

# Vehicle charging inlet - CHARX T1HBI12-1AC80DC250-2,0M1



1162163

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CHARX connect, Vehicle charging inlet, for charging with alternating current (AC) and with direct current (DC), CCS type 1, IEC 62196-2, IEC 62196-3, 250 A / 1000 V (DC), 80 A / 250 V (AC), length: 2 m (AC cables), locking actuator: 12 V, 4-pos., Front and rear mounting, M6, X-Line, 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 for electromobility (EV).

## Commercial Data

Item number	1162163
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	A17
Product Key	XWCAIB
GTIN	4063151172114
Weight per Piece (including packing)	7.33 kg
Weight per Piece (excluding packing)	7.23 kg
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.
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### Product properties

Product type	Vehicle charging inlet
Application	for charging with alternating current (AC) and with direct current (DC)
	for installation in electric vehicles (EV)
	Combined Charging System
Locking type	Locking in the inserted state with a locking mechanism
Charging standard	CCS type 1
Charging mode	Mode 2, 3, 4

### 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	> 200 MΩ
Coding	2.7 kΩ (between PE and CS)
Temperature measurement	DC contacts: 2x PT1000 (DIN EN 60751)
Temperature monitoring	AC contacts: PTC chain (DIN EN 60738-1)
Type of charging current	AC single-phase
Charging power	20 kW
Charging current	80 A
Type of charging current	DC
Charging power	250 kW
Charging current	250 A

### Power contact

Number	5 (L1, N, PE, DC+, DC-)
Rated voltage	250 V AC
	1000 V DC
Rated current	80 A AC
	250 A DC

### Signal contact

Number	2 (CP, CS)
Rated voltage	30 V AC
Rated current	2 A

### Temperature sensors

Sensor type	PTC chain
Standards/regulations	DIN EN 60738-1

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Recommended measured current	$\leq 1 \text{ mA}$ ( $U_{\text{max}} = 16 \text{ V DC}$ )
Tolerance at the sensor with the recommended measured current	$\pm 5 \text{ K}$
Temperature range	$-40 \text{ }^{\circ}\text{C} \dots 130 \text{ }^{\circ}\text{C}$

## Locking actuator

Operating voltage	12 V
Note number of positions	4-pos.
Position of the locking actuator	top center

## Locking actuator

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
Ambient temperature (operation)	$-40 \text{ }^{\circ}\text{C} \dots 80 \text{ }^{\circ}\text{C}$
Cable length	1 m
Cable structure	4 x 0.5 mm <sup>2</sup>
Lock recognition	available
Mechanical emergency release	available

## Dimensions

Dimensional drawing	<p>The drawing shows two views of the vehicle charging inlet. The front view (left) shows a rectangular unit with a width of 108 mm and a height of 151.2 mm. The side view (right) shows a depth of 122.8 mm. Other dimensions include 117.6 mm for the main body width, 90 mm for the top section width, 50.8 mm for the top section depth, 32 mm for the top section width, 14 mm for the top section height, 165.2 mm for the total height, 137.4 mm for the main body height, 117.6 mm for the main body width, 80.8 mm for the bottom section width, 83 mm for the bottom section depth, 103 mm for the bottom section width, 122.8 mm for the total depth, 97.9 mm for the main body depth, 6.9 mm for the top section depth, 27.4 mm for the top section height, 8.4 mm for the top section depth, 116.7 mm for the main body depth, 13.9 mm for the bottom section depth, and Ø 11 for the bottom section diameter.</p>
Width	108 mm
Height	151.2 mm
Depth	122.8 mm
Bore dimensions	117.6 mm x 90 mm, 117.6 mm x 83 mm

## Material specifications

Material	Plastic
	Silver

## Connector

Insertion/withdrawal cycles	> 10000
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## Cable / line

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Cable 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)

## AC cable

Cable weight	approx. 226 kg/km
Conductor structure	2 x 16 mm <sup>2</sup>
External cable diameter	9.9 mm ±0.3 mm
Outer sheath, material	Silicone
External sheath, color	orange
Conductor resistance	≤ 1.16 Ω/km

