Service Hotline:
0514-86821328

provide better service for global energy transmission.
build a century-old enterprise with lasting excellence
in the global power industry.

江苏双汇电力发展股份有限公司
Jiangsu Shuanghui Electric Power Development Co., Ltd.
地址：江苏省扬州市江都区天山西路18号
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Scan this QR code to visit Shuanghui's Official Website

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www.jsshdl.com

Enterprise Profile

Jiangsu Shuanghui Electric Power Development Co., Ltd. (hereinafter referred to as "our company") is located in Jiangdu District, Yangzhou City, Jiangsu Province. It is a high-tech enterprise integrating R&D, manufacturing, sales and service of power fittings, composite insulators and various high and low voltage electrical products with DC voltage of ±1100kV and below AC voltage of 1000kV.

We was founded in 1974 and officially changed its name to Jiangsu Shuanghui Electric Power Development Co., Ltd. on November 7, 2008. At present, the company covers an area of 130,000 square meters and employs more than 500 people. The enterprise has abundant human resources, complete production equipment and advanced testing methods, and has more than 280 sets of domestic leading production testing equipment.

We consists of a number of wholly-owned and holding subsidiaries, such as Yangzhou Shuang Bao Electric Equipment Co., Ltd., Hunan Huda Hualong Electric and Information Technology Co., Ltd., Hunan Zhilong Internet of Things Technology Co., Ltd., Pingdingshan Shuangxin Electric Power Equipment Co., Ltd. and a shareholding subsidiary, Yangzhou Shuanghui Weather-resistant Plastic Products Co., Ltd., whose business segments are involved in the fields of electrical equipment manufacturing, transmission and distribution materials production, smart grid operation and maintenance, power system and civil energy conservation and emission reduction and automatic control. The company has been certified by ISO9001 quality management system, ISO14001 environmental management system and ISO45001 occupational health and safety management system, and has been awarded as a national "high-tech enterprise", rating as a contract-abiding and trustworthy enterprise in Jiangsu Province for many years.

The main products developed and produced by our company are: suspension clamp, tension clamp, link fittings, protective fittings, connecting fittings, cable-drawing fittings and other power fittings covering AC 1000kV, 750kV, 500kV, 330kV, 220kV and DC ±1100kV, ±800kV, ±660kV and ±500 kV. It covers high-voltage suspension composite insulators of various voltage levels, ultra-high voltage suspension composite insulators, molded composite insulators, ultra-high voltage pillar composite insulators and other composite insulator series products, and high and low voltage electrical products such as 35kV inflatable cabinets, 10kV inflatable cabinets, 10kV series switchgear cabinets, vacuum circuit breakers, 10kV ring network cabinets, AC/DC systems, reactive power compensation devices, comprehensive detection terminals for distribution transformers, low-voltage distribution products and low-voltage cabinets.

We have alaways focused on innovation and in-depth research and development of transmission and distribution transformer products, and constantly climbed the commanding heights of the industry, actively cooperated with large enterprises such as State Grid, China Southern Power Grid and Pinggao Group, as well as universities and colleges such as Tsinghua University, Hunan University and State Grid Electric Research Institute, introduced advanced technologies to develop new products, and integrated intelligent, digital and networked design concepts into the company's circuit breakers, load switches and other products, so that the company has an overall first-time solution in the field of distribution automation. By 2017, our company has obtained more than 10 scientific and technological achievements at or above the provincial and ministerial level, nearly 100 independent intellectual property rights such as national patents, software products and computer soft copyright warrants, and more than 10 provincial high-tech products.

We actively explore markets, and is one of the important suppliers of China State Grid and China Southern Power Grid. We have also successfully supplied overseas power companies such as Tokyo Electric Power Company, Saskatchewan Electric Power Company, Los Angeles Hydropower Company, Vietnam State Grid Company and Sarawak Electric Power Company. Our company actively cooperates with well-known international engineering companies at home and abroad to design and supply related products or materials in Myanmar, Laos, Pakistan, Kenya, Ethiopia, Sudan, Ecuador and other countries.

Looking forward to the future, We will continue to uphold the belief of "sincere cooperation and sincere service", continuously improve its independent innovation capability and its own management level, shoulder the mission of providing better services for global energy transmission, and build a century-old enterprise with lasting Excellence in the global power industry!

Brief Introduction Of Electrical Division

Jiangsu Shuanghui Electric Business Department includes 40.5kV/24kV/10kVC-GIS、24kV/10kV Air switchgear、40.5kV/24kV/10kV pole-mounted circuitbreaker、40.5kV/24kV/10kV RMU.AC and DC systems, reactive power compensation devices, comprehensive detection terminals for distribution transformers, low-voltage power distribution products, low-voltage cabinets and other high-voltage electrical products. And the company has obtained ISO9001 quality management system, ISO14001 environmental management system and ISO45001 occupational health and safety management system certification.

The distribution equipment produced by our company, such as pole switch, ring cage, box-type substation, high and low voltage complete sets and one or two complete sets of pole opening/ring cage, has won the bid and been supplied independently in the distribution network protocol inventory of Jiangsu, Fujian, Sichuan, Hubei and other provinces of the State Grid, and the product operation quality is stable, reliable and well received by users. In recent years, based on the industry of traditional equipment manufacturing, the company has been committed to the intelligent development of power grid, mastering key technologies such as infrared detection, arc protection, big data, GIS, 3D interaction, intelligent IOT, etc., and striving to become an international leading overall solution provider of transmission and distribution transformer integrating scientific research, design, products and comprehensive services.

In the future development process, we will always adhere to the purpose of "quality first, reputation first, service first" and wholeheartedly provide high-quality products and services for domestic and foreign users.

CONTENT

双汇电力
SH POWER

Innovation, Excellence,Seeking-Truth and Far-Sightedness

双汇电力 SH POWER

SN2S-40.5 Indoor SF_6 Gas Insulated Metal Enclosed Switchgear

With the rapid development of social economy and technology, the requirements for power grids and engineering construction continue to increase. The traditional AIS (air insulated) switch technology, due to its large size and environmental constraints, cannot fully meet contemporary electricity demand.

C-GIS (gas insulated) switch technology combines high-voltage gas insulation technology with medium-voltage metal-enclosed structure, and uses excellent insulating gas to seal high-voltage components: circuit breakers, disconnectors, bus bars, etc. In an independent air box, the cabinet volume is greatly reduced, providing users with truly miniaturized, modular, intelligent, full working conditions, and maintenance-free customs equipment, especially suitable for subways, tunnels, railways, airports, Mines,petrochemicals, wind power and urban substations and other areas with high power requirements.

Features

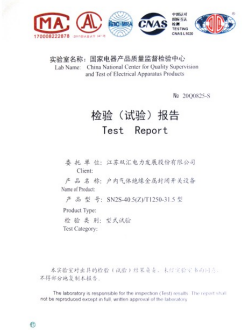
- **Safety and environmental protection:** SN2S-40.5 uses the latest SF_6 and N2 mixed gas insulation and mature and reliable vacuum circuit breaker technology to minimize the impact on the environment. Under normal use, it truly has a long service life and is maintenance-free. The product has passed the severe internal fault arcing test to provide users with the guarantee of safe use.
- **Small and compact:** The use of advanced gas insulation technology also enables the SN2S-40.5 switchgear to achieve a smaller size, lighter weight, and more compact structure under the premise of superior performance, safety and reliability, and save space and land for users.
- **Advanced and reliable:** SN2S-40.5 switchgear adopts international leading design concepts and production and testing methods, making the entire series of products simple in structure, easy to operate, and reliable in interlocking.
- **Full module design/fully enclosed structure/all-round expansion:** SN2S-40.5 switchgear is a new generation of compact modular switchgear. The gas box is made of high-quality 3mm stainless steel plate laser welding. All high-voltage live parts such as circuit breakers, disconnectors and bus bars are respectively sealed in a box filled with SF6 and N2 mixed gas. Each module has its own function and is independent. Metal shell, and can be expanded as required, and does not involve gas systems.

Technical Parameter Table

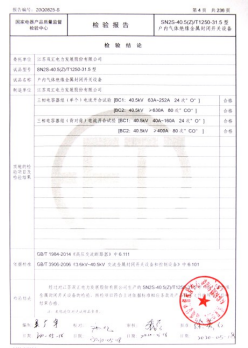
Description		Unit	Specification
Rated voltage		kV	40.5
Rated frequency		Hz	50/60
Rated current		A	1250/1600/2000/2500
Rated power frequency withstand voltage（Imin）	Between phases and phase to earth	kV	95
	Across the isolation gap		118
Rated lightning impulse voltage	Between phases and phase to earth	kV	185
	Across the isolation gap		215
Rated short-circuit breaking current		kA	25/31.5
Rated short-circuit making current (peak value)		kA	63/80
Rated short-time withstand current		kA	25/4s, 31.5/4s
Rated peak withstand current		kA	63/80
Rated cable charging breaking current		A	50
Rated mechanical life		times	10000 (M2)
Rated mechanical life		times	30/(E2)
Protection level (air box/cabinet shell)			IP65/4X
Insulating gas			SF_6
Internal fault arcing test (1s)		kA	25
Cabinet size (width×depth×height)	W1250A	mm	600X1400X2400
	N1600A		800X1500X2400
Cabinet weight	W1250A	kg	800-1000
	N1600A		1100-1400

Product Qualification

检验（试验）报告
Test Report



检验（试验）报告
Test Report



Innovation, Excellence,Seeking-Truth and Far-Sightedness

SH-40.5 SF_6 Gas-Insulated Ring Main Unit

The SH-40.5 SF_6 gas-insulated ring main unit is suitable for power transmission and distribution of new energy power plants, compact secondary substations, commercial buildings, rail transit, underground substations and remote substations, especially suitable for installation in places with narrow space. The product is designed with high performance and small size, full SF_6 gas insulation. The operation of the equipment is independent of the external environment, such as high altitude, salt spray, condensation, dust, wet and other climates, and the maintenance-free and reliable application is realized truly, so as to meet the needs of all types of power users.

