DC charging cable - EV-T1HPCC-DC500A-5,0M50ECBK11R

1089931

https://www.phoenixcontact.com/us/products/1089931

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

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
- Safe against overheating with temperature measurement at every DC power contact
- 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	1089931
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	A17
Product Key	XWBALB
GTIN	4055626892894
Weight per Piece (including packing)	17,000 g
Weight per Piece (excluding packing)	17,000 g
Customs tariff number	85444290
Country of origin	DE

Technical Data

Product properties

Product type	DC charging cable
Application	for charging electric vehicles (EV) with direct current (DC)
	for installation at charging stations for electromobility (EVSE)
Type	HPC DC charging cable
	with cooled vehicle charging connector and cooled cable
Design	with charging connector holder
	with replaceable mating face frame
	with right-hand angled panel feed-through
	with variable-speed fan
	with digital temperature sensors
Technology	Combined Charging System
	High Power Charging
Affixed logo	PHOENIX CONTACT logo
Charging standard	HPC CCS type 1
Charging mode	Mode 4

Cooling system

Cooling	in the vehicle charging connector and in the cable

Electrical properties

Type of signal transmission	Pulse width modulation with modulated Powerline communication in accordance with ISO/IEC 15118 / DIN SPEC 70121
Note on the connection method	cannot be disconnected
Coding	480 Ω (Lever actuated)
	150 Ω (Lever not actuated)
Temperature monitoring	2x NTC (replaceable, front DC contacts)
	2x NTC (DC power wires inside)
	Pt 1000
Type of charging current	DC
Charging power	500 kW
Charging current	500 A

Power contact

Number	3 (PE, DC+, DC-)
Rated voltage	1000 V DC
Rated current	500 A (up to 40 °C)

Signal contact

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

(NTC)

Sensor type	NTC
Attachment point	2 sensors for the replaceable front DC contacts
	2 sensors for the internal DC power wires
Switch-off temperature	90 °C

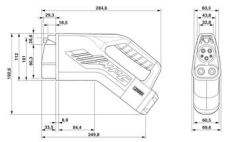
(Pt 1000)

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
TEST Umgebungstemperatur Neu	-50 °C ... 130 °C

Interfaces

Communication interface	CAN bus for reading the temperature and leakage sensor data
	Digital output for determining the functional status of the vehicle connector

Dimensions

Dimensional drawing	
Width Vehicle charging connector	69.6 mm
Width Panel feed-through	80 mm
Width Fans	81 mm
Height Vehicle charging connector	192.6 mm
Height Panel feed-through	82 mm
Height Fans	133 mm
Depth Vehicle charging connector	284.6 mm
Depth Panel feed-through	215.5 mm
Depth Fans	115 mm

Cable / line

Cable length	5 m ±45 mm
Wiring standards/regulations	DIN EN 50620
Cable weight	max. 1938 kg/km
Cable type	Class 6
Cable type	straight
Cable structure	5 x 25 mm² + 7 x 0.75 mm²

External cable diameter	35.7 mm ±0.4 mm
Outer sheath, material	EVM-1 in accordance with EN 50620
Conductor resistance	≤ 0.00078 Ω/m (based on a power core, at an ambient temperature of 20°C)

Mechanical properties

Bending radius	min. 357 mm (10x diameter)
Label	8.9 mm x 28.9 mm (customer logo on request)

Mechanical data

Insertion/withdrawal cycles	> 10000
Insertion force	< 75 N
Withdrawal force	< 75 N

Environmental and real-life conditions

Ambient conditions

Degree of protection Vehicle charging connector	IP54 / Type 3R (plugged in; when plugged in and ready to operate, the degree of protection is only ensued if 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 ... 60 °C
Altitude	5000 m (above sea level)

Standards and regulations

Standards

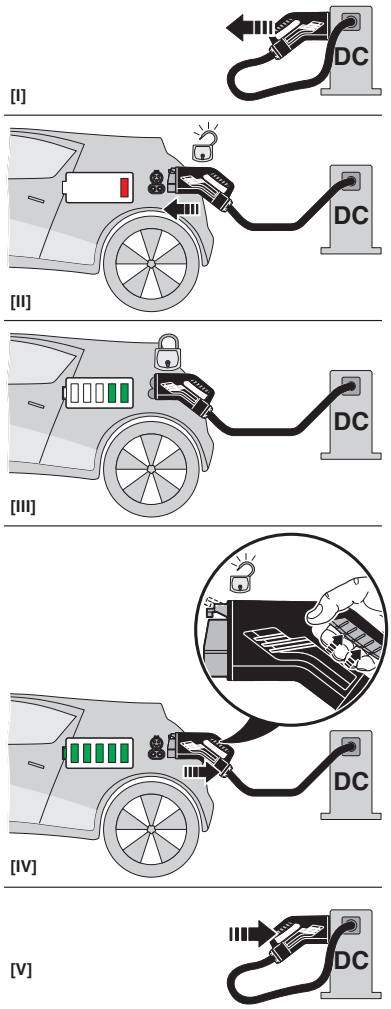
Standards/regulations	SAE J1772
	IEC 62196-3-1

