



FSMC-RY series
Cast resin busbar system
(400A-6300A)



<https://www.rybusway.com>

 **RENYUN**

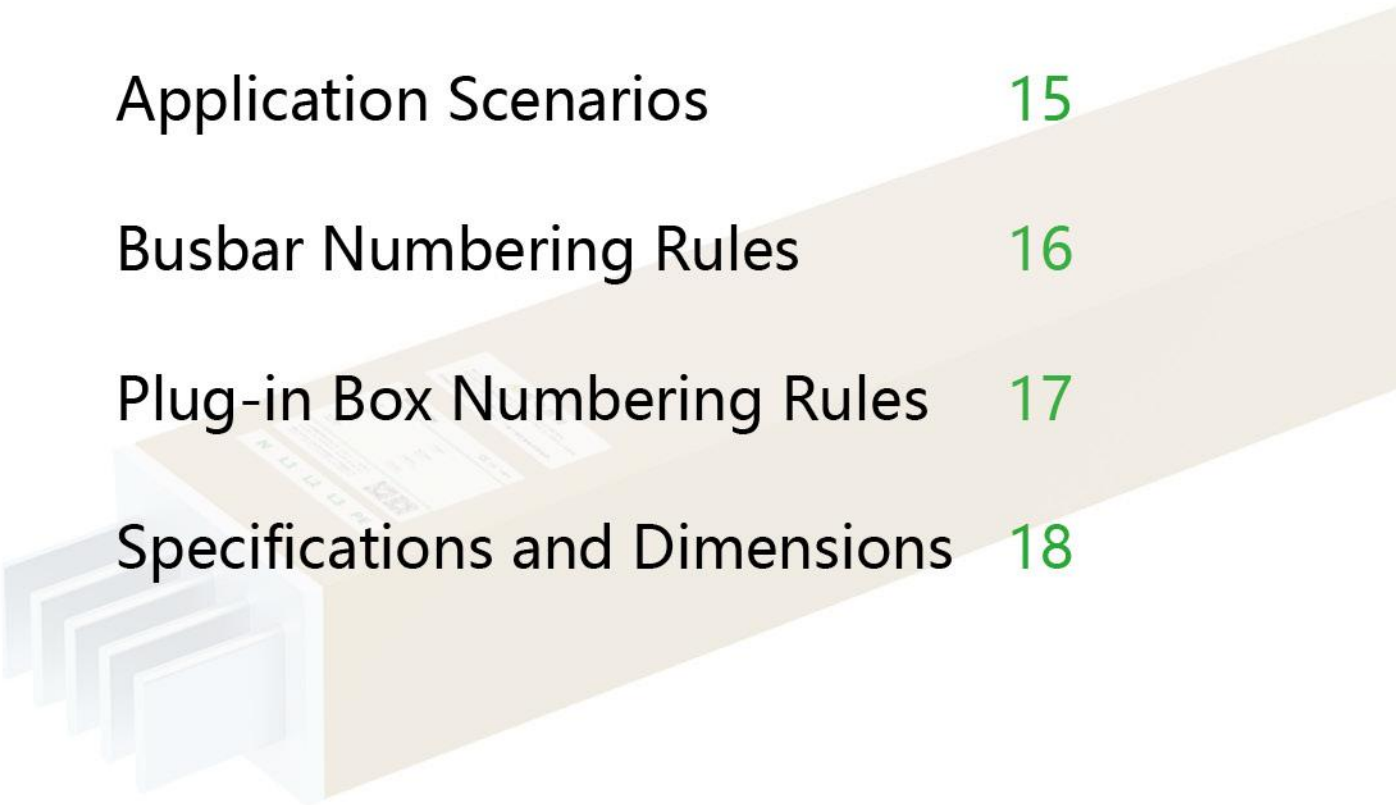


In some relatively special electrical scenarios, the service life and safety of cables are difficult to guarantee, such as humid, dusty, and corrosive gas environments (e.g., chemical industry, tunnels, ships); fire - and explosion - proof places (e.g., petroleum, mines); and direct burial, underwater, or areas prone to mechanical impact. Cast resin busbars have emerged as the times require. They are integrally cast with epoxy resin, with a protection level of up to IP68, featuring high strength and corrosion resistance, and can ensure power transmission in various harsh environments.



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Company Profile

Renyun (Hunan) Busbar Co., Ltd. (founded in 2008) is a technology-driven power transmission & distribution enterprise. Focused on busbar R&D, production, sales, and service, we aim to build a world-class brand.

Key Strengths:

50,000m² production base with 8 automated lines

12 global offices ensuring worldwide coverage

Comprehensive busbar solutions: compact, air-insulated, fire-resistant, high-voltage enclosed, resin-cast, tubular, flexible, and energy-saving types

Certifications:

ISO 9001, ISO 14001, ISO 45001, CE

8S management standard implemented



Mission: Enable the world to enjoy advanced, safe, and energy-efficient busbar power supply systems.

Goal: Continuously push technological boundaries while consistently delivering service beyond customer expectations.

