



Test Report issued under the responsibility of:



TEST REPORT
IEC 61851-23
Electric vehicle conductive charging system –
Part 23: DC electric vehicle charging station

Report Number.: **CN26WETG 001**

Date of issue: **2026-09-08**

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Name of Testing Laboratory preparing the Report.....: **TÜV Rheinland (Shanghai) Co., Ltd.**

Applicant's name.....: **JIANGXI RUIHUA INTELLIGENT TECHNOLOGY CO., LTD.**

Address: **Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City, Jiu jiang City, 332200 Jiangxi, P.R. China**

Test specification:

Standard: **IEC 61851-23:2014/COR1:2016 for use in conjunction with IEC 61851-1:2010**

Test procedure: **CB Scheme**

Non-standard test method.....: **N/A**

Test Report Form No.....: **IEC61851_23B**

Test Report Form(s) Originator.....: **TÜV SÜD Product Service Ltd.**

Master TRF: **2016-11**

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Test item description :	EV DC charging station	
Trade Mark :		
Manufacturer	Same as applicant	
Model/Type reference	RHDCaK-b-EU a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400 b can be 1) ZJ7 or ZJ7/02 2) ZJ2 or ZJ2/02	
Ratings	For model RHDC400K-ZJ2-EU: Input: 400VAC±15%, 50/60Hz, 3P+N+PE Output: 200-1000VDC, 350A Max., 400kW Max., CCS2*2 See the copy of marking plate for details.	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.
Testing location/ address :		No.177, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China
Tested by (name, function, signature)		Carlos Jin / Project Engineer <i>Carlos Jin</i>
Approved by (name, function, signature) ...		David Chen / Authorizer <i>David Chen</i>
☐	Testing procedure: CTF Stage 1:	
Testing location/ address :		
Tested by (name, function, signature)		
Approved by (name, function, signature) ...		
☐	Testing procedure: CTF Stage 2:	
Testing location/ address :		
Tested by (name + signature)		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ...		
☐	Testing procedure: CTF Stage 3:	
☐	Testing procedure: CTF Stage 4:	
Testing location/ address :		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ...		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: Additional test data (1 pages)
- Attachment 2: Photo Documentation (44 pages)

Summary of testing:**Tests performed (name of test and test clause):**

1. Model RHDC400K-ZJ2-EU was subjected to full test and was found to comply with the requirements of IEC 61851-23:2014.

2. Tests performed (test clause and name of test from IEC 61851-23:2014):

Clause	Test	End date
6.4.3.1	Verification that the vehicle is properly connected	2026-08-14
6.4.3.2	Protective conductor continuity checking	2026-06-23
6.4.3.3	Energization of the system	2026-06-23
6.4.3.4	De-energization of the system	2026-06-23
6.4.3.101	DC supply for EV	2026-08-05
6.4.3.102	Measuring current and voltage	2026-08-05
6.4.3.105	Compatibility assessment	2026-06-23
6.4.3.106	Insulation test before charging	2026-06-17
6.4.3.107	Protection against overvoltage at the battery	2026-06-23
6.4.3.109	Control circuit supply integrity	2026-06-17
6.4.3.110	Short circuit test before charging	2026-06-16
6.4.3.111	User initiated shutdown	2026-06-23

Testing location:

TÜV Rheinland (Shanghai) Co., Ltd.
No.177, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China

6.4.3.112	Overload protection for parallel conductors (conditional function)	2026-06-15	
6.4.3.113	Protection against temporary overvoltage	2026-06-15	
6.4.3.114	Emergency shutdown	2026-06-23	
7.2.2	Accessibility of live parts	2026-05-27	
7.2.3.1	Disconnection of EV	2026-06-24	
7.2.3.2	Disconnection of d.c. EV charging station	2026-06-24	
7.3	Fault protection	2026-06-15	
7.5.103	Protective conductor dimension cross sectional area	2026-05-21	
11.4.1	Dielectric Withstand Voltage	2026-08-29	
11.4.2	Impulse dielectric withstand	2026-08-29	
11.5	Insulation Resistance	2026-06-24	
11.6	Clearances and creepage distances	2026-05-22	
11.7	Leakage – Touch Current	2026-06-24	
11.8.2	Ambient air temperature	2026-06-27	
11.8.3	Ambient humidity	2026-06-24	
11.9	Permissible Surface Temperature	2026-07-30	
11.10	Environmental Conditions	2026-07-30	
11.11.2	Mechanical Impact	2026-05-25	
11.15.2	Durability test for marking	2026-05-25	
101.1.1	Emergency switching	2026-05-21	

101.1.2	IP degrees for ingress of objects	2026-08-12	
101.1.3	Storage means of the cable assembly and vehicle connector	2026-05-21	
101.1.4	Stability	2026-08-10	
101.2.1.1	Rated outputs and maximum output power	2026-08-05	
101.2.1.2.1	Output current regulation in CCC	2026-08-05	
101.2.1.2.2	Output voltage regulation in CVC	2026-08-05	
101.2.1.3	Control delay of charging current in CCC	2026-08-04	
101.2.1.4	Descending rate of charging current	2026-08-31	
101.2.1.5	Periodic and random deviation (current ripple)	2026-08-05	
101.2.1.6	Periodic and random deviation (voltage ripple in CVC)	2026-08-05	
101.2.1.7	Load dump	2026-08-31	
101.2.2	Effective earth continuity between the enclosure and the external protective circuit	2026-08-07	
CC.2.1	Proximity resistor	2026-08-14	
CC.3.2	Normal start up	2026-08-14	
CC.3.3	Normal shutdown	2026-08-14	
CC.3.4	DC supply initiated emergency shutdown	2026-08-31	
CC.3.5	EV initiated emergency shutdown	2026-08-14	
CC.4.1	IT (isolated terra) system requirements	2026-06-17	
CC.4.2	Temperature monitoring	2026-07-30	

CC.4.6	Voltage check at initialization	2026-08-14
CC.4.7	DC EV charging station maximum output Y capacitance	2026-08-03
CC.5.1	Pre-charging	2026-08-05
CC.6.1	Turn on inrush current (d.c. side)	2026-08-05
CC.6.2	Protection against overvoltage of battery	2026-06-15
CC.6.3	Requirements for load dump	2026-08-31
CC.6.4	DC output current regulation	2026-08-05

3. Model RHDC160K-ZJ7-EU was subjected to full test and was found to comply with the requirements of IEC 61851-23:2014.

4. Tests performed (test clause and name of test from IEC 61851-23:2014):

Clause	Test	End date
11.4.1	Dielectric Withstand Voltage	2026-08-29
11.4.2	Impulse dielectric withstand	2026-08-29
11.6	Clearances and creepage distances	2026-05-22
11.9	Permissible Surface Temperature	2026-07-30
101.1.2	IP degrees for ingress of objects	2026-08-12

Other models can be covered by above tests.

Summary of compliance with National Differences (List of countries addressed):

No EU Group differences.

☒ **The product fulfils the requirements of EN 61851-23:2014.**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

For rated power range of 60-160kW:

DC EV Charging Station

Type: RHDC60K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 60kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC60K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 60kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC70K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 70kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC70K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 70kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC80K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 80kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC80K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 80kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC90K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 90kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC90K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 90kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China



DC EV Charging Station

Type: RHDC100K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 100kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC100K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 100kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC110K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 110kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC110K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 110kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
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Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC120K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 120kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC120K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 120kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC130K-ZJ7-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 130kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC130K-ZJ7/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-250A
Rated Power A/B: 130kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China



DC EV Charging Station

Type: RHDC140K-ZJ7-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 140kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
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 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC140K-ZJ7/02-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 140kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC150K-ZJ7-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 150kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC150K-ZJ7/02-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 150kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC160K-ZJ7-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 160kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC160K-ZJ7/02-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-250A
 Rated Power A/B: 160kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**For rated power range of 180-400kW:****DC EV Charging Station**

Type: RHDC180K-ZJ2/02-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-350A
 Rated Power A/B: 180kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC180K-ZJ2-EU
 Input: 400V AC±15%
 Frequency: 50/60 Hz
 Power Supply: 3P+N+PE
 Output A/B Voltage: 200-1000V DC
 Current Range A/B: 0-350A
 Rated Power A/B: 180kW MAX
 Ingress Protection: IP55
 Impact Protection Rating: IK10
 Temp: -30°C~50°C
 Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
 Serial Number: 20260325001
 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
 Manufacturer address:
 Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
 Ruichang City ,Jiujiang City,Jiangxi Province,China



DC EV Charging Station

Type: RHDC190K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 190kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC190K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 190kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC200K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 200kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC200K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 200kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC210K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 210kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC210K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 210kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC220K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 220kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC220K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 220kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China



DC EV Charging Station Type: RHDC230K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 230kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC230K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 230kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC240K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 240kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC240K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 240kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC250K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 250kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC250K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 250kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC260K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 260kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC260K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 260kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  

DC EV Charging Station

Type: RHDC270K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 270kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC270K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 270kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC280K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 280kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC280K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 280kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC290K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 290kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC290K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 290kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC300K-ZJ2/02-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 300kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

**DC EV Charging Station**

Type: RHDC300K-ZJ2-EU
Input: 400V AC±15%
Frequency: 50/60 Hz
Power Supply: 3P+N+PE
Output A/B Voltage: 200-1000V DC
Current Range A/B: 0-350A
Rated Power A/B: 300kW MAX
Ingress Protection: IP55
Impact Protection Rating: IK10
Temp: -30°C~50°C
Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603
Serial Number: 20260325001
Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd
Manufacturer address:
Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China



DC EV Charging Station Type: RHDC310K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 310kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC310K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 310kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC320K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 320kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC320K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 320kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC330K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 330kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC330K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 330kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
DC EV Charging Station Type: RHDC340K-ZJ2/02-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 340kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC340K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 340kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Serial Number: 20260325001 Date: 202603 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  

DC EV Charging Station

Type: RHDC350K-ZJ2/02-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 350kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC350K-ZJ2-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 350kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC360K-ZJ2/02-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 360kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC360K-ZJ2-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 360kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC370K-ZJ2/02-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 370kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC370K-ZJ2-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 370kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC380K-ZJ2/02-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 380kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China**DC EV Charging Station**

Type: RHDC380K-ZJ2-EU

Input: 400V AC±15%

Frequency: 50/60 Hz

Power Supply: 3P+N+PE

Output A/B Voltage: 200-1000V DC

Current Range A/B: 0-350A

Rated Power A/B: 380kW MAX

Ingress Protection: IP55

Impact Protection Rating: IK10

Temp: -30°C~50°C

Standard: EN IEC61851-1:2019;IEC61851-23:2014

Date: 202603

Serial Number: 20260325001

Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd

Manufacturer address:

Ruihua Intelligent Industrial Park, Smart Manufacturing Town,
Ruichang City ,Jiujiang City,Jiangxi Province,China

DC EV Charging Station Type: RHDC390K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 390kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  	DC EV Charging Station Type: RHDC390K-ZJ2-EU Input: 400V AC±15% Frequency: 50/60 Hz Power Supply: 3P+N+PE Output A/B Voltage: 200-1000V DC Current Range A/B: 0-350A Rated Power A/B: 390kW MAX Ingress Protection: IP55 Impact Protection Rating: IK10 Temp: -30°C~50°C Standard: EN IEC61851-1:2019;IEC61851-23:2014 Date: 202603 Serial Number: 20260325001 Manufacturer: Jiangxi Ruihua Intelligent Technology co.,Ltd Manufacturer address: Ruihua Intelligent Industrial Park, Smart Manufacturing Town, Ruichang City ,Jiujiang City,Jiangxi Province,China  
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Test item particulars.....:	
Equipment mobility	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains	☐ pluggable equipment ☐ type A ☐ type B ☒ permanent connection ☐ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Access location	☒ operator accessible ☐ service access area ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☐ OVC II ☒ OVC III ☐ OVC IV ☐ other:
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Mains supply tolerance (%) or absolute mains supply values	±15% declared by the manufacturer
Considered current rating (A)	See pages 7-15
Pollution degree (PD)	☐ PD 1 ☐ PD 2 ☒ PD 3 (Inside the EUT is considered as PD2)
IP protection class	IP55
Altitude during operation (m)	Up to 2000
Output Connector Interface Type	Configuration FF
Mass of equipment (kg)	Approx. 580kg Max.
Possible test case verdicts:	
- test case does not apply to the test object.....: N/A	
- test object does meet the requirement.....: P (Pass)	
- test object does not meet the requirement.....: F (Fail)	
Testing.....:	
Date of receipt of test item	2026-05-19
Date (s) of performance of tests	2026-05-21 to 2026-08-31
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-2-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	

Name and address of factory (ies) : JIANGXI RUIHUA INTELLIGENT TECHNOLOGY CO., LTD.

Ruihua Intelligent Industrial Park, Smart
Manufacturing Town, Ruichang City, Jiu jiang City,
332200 Jiangxi, P.R. China

General product information:

1. This series of charging stations mentioned in this report is Class I equipment with a protection degree of IP55 for indoor/outdoor use.

2. The charging station mainly comprises circuit breaker(s), power modules, contactors, SMPS, emergency stop button, touch screen and vehicle connector with cable (case C connection), etc.

3. Insulation design:

- Between input circuits and output circuits: Basic insulation;
- Between lives parts and PE/ metal enclosure: Basic insulation;
- Between HV circuits and SELV circuits: Reinforced insulation.

4. The touch screen on the enclosure is powered by a SELV output from the SMPS. A main earthing terminal for fixed wiring is provided, and the door is earthed to enclosure by wiring.

5. The models mentioned above are identical in hardware like main electrical components, layout and PCBs. The differences between these charging stations are as below:

Model	Dimension (H×W×D)	Description
RHDCaK-ZJ2-EU (a can be 180 to 390 or 400)	2046.0mm×801.0mm×836.0mm	Rated output: 200-1000VDC, 0-350A nominal, 180kW/190kW/200kW/ ... /400kW. The charging stations rated at 180-200 kW are equipped with 5 pcs 40kW power modules. The charging stations rated at 210-240 kW are equipped with 6 pcs 40kW power modules. The charging stations rated at 250-280 kW are equipped with 7 pcs 40kW power modules. The charging stations rated at 290-320 kW are equipped with 8 pcs 40kW power modules. The charging stations rated at 330-360 kW are equipped with 9 pcs 40kW power modules. The charging stations rated at 370-400 kW are equipped with 10 pcs 40kW power modules.
RHDCaK-ZJ7-EU (a can be 60 to 150 or 160)	1816.0mm×640.0mm×760.0mm	Rated output: 200-1000VDC, 0-250A nominal, 60kW/70kW/80kW/ ... /160kW. The charging stations rated at 60-80 kW are equipped with 2 pcs 40kW power modules. The charging stations rated at 90-120 kW are equipped with 3 pcs 40kW power modules. The charging stations rated at 130-160 kW are equipped with 4 pcs 40kW power modules.

Note:

1. Models with the suffix "/02" are identical to those without it, except for the model designation; therefore, the "/02" models have been omitted from the table above.
2. Charging stations with rated power levels that are not multiples of 40 kW are derived from models rated at multiples of 40 kW by software-based power adjustment.
3. Models with ZJ2 can be equipped with a 300A charging connector at the customer's discretion.
4. Models with ZJ2 can optionally be equipped with two types of fan control boards, while models with ZJ7 can only be equipped with the smaller fan control board.

Specifications				
Type designation		See page 2		
Supply	Power System	☒ TN-S ☒ TN-C-S ☐ TN-C ☐ TT ☐ IT ☐ DC		
	Number of phases	☐ Single phase ☒ Three phases		
	Number of poles	3P+N+PE		
	Rated Voltage	400VAC ±15%		
	Rated Current	For ZJ2 series: 607.8A Max. For ZJ7 series: 243.2A Max.		
	Rated Power	---		
	Rated Frequency	50/60Hz		
DC Output		☐ CCS1	☒ CCS2	☐ CAJ
			ZJ2 series ZJ7 series	
	Rated Voltage	---	200-1000VDC	---
	Rated Current	---	350A Max. nom. 300A Max. opt.	250A Max. ---
	Rated Power	---	400kW Max.	160kW Max. ---
Equipment mobility		☐ Wall/pole/column/pipe-mounted ☐ floor mounted ☒ Ground mounted.		
Construction		☒ Integrated-type ☐ Split-type		
Split type		☐ 1x power electronic converter unit ☐ 6x pole ☐ __Poles		
Input connection		☒ Permanently connected		
EV charging mode		Mode 4		
Type of EV connection		Case C		
Output connection		See page 19		
DC Charging System		☐ A ☐ B ☒ C		
IP degree		IP55		
Environmental condition		☒ Indoor ☒ Outdoor		
Pollution Degree		☐ PD II ☒ PD III		
Altitude		Up to 2000m		
Isolation (AC-DC)		☒ Isolated (basic insulation): <u>for CCS2</u> ☐ Isolated (reinforce insulation): _____ ☐ non-isolated: _____		
☐ Bi-directional power flow control		☒ without inverter function ☐ (bi-directional) grid-connected power converter (GCPC)		
		☐ grid-connected AC port ☐ off-grid AC port		
High Power Charging (HPC)		☐ Yes: _____ ☐ No		
		Cooling system: _____		

AC SPD	☒ Internal ☐ external	
Overvoltage Category	☐ I ☐ II ☒ III ☐ IV	
Rated impulse withstand voltage (U_{imp})	BI ☒ 4kV RI or DI ☒ 6kV	
Maximum ambient temperature	☐ 40°C ☒ 50°C	
Minimum ambient temperature	☐ -5°C ☐ -25°C ☒ -30°C	
Short-circuit protective device	☒ RCBO ☒ MCCB	
SCPD specification	Refer to the critical components information	
RCD	☒ Internal ☐ external	
Type	☐ Type B ☐ Type A+DC 6mA ☒ Type A 30mA (for AC input)	
Rated current (I_n)	Refer to the critical components information	
Rated residual operating current ($I_{\Delta n}$)	Refer to the critical components information	
rated conditional short-circuit current (I_{nc})	Refer to the critical components information	
Standard	Refer to the critical components information	
☐ Switch dis-connector (EN 60947-3)	---	
☒ AC Contactor (EN 60947-4-1)	Refer to the critical components information	
☒ DC Contactor (EN 60947-4-1)	Refer to the critical components information	
DC Fuse	Refer to the critical components information	
Relay (EN 61810-1)	Refer to the critical components information	
IMD	100k Ω (CCS2) 500k Ω (CCS2)	
Input cable	Rely on installation	
Nominal cross-sectional areas (mm ²)	Refer to the user manual	
Length (m)	Rely on installation	
Type of terminals	Refer to the user manual	
DC Vehicle connector	☐ Type 3-Ib (CAJ)	---
	☐ Type 3-IIa (China)	---
	☐ Type 3-IIIb (CCS1, SAE J1772 Sheet C)	---
	☒ Type 3-IVc (CCS2)	See below
DC Output Cable (☐ Type 3-Ib (CAJ)	---	

Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---
DC Output Cable (☐ Type 3-IIa (China))	---
Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---
DC Output Cable (☐ Type 3-IIIb (CCS1, SAE J1772 Sheet C))	---
Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---
DC Output Cable (☒ Type 3-IVc (CCS2))	Refer to the critical components information
Nominal cross-sectional areas (mm ²)	Refer to the critical components information
Type of terminals	Fasten in copper bus by screw
Length (m)	5m Nom.
☐ AC Vehicle connector	☐ Type 2-I (SAE J1772 Sheet A)
	☐ Type 2-IIc
	☐ Type 2-IIe
☐ AC Output Cable (☐ Type 2-I (SAE J1772 Sheet A))	☐ EN 50620 ☐ IEC 62893-3 ☐ UL 62
Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---
☐ AC Output Cable (☐ Type 2-IIc)	☐ EN 50620 ☐ IEC 62893-3
Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---
☐ AC Output Cable (☐ Type 2-IIe)	☐ EN 50620 ☐ IEC 62893-3
Nominal cross-sectional areas (mm ²)	---
Type of terminals	---
Length (m)	---

☐ AC EV Socket outlet	☐ IEC/EN 62196 Type 2-II a ☐ IEC/EN 62196 Type _____
Rating	AC _____ V _____ A
IK code	☒ IK10(without screen) ☒ IK08(with screen)
Overall dimensions (H×W×D, mm)	2046.0×801.0×836.0 (for ZJ2 series) 1816.0×640.0×760.0 (for ZJ7 series)
Weight(kg)	Approx. 580kg Max.
Software	yxdc2eu-v440
Optional functions	☐ Ventilation during supply of energy
	☐ Wake up of DC EV charging station by EV
	☐ Detection/adjustment of the real time available load current of the DC EV charging station (smart charging)
	☐ Selection of charging current
	☐ Indicating means to notify users of locked status of vehicle coupler
	☐ Others:

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Clause	Requirement + Test	Result - Remark	Verdict
5	RATING OF THE SUPPLY VOLTAGE		P
	Equipment operates as intended within a supply voltage tolerance of $\pm 10\%$		P
	Equipment operates as intended within a frequency tolerance of $\pm 1\%$		P

