EV-T1HPCC-DC500A-5,0M50ECBK11S - DC charging cable

1085641

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CHARX connect professional, CCS type 1, HPC DC charging cable, up to 700 A in Boost mode, 500 A permanent, 1000 V DC, with cooled vehicle charging connector and cooled cable, cable: 5 m, black, straight, with charging connector holder, with replaceable mating face frame, with straight panel feed-through, with variable-speed fan, with digital temperature sensors, PHOENIX CONTACT logo, SAE J1772, IEC 62196-3-1, for charging electric vehicles (EV) with direct current (DC)

Product description

DC charging cable with vehicle charging connector and free cable end for fast charging of electric vehicles (EV) with direct current (DC) via CCS type 1 vehicle charging inlets, for installation at charging stations for e-mobility (EVSE)

Your advantages

- Complete product range
- The right charging cable for every application, from the carport to the charging park
- Ultra-fast HPC charging, with temporary power up to 500 kW
- Convenient handling due to the ergonomic design
- Available with your logo on request - for consistent branding of your charging station
- Developed and produced in accordance with the IATF 16949 automotive standard and ISO 9001
- Additional safety thanks to integrated leakage sensors and a wear indicator in the cable sheath
- Convenient communication interfaces via CAN bus and digital output
- Maintenance-friendly replacement of the mating face frame without draining the coolant
- Integrated strain relief of single-core wires directly in the panel feed-through
- Pre-assembled busbar screw connection for straightforward connection of the customer’s busbars or cable lug solutions

Commercial data

Item number	1085641
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	EM01
Product key	XWBLPI
GTIN	4055626873954
Weight per piece (including packing)	12,075 g
Weight per piece (excluding packing)	12,075 g
Customs tariff number	85444290
Country of origin	DE

Technical data

Product properties

Product type	DC charging cable
Product family	CHARX connect professional
Technology	Combined Charging System
	High Power Charging
Application	for charging electric vehicles (EV) with direct current (DC)
	for installation at charging stations for electromobility (EVSE)
Design	with charging connector holder
	with replaceable mating face frame
	with straight panel feed-through
	with variable-speed fan
	with digital temperature sensors
Charging standard	CCS type 1
Charging mode	DC level 3
Affixed logo	PHOENIX CONTACT logo
Label	8.9 mm x 28.9 mm (customer logo on request)

Electrical properties

Charging power and current (DC charging)

Type of charging current	DC
Charging current	500 A DC
Charging power	500 kW
Rated voltage	1000 V

Charging power and current (DC charging in Boost Mode)

Type of charging current	DC Boost Mode
Charging current	up to 700 A DC
Charging power	up to 700 kW
Rated voltage	1000 V
Note	The specifications refer to charging in Boost Mode and are dependent on ambient conditions. For further details, see the packing slip in the download area.

Charging power and current (DC charging in the event of cooling unit failure)

Charging current	150 A DC
Charging power	150 W
Rated voltage	1000 V
Note	The specifications refer to charging with a defective cooling unit and a short charging process.

Pin assignment (Leistungskontakte)

Number	3 (PE, DC+, DC-)
Rated voltage	1000 V DC

Rated current	500 A

Pin assignment (Signalkontakte)

Number	2 (CP, PP)
Rated voltage	30 V AC
Rated current	2 A

Temperature sensors (NTC)

Sensor type	NTC
Attachment point	2 sensors for the replaceable front DC contacts
	2 sensors for the internal DC power wires
	1 sensor on the PCB in the housing
Switch-off temperature	90 °C

Temperature sensors (Pt 1000)

Sensor type	Pt 1000
Standards/regulations	DIN EN 60751
Attachment point	Sensor in the panel feed-through
Switch-off temperature	90 °C ±1 K (equivalent to a Pt 1000 value of 1346.5 Ω)
Long-term stability	0.06 % (after 1000 hours at 130 °C)
Recommended measured current	1 mA (1 V at 0°C)
Coefficient	3850 ppm/K
Ambient temperature	-50 °C ... 130 °C (Operation)

Cooling system (Cooling unit)

Cooling	in the vehicle charging connector and in the cable
Coolant	50% water, 50% glycol (Glysofor N)
Cooling hose diameter	1x 11.50 mm Supply hose
	2x 8.80 mm Return hoses
Cooling capacity	600 W (Cable length: 3 m)
	800 W (Cable length: 4 m)
	900 W (Cable length: 5 m)
	1050 W (Cable length: 6 m)
Flow rate	2 l/min
Operating pressure	1.00 bar ... 2.00 bar
Relief pressure	2.00 bar
Maximum permissible pressure	4.00 bar
Flow-in temperature	15 °C

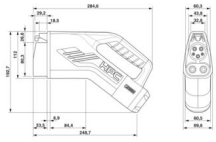
Ventilation (Fan)

Cooling	The fan provides additional cooling inside the panel feed-through to increase the charging current.
	The fan can be attached to the panel feed-through as an option.
Cable structure	2x AWG 26
Nominal voltage U_N	24 V
Nominal voltage range	18 V AC ... 24 V AC

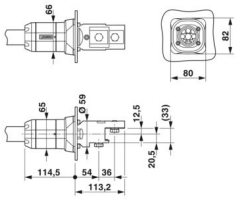
Fan speed indication	4400 min-1
Fan volumetric flow	28 m³/h
Mechanical service life	70.000 h (at 40 °C)
Ambient temperature	-20 °C ... 40 °C

