



SUN.KING TECH

Stock code: 0580.HK

Beijing

- Headquarters

Wuxi, Jiangsu

- Wuxi Sun.King Power Capacitor Co., Ltd.

Switzerland

- Astrol Electronic AG
- SwissSEM Technologies AG

Jiashan, Zhejiang

- Jiashan Sun.King Electrical Equipment & Technology Co., Ltd.
- Sun.King Pacific Semiconductor Technology (Zhejiang) Co., Ltd.
- Zhejiang Jiashan Keneng Power Equipment Co., Ltd.
- Zhejiang Sine Power Technology Co., Ltd.
- Jiashan Sinking Power Electronic Capacitor Co., Ltd.
- Sinking New Energy Technology Co. Ltd.

Wuhan, Hubei

- Wuhan LandPower Co., Ltd.

Germany

- morEnergy GmbH

Ningbo

- Ningbo Hairong Electric co.,Ltd.

Netherlands

- Astrolkwx



POWER ELECTRONIC CAPACITORS

Jiashan Sinking Power Electronic Capacitor Co., Ltd.



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WeChat Official
Account

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Sun.King, a world-class supplier of DC support capacitors for flexible DC transmission

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GROUP INTRODUCTION

SUN.KING TECHNOLOGY GROUP LIMITED

Technologically
Advanced
Highly Influential

Power Electronics Device Supplier and System Integrator

10+

Over 10 subsidiaries located in Beijing, Jiashan, Wuxi, Wuhan, as well as Switzerland, Germany, and the Netherlands

00580

Listed on the Main Board of HKEX in 2010, Stock Code: 00580

1.5
Billion
+

Annual sales revenue of approximately 1.5 billion

6

6 R&D centers worldwide

7

7 nationally recognized high-tech enterprises in China



900+

More than 900 employees in total

30%+

Over 30% of the workforce consists of technical and R&D personnel

9

9 national-level energy technology achievements

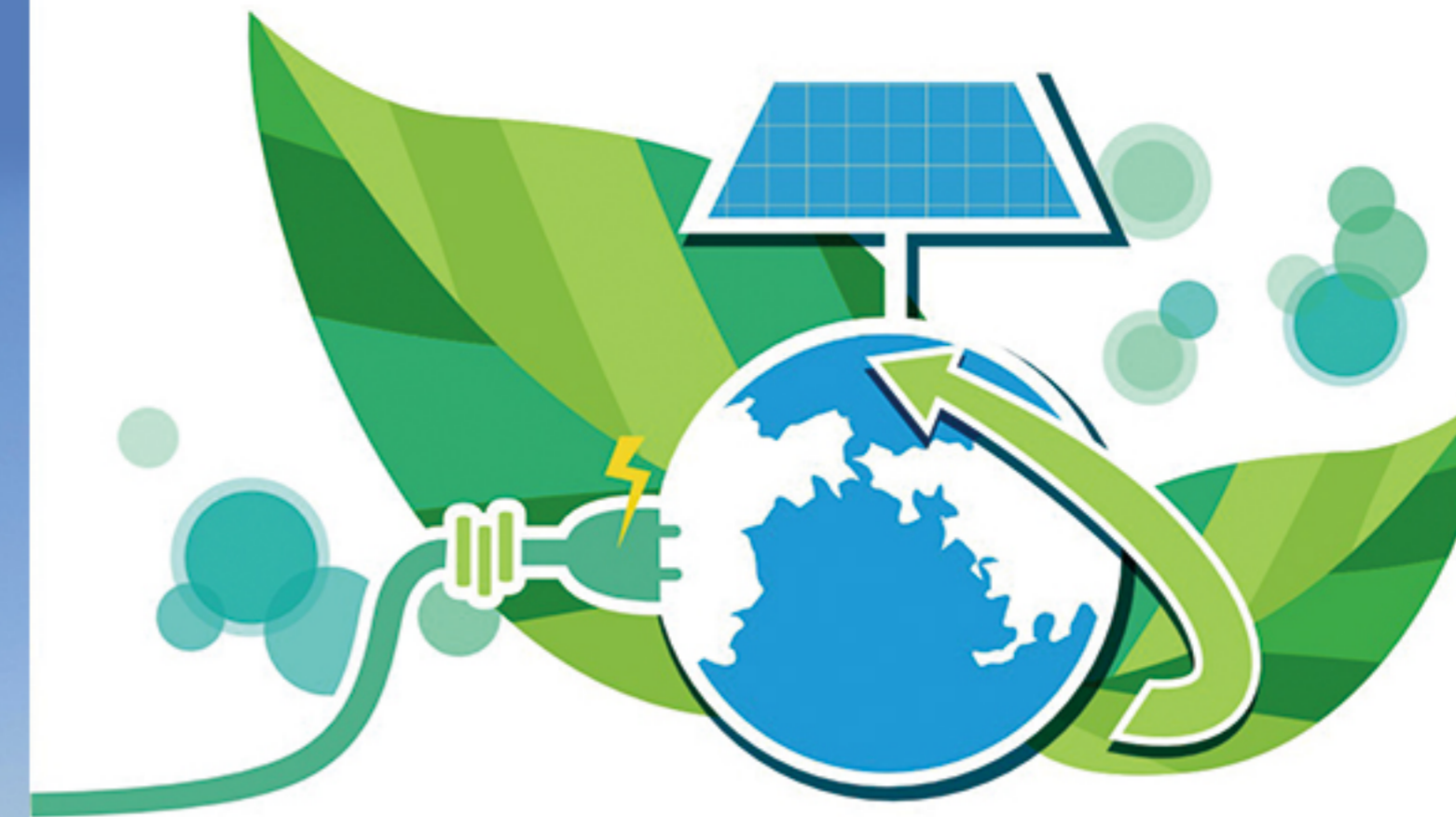
20

Over 20 provincial and municipal technological innovation awards

300+

Over 300 granted patents





COMPANY PROFILE

In June 2017, our company established a production base covering an area of over 15,000 square meters. The first phase is designed to have an annual production capacity of 30,000 sets of large-capacity capacitors. The production environment and facilities equipment are all planned in accordance with the quality requirements of high-end capacitors. Both the component and core processing steps are completed in a constant temperature and humidity environment. Among them, the cleanliness of the winding environment reaches the dry level, reaching the highest standard in the same industry. The base is also equipped with complete testing equipment, which greatly improves the testing efficiency and level, providing strong technical support for the development of higher-quality products.

The Company has obtained certification for quality management, environmental management, occupational health and safety management, and information security management. Guided by the principle of "customer and quality first", the Company has always practiced the business philosophy of "pursuing excellence for a win-win future". It's committed to delivering first-class technology, high-quality products, and refined services, perpetually offering clients exceptional products and services, and continually bolstering communication and collaboration with customers.

Jiashan Sunking Power Electronic Capacitor Co., Ltd., a wholly-owned subsidiary of Sun.King Technology Group Limited, is located in the center of the Yangtze River Delta Economic Zone - Jiashan Electronic Information Industry Park in Zhejiang Province. The Company is primarily engaged in the research, development, design, manufacturing, and engineering services of metallized polypropylene film capacitors. Its independently developed power electronic capacitors, including DC-Link capacitors, AC filter capacitors, and pulse capacitors, are widely used in fields such as flexible DC transmission projects, rail transportation, industrial frequency conversion, photovoltaics, and wind power.