6	GENERAL SYSTEM REQUIREMENTS AND INTERFACE		P
6.1	General Description		P
	Method of charging uses an on-board charger		N/A
	Method of charging uses an off-board charger		P
6.2	EV Charging Modes		P
	EV charging mode is Mode 4, utilizing a d.c. EV charging station (e.g. off-board charger) where the control pilot function extends to the d.c. EV charging station.		P
	Pluggable d.c. EV charging stations, which are intended to be connected to the a.c. supply network (mains) using standard plugs and socket outlets, shall be compatible with residual current device with characteristics of type A.	Permanently connected	N/A
	The pluggable d.c. EV charging station shall be provided with an RCD, and may be equipped with an overcurrent protection device.		N/A
6.3	Types of EV Connection		P
6.3.1	General description		P
	The connection of EVs using cables shall be carried out in case of C connection		P
6.3.2	Cord extension sets not provided		P
	Vehicle instructions indicate no cord extensions		P
	Cable assembly provided cannot be used as a cord extension		P
6.3.3	Adaptors shall not be used to connect a vehicle connector to a vehicle inlet.		P
6.4	Functions provided in each charging mode		P
	The d.c. EV charging station shall supply a d.c. current or voltage to the vehicle battery in accordance with a VCCF request.		P
6.4.1	Mode 4 charging functions		P
	- verification that the vehicle is properly connected;		P
	- protective conductor continuity checking (6.4.3.2);		P
	- energization of the system;		P
	- de-energization of the system (6.4.3.4);		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- d.c supply for EV (6.4.3.101);		P
	- measuring current and voltage (6.4.3.102);		P
	- retaining / releasing coupler (6.4.3.103);	Consider with the EV.	N/A
	- locking of the coupler (6.4.3.104);	Consider with the EV.	N/A
	- compatibility assessment (6.4.3.105)		P
	- insulation test before charging (6.4.3.106)		P
	- protection against overvoltage at the battery (6.4.3.107);		P
	- verification of vehicle connector voltage (6.4.3.108);		N/A
	- control circuit supply integrity (6.4.3.109);		P
	- short circuit test before charging (6.4.3.110);		P
	- user initiated shutdown (6.4.3.111);		P
	- overload protection for parallel conductors (conditional function) (6.4.3.112);		P
	- protection against temporary overvoltage (6.4.3.113).		P
	- emergency shutdown (6.4.3.114)		P
6.4.2	Optional function		N/A
	- determination of ventilation requirements of the charging area;		N/A
	- detection/adjustment of the real time available load current of the DC charger;		N/A
	- selection of charging current;		N/A
	- wake up of d.c. EV charging station by EV (6.4.4.101);		N/A
	- indicating means to notify users of locked status of vehicle coupler.		N/A
	Other additional functions may be provided.		N/A
6.4.3	Details of functions for DC charging		P
6.4.3.1	Verification that the vehicle is properly connected		P
	The EVSE are able to determine that the connector is properly inserted in the vehicle inlet and properly connected to the EVSE.		P
	Vehicle movement by its own propulsion system is impossible as long as the vehicle is physically connected to the EVSE as required in ISO 6469-2.		P
6.4.3.2	Protective conductor continuity checking		P
	For isolated systems, protective conductor continuity between the d.c. EV charging station and the vehicle shall be monitored.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For the rated voltage of d.c. 60 V or higher, the d.c. EV charging station shall perform an emergency shutdown (see 6.4.3.114) within 10 s after a loss of electrical continuity of the protective conductor between d.c. EV charging station and EV (emergency shutdown).		P
	For non-isolated systems, in case of loss of earthing conductor continuity, the non-isolated d.c. EV charging station shall be disconnected from a.c. supply network (mains).		N/A
	Earthing conductor continuity between the d.c. EV charging station and the vehicle shall be monitored. For the rated voltage of d.c. 60 V or higher, the d.c. EV charging station shall perform an emergency shutdown within 5 s after a loss of electrical continuity of the protective conductor between d.c. EV charging station and EV.		N/A
6.4.3.3	Energization of the system		P
	Energization of the system did not performed until the pilot function between EVSE and EV has been established correctly.		P
	Energization may also be subject to other conditions being fulfilled.		P
6.4.3.4	De-energization of the system		P
	If the pilot function is interrupted, the power supply to the cable assembly is interrupted but the control circuit may remain energized.		P
	In the case of failure in control circuit of d.c. EV charging station, such as short-circuit, earth leakage, CPU failure or excess temperature, the d.c. EV charging station shall terminate the supply of charging current, and disconnect the supply of control circuit.		P
	In addition, the conductor, in which earth fault or overcurrent is detected, shall be disconnected from its supply.		P
	Requirement for disconnection of EV is defined in 7.2.3.1.		-
6.4.3.101	DC supply for EV		P
	The d.c. EV charging station shall supply d.c. voltage and current to the vehicle battery in accordance with VCCF's controlling.		P
	For regulated systems, the d.c. EV charging station shall supply regulated d.c. voltage or current to the vehicle battery in accordance with VCCF's controlling.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Requirements for charging performance of regulated d.c. current / voltage are given in 101.2.1.1, 101.2.1.2 and 101.2.1.3 and 101.2.1.4.		-
	In either case mentioned above, the maximum ratings of the d.c EV charging station shall not be exceeded.		P
	The vehicle can change the requested current and/or requested voltage.		P
6.4.3.102	Measuring current and voltage		P
	The d.c. EV charging station shall measure the output current and output voltage. The accuracy of output measurement is defined for each system in Annexes AA, BB and CC.		P
6.4.3.103	Retaining/releasing coupler		N/A
	A means shall be provided to retain and release the vehicle coupler. Such means may be mechanical, electrical interlock, or combination of interlock and latch.		N/A
6.4.3.104	Locking of the coupler		N/A
	A vehicle connector used for d.c. charging shall be locked on a vehicle inlet if the voltage is higher than 60 V d.c.		N/A
	The vehicle connector shall not be unlocked (if the locking mechanism is engaged) when hazardous voltage is detected through charging process including after the end of charging. In case of charging system malfunction, a means for safe disconnection may be provided.		N/A
	The d.c. EV charging station shall have the following functions in case the locking is done by the d.c. EV charging station:		N/A
	– electrical or mechanical locking function to retain the locked status, and		N/A
	– function to detect the disconnection of the electrical circuits for the locking function.		N/A
6.4.3.105	Compatibility assessment		P
	Compatibility of EV and d.c. EV charging station shall be checked with the information exchanged at the initialization phase as specified in 102.5.1.		P
6.4.3.106	Insulation test before charging		P
	The d.c. EV charging station shall confirm the insulation resistance between its d.c. output circuit and protective conductor to the vehicle chassis, including the charging station enclosure, before the EV contactors are allowed to close.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	If the required value is not met, the d.c. EV charging station shall send the signal to the vehicle that the charging is not allowed.		P
	Conformance is determined by measuring the insulation resistance as follows:		P
	Any relays in the d.c. output circuit of the d.c. EV charging station shall be closed during the test.		P
	The required value of insulation resistance R shall be: $R \geq 100 \Omega/V \times U$ U is rated output voltage of the d.c. EV charging station.		P
6.4.3.107	Protection against overvoltage at the battery		P
	The d.c. EV charging station shall perform an emergency shutdown and disconnect its supply to prevent overvoltage at the battery, if output voltage exceeds maximum voltage limit sent by the vehicle. In case of vehicle failure, disconnection from a.c. mains may not be necessary.		P
	Specific requirement for detection and shutdown are defined in Annexes AA, BB and CC.		-
	The vehicle can change the maximum voltage limit during charging process.		P
	Compliance is checked according to the following test.		P
	The d.c. EV charging station is connected to a d.c. voltage source or artificial load.		P
	The voltage of the d.c. voltage source or artificial load should be within the operating range of the charging station.		P
	The d.c. EV charging station is set to charge the d.c. voltage source at a current of more than 10 % of the maximum rated current of d.c. EV charging station.		P
	A maximum voltage limit command lower than the voltage of the voltage source shall be sent to the d.c. EV charging station.		P
	Both the time between when the command is sent and the beginning of charging current reduction, and the rate of reduction shall be measured.		P
	The voltage of the voltage source, the way the command voltage limit is sent and the value of the voltage limit may be chosen freely to comply with this test.		P
6.4.3.108	Verification of vehicle connector voltage		N/A
	This clause is only applicable for charging stations which are responsible for locking of vehicle connector, such as system A and system B.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The d.c. EV charging station shall not energize the charging cable when the vehicle connector is unlocked. The voltage at which the vehicle connector unlocks shall be lower than 60 V.		N/A
6.4.3.109	Control circuit supply integrity		P
	If an earth fault, short circuit or overcurrent is detected in output circuit of d.c. EV charging station, the power circuit shall be disconnected from its supply, but the power supply for control circuit shall not be interrupted unless the power circuit interruption is due to a loss of a.c. supply network (mains).		P
6.4.3.110	Short circuit test before charging		P
	With the EV connected to the d.c. EV charging station and before the EV contactor is closed, the d.c. EV charging station shall have a means to check for a short circuit between d.c. output circuit positive and negative for the cable and vehicle coupler.		P
6.4.3.111	User initiated shutdown		P
	The d.c. EV charging station shall have a means to allow the user to shut down the charging process.		P
6.4.3.112	Overload protection for parallel conductors (conditional function)		P
	If more than one conductor or wire and/or vehicle connector contact is used in parallel for d.c. current supply to the vehicle, the d.c. EV charging station shall have a mean to ensure, that none of the conductors or wires will be overloaded.		P
6.4.3.113	Protection against temporary overvoltage		P
	For stations serving a maximum output voltage up to 500 V, no voltage higher than 550 V shall occur for more than 5 s at the output between DC+ and PE or between DC- and PE.		P
	For stations serving a maximum output voltage above 500 V and up to 1 000 V, no voltage higher than 110 % of d.c. output voltage shall occur for more than 5 s at the output between DC+ and PE or between DC- and PE.		P
	The d.c. EV charging station shall terminate the supply of charging current and disconnect the d.c. power circuit from its supply within 5 s, to remove the source of overvoltage. This shall also apply in case of a first earth fault within the isolated output part of the d.c. EV charging station.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For U_n , as the minimum DC charger output voltage, the d.c. EV charging station shall limit the voltage between DC+/- and PE at: - $(2U_n + 1\,000) \times 1,41\text{ V}$ or; - $(U_n + 1\,200) \times 1,41\text{ V}$.		P
6.4.3.114	Emergency shutdown		P
	When the d.c. EV charging station detects an abnormality in the station and/or the vehicle, the safety shall be ensured by the emergency shutdown. Stop charging by:		P
	a) controlled expedited interruption of charging current or voltage to the vehicle, where d.c. current descends with a controlled slope, and appropriate signalling to the vehicle, or		P
	b) uncontrolled abrupt termination of charging under specific fault conditions, where there is no control of current, and the vehicle may not be informed in time.		N/A
	Under specific conditions, the following disconnection, for example, is required according to the risk assessment of the abnormality in the station or the vehicle:		P
	– disconnection of the supply to the conductor in which an earth leakage is detected;		P
	– disconnection of the conductor in which an overcurrent is detected;		P
	– disconnection of the d.c. power circuit from the supply if an insulation failure is detected.		P
	General procedure of shutdown in the charging control process is given in 102.5.3.		-
6.4.4	Details of Optional Functions		N/A
6.4.4.1	Determination of ventilation requirements during charging		N/A
	If additional ventilation is required during charging, charging is only allowed if such ventilation is provided.		N/A
6.4.4.2	Detection/adjustment of the real time available load current of the supply equipment		N/A
	Means is provided to ensure that the charging rate did not exceed the real time available load current of the EVSE and its power supply.		N/A
6.4.4.4	Selection of charging rate		N/A
	A manual or automatic means is provided to ensure that the charging rate does not exceed the rated capacity of the a.c. supply network (mains), vehicle or battery capabilities.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.4.101	Wake up of d.c. EV charging station by EV		N/A
	The charging station may support a standby mode to minimize power consumption. In this case, the station shall be able to be woken up by the EV.		N/A
6.4.5	Details of Pilot Function		P
	Control pilot function is mandatory. The control pilot function shall be capable of performing at least the mandatory functions described in 6.4.3.1, 6.4.3.2, 6.4.3.3 and 6.4.3.4, and may also be capable of contributing to optional functions described in 6.4.4.		P
6.5	Serial data communication		P
	Serial data communication exchange shall be provided		P
	Serial communication shielded or earthed twisted pair..... :		N/A
6.101	Classification		P
6.101.1	Category		-
6.101.1.1	According to system structure:		-
	- isolated d.c. EV charging station, according to the type of insulation between input and output:	☒ basic insulation ☐ reinforced insulation ☐ double insulation	P
	- non-isolated d.c. EV charging station.		N/A
6.101.1.2	According to system control		-
	- regulated d.c. EV charging station	☐ controlled current charging ☐ controlled voltage charging ☒ combination of controlled current and voltage charging	P
	- non-regulated d.c. EV charging station.		N/A
6.101.1.3	According to power receiving	☒ d.c. EV charging station connected to a.c. mains ☐ d.c. EV charging station connected to d.c. mains	-
6.101.1.4	According to environmental conditions	☒ outdoor use ☒ indoor use	-
6.101.1.5	According to the system used	☐ system A (see Annex AA), ☐ system B (see Annex BB), ☒ system C (see Annex CC)	-
6.101.2	Rating		P
	According to d.c. output voltage I..... :	☐ up to and including 60 V, ☒ over 60 V up to and including 1 500 V.	-

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Clause	Requirement + Test	Result - Remark	Verdict
7	PROTECTION AGAINST ELECTRIC SHOCK		P
7.1	General Requirements		P
	Hazardous live parts are not accessible		P
	Exposed conductive parts not live under normal conditions		P
	Exposed conductive parts not live under single fault conditions		P
7.2	Protection against direct contact		P
7.2.1	One or more provisions prevent contact..... :	Earthing metal enclosure and basic insulation.	P
7.2.2	Accessibility of live parts		P
	Hazardous live parts are not accessible before or after removal of parts not requiring a tool for removal		P
	Accessibility with finger probe does not allow contact with hazardous live parts		P
7.2.3	Stored energy – discharge of capacitors		P
7.2.3.1	Disconnection of EV		P
	Voltage after 1 second shall be less than 60V :	0V	P
	Stored energy available shall be less than 20J :	0J	P
	Warning label provided		N/A
7.2.3.2	Disconnection of d.c. EV charging station		P
	Voltage after 1 second shall be less than 60V :	0V	P
	Stored energy available shall be less than 20J :	0J	P
	Warning label provided		N/A
7.3	Fault Protection		P
	One or more provisions prevent indirect contact..... :	Earthing metal enclosure and basic insulation.	P
7.4	Supplementary Measures		N/A
	Only applicable to mobile d.c. EV charging station		N/A
	An RCD ($I_{\Delta n} \leq 30 \text{ mA}$) shall be provided as a part of the EV conductive supply equipment for earthed systems. The RCD shall have a performance at least equal to Type A and be in conformity with standard IEC 60364-4-4.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Where power supply circuits that are galvanically separated from mains and are galvanically isolated from earth, electrical isolation between the isolated circuits and earth, and between the isolated circuits and exposed conductive parts of vehicle and EVSE shall be monitored. When a fault condition related to the electrical isolation is detected, the power supply circuits shall be automatically de-energized or disconnected by the EVSE.		N/A
7.5	Protective measures for d.c. EV charging stations		P
	The types of d.c. EV charging stations covered by these requirements, including all accessible conductive parts on the equipment shall have the following protective measures.		P
	– protective measures by automatic disconnection of supply by connecting all exposed conductive-parts to a protective conductor during battery charging, unless protective measure by reinforced or double insulation or protective measure by electrical separation is used for the d.c. EV charging stations.		P
7.5.101	Requirements of the isolated d.c. EV charging station		P
	Requirements for the isolated d.c. EV charging station for protection against electric shock are defined for each system in AA.3.1, BB.2 or CC.4.1.		-
	In addition, if the d.c. EV charging station has multiple d.c. outputs designed for simultaneous operation, each output circuit shall be isolated from each other by basic insulation or reinforced insulation.		P
7.5.102	Requirements of the non-isolated d.c. EV charging station		N/A
	under consideration.		N/A
7.5.103	Protective conductor dimension cross-sectional area		P
	Protective conductor shall be of sufficient cross-sectional area to satisfy the requirements of IEC 60364-5-54.		P
7.6	Additional requirements		P
	The d.c. EV charging station shall be compatible with RCD Type A in the installation, i.e. a.c. supply network (mains).		P
	Class II chargers may have a lead- through protective conductor for earthing the EV chassis.		N/A
8	CONNECTION BETWEEN THE POWER SUPPLY AND THE EV		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.1	General		P
	Type of interface being used	Configuration FF	P
8.2	Contact Sequencing		P
	For all d.c. interfaces, the contact sequence during the connection process shall be: – Protective Earth (if any) – d.c. power contacts – Isolation monitor contacts – Proximity detection or connection switch contact – Control pilot contact During disconnection the order shall be reversed.		P
8.3	Functional description of a standard interface		---
	Not applicable.		---
8.4	Functional description of a basic interface		---
	Not applicable.		---
8.5	Functional description of a universal interface		N/A
	Universal interface intermateable with either high power ac or high power dc connector		N/A
	Means provided to ensure dc power connector cannot be mated with ac inlet and vice versa		N/A
	Electrical ratings comply with level 1		N/A

9	SPECIFIC REQUIREMENTS FOR VEHICLE COUPLER		P
9.1	General requirements		P
	The construction and performance requirements of vehicle coupler are specified in IEC 62196-1.		P
	The requirements for the d.c. interfaces are specified in IEC 62196-3.		P
9.2	Operating temperature		P
	Operating temperature	Refer to IEC 62196-1	P
9.3	Service life of vehicle coupler		P
	Service life of vehicle coupler	Refer to IEC 62196-1	P
9.4	Breaking Capacity		P
	For d.c. charging, the vehicle couplers are rated "not for current interruption." A disconnection shall not take place under load.		P
	In the case of disconnection under d.c. load due to a fault, no hazardous condition shall occur.		P
	Avoidance of breaking under load can be achieved by a specific means on the vehicle connector or a system with interlock.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition to locking mechanism defined in 6.4.3.104, in case of unintended disconnection of the vehicle coupler, the output current of the d.c. EV charging station shall be turned off within a defined time to contain a possible arc within the vehicle coupler housing. This turn-off time shall comply with the value specified in Annexes AA, BB and CC, using a speed of separation of the vehicle connector of $(0,8 \pm 0,1)$ m/s according to IEC 60309-1.		P
	Disconnection of vehicle coupler can be detected when one of the following occurs:		P
	– loss of digital communication; – interruption of interlock circuit(s), e.g. control pilot, proximity circuit, to mitigate electrical arcing and shock hazards.		P
	The system specific requirement for breaking capacity and system redundancy are defined in Annexes AA, BB and CC.		P
9.5	IP Degrees		P
	Complies with 11.3		P
9.6	Insertion and Extraction Forces		P
	Complies with IEC 62196-1		P
9.7	Latching of the retaining device		P
	Latching or retaining if required may be a function of the complete system or the connector.		P

10	CHARGING CABLE ASSEMBLY REQUIREMENTS		P
10.1	Electrical Rating		P
	The rated voltage and current of each conductor shall correspond to the rated voltage and current of the d.c. output of the d.c. EV charging station.		P
10.2	Electrical characteristics		P
	Voltage and current ratings of the cable are compatible with the ratings of the EVSE..... :		P
	Cable insulation is wear resistant and maintains flexibility over the full ambient range		P
10.3	Dielectric Withstand Characteristics		P
	Complies with 11.4		P
10.4	Mechanical Characteristics		P
	Meets or exceeds the characteristics specified in IEC 60245-6		P
	Cable is fire resistant		P
	Cable withstands chemical exposure		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Cable is rated for UV exposure		P
10.5	Functional characteristics		P
	The maximum cord length may be specified by national codes		P

11	EVSE REQUIREMENTS		P
11.1	General Test Requirements		P
	Tests performed in an ambient of 20°C ± 5°C unless otherwise specified		P
11.2	Classification		P
	EVSE is considered indoor use only		N/A
	EVSE is considered indoor/outdoor use		P
11.3	IP Degrees for basic and universal interfaces		P
11.3.1	IP Degrees for ingress of objects		P
	Indoor Use (IP).....: IP55		-
	Vehicle inlet mated with connector is IP 21		P
	Connector for Case "C" when not connected is IP 21		P
	Outdoor Use (IP).....: IP55		-
	Vehicle inlet mated with connector is IP 44		P
	All Cable Assemblies:		-
	Inlet in "road" position is IP 55 with or without assistance from vehicle design.....:		N/A
	Connector when not mated is IP 24		P
11.3.2	Protection against electric shock		P
	Vehicle inlet mated with connector is IP XXD		P
	Connector for Mode 1 not connected is IP XXD		N/A
	Connector for Mode 2 and Mode 3 not connected is IP XXB		N/A
11.4	Dielectric Withstand Characteristics		P
11.4.1	Dielectric Withstand Voltage	See appended Table 11.4.1	P
	No breakdown indicated		P
11.4.2	Impulse dielectric withstand		P
	No breakdown indicated		P
11.4.101	Suppression of overvoltage category		P
	The isolated d.c. EV charging station shall reduce overvoltage to the EV to the rated impulse voltage of 2 500 V.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Primary circuit of d.c. charging station in outdoor is overvoltage category (OVC) III according to Part 1.		P
11.5	Insulation Resistance		P
	Insulation resistance measurement is greater than 1 MΩ	See appended Table 11.5	P
11.6	Clearance and Creepage Distances		P
	Clearance and Creepage Distances meet the minimum values	See appended Table 11.6	P
11.7	Leakage – Touch Current		P
11.7.101-11.7.105	Leakage current	See appended Table 11.7	P
11.7.106	Protection measures for the touch current exceeding 3.5 mA		N/A
	For Class I d.c. EV charging station, if the test touch current exceeds 3.5 mA r.m.s, any of the following requirements shall be met:		N/A
	a) The protective conductor shall have a cross-sectional area of at least 10mm ² Cu or 16 mm ² Al, through its total run.		N/A
	b) Where the protective conductor has a cross-sectional area of less than 10 mm ² Cu or 16 mm ² Al, a second protective conductor of at least the same cross-sectional area shall be provided up to a point where the protective conductor has a cross-sectional area not less than 10 mm ² Cu or 16 mm ² Al.		N/A
	c) Automatic disconnection of the supply in case of loss of continuity of the protective conductor.		N/A
	A caution symbol  shall be placed on the outside of the d.c. EV charging station, visible to the user.		N/A
	The minimum size of the protective earthing conductor shall comply with the local safety regulations, and shall be indicated in the installation manual.		N/A
11.8	Environmental Tests		P
11.8.1	General		P
	Equipment meets the original requirements after each test		P
11.8.2	Ambient air temperature		P
	Manufacturer's rated ambient temperature range (°C).....	-30°C to 50°C	P
	Equipment operates as intended within full range of ambient temperatures		P
11.8.3	Ambient Humidity		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test in accordance with IEC 60068-2-78, test Ca, at 40°C ± 2°C and 93% relative humidity for four days:		N/A
	Test in accordance with IEC 60068-2-30, test Db, at 40°C ± 2°C for 6 cycles	Period: 10 cycles of 24h Condition: (50±3) °C and relative humidity of 95 %	P
11.8.4	Ambient Air Pressure		P
	Designed for operation between 860 hPa and 1060 hPa		P
11.9	Permissible Surface Temperature		P
	Temperature limits on surfaces are not exceeded	See appended Table 11.9	P
11.10	Environmental Conditions		P
	The EVSE is designed to resist the effect of normal automotive solvents and fluids, vibration and shock, material flammability standards and other conditions appropriate to the application.		P
11.11	Mechanical Environmental Tests		P
11.11.2	Mechanical Impact		P
	No damage to the enclosure, and no access to internal live parts after impact		P
11.12	Electromagnetic Compatibility tests		P
	The EMC requirements for d.c. EV charging stations are defined in IEC 61851-21-2.	See the EMC report.	P
11.13	Latching of the retaining device		P
	Latching device used to prevent disconnection under load		P
11.14	Service		N/A
	Parts are designed such that they can be removed, serviced and replaced when necessary		N/A
11.15	Marking and Instructions		P
11.15.1	Connection Instructions		P
	Instructions for proper connection of the vehicle to the EVSE shall appear in the vehicle manual		P
	Instructions for proper connection of the vehicle to the EVSE shall appear in the owner's manual		P
	Instructions for proper connection of the vehicle to the EVSE shall appear on the EVSE product		P
11.15.2	All marking comply with the legibility requirements after the rub tests		P
11.15.3	Marking of Electric Vehicle Charging Station		P
	The EVSE product is marked with all relevant information		P
	Name of manufacturer	See pages 7-15	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Model number	See pages 7-15	P
	Serial number	See pages 7-15	P
	Date of manufacturer	See pages 7-15	P
	Rated voltage (V)	See pages 7-15	P
	Rated frequency (Hz)	See pages 7-15	P
	Rated current (A)	See pages 7-15	P
	Number of phases	See pages 7-15	P
	IP Degrees	See pages 7-15	P
	"Indoor use Only" if the product is intended for indoor use only		N/A
	Class II stations marked with Class II symbol		N/A
11.16	Telecommunication Network		N/A
	Telecommunication networks comply with IEC 60950-1		N/A
11.101	Metering		N/A
	If electric metering is provided, it shall comply with IEC 62052-11 and IEC 62053-21.		N/A

101	SPECIFIC REQUIREMENTS FOR D.C. EV CHARGING STATION		P
101.1	General Requirements		P
101.1.1	Emergency switching		P
	An emergency disconnection device may be installed to isolate the a.c. supply network (mains) from the d.c. electric vehicle charging station in case of risk of electric shock, fire or explosion.		P
	The disconnection device may be provided with a means to prevent accidental operation.		P
101.1.2	IP degrees for ingress of objects		P
	The minimum IP degrees shall be as specified: - indoor: IP21 - outdoor: IP44		P
101.1.3	Storage means of the cable assembly and vehicle connector		P
	For d.c. EV charging stations, a storage means shall be provided for the cable assembly and vehicle connector when not in use.		P
	The storage means provided for the vehicle connector shall be located at a height between 0.4m and 1.5m above ground level.		P
101.1.4	Stability		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The d.c. electric vehicle charging station shall be installed as intended by the manufacturer's installation instructions.		P
	A force of 500 N shall be applied for 5 min in the horizontal direction to the top of the d.c. electric vehicle charging station in each of the four directions or in the worst possible horizontal direction.		P
	There shall be neither deterioration of the d.c. electric vehicle charging station nor deformation at its summit greater than: – 50 mm during the load application; – 10 mm after the load application.		P
101.1.5	Protection against uncontrolled reverse power flow from vehicle		P
	The d.c. EV charging station shall be equipped with a protective device against the uncontrolled reverse power flow from vehicle.		P
101.2	Specific requirements for isolated systems		P
101.2.1	DC output		P
101.2.1.1	Rated outputs and maximum output power		P
	The d.c. EV charging station may limit its maximum current under the given condition independent of the rated and demanded power.		P
	The d.c. EV charging station shall be able to deliver d.c. power in the voltage range [Vmin, Vmax] and the regulated current range [Imin, Imax] within the limit of its maximum rated power [Pmax] at the ambient temperature –5 °C to 40 °C below 1 000 m above sea level.		P
	The d.c. EV charging station shall not exceed its maximum rated power, even if the maximum power requested by the EV is beyond the rated maximum power of DC charger. Outside this operating range the DC charger is allowed to de-rate the power or the current.		P
101.2.1.2	Output voltage and current tolerance		P
101.2.1.2.1	Output current regulation in CCC		P
	The tolerance between the output current of the d.c. EV charging station compared to the required value sent by the electric vehicle shall be $\pm 2,5$ A for the requirement below 50 A, and ± 5 % of the required value for 50 A or more.	See appended Table 101.2.1.2.1	P
101.2.1.2.2	Output voltage regulation in CVC		P

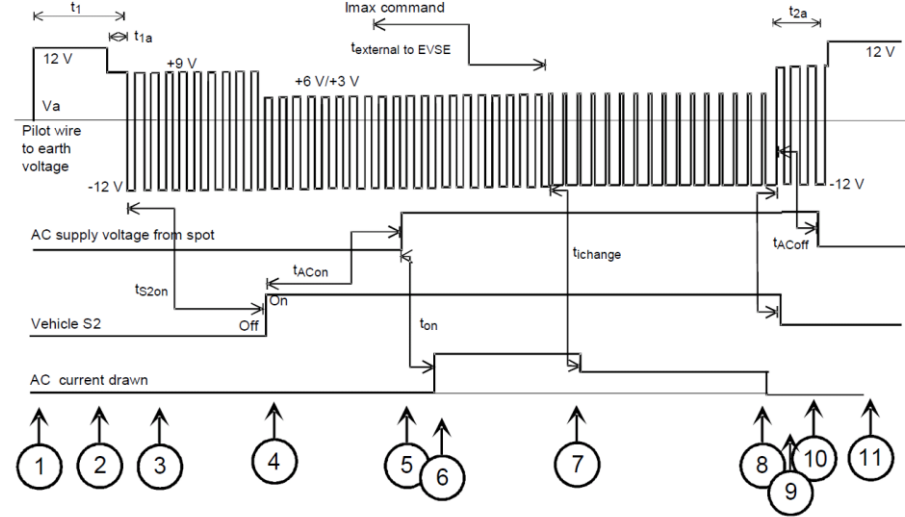
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Clause	Requirement + Test	Result - Remark	Verdict
	The tolerance between the output voltages of the d.c. EV charging station compared to the required value sent by the electric vehicle in steady state operation shall not be greater than 2 % for the maximum rated voltage of the d.c. EV charging station.	See appended Table 101.2.1.2.2	P
101.2.1.3	Control delay of charging current in CCC		P
	The d.c. EV charging station shall control the output current within 1 s after the request from vehicle, with a current control accuracy specified in 101.2.1.2.1, and with a changing rate $dI_{\min}$ of 20 A/s or more.	See appended Table 101.2.1.3	P
	If target current I_N deviated from base current I_0 lower than or equal to 20A, control delay should be <1s		P
	If target current I_N deviated from base current I_0 higher than 20A, control delay T_d should be $T_d \leq \frac{ I_N - I_0 }{dI_{\min}}$		P
101.2.1.4	Descending rate of charging current		P
	The d.c. EV charging station shall be able to reduce current with the descending rate of 100 A/s or more in normal operation.		P
	For emergency shutdown and for fulfilling general requirements in 9.4, even much higher descending rates are necessary. For detailed values refer to Annexes AA, BB and CC.		P
101.2.1.5	Periodic and random deviation (current ripple)		P
	Current ripple of d.c. EV charging station during current regulation shall not exceed the limit.	See appended Table 101.2.1.5	P
101.2.1.6	Periodic and random deviation (voltage ripple in CVC)		P
	For CVC, the maximum voltage deviation during pre-charge state and during charging of the vehicle/traction battery shall not exceed ± 5 % of the requested voltage.	See appended Table 101.2.1.6	P
	The maximum voltage ripple in normal operation shall not exceed ± 5 V.		P
101.2.1.7	Load dump		P
	In any case of load dump, voltage overshoot shall not exceed the limit specified for each system in Annexes AA, BB or CC.		P
	Maximum slew rate of output voltage in case of load dump shall not exceed 250 V/ms.		P
101.2.2	Effective earth continuity between the enclosure and the external protective circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Exposed conductive part of d.c. EV charging station shall be connected to the terminal for the external protective conductor.		P
	The test shall be conducted in accordance with 10.5.2 in IEC 61439-1:2011 unless otherwise specified by national regulations.		P

