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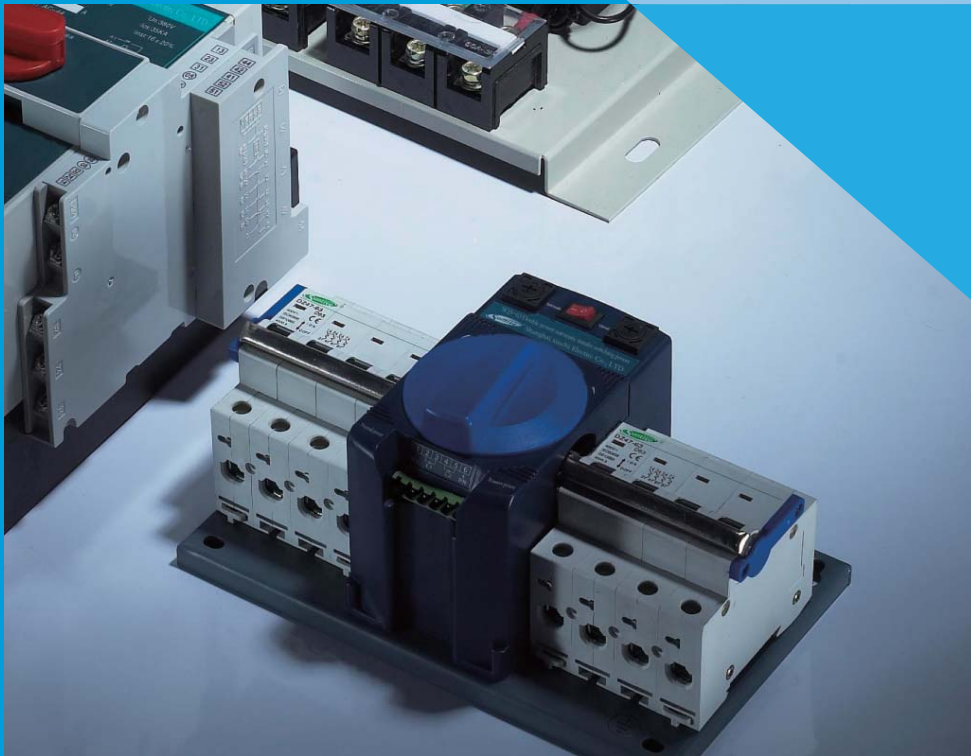
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## Automatic transfer switch



SHANGHAI XINCHI ELECTRIC CO.,LTD.  
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Innovative technology leads to better future.  
professional working makes excellent quality.



## Company Profile

Zhejiang XinChi Electric Co.,Ltd is the best one,which stands out above the rest in China intelligent low voltage electrical field,meanwhile it is a grouping company in the "city of electrical" .There are four branch companies subordinate to it:Yueqing Xinch Electric Sci-Tech Co.,Ltd,Yueqing Imp&Exp Co.,Ltd,HK Yangming Electrical Technology Co.,Ltd and Wenzhou Litto smart Co.,Ltd.Moreover.there are 320 workers,the annual output value breakthrough one hundred million,and the export value arrive at ten million.

We always pay attention to manufacture and sell automatic industrial and control system,modular intelligent electrical equipments,such as circuit breakers,residual circuit breakers,contactors,isolators,solid state relay,control and protect switch ,automatic transfer switch ,electrical fire detecting system,surger protect device,multifunctional meter and new energy system fittings etc.

Especially DC circuit breaker, DC isolating switch, DC fuse, busbar chamber, waterproof switch and other products with leading technical level in this field.. We are the first domestic company with CE, CB, IEC, Nemko, SAA, TUV, ISI Golden Sun certification and CCC certification. Our products are widely used by domestic famous enterprises, and it has become a OEM partner of many international famous brands.

We have fully implement the ISO9001: 2008 quality management system. It adopts advanced production equipment and precision detecting equipment, introduces high-tech process and high technology talents to provides powerful guarantee for product development, quality upgrading and management innovation of the company.

In order to seek after the excellence,Xinchi will continue to carry on the spirit of "practice ,honesty,innovation,active" ,insist on the policy of "technology promotes industry,Brand promotes industrial" ,and we believe in " Technology innovation,famous in the world" ,working hard to let" XINCHI electric brand" walk towards to the world.

- Variety of optional specifications
- Patented products
- Has passed CE, IEC, Certification
- Automatic and manual operation
- Max. 3200A

## *P* 01~70



- Dedicated to the photovoltaic system
- Max. tolerable DC1000V 630A
- Has passed IEC, CE, CB, TUV certification

## *P* 71~74



- LCD display in English
- Functions of early warning, alarm and control.
- RS232 field maintenance interface.

## *P* 75~89



# CONTENTS



PC and CB class  
Has passed IEC、CE、TUV、CB certification  
Patented Products  
Micro-breaking type  
Terminal type  
Intelligent type  
WATSN type  
Isolator type





Keyword: Patented product, smallest volume, Passed IEC, CCC, CE certification

## SQ3W series micro-breaking automatic transfer switch

### General

SQ3W-63 series automatic transfer switch is designed and developed by our company according to universal customers' requirements. This switch uses DZ47 miniature circuit breaker (improved type) as the actuating element, is equipped with the new type control mechanism. With the smallest volume among the similar products, it also has the functions like the fire control and power generation, and, it is specially used in the important power supply locations where the power failure is not allowed.

### Basic structure

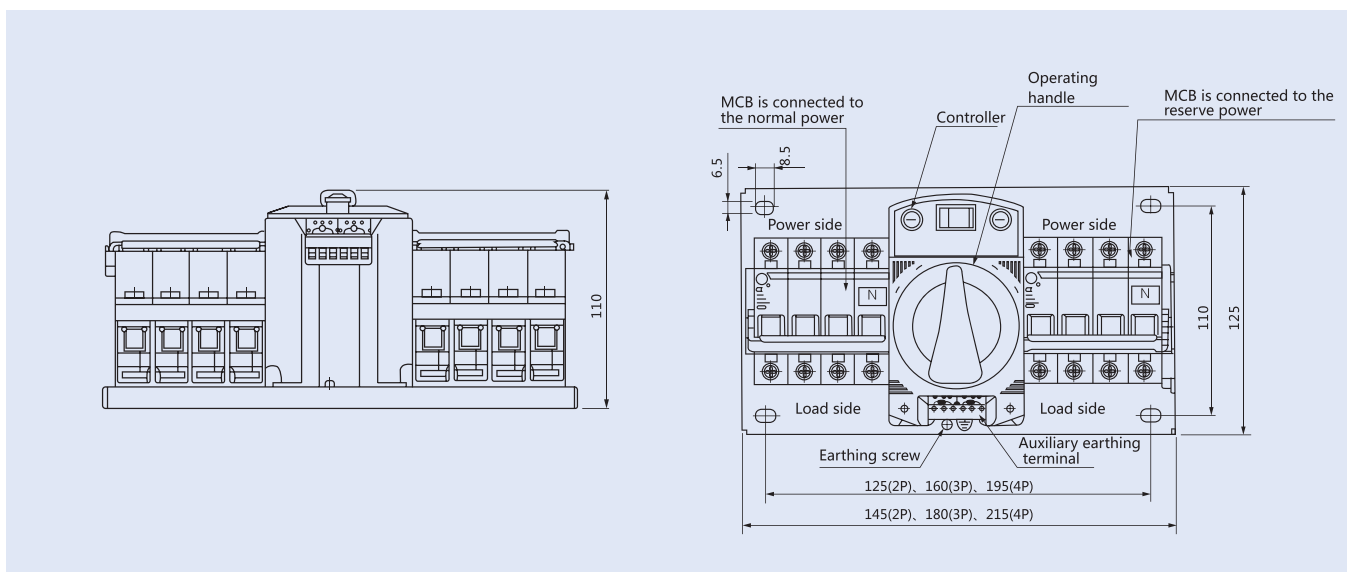
SQ3W-63 series automatic transfer switch is mainly made up of power transfer actuating breaker (including normal power actuating breaker QN and reserve power actuating breaker QR, one for each), automatic controller, electric operating mechanism and so on. Wherein, the circuit breaker QN and QR retains the original over-current protection and short-circuit protection.



### Operation

SQ3W-63 series automatic transfer switch can adopt the manual operation mode, when the manual operation is used, the manual/auto button is set in the "manual" position, when the handle is rotated clockwise to the terminal, thus, the reserve power actuating breaker QR is switched off, and the normal power actuating breaker QN is switched on. On the contrary, when the handle is rotated CCW to the terminal, the reserve power actuating breaker QR is switched on, and the normal power actuating breaker QN is switched off. The panel power indicating lamp (yellow) indicates the working voltage of automatic controller, if this lamp is not brightened, this means the working power of automatic controller has the failure, and the switch should not be operated. After it is recovered, the manual/auto button should be set to the automatic position, if the normal power is in the normal state, the normal power actuating breaker QN will be in the ON state, thus, the panel N power indicating lamp (green) is brightened; if the normal power is abnormal, the normal power actuating breaker QN will be in the OFF state, and reserve power actuating breaker QR will be in the ON state, thus, the panel R power indicating lamp (green) is brightened.

### Outline & mounting size



Keyword: Patented product, Three stable working states, Passed IEC, CCC, CE certification

## SQ3M series terminal type automatic transfer switch

### General

SQ3M series automatic transfer switch is used for the two-circuit power system of AC 50Hz and rated voltage up to and including 690V. It is able to actuate the automatic transfer between the normal power and reserve power, requiring no manual operation. This switch conforms to the clauses stipulated in the GB/T14048.11 Automatic transfer switching equipment. Its operating mechanism has reliable electric and mechanical interlock to prevent the normal power and reserve power being switched on at the same time.

Within the scheduled time after the voltage of normal power detected phase A and each phase is disconnected, the switch can make the load connect to the reserve power from the normal power, after the normal power is recovered, the load returns to the normal power state, while, the switch has the phase-failure protection function.

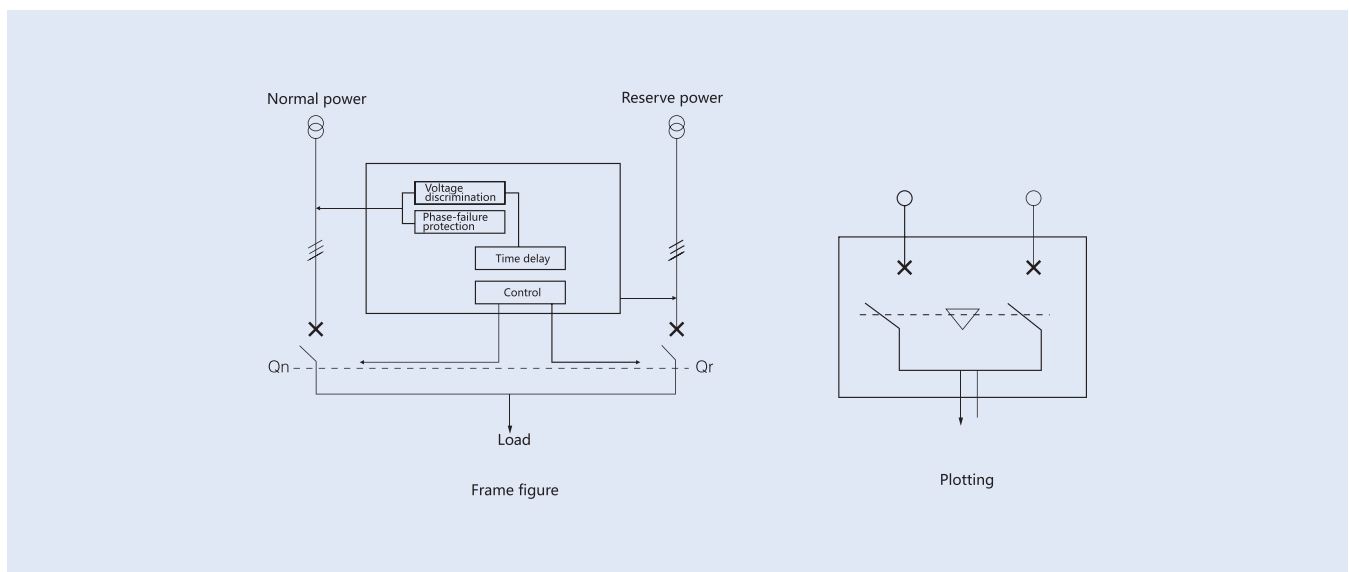


### Model description

S Q 3 M - □ / □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦

①	Enterprise code	Working voltage of switch controller is AC220V. The mechanical life of switch (N-R-N) is 5,000 times. The operating handle of switch is used for manual switching operation in the emergency state (used under the power failure). Three stable working states: normal power ON, reserve power OFF; normal power OFF, reserve power ON; normal power OFF, reserve power OFF;
②	Automatic transfer switch	
③	Design No.	
④	M:Terminal type M:Micro-breaking type	
⑤	Frame current	
⑥	Rated working current	
⑦	3: 3-pole 4: 4-pole	

### Main structure



## Working principle

The letters N, R, QN and QR respectively indicate the normal power, reserve power, normal power actuating breaker and reserve power actuating breaker. Two breakers have the mechanical and interlock dual protections. The controller is made up of voltage discrimination, phase-failure protection, and control four parts. When the normal power is normal, and, the switch works in the automatic position, whether QR is in the "closing" or "opening" state, it always finishes the QR-off QN-on program first, therefore, it can guarantee the load is connected to the normal power. When the normal power has the trouble like the voltage loss, under voltage or phase failure, after the specified time, the load will be transferred to the reserve power.

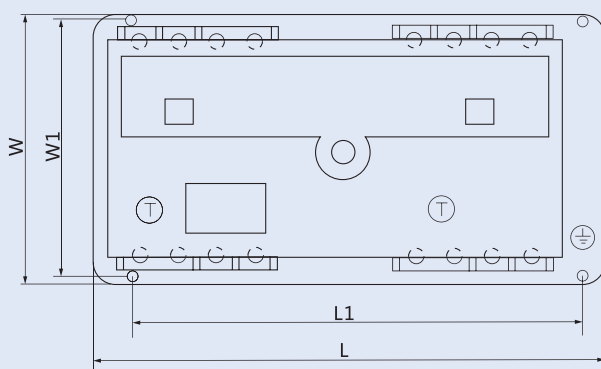
The controlling circuit breaker of switch may be the 3-pole or 4-pole molded-case circuit breaker, it can realize the automatic and manual operation, meanwhile, it can actuate the dual power supplies of automatic and forcible load transfer. According to the customer requirement, normal power indicator, reserve power indicator, normal power tripping indicator and reserve power tripping indicator may be connected from the external terminal to the control panel.

The diagram of this series of automatic transfer switch is very simple, requiring no the secondary connection diagram, so, it is very easy for the engineering design. The external connection diagram is shown as following description (the indicator uses ADL AC220V).

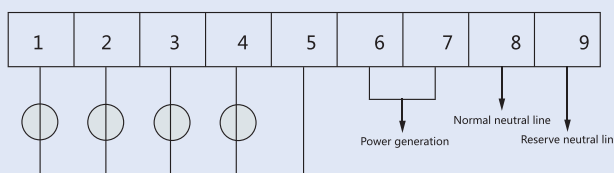
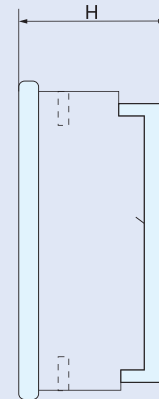
## Outline & mounting size

Model	Size		L		L1		W		W1		H
	3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	
SQ3M-100	332	360	305	335	202	202	175	175	105		
SQ3M-225	377	410	350	385	212	212	185	185	128		

## Mounting & connecting diagram



SQ3M outline diagram



Notice: The three-pole switch must be connected with the neutral line.

In the diagram:H1, H2, H3 and H4 are the external indicators of normal closing, reserve closing, normal tripping, and reserve tripping respectively.

6 and 7 are starting contacts umber of power grid and generator.

8 and 9 are the normal power neutral line and reserve power neutral line respectively.

Keyword: Device body and intelligent automatic controller,aerial plug port,special shielded cable

## SQ3Z series intelligent automatic transfer switch

### General

Nowadays, the technology changes with each passing day, the equipment of power system are being developed in the direction of centralized control and intelligence, that is, the weak current (electron) controls the strong electricity. We developed the new generation of automatic transfer switching equipment by using advanced international technologies according to users' actual needs. This product employs the latest microcomputer control system as the core component; it has advantages of electromagnetic compatibility, strong immunity, long-term reliable operation, is equipped with a large screen LCD backlight display, provides user-friendly man-machine interface, convenient and intelligent operation. Therefore, it is an ideal automatic transfer switching equipment, also is the most perfect upgrading product among the similar products at home, it marks a new epoch in the development toward the intelligence and networking.



### Scope of application

- Ambient air temperature should be within  $-25^{\circ}\text{C}\sim+40^{\circ}\text{C}$ , the mean value within 24h should not exceed  $+35^{\circ}\text{C}$ ;
- Atmospheric conditions: the air should be clean, the relative humidity should not exceed 50% at  $+40^{\circ}\text{C}$ , higher relative humidity is permissible at lower temperature condition, for instance, RH may reach 90% at  $+20^{\circ}\text{C}$ , but should take the condensation into consideration that may caused by temperature change;
- The altitude of installation site should not exceed 2,000m, it should be used indoors;
- The installation site should be free of strenuous vibration or impact, no corrosion affecting the electric elements;
- If beyond the abovementioned conditions, please negotiate with the manufacturer when placing the order;
- If the switch is intended for offshore oil or nuclear power station, shall enter into an additional technical agreement.

### Model description

S Q 3 □ - □ - □ / □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Enterprise code: Shanghai Xinch Electric Co., Ltd.
②	Automatic transfer switch
③	Design No.
④	Z: intelligent type
⑤	Frame current
⑥	Rated current
⑦	3: 3-pole; 4: 4-pole
⑧	R: auto-switch-in auto-restoring, S: auto-switch-in without auto-restoring, F: auto-switch-in auto-restoring between the power grid and generator

## Structural characteristics

- SQ3Z automatic transfer switching equipment (hereinafter referred to as ATSE) is made up of device body and intelligent automatic controller two parts.
- The device body is made up of two circuit breakers (refer to the technical parameters for model and specification) that are equipped with electric operating mechanisms, as well as accessories (auxiliary alarm contact and so on), mechanical interlocking mechanism, electrical interlock, terminal block and so on, all the parts are installed on a metal plate.
- Intelligent automatic controller is made up of novel singlechip as well as output and other modules.
- The two parts are connected by aerial plug port and special shielded cable whose length is not over 2m, formed into intelligent control system, whose control supply voltage is 220V, 50/60Hz.
- ATSE has function of mechanical and electrical dual interlocking protection, guarantees safe and reliable power supply.
- It is able to finish automatic dual-power transfer in single-phase 220V system, three-phase three-wire system and three-phase four-wire system.

## Normal operating conditions

- Ambient air temperature should be within  $-25^{\circ}\text{C}\sim+40^{\circ}\text{C}$ , the mean value within 24h should not exceed  $+35^{\circ}\text{C}$ ;
- Atmospheric conditions: the air should be clean, the relative humidity should not exceed 50% at  $+40^{\circ}\text{C}$ , higher relative humidity is permissible at lower temperature condition, for instance, RH may reach 90% at  $+20^{\circ}\text{C}$ , but should take the condensation into consideration that may caused by temperature change;
- The altitude of installation site should not exceed 2,000m, it should be used indoors;
- The installation site should be free of strenuous vibration or impact, no corrosion affecting the electric elements;
- If beyond the abovementioned conditions, please negotiate with the manufacturer when placing the order;
- If the switch is intended for offshore oil or nuclear power station, shall enter into an additional technical agreement.

## Performance

Working principle of intelligent equipment: The controller detects the two circuits of voltage synchronously, the supply voltage higher than the rated value 110% (adjustable) is considered the over voltage, and that lower than the rated value 80% (adjustable) is considered the under voltage or lost voltage, the microcomputer control circuit makes the logical judge of abovementioned detecting result, and, the delaying (adjustable) circuits drives the corresponding command with the treated result, then, it sends the opening or closing command to the electric operating mechanism, the above detected result may be displayed in the LCD screen of intelligent automatic controller panel, it also can be used for customers to find the fault reasons with the soft control by connecting the serial port with the computer, so as to restore the fault circuit and make the dual power supplies recover in the shortest time.

According to control function, the intelligent automatic controller can be divided into three types: auto-switch-in auto-restoring (R) that is suitable for power grid-power grid. The intelligent automatic controller carries out automatic switching between the two circuits of power supply (i.e. normal and reserve power supplies), power supplied by the normal power supply under normal condition, and transfer to the reserve power supply automatically after the preset time delay (adjustable) once the normal power is failed or is abnormal (any one phase voltage occurs overvoltage, undervoltage, no-voltage or open-phase), and return to the normal power supply automatically after the preset time delay (adjustable) when the normal power supply recovers. When the reserve power supply is failed or is abnormal (any one phase voltage occurs overvoltage, undervoltage, no-voltage or open-phase), the controller will send out normal power or reserve power alarm.

Auto-switch-in without auto-restoring (S) is suitable for power grid-power grid. The automatic controller of auto-switch-in without auto-restoring carries out automatic switching between the two circuits of power supply (i.e. normal and reserve power supplies). It transfers to the other normally operated power supply after the preset time delay when one power supply is abnormal (any one phase voltage occurs overvoltage, undervoltage or open-phase), and will not restore automatically when the abnormal one recovers.

