

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



1089931

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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 right-hand angled 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 | 1089931 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | EM01 |
| Product key | XWBLPI |
| GTIN | 4055626892894 |
| Weight per piece (including packing) | 17,000 g |
| Weight per piece (excluding packing) | 12,075 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

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Technical data

Product properties

| | |
|-------------------|--|
| Product type | DC charging cable |
| Product family | CHARX connect professional |
| 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 Liquid cooling |
| 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 (Power contacts)

| | |
|---------------|------------------|
| Number | 3 (PE, DC+, DC-) |
| Rated voltage | 1000 V DC |
| Rated current | 500 A |

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1089931

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Pin assignment (Signal contacts)

| | |
|---------------|------------|
| 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 |

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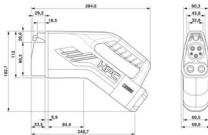
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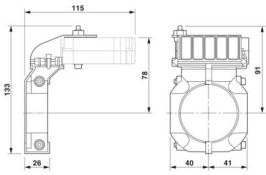
| | |
|-------------------------|---------------------|
| Fan volumetric flow | 28 m³/h |
| Mechanical service life | 70.000 h (at 40 °C) |
| Ambient temperature | -20 °C ... 40 °C |

Dimensions

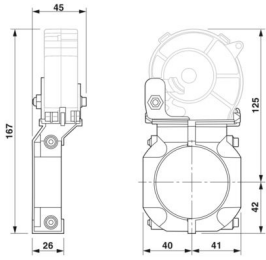
Vehicle charging connector

| | |
|---------------------|--|
| Dimensional drawing |  <p>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.</p> |
| Width | 69.6 mm |
| Height | 192.6 mm |
| Depth | 284.6 mm |

Horizontal fan

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 81 mm |
| Height | 133 mm |
| Depth | 115 mm |

Vertical fan

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 81 mm |
| Height | 133 mm |
| Depth | 115 mm |

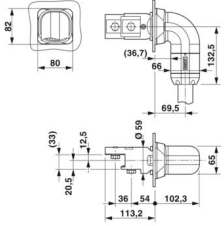
Panel feed-through

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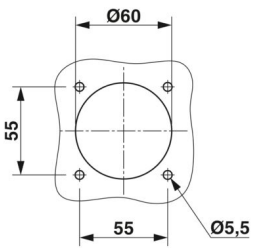


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| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 80 mm |
| Height | 82 mm |
| Depth | 215.5 mm |

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 |

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| | |
|--------------------------------|--|
| Cable structure | 5 x 25 mm ² + 7 x 0,75 mm ² + 2 x 13 mm ² |
| 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 |

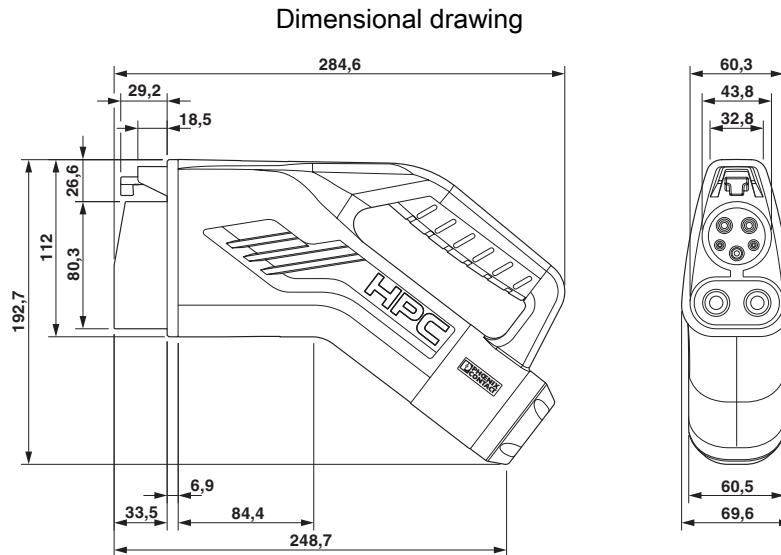
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Drawings



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.