102	COMMUNICATION BETWEEN EV AND D.C. EV CHARGING STATION		P
102.1	General		P
	This clause provides the general requirements for the control communication function and the system between EV and d.c. EV charging station. The specific requirements of digital communication of charging control between off-board d.c. charging system and electric road vehicle are defined in IEC 61851-24.		P
102.2	System configuration		P
	The communication between the d.c. EV charging station and the vehicle can be established via basic communication and high level communications.		P
	Key steps in the charging control process, such as start of charging and normal/emergency shutdown, shall be managed through the basic communication with signal exchange via the control pilot lines in d.c. EV charging system.		P
	In addition to the basic communication, the d.c. EV charging station shall be equipped with digital communication means in order to exchange the control parameters for d.c. charging between the d.c. EV charging station and the vehicle through the high level communication.		P
	Digital communication means used:	PLC	P
102.3	Basic communication		P
102.3.1	Interface		P
	Typical interfaces of control pilot function on d.c. EV charging systems are specified in Annexes AA, BB and CC. Each system shall carry out control pilot function through the control pilot conductors and terminals specified in IEC 62196-3.		P
102.3.2	Charging state		P
	The charging states show physical status of d.c. EV charging system. The d.c. EV charging station and the vehicle can exchange their charging state through the signal communication and the digital communication.		P
102.4	Digital communication		P
	Digital communication is specified in IEC 61851-24.		P

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Clause	Requirement + Test	Result - Remark	Verdict
102.5	Charging control process and state		P
102.5.1	General		P
	Charging control process of general-purpose d.c. EV charging stations shall consist of the following three stages: - process before the start of charging (initialization); - process during charging (energy transfer); - process of shutdown (shutdown).		P
	The d.c. EV charging station and the vehicle shall synchronize control process with each other. The following signals and information shall be used for the synchronization: - signals through the pilot wire circuit; - parameters through the digital communication circuit; - measurement values such as voltage and current level of the d.c. charging circuit.		P
	The d.c. EV charging station and the vehicle shall preserve specified time constraints and control timings for ensuring smooth charging control and operation.		P
	Charging control process as system action level is shown in Table 103. General sequence diagrams are specified in Annex AA, Annex BB, and Annex CC. Digital communication parameters, formats, and other communication requirements are specified in IEC 61851-24.		P
102.5.2	Description of the process before the start of charging (initialization)		P
	In this process, the vehicle and the d.c. EV charging station exchange their operational limitations and relevant parameters for charging control.		P
102.5.3	Description of the process during charging (energy transfer)		P
	In this process, the vehicle continues to send a setting value of charging current or voltage to the d.c. EV charging station throughout the charging process.		P
	Either of the following two algorithms shall be taken: a) CCC b) CVC		P
102.5.4	Description of process of shutdown		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Normal shutdown shall occur when the vehicle battery capacity reaches a certain limit, or when the charging process is stopped by the user with a normal stop means.		P
	Emergency shutdown shall occur under a fault condition.		P

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Clause	Requirement + Test		Verdict
A	ANNEX A (NORMATIVE), PILOT FUNCTION THROUGH A CONTROL PILOT CIRCUIT USING PWM MODULATION AND A CONTROL PILOT WIRE		P
A.1	General		P
A.2	Control pilot circuit		P
	 Figure A.3 – Typical charging cycle under normal operating conditions		---
	Table A.4 – description of connecting sequences as shown on Figure A.3		---
	--	State	Conditions
	1	A	Vehicle unconnected – the full generator voltage is measured by the EVSE at Va (see Figure A.1). The generator signal Vg is a +12 V DC voltage
	2	B	The cable assembly is connected to the vehicle and to the EVSE. This condition is detected by the 9 V signal measured at Va. The voltage from the signal generator (Vg) may be either a steady state +12 V DC or a ±12 V, 1 kHz signal in conformity with Table A.1 if the EVSE is immediately available f or the supply of energy.
	3	B	The EVSE is now able to supply energy and indicated the available current to the vehicle by the duty cycle in conformity with Table A.5. The presence of the diode D (see Figure A.1) is detected by the – 12 V and gives added guarantee that the 9 V signal is a reliable indication of a vehicle connected.
	4	B → C,D	S2 is closed by vehicle as a function of requirements to indicate that the vehicle can receive energy. There are no timing requirements for the closing of On.
	5	C,D	EVSE closes circuit. The timing of switch closure may be subject other requirements (payment, data exchange). If state D is detected, the switch will close only if ventilation requirements are met.
	6	C,D	Current drawn from the vehicle. The timing and current profile are determined by the vehicle. Current may not exceed that indicated by the duty cycle (Table A.5).

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Clause	Requirement + Test		Result - Remark	Verdict
	7	C,D	External demand for power reduction. Such a demand may originate from the grid or by manual setting on EVSE. The Vehicle adjusts the current demand to that indicated by the duty cycle.	P
	8	C,D	End of charge, decided by the vehicle.	P
	9	C,D →B	Vehicle asks for disconnect. This may be the result of the proximity contact being opened	P
	10	B	EVSE detects state B (created by opening of S2 on vehicle) and opens the contactor.	P
	11	A	Complete removal of cable assembly from vehicle or EVSE is detected by the 12V signal.	P
	NOTE The EVSE should allow removal of the plug if the end of the charging session is ended by entering state A.			---

Annex AA	DC EV CHARGING STATION OF SYSTEM A		N/A
AA.3	Specific safety requirements		N/A
AA.3.1	Fault protection in the secondary circuit		N/A
AA.3.1.1	General		N/A
	For fault protection in the secondary circuit, system A station shall have the following measures: a) reinforced isolating transformer; b) earth leakage current measurement using a grounding resistor between the d.c. power lines DC+/DC- and earth (enclosure and chassis); c) automatic disconnection of supply to d.c. power circuit at the first d.c. earth fault; d) charging cable consisting of line conductors that are individually insulated.		N/A
	When PE forms part of a charging cable, the cross-sectional area of PE shall be determined by the formula in 543.1.2 of IEC 60364-5-54:2011.		N/A
AA.3.1.2	Automatic disconnection and earth fault monitoring		N/A
	System A station shall measure the earth leakage current between the secondary circuit and its enclosure, or between the secondary circuit and the vehicle chassis.		N/A
	When an earth fault is detected during charging, the station shall reduce the d.c. output current to 5A or less.		N/A
	Then, the switch d1 shall be open in order to prevent the vehicle to close EV contactor. The line-to-line voltage of d.c. output V _{dc} shall be reduced to less than 60 V The automatic disconnection process shall be accomplished within 5 s from the detection of earth fault.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A method to detect a d.c. fault current is required for the first earth fault.		N/A
AA.3.2	Voltage measurement of d.c. power line for vehicle connector unlock		N/A
	The vehicle connector shall not be unlocked when hazardous voltage is detected. To unlock the vehicle connector, the voltage of d.c. power line shall be measured and be confirmed to be within safe levels, i.e. 10 V or less.		N/A
AA.3.3	Prevention of the hazard due to vehicle battery short-circuit		N/A
	Overcurrent protection device, such as current-limiting fuse u, shall be provided in the output circuit of system A station in order to prevent the hazard due to short-circuit current of vehicle battery caused by the reverse connection of charging cable by mistake.		N/A
	The overcurrent protection device shall have a current rating of 250 A or less, and be a quick-break type.		N/A
AA.3.4	Lock and latch monitoring for vehicle connector		N/A
	The vehicle connector shall have a means of mechanical latching, electrical locking, and lock and latch monitoring.		N/A
	In case of failure of mechanical latching or electrical locking of the vehicle connector, the station shall not energize the d.c. power lines connected to the vehicle connector.		N/A
	If the failure is detected during charging, the station shall reduce the d.c. output current to 5 A or less within 2 s. Then, the switch d1 shall open.		N/A
	The vehicle connector shall have a means to provide system A station with information on anomaly detection in monitoring of latch and electrical locking.		N/A
AA.3.5	Protection of EV contactor		N/A
	In order to prevent the welding of EV contactor, switches d1 and d2 shall not open at current exceeding 5 A.		N/A
AA.3.6	Emergency shutdown at control pilot disconnection		N/A
	If a control pilot is disconnected during charging, system A station shall decrease output current to 5 A or less within 30 ms.		N/A
AA.3.7	Turn on inrush current for vehicle circuit		N/A
	Inrush current on d.c. power line of system A station shall not exceed 20 A at vehicle connector.		N/A
AA.3.8	Protection against overvoltage at the battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	System A station shall reduce the d.c. output current to 5 A or less of rated current within 3 s to prevent overvoltage at the battery, if output voltage exceeds maximum voltage limit sent by the vehicle.		N/A
AA.3.9	Load dump		N/A
	In any case of load dump, voltage overshoot of d.c. output of the station shall not exceed 600 V.		N/A
AA.4	Charging process and communication between the d.c. EV charging station and the vehicle for charging control		N/A
	Communication between the station and the vehicle is carried out through the control pilots CP, CP2 and CP3, proximity circuit CS, the digital communication circuits COM1 and COM2.		N/A
AA.4.2	Charging control process		N/A
AA.4.2.1	State transition diagram and sequence diagram		N/A
	The charging process of system A shall conform to the state transition diagram as shown in Figure AA.5. Figure AA.6 gives the charging control sequence under normal conditions		N/A
AA.4.2.2	Start of charging		N/A
	When the charging process is initiated by system A station, d1 shall be closed. The switch d2 shall be open until the end of insulation test in AA.4.2.3.		N/A
AA.4.2.3	Insulation test before charging		N/A
	The insulation test shall not start until the vehicle provides system A station with a permission signal through CP3, and permission parameters by digital communication as shown in Annex A of IEC 61851-24:— Before the insulation test, system A station shall inform the vehicle through digital communication that the vehicle connector is locked.		N/A
	The insulation test shall be performed in accordance with 6.4.3.106 and as per the following procedure. a) Before the test, the station shall measure V_{dc} of d.c. power line and confirm that the EV contactors open. The voltage of d.c. power line, measured at V_{dc}, shall be 10 V or less. If the measured voltage exceeds 10 V, the charging process shall be shut down (see Figure AA.5). b) The voltage U that is applied to the d.c. power line shall be the maximum output voltage of the station. c) After the test, it shall be confirmed that the voltage at V_{dc} is 20 V or less. Then, the station shall inform the vehicle of the termination of test with closing d2 switch.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	During the insulation test, the earth fault shall be monitored in accordance with AA.3.1.2.		N/A
AA.4.2.4	Energy transfer		N/A
	System A shall continuously monitor the charging current value requested by the vehicle. The charging current shall be changed responding to the vehicle requested value, in accordance with CCC requirements in 101.2.1.2.1 and 101.2.1.3. The characteristics of charging current control shall meet Table AA.5 and Figure AA.8.		N/A
AA.4.2.5	Shutdown		N/A
	In order to terminate the charging safely, system A station shall comply with the following procedure.		N/A
	a) The station shall notify the vehicle of start of shutdown process by digital communication.		N/A
	b) The station shall reduce the output current to 5 A or less.		N/A
	c) In normal conditions, switches d1 and d2 shall not be open until the welding detection of EV contactor by vehicle is finished.		N/A
	d) After d1 and d2 open, and before the vehicle connector unlocks, it shall be confirmed that the voltage at Vdc is 10 V or less.		N/A
AA.4.3	Measuring current and voltage		N/A
	The accuracy of output measurement of system A shall be within the following values: – current: $\pm (1,5\% \text{ of actual current} + 1) \text{ A}$; – voltage: $\pm 5 \text{ V}$.		N/A
AA.5	Response to vehicle command on charge current		N/A
	System A station shall supply d.c. current to the vehicle using CCC with the vehicle as the master and DC charger as the slave. Recommended specification for the charge current request from the vehicle and the response performance of system A station are given in Table AA.5 and Figure AA.7 for the vehicle, and in Table AA.6 and Figure AA.8 for system A station.		N/A

Annex BB	DC EV CHARGING STATION OF SYSTEM B		N/A
BB.3	The operation and control procedure of charging process		N/A
BB.3.1	Measurement accuracy of current and voltage		N/A
	The accuracy of output measurement of system B shall be within the following values:		---
	- voltage measurement: $\pm 0,5\%$		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- current measurement: a) $\pm 2\%$ of the actual current if the actual current is above ($>$) 50 A; b) ± 1 A if the actual current is less than or equal to ($\leq$) 50 A.		N/A
BB.3.2	Proximity function		N/A
	When the vehicle connector is inserted into the vehicle inlet, the proximity function will be active. Namely once the voltage of detecting point 2 changes from 12 V to 6 V, the vehicle confirms the presence of the vehicle connector.		N/A
BB.3.3	Confirmation of connection state of vehicle interface (state 3).		N/A
	When the operator initiates the charging configuration for the d.c. EV charging station, the DC charger control unit can determine whether the vehicle connector is properly connected to the vehicle inlet by the voltage measurement of detecting point 1.		N/A
	When the operator completes the human-machine interaction setup and the d.c. EV charging station is properly connected, the DC charger control unit retains electrical interlock.		N/A
	The releasing of electrical interlock cannot be achieved unless the following three conditions are fully met: – charging terminates (there is no charging current output); – K1 – K6 are all disconnected; – unlock command is received from operator.		N/A
BB.3.4	DC charger self-detection is finished (state 4)		N/A
	After the vehicle interface is properly connected, if the DC charger self-detection (including insulation monitoring) is finished, close K3 and K4 to initiate low voltage auxiliary supply circuit.		N/A
	After the energy is transferred to the low voltage supply power circuit by DC charger, the EV vehicle control unit determines whether the vehicle interface is properly connected by the voltage measurement of detecting point 2.		N/A
	If the voltage of detecting point 2 is 6 V, then the vehicle control unit begins to send “vehicle control unit (or battery management system) identification broadcast message” periodically.		N/A
	The signal can be considered as one of the trigger conditions of non-driving state.		N/A
BB.3.5	Charger ready (state 5)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After handshaking and configuration for the vehicle control unit and the DC charger control unit is finished by communication, the vehicle control unit closes K5 and K6 to energize charging supply output circuit; and the DC charger control unit closes K1 and K2 to energize the d.c. power supply circuit.		N/A
BB.3.6	Charging stage (state 5)		N/A
	During the whole charging process, the vehicle control unit controls the charging process by sending the battery charge level requirements to the DC charger control unit. The DC charger control unit adjusts the charging voltage and current to ensure normal operation of charging procedure according to the battery charge level requirements. In addition, the vehicle control unit and the DC charger control unit send charging status to each other.		N/A
BB.3.7	Terminate charging in normal condition		N/A
	The vehicle control unit determines when to stop charging according to the charged status of the battery system or whether there is a message of "Terminate Charger Request/Response" from the d.c. EV charging station.		N/A
	When one of the above charging termination conditions is met, the vehicle control unit starts to send "Vehicle control unit (or battery management system) Terminate Charger Request/Response" periodically, and makes the charger stop charging before K1, K2, K5 and K6 are opened.		N/A
	After communication is closed, K3 and K4 shall be opened, then release the electrical interlock. Finally the vehicle coupler could be disconnected and the whole charging process is finished.		N/A
BB.3.8	Safety protection under failure mode		N/A
BB.3.8.1	Safety protection under general failures		N/A
	During the charging process, when there are general failures, the DC charger control unit automatically stops charging (shutdown charging current output), then contactors K1, K2, K5, K6, K3 and K4 are opened by the DC charger control unit and the vehicle control unit before the operators release the electrical interlock through the DC charger setup, pull out the vehicle connector or carry out the error checks.		N/A
BB.3.8.2	Protection against overvoltage at the battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The system B station shall reduce the d.c. output current to less than 5 A within 2 s, to prevent overvoltage at the battery, if the output voltage exceeds the maximum voltage limit of the battery system for 1 s.		N/A
BB.3.8.3	Requirements for load dump		N/A
	In any case of load dump, the voltage overshoot shall not exceed 110 % of the maximum voltage limit requested by the vehicle.		N/A
BB.4	Sequence diagram of charging process		N/A
	The sequence diagram of charging process should comply with Figure BB.2.		N/A

Annex CC	DC EV CHARGING STATION OF SYSTEM C (COMBINED CHARGING SYSTEM)		P
CC.2	Communication		P
CC.2.1	The general definitions and functions of the Proximity (PP) and Pilot (CP) – signals / contacts are according to IEC 61851-1 (including detailed resistor definitions in Clause B.5) and SAE J1772™ with specific resistor values for configurations DD and FF given in Table CC.2. A CP duty cycle of 5% shall be used according Annex A of IEC 61851-1:2010.		P
CC.2.2	Charge control communications between the d.c. supply and the EV are specified in IEC 61851-24		P
	The physical layer for charge control communications shall comply with ISO/IEC 15118-3. Equivalent requirements for the physical layer of communications are in SAE J2931/4.		P
	Communication is achieved by PLC on CP and PE/ground contacts. Contact assignments of the different connectors are in IEC 62196-3.		P
	Charge control communications shall comply with DIN SPEC 70121. Charge control communications shall also comply with ISO/IEC 15118-2. Equivalent requirements for charge control communications are in SAE J2836/2™, SAE J2847/2 and SAE J2931/1.		P
CC.3	Process of energy supply		P
	The process of supplying energy to the EV by the d.c. supply is initiated and controlled by the messages sent over PLC and shall follow the sequences shown in Figures CC.1 to CC.4.		P
CC.3.2	Normal start up		P
	Sequence diagram for normal start up shall follow Figure CC.1 and Table CC.3.		P
CC.3.3	Normal shutdown		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Sequence diagram for normal shutdown shall follow Figure CC.2 and Table CC.4.		P
CC.3.4	DC supply initiated emergency shutdown		P
	An emergency shutdown of the output current to less than 5 A within 1s with a current descending rate of 200 A/s or more shall be applied by the d.c. supply.		P
	DC supply shall indicate supply initiated emergency shutdown by turning off CP oscillator.		P
CC.3.5	EV initiated emergency shutdown		P
	EV triggers emergency shutdown by opening S2 and changing CP state from C/D to B.		P
	DC supply shall acknowledge emergency shutdown request from the EV by performing emergency shutdown according to CC.3.3.		P
CC.4	Safety measures		P
CC.4.1	IT (isolated terra) system requirements		P
	The secondary circuit (output side) of the d.c. supply shall be designed as an IT system and protection measures in accordance with 411 of IEC 60364-4-41:2005 shall be applied.		P
	In case of using an insulation monitoring device (IMD), it shall comply with IEC 61557-8 or equivalent. The d.c. supply shall perform insulation monitoring between DC+ and PE and DC and PE during the supply process and communicate the current state (Invalid, Valid, Warning, Fault) of the system periodically to the EV.		P
	Prior to each supply cycle the following tests shall be performed. During these tests the d.c. output voltage shall not exceed 500 V at vehicle connector.		P
	a) A self-test of the insulation monitoring function of the d.c. supply shall be done by applying a defined fault resistor between d.c. output rail and equipotential bonding (e.g. PE). At least one of the following three possibilities for time management of self-test shall be applied:		P
	1) directly prior to supply cycle with vehicle connector plugged into vehicle inlet; 2) at regular intervals with maximum period of 1 h; 3) after self-test has successfully been performed the station may stay in Valid state for a maximum time of 1 h and during supply session under normal conditions.		P
	b) An insulation check of the system according to 6.4.3.106, e.g. by IMD shall be performed:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	1) vehicle connector not plugged into vehicle inlet: system comprises station, cable and vehicle connector, or		P
	2) vehicle connector plugged into vehicle inlet: system comprises station, charging cable, vehicle connector, vehicle inlet and vehicle cables.		P
	The insulation states of the system are defined as follows: invalid state, valid state, warning state, fault state, no IMD state.		P
CC.4.2	Temperature monitoring		P
	Temperature monitoring of the vehicle connector is required and shall be done by the d.c. supply to avoid overheating of vehicle connector.		P
	The station shall shutdown when the lower of the following 2 limits is exceeded: – the vehicle connector contact temperature limit is exceeded; or – the vehicle connector cable temperature rating is exceeded.		P
CC.4.3	Combined coupler lock function		N/A
	For all types of d.c. connectors according to Table CC.1, the vehicle inlet shall provide a locking function to mitigate unintentional disconnecting of the vehicle connector from the vehicle inlet during energy supply.		N/A
CC.4.4	CP lost shutdown (for all connectors of configuration CC)	Configuration FF	N/A
	Fast emergency shutdown of the output current to less than 5 A within 30 ms shall be applied by the d.c. supply.		N/A
	Shutdown is initiated by direct change of pilot from state C to state A due to interruption of the CP line. If an interruption of the pilot occurs the station shall latch the fault, which will prevent the station from going into ready mode until the station is serviced.		N/A
	De-energization of the system shall be done within 100 ms according to Table A.7 in Part 1.		N/A
CC.4.5	PP lost shutdown (additionally with using connector configurations CC and EE)	Configuration FF	N/A
	Fast emergency shutdown of the output current by the d.c. supply within 30 ms shall be applied. Shutdown is initiated by the EVSE and vehicle detecting the Proximity Circuit transitioning from no Proximity Circuit fault detected, S3 closed, to any other state.		N/A
CC.4.6	Voltage check at initialization		P

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Clause	Requirement + Test	Result - Remark	Verdict
	At beginning of supply session, with CP state A or B, the d.c. supply shall check if voltage on the cable is less than 60 V and shall terminate supply session if 60 V is exceeded.		P
CC.4.7	DC EV charging station maximum output Y capacitance		P
	The maximum total parallel Y capacitance shall not exceed 1 μ F. This implies Y capacitance ≤ 500 nF across each d.c. rail and ground for a d.c. EV charging station with Y capacitance equally distributed between each d.c. rail and ground.		P
CC.5	Additional functions		P
CC.5.1	Pre-charging		P
	Pre-charging for voltage matching shall be done by d.c. EV charging station according to the requirements given in 101.2.1.6.		P
CC.5.2	Wake up of d.c. supply by EV		N/A
	The d.c. supply may support a standby mode to minimize power consumption as described as optional function in 6.4.4.101.		N/A
	In this case it is mandatory for the d.c. supply to wake up and resume energy supply according to the following method.		N/A
	If the vehicle attached to the d.c. supply has not changed the control pilot from state B2 to C2 or D2 for more than 2 min, the station may go to sleep.		N/A
	The control pilot signal B1 shall be supplied continuously by the d.c. supply to enable a wake up of the station triggered by the EV changing into state C1 or D1.		N/A
CC.5.3	Provision for manual unlocking of vehicle connector		N/A
	A means may be provided by the EV to manually unlock the vehicle connector even in case the voltage at the output stays higher than 60 V after the termination of the energy supply.		N/A
CC.5.4	Configuration CC connector latch position switch (S3) activation		N/A
	Latch position switch (S3) of the configuration CC connector shall not be able to be actuated when the vehicle connector is locked to the vehicle inlet.		N/A
CC.5.5	Configuration CC connector latch and latch position switch (S3) verification		N/A
	A supply cycle shall only be allowed once the d.c. EV charging station checks for the existence of the configuration CC connector latch and the function of the latch position switch (S3) prior to connecting the vehicle connector to the vehicle inlet.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
CC.6	Specific requirements		P
CC.6.1	Turn on inrush current (d.c. side)		P
	Any inrush current on d.c. side in both directions when closing of EV disconnection device and station contactors, if any, shall not exceed 2 A. DC supply shall be responsible for limiting the inrush current, e.g. by applying a pre-charging circuit as shown in Figure CC.3.		P
CC.6.2	Protection against overvoltage of battery		P
	The d.c. supply shall trigger a d.c. supply initiated emergency shutdown according to CC.3.4 in order to prevent overvoltage at the battery, if output voltage exceeds maximum voltage limit sent by the vehicle for 400 ms.		P
CC.6.3	Requirements for load dump		P
	In any case of load dump, voltage overshoot shall not exceed 110 % of the maximum voltage limit requested by the vehicle.		P
	Maximum slew rate of output voltage in case of load dump shall not exceed 250 V/ms.		P
CC.6.4	DC output current regulation		P
	When in current regulation mode, the DC charger shall provide direct current to the vehicle.		P
	The maximum allowable error between the actual average d.c. current value and the vehicle commanded current value is: – ± 150 mA when the commanded current value is less than or equal to 5 A; – ± 1.5 A when the commanded current value is greater than 5 A but less than or equal to 50A; – ± 3 % of the DC charger's maximum current output when the commanded current value is greater than 50 A.		P
CC.6.5	Measuring current and voltage		P
	The accuracy of output measurement of system C shall be within the following values: – voltage: ± 10 V		P
	The measured current reported shall be within $\pm 1,5\%$ of reading, but not better than $\pm 0,5$ A.		P

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Clause	Requirement + Test	Result - Remark	Verdict
11.4.1	TABLE: Dielectric Strength		P
Test voltage applied between:		Test potential applied (V)	Breakdown / flashover (Yes/No)
Input live parts and PE & metal enclosure (B.I.)		2100 VDC	No
Input live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		4200 VDC	No
Input live parts and CP & PP (R.I.)		4200 VDC	No
Input live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		4200 VDC	No
Input live parts and output live parts (B.I.)		2100 VDC	No
Output live parts and PE & metal enclosure (B.I.)		2100 VDC	No
Output live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		4200 VDC	No
Output live parts and CP & PP (R.I.)		4200 VDC	No
Output live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		4200 VDC	No
Supplementary information:			
1. B.I. - basic insulation, R.I. - reinforced insulation			
2. This test was conducted on the models RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU respectively, and the test results were the same.			

