

# CHARX T2HBI24-DC250-6,0M2 - Vehicle charging inlet



1396601

<https://www.phoenixcontact.com/gb/products/1396601>

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CHARX connect universal, DC CCS Typ 2, Vehicle charging inlet, up to 500 A in Boost mode, 250 A permanent, 1000 V DC, Single wires, length: 6 m, locking actuator: 24 V, 4-pos., Front and rear mounting, M6, housing: black, for charging with direct current (DC), IEC 62196-2, IEC 62196-3, A protective cap is supplied as standard for the DC contacts.

The figure shows a version of the product

## Product description

Vehicle charging inlet for charging with direct current (DC), compatible with type 2 CCS vehicle charging connectors (EVSE), for installation in electric vehicles (EV).

## Your advantages

- Complete product range
- Uniform, space-saving dimensions for the installation space and the screw connection points of all Phoenix Contact vehicle charging inlets
- Developed and produced in accordance with the IATF 16949 automotive standard and ISO 9001
- Integrated interlock during charging
- Manual emergency release of the locking actuator
- Protected and sealed against dirt and water with a high degree of protection

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1396601       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | XWCAID        |
| Product key                          | XWCAID        |
| GTIN                                 | 4063151780784 |
| Weight per piece (including packing) | 107 g         |
| Weight per piece (excluding packing) | 107 g         |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Notes

|         |   |
|---------|---|
| General | A protective cap is supplied as standard for the DC contacts. |
|---------|---|

### Product properties

|                   |                         |
|-------------------|-------------------------|
| Product type      | Vehicle charging inlet  |
| Product family    | CHARX connect universal |
| Charging standard | DC CCS Typ 2            |
| Charging mode     | Mode 4                  |

### Electrical properties

#### Charging power and current (DC charging)

|                          |          |
|--------------------------|----------|
| Type of charging current | DC       |
| Charging current         | 250 A DC |
| Charging power           | 250 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 500 A DC  |
| Charging power           | up to 500 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. |

#### Pin assignment (Power contacts)

|                               |  |
|-------------------------------|--|
| Note on the connection method | Crimp connection, cannot be disconnected |
| Number                        | 3 (PE, DC+, DC-)                         |
| Rated voltage                 | 1000 V DC                                |
| Rated current                 | 250 A DC                                 |

#### Pin assignment (Signal contacts)

|                               |   |
|-------------------------------|---|
| Note on the connection method | Crimp connection, cannot be disconnected  |
| Type of signal transmission   | Pulse width modulation with modulated Powerline communication in accordance with ISO/IEC 15118 / DIN SPEC 70121 |
| Number                        | 2 (CP, PP)  |
| Rated voltage                 | 30 V AC   |
| Rated current                 | 2 A   |
| Coding                        | 4.7 k $\Omega$ (between PE and PP)  |
| Insulation resistance         | > 200 M $\Omega$  |

#### Locking actuator

|                  |              |
|------------------|--------------|
| Locking actuator | 24 V, 4-pos. |
|------------------|--------------|

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|  |                     |
|--|---------------------|
|  | Right position      |
| Possible power supply range at the motor | 22 V ... 26 V       |
| Maximum voltage for locking detection    | 30 V                |
| Typical motor current for locking        | 0.05 A              |
| Reverse current of the motor             | max. 0.5 A          |
| Max. dwell time with reverse current     | 1 s                 |
| Recommended adaptation time              | 600 ms              |
| Pause time after entry or exit path      | 3 s                 |
| Service life insertion cycles            | > 10000 load cycles |
| Lock recognition                         | available           |
| Mechanical emergency release             | available           |
| Ambient temperature (operation)          | -30 °C ... 50 °C    |

## Temperature sensors (Pt 1000)

|                       |                               |
|-----------------------|-------------------------------|
| Sensor type           | Pt 1000                       |
| Standards/regulations | DIN EN 60751                  |
| Attachment point      | 2 sensors for the DC contacts |