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Dimensional drawing



Drill hole spacing

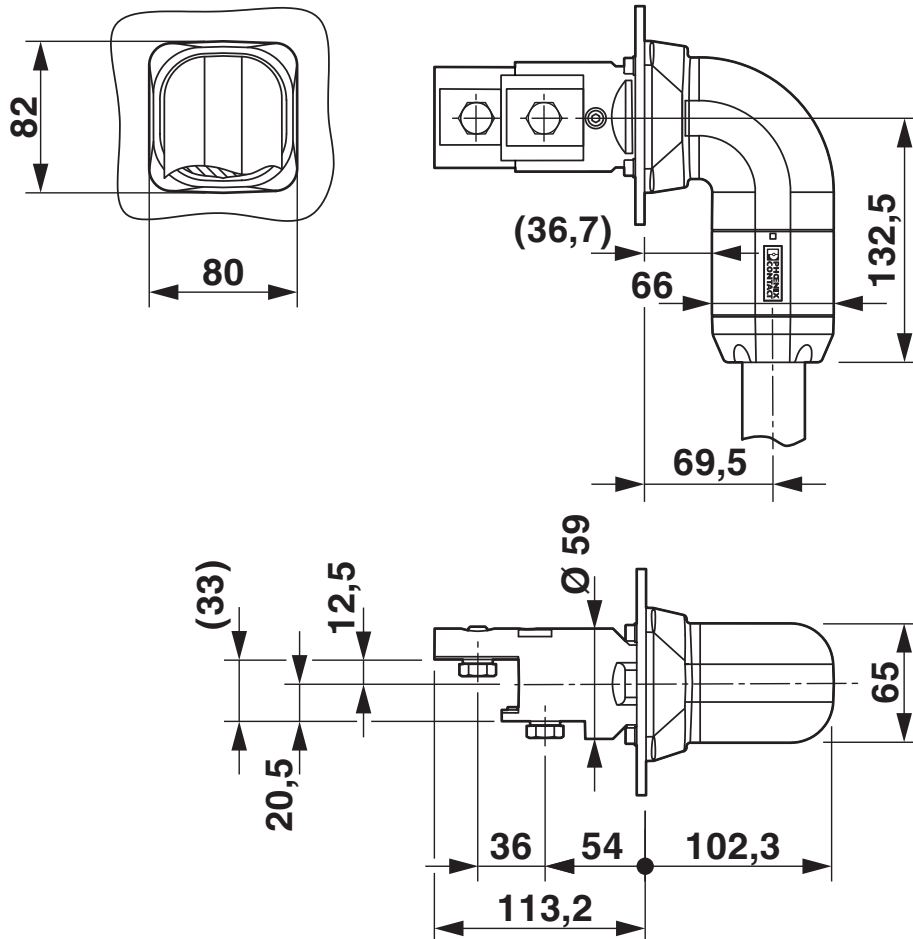
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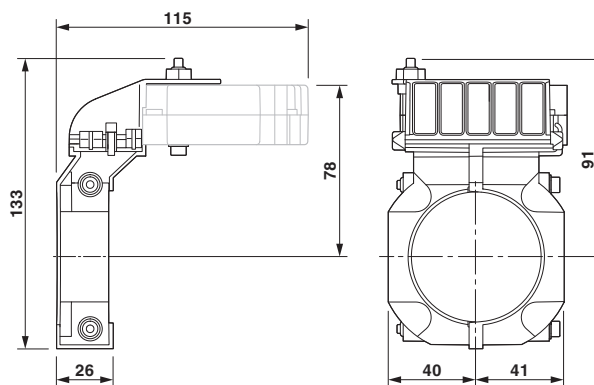
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Dimensional drawing



