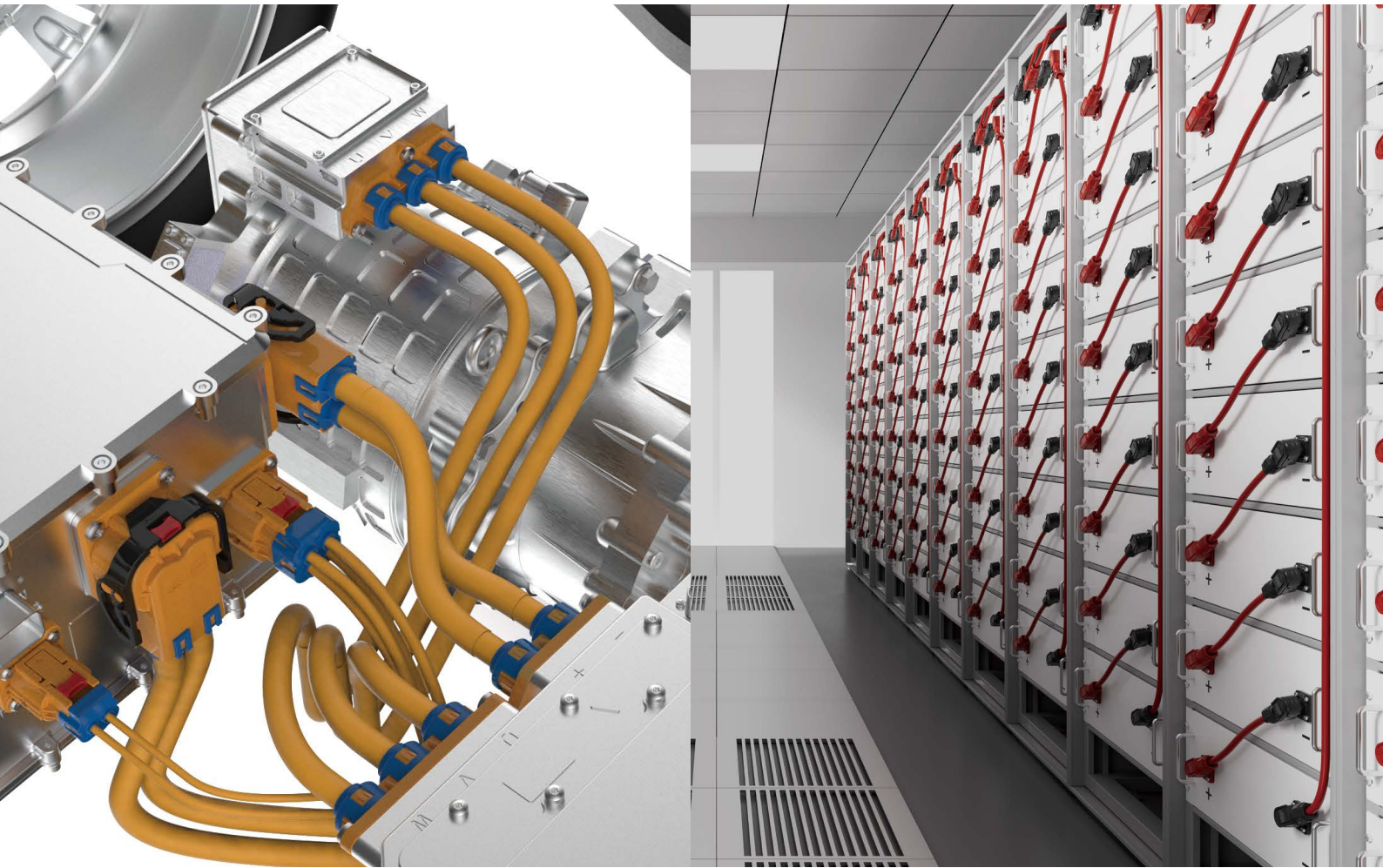




WAIN ELECTRICAL

WAIN New Energy Vehicle / Energy Storage System Applications



WeChat



Website



E-Shop

CONTENT

01

WAIN New Energy Vehicle System Applications

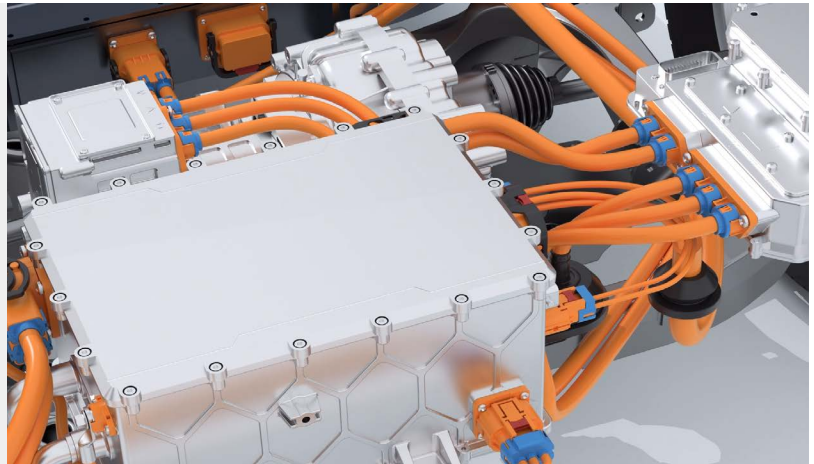
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WAIN Energy Storage System Applications

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01



WAIN New Energy Vehicle System Applications

WAIN Provides Solutions For The New Energy Vehicle System

WAIN specializes in industrial connectors, and has won the trust of many OEMs and end customers and become their partners with reliable and sophisticated technologies and solutions. Through the unremitting efforts of all employees, WAIN have been ISO9001:2015, ISO14001:2015, IRIS and IATF16949 certified, and has embarked on a healthy development path in quality management. At the same time, we continue to communicate and cooperate with professional equipment manufacturers, strive to realize production automation, and provide a strong guarantee for efficient production and stable product quality.

In the field of new energy vehicles, through years of accumulation, the company has a number of highly capable technology R & D teams; The product series has been continuously improved, and mature and reliable vehicle interconnection system products have been provided, such as AC and DC charging gun / socket, high-voltage connector, manual service disconnect (MSD), power exchange connector, perforated connector (IPT), on-board signal connector, etc.

"Simulation analysis" is introduced in the process of new product development to provide guarantee for new product development cycle and design quality. At present, four main analysis modules (dynamic simulation, mode flow analysis, electromagnetic compatibility analysis and structural strength analysis) have been constructed: structural analysis, thermal analysis, signal integrity and electromagnetic compatibility analysis and mode flow analysis.

The establishment of an independent new energy test center has further improved the product development and verification rate. Product test capabilities include **Environmental** test, electrical performance test, mechanical performance test and sealing test. It can completely cover the test standards of domestic and foreign automotive high voltage connectors such as GB/T37133, QC/T29106, USCAR2.0, LV214, LV215, GMW3191 etc. WAIN is willing to cooperate with you in the future with professional technology, reliable products and warm service.



Product quality testing service

WAIN product quality testing service

WAIN Experimental Center is a UL-certified witness laboratory, which can independently conduct conventional electrical, material mechanics, surface treatment, **Environmental** protection, mechanical life and other experiments in the connector field.

- Professional international testing standards
- Reliable test and verification method
- Transparent, fair and traceable analysis verification tests and reports
- Transparent, fair and traceable analysis verification tests and reports

Product guarantee

- Product guarantee

ISO9001:2015 certification system ISO14001:2015 certification system International Railway Industry Standard: IRIS Quality Management System

