

# CHARX T2HBI24-3AC32DC200-5,0M2 - Vehicle charging inlet



1427757

<https://www.phoenixcontact.com/us/products/1427757>

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## Product description

Vehicle charging inlet for charging with alternating current (AC) and direct current (DC), compatible with type 2 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                          | 1427757       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | EM01          |
| Product key                          | XWCAID        |
| GTIN                                 | 4063151789404 |
| Weight per piece (including packing) | 14,070 g      |
| Weight per piece (excluding packing) | 1,407 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 2                                                                                                       |
| 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 (3-phase))

|                          |                   |
|--------------------------|-------------------|
| Type of charging current | AC 3-phase        |
| Charging current         | 32 A AC (3-phase) |
| Charging power           | 26 kW             |

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

|                          |          |
|--------------------------|----------|
| Type of charging current | DC       |
| Charging current         | 200 A DC |
| Charging power           | 200 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 (Leistungskontakte)

|               |                                 |
|---------------|---------------------------------|
| Number        | 7 (L1, L2, L3, N, PE, DC+, DC-) |
| Rated voltage | 480 V AC<br>1000 V DC           |

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|               |                         |
|---------------|-------------------------|
| Rated current | 32 A AC                 |
|               | 200 A DC (DC+, DC-, PE) |

## 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, 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.        |
|                                          | 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)          | -40 °C ... 40 °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. 1280 $\Omega$ $\pm$ 5 K        |
| Recommended measured current | $\leq$ 1 mA ( $U_{\max}$ = 16 V DC) |
| 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 | 140.25 mm |

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|       |          |
|-------|----------|
| Depth | 128.4 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               | 5 m                   |
| Cable type                 | Single wires          |
| Single wire, cross section | 70.00 mm <sup>2</sup> |

### Single-core wires for AC

|                         |                       |
|-------------------------|-----------------------|
| Cable length            | 5 m                   |
| Cable structure         | 4 x 6 mm <sup>2</sup> |
| Single wire, material   | Silicone              |
| Single wire, color      | OG                    |
| External cable diameter | 14.70 mm ±0.2 mm      |
| Cable resistance        | ≤ 3.2 Ω/km            |

### Single-core wires for DC

|                         |                        |
|-------------------------|------------------------|
| Cable length            | 5 m                    |
| Cable structure         | 2 x 70 mm <sup>2</sup> |
| Single wire, material   | Silicone               |
| Single wire, color      | OG                     |
| External cable diameter | 17.90 mm ±0.3 mm       |
| Cable resistance        | ≤ 0.259 Ω/km           |

### Single-core wire for PE

|                         |                        |
|-------------------------|------------------------|
| Cable length            | 5 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                     |

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|                         |                            |
|-------------------------|----------------------------|
| Single wire, color      | BU/RD, BU/GN, BU/YE, BU/BN |
| External cable diameter | 1.60 mm $\pm$ 0.20 mm      |
| Cable resistance        | $\leq$ 37.1 $\Omega$ /m    |

## Single-core wires for PTC temperature sensors

|                         |                         |
|-------------------------|-------------------------|
| Cable length            | 1 m                     |
| Cable structure         | 2 x 0.5 mm <sup>2</sup> |
| Single wire, material   | PVC                     |
| Single wire, color      | BN/GY<br>BN/YE/GN       |
| External cable diameter | 1.60 mm $\pm$ 0.20 mm   |
| Cable resistance        | $\leq$ 37.1 $\Omega$ /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 $\pm$ 0.20 mm   |
| Cable resistance        | $\leq$ 37.1 $\Omega$ /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 $\pm$ 0.20 mm   |
| Cable resistance        | $\leq$ 37.1 $\Omega$ /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)                                                                                                                                                                    |

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

## 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                                                                  |