Right-hand angled panel feed-through

Dimensional drawing



Fan for horizontal attachment to the panel feed-through

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Dimensional drawing



Fan for vertical attachment to the panel feed-through

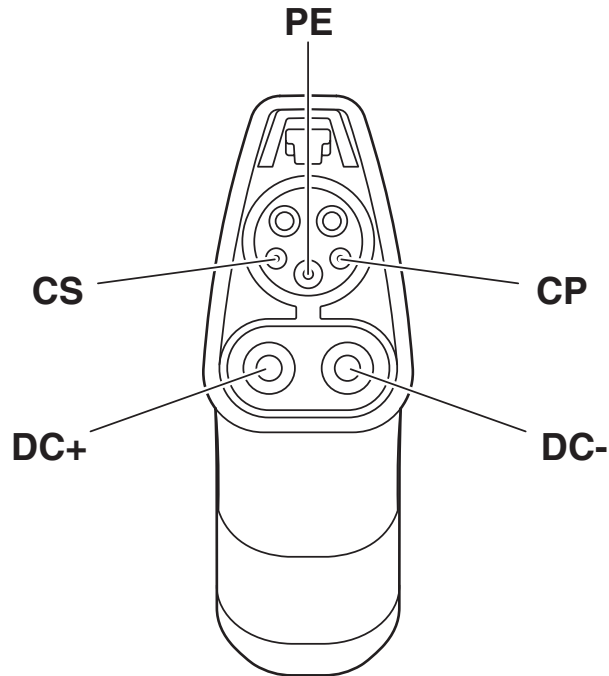
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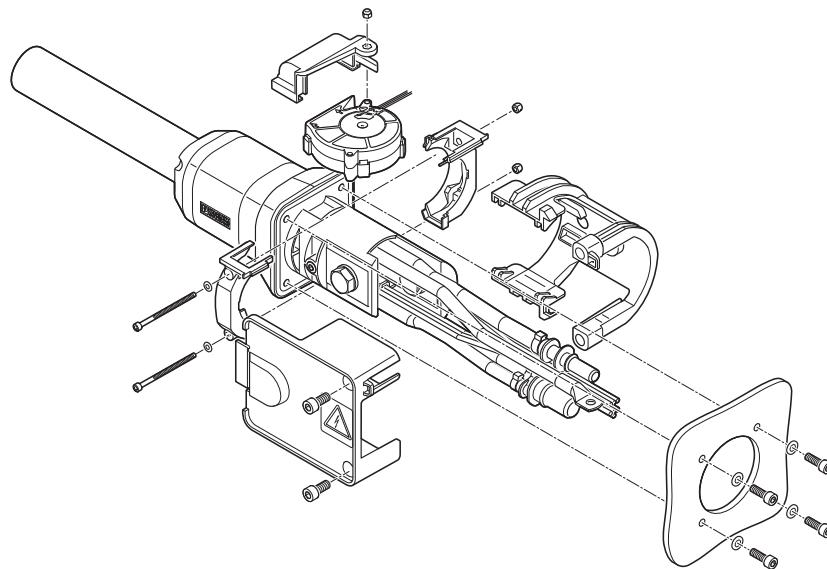
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Schematic diagram