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)
Max. wall thickness	max. 5 mm
Fixing screws	M5x16

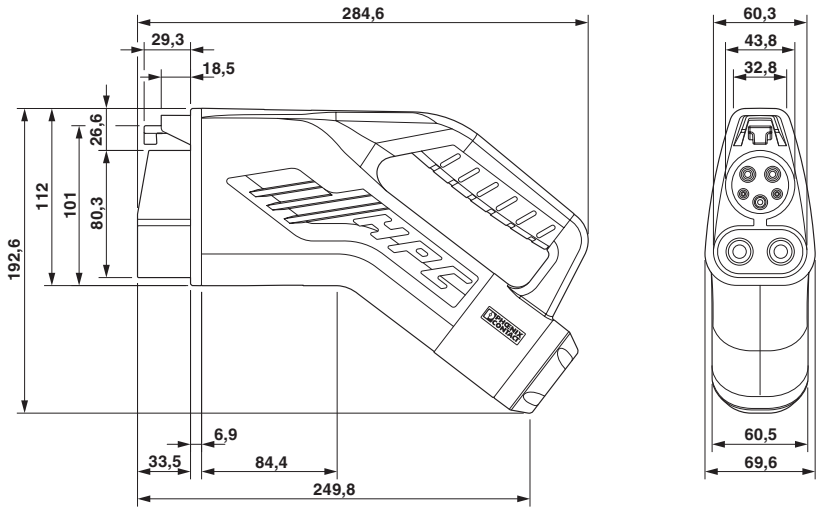
Drawings

Schematic diagram



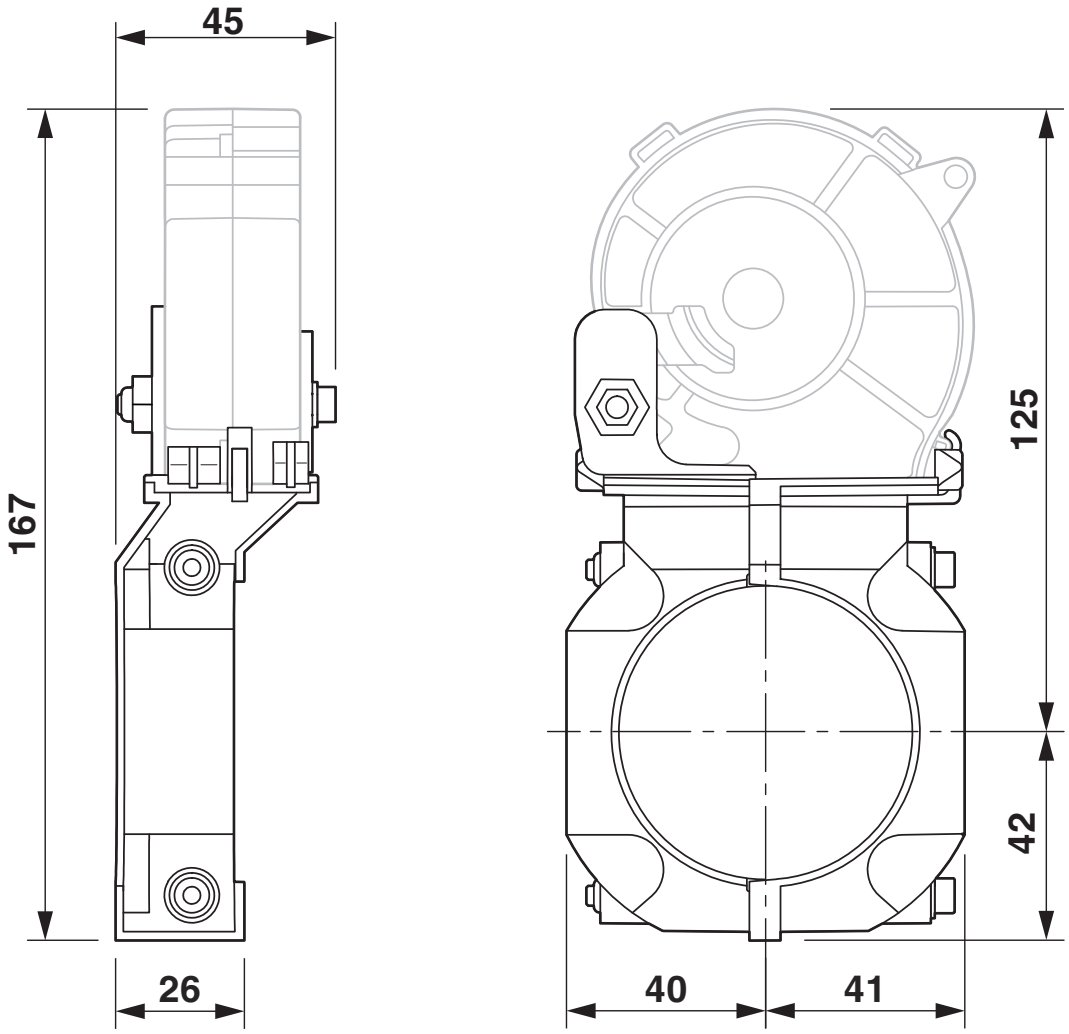
Operating instructions

Dimensional drawing



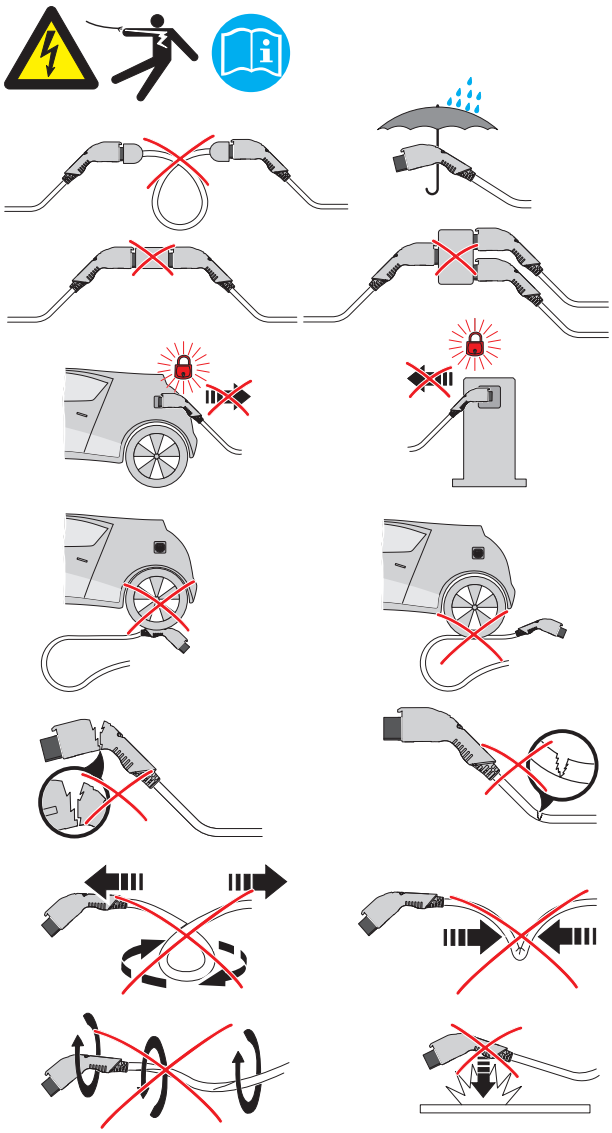
Make sure that the vehicle charging connector is placed in an appropriate charging