

HIITIO®

The background features large, stylized teal geometric shapes, including a large 'H' and a large 'I', which are partially visible and overlap with the main logo.

Company Profile

ZHEJIANG HECHENG SMART ELECTRIC CO.,LTD.

HIITIO®
和诚电气

COMPANY OVERVIEW

01 / Company Overview

02 / Main Products

03 / R&D system

04 / Manufacturing system



Zhejiang Hecheng Smart Electric Co., Ltd. (referred to as **HIITIO®**) was established in **2004** and is now headquartered in Hangzhou, China, which covers **30,000** square meters.

Meanwhile we have another two manufacturing sites - Mingguang Hecheng Electric Co.,Ltd. & Yueqing HeCheng Electrical Co.,Ltd.

◆ **Main Products:** High voltage DC relay/contactor, High voltage DC fuse, DC Disconnecter, Power Modules, BDU/PDU, DP contactors, IEC contactors, etc.

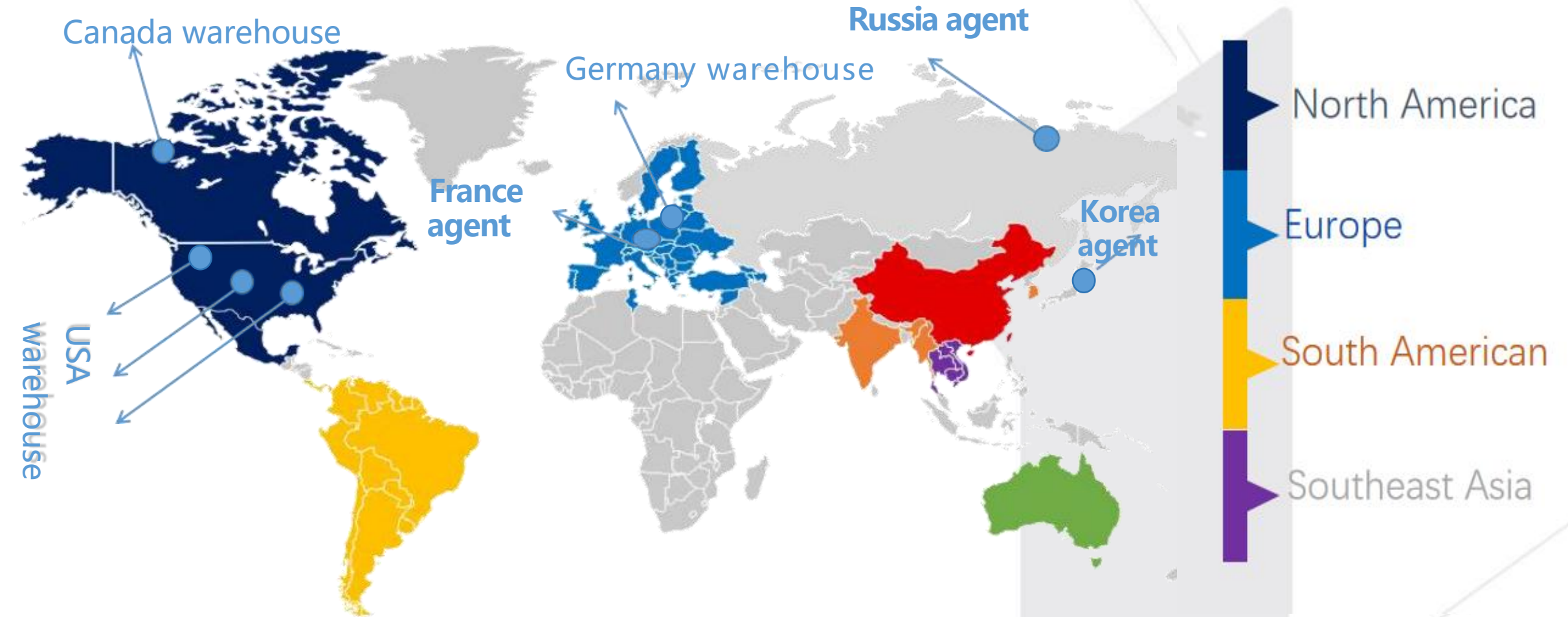
◆ **Main applications:** EV, EV charging, solar and battery energy storage, other ESS projects, HVAC/R, industrial motor controls, etc.

◆ **Certificates:** UL, CUL, CSA, CE, CB, TUV, SEMKO, CCC, VDE etc.

◆ **R&D capability:** We have 30+ experienced R&D staffs and most of them come from well-known companies



Headquarters

**Key Message:**

1. Hangzhou Holdwell Mechanical & Electrical Co., Ltd. (HIITIO Brothers company specializing in overseas trade) serves customers in approximately 200 countries, with a sales revenue of about 100 million USD in 2023.
2. The company has warehouses and agents in multiple countries worldwide and is expanding year by year.
3. U.S. warehouses: Three major warehouses in Houston, the East Coast, and the West Coast, with 28 sub-warehouses covering the entire U.S.
4. In 2024, an overseas branch was established in California, USA.