## Dimensions

### Vehicle charging inlet

|                     |           |
|---------------------|-----------|
| Dimensional drawing |           |
| Width               | 108 mm    |
| Height              | 140.25 mm |
| Depth               | 133.5 mm  |

### Bore dimensions

|        |           |
|--------|-----------|
| Width  | 117.65 mm |
| Height | 90 mm     |
| Depth  | 117.65 mm |

## Material specifications

|                            |              |
|----------------------------|--------------|
| Color (Housing)            | black (9005) |
| Color (Mating face)        | black (9005) |
| Material (Housing)         | Plastic      |
| Material (Contact surface) | Silver       |

## Cable/line

|              |              |
|--------------|--------------|
| Cable length | 6 m          |
| Cable type   | Single wires |

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## Single-core wires for DC

|                         |                        |
|-------------------------|------------------------|
| Cable length            | 6 m                    |
| Cable structure         | 2 x 95 mm <sup>2</sup> |
| Single wire, material   | Silicone               |
| Single wire, color      | OG                     |
| External cable diameter | 20.60 mm ±0.3 mm       |
| Cable resistance        | ≤ 0.196 Ω/km           |

## Single-core wire for PE

|                         |                        |
|-------------------------|------------------------|
| Cable length            | 6 m                    |
| Cable structure         | 1 x 25 mm <sup>2</sup> |
| Single wire, material   | Silicone               |
| Single wire, color      | GN/YE                  |
| External cable diameter | 8.60 mm ±0.1 mm        |
| Cable resistance        | ≤ 0.743 Ω/km           |

## Single-core wires for locking actuator

|                         |                            |
|-------------------------|----------------------------|
| Cable length            | 0.5 m                      |
| Cable structure         | 4 x 0.5 mm <sup>2</sup>    |
| Single wire, material   | PVC                        |
| Single wire, color      | BU/RD, BU/GN, BU/YE, BU/BN |
| External cable diameter | 1.60 mm ±0.20 mm           |
| Cable resistance        | ≤ 37.1 Ω/m                 |

## Single-core wires for Pt 1000 temperature sensors

|                         |                         |
|-------------------------|-------------------------|
| Cable length            | 1 m                     |
| Cable structure         | 3 x 0.5 mm <sup>2</sup> |
| Single wire, material   | PVC                     |
| Single wire, color      | BN<br>GN<br>YE          |
| External cable diameter | 1.60 mm ±0.20 mm        |
| Cable resistance        | ≤ 37.1 Ω/m              |

## Single-core wires for communication

|                         |                         |
|-------------------------|-------------------------|
| Cable length            | 1 m                     |
| Cable structure         | 2 x 0.5 mm <sup>2</sup> |
| Single wire, material   | PVC                     |
| Single wire, color      | BK<br>WH                |
| External cable diameter | 1.60 mm ±0.20 mm        |
| Cable resistance        | ≤ 37.1 Ω/m              |

## Mechanical properties

### Mechanical data

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|                             |         |
|-----------------------------|---------|
| Insertion/withdrawal cycles | > 10000 |
| Insertion force             | < 100 N |
| Withdrawal force            | < 100 N |

## Environmental and real-life conditions

### Ambient conditions

|   |   |
|---|---|
| Degree of protection (Vehicle charging inlet) | IP55 (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)<br>IP67 (Inner area of vehicle charging inlet) |
| Ambient temperature (operation)               | -40 °C ... 40 °C (60°C, maximum (current reduction required, observe the DC contact temperature limit value of 90°C))   |
| Ambient temperature (storage/transport)       | -40 °C ... 85 °C  |
| Altitude                                      | 4000 m (above sea level)  |

## Standards and regulations

### Standards

|                       |                            |
|-----------------------|----------------------------|
| Standards/regulations | IEC 62196-2<br>IEC 62196-3 |
|-----------------------|----------------------------|

## Mounting

|  |   |
|--|---|
| Mounting type                            | Front and rear mounting (0 to 90 degree frontal inclination possible) |
| Mounting hole diameter                   | 6.70 mm (ø)   |
| Fixing screws                            | M6  |
| Screws included in the scope of delivery | none  |