connector holder, which ensures a minimum protection rating of IP24 in accordance with IEC 61851-1, for the entire time between charging. To create this charging connector holder, use the dimensions of the vehicle charging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

Dimensional drawing



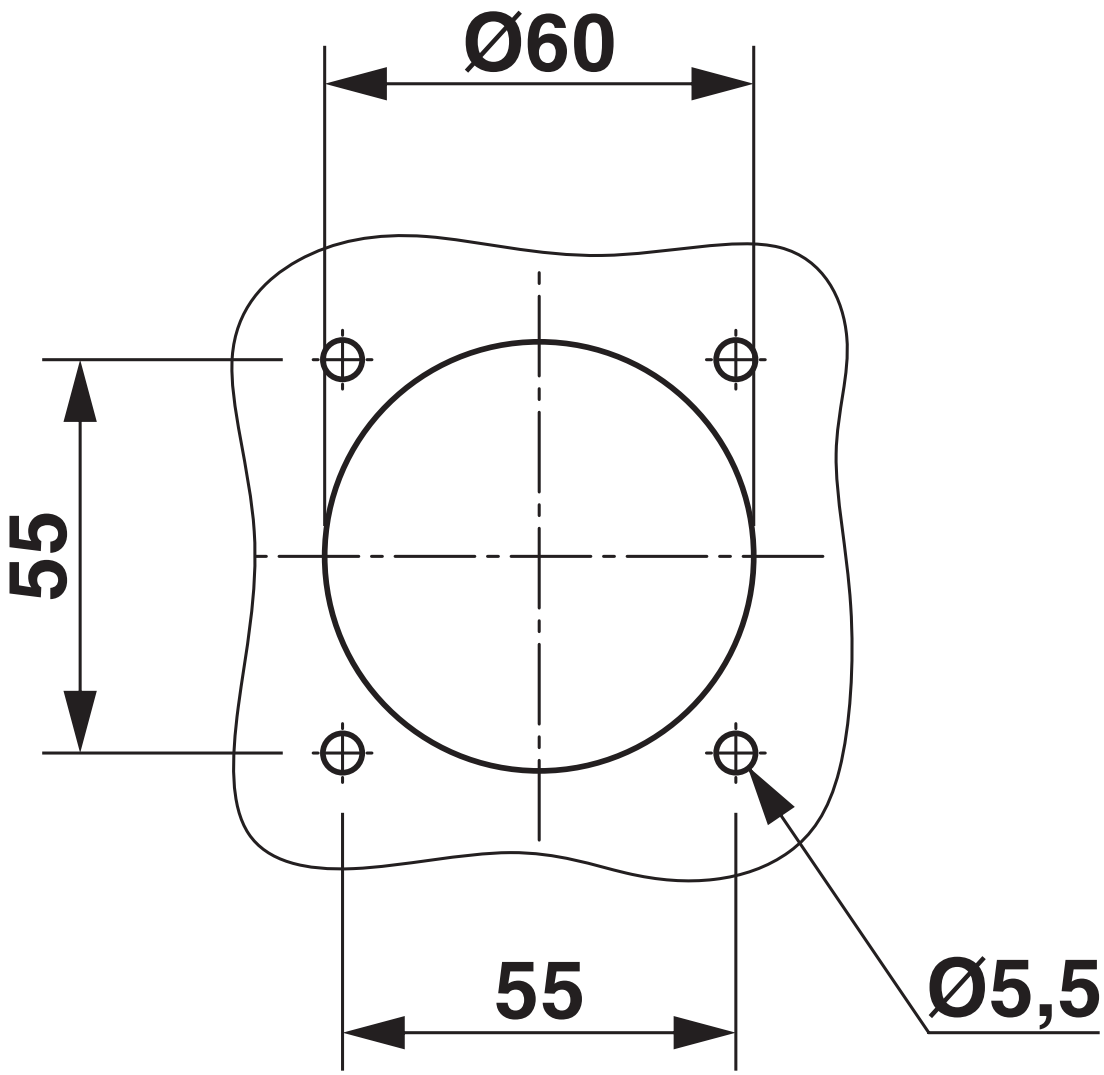
Fan for vertical attachment to the panel feed-through

