Sichuan Yonggui Technology Co., Ltd.

Charging and Discharging System Product Introduction

New Energy Charging Station -Side Product Introduction

-Product Introduction for New Energy charging station Side-

On-board Product Center | Charging Product Line

2026/02/10

CONTENTS

CONTENTS

01

Sichuan Yonggui Company Overview

Basic Overview about Sichuan Yonggui

About Sichuan Yonggui

Sichuan Yonggui Science and Technology Co., Ltd.

Established in March 2008, with Fan Zhengjun as the legal representative.

The company has registered capital of RMB 120 million and total assets of RMB 1.81 billion. It is a wholly-owned subsidiary of Zhejiang Yonggui Electric Equipment Co., Ltd. (Stock Code: 300351).

Sichuan Yonggui Company Overview

About Sichuan Yonggui

Located in Mianyang, Sichuan Province

The company covers an area of over 200 mu, with more than 200,000 square meters of factory and office space.

The company owns more than 5,500 sets of various R&D and production equipment. It is a National High-Tech Enterprise, a National Intellectual Property Demonstration Enterprise, a National "Specialized, Refined, Distinctive and Innovative" Little Giant Enterprise, and a National Green Factory.
With proprietary core technologies, the company is a specialized product company capable of providing reliable connector series products and technical services for national key equipment industries, as well as integrated solutions for interconnection systems.

National Green Enterprise

National High-Tech Enterprise

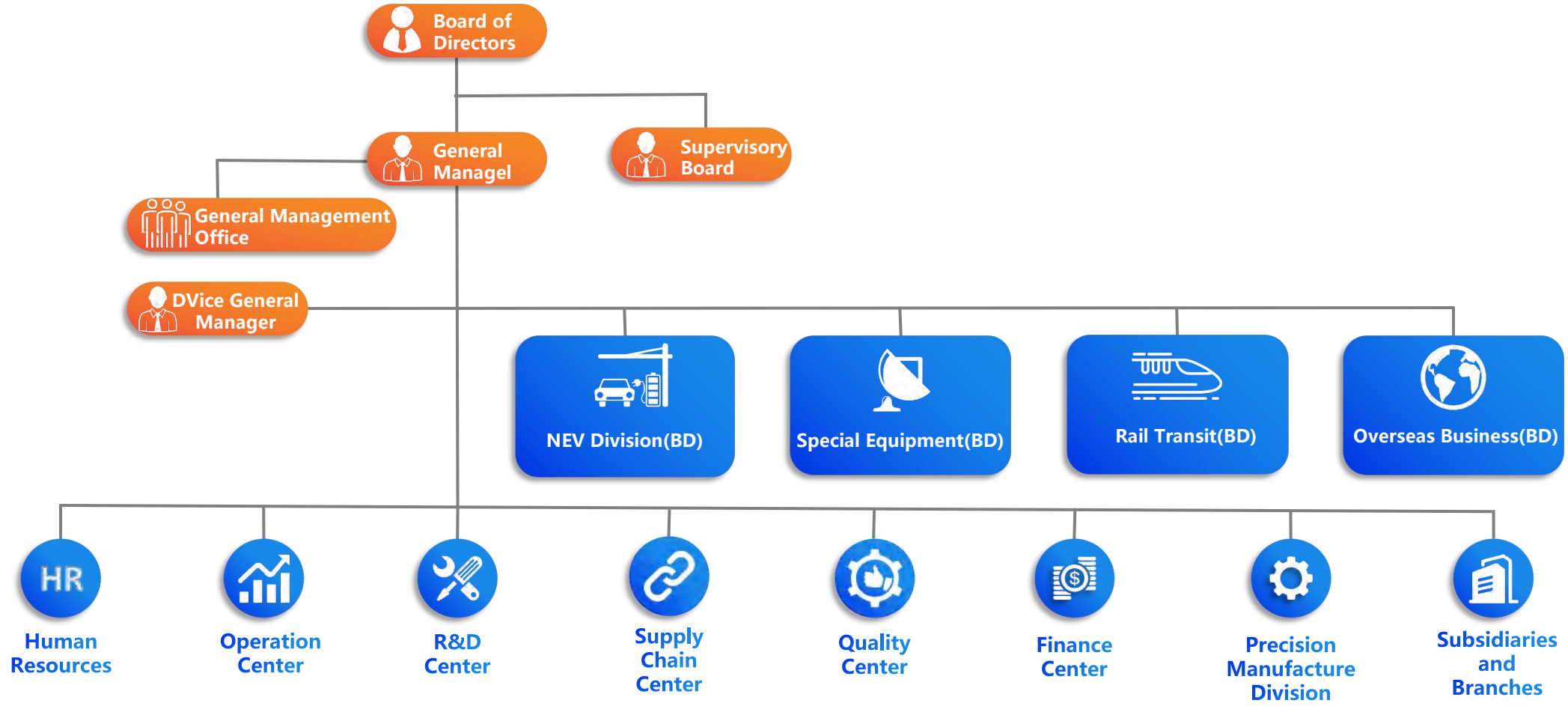
National Intellectual Property Demonstration Enterprise

National Specialized, Refined, Distinctive and Innovative "Little Giant" Enterprise

Aerial View of the Factory Plant

R&D Building

Organization Structure



50+Years Historyof Entrepreneurship

World-Class Interconnect Supplier

1973 Foundation

1979 Build 1st connector

2008 Sichuan Yonggui Set up

2009 High speed train entry

2012 IPO;Enter new energy market

2014 Special market entry

2017 JV with Toyo (Japan)

2018 Yonggui Group establishment

2019+ Business transition to new energy

2023 Globalization strategy

2024 Singapore office & Thailand plant set up

2025 Glocalization

Product Application Fields

Rail transit:
High-speed rail | Metro | locomotives | Maglev trains

Industrial:
wind power | Solar energy | Industrial equipment | Medicial

Defense:
Aerospace | Military electronics | Naval systems

Special segments:
Explosion-proof system | Deep-sea equipment | Nuclear power | Shore power | Aircraft

Vehicle:
NEVs for passenger & commercial | Special -purpose vehicle

Charging:
Public charging station | Home charging | MCS liquid-cooled charging station | Discharging

Telecommunication:
Communication base station | Data center | Power modules

Energy storage:
Residential storage | Power grid systems | Industrial energy storage

Business Performance

Corporate Qualifications

National Intellectual Property Demonstration Enterprise

Provincial Industrial Design Center

National High-Tech Enterprise

Sichuan Provincial Enterprise Technology Center

Through years of dedicated development, Sichuan Yonggui Science and Technology Co., Ltd.after"highnew"and"production", "Designmiddlecenter""middlecenter", 2020 year, is"", 2022 year, "newsmallperson".

Quality System Certifications

ISO14001

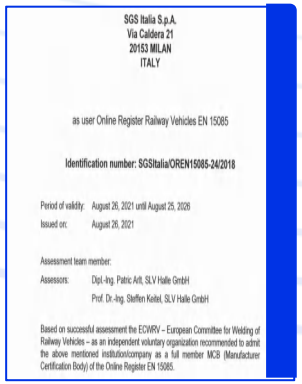
IATF16949

ISO45001

ISO9001

GB/T29490

ISO/IEC17025



EN15085

QC080000

ISO/TS22163

AS9100D

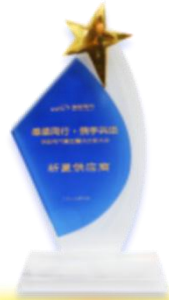
Based on multi-field applications of its products, the company has obtained multiple quality management system certifications, Companynotimproveandspecificationtubewater, improveCompanyforce, continuously providing customers with high-quality products for multiple application fields.

Industry Honors

2013
Annual Best Service Award

2015
Annual Excellent Supplier

2017
Core Components Top 100



2017
Annual Rising Supplier

2019
Annual Excellent Supplier

2023
Annual Technical Cooperation Award

2022
Annual Best Supplier

2022
Annual New Energy Contribution Award

2020
Annual Energy Storage Industry Chain Top 100

2019
Annual Best Quality Award

Yonggui Technology adheres to the business philosophy of "Customer-centric, Maximizing Value", continuously providing high-quality products and services to industry customers, and has gained widespread recognition from clients.
Upholding the corporate values of "Hard Work Rewards Prosperity, Co-creation and Win-Win Cooperation", Yonggui Technology keeps pace with market development, always focuses on customer needs, and strives to become a world-class interconnect solution provider.

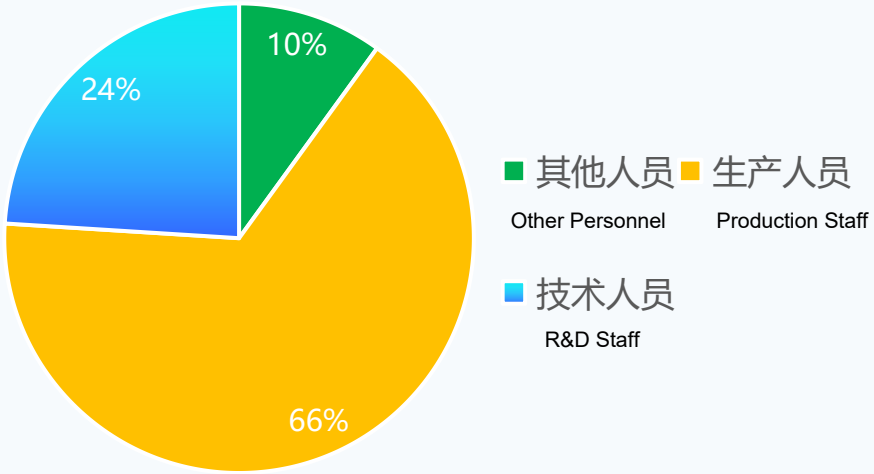
02

Product R&D Capability

Product Development Capability

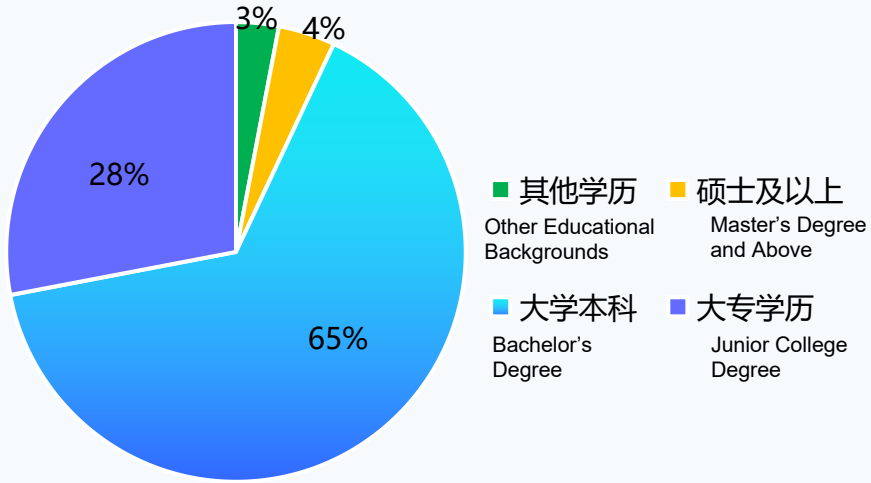
Personnel Status of Sichuan Yonggui

The company has a total workforce of more than 2,300 employees, among whom technical personnel account for 24% of the total staff.



Educational Background of R&D Personnel

There are over 640 technical personnel in total, among whom 65% hold a bachelor’ s degree or above.



Intellectual Property Portfolio

Total

580

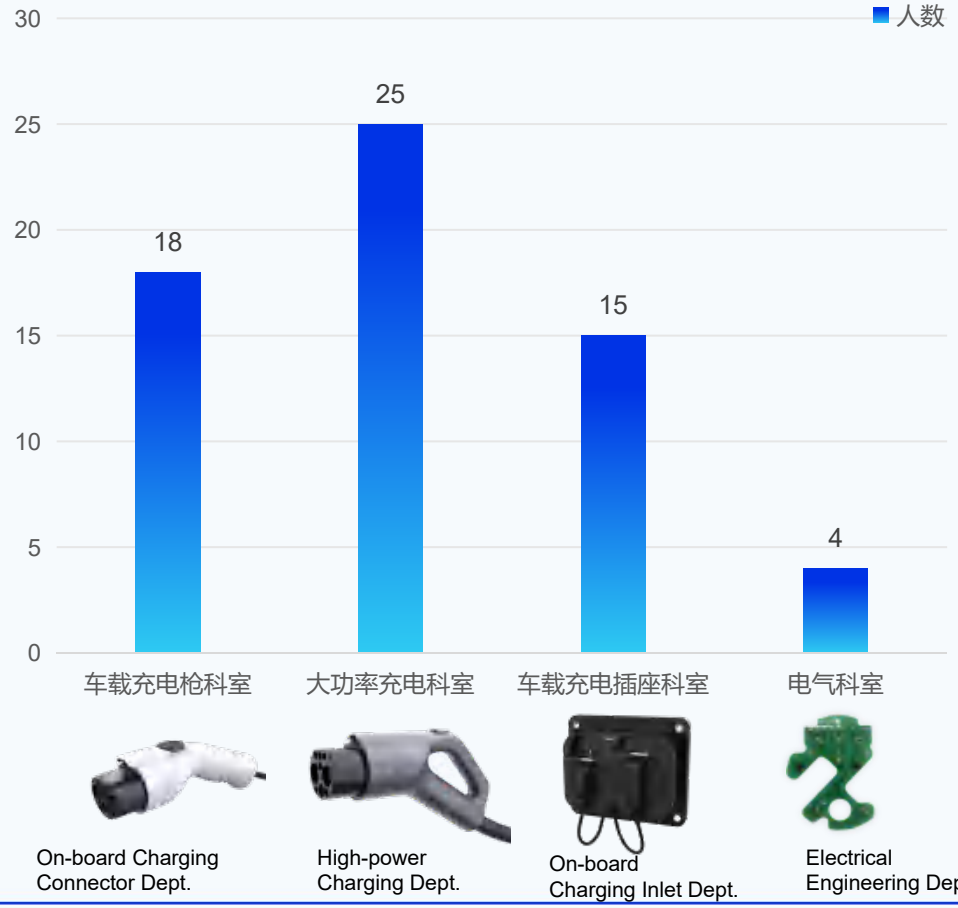
patents

- Invention Patents **78**
- Utility Model Patents **442**
- Design Patents **60**

Staff Profile of Charging Product Line

The charging product line has a total of 64 R&D personnel, including one Director and one Deputy Director respectively.

It consists of four charging product departments. Given the systematic and complex nature of new energy charging and discharging products, in addition to structural R&D engineers, the team is specially equipped with electrical R&D engineers, industrial design R&D engineers, cable R&D engineers and component calibration engineers. The integration of multiple disciplines provides solid support for project development.



Industrial Design R&D Engineer Engineers

Cable R&D Engineer

Mechanical/Structural R&D Engineer

Electrical R&D Engineer

Component Calibration Engineer

Intellectual Property Status – Charging Product Line Special Project

Total

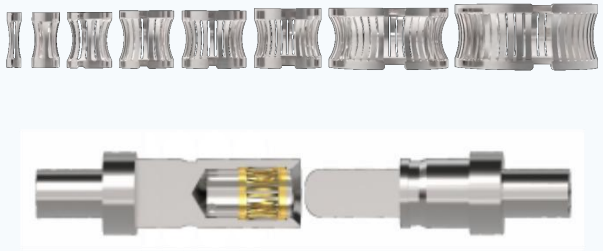
112

patents

- Invention Patents **8**
- Utility Model Patents **85**
- Design Patents **19**

Basic R&D Capability for Contacts

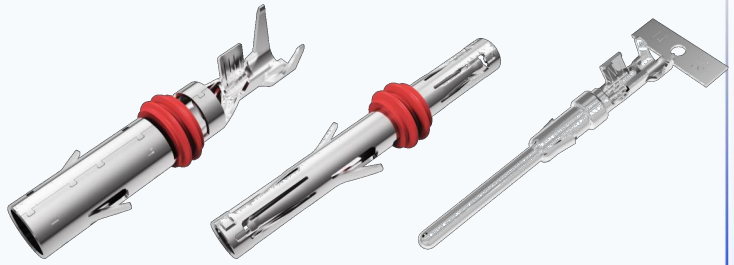
Slotted Contact Terminal Series



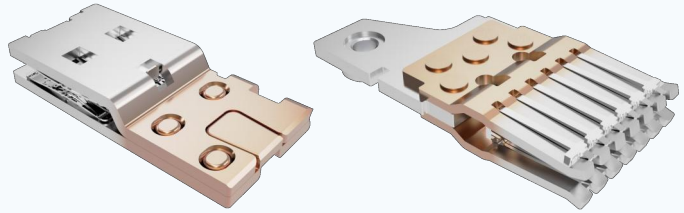
Crown-Spring Contact Terminal Series

Twist-Spring Contactterminalseries

Ring-Spring Contact Terminal Series



Stamped Round Terminal Series

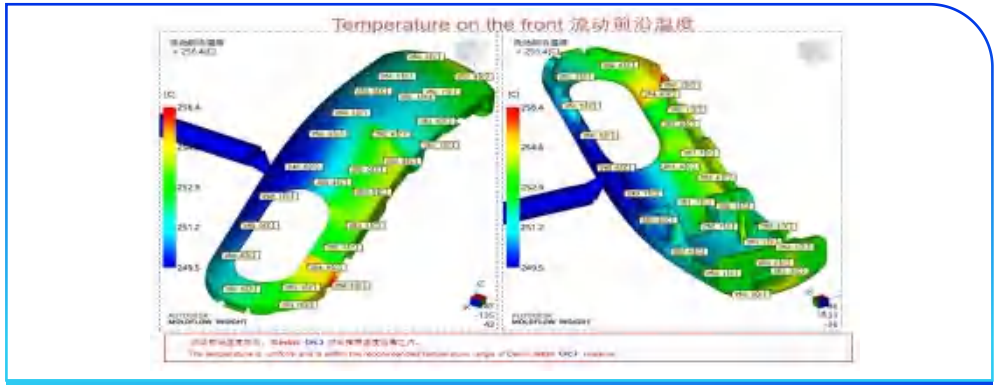


Rectangular Contact Terminal Series

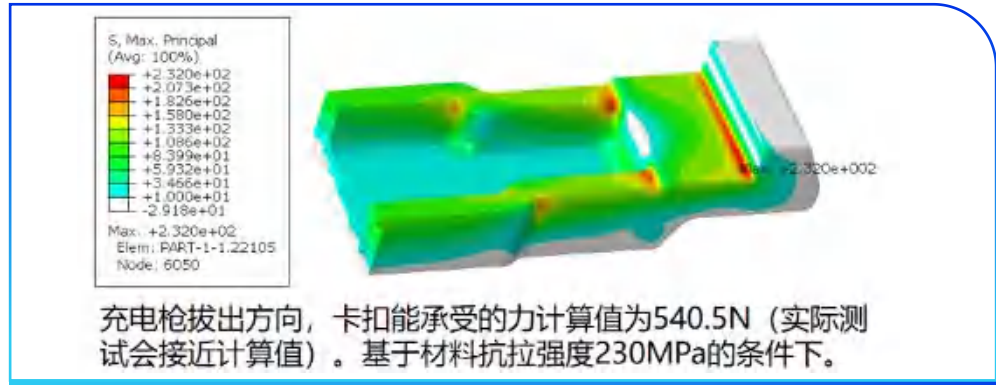
- The company has a Contact Technology R&D Department with over 20 dedicated engineers.
- It provides comprehensive contact design and validation support for various new energy charging and discharging scenarios, including conventional power/signal transmission, high-current charging, and megawatt-level charging applications.

