
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## Drawings

Schematic diagram

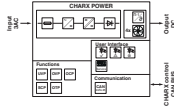


Diagram

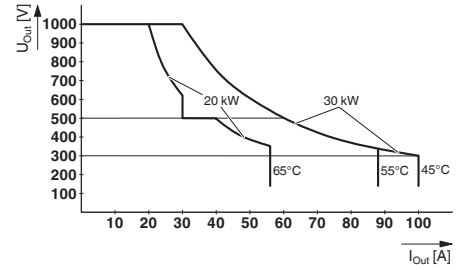


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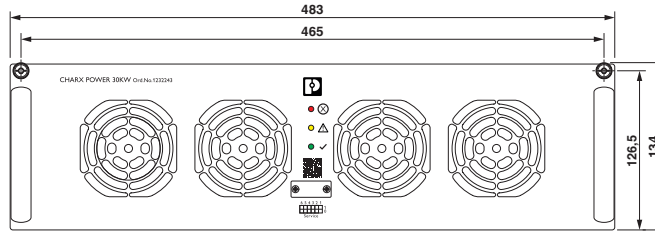
Block diagram



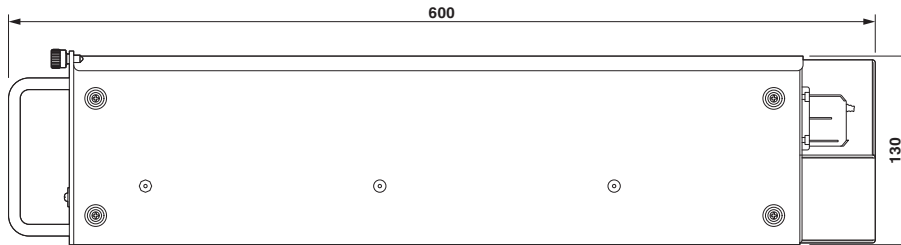
Diagram



Dimensional drawing

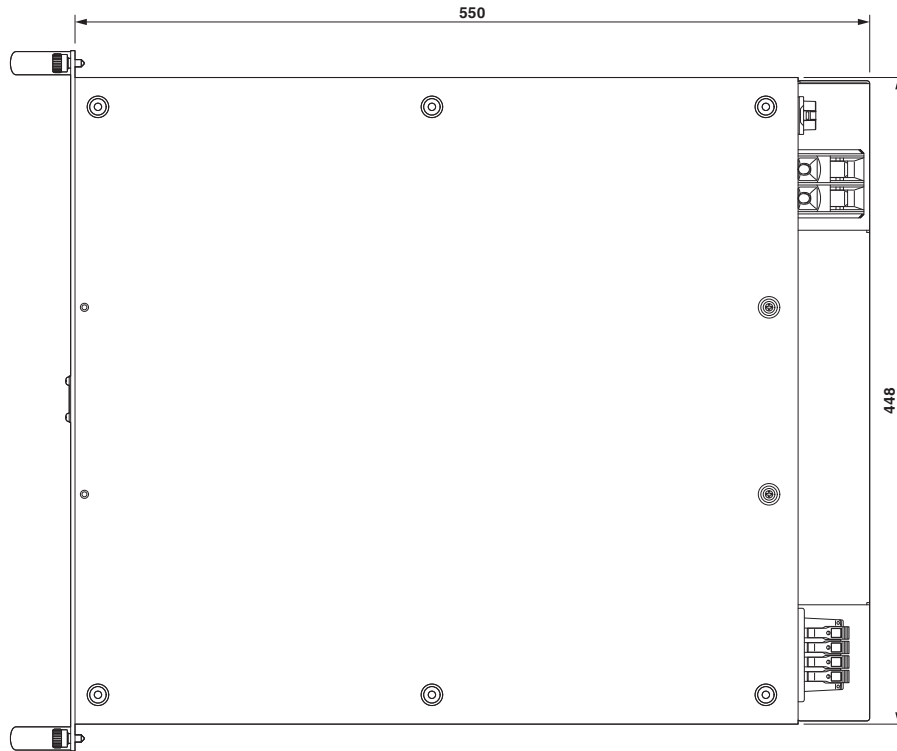


Dimensional drawing



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Dimensional drawing



## Classifications

eCl@ss

eCl@ss 9.0	27144792
eCl@ss 11.0	27144790

## Accessories

Accessories

Data cable preassembled

Network cable - VS-IP20-OE-94F-LI/2,0 - 1415255



Assembled Ethernet cable, CAT6, shielded, 4-pair, AWG 26 stranded (7-wire), RAL 5021 (water blue), RJ45 plug/IP20 on free conductor end, line, length 2 m

DC charging controller

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### Accessories

DC charging controller - EV-PLCC-AC1-DC1 - 1624130



Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121 with integrated 3G mobile network modem