



# Technical Specification of CCS Type 2 DC80A-500A Charging Inlet

(Compliant with IEC62196-3-2022)

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2023.12

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## Change History

DATE	Chap.	Content Before Change	Content After Change
Oct. 28, 2022			Update file template
Apr. 4, 2023			New specifications 80A/125A/150A/300A Add new installation panel;
May 31, 2023			Added instructions for use, installation & maintenance
July 13, 2023			Add 500A specification
Oct. 13, 2023			Added G004:B full DC model
Dec. 15, 2023		The operation temperature is -30~+50	The operation temperature is -30 ~ +40℃

**Note:** Changes to this specification will not be notified to customers as long as they do not reduce product performance or change product status.

Customers will not be notified when the following changes are involved:

- 1) Product models are added, and the original model products remain unchanged;
- 2) Changes to the explanatory text in the specifications will not affect product use, product assembly etc.
- 3) Changes when the promised technical parameters of the product are increased and the promised performance is improved.

## 1. Product Details



Type A: Front Installation



Type B: Rear Installation

The CCS2 DC charging socket is installed on electric vehicles and realizes the charging function by cooperating with the CCS Type 2 charging gun. The product meets IEC 62196-3-2022, standard interface 3-IVa, and complies with RoHS2.0 requirements.

### Model Naming:

Series	SCZ	SCZ	-	200A	-	1000V	-	EU	G001
Separator									
Rated current: 80A, 125A, 150A, 200A, 250A, 300A, 400A, 500A									
Separator									
Rated voltage: 1000V									
Separator									
EU: European Standard									
Modification <b>Default</b> : Type A pure DC; <b>G001</b> : Type A with AC 3-phase 32A; <b>G002</b> : Type B with AC 3-phase 32A; <b>G004</b> : Type B pure DC									

### Available models:

NO.	MODEL	Part No.	DESCRIPTION
1	SCZ-200A-1000V-EU	21G0-00062-A	200A DC charging socket (Type A)
2	SCZ-250A-1000V-EU	21G0-00062-D	250A DC charging socket (Type A)
3	SCZ-300A-1000V-EU	21G0-00062-E	300A DC charging socket (Type A)
4	SCZ-400A-1000V-EU	21G0-00062-F	400A DC charging socket (Type A)
5	SCZ-500A-1000V-EU	21G0-00062-G	500A DC charging socket (Type A)
6	SCZ-200A-1000V-EU G001	21G0-00168-A	200A DC and 32A AC integrated charging socket (Type A)
7	SCZ-250A-1000V-EU G001	21G0-00168-B	250A DC and 32A AC integrated charging socket (Type A)
8	SCZ-300A-1000V-EU G001	21G0-00168-C	300A DC and 32A AC integrated charging socket (Type A)
9	SCZ-150A-1000V-EU G001	21G0-00168-D	150A DC and 32A AC integrated charging socket (Type A)
10	SCZ-125A-1000V-EU G001	21G0-00168-E	125A DC and 32A AC integrated charging socket (Type A)
11	SCZ-80A-1000V-EU G001	21G0-00168-F	80A DC and 32A AC integrated charging socket (Type A)
12	SCZ-400A-1000V-EU G001	21G0-00168-G	400A DC and 32A AC integrated charging socket (Type A)
13	SCZ-500A-1000V-EU G001	21G0-00168-Q	500A DC and 32A AC integrated charging socket (Type A)
14	SCZ-200A-1000V-EU G002	21G0-00205-A	200A DC and 32A AC integrated charging socket (Type B)
15	SCZ-250A-1000V-EU G002	21G0-00205-B	250A DC and 32A AC integrated charging socket (Type B)
16	SCZ-300A-1000V-EU G002	21G0-00205-C	300A DC and 32A AC integrated charging socket (Type B)
17	SCZ-150A-1000V-EU G002	21G0-00205-D	150A DC and 32A AC integrated charging socket (Type B)
18	SCZ-125A-1000V-EU G002	21G0-00205-E	125A DC and 32A AC integrated charging socket (Type B)

