Product catalogue https://www.cnrockwill.com

GCS Type LV withdrawable switchgear

High - level electrical performance
Flexible and convenient for internal installation.
Convenient operation and maintenance
Good protective performance

Comply with IEC / CEI /GB/JB/DL standards
Provided customized manufacture
Whole solutions for design, assembly, test...
Accountable solution for safety and reliability
Wide range offering, easy business and convenient installation

Rockwill Group is one of the leading high technical enterprises professional deals in medium high voltage switchgear and components develop, manufacture and sales.

Located in Wengyang Industrial Zone, Wenzhou, used to known as Yueqing Real Electric Works (Registered in 1986), we have more than 20 years experiences in Medium & high voltage field. We strategically cooperate with worldwide high reputation medium& high voltage switchgear manufacturer and research institute, successfully developed series of medium voltage mutually; filled the blank in China.

We also teamed up with province grade intelligence high voltage switch laboratory, together developed new generation intelligence simultaneous technical vacuum switch, electronic current transformer, digital integrated substation etc. through the cooperation we obtain plenty achievements and build up experience technical team. Plentiful talent backup, advanced production equipment, perfect quality control system and reverse inspection procedure are powerful guarantee of our reliable product quality and high reputation.

We have always insisted the faith on grow together with customers, and to provide a safe, simply, green and efficient medium & high voltage switchgear and components.

ROCKWILL®, China. Provide with best support.
If you have any question please consult below:
Email: rockwell@rockwill.com Tel: +86 (577) 27869969
https://www.cnrockwill.com/

ROCKWILL® Electric strives to bring our customers the latest technology and competitive pricing and best service for distribution automatic.

The device is applicable to the distribution system of power station, petroleum, chemical engineering, metallurgy, weaving and tall building industries etc. In the places with high automaticity and need computer to joint, such as large-scale power station and petrochemical industry system etc, it is the low voltage complete distribution device used in the generating and power supply system with three-phase AC50(60)Hz, rated working voltage 380V, rated current 4000A and below for distribution, motor central control and reactive power compensation. The device accords with standards IEC439- 1 and GB7251.1

The GCS low-voltage draw-out switchgear adopts a cabinet body made of 8MF type open-section steel and features a draw-out structure design. The modular functions are independent, and the modules are convenient to interchange.It can accurately distribute electrical energy, effectively deal with electrical circuit faults through various protection devices, and ensure the stable supply of electricity.

Service environment

Air temperature:-5℃ ~ +40℃ average temperature： <+35℃ 24h

Installation gradien： not exceed 5°

Altitude above sea level:Max 2000m

Relative humidity should not exceed 50% at max temperature. Higher relative humidity is allowed at lower temperature.

Indoor without dust, corrosive gas and rain water attack.

Main framework adopts 8MF bar steel. Both sides of bar steel is installed with 9.2mm mounting hole with modulus 20mm and 100mm. Inner installation is flexible and easy.

Two types of assembly form design for main framework, full assembly structure and partial (side frame and cross rail) welding structure for user selection.

Each function compartment of device is separated mutually. The compartments are divided into function unit compartment, bus bar compartment and cable compartment. Each one has relative independent function.

Horizontal bus bar adopts cabinet back level placed array pattern for enhancing the capacity of resisting electrodynamic force for bus bar. It is the basic measure for obtaining high short circuit strength capacity for main circuit.

Cable compartment design makes cable outlet and inlet up and down convenient.

Power Distribution Principle:

The power supply is connected to the inlet terminal of the GCS low-voltage draw-out switchgear, and the electrical energy is distributed to each drawer unit through the busbars. Each drawer unit is equivalent to an independent circuit branch. According to the actual power consumption requirements, different electrical components such as circuit breakers, contactors, and thermal relays can be configured inside the drawer to achieve the power supply and control of different load devices.

Control Principle:

Taking the control of an electric motor as an example, when it is necessary to start the electric motor, the operator makes the contactor coil energized by operating the control button on the drawer unit or sending a remote control signal. Then, the main contacts of the contactor close, and the electric motor is connected to the power supply and starts to run. At the same time, the thermal relay will monitor the current of the electric motor in real time. When the electric motor has faults such as overload and short circuit, which lead to an excessive current, the thermal relay will act, and its normally closed contacts will open, making the contactor coil de-energized and the main contacts open, thus cutting off the power supply of the electric motor and playing a protective role.