11.4.2	TABLE: impulse tests (1.2/50µs)		P
Test voltage applied between:		Test voltage applied (V)	Breakdown / flashover (Yes/No)
Input live parts and PE & metal enclosure (B.I.)		4923	No
Input live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		7385	No
Input live parts and CP & PP (R.I.)		7385	No
Input live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		7385	No
Input live parts and output live parts (B.I.)		4923	No
Output live parts and PE & metal enclosure (B.I.)		4923	No
Output live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		7385	No
Output live parts and CP & PP (R.I.)		7385	No
Output live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		7385	No

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: 1. B.I. - basic insulation, R.I. - reinforced insulation 2. Due to the testing location being below 100 meters in altitude, the applied pulse voltages need to be corrected for altitude and adjusted to 4923V (Basic/ Supplementary insulation) and 7385V (Reinforced/ Double insulation). 3. This test was conducted on the models RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU respectively, and the test results were the same.			

11.5	TABLE: insulation resistance measurements		P
Insulation resistance R between:		R (MΩ)	Required R (MΩ)
Input live parts and PE & metal enclosure (B.I.)		>120	>1
Input live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		>120	>7
Input live parts and CP & PP (R.I.)		>120	>7
Input live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		>120	>7
Input live parts and output live parts (B.I.)		>120	>1
Output live parts and PE & metal enclosure (B.I.)		>120	>1
Output live parts and plastic enclosure (display screen, touch pad, NFC, etc.) (R.I.)		>120	>7
Output live parts and CP & PP (R.I.)		>120	>7
Output live parts and other SELV (RJ45, UI, 485 and APP) (R.I.)		>120	>7
Supplementary information: B.I. - basic insulation, R.I. - reinforced insulation			

11.6	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
For model RHDC400K-ZJ2-EU						
Between the copper bars of the AC circuit breaker and the metal enclosure (B.I.)	325 VAC	230 VAC	3.00	>30.00	3.00	>30.00
Between the copper bars of AC contactor and the metal enclosure (B.I.)	325 VAC	230 VAC	3.00	>60.00	3.00	>60.00
Between the copper bars near the lower DC shunt and the metal enclosure (B.I.)	1000 VDC	1000 VDC	3.00	>30.00	10.00	>30.00
Between the DC input terminal and the SELV on the IMD board (R.I.)	1000 VDC	1000 VDC	5.50	>15.00	10.00	>15.00

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Clause	Requirement + Test			Result - Remark		Verdict
	For model RHDC160K-ZJ7-EU					
Between the copper bars of the AC circuit breaker and the metal enclosure (B.I.)	325 VAC	230 VAC	3.00	>30.00	3.00	>30.00
Between the copper bars near the lower DC shunt and the metal enclosure (B.I.)	1000 VDC	1000 VDC	5.50	>30.00	10.00	>30.00
Between the copper bars near the lower DC shunt and the PLC box (R.I.)	1000 VDC	1000 VDC	5.50	>50.00	20.00	>50.00
Between the DC input terminal and the SELV on the IMD board (R.I.)	1000 VDC	1000 VDC	5.50	>15.00	10.00	>15.00
Supplementary information: 1. Abbreviation definition: B.I. - basic insulation, R.I. - reinforced insulation, F.I.- functional insulation. 2. Approved SMPS used for isolation between SELV circuit and HV circuit. 3. Approved AC/DC power module used for isolation between AC input circuit and DC output circuit of main power. 4. When determine the clearance according to the PEC connected to AC mains which is the most severe requirements: 1) For DC output circuits: system voltage 1000VDC, Overvoltage Category II applied (impulse withstand voltage 4000V For B.I., 6000V for R.I.). 2) For AC input circuits: system voltage 400VAC, Overvoltage Category III applied (impulse withstand voltage 4000V For B.I., 6000V for R.I.). 3) The max. Altitude is 2000m, limit of clearance by the correction factor 1.0 considered. 5. When determine the creepage: Outside the enclosure is considered as PD3. The module meets the requirements of IP55, and inside the enclosure is considered as PD2.						

11.7	TABLE: Touch current and protective conductor current					P
	Test circuit		accordance with IEC 60990			—
	Supply voltage (Volt)		440VAC			—
	Frequency (Hz)		50.00Hz			—
—	—	—	Touch Current (mA r.m.s.)			
Terminal A (Switch “s”) of Measuring Instrument Connected to:	Switch “e” Position	Component Disconnected	Polarity P1/Primary Switch Condition			
—	—	—	Normal/ EUT On	Normal/ EUT Off	Reverse/ EUT On	Reverse/ EUT Off
Metal enclosure	Open	—	2.499	0.732	0.525	0.547
CP/PP	Open	—	0.894	0.728	0.520	0.498
Plastic enclosure covered by a metal foil	Open	—	0.184	0.165	0.160	0.161

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Clause	Requirement + Test			Result - Remark		
Screen	Open	—	0.167	0.163	0.158	0.159
Miss phase (Metal enclosure) ¹⁾	Open	—	—	0.526	—	0.527
Miss phase (Plastic enclosure) ¹⁾	Open	—	—	0.164	—	0.161
Miss phase (CP/PP) ¹⁾	Open	—	—	0.543	—	0.538
Miss phase (Screen) ¹⁾	Open	—	—	0.163	—	0.159
Supplementary information:						
¹⁾ After the phase opened, the RCCB will trip and then no any touch current can occur.						

11.9	TABLE: Heating Test			P
	Test voltage (V)	Input: 340VAC		—
	Test current (A)	Output 1: 1000VDC, 350A Total power: 350kW		—
	Ambient (°C)	50.00		—
Thermocouple Locations		Max. temperature measured, (°C)	Max. temperature limit, (°C)	
Ambient		50.00	Ref.	
DC contactor K5 5mm		50.66	85.00	
DC contactor K3 5mm		51.48	85.00	
DC fuse FU1 5cm		51.54	120.00	
SMPS 5mm		51.09	70.00	
Wiring terminal JCOM56 on the PCB board		50.74	85.00	
Wiring connector KW1-A		51.50	125.00	
SMPS PM8 5mm on the PCB board		52.34	85.00	
Relay near connector 5mm		51.29	85.00	
DC Fuse FU2 5cm		50.44	120.00	
Transformer on the PCB board		51.07	125.00	
DC contactor K2 5mm		50.52	85.00	
E-cap E21 on the PCB		50.77	85.00	
4G router		59.75	Ref.	
Intermediate relay K1 5mm		61.50	70.00	
AC fuse FU3 5cm		61.81	120.00	
PLC		62.34	85.00	
AC contactor KM1 5mm		65.34	70.00	
AC circuit breaker QF1 5mm		63.44	70.00	

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Clause	Requirement + Test	Result - Remark	Verdict
RCD QF3 5mm	61.60	70.00	
SPD 5mm	60.80	80.00	
Diverter	82.02	Ref.	
Output cable of connector A inside the enclosure	55.95	105.00	
Output cable of connector B inside the enclosure	65.14	105.00	
DC meter	62.28	70.00	
Output cable near connector A	53.38	65.00	
Limited switch	51.53	Ref.	
Handle of DC integrated module	50.31	75.00	
Air inlet/Accessible metal enclosure (Left)	50.71	75.00	
Power module MK4 5mm	62.92	70.00	
Output cable near connector B	57.35	65.00	
Accessible metal enclosure (Front)	57.36	75.00	
Emergency stop button	55.60	70.00	
Card reader	57.63	75.00	
Air outlet/Accessible metal enclosure (Right)/Fan 5mm	58.05	70.00	
Handle of right door	57.60	75.00	
Touch screen	57.89	75.00	
Output cable of connector B	72.06	75.00	
Handle of connector B	58.28	65.00	
Output cable of connector A	54.57	75.00	
Handle of connector A	51.68	65.00	
Supplementary information: 1. In the "Maximum Allowable Temperature" column of this table, "Ref." indicates that the actual temperature rise limit for this test point should be based on the end use. 2. Test sample: RHDC400K-ZJ2-EU 3. Connector B is used as the output connector during this testing.			

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Clause	Requirement + Test	Result - Remark	Verdict
11.9	TABLE: Heating Test		P
	Test voltage (V)	Input: 460VAC	—
	Test current (A)	Output 1: 571VDC, 350A Total power: 200kW	—
	Ambient (°C)	50.00	—
Thermocouple Locations		Max. temperature measured, (°C)	Max. temperature limit, (°C)
Ambient		50.00	Ref.
DC contactor K5 5mm		50.51	85.00
DC contactor K3 5mm		51.40	85.00
DC fuse FU1 5cm		51.42	120.00
SMPS 5mm		51.02	70.00
Wiring terminal JCOM56 on the PCB board		50.70	85.00
Wiring connector KW1-A		51.46	125.00
SMPS PM8 5mm on the PCB board		52.01	85.00
Relay near connector 5mm		51.08	85.00
DC Fuse FU2 5cm		50.70	120.00
Transformer on the PCB board		51.13	125.00
DC contactor K2 5mm		50.63	85.00
E-cap E21 on the PCB		50.92	85.00
4G router		54.59	Ref.
Intermediate relay K1 5mm		56.07	70.00
AC fuse FU3 5cm		56.28	120.00
PLC		56.92	85.00
AC contactor KM1 5mm		60.19	70.00
AC circuit breaker QF1 5mm		58.47	70.00
RCD QF3 5mm		56.74	70.00
SPD 5mm		56.10	80.00
Diverter		77.65	Ref.
Output cable of connector A inside the enclosure		52.84	105.00
Output cable of connector B inside the enclosure		60.56	105.00
DC meter		56.76	70.00
Output cable near connector A		51.45	65.00
Limited switch		50.26	Ref.

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Clause	Requirement + Test	Result - Remark	Verdict
	Handle of DC integrated module	50.65	75.00
	Air inlet/Accessible metal enclosure (Left)	50.77	75.00
	Power module MK4 5mm	61.35	70.00
	Output cable near connector B	55.05	65.00
	Accessible metal enclosure (Front)	52.46	75.00
	Emergency stop button	51.84	70.00
	Card reader	53.23	75.00
	Air outlet/Accessible metal enclosure (Right)/Fan 5mm	57.48	70.00
	Handle of right door	55.46	75.00
	Touch screen	52.71	75.00
	Output cable of connector B	60.88	75.00
	Handle of connector B	51.14	65.00
	Output cable of connector A	52.07	75.00
	Handle of connector A	50.86	65.00
Supplementary information:			
1. In the "Maximum Allowable Temperature" column of this table, "Ref." indicates that the actual temperature rise limit for this test point should be based on the end use.			
2. Test sample: RHDC400K-ZJ2-EU			
3. Connector B is used as the output connector during this testing.			

11.9	TABLE: Heating Test		P
	Test voltage (V)	Input: 460VAC	—
	Test current (A)	Output 1: 1000VDC, 200A Output 2: 1000VDC, 200A Total power: 400kW	—
	Ambient (°C)	50.00	—
Thermocouple Locations		Max. temperature measured, (°C)	Max. temperature limit, (°C)
Ambient		50.00	Ref.
DC contactor K5 5mm		50.40	85.00
DC contactor K3 5mm		51.00	85.00
DC fuse FU1 5cm		51.14	120.00
SMPS 5mm		51.10	70.00
Wiring terminal JCOM56 on the PCB board		50.58	85.00
Wiring connector KW1-A		51.43	125.00
SMPS PM8 5mm on the PCB board		52.01	85.00

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Clause	Requirement + Test	Result - Remark	Verdict
	Relay near connector 5mm	51.67	85.00
	DC Fuse FU2 5cm	50.47	120.00
	Transformer on the PCB board	50.92	125.00
	DC contactor K2 5mm	50.88	85.00
	E-cap E21 on the PCB	50.71	85.00
	4G router	59.51	Ref.
	Intermediate relay K1 5mm	60.59	70.00
	AC fuse FU3 5cm	60.74	120.00
	PLC	61.81	85.00
	AC contactor KM1 5mm	63.91	70.00
	AC circuit breaker QF1 5mm	62.00	70.00
	RCD QF3 5mm	60.53	70.00
	SPD 5mm	59.80	80.00
	Diverter	70.42	Ref.
	Output cable of connector A inside the enclosure	58.83	105.00
	Output cable of connector B inside the enclosure	60.81	105.00
	DC meter	60.85	70.00
	Output cable near connector A	57.30	65.00
	Limited switch	51.47	Ref.
	Handle of DC integrated module	50.17	75.00
	Air inlet/Accessible metal enclosure (Left)	50.44	75.00
	Power module MK4 5mm	64.19	70.00
	Output cable near connector B	56.49	65.00
	Accessible metal enclosure (Front)	56.26	75.00
	Emergency stop button	55.22	70.00
	Card reader	57.12	75.00
	Air outlet/Accessible metal enclosure (Right)/Fan 5mm	58.56	70.00
	Handle of right door	57.86	75.00
	Touch screen	56.83	75.00
	Output cable of connector B	61.64	75.00
	Handle of connector B	57.40	65.00
	Output cable of connector A	55.84	75.00
	Handle of connector A	51.46	65.00

IEC 61851-23			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: 1. In the "Maximum Allowable Temperature" column of this table, "Ref." indicates that the actual temperature rise limit for this test point should be based on the end use. 2. Test sample: RHDC400K-ZJ2-EU			

11.9	TABLE: Heating Test		P
	Test voltage (V)	Input: 340VAC	—
	Test current (A)	Output 1: 571VDC, 350A Output 2: 571VDC, 350A Total power: 400kW	—
	Ambient (°C)	50.00	—
Thermocouple Locations		Max. temperature measured, (°C)	Max. temperature limit, (°C)
Ambient		50.00	Ref.
DC contactor K5 5mm		50.05	85.00
DC contactor K3 5mm		50.77	85.00
DC fuse FU1 5cm		50.83	120.00
SMPS 5mm		50.41	70.00
Wiring terminal JCOM56 on the PCB board		50.27	85.00
Wiring connector KW1-A		51.11	125.00
SMPS PM8 5mm on the PCB board		51.75	85.00
Relay near connector 5mm		50.95	85.00
DC Fuse FU2 5cm		50.64	120.00
Transformer on the PCB board		50.66	125.00
DC contactor K2 5mm		51.03	85.00
E-cap E21 on the PCB		50.32	85.00
4G router		61.91	Ref.
Intermediate relay K1 5mm		62.90	70.00
AC fuse FU3 5cm		63.19	120.00
PLC		64.66	85.00
AC contactor KM1 5mm		66.03	70.00
AC circuit breaker QF1 5mm		63.90	70.00
RCD QF3 5mm		62.98	70.00
SPD 5mm		61.97	80.00
Diverter		81.83	Ref.
Output cable of connector A inside the enclosure		63.84	105.00

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Clause	Requirement + Test	Result - Remark	Verdict
Output cable of connector B inside the enclosure	64.68	105.00	
DC meter	63.37	70.00	
Output cable near connector A	63.24	65.00	
Limited switch	50.16	Ref.	
Handle of DC integrated module	50.84	75.00	
Air inlet/Accessible metal enclosure (Left)	50.06	75.00	
Power module MK4 5mm	67.00	70.00	
Output cable near connector B	56.98	65.00	
Accessible metal enclosure (Front)	57.37	75.00	
Emergency stop button	55.33	70.00	
Card reader	57.74	75.00	
Air outlet/Accessible metal enclosure (Right)/Fan 5mm	60.36	70.00	
Handle of right door	58.33	75.00	
Touch screen	57.84	75.00	
Output cable of connector B	67.11	75.00	
Handle of connector B	57.20	65.00	
Output cable of connector A	57.90	75.00	
Handle of connector A	51.03	65.00	
Supplementary information:			
1. In the "Maximum Allowable Temperature" column of this table, "Ref." indicates that the actual temperature rise limit for this test point should be based on the end use.			
2. Test sample: RHDC400K-ZJ2-EU			

11.9	TABLE: Heating Test		P
	Test voltage (V)	Input: 340VAC	—
	Test current (A)	Output: 1000VDC, 160A Total power: 160kW	—
	Ambient (°C)	50.00	—
Thermocouple Locations		Max. temperature measured, (°C)	Max. temperature limit, (°C)
Ambient		50.00	Ref.
DC contactor K5 5mm		55.52	85.00
DC contactor K3 5mm		57.92	85.00
DC fuse FU1 5cm		63.07	120.00
SMPS 5mm		57.50	70.00

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Clause	Requirement + Test	Result - Remark	Verdict
Wiring terminal JCOM56 on the PCB board	54.13	85.00	
Wiring connector KW1-A	56.09	125.00	
SMPS PM8 5mm on the PCB board	58.38	85.00	
Relay near connector 5mm	61.45	85.00	
Transformer on the PCB board	58.54	125.00	
E-cap E21 on the PCB	53.28	85.00	
4G router	58.27	Ref.	
Intermediate relay K1 5mm	56.87	70.00	
AC fuse FU3 5cm	56.65	120.00	
PLC	53.64	85.00	
AC contactor KM1 5mm	64.20	70.00	
AC circuit breaker QF1 5mm	57.99	70.00	
RCD QF3 5mm	56.46	70.00	
SPD 5mm	56.61	80.00	
Diverter	61.74	Ref.	
Output cable of connector A inside the enclosure	56.63	105.00	
DC meter	51.24	70.00	
Output cable near connector A	56.63	65.00	
Limited switch	50.88	Ref.	
Handle of DC integrated module	54.78	75.00	
Air inlet/Accessible metal enclosure (Left)	50.59	75.00	
Accessible metal enclosure (Front)	53.45	75.00	
Emergency stop button	54.22	70.00	
Card reader	56.27	75.00	
Air outlet/Accessible metal enclosure (Right)/Fan 5mm	60.09	70.00	
Handle of right door	56.65	75.00	
Touch screen	54.42	75.00	
Output cable of connector A	54.76	75.00	
Handle of connector A	52.67	65.00	
Supplementary information:			
1. In the "Maximum Allowable Temperature" column of this table, "Ref." indicates that the actual temperature rise limit for this test point should be based on the end use.			
2. Test sample: RHDC160K-ZJ7-EU			

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Clause	Requirement + Test		Result - Remark	Verdict
101.2.1.2.1	TABLE: output current regulation in CCC			P
Required output current (A)	Current measured (A)	Deviation (A)	Limit (A)	Remark
1000VDC, 350A	349.73	-0.27	± 17.50	-
1000VDC, 175A	174.26	-0.74	± 8.75	-
1000VDC, 5A	4.95	-0.05	± 2.50	-
571VDC, 350A	346.69	-3.31	± 17.50	-
571VDC, 175A	174.26	-0.75	± 8.75	-
571VDC, 5A	4.94	-0.06	± 2.50	-
200VDC, 350A	348.61	-1.39	± 17.50	-
200VDC, 175A	174.27	-0.73	± 8.75	-
200VDC, 5A	4.97	-0.03	± 2.50	-
Supplementary information: Input condition: 400VAC, 50Hz				

101.2.1.2.2	TABLE: output voltage regulation in CVC			P
Required output voltage (V)	Voltage measured (V)	Deviation (V)	Limit (V)	Remark
1000VDC, 350A	998.60	-1.40	± 20.00	-
1000VDC, 175A	999.33	-0.67	± 20.00	-
1000VDC, 5A	1000.70	+0.70	± 20.00	-
571VDC, 350A	570.87	-0.13	± 20.00	-
571VDC, 175A	571.83	+0.83	± 20.00	-
571VDC, 5A	572.57	+1.57	± 20.00	-
200VDC, 350A	194.06	-5.94	± 20.00	-
200VDC, 175A	200.14	+0.14	± 20.00	-
200VDC, 5A	200.70	+0.70	± 20.00	-
Supplementary information: Input condition: 400VAC, 50Hz				

101.2.1.3	TABLE: Control delay of charging current in CCC			P
Current range of change	Reaction time of EV charging station (s)	Delay time (s)	Limit (s)	Remark
0-350A, 1000VDC ¹⁾	-	18.72ms	17.50	18.70
0-350A, 571VDC ¹⁾	-	13.28ms	17.50	26.35
0-350A, 1000VDC ²⁾	-	18.20ms	17.50	19.23
0-350A, 571VDC ²⁾	-	12.60ms	17.50	27.78

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: 1. The description of superscript: 1) Input condition: 340VAC, 50Hz 2) Input condition: 460VAC, 50Hz 2. The data in the Remark represent Measured change rate of current (unit: kA/s), and the limit of change rate for normal shutdown is ≥ 20 A/s according to IEC 61851-23:2014.			

101.2.1.5	TABLE: Periodic and random deviation (current ripple)					P
Output voltage (V)	Output current (A)	Current ripple (A)	Frequency (Hz)	Limit (A)	Remark	
1000	350	0.16	Below 5Hz	1.5	-	
		5.72	Below 5kHz	6.0	-	
		8.16	Below 150kHz	9.0	-	
571	350	0.11	Below 5Hz	1.5	-	
		5.32	Below 5kHz	6.0	-	
		8.00	Below 150kHz	9.0	-	
Supplementary information:						

101.2.1.6	TABLE: Periodic and random deviation(voltage ripple in CVC)					P
Required output voltage (V)	Output voltage (V)	Voltage deviation (%)	Limit (%)	Remark		
1000VDC, 350A ¹⁾	998.66	- 0.134	± 5	0.132		
571VDC, 350A ¹⁾	569.66	- 0.235	± 5	0.130		
1000VDC, 350A ²⁾	1001.28	+ 0.128	± 5	1.219		
571VDC, 350A ²⁾	571.94	+ 0.165	± 5	0.705		
200VDC, 350A ²⁾	200.43	+ 0.215	± 5	0.980		
Supplementary information: 1. The tests of all conditions in this table were carried out when the input voltage is 400V and the frequency is 50Hz. 2. The description of superscript: 1) Measure the maximum Voltage deviation during pre-charge state and slew rate (Annex 5.1). 2) Measure the maximum Voltage deviation during charging. 3. The data in the Remark represent Measured Voltage slew rate (unit: V/ms), and the maximum voltage slew rate in normal operation shall not exceed ± 20 V/ms.						