The Company attaches great importance to the cultivation of independent R&D capabilities and proactively promotes industry-university-research collaboration with top universities and key clients, including Tsinghua University, Xi'an Jiaotong University, State Grid, China Southern Power Grid, and China Aerospace Academy of Systems Science and Engineering. Their collaborative projects encompass special projects included in the National Key Technology Research and Development Program by the Ministry of Science and Technology, flexible DC engineering localization projects of State Grid and China Southern Power Grid, research and development of new magnetic levitation trains, and the development and upgrading of products for rail transportation and industrial frequency conversion. In recent years, the Company has experienced rapid growth and now boasts a specialized R&D team of over 20 experts. Core team members lead the "Energy Storage and Smart Grid Technology" Project 4 in the national key R&D programs. With deep theoretical expertise and over 20 years of experience in capacitor R&D and manufacturing, the team provides comprehensive technical support and solutions. The Company holds more than 10 core technology patents and has published 13 high-quality papers, including one indexed by EI. Its products, models ZCMJ2.8-7500 and ZCMJ2.8-8000, have been certified to meet internationally advanced levels with their overall performance indicators.



Area **15000⁺** square meters

Annual **30,000** sets production capacity

10 national-level patents

PARTNERS



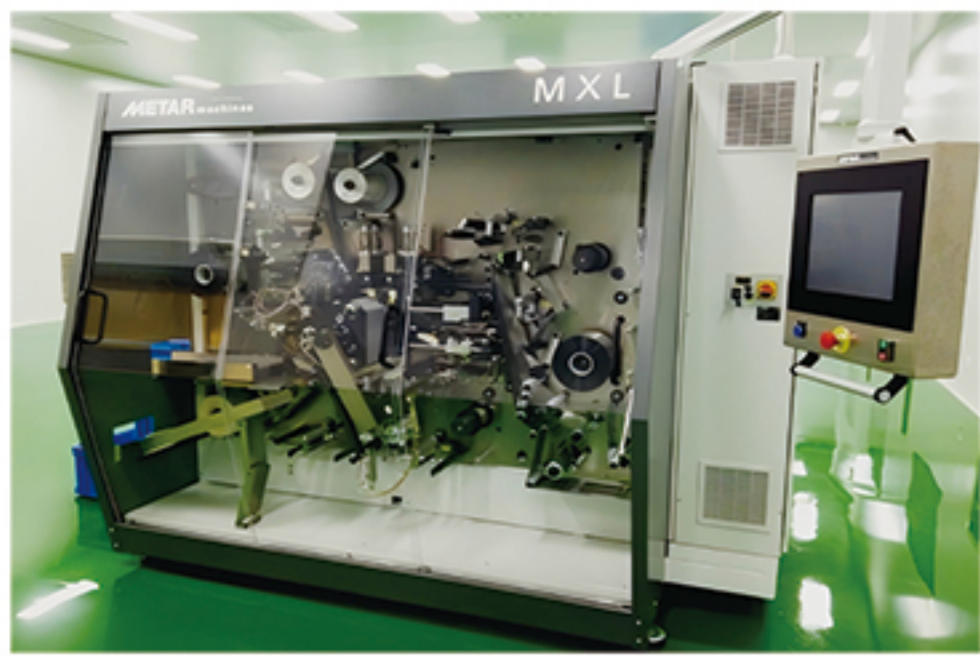
PATENT CERTIFICATES



MANAGEMENT SYSTEM CERTIFICATES



Advanced Equipment and Processes



Winders

- ▶▶▶ 22 most advanced fully automated winders at home and abroad
- ▶▶▶ Automatic photoelectric correction with strong anti-interference capability
- ▶▶▶ Dynamic edge misalignment adjustment for high winding precision
- ▶▶▶ Dynamic tension and pressure adjustment for stable control
- ▶▶▶ Component identification codes integrated with the MES for reliable quality traceability



Metal Sprayers

- ▶▶▶ Fully automated specialized metal sprayers with uniform particle distribution
- ▶▶▶ Strong adhesion on component surfaces, low contact resistance, minimal energy loss, and high charge-discharge durability
- ▶▶▶ Fully automated operation for high batch production efficiency



Vacuum Tanks

- ▶▶▶ Uniquely designed "one to-two" vacuum tanks for energy savings
- ▶▶▶ Large tank capacity with uniform internal temperature and high operational efficiency
- ▶▶▶ Extracting internal air from components and evaporating moisture, ensuring compactness
- ▶▶▶ Fully automated precise control of temperature and vacuum levels



Component Empowerment

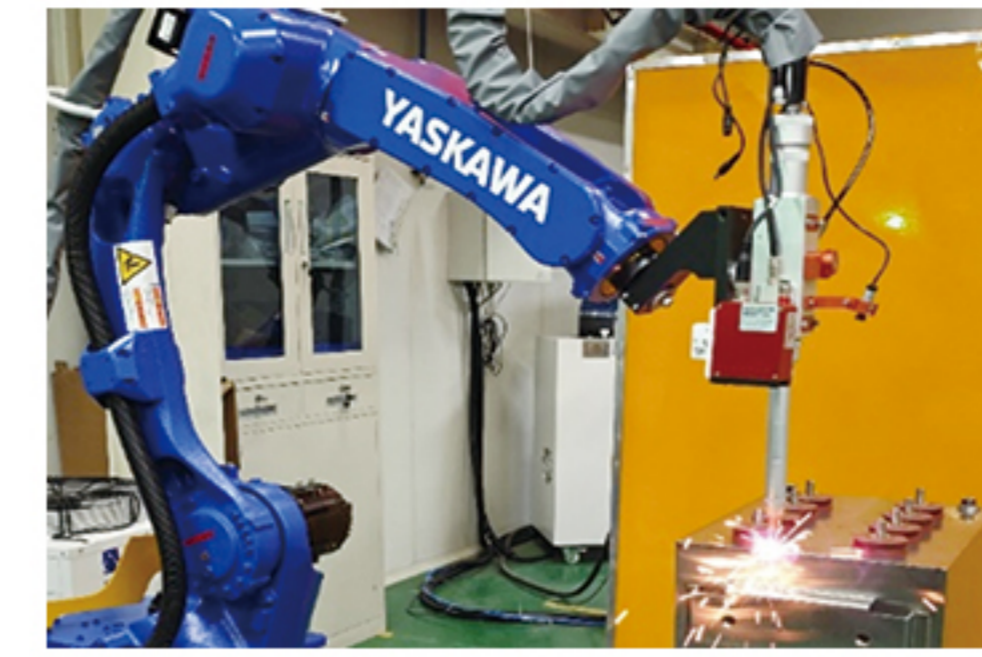
- ▶▶▶ Screening high quality components through tests such as withstand voltage, capacitance, and loss
- ▶▶▶ Fully automated assembly line for high production efficiency
- ▶▶▶ Enhancing component reliability during product operation



Assembly

- ▶▶▶ Assembly line operation with compact and flat cores, preventing component displacement
- ▶▶▶ Automatic core flipping for high operational efficiency
- ▶▶▶ Robotic vision-guided welding technology for precise positioning and reliable weld points

Advanced Equipment and Processes



Box Cover Welding

- ▶▶▶ Robotic laser welding for high operational efficiency
- ▶▶▶ Weld seam tensile strength surpasses that of the base material, providing strong explosion resistance
- ▶▶▶ Neat and consistent weld seams for an aesthetically pleasing appearance