Protection Principle:

Short - circuit Protection: The short - circuit current triggers the circuit breaker's trip device, instantly cutting off the circuit to prevent damage to equipment and lines.
Overload Protection: The thermal relay is set according to the motor's rated current. When overloaded, the bimetallic strip of the thermal relay deforms and pushes the tripping mechanism, causing the contactor to cut off the motor's power supply.
Under - voltage Protection: When the power supply voltage is lower than the specified value, the under - voltage release device operates, making the circuit breaker trip to avoid equipment damage or abnormal operation under under - voltage conditions.

Intelligent Communication Principle:

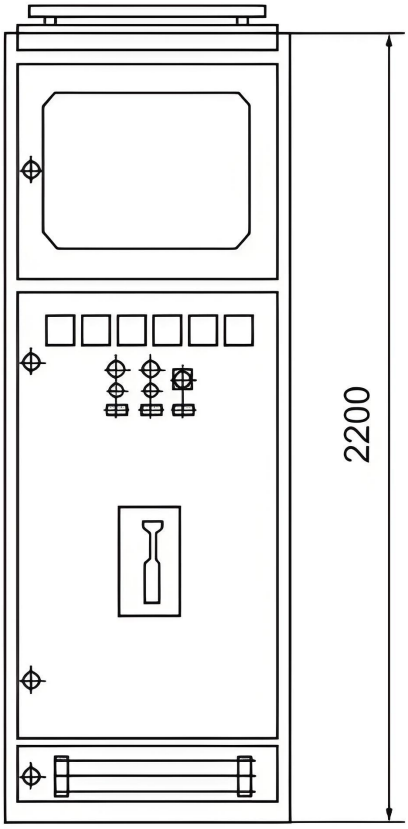
The intelligent monitoring module collects the operation data of the switchgear in real time, such as voltage, current, power, temperature, etc., and processes and analyzes these data. Through the communication interface and protocol, the data are transmitted to the upper computer or the monitoring center. The operator can view the operation status of the equipment in real time on the remote monitoring platform. When an abnormal situation occurs, the system will send out an alarm signal so that timely measures can be taken to deal with it.

Secondary Circuit Control:

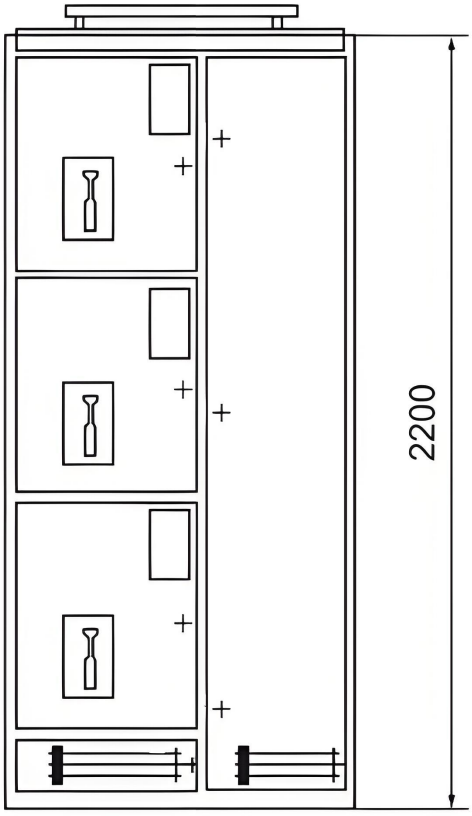
The electrical components in the drawer are also connected to the secondary control circuit in the cabinet through secondary connectors. The secondary circuit is used to achieve functions such as the control of the switch, signal indication, protection, and the interface with external devices (such as the computer monitoring system).