Dimensions

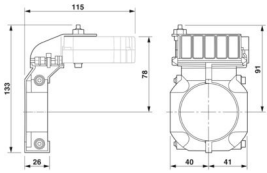
Vehicle charging connector

Dimensional drawing	 Make sure that the vehicle charging connector is placed in an appropriate charging connector holder, which ensures a minimum protection rating of IP24 in accordance with IEC 61851-1, for the entire time between charging. To create this charging connector holder, use the dimensions of the vehicle charging connector. Detailed dimensions can also be found in the Download area.
Width	69.6 mm
Height	192.6 mm
Depth	284.6 mm

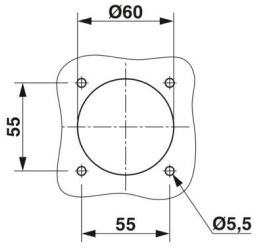
Panel feed-through

Dimensional drawing	
Width	80 mm
Height	82 mm
Depth	227.69 mm

Cooling fan

Dimensional drawing	
Width	81 mm
Height	133 mm
Depth	115 mm

Bore dimensions

Dimensional drawing	 Drill hole spacing
Width	55 mm
Height	55 mm
Diameter	60 mm

Material specifications

Color (Housing)	black (9005)
Color (Handle area)	black (9005)
Color (Mating face)	black (9005)
Color (Cable)	black (9005)
Color (Panel feed-through)	black (9005)
Material (Vehicle charging connector)	Plastic
Material (Cable outer sheath)	EVM-1 in accordance with EN 50620
Material (Panel feed-through)	Plastic
Material (Contact surface)	Silver
Note	The color appearance and gloss level of the charging cable may vary.
Flammability rating according to UL 94	V0 (Mating face)

Cable/line

Cable length	5 m ±45 mm
Wiring standards/regulations	according to UL 62 (File E515623, Vol 1)
	according to IEC 62893
Cable weight	max. 1938.00 kg/km
Cable type	straight
Cable structure	5 x 25 mm² + 7 x 0,75 mm² + 2 x 13 mm²
External cable diameter	35.70 mm ±0.4 mm
Outer sheath, material	TPE-U in accordance with IEC 62893-1
Stripping length of the sheath	250 mm ±5 mm
Stripping length	250 mm ±5 mm
Cable resistance	≤ 0.00078 Ω/m (based on a power core, at an ambient temperature of 20°C)
Bending radius	min. 357 mm (10x Ø)

Mechanical properties

Coolant	50% water, 50% glycol (Glysofor N)

Mechanical data

Insertion/withdrawal cycles	> 10000 (based on IEC 62196-1)
Insertion force	< 75 N
Withdrawal force	< 75 N

Environmental and real-life conditions

Ambient conditions

Degree of protection (Vehicle charging connector)	IP54 / Type 3R (The degree of protection is only ensured in the ready and plugged-in state when both plug-in components are original products from Phoenix Contact or suitable standard-compliant products.)
Degree of protection (Panel feed-through)	IP54
Ambient temperature (operation)	-30 °C ... 40 °C
	max. 55 °C (Current reduction required, observe the DC contact temperature limit value of 90°C)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	5000 m (above sea level)

Standards and regulations

Standards

Standards/regulations	SAE J1772
	IEC 62196-3-1

Mounting

Mounting type Panel feed-through	Rear panel mounting
Mounting type Fans	Rear panel mounting (optional for increasing the charging current up to 500 A)
Fixing screws	M5x16