# CHARX T2HBI24-DC250-6,0M2 - Vehicle charging inlet

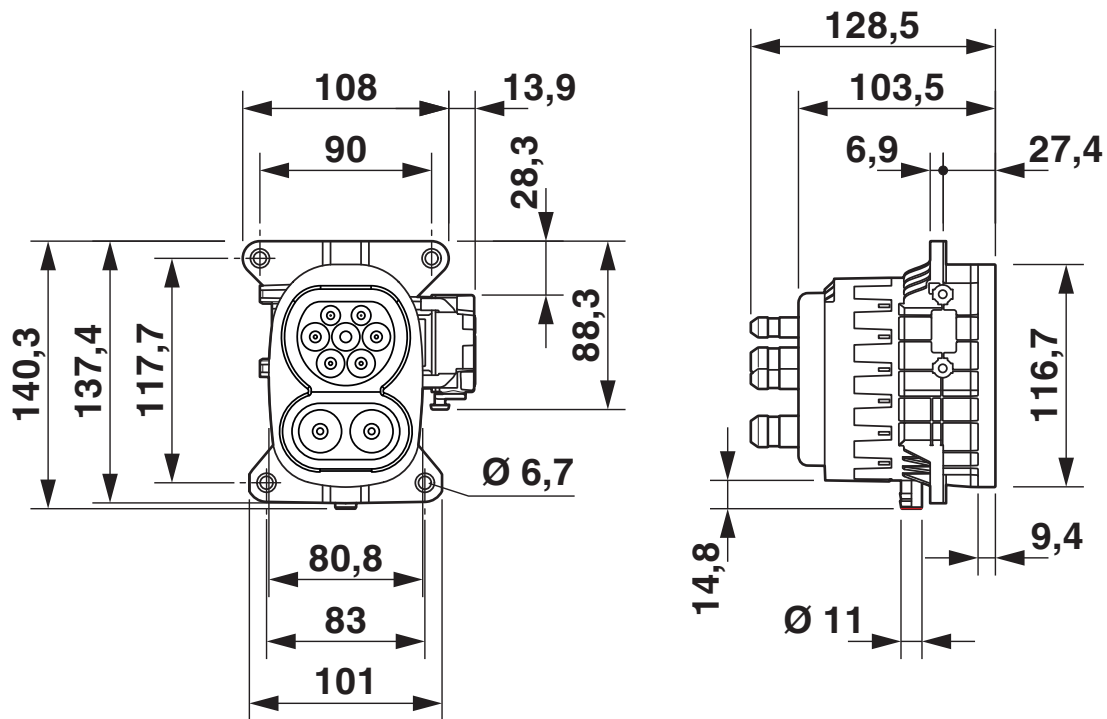


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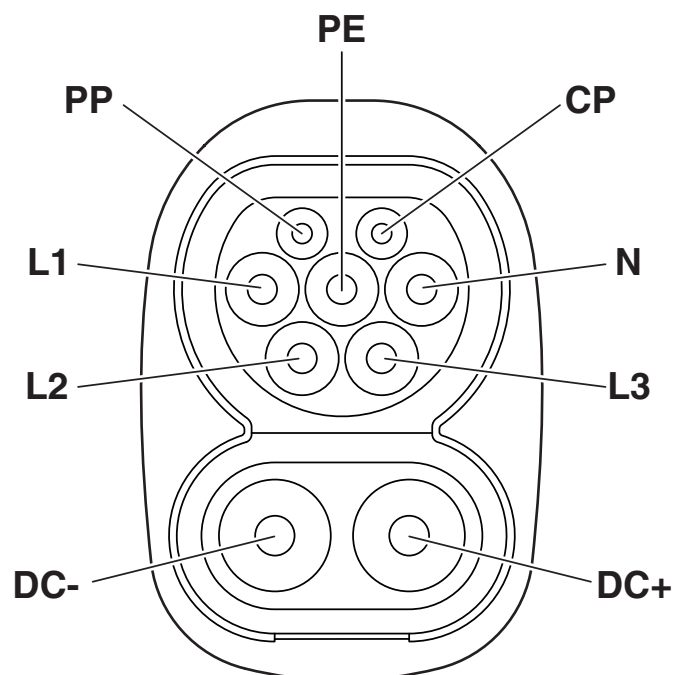
## Drawings