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19	SCZ-80A-1000V-EU G002	21G0-00205-F	80A DC and 32A AC integrated charging socket (Type B)
20	SCZ-400A-1000V-EU G002	21G0-00205-G	400A DC and 32A AC integrated charging socket (Type B)
21	SCZ-500A-1000V-EU G002	21G0-00205-Q	500A DC and 32A AC integrated charging socket (Type B)
22	SCZ-80A-1000V-EU G004	21G0-00205-R	80A DC charging socket (Type B)
23	SCZ-125A-1000V-EU G004	21G0-00205-S	125A DC charging socket (Type B)
24	SCZ-150A-1000V-EU G004	21G0-00205-T	150A DC charging socket (Type B)
25	SCZ-200A-1000V-EU G004	21G0-00205-U	200A DC charging socket (Type B)
26	SCZ-250A-1000V-EU G004	21G0-00205-W	150A DC charging socket (Type B)
27	SCZ-300A-1000V-EU G004	21G0-00205-X	300A DC charging socket (Type B)
28	SCZ-400A-1000V-EU G004	21G0-00205-Y	400A DC charging socket (Type B)
29	SCZ-500A-1000V-EU G004	21G0-00205-Z	500A DC charging socket (Type B)

## 2. Related Wire Cross Sections

No.	Description	Cable cross sections	Cable cross sections
1	DC+, DC-	80A/ 16mm <sup>2</sup> 125A/35mm <sup>2</sup> 150A/50mm <sup>2</sup> 200A/70mm <sup>2</sup> 250A/95mm <sup>2</sup> 300A/95mm <sup>2</sup> 400A/120mm <sup>2</sup> 500A/140mm <sup>2</sup>	16mm <sup>2</sup> - inner insulation O.D.: 8.0±0.2 25mm <sup>2</sup> - insulation O.D.: 10.0±0.2 35mm <sup>2</sup> - insulation O.D.: 11±0.2 50mm <sup>2</sup> - insulation O.D.: 13±0.2 70mm <sup>2</sup> - insulation O.D.: 15±0.2 95mm <sup>2</sup> - insulation O.D.: 17.3±0.3 120mm <sup>2</sup> - insulation O.D.: 19±0.3 140mm <sup>2</sup> - insulation O.D.: 19±0.3
2	PE	25mm <sup>2</sup>	Insulation O.D.: 9.6±0.3
3	L1、L2、L3、N	6mm <sup>2</sup>	Insulation O.D.: 4.7±0.2
4	PP/CP	0.75mm <sup>2</sup>	Insulation O.D.: 1.75±0.1
5	DC+ Temp1	0.5mm <sup>2</sup>	Insulation O.D.: 1.6±0.1
6	DC- Temp2	0.5mm <sup>2</sup>	Insulation O.D.: 1.6±0.1
7	L1 Temp3	0.5mm <sup>2</sup>	Insulation O.D.: 1.6±0.1
8	Locking Actuator	0.5mm <sup>2</sup>	Insulation O.D.: 1.6±0.1

## 3. Product performance

Mechanical Performance	
Mechanical life	10000 cycles
Mechanical vibration shock	GB/T2323.10-2008 Test Fc and guidance: Vibration 10Hz~25Hz 1.2mm 25Hz~500Hz 30m/s <sup>2</sup>
Electrical Performance	
Rated Current	DC+/DC-:80A, 125A, 150A, 200A, 250A, 300A, 400A, 500A; L1/L2/L3/N: 32A; PP/CP: 2A
Rated Voltage	DC+/DC-:1000V DC; L1/L2/L3/N:480V AC; PP/CP 30V DC
Withstand Voltage	Between DC+, DC- and PE: 3000V AC (at room temperature); Between DC+, DC-, PE and other terminals: 3000V AC (at room temperature); Between L1, L2, L3, N and PE: 2000V AC (at room temperature); Between PP and CP: 500V AC (at room temperature)