Schematic diagram



Warning signal note

Dimensional drawing



Drill hole spacing

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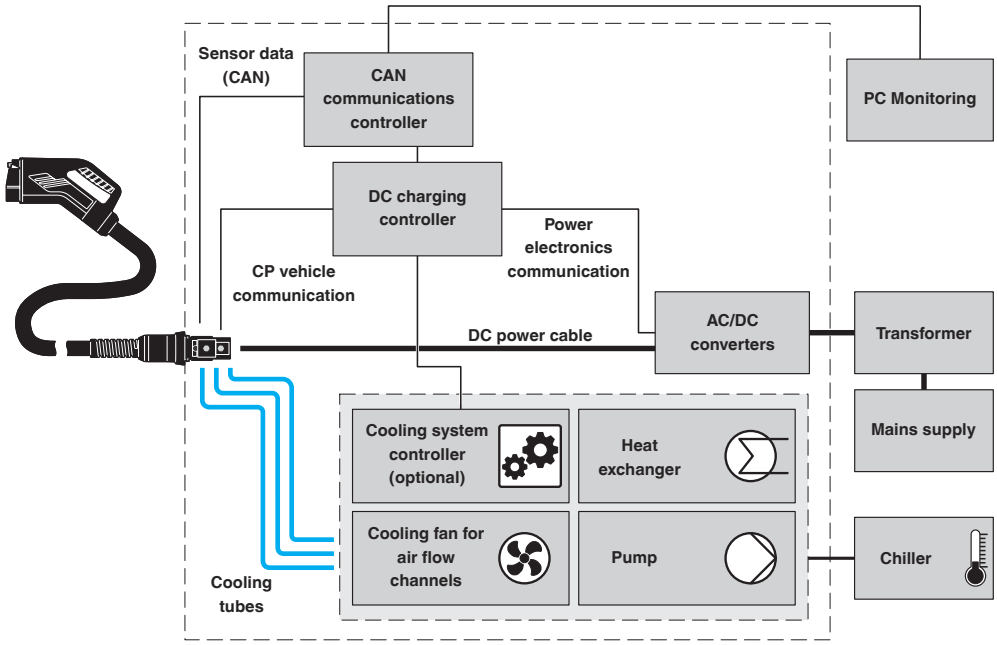
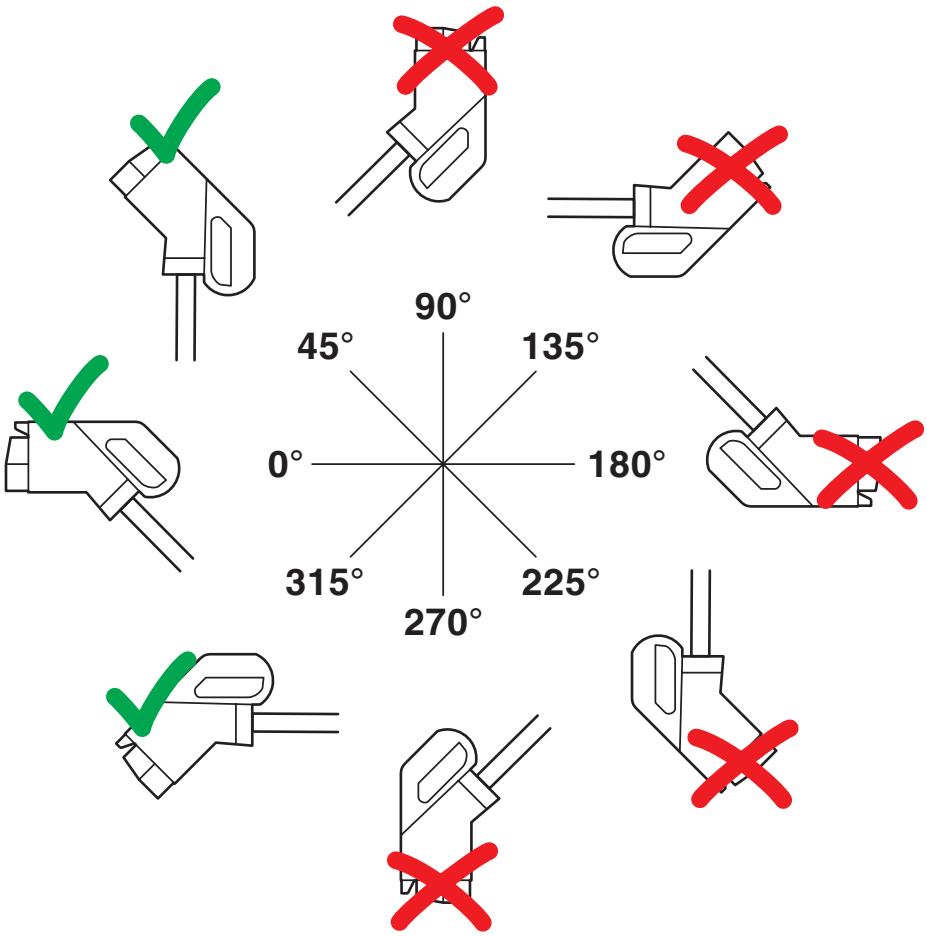
Schematic diagram