## DC cable

Cable weight	approx. 1150 kg/km
Conductor structure	2 x 95 mm <sup>2</sup>
External cable diameter	20.6 mm ±0.3 mm
Outer sheath, material	Silicone
External sheath, color	orange
Conductor resistance	≤ 0.196 Ω/km

## PE cable

Cable weight	approx. 251 kg/km
Conductor structure	1 x 25 mm <sup>2</sup>
External cable diameter	8.6 mm ±0.1 mm
Outer sheath, material	Silicone
External sheath, color	green-yellow
Conductor resistance	≤ 0.743 Ω/km

## Locking actuator cable

Cable weight	7 kg/km
Conductor structure	4 x 0.5 mm <sup>2</sup>
External cable diameter	1.6 mm -0.2 mm
Outer sheath, material	PVC
Conductor resistance	≤ 37.1 Ω/km

## Temperature sensor technology cable

Cable weight	7 kg/km
Conductor structure	5 x 0.5 mm <sup>2</sup>
External cable diameter	1.6 mm -0.2 mm
Outer sheath, material	PVC
Conductor resistance	≤ 37.1 Ω/km
Ambient temperature (operation)	-40 °C ... 130 °C

## Communication cable

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Cable weight	7 kg/km
Conductor structure	0.5 mm <sup>2</sup> + 0.5 mm <sup>2</sup>
External cable diameter	1.6 mm -0.2 mm
Outer sheath, material	PVC
Conductor resistance	≤ 37.1 Ω/km
Single wire, cross section	6 mm <sup>2</sup>

## Mechanical properties

### Mechanical data

Insertion force	< 100 N
Withdrawal force	< 100 N

## Environmental and real-life conditions

### Ambient conditions

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)
	IP67 (Inner area of vehicle charging inlet)
Altitude	4000 m (above sea level)

## Standards and regulations

### Standards

Standards/regulations	IEC 62196-2
	IEC 62196-3
	SAE J1772

## 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

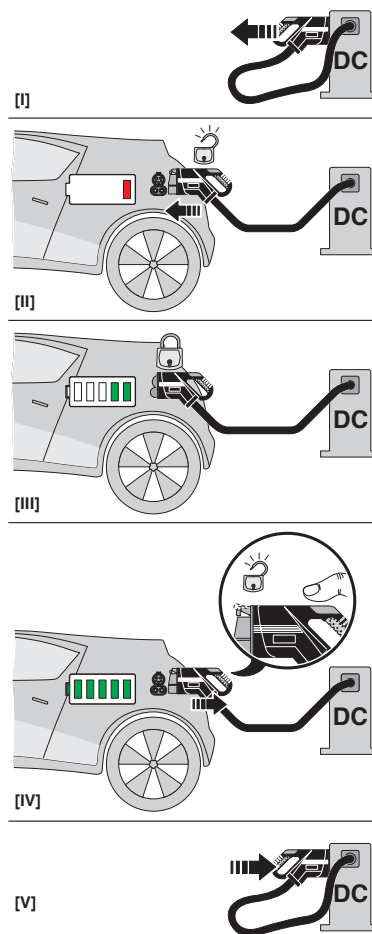
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## Drawings