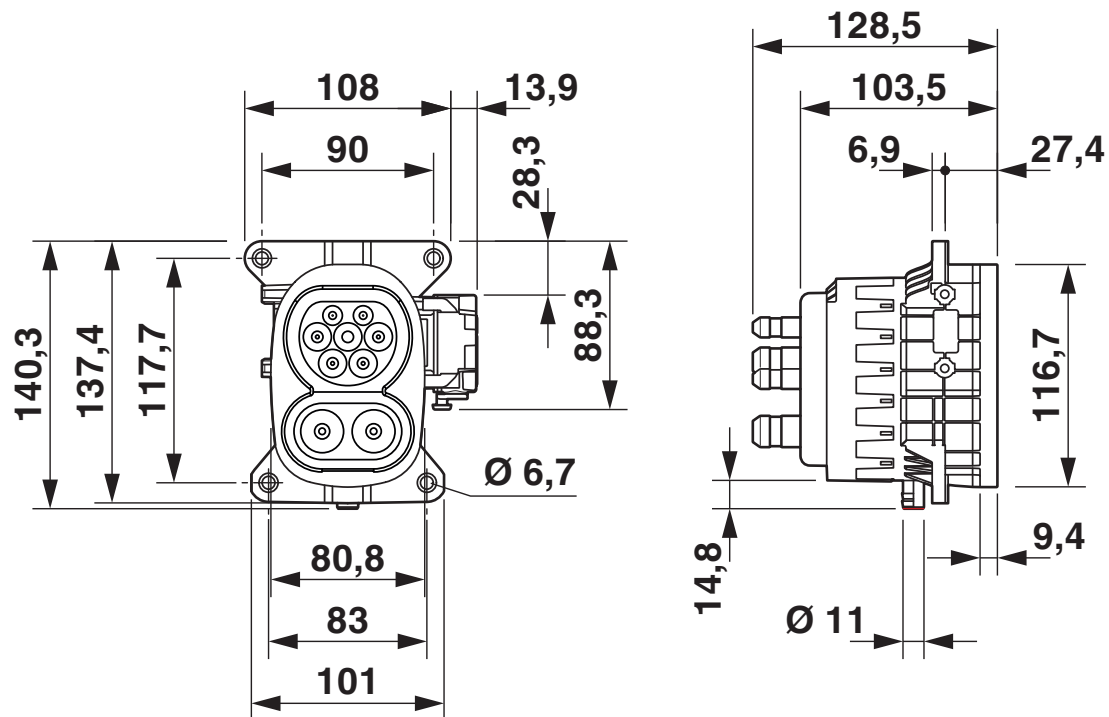
# CHARX T2HBI24-3AC32DC200-5,0M2 - Vehicle charging inlet

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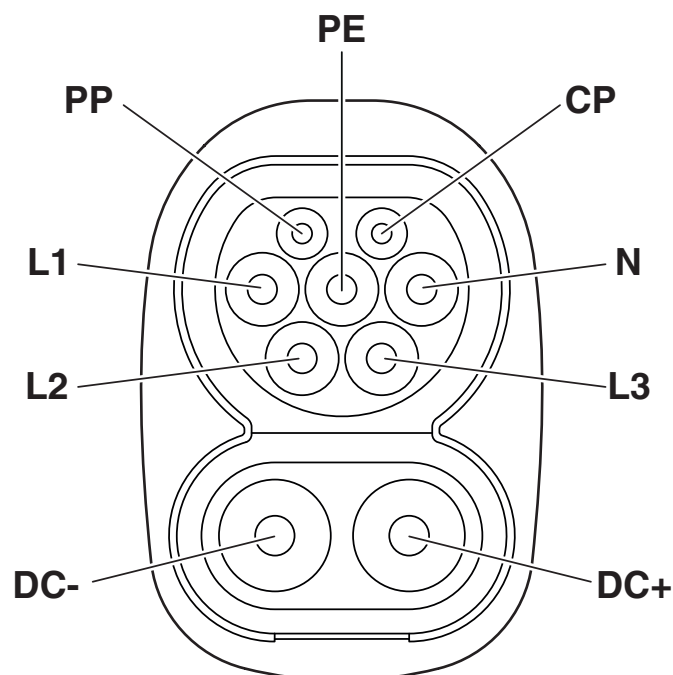
## Drawings