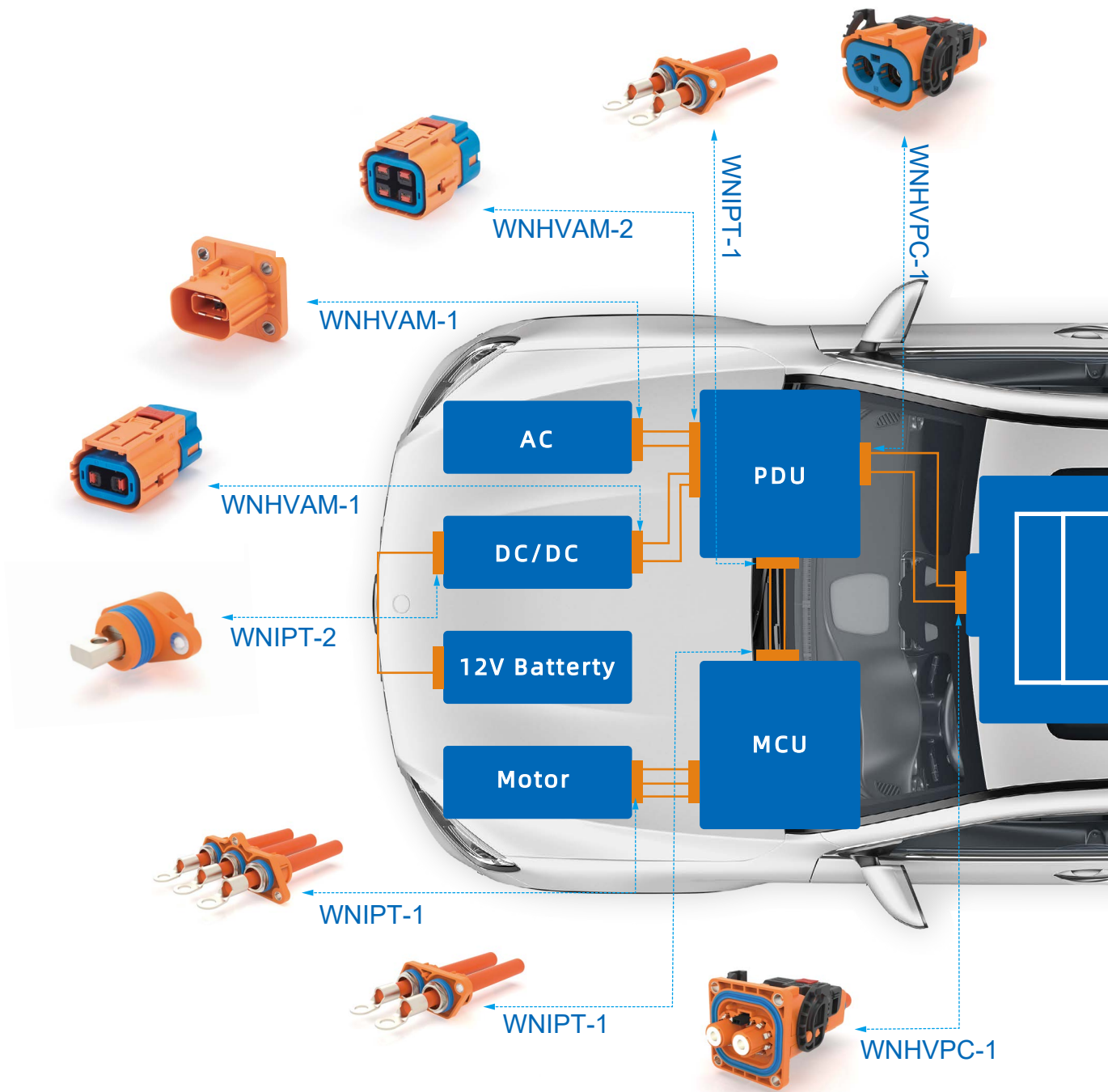


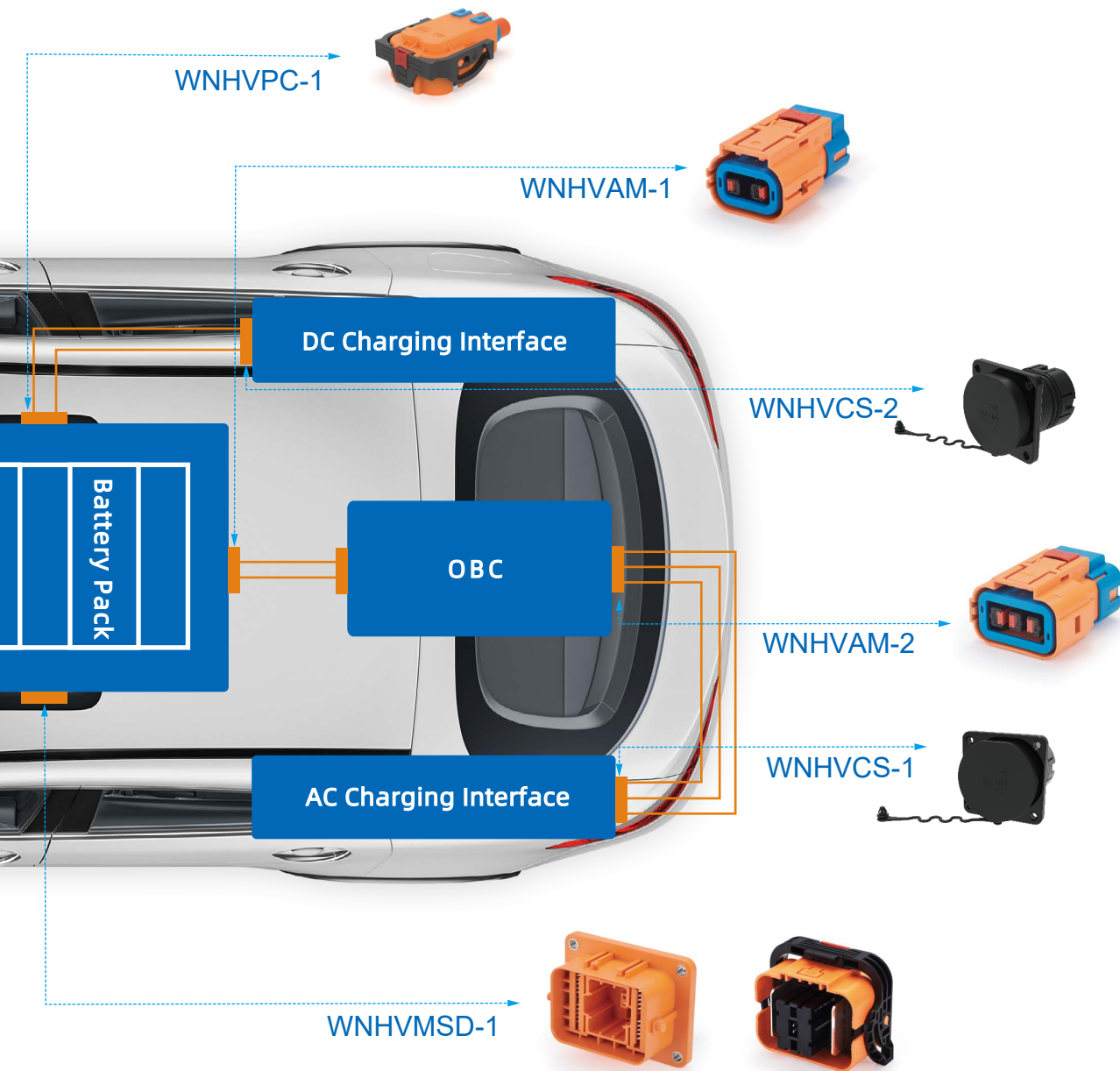
- Product certification



Global universal product certification



High Voltage Interconnection Diagram Of EV

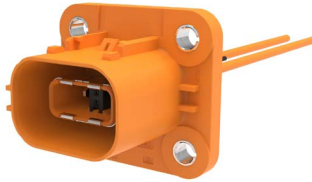




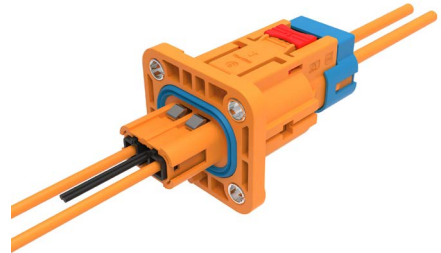
 : High Voltage Connector
 : High Voltage Cable



Plug



Socket



Mating

WNHVAM-1 Two-pins Series

Specification

Technical Parameters

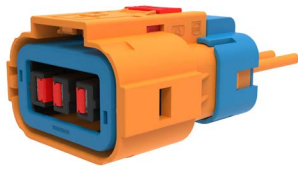
Rated Current	35A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HVIL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5mm²~4mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection
- 360° shielding

Application

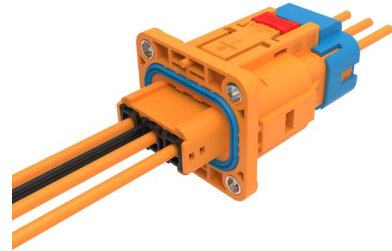
- Battery pack, PDU, MCU



Plug



Socket



Mating

WNHVAM-3 Two-pins Series

Specification

Technical Parameters

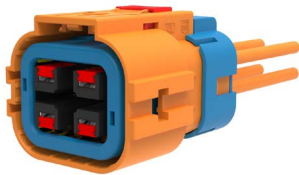
Rated Current	50A MAX
Rated Voltage	600V DC
Withstand Voltage	2500V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

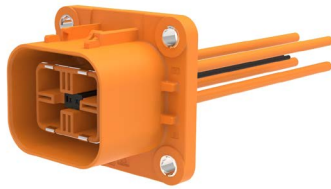
- Secondary Lock
- Adapter Cable: 2.5mm²~6mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

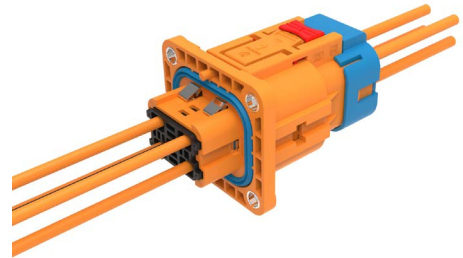
- PDU, MCU



Plug



Socket



Mating

WNHVAM-2 Four-pins Series

Specification

Technical Parameters

Rated Current	50A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5mm²~6mm²
- POKA-YOKE Feature
- HIVL
- Electric shock protection

Application

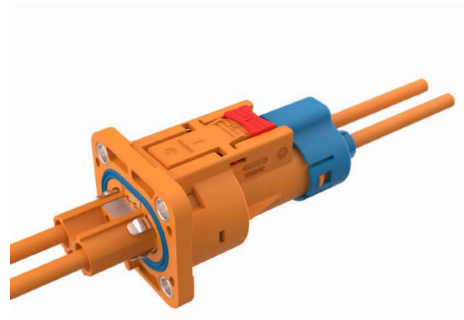
- PDU, MCU



Plug



Socket



Mating

WNHVAM-3 Two-pins Series

Specification

Technical Parameters

Rated Current	70A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	-180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5mm²~10mm²
- POKA-YOKE Feature
- HIVL
- Electric shock protection

Application

- PDU, MCU



Plug



Socket



Mating

WNHVAM-5 Two-pins Series

Specification

Technical Parameters

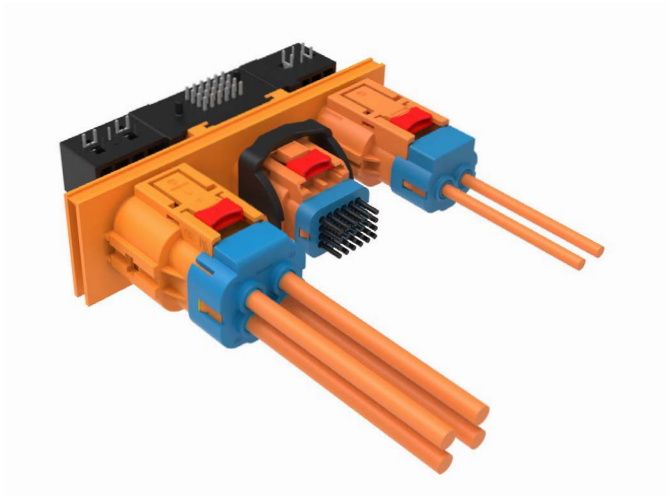
Rated Current	80A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HVIL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 6-16mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHVAM-X Combination Socket Series

Specification

Technical Parameters

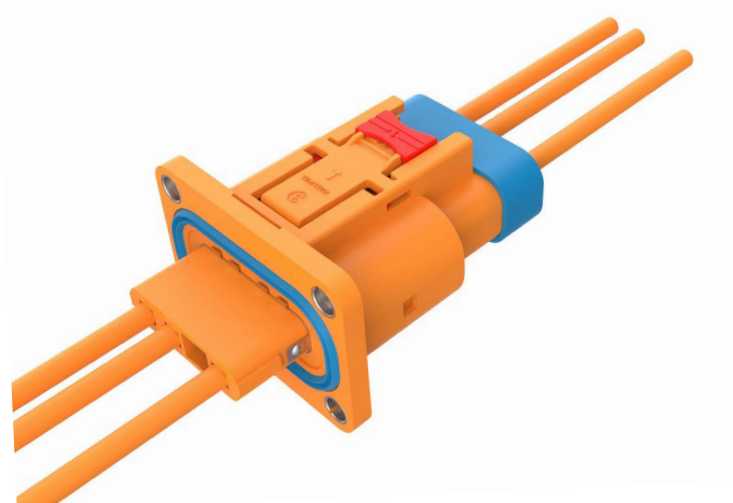
Rated Current	50A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 500V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-6mm² Power, 0.5-1.5mm² Signal
- POKA-YOKE Feature
- HIVL
- Electric shock protection

Application

- PDU, MCU



WNHVAM-X Economical Series

Specification

Technical Parameters

Rated Current	32A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-4mm²
- POKA-YOKE Feature
- HIVL
- Electric shock protection

Application

- PDU, MCU



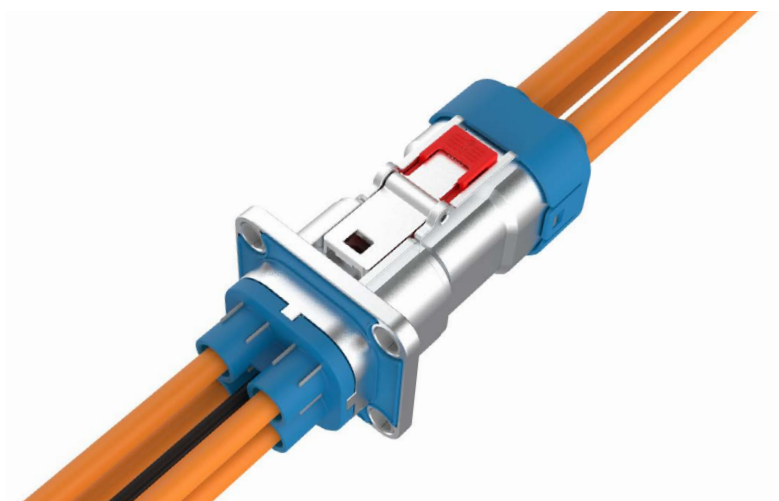
WNHVAM-X Two-pins Vertical Series

Specification

Technical Parameters	
Rated Current	60A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description
·Secondary Lock
·Adapter Cable: 2.5-10mm ²
·POKA-YOKE Feature
·HIVL
·Electric shock protection

