

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



1232243

<https://www.phoenixcontact.com/gb/products/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

## Commercial Data

Item number	1232243
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMER3E
Product Key	CMER3E
GTIN	4063151333171
Weight per Piece (including packing)	36,000 g
Weight per Piece (excluding packing)	36,000 g
Country of origin	CN

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## Technical Data

### 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 frequency	3x 50 Hz 60 Hz $\pm$ 10 %
Supply system configuration	Star network (TN, TT, IT (PE))
Input current	3x 54 A (340 V AC) 3x 35 A (530 V AC)
Inrush current limitation	< 60 A
Power factor (cos phi)	0.99
Total distortion (THDi)	< 5 % (50% ... 100% output load)
Insulation resistance	> 10 M $\Omega$

### Output data

Efficiency	> 95 % ( $P_{Out} > 50\%$ )
Output voltage range	150 V DC ... 1000 V DC
Output current range	0 A ... 100 A
Output current residual ripple	$\leq$ 1 %
Nominal power	30 kW
Power dissipation standby	< 14 W
Protection against overvoltage at the output (OVP)	> 1040 V DC
Derating	> 45 °C ... 55 °C (1.2 A/K) > 55 °C (3.2 A/K) > 55 °C (1 kW/K)
Control deviation	< 0.5 % (Voltage deviation static load change 20% ... 100%) < 1 % (Current deviation Static load change 20 % ... 100 %) $\pm$ 0.2 % (Input voltage change $\pm$ 20 %)
Switch-on delay	< 8 s
Overshoot behavior	$\pm$ 3 % (Switch-on procedure)

### Energy storage

Battery technology	Li-Ion
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### Connection data

#### Input

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)
Stripping length	18 mm

#### Output

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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)
Stripping length	18 mm (10 mm <sup>2</sup> ... 25 mm <sup>2</sup> )
	20 mm (35 mm <sup>2</sup> ... 50 mm <sup>2</sup> )

## Interfaces

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)
Transmission speed	125 kbps
Transmission length	max. 20 m
Supported protocols	CAN 2.0B
Electrical isolation	yes (primary/secondary)
	no (PE)
Number of power modules as CAN bus devices	max. 48 (within one CHARX control controller)
Termination resistor	120 Ω (Terminating the end device)

## Electrical properties

Number of phases	3
Electrical isolation between input and output	yes
Insulation voltage input/output	2121 V DC
Insulation voltage input, output / housing	2121 V DC
Insulation voltage input, output/signal, communication	4242 V DC
Insulation voltage signal, communication/housing	707 V DC

## Product properties

Product type	DC power module
MTBF (IEC 61709, SN 29500)	> 300000 h
Service life	40000 h (40 °C)
	70000 h (Fan)
Hot PLUG connection	No
Ventilation	No
Flow direction	from front to back

## Insulation characteristics

Protection class	I
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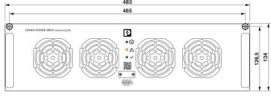
## Dimensions

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Dimensional drawing	
Width	483 mm
Height	134 mm
Depth	550 mm

## Mounting

Mounting type	19" rack mounting
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## Material specifications

Housing material	Zn-Al alloy
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Overtemperature protection (OTP)	> 75 °C
Maximum altitude	≤ 4000 m (Derating >2000 m: 10% / 1000 m)
Permissible humidity (operation)	≤ 95 % (non-condensing)
Noise level	< 60 dB (1 m)

## Standards and regulations

### Overvoltage category

IEC 60664-1	II
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### Electric vehicle conductive charging system - Part 1: General requirements

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

Standards/specifications	IEC 61851-23
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### Electric vehicle conductive charging system - Part 1: General requirements

Standards/specifications	ANIS/UL 2202
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## EMC data

EMC requirements for noise emission	EN 61000-6-3
EMC requirements for noise immunity	EN 61000-6-1
Interference emission	Class B (IEC 61000-6-3)
Noise immunity	IEC 61000-6-1