Power grid-generator (F), when it is used in the power grid-generating system, transfer time should be set at 15s, the automatic controller carries out switching between the power grid and generator. When the power grid voltage is lower than 80% of the rated voltage, the controller sends out power generation command (output by one group of NO NC contacts) after time delay, when the generating voltage reaches 80% of the rated voltage, it cuts off the load circuit from the power grid first, sends out unload command to unload the dispensable loads (output by another group of NO NC contacts), then put through the generating power supply. When the power grid recovers normal (reaches 80% above of the rated voltage), the controller will cut off the loads from the generating power supply and transfer to the power grid automatically through intelligent logical judgment.

When the normal power is abnormal, the microcomputer will detect the presetting operation state (manual, auto, restoring, without restoring) and reserve power, then, the system decides to transfer or start the reserve power, the system load is connected with the reserve power.

When both the dual-power switch and system load are in the dual-breaking state, whether the normal power and reserve power is normal or not, or, whatever the system presetting state is, the system still keeps the dual-breaking state. Only the buttons ☹ (manual) and ☺ (auto) are pushed, the system can work in the non-dual-breaking state (manual-normal-reserve or auto—auto - restoring—without restoring), thus, the load can have the power supply, and it is treated according to the above measures.

### Protection function

- Over-current protection
- Phase failure and short-circuit protections
- Voltage-loss and under-voltage protection
- Remote control
- Fire-control signal output
- Central microcomputer control communication interface
- Adjustable automatic transfer time 1s-3s
- High-performance SCM program control, strong anti-interference ability and high protection precision
- Small volume, high stability and reliable continuous operation
- Noiseless operation, energy saving, according to the national standard of green electric product

### Working principle of ATSE

Current power supply of load		Current presetting state of system				When the current power has the trouble, whether the other is normal or not	System treatment when the power has the failure		Treatment when the current reserve power is provided normally and the normal power is connected			
		Manual		Electric			No transfer	Transfer to		Whether the normal power is normal or not	No transfer	Transfer to
Normal	Reserve	Normal	Reserve	Auto-restoring	Without auto-restoring			Normal	Transfer			
•		•				Normal	•					
						Abnormal	•					
•				•		Normal		•				
						Abnormal	•					
•					•	Normal		•				
						Abnormal	•					
	•		•			Normal	•				•	
						Abnormal	•					
	•			•		Normal				Normal		Normal
						Abnormal	•			Abnormal	•	
	•				•	Normal					•	
						Abnormal	•					

### Setup of controller

•The parameter setup and password amendment of dual-power transfer system is introduced as follows: the buttons ☹ (set) , ☺ (shift), ☹ (up) and ☺ (down) are used to set the parameters, and the buttons ☹☹☹☹ are used to input the password. If the system has not entered into the parameter setup or password input state, any of keys ☹☹☹☹ is pushed singly, the system will not give the response.

•When the new circuit is switched on at the first time, the system will generate the following defaulted parameters: password 9999, transfer time N→R 3s, R→N 3s, dual-breaking→R1s, dual-breaking→N1s, N or R→dual-breaking 1s (N: normal power; R: reserve power).

### Main technical parameters

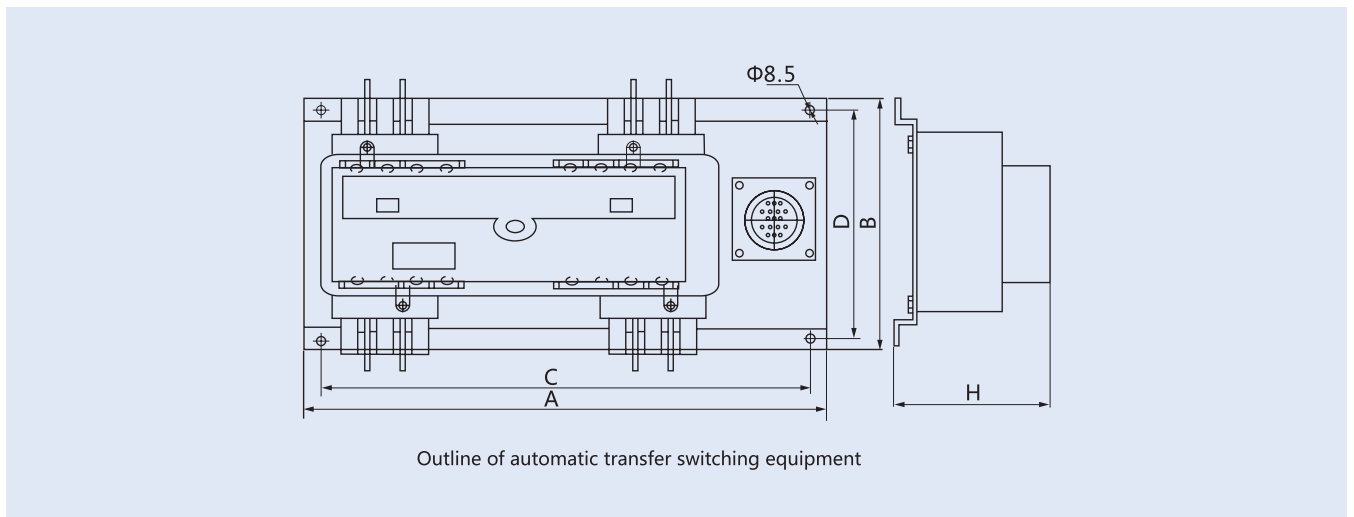
Spec.	Model of circuit breaker	Frame size A	Rated working current A	Breaking current kA	Rated working voltage V	Insulating voltage V	Frequency	Switching time	Intelligent controller voltage	Mechanical life
SQ3Z-100/3	SM1	100	10、16、20、32、40	Refer to the circuit breaker manual	400	1000	50-60Hz	1-30s adjustable	AC220V	Its mechanical life can reach 5000 by once opening and closing operation
SQ3Z-100/4			50、63、80、100							
SQ3Z-225/3		225	100、125、140、160							
SQ3Z-225/4			180、200、225							
SQ3Z-400/3		400	200、250、315、350							
SQ3Z-400/4			400							
SQ3Z-630/3		630	250、315、350、400							
SQ3Z-630/4			500、630							
SQ3Z-800/3	TM30	800	630、700、800							
SQ3Z-800/4										

### Mounting size

Spec	Size	A		B	C		D	H
		3P	4P		3P	4P		
SQ3Z-100		390	420	240	358	388	220	150
SQ3Z-225		435	470	240	400	438	220	150
SQ3Z-400		560	610	325	520	570	302	230
SQ3Z-630		640	700	450	600	660	302	270
SQ3Z-800		670	790	450	630	750	302	270

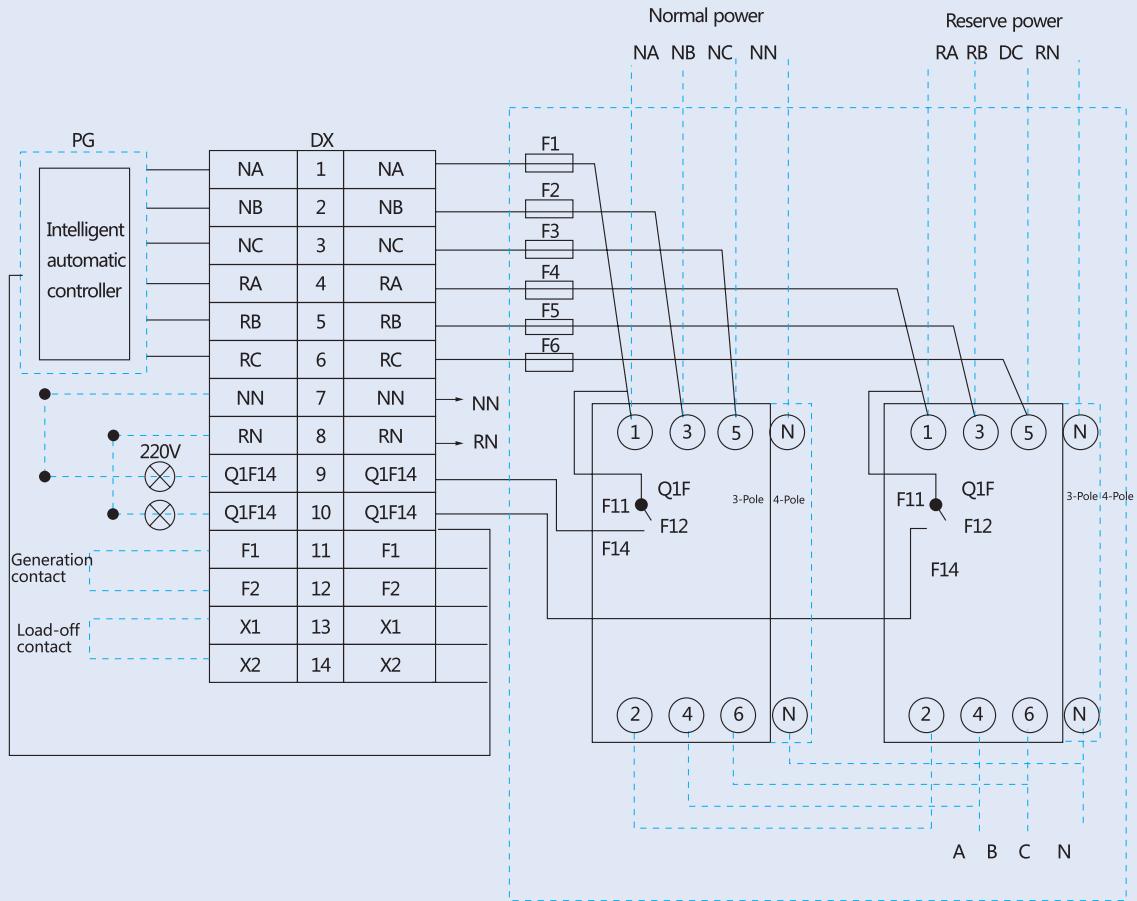
Note: The diagram of split type is the same with that of SQ3M series.

### Mounting & connecting diagram



Outline of automatic transfer switching equipment

Connection principle diagram



NN neutral line of normal power

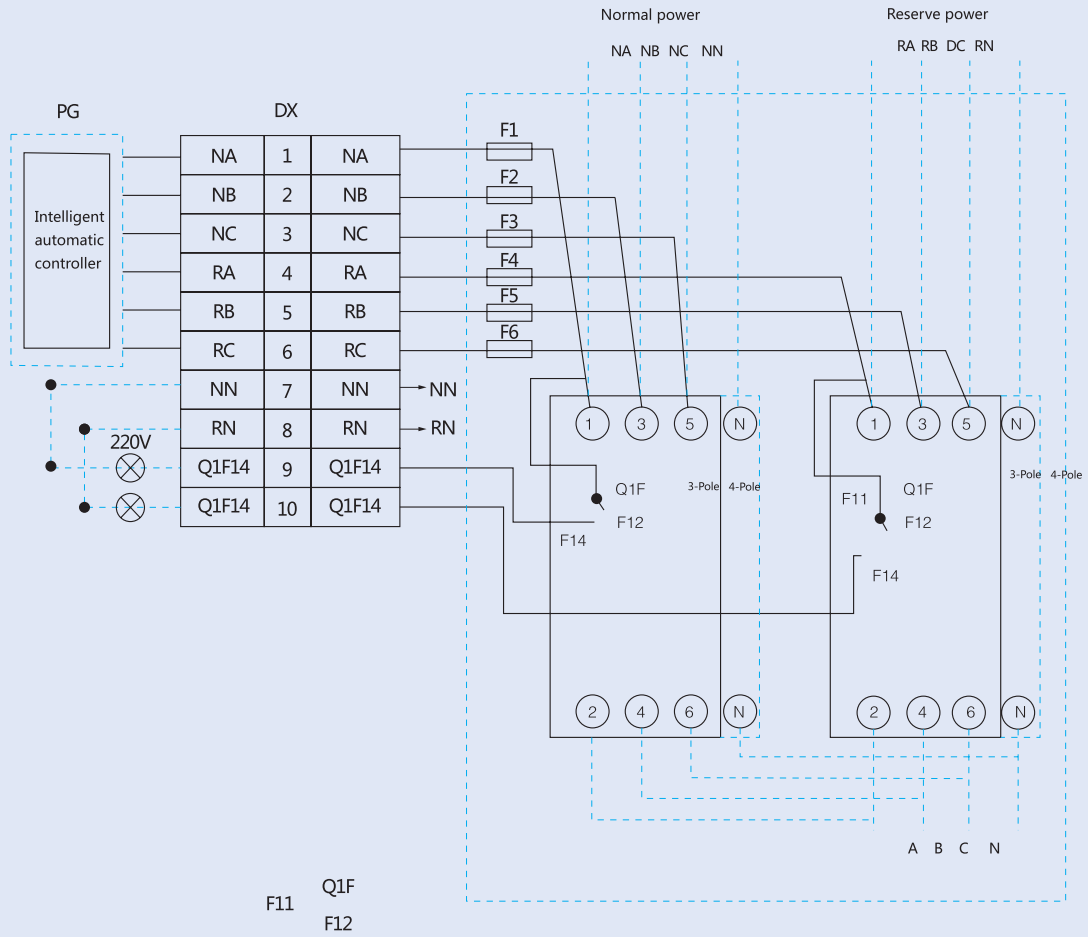
RN neutral line of reserve power

HD normal closing lamp

TD reserve closing lamp

Connection diagram of type R and type S





Connection diagram of type F

HD normal closing lamp AC220V (provided by customer)

TD reserve closing lamp AC220V (provided by customer)

The part marked by dotted line is connected by customer.

This connection diagram is suitable for three-phase four-wire system, when the three-phase three-wire system is used, the normal power neutral line (NN) and reserve power neutral line (RN) are connected to No.7 terminal (NN) and No. 8 terminal (RN) of closing signal lamp respectively.

Keyword: Single-motor for transfer driving, electromechanical interlocking protection

## SQ3N(WATSN) series automatic transfer switch

### General

SQ3N(WATSN) series automatic transfer switch is a new generation of ATS developed by our company making use of microcomputer control technology, it employs our NS and C65 series circuit breakers as actuating members, and is equipped with electromechanical integrated control mechanism that with mechanical-electrical dual interlocking, it is especially suitable for important power supply locations where power failure is not allowed. In order to adapt to the field needs, this series automatic transfer switch is able to realize three operating modes, i.e. auto-switch-in auto-restoring, auto-switch-in without auto-restoring, standby for each other.

### Guarantee power safety and production continuity Commercial and service organizations

- Hospital operating room
- Safety guarantee system in high-rise
- Computer room (bank, insurance company, etc.)
- Lighting system in shopping center

### Industrial

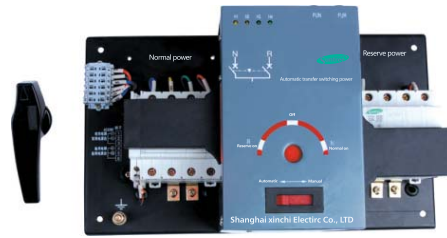
- Continuous production line
- Ship engine room
- Vital area of thermopower station

### Facility

- Port and railway system
- Highway lighting system
- Control system in troops post place

### Effective electric energy management

- Load shield
- Normalization



Function and distribution of power transfer system

2 The two power supplies are wired on the same bus

• Incoming line and LV distribution continuity

	Q1	Q2
distribution continuity	0	0
Un: Normal power	1	0
UR: Reserve power	0	1

• Continuity of distributed power

	Q1	Q2
Typical application	0	0
Continuous production	1	0
Working shop	0	1

• Power supply continuity of terminal X

	Q1	Q2
Typical application	0	0
Fire control	1	0
Smoke exhaust fan	0	1
Emergency lighting		
Others		

Generator or permanent power supply

Generator or permanent power supply

Load

## Characteristics of SQ3N(WATSN) automatic transfer switch

- Three optional working modes: mode of auto-switch-in auto-restoring, mode of standby for each other, mode of auto-switch-in without auto-restoring;
- Three stable working positions: normal power ON, reserve power OFF; normal power OFF, reserve power ON; normal power OFF, reserve power OFF;
- Utilization category: AC33B, motor load or mixed load including motor, resistive load and 30% below incandescent lamp load;
- Compact volume, simplified structure, elegant appearance, complete specifications from 1A-630A, convenient operation, long service life, 2-pole, 3-pole and 4-pole switches are available.
- The switch adopts single-motor for transfer driving, with advantages of simplified structure, reliable and smooth switching, noise free, low impulse force.
- The switch has electromechanical interlocking protection that guarantees reliable operation and mutual noninterference;
- The switch is able to automatic transfer with loads, also manual transfer by handle is available in emergency condition.
- Advantages when comparing with the similar products from other companies:  
Breaking capacity of controller protection fuse is 50KA, improves distribution safety.  
An interlock is installed between manual and automatic operation modes to make sure that the manual operation is ineffective in automatic condition.  
ATS would not transfer when handle of actuator circuit breaker is broken, contracts are stuck or load failure (overload, short-circuit), truly realizes electromechanical interlocking.
- MCB type ATS driving mechanism escapement is modified into concave form from forked type, this solves the problems of broken of lengthened MCB handle and asynchronous closing of MCB, recovers quick making and breaking function of MCB, improves mechanical life of product.
- The product provides function of prevent-reverse wiring, when user wires the zero line and live wire inversely, it would give audible and visual alarm, this function sharply improves reliability of equipment.

### Model description

S Q 3 N / A 100 □ 4 CB R X  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Enterprise code
②	Automatic transfer switch
③	Design No.
④	Wingol type
⑤	Optional controller type A: end type (only provides auto-switch-in auto-restoring integrated type ATS) B: intelligent type (LED display, supply voltage, starting generator, fire alarm and control)
⑥	Optional frame current: I=63A、I=100A、I=160A、I=250A、I=400A、I=630A
⑦	Optional rated current 63: 1、2、4、6、10、16、20、25、32、40、50、63 100: 16、25、32、40、50、63、80、100 160: 16、25、32、40、50、63、80、100、125、160 250: 16、25、32、40、50、63、80、100、125、160、200、250 400: electronic release, adjustable 48 points 0.4-1×400 600: electronic release, adjustable 48 points 0.4-1×40
⑧	Optional pole number of switch: 2: 2-pole switch; 3: 3-pole switch; 4: 4-pole switch
⑨	Optional characteristics of actuator circuit breaker: PC: ATS that is able to make and load, but unable to break the short-circuit current. CB: ATS that is equipped with over-current release, its main contact is able to make and can be used to break short-circuit current.
⑩	Optional switching mode: R: auto-switch-in auto-restoring, S: auto-switch-in without auto-restoring, I: standby for each other
⑪	X: fire control signal, F: with passive feedback signal, X+F: fire control + feedback signal

## Function description for SQ3N(WATSN) automatic transfer switch

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Auto-switch-in auto-restoring: when the normal power is in normal condition, controller sends out command, normal power control circuit breaker is ON and reserve power control circuit breaker is OFF, automatic transfer switching equipment is in state of (1, 0). When the normal power is abnormal, controller will send out command, let the normal power control breaker switch off and reserve power control breaker switch on, and the automatic transfer switching equipment is in (0, 1) state. When the normal power returns to normal, controllers will send out command, normal power control breaker switched on, reserve power control breaker switches off, automatic transfer switching equipment is in (1, 0) state again.

Auto-switch-in without auto-restoring: when the normal power is in normal condition, controller sends out command, normal power control circuit breaker switches on and reserve power control circuit breaker switches off, automatic transfer switching equipment is in state of (1, 0). When the normal power is abnormal, controller will send out command, let the normal power control breaker switch off and reserve power control breaker switch on, and the automatic transfer switching equipment is in (0, 1) state. When the normal power returns to normal, automatic transfer switching equipment is still in (0, 1) state, only operating the button "RESET" that can enable the normal power control breaker to switch on and reserve power control breaker to switch off, and let the automatic transfer switching equipment return to (1, 0) state.

Standby for each other: when the normal power is in normal condition, controller sends out command, normal power control circuit breaker switches on and reserve power control circuit breaker switches off, automatic transfer switching equipment is in state of (1, 0). When the normal power is abnormal, controller will send out command, let the normal power control breaker switch off and reserve power control breaker switch on, and the automatic transfer switching equipment is in (0, 1) state. When the normal power returns to normal, automatic transfer switching equipment is still in (0, 1) state, only when the reserve power fails that the normal power control breaker switches on and reserve power control breaker switches off, and automatic transfer switching equipment returns to (1, 0) state.

Command (fire control) reset (fire control command cutting off the non fire control power): No matter what state is the automatic transfer switching equipment, once receiving command of cutting off the non fire control power from fire control center, it would switch off the normal power control breaker and reserve power control breaker of automatic transfer switching equipment, let the switch in state (0, 0).

Feedback signal: it feeds back the signal of working state of the two control breakers of automatic transfer switching equipment, usually the signal is got from the auxiliary contact of control breaker.

Power grid-power grid: power source of automatic transfer switching equipment is from two circuits of power grid supply.

Power grid-generator: power source of automatic transfer switching equipment is from the power grid and generator.