吉利商用车
GEELY COMMERCIAL VEHICLES

XCMG
徐工集团

RIVIAN



VINFAST

陕汽商用车
品质成就未来

盈峰环境
INFORE ENVIRO

LUCID

NIKOLA®

昕感科技
NEXIC

longertek 朗进

智行盒子
I-T BOX

DAIMLER TRUCK

HITE 海得新能源

HITE 海得智慧能源
HITE SMART ENERGY

HIGEE 海基

Y TNI

SYL
A RISEN GROUP COMPANY

 爱科赛博
ACTIONPOWER

A123
SYSTEMS

ENEROC
鹏成科技

 **GREE** 格力
格力钛新能源


BLUESUN
SOLAR

FLUENCE
A Siemens and AES Company

 **ENERGY**
storage system

HUZHIN
华致能源

Sunplain
旭普新能源

XUPAI 旭派®

ENERGY STAR



□ Beyond
sun

BIG POWER
大力电工



UDAN 尤旦

SIEMENS

ABB

BTCPOWER

wallbox

HIGHPOWER@AMPHENOL
TRUSTED GLOBALLY

Honeywell


Quanta Computer

 玖物智能

Kewell
让测试精准便捷


LIHEXIN
利和興



MKL TECH

VARIED

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6 major product series

BDU/PDU



HVDC Contactor HVDC Fuse



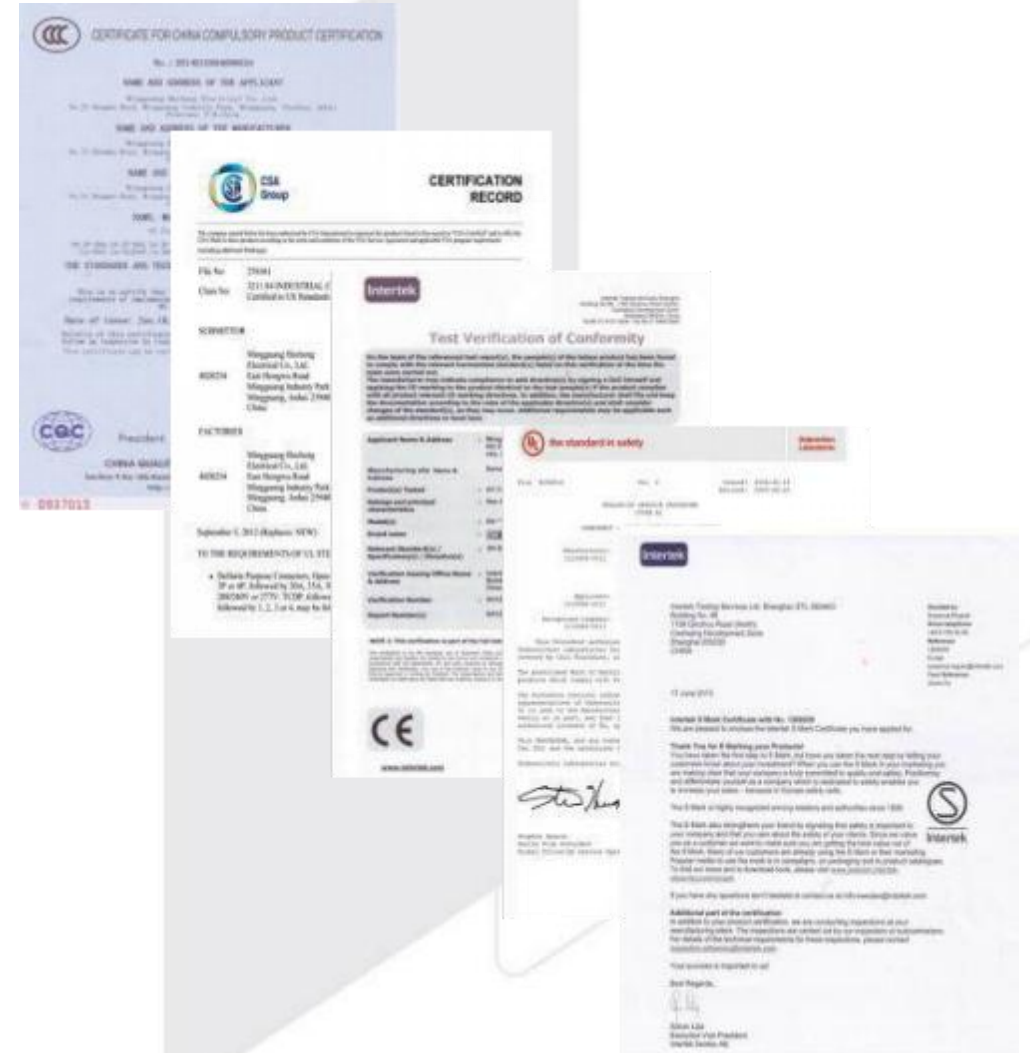
Power Modules

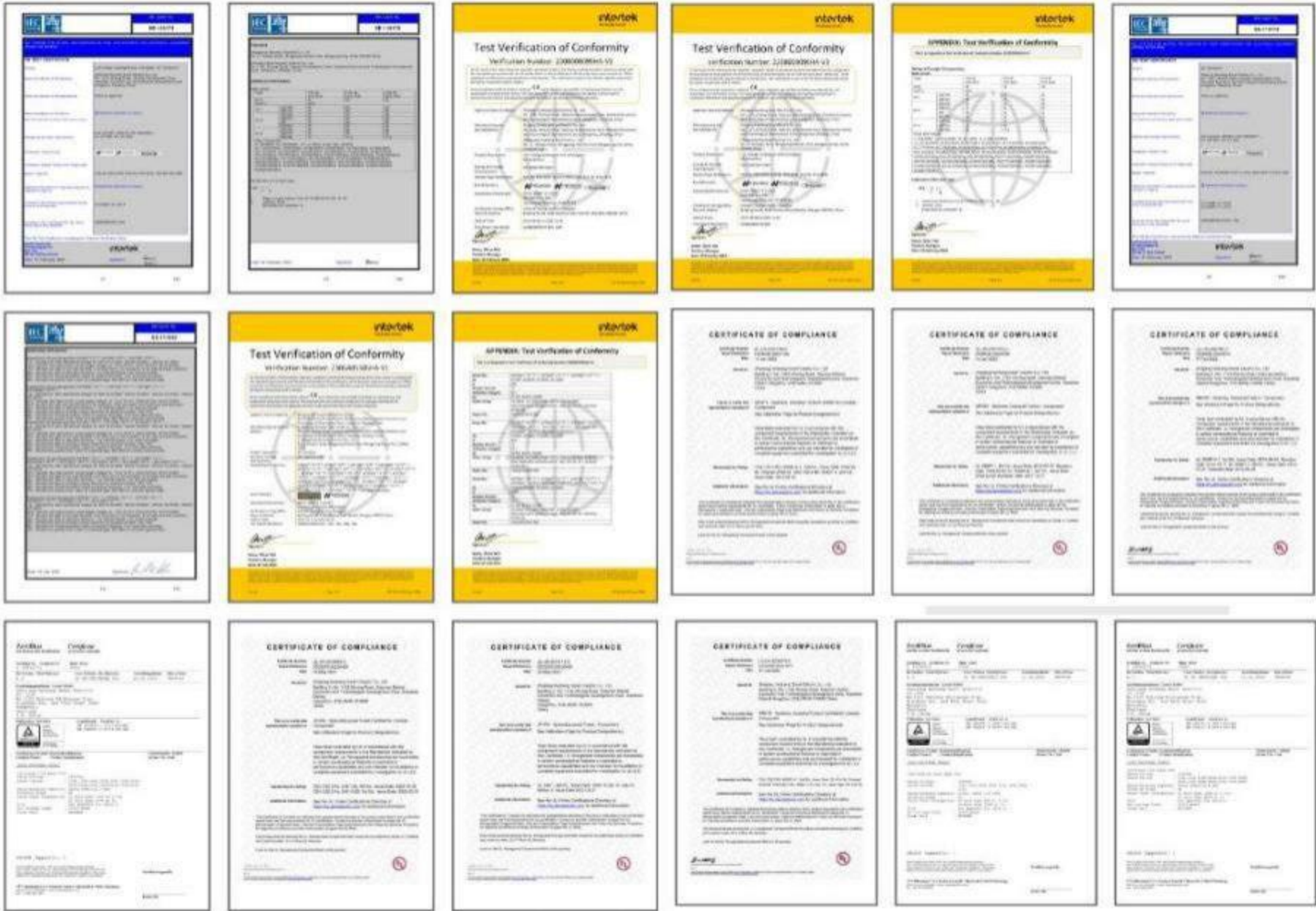


Ac contactor



DC Disconnect





Model	HCF20B	HCF40/HCF60/ HCF100	HCF150/HCF200	HCF250/HCF300	HCF400/HCF500	HCF600/HCF700	HCF800A/HCF100 0A/HCF1200A	HCF800B/HCF100 0B/HCF1200B
Image								
Dimension	78*43.2*46.1	67*36.8*47	76.5*39*70	84.5*42.5*74.5	100*58*91	120.6*70*105.2	196.1*113.95*159.3	185.6*104.6*131.7
Rated Current (A)	20	40/60/100	150/200	250/300	400/500	600/700	800/1000/1200	800/1000/1200
Max opreating voltage (V)	1500	1500	1500	1500	1500	1500	1500	1500
Power Loss (W)	4	3	6	6	start 55 hold 5	start 60 hold 5.4	start 50 hold 10	start 50 hold 10
Coil voltage (V)	12/24/48							
Auxiliary Contact	----	----	optional	optional	optional	optional	optional	optional
Certification	----	UL/cUL/CE/CB /CCC/SEMKO	UL/cUL/CE/CB /CCC/SEMKO	UL/cUL/CE/CB /CCC/SEMKO	UL/cUL/CE/CB /CCC/SEMKO	UL/cUL/CE/CB /CCC/SEMKO	UL	UL