● ISO system certificate



● Patent certificate, CCC, CE, Kema-Keur certificate

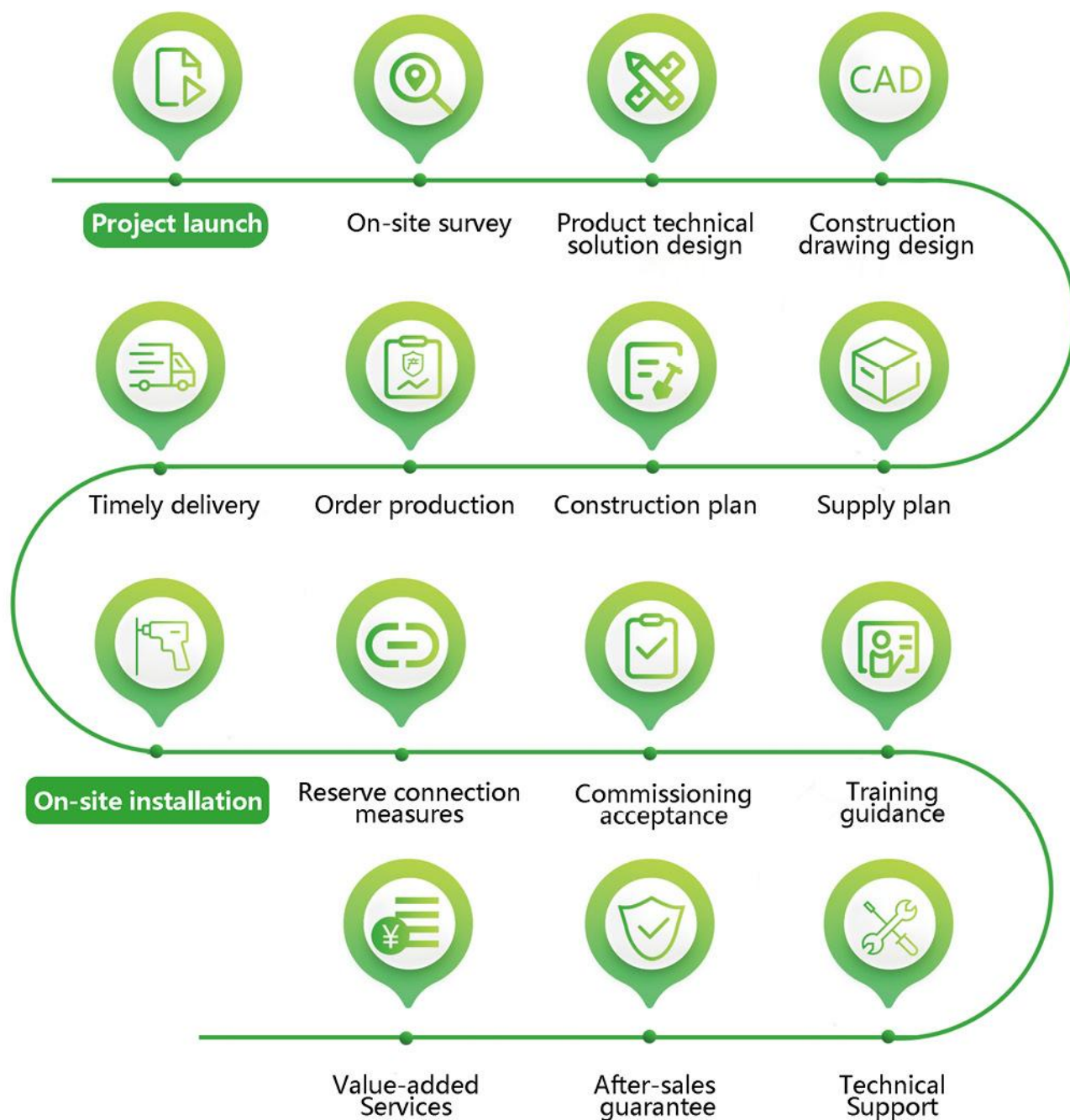


● Trusted by Numerous Renowned Enterprises



One-stop busbar system supplier
Professional, High quality, Trustworthy

Renyun busbar overall solution



RenYun Global Strategic Distribution



60+

Exporting countries
and regions

10+

Global Service
Network

100+

Professional and
technical personnel

300000+

Cumulative customer
service

Renyun (Hunan) Busbar Co, Ltd.

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Middle East: United Arab Emirates, Saudi Arabia, Qatar

Africa: Egypt, South Africa, Nigeria

Australia: Australia, New Zealand

Europe: Germany, Poland, Netherlands, Russia

North America: United States, Mexico

South America: Brazil, Peru, Chile

Southeast Asia: Singapore, India, Indonesia, Malaysia, Bangladesh

Advanced production technology



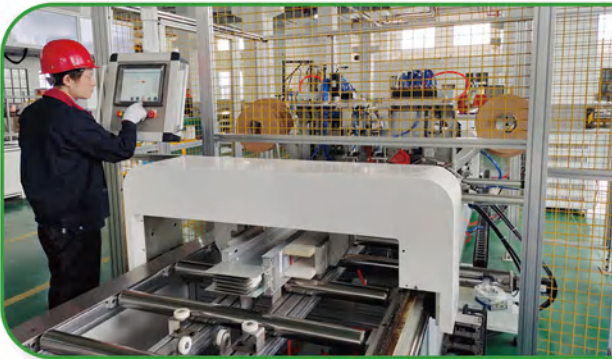
Automatic Busduct Housing Blanking and Forming Line

Fully automated equipment is used to perform blanking, forming, punching, punching insertion interfaces, and cutting operations on high-quality carbon structural steel housings for busducts, effectively ensuring the strength, quality, and precision of the produced housings.



Advanced Welding Process

The busbar welding adopts the advanced friction stir welding technology in the industry, which makes the weld seam uniform and smooth. It greatly reduces the impact of welding on the electrical conductivity, reduces heat generation, and is energy - saving and environmentally friendly.



Automatic busduct riveting and assembly line

The fully automated busduct riveting line perfectly combines robots with self-piercing riveting technology. It can intelligently adjust the riveting force and the spacing between rivets, ensuring that the assembled busduct has a compact, regular and aesthetically pleasing structure.



Precise sawing of special-shaped bent housings

In the design of busducts, various elbows require the housing to be cut at different angles. A fully automatic double-head CNC cutting machine is used to saw and cut the material according to the required dimensions and specified angles, ensuring that the special-shaped bent housings are perfectly horizontal and vertical and fit tightly after welding, without any angular deviation.

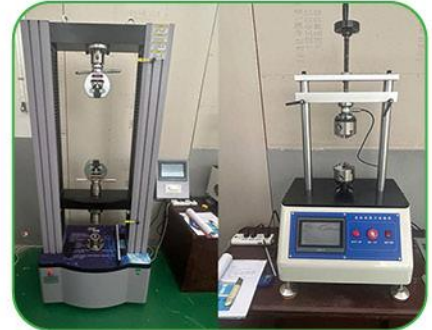
Strict quality control



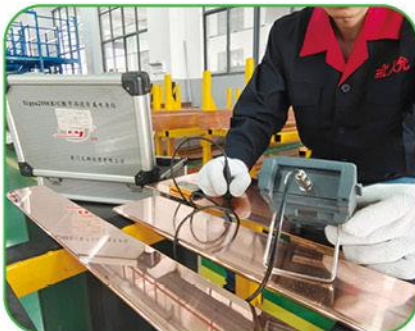
High-current temperature rise performance detector



Integrated Tester for Intelligent Busbar System



Fully Automatic Tensile/Torsion Force Detection



Conductivity Detection of Busbars



Coating Thickness Detection of Copper Busbars



Salt Spray Test for Components and Parts



Paint Film Thickness Detection



Paint Film Performance Testing



Flatness and Appearance Inspection of Copper Busbars

Professional Project Management

Comprehensive Business Plan

An experienced business team conducts project and user needs analysis, incorporates relevant standards to ensure the rational implementation of user requirements, customizes business solutions, and offers a variety of cooperation models for selection.



Professional Technical Solution

A seasoned industry technical team conducts on - site surveys and customizes professional technical solutions for each project. They can appropriately select or design different types of busbars for various scenarios such as factories, real - estate projects, data centers, residential electrical shafts, and distribution rooms, providing customers with a safe busway power supply system.

Comprehensive Process Control

Develop comprehensive supply and construction plans before project implementation to ensure each project phase proceeds in an orderly manner. Conduct objective and accurate risk assessments, and strictly adhere to customer delivery schedules from both product manufacturing and on-site installation perspectives.



Comprehensive Service Assurance



Powerful Service Team

Senior installation service engineers have served clients such as Changsha Rail Transit Group, Changsha Huanghua International Airport, Hunan Television Station, China National Petroleum Corporation, BYD, and Huawei, earning unanimous praise and trust from users. The service team, spread across major cities nationwide, ensures prompt on-site arrival based on project proximity.