CAE Simulation Analysis

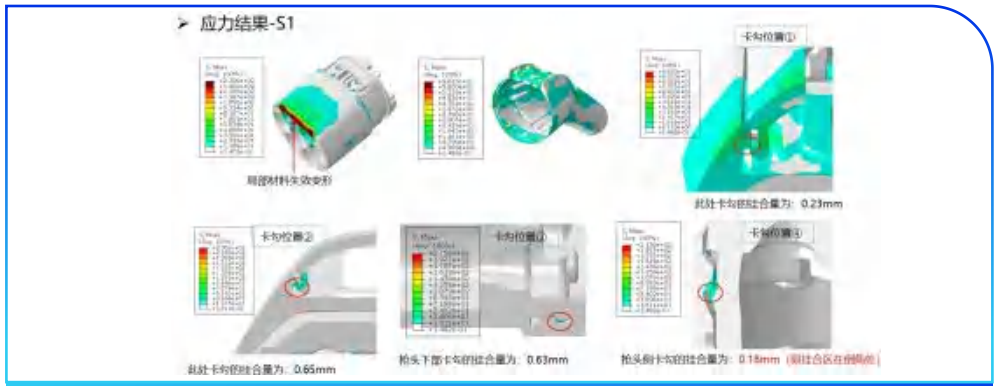
CAE Simulation Cases



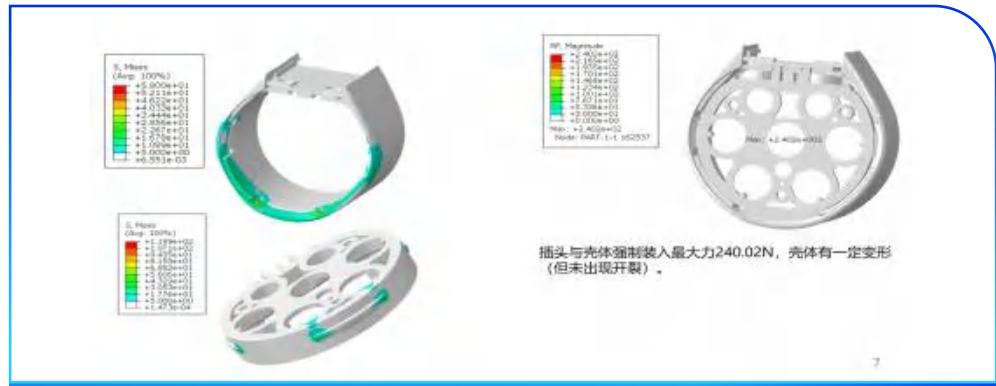
Mold-flow Analysis for Injection-molded Parts



Latch Component Strength Analysis



Charging Connector Drop Analysis



Charging Connector Forced-load Analysis

- The company has an independent Engineering Analysis Laboratory with professional and comprehensive simulation and analysis capabilities.
- During the product R&D process, the laboratory provides multi-dimensional, all-round, and full-process technical support in thermal simulation, structural stress analysis, mold flow analysis, and other key areas.

03 Product Testing Capability

Product Testing Capability

HST Actual Test Lab

SICHUAN HST LAB TECHNOLOGY CO., LTD

CANS Certified Laboratory

Provincial-Level Testing Center

Building Area	Number of Employees	Number of Equipment	Equipment Asset Value
2000m²	20+	200+	¥10 million

CNAS Certification

中国合格评定国家认可委员会
实验室认可证书
（注册号：CNAS L12326）

兹证明：

四川惠仕通检测技术有限公司

（法人：四川惠仕通检测技术有限公司）

四川省绵阳市涪城区会家林上街 68 号，621000

符合 ISO/IEC 17025：2017《检测和校准实验室能力的通用要求》（CNAS-CL01《检测和校准实验室能力认可准则》）的要求，具备承担本证书附件所列服务能力，予以认可。

获认可的能力范围见标有相同认可注册号的证书附件，证书附件是本证书组成部分。

生效日期：2025-06-10
截止日期：2031-06-09

中国合格评定国家认可委员会授权人 张朝华

China National Accreditation Service for Conformity Assessment
LABORATORY ACCREDITATION CERTIFICATE
(Registration No. CNAS L12326)

Sichuan Huishitong Testing Technology Co., Ltd.

(Legal Entity: Sichuan Huishitong Testing Technology Co., Ltd.)

No.68, Jinjialinshang Street, Fucheng District, Mianyang, Sichuan, China

is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2025-06-10
Expiry Date: 2031-06-09

Signed on behalf of China National Accreditation Service for Conformity Assessment 张朝华

Comprehensive Testing

Environmental Tests

- High & Low Temperature Testing
- Thermal Shock Testing
- Temperature & Humidity Cycling
- Low Pressure Testing
- Salt Spray Testing
- Chemical Resistance Testing

Electrical Performance Tests

- Contact Resistance
- Voltage Drop
- Insulation Resistance
- Temperature Rise
- Current Cycling

Mechanical Performance Tests

- Vibration & Shock Testing
- Impact Testing
- Drop Testing
- Constant Acceleration Testing
- Contact Insertion & Extraction Force
- Connector Mating & Unmating Force
- Strength Testing

Sealing Performance Tests

- Rain Spray Test
- Dust Test
- Immersion Test
- Airtightness Test
- IP Protection Test

Charging Product-related Test Equipment

High/Low Temperature Test Chambers

Electronic Lock Life Tester

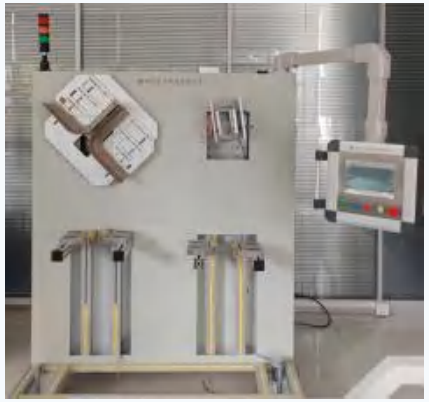
Melt Flow Index Tester

Cable Torsion Test Bench

Electrical Performance Test Stations

Temperature Rise Test Laboratory

High-Power Electrical Measurement & Data Acquisition System



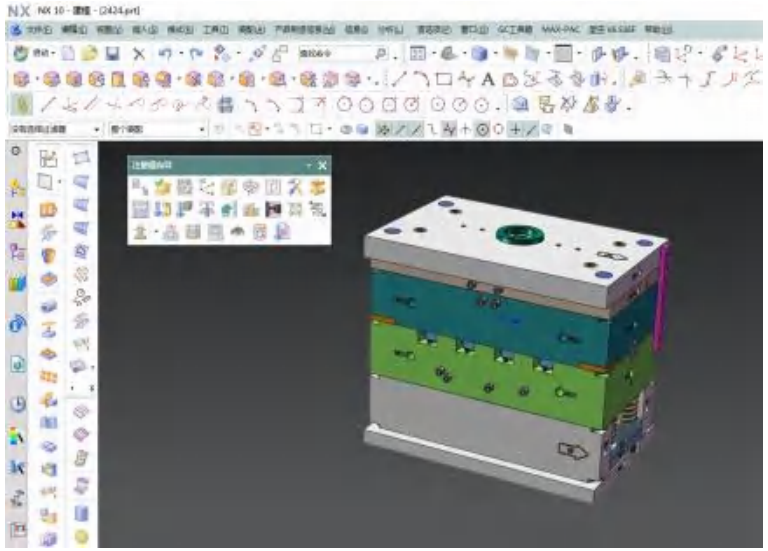
DC Charging Connector Swing Test Bench

04 Manufacturing Capability

Product Manufacturing Capability

Tooling and Mold Design & Manufacturing

- Yonggui boasts an independent tooling and mold workshop as well as a professional mold design studio.
- The tooling and mold workshop covers a floor area of nearly 2,000 square meters, with more than 40 professional employees.
- It is equipped with an independent mold flow analysis room, staffed by full-time mold flow analysis engineers, mold design engineers, and tooling & fixture design engineers.
- The workshop covers a floor area of over 2,000 square meters.
- It is furnished with more than 40 sets of precision mold processing equipment imported directly from Japan, including Seibu low-speed wire cut EDM, Makino EDM, FANUC drilling & tapping centers, Makino CNC machine tools and Junli grinding machines.
- Additionally, there are over 10 sets of dedicated inspection equipment such as coordinate measuring machines (CMM), video measuring systems and height gauges.
- The annual production capacity for the design and manufacturing of various molds reaches more than 400 sets.



Injection Mold Design

Mold Grinding Machining

CNC Machining Center

Electroplating Processing Capacity

- Yonggui owns an electroplating plant with a floor area of over 15,000 square meters.
- The company is equipped with one fully automatic gold plating production line, two silver plating production lines, two semi-automatic tin plating production lines, two zinc plating production lines, one manual phosphating production line, two semi-automatic electroless nickel plating production lines, and one aluminum anodizing and coloring production line.

Finished Electroplated Parts

Plating Thickness Test Bench

Automated Electroplating Production Line

Injection Molding

- Yonggui runs an injection- molding plant covering over 3,500 m².
- Equipped with 50+ injection- molding machines (imported Japanese FANUC, Nissei, Zhenxiong, 45T- 380T) for horizontal, vertical and two- color molding of diverse plastics.
- All machines feature visual monitoring and manipulators, with an annual output of over 80 million molded parts.

Finished Injection-molded Parts

Injection Molding Workshop

Injection Molding Workshop

Precision Machining

- Yonggui runs a precision machining plant of approx. 9,000 m².
- It has over 150 imported precision machines including Miyano dual- spindle turn- milling lathes, Citizen/Tornos sliding- head lathes, Kitamura turret/sliding- head lathes, Brother machining centers; 30+ auxiliary devices such as visual measuring instruments, CCD online inspectors, vacuum tempering furnaces, laser welders and special spring- coiling machines; plus 30+ auto/semi- auto component assembly units.
- Annual output capacity: over 70 million high- precision parts.

Precision-machined Parts

Precision Machining Workshop

Precision Machining Workshop

Product Integrated and Assembly

- Yonggui has more than 120 production lines, including component assembly lines, connector assembly lines, wire harness assembly lines and integrated product assembly lines, of which over 50 are fully automatic and semi-automatic lines.
- It has an annual production capacity of over 75 million sets of various connector plugs, receptacles, wire harness assemblies and integrated products.
- The MES system is adopted to collect and store manufacturing process data, enabling full traceability of product manufacturing.

Automated Final Assembly Line for DC Charging Connectors

Automated AC Charging Connector Production Line

Automated Electronic Lock Production Line

In-line Inspection Equipment

• Yonggui has gradually introduced various in-line inspection equipment into its production lines to monitor and contol key technical parameters in real time, ensuring that only qualified products are released from the line.

Mode 2 Product Aging Test

In-line Latch System Inspection

Production Data Dashboard

In-line Flow Rate Inspection for Liquid-cooled Charging Connectors

Inlet Wiring Harness Integrated Test Bench

Comprehensive Inspection of Electronic Lock

05

Charging & Discharging Product Overview

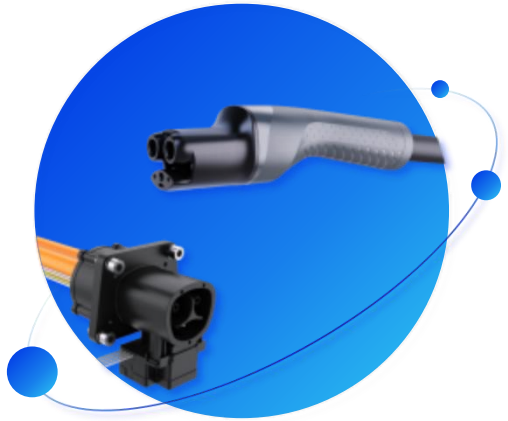
Basic Overview about Charging and Discharging Products

Covers Five Mainstream Charging Standards

GB/T 20234

EN 62196 CCS2

MCS standard

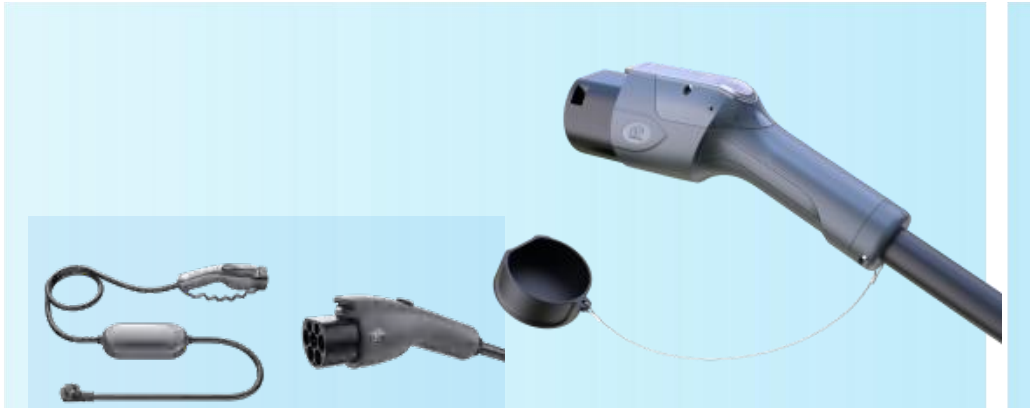


NACS standard

ChaoJi standard

YG-GB Series GB/T Charging Connector

Natural Cooling
Active Liquid Cooling



0A 16A 32A 50A 80A 250A 400A 600A 1000A 1500A

AC Series

Mode 2 product			
Product Specification		Cable OD Specification	
		Charging Connector End	Three-plug End
Single-phase	10A	⌀ 13±0.3	⌀ 10.5±0.3
	16A	⌀ 13.5·±0.3	⌀ 10.5±0.3

Mode 3 product		
Product Specification		Cable OD Specification
Single-phase	10A	⌀ 11±0.3
	16A	⌀ 13±0.3
	32A	⌀ 15.5±0.3
Three-phase	16A	⌀ 15.5±0.3
	32A	⌀ 19.5±0.3

Compact DC Series

Product Specification	Cable OD Specification
10A	⌀ 19.5±0.5
16A	⌀ 21±0.5
32A	⌀ 21±0.5
50A	⌀ 24±0.6
80A	⌀ 24±0.6

Conventional DC Series

Product Specification	Cable OD Specification
125A	⌀ 30±1
200A	⌀ 30±1(PE 6) ⌀ 32±1(PE 16)
250A	⌀ 31±1(PE 6) ⌀ 32±1(PE 16) ⌀ 38±1(2*80)
300A	⌀ 36±1(Small OD Version) ⌀ 38±1
400A	⌀ 40±1

HPC liquid-cooled charging series

Product Specification	Cable OD Specification
500 A Water-cooled	⌀ 32.3±0.5
600 A Water-cooled	⌀ 32.3±0.5
600 A Oil-cooled	⌀ 31.5±0.5
800 A Oil-cooled	⌀ 34±0.5
1000 A Oil-cooled	⌀ 40±0.5

GB/T Megawatt Charging Series

Product Specification	Cable OD Specification
1200 A Water-cooled	⌀ 40±1

YG-EN/SA Series Charging Connector

Natural Cooling
Active Liquid Cooling





0A 16A 32A 80A 250A 375A 600A 1000A 1500A

AC Series

Mode2productionproduct			
Product Specification		Cable OD Specification	
		Charging Connector End	Three-pin Plug End
Single-phase	10A	⌀ 10.7±0.5	⌀ 10.8±0.3
	16A	⌀ 10.7±0.5	⌀ 10.8±0.3

Mode3productionproduct		
Product Specification		Cable OD Specification
Single-phase	13A	⌀ 10.7±0.5
	20A	⌀ 10.7±0.5
	32A	⌀ 13.5±0.5
Three-phase	13A	⌀ 13.5±0.5
	20A	⌀ 13.5±0.5
	32A	⌀ 16.5±0.5

Conventional DC Series

Product Specification	Cable OD Specification
80A	Φ25±1
125A	Φ26.5±1
200A	Φ34.5±1
250A	Φ32±1
300A	Φ34.5±1
350A	Φ36±1
375A	Φ36±1

HPC Liquid-cooled Charging Series

Product Specification	Cable OD Specification
600AWater-cooled	⌀ 32±1

SAMCS Charging Series

Product Specification	Cable OD Specification
1500Aoilcooling	⌀ 44±1

Charging Product Accessories

Indicates products under development

YG-CH Series

GB/T AC Connector Holder

GB/T DC Charging Connector Holder

CCS2 DC Connector Holder

CCS2 AC Connector Holder

YG-EN Series

CCS2 AC Charging Socket-outlet

YG-ED Series

Electronic Lock (for receptacle)

Electronic Lock
(for Charging Connector)

06

Key Station-side Product Introduction

Introduction of Key Products of Charge and Discharge System

YG-GB Series GB/T DC Charging Connector

Product Overview

This product is Yonggui's **third-generation GB DC charging connector**. Adopting a family-style exterior design, it fully complies with the certification requirements of the 2023 version of the new national standard, with a maximum rated current up to 400A.