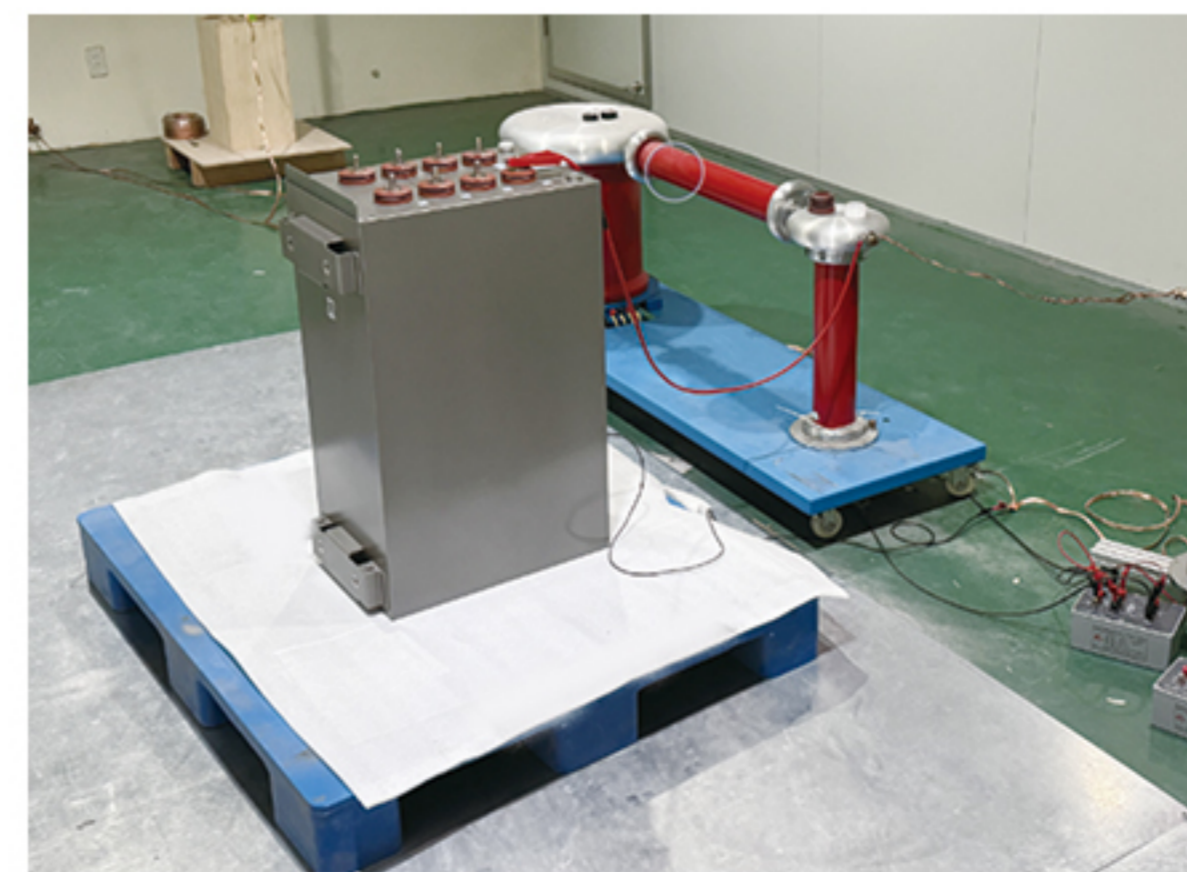
Potting

- ▶▶▶ Fire resistant polyurethane compliant with UL94 V-0 standard, achieving optimal balance between thermal conductivity and insulation performance
- ▶▶▶ Proper matching of vacuum, temperature, and humidity parameters
- ▶▶▶ Fully automated control with excellent fluidity during potting and strong adhesion after curing, providing superior partial discharge resistance for electrodes and shells
- ▶▶▶ Simultaneous operation for multiple products, ensuring high efficiency

Testing Capabilities



- ▶▶▶ Comprehensive testing equipment capable of conducting complete routine and type tests for capacitors in full compliance with relevant standards, including AC-DC superimposed endurance and destructive testing



- ▶▶▶ Professional partial discharge testing shielded room, supporting electrode shell partial discharge testing with advantages such as low background discharge <math><1 \text{ pC}</math> and highly accurate discharge measurement (<math><1 \text{ pC}</math>)

- ▶▶▶ Complete design verification testing equipment, including AC-DC superimposed component endurance testing devices, component impulse discharge equipment, and dual 85 testing equipment for cylindrical products

KEY PRODUCTS

Dc Support Capacitors for Power Applications, such as Flexible DC and SVG Systems

Applications and Features

Applications: Suitable for conventional flexible DC projects, low frequency power transmission, offshore wind power converter valves, circuit breakers, and SVG devices.

Features: High safety, excellent weather resistance, low inductance, and high reliability.

Standards Compliance

IEC61071, GB/T17702, and user technical specifications.

Appearance

Application Environmental Conditions

Application Environment: Indoor;

Long-term Operating Temperature: -40°C to 50°C ;

Relative Humidity: $<95\%$ RH;

Atmospheric Pressure: Slight positive pressure;

Altitude: $\leq 2000\text{m}$.

Key Performance Indicators

Rated Voltage (kV): 1.0 to 4.0;

Rated Capacitance (μF): 2000 to 20000;

Capacitance Tolerance: 0 to $+5\%$;

Equivalent Series Inductance (nH): ≤ 50 ;

Service Life (Years): ≥ 40 ;

Other Detailed Parameters: Based on user requirements.



DC Support Capacitors for Inverters

Applications and Features

Applications: Suitable for mining, marine, and other multi-purpose frequency converters.

Features: High safety, excellent weather resistance, low inductance, and high reliability.

Standards Compliance

IEC61071, GB/T17702, and user technical specifications.

Appearance

Application Environmental Conditions

Long-term operating temperature: -40°C to 70°C

Key Performance Indicators

Rated Voltage (kV): 1.0 to 4.0;

Rated Capacitance (μF): $2 \times (1000 \sim 3000)$;

Capacitance Tolerance: $-5\% \sim +5\%$;

Other Detailed Parameters: Based on user requirements.



DC Capacitors for Rail Locomotives

Applications and Features

Applications: Suitable for railway locomotive traction power supply systems and power lighting supply systems.

Features: High safety, excellent weather resistance, low inductance, and high reliability.

Standards Compliance

IEC61881,GB/T25121,and user technical specifications.

Application Environmental Conditions

Operating Temperature: -40°C to 70°C

Key Performance Indicators

Rated Voltage(kV):1.0 to 4.0;

Rated Capacitance(μF):750 to 6000;

Capacitance Tolerance:-5%~+5%;

Other Detailed Parameters:Based on user requirements.

Appearance



Pulse Capacitors

Applications and Features

Applications:Suitable for military applications, medical equipment, laser power supplies, and industrial magnetizers.

Features: High safety, excellent weather resistance, low inductance, and high reliability.

Standards Compliance

JB/T8168 and user technical specifications.

Application Environmental Conditions

Operating Temperature:-40° C to 40°C.

Key Performance Indicators

Rated Voltage(kV):≤100;

Capacitance Tolerance:-5%~+5%;

Other Detailed Parameters: Based on user requirements.