Rated voltage of main circuit AC(V):	380(400),(660)
Rated voltage of auxiliary circuit AC(V):	220、380(400)
Rated voltage of auxiliary circuit DC (V):	110、220
Rated frequency (Hz): 50(60)	50/60
Rated insulation voltage (V):	660(1000)
Rated current Horizontal bus bar (A):	＜4000
Rated current Vertical bus bar(MCC) (A):	1000

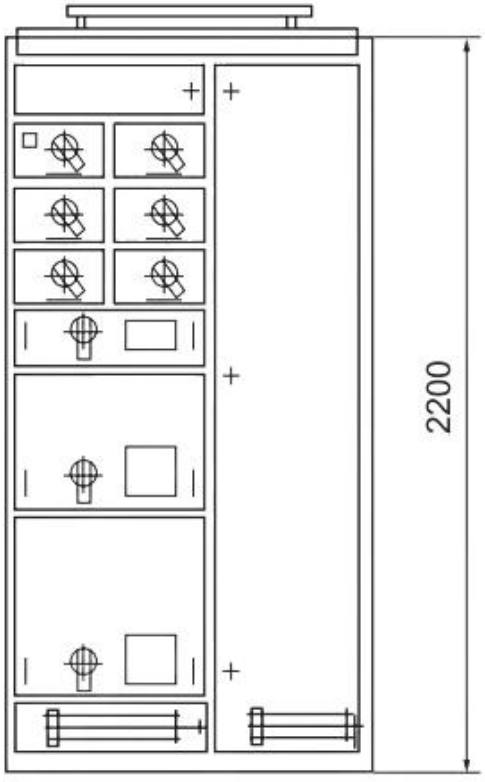
Rated short time withstand current of bus bar (kA/1s):	50、80
Rated peak withstand current of bus bar (kA/0.1s):	105、176
Line frequency test voltage Main circuit (V/1min):	2500
Line frequency test voltage Auxiliary circuit (V/1min):	1760
Bus bar Three-phase four-wire system:	A.B.C.N
Bus bar Three-phase five-wire system:	A.B.C.PE.N
Protection grade:	IP30、IP40



power receiving cabinet



PC Cabinet



MCC Cabinet

Height	2200	
Width	400	
Depth	800	1000

Height	2200	
Width	600	
Depth	800	1000

Height	2200		
Width	800		
Depth	600	800	1000

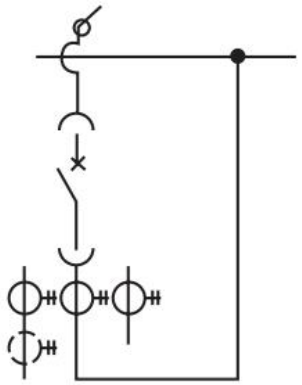
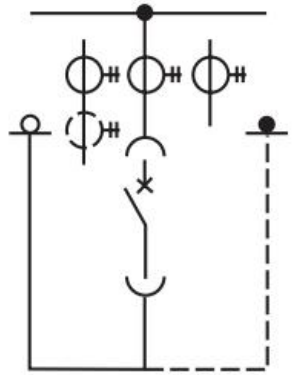
Height	2200		
Width	1000		
Depth	600	800	1000

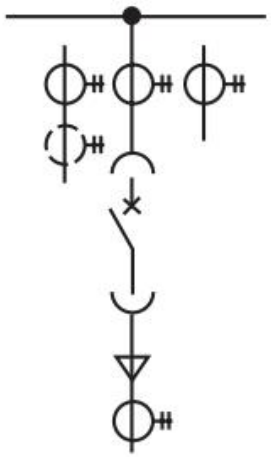
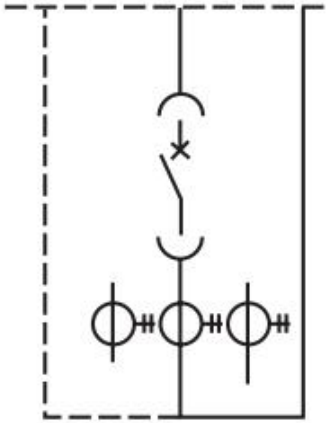
Field service operation and warranty issues:

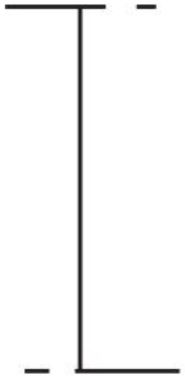
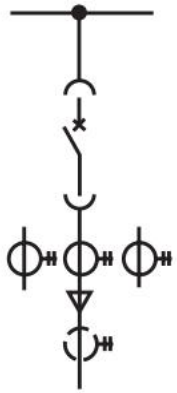
ROCKWILL® can provide competent, well trained field service representatives to provide technical guidance and advisory assistance for the installation, overhaul, repair and maintenance of ROCKWILL® equipment, processes and systems.