Overall View

Product Advantages

High IP Rating

This product is Yonggui's third-generation GB DC charging connector. Adopting a family-style exterior design, it fully complies with the certification requirements of the 2023 version of the new national standard, with a maximum rated current up to 400A.

Enhanced Housing Material Strength

The entire product lineup adopts high-strength PC material. The end-face screw fixing structure of the charging connector head delivers higher overall rigidity, superior impact resistance, and better performance in low-temperature drop tests.

Upgraded Cable Structure

The entire series adopts high-strength PC material. With screw fastening on the end face of the connector head, it features higher overall structural strength, superior impact resistance, and excellent low-temperature drop performance.

Enclosed LaTCH Design

Encapsulated latch protection structure prevents foreign matter jamming and drop damage to exposed latches.

Unified Family-style Appearance Design

Yonggui triangular grip structure supports large-angle cable routing for smooth and flexible arrangement. It also enables small-angle holding, delivering comfortable and effortless insertion and withdrawal of the charging connector with an excellent user experience.

Two-piece Latch Assembly Structure

New products adopt material selection tailored to application scenarios. The main body is made of high-strength zinc alloy, providing reliable protection for the interlock of the connector receptacle. Matched with a plastic button cover, it optimizes the tactile feel during operation—no finger sticking in winter and no scalding heat in summer.

项目/Item	125A series	200A series	250A series	300A series	400A series
执行标准/Standard	GB/T 18487.1-2023 GB/T20234.1-2023 GB/T20234.3-2023				
充电模式/Charging modes	充电模式4				
额定电压/Rated voltage	1000V DC				
额定电流/Rated current	125A DC	200A DC	250A DC	300A DC	400A DC
耐电压/voltage resistance	3000V AC				
绝缘电阻/Insulation resistance	≥100MΩ				
防护等级/Degree of protection	插合前/Before insertion：IP54；插合后/After insertion：IP55 电气部分/Electrical part：：IP67				
插拔次数/Cycles life	≥10000				
插拔力/Insertion and withdrawal force	<120N				
使用环境温度/Ambient temperature	-30℃ ~+ 50℃				
温控方式/Temperature detection methods	PT1000 或NTC温度传感器/PT1000 or NTC Temperature sensor				
阻燃等级/Flame retardant rating	UL94 V-0/UL94 HB				
功率触头表面镀层材质 Coating material of power contacts	Ag				
电缆外径/External cable diameter	Φ30±1mm	Ø 30±1(PE 6) Ø 32±1(PE 16)	Ø 31±1(PE 6) Ø 32±1(PE 16) Ø 38±1(2*80)	Ø 36±1(小线径版) Ø 38±1	Φ40±1mm

YG-GBHPC Series GB/T Water-cooled Charging Connector

Product Overview

This product is Yonggui's platform-based isolated water-cooled high-power DC charging connector. It fully complies with the certification requirements of the 2023 new national standard, featuring a maximum continuous current of 600A and a short-time maximum current capacity of 800A.

Overall View

Product Advantages

Meet stringent test conditions

It passes the double 85-500H test, 90℃ high-temperature storage for 250H, and 100H thermal shock test ranging from -40℃ to 90℃. The entire charging connector achieves an **IP67 rating**, suitable for harsh outdoor service environments.

Independent patented design

Unique ceramic water tank structure significantly improves the heat exchange efficiency of terminals and boosts charging efficiency.

Certified personnel only

Unique ceramic water tank structure greatly improves the heat exchange efficiency of terminals and enhances charging efficiency.

Strict screening of characteristic components

After completing 20,000 cycles of room-temperature swing and torsion tests, 10,000 cycles of high-temperature swing and torsion tests, and 1,000 manual torsion tests, all performance indicators of the cable meet the requirements.

Scientific appearance design

Ergonomic exterior design delivers an excellent hand-held charging experience with distinctive family-style facial design recognition.

项目/Item	600A series
执行标准/Standard	GB/T 18487.1-2023 GB/T20234.1-2023 GB/T20234.3-2023
充电模式/Charging modes	充电模式4
额定电压/Rated voltage	750V/1000V DC
额定电流/Rated current	600A
耐电压/voltage resistance	5656V/DC
绝缘电阻/Insulation resistance	≥100MΩ
防护等级/Degree of protection	插合前/Before insertion：IP54；插合后/After insertion：IP55 电气部分/Electrical part：：IP67（与插座对插连接界面除外~~/Except the interface with socket~~）
插拔次数/Cycles life	≥10000
插拔力/Insertion and withdrawal force	<100N
使用环境温度/Ambient temperature	-30℃ ~+ 50℃
温控方式/Temperature detection methods	PT1000 或NTC温度传感器/PT1000 or NTC Temperature sensor
阻燃等级/Flame retardant rating	UL94 V-0
功率触头表面镀层材质 Coating material of power contacts	Ag
电缆外径/External cable diameter	Φ32.3±0.5

YG-GBHPC Series GB/T Oil-cooled Charging Connector

Product Overview

This product is Yonggui platform immersive oil-cooled high-power DC charging connector, fully compliant with the certification requirements of the 2023 version of the new national standard, with maximum continuous current of 400A/600A/800A respectively.

Overall View

Product Advantages

Meet stringent test conditions

It complies with the double 85-500H test, 90 ℃ high-temperature storage for 250 hours, and 100-hour temperature shock test ranging from -40 ℃ to 90 ℃. The entire charging connector reaches IP67 rating, adapting to harsh outdoor service environments.

Independent patented design

Unique ceramic water tank structure greatly improves the heat exchange efficiency of terminals and enhances charging efficiency..

Certified personnel only

Developed in accordance with the latest national standard GB/T 20234-2023, and has completed the full range of compulsory inspection certification and CQC certification.

Strict screening of key functional components

Completing 20,000 cycles of swing and torsion tests at room temperature, 10,000 cycles of swing and torsion tests at high temperature, and 1,000 manual torsion tests, all performance parameters of the cable meet the specified requirements.

Scientific appearance design

Ergonomically contoured design delivers an excellent handheld charging experience with highly recognizable family-style styling.

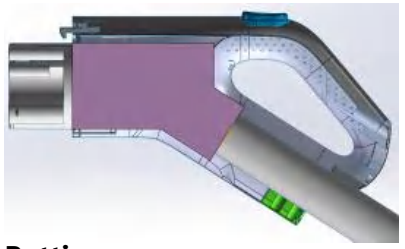
项目/Item	400A series	600A series	800A series
执行标准/Standard	GB/T 18487.1-2023 GB/T20234.1-2023 GB/T20234.3-2023		
充电模式/Charging modes	充电模式4		
额定电压/Rated voltage	750V/1000V DC		
额定电流/Rated current	400A	600A	800A
耐电压/voltage resistance	5656V/DC		
绝缘电阻/Insulation resistance	≥100MΩ		
防护等级/Degree of protection	插合前/Before insertion：IP54；插合后/After insertion：IP55 电气部分/Electrical part：：IP67（与插座对插连接界面除外/~~Except the interface with socket~~）		
插拔次数/Cycles life	≥10000		
插拔力/Insertion and withdrawal force	< 100N		
使用环境温度/Ambient temperature	-30℃ ~+ 50℃		
温控方式/Temperature detection methods	PT1000 或NTC温度传感器/PT1000 or NTC Temperature sensor		
阻燃等级/Flame retardant rating	UL94 V-0		
功率触头表面镀层材质 Coating material of power contacts	Ag		
电缆外径/External cable diameter	Φ31.5±0.5	Φ31.5±0.5	Φ34±0.5

YG-GB Series GB/T DC Charging Connector - 400A Air-Cooled Version 2: With Fan

Integrated family-style appearance design, with fan equipped.

1. Power terminal

- 130 mm² ultrasonic welded large terminal
- 10μm silver plating, exceeding standard requirements greatly for excellent insertion and withdrawal performance



2.Overall Potting

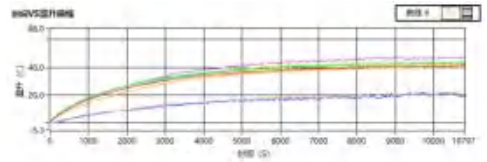
- The purple area denotes the potting zone. Thermally conductive adhesive transfers heat from the terminals to the charger connector housing for dissipation into the ambient air.
- Delivers more stable performance in harsh environments and avoids the vulnerability of easily damaged fans.

3. Cable Structure (OD40)

- Adopts 4×65 conductors with a single side of 130 mm², delivering more stable temperature performance.
- Passes extreme torsion resistance testing.

Product Design Details

4.Temperature Rise Test (150 mm² Split-Slot Receptacle Terminal)



- Maximum temperature rise of power terminal reaches 44.6K, complying with national standard requirements.

5.Notes

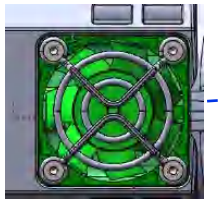
- This DC charging connector has no active heat dissipation system. In accordance with relevant standards, only the mandatory inspection report and CQC certificate report for 300A can be issued.
- Without an active heat dissipation system, the DC charging connector cannot efficiently dissipate excessive heat from the receptacle end. For 400A rated current application, it shall be matched with a 150 mm² split-slot receptacle.5.

YG-GB Series GB/T DC Charging Connector-400A Air-Cooled Version 2: With Fan

Integrated family-style overall appearance design, with built-in fan

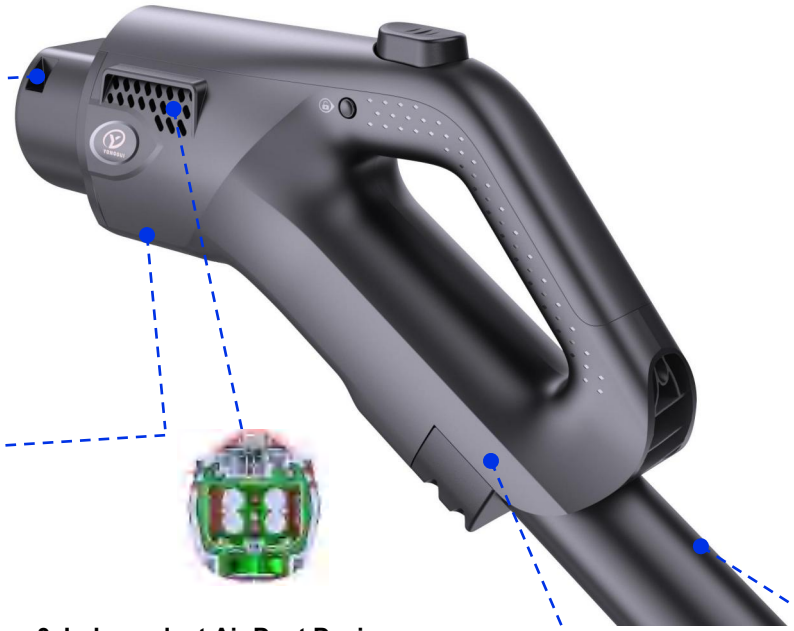
1.Power terminal

- 120 mm² Ultrasonic Welded Large Terminal
- 10μm silver plating, far exceeding industry standards for superior insertion and withdrawal durability



2. Cooling Fan Structure

- Rated voltage 12V, high-performance fan with 15000 RPM
- Equipped with a protective cover to prevent foreign matter ingress
- Installed at the lower part of the connector housing to avoid damage from dropping and rolling compression
- Adopts quick-connect mating design for simple and convenient replacement



3. Independent Air Duct Design

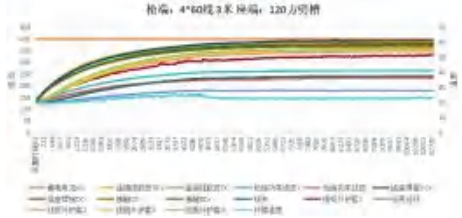
- The air duct is optimized via simulation to achieve minimum air resistance and enhance heat dissipation performance.

4.High Protection Performance

- The inner cavity of the entire connector meets IP67 rating.

Product Design Details

6. Temperature Rise Test (Receptacle end, 120 mm² split groove)



- The maximum temperature rise of power terminal is 36.8K, complying with national standard requirements.
- Receptacle end is upgraded to 120 mm² receptacle.

5.Cable Structure (OD40)

- Adopts 4×60 conductors with 120 mm² per side
- Passes extreme torsion test

★ Development Plan

- 2025/12 /30 Project initationf
- 2026/4/20 Scheme Freeze
- Mid-June 2026: CQC completion
- Early June 2026 T0
- 2026/7/30 OTS

DC Charging Connector Modular Design Highlights

Product Design Details

Enveloped Latch Protection Structure

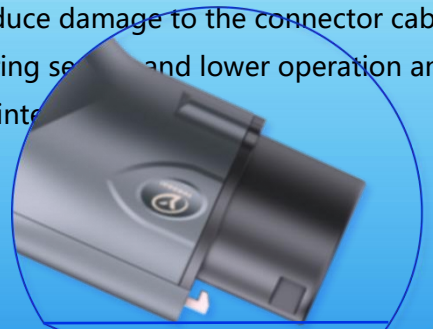
Design:

Add a protective cover on the top of the charging connector to protect the latch.

Advantages:

Prevent foreign matter ingress and icing on the latch, which may cause jamming or damage from drop and impact;

Reduce damage to the connector cable during se and lower operation and maint



Design:

The terminals at the connector end adopt ultrasonic welding, with the welding resistance half of that of crimping connection.

Advantages:

1.Ultrasonic welding features lower resistance and lower temperature rise;

2.It delivers stable aging resistance of welding resistance, with a small temperature rise increment during long-term service.

Terminal Connection Design

Housing Structure

Design:

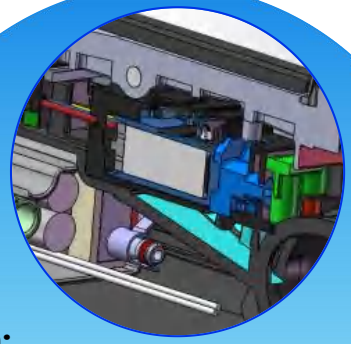
Adopt rounded integrated structure with a basic wall thickness of 4.5mm, and made of high notched impact resistant material.

Advantages:

Avoid stress concentration and cracking caused by external force;

Better overall appearance integrity;

The housing remains crack-free after more than 100 times of low-drop tests at room temperature.



Design:

A slope structure is adopted at the water-prone area on the top of the connector housing, with the drainage opening area larger than 16mm², and the electronic lock is arranged in a suspended state.

Advantages:

Smooth drainage reduces the risk of water accumulation causing switch and electronic lock failure;

Lower the risk of electronic lock jamming due to icing at low temperature.

Housing Drainage Design

DC Charging Connector Modular Design Highlights

Product Design Details

Combined Latch and Unlocking Rod Structure

Design:

The latch adopts a combined structure of metal main body and plastic button. The unlocking rod is embedded inside the housing with a diameter of 7mm.

Advantages:

1.The latch features high strength and stays heat-proof without scalding hands under direct summer sunlight;

2.The embedded unlocking rod is anti-theft and not easy to lose;

Large unlocking hole enables effortless unlocking.

Design:

The two-piece wire clamp clamps the cable, with the clamping teeth interlocking with the cable sheath, and a cable grommet is additionally equipped.

Advantages:

1.The two-piece structure provides more reliable clamping, reduces the number of parts and lowers costs;

2.Reduce the risk of cable bulging and sheath cracking caused by abnormal bending during use.

Two-piece Wire Clamp with Cable Grommet

Patented Integrated Water Tank

Design:

Integrated water tank structure made of insulating material, which is in direct contact with terminals for heat dissipation.

Advantages:

1.Simplify part composition and reduce cost;

2.Reduce heat transfer loss, improve heat exchange efficiency and lower temperature rise;

3.One-piece forming process enhances structural reliability.

Design:

Adopt water-cooled double isolation type and oil-cooled full immersion type. In-depth optimization is carried out on cabling stranding direction, material selection and structural layout to improve torsion resistance performance.

Advantages:

1.The double isolation type delivers high safety performance, while the full immersion type features high current-carrying capacity.

2.Small outer diameter, excellent anti-torsion capability and no wire breakage.

Liquid-cooled Cable

YG-EN Series EU DC Charging Connector

Overall View

Product Overview

The YG-ENC-DC series European standard DC charging connectors are independently developed and designed by Yonggui. They comply with IEC 62196-1:2022 and IEC 62196-3:2022, and are available in seven rated current specifications: 375A, 350A, 300A, 250A, 200A, 125A and 80A.

Product Advantages

High IP Rating

The electrical components within the high-voltage cavity meet IP67 protection rating, with upgraded compliance to satisfy stringent standard requirements.

Modular Design

All terminals are quick-replaceable to reduce subsequent maintenance costs. After disassembly of the quick-replaceable parts, the interior of the high-voltage cavity still maintains an IP67 protection rating.

Compact and aesthetic appearance

Ergonomically designed with a small-angle grip handle, it enables comfortable and natural plug-in operation and enhances user experience.

Precise Temperature Control

The actual temperature difference between the temperature sensor and contact terminals can be less than 5K. The high-precision thermocouple adopted supports a temperature range of -40℃ to 150℃.