Interconnection type: interconnection type automatic transfer switching equipment is made up of three molded case circuit breakers. Among them, QA and QB molded case circuit breakers are supplied by two circuits of power supply or two segments of busbar power source separately, QC molded case circuit breaker is interconnected at output terminal of QA and QB. When any one circuit of power source is failed, the breaker would switch off, QC breaker switches on, and through interconnection of this circuit breaker, the equipment is supplied by another circuit of power source, when the fault is eliminated, the interconnection circuit breaker switches off, the trouble power circuit breaker switches on. Automatic transfer switching equipment recovers normal operation.

## Standards

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IEC60947-6-1:1998 (edition 1.2) Low-voltage switchgear and controlgear--Part 6-1:Multiple function equipment--Automatic transfer switching equipment

GB14048.11-2002 Low-voltage switchgear and controlgear--Part 6-1:Multiple function equipment--Automatic transfer switching equipment

## Functions and characteristics of SQ3N(WATSN) automatic transfer switch

Model & spec.		SQ3N(WATSN)-63	SQ3N(WATSN)-100	SQ3N(WATSN)-160	SQ3N(WATSN)-250	SQ3N(WATSN)-400	SQ3N(WATSN)-630
Pole No.		2, 3, 4	4	4	4	4	4
Control voltage AC(V)		220	220	220	220	220	220
Shortest switching time		1.5s~2s	1.5s~3s	1.5s~3s	1.5s~3s	1.5s~3s	1.5s~3s
Mechanical life of transfer switch			10000 times			6,000 times	
Controller							
A		■	■	■	■	-	-
B		■	■	■	■	■	■
D		■	■	■	■	■	■
Actuator circuit breaker		SC65	SM6-100	SM6-160	SM6-250	SM6-400	SM6-630
Rated current (A) In 40°C		1~63	16~100	125~160	200~250	250~400	500~630
Rated insulation voltage (V) Ui		-	750	750	750	750	750
Rated impulse withstand voltage (kV) Uimp		6	8	8	8	8	8
Rated working voltage (V) Ue AC 50/60Hz		230/440	690	690	690	690	690
Ultimate breaking capacity DC (kA effective value)		440 H	500 N	500 N	500 N	500 N	500 N
Icu AC 50/60Hz	220/240V	10	85	85	85	85	85
	380/415V	-	25	36	36	45	45
	440V	-	25	35	35	42	42
	500V	-	18	30	30	30	30
	525V	-	18	22	22	22	22
	660/690V	-	8	8	8	10(***)	10(***)
	DC	250V(1P)	-	50	50	50	-
Operation breaking capacity Ics(%Icu)		100%	100%	100%	100%	100%	100%
Utilization category		A	A	A	A	A	A
Isolation function		■	■	■	■	■	■
Max expected maintenance value	Mechanical	20000 above	50000	40000	20000	15000	15000
	Electrical 440V-In	20000	30000	20000	10000	6000	4000
Protection							
Over-current protection (A)	General release	-	■				
	Setting current	-	12.5...100	12.5...160	12.5...250	160...400	250...630
Earth-fault protection	Equipped with Vigi module	■	■	■	■	■	■
Installation and connection							
Fixed connection/connection in the front of board		-	■	■	■	■	■
Monitor and indication auxiliary device							
Auxiliary switch		■	■	■	■	■	■
Electronic release		-	■	■	■	■	■
Live displaying module		-	■	■	■	■	■
Current transformer module		-	■	■	■	■	■
Ammeter module		-	■	■	■	■	■
Insulation monitoring module		-	■	■	■	■	■
Installation and connection accessories							
Bare cable coupler		-	■	■	■	■	■
Terminal extension and expander		-	■	■	■	■	■
Terminal cover and interphase insulating barrier		-	■	■	■	■	■
Dim. and weight							
Dim. L×H×W(mm)	A	350×125×200	500×140×200	500×140×200	500×140×200	-	-
	B	470×125×200	570×140×200	570×140×200	570×140×200	710×190×275	710×190×275
	D	310×125×200	460×140×185	460×140×185	460×140×185	610×190×275	610×190×275
	A	4.8/5.0/5.2	10.5	10.5	10.5	-	-
	B	6.2/6.4/6.6	10.7	10.7	10.7	24.5	24.5
	D	5.6	11.5	11.5	11.5	28	28

## Functions and characteristics of SQ3N(WATSN) automatic transfer switch

Model & spec.		SQ3N(WATSN)-100	SQ3N(WATSN)-160	SQ3N(WATSN)-250	SQ3N(WATSN)-400	SQ3N(WATSN)-630	
Pole No.		3	3	3	3	3	
Control voltage AC(V)		220	220	220	220	220	
Shortest switching time		1.5s~2s	1.5s~2s	1.5s~2s	1.5s~2s	1.5s~2s	
Mechanical life of transfer switch			10000 times			6,000 times	
Controller							
A		■	■	■	■	-	
B		■	■	■	■	■	
D		■	■	■	■	■	
Actuator circuit breaker		SM6-100	SM6-160	SM6-250	SM6-400	SM6-630	
Rated current (A) In 40°C		16~100	125~160	200-250	250~400	500~630	
Rated insulation voltage (V) Ui		750	750	750	750	750	
Rated impulse withstand voltage (kV) Uimp		8	8	8	8	8	
Rated working voltage (V) Ue AC 50/60Hz		690	690	690	690	690	
Ultimate breaking capacity DC		500	500	500	500	500	
(kA effective value)		N	N	N	N	N	
Icu AC 50/60Hz	220/240V	85	85	85	85	85	
	380/415V	25	36	36	45	45	
	440V	25	35	35	42	42	
	500V	18	30	30	30	30	
	525V	18	22	22	22	22	
	660/690V	8	8	8	10(***)	10(***)	
	DC	250V (1P)	50	50	50	-	-
		500V (2P connection in series)	50	50	50	-	-
Operation breaking capacity		100%	100%	100%	100%	100%	
Utilization category		A	A	A	A	A	
Isolation function		■	■	■	■	■	
Max expected maintenance value	Mechanical	50000	40000	20000	15000	15000	
	Electrical 440V-In	30000	20000	10000	6000	4000	
Protection							
Over-current protection (A)	General release	■	■	■	■	■	
	Setting current	12.5...100	12.5...160	12.5...250	160...400	250...630	
Earth-fault protection	Equipped with Vigi module	■	■	■	■	■	
Installation and connection							
Fixed connection/connection in the front of board		■	■	■	■	■	
Monitor and indication auxiliary device							
Auxiliary switch		■	■	■	■	■	
Electronic release		■	■	■	■	■	
Live displaying module		■	■	■	■	■	
Current transformer module		■	■	■	■	■	
Ammeter module		■	■	■	■	■	
Insulation monitoring module		■	■	■	■	■	
Installation and connection accessories							
Bare cable coupler		■	■	■	■	■	
Terminal extension and expander		■	■	■	■	■	
Terminal cover and interphase insulating barrier		■	■	■	■	■	
Dim. and weight							
Dim. L×H×W(mm)	A	430×140×200	430×140×200	430×140×200	-	-	
	B	500×140×200	500×140×200	500×140×200	620×190×275	620×190×275	
	D	400×140×185	400×140×185	400×140×185	520×190×275	520×190×275	
	A	9.0	9.0	9.0	-	-	
	B	9.4	9.4	9.4	20.5	20.5	
	D	10.2	10.2	10.2	24	24	

Release of SQ3N(WATSN) automatic transfer switch

SM6-100-SM6-250 tripping mechanism		SM616D-SM6250D											
Rated value (A)	In 40°C	16	25	32	40	50	63	80	100	25	160	200	250
Circuit breaker	SM6-100N/H/L	■	■	■	■	■	■	■	■				
	SM6-160N/H/L	■	■	■	■	■	■	■	■	■	■		
	SM6-250N/H/L	■	■	■	■	■	■	■	■	■	■	■	■
Tripping current (A)	Ir	Adjustable range 0.8...1×1×Ir											
Neutral line protection (aA)	4P 3d	No protection											
	4P 3d+N/2								56	56	63		0.5×Ir
	4P 4d	1×Ir											
Short-circuit current protection (electromagnetic release)													
Tripping current (A)	Im	Fixed											
	SM6-100	190	300	400	500	500	500	640					
	SM6-160/250	190	300	400	500	500	500	1000	1250				
SM6-100-SM6-250 tripping mechanism		STR22SE											
Rated value (A)	In 20-70°C		40				100			160			250(.)
Circuit breaker	SM6-100N/H/L		■				■			■			■
	SM6-160N/H/L		■				■			■			■
	SM6-250N/H/L		■				■			■			■
Overload protection (long time delay)		Adjustable(48 points)0.4...1×Ir											
Tripping current (A)	In	90...180											
Tripping time (S)	at1.5×Ir	5...7.5											
	at6×Ir-	3.2...5											
	at7.2×Ir	1×Ir											
Neutral line protection	4P 4d-	0.5×Ir											
	4P 4d+N/2	No protection											
	4P 3d-												
Setting value of tripping current	Im	Adjustable(8 points)2...10×Ir											
	Precision	15%											
Delay time (ms)	Max over-current	Fixed											
	Tripping time	≤40											
	Total interrupting time	≤60											
Tripping current (A)	Ii	Fixed ≥ 11×Ir											
Operating environment		When the working ambient temperature is high, setting of STR22SE should take the temperature coefficient into consideration, it should not exceed 0.95 at 60°C, or not exceed 0.90 at 70°C.											
NS-100-NS-630 Ma release													
Rated value (A)	In 65°C	2.5	6.3	12.5	25	50	100	150	220	320			
Circuit breaker	NS-100N/H/L	■	■	■	■	■	■						
	NS-160N/H/L				■	■	■	■	■				
	NS-250N/H/L						■	■	■	■			
	NS-400N/H/L												
	NS-630												
Short-circuit current protection (electromagnetic)													
Tripping current setting range (A)		Adjustable6...14×Ir						Adjustable9...14×Ir			9...14×Ir		

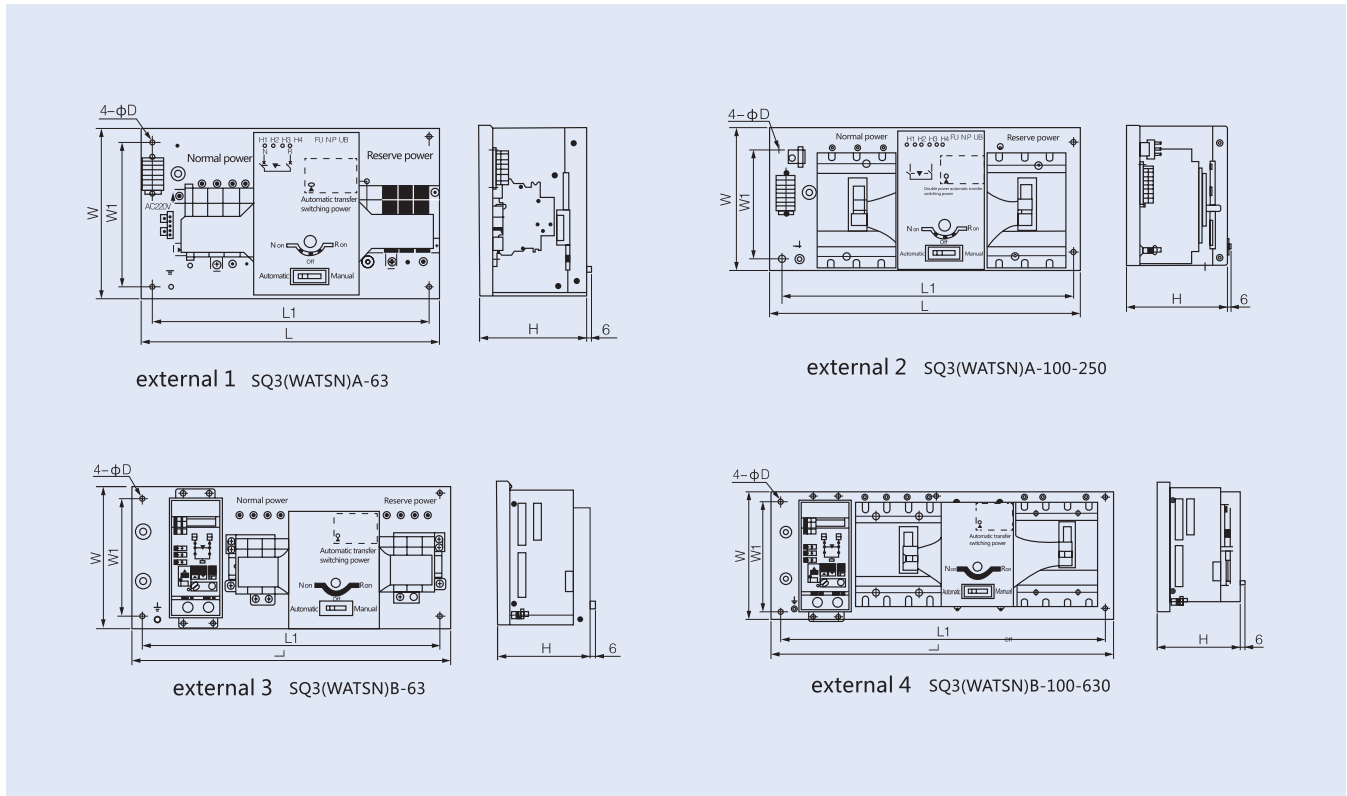


## Controller of SQ3N(WATSN) automatic transfer switch

Controller	A (built-in type)	B (external type)	D (panel type)
Rated working voltage	AC220V	AC220V	AC220V
Rated working frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
3 operating positions			
Normal power switches on	■	■	■
Reserve power switches on	■	■	■
Both normal power and reserve power break (position 0)	■	■	■
Three operating modes			
Automatic operation mode	■	■	■
Manual remote control		■	■
Handle operation	■	■	■
Automatic operation			
Monitor normal power and automatic switching	■ (Three-phase open-phase and no-voltage detection)	■ (Three-phase open-phase, under-voltage, over-voltage and no-voltage detection)	
Monitor reserve power and automatic switching			
Generator control		■	■
Fire control signal (DC24V) cutting off non-priority loads	□	□	□
Auto-switch-in auto-restoring	■	■	■
Auto-switch-in without auto-restoring	■	■	■
Standby for each other	■	■	■
Test			
Through the control panel test button or control pushbutton	■	■	■
Display			
Working state display of circuit breaker: ON and OFF		■	■
Indicators of normal power and reserve power	■	■	■
Failure tripping indicator	■	■	■
Parameter setting indicator	■	■ (LED)	■ (LED)
Other functions			
Switching time delay	0s, 5s, 15s, 30s	0-255s adjustable continuously	0-255s adjustable continuously
Return time delay	Accuracy ≤ 5%		
Protection function for misconnection of neutral line and phase line (alarm)	■	■	■
After sending out switching signal, cut off 5S later	■	■	■
Communication selection		□	□
Feedback signal	□	□	□

Note: ■: standard configuration □: optional function D type controller is of panel mode installation and can be set up on panel, it is advantageous to the on-site monitoring, its basic functions are similar to that of B type controller, but it has LCD display and Chinese interface, is convenient for field setting.

SQ3N(WATSN) autoatic transfer switching external and installation diension



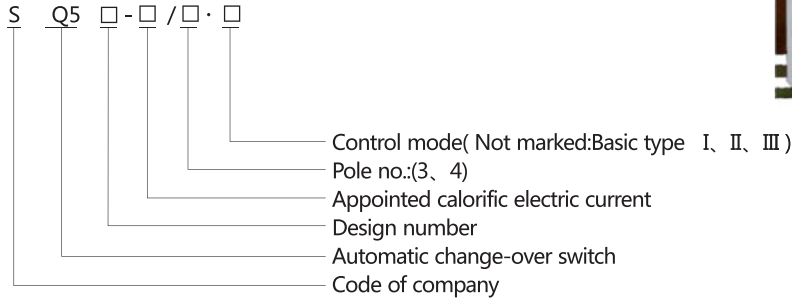
Product external dimension and installation dimension

Type	Dim. (mm)	external diension			installation dimension		
		L(3P/4P)	W(3P/4P)	H(3P/4P)	L1(3P/4P)	W1(3P/4P)	D(Φ)
SQ3N(WATSN)A-63		350	200	125	320	170	5.5
SQ3N(WATSN)A-63 Fire		370	200	125	320	170	5.5
Feedback or X+F		350	200	125	320	170	5.5
SQ3N(WATSN)A-100(INT)		430/500	200	140	420/470	155	6.5
SQ3N(WATSN)A-100		430/500	200	140	420/470	155	6.5
SQ3N(WATSN)A-160		430/500	200	140	420/470	155	6.5
SQ3N(WATSN)A-250		470	200	125	440	170	5.5
SQ3N(WATSN)B-63		430/500	185	140	400/470	155	6.5
SQ3N(WATSN)B-100		430/500	185	140	400/470	155	6.5
SQ3N(WATSN)B-250		430/500	185	140	400/470	155	6.5
SQ3N(WATSN)B-400		600/680	275	190	570/650	245	9
SQ3N(WATSN)B-630		600/680	275	190	570/650	245	9

Keyword: Double complex contact,Zero arc(No Arc Chute),distinct on and off position indecator,padlock function etc

## SQ5 Series Automatic Change-over switch

### Type & Meaning



### Example for model selection

SQ5 -100/4.III~400V In50A

Automatic change-over switch, Conventional thermal current is 100A, AC rate voltage 400V,rate current 50A,4poles(3 poles+on and off neutral pole),Suitable for automatic change and automatic recovery of municipal power oil generator power supply system.

### Conform Standard

SQ5 Series Automatic Change-Over Switch Complies With The Following Standards:

IEC60947-1(1998) 《Low-voltage switchgear and controlgear, part one: General Rules》 .

IEC6094-3(1999) 《Low-voltage switchgear and controlgear, switches, disconnectors, switch-disconnectors and fuse-combination units》 .

IEC60947-6(1999) 《Low voltage switch equipment and control equipment multi-function-switch automatic change-Over switch electrical device》 .

### National Standard:

GB/T14048.1-2002 《Low-voltage switchgear and controlgear,part one: General Rules》 .

GB14048.3-2002 《Low-voltage switchgear and controlgear,switches,disconnectors,switch-disconnectors and fuse-combination units》 .

GB014048.11-2002 《Low voltage switch equipment and control equipment multi-function-switch automatic change-over switch electrical device》 .

## Main Technical Parameters

## • SQ5-100~1600A

SQ5-100-1600A series automatic change-over switch electrical properties and mechanical properties

Conventional thermal current Ith A			100ASQ51								
Rated current In(A)			16A	20A	25A	32A	40A	50A	63A	80A	100A
Rated impulse withstand voltage Ui(V)			500	500	500	500	500	500	500	500	500
Dielectric strength(V)			3000	3000	3000	3000	3000	3000	3000	3000	3000
Rated surge-resistant voltage Uimp KV (installed category IV)			6	6	6	6	6	6	6	6	6
Rated Working current Ie(A)	400V	AC-31	16	20	25	32	40	50	63	80	100
		AC-33	16	20	20	25	32	40	40	63	80
		AC-35	16	20	25	32	40	50	63	80	100
	220V	DC-31	16	20	25	32	40	50	63	80	100
		DC-33	16	20	20	25	32	40	40	63	80
		DC-35	16	20	25	32	40	50	63	80	100
Motor power P(400V)KW			8	10	15	15	20	25	30	30	32
Rated short-time withstand current(kA Rms)0.1S/1S			9/5	9/5	9/5	9/5	9/5	9/5	9/5	9/5	9/5
Rated Breaking capability(A rms)AC33 380V			125	160	200	250	320	400	500	640	800
Rated making capability (ARms)AC33 380V			160	200	250	320	400	500	630	800	1000
Rated short-current making capability Icm (KA peak value)			8	8	8	8	8	8	10	10	10
Mechanical durability(number of cyclic operation)			10000	10000	10000	10000	10000	10000	10000	10000	10000
Electric durability	Cosφ=0.65Ac33		2000	2000	2000	2000	2000	2000	2000	2000	2000
Change-over time	I-0-II or II-0-I(S)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	I-0 or II-0(S)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Power consumption of electrical control	24V(DC)(W)		25	25	25	25	25	25	25	25	25
	220V(AC)(W)		25	25	25	25	25	25	25	25	25
Moment of operation(Nm)			1	1	1	1	1	1	1	1	1
Weight(kg)	3Poles		5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
	4Poles		5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8

## SQ5 SERIES AUTOMATIC CHANGE-OVER SWITCH

### Main Technical Parameters

1.SQ5-100-1600A series automatic change-over switch electrical properties and mechanical properties

100A					160A		250A		630A		1600A			
20A	40A	63A	80A	100A	125A	160A	200A	250A	400A	630A	800A	1000A	1250A	1600A
500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
5000	5000	5000	5000	5000	5000	5000	5000	5000	8000	8000	10000	10000	10000	10000
8	8	8	8	8	8	8	8	8	12	12	12	12	12	12
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	32	40	63	80	125	160	200	250	340	536				
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600
20	32	40	63	80	100	125	160	200	315	500				
20	40	63	80	100	125	160	200	250	400	500	800	1000	1250	1600
10	20	25	30	32	63	80	100	132	220	280				
9/5	9/5	9/5	9/5	9/5	20/10	20/10	25/12	25/12	40/20	50/25	90/50	90/50	90/50	90/50
160	320	500	640	800	1000	1000	1600	1600	3200	3200				
200	400	630	800	1000	1250	1250	2000	2000	4000	4000				
8	8	10	10	10	12	12	17	17	30	30				
1000	10000	10000	10000	10000	10000	10000	10000	10000	5500	5500	4000	4000	4000	3000
1500	1500	1500	1500	1500	1000	1000	1000	1000	500	500	500	500	500	500
0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
50	50	50	50	50	75	75	75	75	90	90	90	90	90	90
50	50	50	50	50	75	75	75	75	90	90	90	90	90	90
15	15	15	15	15	22	22	30	30	45	45	55	55	55	60
					8.2	8.2	10.4	10.4	17.8	19	28	31	31	34
4.2	4.3	4.4	4.5	4.5	8.7	8.7	11.3	11.3	20.2	22	32	36	36	40

2.SQ5-800~3200A basic type series automatic change-over switch electrical properties and mechanical properties

Conventional thermal current Ith A		800A	1000A	1250A	1600A	2000A	2500A	3200A	
Rated impulse withstand voltage Ui(V)					1000V				
Rated surge-resistant voltage Uimp KV					12KV				
Rated Working voltage Ui(V)					AC440V				
Rated Working current Ie(A)	AC-31	800	1000	1250	1600	2000	2500	3200	
	AC-33	800	1000	1000	1000	1250	1250	1250	
	AC-35	800	1000	1000	1250	2000	2000	2500	
Rated making capability					10Ie				
Rated breaking capability					8Ie				
Rated restrict short circuit current KA			100	120	80				
Rated short-time withstand current Is		26KA	50KA				55KA		
Change-over time I-0-II or II-0I(s)				1.2S		2.4S			
Power supply voltage control					DC24V, 48V, 110V AC220V				
The energy consumption of the motor	Rated control voltage	Sartup	400W	400W			600W		
		In gear	90W	98W			120W		
Weight (kg)		4poles	32	36	40	49	95	98	135

Performance and characteristic

- It adopted double complex contact, horizontal and vertical type frame basically, it have come to 'Zero' arc(No Arc Chute);
- It adopt reliable machine interlock and electric interlock, the execu-tive union parts adopt independency overload disconnect switch,it makes more reliable and safety;
- Adopt 'zero' technique, it can force to set 'zero' under emergency situation(break off two way power supply at the same time),meet the requirement of fire protection linkage;
- Operate overload disconnect switch change over adopt singleness electromotor drive, switch over smooth and reliable, no noise, little wallop;
- Operate machine drive motor use only under the executive overload disconnect switch change over instanecus current across,outstanding energy saying;
- Perform overload disconnect switch with mechanism interlock device, it ensure the common use,standby power working reliable and not interference;
- Distinct On and Off position indicator padlock function ect.,safe realize the isolator between electric power and overload;
- High security, high automatization, high reliability, use life more than 8000 times;

## SQ5 Series Automatic Change-over switch

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- Machine & Electricity perfect design, On-Off change-over nicely agility smooth, adopt international advanced logical control technique, high anti-interference and no interference outside;
- It include main power close, standby power separate; main power separate; standby power close; main standby power all break off and steady working(I-0-II)
- Easy installation, control loop adopt terminal connection and insert.
- Four kind of operation function: emergency manual operation electromotion remote control operation automatic control stage emergency off operation automatic control operation.