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Clause	Requirement + Test		Result - Remark		Verdict
5	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
1. Enclosure (for rated power of 180-400kW)	Jiangxi Ruihua Intelligent Technology Co., Ltd.	RHDC-ZJ2	SGCC H×W×D×T: 2046.0mm×801.0mm×836.0mm×1.5mm	Tested with appliance	Tested with appliance
2. Enclosure (for rated power of 60-160W)	Jiangxi Ruihua Intelligent Technology Co., Ltd.	RHDC-ZJ7	SGCC H×W×D×T: 1816.0mm×640.0mm×760.0mm×1.5mm	Tested with appliance	Tested with appliance
3. Material for PC cover	SABIC JAPAN L L C	945(GG)	V-0, 120°C GWIT: 800°C GWFI: 825°C Min. Thickness: 1.5mm	UL 94 UL 746C	UL E207780
4. Insulated column	Guangdong Wolf Polymer Material Technology Co., Ltd.	WF88	V-0, 130°C	UL 94 UL 746C	UL E488513
5. Display screen	HUNAN DWIN TECHNOLOGY CO., LTD.	DMG10600T1 01_01WTC	10.1-inch, 250 nits W×H: 222.72mm × 125.28mm 6-36VDC, 5W Max. -20°C to 70°C	Tested with appliance	Tested with appliance
(Alternative)	HUNAN DWIN TECHNOLOGY CO., LTD.	DMG10600T1 01_09WTC	10.1-inch, 550 nits W×H: 222.72mm × 125.3mm 6-36VDC, 5W Max. -20°C to 70°C	Tested with appliance	Tested with appliance
6. Emergency stop (SBE)	ZHEJIANG ANU ELECTRIC CO., LTD.	LA139A-BS545	AC-15 220VAC, 5A 1 Form A and 1 Form B	EN IEC 61058-1:2018 EN 61058-1-1:2016	TVU R 50665076 0001
(Alternative)	DELIXI ELECTRIC LTD.	LAY5s	AC-15 240VAC, 3A 1 Form A and 1 Form B	EN 60947-5-1:2017	Intertek VOC: 211100044SH A-V1

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Clause	Requirement + Test		Result - Remark		Verdict
7. MCCB (QF1, QF2 for rated power of 330-400kW; QF1 for rated power of 180-320kW)	Schneider Electric (China) Co., Ltd.	EZSS400F3400 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 35kA -35°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715841/M1
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	C40N3TM400 (ComPacT NSX400N)	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_711869/M2
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS400N	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715394/M2
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-400L	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 37.5kA -35°C to 70°C	EN 60947-2:2017+A1	TUV AN 50608918 0001

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	DELIXI ELECTRIC LTD.	CDM6H-400L	Ue: 400/415VAC, 3P Uimp: 12kV In: 400A Ics: 50kA -40°C to 70°C	EN 60947-2:2017+A1	TUV R 50550830 0007
(Alternative)	DELIXI ELECTRIC LTD.	CDM6i-400L	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 35kA -25°C to 70°C	EN 60947-2:2017+A1	TUV R 50691318 0001
(Alternative)	Siemens AG	3VM1M400 R400 TM220 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 400A Ics: 41kA -25°C to 70°C	EN 60947-2:2017+A1	DOC No. 15020A14 v11
8. MCCB (QF1 for rated power of 250-320kW)	Schneider Electric (China) Co., Ltd.	EZSS630F3630 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 35kA -35°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715839/M 1
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	C63N3TM630 (Compact NSX630N)	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_711869/M 2

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS630N	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 50kA -25°C to 70°C	IEC 60947- 1:2007 IEC 60947- 1:2007/AMD1:2 010 IEC 60947- 1:2007/AMD2:2 014 IEC 60947- 2:2016 IEC 60947- 2:2016/AMD1:2 019	CB No. FR_715394/M 2
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-630L	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 37.5kA -35°C to 70°C	EN 60947- 2:2017+A1	TUV AN 50608921 0001
(Alternative)	DELIXI ELECTRIC LTD.	CDM6H-630L	Ue: 400/415VAC, 3P Uimp: 12kV In: 630A Ics: 50kA -40°C to 70°C	EN 60947- 2:2017+A1	TUV R 50550830 0008
(Alternative)	DELIXI ELECTRIC LTD.	CDM6i-630L	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 36kA -25°C to 70°C	EN 60947- 2:2017+A1	TUV R 50691318 0001
(Alternative)	Siemens AG	3VM1M630 R630 TM220 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 630A Ics: 41kA -25°C to 70°C	EN 60947- 2:2017+A1	DOC No. 15020A14 v11

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Clause	Requirement + Test		Result - Remark		Verdict
9. MCCB (QF1 for rated power of 210-240kW)	Schneider Electric (China) Co., Ltd.	EZSS630F3500 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 500A Ics: 35kA -35°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715839/M1
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	C63N3TM500 (Compact NSX630N)	Ue: 400/415VAC, 3P In: 500A Uimp: 8kV Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_711869/M2
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS630N	Ue: 400/415VAC, 3P In: 500A Uimp: 8kV Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715394/M2
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-630L	Ue: 400/415VAC, 3P In: 500A Uimp: 8kV Ics: 37.5kA -35°C to 70°C	EN 60947-2:2017+A1	TUV AN 50608921 0001

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	DELIXI ELECTRIC LTD.	CDM6H-630L	Ue: 400/415VAC, 3P In: 500A Uimp: 12kV Ics: 50kA -40°C to 70°C	EN 60947-2:2017+A1	TUV R 50550830 0008
(Alternative)	DELIXI ELECTRIC LTD.	CDM6i-630L	Ue: 400/415VAC, 3P Uimp: 8kV In: 500A Ics: 36kA -25°C to 70°C	EN 60947-2:2017+A1	TUV R 50691318 0001
(Alternative)	Siemens AG	3VM1M630 R500 TM220 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 500A Ics: 41kA -35°C to 70°C	EN 60947-2:2017+A1	DOC No. 15020A14 v11
10. MCCB (QF1 for rated power of 130-160kW)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-400L	Ue: 400/415VAC, 3P In: 315A Uimp: 8kV Ics: 37.5kA -35°C to 70°C	EN 60947-2:2017+A1	TUV AN 50608918 0001
(Alternative)	Schneider Electric (China) Co., Ltd.	EZSS400N33 15 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 315A Ics: 50kA -35°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715841/M 1

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Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS400N	Ue: 400/415VAC, 3P Uimp: 8kV In: 320A Ics: 50kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715394/M2
(Alternative)	Siemens AG	3VM1M400 R320 TM220 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 320A Ics: 41kA -35°C to 70°C	EN 60947-2:2017+A1	DOC No. 15020A14 v11
11. MCCB (QF1 for rated power of 90-120kW)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS250N	Ue: 400/415VAC, 3P Uimp: 8kV In: 250A Ics: 36kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_708960/A1
(Alternative)	Schneider Electric (China) Co., Ltd.	EZSS250N32 50 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 250A Ics: 38kA -35°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_715856/M1

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-250L	Ue: 400/415VAC, 3P In: 250A Uimp: 8kV Ics: 37.5kA -35°C to 70°C	EN 60947-2:2017+A1	TUV AN 50608918 0001
(Alternative)	Siemens AG	3VM1M250 R250 TM210 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 250A Ics: 41kA -35°C to 70°C	EN 60947-2:2017+A1	DOC No. 15020A14 v11
12. MCCB (QF1 for rated power of 60-80kW)	Shanghai Liangxin Electrical Co., Ltd.	NDM2-250L	Ue: 400/415VAC, 3P In: 160A Uimp: 8kV Ics: 27kA -35°C to 70°C	IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. CN56685
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	CVS160N	Ue: 400/415VAC, 3P Uimp: 8kV In: 160A Ics: 36kA -25°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-2:2016 IEC 60947-2:2016/AMD1:2019	CB No. FR_708960/A1
(Alternative)	Schneider Electric (China) Co., Ltd.	EZSS160N3160 (EasyPact EZS+)	Ue: 400/415VAC, 3P Uimp: 8kV In: 160A Ics: 38kA -35°C to 70°C	IEC 60947-1:2007 +A1:2010 +A2:2014 IEC 60947-2:2016 +A1:2019	CB No. FR_715856/M1
(Alternative)	Siemens AG	3VM1M160 R160 TM210 F/3P	Ue: 400/415VAC, 3P Uimp: 8kV In: 160A Ics: 41kA -35°C to 70°C	EN 60947-2:2017+A1	DOC No. 15020A14 v11

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Clause	Requirement + Test		Result - Remark		Verdict
13. AC contactor (KM1, KM2 for rated power of 330-400kW and KM1 for rated power of 180-200kW)	Shanghai Liangxin Electrical Co., Ltd	NDC2-400RX	Ue: 400/415VAC, 3P In: 400A Uimp: 8kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD B 083574 0383 Rev.03
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	LC1E420KUE NS260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 420A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. FR_720210/M 3
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-410	Ue: 400/415VAC, 3P In: 410A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
14. AC contactor (KM1 for rated power of 250-320kW)	SCHNEIDER ELECTRIC INDUSTRIES SAS	LC1E630KUE NS260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 630A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. FR_722242/M 2
(Alternative)	Shanghai Liangxin Electrical Co., Ltd	NDC2-670RX	Ue: 400/415VAC, 3P In: 670A Uimp: 8kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD B 083574 0397 Rev.03
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-680	Ue: 400/415VAC, 3P In: 680A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
15. AC contactor (KM1 for rated power of 210-240kW)	Shanghai Liangxin Electrical Co., Ltd.	NDC2-500RX	Ue: 400/415VAC, 3P In: 500A Uimp: 8kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0261 Rev. 04
(Alternative)	SCHNEIDER ELECTRIC INDUSTRIES SAS	LC1E525KUE NS260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 525A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. FR_722242

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-510	Ue: 400/415VAC, 3P In: 510A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
16. AC contactor (KM1 for rated power of 130-160kW)	SCHNEIDER ELECTRIC INDUSTRIES SAS	LC1E315KUE NS260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 315A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. FR_720210/M3
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-325	Ue: 400/415VAC, 3P In: 325A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDC1-330	Ue: 400/415VAC, 3P In: 330A Uimp: 8kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0337 Rev.03
(Alternative)	Siemens AG, SI EP	3RT5066 300A	Ue: 400/415VAC, 3P In: 330A Uimp: 8kV -55°C to 80°C	EN 60947-4-1:2010/A1:2012	DOC No. 002-10.02
17. AC contactor (KM1 for rated power of 90-120kW)	Schneider Shanghai Industrial Control Co., Ltd.	LC1E210M5N S260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 210A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-4-1:2018	CB No. CN49888-M2
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-255	Ue: 400/415VAC, 3P In: 255A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDC1-265	Ue: 400/415VAC, 3P In: 265A Uimp: 12kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0398 Rev.03

IEC 61851-23					
Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	Siemens AG, SI EP	3RT5065 265A	Ue: 400/415VAC, 3P In: 265A Uimp: 8kV -55°C to 80°C	EN 60947-4-1:2010/A1:2012	DOC No. 002-10.02
18. AC contactor (KM1 for rated power of 60-80kW)	Schneider Shanghai Industrial Control Co., Ltd.	LC1E105M5N S260 (Easy TeSys Control)	Ue: 400/415VAC, 3P In: 105A Uimp: 8kV -40°C to 70°C	IEC 60947-1:2007 IEC 60947-1:2007/AMD1:2010 IEC 60947-1:2007/AMD2:2014 IEC 60947-4-1:2018	CB No. CN49896-M2
(Alternative)	DELIXI ELECTRIC LTD.	CDC6D-160	Ue: 400/415VAC, 3P In: 160A Uimp: 8kV -35°C to 70°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. SE-117063M1
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDC1-150	Ue: 400/415VAC, 3P In: 150A Uimp: 12kV -40°C to 70°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0398 Rev.03
(Alternative)	Siemens AG, SI EP	3RT5055 150A	Ue: 400/415VAC, 3P In: 150A Uimp: 8kV -55°C to 80°C	EN 60947-4-1:2010/A1:2012	DOC No. 002-10.02
19. MCB (QF4 for rated power of 180kW-400kW)	Schneider Electric Manufacturing (Wuhan) Co., Ltd.	C9F18363 (C9N series)	Ue: 400/415VAC, 3P In: 63A, C63 Uimp: 4kV Ics: 6kA -40°C to 70°C	IEC 60898-1:2015 IEC 60898-1:2015/AMD1:2019	CB No. SE-110390
(Alternative)	Schneider Electric Industries SAS	A91HC363 (Acti9 Pro iC65H)	Ue: 400/415VAC, 3P In: 63A, C63 Uimp: 6kV Ics: 7.5kA -40°C to 70°C	EN 60898-1:2019	DOC No. FD21020401A

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Schneider Electric Industries SAS	A91NC363 (Acti9 Pro iC65N)	Ue: 400/415VAC, 3P In: 63A, C63 Uimp: 6kV Ics: 6kA -40°C to 70°C	EN 60898-1:2019	DOC No. FD21020401 D
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDB1-63 C63/3	Ue: 400/415VAC, 3P In: 63A, C63 Uimp: 4kV Ics: 6kA -40°C to 70°C	IEC 60898-1:2015 IEC 60898-1:2015/AMD1:2019 IEC 60898-2:2016	CB No. CN61242-A1
(Alternative)	DELIXI ELECTRIC LTD.	CDB6LEi-3C63	Ue: 400/415VAC, 3P In: 63A, C63 Uimp: 4kV Ics: 6kA IΔn: 30mA Type A -40°C to 70°C	EN 61009-1:2012+A1:2014+A2:2014+A11:2015+A12:2016+A13:2021	Intertek 220801291SH A-V1
20. MCB (QF4 for rated power of 60kW-160kW)	Schneider Electric Manufacturing (Wuhan) Co., Ltd.	C9F18332 (C9N series)	Ue: 400/415VAC, 3P In: 32A C32 Uimp: 4kV Ics: 6kA -30°C to 70°C	IEC 60898-1:2015 IEC 60898-1:2015/AMD1:2019	CB No. SE-110390
(Alternative)	Schneider Electric Industries SAS	A91HC332 (Acti9 Pro iC65H)	Ue: 400/415VAC, 3P In: 32A C32 Uimp: 6kV Ics: 7.5kA -40°C to 70°C	EN 60898-1:2019	DOC No. FD21020401A
(Alternative)	Schneider Electric Industries SAS	A91NC332 (Acti9 Pro iC65N)	Ue: 400/415VAC, 3P In: 32A C32 Uimp: 6kV Ics: 6kA -40°C to 70°C	EN 60898-1:2019	DOC No. FD21020401 D
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDB1-63 C32/3	Ue: 400/415VAC, 3P In: 32A C32 Uimp: 4kV Ics: 6kA -40°C to 70°C	IEC 60898-1:2015 IEC 60898-1:2015/AMD1:2019 IEC 60898-2:2016	CB No. CN61242-A1

IEC 61851-23					
Clause	Requirement + Test			Result - Remark	Verdict
(Alternative)	DELIXI ELECTRIC LTD.	CDB6LEi-3C32	Ue: 400/415VAC, 3P In: 32A, C32 Uimp: 4kV Ics: 6kA IΔn: 30mA Type A -40°C to 70°C	EN 61009-1:2012+A1:2014+A2:2014+A11:2015+A12:2016+A13:2021	Intertek 220801291SH A-V1
21. RCD (QF3)	Schneider Merlin Gerin Low Voltage (Tianjin) Co., Ltd.	A9D65216EV (iC65N Vigi+ EV)	Ue: 230VAC, 1P+N In: 16A, C16 Uimp: 4kV IΔn: 30mA Type A Ics: 4kA -25°C to 70°C	EN 61009-1:2012+A1+A2+A11+A12+A13	TUV AN 50623681 0002
(Alternative)	Schneider Shanghai Low Voltage Terminal Apparatus Co., Ltd.	A9RBONC116 1 (Acti9 Pro iDPNN Vigi+)	Ue: 230VAC, 1P+N In: 16A, C16 Uimp: 4kV IΔn: 30mA Type A Ics: 4.5kA -30°C to 70°C	IEC 61009-1:2010/AMD2:2 013 IEC 61009-2-2:1991	CB HU-005059
(Alternative)	Schneider Shanghai Low Voltage Terminal Apparatus Co., Ltd.	C9D25616 (C9DPNN Vigi)	Ue: 230VAC, 1P+N In: 16A, C16 Uimp: 4kV IΔn: 30mA Type A Ics: 6kA -30°C to 70°C	IEC 61009-1:2010/AMD2:2 013 IEC 61009-2-2:1991	DOC No. FD23051202
(Alternative)	Shanghai Liangxin Electrical Co., Ltd.	NDB1TLE-63 C16/1PN 30mA A	Ue: 230VAC, 1P+N In: 16A, C16 Uimp: 4kV IΔn: 30mA Type A Ics: 6kA -40°C to 80°C	EN 60947-2:2017/A1:2020	SUD N8A 083574 0453 Rev. 00
(Alternative)	DELIXI ELECTRIC LTD.	CDB6LEi-1C16	Ue: 230VAC, 1P+N In: 16A C16 Uimp: 4kV IΔn: 30mA Type A Ics: 6kA -35°C to 70°C	EN 61009-1:2012+A1:2014+A2:2014+A11:2015+A12:2016+A13:2021	Intertek 220801291SH A-V1

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Clause	Requirement + Test		Result - Remark		Verdict
22. SPD	GUANGDONG LEISIKE ELECTRIC TECHNOLOGY CO., LTD.	LM-XC385-40/385/3P+N/Y	Uc: 385VAC (L-N) 255VAC (N-PE) In(8/20us): 20kA Imax(8/20us): 40kA Up: 1.5kV (L-N) 1.2kV (N-PE) -40°C to 80°C	EN 61643-11:2012+A11	TUV R 50596128 0001
(Alternative)	Anhui Jinli Electric Tech. Co., Ltd.	JLSP-GA385/40/3P+N	Uc: 385VAC (L-N) 255VAC (N-PE) In(8/20us): 20kA Imax(8/20us): 40kA Up: 1.8kV (L-N) 1.6kV (N-PE) -40°C to 85°C	EN 61643-11:2012+A11 IEC 61643-11:2011	TUV R 50447770 0004
23. Intermediate relay (KA1-KA3)	Xiamen Hongfa Electroacoustic Co., Ltd.	HF13F-012-2Z13D	Contact rating: 30VDC, 10A 2 Form C Coil rating: 12VDC, 1.1W Max. -40°C to 70°C	EN 61810-1:2015+A1 IEC 61810-1:2015+A1	TUV R 50154518 0006
24. DC fan (FAN13-FAN16, inside the DC integrated module)	Crown Thermal Tech (Dongguan) Co., Ltd.	AGE08025B1 2H-RDL	12VDC, 0.29A Max., 2.76W 4300±10%RPM 56.79±10%CFM -10°C to 70°C	EN IEC 62368-1:2020/A11:2020	SUD B 068566 0006 Rev.01
(Alternative)	Crown Thermal Tech (Dongguan) Co., Ltd.	AGE08025B1 2U-REL	12VDC, 0.732A Max., 6.96W 5700±10%RPM 74.57±10%CFM -10°C to 70°C	EN IEC 62368-1:2020/A11:2020	SUD B 068566 0006 Rev.01
25. AC fan (FAN5, FAN6 for rated power of 60-160kW)	Shenzhen Ying Tian Mechatronics Equipment Co., Ltd.	YTE221238B000	220VAC, 8.5W Max. 2800±10%RPM 113.76 CFM -25°C to 70°C	EN 62368-1:2014/A11:2017	SUD N8A 001794 0008 Rev.00
26. EC fan (FAN1-FAN12 for rated power of 180-400kW; FAN1-FAN4 for rated power of 60-160kW)	Shenzhen Yongyihao Electronic Co., Ltd.	YE20060H220 B-J30PW	220VAC, 75W Max. 3000±10%RPM 443.16 CFM Min. -10°C to 70°C	EN IEC 62368-1:2020/A11:2020	SUD B 126482 0001 Rev.01

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Shenzhen Ying Tian Mechatronics Equipment Co., Ltd.	YTE2220060B	220VAC, 60W Max. 3000±10%RPM 600.26 CFM -25°C to 70°C	EN IEC 62368-1:2020/A11:2020	SUD B 001794 0007 Rev.01
27. SMPS (DY1)	MEAN WELL Enterprises Co., Ltd.	LRS-150-12	Input: 85-264VAC, 3A Max., 50/60Hz Output: 12VDC, 12.5A, 150W -30°C to 70°C	EN 60335-1:2012+A11+A13+A14+A2+A15+A16 EN 62233:2008	TUV R 50313573 0009
(Alternative)	ATAZ Guangzhou Science & Technology Co., Ltd.	AM150-B12	Input: 85-264VAC, 4A Max., 50/60Hz Output: 12VDC, 12.5A, 150W -30°C to 70°C	EN 62368-1:2014/A11:2017	SUD N8A 127179 0038 Rev.00
28. DC contactor (K1-K4 for rated power of 180-400kW)	Schneider Electric Industries SAS	LC1E400BSC T1S260N (Easy TeSys Control)	Contact rating: 400A, 1000VDC 1 Form A Coil rating: 24VDC, 6W -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005182
(Alternative)	Shanghai CII Electronics Co., Ltd.	EVF400-24AD	Contact rating: 400A, 1000VDC 1 Form A Coil rating: 24VDC, 5W -40°C to 85°C	EN IEC 60947-4-1:2019	TUV R 50693100 0001
(Alternative)	Shanghai CII Electronics Co., Ltd	ES400-24HD	Contact rating: 400A, 1000VDC 1 Form A Coil rating: 24VDC, 0.13A -40°C to 85°C	EN IEC 60947-4-1:2019 EN 60947-1:2007/A2:2014 EN 60947-5-1:2017	SUD N8A 093951 0003 Rev. 00
(Alternative)	Shanghai Liangxin Electrical Co., Ltd	NDZ3AT-400R	Contact rating: 400A, 1000VDC 1 Form A Coil rating: 24VDC, 3.5W -40°C to 85°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0496 Rev.01

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Shenzhen Unitone New Energy Technology Co., Ltd.	UT400-P-H	Contact rating: 400A, 1000VDC 1 Form A Coil rating: 24VDC, 3.7W -40°C to 85°C	EN IEC 60947-4-1:2019 EN 60947-5-1:2017 EN IEC 60947-1:2021 EN 60947-1:2007/A2:2014	SUD B 07422 0007 Rev.01
29. DC contactor (K1-K4 for rated power of 180-400kW)	Schneider Electric Industries SAS	LC1E350BSC T1S260N (Easy TeSys Control)	Contact rating: 350A, 1000VDC 1 Form A Coil rating: 24VDC, 6W -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005182
(Alternative)	Shenzhen Unitone New Energy Technology Co., Ltd.	UT350-P-H	Contact rating: 350A, 1500VDC 1 Form A Coil rating: 24VDC, 4W -40°C to 85°C	EN IEC 60947-4-1:2019 EN 60947-5-1:2017 EN IEC 60947-1:2021 EN 60947-1:2007/A2:2014	SUD B 07422 0007 Rev.01
(Alternative)	Shanghai Liangxin Electrical Co., Ltd	NDZ3AT-350R	Contact rating: 350A, 1000VDC 1 Form A Coil rating: 24VDC, 3.5W -40°C to 85°C	EN IEC 60947-4-1:2019	SUD N8A 083574 0496 Rev.01
30. DC contactor (K1-K4 for rated power of 60-160kW and K5, K6 for rated power of 180-400kW)	Schneider Electric Industries SAS	LC1E300ASC H2S260N (Easy TeSys Control)	Contact rating: 1000VDC, 300A 1 Form A Coil rating: 12VDC, 3.5W Max. -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005181-M2
(Alternative)	Schneider Electric Industries SAS	LC1E300PCH 2S260N	Contact rating: 1000VDC, 300A 1 Form A Coil rating: 12VDC, 2.4W Max. -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005181-M2

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Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Shenzhen Unitone New Energy Technology Co., Ltd.	UT300-P-H	Contact rating: 300A, 1000VDC 1 Form A Coil rating: 12VDC, 2W -40°C to 85°C	EN IEC 60947-4-1:2019 EN 60947-1:2007/A2:2014 EN IEC 60947-1:2021 EN 60947-5-1:2017	SUD N8A 107422 0003 Rev.03
(Alternative)	Shanghai Liangxin Electrical Co., Ltd	NDZ3W-300S DC24	Contact rating: 300A, 1000VDC 1 Form A Coil rating: 24VDC, 3.6W -40°C to 85°C	EN IEC 60947-4-1:2019	SUD B 083574 0409 Rev. 02
31. DC contactor (K5, K6 for rated power of 60-160kW)	Schneider Electric Industries SAS	LC1E250ASC H2S260N	Contact rating: 1000VDC, 250A 1 Form A Coil rating: 12VDC, 3.5W Max. -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005181-M2
(Alternative)	Schneider Electric Industries SAS	LC1E250PCH 2S260N	Contact rating: 1000VDC, 250A 1 Form A Coil rating: 12VDC, 2.4W Max. -40°C to 85°C	IEC 60947-1:2020 IEC 60947-4-1:2023	CB No. HU-005181-M2
(Alternative)	Shenzhen Unitone New Energy Technology Co., Ltd.	UT250-P-H	Contact rating: 250A, 1000VDC 1 Form A Coil rating: 12VDC, 1.7W -40°C to 85°C	EN IEC 60947-4-1:2019 EN 60947-1:2007/A2:2014 EN IEC 60947-1:2021 EN 60947-5-1:2017	SUD N8A 107422 0003 Rev.03
(Alternative)	Shanghai Liangxin Electrical Co., Ltd	NDZ3W-250S DC24	Contact rating: 250A, 1000VDC 1 Form A Coil rating: 24VDC, 3.6W -40°C to 85°C	EN IEC 60947-4-1:2019	SUD B 083574 0409 Rev.

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
32. Power module (MK1-MK10)	Shenzhen UUGreenPower Co., Ltd	UR100040-SW(EU)	Input: 360-480VAC, 76A Max., 50/60Hz, 3P+PE Output: 150-1000VDC, 133.3A Max., 40kW Max. -40°C to 70°C	EN IEC 61851-1:2019 EN 61851-23:2014	TUV AN 50685881 0001
33. CCS2 DC charging connector (for rated power of 180-400kW)	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	WOER-CCS2-C-DC350-01	1000VDC, 350A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50592750 0001
- EV cable	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	62893 IEC 126 2X4...120+1X2,5...50+mX2,5...6+nX(0,5...1,5)P (m=0 or 2), (n=0...12)	4×50mm ² +1×35mm ² +6×1.5mm ²	IEC 62893-4-1:2020	TUV R 50566400 0003
(Alternative)	Sichuan Yonggui Science and Technology Co., Ltd.	YG-ENC-DC350-BK	1000VDC, 350A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50709013 0001
- EV cable	Hongqi Cable Electric Instrument Group Co., Ltd.	62893 IEC 126 4X10...50+1X4...95+mX2,5...6+nX0,5...1,0 (m=0 or 2, n=4...10)	4×50mm ² +1×6mm ² +(2×0.75mm ²)(P2)+6×0.75mm ²	IEC 62893-4-1:2020	TUV R 50511906 0002
34. CCS2 DC charging connector (optional for rated power of 180-400kW)	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	WOER-CCS2-C-DC300-01	1000VDC, 300A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50592750 0001
- EV cable	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	62893 IEC 126 2X4...120+1X2,5...50+mX2,5...6+nX(0,5...1,5)P (m=0 or 2), (n=0...12)	4×50mm ² +1×35mm ² +6×1.5mm ²	IEC 62893-4-1:2020	TUV R 50566400 0003

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Sichuan Yonggui Science and Technology Co., Ltd.	YG-ENC-DC300-BK	1000VDC, 300A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50709013 0001
- EV cable	Hongqi Cable Electric Instrument Group Co., Ltd.	62893 IEC 126 4X10...50+1X4...95+mX2,5...6+nX0,5...1,0 (m=0 or 2, n=4...10)	4×50mm ² +1×6mm ² +(2×0.75mm ²)(P2)+2×(3×0.75mm ²)	IEC 62893-4-1:2020	TUV R 50511906 0002
35. CCS2 DC charging connector (optional for rated power of 60-160kW)	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	WOER-CCS2-C-DC250-01	1000VDC, 250A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50592750 0001
- EV cable	Shenzhen Woer New Energy Electrical Technology Co., Ltd.	62893 IEC 126 2X4...120+1X2,5...50+mX2,5...6+nX(0,5...1,5)P (m=0 or 2), (n=0...12)	2×70mm ² +1×25mm ² +6×0.75mm ²	IEC 62893-4-1:2020	TUV R 50566400 0003
(Alternative)	Sichuan Yonggui Science and Technology Co., Ltd.	YG-ENC-DC250-BK	1000VDC, 250A IP55 (mated) Ta: -30°C to 50°C	EN IEC 62196-1:2022 EN IEC 62196-3:2022 EN 17186:2019	TUV R 50709013 0001
- EV cable	Hongqi Cable Electric Instrument Group Co., Ltd.	62893 IEC 126 4X10...50+1X4...95+mX2,5...6+nX0,5...1,0 (m=0 or 2, n=4...10)	4×35mm ² +1×6mm ² +(2×0.75mm ²)(P2)+2×3×0.75mm ²	IEC 62893-4-1:2020	TUV R 50511906 0002
36. AC fuse (FU3)	NANRONG ELECTRIC INDUSTRIAL (HK) LIMITED	HD10X	500VAC, 10A, 5kA -55°C to 120°C	EN 60127-1:2006+A1+A2 EN 60127-7:2016	TUV R 50545661 0002
(Alternative)	ADLER Elektrotechnik Leipzig GmbH	ARC21006A0	600VAC, 10A, 100kA -40°C to 120°C	EN 60269-1:2007+A1+A2 EN 60269-4:2009+A1+A2	TUV J 50463107 0003