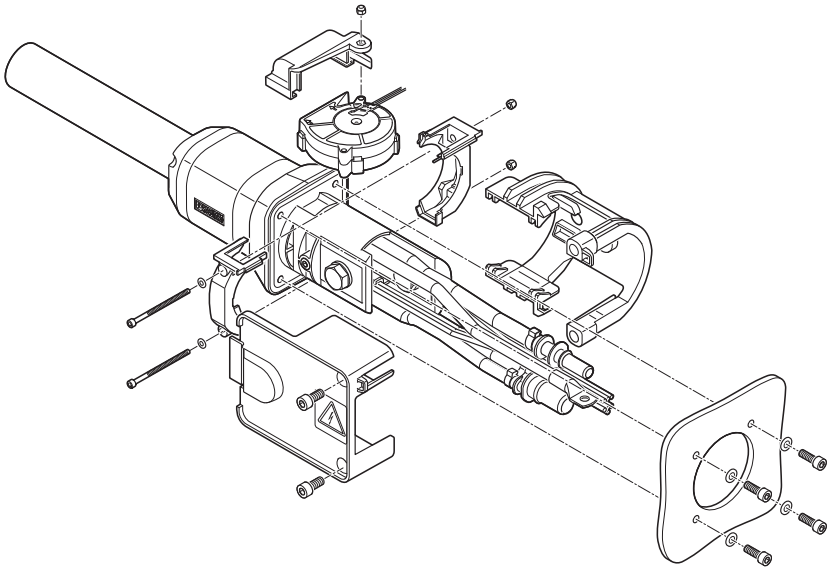
Central system: cooling unit and controller are positioned externally and supply multiple charging stations, each of which is equipped with a heat exchanger. The cooling is done actively using a chiller.

Schematic diagram



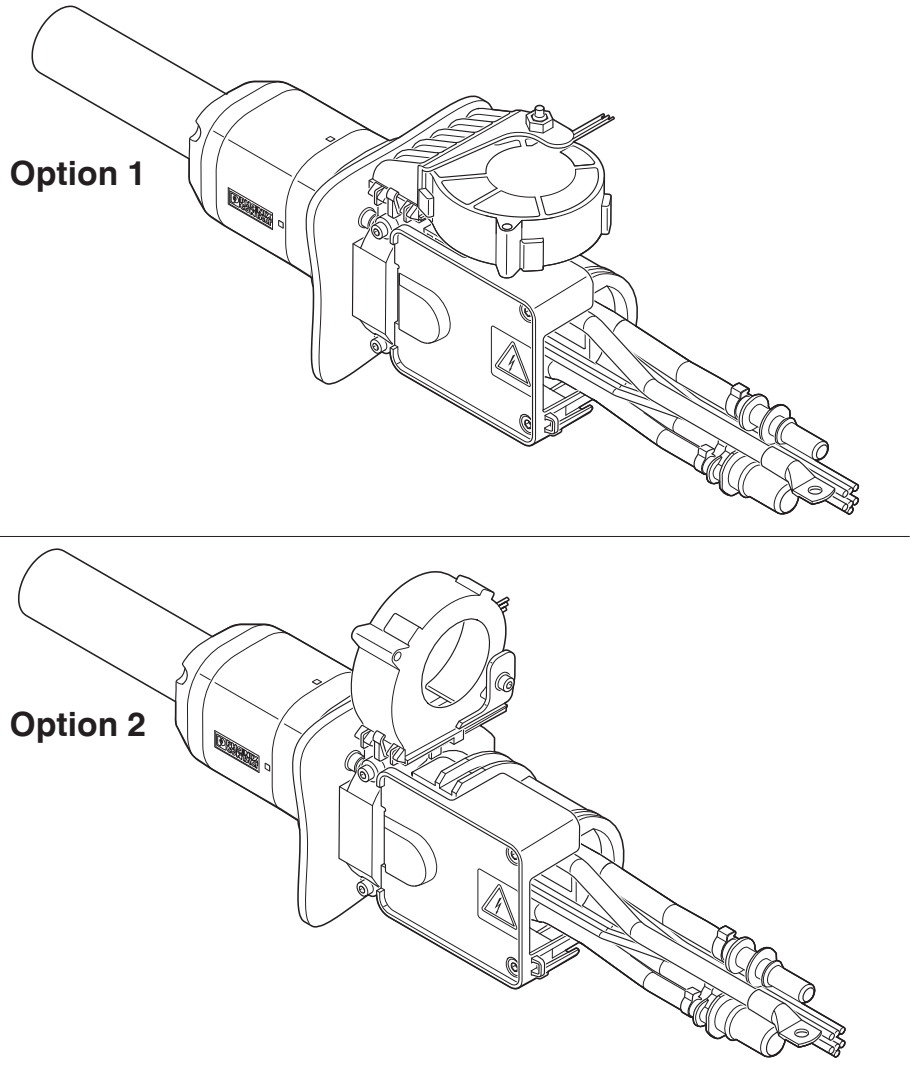
The resting position must be installed in the charging station such that the user cannot hang up the vehicle connector upside down (90° to 270°). However, positions rotated upward (45°) or downward (315°) are options for a resting position.