### Product Usage

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SQ5 Series automatic change over switch mainly suitable for distribution or electromotor network, which under AC 50Hz, rated voltage 380V, rated voltage DC220V, rated current 16-1600A, main power and standby power and standby power or mutual standby power change over system or city power and generator group overload switch-over. At the same time, it can operated under un-frequency On and Off circuit act as disconnecter.

Such products are widely used at the field of important power supply site, which transport, distribution power supply system and automatization System. For Fire proection、Ho-spital、Bank、Buding etc., Which doesn't allowed power off.

### Control Characteristic

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- The switch has 3poles or 4poles(3poles+on or off neutral pole).
- 27 current grades can be divided into 16A 20A 25A 32A 40A 50A 63A 80A 100A 125A 160A 200A 225A 250A 315A 350A 400A 450A 500A 630A 800A 1000A 1250A 1600A 2000A 2500A 3200A.
- Basic Type: Main-standby power, self-cast, self reset.
- Type I 100A below, city power-city power self-cast, self reset Tow way power three phase short phase testing; Above 125A, City power-
- City power main and Standby or mutual power can do selection self-cast two way power three phase checking.
- Type II : City power-City power main and standby or mutual power supply can do selection(that is self-casting self reset or self-casting without self reset),two way power three phase and lack phase, overload voltage checking.
- Type III: City power-Oil machine, self casting self reset,two way power supply three phase and lack phase, overload voltage, oil machine frequency testing.

### Basic Type switch control characteristic:

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- Suitable for two way main and standby power system, self casting and self reset;
- It can expand function by outer connection.

### Type I switch control characteristic:

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- 100A below;  
A: Suitable for two way main and standby power system;  
B: It will switch on to the standby power supply circuit after switch delay(setting range 1~16S)when the main power supply circuit short circuit and loop(switch off or short phase).

C:When main circuit loop recovery and normal,the switch delay(setting range 1~250S)automatic switch on to the main circuit.

- 125A above

A:It suitable for main power system or mutual standby power system of two way city power.

B:When the switch selected as self casting and self reset(that is main & standby type),When main power circuit loop caused any fault(power off、 short phase);switch delay (setling range 1~46S)auto switch on standby power supply circuit loop;when the main loop recovery to normal circuit,the switch didn' t switch on to route I,only when the route II caused faulty; the On-Off delay(setting range 1~120S) automatic switch on to power supply circuit I.

C:When the switch atthe function of self casting and with out selt reset,(mutual power standby type),when loop I have power supply fault (bresk off、 short phase);the On-Off delay(setting range 1~16S) automatic switch on to the circuit II;when the circuit I recovery normal, On-Off delay(setting range 1~120S)automatic switch on to circuit loop II.

- Select the best power supply circuit through terminal connection.

### Type II switch control characteristic:

---

- It suitable for two way city main power or mutual standby power supply system.
- When the switch select to be self casting and self reset function, the On-Off delay(setting range 1~16S)automatic switch on to standby power supply circuit when the main power supply loop caused power fault. Once the main power, supply circuit come to normal, switch delay (setting range 1~120S)auto change to the main power supply circuit.
- Under the condition of switch at self casting and without self reset function, when power circuit I cause fault(short phase、 overload voltage): On-Off delay(setting range 1~16S)auto-matic switch on route II power supply; when circuit I, recovery normal, the switch doesn' t change back to circuit I, but only when the circuit II caused fault, On-Off delay(setting range 1~250S)automatic switch on to loop I.
- Select the best power supply circuit through terminal connection (Above 125A)

### Type III switch control characteristic:

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- It suitable for city power supply system of main power supply、 standby power supply of generator group.
- When the city power occur fault,On-Off control primary indicate the signal to start oil machine, after the On-Off delay 3S,the switch to postion " 0", delay again(warm-start time setting range 1~250S) automatic switch on to city power supply, when switch delay a gain (warm-start time setting range 1~250S)automatic switch on to oil-machine circuit power supply.
- when the city power recovery normal, the On-Off delay(setting range 1~250S)automatic switch on to city power supply, when switch delay again(setting range 1~250S), the controller send out the signal of indication to off the oil-machine.
- City power, oil-machine have the function of three phase short phase, three phase overload voltage checking, Oil machine frequency checking etc.



The above-mentioned 4 models having:

- The functions of automation, electric control and hand control.
- Delay-time 0.5s,detection signal, to prevent error action.
- Remote control "0" position.
- The key switch to select control modes.
- The switch can all be provided with RS-485 communication interface. This can be provided according to the requirements of the user.

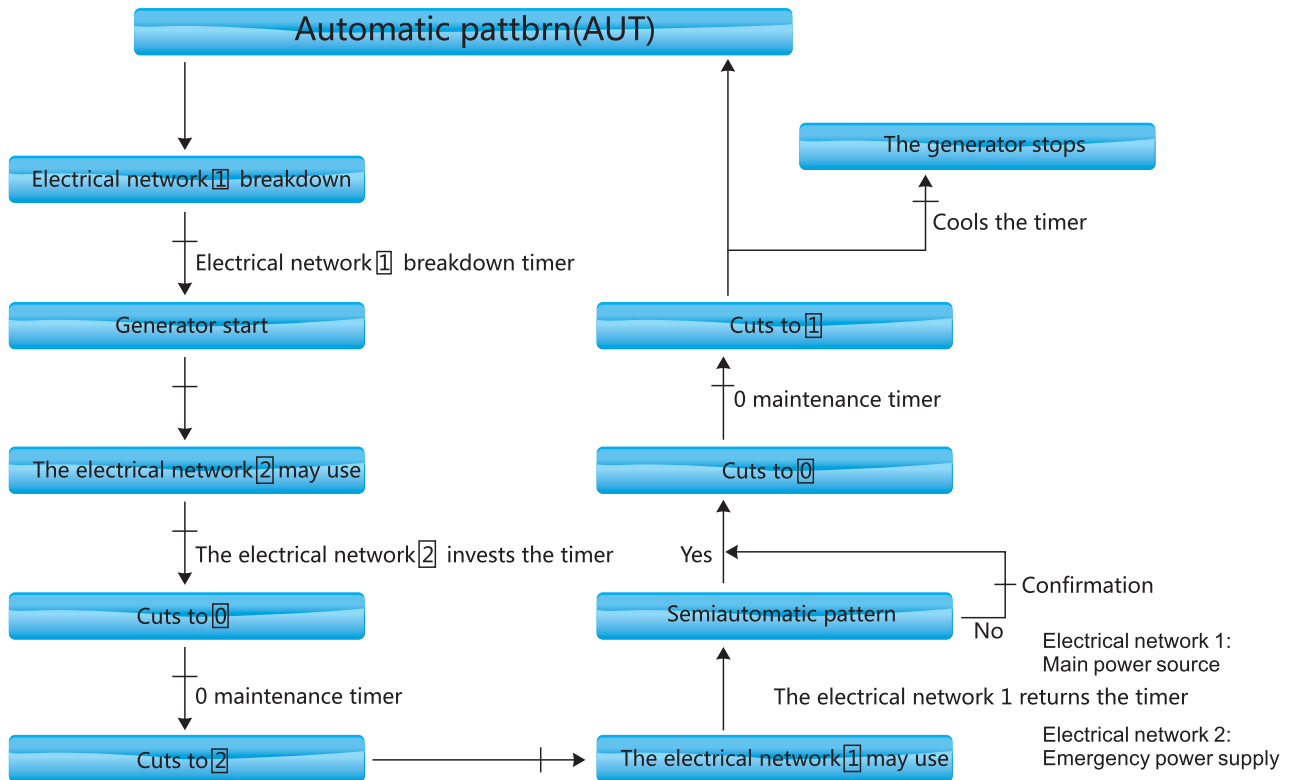
Operation Environment

Sq5 automatic changing-over isolation switch can work reliably under the following conditions:

- Height above sea level does not exceed 2,000m;
- Ambient temperature is not higher than 40°Cand not lower than -5°C;
- Relative humidity is not larger than 95%;
- No explosion dangerous medium environment;
- No rain and snow attack environment;

Note;if the load isolation switch is expected to be used in the condition that the ambient temperature is higher than+40°C or is lower than-5°C-45°C,customers should intorm to the manufactory.

City power-oil machine automatic cut over schematic drawing

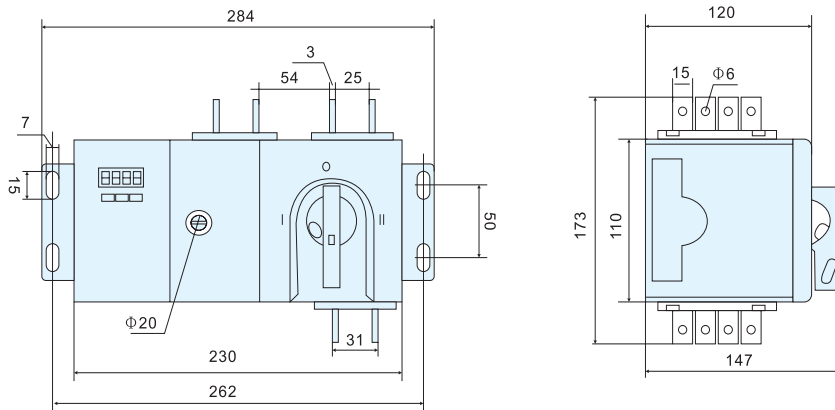


## Terminal Diagram, Outline and Installation Dimension of SQ5 I-100A and SQ5-63A

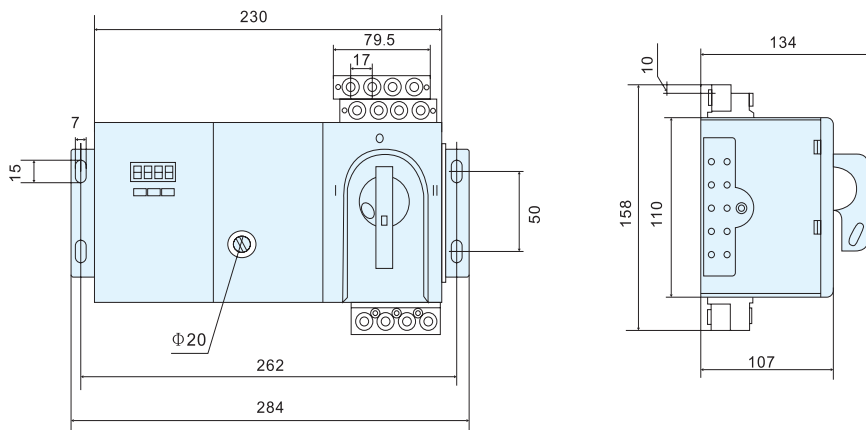
### Terminal diagram

output connection	Zero line suitable for 3 pole N2 or N ( G )	N1	Set display passive contact II 0 I common point	Start the diesel generator G	Switch body button Open to autoatically Closure for electric K	Electric/autoatic select Open to autoatically Closure for electric K	Electric control II 0 I common point
Inside of the unit	62	61	54 53 52 51	42 41	11 31	11 21	14 13 12 11

### Outline and Installation Dimension



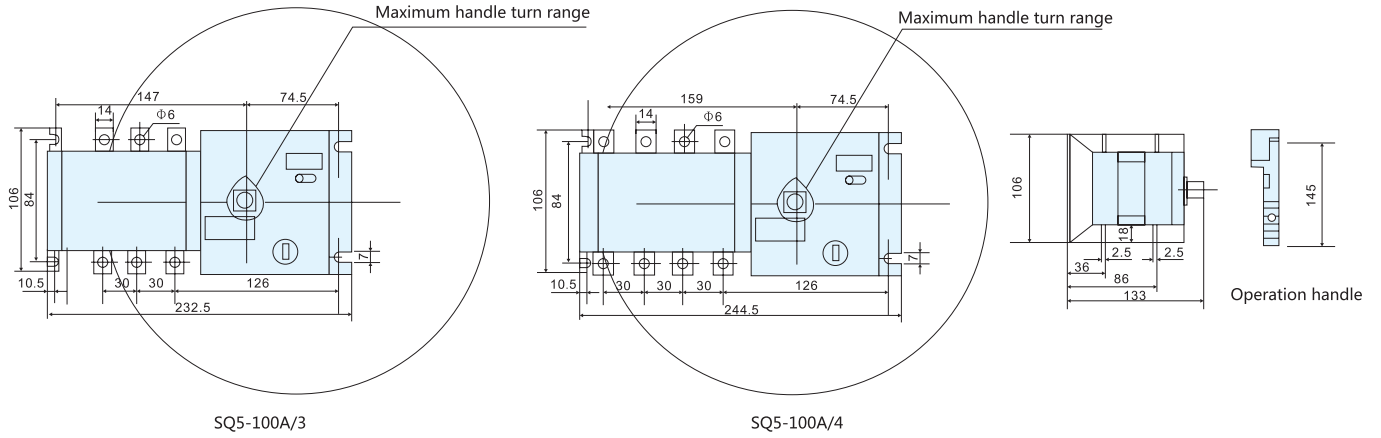
SQ51-100A



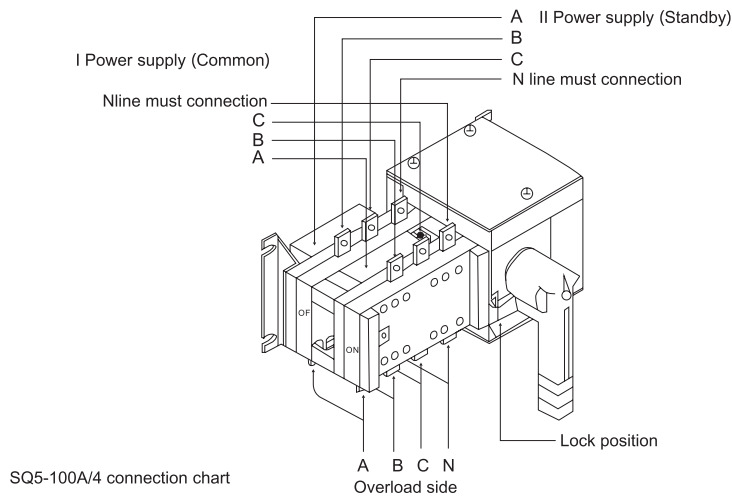
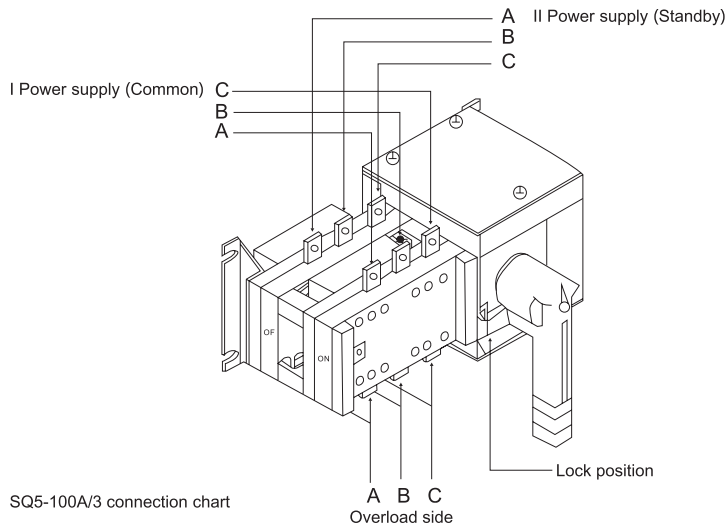
SQ52-63

## SQ5-100A automatic change-over switch

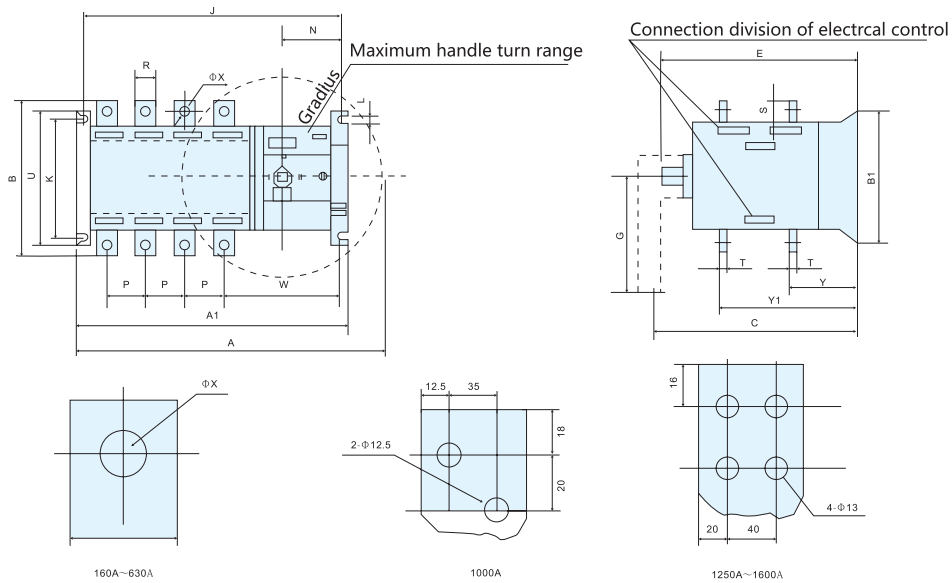
### External dimension and installation dimension(20~100A)



### Connection chart



## SQ5-160~1600A automatic change-over switch external dimension and installation dimension



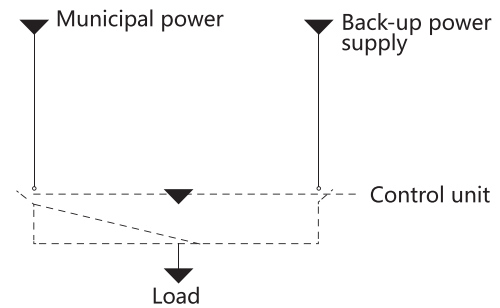
Note: The connection bridge opening and output post hole quantity is consistent.