Pin assignment of the Vehicle Connector

Schematic diagram



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

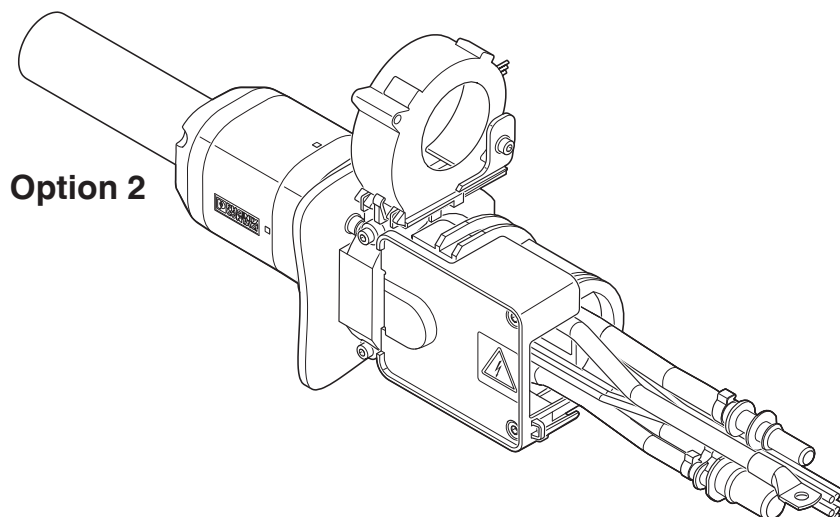
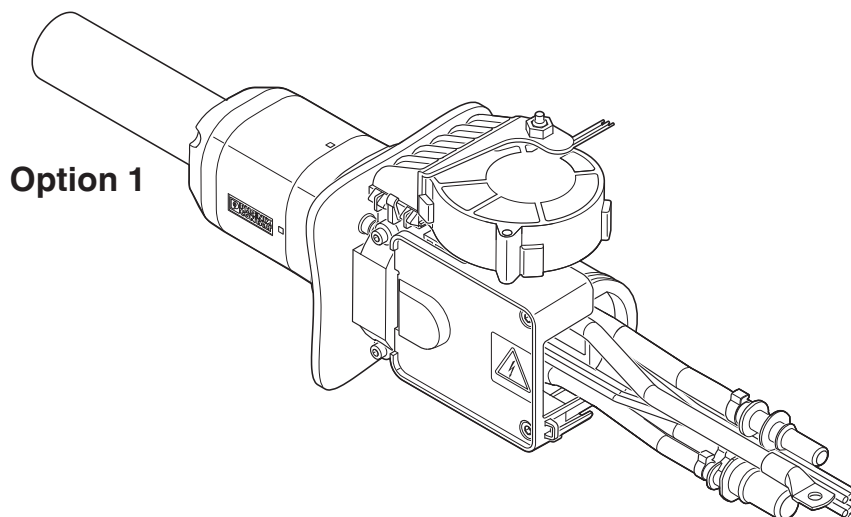
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Schematic diagram



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

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Schematic diagram



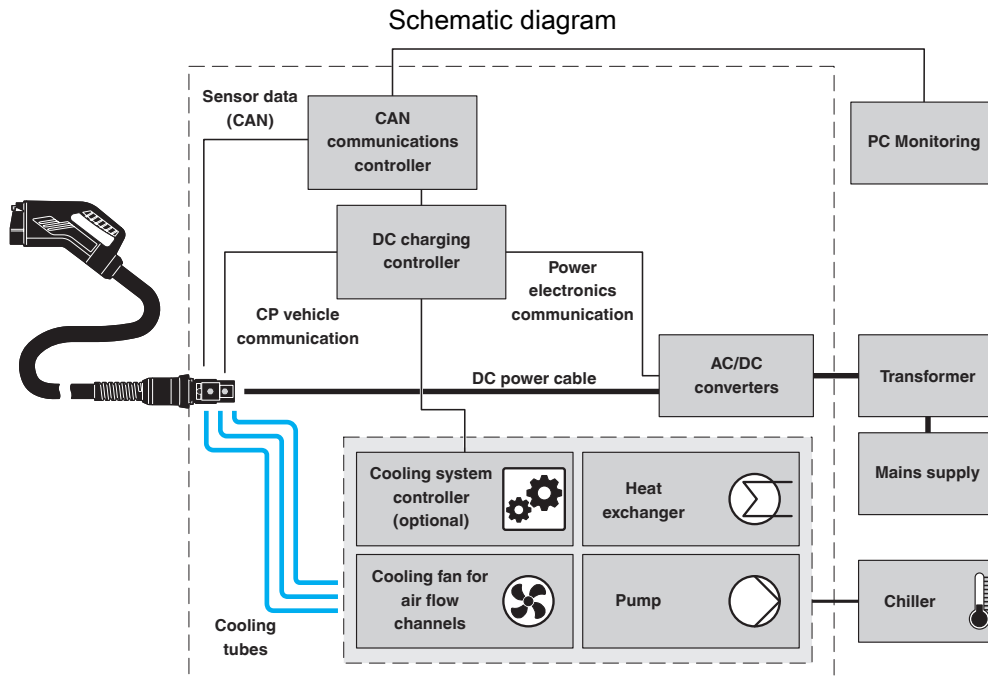
The resting position must be installed in the charging station such that the user cannot hang up the vehicle connector upside down (90° to 270°). However, positions rotated upward (45°) or downward (315°) are options for a resting position.