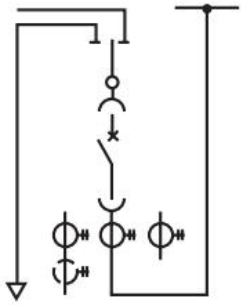
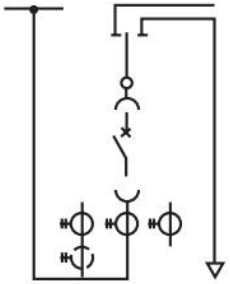
ROCKWILL® service Tel: +86 (577) 27869969
Email: rockwell@rockwill.com
Or check the website information: https://www.cnrockwill.com/

Primary wire scheme diagram：

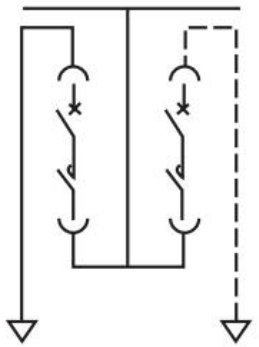
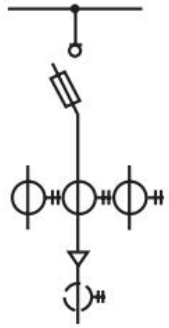
Main circuit scheme		01							02						
Line diagram															
Purpose		Electrification (upper incoming line)							Electrification (lower incoming line)						
Specification serial No		A	B	C	D	E	F	G	A	B	C	D	E	F	G
Short time withstand current / instantaneous withstand current(kA)		80/176							80/176						
		50/105							50/105						
						30/63							30/63		
Rated current(A)		4000	3150	2500	200	1600	1000	630	4000	3150	2500	200	1600	1000	630
Main electrical appliance	AH - 40C	1							1						
	AH - 30CH		1							1					
	AH - 25C			1							1				
	AH - 20C				1							1			
	AH - 16B					1							1		
	AH - 10B						1							1	
	AH - 6B							1							1
	SDL - □														
	SDH - □ □/5	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)
Cabinet widthmm		800(1000)				600			800(1000)				600		
Cabinet depthmm		1000		800					1000		800				
Occupied cabinet heightmm															

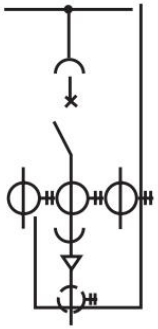
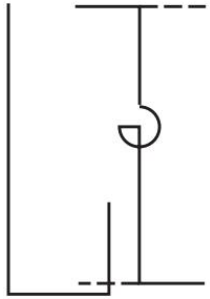
Main circuit scheme		03							04						
Line diagram															
Purpose		Electrification (lower incoming line)							Interconnection						
Specification serial No.		A	B	C	D	E	F	G	A	B	C	D	E	F	G
Short time withstand current / instantaneous withstand current(kA)									80/176						
		50/105							50/105						
						30/63							30/63		
Rated current(A)		2500	2000	1600	1000	630			4000	3150	2500	2000	1600	1000	630
Main electrical appliance	AH - 40C								1						
	AH - 30CH									1					
	AH - 25C	1									1				
	AH - 20C		1									1			
	AH - 16B			1									1		
	AH - 10B				1									1	
	AH - 6B					1									1
	SDL - □	(1)	(1)	(1)	(1)	(1)									
	SDH - □ □/5	3(4)	3(4)	3(4)	3(4)	3(4)									
Cabinet widthmm		800		600					1000		800				
Cabinet depthmm		800							1000		800				
Occupied cabinet heightmm															