Specification	External Dimension and Installation Dimension																			
In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
125A/3	376	283.5	135	134	261	208	166	262.5	78/108	7	87	36	20	25	3.5	134	155	9	56	141
125A/4	406	316	135	134	261	208	166	295	78/108	7	87	36	20	25	3.5	134	155	9	56	141
160A/3	376	283.5	135	134	261	208	166	262.5	78/108	7	87	36	20	25	3.5	134	155	9	56	141
160A/4	406	316	135	134	261	208	166	295	78/108	7	87	36	20	25	3.5	134	155	9	56	141
200A/3	416	323.5	170	134	261	208	166	302.5	78/108	7	87	50	25	30	3.5	134	164	11	60	145
200A/4	466	373.5	170	134	261	208	166	353	78/108	7	87	50	25	30	3.5	134	164	11	60	145
250A/3	416	323.5	170	134	261	208	166	302.5	78/108	7	87	50	25	30	3.5	134	164	11	60	145
250A/4	466	373.5	170	134	261	208	166	353	78/108	7	87	50	25	30	3.5	134	164	11	60	145
400A/3	455	378.5	240	208	333	270	166	358.5	176	11	103.5	65	30	40	5	208	197	12	83	193
400A/4	515	438.5	240	208	333	270	166	418.5	176	11	103.5	65	30	40	5	208	197	12	83	193
630A/3	455	378.5	260	208	333	270	160	358.5	176	11	103.5	65	40	50	6	208	197	12	83	194
630A/4	515	438.5	260	208	333	270	160	418.5	176	11	103.5	65	40	50	6	208	197	12	84	194
800A/3	871.5	524	340	250	387	319.5	448	499	212	11	88	120	60	69	8	250	198.5	12.5	84	252
800A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	60	69	8	250	207	12.5	107	252
1000A/3	871.5	524	340	250	387	319.5	448	499	212	13	88	120	60	69	8	250	198.5	12.5	107	252
1000A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	60	69	8	250	207	12.5	107	252
1250A/3	871.5	524	369	250	387	319.5	448	499	212	13	88	120	80	69	8	250	198.5	13	107	252
1250A/4	975.5	637.5	369	250	387	319.5	448	612.5	212	13	88	120	80	69	8	250	207	13	107	252
1600A/3	871.5	524	376	250	387	319.5	448	499	212	13	88	120	80	69	10	250	198.5	13	109	253.5
1600A/4	975.5	637.5	376	250	387	319.5	448	612.5	212	13	88	120	80	69	10	250	207	13	109	253.5

## SQ5-100~1600A automatic change-over switch control and operation

- ▲ The logic control board will send out different logic commands to control the operation of the gear-motor directly directly assembled in the switch to ensure the position of the switch.
- ▲ The gear motor is made of neoprene to insulate wetness and heat, has a safety device. It will trip off when the temperature is over 110°C and when it is under over-current state, when resumes its work, the reversible reduction gear adopts straight tooth gear.

### Operation



Application example: 《Normal-Emergency》 change-over



When the key is at manual operation position, to use connection terminals 202~205 to perform remote electric control.

When the key is under automatic state, SQ5 will automatic change and recovers, Once manual handle is used on emergency, SQ5 will return back after delay-time 60s.

Through terminals 102、103 to force remote control turn to "0" position, optimum selection of switches 202、204.



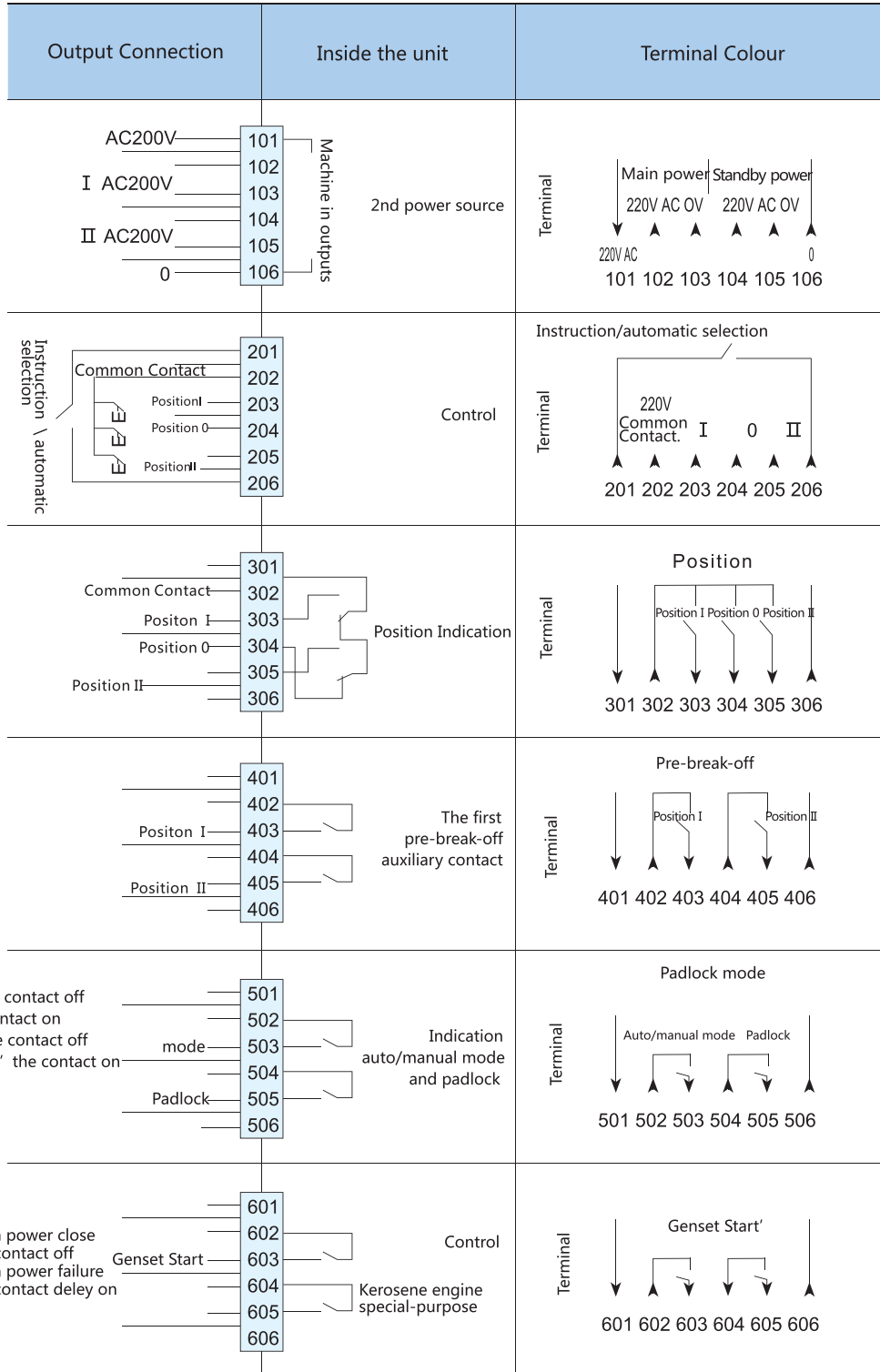
Emergency manual operation: to use emergency operation handle, to turn 90° at each position.



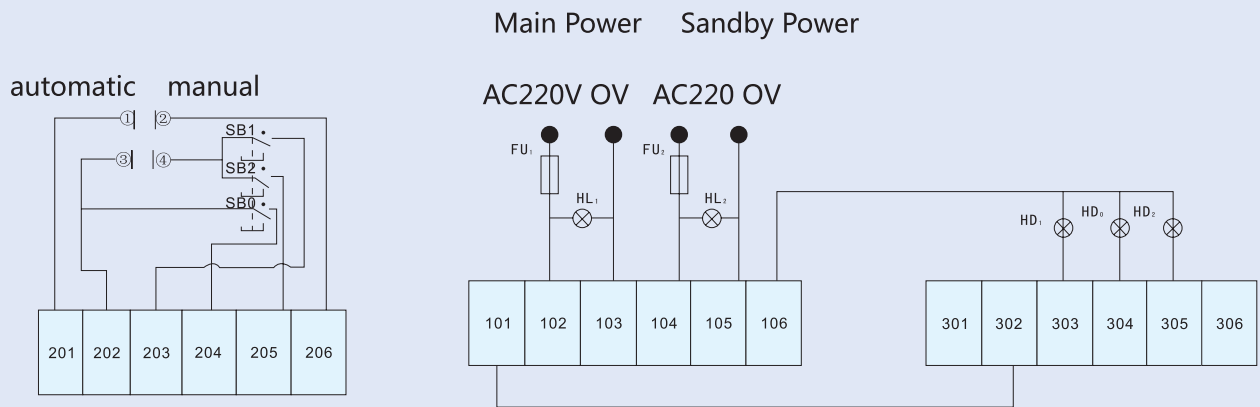
To use 1~3 locks to lock in: To keep position status, To prevent the emergency handle from being held on.

Terminal diagram of SQ5-100~1600A

Basic type terminal diagram



Basic type Automatic + manual(remote control)connect ways  
(two city power supply circuit)



Note:SA automatic/manual function select switch

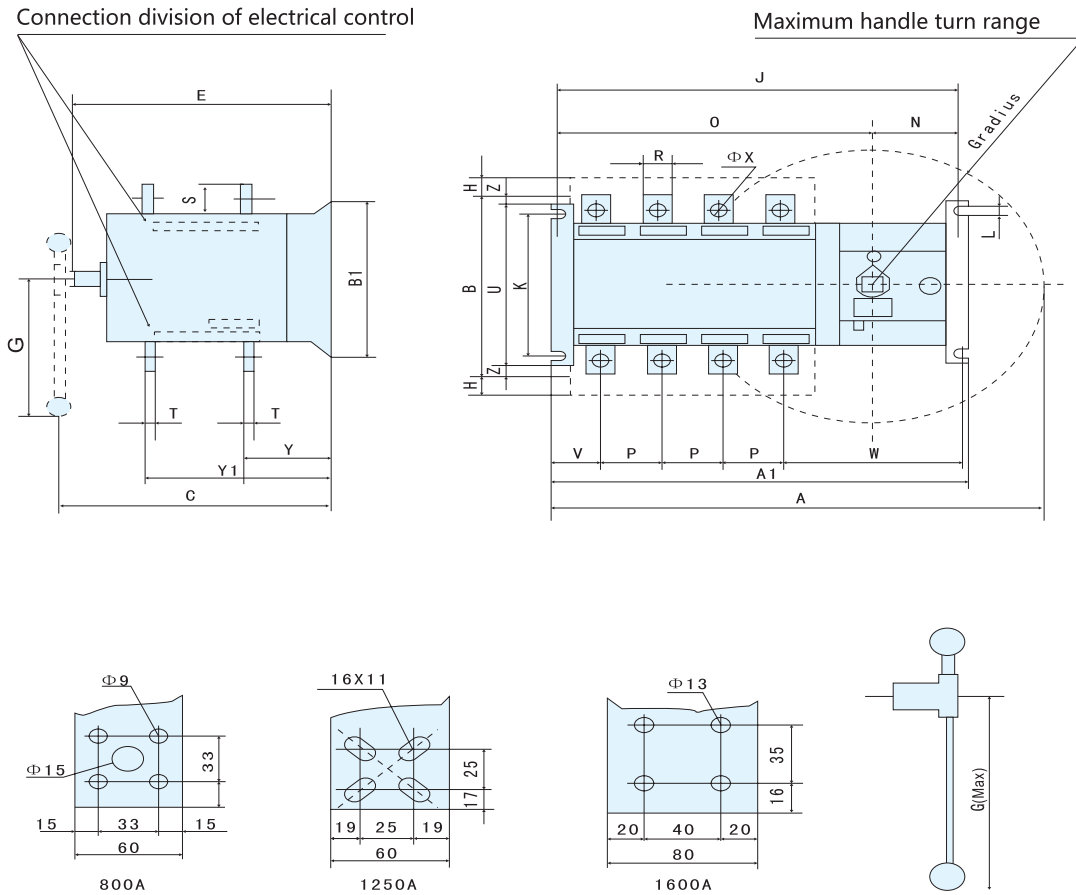
SB1:common use power、 manual push butto(No original contact)

SB2:standby power supply manual push button(No original contact)

SB0:force set "O" pushbutton(No original contact) (self-lock)

SQ5-800~3200A basic type automatic change-over switch

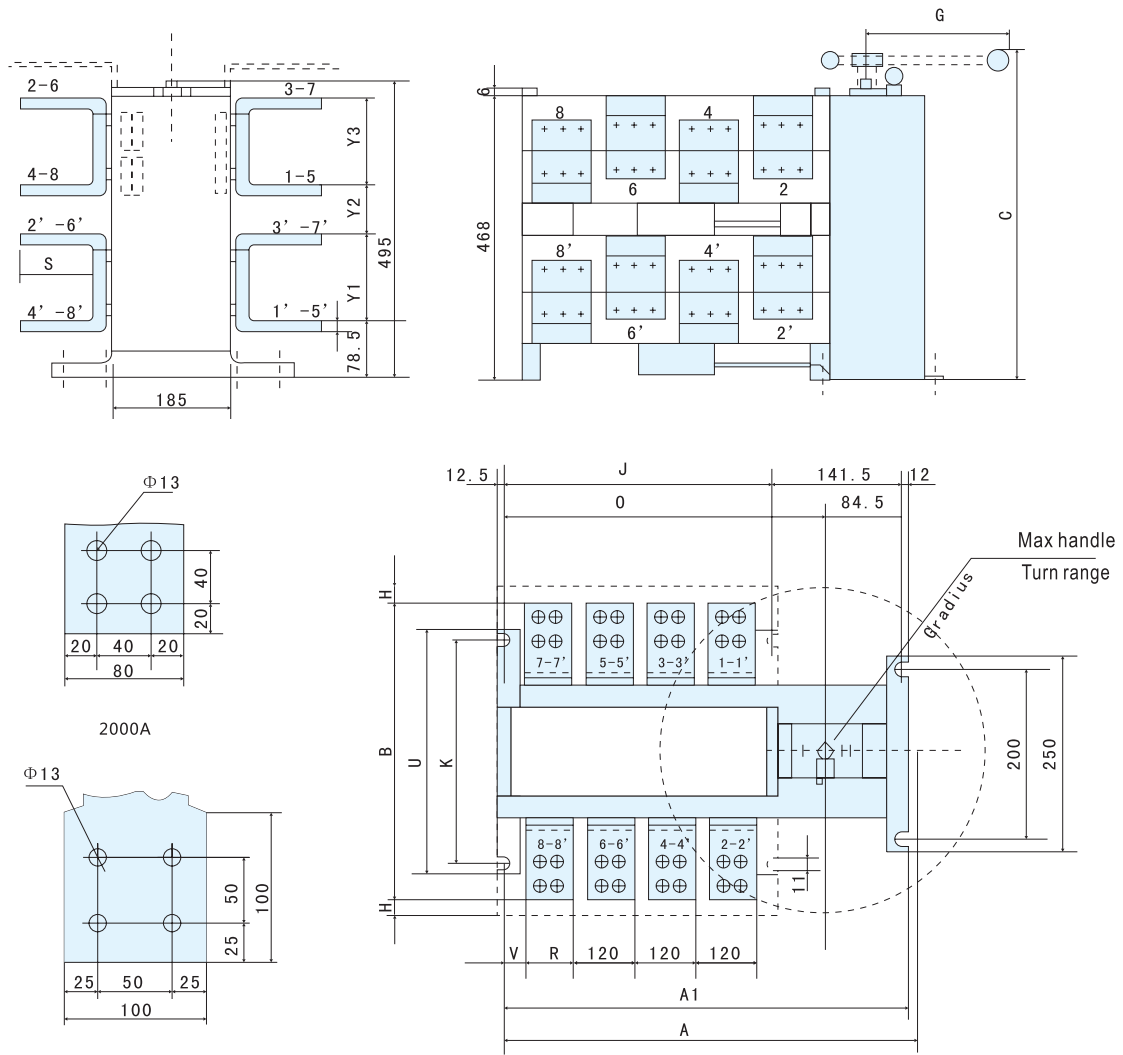
SQ5-800~1600A External dimension and installation dimension



Specs	General dimension							On-Off installation					Terminal connection										
	A	A1	B	B1	C	E	G	H	J	K	L	N	O	P	R	S	T	U	V	W	Y	Y1	Z
800A	1007	633	330	250	370	321	470	65	609	220	11	85	524	120	63	65	8	250	60.5	188.5	107	249	40
1000A	1007	633	330	250	370	321	470	65	609	220	11	85	524	120	63	65	8	250	60.5	188.5	107	249	40
1250A	1007	633	330	250	370	321	470	65	609	220	11	85	524	120	63	65	8	250	60.5	188.5	107	249	40
1600A	1007	633	330	250	370	321	470	65	609	220	11	85	524	120	63	65	10	250	60.5	188.5	111	249	40



SQ5-200~3200A External Dimension and Installation Dimension



Specs	General dimension						On-Off installation						Terminal connection								
	A	A1	B	C	E	G	H	J	K	L	N	O	P	R	S	T	U	V	Y	Y1	Y3
2000A	1007	633	455	562	495	470	53	467	220	11	84.5	524	120	80	80	10	250	33	147	84	147
2500A	1007	633	455	562	495	470	28	467	220	11	84.5	524	120	80	100	10	250	13	152	79	152
3200A	1007	633	505	562	495	470	28	467	220	11	84.5	524	120	80	100	14	250	13	152	79	152

## Cutoff function

### 1. Power supply changeover;

Main power supply changeover to emergency power.

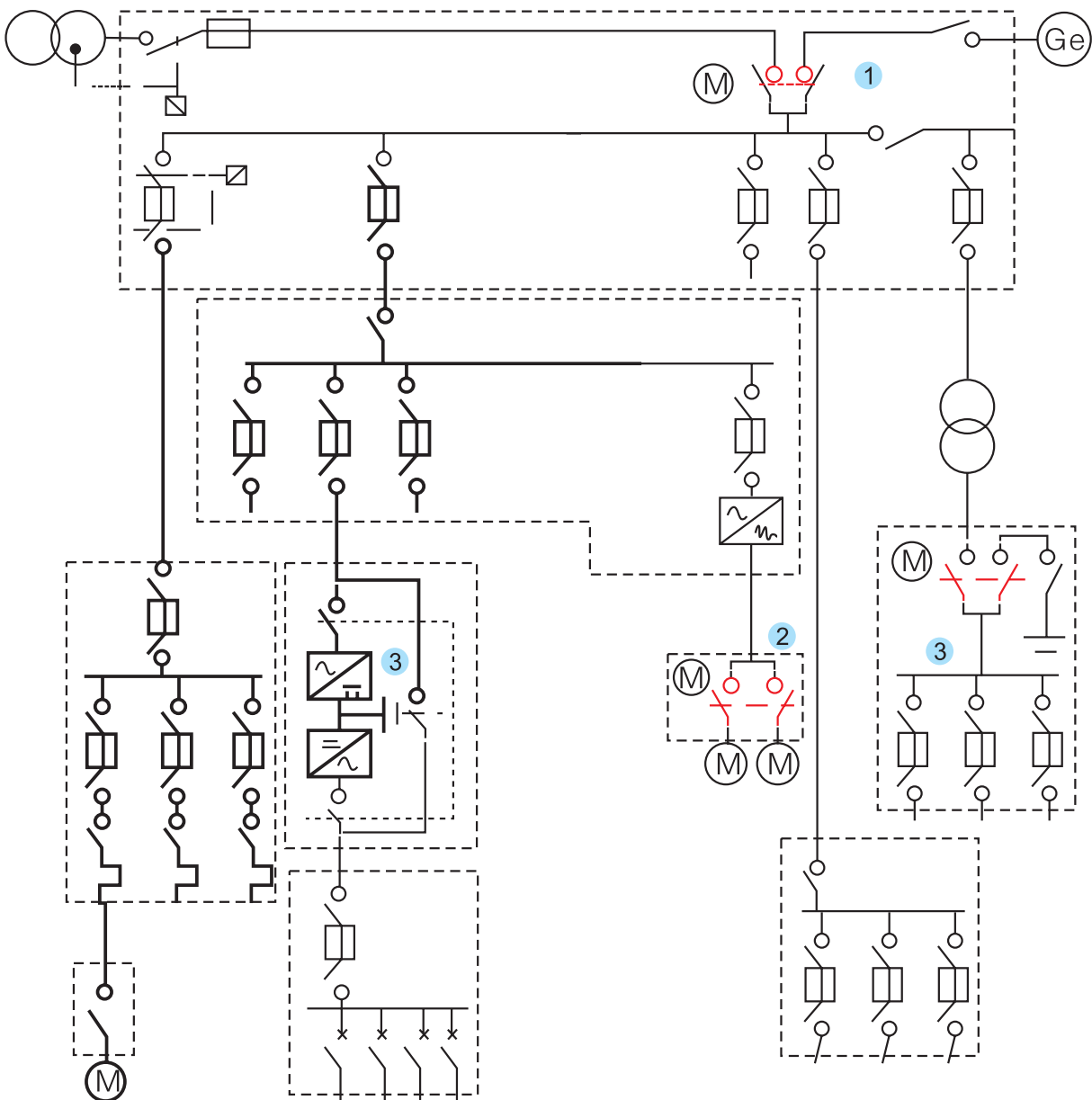
### 2. Changeover,reverse:

Changeover between two load equipment.  
(Emergency standby motor)reversion by two phases changeover.

### 3. Cutoff+the grounding

One operation of grounding and short circuit realizes the isolation(\*) $(U_e > A_c)$

※General opening functions conform with the standards of IEC 947 and GB/T14048.



**Keyword:** Operation outside the board.operation inside the board,poles:3 poles,4 poles(3 poles +on and off neutral pole), transparent cover.

## SGL series Load Isolation Switch

SGL series load isolation switch(hereinafter called switch for short) is manufactured by our company with the up-to-date technique imported from europe . This product meets the international technical level in the late 1990s. Being the most ideal renewal of domestic congeneric products.