Dimensional drawing



Dimensional drawing

Connection diagram



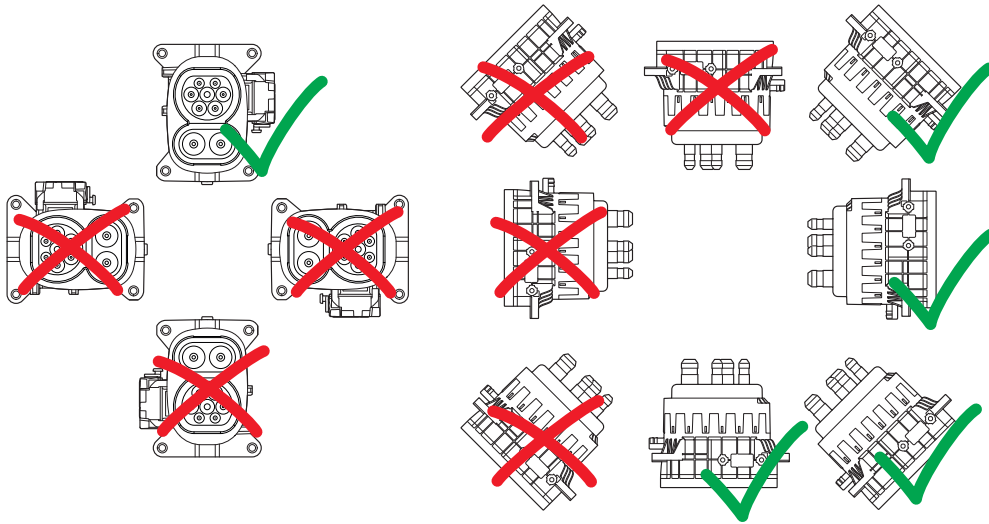
Pin assignment of vehicle charging inlets