Appearance



SPECIFICATIONS

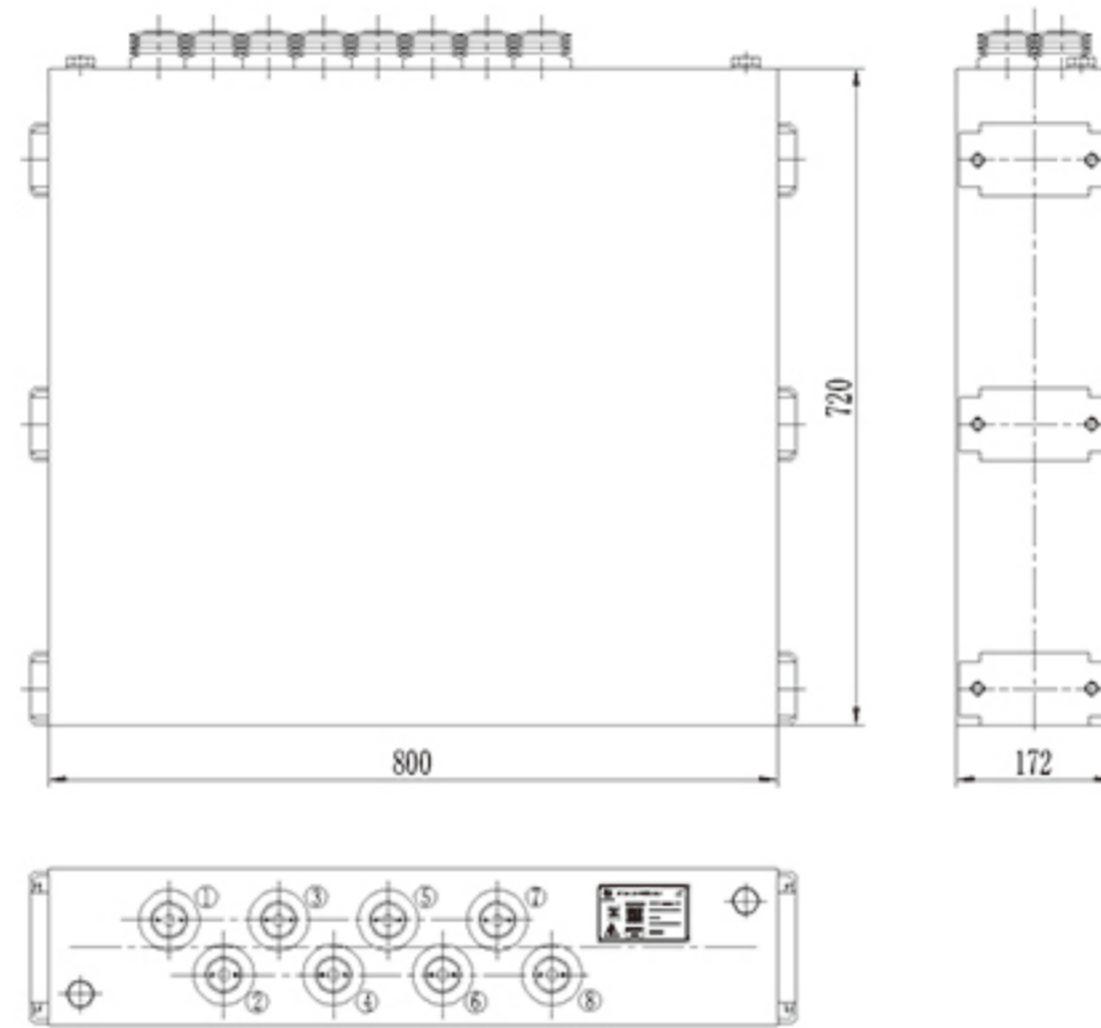
U _N (V _{DC})	C _N (μF)	ESR (mΩ) @100Hz	ESL (nH)	I _{max} (A)	Box Shell Dimensions(mm)			Weight (kg)
				50°C	L	W	H	
1200	8000	< 0.16	< 80	260	360	95	410	30
	15000	< 0.20	< 50	450	450	160	550	57
2200	8500	< 0.22	< 50	800	420	325	665	117
	10000	< 0.20	< 40	850	430	327	605	116
	20000	< 0.20	< 40	650	490	328	1015	208
12000	3000	< 0.53	< 60	300	255	267	617	60
	4000	< 0.47	< 50	1500	506	265	420	72
	5000	< 0.42	< 40	500	750	172	505	88
	6000	< 0.29	< 40	650	800	172	585	103
	7000	< 0.20	< 50	500	737	172	685	113
	7500	< 0.24	< 40	700	750	175	725	122
	8000	< 0.13	< 40	800	750	150	885	137
	9000	< 0.20	< 40	900	810	290	328	154
	10000	< 0.28	< 40	750	750	172	925	125
	4000	2400	< 0.53	< 50	300	840	150	580
4000	3600	< 0.37	< 60	500	840	175	640	120
	4000	< 0.40	< 50	500	770	175	840	147
	5500	< 0.29	< 40	700	800	175	1090	204
	6000	< 0.27	< 50	700	720	175	1195	187

Notes:

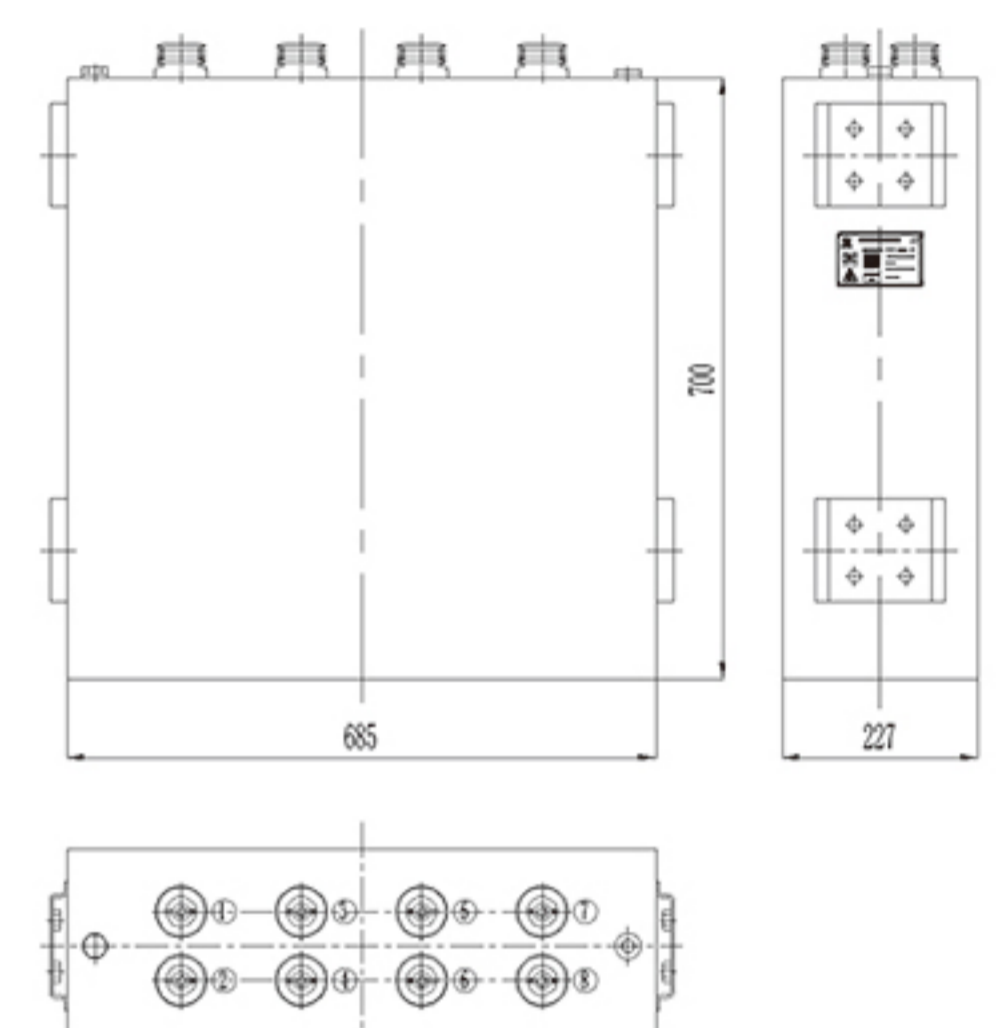
1. The dimensions listed in the table are commonly used box shell sizes for this product series. Products with other specifications can also be manufactured.
2. Users can choose capacitors with or without M12 bottom bolts.

