

# CHARX T1HBI12-1AC48DC250-8,0M1 - Vehicle charging inlet



1360822

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CHARX connect universal, AC/DC CCS Typ 1, Vehicle charging inlet, 250 A permanent, 1000 V DC, 48 A , 250 V AC, Single wires, length: 2 m, locking actuator: 12 V, 4-pos., Front and rear mounting, M6, housing: black, for charging with alternating current (AC) and with direct current (DC), IEC 62196-2, IEC 62196-3, A protective cap is supplied as standard for the DC and AC contacts.

## Product description

Vehicle charging inlet for charging with alternating current (AC) and direct current (DC), compatible with type 1 AC and 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                          | 1360822       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | EM01          |
| Product key                          | XWCAIB        |
| GTIN                                 | 4063151691745 |
| Weight per piece (including packing) | 24,600 g      |
| Weight per piece (excluding packing) | 206 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 and AC contacts. |
|---------|----------------------------------------------------------------------|

### Product properties

|                     |                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------|
| Product type        | Vehicle charging inlet                                                                                                |
| Product family      | CHARX connect universal                                                                                               |
| Technology          | Combined Charging System                                                                                              |
| Application         | for charging with alternating current (AC) and with direct current (DC)<br>for installation in electric vehicles (EV) |
| Charging standard   | AC/DC CCS Typ 1                                                                                                       |
| Charging mode       | Mode 2, 3, 4                                                                                                          |
| Customer variations | On request                                                                                                            |

### Electrical properties

|                               |                                          |
|-------------------------------|------------------------------------------|
| Note on the connection method | Crimp connection, cannot be disconnected |
| Temperature measurement       | DC contacts: 2x PT1000 (DIN EN 60751)    |
| Temperature monitoring        | AC contacts: PTC chain (DIN EN 60738-1)  |

#### Charging power and current (AC charging (1-phase))

|                          |                   |
|--------------------------|-------------------|
| Type of charging current | AC single-phase   |
| Charging current         | 48 A AC (1-phase) |
| Charging power           | 12 kW             |

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

|                          |          |
|--------------------------|----------|
| Type of charging current | DC       |
| Charging current         | 250 A DC |
| Charging power           | 250 kW   |

#### Pin assignment (Leistungskontakte)

|               |                         |
|---------------|-------------------------|
| Number        | 5 (L1, N, PE, DC+, DC-) |
| Rated voltage | 250 V AC<br>1000 V DC   |
| Rated current | 48 A AC<br>250 A DC     |

#### Pin assignment (Signalkontakte)

|                             |                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| Type of signal transmission | Pulse width modulation with modulated Powerline communication in accordance with ISO/IEC 15118 / DIN SPEC 70121 |
| Number                      | 2 (CP, CS)                                                                                                      |
| Rated voltage               | 30 V AC                                                                                                         |
| Rated current               | 2 A                                                                                                             |

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|                       |                                    |
|-----------------------|------------------------------------|
| Coding                | 2.7 k $\Omega$ (between PE and CS) |
| Insulation resistance | > 200 M $\Omega$                   |

## Locking actuator

|                                          |                                     |
|------------------------------------------|-------------------------------------|
| Locking actuator                         | 12 V, 4-pos.<br>Top center position |
| Possible power supply range at the motor | 9 V ... 16 V                        |
| Maximum voltage for locking detection    | 12 V                                |
| Typical motor current for locking        | 0.25 A                              |
| Reverse current of the motor             | max. 1.5 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)          | -40 °C ... 80 °C                    |

## Temperature sensors (PTC chain)

|                            |                                |
|----------------------------|--------------------------------|
| Sensor type                | PTC chain                      |
| Standards/regulations      | DIN EN 60738-1                 |
| Attachment point           | Sensor for the AC contacts     |
| Measuring range_resistance | 790 $\Omega$ ... 1420 $\Omega$ |
| Resistance                 | max. 1200 $\Omega$ $\pm$ 5 K   |
| Ambient temperature        | -40 °C ... 130 °C (Operation)  |

## 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

|        |          |
|--------|----------|
| Width  | 108 mm   |
| Height | 151.2 mm |
| Depth  | 122.8 mm |