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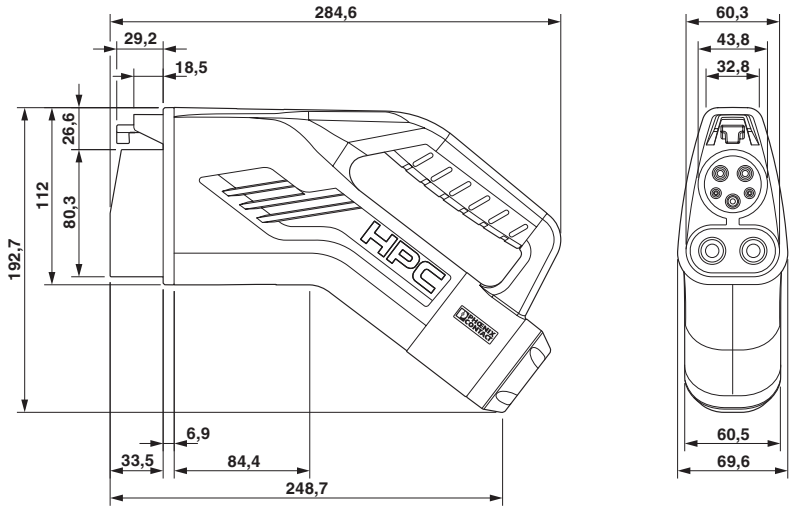
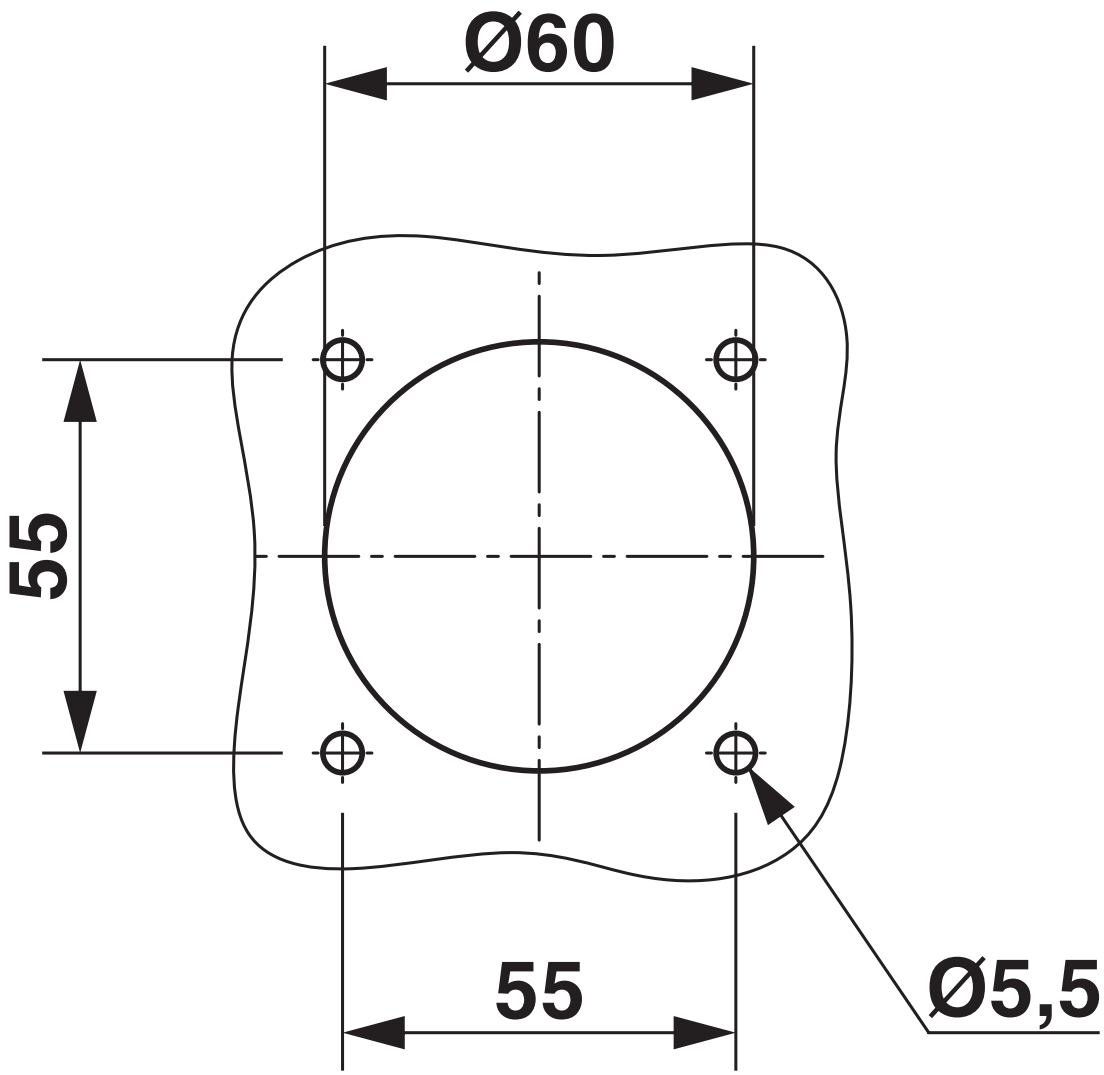
Drawings

Dimensional drawing



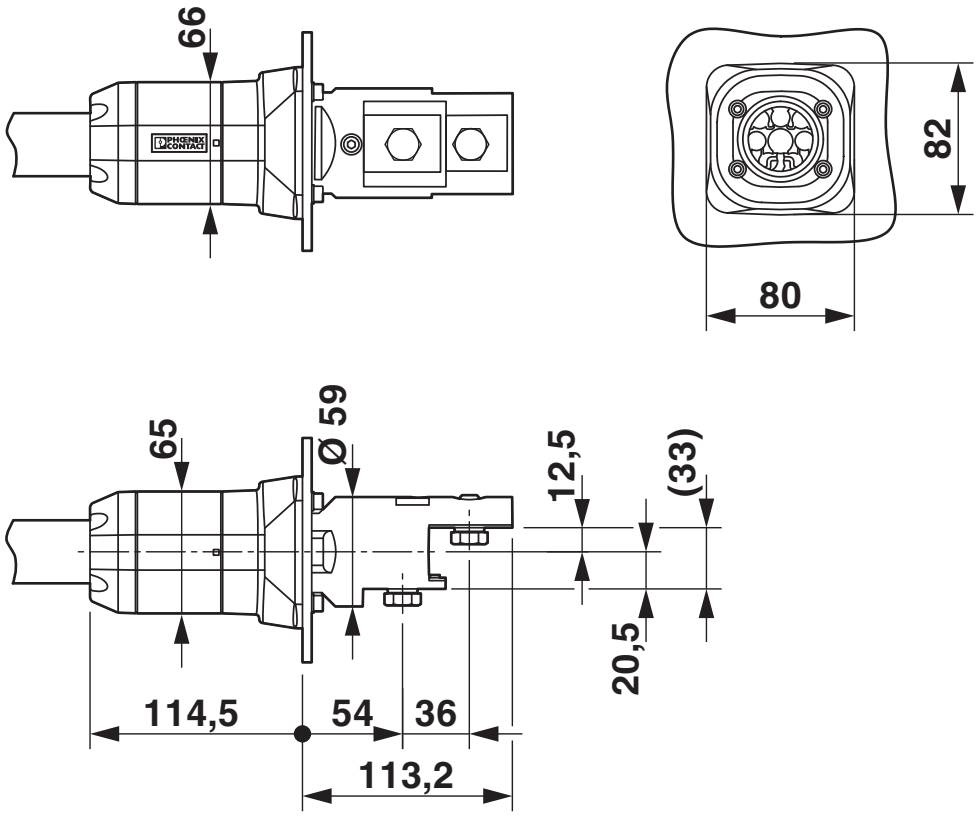
Make sure that the vehicle charging connector is placed in an appropriate charging connector holder, which ensures a minimum protection rating of IP24 in accordance with IEC 61851-1, for the entire time between charging. To create this charging connector holder, use the dimensions of the vehicle charging connector. Detailed dimensions can also be found in the Download area.