Application
·PDU, MCU



WNHVAM-X Four-pins Vertical Series

Specification

Technical Parameters

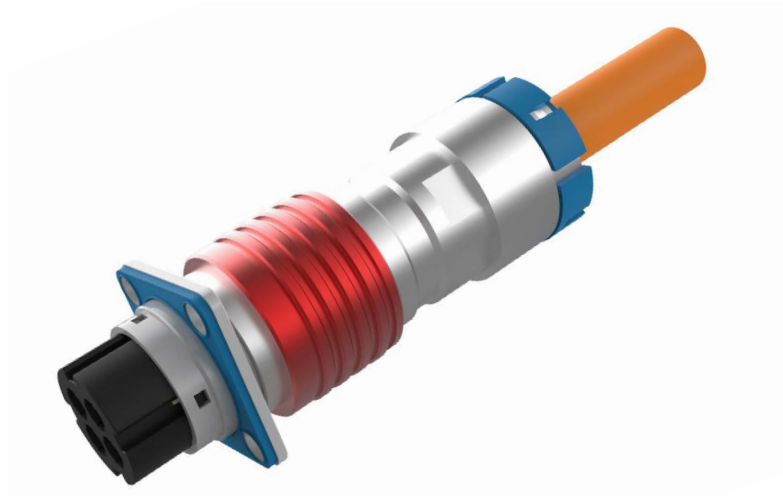
Rated Current	40A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180° or 90°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-6mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHVAM-X Push-pull Series

Specification

Technical Parameters

Rated Current	55A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-6mm²
- POKA-YOKE Feature
- HIVL
- Electric shock protection

Application

- PDU, MCU



WNHVPC-1 Vertical Series

Specification

Technical Parameters

Rated Current	200A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-50mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHVPC-1 Right-angle Series

Specification

Technical Parameters	
Rated Current	200A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	90°

Product Description
·Secondary Lock
·Adapter Cable: 25-50mm ²
·POKA-YOKE Feature
·HIVL
·Electric shock protection

Application
·PDU, MCU



WNHVPC-2 Vertical Series

Specification

Technical Parameters

Rated Current	200A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-50mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHVPC-X Vertical Series

Specification

Technical Parameters	
Rated Current	250A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description
·Secondary Lock
·Adapter Cable: 25-70mm ²
·POKA-YOKE Feature
·HVIL
·Electric shock protection

Application
·PDU, MCU



WNHVPC-X One-pin Vertical Series

Specification

Technical Parameters

Rated Current	250A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistanc	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Directio	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-70mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHVPC-X Two-pins Vertical Series

Specification

Technical Parameters	
Rated Current	250A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistanc	UL94 V-0
Shielding	360° EMC Shielding
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Directio	180°

Product Description
·Secondary Lock
·Adapter Cable: 25-70mm ²
·POKA-YOKE Feature
·HIVL
·Electric shock protection

Application
·PDU, MCU



WNHV IPT-1 Two-pins Series

Specification

Technical Parameters

Rated Current	220A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	NO
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-70mm²
- POKA-YOKE Feature
- Electric shock protection

Application

- PDU, MCU



WNHV IPT-1 Three-pins Series

Specification

Technical Parameters	
Rated Current	220A MAX
Rated Voltage	1000V DC
Withstand Voltage	4000V AC Power
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	NO
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description
·Secondary Lock
·Adapter Cable: 25-70mm ²
·POKA-YOKE Feature
·Electric shock protection

Application
·PDU, MCU



WNHVIPT-1 Four-pins Series

Specification

Technical Parameters

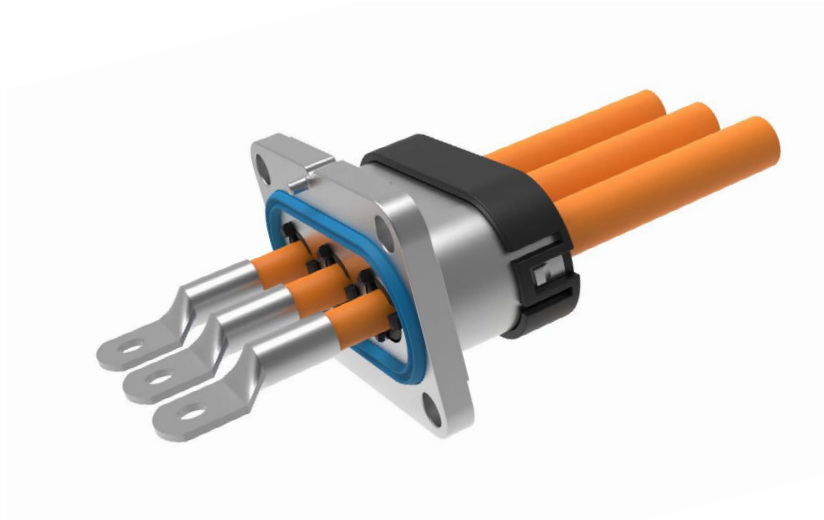
Rated Current	50A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	Optionally
HVIL	Optionally
Salt Mist	96H
IP Rating	/
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-6mm²
- POKA-YOKE Feature
- HVIL
- Electric shock protection

Application

- PDU, MCU



WNHV IPT-X Three-pins Series

Specification

Technical Parameters

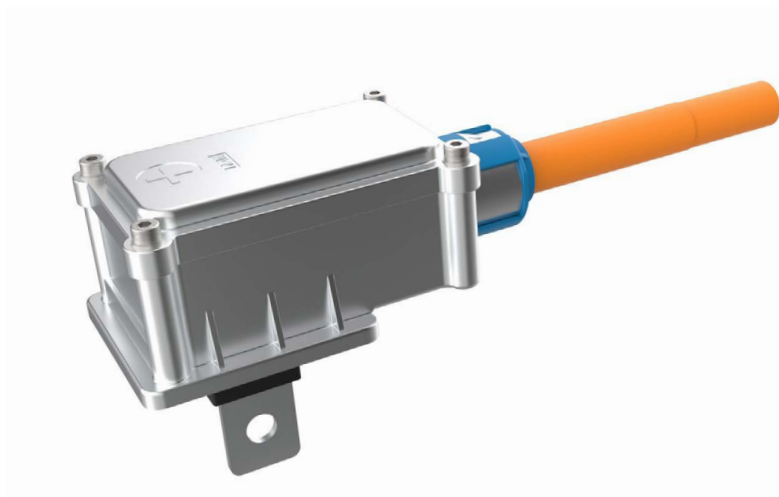
Rated Current	55A MAX
Rated Voltage	800V DC
Withstand Voltage	3000V AC Power
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	NO
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 2.5-6mm²
- POKA-YOKE Feature
- Electric shock protection

Application

- PDU, MCU



WNHV IPT-X Copper Busbar Metal Series

Specification

Technical Parameters

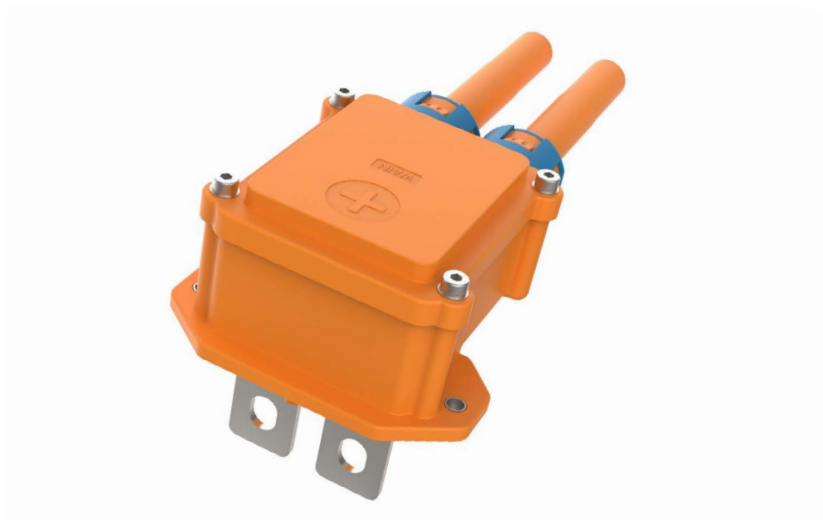
Rated Current	250A MAX
Rated Voltage	630V DC
Withstand Voltage	3000V AC
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	Optionally
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-70mm²
- POKA-YOKE Feature
- Electric shock protection

Application

- PDU, MCU



WNHV IPT-X Copper Busbar Two-pins Series

Specification

Technical Parameters

Rated Current	250A MAX
Rated Voltage	630V DC
Withstand Voltage	3000V AC
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	Optionally
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-70mm²
- POKA-YOKE Feature
- Electric shock protection

Application

- PDU, MCU



WNHV IPT-X Copper Busbar Three-pins Series

Specification

Technical Parameters

Rated Current	250A MAX
Rated Voltage	630V DC
Withstand Voltage	3000V AC
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	360° EMC Shielding
HIVL	Optionally
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	180°

Product Description

- Secondary Lock
- Adapter Cable: 25-70mm²
- POKA-YOKE Feature
- Electric shock protection

Application

- PDU, MCU



WNHVMSD-1 Series

Specification

Technical Parameters

Rated Current	Depending on the fuse
Rated Voltage	600V DC
Withstand Voltage	3450V AC Power / 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	/
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	/

Product Description

- Secondary Lock
- Adapter Cable: On demand (meeting performance parameters)
- HIVL
- Electric shock protection

Application

- PDU, MCU



WNHVMSD-2 Series

Specification

Technical Parameters

Rated Current	350A MAX
Rated Voltage	1500V DC
Withstand Voltage	3500V AC Power 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	/
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	/

Product Description

- Secondary Lock
- Adapter Cable: On demand (meeting performance parameters)
- HIVL
- Electric shock protection

Application

- PDU, MCU



WNHVMSD-X Series

Specification

Technical Parameters

Rated Current	Depending on the fuse
Rated Voltage	750V DC
Withstand Voltage	3000V AC Power 1000V AC Signal
Insulation Resistance	≥ 200MΩ
IP Rating	IP67&IP6K9K (Mating)
Ambient Temperature	-40~125°C
Flame Resistance	UL94 V-0
Shielding	/
HIVL	√
Salt Mist	96H
IP Rating	IP2XB
Outlet Direction	/

Product Description

- Secondary Lock
- Adapter Cable: On demand (meeting performance parameters)
- HIVL
- Electric shock protection