Features

- It is featured with comprehensive function, smart and compact, easy to be installed in the area with small space such as wind tower.
- Modular design is adopted, any combination and extension can be allowed, and the splicing and replacement in the wind tower can be realized.
- The switch cabinet gas box shall be assembled in the factory for overall transport. The reliable bus connector is adopted for the LCL. There is no need to perform on-site handling of insulating gases.
- The high-pressure components are all sealed in the grounded 3mm stainless steel air box, which greatly protects the personal safety of the operator.
- The inflation pressure of the air box is as low as 0.12MPa (absolute value: 20°C), the leakage rate is low, the rated insulation level and breaking capacity are guaranteed at zero gauge pressure, and the equipment does not need to be operated at reduced voltage to ensure the reliability of power supply.
- Full laser welded high-quality stainless steel air box is adopted, with the annual gas leakage rate less than 0.1%.
- Solid interface plug-in technology is adopted, as well as fully shielded high-voltage components, which is safe and reliable in operation.

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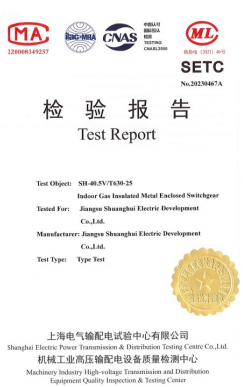
Technical Parameter Table

Description		Load Break Switch Unit	Switch-Fuse Combination	Breaker Unit
Rated voltage (kV)		40.5	40.5	40.5
Rated frequency (Hz)		50/60	50/60	50/60
Rated current of main bus (A)		630	630	630
Rated current (A)		630	80	630
Rated short-circuit breaking current (kA)			31.5	25
Rated short-circuit transfer current (A)			1000	
Rated short-time Withstand current (kA)	Main circuit 4s	25		25
	Earthing switch 4s	25		25
	Earth connecting circuit 2s	21.8		21.8
Rated peak Withstand current (kA)	Main circuit	63		63
	Earthing switch	63		63
	Earth connecting circuit	54.8		54.8
Rated short-circuit making current (kA)		63		63
Rated Power frequency Withstand voltage (kV) 1min	Between phases and phase to earth	95	95	95
	Across the isolation gap	118	118	118
Rated lightning impulse withstand voltage (kV)	Between phases and phase to earth	185	185	185
	Across the isolation gap	215	215	215

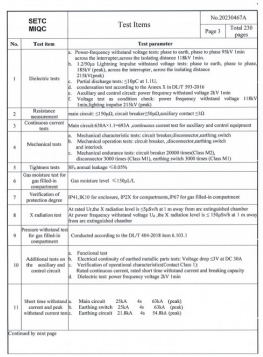
Product Qualification



检 验 报 告
Test Report

Test Object: SH-40.5V/T630-25
Indoor Gas Insulated Metal Enclosed Switchgear
Tested For: Jiangsu Shunghui Electric Development Co.,Ltd.
Manufacturer: Jiangsu Shunghui Electric Development Co.,Ltd.
Test Type: Type Test

上海电气输配电试验中心有限公司
Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.
机械工业高压输配电设备质量检测中心
Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center



SETC MIQC | Test Items | No.20230467A | Page 3 | Total 23 pages

No.	Test item	Test parameter
1	Dielectric tests	a. Power-frequency withstand voltage tests: phase to earth, phase to phase 95kV 1min Across the isolating distance 118kV 1min b. 1.2/50μs Lightning impulse withstand voltage tests: phase to earth, phase to phase 185kV (peak), across the interrupter, across the isolating distance 215kV(peak) c. Partial discharge tests: ≤10pC at 1.1U<sr>r</sr> d. conducted out according to the Annex X in DL/T 393-2010 e. Auxiliary and control circuit: power frequency withstand voltage 2kV 1min f. Auxiliary and control circuit: 1.2/50μs impulse power frequency withstand voltage 1146V (min.lightning impulse 215kV (peak))
2	Resistance measurement	main circuit: ≤130μΩ, circuit breaker≤58μΩ,auxiliary contact ≤1Ω
3	Continuous current tests	Main circuit:630A×1.1=693A ,continuous current test for auxiliary and control equipment
4	Mechanical tests	a. Mechanical characteristic tests: circuit breaker,disconnector,earthing switch b. Mechanical operation tests: circuit breaker, ,disconnector,earthing switch and interlock. c. Mechanical endurance tests: circuit breaker 20000 times(Class M2), disconnector 3000 times (Class M1), earthing switch 3000 times (Class M1)
5	Tightness tests	SF_6 annual leakage ≤0.05%
6	Gas moisture test for gas filled-in compartment	Gas moisture level ≤150μL/L
7	Verification of protection degree	IP41,IK10 for enclosure, IP2X for compartments, IP67 for gas filled-in compartment
8	X radiation test	At rated Ur,the X radiation level is ≤5μSv/h at 1 m away from any extinguished chamber At power frequency withstand voltage Ua ,the X radiation level is ≤ 150μSv/h at 1 m away from an extinguished chamber
9	Pressure withstand test for gas filled-in compartment	Conducted according to the DL/T 404-2018 item 6.103.1
10	Additional tests on the auxiliary and control circuit	a. Functional test b. Electrical continuity of earthed metallic parts tests: Voltage drop ≤3V at DC 30A c. Verification of operational characteristic(Contact Class 1) d. Rated continuous current, rated short time withstand current and breaking capacity e. Dielectric test: power frequency voltage 2kV 1min
11	Short time withstand current and peak withstand current tests	a. Main circuit 25kA 4s 63kA (peak) b. Earthing switch 25kA 4s 63kA (peak) Earthing circuit 21.8kA 4s 54.8kA (peak)

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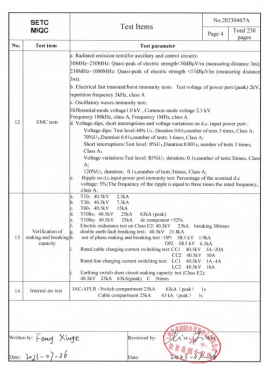


SETC MIQC | Test Items | No.20230467A | Page 4 | Total 23 pages

No.	Test item	Test parameter
12	EMC tests	a. Radiated emission test(for auxiliary and control circuit): 30MHz~2100MHz: Quasi-peak of electric strength<50dBμV/m (measuring distance 3m); 2100MHz~10000MHz: Quasi-peak of electric strength <57dBμV/m (measuring distance 3m). b. Electrical fast transient/burst immunity tests: Test voltage of power port (peak) 2kV, repetition frequency 5kHz, class A c. Oscillatory waves immunity test: Differential-mode voltage1.0 kV , Common-mode voltage 2.5 kV Frequency 100kHz, class A, Frequency 1MHz, class A; d. Voltage dips, short interruptions and voltage variations on d.c. input power port : Voltage dips: Test level:40% U<sr>T</sr>, Duration 0.01s,number of tests 3 times, Class A; 70%U<sr>T</sr>,Duration 0.01s,number of tests: 3 times, Class A; Short interruptions:Test level: 0%U<sr>T</sr>, Duration 0.001s, number of tests 3 times, Class A; Voltage variations:Test level: 85%U<sr>T</sr>; duration: 0.1s,number of tests:3times, Class A; 120%U<sr>T</sr>; durations: 0.1s,number of tests:3times, Class A; e. Ripple on d.c.input power port:immunity test: Percentage of the acemial d.c voltage: 5%;The frequency of the ripple is equal to three times the rated frequency, class A;
13	Verification of making and breaking capacity	a. 5kA 5kV 2.5kA b. 31.5kA 5kV 7.5kA c. 5kA 40.5kV 10kA d. 31.5kA 40.5kV 25kA 63kA (peak) e. 31.5kA 40.5kV 25kA dc component =52% f. Electric endurance test on Class E2: 40.5kV 25kA breaking 30times g. double earth fault breaking test: 40.5kV 21.8kA h. out of phase making and breaking test: CB2 40.5kV 1.9kA DS1 DS2 40.5kV 6.3kA i. Rated cable charging current switching test CC1 40.5kV 3A~20A CC2 40.5kV 50A Rated line charging current switching test: LC1 40.5kV 1A~4A LC2 40.5kV 10A j. Earthing switch short circuit making capacity test (Class E2): 40.5kV 25kA, 63kA(peak) C Times
14	Internal arc test	IAC-AFLR : Switch compartment 25kA 63kA (peak) 1s Cable compartment 25kA 63 kA (peak) 1s

Written by: Feng Xiuge Date: 2021-07-26
Reviewed by: Date: 2021-07-26

Innovation, Excellence,Seeking-Truth and Far-Sightedness

SN2X-24/12 Indoor Gas Insulated Metal Enclosed Switchgear

With the rapid development of social economy and technology, the requirements for power grids and engineering construction continue to increase. The traditional AIS (air insulated) switch technology, due to its large size and environmental constraints, can no longer fully meet contemporary electricity demand.

C-GIS (gas insulated) switch technology combines high-voltage gas insulation technology with medium-voltage metal-enclosed structure, and uses excellent insulating gas to seal high-voltage components: circuit breakers, disconnectors, bus bars, etc. In an independent air box, the cabinet volume is greatly reduced, providing users with truly miniaturized, modular, intelligent, full working conditions, and maintenance-free switchgear.

Shuanghui's SN2X-24/12 gas insulated switchgear adopts the latest SF_6 and N2 mixed gas insulation technology and vacuum interruption technology, combined with modern digital production, detection methods, and sensing, monitoring, and protection technologies. Adapt to various distribution network requirements, and especially suitable for areas with high power requirements such as subways, tunnels, railways, airports, mines, petrochemicals, wind power and urban substations.

Features

- **Safety and environmental protection:** SN2X-24/12 uses the latest SF_6 and N2 mixed gas insulation and mature and reliable vacuum circuit breaker technology to minimize the impact on the environment. Under normal use, it can truly achieve long service life and maintenance-free. The product has passed the severe internal fault arcing test to provide users with the guarantee of safe use.
- **Small and compact:** The use of advanced gas insulation technology also enables the SN2X-24/12 switchgear to achieve a smaller size, lighter weight, and more compact structure under the premise of superior performance, safety and reliability, which greatly saves space and space for users.
- **Advanced and reliable:** SN2X-24/12 switchgear adopts international leading design concepts and production and testing methods, making the entire series of products simple in structure, easy to operate, and reliable in interlocking.
- **Full module design/fully enclosed structure/all-round expansion:** SN2X-24/12 switchgear is a new generation of compact modular switchgear. The gas box is laser welded with high-quality 3mm stainless steel plate. All high-voltage live parts such as circuit breakers, disconnectors and bus bars are respectively sealed in a box filled with SF6 and N2 mixed gas. Each module has its own function and is independent. Metal shell, and can be expanded as required, and does not involve gas systems.