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Insulation resistance	1000V DC, ≥5000M (normal temperature and humidity); ≥100M (hot and humid state)
Terminal temp. rise	<50K
Environmental Performance	
Protective level	IP44(mated)
Operating temp.	-30℃~+40℃
Salt spray	96H
Main Materials	
Housing	PA
Insulation	PA
Sealing	Silicone rubber
Contact parts	Copper alloy

**Note:** The charging socket complies with the standard IEC62196-3-2022, and a charging gun that complies with the IEC62196 standard must be used for plugging.

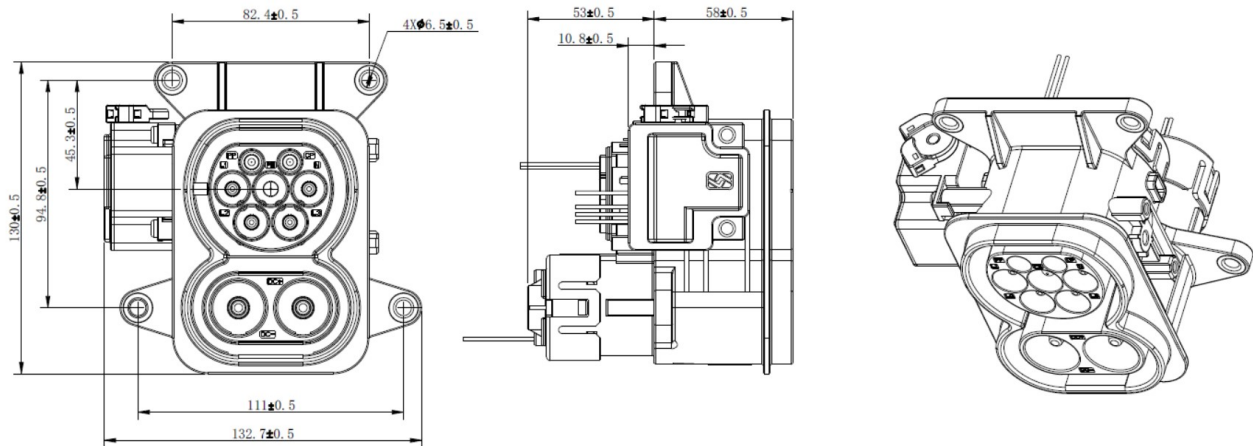
#### 4. Wire Cross Sections Table (unit: mm<sup>2</sup>)

Item	AC32A	DC 500A	DC 400A	DC 300A	DC 250A	DC 200A	DC 150A	DC 125A	DC 80A	Color
L1	6									Orange
L2	6									Orange
L3	6									Orange
N	6									Orange
L1	T3+ 0.5									White
L1	T3- 0.5									White
PE		25	25	25	25	25	25	25	25	Yellow green
CP		0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	Black
PP		0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	Red
DC+		140	120	95	95	70	50	35	16	Orange
DC-		140	120	95	95	70	50	35	16	Orange
DC+ T1+		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Red
DC+ T1-		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Red
DC- T2+		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	White
DC- T2-		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	White

