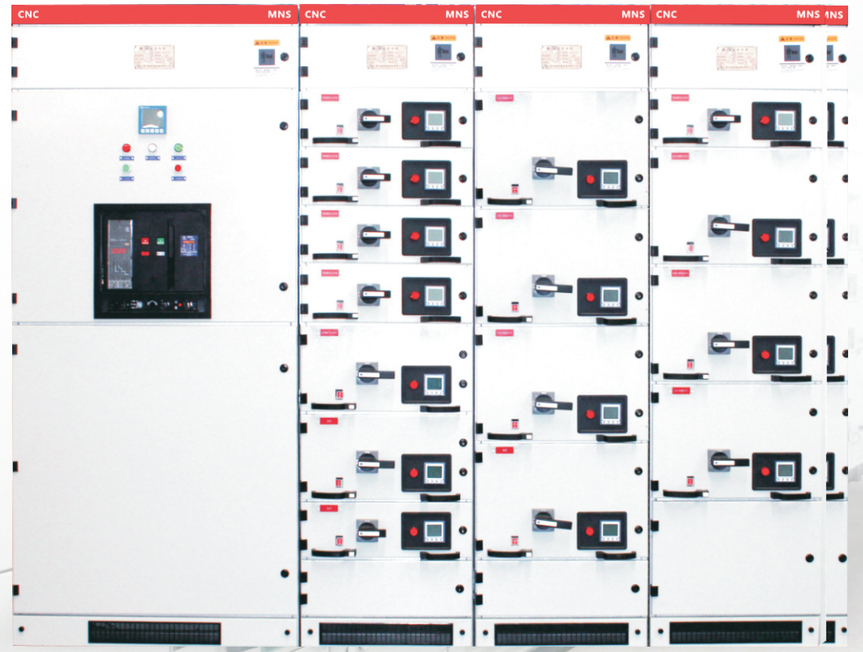
Low Voltage Switchgear

GCK Low-voltage Switchgear Panel, Withdrawable type

- Application: mainly applicable in places with high automation and need to communicate with computer, like large power station and petrochemistry system, as the low voltage distribution device of the distribution and motor controling, and reactive power compensation in power system.
- Protection degree: IP30, IP40. Bus type: three phase four wires, three phase five wires. Operation type: in-place, long-distance and automatic
- Standard: IEC60439-1

General



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Selection

G C K (L, J) 1 - □ - □

- Main circuit scheme No.
- Design No.
- Reactive power compensation
- Power center
- Control center
- Withdrawable type
- Cabinet Features

Operating conditions

1. Ambient air temperature: -5℃~+40℃.
   Daily average temperature: ≤35℃.
   When the actual temperature exceed the range, it should be used by reducing the capacity accordingly.
2. Transport and store temperature: -25℃~+55℃. do not exceed +70℃ in short time.
3. Altitude: ≤2000m.
4. Relative humidity : ≤50%, when temperature is +40℃.
   When temperature is low, larger relative humidity is allowed. when it is +20℃, relative humidity can be 90%. Since the temperature change will make out condensation.
5. Installation inclination: ≤5%
6. Applicable in the places without corrosive and flammable gas.

Note: Customized products are available.

Technical data

1. Electric datas
1) Rated insulation voltage: 690V/1000V
2) Rated operational voltage: 400V/690V
3) Rated frequency: 50/60Hz
4) Rated impulse withstands voltage: 8kV
5) Rated voltage of auxiliary circuit: AC380/220V, DC110/220V
6) Over-voltage grade: III
7) Rated current: ≤5000A
8) Rated current of horizontal bus bar: ≤5000A
9) Rated current of vertical bus bar: 1000A
2. Mechanical items
1) Incoming and outgoing mode
2) Cable incoming and outgoing
3) Connection mode
4) The functional units completely separated or partially separate

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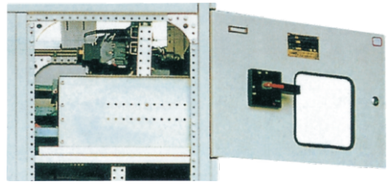