Comprehensive Service Provisions

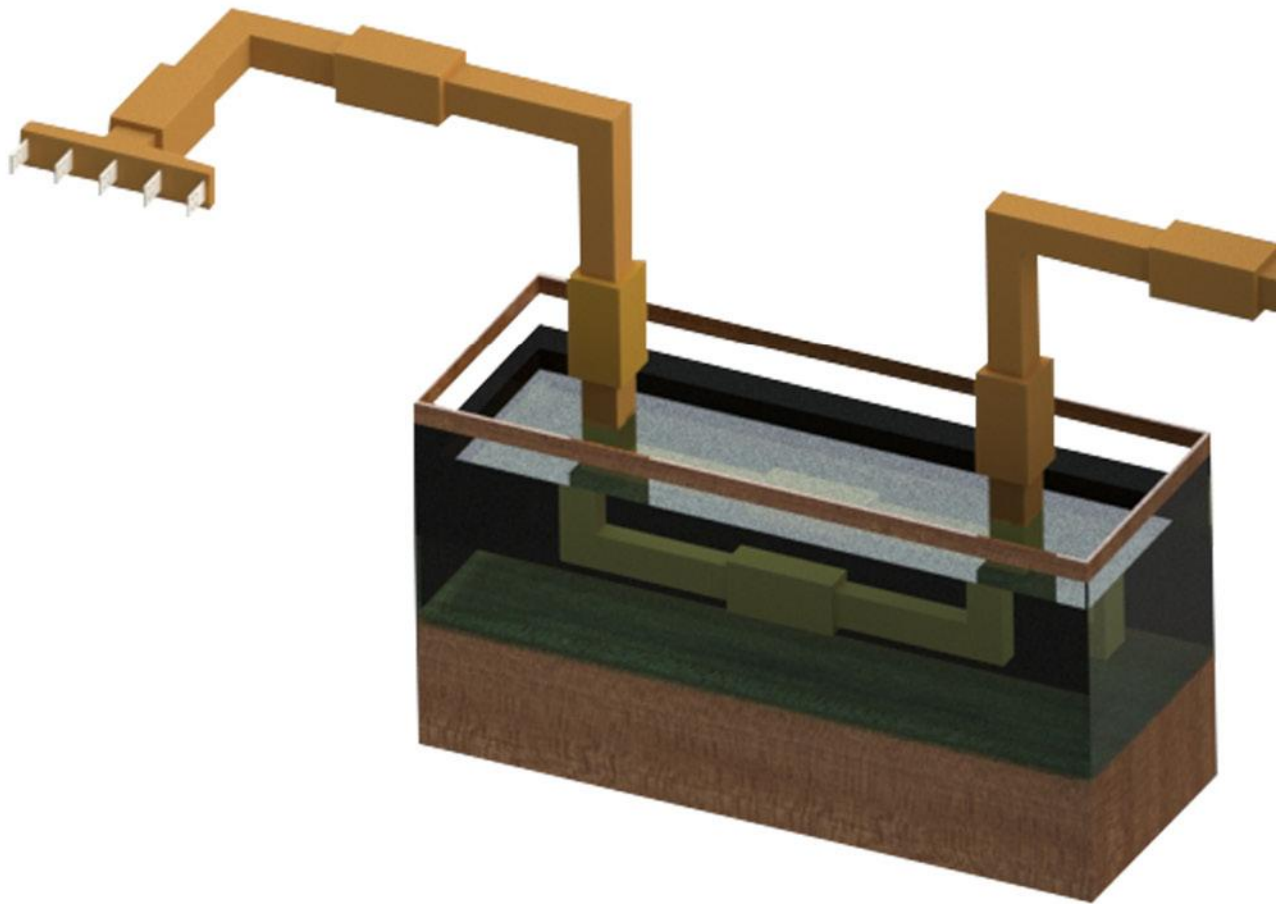
Provide standardized service support for customer projects, including: professional training programs, comprehensive technical documentation, 2-hour prompt response with rapid on-site arrival, first-year warranty and lifetime maintenance support, spare parts availability at any time, and support for upgrades and retrofitting. Ensure customers experience all-round service comparable to a dedicated caretaker.



Thoughtful Value-Added Services

Drawing on years of industry experience, we have customized a variety of value-added services to meet the diverse service needs of different clients, including annual inspection service, trade-in replacement, upgrade & retrofitting, and customized accessories. We always prioritize client-centric thinking and actively listen to their voices.

Product Overview



Excellent Protection Performance (IP68 Fully Sealed)

Adopting an integral epoxy resin casting process, it forms a seamless insulator with a protection level of IP68, enabling long-term operation under water or direct burial installation. Its airtightness completely isolates dust, moisture, and corrosive gases, solving the problem of electrochemical corrosion of metal enclosures in scenarios such as chemical industry and marine environments. The designed service life can reach more than 50 years.

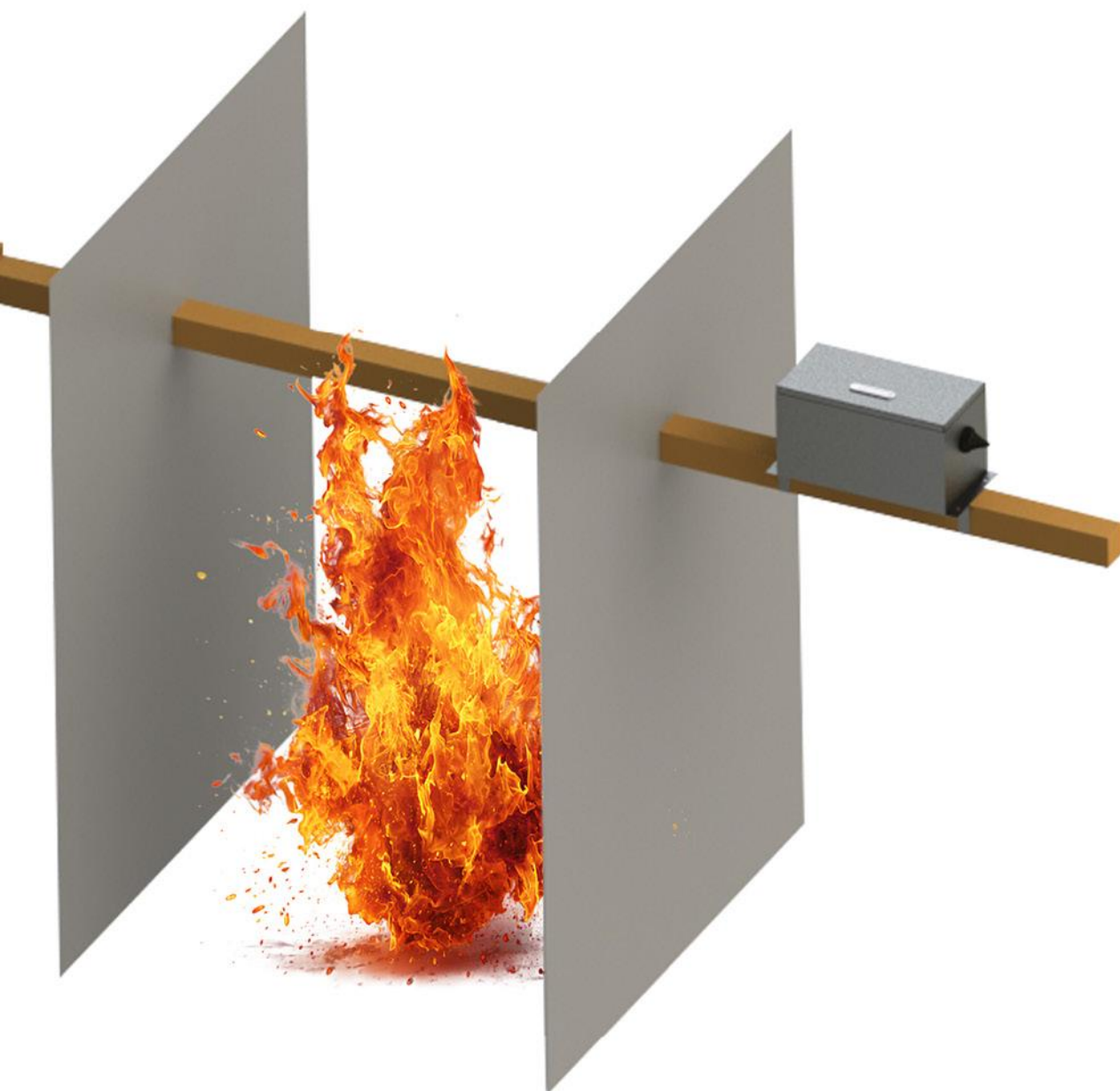
Four Prevention Safety System

Fire prevention: Class A refractory materials can maintain unobstructed circuits for 90 minutes in 1000°C flames without halogen release.

Explosion prevention: High mechanical impact resistance, certified by IECEx Explosion-proof Standard 611.

Corrosion prevention: Resistant to 98% concentrated sulfuric acid and salt spray for over 10,000 hours.

Waterproofing: Can operate continuously at 1 meter underwater without short circuits.



Resistance to External Interference

It boasts excellent structural strength and seismic performance, is not easily damaged by insects or rodents, and requires no maintenance.

Adaptability to Extreme Environments Operates in a wide temperature range

from -40°C to $+130^{\circ}\text{C}$ (with resin remaining crack-free).
Adapts to environments at an altitude of over 5,000 meters.
Maintains stable operation in areas with pollution degree 4.