Schematic diagram



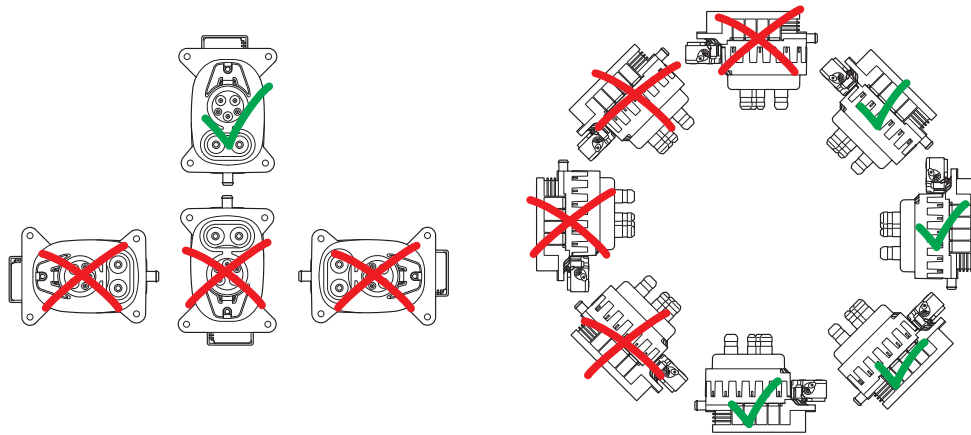
## Operating instructions

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Connection diagram



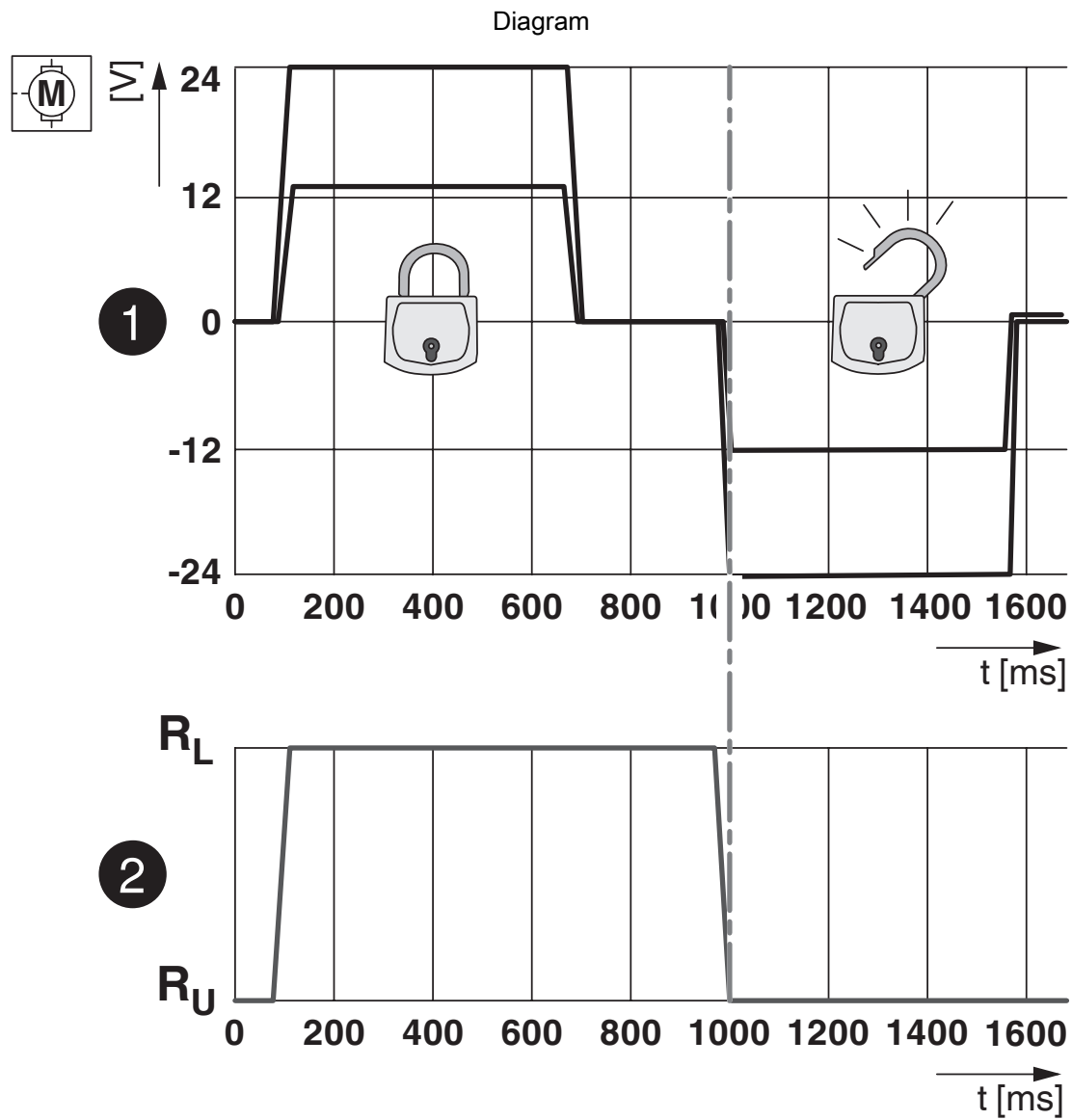
Installation positions