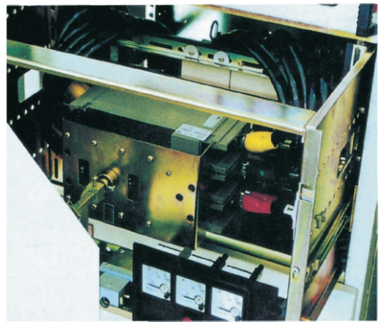

Feature

GCK panel is combination structure with bolt. The complete panel is compose of door, terminal board , baffle plate ,supporting frame and drawer, busbar, etc.
Basic frame adopts FA28 type or KB type (C type) to combine with together. Total structural components of frame are connected by self-tapping screw.
It should add to door, face place, baffle plate, supporting frame and drawer to finish completed panel by requirements.
The installation hole of body and components modules E=25mm change ,flexible and convenient to install.
Drawer unit height divide into ½ unit, 200mm, 300mm, 400mm, 500mm, and 600mmm series. The loop current decide the drawer height ,virtual installation height is 1800mm.
GCK panel withdrawable function unit adopts special push (pull) mechanism, light structure, perfect interchange. It indicate of working position, test position and isolating position mechanical locking condition. Install additional pad lock for operating handle.
The frame and inner metal components are galvanized to assure reliable earthing .
GCK basic frame is combination assembly type structure, adopt standardized module design. for combination assembly type structure, the standard module design.
Compact structure, flexible assembly, can be assembled into a protection, measurement and control, indicating etc. standard unit, Can choose assembly according to requirement, To form different frame Features and drawer unit.

1. The cabinet frame

C type material adopted for the main frame, Frame parts and Special parts will be provided by our company to make sure the accuracy and quality.

- Parts forming size, hole size ,Equipment interval adopt modularization. (E=25mm)
- The internal structure should be galvanized.
- The top cover is detachable ,horizontal bus can be installed easily after removing the top cover, Hand ring
- External phosphating treatment; Then use electrostatic epoxy powder coating.
- Cabinet frame is divided into the busbar compartment, functional compartment, the cable compartment three separate interval, Can prevent accidents diffusion and convenient charged repair.

2. Functional unit (Withdrawable part)

- Functional unit: Feeder unit , Motor unit ,utility power unit.
- The high modulus of drawer unit is 200mm, include 1/2unit ,1unit ,2 unit ,3 unit four size series.
  Unit loop rated current below 630A.
- Each MCC Cabinet can install 9 set drawer with 1 unit , or 18 set drawer with ½ unit .

GCK Low-voltage Switchgear Panel, Withdrawable type

- The compartment door plate is interlocked between operating mechanism and drawer, the door can be open until the main switch is on the close position
- The main switch operating mechanism can be locked in close or open position by a padlock , the equipment can be maintained safely.
- There are main circuit outlet plug ,auxiliary circuit secondary plug and earthing plug at the back of function unit.
- The earthing plug make sure the protection circuit continuity when drawer on Separation tests connection position.
- Functional unit compartment by metal partition board.
- Compartment valve, can be open and close automatically, with drawers pushed and pulled so that in the compartment without touching the vertical busbar.

3. Busbar system

- Vertical bus uses polycarbonate engineering plastic shell sealed
- GCK, GCL busbar system use 3P4W, 3P5W, Horizontal busbar will be installed at the top of cabinet, N phase, PE phase. Can be installed on the top of the cabinet, and can also be arranged in the cabinet bottom.

Overall and mounting dimensions(mm)

The effective height of installation

1. Electric cabinet and buscouple cabinet
   Cabinet width can be 600,800,1000,1200,(800-400)mm according to rated current and method of incoming and outgoing.
   Depth of cabinet is 800,1000(Advise to use 1000mm ,The top incoming and top outgoing must be 1000mm)
2. Feeder cabinet
   Cabinet Width: 600, 800mm
   Cabinet depth: 600, 1000 (advise to use 1000mm top outgoing cabinet must be 1000mm)
3. Motor control cabinet
   Width: 600, 600+200mm
   Depth of cabinet: 800, 1000mm(advise to use 1000mm top outgoing cabinet must be 1000mm)
   Power compensation cabinet
   Width: 600(4, 6 loop), 800(8), 1000(10 loop)mm
   cabinet depth: 800, 1000mm