双汇电力 SH POWER

Technical Parameter Table

Description		Unit	Specification	Specification
Rated voltage		kV	12	24
Rated frequency		Hz	50/60	50/60
Rated current		A	630/1250/1600/2000/2500/3150	630/1250/2000/2500
Rated power frequency withstand voltage (Imin)	Between phases and phase to earth	kV	42	50
	Across the isolation gap		48	60
Rated lightning impulse Shock voltage	Between phases and phase to earth	kV	75	125
	Across the isolation gap		85	125
Rated short-circuit breaking current		kA	25/31.5	25/31.5
Rated short-circuit making current (peak value)		kA	63/80	63/80
Rated short-time withstand current		kA	25/4s, 31.5/4s	25/4s, 31.5/4s
Rated peak withstand current		kA	63/80	63/80
Rated mechanical life		times	10000 (M2)	10000 (M2)
Rated electrical life		times	30/ (E2)	30/ (E2)
Protection level (air box/cabinet shell)			IP65/4X	IP65/4X
Insulating gas			SF_6 inflation or SF_6+N2 mixed gas	SF_6 inflation or SF_6+N2 mixed gas
Internal fault arcing test (1s)		kA	25、31.5	25、31.5

Product Qualification


CHPTL

No.20200599A

检 验 报 告

Test Report

试品型号：SN2X-12(Z)/T3150-31.5

试品名称：户内气体绝缘金属封闭开关设备

委托单位：江苏双汇电力发展股份有限公司

制造单位：江苏双汇电力发展股份有限公司

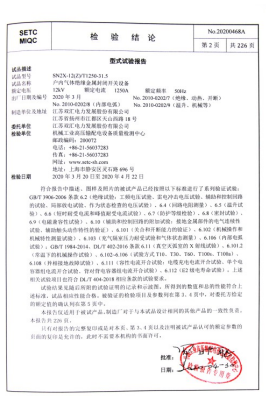
检验类别：型式试验

机械工业高压输配电设备质量检测中心

Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center

上海电气输配电试验中心有限公司

Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.


SETC MQC

检 验 结 论

No.20200468A

型式试验报告


CHPTL

No.20200468A

检 验 报 告

Test Report

试品型号：SN2X-12(Z)/T1250-31.5

试品名称：户内气体绝缘金属封闭开关设备

委托单位：江苏双汇电力发展股份有限公司

制造单位：江苏双汇电力发展股份有限公司

检验类别：型式试验

机械工业高压输配电设备质量检测中心

Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center

上海电气输配电试验中心有限公司

Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.

Innovation, Excellence,Seeking-Truth and Far-Sightedness

24/12kV Metal-Clad Removable Switchgear

KYN28-24/12 metal armored removable AC enclosed equipment (hereinafter referred to as "switch equipment") is Jiangsu Shuanghui borrowed from, absorbed advanced technology from domestic and foreign counterparts, refined the company has accumulated many years of valuable experience in designing and manufacturing center cabinets. According to the requirements of standardized cabinets of the State Grid Corporation of China, a new generation of medium voltage switch cabinets have been developed and manufactured using world-class CNC machining equipment. The switchgear has passed the strict internal combustion failure test and other type tests. oKYN28-24/12 switch The equipment has outstanding features such as advanced, stable performance, reasonable structure design, convenient operation and maintenance, safety and reliability. It is the best equipment for receiving and distributing electric energy, detecting and protecting the power grid. oKYN28-24/12 switchgear can be configured with excellent performance ZN、VS1、VD4、3AH Air-insulated or composite-insulated vacuum circuit breakers can also be equipped with permanent magnet operating mechanism type circuit breakers.

Features

» **Safe, reliable, and outstanding performance:**

Each compartment is separated by partitions to effectively prevent foreign matter from intruding

The internal arcing level AFLR can ensure the safety of the operator in the event of an accidental internal arc fault. The operation can only be performed when the circuit breaker door is closed.

» **Reliable and safe operation:**

Passed the third-party full set of type test verification, in line with GB/DL standards

Internal arc fault test meets the latest GB standard

Cable room, circuit breaker room and busbar room are independent of each other

» **Low cost:**

The cable connection can be in the front or back of the cabinet

The cable entry can be entered from the top or bottom of the cabinet

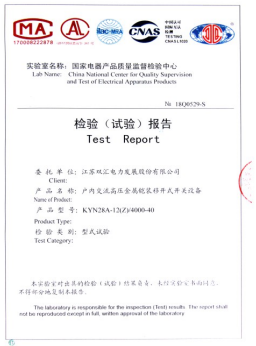
Easy access to the cable room, easy cable connection

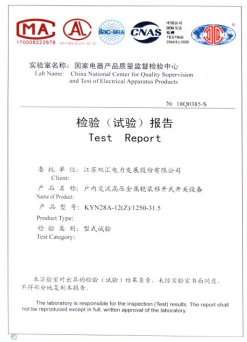
双汇电力 SH POWER

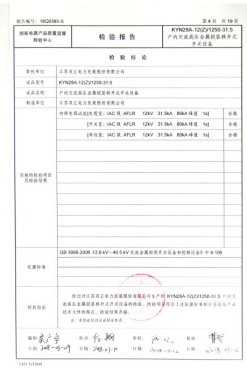
Technical Parameter Table

Description		Specifications					Specifications			
Rated voltage (kV)		12					24			
Rated frequency (HZ)		50/60					50/60			
Rated current (A)		630	1250	1250	2500	4000	630	1250	1250	2500
Rated peak withstand current (kA)		50/63		80		100	50/63		80	
Rated short-time withstand current (kA)		20/25		31.5		40	20/25		31.5	
Rated short-circuit breaking current (kA)		20/25		31.5		40	20/25		31.5	
Rated short-circuit making current (kA)		50/63		80		100	50/63		80	
Rated short-circuit duration (s)		4					4			
Rated short-circuit breaking times		30					30			
Internal arc degree		AFLR					AFLR			
Rated Power frequency Withstand voltage (kV) 1min	Between phases and phase to earth	42					50			
	Across the isolation gap	48					60			
Rated lightning impulse withstand voltage (kV)	Between phases and phase to earth	75					125			
	Across the isolation gap	85					125			
Auxiliary control (V)	Rated voltage	DC220/110、AC220					DC220/110、AC220			
	Power frequency withstand voltage1min	2000					2000			
Rated operating sequence		0-0.3s-CO-180s-CO					0-0.3s-CO-180s-CO			
Rated mechanical endurance level		10000					10000			
Degree of protection		Compartment					Compartment			
Degree of protection	Enclosure	IP41					IP41			
	Between compartments or CB door open	IP2X					IP2X			

Product Qualification


检验（试验）报告
Test Report


检验（试验）报告
Test Report



SH-24/12 SF_6 Gas-Insulated Ring Main Unit

The SH-24/12 type SF_6 inflatable fully insulated ring network cabinet is suitable for three-phase AC 50Hz, rated voltage 12kV distribution lines, widely used in urban power supply ring networks and power supply terminals, especially suitable for small secondary power distribution stations, opening and closing Use for receiving and distributing electric energy in power systems such as offices, industrial and mining enterprises, urban residential communities, airports, railways, tunnels, and high-rise buildings.The SH-24/12 type SF_6 inflatable ring main unit completely seals all high-voltage live parts in a 304 stainless steel shell filled with SF_6 insulating gas, and the air box protection level reaches IP67. The SH-24/12 series switch can also provide factory automation solutions, which fully meet the requirements of the State Grid and China Southern Power Grid for a complete set of primary and secondary integration or a complete set of automation. At the same time, the SH-24/12 type gas insulated ring network cabinet fully meets the standardization of the State Grid and the technicial requirements for ring network cabinets.

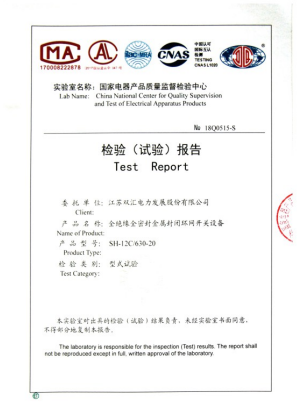
Features

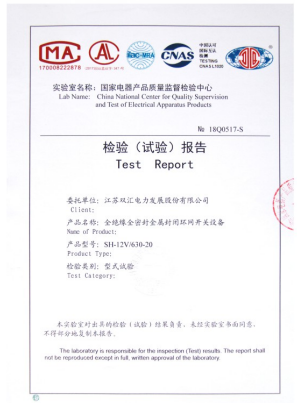
- **Highly reliable personal safety:** All live parts are enclosed in the SF_6 gas chamber; the gate has a reliable pressure relief channel, and has passed the internal arc test of 20kA/ls.
- **Not affected by the environment:** All high-voltage live parts are located in the stainless steel box, the box shell is stainless steel sealed and welded, and the protection level is IP67. It can be installed in damp, sandy, dusty, salty, box-type substations and other places.
- **Good scalability:** Modular structure design is adopted, and a fully modular configuration can be realized by using an expansion bus between all modules.
- **Intelligent and effective integration:** SH-24/12 is an intelligent switch IRMU (Intelligent Ring Main Unit) that integrates industrial automation technology: it can provide effective protection, remote control and monitoring systems; it provides plug-and-play distribution network automation DTU factory solution.