This kind of lode isolation switch is widely used in the distribution system and automatic system of architecture, electrical power, petrochemical, and other industries.

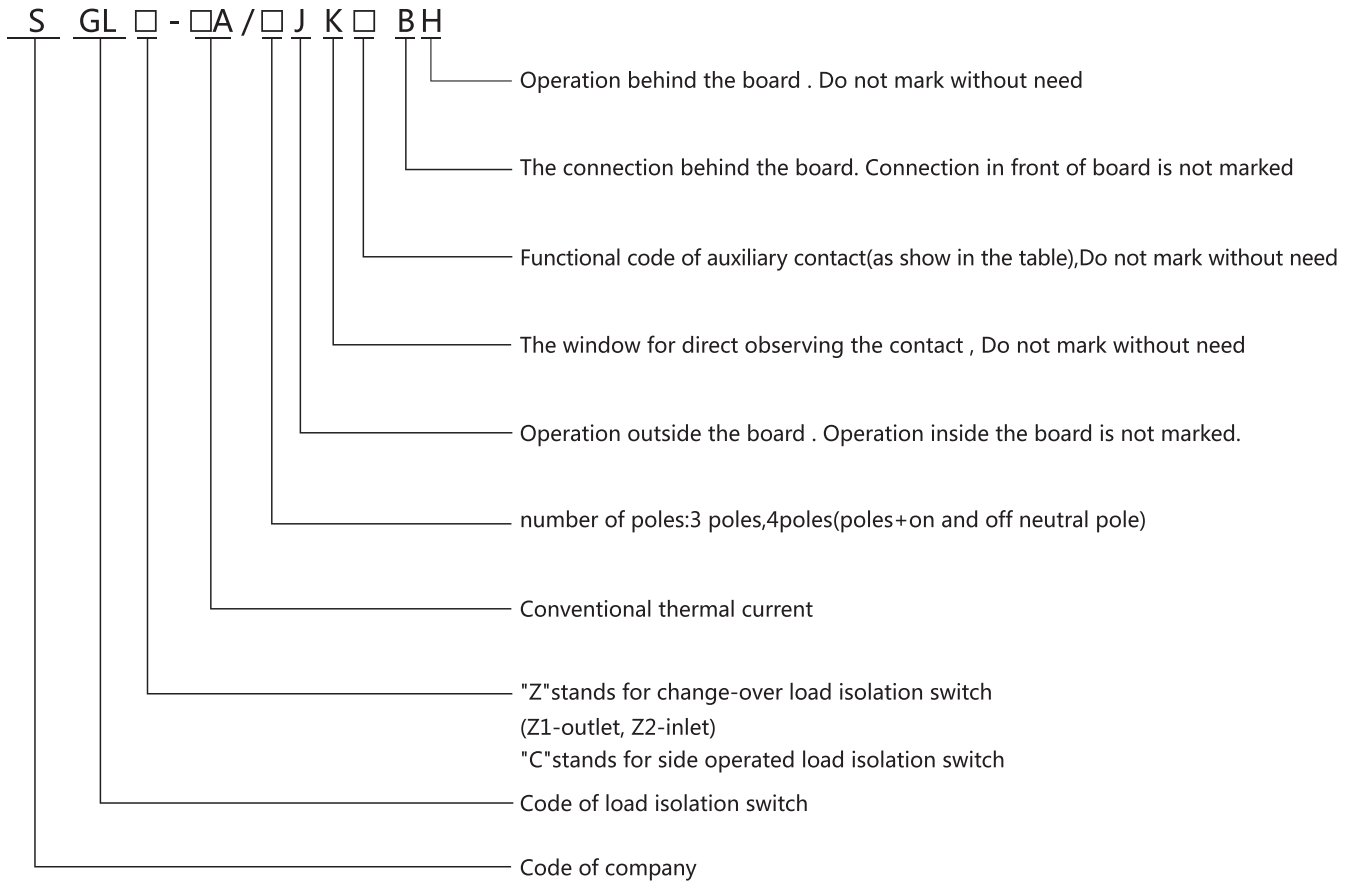
This kind of lode isolation switch possesses flexible structure of modularized design, pssesses flexible and versatile composition ality. it adopts the shell made by unsaturated polyester resin reinforced by glassfibre. It has very high dielletric performance. protective capability, and reliable operation.

The operating mechanism is an elatic-accumulating accelerating mechanism for instant release, which makes instant on and off of the double breakpoint contact, It has on relationship with the speed of operating handle and increases geeatly various electric properties and mechanical properties,

Many forms of structures and operations in which the on and off state of contact is observed through widows. There are operations inside and outside the board. There are frontal and lateral operations. There are connections behind the board.

This kind of switch as a good-looking outline and various functions, being very novel, simple and small-dimensioned, and the best choice among the congeneric products.

## Type & meaning



One NO One NC	F11	F1NO+F1NC
Two NO Two NC	F22	F2NO+F2NC

### Example of model selection

SGL Z2-160A/4JF11~380V In125A

Change over load isolation switch, inlet, AC rated voltage 380V, conventional thermal current 160A; rate current 125A, 4 poles, operation outside the board, auxiliary NO+Nc

## Characteristics of products

1. The elastic-accumulating accelerating mechanism For instant release realizes the rapid making and breaking (13.8m/s). having no relation with the speed of the operating handle, and increasing greatly the capability of extinguish electric arc.
2. The shell made of unsaturated polyester resin reinforced by glass fibre possesses excellent performance of flame resistant, dielectric performance, safe operation, resist carbonic performance and resist impact performance.
3. Parallel double gap contact possesses self cleaning functions.
4. All the contact materials are copper alloy plated with silver, and possess two separation contact surfaces.
5. Large clearance of insulation.
6. Be on "o", the products can lock the handle with three locks at the same time and thus can avoid error operation.

## Product usage

SGL series load isolation switch mainly suitable for AC 50Hz rated voltage to 660V. DC rated voltage up to 440V, rated current up to 3150A, The switch is used in the infrequent making and breaking circuit

SGL-63A~3150A electrical properties and mechanical properties

Conventional thermal current IthA			63A		100A		160A	
Rated current in(A)			40	63	80	80	125	160
Rated impulse withstand voltage Ui(V)			750	750	750	750	750	750
Dielectric strength(V)			5000	5000	5000	5000	5000	5000
Rated surge-resistant voltage Uimp KV (installed category IV)			6	6	6	6	8	8
Rated Working current Ie(A)	380V	AC-21	40	63	80	80	125	160
		AC-22	40	63	80	80	125	160
		AC-23	40	50	80	80	125	160
	660V	AC-21	40	50	80	80	125	160
		AC-22	32	32	50	50	125	160
		AC-23	25	25	40	40	80	80
	220V	DC-21	32	63	80	100	125	160
		DC-22	40	63	80	80	125	160
		DC-23	40	63	63	63	125	125
	440V	DC-21					100	125
		DC-22					100	125
		DC-23					100	125
Motor power P(380V)KW		380V	18.5	25	40	40	63	80
		660V	22	22	33	33	75	75
Rated short-time withstand current Icw(kA Rms)0.1s/1.0s			10/5	10/5	10/5	10/5	20/10	20/10
Rated breaking capability Icn (ARms) Ac23 380VA			320	504	640	800	1000	1000
Rated making capability Icm(ARms)AC23 380V			400	630	800	1000	1250	1250
Rated short-current making capability Icm' (Kapeak value)			7.5	7.5	10	10	12	12
Mechanical durability(number of cyclic operation)			10000	10000	10000	10000	10000	10000
Electric durability Ue=660V,Rated current		COSφ=0.95AC21	1700	1700	1700	1700	1500	1500
		COSφ=0.65AC22	100	100	100	100	1000	1000
		COSφ=0.35AC23	500	500	500	500	500	500
(Nm)Moment of operation(Nm)			1.2	1.2	1.2	1.2	6.5	6.5
Weight(kg)		3poles	0.37	0.37	0.37	0.37	1.3	1.3
		4Poles	0.41	0.41	0.41	0.41	1.5	1.5

SGL-63A~3150A electrical properties and mechanical properties

250A		630A				1600A			3150A		
200	250	315	400	630	630	1250	1250	1600	2000	2500	3150
750	750	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
5000	5000	8000	8000	800	800	10000	10000	10000	10000	10000	10000
8	8	12	12	12	12	12	12	12	12	12	12
200	250	315	400	630	630	1000	1250	1600	2000	2500	3150
200	250	315	400	630	630	1000	1250	1600	2000	2000	3150
200	250	315	340	536	536				2000		
200	250	315	400	500	500	1000	1000	1600	1000	2500	2500
160	160	315	315	315	315	800	800	800		1000	1000
100	125	125	125	125	125						
200	250	315	400	630	630	1000	1250	1600	2000	2500	2500
200	250	315	400	500	500	1000	1250	1250	1600	1600	1600
160	200										
160	200	315	400	500	500	1000	1250	1250	2000		2000
160	200	315	400	500	500	1000	1250	1250	1250	2000	1250
160	200	315	400	500	500	1000	1000	1000		1250	
100	132	160	220	315	315	560	560	560	710	710	710
90	110	185	185	185	185	475	475	475	750	750	750
30/12	30/12	45/20	45/20	50/25	50/25	90/50	90/50	90/50	90/50	90/50	90/50
1600	1600	2500	2500	3200	3200						
2000	2000	3150	3150	4000	4000						
17	17	30	30	40	40						
1000	10000	5500	5500	5500	5500	4000	4000	3000	2500	2500	2500
1500	1500	750	750	750	750	600	600	450			
1000	1000	500	500	500	500	400	400	300			
500	500	250	250	250	250	200	200	150			
10	10	14.5	14.5	14.5	14.5	37	37	60	90	60	60
2.2	2.2	4.3	4.3	4.7	4.7	10.5	10.5	16	25.5	25.5	31
2.6	2.6	5.4	5.4	6	6	13	13	20	37.5	37.5	51.5

## Conformed standard

### International Standard:

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IEC60947-1(1998) 《Low-voltage switchgear and controlgear, part one ; General Rules》 .

IEC60947-3(1999) 《Low-voltage switchgear and controlgear,switches,disconnectors,switch-disconnectors and fuse-combination units》

### National standard:

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GB/T 14084.1-2000 《Low-voltage switchgear and controlgear, part one: General Rules》 .

GB 14048.3-2002 《Low-voltage switchgear and controlgear, switches, disconnectors, switch-dis connectors and fuse-combination units》 .

### Operation environment:

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SGL series load isolation switch can work reliably under the fol wing condition;

- Height about level does not exceed 2,000m;
- Ambiebt temperature is not higher than 40°C and not lower than-5°C , Relative humidity is not larger than 95% ;
- No explosive dangerous medium environment;
- No rain and snow attack environment;

Note: If the load isolation switch is expected to be used in the conditon that the ambient temperature is higher than +40°C or is lower than -5°C~-45°C , customers should infoum to the manufactory

### SGL-63~3150A load isolation switch:

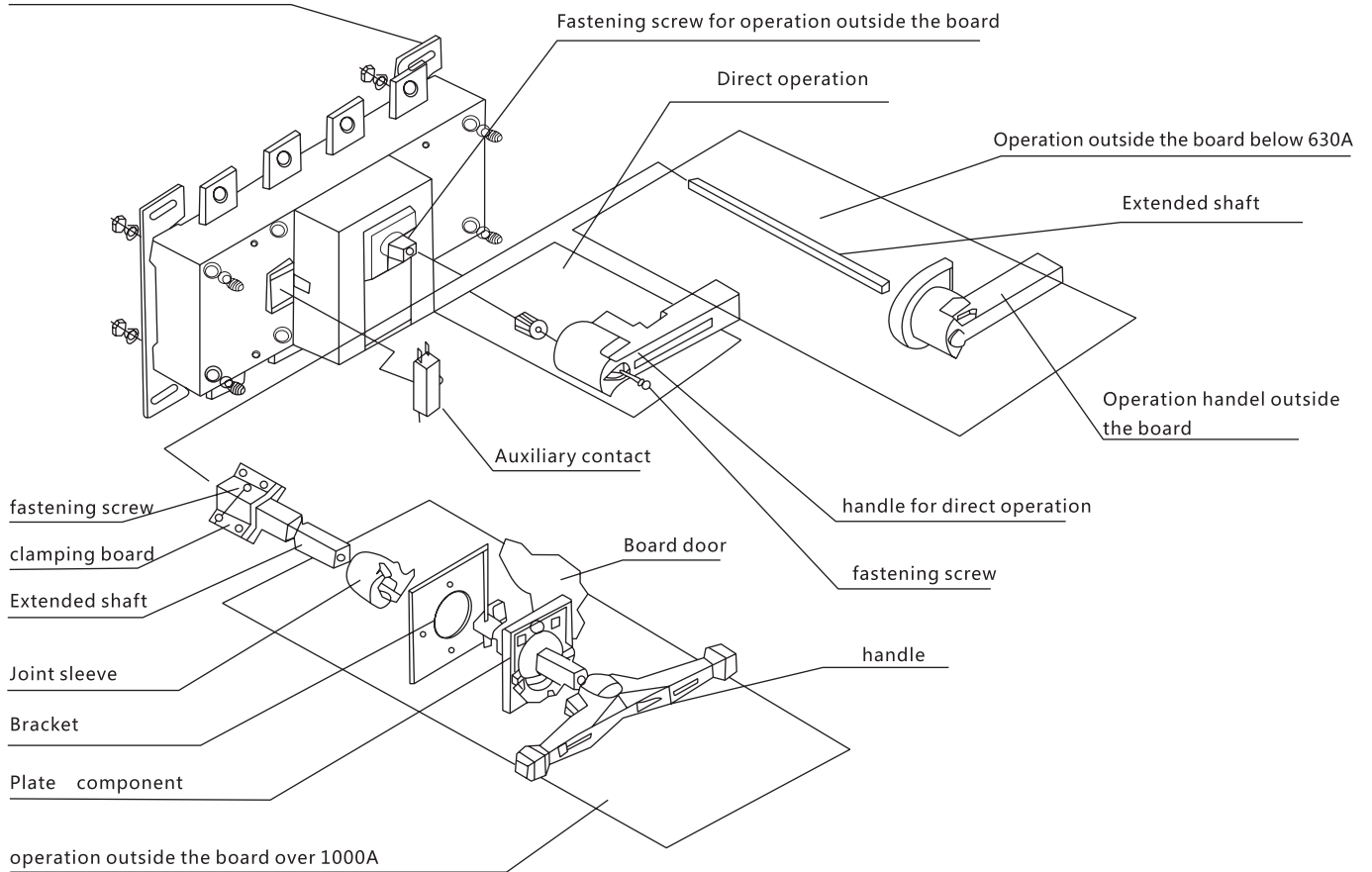
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- 7 specifications of SGL load isolation switch form 63A to 3150A:Basic model of modularized design,3poles 4 poles(3 poles+on and off neutral pole).It is suitable for electric isolation. Switches over 1000A are only suitable for electric isolation.
- Mark window is set in the front side to indicate the on and off state of the contact.
- Rear observation window can be provided according to the demand to observe direct the on and off state of the contact,
- For window pattern, refer to the back operational load isolation switch, SGL-160A~A / H.
- Two group of auxiliary contacts can be assembled.
- The electric cable insulating cover can be assembled.

## Operation mode

- Direct operation: The handle is installed directly in the middle of the switch. Operation outside the board:
- The handle is installed outside the door of distributing board.

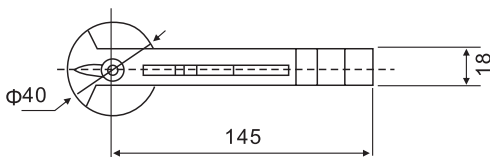
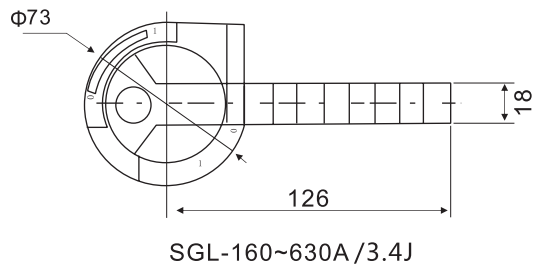
Bottom board used for installing the observing window  
 Installing bottom board used for operation outside the board



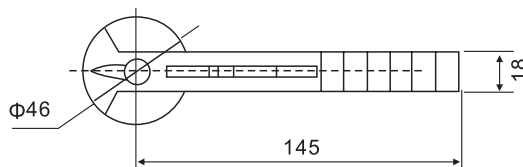
SGL-160~315A Load Isolation Switch

### Note : Standard length of extended shaft is

160A,250a:330m  
 630A:300m;  
 1600A,3150A:330m



SGL-160~250A/3.4  
 SGL(Z)160~250A/3.4(J)

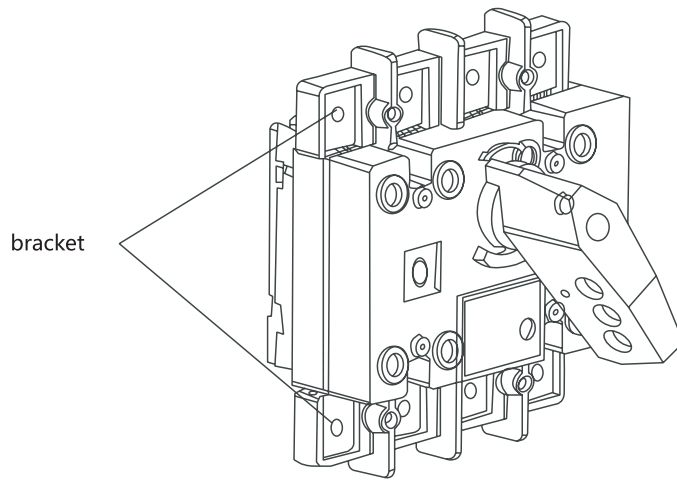


SGL-630A/3.4  
 SGL(Z)-630/3.4(J)

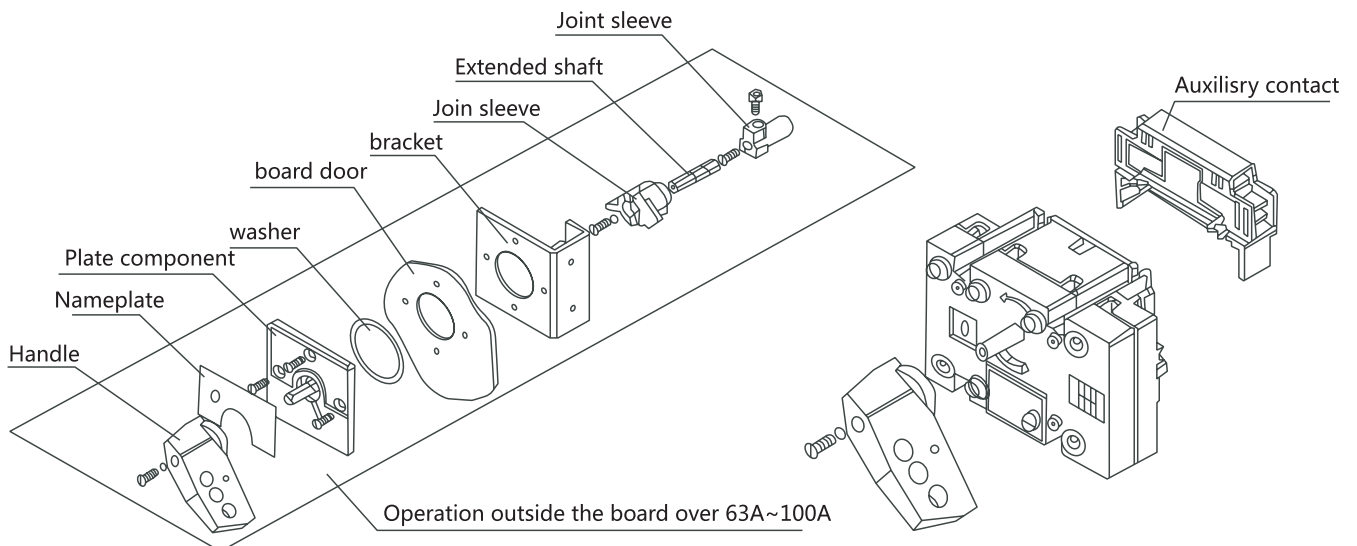


## SGL-63A~100A Load isolation switch

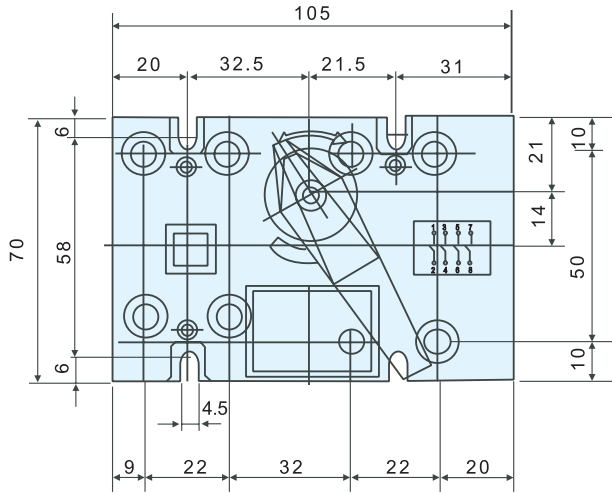
- 63A-100A is suitable for the making and breaking of electrical isolation circuit or electric insulation.
- 63A-100A possesses three poles, and four poles (three poles+on off neutral pole.)
- Two sets of auxiliary contacts can be assembled according to demand.
- Side operation, operation outside the board, the board can be assembled according to demand.