Schematic diagram



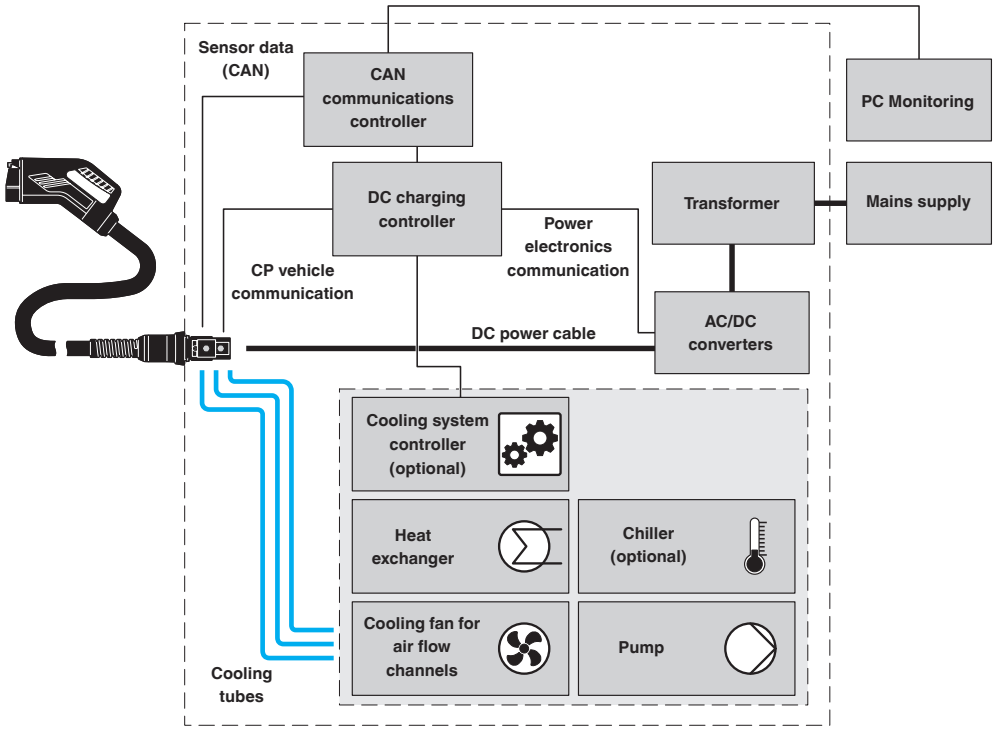
Assembly instructions for attaching the touch protection using straight panel feed-through as an example