Technical Parameter Table of FSMC-RY Series Busbar Products

Copper conductor

Standards		JB/ T13690-2019, GB/T7251.6-2015(CCC), EN61439-6:2012(CE), IEC 60331-1(Fireproof), EN 60079(explosion-proof)												
Conductor Materials		Cu*Ag ≥ 99.95%												
Enclosure		Epoxy resin												
Per Unit Length		The standard length is 3 meters, and other lengths from 0.5 meters to 6 meters can be customized												
IP Rating		IP68(without tap changer)/IP54 (with tap changer)												
Rated Insulation Voltage	V	Optional high voltage: 10kV and 35kV												
Rated Voltage	V	Optional high voltage: 10kV and 35kV												
Rated Frequency	Hz	50												
Phase Configuration		3P+100%N and 3P+100%N+50%PE are available for selection												
Rated Current	A	400	500	630	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Resistance (R20)	mΩ/m	0.0121	0.0091	0.0073	0.0060	0.0045	0.0036	0.0026	0.0023	0.0013	0.0014	0.0011	0.0008	0.0006
Reactance (X20)	mΩ/m	0.0041	0.0033	0.0028	0.0026	0.0022	0.0019	0.0016	0.0015	0.0008	0.0007	0.0004	0.0002	0.0002
Reactance (X20)	mΩ/m	0.0130	0.0096	0.0077	0.0064	0.0049	0.0040	0.0029	0.0027	0.0015	0.0015	0.0012	0.0008	0.0007
Voltage Drop at Power Factor (cosφ) = 0.9	V/m	0.0087	0.0081	0.0083	0.0090	0.0085	0.0087	0.0085	0.0090	0.0061	0.0078	0.0071	0.0069	0.0102
Mechanical Load Capacity	kg	30				45			60			75		
Rated Short-Time withstand Current	kA	30							65		80		100	
Rated Peak withstand Current	kA	63							176			220		
Rated Impulse withstand Voltage	kV	12												
Clearance	mm	≥ 8												
Creepage Distance	mm	≥ 8												
Insulation Resistance	MΩ	≥ 10												
Dielectric Properties		No breakdown or flashover at 4KV/5s												
Temperature Rise	K	≤ 70 (at all conductive connections) ≤ 55 (on insulating surfaces)												
Number of Tap-Off Points		Minimum: 1 meter per piece												
Maximum Fixed Spacing	m	1												
Installation Method		Vertical or horizontal												
Operating Conditions	Ambient air temperature: maximum +130°C , minimum -40°C .													

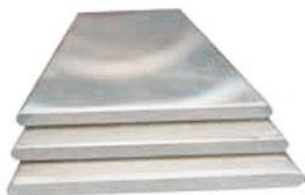
Technical Parameter Table of FSMC-RY Series Busbar Products

Aluminum conductor

Standards		JB/ T13690-2019, GB/T7251.6-2015(CCC), EN61439-6:2012(CE), IEC 60331-1(Fireproof), EN 60079(explosion-proof)												
Conductor Materials		Al ≥ 99.50%												
Enclosure		Epoxy resin												
Per Unit Length		The standard length is 3 meters, and other lengths from 0.5 meters to 6 meters can be customized												
IP Rating		IP68(without tap changer)/IP54 (with tap changer)												
Rated Insulation Voltage	V	1000V(without tap changer)/800V(with tap changer)												
Rated Voltage	V	1000V(without tap changer)/400V(with tap changer)												
Rated Frequency	Hz	50												
Phase Configuration		3P+100%N and 3P+100%N+50%PE are available for selection												
Rated Current	A	400	500	630	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Resistance (R20)	mΩ/m	0.0097	0.0081	0.0061	0.0048	0.0037	0.0030	0.0025	0.0019	0.0015	0.0012	0.0009	0.0008	0.0006
Reactance (X20)	mΩ/m	0.0033	0.0029	0.0024	0.0021	0.0018	0.0016	0.0015	0.0012	0.0009	0.0006	0.0003	0.0002	0.0001
Reactance (X20)	mΩ/m	0.0104	0.0085	0.0065	0.0052	0.0040	0.0033	0.0028	0.0022	0.0017	0.0013	0.0010	0.0008	0.0007
Voltage Drop at Power Factor (cosφ) = 0.9	V/m	0.0070	0.0072	0.0069	0.0072	0.0070	0.0073	0.0082	0.0074	0.0071	0.0067	0.0060	0.0068	0.0097
Mechanical Load Capacity	kg	30				45			60			75		
Rated Short-Time withstand Current	kA	30							65		80		100	
Rated Peak withstand Current	kA	63							176			220		
Rated Impulse withstand Voltage	kV	12												
Clearance	mm	≥ 8												
Creepage Distance	mm	≥ 8												
Insulation Resistance	MΩ	≥ 10												
Dielectric Properties		No breakdown or flashover at 4KV/5s												
Temperature Rise	K	≤ 70 (at all conductive connections) ≤ 55 (on insulating surfaces)												
Number of Tap-Off Points		Minimum: 1 meter per piece												
Maximum Fixed Spacing	m	1												
Installation Method		Vertical or horizontal												
Operating onditions		Ambient air temperature: maximum +130℃ , minimum -40℃ .												

Raw Material Properties

High-Quality Conductor



High-purity electrolytic copper is preferably selected. Its electrical conductivity reaches over 57 MS/m (100% ACS), and the copper content is over 99.95%. Special processing techniques are adopted to strictly control the impurity content within the conductor. Compared with traditional busbars of the same cross-section, the loss is reduced by 3% - 5%. There are multiple options for the conductor surface treatment, such as tin plating and silver plating. The alloy electroplating process is adopted, leading to a 5% - 8% reduction in contact resistance compared with the common electroplating process of traditional busbars.

(Note: Aluminum conductors can also be selected, with an aluminum content of >99.50%. The surface of the conductor is treated with copper plating and tin plating processes.)

Casting Material



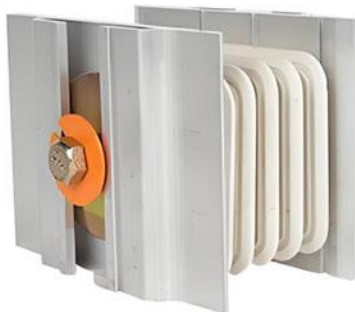
High-quality epoxy resin material, compliant with ROHS environmental certification and UL94 flame retardancy standards.

T_g (glass transition temperature) > 130°C (prevents high-temperature deformation).

After being frozen at -40°C, the 10-meter drop test shows no cracks on the shell.

Resin does not carbonize under short-circuit impact of 3 times the rated current.

The color of the casting surface can be customized through formulation adjustment.



Combination Connector

adopts double-ended torque shear bolts with a standard tightening torque of 70 ± 10 N·m. When tightened until the external connector and nut shear off, the torque meets the specified requirement. The double-sided overlapping busbar phase bars feature surface tin-plated treatment to enhance the electrical conductivity of the connection points.



Casting Process

High-precision automatic mixing and proportioning of casting liquid ensures uniform curing time, strength, and leveling property, all reaching optimal standards.

Vacuum mixing and casting equipment with a fully enclosed structure prevents air from entering during the mixing of casting liquid, resulting in a bubble rate of less than 0.01%.

A constant-temperature, vibration-free curing workshop ensures the casting liquid cures and shapes at 20°C (with a temperature fluctuation of $\leq \pm 2^\circ\text{C}$).

Application Scenarios

The FSMC-RY series busbar has a complete range of grades and superior performance, and can be widely used in the following situations



Suitable for shipyards, docks, offshore mining platforms, and other areas with high humidity, high salinity, and high waterproofing requirements.



Applicable to paper mills, petroleum plants, chemical factories, and other locations with harsh operating environments involving salt spray, acid, and alkali.



In iron and steel metallurgical plants, mines, and mechanical & electronic fields, its high-temperature resistance and explosion-proof performance can cope with high-temperature furnaces and environments with mechanical impact.



Suitable for outdoor installation, featuring weather resistance, sun resistance, waterproofing, protection against insects and rodents, and maintenance-free operation.

Busbar Numbering Rules

FSMC-RY series
Cast resin busbar system
(400A-6300A)

The catalog number consists of a title and a suffix, where the title indicates the specifications and the suffix indicates the functional parameters. When selecting a model, choose color-coded codes from the left-hand table as needed (select one) to replace the corresponding codes in the product model.

