

# Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



CHARX connect, Vehicle charging inlet, Locking actuator right, For charging with alternating current (AC) and with direct current (DC), For installation in electric vehicles (EV), CCS type 2, Combined Charging System, IEC 62196-2, IEC 62196-3, 125 A / 1000 V (DC), 32 A / 250 V (AC), length: 2 m, Locking actuator: 24 V, 4-position, M6, Generation 4, A protective cap is supplied as standard for the DC and AC contacts.


The figure shows a version of the product

## Your advantages

- ✓ Uniform, space-saving dimensions for the installation space and the screw connection points of all Phoenix Contact Vehicle Inlets
- ✓ Silver-plated surface of the power and signal contacts
- ✓ Certified in accordance with IATF 16949:2016 and ISO 9001:2015
- ✓ Material data available in the IMDS (International Material Data System of the automotive industry)
- ✓ Tested in accordance with selected tests of automotive standards LV124, LV214, LV215-2
- ✓ Manual emergency release of the locking actuator
- ✓ Integrated interlock during charging
- ✓ Integrated temperature sensors for monitoring the temperature at the power contacts



## Key Commercial Data

|                                      |  |
|--------------------------------------|--|
| Packing unit                         | 1 pc   |
| GTIN                                 |  |
| GTIN                                 | 4063151282295  |
| Weight per Piece (excluding packing) | 4.100 kg   |
| Weight per piece (including packing) | 4.280 kg   |
| Custom tariff number                 | 85444290   |
| Country of origin                    | Germany  |
| Sales Key                            | Q1 - Electro Mobility  |

## Technical data

### Product definition

|             |   |
|-------------|---|
| Type        | Locking actuator right  |
| Application | For charging with alternating current (AC) and with direct current (DC) |

# Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

## Technical data

### Product definition

|                               |  |
|-------------------------------|--|
|                               | For installation in electric vehicles (EV)                           |
| Design                        | Generation 4   |
| Standards/regulations         | IEC 62196-2  |
|                               | IEC 62196-3  |
| Charging standard             | CCS type 2   |
|                               | Combined Charging System   |
| Charging mode                 | Mode 2, 3, 4   |
| Note                          | A protective cap is supplied as standard for the DC and AC contacts. |
| Note on the connection method | Crimp connection, cannot be disconnected                             |

### Dimensions

|                  |                                      |
|------------------|--------------------------------------|
| Height           | 140.25 mm                            |
| Width            | 108 mm                               |
| Depth            | 128.4 mm                             |
| Bore dimensions  | 117.65 mm x 90 mm, 117.65 mm x 83 mm |
| Conductor length | 2 m (AC cables)                      |
|                  | 2 m (DC cables)                      |
|                  | 2 m (PE cable)                       |
|                  | 1 m (Locking actuator cables)        |
|                  | 1 m (Temperature sensors cables)     |
|                  | 1 m (Communications cables)          |

### Ambient conditions

|   |  |
|---|--|
| Ambient temperature (operation)         | -40 °C ... 60 °C   |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C   |
| Max. altitude                           | 4000 m (above sea level)   |
| Degree of protection                    | 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) |
|   | IP55 (Inner area of vehicle charging inlet)  |

### Electrical properties

|                                   |                         |
|-----------------------------------|-------------------------|
| Maximum charging power            | 125 kW                  |
| Type of charging current          | DC, AC 1-phase          |
| Number of phases                  | 1                       |
| Number of power contacts          | 5 (L1, N, PE, DC+, DC-) |
| Rated current of power contacts   | 32 A AC                 |
|                                   | 125 A DC                |
| Rated voltage for power contacts  | 250 V AC                |
|                                   | 1000 V DC               |
| Number of signal contacts         | 2 (CP, PP)              |
| Rated current for signal contacts | 2 A                     |
| Rated voltage for signal contacts | 30 V AC                 |

# Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

## Technical data

### Electrical properties

|   |   |
|---|---|
| Type of signal transmission                   | Pulse width modulation with modulated Powerline communication according to ISO/IEC 15118 / DIN SPEC 70121 |
| Note on the connection method                 | Crimp connection, cannot be disconnected  |
| Insulation resistance of neighboring contacts | > 200 MΩ  |
| Resistor coding                               | 4.7 kΩ (between PE and PP)  |
| Temperature measurement                       | DC contacts: 2x PT1000 (DIN EN 60751)   |
| Temperature monitoring                        | AC contacts: PTC chain (DIN#EN#60738-1)   |

### Mechanical properties

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

### Mounting

|   |  |
|---|--|
| Restrictions to mounting position         | Only 0 to 90 degree frontal inclination possible, see figure |
| Mounting position of the locking actuator | Right-side   |
| Mounting hole diameter                    | 6.80 mm (ø)  |
| Required mounting screws                  | M6   |
| Screws included in the scope of delivery  | none   |

### Design

|                     |              |
|---------------------|--------------|
| Design line         | Generation 4 |
| Housing color       | black        |
| Customer variations | On request   |

### Material

|                              |         |
|------------------------------|---------|
| Material                     | Plastic |
| Flammability rating          | V0      |
| Material surface of contacts | Ag      |

### Locking

|              |  |
|--------------|--|
| Locking type | Locking in the inserted state with a locking mechanism |
|--------------|--|

### AC cable

|                         |                       |
|-------------------------|-----------------------|
| Cable structure         | 2 x 6 mm <sup>2</sup> |
| External cable diameter | 12.6 mm ±0.2 mm       |
| Cable resistance        | ≤ 3.2 Ω/km            |
| Outer sheath, material  | Silicone              |
| External sheath, color  | orange                |
| Minimum bending radius  | 3 x D                 |
| Cable weight            | approx. 285 kg/km     |

### DC cable

|                         |                        |
|-------------------------|------------------------|
| Cable structure         | 2 x 35 mm <sup>2</sup> |
| External cable diameter | 14.1 mm ±0.3 mm        |

# Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

## Technical data

### DC cable

|                        |                               |
|------------------------|-------------------------------|
| Cable resistance       | $\leq 0.527 \Omega/\text{km}$ |
| Outer sheath, material | Silicone                      |
| External sheath, color | orange                        |
| Minimum bending radius | 3 x D                         |
| Cable weight           | approx. 482 kg/km             |

### PE cable

|                         |                               |
|-------------------------|-------------------------------|
| Cable structure         | 1 x 25 mm <sup>2</sup>        |
| External cable diameter | 8.6 mm $\pm$ 0.1 mm           |
| Cable resistance        | $\leq 0.743 \Omega/\text{km}$ |
| Outer sheath, material  | Silicone                      |
| External sheath, color  | Green-yellow                  |
| Minimum bending radius  | 3 x D                         |
| Cable weight            | approx. 251 kg/km             |

### Locking actuator cable

|                         |                              |
|-------------------------|------------------------------|
| Cable structure         | 4 x 0.5 mm <sup>2</sup>      |
| External cable diameter | 1.6 mm -0.2 mm               |
| Cable resistance        | $\leq 37.1 \Omega/\text{km}$ |
| Outer sheath, material  | PVC                          |
| Single wire, color      | BU/RD, BU/GN, BU/YE, BU/BN   |
| Minimum bending radius  | 15 mm                        |
| Cable weight            | 7 kg/km                      |

### Temperature sensor cable

|                         |                              |
|-------------------------|------------------------------|
| Cable structure         | 5 x 0.5 mm <sup>2</sup>      |
| External cable diameter | 1.6 mm -0.2 mm               |
| Cable resistance        | $\leq 37.1 \Omega/\text{km}$ |
| Outer sheath, material  | PVC                          |
| Single wire, color      | brown, gray                  |
|                         | brown, yellow, green         |
| Minimum bending radius  | 15 mm                        |
| Cable weight            | 7 kg/km                      |