Schematic diagram



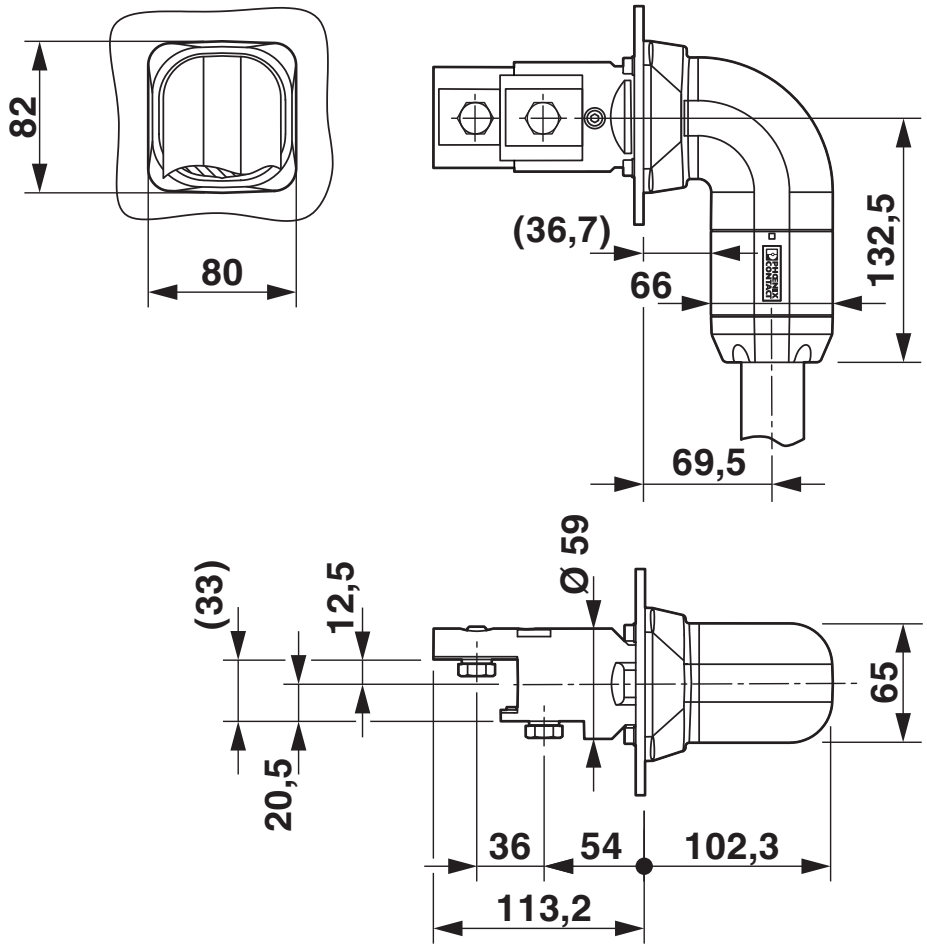
Select one option for mounting the fan. Illustrated using straight panel feed-through as an example.

Schematic diagram



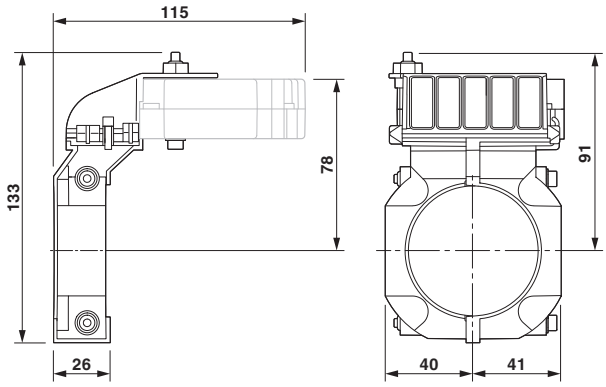
Standalone, decentralized system: cooling unit and controller are integrated into the charging station. The choice of cooling unit can be passive or active (i.e., with or without chiller).

Dimensional drawing



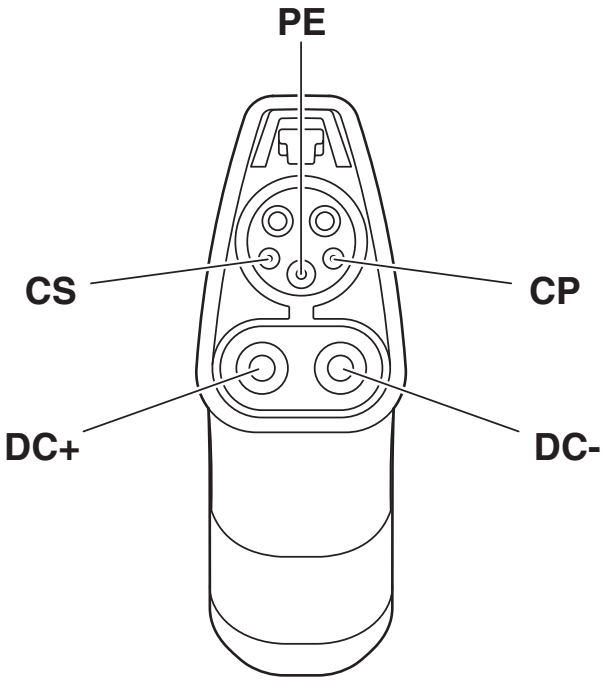
Right-hand angled panel feed-through

Dimensional drawing



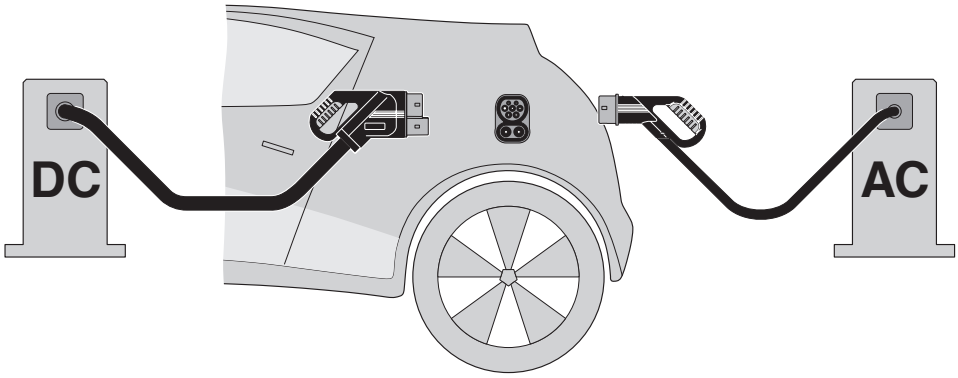
Fan for horizontal attachment to the panel feed-through

Schematic diagram



Pin assignment of the Vehicle Connector

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.