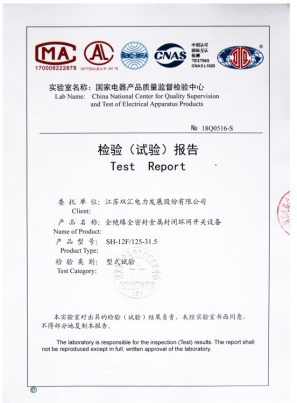
Technical Parameter Table

Description		Load Break Switch Unit	Switch-Fuse Combination	Breaker Unit
Rated voltage (kV)		24/12	24/12	24/12
Rated frequency (HZ)		50/60	50/60	50/60
Rated current of main bus (A)		630	630	630
Rated current (A)		630	80/125	630
Rated short-circuit breaking current (kA)			31.5	20
Rated transfer current (A)			1200/1700	
Rated short time Withstand current (kA)	Main circuit 4s	20		20
	Earthing switch 4s	20		20
	Ground connection loop 2s	17.4		17.4
Rated peak value Withstand current (kA)	Main circuit	50		50
	Earthing switch	50		50
	Ground connection loop	43.5		43.5
Rated short-circuit making current (kA)		50		50
Power frequency Withstand voltage (kV)	Between phases and phase to earth	50/42	50/42	50/42
	Across the isolation gap	60/48	60/48	60/48
Thunder and lightning Impact (kV)	Between phases and phase to earth	125/75	125/75	125/75
	Across the isolation gap	125/85	125/85	125/85

Product Qualification


检验（试验）报告
Test Report


检验（试验）报告
Test Report


检验（试验）报告
Test Report

Innovation, Excellence,Seeking-Truth and Far-Sightedness

双汇电力 SH POWER

SHN-12 N2 Gas Insulated Ring Main Unit

SHN-12 is a product with milestone significance promoted by Shuanghui Company during the environmental protection development of switchgear. This product successfully uses N2 instead of SF6 gas and is used in switchgear, so that the switchgear has good environmental performance and safety performance, and at the same time, it inherits the advantages of GIS products in terms of compact structure and maintenance-free.

This product is the result of long-term electric field optimization research conducted by SH Power Company on the basis of summing up the long-term operating experience of SH-12 products. It retains the original structure of SH-12 products and adopts switches, busbars, etc. The live parts are sealed in a stainless steel welded gas chamber. This product uses N2 as the insulating medium, and adopts vacuum breaking technology for the breaking of the short-circuit current of the circuit breaker scheme.

Features

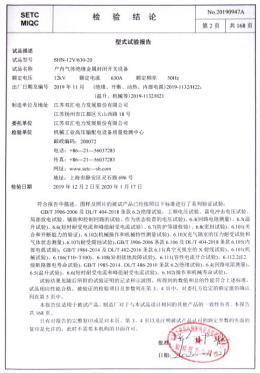
- **Safe to use:**
  The sealed compartment design effectively avoids entering the charged compartment by mistake
  Capacitive voltage indicator system provides effective live safety indication
- **Environmental protection:**
  Do not use SF6 gas as arc extinguishing and insulation
  Adopt solid insulation technology and only use recyclable or reusable materials
- **Easy to use:**
  The cable wiring and user operation interface are located at the front of the cabinet, which is convenient for operation and maintenance. The cable installation space is large and easy to install.
- **Maintenance-free, low total cost:**
  The cabinet design is compact, and is a standardized design of 420mm
  The main parts of the switchgear and the insulating gas need no maintenance, which greatly reduces the operation and maintenance cost
  No SF6 pressure check required

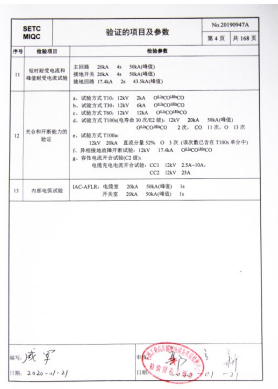
Technical Parameter Table

Description		Breaker
Rated voltage (kV)		12
Rated frequency (HZ)		50
Rated current (A)		630
Rated short-circuit breaking current (kA)		20
Rated short-time withstand current (kA)	Main circuit 4s	20
	Earthing switch 4s	20
	Ground connection loop 2s	17.4
Rated peak withstand current (kA)	Main circuit	50
	Earthing switch	50
	Ground connection loop	43.5
Rated mechanical endurance level	disconnector	3000(Times)
	Vacuum circuit breaker	10000(Times)
Short-circuit breaking life class		30(E2)
Rated operating sequence		O-0.3s-CO-3min-CO
Insulating gas		Nitrogen(N2)
Rated short-circuit making current (kA)		50
Power frequency withstand voltage (kV)	Between phases and phase to earth	42
	Across the isolation gap	48
Lightning impulse (kV)	Between phases and phase to earth	75
	Across the isolation gap	85

Product Qualification


CHPTL
No.20190947A
检 验 报 告
Test Report
试品型号：SHN-12V/630-20
试品名称：户内气体绝缘金属封闭开关设备
委托单位：江苏双汇电力发展股份有限公司
制造单位：江苏双汇电力发展股份有限公司
检验类别：型式试验
机械工业高压输配电设备质量检测中心
Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center
上海电气输配电试验中心有限公司
Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.


SETC MQC 检 验 结 论 No.20190947A 第 2 页 共 168 页
型式试验报告


SETC MQC 验证的项目及参数 No.20190947A 第 4 页 共 168 页

Innovation, Excellence,Seeking-Truth and Far-Sightedness

XGW-12 Outdoor Ring Main Unit Distrbution

Outdoor switching stations are mainly used in power supply and distribution systems with a rated voltage of 12kV and a rated frequency of 50/60HZ, with the functions of connecting, transferring and distributing electric energy. It is widely used in urban industrial parks, residential quarters, commercial centers, densely populated cities, railways, highways, petroleum, chemical and other places. XGW-12 outdoor opening and closing station adopts and learns from foreign advanced technology, and combines 12kV switch cabinets and circuit breakers. Load switch, current transformer, voltage transformer, power distribution terminal, communication control terminal, metering terminal, UPS power supply and indicating instrument, etc. are packed into a 2mm stainless steel box. It has realized the primary and secondary system integration and assembly modularization of the distribution network, which can shorten the construction period and improve the reliability of urban distribution network operation. Our company's standardized and customized primary and secondary integrated outdoor ring net boxes have passed the testing and review work such as of the China Electric Power Research Institute, and won many bids in the State Grid such as Fujian, Sichuan, Hubei and other provinces.

Features

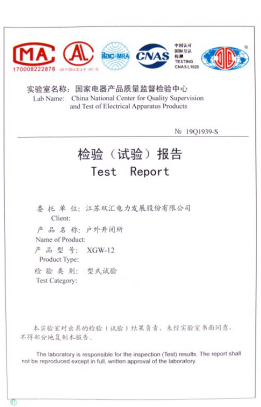
- The shell is made of 2mm304 stainless steel/SMC/GRC and other materials, which has high mechanical strength, and the appearance is treated by a special spraying process, which can withstand strong corrosion and guarantee a 20-year service life.
- The secondary electrical components in the box adopt imported or domestic high-quality products, which have ensured reliable and long-term safe operation in the extremely harsh environment of high temperature and high humidity.
- The box and top cover have heat insulation function, which can effectively reduce the indoor temperature rise caused by sunlight. The unique double top structure can resist condensation, dust and splash.
- DTU can be configured in the factory to realize the intelligent control of the opening and closing station/ring network cabinet, and can meet the needs of the national grid for primary and secondary integration.
- The ring network cabinet has strong versatility and can be equipped with SF6 fully insulated ring network cabinet or environmentally friendly gas (N2) ring network cabinet according to the customized needs of customers.

双汇电力 SH POWER

Technical Parameter Table

Description		Load Break Switch Unit	Switch-Fuse Combination	Breaker Unit
Rated voltage (kV)		12	12	12
Rated frequency (HZ)		50/60	50/60	50/60
Rated current of main bus (A)		630	630	630
Rated current (A)		630	125	630
Rated short-circuit breaking current (kA)			31.5	20
			1700	
Rated short-time withstand current (kA)	Main circuit 4s	20		20
	Earthing switch 4s	20		20
	Ground connection loop 2s	17.4		17.4
Rated peak withstand current (kA)	Main circuit	50		50
	Earthing switch	50		50
	Ground connection loop	43.5		43.5
Rated short-circuit making current (kA)		50		50
Power frequency withstand voltage (kV)	Between phases and phase to earth	42	42	42
	Across the isolation gap	48	48	48
Lightning strike (kV)	Between phases and phase to earth	75	75	75
	Across the isolation gap	85	85	85

Product Qualification



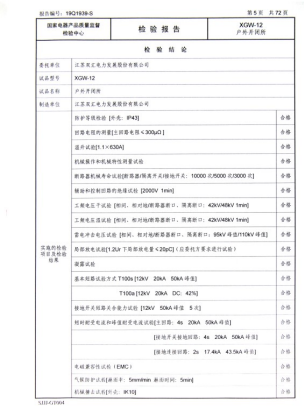
实验室名称：国家电器产品质量监督检验中心
Lab Name: China National Center for Quality Supervision and Test of Electrical Apparatus Products

№ 19Q1939-S

检验（试验）报告
Test Report

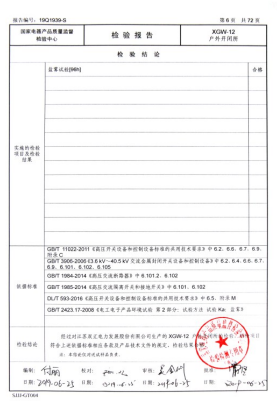
委托单位：江苏双汇电力发展股份有限公司
Client:
产品名称：户外开闭所
Name of Product:
产品型号：XGW-12
Product Type:
检验类别：型式试验
Test Category:

本实验室对出具的检验（试验）结果负责，未经实验室书面同意，不得部分地复制本报告。
The laboratory is responsible for the inspection (Test) results. The report shall not be reproduced except in full, written approval of the laboratory.



检验报告 XGW-12 户外开闭所

检验结论



检验报告 XGW-12 户外开闭所

检验结论

Innovation, Excellence,Seeking-Truth and Far-Sightedness

双汇电力 SH POWER

YBW-12 High-Voltage/Low-Voltage Prefabricated Substation

Box-type substation, also known as prefabricated substation, is composed of high-voltage switchgear, power transformer, low-voltage switchgear, electric energy metering equipment, reactive power compensation equipment, auxiliary equipment and connectors and other components pre-assembled in a box shell . It includes the advantages of small size, less space, maximum access to the load center, easy to move, convenient installation, and short power transmission cycle. It is especially suitable for places such as public buildings, residential quarters, scenic spots and urban roads with small and scattered loads.