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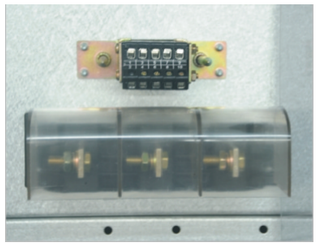
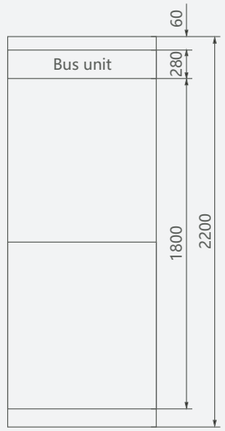
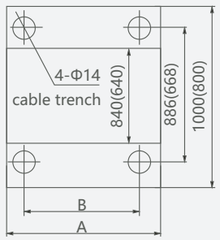


mm

Rated current (A)	Copper bus model (mm)
630	50×5
1250	60×10
1600	80×10
2000	100×10
2500	2(80×10)
3150	2(100×10)

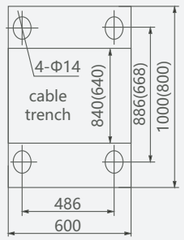


Fixed cabinet



Incoming,
Bus connection cabinet

Drawer cabinet

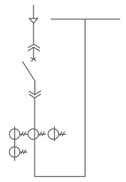
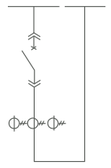


MCC cabinet

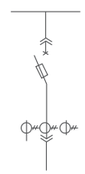
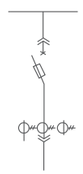
Item \ Size	A	B
Electric power or Electric feeder	600	486
Electric power or Bus connection	800	686
Electric power or Bus connection	1000	886

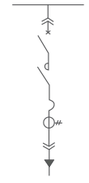
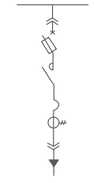
Main single line diagram

Sheet 2

Program No.	01	02	03	04	05	06	07
Single line diagram							/
Application	Overhead power		Cable power		Buscouple		/
Rated current (A)	630~1600	2000~3150	630~1600	2000~3150	630~1600	2000~3150	/
Circuit breaker	ME630~ME3205, AH6B~AH30C, M08~M32, YCW1-2000, YCW1-3200						/
Current transformer	LMK-0.66□/5						/
Cabinet width(mm)	800	1000	800	1000	800	1000(1200)	/
Small compartment height(mm)	1800	1800	1800	1800	1800	1800	/
Instruction	When the rated current exceeds 3150A, the user should consult with the manufacturer.						

Continued Sheet 2

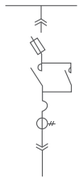
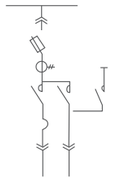
Program No.		08	09		10		11
Single line diagram							
Application		Electric feeder	Electric feeder		Electric feeder		Electric feeder
Main electrical components	Circuit breaker	ME630~ME1000 M08~M10 YCW1~2000	YCM1-100 YCM1-250	TO-400B YCM1-400 YCM1-400	QSA-63 QSA-125	QSA-250 QSA-400	QSA-630
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66
Cabinet width(mm)		600	600	600	600	600	600
Small compartment height(mm)		/	200 300	400 600	200 300	400 600	600
Instruction		Each set can install two loops	The number of measuring transformer is selected according to the practical situation				

Program No.		12				13		
Single line diagram								
Application		Motor control				Motor control		
Main electrical components	Circuit breaker knife fuse switch	TG-30B	TG-100B	TG-225B	TG-225B	QSA-63	QSA-125	QSA-125
		CM1-63	CM1-100	CM1-225	CM1-225	/	/	/
		YCM1-100	YCM1-100	YCM1-225	YCM1-225	/	/	/
	Contactor	B9-B45	B45-B85	B105-B170	B250	B9-B45	B45-B85	B105-B170
	Thermal relay	T16-T45	T45-T105	*T16	C	T16-T45	T16-T45	*T16
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66
Cabinet width(mm)		600	600	600	600	600	600	600
Small compartment height(mm)		200	200	400	600	200	200	400
Instruction		≤11KW	≤30KW	≤55KW	≤105KW	≤15KW	≤30KW	≤55KW
		According to each cabinet circuit number, the appliance should consider the heating capacity * adopt current transformer protection. 7.5KW and below can also adopt 1/2 unit.						