Dimensional drawing



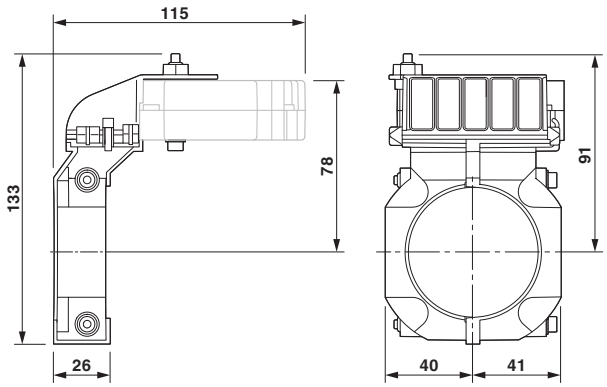
Drill hole spacing

Dimensional drawing



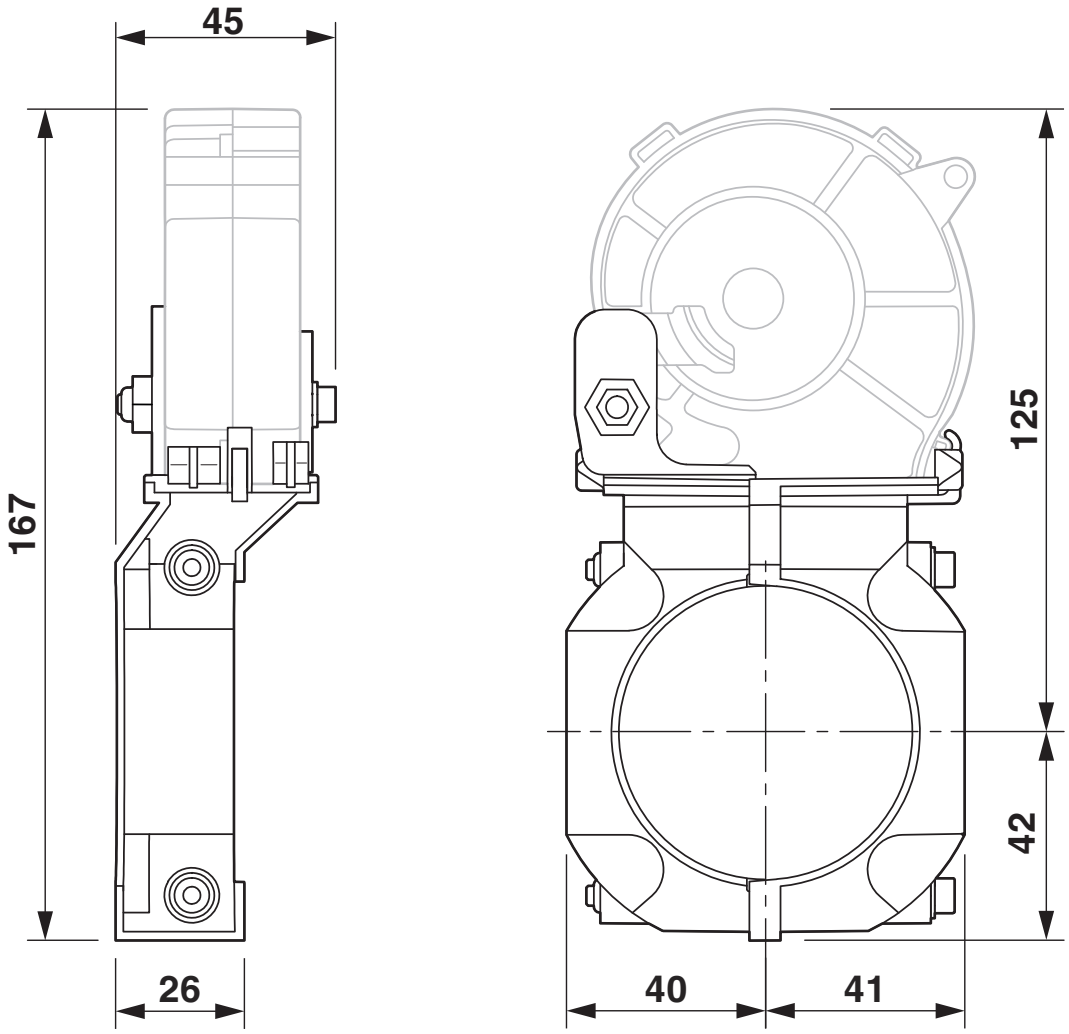
Straight panel feed-through

Dimensional drawing



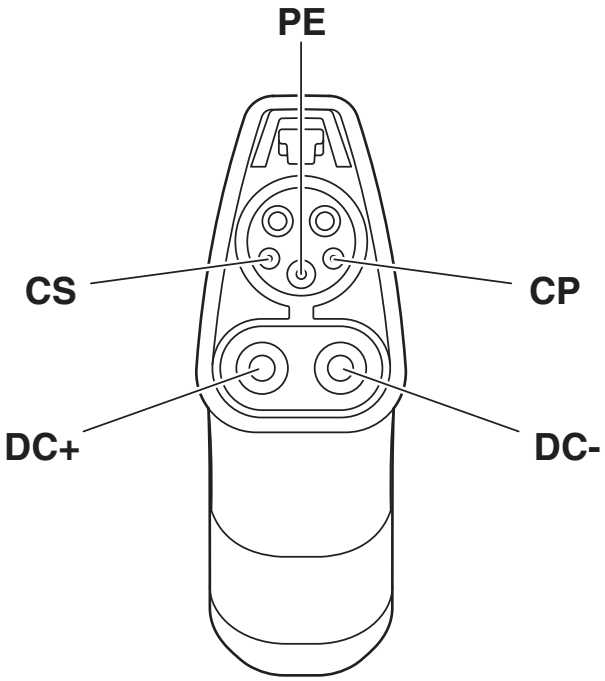
Fan for horizontal attachment to the panel feed-through

Dimensional drawing



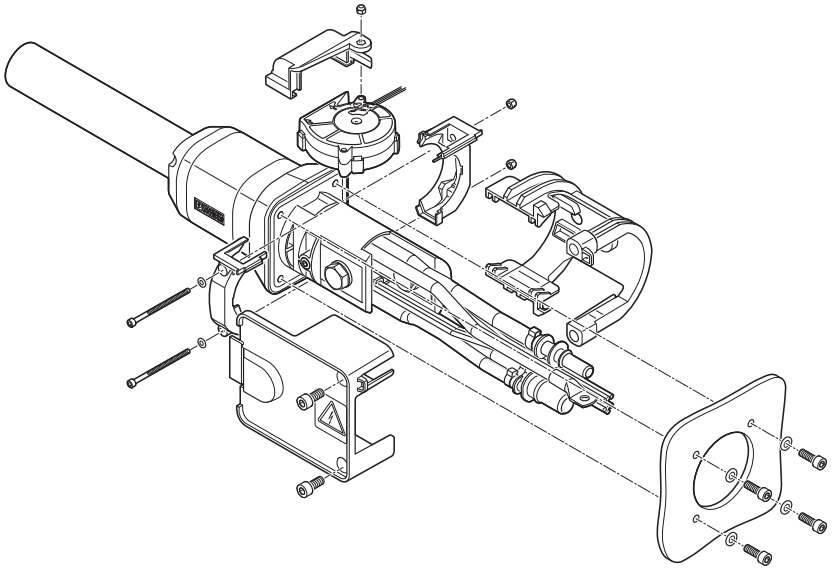
Fan for vertical attachment to the panel feed-through