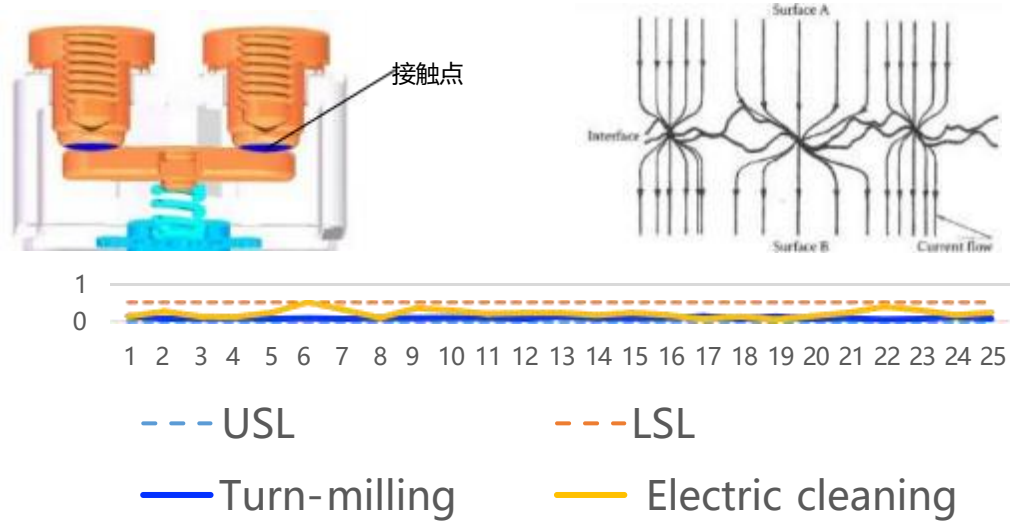
Key Message:

1.The main products are square ceramic non-polarized types, covering current ratings from 20A to 1200A.

Model	HCF100B	HCF250E	HCF350	HCF600	HCF800B/ HCF1000B/HCF1200B	HCF800A/ HCF1000A/HCF1200A
Image						
Dimension	76.5*39*70	120.6*70*105.2	120.6*70*105.2	120.6*70*105.2	185.6*104.6*131.7	196.1*113.95*159.3
Rated Current (A)	100A	250A	350A	600A	800A/1000A/1200A	800A/1000A/1200A
Max opreating voltage (V)	2000VDC	2500VDC	2500VDC	2500VDC	2500VDC	2500VDC
Power Loss (W)	6W	start 60 hold 5.4	start 60 hold 5.4	start 60 hold 5.4	start 50 hold 5	satrt 50 hold 5
Coil voltage (V)	12/24/48					
Auxiliary Contact	optional	optional	optional	optional	optional	optional
Electrical life	2000V 20A ≥11000 ops (only making)	2000V 250A≥500 ops	2000V 350A≥500 ops	2000V 600A ≥500 ops	2000V 800A ≥100 ops; 2000V 1000A ≥100 ops	2000V 800A ≥100 ops; 2000V 1000A ≥100 ops

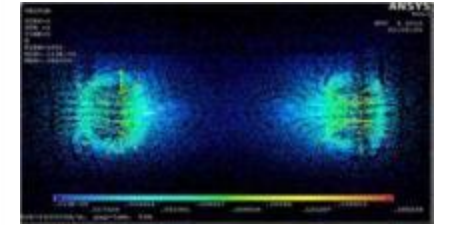
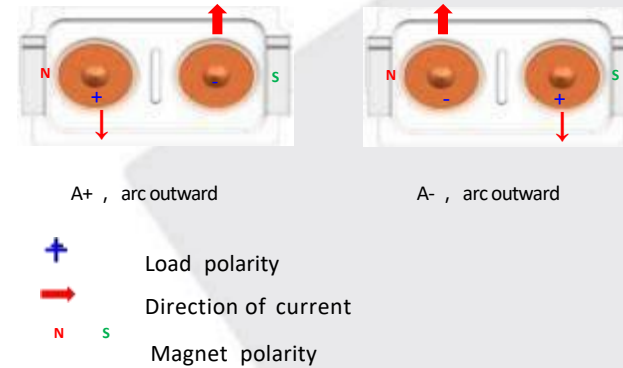
CUL **CE**

Good contact resistance control



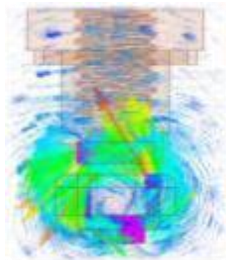
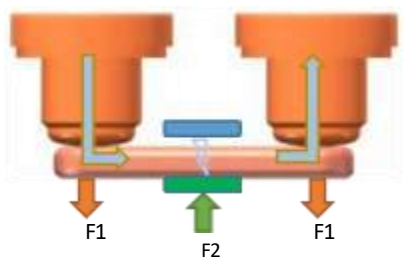
Non-polarity Load

The contactor is preferably designed with non-polarity to facilitate customer installation and adapt to bidirectional current application scenarios.



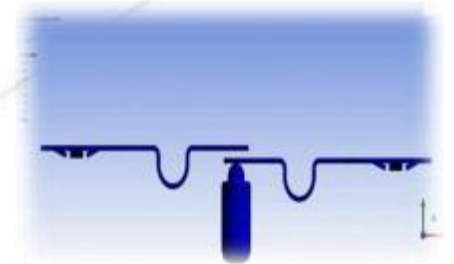
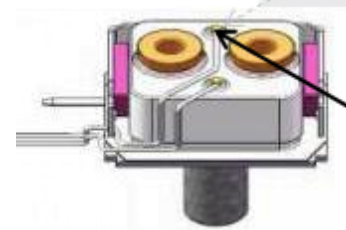
High Short Circuit Current Withstanding

- Add the design of magnetic structure to the internal of product to improve the ability to withstand the short circuit, which can carry 8kA, 5ms
- High short-circuit withstanding solutions can be tailored per customer requirements



Auxiliary Contact

- The design overcomes the space problem and is available in the products above 100A; it can monitor and feedback the working condition of the main contact accurately and reliably.

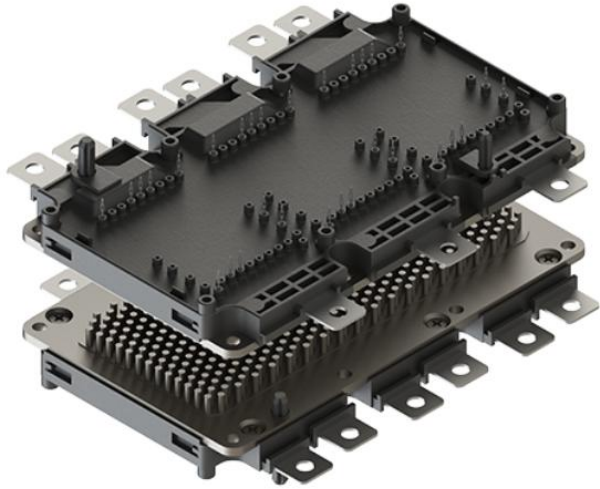


Model	HCHVT-36E	HCHVT-43E	HCHVT-51E	HCHVT-59E	HCHVT-74E	HCHVT-105E	HCHVT-159E	HCBMG5	HCPVT-59E	HCPVT-74E
Photo										
Rated Current/A	25A~315A	50A~630A	100A~800A	100A~630A	100A~1800A	400A~2000A	1400A~3000A	1400A~3000A	50A~630A	100A~800A
Max opreating voltage/V	750VDC 1000VDC	500VDC 750VDC 1000VDC	500VDC	1000VDC 1500VDC	500VDC 1000VDC 1500VDC	1500VDC	1500VDC	2000VDC	1500VDC	1500VDC
Breaking Capatcity	50kA	50kA	50kA	50kA 250kA	50kA 250kA	50kA 250kA	100kA 250kA	100kA 250kA	50kA	50kA
Class Type	aR								gPV	
Size	#000	#01	#1	#02	#03	#04	#05	#05	#02	#03
Application	EVSE	EV, ESS	ESS	ESS	ESS	ESS	ESS	ESS	PV, ESS	PV, ESS
Certification	Pending					Pending				