IEC 61851-23					
Clause	Requirement + Test			Result - Remark	Verdict
37. AC fuse holder	Shenzhen Deer Electronics Co., Ltd.	HDPV	500VAC, 40A, 6kA -55°C to 120°C	EN IEC 60947-3:2021 EN IEC 60947-1:2021	SUD B 113737 0006 Rev.00
(Alternative)	ZHEJIANG GALAXY FUSE CO., LTD.	YRPV-30	250VAC, 30A, 40kA -40°C to 120°C	EN IEC 60947-1:2021 EN IEC 60947-3:2021	TUV R 50276247 0005
38. DC fuse (FU1, FU2 for rated power of 180-400kW)	Hangzhou Chauron Technology Co., Ltd.	SEV-59F-500/1000	1000VDC, 500A, 50kA -40°C to 125°C	EN 60269-4:2009+A1+A2 EN 60269-1:2007+A1+A2	TUV R 50621245 0002
(Alternative)	Zhejiang Zhongtai Fuse Stock Co., Ltd.	ZTR170/500	1000VDC, 500A, 50kA -40°C to 120°C	EN 60269-1:2007/A2:2014 EN 60269-4:2009/A2:2016	SUD B 098273 0041 Rev.00
39. DC fuse (FU1, FU2 for rated power of 60-160kW; for 180-400kW are equipped with 300A connector)	Hangzhou Chauron Technology Co., Ltd.	SEV-43F-400/1000	1000VDC, 400A, 50kA -40°C to 125°C	EN 60269-4:2009+A1+A2 EN 60269-1:2007+A1+A2	TUV R 50596221 0002
(Alternative)	Zhejiang Zhongtai Fuse Stock Co., Ltd.	ZTR170/400	1000VDC, 400A, 50kA -40°C to 120°C	EN 60269-1:2007/A2:2014 EN 60269-4:2009/A2:2016	SUD B 098273 0041 Rev.
40. DC meter (WH1, WH2 for rated power of 180-400kW)	Zhejiang Eastron Electronic Co., Ltd.	DCM230-2-400	Supply: 9-40VDC, 2W Max. Range: 100-1000VDC, 400A Max. Accuracy: Class B -40°C to 70°C	EN 50470-4:2023 EN IEC 62052-11:2021+11:2022 IEC 62052-31:2015	SGS 0598/MID/B/2 4/028
(Alternative)	Guangdong Yada Electronics Co., Ltd.	YDM500D	Supply: 10-30VDC, 4W Max. Range: 48-1000VDC, 400A Max. Accuracy: Class 0.5 -40°C to 70°C	EN 50470-4:2023 EN IEC 62052-11:2021+A11:2022 IEC 62052-31:2015	SGS 0598/MID/B/2 4/024

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
41. DC meter (WH1, WH2 for rated power of 60-160kW)	Zhejiang Easton Electronic Co., Ltd.	DCM230-2-300	Supply: 9-40VDC, 2W Max. Range: 100-1000VDC, 300A Max. Accuracy: Class B -40°C to 70°C	EN 50470-4:2023 EN IEC 62052-11:2021+11:2022 IEC 62052-31:2015	SGS 0598/MID/B/24/028
(Alternative)	Guangdong Yada Electronics Co., Ltd.	YDM500D	Supply: 10-30VDC, 4W Max. Range: 48-1000VDC, 300A Max. Accuracy: Class 0.5 -40°C to 70°C	EN 50470-4:2023 EN IEC 62052-11:2021+A11:2022 IEC 62052-31:2015	SGS 0598/MID/B/24/024
42. Diverter (FL1, FL2 for rated power of 180-400kW)	VICTORY CHINA FAR EAST ELECTRONICS CO., LTD.	FL-2	400A, 75mV Accuracy: $\pm 0.2\%$	Tested with appliance	Tested with appliance
(Alternative)	Shenzhen Milliohm Electronic Co., Ltd.	HoFL3-400A-75mV-0.2%	400A, 75mV Accuracy: $\pm 0.2\%$	Tested with appliance	Tested with appliance
43. Diverter (FL1, FL2 for rated power of 60-160kW)	VICTORY CHINA FAR EAST ELECTRONICS CO., LTD.	FL-2	300A, 75mV Accuracy: $\pm 0.2\%$	Tested with appliance	Tested with appliance
(Alternative)	Shenzhen Milliohm Electronic Co., Ltd.	HoFL3-300A-75mV-0.2%	300A, 75mV Accuracy: $\pm 0.2\%$	Tested with appliance	Tested with appliance
44. PLC	Shenzhen GW Technology Co. Ltd.	HDP986_E	CCS 9-28VDC, 5W Max. -40°C to 85°C	ISO 15118-1:2019 ISO 15118-2:2014 ISO 15118-3:2015 ISO 15118-4:2018 ISO 15118-5:2018	SUD D 131452 0001 Rev. 00
45. Internal wiring 1#	DONGGUAN YONGJINXIANG ELECTRIC WIRE & CABLE INDUSTRY CO., LTD.	3644	150°C, 1000VAC 5/7AWG	UL 758	UL E322614

IEC 61851-23					
Clause	Requirement + Test		Result - Remark		Verdict
46. Internal wiring 2#	SUZHOU JINHAOYU WIRE & CABLE CO., LTD.	2464	80°C, 300VAC 20/22AWG	UL 758	UL E341986
47. Internal wiring 3#	SUZHOU JINHAOYU WIRE & CABLE CO., LTD.	2547	80°C, 300VAC 20/22AWG	UL 758	UL E341986
48. Internal wiring 4#	SUZHOU JINHAOYU WIRE & CABLE CO., LTD.	1015	105°C, 600VAC 5/6/7/9/11/13/15/17/20/22AWG	UL 758	UL E341986
49. Internal wiring 5#	SUZHOU JINHAOYU WIRE & CABLE CO., LTD.	1007	80°C, 300VAC 17/20/22AWG	UL 758	UL E341986
50. Internal wiring 6#	WUXI XINHONGYE WIRE & CABLE CO., LTD.	10269	105°C, 1000VAC 16AWG	UL 758	UL E248566
YX-DCM board					
51. PCB	Xin Man Da Circuit (Shenzhen) Co., Ltd.	1	V-0, 130°C Layers:2 Thickness:1.6mm	UL 796	UL E308011
(Alternative)	Shenzhen Jia Li Chuang Technology Development Co., Ltd.	JLC-4(ASP1)	V-0, 130°C Layers:2 Thickness:1.6mm	UL 796	UL E479892
52. Relay (K2, K8)	NINGBO HUI LONG CANG ELECTRONICS CO., LTD.	990-12VDC-SL-A F	Coil rating: 12VDC, 0.9W Contact rating: 250VAC, 50A 1 Form A -40°C to 85°C	EN 61810-1:2015+A1	TUV R 50565469 0003
53. Relay (K1, K5, K9)	Xiamen Hongfa Electroacoustic Co., Ltd.	HFD3 /12	Coil rating: 12VDC, 140mW Contact rating: 30VDC, 2A/ 125VAC, 0.5A 2 Form C -40°C to 85°C	EN 61810-1:2015 EN 61810-1:2015/A1:2020 IEC 61810-1:2015 IEC 61810-1:2015/AMD1:2019	VDE 40018867

IEC 61851-23					
Clause	Requirement + Test			Result - Remark	Verdict
54. Relay (D32, D33, D37, D39, D41, D44, D45, D47, D51, D53, D57, D61, D63)	Xiamen Hongfa Electroacoustic Co., Ltd.	HF46F-G/12-HS1	Coil rating: 12VDC, 200mW Contact rating: 250VAC/30VDC, 7A 1 Form A -40°C to 85°C	EN 61810-1:2015 EN 61810-1:2015/A1:2020 IEC 61810-1:2015 IEC 61810-1:2015/AMD1:2019	VDE 40025215
55. Terminal block (P26, P28)	DEGSON TECHNOLOGY CO., LTD.	DG350R	300V, 7A -40°C to 105°C	EN 60998-1:2004 EN 60998-2-1:2004	VDE 40022177
56. DC-DC power supply	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD.	URF2405P-6WR3	Input: 24VDC, 329mA Max. Output: 5VDC, 1200mA Max. -40°C to 85°C	IEC 60950-1:2005 IEC 60950-1:2005 IEC 60950-1:2005 IEC 60950-1:2005/AMD1:2009 IEC 60950-1:2005/AMD1:2009 IEC 60950-1:2005/AMD2:2013	CB No. DK-42936-UL
57. Isolation resistor	UNIROYAL ELECTRONICS INDUSTRY (KUNSHAN) CO., LTD.	1210W2F3002 T5E	Package: 1210 30Ω±1%, 1/2W -55°C to 155°C	Tested with appliance	Tested with appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

Software Revision

Module / Modul Version / Version Revision / Stand	Manufacturer/ Hersteller	Function/ Funktion	Tested / Certified by: / Geprüft / Zertifiziert von:
yxdc2eu-v440	Shenzhen Yuxin Internet of Things Technology Co., Ltd.	OCPP1.6-J., Bulid-in 4G, loadbalancer, charging-control, RS485, RFID	Tested with appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.			

- END OF REPORT -

IEC 61851-23 Additional test data						
Clause	Requirement + Test			Result - Remark		Verdict
101.2.1.4	TABLE: Descending rate of charging current					P
Base current I_0	Target current I_N	Output voltage	Measured delay time	Limit of delay time	Measured change rate	Limit of change rate
350 ¹⁾	0	1000	126.00ms	---	2777.78	≥100A/s
350 ¹⁾	0	571	132.00ms	---	2651.51	≥100A/s
350 ²⁾	0	1000	1.10s	---	318.19	≥100A/s
350 ²⁾	0	571	1.10s	---	318.19	≥100A/s
Supplementary information:						
1. The tests of all conditions in this table were carried out when the input voltage is 400V and the frequency is 50Hz.						
2. The description of superscript:						
1) Measure the descending rate of charging current when the system normal shutdown.						
2) Measure the descending rate of charging current when the system emergency shutdown.						
3. The unit of the measured change rate is A/s.						

101.2.1.7	Load dump				P
Required output voltage (V)	Measured max. voltage overshoot	Limit of voltage overshoot	Measured max. slew rate	Limit of slew rate	
Input: 400V, 50Hz. Output condition 1: 1000.0VDC, 350A	1020.00	1100.00 VDC	135.13 V/ms	250V/ms	
Input: 400V, 50Hz. Output condition 2: 571VDC, 350A	584.00	628.10 VDC	1.14 V/ms	250V/ms	
Input: 400V, 50Hz. Output condition 3: 300VDC, 350A	324.00	330.00 VDC	17.65 V/ms	250V/ms	
Supplementary information:					

101.2.2	TABLE: Earthing resistance measurements			P
Position between	Test current (≥ 10A)	Measured Resistance (mΩ)	Limit (Ω)	
Right metal enclosure	25.0A	14.20	≤ 0.1	
Left metal enclosure	25.0A	6.47	≤ 0.1	
Front door	25.0A	7.36	≤ 0.1	
Supplementary information:				

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 1 Front view



Figure 2 Rear view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 3 Side view



Figure 4 Side view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 5 Emergency stop button



Figure 6 Front internal view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

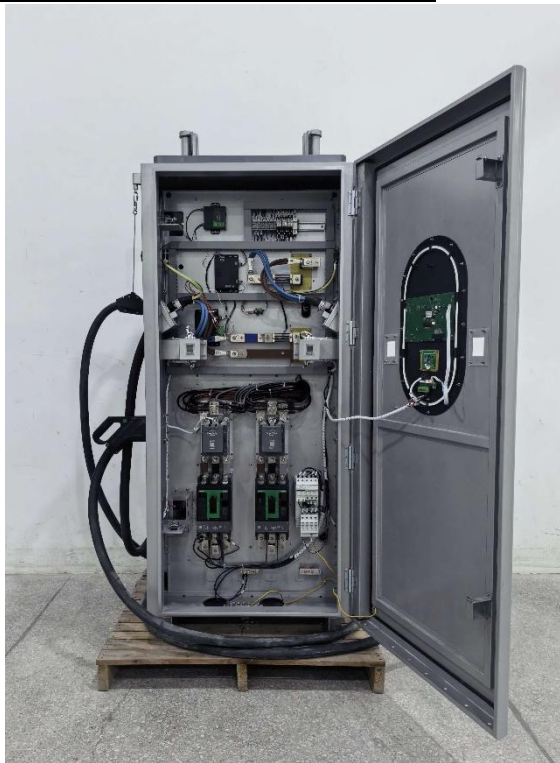


Figure 7 Front internal view with cover removed



Figure 8 Side internal view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 9 Side internal view



Figure 10 Side internal view with alternative fan control board

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 11 AC circuit breaker QF1



Figure 12 AC contactor KM1

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 13 RCD and MCB

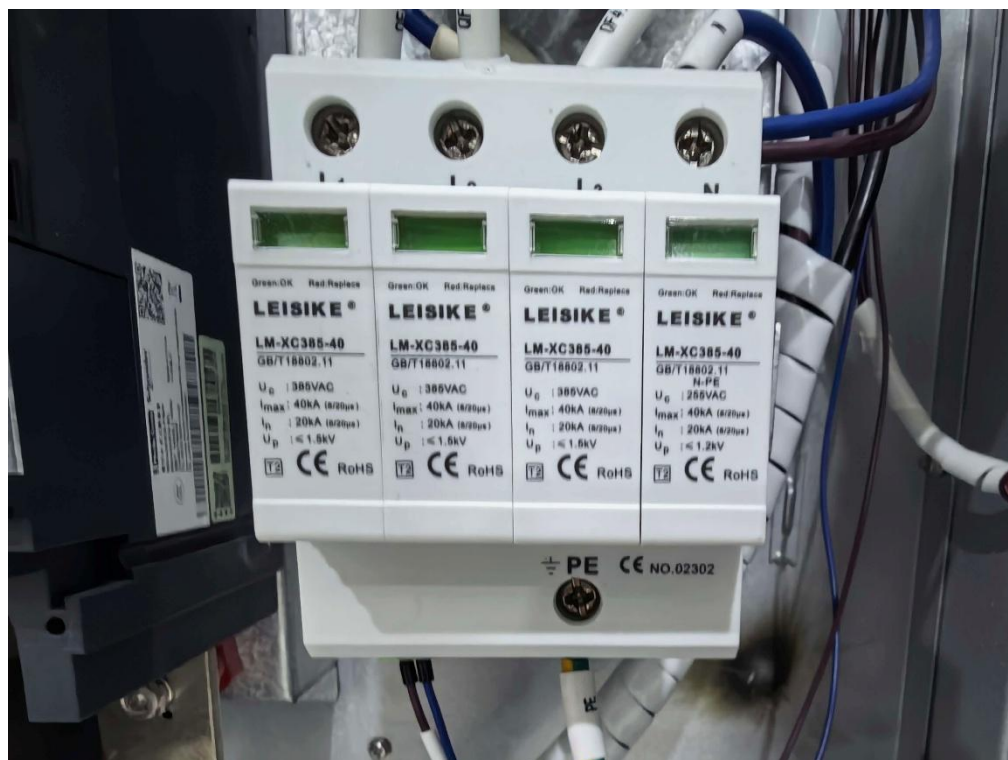


Figure 14 SPD

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

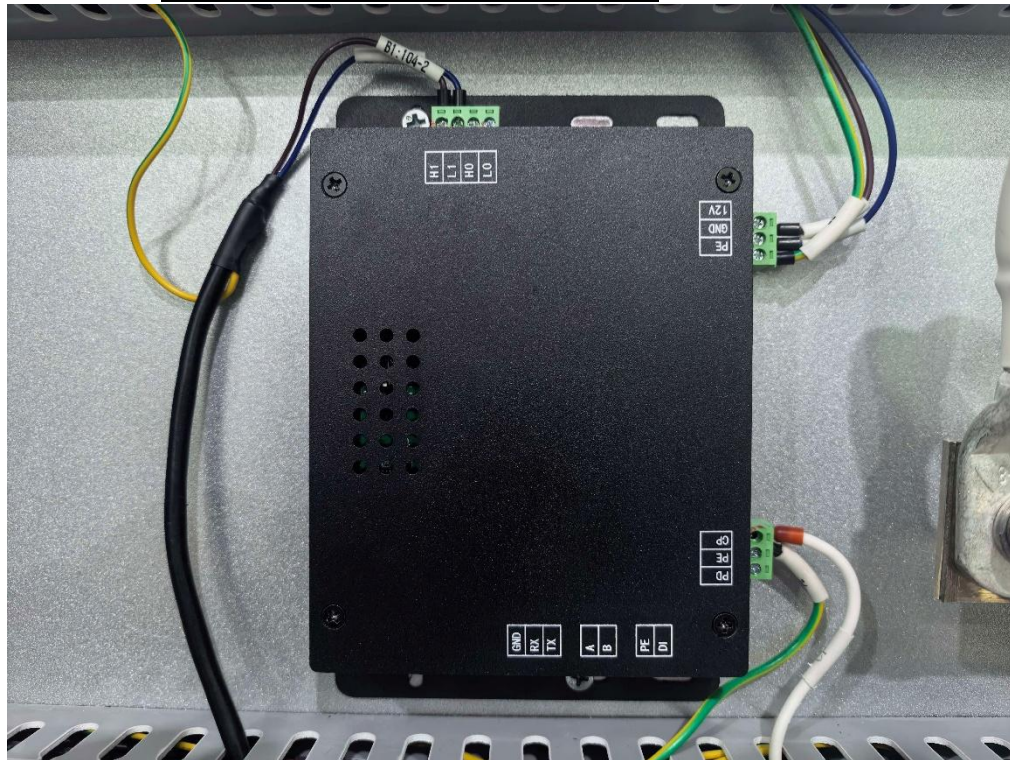


Figure 15 PLC



Figure 16 DC meter

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 17 Relay module of emergency stop button



Figure 18 Intermediate relays and AC fuse

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 19 4G router



Figure 20 Limited switch

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 21 Power module



Figure 22 Card reader on the back of the front door

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

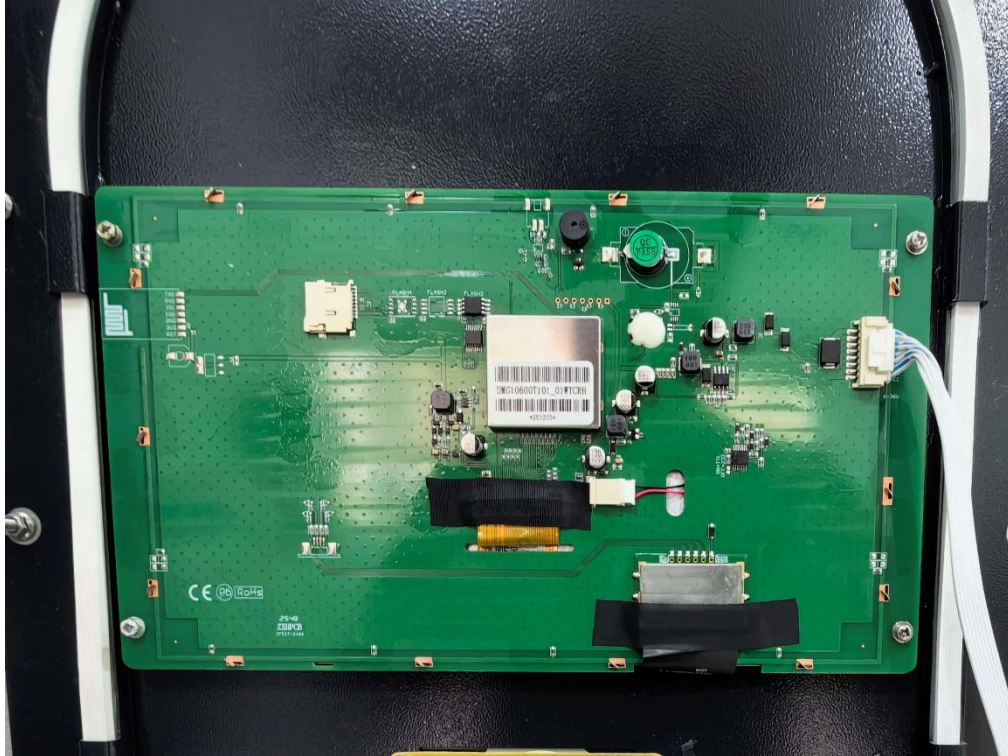


Figure 23 Touch screen on the back of the front door



Figure 24 Marking plate of EC fan

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 25 Front, Top and side of DC integrated module



Figure 26 Rear, bottom and side of DC integrated module

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 27 Front of DC integrated module



Figure 28 Rear of DC integrated module

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 29 Internal of DC integrated module



Figure 30 Internal of DC integrated module with SELV cover removed

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

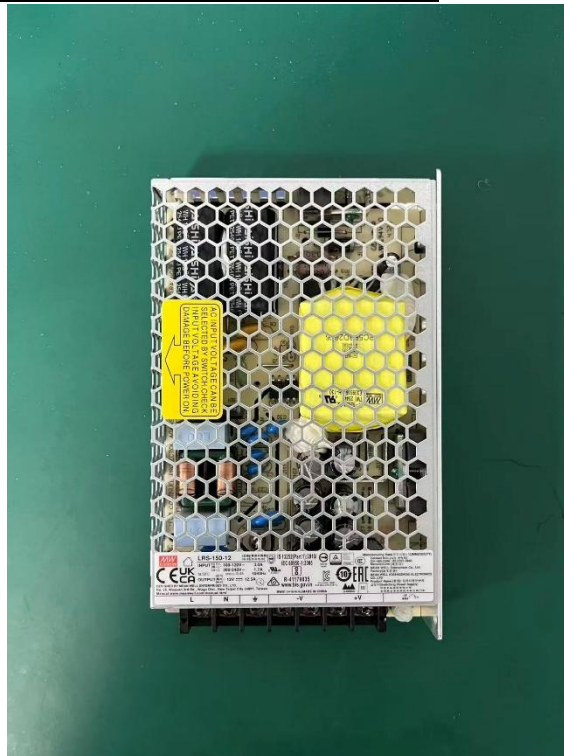


Figure 31 SMPS



Figure 32 DC fuse

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 33 DC contactor KM1-KM4



Figure 34 DC contactor KM5, KM6

Product: EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 35 Marking plate of fan inside the DC integrated module

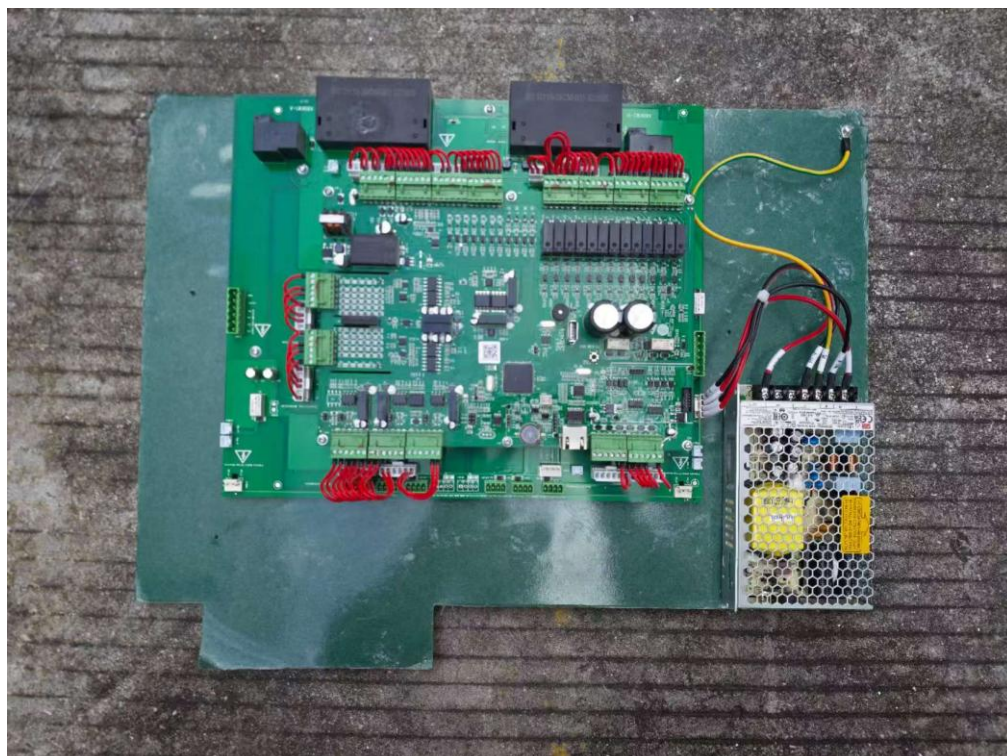


Figure 36 SMPS and control board on top layer of SELV cover plate

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 37 Bottom layer of SELV cover plate