### Bore dimensions

|        |          |
|--------|----------|
| Width  | 117.6 mm |
| Height | 90 mm    |
| Depth  | 117.6 mm |

## Material specifications

|                     |              |
|---------------------|--------------|
| Color (Housing)     | black (9005) |
| Color (Mating face) | black (9005) |

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|                            |         |
|----------------------------|---------|
| Material (Housing)         | Plastic |
| Material (Contact surface) | Silver  |

## Cable/line

|                            |                       |
|----------------------------|-----------------------|
| Cable length               | 2 m                   |
| Cable type                 | Single wires          |
| Single wire, cross section | 95.00 mm <sup>2</sup> |

### Single-core wires for AC

|                         |                       |
|-------------------------|-----------------------|
| Cable length            | 8 m                   |
| Cable structure         | 2 x 6 mm <sup>2</sup> |
| Single wire, material   | Silicone              |
| Single wire, color      | OG                    |
| External cable diameter | 12.60 mm ±0.2 mm      |
| Cable resistance        | ≤ 3.2 Ω/km            |

### Single-core wires for DC

|                         |                        |
|-------------------------|------------------------|
| Cable length            | 8 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            | 8 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            | 1.5 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 PTC temperature sensors

|                         |                         |
|-------------------------|-------------------------|
| Cable length            | 1 m                     |
| Cable structure         | 5 x 0,5 mm <sup>2</sup> |
| Single wire, color      | BN/GY                   |
|                         | BN/YE/GN                |
| External cable diameter | 1.60 mm ±0.20 mm        |

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|                  |            |
|------------------|------------|
| Cable resistance | ≤ 37.1 Ω/m |
|------------------|------------|

## Single-core wires for Pt 1000 temperature sensors

|                         |                         |
|-------------------------|-------------------------|
| Cable length            | 0.9 m                   |
| Cable structure         | 3 x 0.5 mm <sup>2</sup> |
| Single wire, material   | PVC                     |
| Single wire, color      | BN                      |
|                         | GN                      |
|                         | 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                      |
|                         | WH                      |
| External cable diameter | 1.60 mm ±0.20 mm        |
| Cable resistance        | ≤ 37.1 Ω/m              |

## Mechanical properties

### Mechanical data

|                             |         |
|-----------------------------|---------|
| 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) |
|                                               | 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 |
|                       | IEC 62196-3 |
|                       | SAE J1772   |

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## 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                                                                  |

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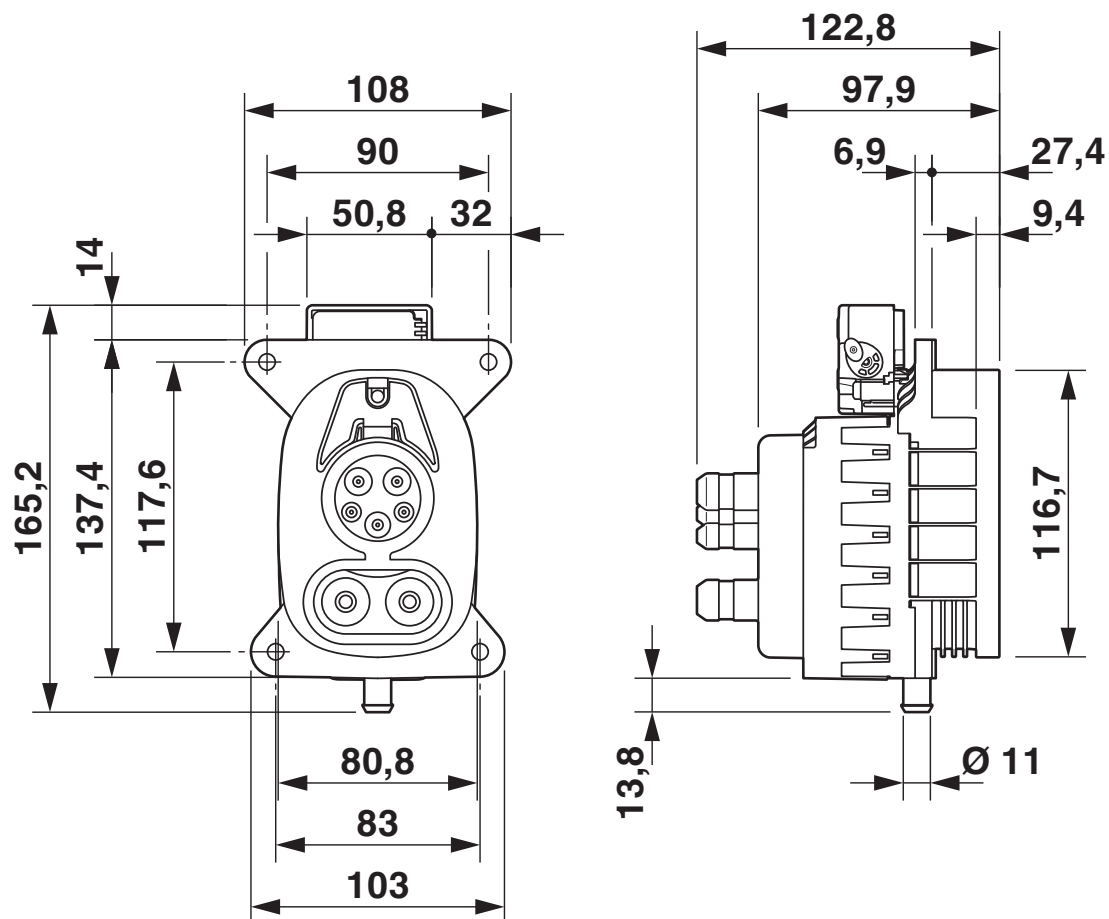