Model	HCEVF500	HCHVF500	HCHVF750	HCHVF1000	HCHVT250	HCHVT300	HCHVT500	HCHVT500-18R	HCHVT750
Photo									
Rated Current/A	50A~800A	35A~800A	35A~800A	30A~800A	16A~500A	50A~200A	10A~400A	10A~100A	10A~100A
Max opreating voltage//V	500VDC	500VDC	750VDC	1000VDC	250VDC	300VDC	500VDC	500VDC	750VDC
Breaking Capatcity	50kA	50kA	50kA	50kA	50kA	6kA	50kA	50kA	50kA
Application	EV	EV	EV, EVSE	EV, EVSE, ESS	EV	EV	EV	EV	EV
Class Type	aR								
Certification									

Model	HCEVT500-10R HCHVT500-10R	HCEVT750-10R HCHVT700-10R HCHVT750-10R	HCHVT500-14R HCHVT750-14R	HCPVF1500-10R	HCPVF1500-10RS	HCPVF1000-10R	HCPVT1500-14R	HCNR	Fuse Holder
Photo									
Rated Current/A	10A~60A	10A~50A	10A~50A	1A~32A	10A~32A	10A~35A	10A~32A	1A~60A	Max 35A
Max opreating voltage//V	500VDC	750VDC	500VDC 750VDC	1500VDC	1500VDC	1000VDC	1500VDC	250VAC 150VDC	600VDC 1000VDC 1500VDC
Breaking Capatcity	20kA	20kA	20kA	20kA	30kA	30kA	30kA	200kA	30kA
Application	EV	EV	PV	PV	PV	PV	PV	HVAC/R	PV
Class Type	aR				gPV			Class RK5	/
Certification	Pending								Pending
Size	10x38mm	10x38mm	14x51mm	10X85mm	10x65mm	10x38mm	14x51mm	/	10X38mm 10x65mm 10x85mm

Series	Circuit Diagram						Current (A)				
	Half-Bridge	H-Bridge	Full-Bridge 3-Phase	Chopper Boost	NPC	PIM	25-50	51-100	101-200	201-450	451-1000
HPD 750V 1200V 1400V			✓							400-800	
ED3H 1200V	✓									400-800	
ED3 & ED3S 1200V 1400V 1700V 2200V	✓			✓						200-1000	
62mm 650V 1200V 1700V	✓									200-600	
E4 1200V					✓					300	
E0 & E2 1200V 1400V	✓	✓	✓	✓	✓		25-200				
PIM 1200V			✓				25-50				
F0 1200V				✓				50-75			
EPM2 & EPM3 1200V						✓		50-100			
34mm 650V 1200V 1700V	✓							75-200			



1. Automotive-Grade Quality Standards

- Compliant with AQC324 testing standards
- Power cycling lifetime exceeds automotive requirements by more than 3 times

2. Leading Technology

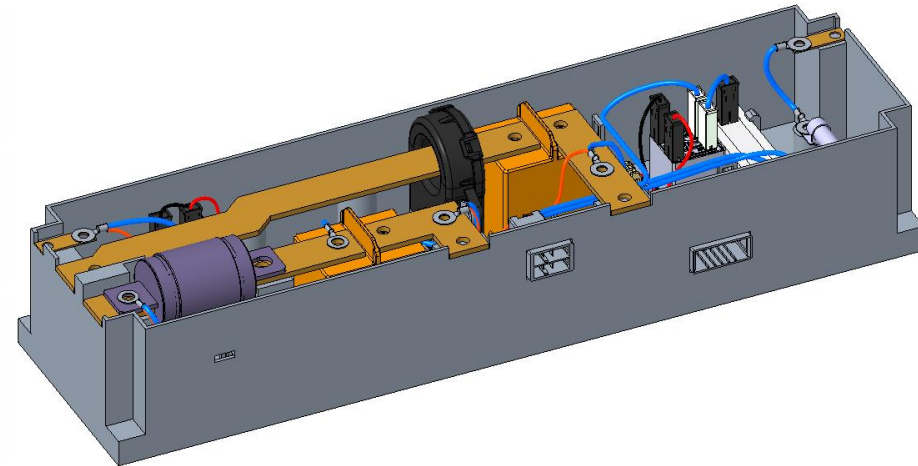
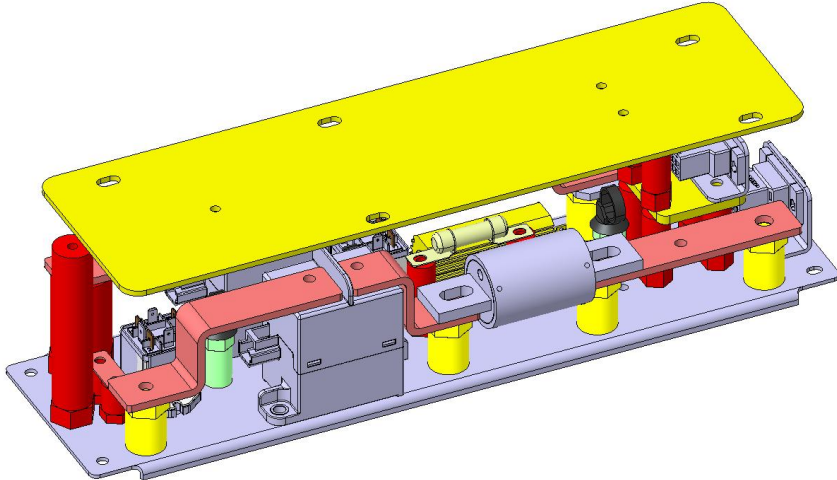
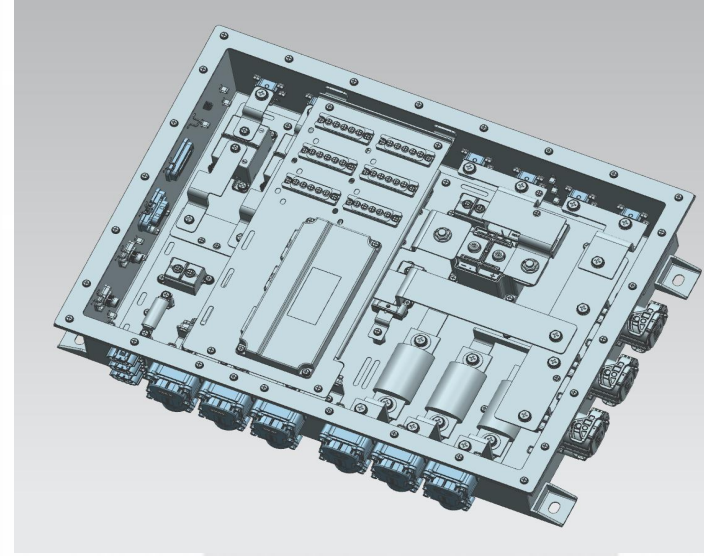
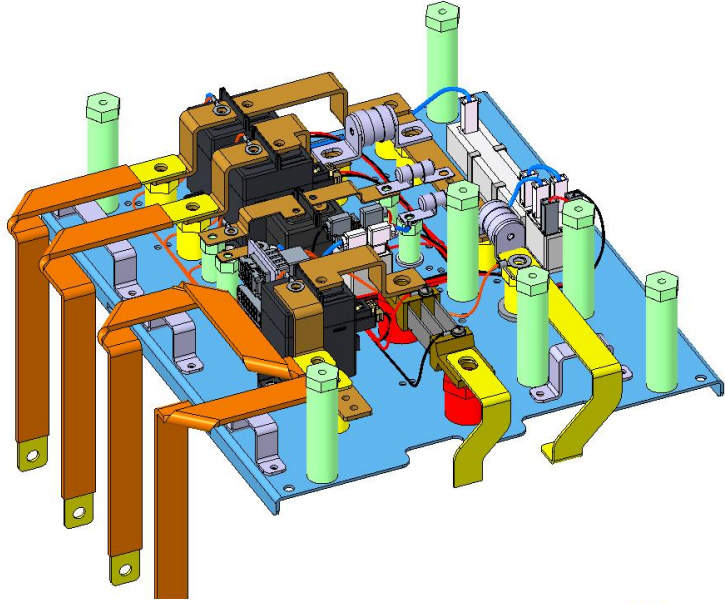
- Proprietary chip interconnection technology
- Power density 30% higher than industry average
- 20% lower thermal resistance
- Low switching loss