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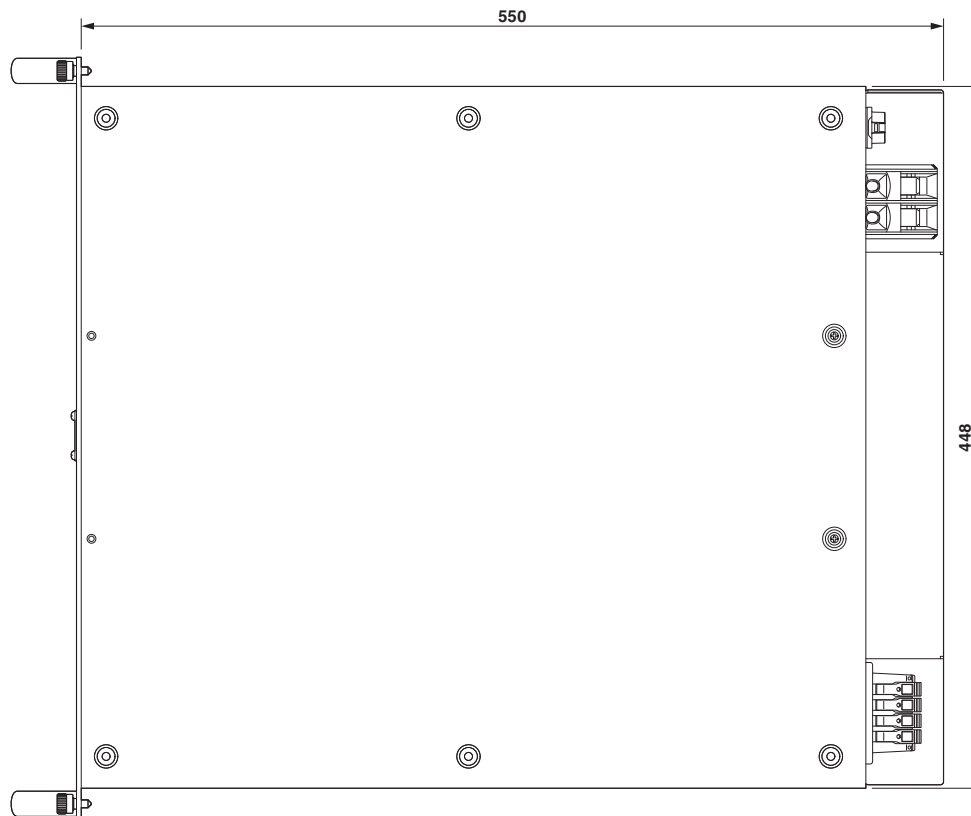


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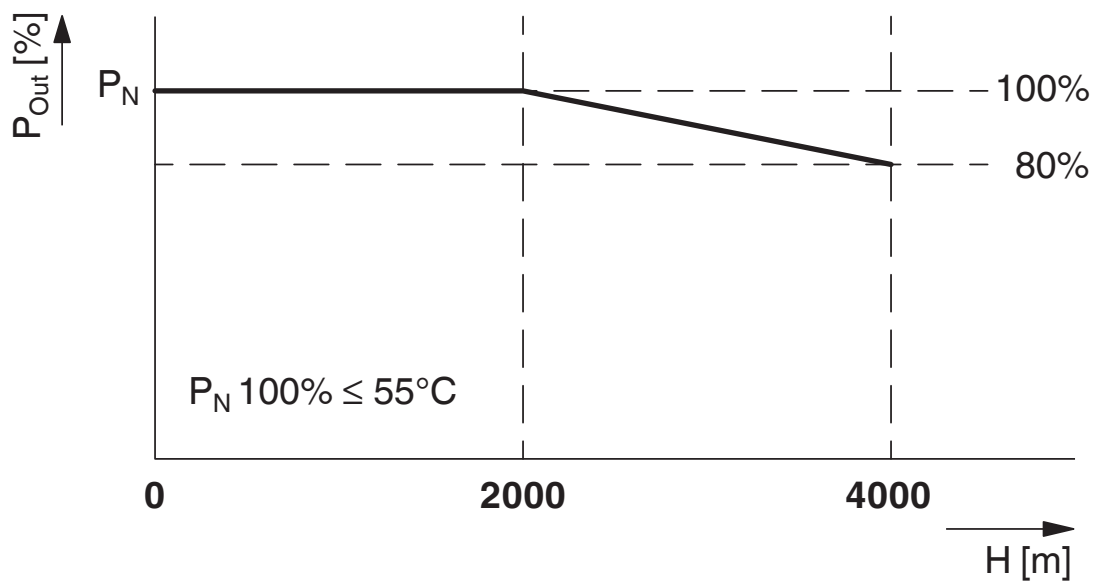
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## Drawings