ENGINEERING APPLICATION EXAMPLES

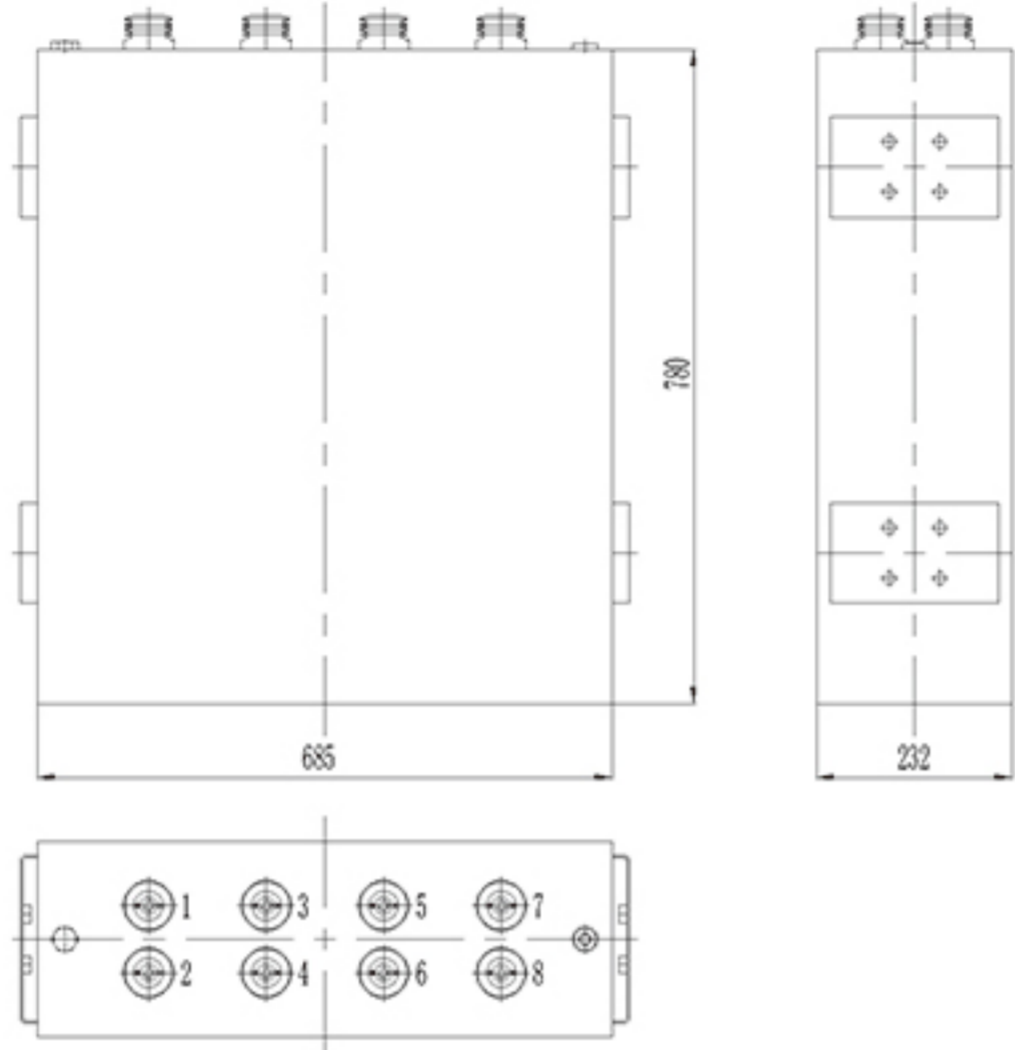
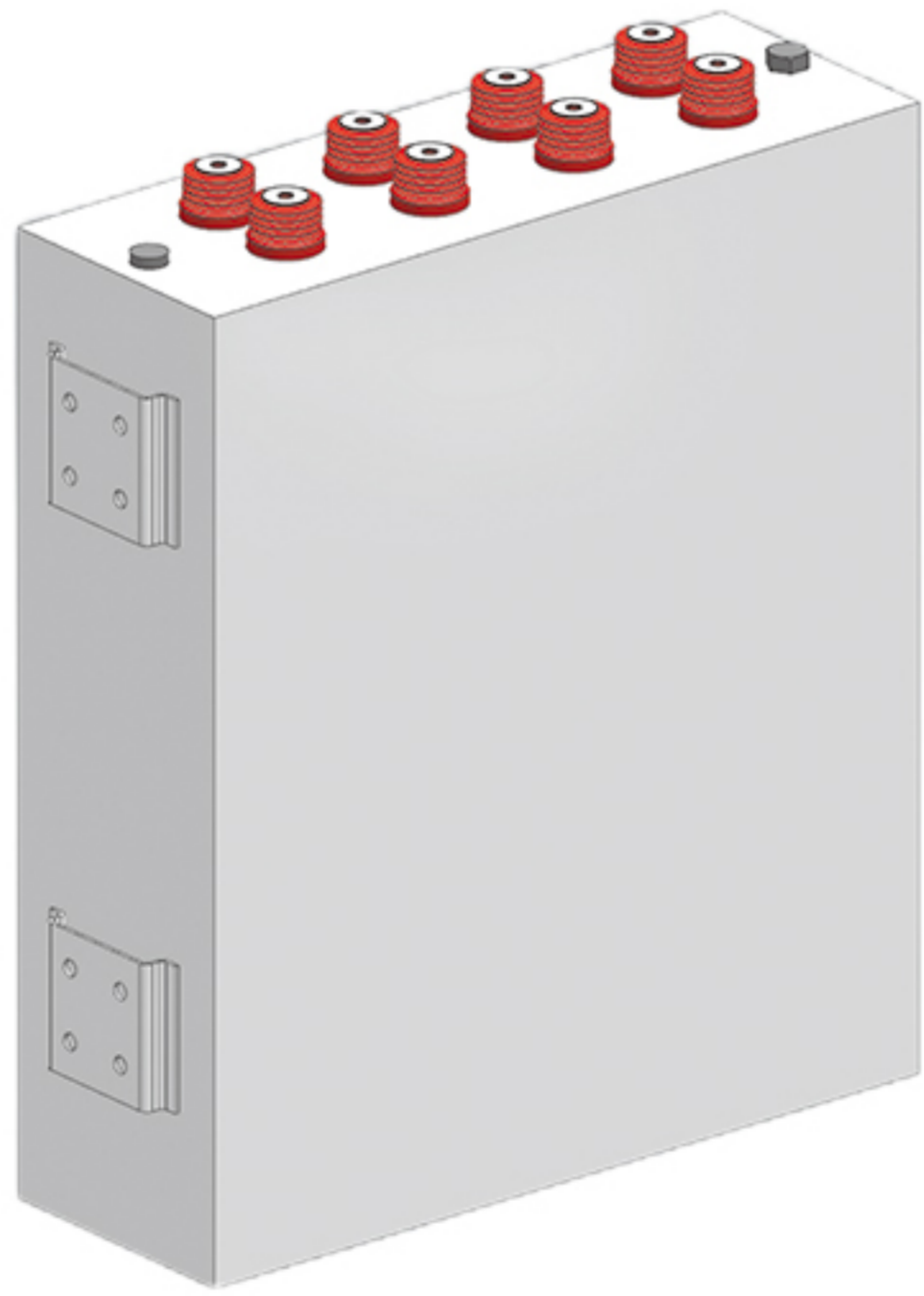
Gansu-Zhejiang±800kV Ultra-high Voltage Flexible DC Transmission Project