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## Drawings

Dimensional drawing



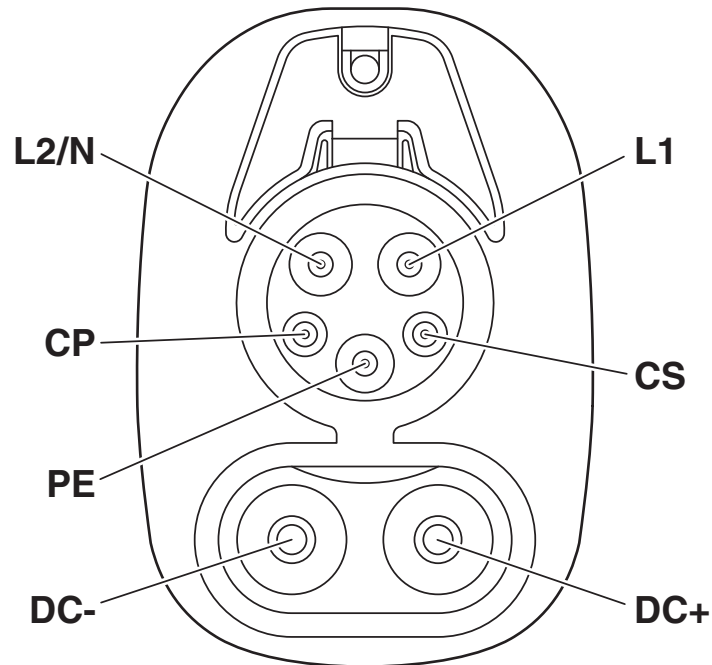
Dimensional drawing

# CHARX T1HBI12-1AC48DC250-8,0M1 - Vehicle charging inlet

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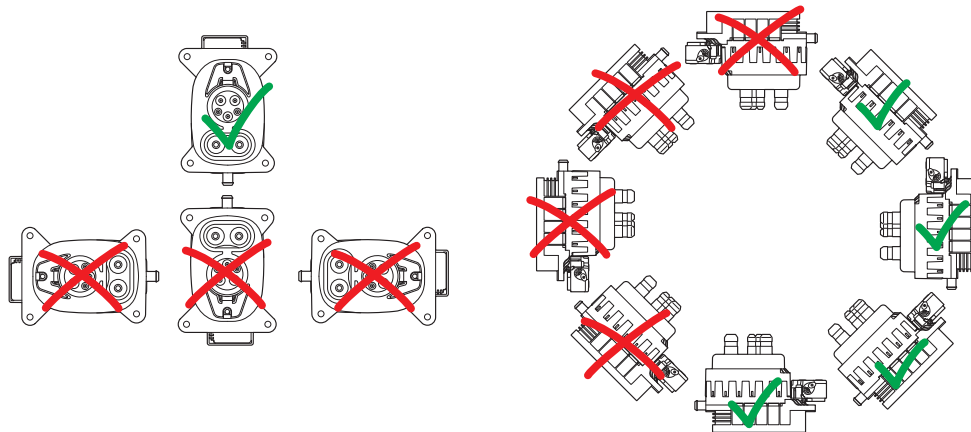
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Connection diagram