Integrated Housing Design of Charging connector

High IP rating and superior product safety avoid the safety risks of two-piece housings under harsh environmental conditions.

Ultrasonic Welding

Power terminals adopt silver plating plus ultrasonic welding, featuring lower resistance and temperature rise as well as excellent aging stability. A built-in high-precision temperature sensor continuously feeds back the internal temperature of the charging connector.

Item/Item	80A	125A	200A	250A	300A	350A	375A
standard/Standard	IEC 62196-1：2022 IEC 62196-3：2022 IEC 61851-1:2017						
chargingMode/Charging modes	chargingMode4						
rated voltage/Rated voltage	1000V DC						
Rated Current/Rated current	80A	125A	200A	250A	300A	350A	375A
withstand voltage/voltage resistance	3000V AC						
insulation resistance/Insulation resistance	≥500MΩ						
degree of protection/Degree of protection	matingbefore(protectioncover)/Before insertion：IP55 ; matingafter/After insertion：IP55 electricelectricaldepartment/Electrical part：：IP67(andinletsurfaceoutside/Except the interface with socket)						
Insertcycles/Cycles life	≥10000						
insertion and withdrawal force/Insertion and withdrawal force	< 100N						
operating environmenttemperature/Ambient temperature	-30℃ ~+ 50℃						-30℃ ~+ 45℃
temperature/Temperature detection methods	PT1000 orNTCtemperature/PT1000 or NTC Temperature sensor						
flame retardant rating/Flame retardant rating	UL94 V-0						
powersurface coatingquality Coating material of power contacts	Ag						
electricoutside/External cable diameter	Φ25±1mm	Φ26.5±1mm	Φ34.5±1mm	Φ32±1mm	Φ34.5±1mm	Φ36±1mm	

YG-EN Series EU Water-cooled Charging Connector

Overall View

Product Overview

This product is Yonggui's first-generation European standard DC liquid-cooled charging connector, fully compliant with the 2022 edition of IEC European standard certification requirements, with a maximum rated current up to 600A.

Product Advantages

High IP Rating

The electrical components inside the high-pressure cavity meet IP67 protection requirements with upgraded compliance, complying with stringent standard specifications.

Modular Design

The connector head, quick-replaceable terminals, liquid-cooled cold plate and pins are all modularly designed, enabling efficient operation and maintenance, reducing failure losses, supporting standardized production, cutting costs, improving efficiency and achieving controllable product quality.

Precise Temperature Control

The actual temperature deviation between the temperature sensor and contact terminals is less than 5K. The optional high-precision thermocouple covers a temperature range of -40℃ to 150℃.

Ultrasonic Welding

Power terminals adopt silver plating and ultrasonic welding, delivering lower resistance and temperature rise with excellent aging stability. A built-in high-precision temperature sensor continuously transmits the internal temperature of the charging connector in real time.

Item/Item	DC/DC	
	500A	600A
standard/standard	IEC 62196-1：2022、IEC 62196-2：2022 、IEC 62196-3：2022、 PD IEC TS 62196-3-1-2020：2022	
rated voltage/Rated voltage	1000V DC	
Rated Current/Rated current	500A DC	600A DC
withstand voltage/Voltage resistance	3000V DC	
insulation resistance/Insulation resistance	≥500MΩ	
degree of protection/Degree of protection	matingbefore/Beforeinsertion:IP54:matingafter/Afterinsertion:IP55 electricelectricaldepartment/Electrical part:IP67	
mating/unmating cycles/Cycles life	≥10000cycles	
insertion and withdrawal force/insertion and withdrawal force	< 100N	
operating environmenttemperature/Ambient temperature	-30℃~+50℃	
Indicator Light/indicator light	can/Optional	
flame retardant rating/Flame retardant rating	UL94 V-0	

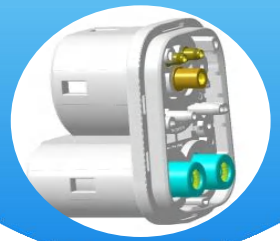
YG-EN Series EU Water-cooled Charging Connector

Product Design Details

Replaceable Connector Head Assembly

After the connector head is assembled with the quick-replaceable terminals into a component, it can be detachably mounted on the connector housing. **Advantages:**

1. A quick-change structure is formed, allowing users to easily replace the plastic connector head and terminals;
2. Simple and easy disassembly and assembly operation extends the service life of the entire charging connector.



The charging connector adopts a double-layer sealing design, with an additional end face sealing around the pins for dual protection.

Advantages:

1.Enhances IP protection performance and forms double safeguarding together with the O-ring;

2.Effectively protects the pins and reduces the risk of protection failure.

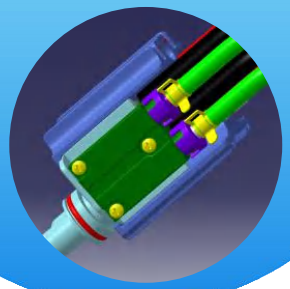
Dual-Layer End Face Sealing

Ceramic Water-Cooling Chamber

The liquid cooling system adopts a ceramic water tank design with two inlet and two outlet ports.

Advantages:

1. The ceramic water tank features compact size and non-conductivity, making effective use of the internal space of the charging connector;
2. It delivers excellent thermal conductivity, ensures smooth liquid circulation, and comes with low cost.



The temperature sensor is precisely arranged inside the pins.

Advantages:

1. The deep layout of the temperature sensor enables more accurate readings, which are basically consistent with the temperature rise data of the pins;
2. The temperature sensor is protected by high-temperature resistant heat-shrink tubing, featuring simple assembly and firm installation.

Precise Temperature Sensor Placement

YG-SAMCS Series EU/US Megawatt Charging Connector

Product Overview

The MCS (Megawatt Charging System) charging connector is independently developed by Yonggui. Designed for heavy-duty electric vehicles like trucks and coaches, it delivers high charging power up to 1 MW.Compared with conventional DC fast charging, it greatly boosts charging speed, quickly replenishes range for large EVs, and perfectly meets long-distance travel needs.

Overall View

Product Advantages

High IP Rating

The electrical parts inside the connector head meet IP67 protection rating with upgraded compliance, complying with stringent standard requirements.

Enhanced Housing Material Strength

All series adopt high-strength PC material. The connector head adopts end-face screw fastening design, delivering higher overall structural strength, superior impact resistance and better low-temperature drop performance.

Metal-clad connector Head Flange Design

The flange of the connector head is wrapped with metal parts to prevent damage from dropping or rolling pressure, achieving higher structural strength.

Immersed Liquid Cooling Design

It adopts an overall immersed liquid cooling structure with 2 inlets and 4 outlets, and applies ultrasonic welding technology for power terminals. It features stronger current-carrying capacity and supports a rated current of 1500A.

Unified Family-style Appearance Design

Adopting Yonggui's family-style appearance structure, it features a large-angle wire routing with a smooth and streamlined design. The small-angle grip enables comfortable and natural insertion and withdrawal of the charging connector, delivering an excellent user experience.

Built-in Cable Clamping Structure Design

Built-in cable clamping structure with a minimalist appearance. Four-petal clamping design avoids squeezing the water pipe to ensure stable flow rate.

项目/Item	1500A series
执行标准/Standard	IEC 62196-1-2022 IEC 62196-3-2022 IEC TS 63379 IEC TS 62893-4-2
充电模式/Charging modes	充电模式4
额定电压/Rated voltage	1500V DC
额定电流/Rated current	1500A DC
耐电压/voltage resistance	4000V AC
绝缘电阻/Insulation resistance	≥100MΩ
防护等级/Degree of protection	插合后/After insertion：IP55 电气部分/Electrical part：：IP67
插拔次数/Cycles life	≥20000
插拔力/Insertion and withdrawal force	<100N
使用环境温度/Ambient temperature	-30℃ ~+ 50℃
温控方式/Temperature detection methods	PT1000 Temperature sensor
阻燃等级/Flame retardant rating	UL94 V-0/UL94 HB
功率触头表面镀层材质 Coating material of power contacts	Ag
电缆外径/External cable diameter	Φ44±1mm

YG-SAMCS Series EU & US Standard Megawatt Charging Connector

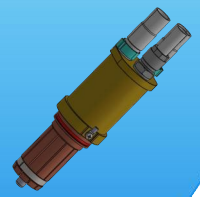
Product Design Details

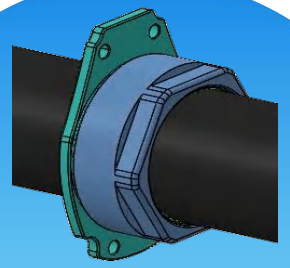
Liquid Cooling Circuit Design

Single-side one-inlet and two-outlet design with immersed oil cooling and ultrasonically welded terminals, rated for 1500A current.

Advantages:

Ultrasonic welding ensures more stable resistance and lower temperature rise;
Immersed oil cooling delivers stronger current-carrying capacity with a rated current of 1500A.





The charging connector is designed with a built-in four-petal cable clamp to secure the cable.

Advantages:

The built-in clamping design keeps the appearance intact without external protrusions;
Four-petal clamping avoids squeezing the water pipe to ensure stable fluid flow.

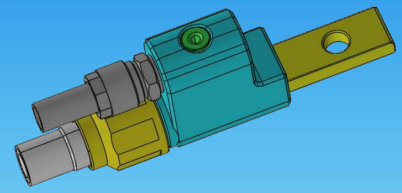
Cable Clamp Holding Design

Metal-clad Flange Structure

The plug flange is wrapped with metal components.

Advantages:

Higher structural strength and lower risk of cracking from drop and rolling impact.



Copper bar type rear terminals with adjustable liquid outlet direction on demand.

Advantages:

1.Copper bar type rear terminal connection provides a larger contact area;
2.The direction of liquid outlet pipes can be adjusted according to design requirements.

Rear Terminal Design

YG-GB Series GB/T Standard Liquid-Cooled Charging Connector

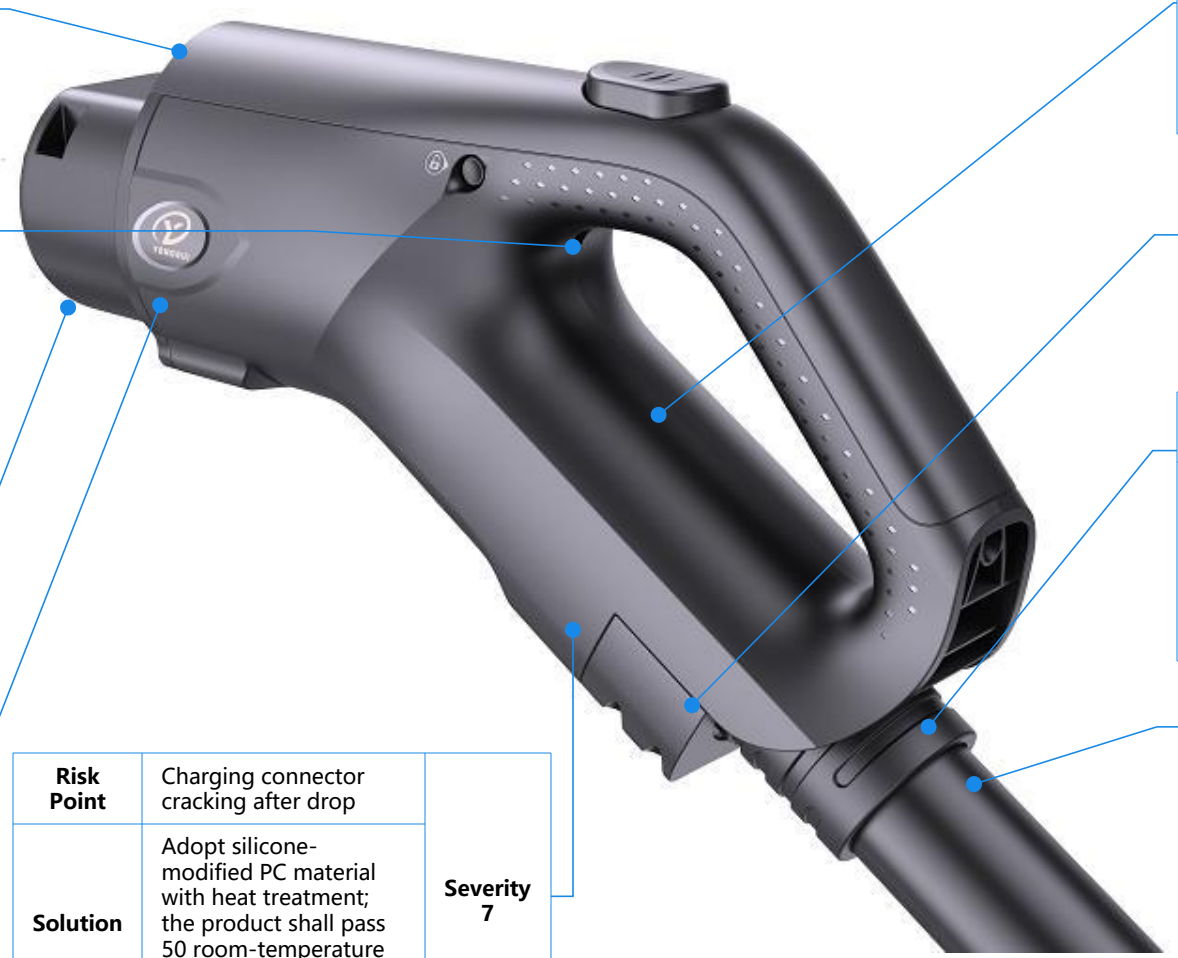
Product Risk Map

Risk Point	Hook locking failure
Solution	Strictly control critical dimensions such as hook tip and locking clearance; conduct 100% inspection before delivery to prevent defective parts from being released.
Severity	**8**

Risk Point	Electronic lock low-temperature start-up failure
Solution	Optimize drainage design with sloped drainage and enlarged outlet area.
Severity	**8**

Risk Point	Difficult plug insertion
Solution	Strictly control plug dimensions; perform 100% inspection with dedicated gauges after injection molding.
Severity	**8**

Risk Point	Seal failure between charging connector and plug housing
Solution	Design seal ring compression ratio at 15%~30% and fill ratio at 70%~95%.
Severity	**7**



Risk Point	Charging connector cracking after drop
Solution	Adopt silicone-modified PC material with heat treatment; the product shall pass 50 room-temperature drops and 10 low-temperature drops without cracking.
Severity	**7**

Risk Point	Charging connector cracking after rolling impact
Solution	The wall thickness of the charging connector is designed to be ≥3mm; silicone-modified PC material with heat treatment is adopted.
Severity	**7**

Risk Point	Cable sheath pull-out
Solution	The cable clamping structure is designed with serrated teeth for full-circle clamping, and shall withstand a pull-out force of 200N without loosening.
Severity	**7**

Risk Point	Cable bulging after repeated bending
Solution	Add a strain relief boot at the tail of the charging connector to avoid direct contact between the cable and plastic housing; the cable shall pass 10,000 swing tests without bulging.
Severity	**8**

Risk Point	Signal wire breakage in cable
Solution	Add aramid yarn and copper foil wires to the signal cable; the signal wire shall pass 50 twist tests without breakage.
Severity	**8**

07

Charging Industry Issues and Solutions

Problems and solutions of the charging industry

No feedback signal when the electronic lock is locked

Problem Description

Problem Description: No signal from the locking feedback switch of the electronic lock

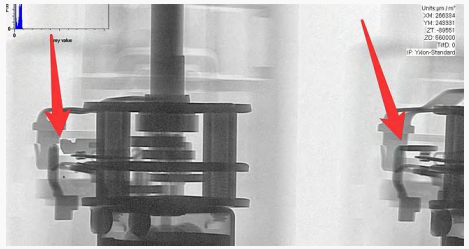
Common Occurrence Scenarios: It may occur before and after use

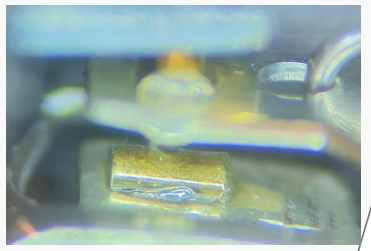
Frequency: Low

Failure Manifestation: The feedback signal of the electronic lock locking state fails to switch

Consequence: The charging system cannot perform normal charging

Difficulty in Resolution: There are many influencing factors in the production process. It is difficult to identify on-off faults of the feedback switch signal merely through a small number of functional tests and visual inspection.





Yonggui Solution

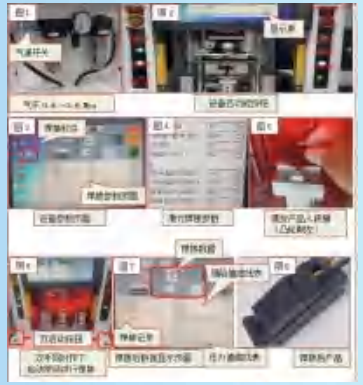
The main causes of no signal are as follows:

1. Parameter variation of ultrasonic welding equipment leads to fracture of NC terminals.
2. The feedback switch is damaged by external impact but not completely failed.
3. Foreign matter enters the inner cavity of the switch during assembly.

Solutions

1. Replace the welding process with laser welding.
2. Adopt X-ray inspection to check the internal component status of feedback switches after welding.
3. Control the production environment and assembly operators to prevent dust and foreign matter from being brought in.

Laser Welding Process

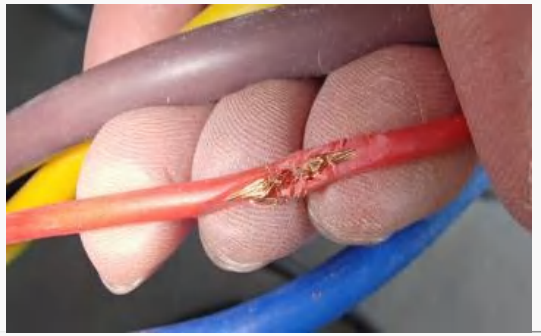


X-ray Detection Measure

Broken core wire in the signal line of AC charging cable

Problem Description

Problem Description: Broken signal wire core in the cableCommon
Occurrence Scenario: Approximately one year after commissioning
Frequency: Low
Failure Manifestation: No resistance change detected when pressed
Consequence: Charging cannot be performed
Why It Is Difficult to Resolve: Pulling and twisting during use degrade the strength of cable conductors. Since signal wires are far less robust than power wires, they fail first. While the standard allows a maximum cross-sectional area of 1.5 mm², industry practices typically use 0.5 mm² or 0.75 mm² for signal wires due to cost pressure.