Application

- PDU, MCU



WNHVCS-1 National Standard Charging Gun Series

Specification

Technical Parameters

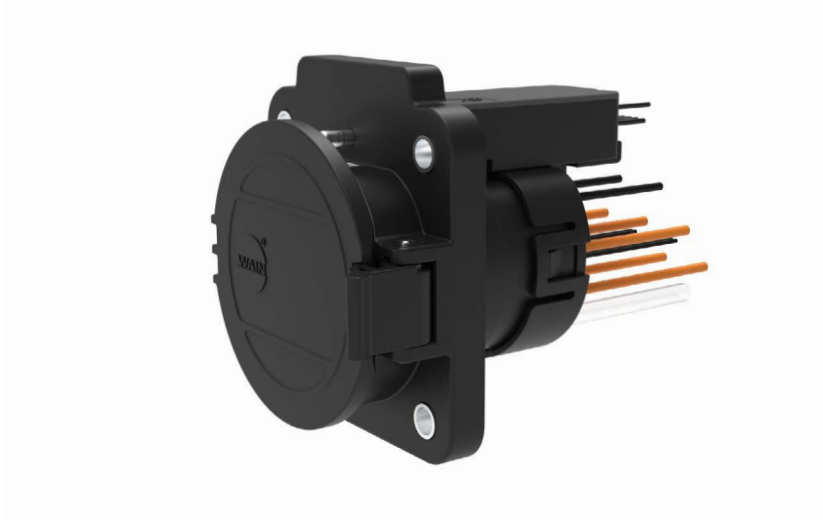
Rated Current	32A MAX
Rated Voltage	250V/440V
Withstand Voltage	2500V AC Power 500V AC Signal
Insulation Resistance	≥ 500MΩ
IP Rating	IP67 (Tail Cable) IP55 (Mating)
Ambient Temperature	-30~50°C
Flame Resistance	UL94 V-0
Mating Cycle Frequency	≥ 10000
Insertion and Separation Forces	< 100N
Relative Humidity	3~95%
RoHS	Compliance
Executive Standard	GB/T20234.1, GB/T20234.2, GB/T18487.1

Product Description

Meet mandatory inspection and certification requirement.
The appearance color can be customized according to customer requirements.

Application

·Charging port



WNHVCS-1 National Standard Charging Socket Series

Specification

Technical Parameters	
Rated Current	32A MAX
Rated Voltage	250V/440V
Withstand Voltage	2500V AC Power 500V AC Signal
Insulation Resistance	≥ 500MΩ
IP Rating	IP67 (Tail Cable) IP55 (Mating)
Ambient Temperature	-40~85°C
Flame Resistance	UL94 V-0
Mating Cycle Frequency	≥ 10000
Insertion and Separation Forces	< 100N
Relative Humidity	95% (40°C)
RoHS	Compliance
Executive Standard	GB/T20234.1,GB/T20234.2,GB/T18487.1

Product Description
Meet mandatory inspection and certification requirement.
The appearance color can be customized according to customer requirements.

Application
·Charging port



WNHVCS-2 National Standard Charging Socket Series

Specification

Technical Parameters

Rated Current	250A MAX
Rated Voltage	1000V DC
Withstand Voltage	3000V DC Power 500V DC Signal
Insulation Resistance	≥ 500MΩ
IP Rating	IP67 (Tail Cable) IP55 (Mating)
Ambient Temperature	-40~85°C
Flame Resistance	UL94 V-0
Mating Cycle Frequency	≥ 10000
Insertion and Separation Forces	< 140N
Relative Humidity	95% (40°C)
RoHS	Compliance
Executive Standard	GB/T20234.1, GB/T20234.3, GB/T18487.1

Product Description

Meet mandatory inspection and certification requirement.
The appearance color can be customized according to customer requirements.

Application

· Charging port



WNHVCS-3 European Standard Charging Gun Series-pile End

Specification

Technical Parameters

Rated Current	32A MAX
Rated Voltage	250V/480V
Withstand Voltage	2500V AC Power 500V AC Signal
Insulation Resistance	≥ 500MΩ
IP Rating	IP67 (Tail Cable) IP55 (Mating)
Ambient Temperature	-30~50°C
Flame Resistance	UL94 V-0
Mating Cycle Frequency	≥ 10000
Insertion and Separation Forces	< 100N
Relative Humidity	95% (40°C)
RoHS	Compliance
Executive Standard	IEC62196-1, IEC62196-2, IEC61851-1

Product Description

Meet mandatory inspection and certification requirement.
The appearance color can be customized according to customer requirements.

Application

·Charging port



WNHVCS-3 European Standard Charging Gun Series-car End

Specification

Technical Parameters

Rated Current	32A MAX
Rated Voltage	250V/480V
Withstand Voltage	2500V AC Power 500V AC Signal
Insulation Resistance	≥ 500MΩ
IP Rating	IP67 (Tail Cable) IP55 (Mating)
Ambient Temperature	-30~50°C
Flame Resistance	UL94 V-0
Mating Cycle Frequency	≥ 10000
Insertion and Separation Forces	< 100N
Relative Humidity	95% (40°C)
RoHS	Compliance
Executive Standard	IEC62196-1, IEC62196-2, IEC61851-1

Product Description

Meet mandatory inspection and certification requirement.
The appearance color can be customized according to customer requirements.

Application

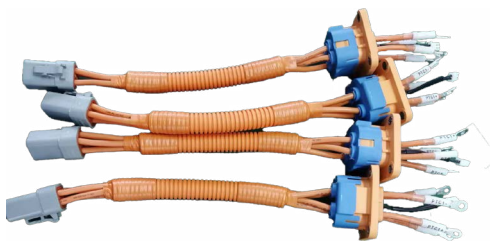
·Charging port

Automotive PDU



WAIN Automotive Cable Series

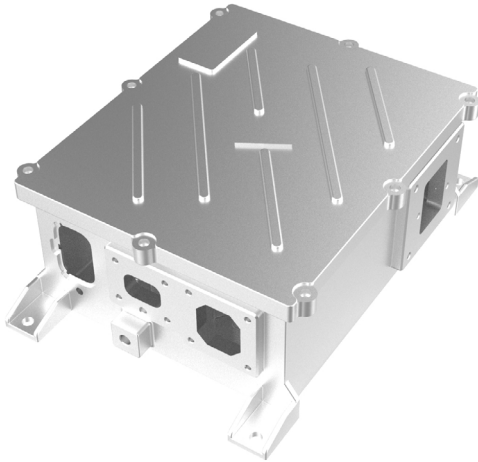
High-voltage cable



Charging cable



Housing parts



Connector parts



WAIN Electric Motorcycle Series

Electric motorcycle plug-in series



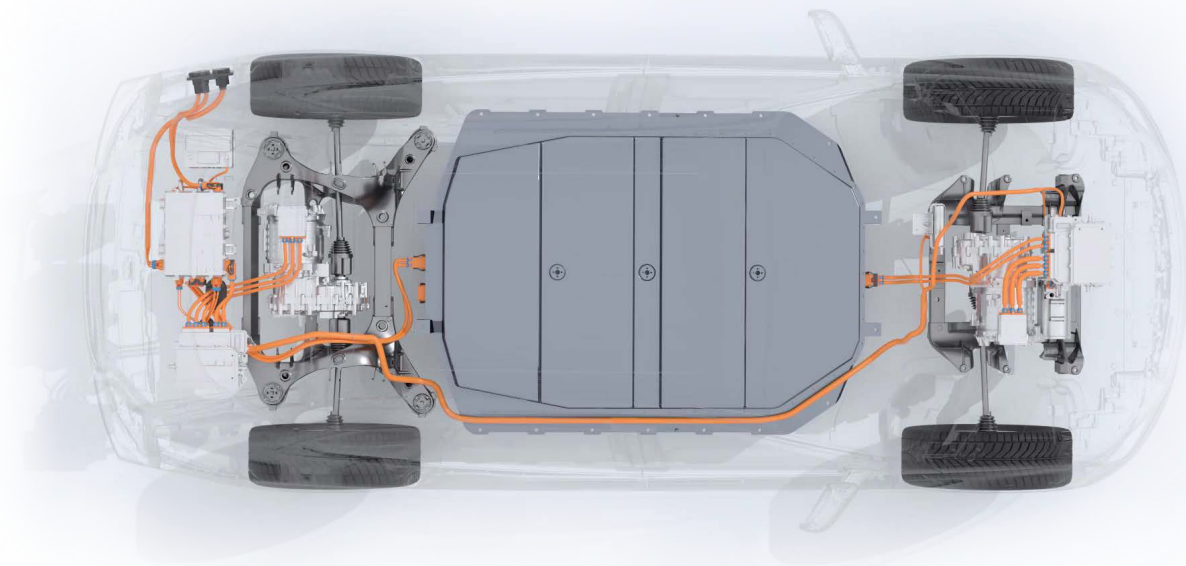
Electric motorcycle snap-on series



WAIN products meet diverse design needs

WAIN product line covers in-vehicle high-voltage interconnection/charging interface requirements

Meet electrical/mechanical/ergonomic requirements in all design areas of the vehicle
Support for customized manufacturing/coordination with customers to design and manufacture wire harness assemblies



Standard compliance

Connectors and harnesses meet national and regional design and testing requirements

Vehicle compliance

Different adaptations of connectors and harnesses for different **Environments**

Simple and easy to use

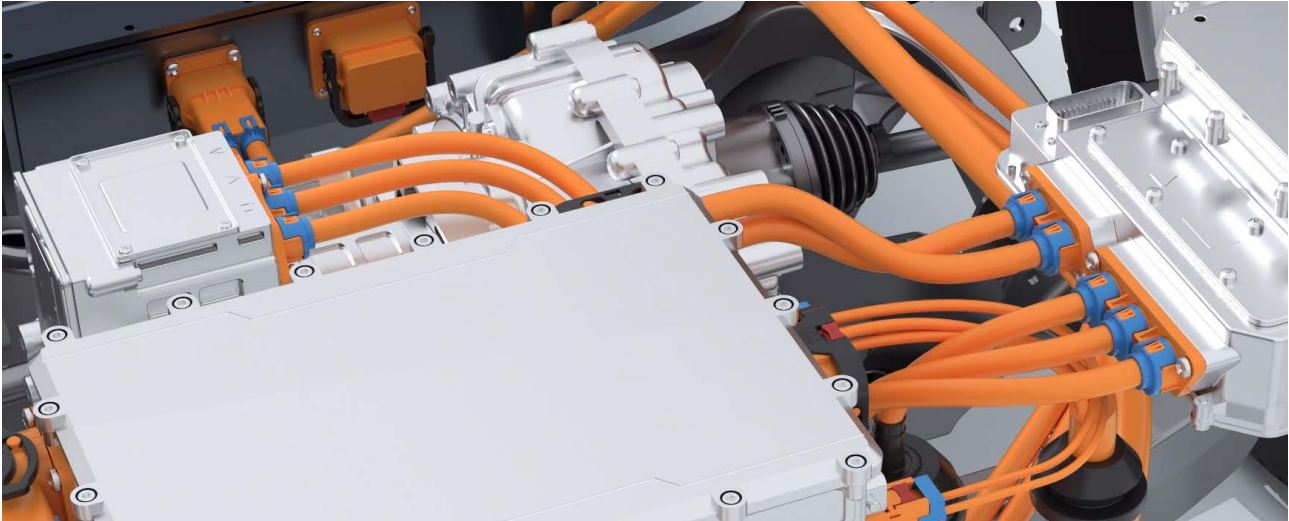
Considering the ergonomics of the customer's installation of connectors and wiring harnesses

Reliable connection

Wiring harnesses and connectors are designed, tested and processed in a rigorous and reliable way

Different drive modes
Different vehicle layout options

Provide unique standardized design
Applied for relevant invention patents



At present, WAIN EV automotive connectors cover high-voltage power interfaces, energy storage interfaces and auxiliary system interfaces.