Model	ZCMJ2.8-8000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2800V _{DC}	
Capacitance Range	8000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4200V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day) 1.15U _N (30 minutes/day) 1.2U _N (5 minutes/day) 1.3U _N (1 minute/day) 1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	700kA	
Maximum Operating Altitude	2000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	

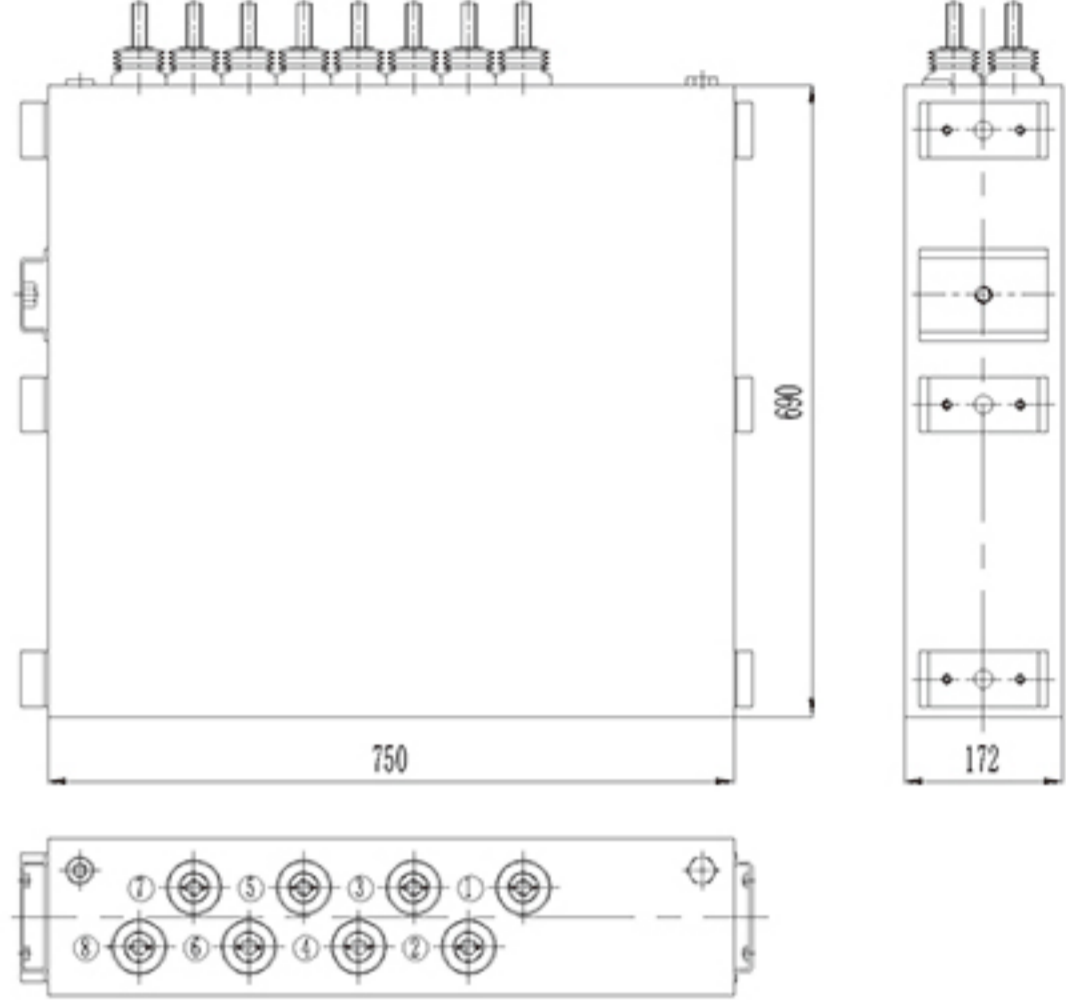
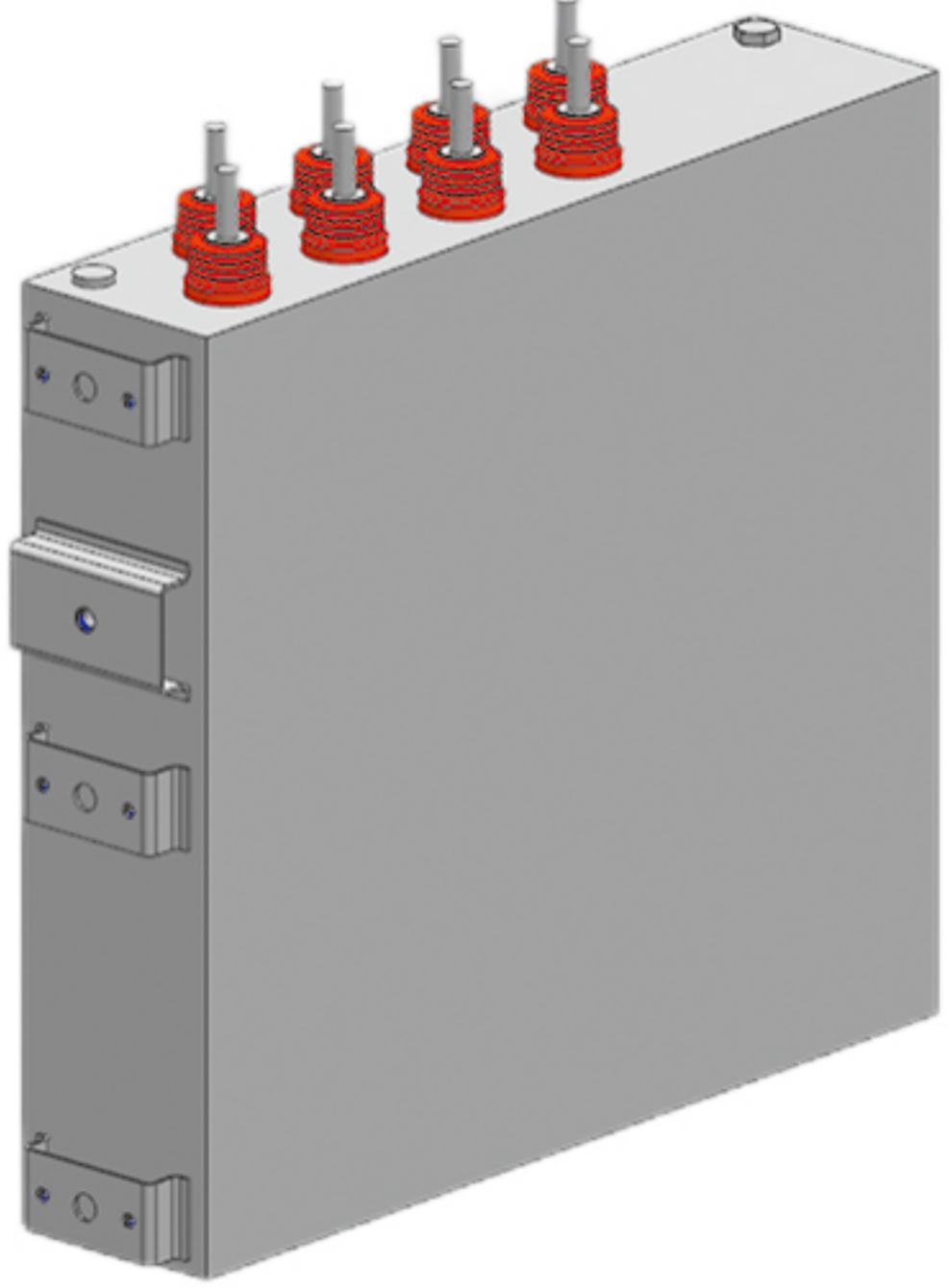
Zhangbei ±500kV Flexible DC Transmission Project