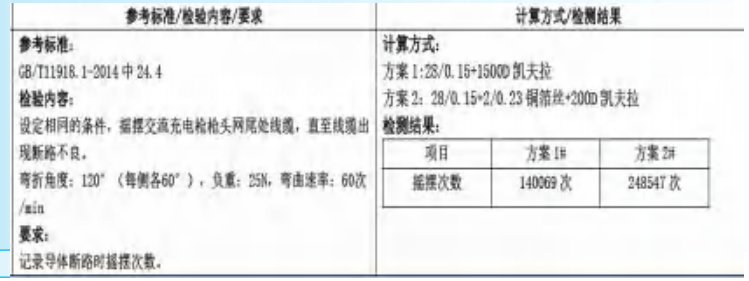
Yonggui Solution

Main causes of wire breakage:
Improper conductor arrangement causes the signal wires to be pulled and squeezed during twisting.
Insufficient inherent strength of the signal wire core.
Inadequate manufacturing processes.

Solutions:
1.Place individual signal wires in structurally stable gaps, and apply stranded construction to multi-strand signal wires.
2.Reinforce conductors with copper foil wires and aramid yarn (bulletproof filament).
3.Appropriately reduce the stranding pitch and apply back-twisting during cabling.

Add copper foil wires

Add aramid yarn, or aramid yarn + copper foil wires respectively



参考标准/检验内容/要求	计算方式/检测结果
参考标准： GB/T11918.1-2014 中 24.4 检验内容： 设定相同的条件，摇摆交流充电枪枪头两尾处线缆，直至线缆出现断路不良。 弯折角度：120°（每侧各60°），负重：25N，弯曲速率：60次/min 要求： 记录导体断路时摇摆次数。	计算方式： 方案 1:28/0.15+1500D 凯夫拉 方案 2：28/0.15+2/0.23 铜箔丝+200D 凯夫拉 检测结果：

项目	方案 1#	方案 2#
摇摆次数	140069 次	248547 次

Twisting of DC charging connector cable

Problem Description

Problem Description: Twisted "helical" marks appear on the outer sheath of the cable during field use.

Common Occurrence Scenario: Approximately half a year after commissioning.

Frequency: Low.

Failure Manifestation: Appearance degradation with obvious "twisted/helical" marks on the outer sheath.

Consequence: Users lose confidence in safe use, which may lead to damage to the cable outer sheath.

Why It Is Difficult to Resolve: Driven by market focus on charging experience and extreme cost reduction, most cables on the market adopt a split power conductor structure with a thin sheath. This results in poor binding capability of the sheath to the multi-core power and signal bundles inside. Combined with the flexible sheath and unavoidable twisting during use, delamination occurs between the sheath and internal conductors.

Yonggui Solution

The main causes of cable twisting are as follows:

1.The outer sheath thickness is too thin.

2.The sheath material is soft with poor restraint on the inner core wires.

3.Insufficient cabling processing technology.

Solutions

1.Increase the sheath thickness by 0.5mm based on the minimum nominal thickness specified in national standards.

2.Appropriately increase the hardness of the sheath material.

3.Optimize the cabling process.

Perform 1000 cycles of manual twisting with 3 turns clockwise and 3 turns counterclockwise, no obvious twisting marks shall occur.

Cracking of DC charging connector housing

Problem Description

Problem Description: The charging connector housing cracks during use, resulting in failure of the charging connector protection performance.Common Occurrence Scenario: Approximately half a year after being put into use.

Frequency: Moderate.

Failure Mode: Cracking and damage of the housing.

Consequence: Functional failure and protection failure of the charging connector.

Reasons for Difficulty in Resolution:

1.The actual service environment of charging connectors in the market is harsh and complex, with multiple drops likely to occur.

2.The charging connector lacks sufficient strength margin. It only meets the drop, rolling and other test conditions specified in national standards, but the strength is insufficient to withstand multiple drops in actual user scenarios without adequate quality redundancy.

Yonggui Solution

The main causes of housing damage are as follows:

1. Insufficient design margin for the structural strength of the charging connector housing.
2. The test conditions in the charging connector verification phase are not stringent enough.
3. The lock hook is exposed; impact from drops causes severe damage to the rotating shaft fixing position.
4. Harsh actual service conditions with high risks of drop and rolling impact.

Solutions

1. Optimize the structural strength of the charging connector housing, and select engineering plastics with better mechanical properties and higher resistance to impact cracking.
2. Adopt an encapsulated design for the lock hook to avoid force bearing on the lock hook during dropping and eliminate the lever effect.
3. Strengthen the strength test requirements under room temperature and low temperature conditions.

Drop test: The hook shall not collide with the ground.

Drop height: 1.5m; after low-temperature storage, withstand more than 50 drop tests.

08

Product Extreme Performance Testing

Product extreme performance testing

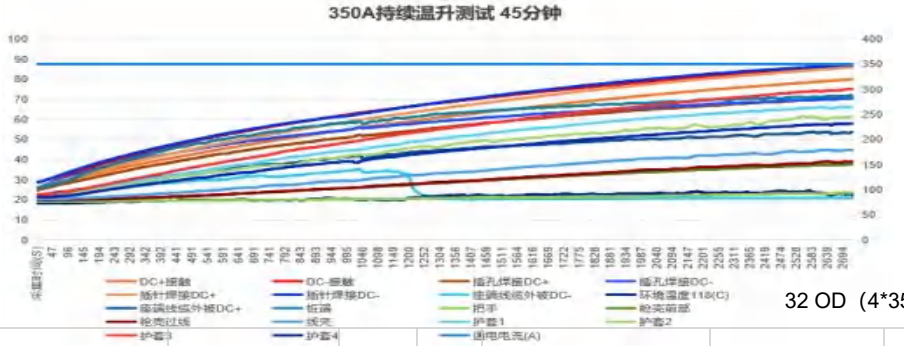
Short-time Overcurrent Capability Test for Conventional DC Charging Connector

Test Status

In actual application, the current borne by the charging connector is usually not maintained at a fixed constant value and may briefly exceed the rated current. Therefore, short-time overcurrent capability tests at 300A/350A/400A are conducted on charging connectors with a rated current of 250A.

Test Conditions

Conduct a short-time overcurrent capability test on the charging connector, and record the time when the temperature rise exceeds the limit at a specific position.

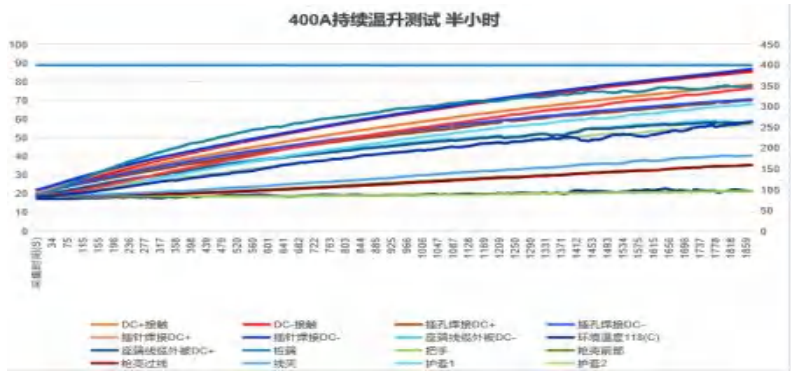


32 OD（4*35 ）350A 17min

No.	Item	Max. Temp Rise	Note	No.	Item	Max. Temp Rise	Note
1	Pin contact	43.04 K		6	connector housing handle	0.31 K	
2	Socket welding	35.94 K		7	Connector housing front	6.00 K	
3	Pin welding	42.43 K		8	connector housing wire pass	5.96 K	
4	Cable sheath at receptacle side	21.70 K		9	Cable clamp	9.47 K	
5	Terminal at charging pile side	38.79 K		10	Sheath	29.20 K	Limited by sheath temperature

Test Conclusion

GB 250A-rated charging connector:
At 300A with 70mm² receptacle, the pin contact area overheats after 34 min;
At 350A with 95mm² receptacle, the charging connector cable sheath starts overheating at 30K after 17 min;
At 400A with 95mm² receptacle, the charging connector cable sheath starts overheating at 30K after 14 min.



32 OD（4*35 ）400A 14min

No.	Item	Max. Temp Rise	Note	No.	Item	Max. Temp Rise	Note
1	Pin contact	37.51 K		6	Connector housing handle	0.36 K	
2	Socket welding	29.78 K		7	Connector housing front	4.81 K	
3	Pin welding	38.13 K		8	Connector housing wire pass	4.34 K	
4	Cable sheath at receptacle side	23.76 K		9	Cable clamp	7.33 K	
5	Terminal at charging pile side	41.47 K		10	Sheath	29.19 K	Limited by sheath temperature

Short-time Overcurrent Capability Test for Conventional DC Charging Connector

Test Status

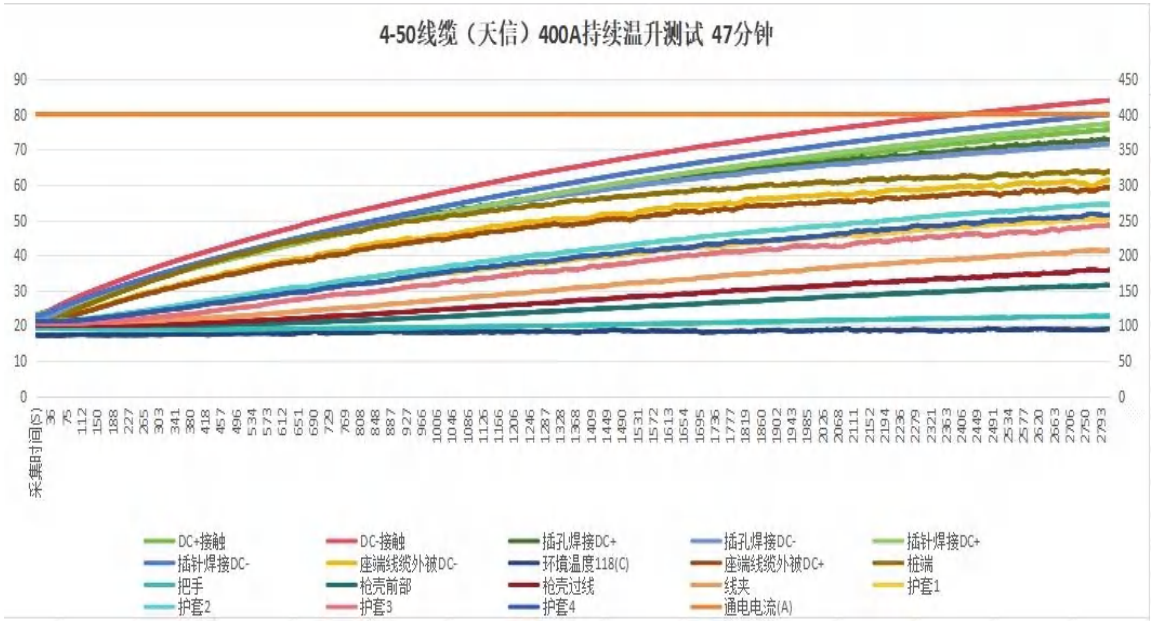
In actual use, the current borne by the charging connector usually does not remain at a fixed constant value and may temporarily exceed the rated current. Therefore, a short-time overcurrent capability test at 400A is conducted on the charging connector rated at 300A.

Test Conditions

Conduct a short-time overcurrent capability test on the charging connector, and record the time when the temperature rise exceeds the limit at a specific position.

Test Conclusion

Rated 300A national standard charging connector, when carrying 400A current (with 95mm² cable for the receptacle), the pin contact area exhibits overtemperature after 25 minutes, with the temperature rise approaching the limit value of 49K.



32 OD（4*35）350A 17min

No.	Item	Max. Temp Rise (K)	Note	No.	Item	Max. Temp Rise (K)	Note
1	Pin contact	37.51		6	Connector housing handle	0.36	
2	Socket welding	29.78		7	Connector housing front section	4.81	
3	Pin welding	38.13		8	Connector housing wire passage	4.34	
4	Cable Sheath at receptacle side	23.76		9	Cable clamp	7.33	
5	Terminal at charging pile side	41.47		10	Sheath	29.19	Limited by Sheath temperature

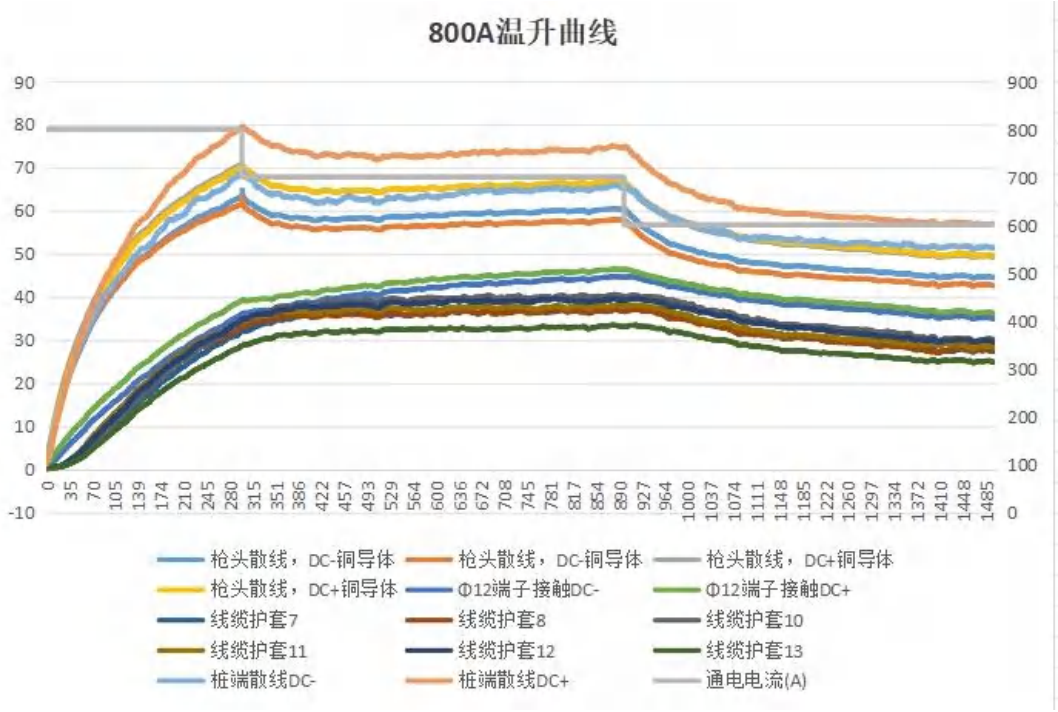
Short-time Overcurrent Capability Test of GB/T High-power Charging Connector — Water-cooled 600A

Test Status

In actual use, the current carried by the charging connector is often not maintained at a constant fixed value and may briefly exceed the rated current. Therefore, short-time overcurrent capability tests at 700A and 800A are performed on the rated 600A water-cooled charging connector.

Test Conditions

Conduct a short-time overcurrent capability test on the charging connector, and record the time when the temperature rise exceeds the limit at a specific position.



Test Conclusion

A 600A-rated national standard charging connector operates at 800A (mated with a national standard megawatt charging receptacle, only mated with the national standard 9-core terminal). After 25 minutes, overheating occurs at the pin contact area, and the temperature rise approaches the limit value of 49K.

No.	Item	Max. Temp Rise (K)	Note	No.	Item	Max. Temp Rise (K)	Note
1	Pin contact	37.51		6	Connector housing handle	0.36	
2	Socket welding	29.78		7	Connector housing front section	4.81	
3	Pin welding	38.13		8	Connector housing wire passage	4.34	
4	Cable Sheath at receptacle side	23.76		9	Cable clamp	7.33	
5	Terminal at charging pile side	41.47		10	Sheath	29.19	Limited by Sheath temperature

Extreme Drop and Rolling Compression

Test Status

Referring to the drop and rolling test methods specified in GB/T 20234.1-2023, the test is conducted by increasing the drop height and rolling force by more than 1.5 times.

Test Conclusion

After undergoing enhanced low-temperature rolling and drop tests, the charging connector delivers improved damage resistance, with safety performance exceeding the requirements of national standards.

Low-temperature Drop Test

Store the charging cable and connector at an ambient temperature of -40℃ for no less than 8 hours. Place the connector head at a height of approximately 1.5 meters and release it freely to allow the charging connector to fall in a natural pendulum motion. Inspect the appearance of the charging connector after each drop; the charging connector shall withstand more than 20 drop impacts.

Extreme Rolling Compression

Store the charging connector and cable at an ambient temperature of -40℃ for no less than 8 hours. Fix the connector head on a flat cement ground, then perform rolling test using a 4.2-meter box-type van (approximately 3.5 tons). The charging connector shall remain fully functional after rolling.
Note: The ground of actual charging stations may be uneven with gravel on the surface. During rolling, the connector head may be pushed and rubbed by the vehicle tire, which could cause unpredictable damage to the connector head. Therefore, vehicle rolling on the charging connector should be avoided as much as possible in practical application.