Pin assignment of vehicle charging inlets

Connection diagram

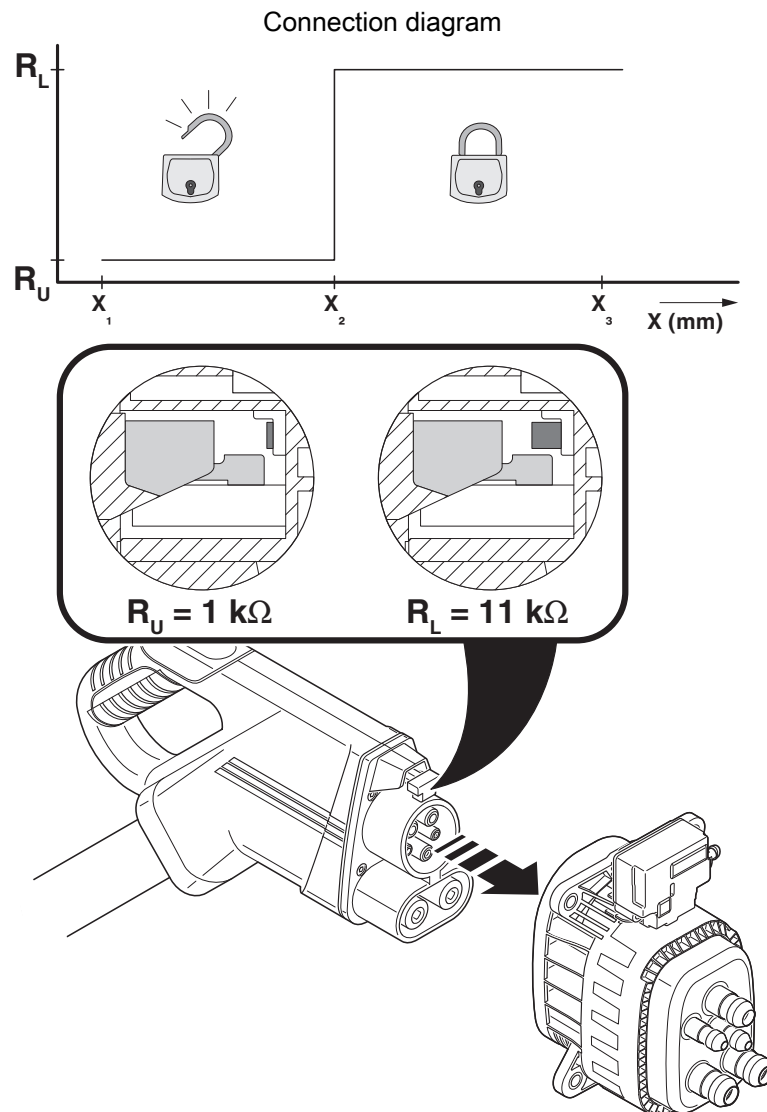


Installation positions

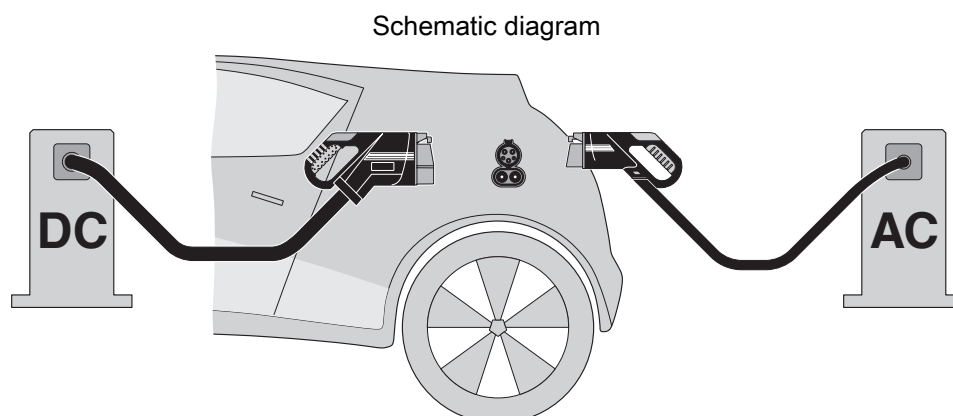
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Detection for Vehicle Connector