3. New Packaging Materials

- Epoxy potting replaces conventional silicone gel
- New epoxy molding compound
- Resin-based substrate
- Silver sintering technology

HIITIO® 和诚电气 Integrated products- BDU / PDU

Customized according to the customer's specific requirements



Advantages

➤ **Cost Competitiveness**

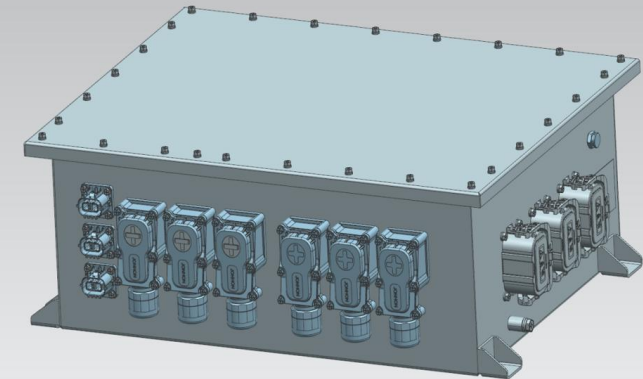
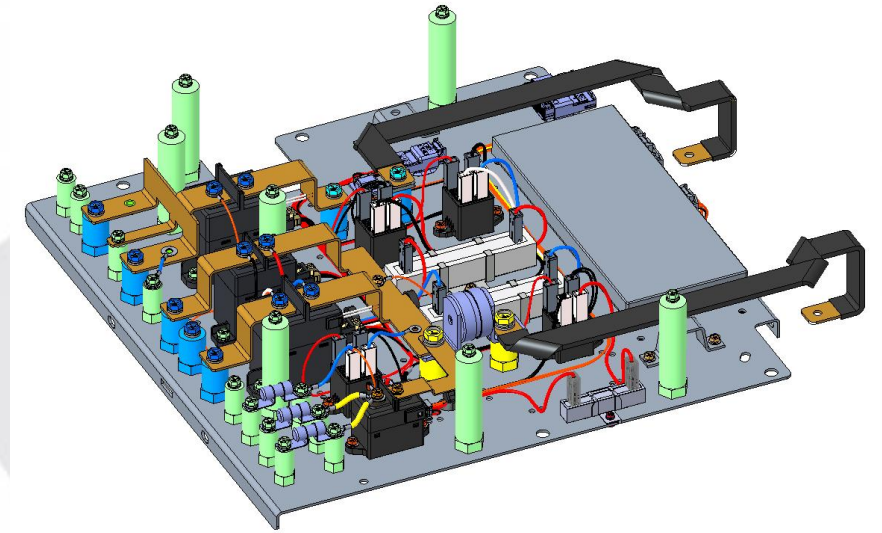
Since we produce the core components ourselves, our pricing is more competitive compared to manufacturers that rely on third-party suppliers.

➤ **Comprehensive Technical Support**

Our deep understanding of these critical components allows us to offer more thorough and precise technical assistance for system integration and performance optimization.

➤ **Fast and Reliable After-Sales Service**

Unlike other PDU/BDU suppliers that depend on external supply chains for troubleshooting, we can provide direct and rapid support for any issues, ensuring smooth operation.





New energy vehicles



Rail transit



Charging system



Energy storage system



Photovoltaic system

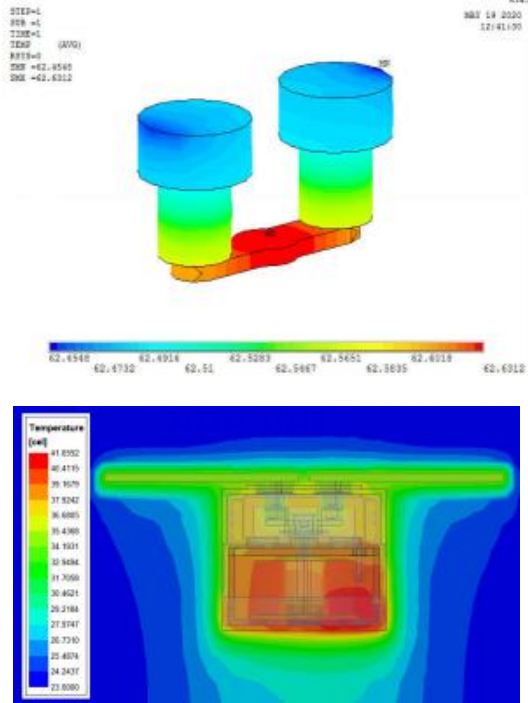


Aviation, military

COMPANY OVERVIEW

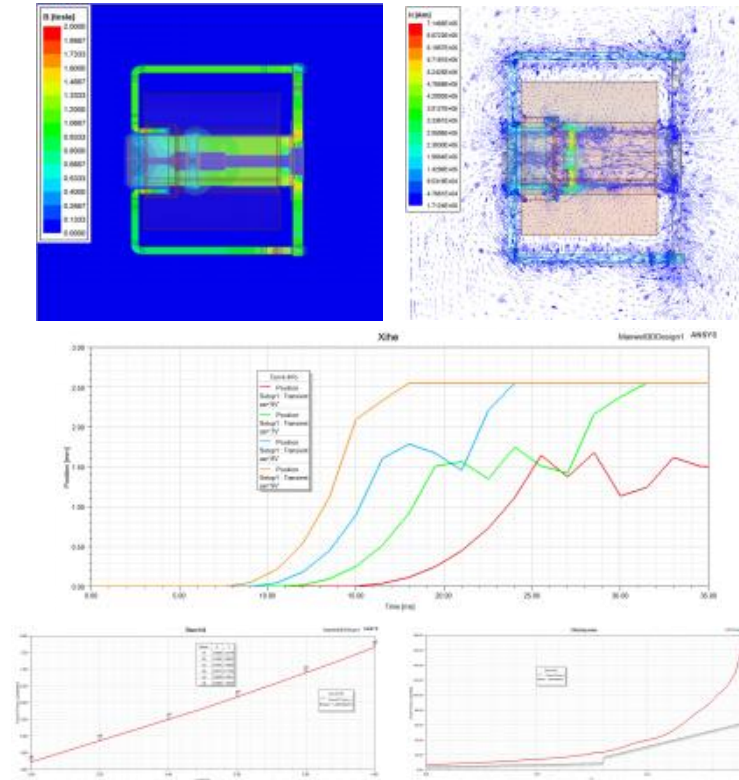
- 01 / Company overview
- 02 / Main Products
- 03 / R&D system**
- 04 / Manufacturing system