		F	05	5P	T	L	FE
Product Series	Code						
Epoxy resin cured insulation busbar	F						
Current Rating	Code						
400A	04						
500A	05						
630A	06						
800A	08						
1000A	10						
1250A	12						
1600A	16						
2000A	20						
2500A	25						
3200A	32						
4000A	40						
5000A	50						
6300A	63						
System Wiring Configuration							
3-phase 4-wire system	4P						
3-phase 5-wire system	5P						
Neutral + 3 Line Conductor Material							
Copper	T						
Aluminium	L						
Protective Earth Conductor Material	Code						
Copper	T						
Aluminium	L						
Component Type	Code						
Straight Busbar	L						
Flange	FE						
Elbow	LR						
Tee	ZR						
T connection	T						
Expansion joint	EZ						

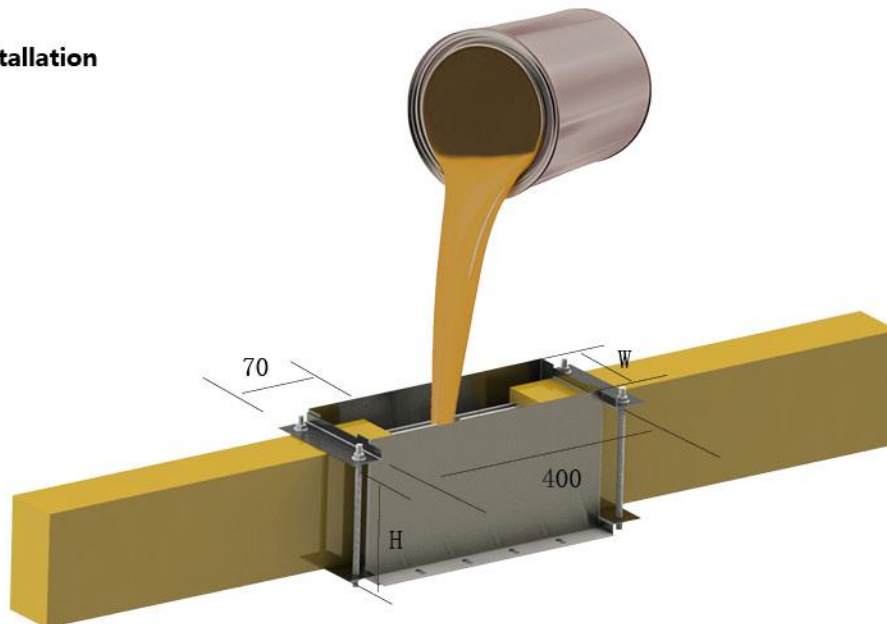
Plug-in Box Numbering Rules

FSMC-RY series
Cast resin busbar system
(400A-6300A)

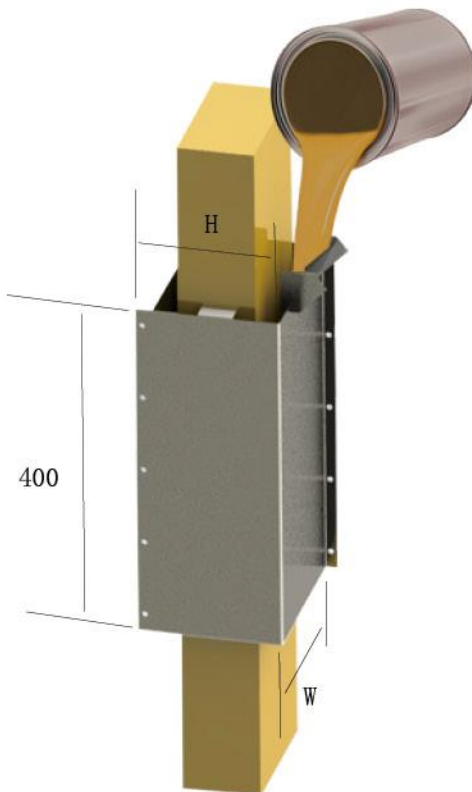
		F	20	5P	T	FX
Product Series	Code					
Epoxy resin cured insulation busbar	F					
Current Rating	Code					
80A	08					
125A	12					
160A	16					
200A	20					
250A	25					
400A	40					
630A	63					
System Wiring Configuration						
3-phase 4-wire system	4P					
3-phase 5-wire system	5P					
Neutral + 3 Line Conductor Material						
Copper	T					
Aluminium	L					
Component Type	Code					
Plug-in Box	FX					

Note: The circuit breaker inside the plug-in box is available in various options as per customer specifications

Horizontal installation

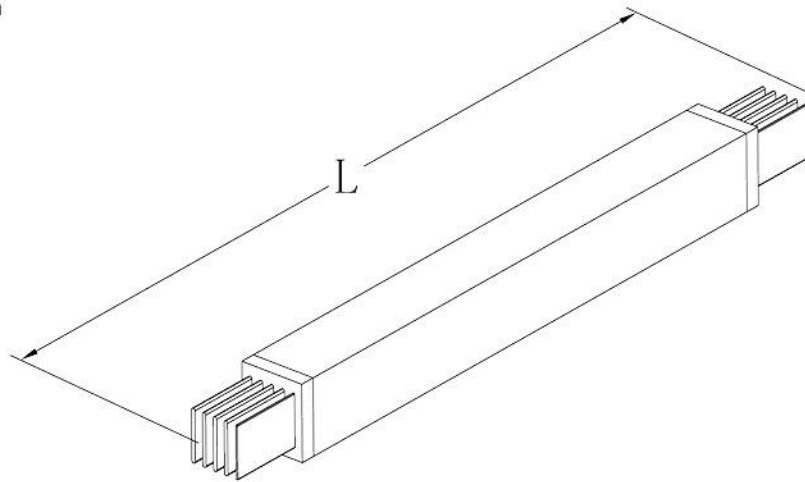


Vertical installation

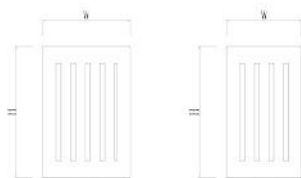


Rated Current	Copper Conductor		aluminum conductor	
	W(mm)	H(mm)	W(mm)	H(mm)
400A	150	125	170	145
500A	150	135	170	155
630A	150	145	170	175
800A	150	155	170	195
1000A	150	175	170	225
1250A	150	195	170	255
1600A	150	235	170	290
2000A	150	255	170	355
2500A	150	295	170	433
3200A	150	383	170	533
4000A	150	443	170	633
5000A	160	513	194	538
6300A	160	613	194	568

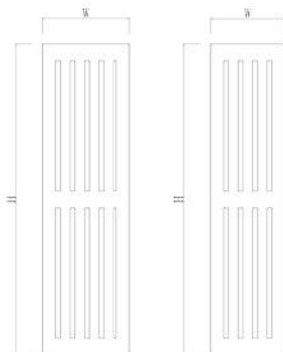
Straight Section



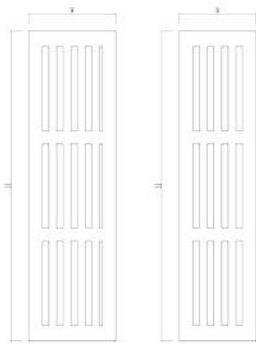
Standard length L=3mm, regular length 1m, 1.5m, 2m,
non-standard length 0.5-6m can be customized