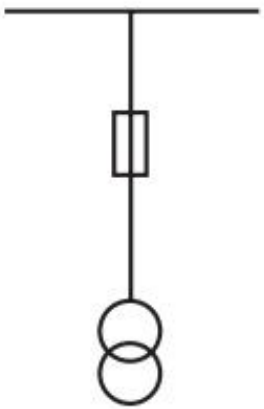
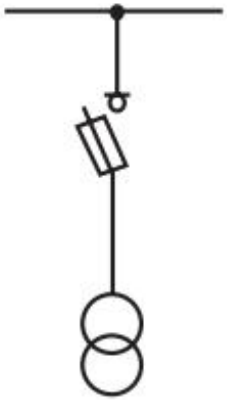
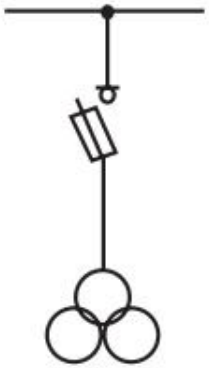
Main circuit scheme		05							06						
Line diagram															
Purpose		Bus adaptation							Feeding						
Specification serial No.									A	B	C				
Short time withstand current / instantaneous withstand current(kA)									80/176						
									30/63						
Rated current(A)									1600	1000	630				
Main electrical appliance	AH-16B								1						
	AH-10B									1					
	AH-6B										1				
	QPS-1000														
	QPS-630														
									(1)	(1)	(1)				
	SDL - □														
	SDH - □ □/5								1(3)	1(3)	1(3)				
Cabinet widthmm		400(600)							1000						
Cabinet depthmm		800(1000)							800(1000)						
Occupied cabinet heightmm									640						

Main circuit scheme		07							08						
Line diagram															
Purpose		Manual switch-over of dual power supply							Manual switch-over of dual power supply						
Specification serial No.		A	B						A	B	C	D	E	F	G
Short time withstand current / instantaneous withstand current(kA)		50/105							50/105						
		30/63							30/63						
Rated current(A)		1000	630						1000	630					
Main electrical appliance	AH-16B	1							1						
	AH-10B		1							1					
	AH-6B	1							1						
	QPS-1000		1							1					
	QPS-630														
	SDL - □														
	SDH - □ □/5	3(4)	3(4)						3(4)	3(4)					
Cabinet widthmm		1000									1000				
Cabinet depthmm		800									800				
Occupied cabinet heightmm															

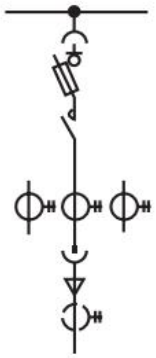
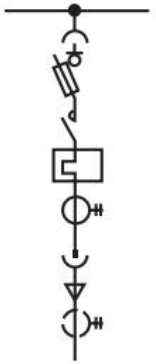
Note:1.AH is master circuit breaker, it can also choose imported F, MT series or circuit breaker with more advanced performance.2.01, 02, 04 scheme, e.g.: When the PE+N needs to enter power cabinet, the width size adopts the one in the bracket.3.SDL and SDH are special current transformers for GCS cabinet.

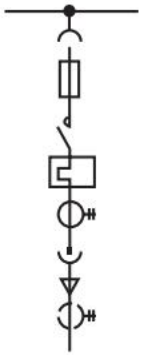
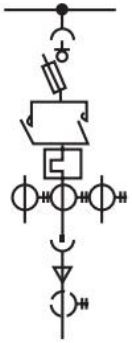
Main circuit scheme		09							10						
Line diagram															
Purpose		Manual switch-over of dual power supply							Feeding						
Specification serial No.		A	B						A	B	C	D			
Short time withstand current / instantaneous withstand current(kA)		50/105							50/105						
		30/63							30/63						
Rated current(A)		400	250						630	400	250	160			
Main electrical appliance	QSA-630								1						
	QSA-400									1					
	QSA-250										1				
	QSA-160											1			
	Current-limiting reactor 600A 0.0084Ω/φ														
	B370,LR1,CJ35	1													
	B250,LR1,CJ35		1												
	TG400BD,CM1-400M,TM30	1	1												
	TG225BD,CM1-225M,TM30														
	TG100BD,CM1-100M,TM30														
	SDL - □								(1)	(1)	(1)	(1)			
	SDH - □ □/5								1(3)	1(3)	1(3)	1(3)			
Cabinet widthmm		800(1000)							1000						
Cabinet depthmm		600							800(1000)						
Occupied cabinet heightmm		480×2							480	320					