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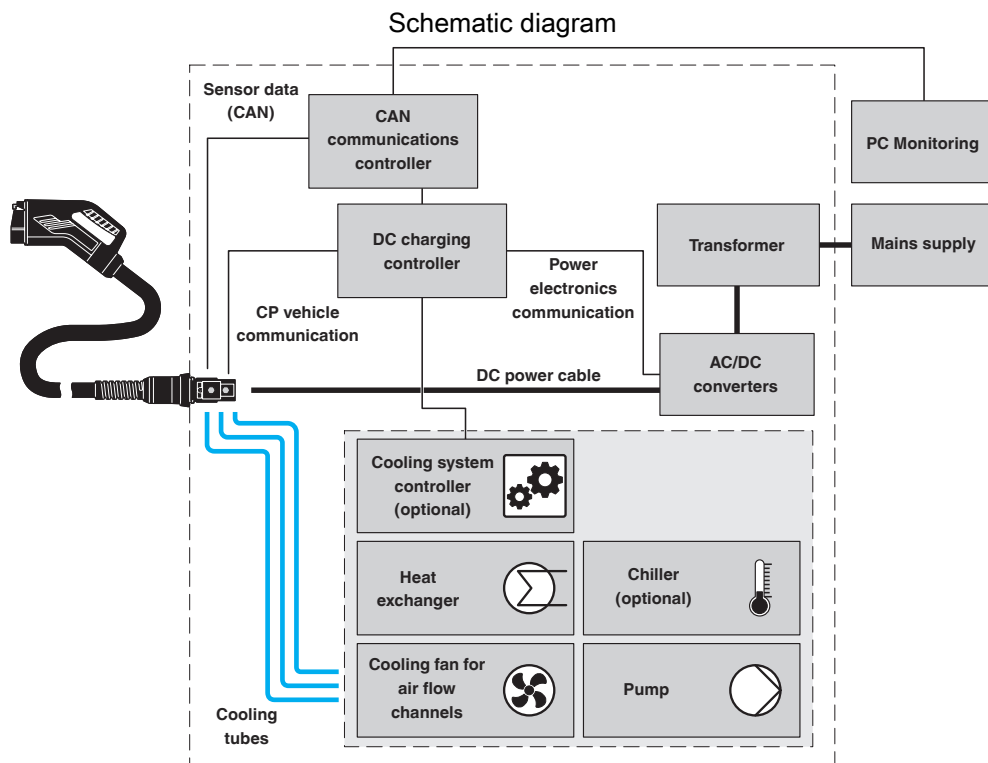


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Central system: cooling unit and controller are positioned externally and supply multiple charging stations, each of which is equipped with a heat exchanger. The cooling is done actively using a chiller.



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).

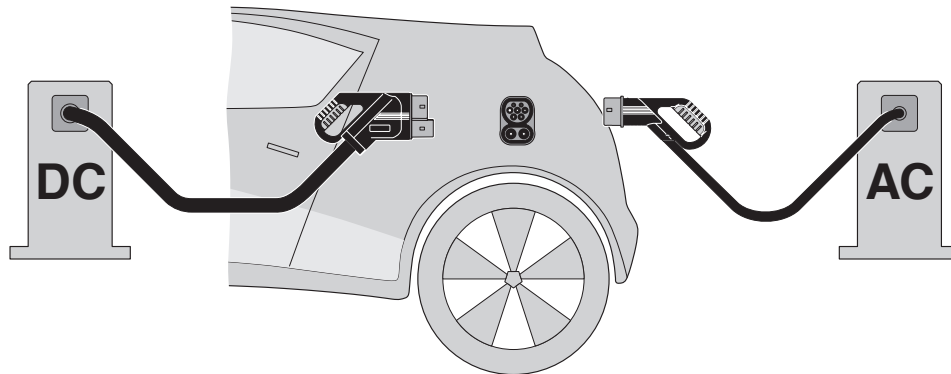
EV-T1HPCC-DC500A-5,0M50ECBK11R - DC charging cable