Features

- **Altitude:** ≤1000m;
- **Ambient temperature:** -30°C~+40°C;
- **Temperature:** The highest monthly average temperature +30°C, the highest annual average temperature +20°C;
- **Relative humidity:** Daily average ≤95%,monthly average ≤ 90%;
- **Anti-vibration level:** Horizontal acceleration 0.4m/s^2 , vertical acceleration 0.15m/s^2 ;
- **Installation location:** There is no severe impact, serious pollution and chemical corrosion, no conductive dust and explosion hazard.

  Note: if it can not meet the normal use conditions, please negotiate with our company.

Technical Parameter Table

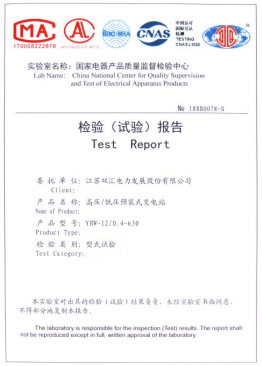
Serial number	Description	Unit	High-voltage	Transformer	Low-voltage
1	Rated voltage	kV	7.2、12	6/0.4、10/0.4	0.42
2	Rated capacity	kVA		Mesh type:200~1250	
3	Rated current	A	200-630		100~300
4	Rated breaking current	A	Load switch 400~630A		15~63
		kA	Combination of electrical appliances depends on the fuse		
5	Rated short time Withstand current (seconds)	kA(XS)	20×(2)	200~400kVA	15×1
			12.5×(4)	400kVA	30×1
6	Rated peak value Withstand current	kA	31.5、50	200~400kVA	30
				400kVA	63
7	Rated making current	kA	31.5、50		
8	Power frequency Withstand voltage /min	kA	Between phases and phase to earth32\40	Oil:35/5min	≤300V 2kV
			Across the isolation gap 34\48	Dry:28/5min	≤600V 2.5kV
9	Lightning strike	kV	Between phases and phase to earth60、75	75	
			Across the isolation gap75、85	75	
10	Noise level	dB		Oil＜55	
				Dry＜65	
11	Protection level			IP44	
12	Dimensions	According to the selected transformer capacity and form, select different dimensions			

Model Description

YB□□-12/0.4-□ **Prefabricated substation (intelligent integrated substation)**

- Transformer capacity（kVA）
- Rated voltage on high/low voltage side(kV)
- Design serial number, generally default
- M: Wooden word line arrangement,P: product font arrangement
- Installed substation (intelligent integrated substation)

Product Qualification



实验室名称：国家电器产品质量监督检验中心
Lab Name: China National Center for Quality Supervision and Test of Electrical Apparatus Products

№ IXB0078-S

检验（试验）报告
Test Report

委 托 单 位：江苏双汇电力发展股份有限公司
Client:
产 品 名 称：高压/低压预装式变电站
Name of Product:
产 品 型 号：YBW-12/0.4-630
Product Type:
检 验 类 别：型式试验
Test Category:

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The laboratory is responsible for the inspection (Test) results. The report shall not be reproduced except in full, written approval of the laboratory.

ZW20-12 Outdoor High Voltage Vacuum Circuit Breaker

ZW20-12 series high voltage AC vacuum circuit breakers are outdoor power distribution equipment with a rated voltage of 12kV and three-phase AC 50Hz. They are mainly used to break the rated load current, short circuit current, and close overload current and short circuit current in the power system. This type of circuit breaker is used in conjunction with the controller, which can not only meet the requirements of the distribution automation system, but also replace the traditional recloser. It is the first choice for the realization of intelligent, automated and miniaturized distribution network substations. This device can be equipped with electronic transformers and two-way metering feeder terminals to realize a complete set of primary and secondary integration applications and meet the requirements of the State Grid and China Southern Power Grid for complete primary and secondary integration or complete automation.

Features

- **Support four remote functions:** It can be matched with the controller to realize remote control, remote measurement, remote signaling and remote adjustment functions.
- **Flexible and convenient operation:** Electric energy storage, electric opening and closing, and manual operation function are supported at the same time.
- **Excellent breaking performance:** Breaking short-circuit current of 25kA up to 30 times.
- **Low operating power and high reliability:** Spring operating mechanism or permanent magnet operating mechanism can be selected.
- **Reliable sealing performance:** SF6 pressure is "zero" gauge pressure and mature sealing structure technology is adopted, with reliable sealing performance and not easy to leak.
- **Flexible outlet mode:** Silicone rubber sleeve can be used for outlet, or fully insulated outlet cable can be used.
- **Safety in use:** An explosion-proof device is installed on the top of the box, even if there is an internal failure, there will be no leakage of high-temperature gas or splashes.
- **High protection level:** Three-phase common box type, protection level reaches Ip67.

双汇电力 SH POWER

Technical Parameter Table

Description		Specification	
Rated voltage（kV）		12	
Rated frequency（Hz）		50/60	
Rated current（A）		630	
Rated insulation level	1 min power frequency withstand voltage (effective value)（kV）	Between phases and phase to earh	Across the isolation gap
		42	48
	Lightning impulse withstand voltage (peak value)（kV）	75	85
Rated circuit breaker breaking current（kA）		20/25	
Rated short-circuit making current (peak value)（kA）		50/63	
Rated short-time withstand current (4S, effective value)（kA）		20/25	
Rated peak withstand current（kA）		50/63	
Mechanical life times		10000	
Protection level		IP65	

Product Qualification

CHPTL

No.20200182A

检 验 报 告

Test Report

试品型号：ZW20-12/M630-25

试品名称：户外高压真空断路器

委托单位：江苏双汇电力发展股份有限公司

制造单位：江苏双汇电力发展股份有限公司

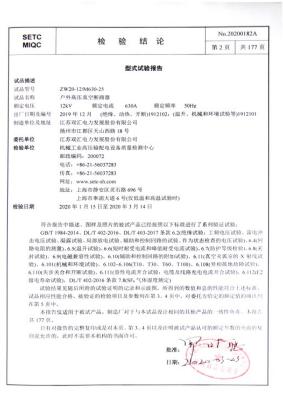
检验类别：型式试验

机械工业高压输配电设备质量检测中心

Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center

上海电气输配电试验中心有限公司

Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.



SETC MIQC 检 验 结 论 No.20200182A 第 2 页 共 177 页

型式试验报告

SETC MIQC 验证的项目及参数（续表） No.20200182A 第 4 页 共 177 页

Innovation, Excellence,Seeking-Truth and Far-Sightedness

ZW32-12 Outdoor High Voltage Vacuum Circuit Breaker

ZW32-12 outdoor high voltage AC vacuum circuit breaker is suitable for three-phase AC power distribution system with rated voltage of 12kV and rated frequency of 50Hz. It is mainly used to break the rated load current, short-circuit current, and close overload current and short-circuit current in the power system; The circuit breaker has two operation modes: manual and electric. It can be equipped with corresponding automatic control interface according to customer requirements, and can also be purchased as a set of supporting FTU/intelligent controllers to realize automatic detection, isolation and alarm of line faults, and monitor line operation , automatically restore the power supply function of the non-faulty section; and equipped with measurement, protection, control and communication modules to meet the requirements of distribution network automation.

This device can be equipped with electronic transformers and two-way metering feeder terminals to realize a complete set of primary and secondary integration applications and meet the requirements of the State Grid and China Southern Grid for complete primary and secondary integration or complete automation.

Features

- **Large capacity and high precision:** The built-in current transformer of the insulated pillar has large capacity and high precision
- **Safe and reliable:** The miniaturized vacuum interrupter is enclosed in a solid-sealed pole with high reliability.
- **Flexible and convenient operation:** Electric energy storage, electric opening and closing, and manual operation function are supported at the same time.
- **Low operating power and high reliability:** Spring operating mechanism or permanent magnet type operating mechanism can be selected. Both mechanisms have been re-developed and upgraded. With the advantages of small size, low working energy consumption, and high reliability.
- **Anti-misoperation:** Optional outdoor isolation switch, there is a visible fracture in the opening state, and an anti-misoperation interlock with the circuit breaker body.
- **High-performance materials:** The switch housing has good corrosion resistance and is suitable for high-quality stainless steel plates (plastic spray treatment).

双汇电力 SH POWER

Technical Parameter Table

Description		Specification	
Rated voltage(kV)		12	
Rated frequency(Hz)		50/60	
Rated current(A)		630	
Rated insulation level		Between phases and phase to earth	Across the isolation gap
	1 min power frequency withstand voltage (effective value)（kV）	42	48
	Lightning impulse withstand voltage (peak value)（kV）	75	85
Rated circuit breaker breaking current(kA)		20/25	
Rated short-circuit making current (peak value)(kA)		50/63	
Rated short-time withstand current (4S, effective value)(kA)		20/25	
Rated peak withstand current(kA)		50/63	
Mechanical life times		10000	
Protection level		IP65	

Product Qualification


CHPTL

No.202001833A

检 验 报 告

Test Report

试品型号：ZW32-12/M630-25

试品名称：户外高压真空断路器

委托单位：江苏双汇电力发展股份有限公司

制造单位：江苏双汇电力发展股份有限公司

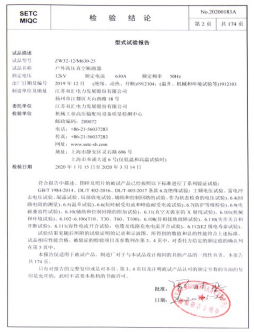
检验类别：型式试验

机械工业高压输配电设备质量检测中心

Machinery Industry High-voltage Transmission and Distribution Equipment Quality Inspection & Testing Center

上海电气输配电试验中心有限公司

Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.


SETC MIQC

检 验 结 论

No.202001833A

第 2 页 共 174 页

型式试验报告


SETC MIQC

验证的项目及参数（续表）

No.202001833A

第 4 页 共 174 页

Innovation, Excellence,Seeking-Truth and Far-Sightedness

双汇电力 SH POWER

MNS Low Voltage Withdrawable Switch Cabinet

In a highly competitive market, MNS assembled low-voltage switchgear has led the mainstream development direction of switchgear by virtue of its years of successful use experience. The entire system has fully considered the future development space, and advanced technology has always been in the leading position in this field. It has far-reaching foresight.

