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POWER INDUSTRY INNOVATION TO LEAD THE FUTURE



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MAIN PERFORMANCE TABLE OF THE COMPANY

PROJECT NAME	PRODUCT MODEL
Guangzhou Water Supply Company's Permanent Power Supply Project - Huangpu Pressure Station Clean Water Tank Construction Project	GCK
Yuhu Cold Chain (Jieyang) International Food Trading Center Project Substation and Distribution Engineering	KYN/GCK
Hengyun Guangzhou Zhongxin Knowledge City New Energy Storage Demonstration Project	KYN/Transformer/GGD
Indonesia Puqing Circular Technology Renovation Project	GGD/XM/XGN/Transformer+Bus Bridge
Guangzhou Lihong Garden Project	XGN/GCK/XL
Hainan Poly Peninsula No.1 A12 Plot	KYN/GCK/XM
Luofeng Old Village Renovation Project	XGN/KYN/GCK/XM/GGD/DC screen
Xinghe Huafu Project	XM
Bangpu Recycling Waste Battery Recycling Project	GGD/XM/KYN
Henan Branch Bangpu Yihua Supporting Raw Materials and Iron Phosphate Engineering Project	KYN/GCK/GGD/HXGN
Bangpu Integrated New Energy Industrial Park - Bangpu Era Lithium ion Battery New Materials Project	KYN/GCK
Guangfo Company's Shabu Project integrates 6 transformer and distribution projects	KYN/XGN
Industrial Wastewater Treatment Project of Phosphorus Chemical Industry Park in Yichang City, Hubei Province	MNS(GCK)
Pingnan Times New Materials Technology Co., Ltd	KYN/GCK
Guangzhou Second Workers' Cultural Palace Overall Renovation Project	KYN/GCK
High and Low Voltage Power Distribution Project of Guangzhou Airport Expressway Baiyun Service Area (East District) Construction General Contracting Project	KYN/GCK
Bicun Old Village Renovation Project	GCK/XGN/XM/meter box
New 3x800kVA Temporary Power Supply Project for Nanxiangyaju in Zengcheng Development Zone	Box Transformer/Distribution Box
Guangdong Bangpu Circulation Global R&D Center and Innovation Headquarters - Distribution Installation Project for Distribution Room in Production Area	KYN/GCK/DC screen
Tencent News Gui'an Seven Star Project	XM
Capacity Expansion Project of Guangzhou Shangwei Daily Necessities Co., Ltd	GCK/KYN/DC screen
Poly Dongcheng Old Village Renovation Project	XGN/KYN/GCK/electric meter box/box transformer
Bangpu Yihua phosphogypsum and phosphate tailings transportation and pressure filtration project	KYN/GGD/DC screen
Permanent Power Supply Project for Junhui Science and Technology Innovation Center in the Greater Bay Area	XGN/KYN/GCK
Guangzhou Nord Cloud City Project	KYN/XGN/GCK/Meter Box
Guangzhou Company City Light Project	Electric meter box
Guangzhou Shiyuan Innovation Technology Co., Ltd. - Permanent Power Supply Project for Interactive Intelligent Display and Control Products Intelligent Manufacturing Base	KYN/GCK
Guangdong Taikoo Coca Cola Co., Ltd. Greater Bay Area Intelligent Green Production Base Temporary Power Design and Construction Project	Box transformation
Guangzhou Gaoxing Communication Co., Ltd. newly installed 4 × 1600kVA+2 × 1250kVA+2 × 1000kVA specialized transformer power project	XGN/KYN/GCK
Power Supply Project of Guangzhou Zhongjian Xingguang City Project	XM