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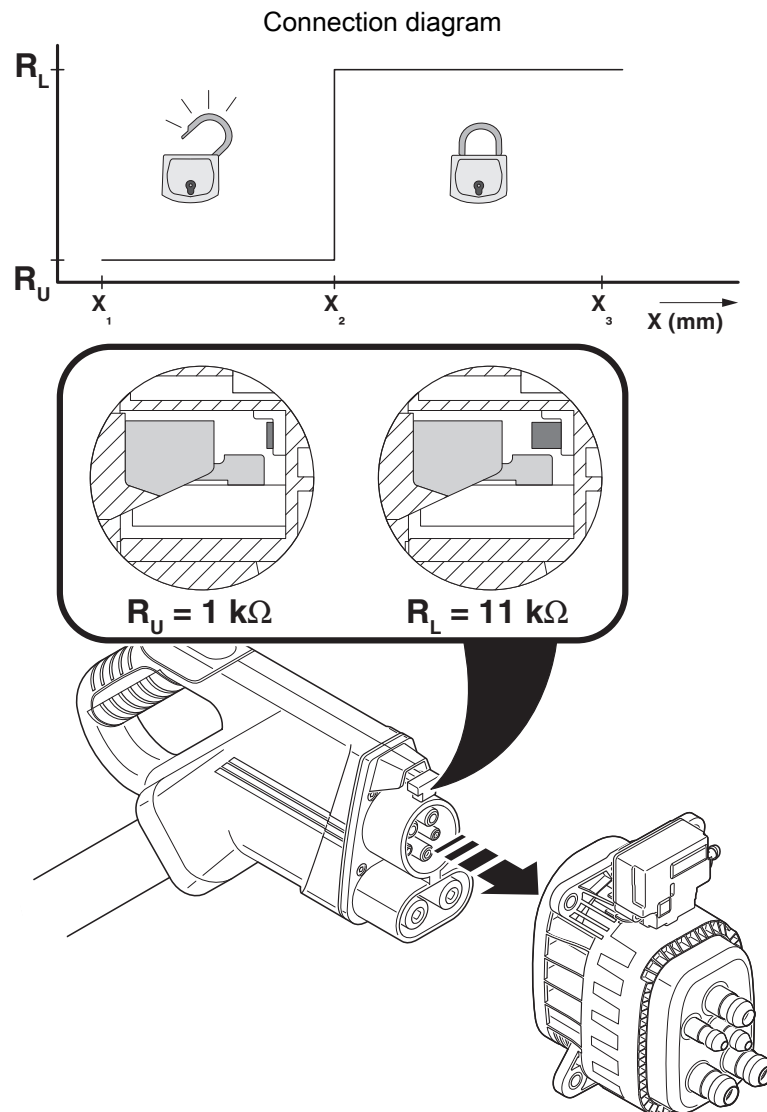
Locking states of the locking actuator



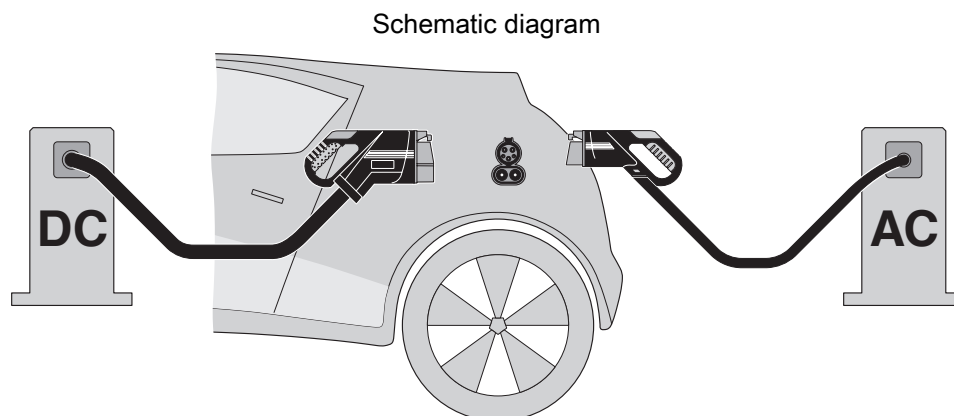
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Detection for Vehicle Connector