The basic frame of the MNS switch cabinet is assembled by C-shaped materials. The standard modulus of the switch cabinet (ie, the C-shaped mounting hole modulus) E=25mmo frame structure can be assembled into various types of cabinets without special tools, such as the front operation type. And back-to-back single or multiple switch cabinets.

Features

- Compact structure, save the volume of the cabinet
- Cabinets can be arranged back to back
- Economical distribution circuit layout
- All standard components are selected, which is convenient for engineering and technical personnel to design
- Full range of standardization
- The cabinet with corresponding protection level can be designed according to the different requirements of work and environment
- Different types of functional components such as fixed components and withdrawable components can be freely installed in a cabinet
- Easy to update and improve equipment
- High equipment operation continuity and reliability
- The personal safety of operators is more guaranteed

Technical Parameter Table

Description			Specification
Rated voltage	Rated insulation voltage		AC 690V
	Rated working voltage		AC 400V
	Rated impulse withstand voltage		8kV
	1 minute power frequency withstand voltage		2.5kV
Rated current	Main bus	Rated current	⩾4000A
		Rated peak withstand current	⩾176kA
		Rated short-time withstand current	⩾80kA
	vertical Bus	Rated current	⩾1250A
		Rated peak withstand current	⩾105kA
		Rated short-time withstand current	⩾50kA
Rated frequency			50/60Hz
Protection level			IP30~IP42
Standard			GB7251.12 IEC60439-2

Model Description

MNS□-□ **Low-voltage withdrawable switchgear**

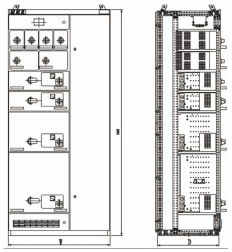
- Auxiliary circuit scheme number
- Main circuit scheme number
- system
- New type
- Modularization and modularization

Application Environment Conditions

- Ambient air temperature: maximum temperature +40°C, minimum temperature -25°C, maximum daily temperature difference 25k;
- Relative humidity: daily average not more than 95%, monthly average not more than 90%;
- Night altitude: 2000m and below;
- Night pollution level: III;

Dimensions

Size	Height (Companymm)	2200
	Width (Companymm)	400、600、800、1000、1200
	Depth (Companymm)	600、800、1000、1200
	Modulus	E=25mm



Product Qualification

中国国家强制性产品认证证书

中国质量认证中心

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GCS Low Voltage Withdrawable Switch Cabinet

It is suitable for three-phase four-wire or three-phase five-wire power systems with three-phase AC 50HZ/60HZ, rated voltage 400V and below, and rated current 4000A and below, for power conversion, distribution and control. It is widely used in power plants, substations, petrochemicals, metallurgical steel rolling, light industry and textiles, factories and mining enterprises, and high-rise buildings.

The basic structure of the GCS cabinet is assembled from C-shaped materials, with a standard modulus of E=25mm. The cabinet is phosphated with acid and then electrostatically sprayed. The internal partitions and drawers are galvanized and passivated. Each functional room is isolated from each other, and its isolated house is divided into functional unit room, busbar room and cable room, and the functions of each room are relatively independent. The vertical channel and the primary and secondary connectors are in the form of the GCS cabinet. The horizontal bus bar can be placed on the top of the cabinet, the top cover can be opened, and back-out method can be adopted. While maintaining the original work performance and appearance, it is safe and reliable, and convenient for installation, testing and maintenance.

Features

- **The parts are versatile and flexible in assembly:** C-profiles with a modulus of 25mm and self-made modular parts are tightly connected, which can meet the needs of various structural forms, protection levels and use environments, and avoid welding deformation.
- **Safety:** Effectively strengthen the protective safety performance.
- **Ease of use:** Easy to install and use, no special complex tools are needed.
- **The protection level of the cabinet is IP30,** and it can also be selected between IP20-IP42 according to user requirements.

双汇电力 SH POWER

Technical Parameter Table

Description			Specification
Rated voltage	Rated insulation voltage		AC 690V
	Rated working voltage		AC 400V
	Rated impulse withstand voltage		8kV
	1 minute power frequency withstand voltage		2.5kV
Rated current	Main bus	Rated current	⩾4000A
		Rated peak withstand current	⩾176kA
		Rated short-time withstand current	⩾80kA
	Vertical Busbar	Rated current	⩾1250A
		Rated peak withstand current	⩾105kA
		Rated short-time withstand current	⩾50kA
Rated frequency			50/60Hz
Protection level			IP30~IP42
Standard			GB7251.12 IEC60439-2

Model Description

GCS□-□ **Low voltage draw out switch cabinet**

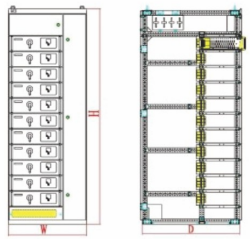
- Auxiliary circuit scheme number
- Main circuit plan numbering system
- Withdrawable
- Enclosed switch cabinet

Application Environment Conditions

- Ambient air temperature: maximum temperature +40°C, minimum temperature -25°C, maximum daily temperature difference 25k;
- Relative humidity: daily average not more than 95%, monthly average not more than 90%;
- Altitude: 2000m and below;
- Pollution level: III;

Dimensions

Size	Height (Companymm)	2200
	Width (Companymm)	600、800、1000、1200
	Depth (Companymm)	600、800、1000、1200
	Modulus	E=25mm



Product Qualification

中国国家强制性产品认证证书

中国质量认证中心

双汇电力 SH POWER

GGD AC Low-Voltage Power Distribution Cabinet

It is suitable for three-phase AC 50/60HZ, rated voltage 400V and below, and rated current 1600A and below power distribution system for power conversion, distribution and control. It is widely used in power plants, substations, petrochemicals, metallurgical steel rolling , light industry and textiles, factories and mining enterprises, and high-rise buildings. The device has the characteristics of high breaking capacity, flexible electrical scheme, convenient combination, series, strong practicability, novel structure and high protection level. The basic frame of the GGD switchgear is made of C-shaped material, which is fastened by self-tapping locking screws and 8.8 high-strength bolts.

Features

- Compact structure, saving the volume of the cabinet;
- Full consideration of the heat dissipation problem in the operation of the cabinet during the design. The upper and lower ends of the cabinet have different numbers of heat dissipation holes. When the cabinet components heat up, the heat star rises and passes through the upper slot Exhaust, and the cold air is constantly replenished from the bottom slot, so that the sealed cabinet forms a natural ventilation channel from bottom to top to achieve the purpose of heat dissipation;
- The cabinet surface paint has good adhesion and good texture. The whole cabinet is in matte tones, avoiding the dazzling effect and creating a more comfortable visual environment for the staff on duty;
- The top cover of the cabinet can be removed when needed to facilitate the installation and adjustment of the main bus on site;
- The protection level of the cabinet is IP30, and it can also be selected between IP20-IP42 according to user requirements.

Technical Parameter Table

Description	Specification
Rated working voltage	400V
Rated insulation voltage	690A
Rated current of main bus	1600A-400A
Rated short-time withstand current of main bus（lew）	30KA
Rated peak withstand current of main bus（Ipk）	63KA
Overvoltage category	Class VI
Pollution level	Level 3
Protection level	IP20-IP42

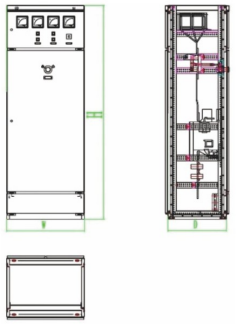
Model Description

GGD□-□□ **Low-Voltage AC Power Distribution Cabinet**

- Auxiliary circuit plan number
- Vain cireuit pian moer
- Desi soriat tabar
- Low-voltage power distribution cabinetcabinet
- Fixed installation and fixed viring of electrical components
- Power cabinet

Dimensions

Size	Height（Companymm）	2200
	Width（Companymm）	400、600、800、1000、1200
	Depth（Companymm）	600、800、1000、1200



Product Qualification

中国国家强制性产品认证证书

证书编号：2018010301058675

委托人名称、地址

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生产者（制造商）名称、地址

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生产企业名称、地址

江苏双汇电力发展股份有限公司

扬州市江都区仙女镇天山西路18号

产品名称和系列、规格、型号

交流低压配电柜（低压成套开关设备）

GGD 主台列：In=1600A～400A,Icw=30kA,Ue=400V,Ui=690V,50Hz,IP30

产品标准和技术要求

GB/T7251.12-2013

上述产品符合强制性产品认证实施规则 CNCA-C03-01:2014 的要求，特发此证。

发证日期：2019 年 05 月 09 日　有效期至：2023 年 04 月 13 日

证书有效期内本证书的有效性依据发证机构的定期监管获得保持。

本证书为变更证书，证书首次颁发日期：2018 年 04 月 13 日

本证书的相关信息可通过国家认监委网站 www.cnca.gov.cn 查询

主任：

中国质量认证中心

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Innovation, Excellence,Seeking-Truth and Far-Sightedness

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GGF Low Voltage Reactive Power Compensation Device

The AC reactive power compensation cabinet can effectively improve the power factor of the electrical load, reduce the line loss, and increase the actual load capacity of the transformer. It has a significant energy saving effect. At the same time, the use of a specific reactor in the system can also effectively prevent harmonic amplification, It can effectively absorb most of the harmonic currents, so that the total distortion rate limit of the harmonic voltage and the limit of the harmonic current content of each sub-harmonic current meet the national standards to achieve the purpose of harmonic control.

GGF AC reactive power compensation cabinet has strong general performance. The compensation cabinet can be combined with various cabinets, such as MNS, GCS, GGD, etc. Capacitance compensation combinations are diverse and flexible. It has Y type compensation method, △ type compensation method, Y+△ combination compensation method. The use of maintenance-free capacitors has a service life of more than 100,000 hours, and the control is accurate and safe.