Dimensional drawing



Dimensional drawing

Connection diagram



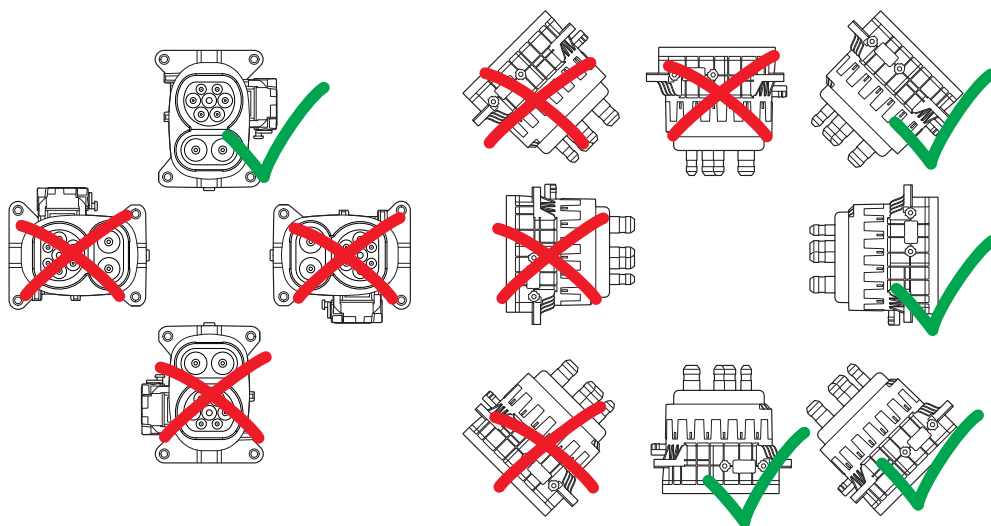
Pin assignment of vehicle charging inlets