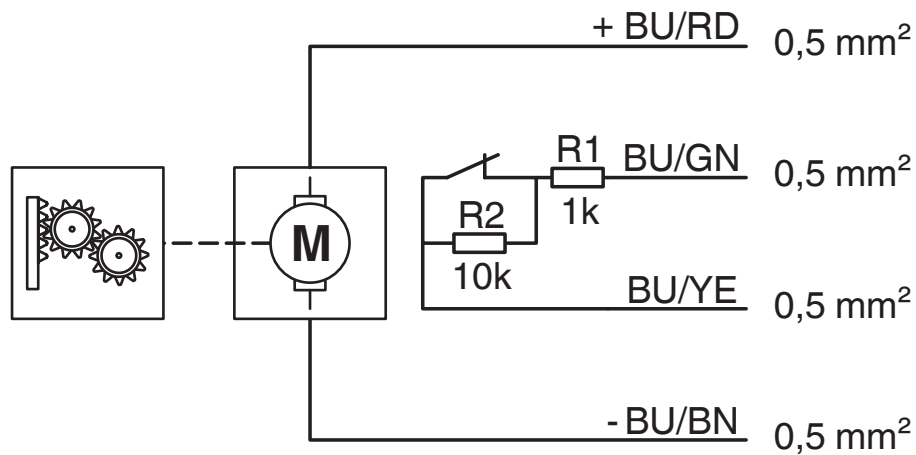
The Combined Charging System (CCS) principle - standard-compliant charging system for electric vehicles, which supports both conventional AC charging and fast DC charging. Both Vehicle Connectors fit into the CCS Vehicle Inlet.

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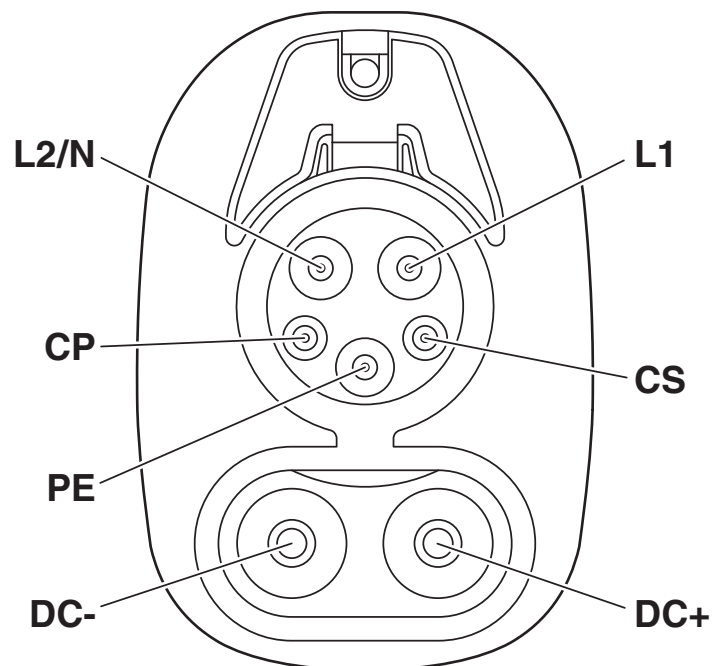
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Schematic diagram