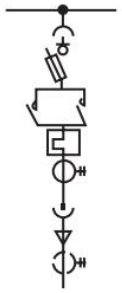
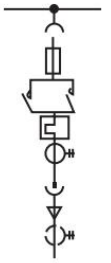
Main circuit scheme		11							12						
Line diagram															
Purpose		Feeding							Current limiting reactor						
Specification serial No.		A	B	C							C				
Short time withstand current / instantaneous withstand current(kA)		50/105													
		30/63													
Rated current(A)		400	200	100							600				
Main electrical appliance	QSA-630														
	QSA-400														
	QSA-250														
	QSA-160														
	Current-limiting reactor 600A 0.0084Ω/φ										3				
	B370,LR1,CJ35														
	B250,LR1,CJ35														
	TG400BD,CM1-400M,TM30	1													
	TG225BD,CM1-225M,TM30		1												
	TG100BD,CM1-100M,TM30			1											
	SDL - □	(1)	(1)	(1)											
	SDH - □ □/5	1(3	11	1											
Cabinet widthmm		800(1000)							600						
Cabinet depthmm		600							800						
Occupied cabinet heightmm		240(160)													

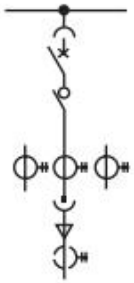
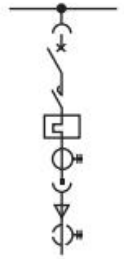
Main circuit scheme		13	14	15
Line diagram				
Purpose		Voltage transformers	Voltage transformers	Voltage transformers
Specification serial No.				
Rated current(A)				
Main electrical appliance	QSA-63		1	1
	NT00- □	3		
	JDG-0.5 380/100	2	2	
	JSGW-0.5			1
	SDH- □ □ /5			
Cabinet widthmm		(Does not occupy a separate compartment. It is installed in the power receiving cabinet or the transfer cabinet of Scheme 05 and connected to the branch busbar.)		
Cabinet depthmm				
Occupied cabinet heightmm				

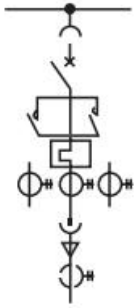
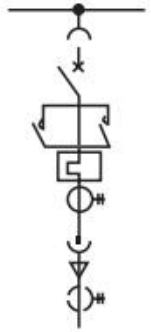
Note：Remark: feed line scheme can be equipped with zero-phase sequence protection with zero-phase sequence current transformer installed in cable chamber.

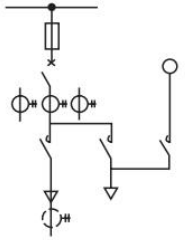
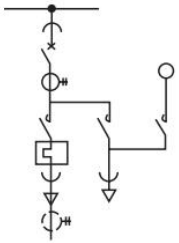
Main circuit scheme		16							17						
Line diagram															
Purpose		Motor (irreversible)							Motor (irreversible)						
Specification serial No.		A	B	C					A	B					
Max. control power(kW)		100	75	55					35	75					
Main electrical appliance	QSA-250	1													
	QSA-160		1												
	QSA-125			1					1						
	HH17-63									1					
	NT00- □														
	B250,LC1,CJ35	1													
	B170-105,LC1,CJ35		1	1											
	B85 or LC1-D80								1						
	B45 or LC1-D32									1					
	B16 or LC1-D18														
	T85,LR1								1						
	TSA45,LR1									1					
	T16,LR1	1	1	1											
	SDL - □	(1)	(1)	(1)					(1)	(1)					
	SDH - □ □/5	3	3	3					1	1					
Cabinet widthmm		800(1000)							800(1000)						
Cabinet depthmm		600							800						
Occupied cabinet heightmm		480							320						

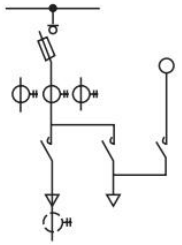
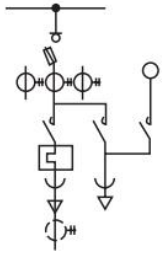
Main circuit scheme		18							19						
Line diagram															
Purpose		Motor (irreversible)							Motor (irreversible)						
Specification serial No.									A	B	C				
Max. control power(kW)					7.5				100	75	55				
Main electrical appliance	QSA-250								1						
	QSA-160									1					
	QSA-125										1				
	HH17-63														
	NT00- □				3										
	B250,LC1,CJ35														
	B170-105,LC1,CJ35								2						
	B85 or LC1-D80									2	2				
	B45 or LC1-D32														
	B16 or LC1-D18														
	T85,LR1														
	TSA45,LR1														
	T16,LR1				1				1	1	1				
	SDL - □				(1)				(1)	(1)	(1)				
	SDH - □ □/5				1				3	3	3				
Cabinet widthmm		800/2(1000/2)							800(1000)						
Cabinet depthmm					600				600						
Occupied cabinet heightmm					160				480						