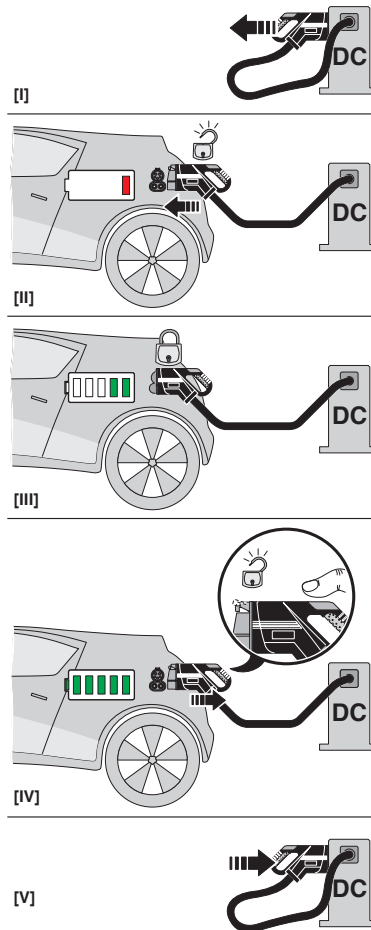
The Combined Charging System (CCS) principle - standard-compliant charging system for electric vehicles, which supports both conventional AC charging and fast DC charging. Both Vehicle Connectors fit into the CCS Vehicle Inlet.