A Single row sectional view



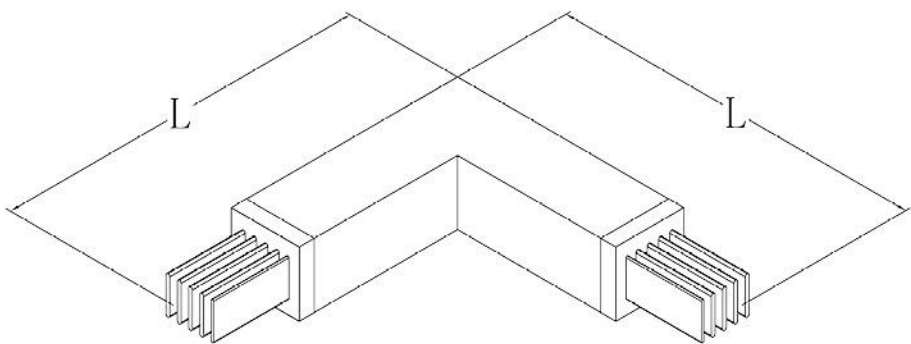
B Double row sectional view



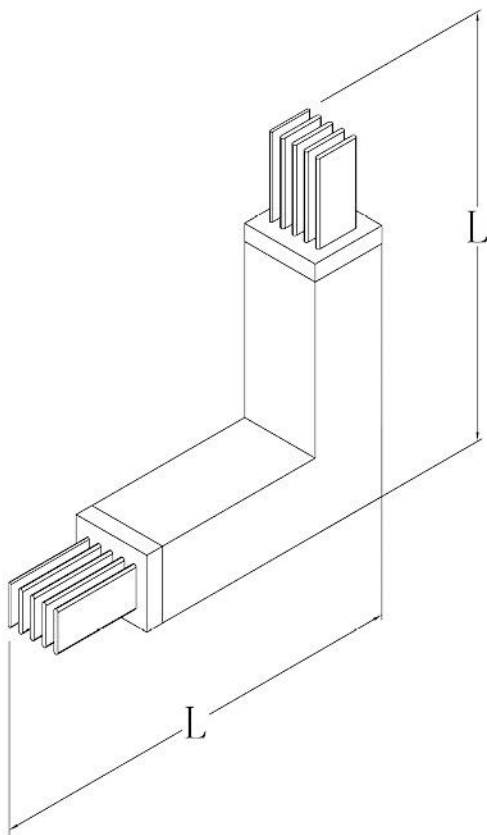
C Three row sectional view

Rated Current	System Wiring Configuration	Copper Conductor H(mm)	Copper Conductor W(mm)	pattern	aluminum conductor H(mm)	aluminum conductor H(mm)	pattern
400A	4P	65	77	A	85	87	A
	5P		90			110	
500A	4P	75	77		95	87	
	5P		90			110	
630A	4P	85	77		115	87	
	5P		90			110	
800A	4P	95	77		135	87	
	5P		90			110	
1000A	4P	115	77		165	87	
	5P		90			110	
1250A	4P	135	77		195	87	
	5P		90			110	
1600A	4P	175	77		230	87	
	5P		90			110	
2000A	4P	195	77		295	87	
	5P		90			110	
2500A	4P	235	77		373	87	
	5P		90			110	
3200A	4P	323	77	B	473	87	B
	5P		90			110	
4000A	4P	383	77		573	87	
	5P		90			110	
5000A	4P	453	87		478	118	C
	5P		100			134	
6300A	4P	553	87		508	118	
	5P		100			134	

Horizontal Elbow



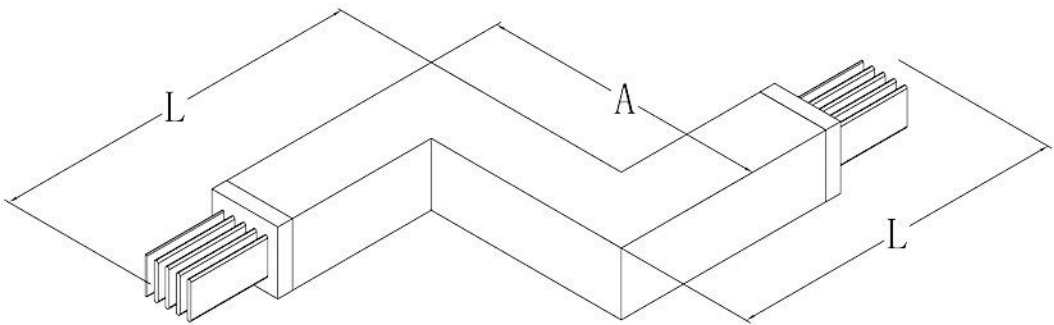
Vertical Elbow



Rated Current	Copper/aluminum Conductor
	L(mm)min.
400A	350
500A	350
630A	350
800A	350
1000A	350
1250A	350
1600A	350
2000A	350
2500A	350
3200A	350
4000A	350
5000A	350
6300A	350

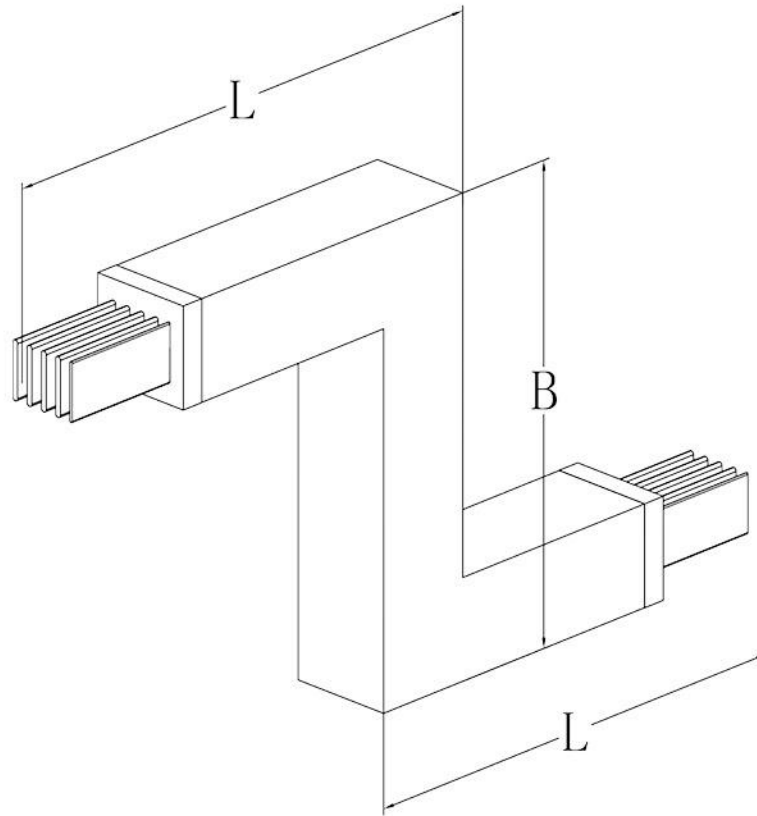
Rated Current	Copper Conductor	aluminum conductor
	L(mm)min.	L(mm)min.
400A	415	435
500A	425	445
630A	435	465
800A	445	485
1000A	465	515
1250A	485	545
1600A	525	580
2000A	545	645
2500A	585	723
3200A	673	823
4000A	733	923
5000A	803	828
6300A	903	858

Horizontal Double Elbow



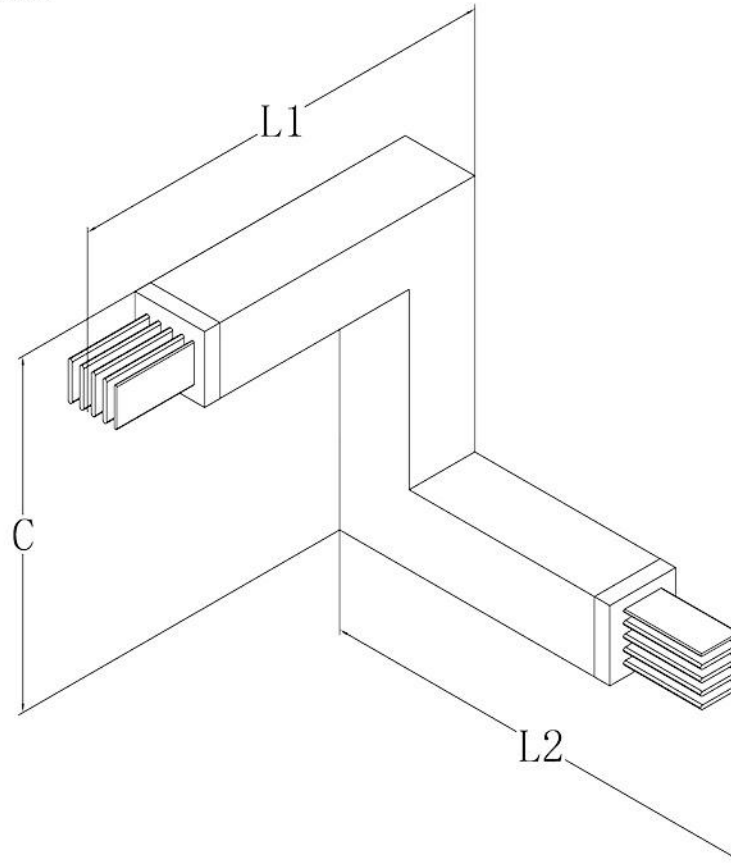
Rated Current	Copper Conductor		aluminum conductor	
	L(mm)min.	A(mm)min.	L(mm)min.	A(mm)min.
315A	350	340	350	380
400A	350	340	350	380
500A	350	340	350	380
630A	350	340	350	380
800A	350	340	350	380
1000A	350	340	350	380
1250A	350	340	350	380
1600A	350	340	350	380
2000A	350	340	350	380
2500A	350	340	350	380
3200A	350	340	350	380
4000A	350	360	350	428
5000A	350	360	350	428