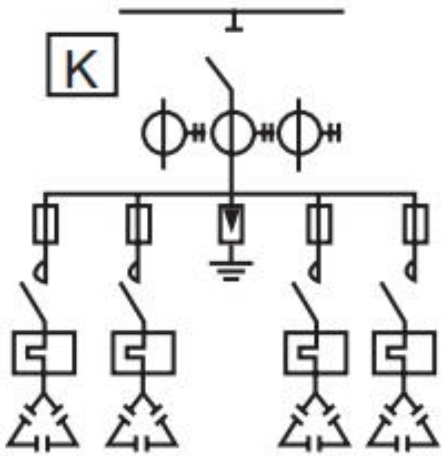
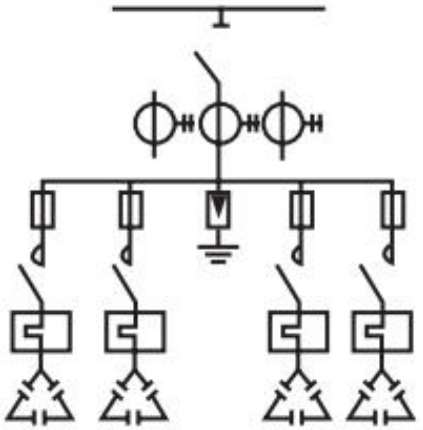
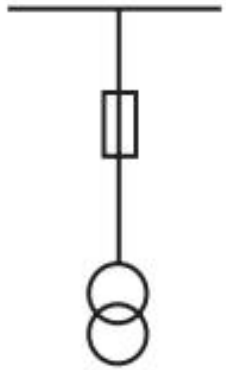
Main circuit scheme		20							21						
Line diagram															
Purpose		Motor (reversible)							Motor (reversible)						
Specification serial No.		A	B												
Max. control power(kW)		37	15									7.5			
Main electrical appliance	QSA-125	1													
	HH17-63		1												
	NT00-□											3			
	CM1-400LTG-400BD,TM30														
	CM1-225M,TM30														
	CM1-100M,TG-100BD,TM30														
	NZMS4,TM30														
	B250,LC1,CJ35														
	B170-105,LC1,CJ35														
	B85 or LC1-D80	2													
	B45 or LC1-D32		2												
	B16 or LC1-D18											2			
	T85,LR1	1													
	TSA45,LR1		1												
	T16,LR1											1			
	SDL - □	(1)	(1)									(1)			
	SDH - □ □/5	1	1									1			
Cabinet widthmm		800(1000)							800/2(1000/2)						
Cabinet depthmm		600							600						
Occupied cabinet heightmm		480							160						

Main circuit scheme		22							23						
Line diagram															
Purpose		Motor (irreversible)							Motor (irreversible)						
Specification serial No.		A	B	C					A	B	C				
Max. control power(kW)		100	75	55					37	15	7.5				
Main electrical appliance	QSA-125														
	HH17-63														
	NT00-□														
	CM1-400LTG-400BD,TM30	1													
	CM1-225M,TM30		1	1											
	CM1-100M,TG-100BD,TM30								1	1					
	NZMS4,TM30										1				
	B250,LC1,CJ35			1											
	B170-105,LC1,CJ35				1	1									
	B85 or LC1-D80								1						
	B45 or LC1-D32									1					
	B16 or LC1-D18										1				
	T85,LR1								1						
	TSA45,LR1									1					
	T16,LR1	1	1	1							1				
	SDL - □	(1)	(1)	(1)											
	SDH - □ □/5	3	3	3											
Cabinet widthmm		800(1000)							800(1000)		800/2(1000/2)				
Cabinet depthmm		600							600		600				
Occupied cabinet heightmm		480	320						240		160				