Schematic diagram



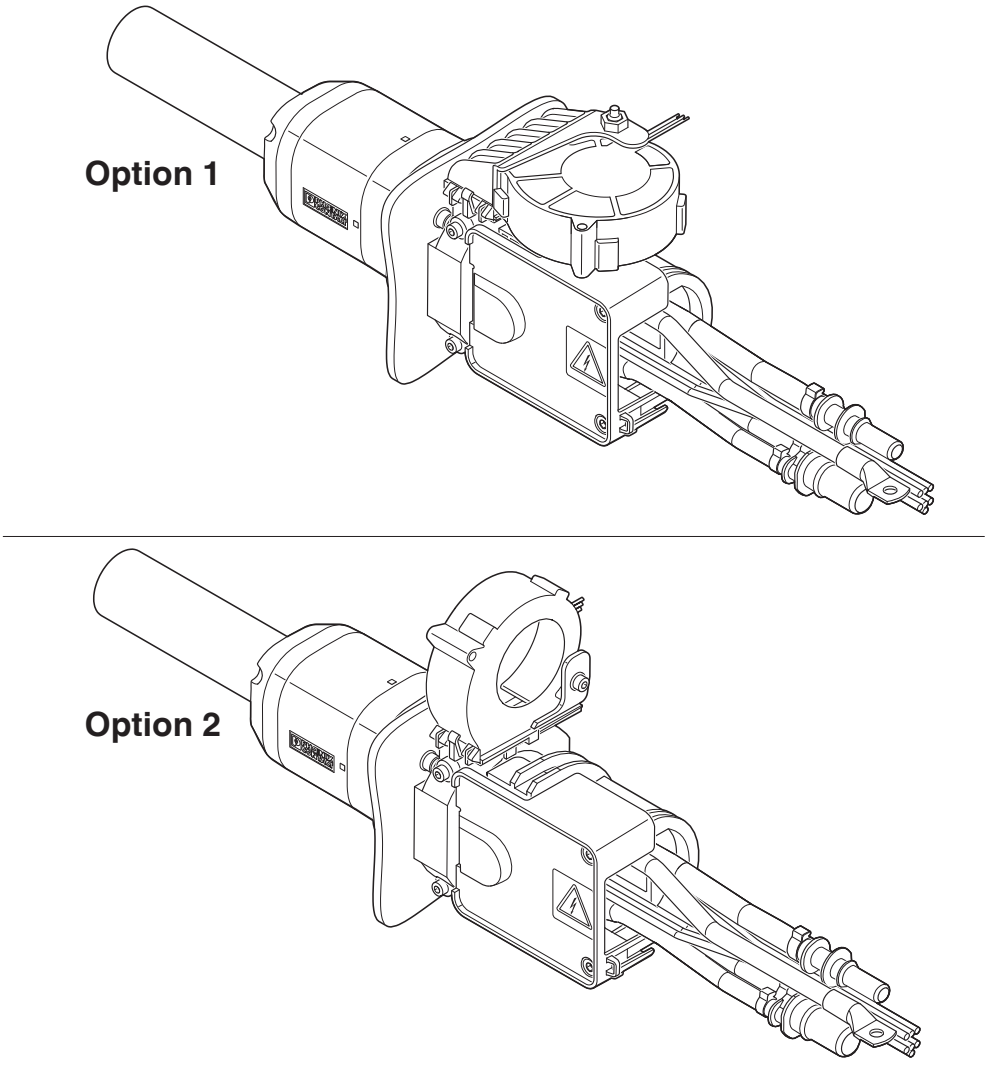
Pin assignment of the Vehicle Connector

Schematic diagram



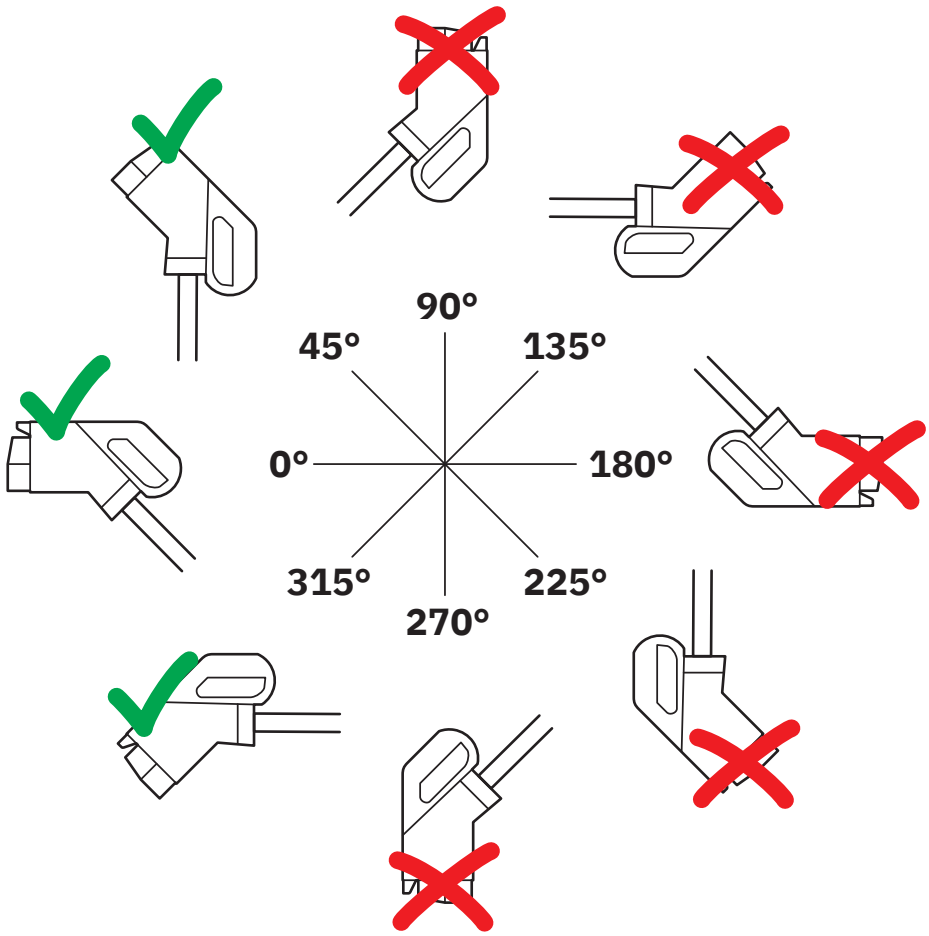
Assembly instructions for attaching the touch protection using straight panel feed-through as an example