Electrothermal coupling analysis



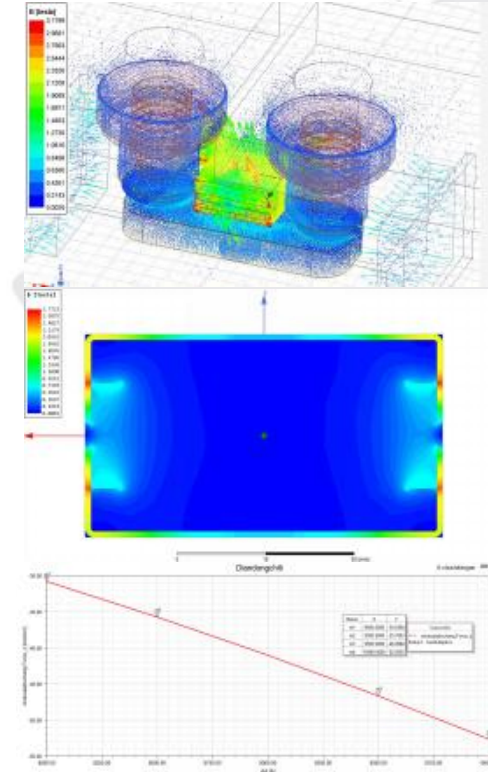
- Analyze the temperature of the contacts and coils under the rated current to provide a basis for material selection and miniaturization

Electromagnetic field analysis



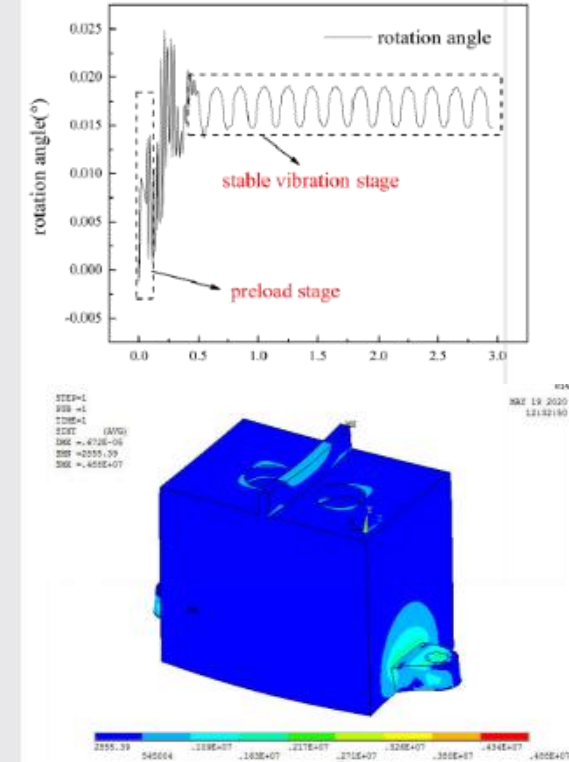
- Analyze the distribution of magnetic flux in the magnetic permeable circuit to provide a basis for permeable materials and structures
- Analyze the suction curve of the iron core, and match the design of the spring force value to improve the service life

Magnetic field analysis



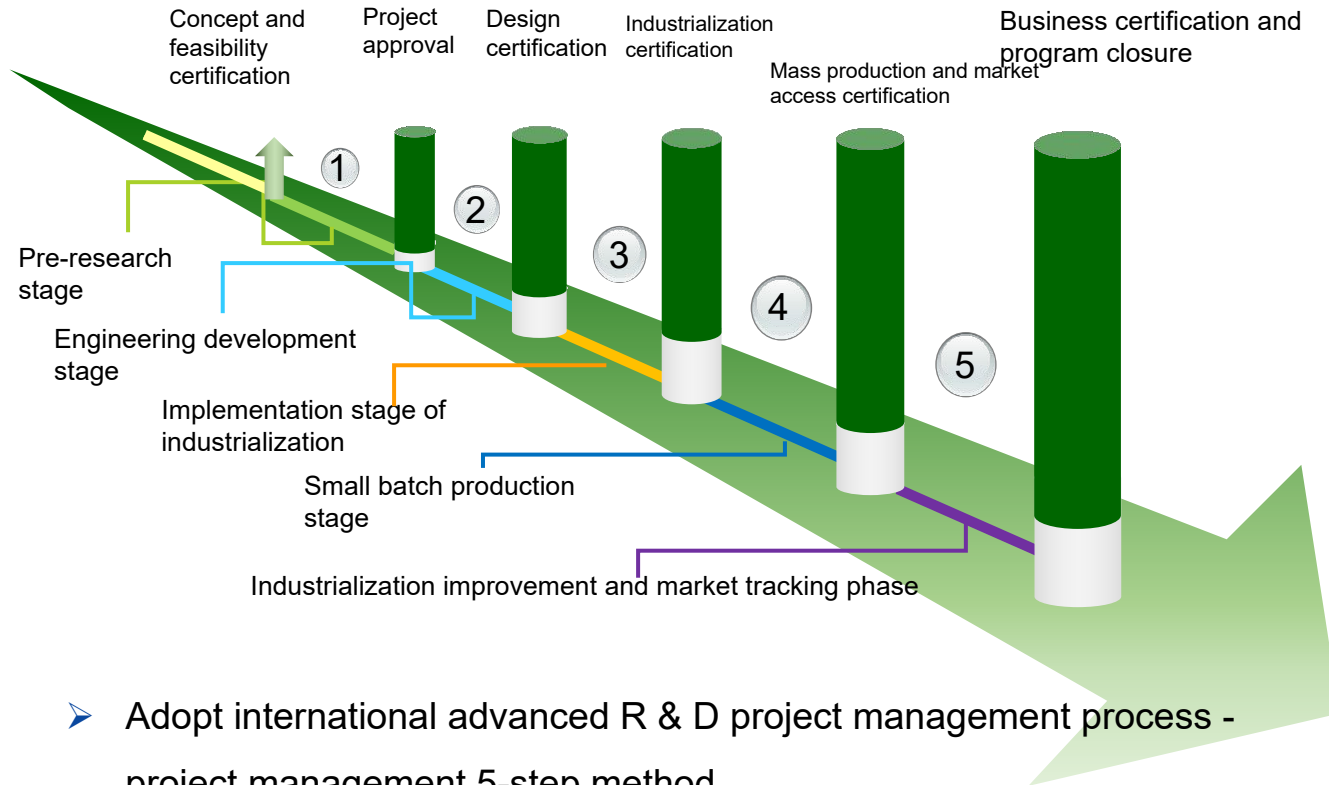
- Analyze the Lorentz force value and direction of the magnetic field on the arc in the main circuit to provide a basis for the design of the arc extinguishing structure
- Analyze the ampere force received by the moving contact bridge to provide a basis for improving the ability to withstand short circuits