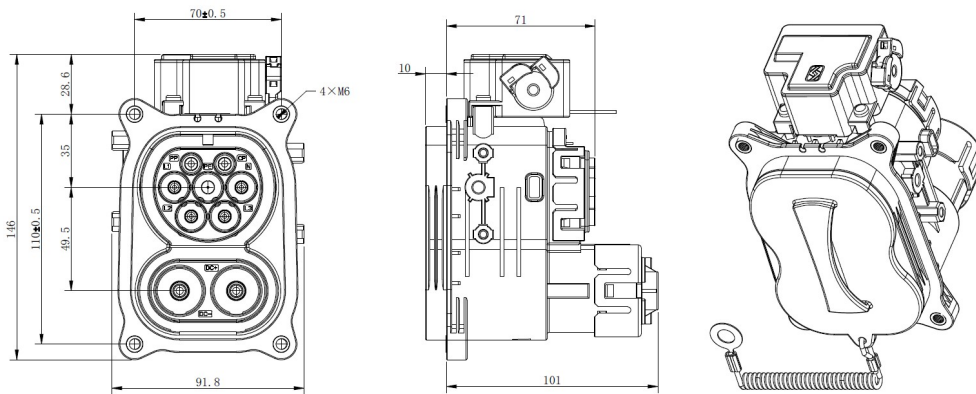
Note: Customers can match the DC part and AC part according to their needs. The default temperature sensing line is PT1000.

## 5. Product dimensions

### 5.1 Front installation---Type A

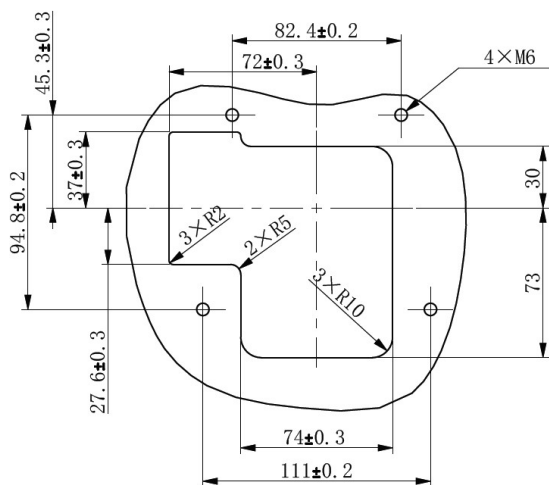


### 5.2 Rear-installation---Type B

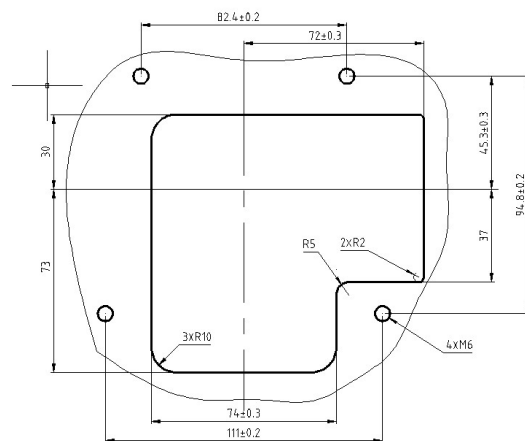


## 6. Installation space

6.1 Socket A adopts the front installation method, and the opening dimensions of the installation panel are as follows:



Electronic lock installed on the left



Install electronic lock on the right side

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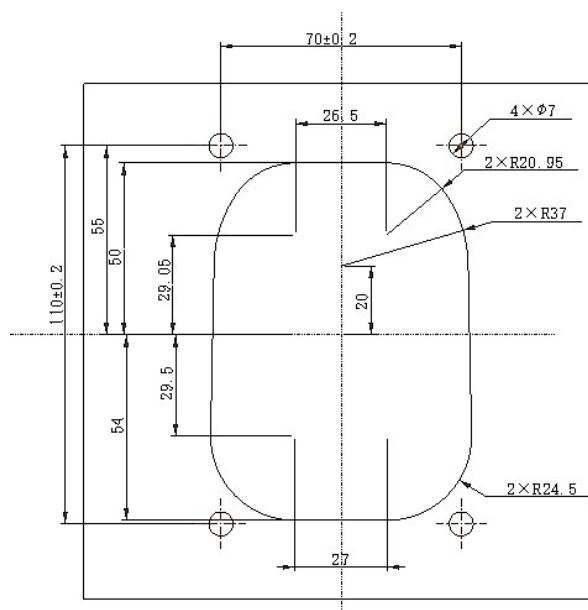
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6.2 Socket B type adopts the rear installation method, and the opening dimensions of the installation panel are as follows:



## 7. Temperature sensor

### 7.1 PT1000 temperature sensor (default)

#### 7.1.1 Installation location

AC part: 1 temperature sensor is installed at the L1 terminal

DC part: 2 temperature sensors are installed at the DC+/DC- terminals respectively

#### 7.1.2 PT1000 temperature sensor parameters

Items	Parameters
Rated Current	≤0.3mA
Insulation Resistance	≥100M (100V DC)
Withstand Voltage	3000V AC (60s)
Flammability rating	UL94 V-0

#### 7.1.3 Precautions

Recommended temperature control method: limit the charging current when the temperature approaches 90°C, and stop charging when the temperature reaches 90°C.

Reason for request: IEC62196 stipulates that the operating temperature of charging products is -30~+40, and the maximum temperature rise of the terminal is 50K. When the temperature approaches 90°C, the charging current should be reduced to avoid continued temperature rise. To prevent the internal components and cables of charging products from aging at high temperatures, the charger should stop charging when the temperature reaches 90°C.

#### 7.1.4 Correspondence table between temperature value and resistance value of PT1000 temperature sensor

See attachment 1

## 7.2 NTC 10K temperature sensor (optional)

### 7.2.1 Installation location

AC part: 1 temperature sensor is installed at the L1 terminal

DC part: 2 temperature sensors are installed at the DC+/DC- terminals respectively

### 7.2.2 NTC temperature sensor parameters

Items	Parameters
Rated Current	$\leq 2\text{mA}$
Insulation Resistance	$\geq 100\text{M}$ (100V DC)
Withstand Voltage	3000V AC (60s)
Flammability rating	UL94 V-0

### 7.2.3 Precautions

Recommended temperature control method: limit the charging current when the temperature reaches 100°C, and stop charging when the temperature reaches 120°C.

Reason for request: IEC62196 stipulates that the operating temperature of charging products is -30~+40, and the maximum temperature rise of the terminal is 50K. When the temperature approaches 90°C, the charging current should be reduced to avoid continued temperature rise. To prevent the internal components and cables of charging products from aging at high temperatures, the charger should stop charging when the temperature reaches 90°C.

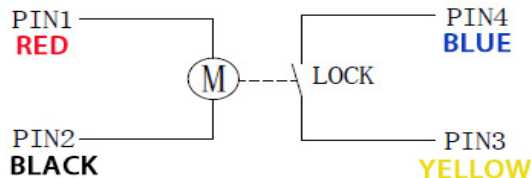
### 7.2.4 Correspondence table between temperature value and resistance value of NTC temperature sensor

See attachment 2

## 8. Electronic lock

### 8.1 24V 4-wire electronic lock---switch type (A type)

The electronic lock is driven by a motor and uses a microswitch as a position signal feedback device. It is connected to the external control circuit through PIN1, PIN2, PIN3, and PIN4 to realize locking, unlocking and signal feedback of the electronic lock.

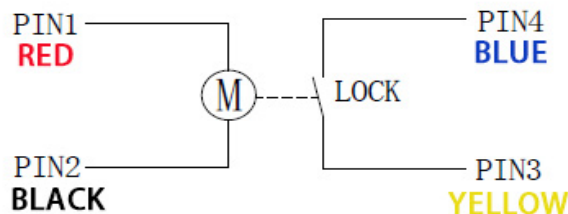


Motor power terminal status		Signal feedback switch status	Electronic lock status
PIN1	PIN2	PIN3-PIN4	
+24VDC	0VDC	Conduction	Locked
0VDC	+24VDC	Disconnect	Unlock

### 8.2 12V 4-wire electronic lock---switch type (Type B)

The electronic lock is driven by a motor and uses a microswitch as a position signal feedback device. It is connected to the external control circuit through PIN1, PIN2, PIN3, and PIN4 to realize locking, unlocking and signal feedback of the electronic lock.