Vertical Double Elbow



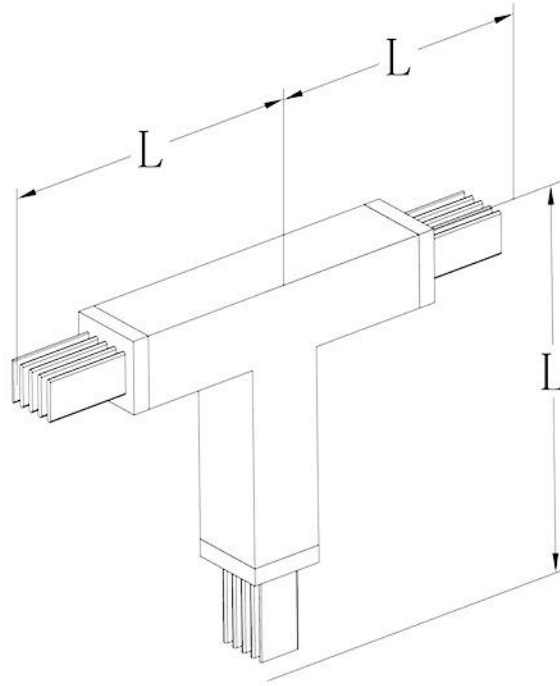
Rated Current	Copper Conductor		aluminum conductor	
	L(mm)min.	B(mm)min.	L(mm)min.	B(mm)min.
400A	415	290	435	330
500A	425	310	445	350
630A	435	330	465	390
800A	445	350	485	430
1000A	465	390	515	490
1250A	485	430	545	550
1600A	525	510	580	620
2000A	545	550	645	750
2500A	585	630	723	906
3200A	673	806	823	1106
4000A	733	926	923	1306
5000A	803	1066	828	1116
6300A	903	1266	858	1176

Compound Steering Elbow



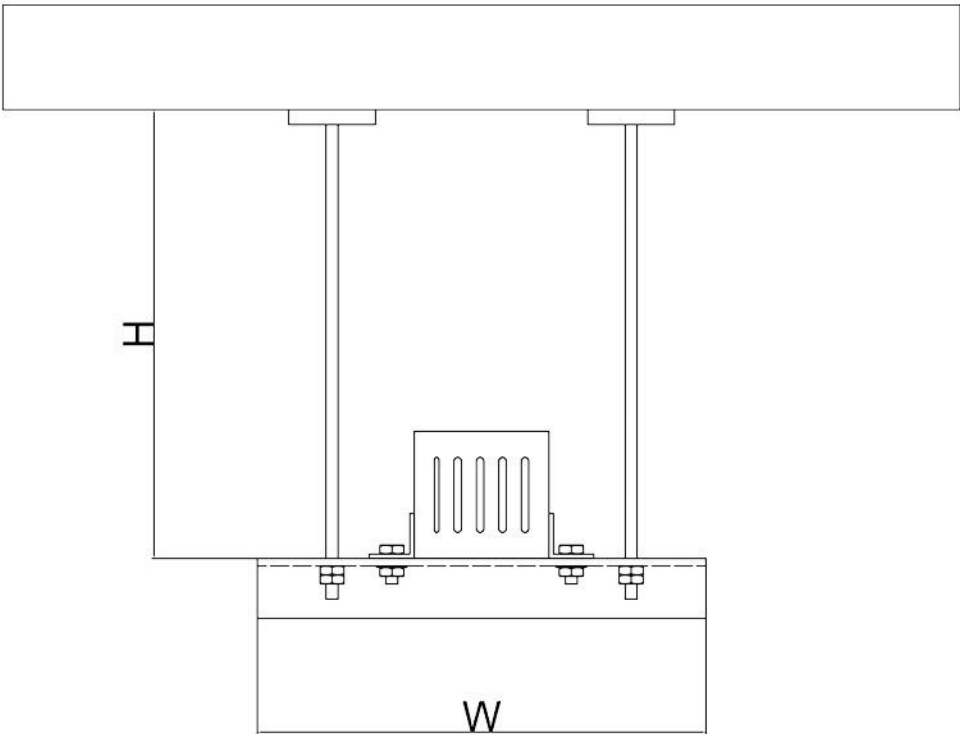
Rated Current	Copper Conductor			aluminum conductor		
	L1(mm)min.	L2(mm)min.	C(mm)min.	L1(mm)min.	L2(mm)min.	C(mm)min.
400A	350	415	315	350	435	355
500A	350	425	325	350	445	365
630A	350	435	335	350	465	385
800A	350	445	345	350	485	405
1000A	350	465	365	350	515	435
1250A	350	485	385	350	545	465
1600A	350	525	425	350	580	500
2000A	350	545	445	350	645	565
2500A	350	585	485	350	723	643
3200A	350	673	573	350	823	743
4000A	350	733	633	350	923	843
5000A	350	803	713	350	828	772
6300A	350	903	813	350	858	802

T-Elbow



Rated Current	Copper Conductor	aluminum conductor
	L(mm)min.	L(mm)min.
400A	415	435
500A	425	445
630A	435	465
800A	445	485
1000A	465	515
1250A	485	545
1600A	525	580
2000A	545	645
2500A	585	723
3200A	673	823
4000A	733	923
5000A	803	828
6300A	903	858

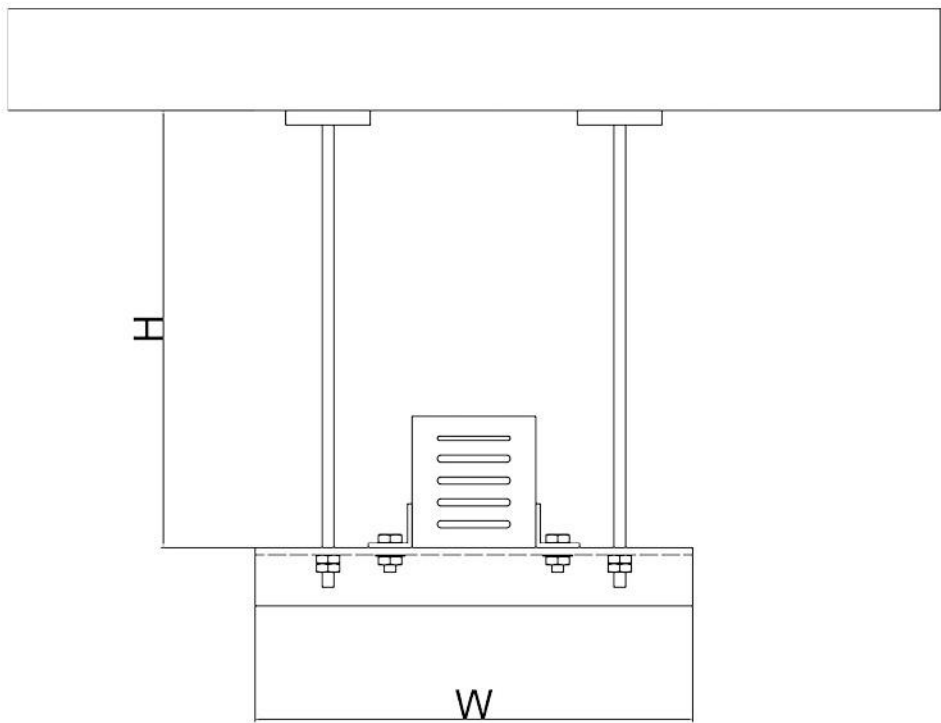
Horizontal Hanger



Hanger (vertical installation)