Technical Parameter Table

Description	Specification
Rated voltage	Below AC400V
Rated frequency	50Hz
Rated compensation capacity	60-420Kvar
Operating voltage range	0.8-1.lUn
Capacitor wiring method	"△" or "Y"
Measuring error voltage	±0.5%, current: ±1.0%, reactive power: ±1.0%
Switching method	Automatic cycle switching, phase switching
Switching delay	0-999 seconds adjustable

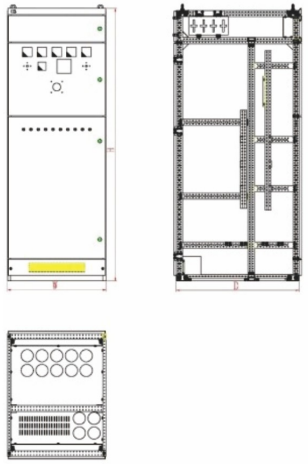
Model Description

GGF -□ -□/ □* □ Low voltage AC reactive power compensation cabinet

- Wiring
- Voltage level
- Compensation
- Capacity
- Compensation method

Dimensions

Size	Height(Companymm)H	2200
	Width(Companymm)W	600、800、1000、1200
	Depth(Companymm)D	600、800、1000、



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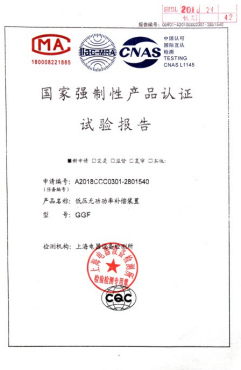
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试验报告


安全型式试验报告


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中国质量认证中心

XLW Low Voltage Cable Branch Box

XLW series distribution boxes are mainly used in public power grids. The new and diverse wiring methods and component layouts can completely realize the installation of busbars without drilling holes, and the busbar current carrying capacity will not be affected. According to the needs of the power transmission and distribution network and users, it provides a variety of branching methods, box types and installation methods, which are convenient for users to choose among flexible and changeable solutions. In the construction and transformation of the national area network, it is the introduction and support product that replaces the overhead line. It is widely used in three-phase low-voltage transmission and distribution systems in outdoor public places such as substations, public mining enterprises, both sides of streets, garden residential quarters, high-rise buildings, airports, key construction and renovation projects, etc., as a cable to other A complete set of sizing equipment for users or equipment to distribute electrical energy.

Features

- **Corrosion resistance, aging resistance, good strength, long life:** 304 stainless steel or SMC (glass fiber reinforced unsaturated polyester plastic box body) box, with excellent mechanical strength, corrosion resistance, aging resistance and other functions, can resist sudden changes The service life can reach 20 years or more due to the weather and harsh working environment.
- **Good weather resistance:** The box has good heat insulation performance, which can effectively prevent moisture condensation.
- **Fully reliable:** The box door adopts a three-point locking structure, which has strong anti-theft performance.
- **Strong airtightness:** The scientific and reasonable matching structure fully guarantees the airtightness of the box body and can effectively prevent all kinds of foreign objects from entering the box.
- **The cabinet structure is diversified:** The cabinet is divided into two types: SMC composite material combination method and metal plate production method.

双汇电力 SH POWER

Technical Parameter Table

Serial number	Description	Unit	Specification
1	Rated voltage	V	AC380
2	Rated current	A	630
3	lmin power frequency withstand voltage	KV	2.5
4	Insulation resistance	Ω	>5.9*1013
5	Short circuit impulse withstand current	KA	25
6	Arc resistance	S	≥180
7	Tracking Resistance Index (PT1)	V	≥600
8	Impact strength	KJ/M2	60-94
9	Bending strength	Mpa	≥150-180
10	Thermal change temperature	°C	≥240
11	Relative humidity		<95%
12	Service life	year	>30
13	Protection level		IP44-IP54
14	Flame retardant		FV0

Product Qualification


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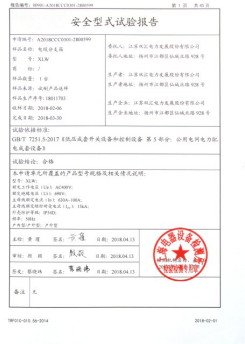
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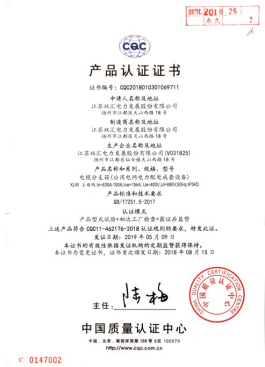

产品认证证书

CMC Low Voltage Bus Duct

CMC type intensive busway is suitable for AC three-phase four-wire, three-phase five-wire system, frequency 50-60HZ, rated voltage 380V-1000V, rated working current 400A-6300A power supply and distribution system, to undertake power distribution tasks, used for The connection of low-voltage power distribution equipment with large and medium loads is mainly used in modern workshops, factories, high-rise buildings, new energy and many other fields. Without adding additional components, it can be used directly in the house. The enclosure protection level is up to IP66 and IP67.

Features

- Fully meet the load demand, 400A-6300A
- The four anti-corrosion, moisture-proof, dust-proof and waterproof functions, and the protection level is up to IP66 and IP67
- Aluminum-magnesium alloy, non-magnetic shell design, to prevent magnetic current interference
- The sub-shaped structure is the thinnest and best busway structure
- I formed 360. Comprehensive protection
- Double zero line system, safer electricity consumption
- Two-page combination, sandwich mechanism design, withstand strong mechanical impact
- Shape heat sink design temperature rise 55K to reduce energy consumption
- Five-core structure, double grounding system, completely shielding magnetic field

双汇电力 SH POWER

Typical Scheme

1 Power unit

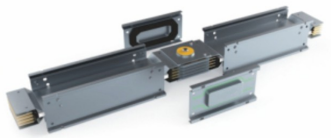
Including the computer ts electric box, the flange is connected to the bus bar through the electric wire or the steel plate

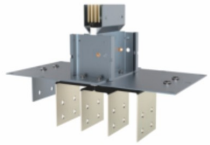
2 Straight K

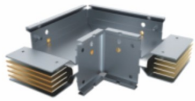
It is divided into cautious line type, rising type and plug-in type, with a total of 11 current levels from 400A to 5000A.

3 Elbow

Including flat heads, vertical domes, T-shaped longevity heads, special angles and heads, combined ritual heads, etc., used to change the direction of the bus.







Product Qualification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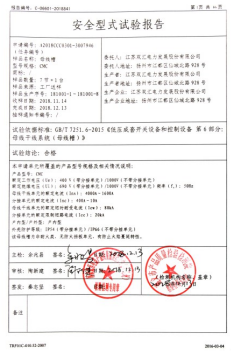
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Power Box

The power box is the power distribution box, which assembles switchgear, measuring instruments, protective appliances and auxiliary equipment in a closed or semi-enclosed metal cabinet or screen according to electrical wiring requirements to form a low-voltage power distribution device. During normal operation, the circuit can be switched on or off by means of manual or automatic switches. In the event of malfunction or abnormal operation, the circuit will be cut off or alarmed with the help of protective appliances. As part of the main incoming line power distribution or branch power distribution, the distribution box is the core of this power distribution system. Our power boxes are often used in key load applications such as commercial buildings, industrial plants, multi-tenant buildings, data centers, and healthcare facilities.

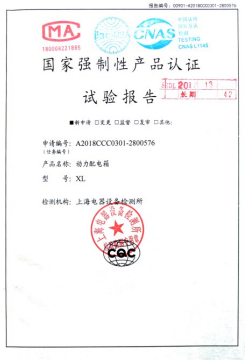
Features

- The structure is compact, saving the volume of the box.
- The whole cabinet is in matte tones, which avoids the dazzling effect and creates a more comfortable visual environment for the staff on duty.
- The protection level of the cabinet is IP30, and it can also be selected between IP20-IP4X according to user requirements.
- The auxiliary circuit has local and remote control functions and automatic switching between local and remote functions.
- Diversity of incoming and outgoing ways, classification of incoming and outgoing ways; top in and top out, top in and bottom out, bottom in and top out, bottom in and out next out.

Technical Parameter Table

Description	Specification
Rated current (A)	630
Rated insulation voltage Ui (VAC)	1000
Rated working voltage (VAC)	400V/440V
Rated impulse withstand voltage (kV)	8
frequency	50/60
Rated short-time withstand current Icw (kA/1s)	20
Rated peak withstand current Ipk (kA)	42
Door type	Solid door, double door, glass door
IP rating (3)	30/31/40/41/54
IK grade (4)	07/10
Type test	GB7251.1and GB725L12
IP rating	IEC60529
Empty cabinet standard	GB/T20641
Environmental operation	indoor
Maximum altitude (m)	2000
Ambient average temperature (°C)	35
Pollution level	3
Cabinet material	Cold rolled steel sheet
Coating	Electrostatic sprayed epoxy powder
Colour	RAL7035 (T industry gray)
Insulation material inside the cabinet	High mixing resistance, flame retardant

Product Qualification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JP Low-Voltage Integrated Distribution Box

JP series 10kV transformer integrated distribution box (hereinafter referred to as "distribution box"), suitable for rural distribution transformers with rated frequency AC 50Hz, rated working voltage 400V, rated current 800A and below, and installed on outdoor poles use. The distribution box has a comprehensive set of low-voltage switchgear and control equipment with functions such as remote online monitoring, electric energy distribution, electric energy metering, reactive power compensation and residual current protection.

Features

- Integrate electric energy metering and reactive power compensation devices to improve equipment utilization and short investment payback period.
- During the switching process, there is no operating overvoltage, no arc reignition; it can be switched frequently, and the compensation is in place for multiple times.
  It can realize split-phase compensation, three-phase compensation, combined compensation, and the configuration of reactor can filter out high-order harmonics.
- Complete protection measures: short circuit, phase loss, overvoltage, undervoltage, harmonic protection, etc.
- It is convenient to set various parameters, automatically exit operation when there is an external failure, and automatically resume operation after power is supplied.
- Reduce line loss, increase the effective output capacity of distribution transformers, and reduce the burden on the power grid; optimize the quality of electricity, including increasing the voltage qualification rate, reducing voltage fluctuations, suppressing voltage flicker, and improving the safety and reliability of grid operation.
- In the three-phase imbalance, the reactive power can be compensated in phases to improve the imbalance.