The products are suitable for front cabin, chassis, tailgate and other **Environmental** conditions. WAIN EV connectors meet the requirements of international standards and customized needs of customers.

Modularized parts, ergonomic design.

Complete product development and production testing and verification capabilities.

Meet the high vibration of power unit and other special working condition tests.

Optional wiring harness design and processing, with the same quality as the connector to meet the needs of different equipment connection.

... ..

Design products with adequate design redundancy with reference to national standards

Meet customer export requirements

Product development in accordance with ISO 9001 requirements to establish a comprehensive quality control system

Product development in accordance with ITAF 16949 related requirements to carry out project work.

Product development simulation + experimental testing to ensure that the design meets the performance index requirements

Automated assembly of products to meet assembly consistency requirements

Products meet the latest version of RoHS requirements

Products meet CE certification requirements (on demand)



Meets China's vehicle-grade specifications and requirements

GB 18384-2020, GB/T 37133-2018, GB/T 20234.X (series)
 GB/T 18488.1-2015, GB/T 30512-2014, GB/T 2423.X
 (series) QC/T 1067.1-2017, QC/T 797, T/CSAE 178-2021
 and other standards



Meets U.S. Standard Requirements

USCAR-2
 USCAR-37 and other standards

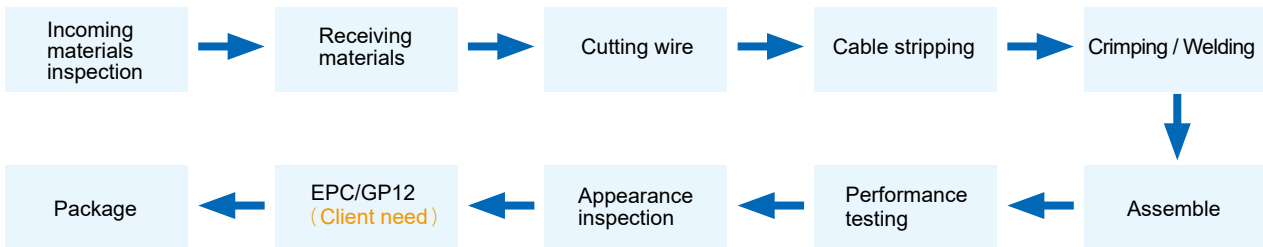


Meets ISO, European and other standards

SAE J1742, SAE J2223
 IEC 61587-3-2006, IEC 60512-5-2 ISO2248-1985,
 ISO19462 and other standards
 GMW/VW/Geely and other OEM standards

* Charging interface development on demand

Support for customized wiring harness: wiring harness customization and processing flow



Design basis
Self-development and adapt to the needs

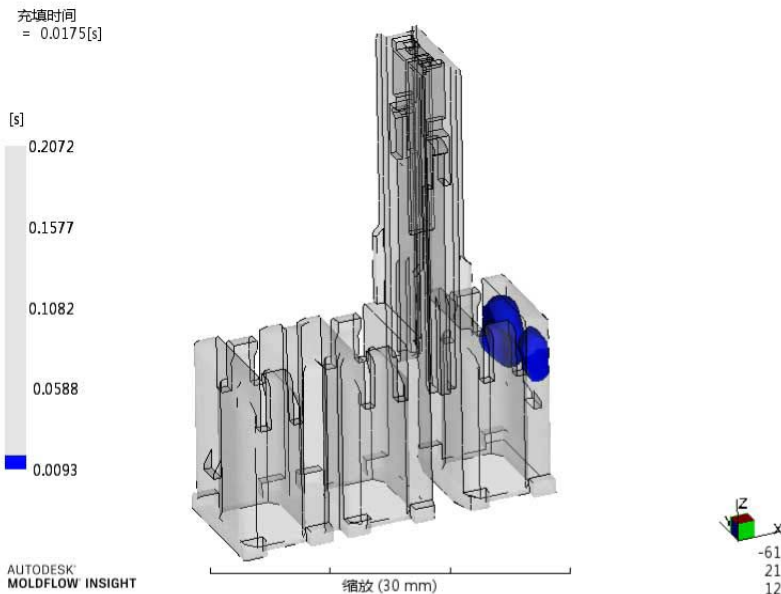
Internal control
Modular design, universal principles

Client request
Standard requirements, customer sensory

Product design to meet the requirements of the current mainstream platform, in addition to adapting to the future needs of adaptation
 Selection of raw materials with a wide range of applicable temperatures and excellent weather resistance.
 Reserve more redundant design margins to meet the special circumstances of short-term overload.
 Rated voltage design for example:
 Modular design of the front connector contact and positioning structure, to maintain the consistency of performance under the multi-core connector.
 After the completion of the design with reference to GB/T16935.1-2008 (IEC60664-1:2007) pollution level 2, over-voltage category II, altitude ≤ 4000m for testing to meet the requirements of the vehicle and the user's working conditions under the use of the **Environment**.

Precise failure risk identification prior to development Simulation during development

Pre-development in accordance with the internal control requirements of the vehicle and charging system, complete risk identification and design FEMA preparation, the project schedule and risk is fully controllable development and design of key structural performance and mold flow analysis, in order to meet the design specifications and automation of the process.



01

Risk identification

Risk identification prior to product development and preparation of FEMA for risk avoidance to meet electrical and mechanical performance specifications.

02

Structural analysis

Structural strength analysis is carried out during the design process, and the design of electrical clearance and creepage distance meets the requirements of electrical performance and mechanical performance.

03

Simulation analysis

Mold flow analysis in product design meets the design intent of product optimization and reduces the risk of failure due to processing.

04

Test verification

According to the test DVP outline for test verification to meet the product functional requirements under multiple test conditions, with the vehicle to simulate the loading test testing

The customer enters the test outline and the test is carried out according to the requirements



- On-vehicle and off-vehicle connector related performance test
- On-vehicle and off-vehicle wiring harness mating control box related experiments
- Professional wiring harness laboratory for experiments
- Familiar with the development of connectors, wiring harnesses and experimental engineers to provide experimental advice
- Assist customers to promote mapping and bench testing

No explicit requirements, customized experiments with customers on usage scenarios

- Customize experimental items according to customer requirements
- Identification of experimental projects based on DOE

Key performance check

Important guarantee of production quality consistency

For the key performance of the product: insulation resistance, withstand voltage, waterproof performance (airtightness test), interchangeability, conduction performance, the execution of the Adopt GP12 to carry out quality statistics in the pre-lot stage to meet the requirement of 0 defects in the factory.

After stabilizing the batch, adopt type test to control the quality threshold.

Electrical performance

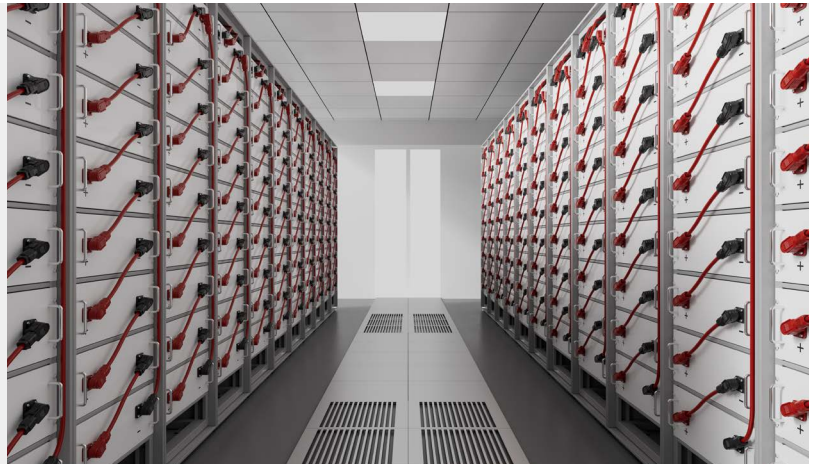
Performs 100% factory inspection of all-in-one terminals to eliminate human influence

Mechanical performance

100% factory inspection to ensure consistency of insertion and mating properties



02



WAIN Energy Storage System Applications

CONTENT

02

WAIN Energy Storage System Applications

Energy storage system solutions	48
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Manual service disconnect - MSD series	63
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WAIN service network	70

WAIN Provides Solutions For Energy Storage Systems

Energy storage battery module systems are widely used to ensure a stable power supply for clean and green energy. As renewable energies are further utilized, storage battery modules are playing an important role in the energy revolution.

With the further **Application** of renewable energy, energy storage battery module system plays an important role in the energy revolution. Energy storage battery module systems can store excess power generated by solar and wind power generation systems and feed it into the grid system when power demand is higher than the grid's supply capacity.

Resilient and durable electrical connections are essential for the safe and reliable operation of energy storage systems.

WAIN electrical connection technology meets the stringent requirements of energy storage module systems.



Solutions For Every **Application** Scenario

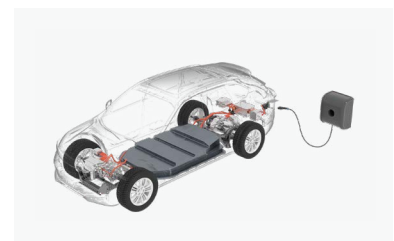


Connection technology for photovoltaic power generation



Connection technology for wind power

Contact your salesperson to get the «WAIN Wind Power Industry Application»



High voltage connector technology for new energy vehicles

Contact your salesperson to get the «WAIN New Energy Vehicle Industry Applications»



Connector technology for energy storage battery system



Connector technology for control cabinets and converter systems



WNHVPC-3 150-300A Series

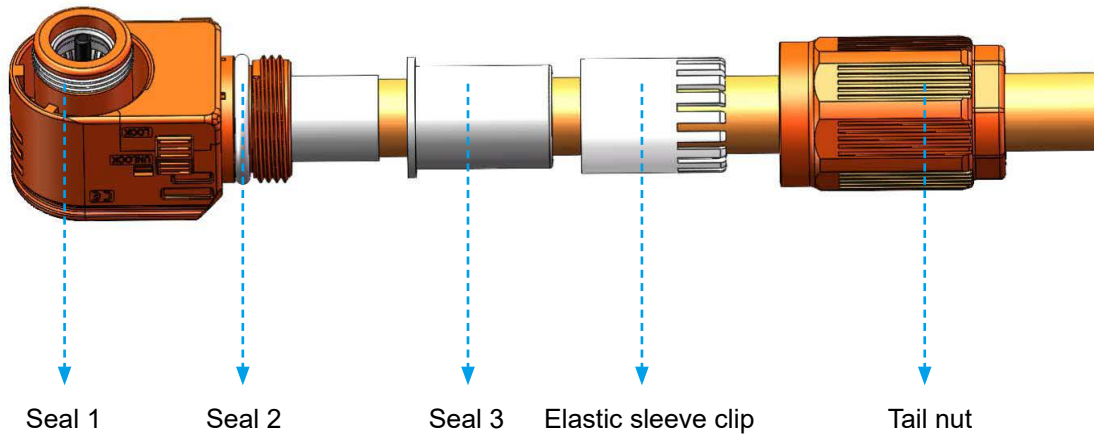
Color	
	Positive housing orange Negative housing black
Electrical Performance	
Rated Current	150~300A
Rated Voltage	1500V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	4000V AC
Temperature Rise	≤ 45K
Environment	
IP Rating	IP67
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 200 times
Insertion and Extraction Force	Mating Force ≤ 75N, Unmating Force ≥ 10N
Material	PBT/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated

Special Functions	
Optional secondary locking function	
360° rotatable	

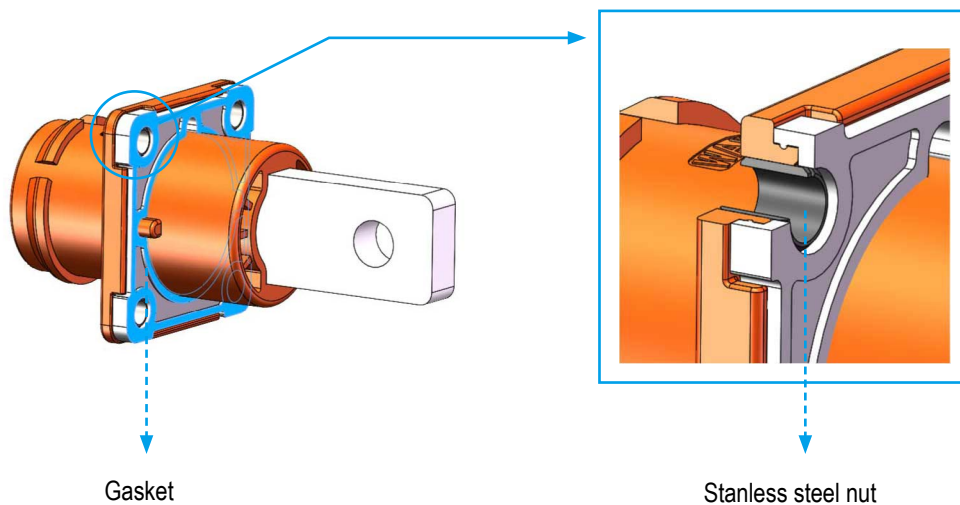
WNHVPC-3 150 ~ 300A Series: Plug sealing structure

Plug terminal assembly overall plastic sealing, the periphery of the use of three seals, seals 1 and socket plug radial compression sealing, tail nut locking radial compression sealing seals 2, at the same time, the internal taper of the tail nut on the elastic sleeve clamp radial and axial pressure, which makes the elastic sleeve clamp on the seals of the 3 axial and radial compression, so as to achieve the sealing effect.



WNHVPC-3 150 ~ 300A Series: Socket sealing structure

The socket gasket adopts 0.5mm high rib (blue side as below) to match with the mounting panel, and the screw holes are equipped with stainless steel nuts to prevent the gasket from excessive compression and deformation resulting in sealing failure. The screw holes are equipped with stainless steel nuts to prevent the gasket from excessive compression and deformation resulting in sealing failure.

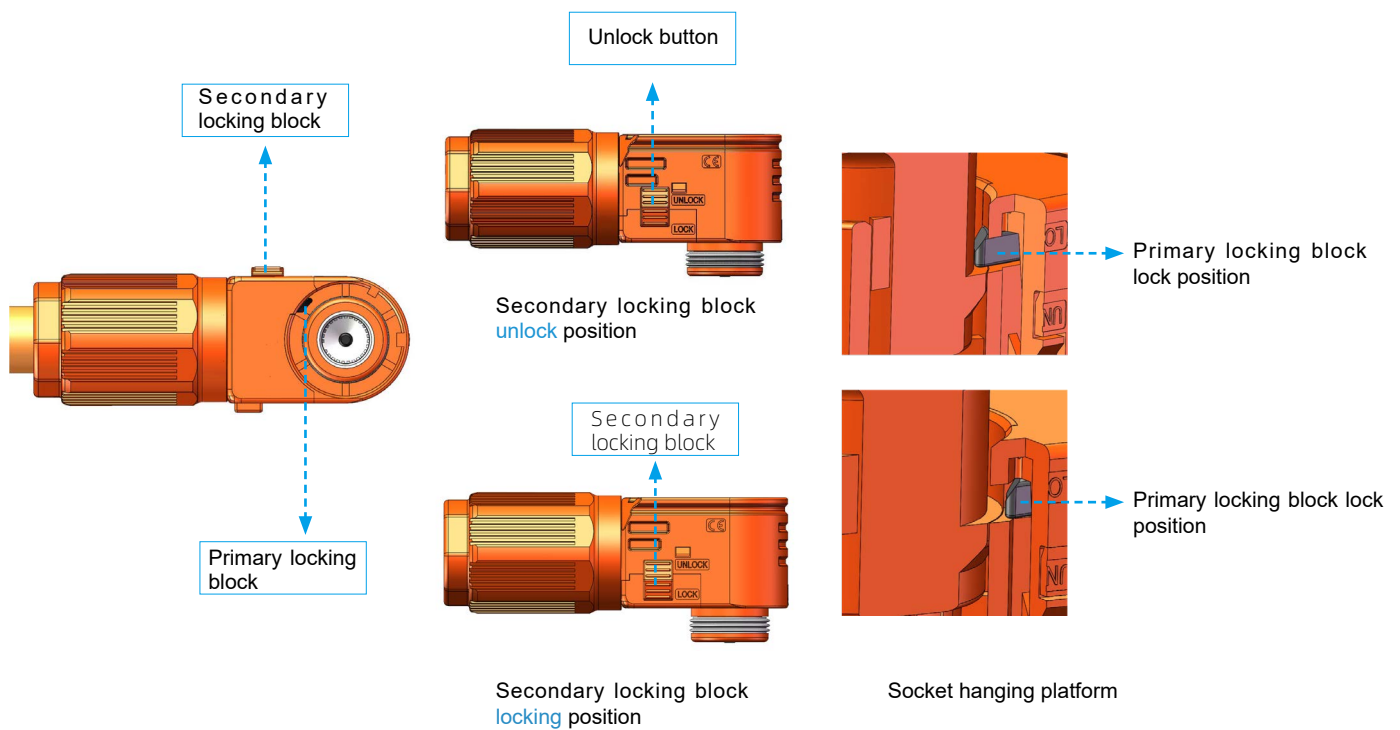


WNHVPC-3 150 ~ 300A Series: Locking structure

As shown in the figure below, the plug has a lock and unlock button, primary locking block, secondary locking block

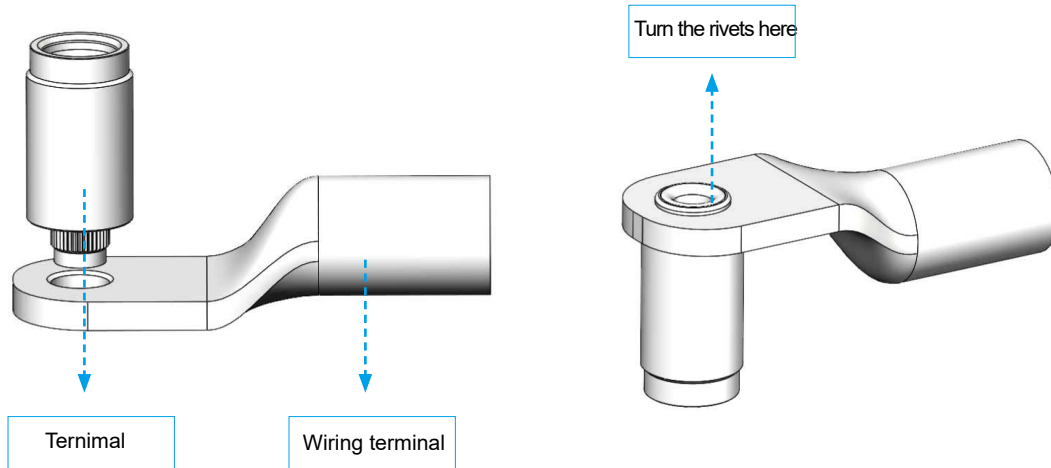
Locking method: the secondary locking block can be inserted in any position, after hearing the clicking sound, the primary locking block is stuck into the socket hanging platform, confirm whether the secondary locking block is in the locking position, if not, push the secondary locking block to the locking position to complete the locking. In the locking position, if not, push the secondary locking block to the locking position to complete the locking;

Unlocking method: push the secondary locking block to the unlocking position (the unlocking button can only be pressed in this state), and then press the unlocking button to the bottom, you can pull out the plug.



WNHVPC-3 150 ~ 300A Series: Terminal adapter structure

As shown in the figure below, the wiring terminal and the terminals are riveted with a straight pattern of interference riveting, with a holding force of up to 1500N, and then riveted to the end of the wiring terminal for riveting. Increase the holding force of the wiring terminal and terminals, and at the same time reduce the connection resistance to reduce temperature rise.





WNHVPC-3 150-300A Series

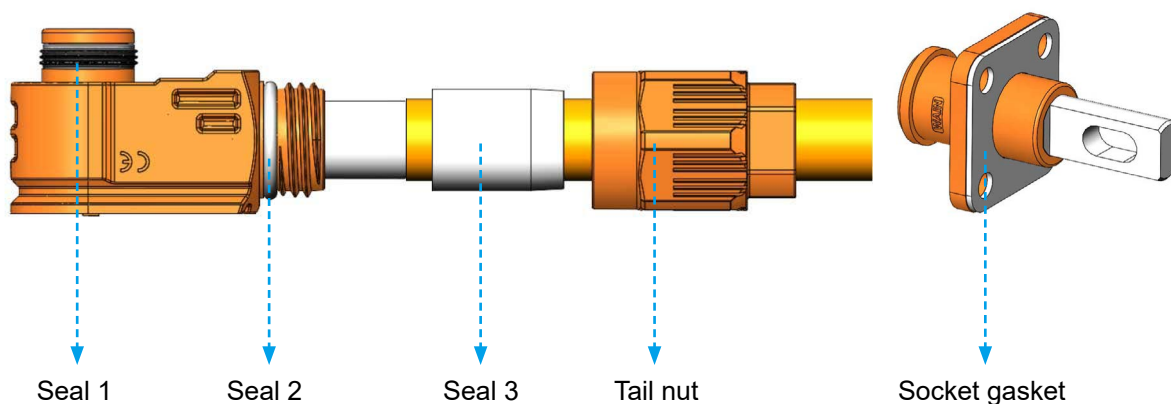
Color	
Positive housing	orange
Negative housing	black
Electrical Performance	
Rated Current	80/120A
Rated Voltage	1000V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	3000V AC
Temperature Rise	≤ 45K
Environment	
IP Rating	IP67
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 200 times
Insertion and Extraction Force	Mating Force ≤ 75N, Unmating Force ≥ 10N
Material	PA66/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated
Specia Functions	
360° rotatable	

WNHVPC-3 80~120A Series: Plug sealing structure

The plug terminal assembly is molded as a whole, and three seals are used in the periphery. Seal 1 is radially compressed when it is plugged into the socket, and seal 2 is radially compressed when the tail nut is locked. Seal 1 and socket radial compression sealing, tail nut locking radial compression sealing on the seal 2, while the tail nut has a taper inside the seal 3 radial compression force, the outer surface of the seal 3 and the tail nut with the inner taper seal, the inner surface and cable The outer surface of the seal 3 is sealed with the inner taper of the tail nut and the inner surface is sealed with the cable to achieve the sealing effect.