Rated Current	Copper Conductor		aluminum conductor	
	4P-W(mm)	5P-W(mm)	4P-W(mm)	5P-W(mm)
400A	200	250	200	250
500A	200	250	200	250
630A	200	250	200	250
800A	200	250	200	250
1000A	200	250	200	250
1250A	200	250	200	250
1600A	200	250	200	250
2000A	200	250	200	250
2500A	200	250	200	250
3200A	200	250	200	250
4000A	200	250	200	250
5000A	250	250	250	300
6300A	250	250	250	300

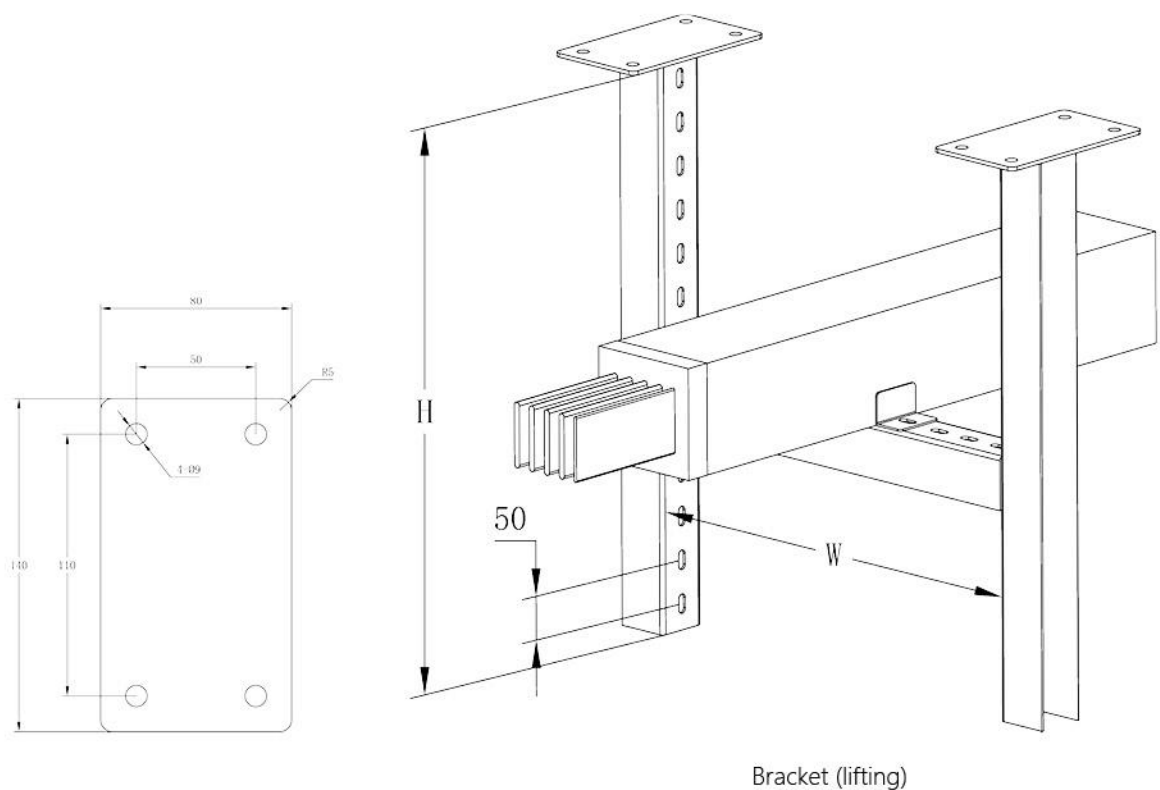
Horizontal Hanger



Hanger (horizontal installation)

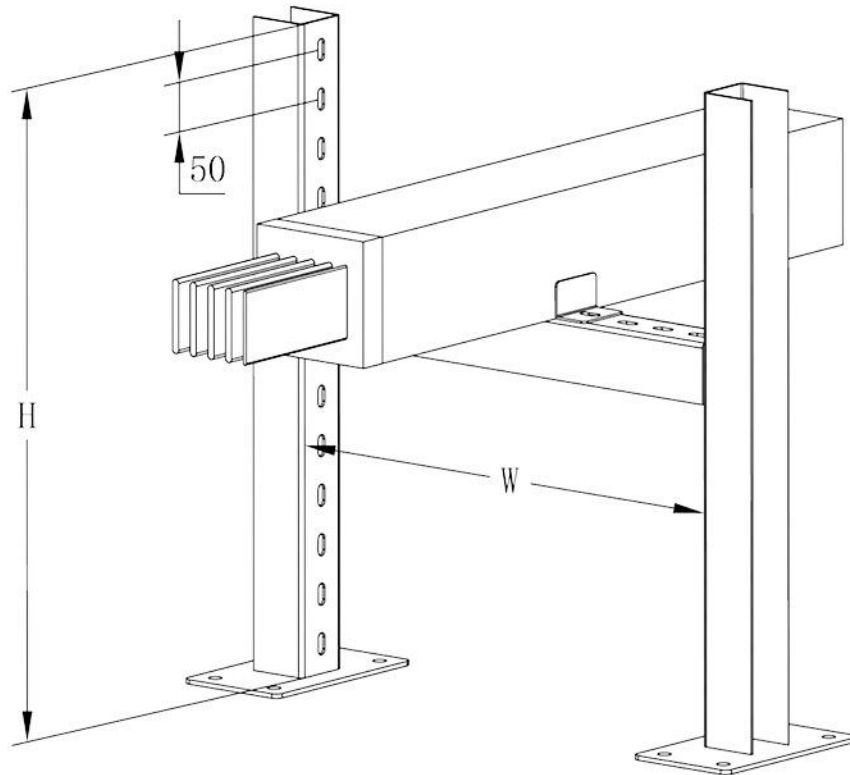
Rated Current	Copper ConductorW(mm)	aluminum conductorW(mm)
400A	210	230
500A	220	240
630A	230	260
800A	240	280
1000A	260	310
1250A	280	340
1600A	320	375
2000A	340	440
2500A	380	518
3200A	468	618
4000A	528	718
5000A	598	623
6300A	698	653

Steel support frame



Rated Current	Copper ConductorH(mm)		aluminum conductor H(mm)	
	4P-W(mm)	5P-W(mm)	4P-W(mm)	5P-W(mm)
400A	200	250	200	250
500A	200	250	200	250
630A	200	250	200	250
800A	200	250	200	250
1000A	200	250	200	250
1250A	200	250	200	250
1600A	200	250	200	250
2000A	200	250	200	250
2500A	200	250	200	250
3200A	200	250	200	250
4000A	200	250	200	250
5000A	250	250	250	300
6300A	250	250	250	300

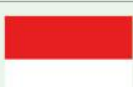
Steel support frame



Bracket (floor standing)

Rated Current	Copper ConductorW(mm)	aluminum conductorW(mm)
400A	210	230
500A	220	240
630A	230	260
800A	240	280
1000A	260	310
1250A	280	340
1600A	320	375
2000A	340	440
2500A	380	518
3200A	468	618
4000A	528	718
5000A	598	623
6300A	698	653

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Due to changes in standards and materials, the functions described in the text and images
These materials will only be binding on us after confirmation by our business department.