Block diagram of the locking actuator

Connection diagram



Pin assignment of vehicle charging inlets

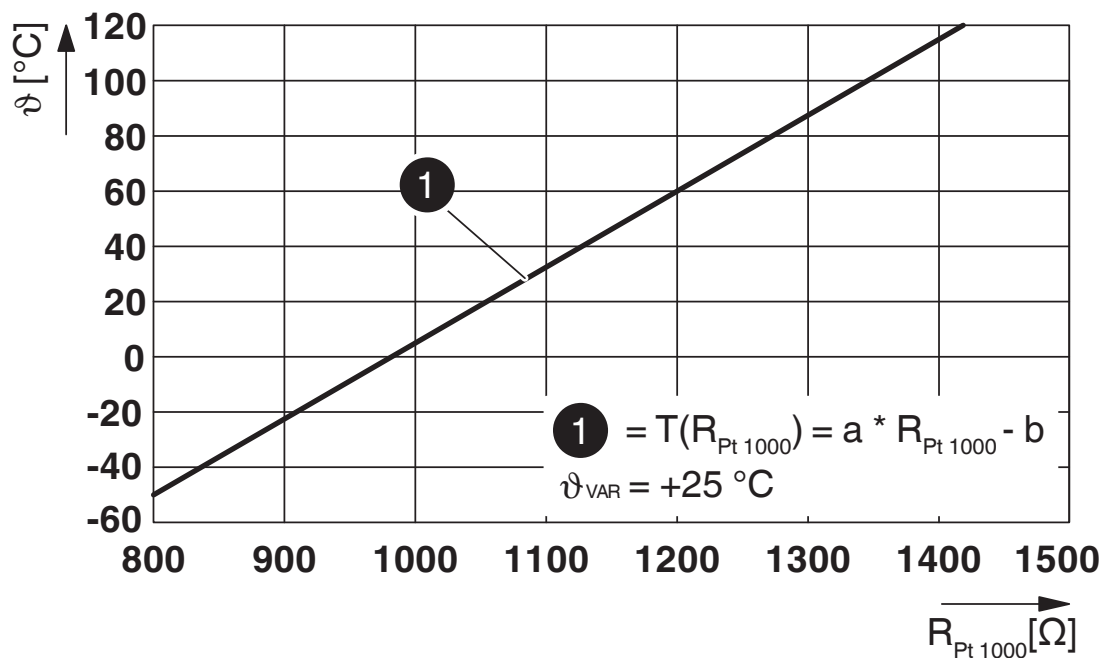
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Diagram



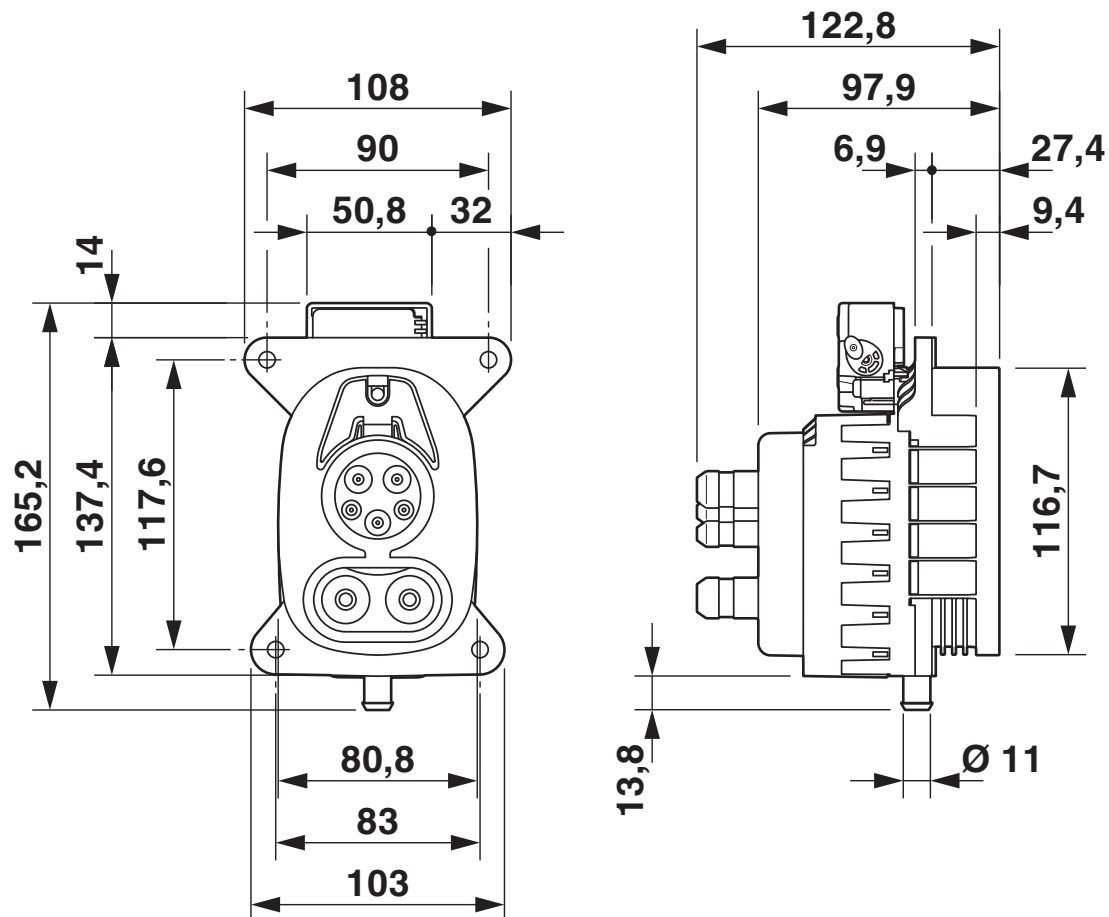
Pt 1000 characteristic curve at an ambient temperature of 25°C for temperature measurement at the DC contacts