PROJECT NAME	PRODUCT MODEL
Permanent Power Supply Project for the Demolition and Resettlement Land of Chebei Collective Property in the Starting Area of Financial City	KYN/GCK/XGN
Aofei Silicon Valley Project	XM
Permanent Electricity Project for the R&D and Production Base of Weitai Medical Blood Purification Products	KYN/GCK
Ningde Bangpu New Materials Industrial Park Project	GGK/GGD/KYN/XM
LG Chem (Guangzhou) Engineering Plastics Co., Ltd. Photovoltaic Power Station Project	KYN/Box Transformer/System/Busbar Bridge
Guangzhou Meizhi Distributed Comprehensive Control Platform Innovation Center	Authorization box
Electric Power Construction Real Estate Shenzhen Mingyue Peng Project Power Supply Engineering	Electric meter box
Yihai Kerry (Guangzhou) Food Industry Co., Ltd. Temporary Electricity Capacity Expansion Project	Box transformation
Poly Shangchen External Power Engineering	Electric meter box
Wuzhou Fengda Mining Co., Ltd. 10kV Power Distribution Project	KYN/GCK/XGN
Guangzhou University of Science and Technology Power Distribution Engineering	KYN28、GCK
JD 2021- Phase II Substation and Distribution Project of JD Asia No.1 Guangzhou Huadu Project	KYN/GCK
Hunan Bangpu Recycling Technology Co., Ltd. Project	GCK
Permanent Power Supply Project for Guangzhou Experimental Middle School	KYN/GCK
Shun'an Stone Factory Project	KYN/XGN
International Biomedical Innovation Center Project	KYN/GCK
Permanent Power Supply Project for Qiaofeng Commercial Building	KYN/GCK
Supply and installation of high and low voltage distribution equipment for Guangzhou Green Leaf Biomedical Industry Park project	KYN/GCK
Poly Nanyi Bay Project	XM
Tencent Huailai Ruibei Cloud Computing Data Center Project	XL、XM
Digital Ceramic Assembly Manufacturing Base	GCK/XL、XM
Guangzhou Baiyun (Tangxi Station) Station Front Engineering and Comprehensive Maintenance Area Comprehensive Building Project for the New Guangzhou Railway Hub	XL、XM
Foshan Greenland Color Tube Factory Brilliant Tiancheng Project	XL、XM
Dongguan Greenland Mansion Project	XL、XM
Foshan Greenland Water Fragrance Tree Garden Project	XL、XM
The permanent power supply project for the southern area of the Aite City project	XM
Photomask project for semiconductor applications in Guangzhou Zhongxin Knowledge City	XM
Permanent Electricity Engineering for the Procurement Project of Surveying and Mapping Geographic Information Production Base of Guangdong Provincial Institute of Land and Resources Surveying and Mapping	KYN、GCK
Guangzhou Boji Biomedical Technology Park Phase II (Low Voltage) Power Distribution Project	GCK、XM、XL
Zhongshan Bailiingda Electronics Co., Ltd	XL、XM

MAIN CONFIGURATION TABLE OF LOW-VOLTAGE ELECTRICAL SYSTEM

\	Transformer capacity Sn (kVA)	100	125	160	200	250	315	
\	Rated current of transformer In (A)	144	180	231	289	361	455	
0.4kV low pressure Distribution transformer Cable Or mother Wire duct	0.4kV cable phase line section ZRYJV	3(1×95)	3(1×120)	3(1×185)	3(1×240)	3(2×(1×150))	3(2×(1×185))	
	0.4kV cable N-wire section ZRYJV	1×50	1×70	1×95	1×120	1×95	1×185	
	0.4kV bus duct	\	\	\	\	\	\	
low pressure Incoming cabinet	0.4kV busbar copper busbar	50×5	50×5	50×5	50×5	50×5	60×6	
	0.4kV busbar N/PE/PEN copper busbar	40×4	40×4	40×4	40×4	40×4	50×5	
	Instantaneous setting current	(8~12) In						
	Short delay setting current	(3~5) In						
	Short delay setting current time setting (S)	0.1~0.4						
	Long delay setting current	(1~1.1) In						
	Long delay setting current time setting (S)	3~15						
	Measuring current transformers	200/5	250/5	300/5	400/5	500/5	600/5	
	Surge protector (Class I)	Uc≥253V, Iimp≥12.5kA (10/350μs), Level 4P or 3P, Up≤2.5kV						
	Fuse (Surge Protector) (A)	80						
low pressure Compensation cabinet	Knife melting switch	Require the rated current of the switch to be at least 1.5 times the compensating current						
	Measuring current transformers	Select according to the corresponding reactive power compensation capacity						
	Compensation capacity	When calculation conditions are not available, it is advisable to configure according to 20% -40% of the capacity of the distribution transformer						
	Surge protector (Class II)	Uc≥253V, In≥5kA (8/20μs), Level 4P, Up≤2.5kV						
	Fuse (Surge Protector) (A)	32						
notes	The selection of cable and copper bar cross-sections in this table refers to the basic data of current carrying capacity in the "Industrial and Civil Power Supply and Distribution Design Manual Volume 4". This table is a recommended configuration table for low-voltage							