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## Schematic diagram



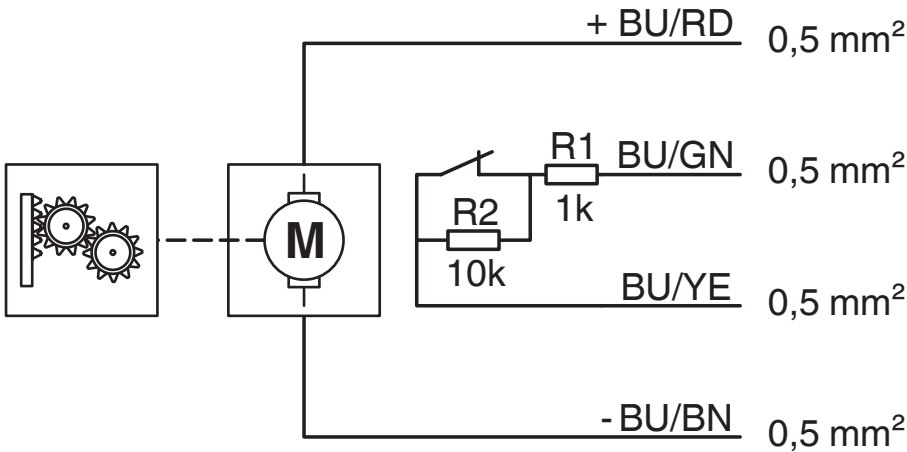
## Operating instructions

# CHARX T1HBI12-1AC48DC250-8,0M1 - Vehicle charging inlet



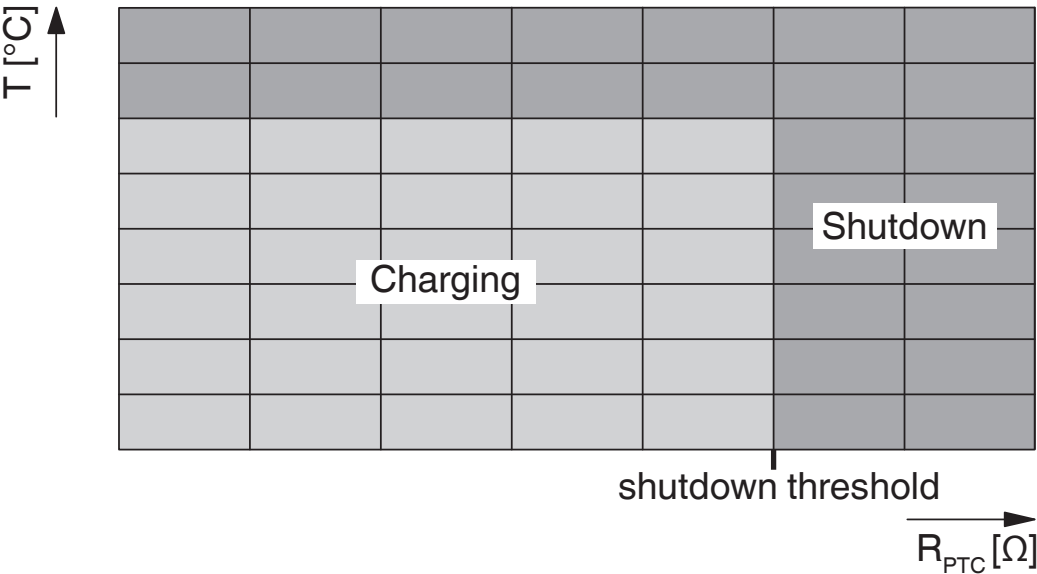
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Schematic diagram



Block diagram of the locking actuator

Schematic diagram



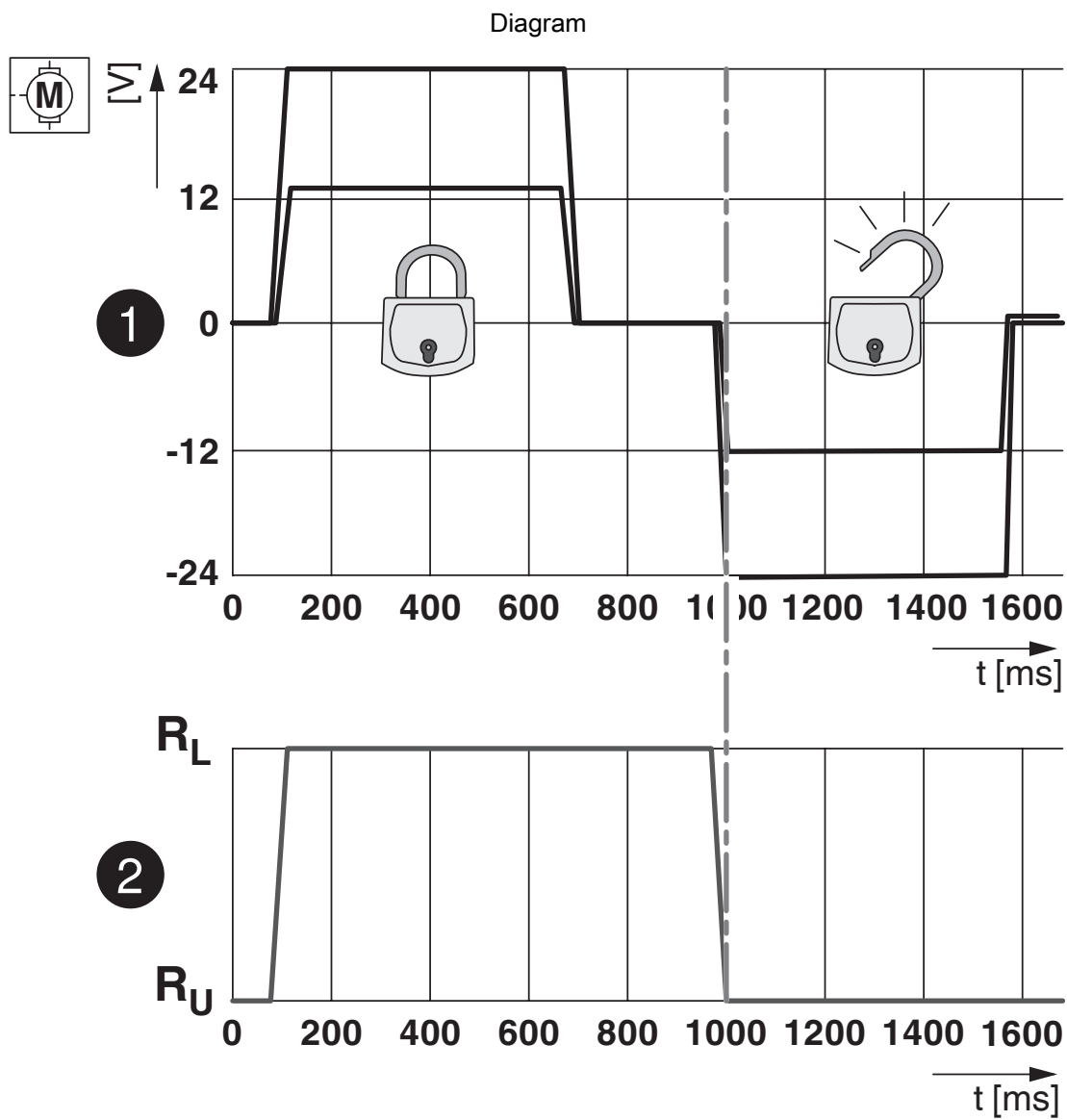
Temperature sensor technology resistance range at AC contacts

