CHARX PS/3AC/500DC/20KW - DC power module

1158272

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CRA READY



CHARX power advanced, Fast charging module for setting up DC charging stations, 19" rack mounting, input: 3-phase, output: 150 V DC...500 V DC / 0 A...66 A. The product is being prepared for compliance with the Cyber Resilience Act (CRA).

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 350 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
- 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

Commercial data

Item number	1158272
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM28
Customs tariff number	85044083
Country of origin	CN

Technical data

Notes

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

Input data

AC operation

Input voltage range	3x 340 V AC ... 440 V AC
Frequency range	3x 50 Hz ... 60 Hz ±10 %
Input current	3x 36 A (340 V AC)
	3x 32 A (400 V AC)
Nominal power consumption	22170 VA
Rated short-time current carrying capacity (I_{CW})	10 kA
Rated peak withstand current (I_{PK})	17 A
Duration (I_{CW})	60 ms
Short-circuit current rating (SCCR)	10 kA
Power factor	0.98 (25% ... 60% output load)
	≥ 0.99 (60% ... 100% output load)
Total distortion (THDi)	0.02 %
Insulation resistance	> 10 MΩ
Supply system configuration	Star network (TN, TT, IT (PE))

DC operation

Input voltage range	300 V DC ... 600 V DC
Derating	< 350 V DC (60 W/V DC)
Nominal input voltage range	350 V DC ... 500 V DC
Input current	3x 20 A (300 V DC)
	3x 12 A (600 V DC)
Supply system configuration	DC grid

Output data

Efficiency	> 96.5 % (400 V AC, 50 % < P_{Out} < 100 %)
	> 97 % (600 V DC, P_{Out} > 50 %)
Output voltage range	150 V DC ... 500 V DC
Output current range	0 A ... 66 A
Nominal power	20 kW
Power dissipation standby	< 5 W
Protection against overvoltage at the output (OVP)	> 550 V DC
Derating	> 45 °C (1.65 A/K)
	> 45 °C (0.5 kW/K)
Control deviation	< 1 % (Current deviation Static load change 20 % ... 100 %)

	± 0.2 % (Input voltage change ±20 %)
Switch-on delay	< 2 s
Overshoot behavior	< 1 % (Switch-on procedure)

Connection data

Connection technology

Position marking	2x L1, 2x L2 (PE), 2x L2, 2x L3 (PE), 2x L3, 2x L1 (PE)

Conductor connection

Connection method	Push-in connection
rigid	6 mm² ... 10 mm²
flexible	6 mm²
flexible with ferrule without plastic sleeve	6 mm²
flexible with ferrule with plastic sleeve	6 mm²
AWG	10 ... 8 (Cu)
Stripping length	10 mm (Rigid/flexible/ferrule)

Connection technology

Position marking	1x +/-, 1x +/-, 1x +/-

Conductor connection

Connection method	Push-in connection
rigid	6 mm² ... 10 mm²
flexible	6 mm²
flexible with ferrule without plastic sleeve	6 mm²
flexible with ferrule with plastic sleeve	6 mm²
AWG	10 ... 8 (Cu)
Stripping length	10 mm (Rigid/flexible/ferrule)

Interfaces

CAN-Bus

Specification	CANopen standard
Interface	CAN bus
Number of interfaces	1
Connection method	2x RJ45
Supported protocols	CAN 2.0B
Locking	Locking clip
Transmission physics	wired
Topology	Daisy Chain
Transmission speed	500 kbps (BCT Protocol)
Transmission length	max. 30 m
Termination resistor	120 Ω ()
Number of power modules as CAN bus devices	max. 30 (BCT Protocol)

Electrical properties

Number of phases	3
Electrical isolation between input and output	yes
Insulation voltage input/output	4240 V DC (Reinforced insulation)
Insulation voltage input, output / housing	2614 V DC (Basic insulation)
Insulation voltage input, output/signal, communication	4242 V DC (Reinforced insulation)
Insulation voltage signal, communication/housing	707 V DC (Basic insulation)

Product properties

Product type	DC power module
Product family	CHARX power advanced
Service life	85000 h (40°C, electrolytic capacitators)
	70000 h (40 °C, fan)
Special properties	The product is being prepared for compliance with the Cyber Resilience Act (CRA)
Internal fan	yes
Volumetric flow	160 m³/h (P_{Out} = 100 %, 45 °C)
Flow direction	from front to back

Insulation characteristics

Protection class	I
Overvoltage category (IEC 60664-1)	III (AC/DC rectified from < 300 V AC)
	II (DC)
Pollution degree	2