### Cable communication

|                         |   |
|-------------------------|---|
| Cable structure         | 0.5 mm <sup>2</sup> + 0.5 mm <sup>2</sup> |
| External cable diameter | 1.6 mm -0.2 mm                            |
| Cable resistance        | $\leq 37.1 \Omega/\text{km}$              |
| Outer sheath, material  | PVC                                       |
| Single wire, color      | black PP/CS                               |
|                         | white CP                                  |
| Minimum bending radius  | 15 mm                                     |
| Cable weight            | 7 kg/km                                   |

# Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

## Technical data

### Locking actuator

|  |  |
|--|--|
| Number of positions of the connectors    | 4  |
| Operating voltage                        | 24 V (Typical power supply at the motor) |
| 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                      |
| Ambient temperature (operation)          | -30 °C ... 50 °C                         |
| Cable length                             | 0.5 m                                    |
| Cable structure                          | 4 x 0.5 mm <sup>2</sup>                  |
| Lock recognition                         | available                                |
| Mechanical emergency release             | available                                |

### Temperature monitoring, AC contacts

|   |                                     |
|---|-------------------------------------|
| Type of sensor  | PTC chain                           |
| Standards/regulations   | DIN#EN 60738-1                      |
| Recommended measured current                                  | ≤ 1 mA (U <sub>max</sub> = 16 V DC) |
| Tolerance at the sensor with the recommended measured current | ±5K                                 |
| Temperature range   | -40 °C ... 130 °C                   |

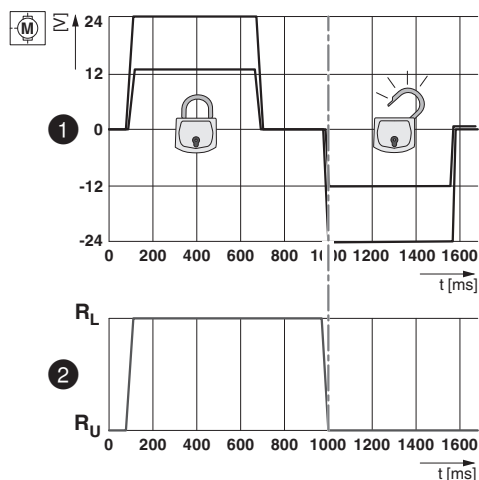
### Temperature sensor technology, DC contacts

|                              |                                     |
|------------------------------|-------------------------------------|
| Type of sensor               | Pt 1000                             |
| Standards/regulations        | DIN EN 60751                        |
| Recommended measured current | ≤ 1 mA (U <sub>max</sub> = 16 V DC) |
| Temperature range            | -40 °C ... 130 °C                   |
| Resistance range             | 650 Ω ... 1450 Ω                    |