Main circuit scheme		24							25						
Line diagram															
Purpose		Motor (reversible)							Motor (reversible)						
Specification serial No.		A	B	C					A	B	C				
Short time withstand current / instantaneous withstand current(kA)		50/105							50/105						
		30/63							30/63						
Max. control power(kW)		100	75	55					37	15	7.5				
Main electrical appliance	CM1-400L or TG-400BD,TM30	1													
	CM1-225M,TM30		1												
	CM1-100M,TG-100BD,TM30								1	1					
	NZMS4,TM30										1				
	B250,LC1,CJ35	2													
	B170-105,LC1,CJ35			2											
	B85 or LC1-D80								2						
	B45 or LC1-D32									2					
	B16 or LC1-D18										2				
	T85,LR1								1						
	TSA45,LR1									1					
	T16,LR1	1	1	1							1				
	SDL - □	(1)	(1)	(1)					(1)	(1)	(1)				
	SDH - □ □/5	3	3	3					1	1	1				
Cabinet widthmm		800(1000)							800(1000)		800/2				
Cabinet depthmm		600							600		1000/2				
Occupied cabinet heightmm		480	320						240		160				

Main circuit scheme		26							27						
Line diagram															
Purpose		Y- △Start							Y- △Start						
Specification serial No.		A	B						A	B					
Short time withstand current / instantaneous withstand current(kA)		50/105							50/105						
		30/63							30/63						
Max. control power(kW)		160	90						37	15					
Main electrical appliance	QSA-400~250														
	QSA-125														
	HH17-63														
	NT3- □	3	3												
	TG-400BD,TM30	1													
	CM1-225M,TG-225BD,TM30		1												
	CM1-100M,TG-100BD,TM30								1	1					
	B370+B250,LC1,CJ35	2+1													
	B250+B170,LC1,CJ35		2+1												
	B85 or LC1-D80								3						
	B45 or LC1-D80									3					
	T85,LR1								1						
	TSA45,LR1									1					
	T16,LR1	1	1												
	SDL - □	(1)	(1)						(1)	(1)					
	SDH - □ □/5	3	3						1	1					
Cabinet widthmm		1000							800(1000)						
Cabinet depthmm		800							600						
Occupied cabinet heightmm		1120	960						320						

Main circuit scheme		28							29						
Line diagram															
Purpose		Y- △Start							Y- △Start						
Specification serial No.		A	B						A	B					
Short time withstand current / instantaneous withstand current(kA)		50/105							50/105						
		30/63							30/63						
Max. control power(kW)		160	90						37	15					
Main electrical appliance	QSA-400~250	1	1												
	QSA-125								1						
	HH17-63									1					
	NT3- □														
	TG-400BD,TM30														
	CM1-225M,TG-225BD,TM30														
	CM1-100M,TG-100BD,TM30														
	B370+B250,LC1,CJ35	2+1													
	B250+B170,LC1,CJ35		2+1												
	B85 or LC1-D80								3						
	B45 or LC1-D80									3					
	T85,LR1								1						
	TSA45,LR1									1					
	T16,LR1	1	1												
	SDL - □	(1)	(1)						(1)	(1)					
	SDH - □ □/5	3	3						1	1					
Cabinet widthmm		800(1000)							800(1000)						
Cabinet depthmm		600							600						
Occupied cabinet heightmm		800							320						

Main circuit scheme		30							31							32						
Line diagram																						
Purpose		Reactive compensation(master cabinet)							Reactive compensation(master cabinet)							Common power supply						
Specification serial No.		A	B	C					A	B	C											
Max. compensation capacitance(kW)		160	128	96					160	128	96											
Main electrical appliance	QA-400	1	1	1					1	1	1											
	am-32	30	24	18					30	24	18											
	NT00-□																3					
	JBK3-400																1					
	B30C	10	8	6					10	8	6											
	T45,LR1	10	8	6					10	8	6											
	BCMJ-0.4-16-3	10	8	6					10	8	6											
	SDH- □ □/5	3	3	3					3		3											
Cabinet widthmm		1000	800						1000	800												
Cabinet depthmm		800(1000)							800(1000)													
Occupied cabinet height （mm）																						