Cable Extreme Torsion Test

Test Status

Simulate the durability of cables under actual application conditions

Test Conditions

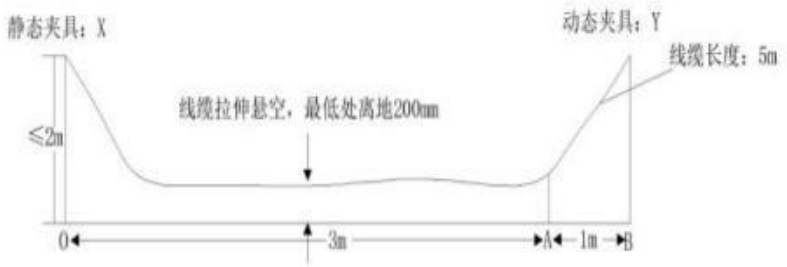
Relevant condition data for extreme tests.

Technical Indicator	Data
Cable Model &Specification	62893 IEC 126 4×50+6+2×0.75(P2)+6×0.5
Outer Diameter of Cable	36mm
Total Length of Cable	5.6m
Cable Twisting Length	5m
Preconditioning Test Temperature	-40~105℃
Twisting Method	Sample Fixing: Fix both ends of the 5.6m cable to fixtures X and Y of the twisting tester, ensuring the exposed cable length at both ends of the tester fixtures is 300mm (including the stripped insulation sections at the cable ends); after fixing (and during the test), the cable shall not experience lateral movement (horizontal displacement perpendicular to the cable axis ≤ 5mm) or rotational movement (circumferential displacement perpendicular to the cable axis ≤ 5mm); the fixing direction is perpendicular to the cable. Before starting the test, fixture Y is at Position A and at its highest position.Stress Application:1) With fixture Y at Position A: First twist the cable 3 turns clockwise at the specified angular velocity α, then pull the cable backward at the specified horizontal speed s until fixture Y reaches Position B;2) At Position B: Return the cable to Position A at the specified horizontal speed s without rotating the fixture, then perform rotational reset at Position A;3) After rotational reset at Position A: Twist the cable 3 turns counterclockwise at the specified angular velocity α, then pull the cable backward at the specified horizontal speed s until fixture Y reaches Position B;4) At Position B: Return the cable to Position A at the specified horizontal speed s without rotating the fixture, then perform rotational reset at Position A;5) Steps 1) to 4) above constitute 1 cycle, counted as 1 time.Termination Conditions: Stop when the specified number of cycles is reached or a failure occurs (short circuit, open circuit, etc.).Photos shall be taken every 500 cycles during the test, with a requirement of 1000 photos in total;After the test, the insulation shall not break down, the cable shall have no obvious abnormalities such as twisting, deformation, bulging, hardening, or wrinkling; when disassembled, the insulated core wires inside the cable shall not stick together, and no visible cracks shall appear on the insulation surface.

Test Conclusion

By simulating actual service conditions in an enhanced test mode, the cable can still function normally even after aging, twisting and deformation caused by long-term operation.

Test Evidence



试验项目及技术要求

JZXL/QR 1003 编号：（MP-20251222201）

产品名称	直流充电电缆		型号规格	62893 IEC 126 4×50+1×6+2×0.75(P2) +6×0.75（Ø36mm）	抽样日期	2025.12.18
生产单位	永唐公司提供样品		试验标准	客户要求	试验日期	2025.12.18~2025.12.20
序号	试验项目	单位	试验要求		试验结果	结论
1	拉扭疲劳试验	—	按以下试验程序进行试验。 固定样品：将线缆两端分别固定于扭转试验机夹具 X、Y 上，确保：处于试验机夹具两端露出电缆长度为 300mm（含线缆头尾剥掉绝缘皮部分）；固定后（含测试过程中）线缆不得平动（垂直于线缆轴向的水平方向位移不超过 5mm，转动（垂直于线缆轴向的圆周方向位移不超过 5mm；固定方式为垂直于线缆方向；启动测试前夹具 Y 处于位置 A 且处于最高位置。 加载应力： 1）此时 Y 位于位置 A，先以设定的角速度 α 顺时针将线缆扭转 3 圈，再以设定的水平速度 s 将线缆向后拉，直至夹具 Y 到达位置 B；2）位于位置 B 的夹具先不旋转复位，以设定的水平速度 s 将电缆复位到位置 A，于位置 A 进行旋转复位；3）在 A 位置旋转复位后，再以设定的角速度 α 逆时针将线缆扭转 3 圈，再以设定的水平速度 s 将线缆向后拉，直至夹具 Y 到达位置 B；4）位于位置 B 的夹具先不旋转复位，以设定的水平速度 s 将电缆复位到位置 A，于位置 A 进行旋转复位；5）以上 Step2 的 1）~4）步骤为 1 个循环，计数 1 次。 判定要求，达到循环 1000 次不出现失效（短路、断路等）；线缆中线芯断丝率不超过 50%；所有电缆绝缘不破裂		样品试验循环次数 1000 次，未出现短路、断路失效； 样品拆解功率线：DC+断丝率 7%，DC-断丝率 4%，信号线、PE 导体未断裂； 样品电缆绝缘层目视无破裂	合格

Cable Extreme Torsion Test

Test Status

Simulate the durability of the cable under actual application conditions.

Test Conditions

Relevant condition data for extreme tests.

Technical Indicator	Data
Cable Model & Specification	EVDC-REYU 4×35+6+2×2.5+2×0.5(P2)+9×0.5
Outer Diameter of Cable	30 mm
Total Length of Cable	5.5 m
Cable Twisting Length	5 m
Preconditioning Test Temperature	-40 ~ 105℃
Twisting Method	Fix the 5.5m incoming cable: One end serves as the signal monitoring end, and the other as the twisting clamping end. After mounting the sample, the sample fixture head moves forward 0.5m from the initial position; rotate the cable clockwise by X° (360°×5 turns) and then return to the initial position, then rotate the cable counterclockwise by 1080° (360°×5 turns); then rotate the cable counterclockwise by 1080° (360°×5 turns) and return to the initial position, then rotate the cable clockwise by 1080° (360°×5 turns). This constitutes one cycle.Repeat the bending and twisting according to this cycle. During the test, monitor the instantaneous disconnection of the cable (excluding power lines) (signal lines, PE, auxiliary power lines, high-voltage sampling lines) and record the number of cycles before the instantaneous disconnection occurs.Check the appearance of the sheath every 500 cycles: the cable shall have no twisting or deformation in its natural state, and the sheath shall have no bulging or wrinkling. Continue the above test until 800 cycles are completed. At the end of the test, no visible cracks, twisting or bulging shall occur on the insulated conductors and sheath surface of the cable; no signal lines shall be broken.The sample is judged qualified if all the above requirements are met.

Test Conclusion

By simulating actual service conditions in an enhanced test mode, the cable can still function normally even after aging, twisting, and deformation caused by long-term use.

Test Evidence

测试报告

试验地点：	■本厂试验 □ 第三方试验	检验项目：	直流线缆极限扭曲测试	报告编号：YG-PZ2025060010	
产品编码	供应商	规格型号	材料批管号	检验结论	备 注
50103110928	无信	EVDC-REYU 4×35+1×6+2×2.5+2×0.5(P2)+9×0.5	20250623 长标：0040m	N/A	方案 7

序号	参考标准/检验内容/要求	计算方式/检测结果	测量工具
1	参考标准：《低温柔性充电线缆物料规格书》中 12.11 检验内容： 将 5.5m 末料固定：端作为信号监测端，另一端作为打扭夹持端，装好试样后，试样夹具头从初始位置向前移动 0.5m；向顺时针使电缆转动 1080°（360°×5 圈）后回到初始位置再向逆时针使电缆转动 1080°（360°×5 圈）。然后逆时针使电缆转动 1080°（360°×5 圈）后回到初始位置。再顺时针使电缆转动 1080°（360°×5 圈）。以此为一个循环； 按此循环进行重复性弯曲打扭，测试中监控（除功率线外）电缆屏蔽（信号线、PE、辅助电源线、高压采样线），记录打扭瞬断前的次数； 500 个循环需要检查护套外观，电缆处于自然状态下无扭曲变形，护套无鼓包起皱，继续上述试验直至 800 个循环。电缆绝缘线芯和护套表面均无肉眼可见裂纹和扭曲、鼓包发生；信号线无断裂；符合以上要求判定合格。	计算方式： 负载 5A（上下限设定：2A~8A） 检测结果： 打扭次数 / 导通情况 / 外观检查 500 次 / 无导通不良 / 无扭曲、鼓包 800 次 / 无导通不良 / 无扭曲、鼓包	拉扭摆寿命测试机

检验结果照片

试样	图片 1	图片 2	图片 3	图片 4	图片 5	图片 6	图片 7
照片							

试验时间：2882.9H（从 2025 年 06 月 24 日 12: 33 开始 到 2025 年 06 月 25 日 16: 57 结束）
注意事项：试验时，注意对样品变化情况进行记录。有目视检验要求的需附上检验前后的图片；

实验室

试验员：叶绍洋 审核：曹森鑫 第 1 页 共 1 页 日期：2025.06.25 表单编号：QR-05-042/C0

Temperature Rise Test for GB/T Megawatt Charging Inlet

Test Status

Extreme current-carrying test of megawatt charging receptacle: test its maximum current-carrying value and current duration under conventional natural air cooling conditions, with a liquid-cooled charging connector adopted at the connector end.

Test Conclusion

At ambient temperature, the receptacle can operate continuously at 1000A for 2 hours. As the rated current increases, the maximum sustainable operating current decreases gradually. When the maximum current reaches 1600A, the sustainable working duration is 6 minutes.

Test Conditions

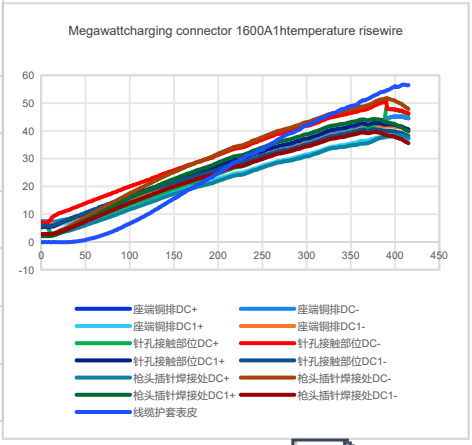
Relevant conditions of this extreme test.

Cooling Method: Isolated cooling
Coolant: Glycol aqueous solution
Cooling Equipment: 6KW system (different from the customer-end solution which adopts active cooling; the inlet liquid temperature can be stably controlled within 18℃~22℃).

Test Evidence

Relevant test photos, data records and analysis sheets.

No.	Rated Current / A	Test Results
1	1000	Continuous temperature rise requirements met
2	1200	Temperature rise requirements met within 24 minutes
3	1300	Temperature rise requirements met within 16 minutes
4	1400	Temperature rise requirements met within 11 minutes
5	1500	Temperature rise requirements met within 8 minutes
6	1600	Temperature rise requirements met within 6 minutes



兆瓦充电枪-1000A
-1600A持续温升数

Temperature Rise Test for GB/T Megawatt Charging Inlet

Test Status

Extreme current-carrying test of megawatt charging receptacle:
Under conventional natural air cooling conditions, test its maximum current-carrying capacity and current conduction duration.
(The charging connector adopts immersion cooling, and the charging receptacle also adopts immersion cooling.)

Test Conclusion

1.The influence of non-touch-proof fingers / Φ4 / Φ5 / Φ6 touch-proof fingers on the temperature rise of terminals is negligible. It is recommended to follow the touch-proof finger diameter specified in MCS-4X12_REV_1 released on April 19, 2024.
2.Limited by our company's equipment capacity, the maximum test current can only reach 2850 A. However, the test data shows a large performance margin. It can be inferred that under active cooling conditions, the existing interface structure can theoretically meet the rated current-carrying requirement of 3000 A, which has been verified by earlier simulation analysis.

Test Conditions

Relevant Conditions of This Extreme Test

Cooling medium: Tap water
Inlet liquid temperature at connector end:
18.4℃ (Positive pole) / 18.5℃ (Negative pole)
Return liquid temperature at connector end:
43.1℃ / 39.7℃ (Positive pole); 46.4℃ / 39℃ (Negative pole)
Flow rate at connector end:
Inlet flow rate: 8.5 L/min;
Return flow rate: 4.0 L/min (Positive pole); 4.4 L/min (Negative pole)
Inlet liquid pressure at connector end:
2.37 bar (Positive pole); 2.26 bar (Negative pole)
Return liquid pressure at connector end: 0.23 bar / 0.35 bar (Positive pole); 0.34 bar / 0.25 bar (Negative pole)

Test Evidence

Relevant test photos, data records and analysis report forms

DC Terminal Specification	4*Φ12	4*Φ12	4*Φ12	4*Φ12
Touch-proof Finger Diameter	None	Φ4	Φ5	Φ6
Charging Connector / Receptacle Cooling Method	Immersion	Immersion	Immersion	Immersion
Active Cooling on Connector / Receptacle	Yes	Yes	Yes	Yes
Cooling Medium for Connector / Receptacle	Water	Water	Water	Water
Rated Current	2850A	2850A	2850A	2850A
Max Temperature Rise at Test Point 1	2.3K	2.2K	2.1K	2.4K
Max Temperature Rise at Test Point 2	2.3K	2.2K	2.5K	2.2K
Max Temperature Rise at Test Point 3	7.6K	7.1K	7.3K	7.8K
Max Temperature Rise at Test Point 4	7.8K	7.2K	7.6K	8.1K
Max Temperature Rise at Test Point 5	20.1K	20.1K	20.3K	21.6K
Max Temperature Rise at Test Point 6	17.2K	17.2K	17.5K	18.5K
Max Temperature at Test Point 7	31.6℃	31.6℃	31.8℃	32.1℃
Max Temperature at Test Point 8	43.6℃	43.6℃	43.9℃	44.2℃

Note:
***The immersion cooling solution adopted for our internal verification: The conductors are in direct contact with the cooling medium, with active cooling applied to both the charging connector and charging receptacle simultaneously.**
Test Point 1: Connection area between DC pin and wire;
Test Point 2: Connection area between DC1 pin and wire;
Test Point 3: Contact area of DC pin and socket;
Test Point 4: Contact area of DC1 pin and socket;
Test Point 5: Pipe wall at the connection area of DC socket and wire;
Test Point 6: Pipe wall at the connection area of DC1 socket and wire;
Test Point 7: Sheath area of charging cable at the tail of charging connector (direct human hand contactable area);
Test Point 8: Insulation layer (pipe) of charging receptacle cable.

Other Extreme Tests

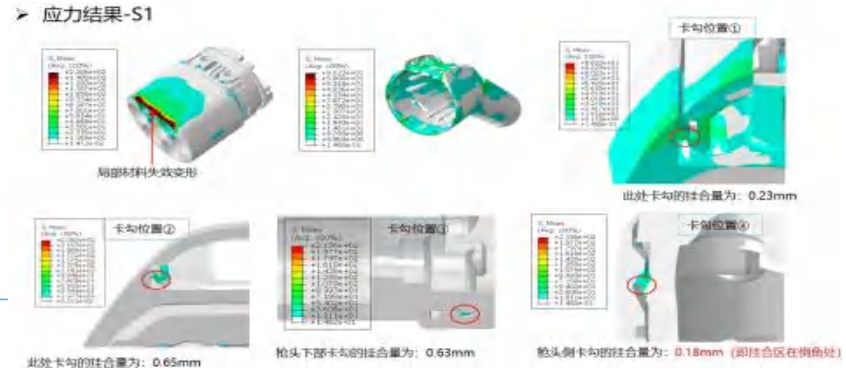
Yonggui owns a CNAS-certified professional charging connector testing laboratory, equipped with insertion and withdrawal robots, walk-in temperature chambers, cable torsion/bending testers and liquid cooling test systems.It has long been committed to researching the reliability and safety of charging connectors. Meanwhile, our professional CAE simulation team provides full-process comprehensive simulation analysis for charging product development.

Extreme Insertion and Withdrawal Test

Adopt mechanical arm for insertion and withdrawal, and conduct cable weighted bending test, to simulate and verify the reliability of charging connector cables in actual application scenarios.

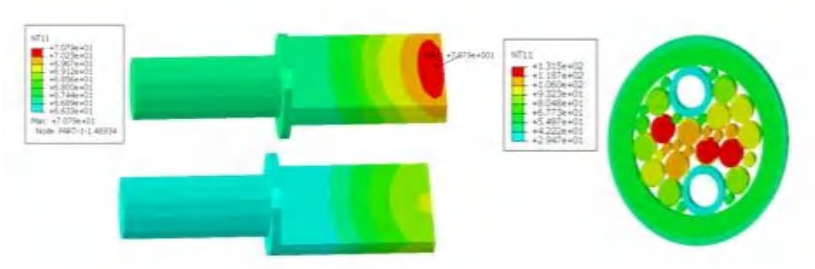
Structural Simulation

Carry out stress analysis, strength analysis and mold flow simulation on all components of the charging connector.



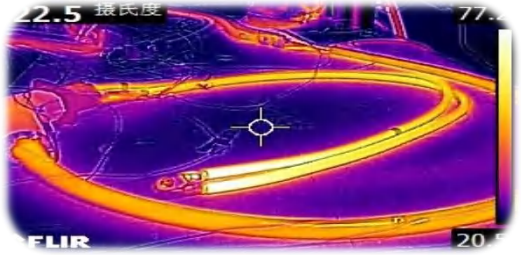
Thermal Simulation

Conduct thermal simulation analysis on all heat-generating and heat-dissipating components as well as cables of DC charging connectors, especially liquid-cooled charging connectors.



Extreme Current-Carrying Test

Yonggui conducts long-term current-carrying tests and peak current-carrying tests on liquid-cooled charging connectors and conventional DC charging connectors under simulated high-temperature conditions.



9 Benchmarking Cases of Charging Products

Benchmarking case of charging products

YG-GBC-DC DC Charging Connector

Benchmarking Introduction

Comparison of the new-generation YG-GBC-DC series air-cooled DC charging connector with competitors' air-cooled charging connectors.