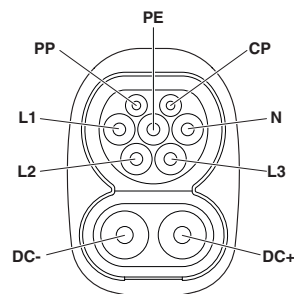
## Drawings

## Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

Diagram



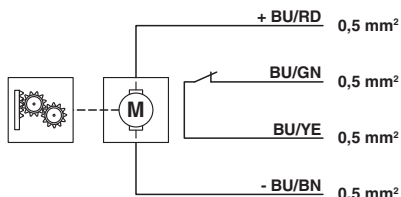
Connection diagram



Pin assignment of Vehicle Inlet

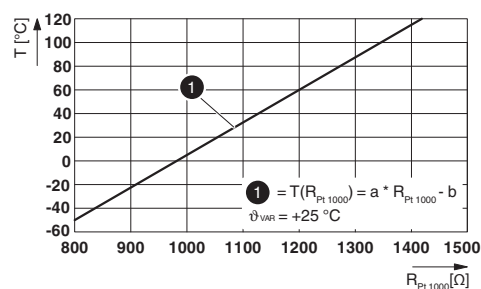
Locking states of the locking actuator

Block diagram



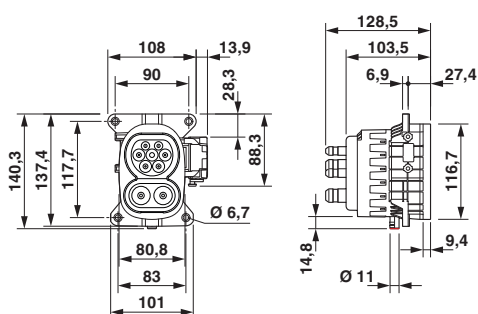
Block diagram of the locking actuator

Diagram



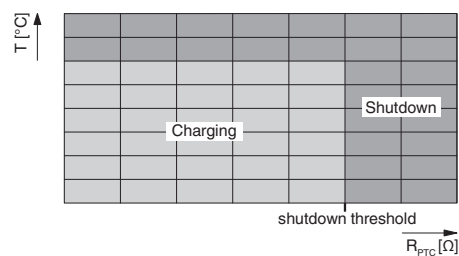
Pt 1000 characteristic curve at an ambient temperature of 25°C for temperature measurement at the DC contacts