Approvals

cULus Recognized
Approval ID: E473195-20220201

	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	1000 V	500 A	-	-

Classifications

ECLASS

ECLASS-9.0	27144705
ECLASS-10.0.1	27144705
ECLASS-11.0	27144705

ETIM

ETIM 8.0	EC002897

UNSPSC

UNSPSC 21.0	39121500

Environmental Product Compliance

REACh SVHC	DOTE 15571-58-1
	Dechlorane Plus

China RoHS	Environmentally Friendly Use Period = 10;
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

Accessories

Charging connector holder

Charging connector holder - EV-T1CCS-PARK - 1624143

https://www.phoenixcontact.com/us/products/1624143

CHARX connect, Charging connector holder, Accessories, for vehicle charging connectors on charging stations (EVSE), HPC CCS type 1, SAE J1772, Front mounting, C-Line, HPC-Line, housing: black

Repair kit

Repair kit - EV-T1CCS-MF-M4X10-BIT-CTS - 1085802

https://www.phoenixcontact.com/us/products/1085802

CHARX connect, Repair kit, Accessories, for replacement of the mating face frame of vehicle charging connectors, with DC contact holder with integrated front part of the DC contacts, with replaceable mating face frame, with 5x M4X10 rounded head screws with Torx security drive, with special bit for insulated screwdriver, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Repair kit

Repair kit - EV-T1CCS-MF-M4X10-CTS - 1281251

https://www.phoenixcontact.com/us/products/1281251

CHARX connect, Repair kit, Accessories, for replacement of the mating face frame of vehicle charging connectors, with DC contact holder with integrated front part of the DC contacts, with replaceable mating face frame, with 5x M4X10 rounded head screws with Torx security drive, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Repair kit

Repair kit - EV-T1CCS-MF-M4X10-BIT - 1085801

https://www.phoenixcontact.com/us/products/1085801

CHARX connect, Repair kit, Accessories, for replacement of the mating face frame of vehicle charging connectors, with replaceable mating face frame, with 5x M4X10 rounded head screws with Torx security drive, with special bit for insulated screwdriver, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Repair kit

Repair kit - EV-T1CCS-MF-M4X10 - 1085800

https://www.phoenixcontact.com/us/products/1085800

CHARX connect, Repair kit, Accessories, for replacement of the mating face frame of vehicle charging connectors, with replaceable mating face frame, with 5x M4X10 rounded head screws with Torx security drive, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Repair kit

Repair kit - EV-T1CCS-M4X20-BIT-CTS - 1295723

https://www.phoenixcontact.com/us/products/1295723

CHARX connect, Repair kit, Accessories, with DC contact holder with integrated front part of the DC contacts, with special bit for insulated screwdriver, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Repair kit

Repair kit - EV-T1CCS-M4X20-CTS - 1295744

https://www.phoenixcontact.com/us/products/1295744

CHARX connect, Repair kit, Accessories, with DC contact holder with integrated front part of the DC contacts, HPC CCS type 1, IEC 62196-3-1, SAE J1772, HPC-Line, housing: black, Replacement without draining the coolant

Cable handle

Cable handle - EV-GRIP-D35,7MM - 1091431

https://www.phoenixcontact.com/us/products/1091431

CHARX connect, Cable handle, Accessories, For vehicle charging connector, HPC CCS type 2, HPC CCS type 1, IEC 62196-3-1, HPC-Line, housing: black, Please note: The item can only be used with the outer cable diameter indicated.

Quick coupling

Quick coupling - EV-HPC-QC - 1346562

https://www.phoenixcontact.com/us/products/1346562

CHARX connect, Quick coupling, Accessories, Counterpart for connecting the coolant lines of a PHOENIX CONTACT HPC DC charging cable, HPC CCS type 2, HPC CCS type 1, HPC-Line

DC power module

DC power module - CHARX PS/3AC/920DC/87.5KW - 1162690

https://www.phoenixcontact.com/us/products/1162690

CHARX power, Fast charging module for setting up DC charging stations, Rack mounting, input: 3-phase, output: 200 V DC...920 V DC / 125 A. The corresponding system control cabinet CHARX PS-CAB/4x87.5KW (Item No. 1165442) is necessary for operating the DC power module

DC power module

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

https://www.phoenixcontact.com/us/products/1232243

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

DC power module

DC power module - CHARX PS-M2/825DC/1000DC/30KW - 1296467

https://www.phoenixcontact.com/us/products/1296467

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

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com