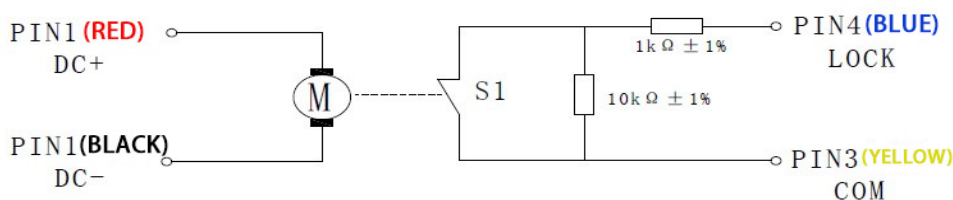




Motor power terminal status		Signal feedback switch status	Electronic lock status
PIN1	PIN2	PIN3-PIN4	
+12VDC	0VDC	Conduction	Locked
0VDC	+12VDC	Disconnect	Unlock

### 8.3 12V 4-wire electronic lock---resistive type (C type)

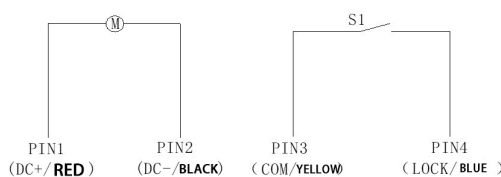
The electronic lock is driven by a motor and uses a microswitch as a position signal feedback device. It is connected to the external control circuit through PIN1, PIN2, PIN3, and PIN4 to realize locking, unlocking and signal feedback of the electronic lock.



Motor power terminal status		Signal feedback switch status	Electronic lock status
PIN1	PIN2	PIN3-PIN4	
+12VDC	0VDC	S1 disconnected, R=11k	Locked
0VDC	+12VDC	S1 closed, R=1k	Unlock

### 8.4 12V electronic lock---switch type (type D)

The electronic lock is driven by a motor and uses a microswitch as a position signal feedback device. It is connected to the external control circuit through PIN1, PIN2, PIN3, and PIN4 to realize locking, unlocking and signal feedback of the electronic lock.



Motor power terminal status		Signal feedback switch status	Electronic lock status
PIN1	PIN2	PIN3-PIN4	
+12VDC	0VDC	Disconnect	Locked
0VDC	+12VDC	Conduction	Unlock

### 8.5 Specific parameters of electronic locks

See attachment 3

## 9. Precautions

### 9.1 Precautions during installation

Vehicle sockets must comply with the generally applicable safety precautions and the following instructions:

- Vehicle sockets are only allowed to be installed and maintained by electrical professionals.
- It is prohibited to damage the vehicle socket or disassemble it.
- Make sure that the vehicle plug cannot be loosened and cannot be pulled out while the vehicle socket is still energized. Never plug or unplug the vehicle while there is a live load.
- Before using the vehicle socket, it must be properly installed and debugged on the electric vehicle. Before commissioning, electric vehicle manufacturers must ensure that the charging process can be switched off in the event of a malfunction.
- Install the vehicle socket at the specified installation point on the body. We recommend using  $6\text{Nm} \pm 0.5\text{Nm}$  installation torque and M6 screws.