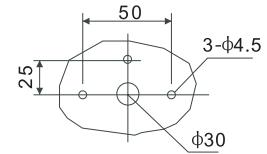
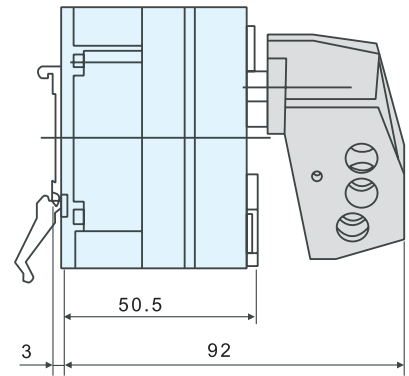
Attention: It's SGL-40A~63A Loading isolation switch which is no span



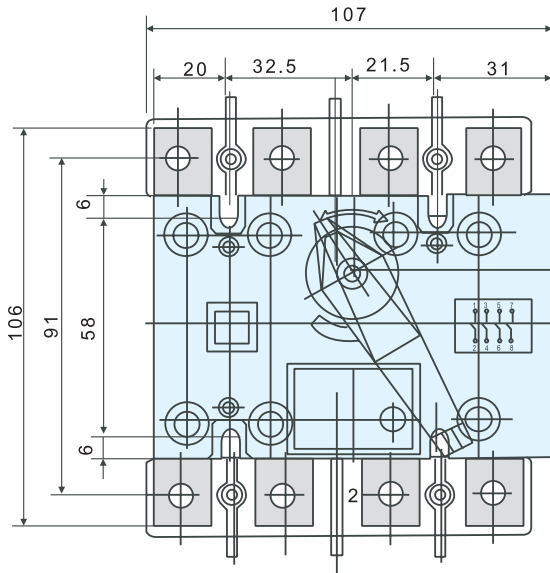
SGL-63A~100A load isolation swtch side operation load isolation switch



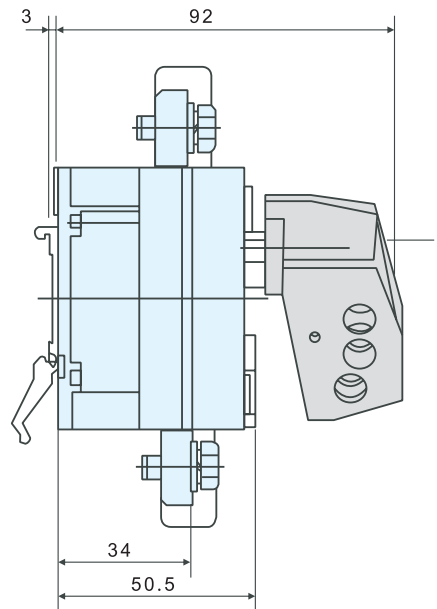
Direct operation of SGL-63A



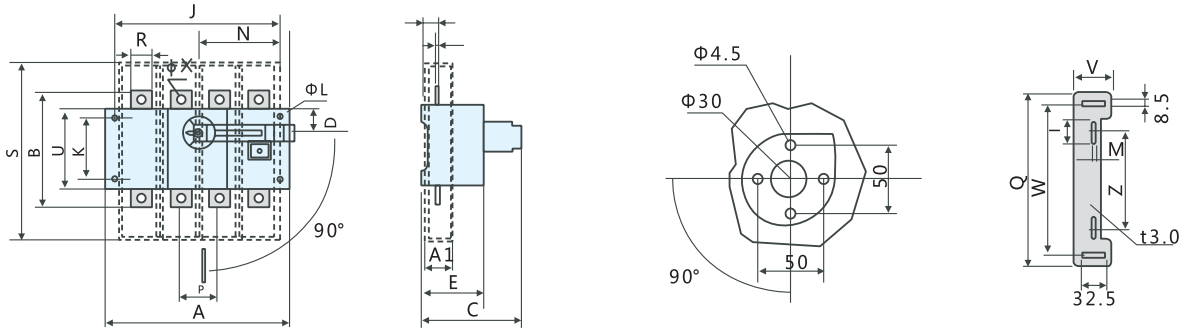
Installation Size of handle seat outside board.



Direct operation of SGL-100A



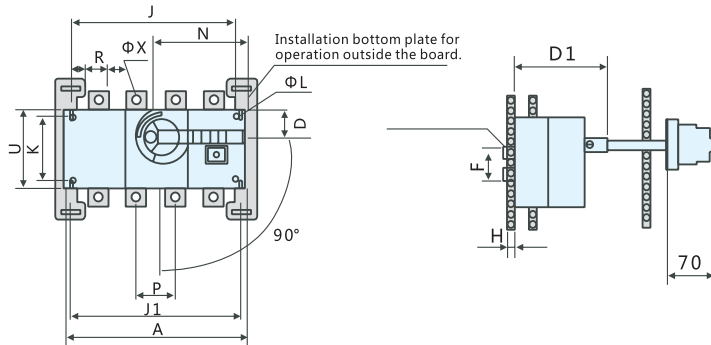
External dimension and installation dimension of SGL-I 60~630A load isolation switch



Direct Operation of SGL-160A~630A

Installation size of handle seat outside board.

Installation bottom plate for operation outside the board.

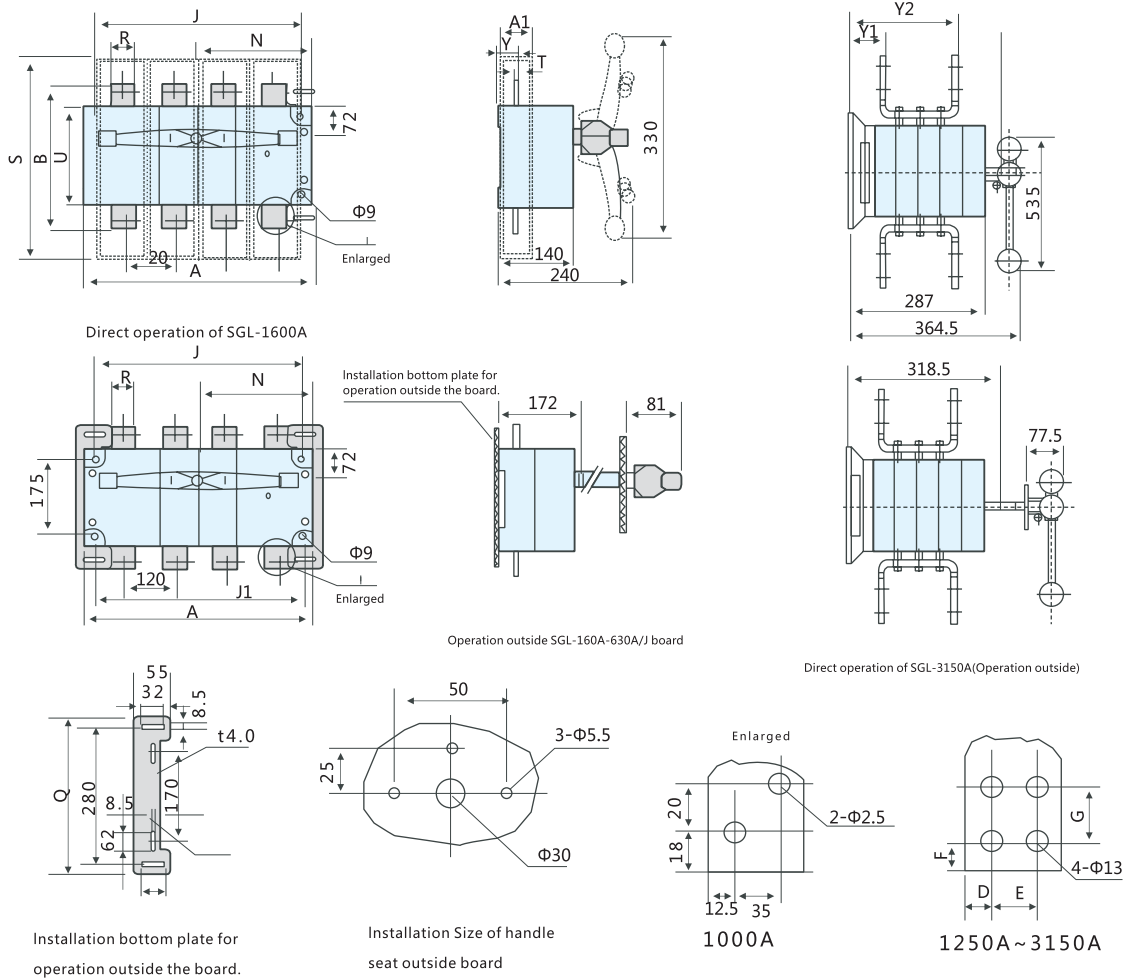


Direct Operation of SGL-160A~630A/JK

Specification	Dimension of bottom board					
	I	M	Z	W	Q	V
125~630A						
125A	55	5.5	85	190	218	54
160A	55	5.5	85	190	218	54
200A	55	5.5	85	190	218	54
250A	55	5.5	85	190	218	54
315A	60	6.5	130	240	270	55
400A	60	6.5	130	240	270	55
500A	60	6.5	130	240	270	55
630A	60	6.5	130	240	270	55

Specification	External dimension and installation dimension																					
	In	A	A1	B	C	D	D1	E	ΦL	J	J1	K	N	P	R	R	T	U	ΦX	Y	F	H
125A/3	140	50	135	116	27	92	71	5.5	120	120	65	85	36	20	235	3.5	85	9	24	52	10	
125A/4	170	50	135	116	27	92	71	5.5	150	150	65	85	36	20	235	3.5	85	9	24	52	10	
160A/3	140	50	135	116	27	92	71	5.5	120	120	65	85	36	20	235	3.5	85	9	24	52	10	
160A/4	170	50	135	116	27	92	71	5.5	150	150	65	85	36	20	235	3.5	85	9	24	52	10	
200A/3	180	60	170	128	35	104	83	5.5	160	160	90	115	50	25	290	3.5	110	11	25	79	13	
200A/4	230	60	170	128	35	104	83	5.5	210	210	90	115	50	25	290	3.5	110	11	25	79	13	
250A/3	180	60	170	128	35	104	83	5.5	160	160	90	115	50	25	290	3.5	110	11	25	79	13	
250A/4	230	60	170	128	35	104	83	5.5	210	210	90	115	50	25	290	3.5	110	11	25	79	13	
315A/3	230	85	240	169	50	133	113	7	210	210	140	145	65	30	400	5	160	11	36	100	24	
315A/4	290	85	240	169	50	133	113	7	270	270	140	145	65	30	400	5	160	11	36	100	24	
400A/3	230	85	240	169	50	133	113	7	210	210	140	145	65	30	400	5	160	11	36	100	24	
400A/4	290	85	240	169	50	133	113	7	270	270	140	145	65	30	400	5	160	11	36	100	24	
500A/3	230	85	260	169	50	133	113	7	210	210	140	145	65	40	400	6	160	12	36	100	24	
500A/4	290	85	260	169	50	133	113	7	270	270	140	145	65	40	400	6	160	12	36	100	24	
630A/3	230	85	260	169	50	133	113	7	210	210	140	145	65	40	400	6	160	12	36	100	24	
630A/4	290	85	260	169	50	133	113	7	270	270	140	145	65	40	400	6	160	12	36	100	24	

External dimension and installation dimension of SGL-I 600~3150A load isolation switch

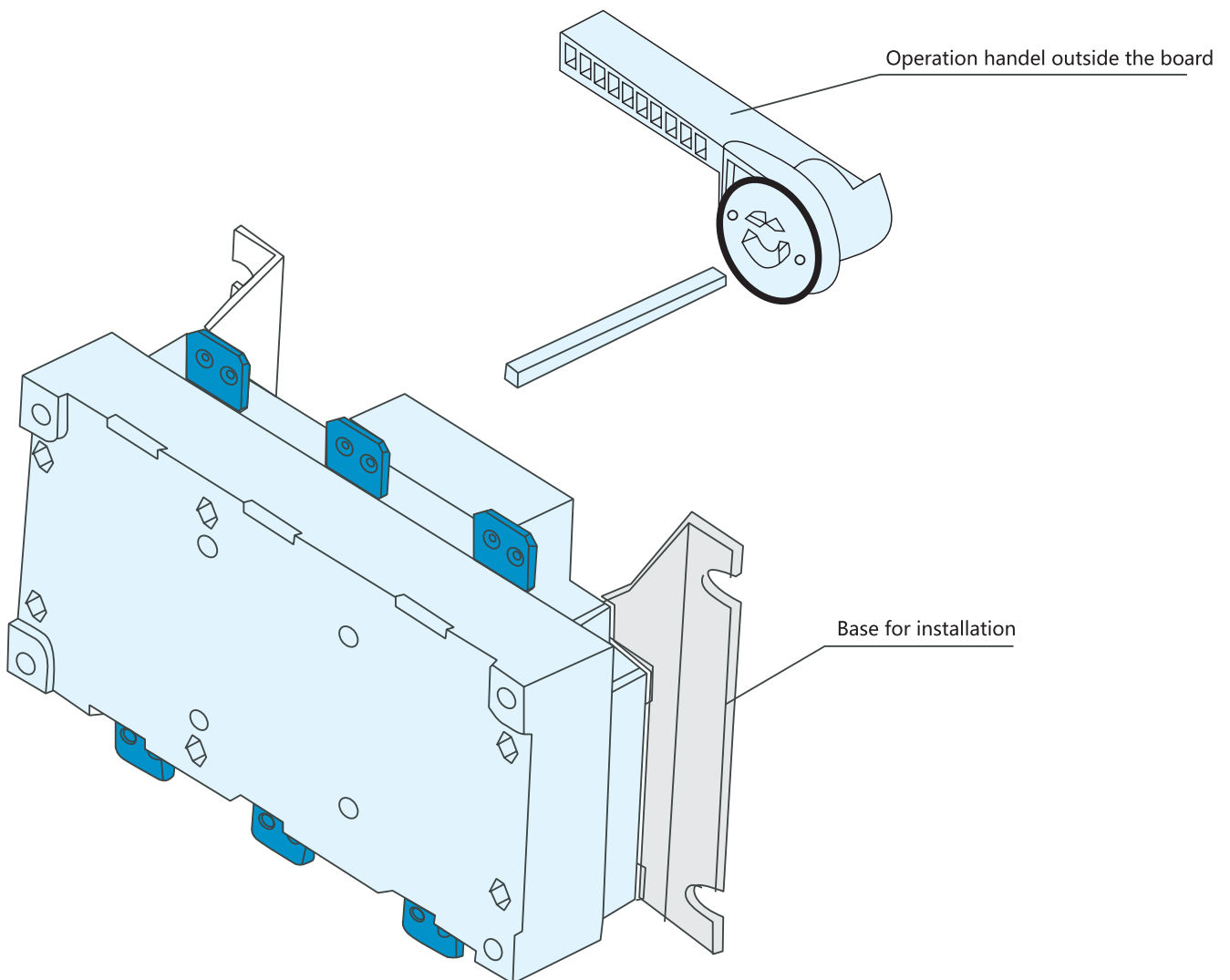


Specification	External dimension and installation dimension																		
	In	A	A1	B	D	E	F	G	J	J1	N	R	S	T	U	Y	Y1	Y2	Q
1000A/3	378	105	312						353	353	186	60	480	8	200	48			311
1000A/4	492	105	312						467	467	246	60	480	8	200	48			311
1250A/3	378	105	338	20	40	16	35	353	353	186	80	480	8	200	48				311
1250A/4	492	105	338	20	40	16	35	467	467	246	80	480	8	200	48				311
1600A/3	378	105	338	20	40	16	35	353	353	186	80	480	10	200	49				311
1600A/4	492	105	338	20	40	16	35	467	467	246	80	480	10	200	49				311
2000A/3	378		455	20	40	20	40	353	353	186	80	560	10	200		75.5	227.5		311
2000A/4	492		455	20	40	20	40	467	467	246	80	560	10	200		75.5	227.5		311
2500A/4	378		455	20	40	20	40	353	353	186	80	560	10	200		75.5	227.5		311
2500A/4	492		455	20	40	20	40	467	467	246	80	560	10	200		75.5	227.5		311
3150A/3	378		505	25	50	25	50	353	353	186	100	560	14	200		78	230		311
3150A/4	492		505	25	50	25	50	467	467	246	100	560	14	200		78	230		311

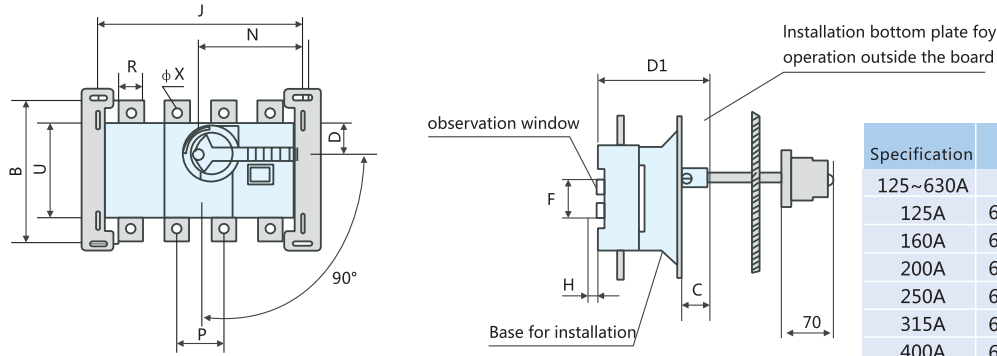
## Operation load Isolation switch behind the behind the SGL-160A~1600A/H board

- 160A~1600 is suitable for the making and breaking of electrical isolation circuit or electric insulation. Those over In 1,1000A are only suitable for electric isolation.
- 160A~1600A possesses three poles and four poles (three poles +on -off neutral pole).
- Observation window for products below 630A can be provided according to the demand to observe directly the on and off state of the contact.
- Two sets of auxiliary contacts can be assembled according to demand.
- Mechanical property and electric property correspond to the mechanical property and electric property of SGL-160~1600a.

Note:only offer products for operation outside the board.