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Connection diagram

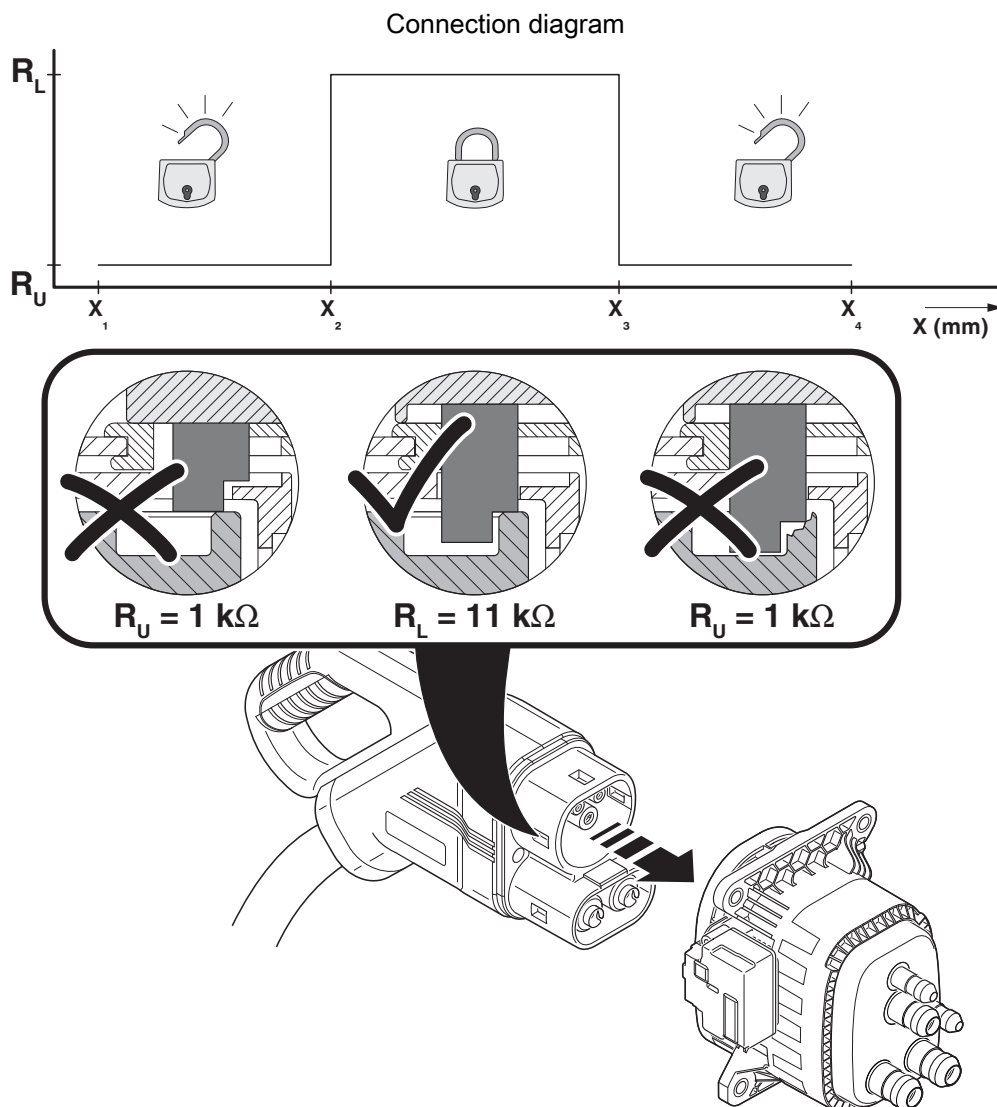


Installation positions

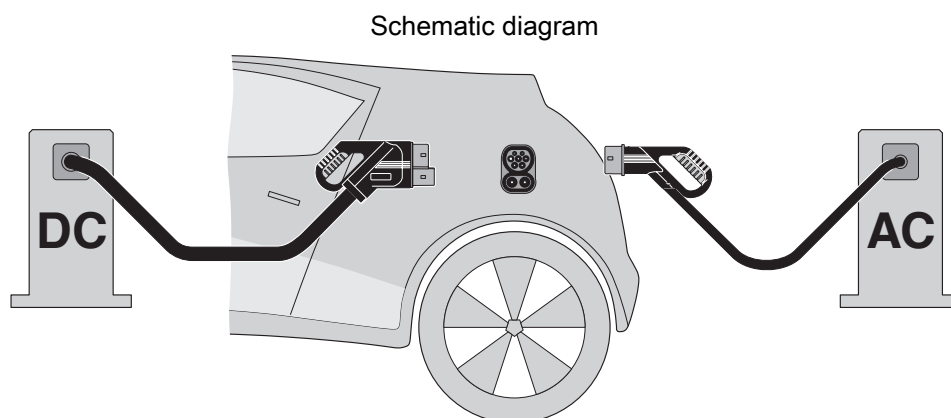
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Detection for Vehicle Connector