Technical Parameter Table

Rated voltage	400V	**Rated frequency**	50Hz
Rated insulation voltage	660V	**Rated current**	50,80,125,160,200,250, 315,400,500,630,800A
Rated ultimate short-circuit breaking capacity of circuit breaker	⩾50kA	**Electrical clearance**	⩾10 mm
Creepage distance	>14mm	**Grounding method**	Neutral point is directly grounded
Number of outgoing switch circuits	1~4 way	**Compensation capacity**	5~300kvar, Compensate according to the transformer 10%-40%
Pollution level	three-level	**Installation method**	Single pole bracket installation, installation on transformer bench (channel steel)
Inlet and outlet wiring method	Side inlet and side outlet and bottom inlet and bottom outlet	**Compensation mode**	Split-phase compensation /three-phase compensation /combination compensation
Dynamic response time	<20ms	**Self-discharge characteristics**	After removing 1min, the voltage drops below 50V

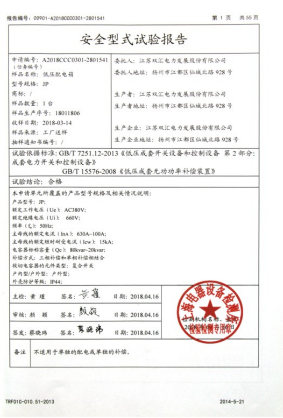
Model Description

JP — □ / □

- compensation capacity (kvar)
- Transformer capacity (kVA)
- low-voltage integrated distribution box

Product Qualification


国家强制性产品认证
试验报告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Metering Box JLXZB

The electric energy meter box is suitable for the centralized electric energy metering management of apartment buildings, office buildings, and household electricity. Pulse-type electric energy meters can be installed according to the design needs to realize computer management, and there is a place for installing remote measurement and remote communication equipment. A miniature circuit breaker is installed in the meter box to protect against overload and short circuit. The non-metallic materials, shell and metal coatings, structural strength of the shell, and signs used in the metering box meet the expected life span of no less than 20 years.

Features

» Safety requirements

The electrical installation and protection measures are reliable, insulation measures are installed between the electrical components and the mounting plate (bottom plate), the mounting accessories and the mounting plate (bottom plate) have sufficient safety margin and can pass the corresponding static load capacity test.

The shell of the star counting box has reliable rainproof and necessary dustproof measures, and its protection level is not lower than IP34D (including cable and conduit entrance). The box door, window and door lock have a certain anti-pry function, and the cable and wire perforation has Protective measures against wear.

» Reliability requirements

The mechanical properties, thermal properties, and anti-aging properties of the casing and insulating materials should be able to pass the corresponding national standards.

The door lock of the box has the function of rainproof and dustproof.

The electrical plug of the electric energy meter connector undergoes a special process to make it corrosion-resistant, oxidation-resistant, and has a long life and high reliability.

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Technical Parameter Table

Description	Body part				Observation window part
	GoldenSession		Non-metal		Non-metal
	Continuous hot-dip galvanized steel sheet	Austenitic non-magnetic stainless steel cold-rolled steel sheet	Polycarbonate resin+acrylic wax-butadiene-styrene resin	Glass fiber reinforced unsaturated polyester molding compound	Polycarbonate resin
Material related standards	GB/T 2518	GB/T 3280	/	GB/T 23641	HG/T2503
Material code	/	/	PC+ABS(Flame retardant)	SMC(FRP)	PC
Density (g/cm^3)	7.8	7.93	1.2	1.78	1.20
Tensile Strength(MPa)	270-420	≥520	≥42	≥55	≥55
Bending strength(MPa)	/	/	≥65	≥140a	≥95
Impact strength of unnotched simply supported beam(kJ/m^3)	/	/	≥42	≥55b	≥45
Deflection temperature under load((Tffl.8)℃)	/	/	≥100	≥180	≥130
Tortoise gas strength (in normal oil)kV/mm	/	/	≥15	≥20	≥16
Flammability rating	/	/	V0	V0	V0
Yield strength MPa	140-300	≥205	/	/	/
Elongation at break %	≥26	≥40	/	/	/
Reference model	DX52D+Z	1Cr18Ni9	Premium grade	GF25,Q,M	First class
Material thickness mm	≥1.5	≥1.5	≥3 (single epitope); ≥4 (multiple epitopes)		⩾2.5

Product Qualification


国家强制性产品认证
试验报告


安全型式试验报告


产品认证证书
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中国质量认证中心

Innovation, Excellence,Seeking-Truth and Far-Sightedness

Lighting Box

The PZ30 series of low-voltage enclosed lighting boxes are suitable for single-phase and three-phase circuits with a rated voltage of 500V and a load current of no more than 100A. It is designed for lighting, motor control, and circuit overload, leakage and short circuit protection. Reasonable, small size, beautiful appearance, safe and reliable to use. Our lighting box is a brand new indoor terminal distribution box product developed for the mid-to-high-end commercial and civil construction markets. The product is generous in appearance and complete in specifications. It can be widely used in apartments, villas, hotels, office buildings and other places. It can be used in conjunction with Shuanghui Power's modular low-voltage terminal power distribution products and panel switches to provide users with a safe, reliable, coordinated, and a complete indoor low-voltage terminal power distribution solution is the best choice for real estate developers, panel factories and end users.

Features

- **Optimized design, efficient and convenient**

  Complete models, diverse sizes, flexible and practical, unique waist-shaped hole design, auxiliary bracket leveling, smooth and accurate construction, quick installation, quick work and meticulous work, save time and worry, and ensure beautiful and more efficient on-site installation.

- **Fashion and versatile, outstanding taste**

  The shell design is stylish and simple, with generous temperament, exquisite details, outstanding texture, low-key decoration of the home space, seamless integration into the residential space of different styles.

- **Seiko excellent materials, strong and durable**

  Selected excellent materials, environmental protection, corrosion resistance, and excellent physical properties.

  It is resistant to yellowing, scrubbing, non-sticking, anti-aging, anti-UV, anti-static, moisture-proof, anti-mildew, and flame-retardant. It will last forever and feel smooth.

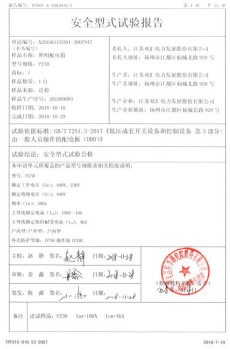
  Rugged and durable, with high standards and strict anti-rust technology, it provides a strong guarantee for your home power load center, stabilizes the use, and ensures the stable operation of the core circuit breaker.

Technical Parameter Table

Description	Specification
Rated working voltage	AC220V/380V
Rated insulation voltage	AC660V
Rated current and short-time withstand current of the bus	80-16A、4.5kA
Electrical clearance	≥5.5mm
Creepage distance	≥3.3mm
Rated current of incoming circuit	80A-10A
Shell protection level	IP30
Contact protection category	I

Product Qualification


国家强制性产品认证
试验报告


安全型式试验报告


中国国家强制性产品认证证书
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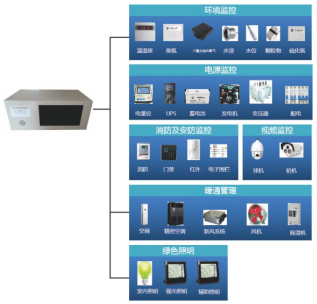


SHDL-6000 Substation (Distribution Room) Intelligent Integrated Monitoring System

The construction of the intelligent auxiliary monitoring system is to enhance the perception ability of substations and power distribution rooms. In response to failures such as power loss, fire, flooding, etc., it forms from perception, fault generation to automatic inspection, and judges equipment status and fault conditions. The whole process of intelligent transportation and inspection. An intelligent inspection mode with interactive perception is formed, which effectively reduces the safety risks of on-site inspections, guarantees the center's real-time management capability of on-site conditions, improves on-site inspection efficiency, and reduces operation and maintenance costs.

Features

» **Intelligent perception and automatic processing**

Through the auxiliary control host, real-time acquisition of field data, such as temperature, humidity, SF6, 02, noise, fans, water pumps, dehumidifiers, lighting, security, fire protection, etc. When the on-site data exceeds the limit, the auxiliary control host will coordinate processing according to the system preset strategy. Which can realize one-to-one, one-to-many, and many-to-one linkage combination

» **Multi-dimensional monitoring and intelligent analysis**

Through multi-dimensional collection of on-site operating data and algorithm analysis, conclusion data can be provided to assist decision-making, helping the operation and maintenance department to analyze and judge problems.

» **Intelligent inspection**

According to the specifications and requirements of the operation inspection, the inspection report can be automatically generated, and the omnidirectional and multi-angle substation inspection system can be constructed by combining the results of the intelligent analysis.

双汇电力 SH POWER

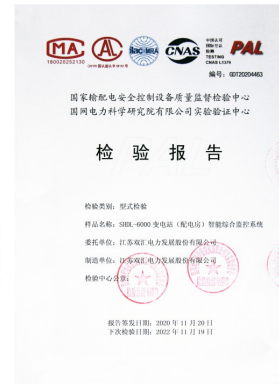
Technical Parameter Table

Description	Specification	
Telemetry interface	Analog collection channel（AKRS485）	4 way
Remote signal interface	Switch signal acquisitionDI（Dry contact signal）	8 way
Remote control/ linkage interface	Control or linkage signalD0	8 way
	(Relay dry contact) Drive capacity: AC 220V/ 2A	
Access control interface	Card reader	WEGEN261way
	Access control interface	2 way
Network Interface	10/100M RJ45	Full duplex
USB interface	USB 2.0/3.0	✓
Embedded Systems	Built-in WEB browsing function	✓
	Built-in configuration function	✓
	Built-in IP configuration	✓
	Built-in linkage/manual function	✓
Network adaptability	local area network	✓
	4G/5G	✓
Installation structure	Installation form	4U
		Standard 19-inch rack installation
	size	430 X 250 X 178 (mm)
Operating system and configuration	Linux/Cortex-A53 Eight cores,1.4G Hz/2GB/16GB	
Secondary development software interface	Designated interface development	Customized interface access
Display module		Touch screen display
		Indicator light display

Product Qualification


国家输配电安全控制设备质量监督检验中心
国网电力科学研究院有限公司实验验证中心
检 验 报 告


检 验 报 告 总 表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