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## Connection diagram

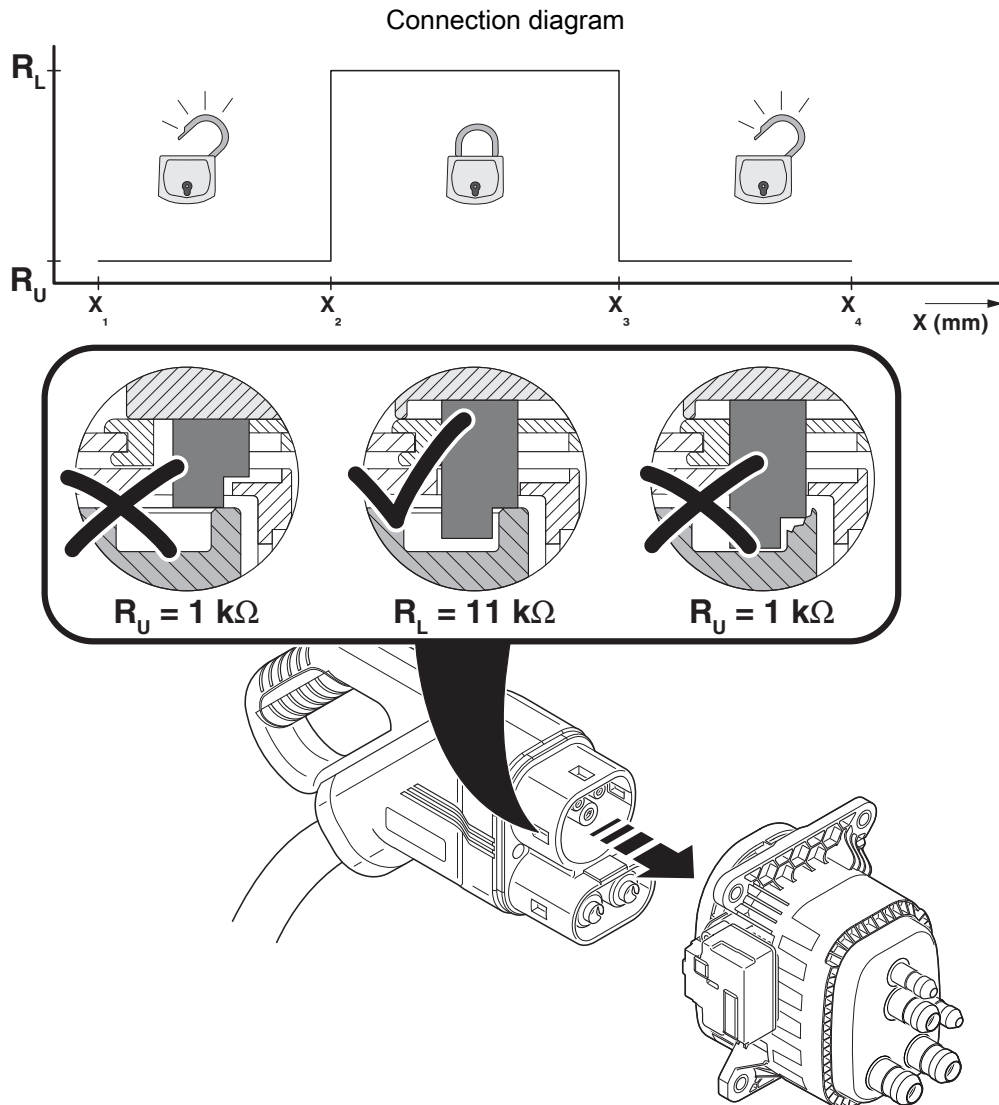


## Installation positions

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Detection for Vehicle Connector



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.

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Schematic diagram



Operating instructions

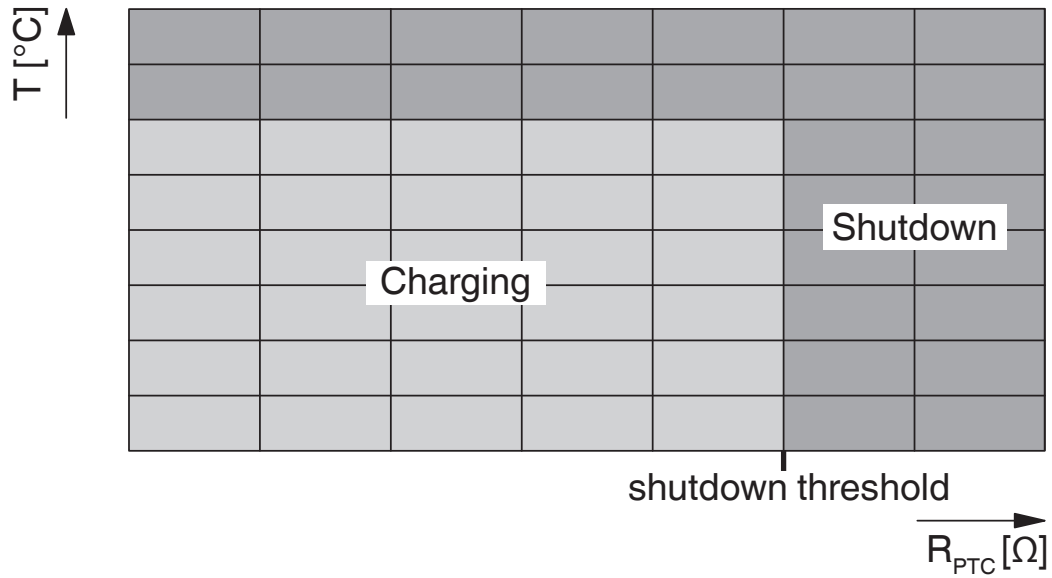
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Schematic diagram