Schematic diagram



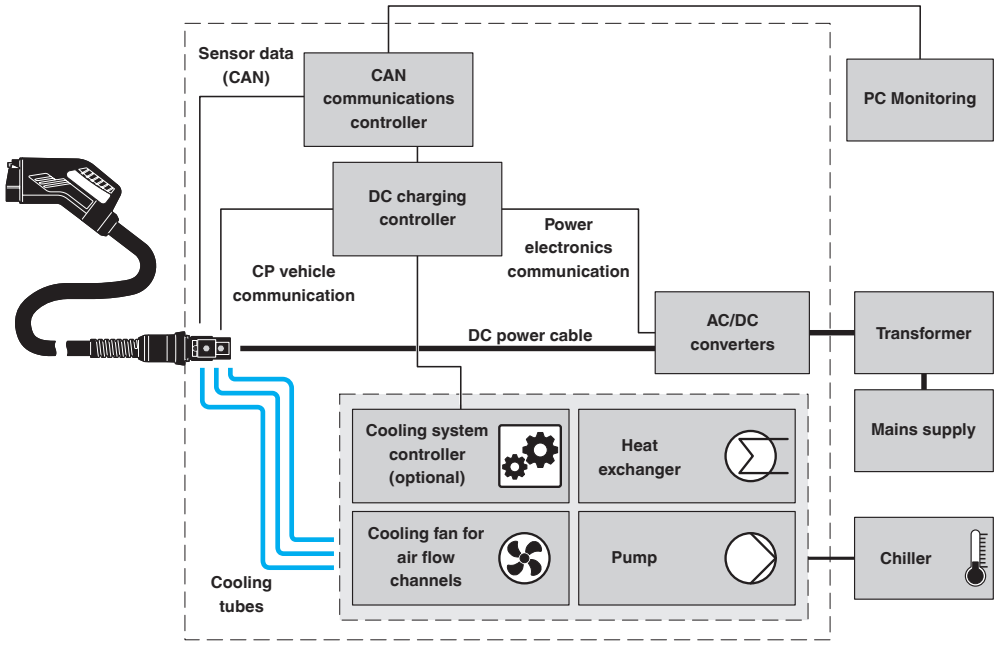
Select one option for mounting the fan. Illustrated using straight panel feed-through as an example.

Schematic diagram



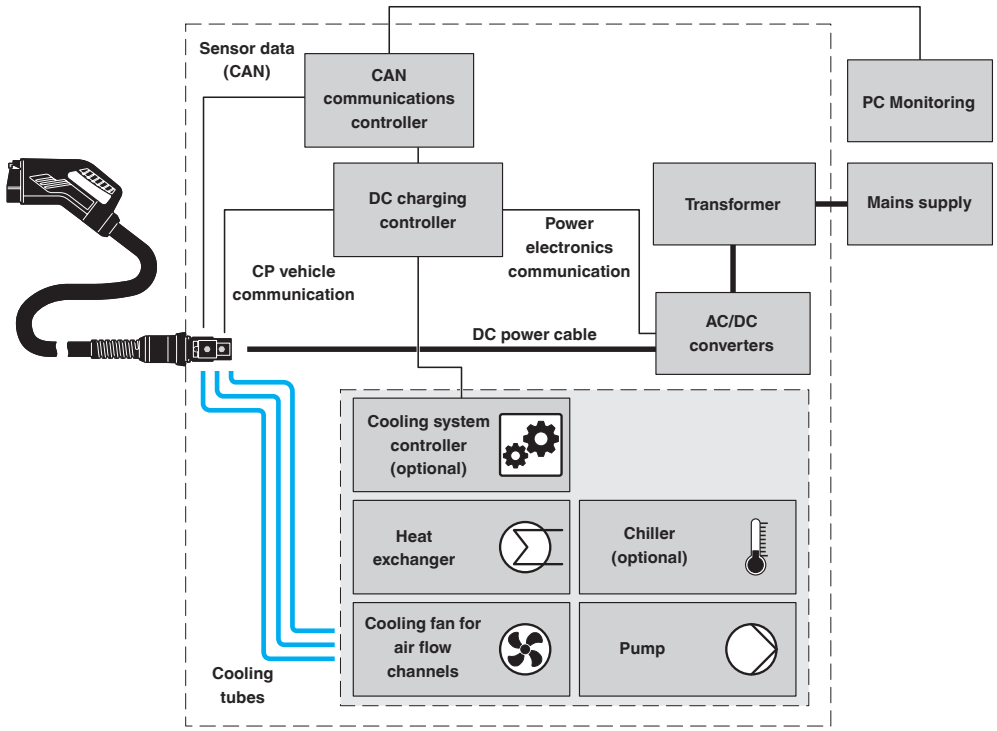
The resting position must be installed in the charging station such that the user cannot hang up the vehicle connector upside down (90° to 270°). However, positions rotated upward (45°) or downward (315°) are options for a resting position.