400	500	630	800	1000	1250	1600	2000	2500
577	722	909	1153	1443	1804	2309	2887	3609
3(2×(1×240))	3(3×(1×185))	3(3×(1×185))	3(4×(1×240))	\	\	\	\	\
1×240	3×(1×150)	2×(1×85)	2×(1×240)	\	\	\	\	\
\	1000A/4P	1250A/4P	1600A/4P	2000A/4P	2500A/4P	3150A/4P	4000A/4P	5000A/4P
60×6	80×8	80×8	80×10	100×10	2×(100×8)	2×(120×10)	3×(100×10)	3×(120×10)
50×5	60×6	60×6	80×8	80×8	100×8	120×10	2×(100×8)	2×(100×10)
(8~12) In								
(3~5) In								
0.1~0.4								
(1~1.1) In								
3~15								
700/5	1000/5	1200/5	1500/5	2000/5	2500/5	3000/5	4000/5	5000/5
Uc≥253V, Iimp≥12.5kA (10/350μs), Level 4P or 3P, Up≤2.5kV								
80								
Require the rated current of the switch to be at least 1.5 times the compensating current								
Select according to the corresponding reactive power compensation capacity								
When calculation conditions are not available, it is advisable to configure according to 20% -40% of the capacity of the distribution transformer								
Uc≥253V, In≥5kA (8/20μs), Level 4P, Up≤2.5kV								
32								
electrical systems in user distribution stations (for reference only). User selection should be verified and calculated according to the actual environment. It is recommended to use bus duct connection for the line from 800kVA and above transformers to low-voltage incoming cabinets, and cable connection for the line from 630kVA and below transformers to low-voltage incoming cabinets.								

CALCULATION METHODS FOR COPPER BARS, WIRES AND CABLES

Calculation method for current carrying capacity of copper bars

Size and current carrying capacity table of commonly used copper bars				
Copper busbar cross-section	25°C		35°C	
	Flat (A)	Vertical placement (A)	Flat (A)	Vertical placement (A)
15*3	176	185		
20*3	233	245		
25*3	285	300		
30*4	394	415		
40*4	404	425	522	550
40*5	452	475	551	588
50*5	556	585	721	760
50*6	617	650	797	840
60*6	731	770	940	950
60*8	858	900	1101	1160
60*10	960	1010	1230	1295
80*6	930	1010	1195	1300
80*8	1060	1155	1361	1480
80*10	1190	1295	1531	1665
100*6	1160	1260	1557	1592
100*8	1310	1425	1674	1850
100*10	1470	1595	1865	2025
120*8	1530	1675	1940	2110
120*10	1685	1830	2052	2340
2(60*6)	1126	1185	1452	1530
2(60*8)	1460	1480	1503	1600
2(60*10)	1680	1170	2140	2250
2(80*6)	1320	1433	1705	1855
2(80*8)	1651	1795	2117	2515
2(80*10)	1950	2120	2575	2735
2(100*6)	1564	1700	2000	2170
2(100*8)	1930	2100	2470	2690
2(100*10)	2320	2500	2935	3185
2(120*8)	2140	2330	2750	2995
2(120*10)	2615	2840	3330	3620

The calculation method of copper busbar current carrying capacity mainly includes the following steps:

Basic formula: Copper busbar current carrying capacity at 40 °C = busbar width 9x thickness coefficient 9. The thickness coefficient varies depending on the thickness of the copper bar, for example, a 12mm thick copper bar has a coefficient of 20, a 10mm thick copper bar has a coefficient of 18, and so on.

Double layer copper busbar 9: Current carrying capacity=Single layer copper busbar current carrying capacity x1.56-1.58.

Three layer copper busbar 9: Current carrying capacity=Single layer copper busbar current carrying capacity x2.

Four layer copper busbar 9: Current carrying capacity=Single layer copper busbar current carrying capacity x2.45 (not recommended, it is best to use a non-standard busbar instead).

Temperature correction: The current carrying capacity of copper bars at 25 °C is equal to the current carrying capacity at 40 °C multiplied by 0.85.

Specific calculation example
Taking TMY100 * 10 copper bar as an example, the specific calculation is as follows:

1. Single layer copper busbar current carrying capacity: 100mm width x 18 coefficient=1800A.

2. Double layer copper busbar current carrying capacity: 1800Ax1.58=2940A.

3. Three layer copper busbar current carrying capacity: 1800Ax2=3720A.

The above calculation results are quite close to the manual data.

TRANSFORMER CONNECTION GROUP DYN11

transformer capacity	High voltage coil D connected to 10kV		Low voltage coil y connected to 0.4kV	
	line current	Phase current	line current	Phase current
630	36.4	21.0	909.3	909.3
800	46.2	26.7	1155	1155
1000	57.7	33.3	1443	1443
1250	72.2	41.7	1804	1804
1600	92.4	53.3	2309	2309
2000	115.5	66.7	2887	2887
2500	144.3	83.3	3608	3608
3150	181.9	105.0	4547	4547
D connection: Line current=Transformer capacity/High voltage/Root size 3 Line current=Transformer capacity/High voltage/Root size 3 Y connection: Phase current=Line current/Root number 3 Line current=Phase current				
According to the writing standard for transformer connection groups, the letters for high-voltage connection are capitalized, and the letters for low-voltage connection are lowercase, The connection method on the 10kV voltage side is the capital letter D connection, and the connection method on the 0.4kV voltage side is the lowercase letter Y.				