Model	ZCMJ2.8-8000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2800V _{DC}	
Capacitance Range	8000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4200V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day) 1.15U _N (30 minutes/day) 1.2U _N (5 minutes/day) 1.3U _N (1 minute/day) 1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	800kA	
Maximum Operating Altitude	2000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	

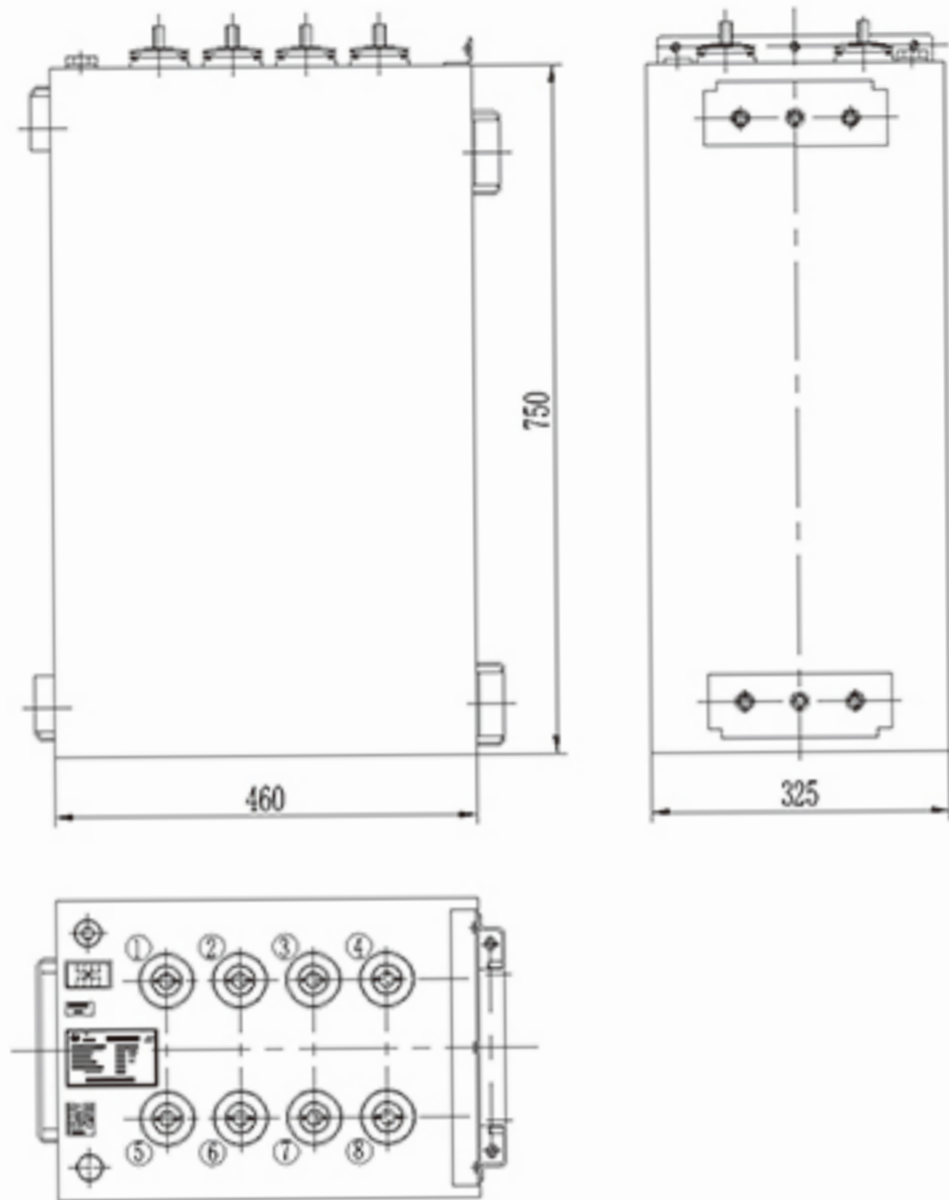
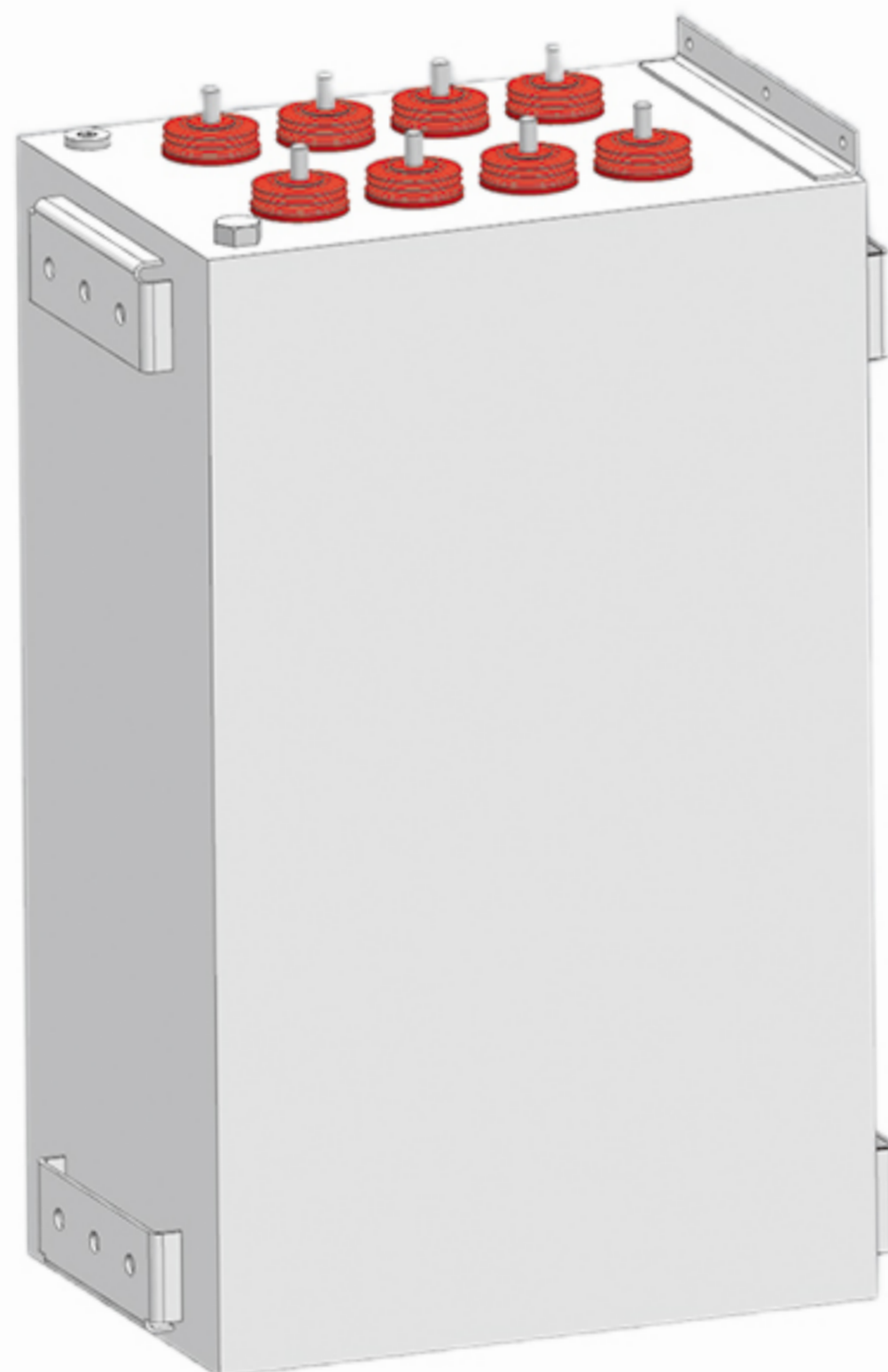
Offshore Wind Power Flexible DC Transmission Project