### 9.2 Precautions when using

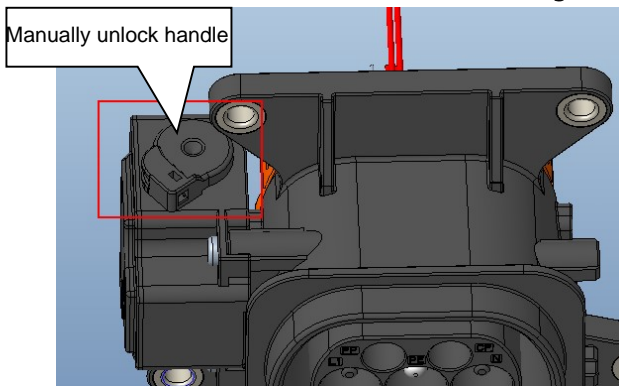
- All contacts of the vehicle socket are not replaceable, please pay attention to protection.
- When the vehicle socket is not in use, the supplied protective cover must be installed at all times to protect it from various environmental influences.
- Do not charge in places where it may be affected by rainfall or other water.
- The vehicle socket and its contacts must be checked for damage and contamination before use.
- It is prohibited to use damaged charging sockets or charging cables for charging.
- Do not use dirty or wet contacts for charging.

### 9.3 End User Operations

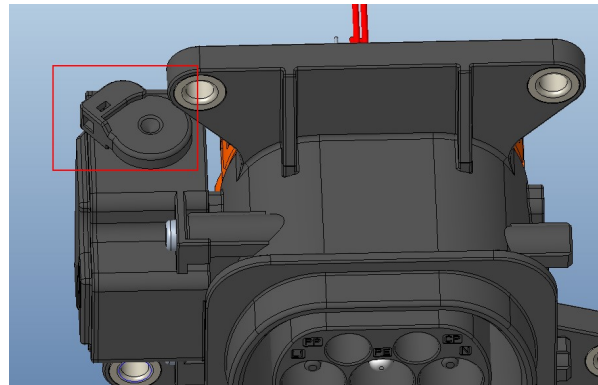
When charging, please follow the instructions for the charging station and electric vehicle:

- ① Turn off the car, remove the protective cover, and take out the vehicle plug from the security slot of the charging station;
- ② Insert the vehicle plug into the vehicle socket and check whether the vehicle plug is correctly and safely inserted into place;
- ③ Start the charging process at the charging station. After receiving a signal from the charge controller, the vehicle's charge manager activates the vehicle socket's electronic lock to automatically lock the vehicle plug. When stopping the charging process, please follow the above safety precautions and the operating instructions of the charging station;
- ④ When the charging process is completed, you can unlock and disconnect the vehicle plug. Danger: Do not use force to pull out the vehicle plug under any circumstances. Dangerous arcs may cause injuries;
- ⑤ Insert the vehicle plug into the slot of the charging station and immediately cover the socket protective cover.

## 9.4 Measures for abnormal handling of electronic lock not unlocking after charging



locked status



Unlocked status

**Note:** When the vehicle is charged and the electronic lock is not unlocked, do not pull out the gun violently to avoid damaging the electronic lock.

The electronic lock unlocking handle can be manually operated to unlock the vehicle plug (the operating force is preferably 5~10N). The position of the handle in the locked and unlocked states is shown in the figure above.

**Please take the following measures as a priority:**

- ① Straighten the charging gun and insert it all the way, and then try to see if it can be unlocked by cutting off the power at the charging pile end or the car end;
- ② If measure 1 does not solve the problem, please manually push the electronic lock unlocking handle from the locked position to the unlocked position, and then unplug the vehicle.

## 9.5 Cleaning

- Cleaning of the vehicle socket is only allowed when the charging cable is not connected.
- Please use a high-pressure air gun to blow away the floating dust on the interface of the vehicle socket. If conditions are not met, you can use a dry cloth to clean the dirty contacts.
- Do not use corrosive cleaners, water spray or steam jet cleaners when cleaning vehicle sockets.
- Do not immerse this product in liquid for cleaning.

## 9.6 Storage and maintenance

- Store vehicle sockets in a dry and clean location.
- It is recommended to set the electronic lock wiring to a separate electrical interface so that the electronic lock wiring harness can be replaced to facilitate later maintenance.
- When the charging socket wiring harness assembly is damaged, it cannot be repaired. It is recommended to replace the damaged product.