Structural analysis



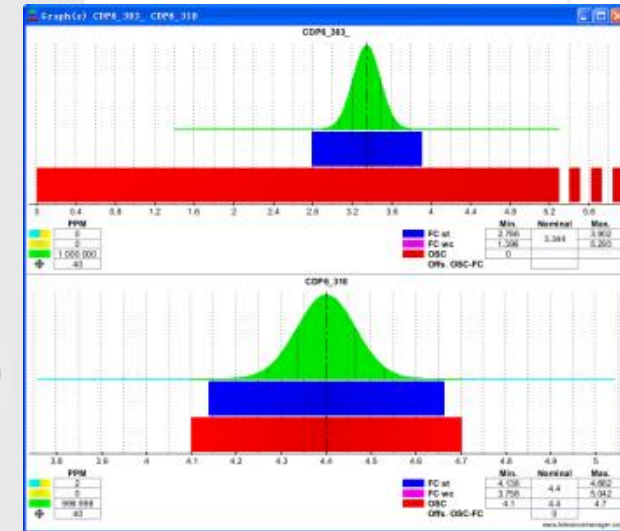
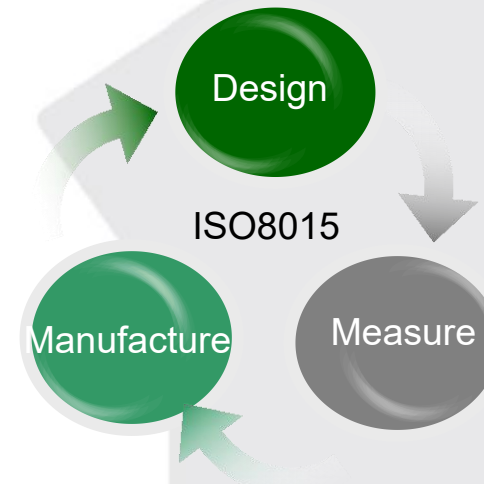
- Analyze the distribution of stress when the product structure is in the working position to provide a basis for structural design

Project management process in line with international standards (five steps)



- Adopt international advanced R & D project management process - project management 5-step method
- Each project is developed by the project manager
- Product data management, building material library, standard parts library, common parts library, etc

Advanced drawing standards and tolerance management tools



- ISO8015 drafting standard was introduced
- Use TM software to design tolerances properly
- Introduce advanced design concept and functional design method

Environmental test



High and low temperature shock



Temperature and humidity



High and low temperature storage

Thermal shock:

Standard: GB/T28046 GB/T2423.22,
Temperature: -50°C~150°C
Switching speed: ≤10S

High low temperature:

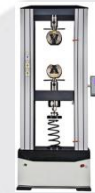
Standard: GB/T28046.4 GB/T2423.1
Temperature: -50°C~150°C
Humidity range: 20~98%RH



Temp/Humid/Vibration Chamber



Impact test



Pull test



Mechanical life

Vibration

Standard: GB/T28046.3
Direction: vertical, horizontal

Mechanical life

Standard: GB/T 21711.7
Contact monitoring current: 5mA, 50mA, 200mA optional;
It can satisfy 40 samples to be tested at the same time.

Electrical test



Electrical life



Temperature Rise

Electrical life:

Standard: UL508
Max voltage: 1500V
Max current: 600A
Short circuit test current up to 20kA

Temperature Rise:

Standard: GB/T14048.1
Max current: 10000A

Other test



Elemental analysis



Precision force gauge



Hardness Tester



Tztek



X-ray



中国合格评定国家认可委员会 实验室认可证书

(注册号: CNAS L21725)

兹证明:

浙江和诚智能电气有限公司检测中心

(法人: 浙江和诚智能电气有限公司)

浙江省杭州市萧山区经济技术开发区桥南区知行路 1125 号

2 幢 1 楼, 311200

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: 2024-10-17

截止日期: 2030-10-16



中国合格评定国家认可委员会授权人 **张朝华**

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CNAS 是国际实验室认可合作组织 (ILAC) 和亚太认可合作组织 (APAC) 的互认协议成员。
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China National Accreditation Service for Conformity Assessment LABORATORY ACCREDITATION CERTIFICATE (Registration No. CNAS L21725)

Zhejiang Hecheng Smart Electric Co., Ltd. Testing Center

(Legal Entity: Zhejiang Hecheng Smart Electric Co., Ltd.)

1/F., Building 2, No. 1125, Zhixing Road, Economic and Technological
Development Zone (Qiaonan), Xiaoshan District, Hangzhou, Zhejiang, 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: 2024-10-17

Expiry Date: 2030-10-16

Signed on behalf of China National Accreditation Service for Conformity Assessment

张朝华

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).
The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/index/accreditedbody/index.shtml>.

PLM

ERP

PLM number	Standard number	Name	ERP number	surface treatment	Standard number	PLM number
GB00100001	GB/T 818	bolt	99.....1	Colored - plating	GB/T 818	
			99.....2	White zinc-plating	GB/T 818	GB00100001
			99.....3	Environmental-plating	GB/T 818	