Model	ZCMJ2.8-9000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2800V _{DC}	
Capacitance Range	9000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4200V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day)	
	1.15U _N (30 minutes/day)	
	1.2U _N (5 minutes/day)	
	1.3U _N (1 minute/day)	
	1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	700kA	
Maximum Operating Altitude	2000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	
		<p>3D Model of the Capacitor</p> 

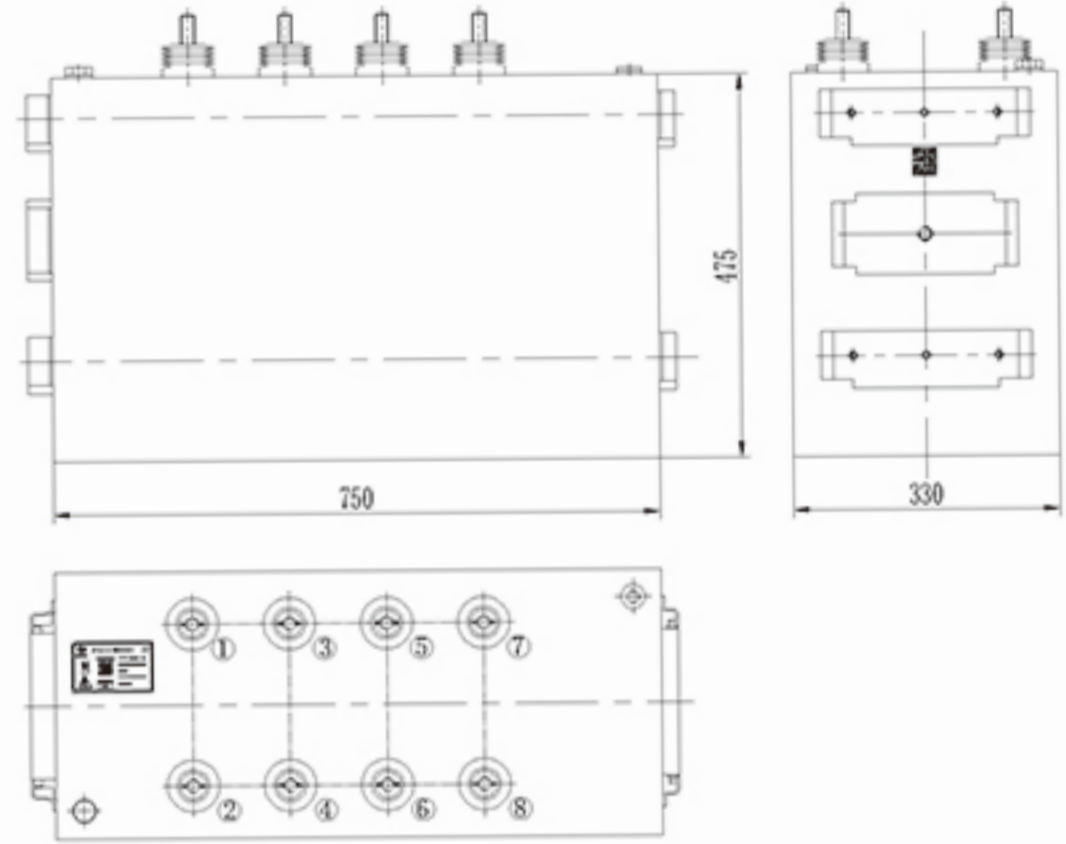
Low-frequency Power Transmission Project

Model	ZCMJ2.8-7000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2800V _{DC}	
Capacitance Range	7000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4500V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day)	
	1.15U _N (30 minutes/day)	
	1.2U _N (5 minutes/day)	
	1.3U _N (1 minute/day)	
	1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	750kA	
Maximum Operating Altitude	2000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	
		<p>3D Model of the Capacitor</p> 

Overseas SVG Projects

Model	ZCMJ2.2-12000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2200V _{DC}	
Capacitance Range	12000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4200V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day)	
	1.15U _N (30 minutes/day)	
	1.2U _N (5 minutes/day)	
	1.3U _N (1 minute/day)	
	1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	700kA	
Maximum Operating Altitude	2000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	
	<p>3D Model of the Capacitor</p> 	

Grid Construction Projects

Model	ZCMJ2.8-9000	<p>Outline Diagram of the Capacitor</p> 
Standards Compliance	GB/T 17702, IEC 61071	
Operating Temperature Range	-25°C~+50°C	
Storage Temperature Range	-25°C~+70°C	
Voltage Range	2800V _{DC}	
Capacitance Range	9000μF	
Capacitance Tolerance	0~+5%	
Inter-electrode Withstand Voltage (Routine)	4500V _{DC} , 10s	
Electrode-to-Shell Withstand Voltage	5000V AC _{RMS} , 10s	
Overvoltage	1.1U _N (30% of the operating time/day)	
	1.15U _N (30 minutes/day)	
	1.2U _N (5 minutes/day)	
	1.3U _N (1 minute/day)	
	1.5U _N (30ms/instance, not exceeding 1000 instances throughout the service life)	
Impulse Discharge Current	800kA	
Maximum Operating Altitude	5000m	
Maximum Terminal Torque	≥25N·m	
Installation	Any direction	
Expected Service Life	≥40years	
Failure Rate	100FIT	
Dielectric Material	Metallized polypropylene film	
Structure	Non-magnetic stainless steel, fully sealed welding, resin-filled	
	<p>3D Model of the Capacitor</p> 