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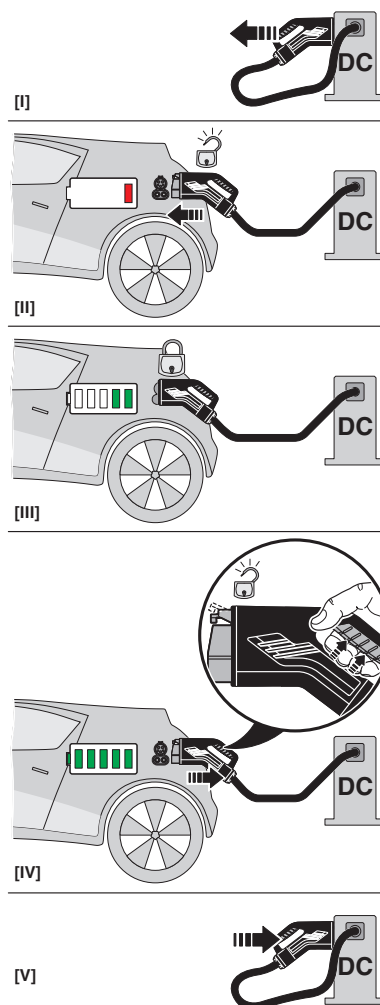
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Schematic diagram



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



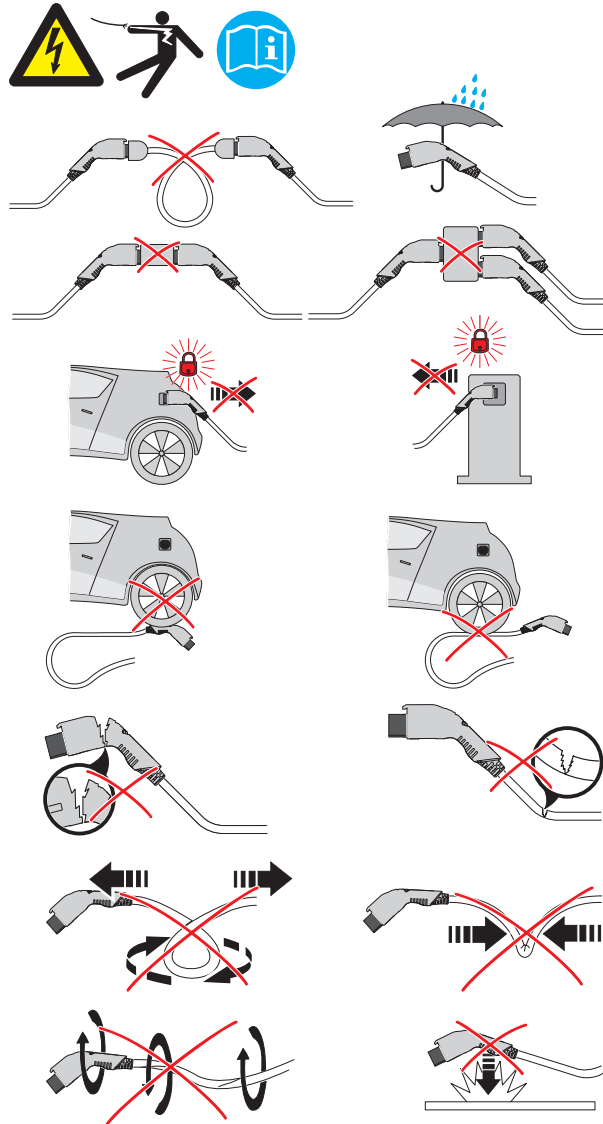
Operating instructions

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Schematic diagram



Warning signal note

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1089931>

|  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 | - | - |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27144705 |
| ECLASS-15.0 | 27144705 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002897 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121500 |
|-------------|----------|

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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-10 |
| | 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 | 302e6b42-bdad-420b-a057-727a63a5e5bf |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 101.8 kg CO2e |
|---------|---------------|

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