GCK Low-voltage Switchgear Panel, Withdrawable type

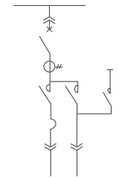
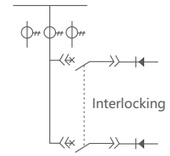
Continued Sheet 2

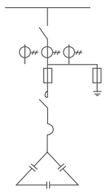
Program No.		14			15
Single line diagram					/
Application		Motor reversible control			/
Main electrical components	Circuit breaker knife fuse switch	TG-30B	TG-100B	TG-225B	/
		CM1-63	CM1-100	CM1-225	/
		YCM1-100	YCM1-100	YCM1-225	/
	Contactor	B9-B45	B45-B85	B105-B170	/
	Thermal relay	T16-T45	T45-T105	*T16	/
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	/
Cabinet width(mm)		600	600	600	/
Small compartment height(mm)		200	200	400	/
Instruction		≤11KW	≤30KW	≤55KW	/
		According to each cabinet circuit number, the appliance should consider the heating capacity * adopt current transformer protection. 7.5KW and below can also adopt 1/2 unit.			

Program No.		16			17		
Single line diagram							
Application		Motor reversible control			Y-Δ Motor control		
Main electrical components	Knife fuse switch	QSA-63	QSA-125	QSA-250	QSA-63	QSA-125	QSA-250
	Contactor	B9-B45	B45-B85	B105-B170	B9-B45	B45-B85	B105-B170
	Thermal relay	T16-T45	T45-T105	*T16	T16-T45	T45-T105	*T16
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66
Cabinet width(mm)		600	600	600	600	600	600
Small compartment height(mm)		200	300	600	300	400	600
Instruction		≤15KW	≤30KW	≤55KW	≤15KW	≤30KW	≤55KW
		According to each cabinet circuit number, the appliance should consider the heating capacity * adopt current transformer protection.					

GCK Low-voltage Switchgear Panel, Withdrawable type

Continued Sheet 2

Program No.		18			19
Single line diagram					
Application		Y-Δ Motor control			Power supply change over
Main electrical components	Circuit breaker	TG-30B	TG-100B	TG-225B	ME630~1000A
		CM1-63	CM1-100	CM1-225	AH600~1000A
		YCM1-63	YCM1-100	YCM1-225	M800~1000A
					YCW1-2000
	Contactor	B9-B45	B45-B85	B105-B170	/
	Thermal relay	T16-T45	T45-T105	*T16	/
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66
Cabinet width(mm)		600	600	600	600(800)
Small compartment height(mm)		300	300	600	1800
Instruction		≤11KW	≤37KW	≤75KW	Electric interlocking automatic or manual switch
		According to each cabinet circuit number, the appliance should consider the heating capacity * adopt current transformer protection.			

Program No.		20		21	22
Single line diagram					
Application		6 Loops power compensation		8 Loops power compensation	10 Loops power compensation
Main electrical components	Knife fuse switch	QSA400	QSA400	QSA400	QSA400(630)
	Fuse	NT00	NT00	NT00	NT00
	Contactor	Cj19	Cj19	Cj19	Cj19
	Capacitor	BSMJ0.415-20-3	BSMJ0.415-20-3	BSMJ0.415-20-3	BSMJ0.415-20-3
	Reactive power compensation	JKL	JKL	JKL	JKL
	Current transformer	LMK-0.66	LMK-0.66	LMK-0.66	LMK-0.66
	Surge arrester	FYS-0.22	FYS-0.22	FYS-0.22	FYS-0.22
Cabinet width(mm)		600	800	800	800(1000)
Small compartment height(mm)		1800	1800	1800	1800
Instruction		When used for auxiliary cabinet, eliminate the reactive compensator Automatic switching is controlled by main cabinet			