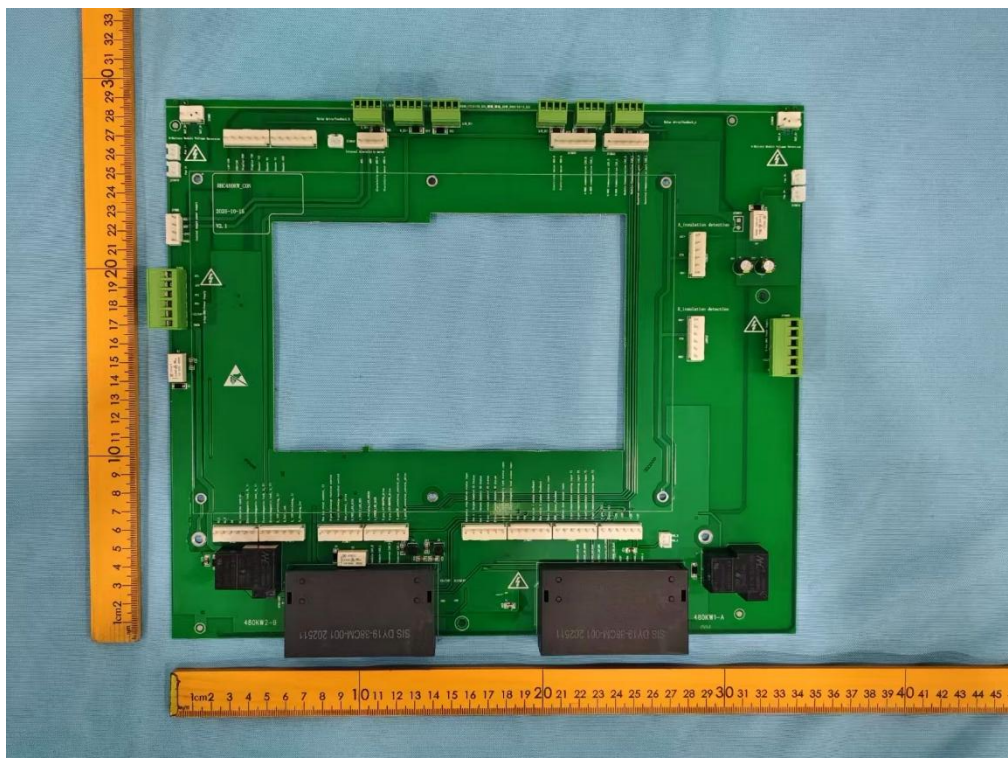


Figure 38 Top layer of interface board

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

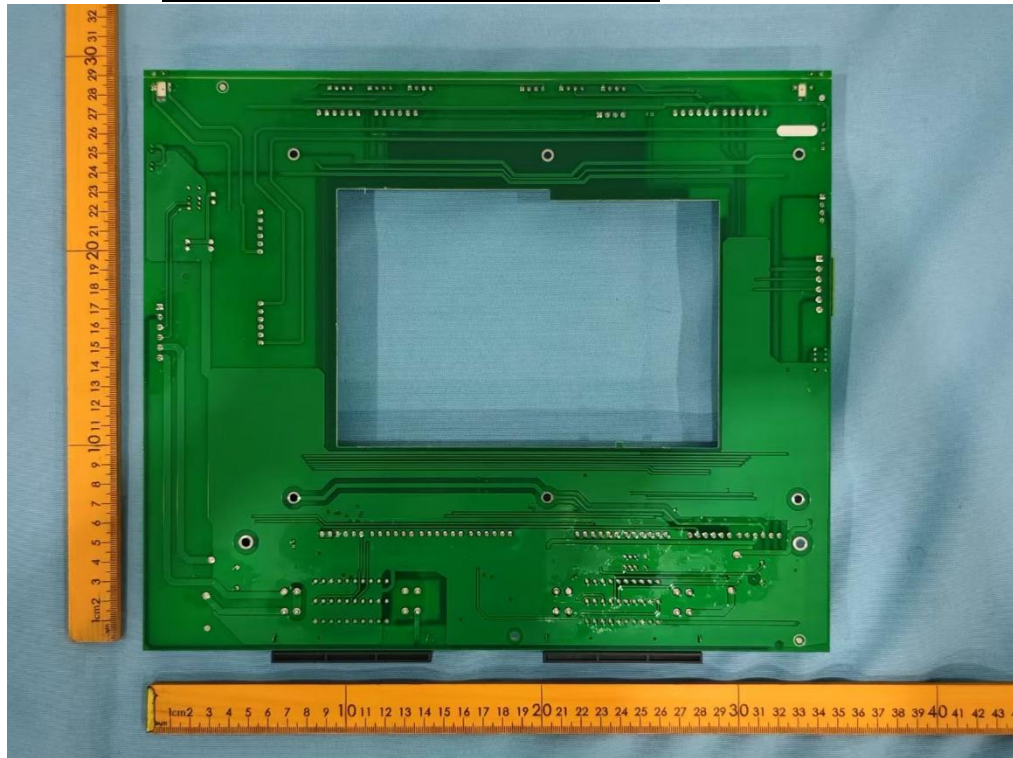


Figure 39 Bottom layer of interface board

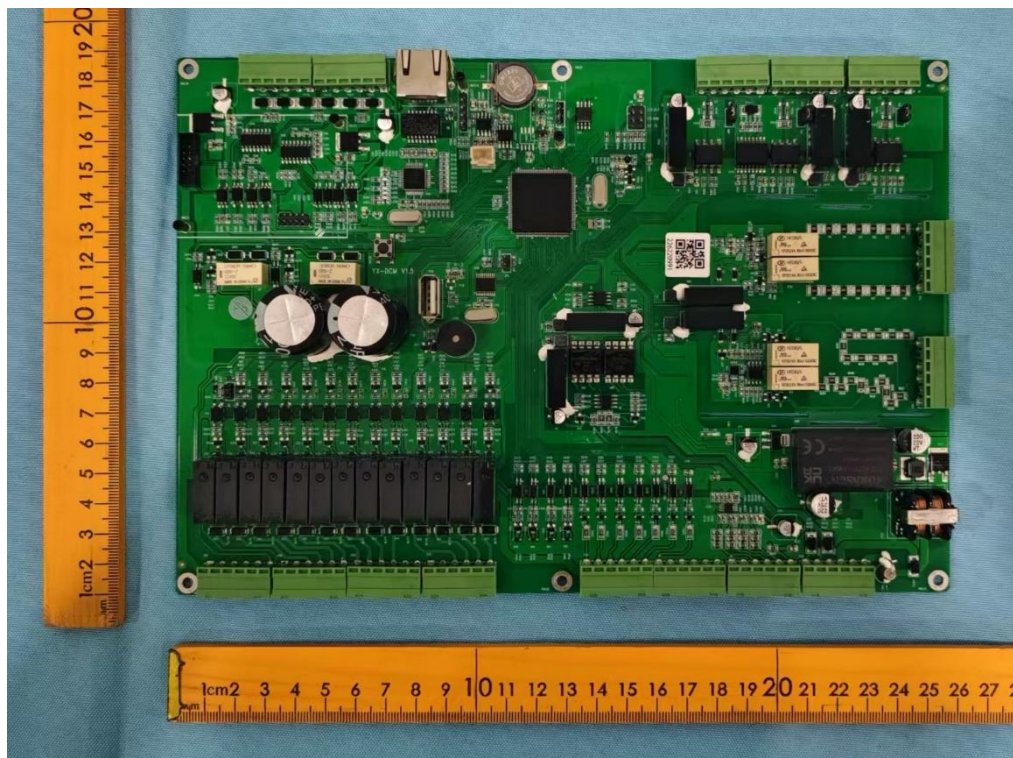


Figure 40 Top layer of control board

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

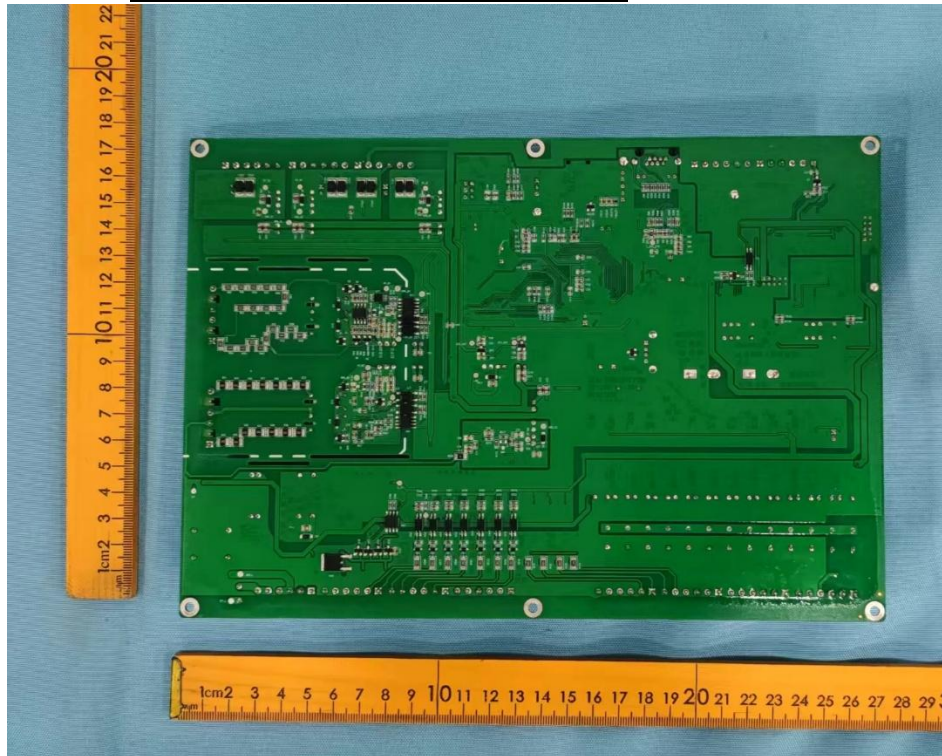


Figure 41 Bottom layer of control board

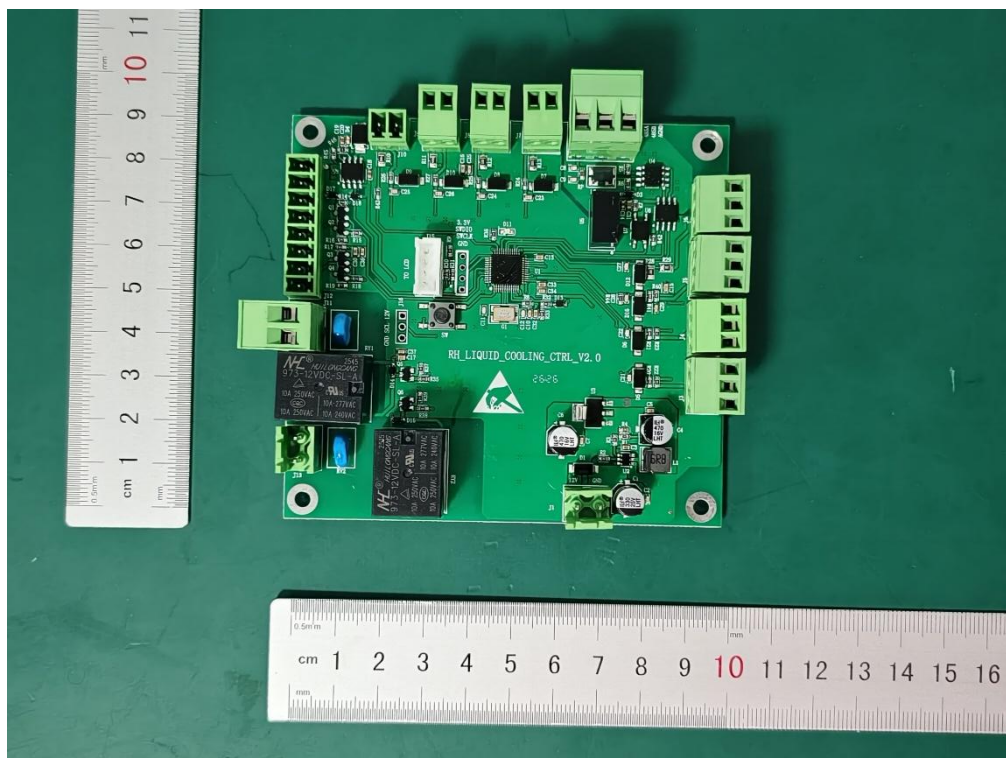


Figure 42 Top layer of fan control board

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

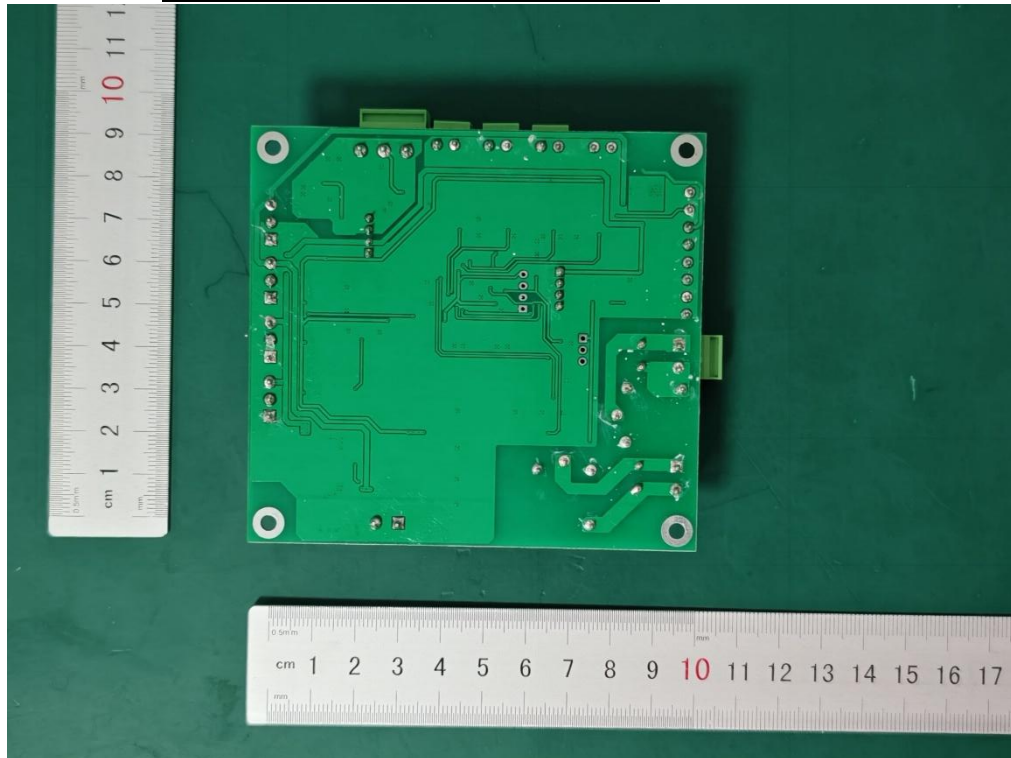


Figure 43 Bottom layer of fan control board

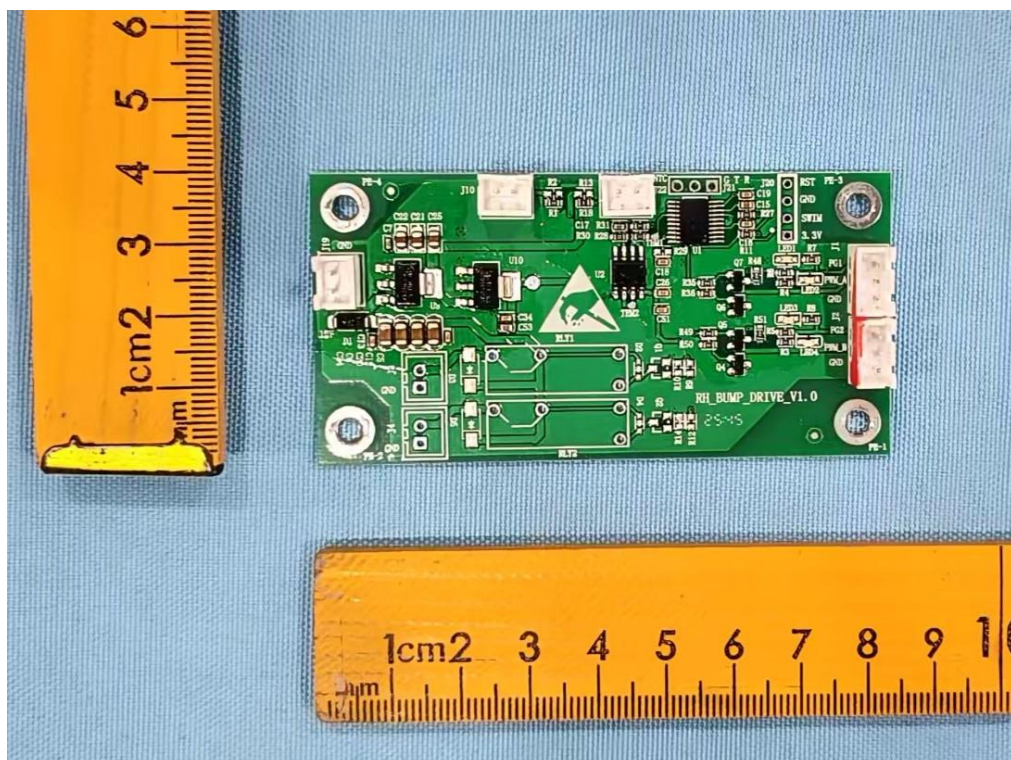


Figure 44 Top layer of fan control board (Alternative)

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

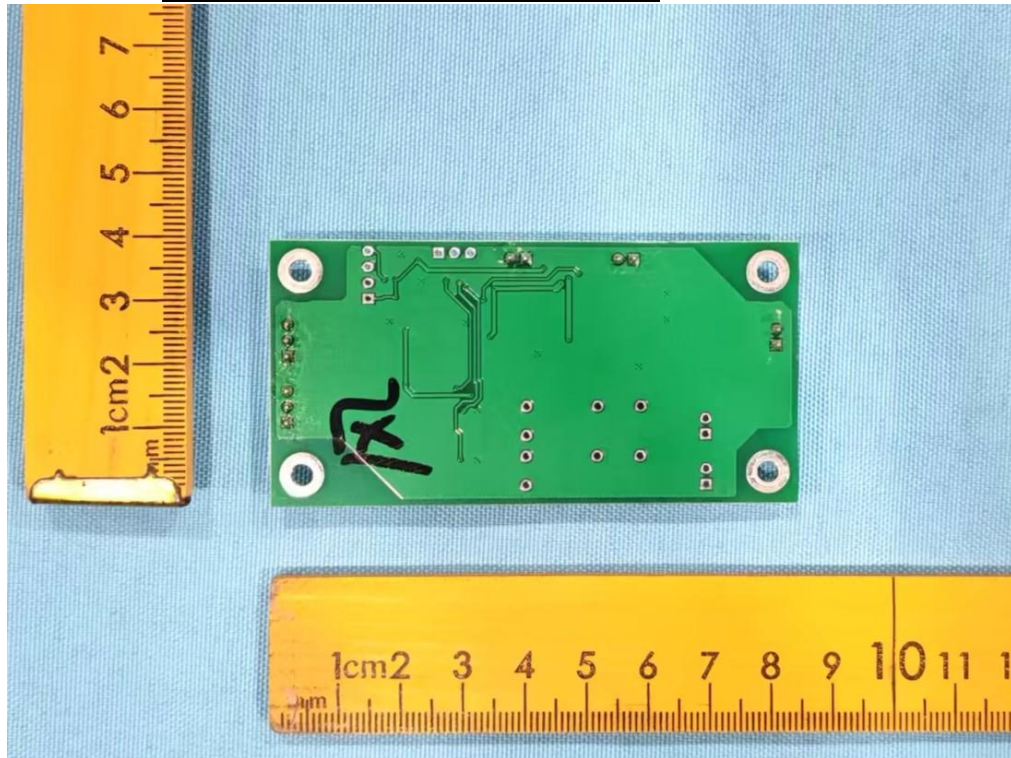


Figure 45 Bottom layer of fan control board (Alternative)

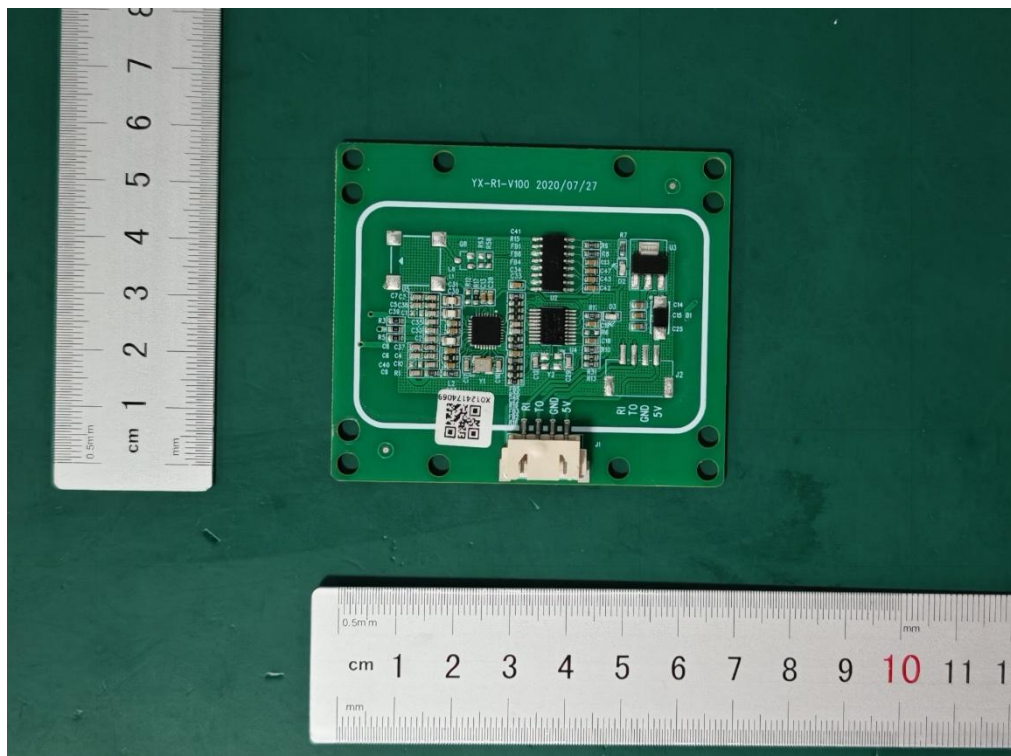


Figure 46 Top layer of card reader board

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

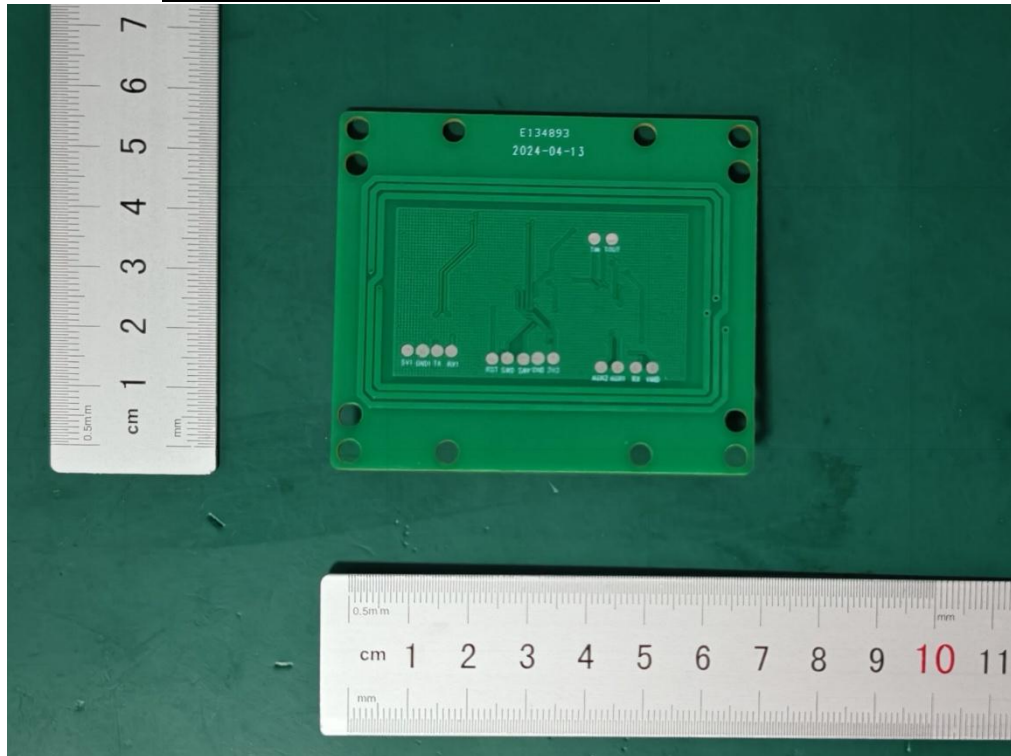


Figure 47 Bottom layer of card reader board



Figure 48 Top layer of touch screen

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

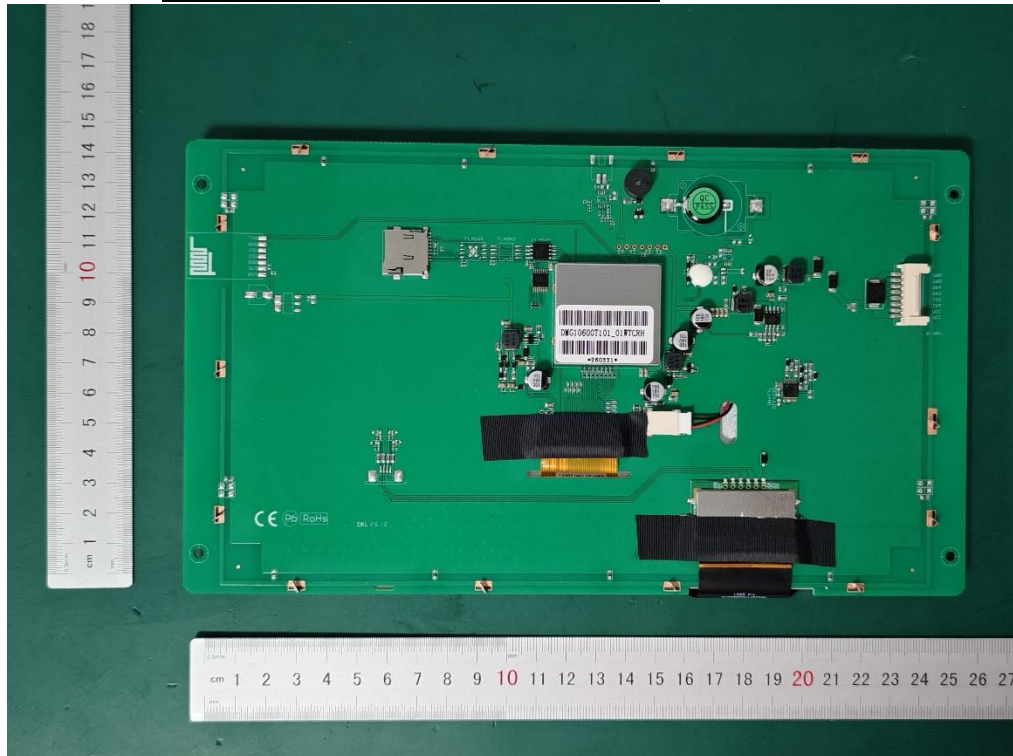


Figure 49 Bottom layer of touch screen



Figure 50 Side of charging connector

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 51 Interface of charging connector