Dimensional drawing



Dimensional drawing

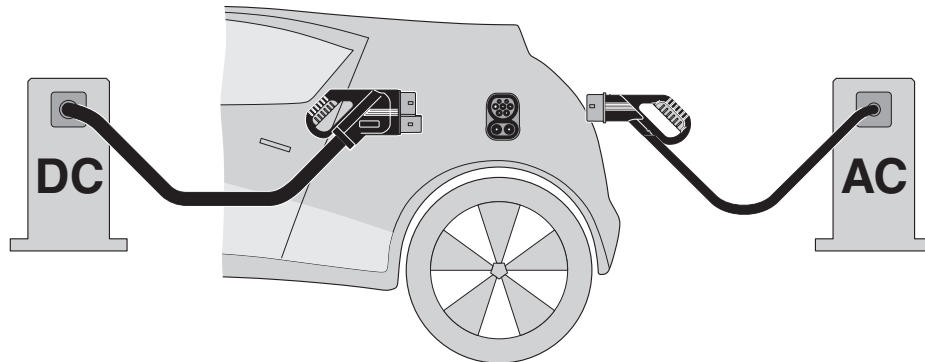
Schematic diagram



Temperature sensor technology resistance range at AC contacts

## Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

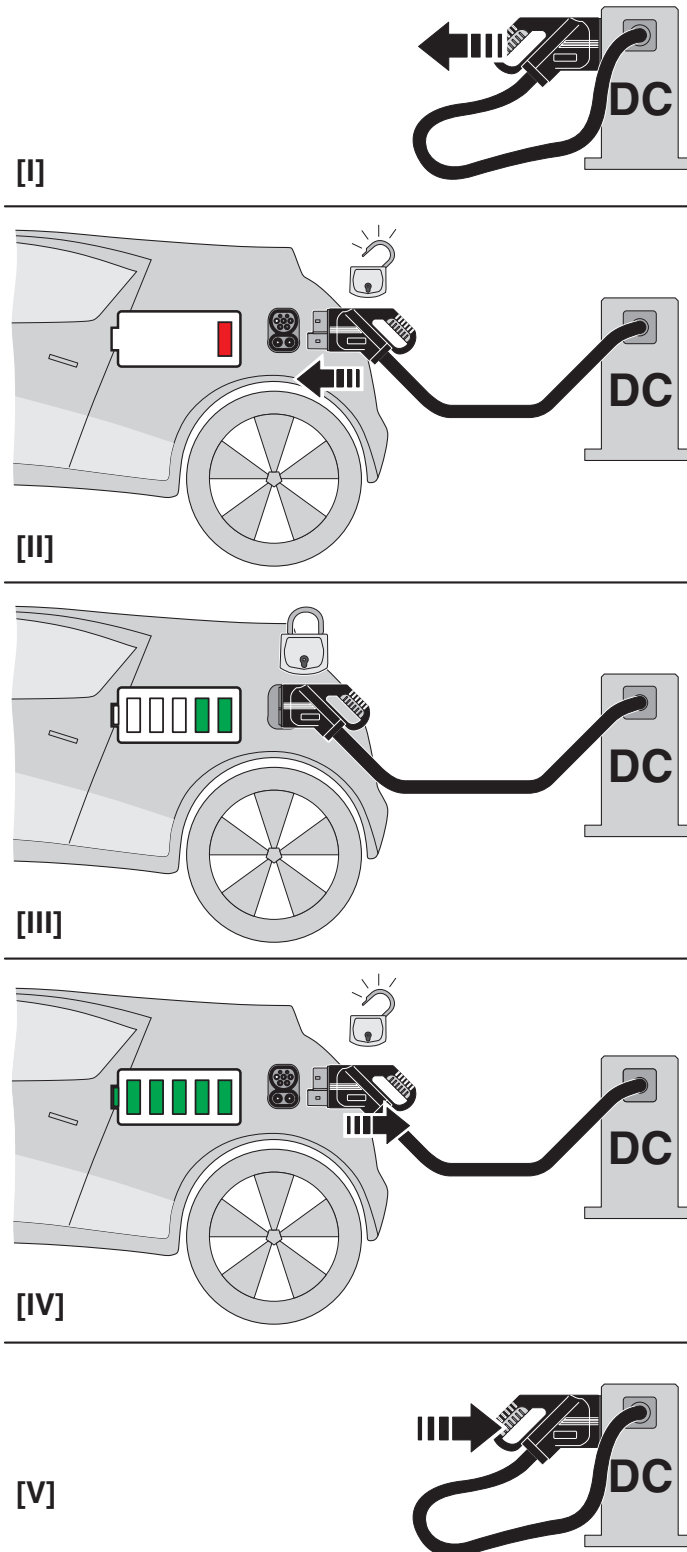
Schematic diagram



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.

## Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

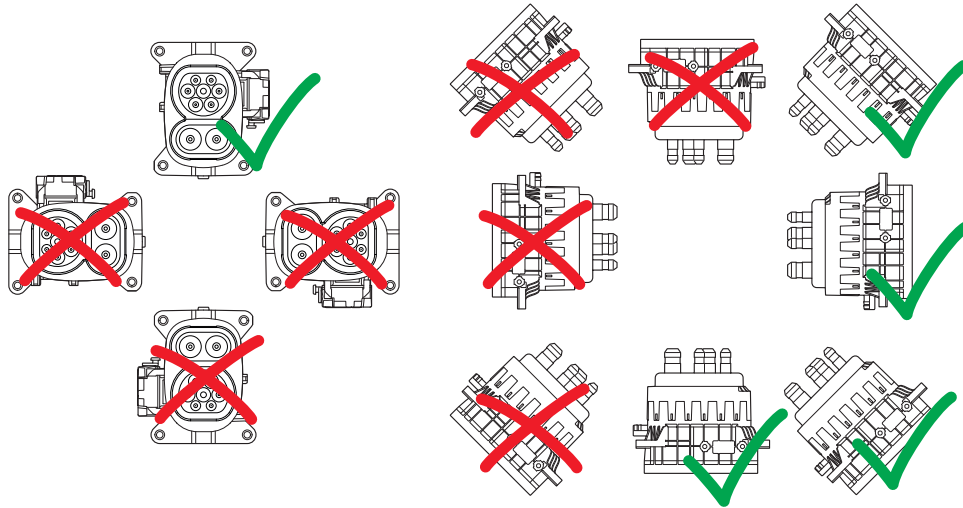
Schematic diagram





## Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

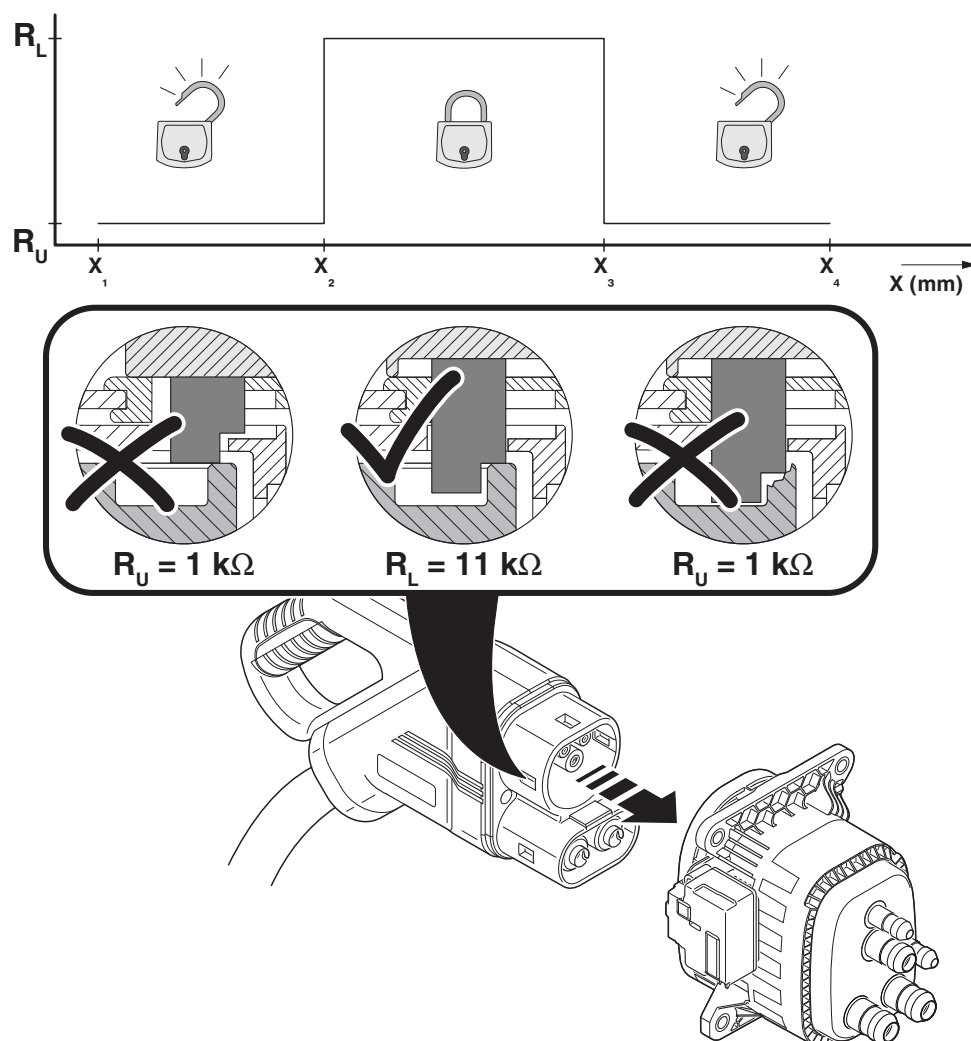
Connection diagram



Installation positions

## Vehicle charging inlet - CHARX T2HBI24-1AC32DC125-2,0M2 - 1211201

Connection diagram



Detection for Vehicle Connector

### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27144706 |
| eCl@ss 11.0   | 27144706 |
| eCl@ss 9.0    | 27144706 |