Product Benchmarking Analysis Table

Item	Competitors & Previous- Gen Products	3rd- Gen DC Charging Connector	Advantages & Disadvantages	Remark
Rated Voltage (V)	1000V	1000V	/	Equal
Rated Current (A)	125A, 200A, 250A, 300A	125A, 200A, 250A, 300A	/	Equal
Operating Ambient Temperature	-30~50℃	-30~50℃	/	Equal
Overall Dimensions (mm)	300*72*180	271*77*152	Compact size, superior ergonomics	Better
Latch Protection	Exposed latch	Enclosed latch	Better latch protection performance	Better
Scald- Resistant Button	Metal button	Plastic button	No scald risk in summer, improved user experience	Better
Mechanical Performance	Complies with GB standard for 8- time drop test	Complies with GB standard for 20- time drop test	Superior mechanical performance	Better
IP Rating	IP67 (Electrical)	IP67 (Electrical)	Maintains protection performance after 500h double- 85 aging test of new generation	Better
Insertion- Withdrawal Lifespan	10,000 cycles	10,000 cycles	/	Equal
Terminal Connection Method	Crimping or ultrasonic welding	Ultrasonic welding	/	Equal
Cable	2+2 power cables	2+2 power cables	Multiple optimized verifications for cables; improved anti- twisting and anti- deformation capability	Better
Electronic Lock	Static waterproofing	Dynamic waterproofing, lifespan ≥60,000 cycles	Higher reliability	Better
S- Switch	Static waterproofing	Dynamic waterproofing	Higher reliability	Better
Temperature Sensor	Fails boiling- water immersion test	Passes boiling- water immersion test	Higher reliability	Better

Benchmarking of National Standard Liquid-Cooled DC Charging Cables (Ethylene Glycol Aqueous Solution)

Benchmarking Introduction

All models of Yonggui CCS2 charging connectors adopt a quick-replace structure. When the sockets suffer wear, contact failure or increased resistance, all sockets can be replaced rapidly. The front-end mating insulator and the complete set of sockets can be replaced as an integral assembly in one operation.

Product Benchmarking Analysis Table

Item	Competitors & Previous- Gen Products	Yonggui CCS2 DC Charging Connector	Advantages & Disadvantages	Remarks
Rated Voltage (V)	1000V	1000V	/	Equal
Rated Current (A)	125A, 200A, 250A, 300A	125A, 150A, 200A, 250A, 300A, 350A, 375A	More complete specifications	Better
Operating Ambient Temperature	-30~50℃	-30~50℃	/	Equal
Overall Dimensions (mm)	300*72*180	271*77*152	Compact size, superior ergonomics	Better
Cable Protection Structure	None / Available	Available	Prevents cable bulging during use	Better
Socket Structure	Coil spring	Split- slot	Longer service life and strong self- cleaning capability	Better
Quick- Replaceable Power Sockets	Yes	Yes	/	Equal
Quick- Replaceable Signal Sockets	No	Yes	Quick- replaceable signal pins, low maintenance cost	Better
~~Insertion- Withdrawal Lifespan~~	~~10,000 cycles~~	~~10,000 cycles~~	~~/~~	~~Equal~~
Terminal Connection Method	Crimping or ultrasonic welding	Ultrasonic welding	/	Equal
Cable	2+2 power cables	2+2 power cables	Multiple optimized verifications for cables; improved anti- twisting and anti- deformation capability	Better
Temperature Sensor	Fails boiling- water immersion test	Passes boiling-water immersion test	Higher reliability	Better

True quick replacement, truly worry-free

Benchmarking of GB/T Conventional DC Charging Cables

Benchmarking Introduction

The cable is the core component of the charging connector harness, determining the current-carrying performance and reliability of the entire harness assembly. In the early development stage of Yonggui's new-generation DC charging connectors, a full benchmarking study was conducted on mainstream charging cables available in the market.

Product Benchmarking Analysis Table

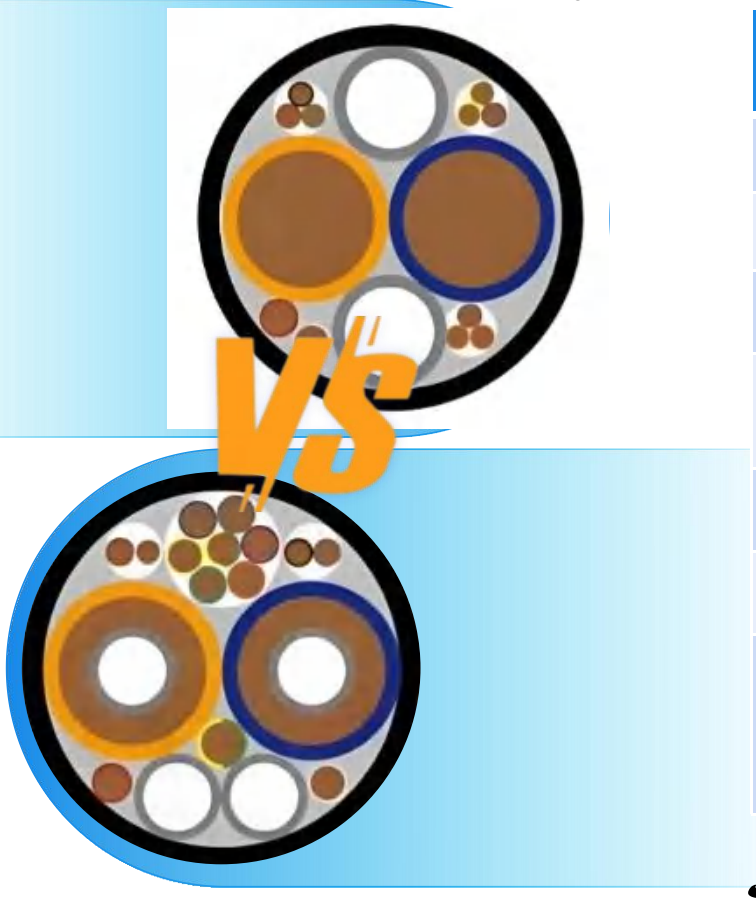
Item	Competitor Cable	Yonggui Cable	Advantages & Disadvantages	Remarks
Model	REYU	REYU	/	Equal
Voltage Grade	1.0kV	1.0kV	/	Equal
Specification	4×35+1×6+2×2.5+4×0.75 (P2)+7×0.75	4×35+1×6+2×2.5+2×0.5 (P2)+9×0.5	Lower cost	Better
Outer Diameter	30	31	/	Good appearance performance
Conductor Material	Bare Copper	Bare Copper	/	Equal
Insulation Material	XLPO	XLPO	/	Equal
Sheath Material	TPU	TPU	/	Equal
Structure	Wrapping + Filling	Wrapping + Filling	/	Equal
Sheath Thickness	Too thin	Thick	Higher resistance to bending bulging	Better
Signal Wire Structure	Multi- stranded	Integral stranding	Superior anti- twisting fatigue resistance	Better
Sheath Temperature Rise	>30K	≤30K	/	Better

Benchmarking of GB/T Liquid-cooled DC Charging Cables (Ethylene Glycol Aqueous Solution)

Benchmarking Introduction

Yonggui's oil-cooled charging cable adopts the liquid-around-copper scheme, consistent with most competitors. Its water-cooled charging connector, however, differs distinctly from some peers. Since 2019, Yonggui has adhered to the water-electric isolation cooling structure. Even if the pipeline leaks under extreme conditions, the coolant will not directly contact the positive and negative poles and cause an immediate short circuit. Alarms will be triggered by reduced insulation resistance or abnormal system pressure instead. By comparison, the copper-around-pipe structure of other brands leads to instant short circuit once leakage happens, making Yonggui's design much safer.

Product Benchmarking Analysis Table



Item	Competitor Cable	Yonggui Cable	Advantages/ Disadvantages	Remarks
Model	REYU	REYU	/	On par
Voltage Rating	1.0kV	1.0kV	/	On par
Power Lines	2×35+1×6+2×2.5+4×0.75（P2）+7×0.75	4×25+1×6+2×2.5+2×0.5（P2）+9×0.5	Competitor's cable has lower cost	Inferior
Outer Diameter	30	31	No significant difference in experience, with better protection	/
Cooling Structure	Copper-around-pipe	Isolated type	Isolated cable has slightly lower cooling efficiency	Inferior
Safety Performance	Immediate short circuit upon leakage	Insulation resistance drops upon leakage	Isolated cable is safer	Superior
Manufacturability	Poor	Excellen	Copper-around-pipe cables require manual separation of conductors and water pipes at both ends, plus manual bundling	Superior

Safety is the greatest luxury

11

Cost Reduction and Innovative Technology Roadmap

Product Cost Reduction and Innovative Technology Planning

Product Highlights - 3rd-Gen GB/T DC Charging Connector

Product Overview

Yonggui 3rd- Gen Conventional National- Standard DC Charging connector & 3rd- Gen Charging Connector.

Detailed Introduction

Supplement the relevant planning of this innovation point in the area below.

Detail	Advantage Introduction
Compatibility	Conventional DC and liquid- cooled models share the same appearance and color scheme, with unified style and lower risk of material control.
Cable Clamp	The Cable Clamp features smooth curved surfaces integrated with the connector body, delivering a more attractive appearance.
Latch	Full- enclosed design enhances resistance to drop and crush impacts, reduces radiant temperature, and optimizes user experience.
connector Body Angle	The connector body angle is basically consistent with that of Tesla and other brands, providing better ergonomic experience.

Detailed Illustrations

Product Highlights - 3rd-Gen GB/T DC Charging Connector

Product Overview

Yonggui 3rd- Gen Conventional GB- Standard DC Charging connector & 3rd- Gen Charging Connector.

Details Introduction

Supplement the relevant planning information of this innovation point in the area below.

Detail	Advantage Introduction
Compatibility	Conventional DC and liquid- cooled charging connectors share the same shape and color scheme, featuring unified style and lower risks in material management.
Cable Clamp	The Cable Clamp has smooth curved surfaces integrated seamlessly with the connector body for a more refined appearance.
Latch	Full- enclosed design delivers excellent drop and crush resistance, lower radiant temperature and improved user experience.
connector Body Angle	The connector body angle is basically consistent with that of Tesla and other mainstream brands for better ergonomic performance.

Detail Illustration

Product Highlights - GB/T Liquid-cooled DC Charging Connector

Product Overview

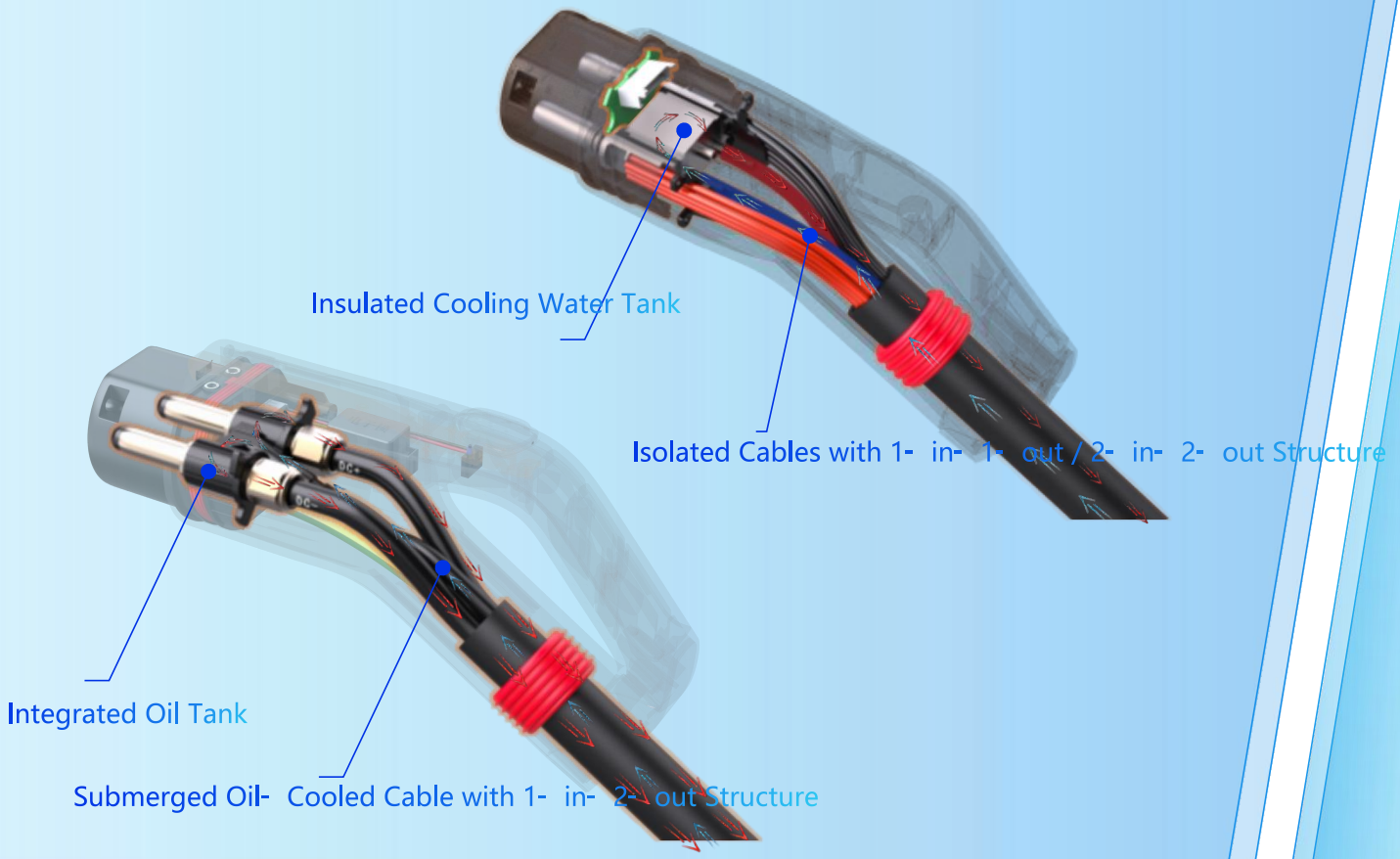
1. Dual- core in one connector: Oil- cooled and water- cooled charging connectors adopt a unified shape with consistent style.
2. All parts except the cooling unit are shared.
3. Isolated water- cooling design ensures higher safety (no direct short- circuit risk even if liquid leaks under extreme conditions).

Details Introduction

Advantages:

1. High part repetition rate, resulting in low component costs.
2. Shared key components including electronic lock and latch reduce trial- and- error risks and ensure stable quality.

Detail Illustration



Product Highlights - GB/T Liquid-cooled DC Charging Connector

Detail Introduction

Innovative Technologies:

1. Reciprocating cooling channels are designed in the charging Connector and cable. The liquid- cooling system drives the coolant to circulate reciprocally to cool down the charging Connector and cable, while the radiator of the liquid- cooling system cools the coolant.
2. Mineral oil and ethylene glycol aqueous solution are optional as cooling media according to customer requirements.

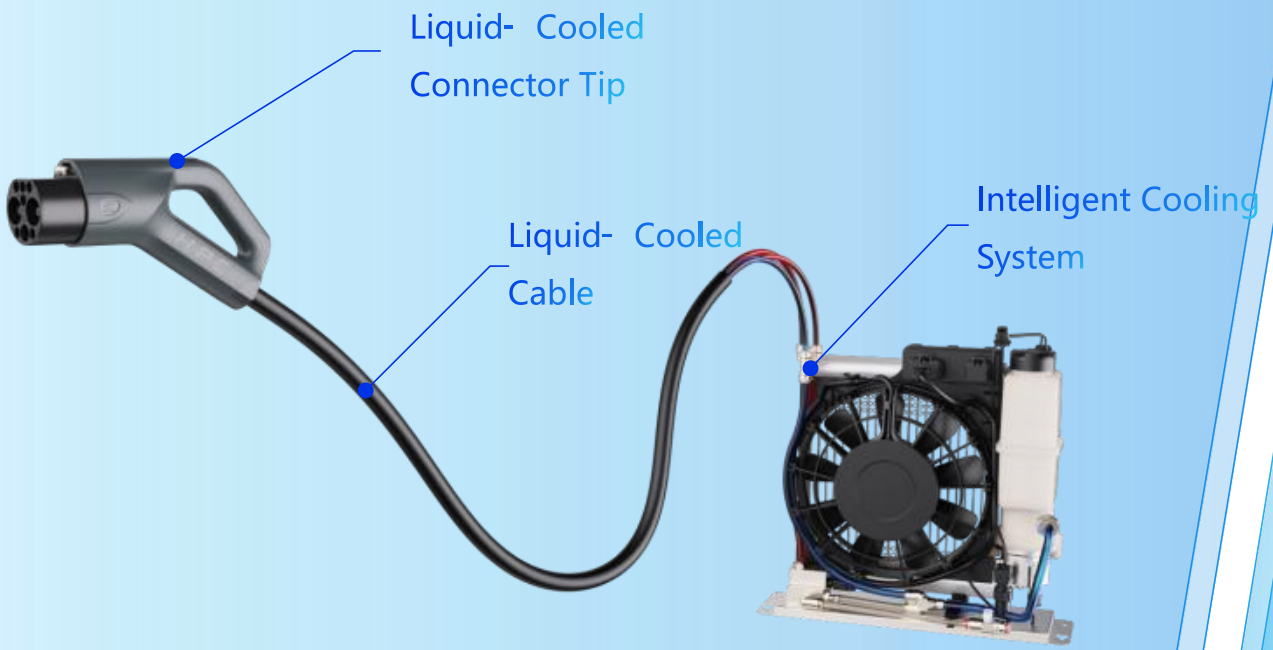
Advantages:

Conventional DC charging Connectors feature a maximum current- carrying capacity of 300 A, with slow charging speed and bulky Connector cables, resulting in poor user experience. Yonggui has developed a product with a maximum rated current- carrying capacity of 800 A, which enables fast energy replenishment for new- energy vehicles. Meanwhile, the lightweight Connector cable greatly improves user experience.