Dimensional drawing



Diagram

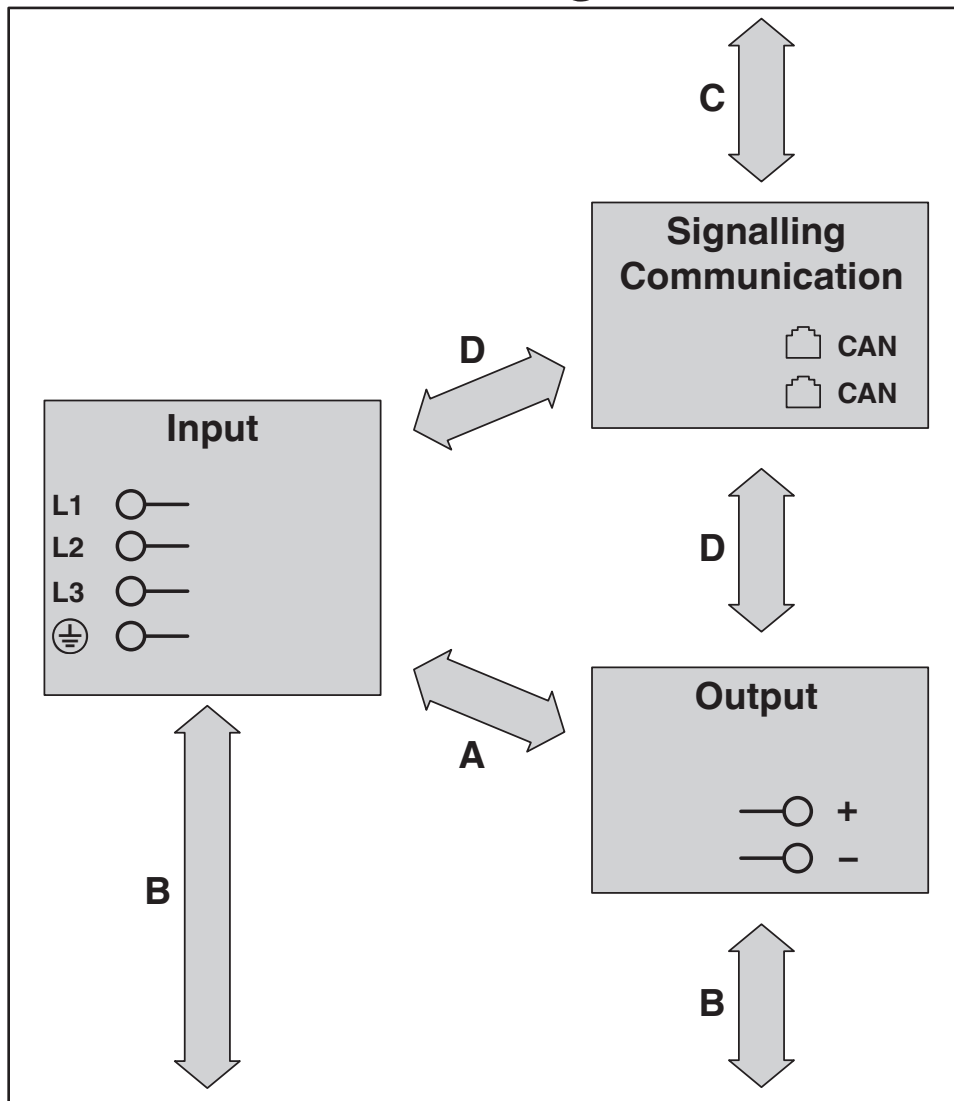


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Schematic diagram

## Housing



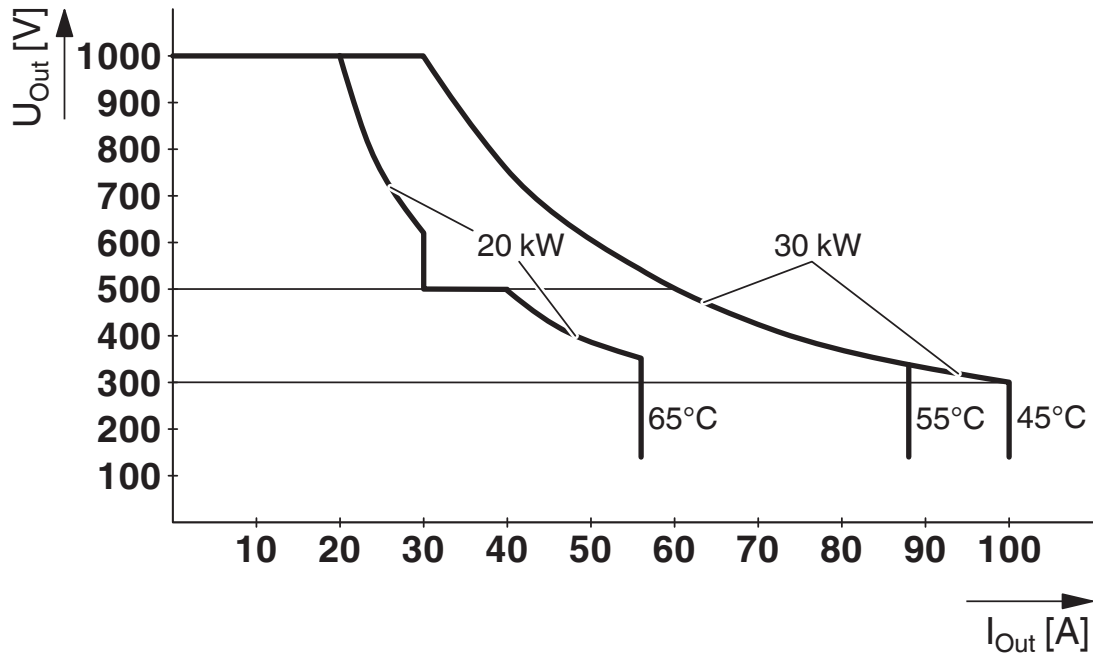
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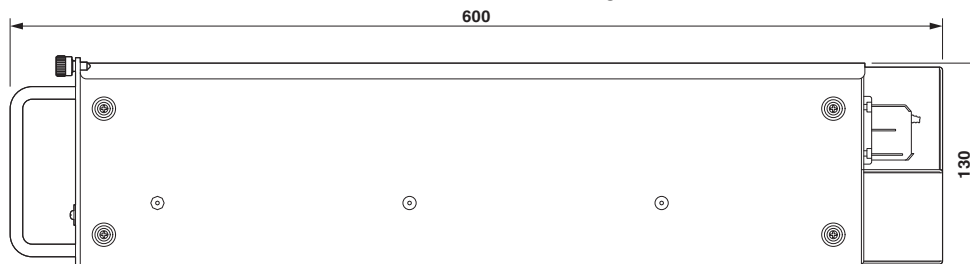