Temperature sensor technology resistance range at AC contacts

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Locking states of the locking actuator

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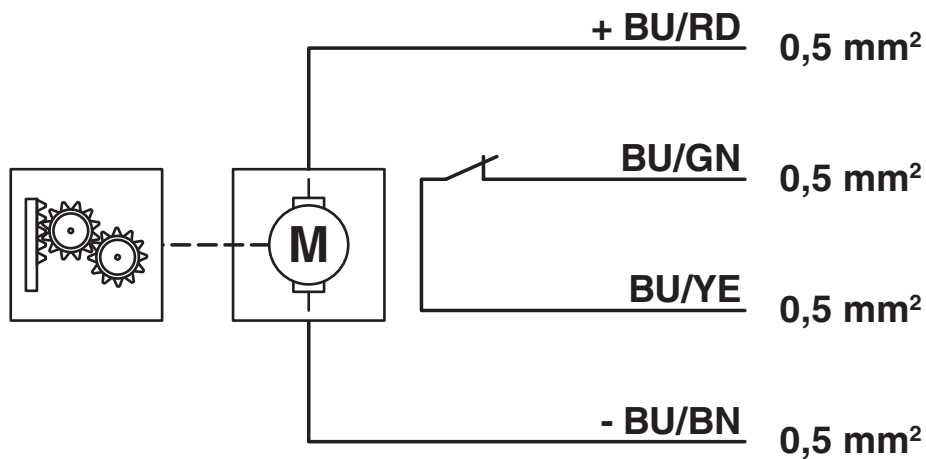
<https://www.phoenixcontact.com/gb/products/1396601>

Diagram



Pt 1000 characteristic curve at an ambient temperature of 25°C for temperature measurement at the DC contacts

Block diagram



Block diagram of the locking actuator

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27144706 |
| ECLASS-15.0 | 27144706 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002898 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121800 |
|-------------|----------|

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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-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.) | 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)(CAS: 15571-58-1) |
|                                     | Lead(CAS: 7439-92-1)  |
|                                     | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)   |
| SCIP                                | eac9f4ac-0266-48e9-9bdd-2d03cf8d319d  |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 89.19 kg CO2e |
|---------|---------------|

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## Accessories

### CHARX T2HBI-DC-COVER SET - Protective cap

1793961

<https://www.phoenixcontact.com/gb/products/1793961>



CHARX connect universal, DC CCS Typ 2, Protective cap, Accessories, Plug-on assembly, housing: black, for vehicle charging inlet

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### CHARX T2HBI-FLAP-COMLETE - Protective cover

1778115

<https://www.phoenixcontact.com/gb/products/1778115>



CHARX connect universal, AC/DC CCS Typ 2, Protective cover, Accessories, square, M6, with status indicator via freely controllable RGB LED, with cancel charging button, for mounting on vehicle charging inlets, UNECE R61

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## CHARX T2HBI-FLAP-ESSENTIAL - Protective cover

1778119

<https://www.phoenixcontact.com/gb/products/1778119>



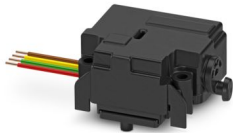
CHARX connect universal, AC/DC CCS Typ 2, Protective cover, Accessories, square, M6, for mounting on vehicle charging inlets, UNECE R61

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## CHARX T2HI-ELOCK12V - Locking

1331532

<https://www.phoenixcontact.com/gb/products/1331532>



CHARX connect universal, Type 2, Locking, Accessories, Single wires, length: 1 m, locking actuator: 12 V, 4-pos., for mounting on vehicle charging inlets, IEC 61851-1

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## CHARX T2HI-ELOCK24V - Locking

1331524

<https://www.phoenixcontact.com/gb/products/1331524>

CHARX connect universal, Type 2, Locking, Accessories, Single wires, length: 1 m, locking actuator: 24 V, 4-pos., for mounting on vehicle charging inlets, IEC 61851-1



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