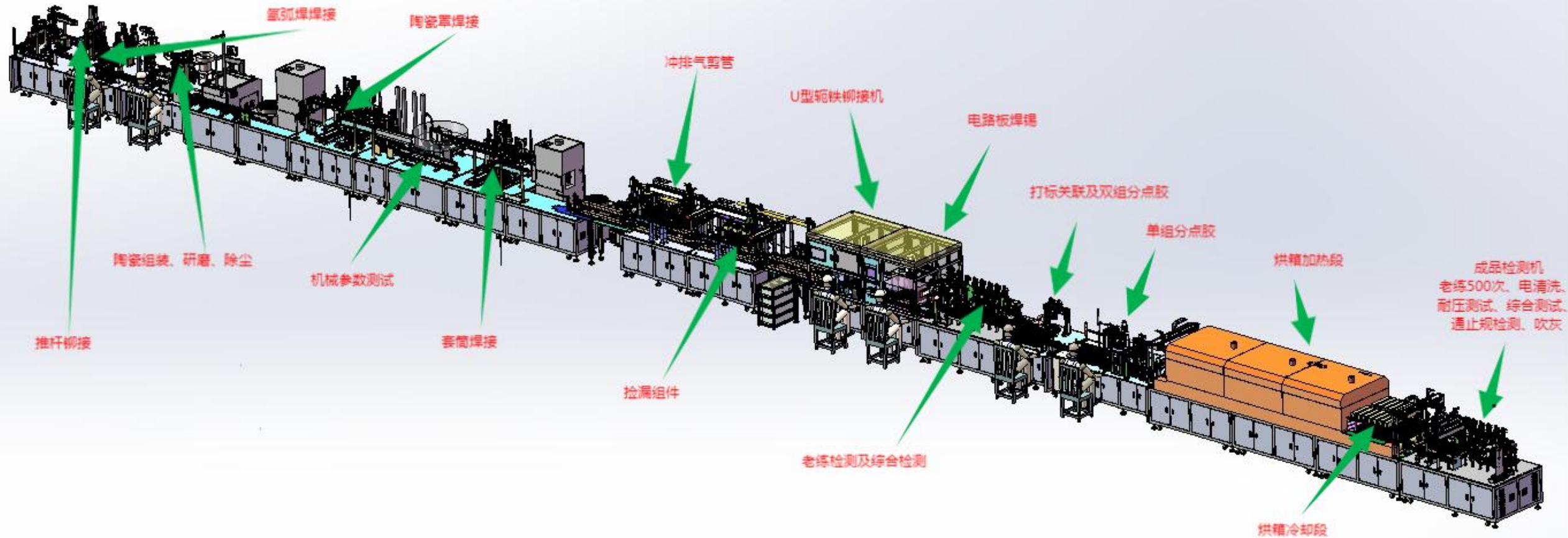


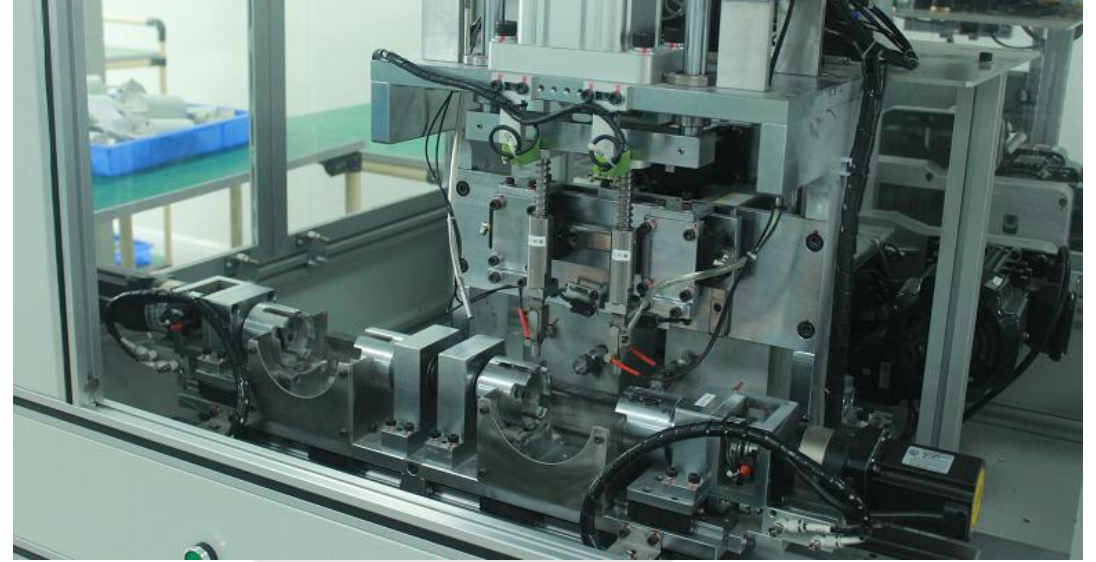
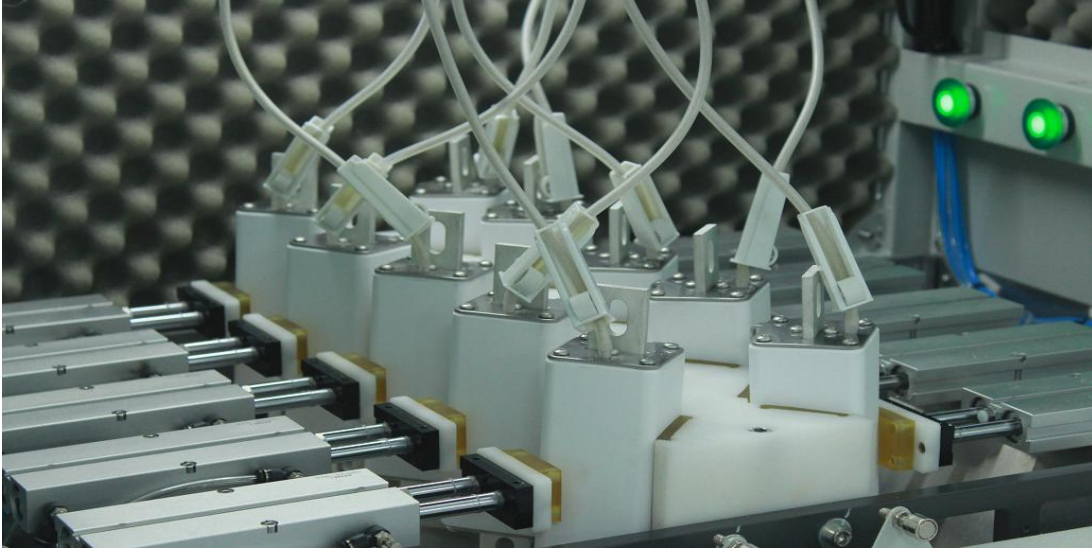
The PLM number of the future standard parts will be generated in the PLM system, and the standard parts table (PLM number, country number and attribute information) will be exported and input to the ERP interface personnel. For ERP, different plating layers have different ERP numbers corresponding to the same PLM number. In the future, the corresponding standard parts of ERP can be queried through the PLM number.

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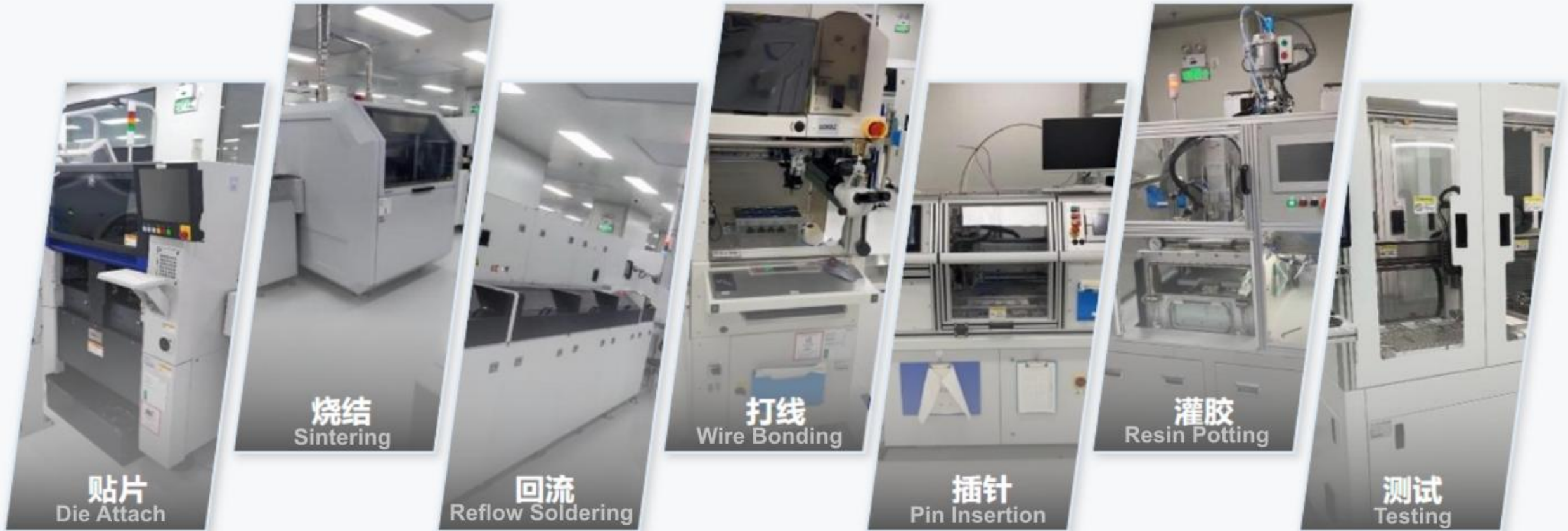
Production capacity: 300PCS/Hour





Equipped with an advanced automated SiC module packaging and testing production line

Production capacity: 700K pcs/Year





ISO 9001



ISO 14001



ISO 45001



IATF 16949

THANK YOU

HIITIO®
和诚电气

浙江和诚智能电气有限公司

ZHEJIANG HECHENG SMART ELECTRIC CO.,LTD.

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Economic and Technological Development Zone,
Hangzhou, Zhejiang