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Diagram



Dimensional drawing



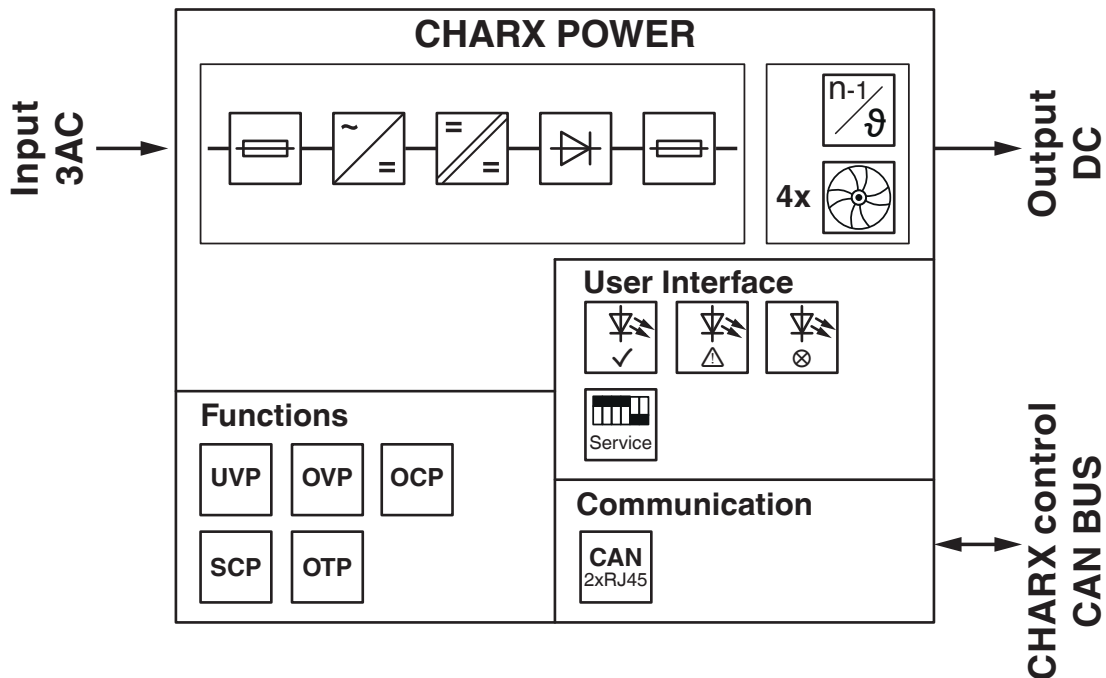
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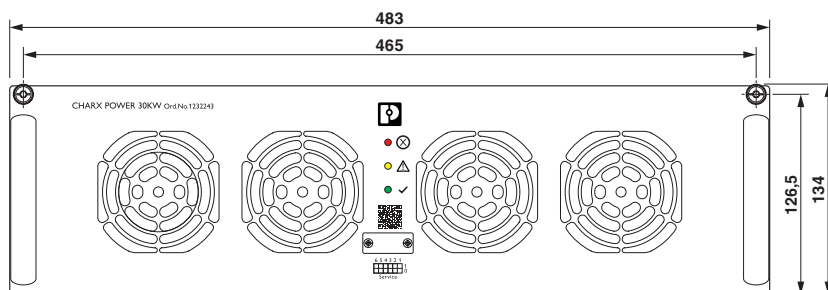
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Block diagram