Dimensions

Item dimensions

Width	483 mm
Height	89 mm
Depth	540 mm
Rack unit	2 U

Mounting

Mounting type	19" rack mounting

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 60 °C
Over temperature protection	> 65 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	≤ 95 % (non-condensing)
Noise level	< 60 dB (1 m)

Standards and regulations

Electric vehicle conductive charging system - Part 1: General requirements

Standard designation	Electric vehicle conductive charging system - Part 1: General requirements
Standards/specifications	IEC 61851-1

Electric vehicle conductive charging system - Part 21-2: EMC requirements for off board electric vehicle charging systems

Standard designation	Electric vehicle conductive charging system - Part 21-2: EMC requirements for off board electric vehicle charging systems
Standards/specifications	IEC 61851-21-2 (Class B)

Electric vehicle conductive charging system – Part 23: DC electric vehicle charging station

Standard designation	Conductive charging systems for electric vehicles – Part 23: DC supply equipment for electric vehicles
Standards/specifications	IEC 61851-23

Safety requirements for power electronic converter systems and equipment - Part 1: General

Standard designation	Safety requirements for power electronic converter systems and equipment - Part 1: General
Standards/specifications	IEC 62477-1

Standard for Safety for Electric Vehicle (EV) Charging System Equipment

Standard designation	Standard for Safefy for Electric Vehicle (EV) Charging System Equipment
Standards/specifications	UL 2202

Power conversion equipment

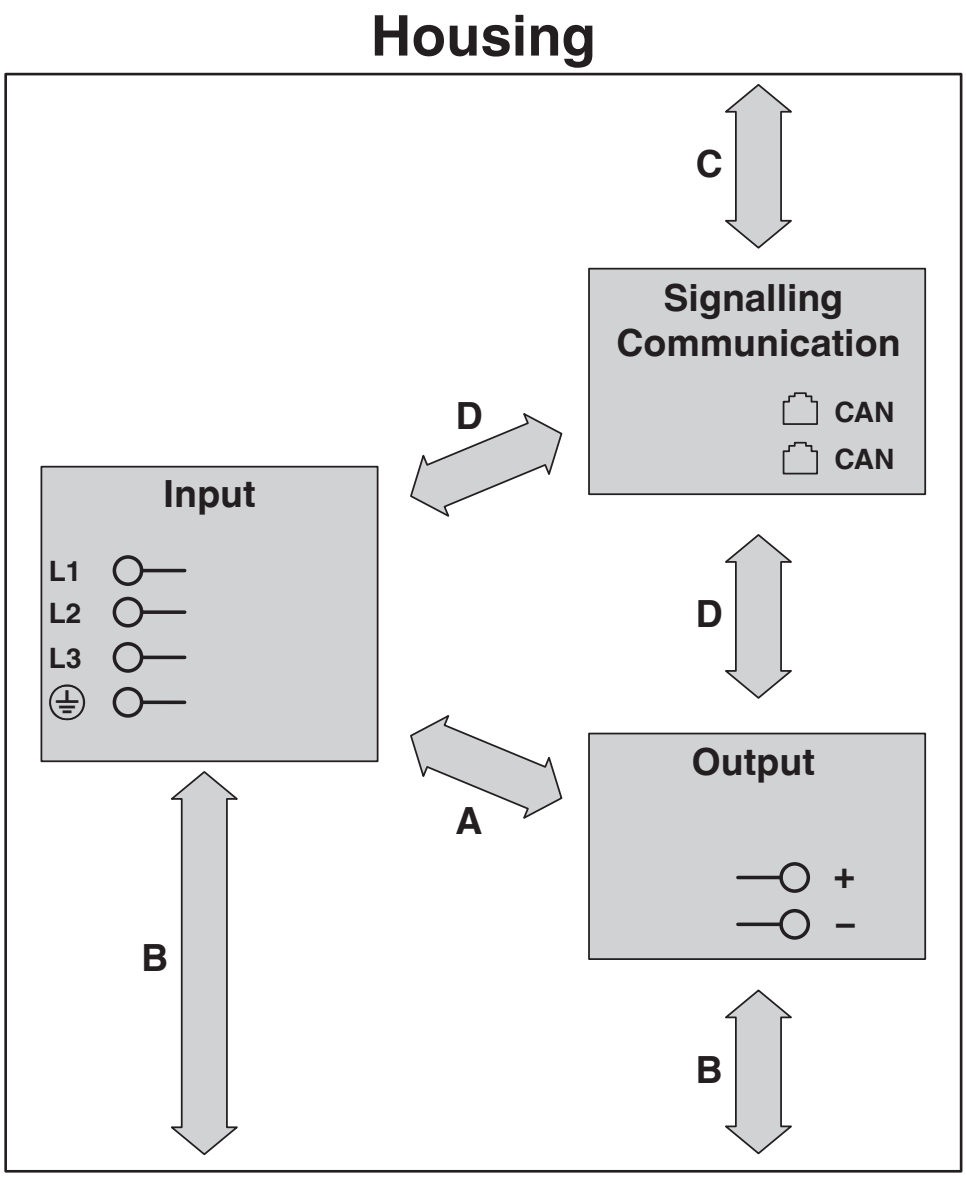
Standard designation	Power conversion equipment
Standards/specifications	CSA C22.2 No. 107.1-16