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Locking states of the locking actuator

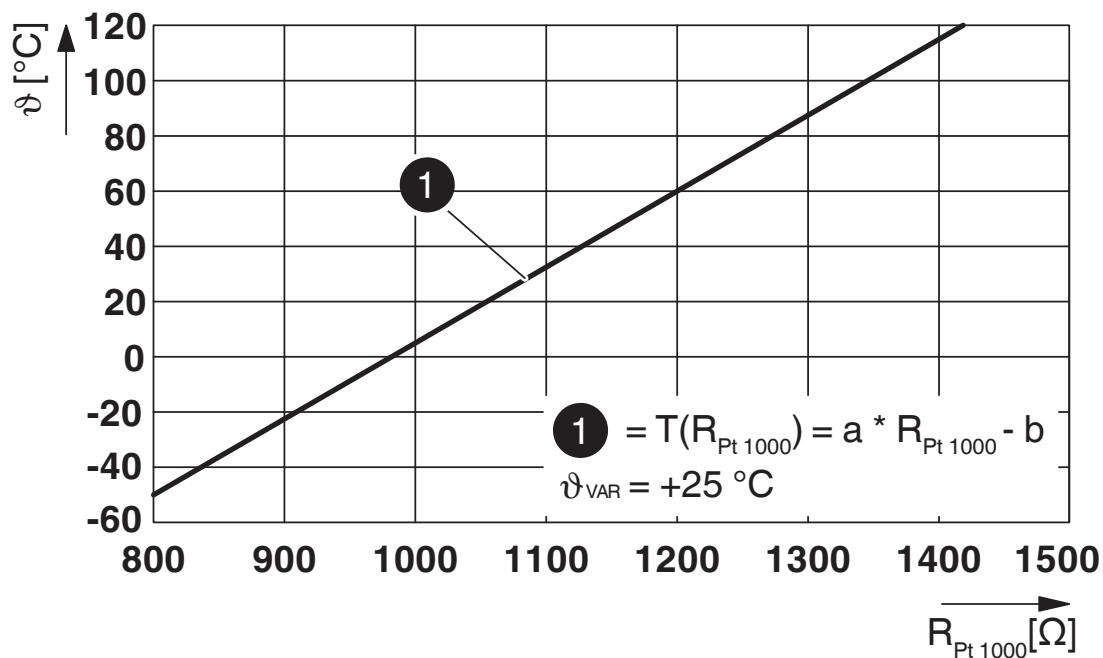
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Diagram



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

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## Approvals

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**cULus Recognized**

Approval ID: E473195-20210730

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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)                                                                                    |
|                                     | Bis(2-(2-methoxyethoxy)ethyl)ether(CAS: 143-24-8)                                                       |
|                                     | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)                                             |
| SCIP                                | d56130c1-5e53-466e-97a1-8bc8e7c23564                                                                    |

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