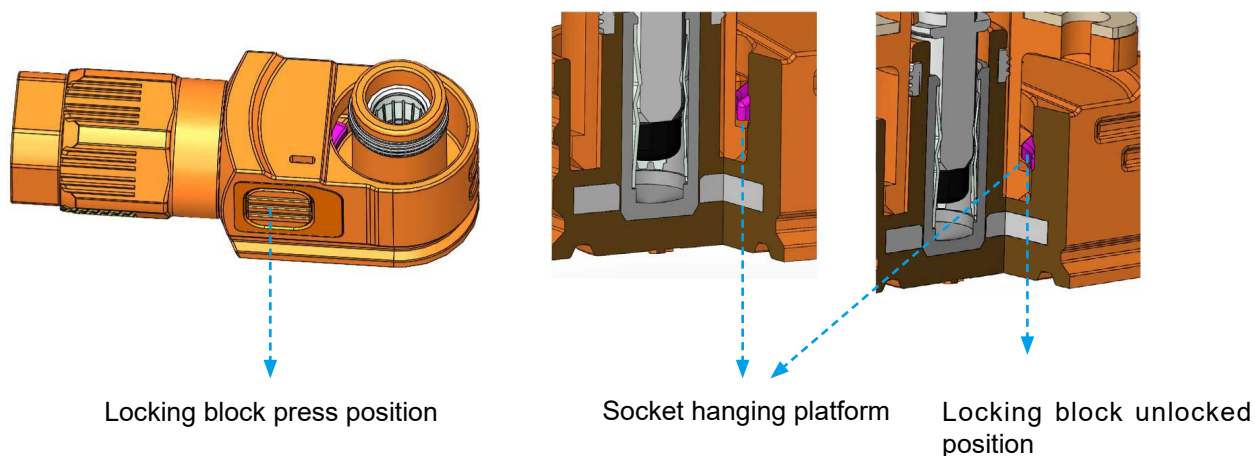
The socket is sealed to the mounting panel with a 60HA silicone rubber gasket.



WNHVPC-3 80~120A Series: Locking structure

As shown in the figure below, the plug is equipped with a locking block, after inserting the locking block, the protruding part of the locking block (the purple part shown in the figure) is stuck into the socket hanging platform to realize the locking of the insertion, and when it is unlocked, it can be pulled out by pressing the locking block to the limit position.

locking block locking position





WNHVPC-3 30-50A Series

Color	
	Positive housing orange Negative housing black
Electrical Performance	
Rated Current	30-50A
Rated Voltage	850V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	4000V AC
Temperature Rise	≤ 45K
Environment	
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 200 times
Insertion and Extraction Force	Mating Force ≤ 75N, Unmating Force ≥ 10N
Material	PA66/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated



WNHVIPT-2 200A Series

Color	Positive housing orange Negative housing black Other colors can be customized
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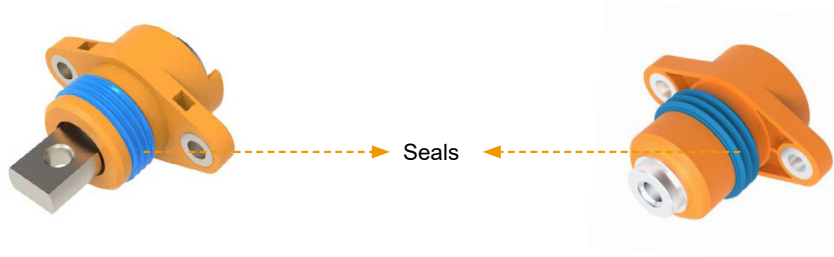
Electrical Performance	
Rated Current	200A
Rated Voltage	1000V
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	3000V AC

Environment	
IP Rating	IP68
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 15 times
Material	PA66/Silicone Rubber/Aluminum Alloy
Surface Treatment	Tin plated

WNHVIPT-2 200A Series: Sealing structure

As shown in the figure below





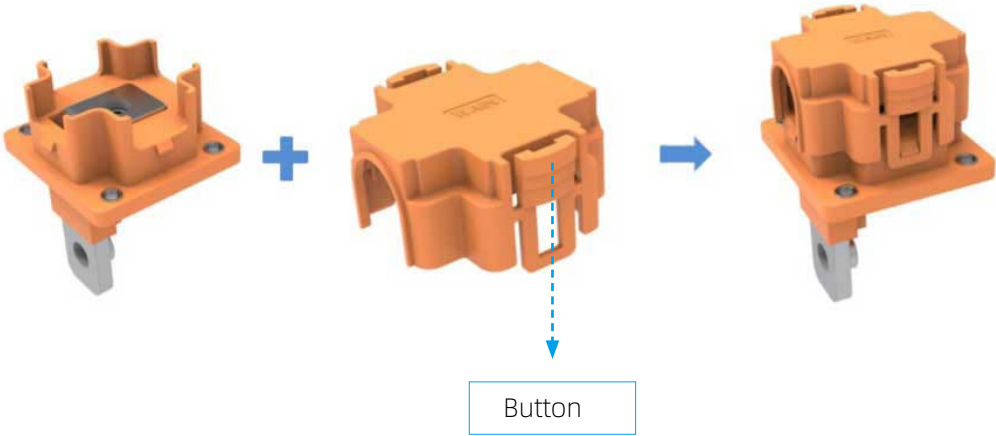
WNHVIPT-3 250A/400A Series

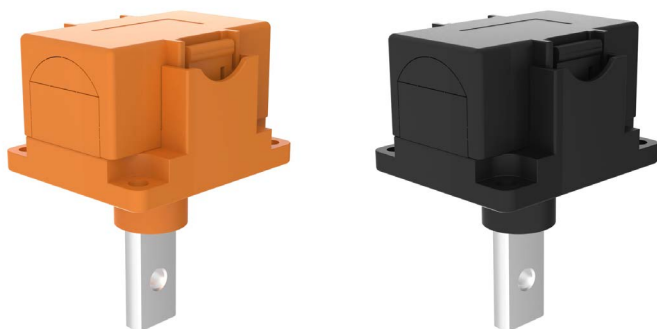
Color	
Positive housing	orange
Negative housing	black
Electrical Performance	
Rated Current	250/400A
Rated Voltage	1500V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	4200V AC
Temperature Rise	≤ 45K
Environment	
IP Rating	IP20
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 50 times
Material	PBT/Silicone Rubber/Aluminum Alloy
Surface Treatment	Tin plated

WNHVIPT-3 250/400A Series: Copper-busbar connection

As shown in the picture below, the plug is equipped with an opening and closing snap button, which locks when pairs are inserted and unlocks when the plug button is pressed.





WNHVIPT-6 250A Series

Color	Positive housing orange Negative housing black
-------	---

Electrical Performance	
Rated Current	250A
Rated Voltage	1500V DC
Contact Resistance	≤ 0.5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	3500V AC/5000V DC
Temperature Rise	≤ 45K

Environment	
IP Rating	IP67(Indise the box), IP20(Outside the box)
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 50times
Material	PBT/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated



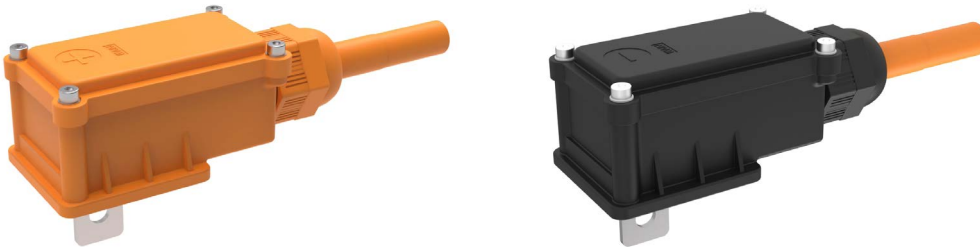
Parallel Storage 250A Series

Color	Positive housing orange Negative housing black
-------	---

Electrical Performance	
Rated Current	250A
Rated Voltage	1500V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	4200V DC
Temperature Rise	≤ 45K

Environment	
IP Rating	IP67(Indise the box), IP20(Outside the box)
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95%
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 50times
Material	PBT/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated



Flexible Copper Row 250A/400A Series

Color		Mechanical Performance	
Color		Mating Cycle Life	≥ 15times
Electrical Performance		Material	PA66/ Silicone Rubber/Aluminum Alloy
Rated Current	250/400A	Surface Treatment	Sliver plated, Tin plated
Rated Voltage	2450V DC/1750V AC		
Insulation Resistance	≥ 200MΩ		
Withstand Voltage	4200V AC		
Temperature Rise	≤ 55K		
Environment			
IP Rating	IP68		
Pollution Level	III		
Ambient Temperature	-40°C ~ +80°C		
Operation Temperature	-40°C ~ +125°C		
Relative Humidity	3%-95%		
Flame Resistance	UL94 V0		
RoHS	Comply with RoHS2.0		



WNHVMSD-2 350A Series

Color	
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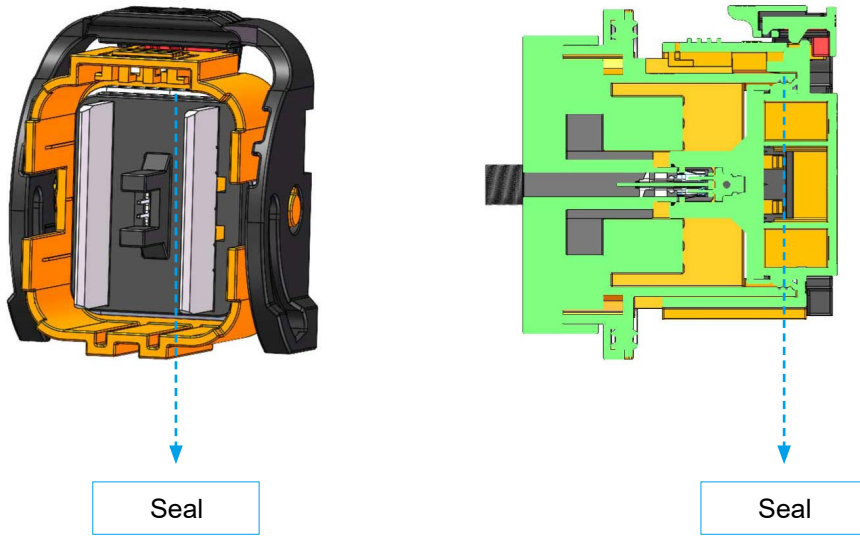
Electrical Performance	
Rated Current	350A
Rated Voltage	1500V DC
Contact Resistance	≤ 5mΩ
Insulation Resistance	≥ 200MΩ
Withstand Voltage	4200V DC