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



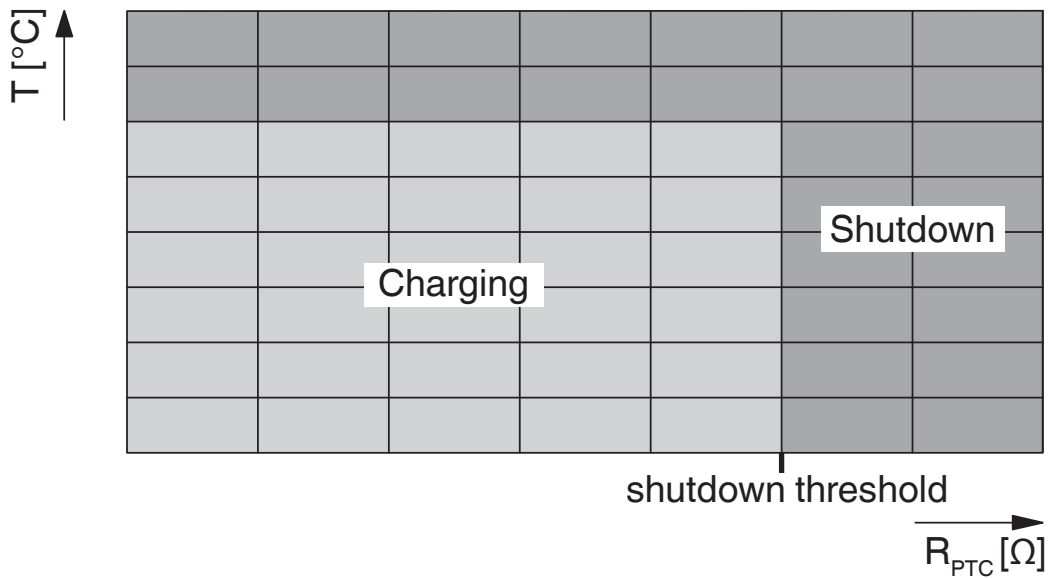
Operating instructions

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Schematic diagram



Temperature sensor technology resistance range at AC contacts

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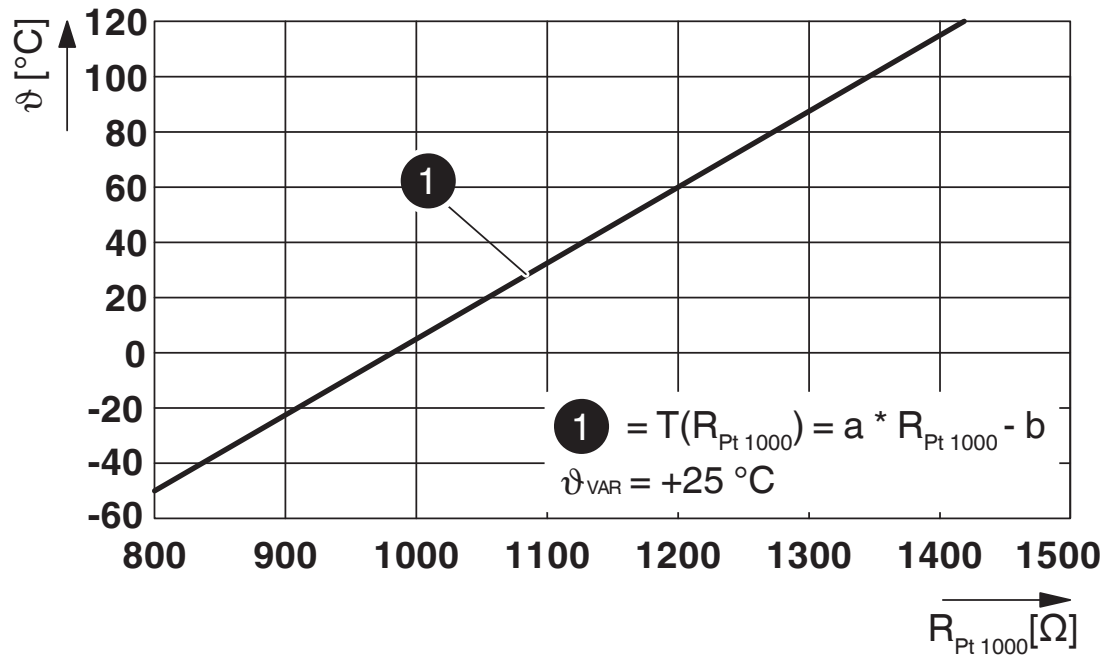
Locking states of the locking actuator

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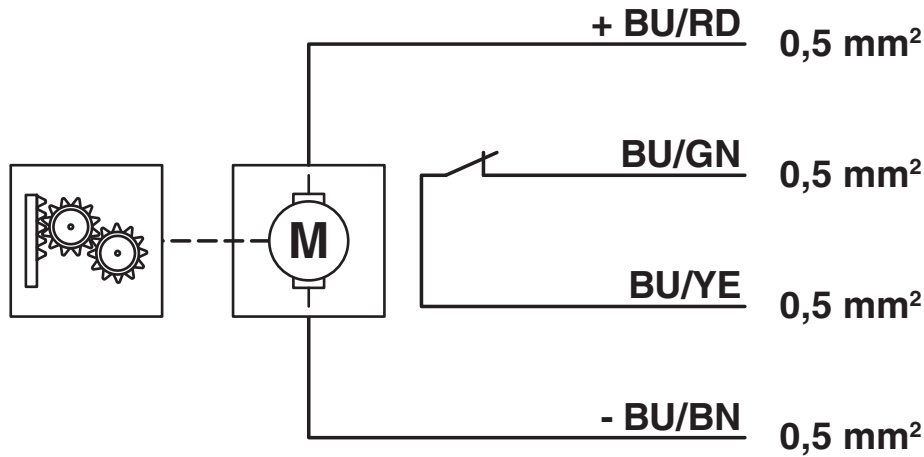
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Diagram



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 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)                                                                                                                                                                                                              |
|                                         | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)                                                                                                                                                                       |
| SCIP                                    | 8dbcad3d-063d-4904-8da7-9d518dc633c2                                                                                                                                                                                              |

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