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Dimensional drawing



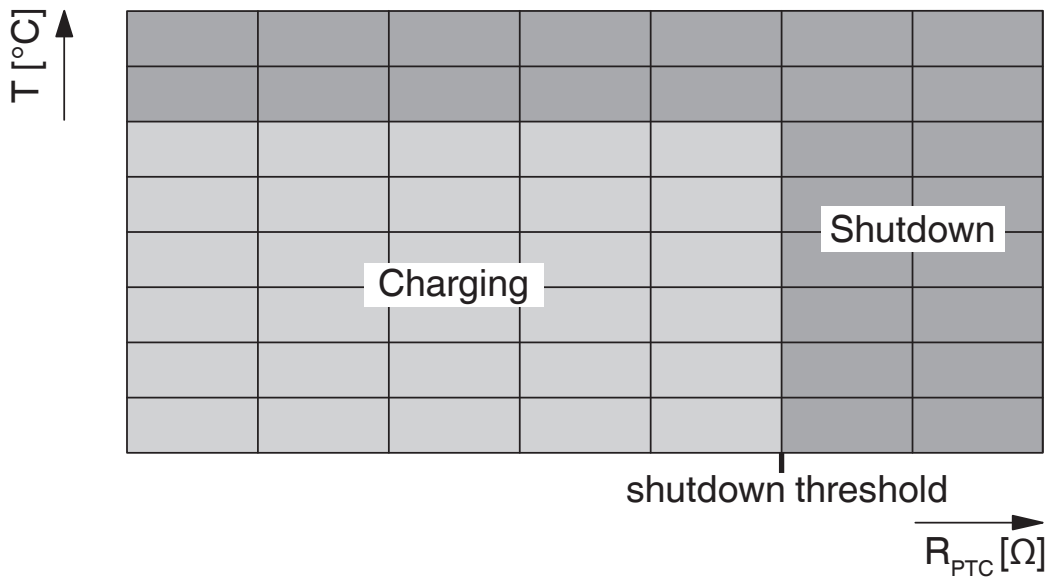
Dimensional drawing

Vehicle charging inlet - CHARX T1HBI12-1AC80DC250-2,0M1



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Schematic diagram



Temperature sensor technology resistance range at AC contacts

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## Approvals



**cULus Recognized**

Approval ID: E473195-20210730

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## Classifications

### ECLASS

ECLASS-9.0	27144706
ECLASS-10.0.1	27144706
ECLASS-11.0	27144706

### ETIM

ETIM 8.0	EC002898
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### UNSPSC

UNSPSC 21.0	39121800
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
	Dechlorane Plus

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