EMC data

EMC requirements for noise emission	EN IEC 61000-6-3
EMC requirements for noise immunity	EN IEC 61000-6-2

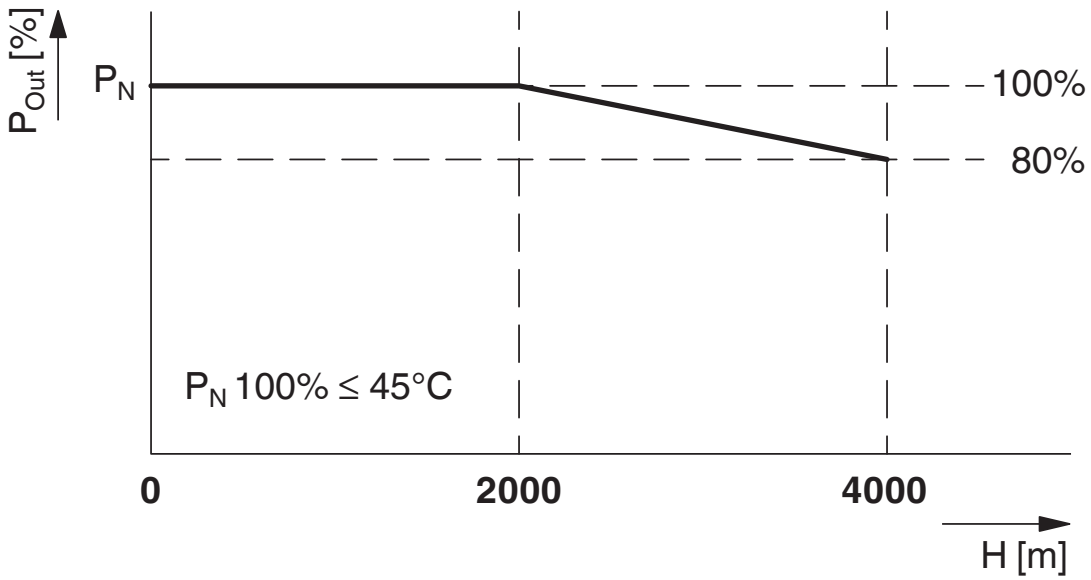
Drawings

Schematic diagram



Insulation electric strength

Diagram



Diagram

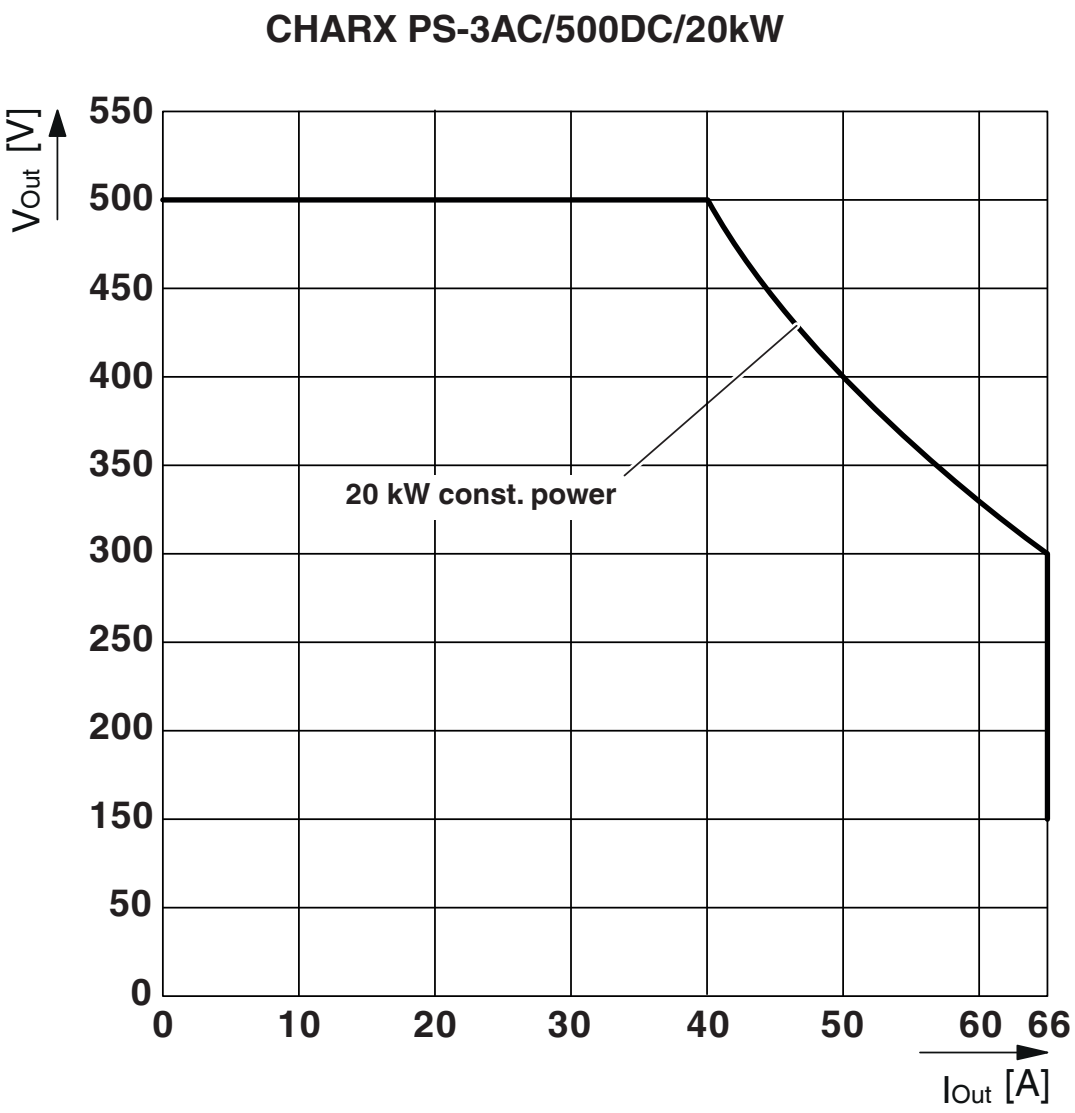
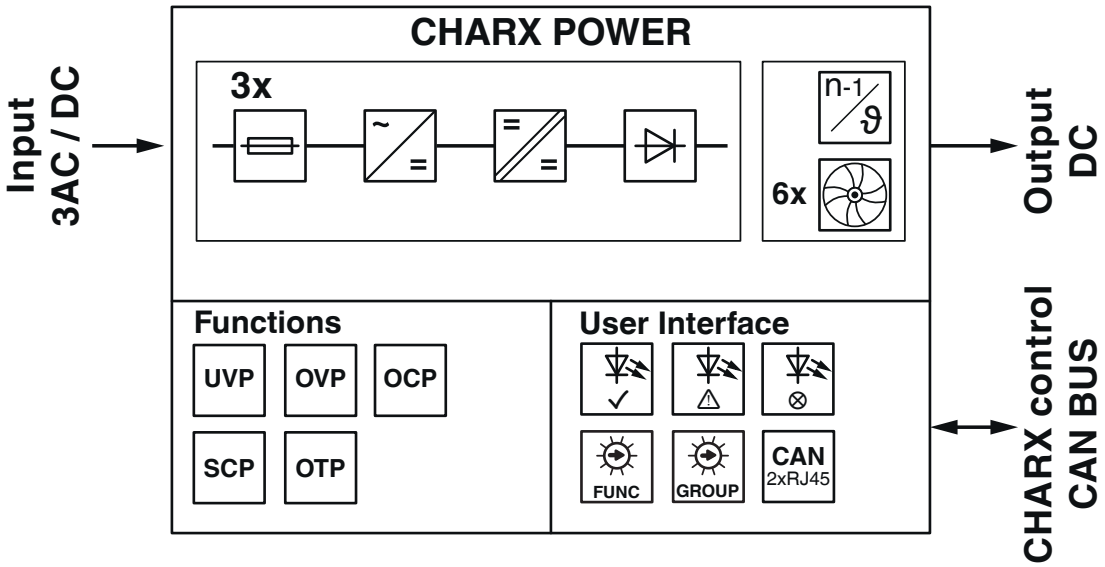


Chart (output power)

Block diagram



Block diagram

Classifications

ECLASS

ECLASS-13.0	27040701
ECLASS-15.0	27040701

ETIM

ETIM 10.0	EC002540

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(a)-I, 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-25
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)

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