Schematic diagram



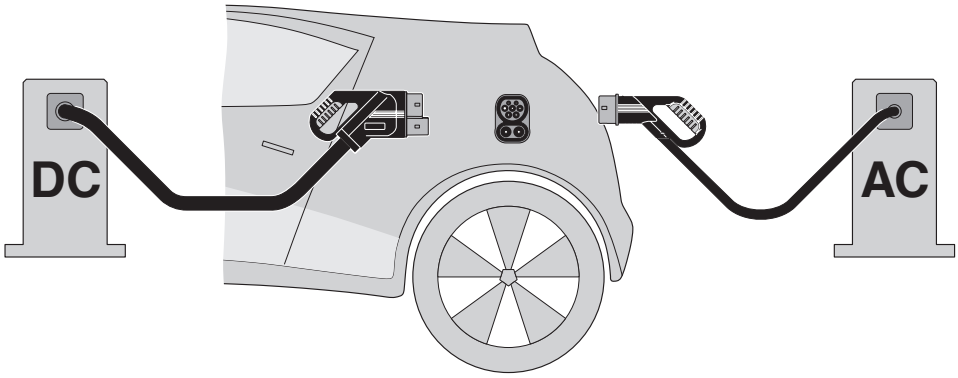
Central system: cooling unit and controller are positioned externally and supply multiple charging stations, each of which is equipped with a heat exchanger. The cooling is done actively using a chiller.

Schematic diagram



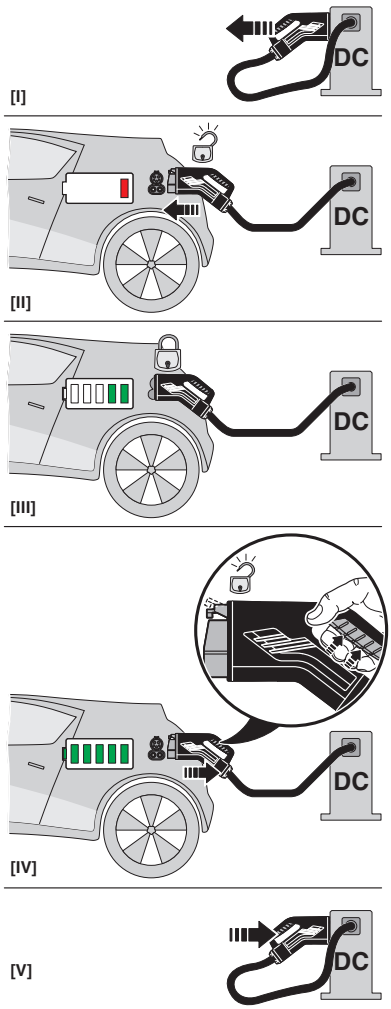
Standalone, decentralized system: cooling unit and controller are integrated into the charging station. The choice of cooling unit can be passive or active (i.e., with or without chiller).

Schematic diagram



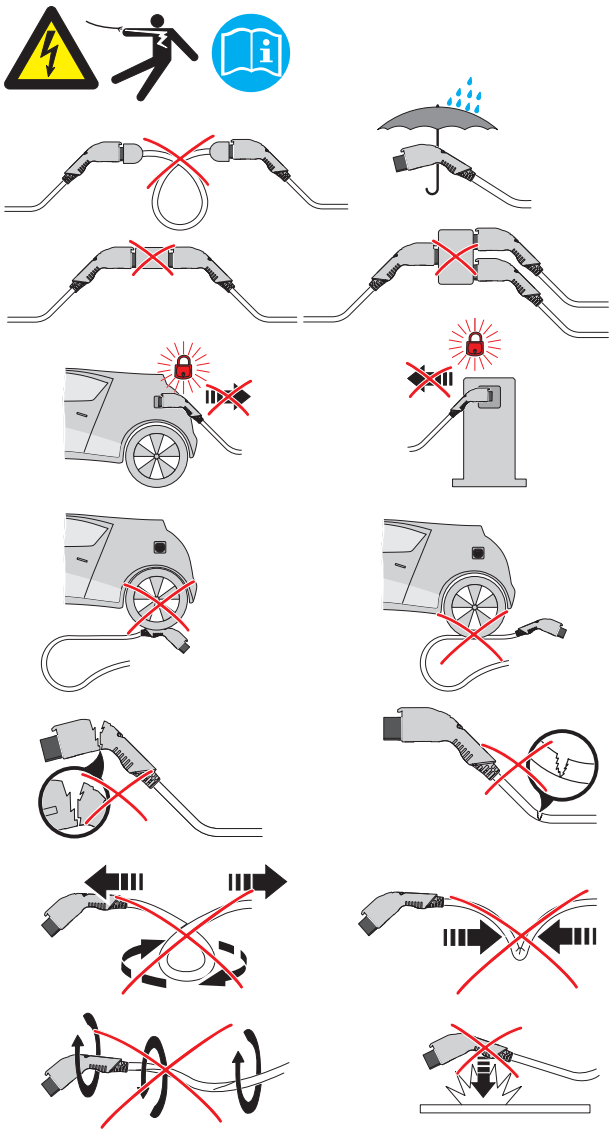
The Combined Charging System (CCS) principle - standard-compliant charging system for electric vehicles, which supports both conventional AC charging and fast DC charging. Both Vehicle Connectors fit into the CCS Vehicle Inlet.

Schematic diagram



Operating instructions

Schematic diagram



Warning signal note

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1085641

cULus Recognized
Approval ID: E473195-20220201

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	1000 V	500 A	-	-

Classifications

ECLASS

ECLASS-13.0	27144705
ECLASS-15.0	27144705

ETIM

ETIM 9.0	EC002897

UNSPSC

UNSPSC 21.0	39121500

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	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)
	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)
SCIP	5effddf5-e657-44fd-bec8-44757c658658

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