Environment	
IP Rating	IP68 (1m water depth, 24h)
Pollution Level	III
Ambient Temperature	-40°C ~ +80°C
Operation Temperature	-40°C ~ +125°C
Relative Humidity	3%-95 %
Flame Resistance	UL94 V0
RoHS	Comply with RoHS2.0

Mechanical Performance	
Mating Cycle Life	≥ 200times
Material	PA66/ Silicone Rubber/Aluminum Alloy
Surface Treatment	Sliver plated, Tin plated

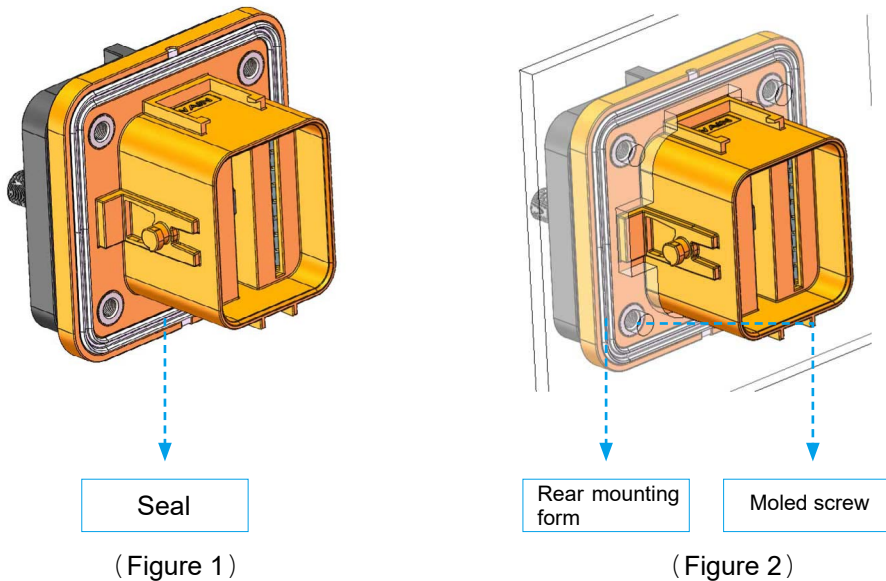
WNHVMSD-2 350A Series: Plug sealing structure

The plug seal is located in the white circle below the plug mounting plate (Figure 1 below) and acts as a seal when mated to the plug (Figure 2 below).



WNHVMSD-2 350A Series: Socket sealing structure

The socket gasket is located one turn above the socket flange (Figure 1 below), and is mounted behind the customer's chassis panel with a molded screw sleeve to achieve the sealing effect (Figure 2 below). The socket gasket is located one turn above the socket flange (Figure 2 below).



WNHVMSD-2 350A Series: Locking structure

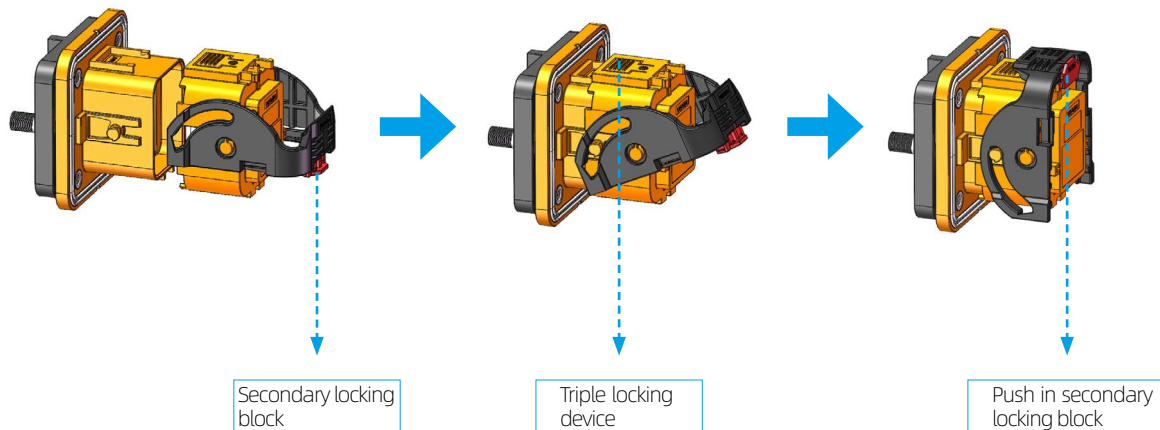
The following figure shows the uninserted state, inserted state, and locked state in order;

Locking method:

① Push the plug in the initial position of the handle into the socket → ② Turn the handle through the plug and socket formed by the three locking position → ③ Turn the handle so that it cannot be turned and push in the secondary locking block to achieve complete locking.

Unlocking method:

① push out the secondary locking block → ② turn the handle to the three locking position, press the shell at the three locking structure and continue to turn the handle → ③ turn the handle to the initial position, remove the plug and socket formed by the three locking positions Turn the handle to the initial position and remove the plug.

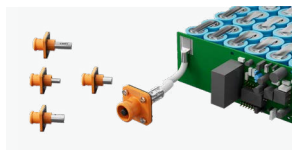
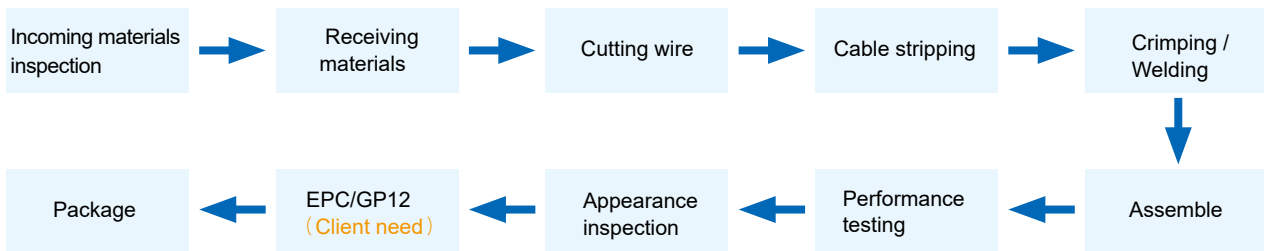




WNHVMSD-1 450A Series

Electrical Performance		Mechanical Performance	
Rated Voltage	600 V DC (Powe), 24 V(Singl)	Mating Cycle Life	≥ 200times
Withstand Voltage	3540 V AC(Powe), 1000 V(Singl)	Material	PA66/ Silicone Rubber/Aluminum Alloy
Pollution Level	III	Surface Treatment	Sliver plated, Tin plated
Insulation Resistance	≥ 200MΩ		
Environment			
IP Rating	IP67&IP6K9K (Mating)		
Pollution Level	III		
locking system	Two-stage handle type(tool-free)		
Terminals and Cable Connection Methods	Screw connection		
Operation Temperature	-40°C ~ +125°C		
Relative Humidity	95% (40°C)		
IP Rating	IP2XB		
Flame Resistance	UL94 V0		
RoHS	Comply with RoHS2.0		

Support for customized wiring harness: wiring harness customization and processing flow



Design basis
Self-development and adapt to the needs

Internal control
Modular design, universal principles

Client request
Standard requirements, customer sensory

Product design to meet the requirements of the current mainstream platform, in addition to adapting to the future needs of adaptation

Selection of raw materials with a wide range of applicable temperatures and excellent weather resistance.

Reserve more redundant design margins to meet the special circumstances of short-term overload.

Rated voltage design for example:

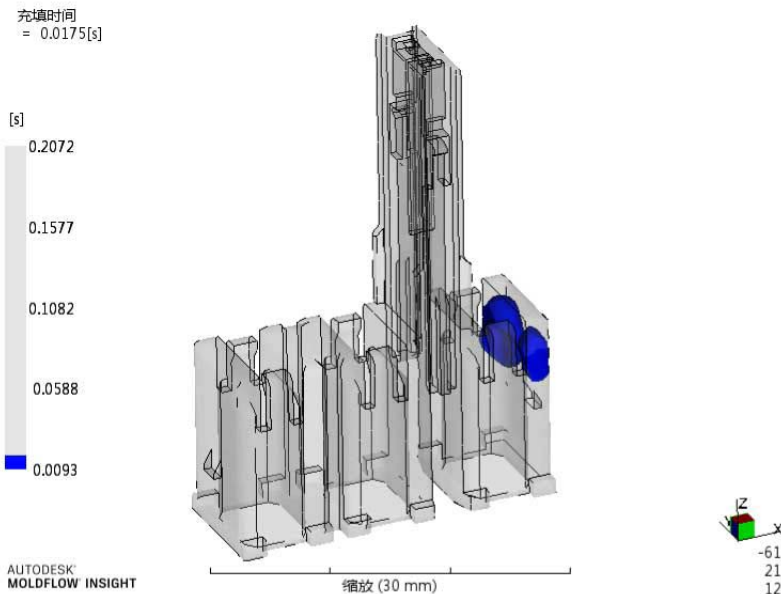
Pre-connector modular design contacts and positioning structure to maintain connector performance consistency

After the design is completed, the connector is calibrated and certified with reference to UL and IEC standards and the user's operating **Environment**.

Simultaneous internal simulation test to maximize the user's actual **Environment** to meet the requirements.

Precise failure risk identification prior to development Simulation during development

Pre-development in accordance with the internal control requirements of the vehicle and charging system, complete risk identification and design FEMA preparation, the project schedule and risk is fully controllable development and design of key structural performance and mold flow analysis, in order to meet the design specifications and automation of the process.



01

Risk identification

Risk identification prior to product development and preparation of FEMA for risk avoidance to meet electrical and mechanical performance specifications.

03

Simulation analysis

Mold flow analysis in product design meets the design intent of product optimization and reduces the risk of failure due to processing.

02

Structural analysis

Structural strength analysis is carried out during the design process, and the design of electrical clearance and creepage distance meets the requirements of electrical performance and mechanical performance.

04

Test verification

According to the test DVP outline for test verification to meet the product functional requirements under multiple test conditions, with the vehicle to simulate the loading test testing

The customer enters the test outline and the test is carried out according to the requirements



- On-vehicle and off-vehicle connector related performance test
- On-vehicle and off-vehicle wiring harness mating control box related experiments
- Professional wiring harness laboratory for experiments
- Familiar with the development of connectors, wiring harnesses and experimental engineers to provide experimental advice
- Assist customers to promote mapping and bench testing

No explicit requirements, customized experiments with customers on usage scenarios

- Customize experimental items according to customer requirements
- Identification of experimental projects based on DOE

Key performance check
Important guarantee of production quality consistency

For the key performance of the product: insulation resistance, withstand voltage, waterproof performance (airtightness test), interchangeability, conduction performance, the execution of the Adopt GP12 to carry out quality statistics in the pre-lot stage to meet the requirement of 0 defects in the factory.

After stabilizing the batch, adopt type test to control the quality threshold.

Electrical performance

Performs 100% factory inspection of all-in-one terminals to eliminate human influence

Mechanical performance

100% factory inspection to ensure consistency of insertion and mating properties



International Service network



WAIN established a branch in Germany in 2013.

WAIN established a branch in Singapore in 2019

There are agents or distributors in Europe, America, Southeast Asia, South Korea, Japan, etc.

Domestic service net work



Service hotline: [400-882-5885](tel:400-882-5885)

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