Figure 52 Marking plate of charging connector

Product: EV DC charging station

Type Designation: RHDCaK-b-EU
a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

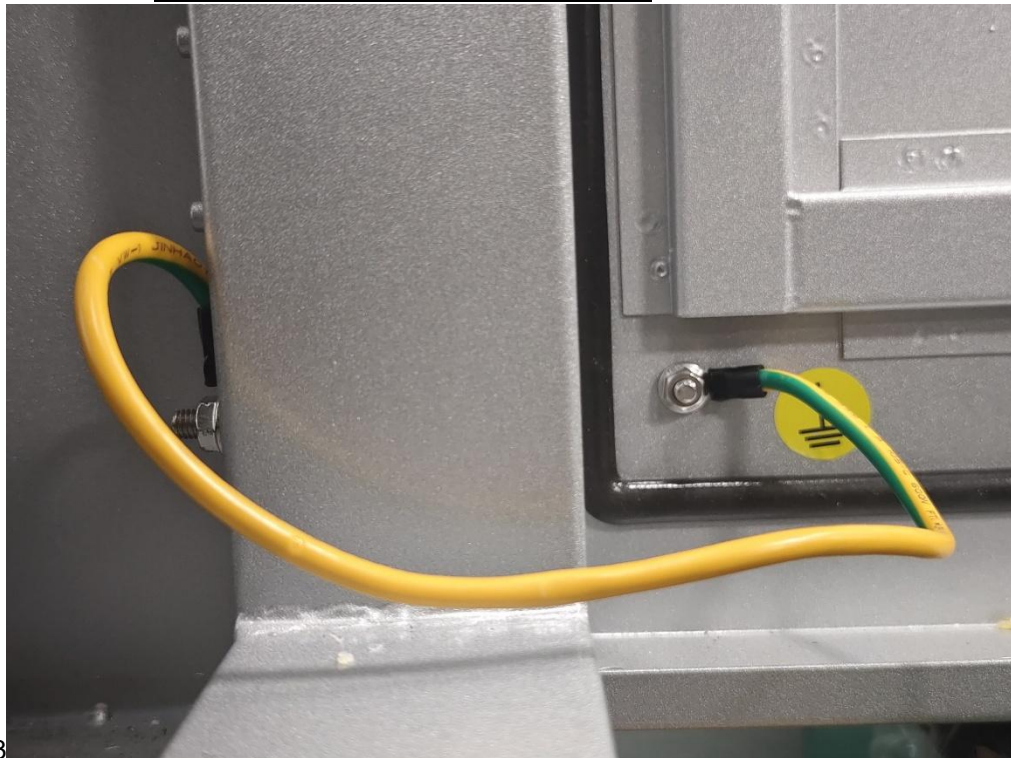


Figure 53 Earthing wiring of the front door

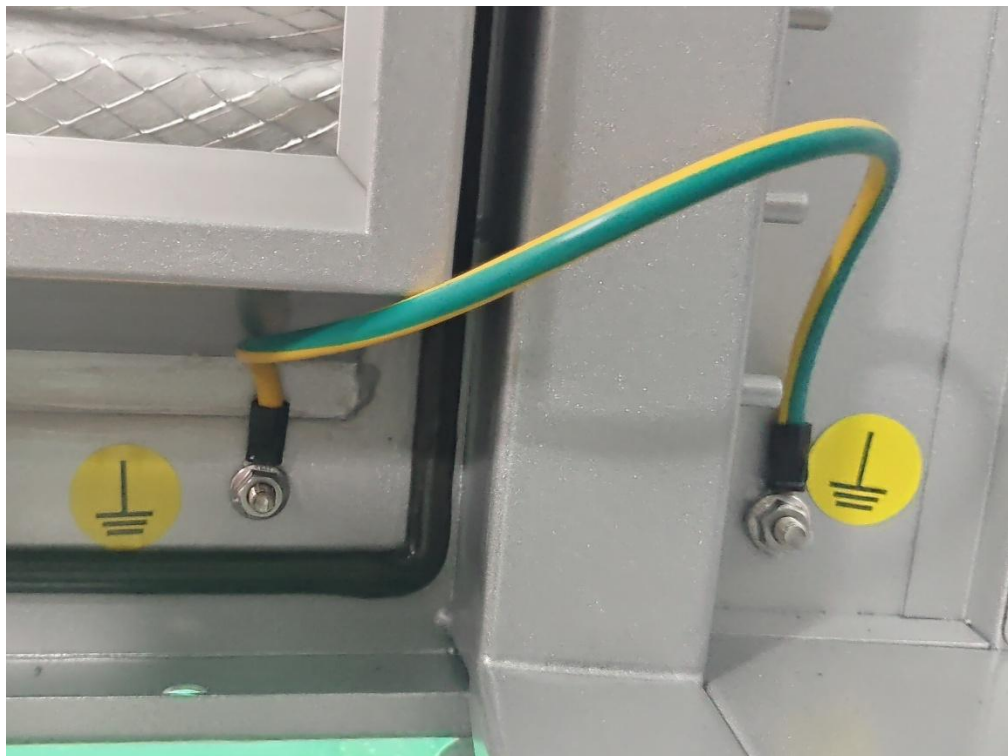


Figure 54 Earthing wiring of the side door

Product: EV DC charging station

Type Designation: RHDCaK-b-EU
a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

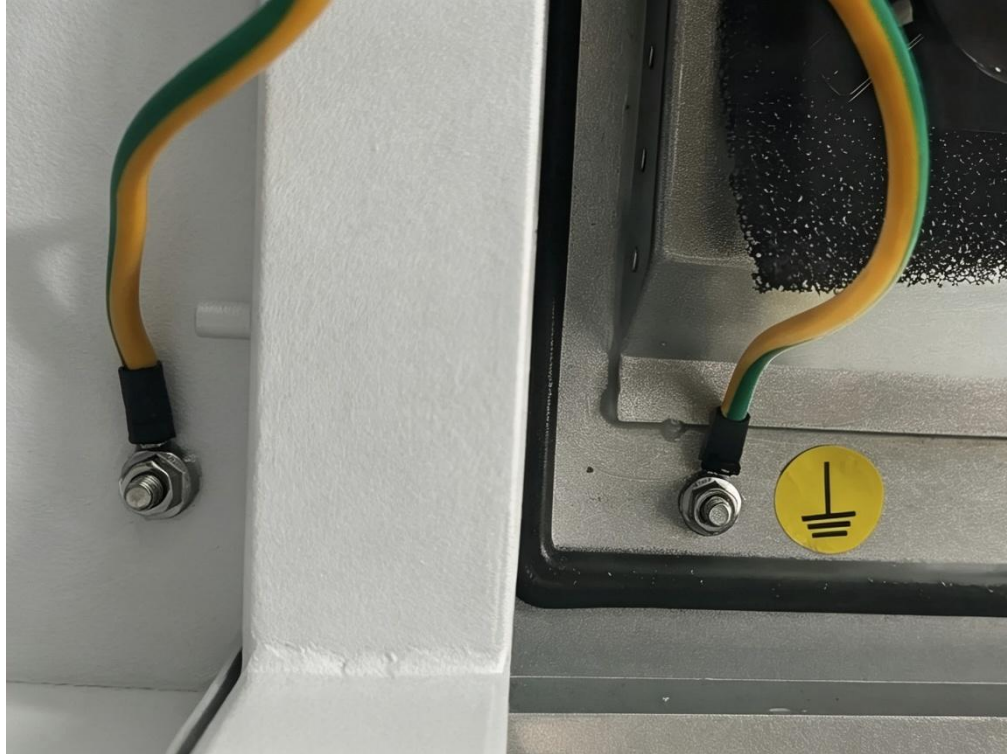


Figure 55 Earthing wiring of the side door



Figure 56 Front view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 57 Rear view



Figure 58 Side view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 59 Side view



Figure 60 Front internal view

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 61 Front internal view with cover removed



Figure 62 Side internal view

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 63 Side internal view



Figure 64 AC circuit breaker QF1

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 65 AC contactor KM1



Figure 66 DC meter

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 67 RCB, MCB and SPD

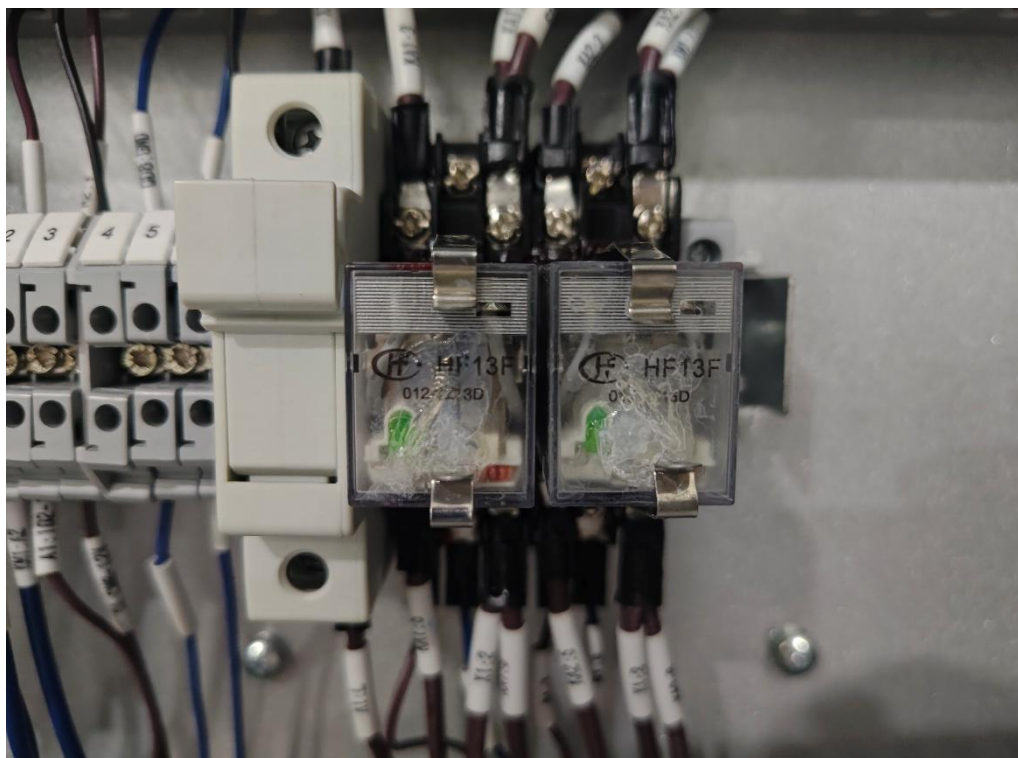


Figure 68 Intermediate relays and AC fuse

Product: EV DC charging station

Type Designation: RHDCaK-b-EU
a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 69 4G router



Figure 70 PLC

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

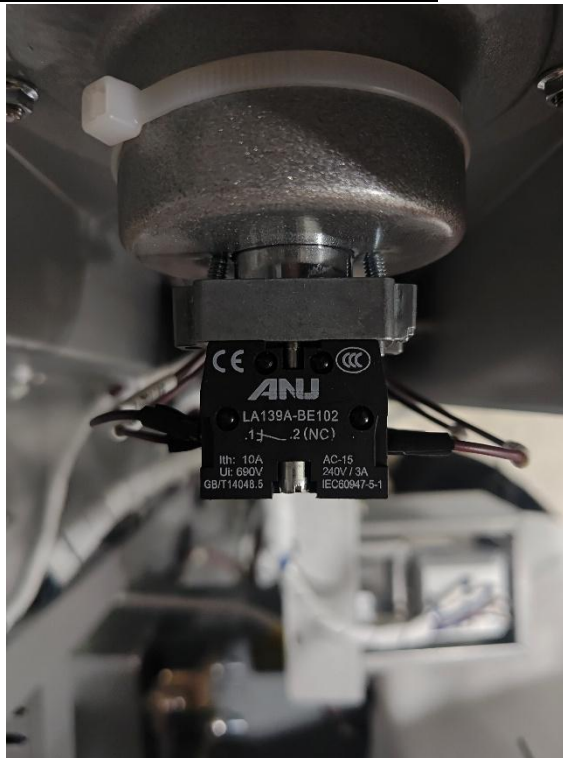


Figure 71 Relay module of emergency stop button



Figure 72 Front, Top and side of DC integrated module

Product: EV DC charging station

Type Designation: RHDCaK-b-EU
a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 73 Rear, bottom and side of DC integrated module



Figure 74 Front of DC integrated module

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 75 Rear of DC integrated module

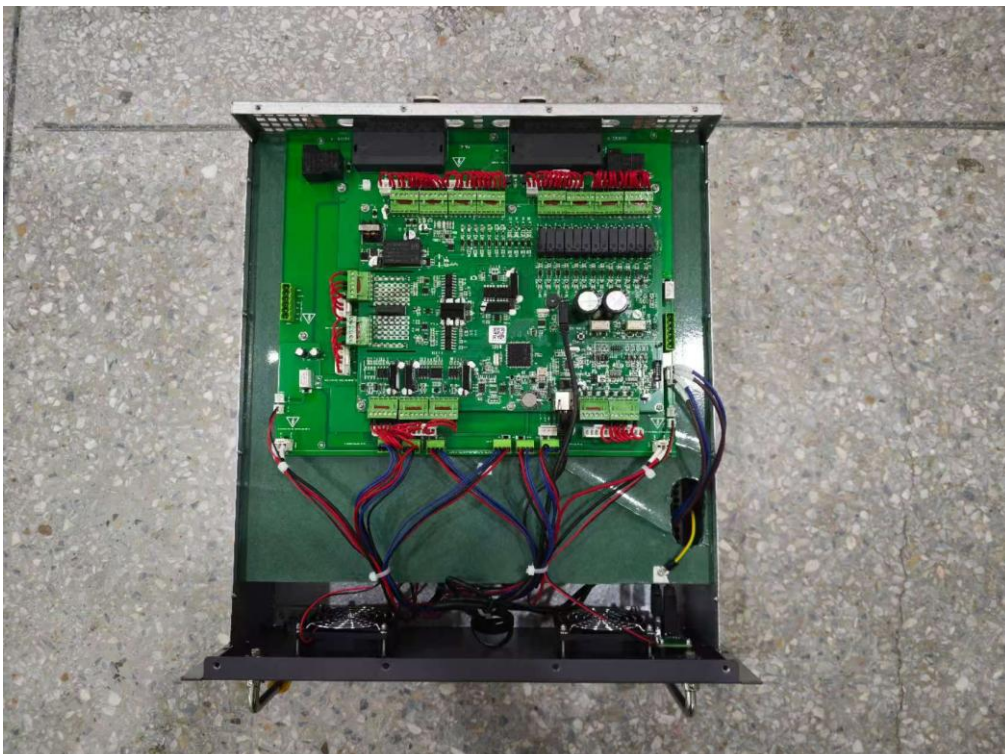


Figure 76 Internal of DC integrated module

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

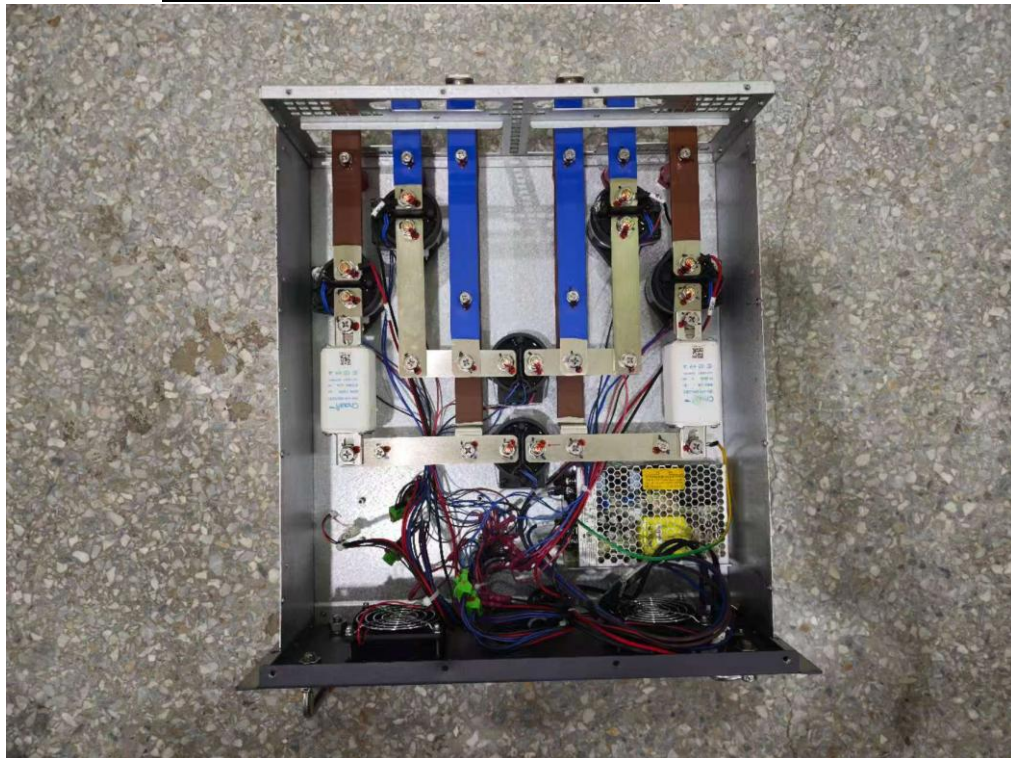


Figure 77 Internal of DC integrated module with SELV cover removed



Figure 78 DC fuse

Product:

EV DC charging station

Type Designation:

RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 79 DC contactor KM1-KM4



Figure 80 DC contactor KM5, KM6

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 81 Marking plate of fan inside the DC integrated module



Figure 82 Control board on top layer of SELV cover plate

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 83 Bottom layer of SELV cover plate



Figure 84 Marking plate of AC Fan FAN5, FAN6

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.



Figure 85 Marking plate of charging connector

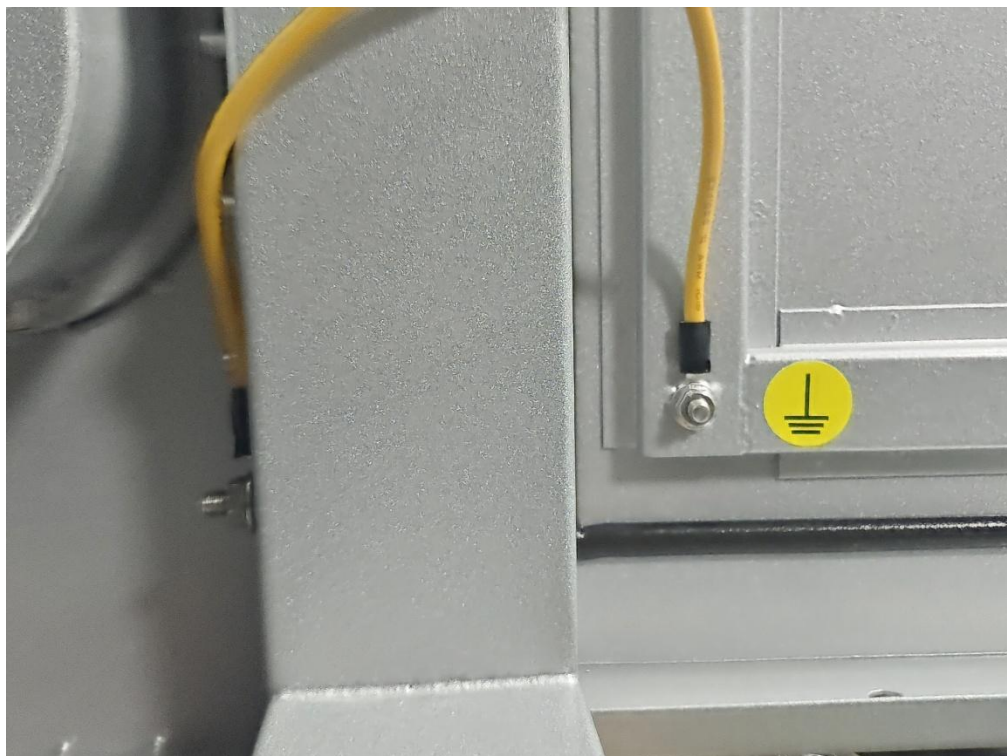


Figure 86 Earthing wiring of the front door

Product: EV DC charging station

Type Designation: RHDCaK-b-EU

a can be 1) 60, 70, 80, 90, 100, 110, 120, 130, 140, 150 or 160; 2) 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390 or 400. b can be 1) ZJ7 or ZJ7/02; 2) ZJ2 or ZJ2/02.

Figure 1-55 show RHDC400K-ZJ2-EU; Figure 56-88 show the differences between RHDC160K-ZJ7-EU and RHDC400K-ZJ2-EU.

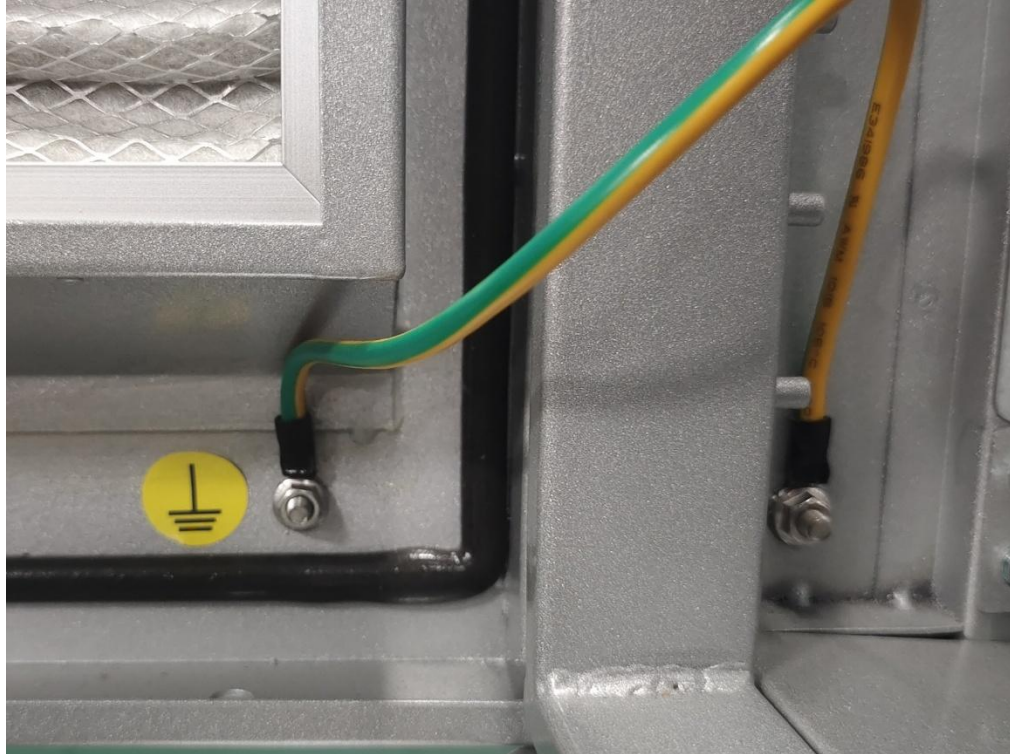


Figure 87 Earthing wiring of the side door

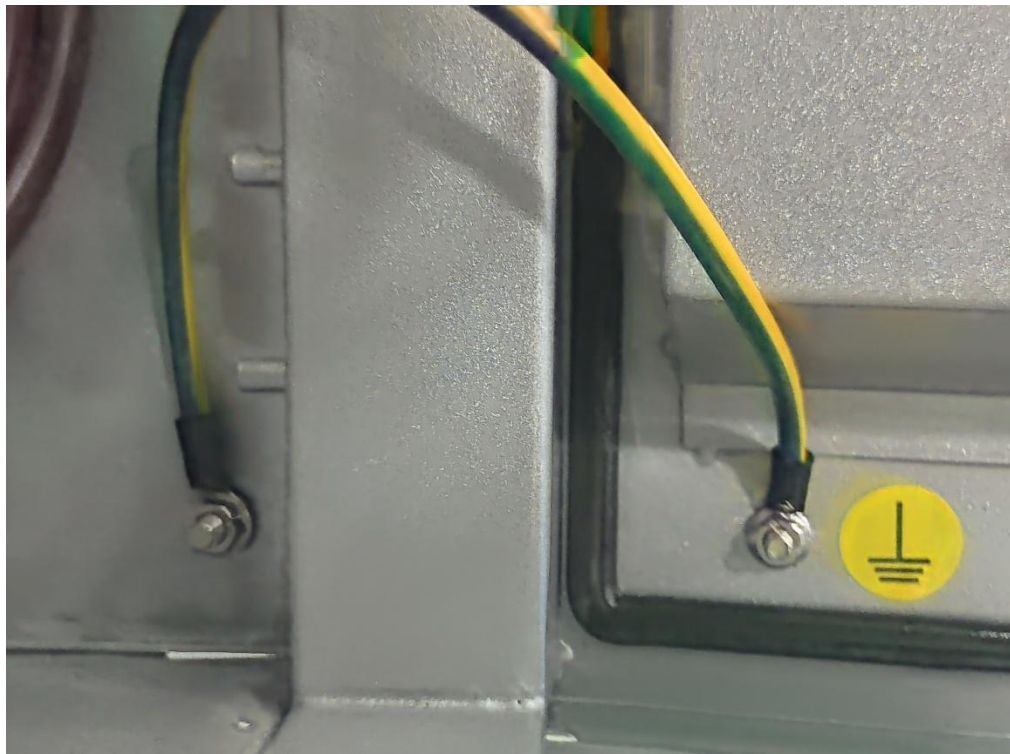


Figure 88 Earthing wiring of the side door

- END OF ATTACHMENT 2 -