Introduction Roadmap

Current Stage	Mass Production
Mass- production Time	November 2024
Applicable Products	High- Power Charging System

Detail Illustration



GB- Standard Liquid- Cooled Charging Connector System

Product Highlights - Megawatt DC Charging Connector (MCS)

Detail Introduction

Innovative Technologies:

1. A complete solution including megawatt charging Connectors, liquid- cooled cables, and megawatt liquid- cooled systems.
2. Applied to rapid energy replenishment for heavy- duty machinery and vehicles such as construction machinery and road heavy- duty trucks.

Advantages:

1. Through the unique structural design of high- current charging Connectors and liquid- cooled cables, it can achieve a maximum rated charging current- carrying capacity of 3000A.
2. The charging power is increased by more than 10 times compared with conventional DC charging Connectors.

Introduction Roadmap

Current Stage	GB Standard: Mass ProductionEU Standard: Small- batch Verification
Scheduled Mass- production Time	GB Standard: November 2024EU Standard: February 2026
Applicable Products	Megawatt Charging System

Detail Illustration

Megawatt Charging Connector System

Product Highlights - 3rd-Gen GB/T DC Charging Connector

Detail Introduction

Self- developed Electronic Lock:

Yonggui charging Connectors adopt self- developed electronic locks.

Advantages:

Metal locking block for superior wear resistance.

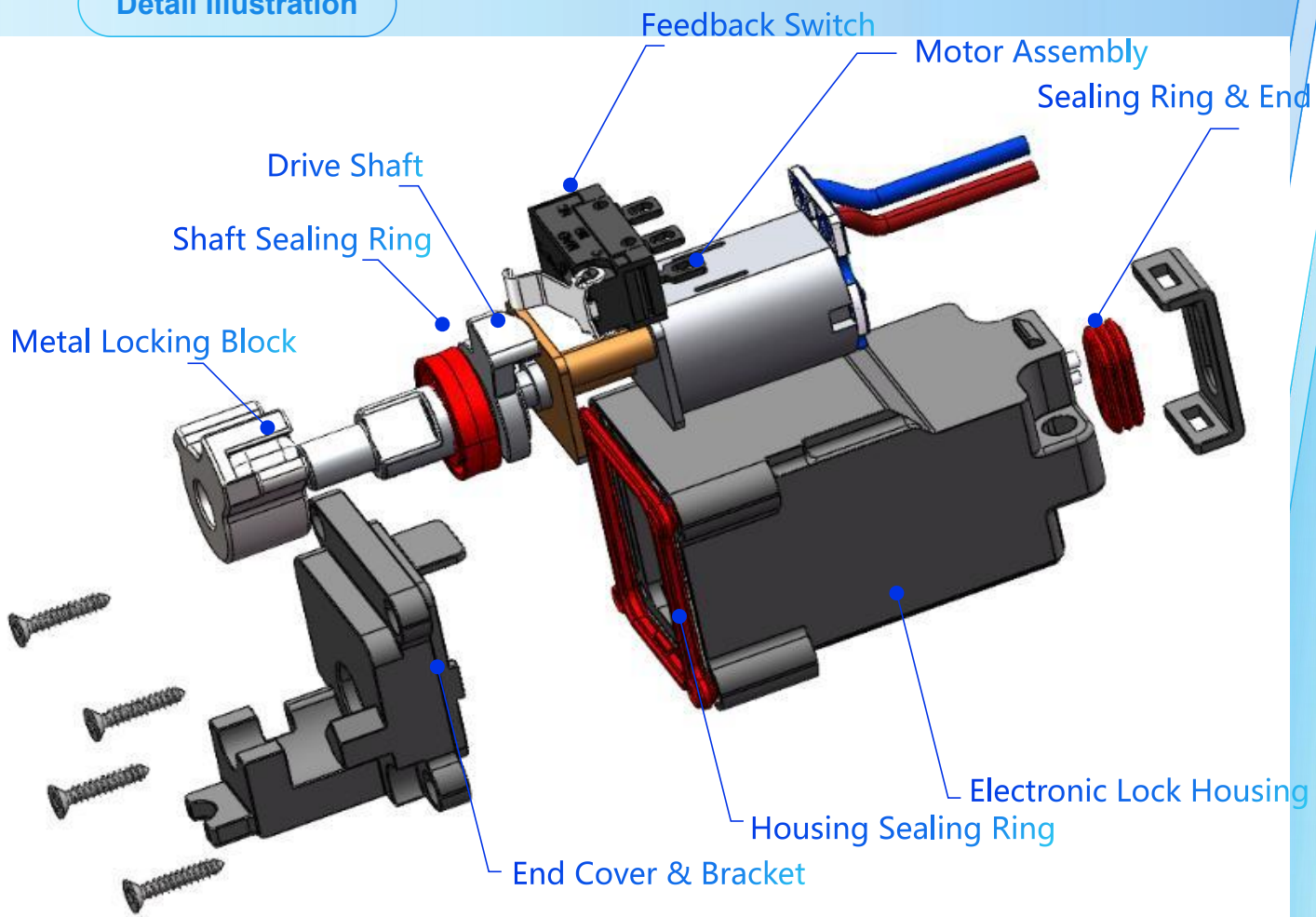
Self- developed electronic lock enables better control over cost, quality and delivery time.

Innovative locking structure design with strong anti- interference unlocking capability.

Introduction Roadmap

Current Stage	Small- batch Verification
Planned Mass-production Time	April 2026
Applicable Products	Yonggui GB- Standard DC Charging Connector, Liquid- Cooled Concept Charging Connector

Detail Illustration



12

Design and Selection of Charging Connector Wiring Harness

GB/T DC Charging Connector (GB/T 20234.3)

Selection Guide

To meet customers' diversified selection requirements, Yonggui launches three color options for both the 3rd- generation GB- standard DC charging connector and high- power GB- standard liquid- cooled charging connector: Mountain Rock Gray, Jade White and Starry Black. Customers can choose according to the overall color scheme of charging stations and piles for better color coordination.

Mountain Rock Gray

Jade White

Starry Black

GB/T DC Charging Connector (GB/T 20234.3)

Selection Guide

To meet customers' connector- cable requirements for charging piles of different power ratings, Yonggui's 3rd- generation GB- standard DC charging connector supports 125A–300A. For connector cables with the same current- carrying specification, different cables can be configured according to customer needs. For example, the 250A power cable is available in options of 4×35 mm² and 2×80 mm², while the PE wire cross- section can be matched with 6 mm² or 16 mm² respectively.

No.	Name	Housing Color	Rated Current	Rated Voltage	Port Wiring Specificationsn(mm2)								
					DC+	DC-	PE	A+	A-	CC1	CC2	S+	S-
1	YG-GBC-DC300-GY Plug	Gray	300A	1000V	2*50	2*50	6/16	2.5	2.5	0.5	0.5	0.5	0.5
2	YG-GBC-DC300-WT Plug	White			2*50	2*50	6/16	2.5	2.5	0.5	0.5	0.5	0.5
3	YG-GBC-DC300-BK Plug	Black			2*50	2*50	6/16	2.5	2.5	0.5	0.5	0.5	0.5
4	YG-GBC-DC250-GY Plug	Gray	250A		2*35/80	2*35/80	6/16	2.5	2.5	0.5	0.5	0.5	0.5
5	YG-GBC-DC250-WT Plug	White			2*35/80	2*35/80	6/16	2.5	2.5	0.5	0.5	0.5	0.5
6	YG-GBC-DC250-BK Plug	Black			2*35/80	2*35/80	6/16	2.5	2.5	0.5	0.5	0.5	0.5
7	YG-GBC-DC200-GY Plug	Gray	200A		2*25	2*25	6/16	2.5	2.5	0.5	0.5	0.5	0.5
8	YG-GBC-DC200-WT Plug	White			2*25	2*25	6/16	2.5	2.5	0.5	0.5	0.5	0.5
9	YG-GBC-DC200-BK Plug	Black			2*25	2*25	6/16	2.5	2.5	0.5	0.5	0.5	0.5
10	YG-GBC-DC125-GY Plug	Gray	125A		2*16	2*16	6/16	2.5	2.5	0.5	0.5	0.5	0.5
11	YG-GBC-DC125-WT Plug	White			2*16	2*16	6/16	2.5	2.5	0.5	0.5	0.5	0.5
12	YG-GBC-DC125-BK Plug	Black			2*16	2*16	6/16	2.5	2.5	0.5	0.5	0.5	0.5

★ Compatible Cable

No.	Specification	Compatible Cable Specification	Numbers of Cable ccores	OD(mm)
1	300A	EVDC-REYU 1.0kV 4×50+1×6+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ37.5±1
2		EVDC-REYU 1.0kV 4×50+1×16+2×2.5+2×0.5(P2)+9×0.5 cable	18	
3	250A	EVDC-REYU 1.0kV 4×35+1×6+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ31±1
4		EVDC-REYU 1.0kV 4×35+1×16+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ32±1
5		EVDC-REYS90 1.0kV2×80+1×6+2×2.5+4×0.75 (P2)+7×0.75 cable	16	Φ37.5±1
6		EVDC-REYS90 1.0kV2×80+1×16+2×2.5+4×0.75 (P2)+7×0.75 cable	16	
7	200A	EVDC-REYU 1.0kV 4×25+1×6+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ31±1
8		EVDC-REYU 1.0kV 4×25+1×16+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ32±1
9	125A	EVDC-REYS90 1.0kV 4×16+1×6+2×2.5+2×0.5(P2)+9×0.5 cable	18	Φ31±1
10		EVDC-REYS90 1.0kV 4×16+1×16+2×2.5+2×0.5(P2)+9×0.5 cable	18	

★ The above are general- purpose product models. Please select wiring according to wire diameter requirements. Contact our company for any customized requirements.

★ Wire harnesses are customized products whose specific models shall be determined based on practical applications. Please consult our company for details.

GB/T DC Charging Connector (GB/T 20234.3)

Selection Guide

According to market research, automakers tend to prefer water- cooled charging connectors, while most charging pile enterprises favor oil- cooled charging connectors. To meet customers' diversified selection requirements, Yonggui has separately developed the oil- cooled charging connector series YGC- GBLCS- O- 600/800, which uses oil- based special coolant for charging connector cables (e.g., Shell E4, FUCHS 8016), and the water- cooled charging connector series YGC- GBLCS- W- 500/600 using conventional automotive coolant. Meanwhile, both water- cooled and oil- cooled charging connectors are available in three color options: Jade White, Starry Black and Mountain Rock Gray.

Jade White

Starry Black

Mountain Rock Gray

YGC-GBLCS-W-500/600 series

YGC-GBLCS-O-600/800 series

GB/T Liquid-Cooled DC Charging Connector (GB/T 20234.3)

Selection Guide

To meet customers' connector- cable requirements for charging piles with different power ratings and different liquid- cooling systems, Yonggui high- power GB- standard liquid- cooled DC charging connector is compatible with 400A–800A. Among them, the 600A version is available in water- cooled (ethylene glycol aqueous solution) and oil- cooled (special mineral oil for charging connector cable cooling) types, with the PE wire cross- section configurable as 6 mm² or 16 mm² for both types respectively.

No.	Name	Housing Color	Rated Current	Rated Voltage	Port Wiring Specificationsn (mm²)								
					DC+	DC-	PE	A+	A-	CC1	CC2	S+	S-
1	YG-GBHPCC-600-W-GY Plug	Gray	600A	1500V	2*25	2*25	6/16	1.5	1.5	0.5	0.5	0.5	0.5
2	YG-GBHPCC-600-W-WT Plug	White			2*25	2*25	6/16	1.5	1.5	0.5	0.5	0.5	0.5
3	YG-GBHPCC-600-W-BK Plug	Black			2*25	2*25	6/16	1.5	1.5	0.5	0.5	0.5	0.5
4	YG-GBHPCC-600-L-GY Plug	Gray	600A		30	30	6/16	2.5	2.5	0.5	0.5	0.5	0.5
5	YG-GBHPCC-600-L-WT Plug	White			30	30	6/16	2.5	2.5	0.5	0.5	0.5	0.5
6	YG-GBHPCC-600-L-BK Plug	Black			30	30	6/16	2.5	2.5	0.5	0.5	0.5	0.5
7	YG-GBHPCC-800-L-GY Plug	Gray	800A		35	35	6/16	2.5	2.5	0.5	0.5	0.5	0.5
8	YG-GBHPCC-800-L-WT Plug	White			35	35	6/16	2.5	2.5	0.5	0.5	0.5	0.5
9	YG-GBHPCC-800-L-BK Plug	Black			35	35	6/16	2.5	2.5	0.5	0.5	0.5	0.5

★Compatible cable

No.	Specification	Compatible Cable Specification	Numbers of Cable ccores	OD(mm)
1	600A (water-cooled)	EVDC-REYU-LCC(I) 1.5kV 4×25+1×16+2×1.5+2×0.75+3×0.5(P2)+9×0.5+4C	21	32.3±0.5
2		EVDC-REYU-LCC(I) 1.5kV 4×25+1×6+2×1.5+2×0.75+3×0.5(P2)+9×0.5+4C	21	
3	600A (oil-cooled)	EVDC-EYU-LCC(IV) 1.5kV 2×25+6+2×2.5+(2×0.5)(P2)+10×0.5+3C	17	31.5±0.5
4		EVDC-EYU-LCC(IV) 1.5kV 2×25+16+2×2.5+(2×0.5)(P2)+10×0.5+3C	17	
5	800A (oil-cooled)	EVDC-EYU-LCC(IV) 1.5kV 2×35+6+2×2.5+(2×0.5)(P2)+10×0.5+3C	17	Φ34±0.5
6		EVDC-EYU-LCC(IV) 1.5kV 2×35+16+2×2.5+(2×0.5)(P2)+10×0.5+3C	17	

Notes

★ The above are general- purpose product models. Please select wiring in accordance with wire diameter requirements. Should you have any customized requirements, please consult our company.

★ Wire harnesses are customized products whose specific models shall be determined based on practical applications. For details, please contact us.

CCS2 DC Charging Connector (IEC 62196)

Selection Guide

To meet customers' diversified selection requirements, Yonggui's standard CCS2 DC charging connector and high- power CCS2 liquid- cooled charging connector are available in three color options: Mountain Rock Gray, Jade White, and Starry Black. Customers may choose according to the overall color scheme of charging stations and piles for better visual coordination.,.

Mountain Rock Gray

Jade White

Starry Black

CCS2 DC Charging Connector (IEC 62196)

Selection Guide

To meet customers' diversified selection requirements, Yonggui's 3rd- generation GB- standard DC charging connector and high- power GB- standard liquid- cooled charging connector are offered in three color options: Mountain Rock Gray, Jade White and Starry Black. Customers can select colors based on the overall color scheme of charging stations and charging piles for better visual harmony.

No.	Name	Housing Color	Rated Current	Rated Voltage	Port Wiring Specificationsn (mm2)					Compatible Inlet
					DC+	DC-	PE	CP	PP	
1	YG-ENC-DC300-GY Plug	Gray	375A/350A	1000V	2*50(60)	2*50(60)	6	0.75	0.75	Min. 150 mm² copper wire (busbar) charging inlet
2	YG-ENC-DC300-WT Plug	White			2*50(60)	2*50(60)	6	0.75	0.75	
3	YG-ENC-DC300-BK Plug	Black			2*50(60)	2*50(60)	6	0.75	0.75	
4	YG-ENC-DC250-GY Plug	Gray	300A		2*50	2*50	6	0.75	0.75	Min. 95 mm² copper wire (busbar) charging inlet
5	YG-ENC-DC250-WT Plug	White			2*50	2*50	6	0.75	0.75	
6	YG-ENC-DC250-BK Plug	Black			2*50	2*50	6	0.75	0.75	
7	YG-ENC-DC200-GY Plug	Gray	250A		2*35	2*35	6	0.75	0.75	Min. 95 mm² copper wire (busbar) charging inlet
8	YG-ENC-DC200-WT Plug	White			2*35	2*35	6	0.75	0.75	
9	YG-ENC-DC200-BK Plug	Black			2*35	2*35	6	0.75	0.75	
10	YG-ENC-DC125-GY Plug	Gray	200A		70	70	6	0.75	0.75	Min. 95 mm² copper wire (Busbar) charging inlet
11	YG-ENC-DC125-WT Plug	White			70	70	6	0.75	0.75	
12	YG-ENC-DC125-BK Plug	Black			70	70	2	0.75	0.75	

★Compatible Cable

No.	Specification	Compatible Cable Specification	Numbers of Cable ccores	OD(mm)
1	375A/350A	4×50+1×6+(2×0.75)(P2)+6×0.75 (powerwireactual60) cable	13	Φ36±1
2	300A	4×50+1×6+(2×0.75)(P2)+2×(3×0.75) cable	13	Φ34.5±1
3	250A	4×35+1×6+(2×0.75)(P2)+2×(3×0.75) cable	13	Φ32±1
4	200A	2×70+1×6+(2×0.75)(P2)+2×(3×0.75) cable	11	Φ34.5±1
5		2×70+1×25+(2×0.75)(P2)+2×(2×0.75) cable	9	

★ The above are general- purpose product models. Please select wiring options from the table. Should you require cables other than the recommended compatible ones, please consult our company.

★ The recommended cable length shall not exceed 5.5 m. For lengths over 5.5 m, corrugated tubing shall be added at the middle of the cable or a cable retractor shall be used to protect the cable, so as to avoid sheath twisting and bulging caused by improper operation during use. For long- length cables, ensure the cable extends naturally to the vehicle receptacle when in use. Bending, twisting or forceful pulling is prohibited. The minimum bending radius is 6D. Please retract, straighten and coil the cable after use.

★ The ground where cables are placed shall be flat to prevent sharp gravel from scratching the cable sheath.

YONGGUI

Corporate Mission

Keep pace with market development | Always focus on customer needs

Business Philosophy

Customer-centric | Maximize value

Corporate Culture

People-oriented | Efficiency | Diligence & Thrift | Innovation

Core Corporate Values

Hard work pays off | Win- win cooperation

Corporate Vision

Committed to Becoming a World-Class Provider of Connectivity Solutions

Thanks for Watching!

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Yonggui Connection Connection Experts