Dimensional drawing





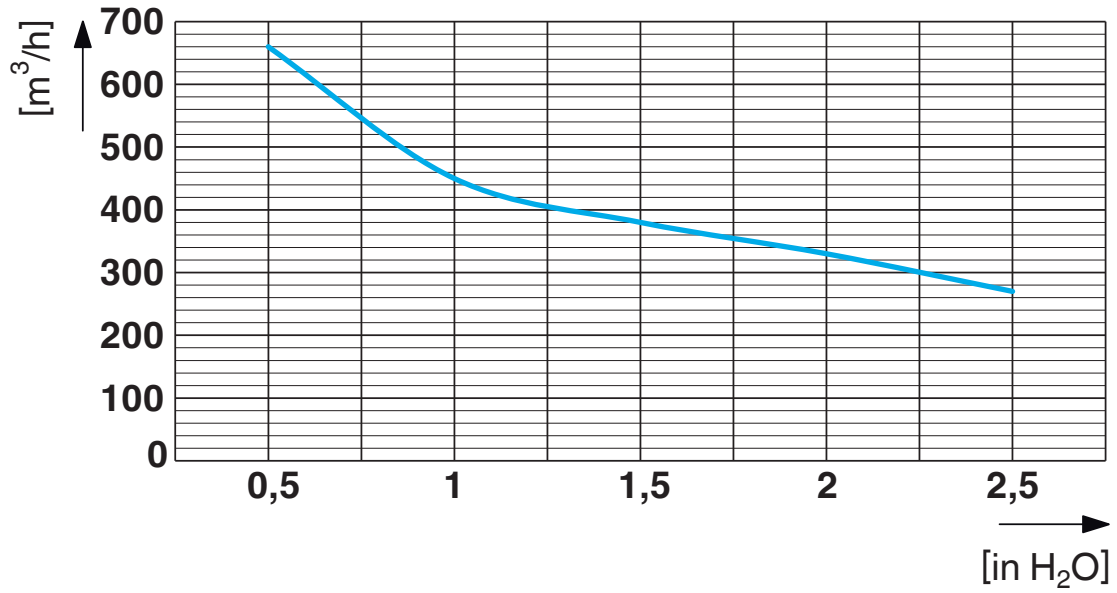
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Diagram



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## Approvals



**EAC**

Approval ID: RU\*DE\*01.B.02076/21



**TÜV SÜD Type tested**

Approval ID: B 029429 0017

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	125 V		-	- 1.5



**TÜV Rheinland**

Approval ID: CU 72213032 01

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	500 V	21.4 A	-	- 6



**EAC**

Approval ID: RU\*DE\*01.B.85589/21

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## Classifications

### ECLASS

ECLASS-9.0	27144792
ECLASS-11.0	27040701

### ETIM

ETIM 8.0	EC002884
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 10;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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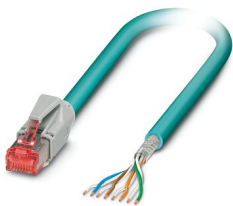
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## Accessories

### Network cable

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

<https://www.phoenixcontact.com/gb/products/1415255>

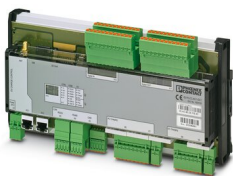


Assembled Ethernet cable, CAT6, shielded, 4-pair, AWG 26 stranded (7-wire), RAL 5021 (water blue), RJ45 plug/IP20 on free conductor end, line, length 2 m

### DC charging controller

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

<https://www.phoenixcontact.com/gb/products/1624130>



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

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