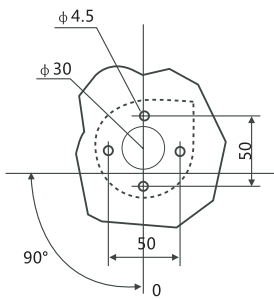


## External dimension and installed dimension of operation load isolation switch behind the SGL-I60A~630A/H board

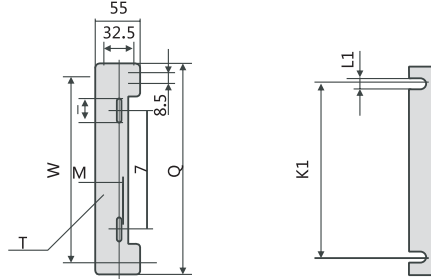


Operation Outside SGL-160~630A/JHK board

Specification	Dimension of bottom board					
	I	M	Z	W	Q	T
125~630A						
125A	60	6.5	115	240	270	3
160A	60	6.5	115	240	270	3
200A	62	8.5	115	240	270	3
250A	62	8.5	115	240	270	3
315A	65	11	170	280	311	4
400A	65	11	170	280	311	4
500A	65	11	170	280	311	4
630A	65	11	170	280	311	4



Installation size of handle seat outside board

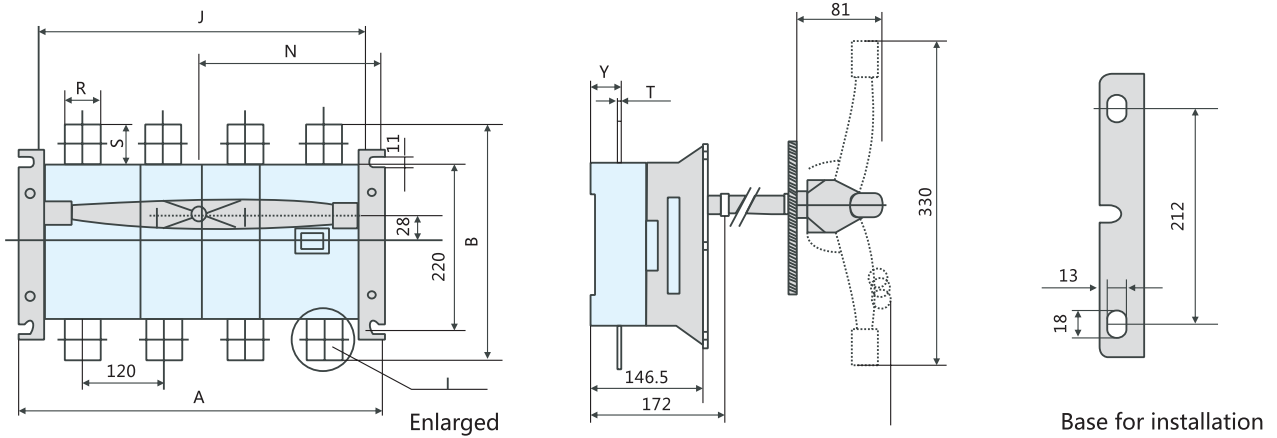


Installation bottom plate for operation outside the board Base for installation

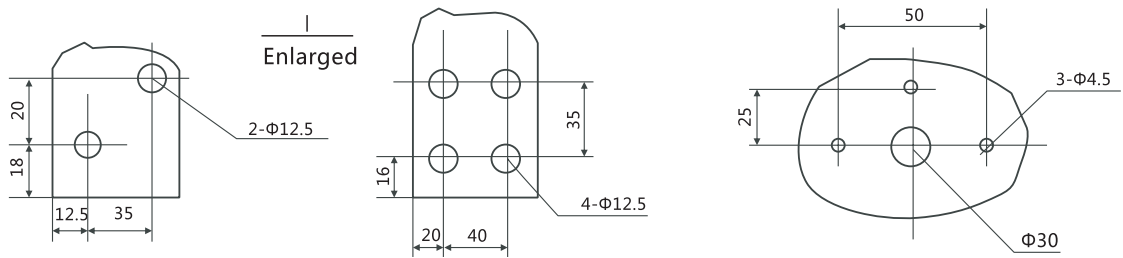
Specification	Dimension of bottom board	
	K1	L1
125~630A		
125A	95	7
160A	95	7
200A	116	9
250A	116	9
315A	180	11
400A	180	11
500A	180	11
630A	180	11

specification	External dimension and installation dimension											
	In	B	C	D	D1	J	N	P	R	U	ΦX	F
125A/3	135	14	27	92	120	85	36	20	85	9	52	10
125A/4	135	14	27	92	150	85	36	20	85	9	52	10
160A/3	135	14	27	92	120	85	36	20	85	9	52	10
160A/4	135	14	27	92	150	85	36	20	85	9	52	10
200A/3	170	16	35	104	160	115	50	25	110	11	79	13
200A/4	170	16	35	104	210	115	50	25	110	11	79	13
250A/3	170	16	35	104	160	115	50	25	110	11	79	13
250A/4	170	16	35	104	210	115	50	25	110	11	79	13
315A/3	240	15	50	133	210	145	65	30	160	11	100	24
315A/4	240	15	50	133	270	145	65	30	160	11	100	24
400A/3	240	15	50	133	210	145	65	30	160	11	100	24
400A/4	240	15	50	133	270	145	65	30	160	11	100	24
500A/3	260	15	50	133	210	145	65	40	160	12	100	24
500A/4	260	15	50	133	270	145	65	40	160	12	100	24
630A/3	260	15	50	133	210	145	65	40	160	12	100	24
630A/4	260	15	50	133	270	145	65	40	160	12	100	24

External dimension and installed dimension of operation isolation switch behind the SGL-I 600A/H board



SGL-1600A/JH operation outside board



1000A

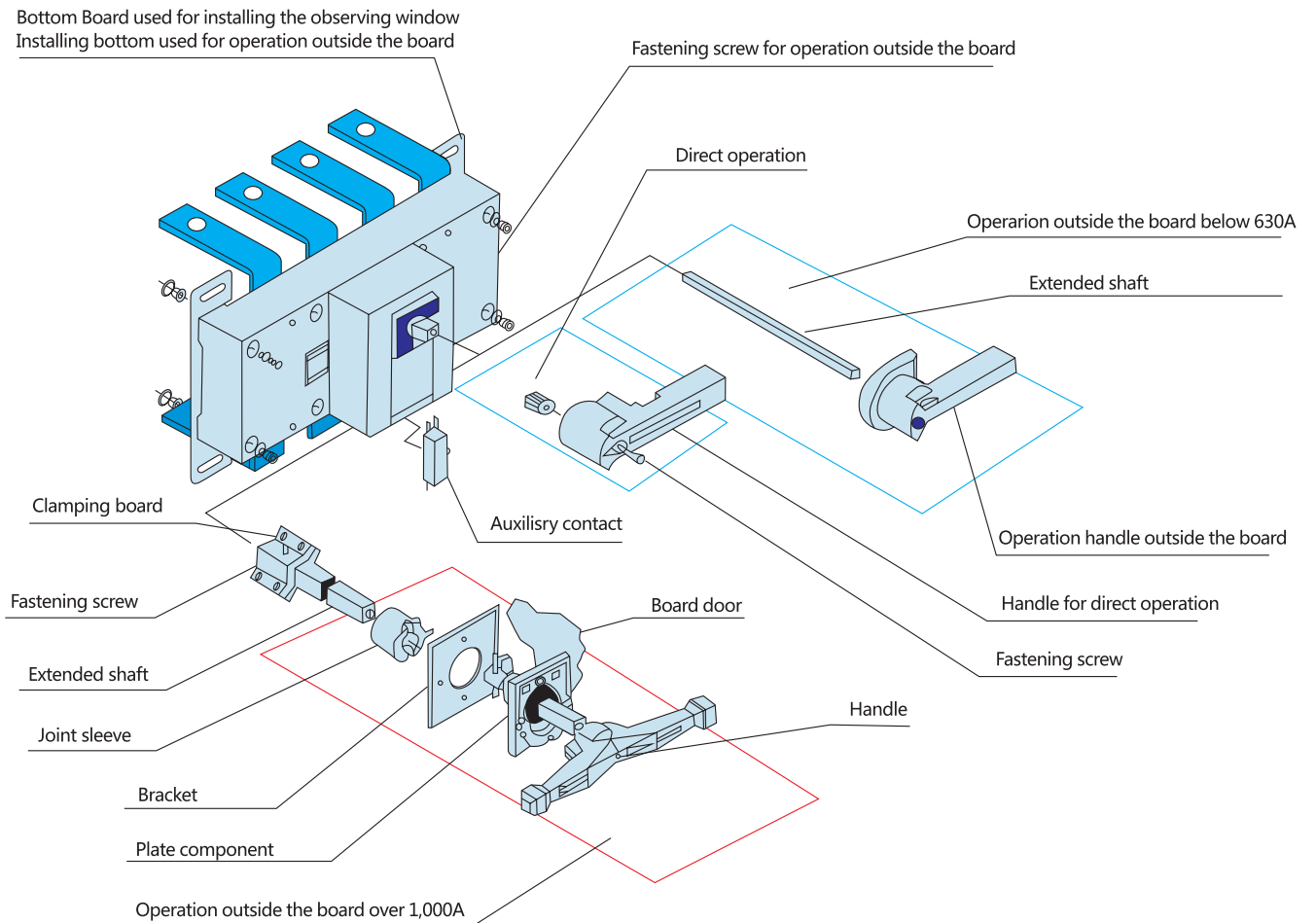
1250A-1600A

Installation size of handle seat outside board

Specification	External dimension and installation dimension							
	A	B	J	N	R	S	T	Y
1000A/3	378	312	353	186	60	56	8	48
1000A/4	492	312	467	246	60	56	8	48
1250A/3	378	338	353	186	80	69	8	48
1250A/4	492	338	467	246	80	69	8	48
1600A/3	378	338	353	186	80	69	10	49
1600A/4	492	338	467	246	80	69	10	49

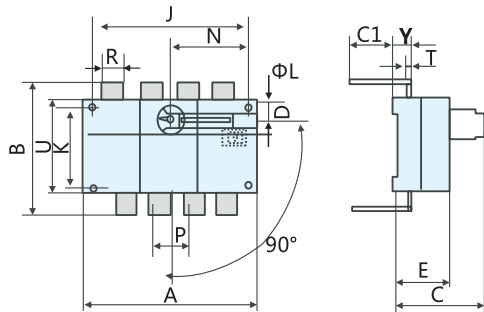
## Connection load isolation switch behind SGL- I 600A/B board

- 160A~1600A is suitable for the making and breaking of electric circuit or electric isolation. Over 1000A is only suitable for electric isolation.
- 160A~1600A has three poles, and four poles (three poles+on and off neutral pole).
- Products below 630A with observation window can be provided according to the demand to directly the on and off state of contact
- Two sets of auxiliary contacts is assembled according to the demand.
- Mechanical performance and electric property correspond to the mechanical performance and electrical property of SGL-160~1600A.

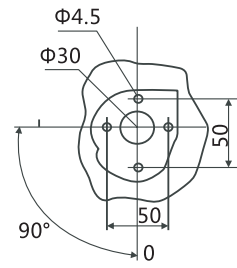




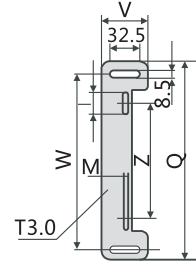
External dimension and installed dimension of SGL-I 60A~630A/B load isolation switch



Direct operation of SGL-160A~630S/B

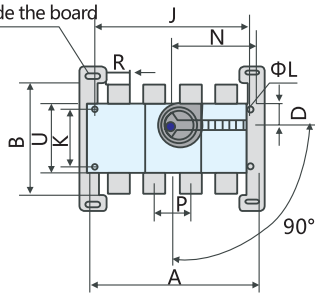


Installation size of handle seat outside board

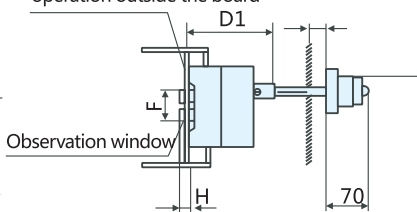


Installation bottom plate for operation outside the board

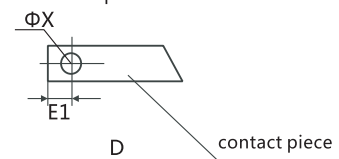
Installation bottom plate for operation outside the board



Installation bottom plate for operation outside the board



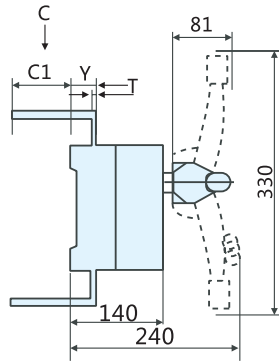
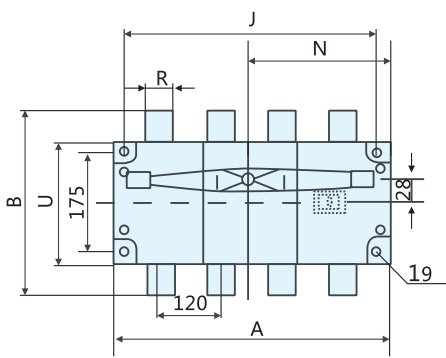
Operation outside the SGL-160A/JB board



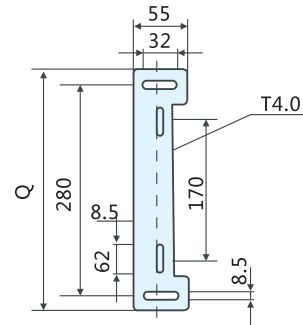
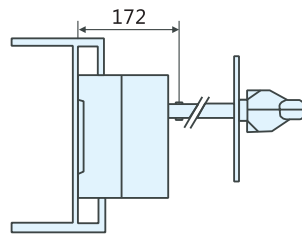
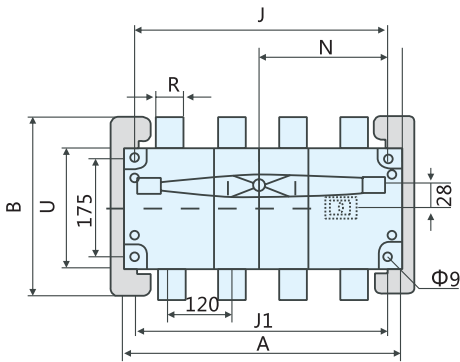
Specification	Dimension of bottom board					
	I	M	Z	W	Q	T
125~630A						
125A	55	5.5	85	190	218	54
160A	55	5.5	85	190	218	54
200A	55	5.5	85	190	218	54
250A	55	5.5	85	190	218	54
315A	60	6.5	130	240	270	55
400A	60	6.5	130	240	270	55
500A	60	6.5	130	240	270	55
630A	60	6.5	130	240	270	55

specification	External dimension and installation dimension																			
	In	A	B	C	C1	D	D1	E	E1	ΦL	J	K	N	P	R	U	T	ΦX	Y	F
125A/3	140	189	116	6	27	92	71	10	5.5	120	65	85	36	20	85	3.5	9	24	52	10
125A/4	170	189	116	6	27	92	71	10	5.5	150	65	85	36	20	85	3.5	9	24	52	10
160A/3	140	189	116	6	27	92	71	10	5.5	120	65	85	36	20	85	3.5	9	24	52	10
160A/4	170	189	116	6	27	92	71	10	5.5	150	65	85	36	20	85	3.5	9	24	52	10
200A/3	180	222	128	10	35	104	83	15	5.5	160	90	115	50	25	110	3.5	11	25	52	13
200A/4	230	222	128	10	35	104	83	15	5.5	210	90	115	50	25	110	3.5	11	25	79	13
250A/3	180	222	128	10	35	104	83	15	5.5	160	90	115	50	25	110	3.5	11	25	79	13
250A/4	230	222	128	10	35	104	83	15	5.5	210	90	115	50	25	110	3.5	11	25	79	13
315A/3	230	284	169	4	50	133	113	17	7	210	140	145	65	30	160	5	11	36	100	24
315A/4	290	284	169	4	50	133	113	17	7	270	140	145	65	30	160	5	11	36	100	24
400A/3	230	284	169	4	50	133	113	17	7	210	140	145	65	30	160	5	11	36	100	24
400A/4	290	284	169	4	50	133	113	17	7	270	140	145	65	30	160	5	11	36	100	24
500A/3	230	294	169	14	50	133	113	20	7	210	140	145	65	40	160	6	13	36	100	24
500A/4	290	294	169	14	50	133	113	20	7	270	140	145	65	40	160	6	13	36	100	24
630A/3	230	294	169	14	50	133	113	20	7	210	140	145	65	40	160	6	13	36	100	24
630A/4	290	294	169	14	50	133	113	20	7	270	140	145	65	40	160	6	13	36	100	24

External dimension and installed dimension of SGL-I 600A/B load isolation switch wired at the back

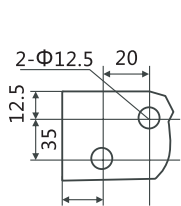


SGL-1600A direct operation

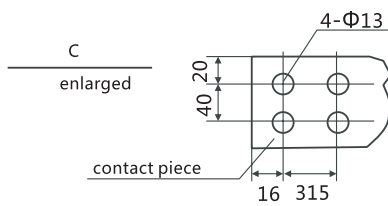


Installation bottom plate for operation outside the board

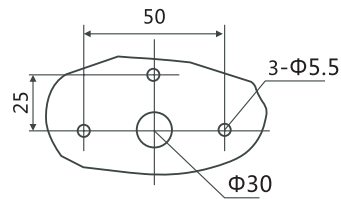
SGL-1600A/JB operation outside board



1000A



1250A-1600A

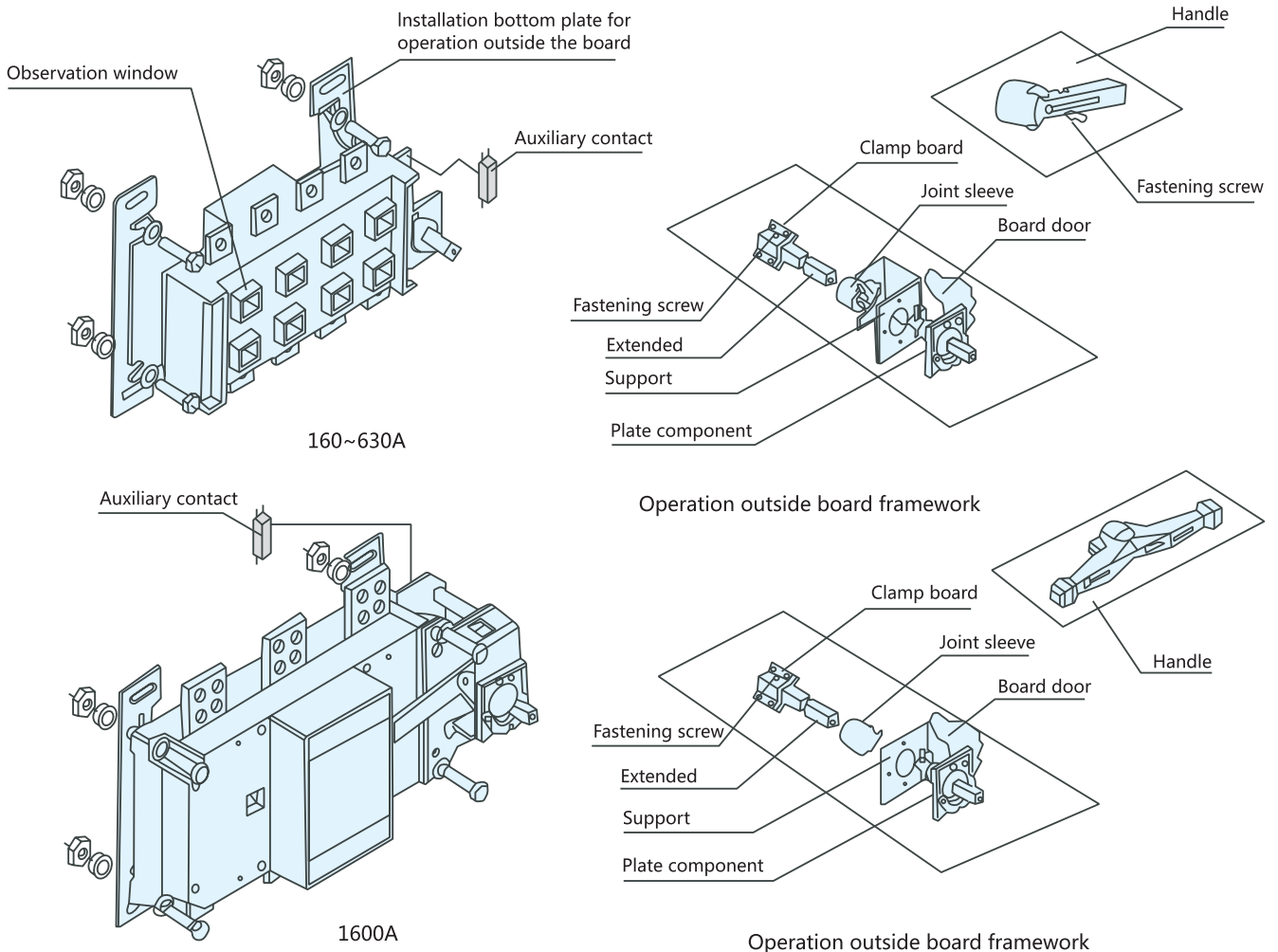


Installation size of handle seat outside board

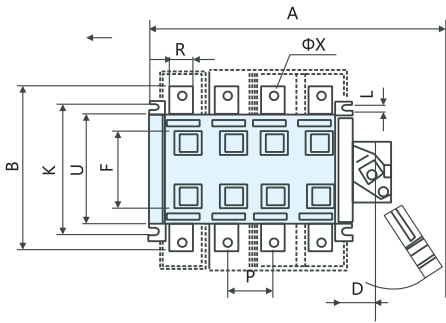
Specification	External dimension and installation dimension										
In	A	B	C1	J	J1	N	R	U	T	Q	Y
1000A/3	378	344	22	353	353	186	60	200	8	311	48
1000A/4	492	444	22	467	467	246	60	200	8	311	48
1250A/3	378	344	32	353	353	186	80	200	8	311	48
1250A/4	492	444	32	467	467	246	80	200	8	311	48
1600A/3	378	348	32	353	353	186	80	200	10	311	49
1600A/4	492	448	32	467	467	246	80	200	10	311	49

## External dimension and installed dimension of SGLC- I 60A~ I 600A/B load isolation switch

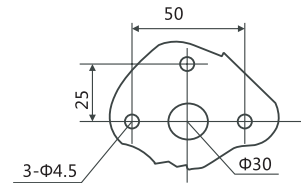
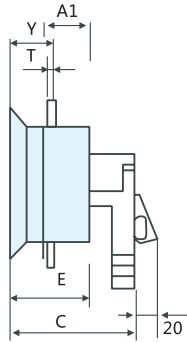
- SGLC-160A~1600A.The load isolation switch is suitable for the making and breaking of circuit or electric isolation.The products have three pole ,four pole (three poles+on off neutral pole)Switches over 1000A are only suitable for Electric isolation.
- Observation window can be provided for products below 630A can be provided according to the demand to observe directly the on and off state of the contact.
- Mode of operation: Direct operation:handle is installed on the right side of switch. Operation outside the board: handle is installed outside the door of distributing board.
- Two sets of auxiliary contacts can be assembled according to the demand.
- Extended shaft is used for the operation outside the board.
- Mechanical property and electric performance correspond to the mechaical performance and electric performance of SGLC-160a~1600A.
- The electric cable insulating cover can be assembled.



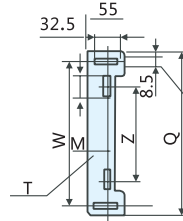
External dimension and installation dimension of SGLC-160A~630A side operation load isolation switch



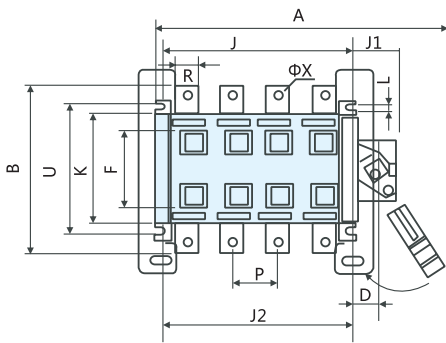
SGLC-160A~630A/K direc operation



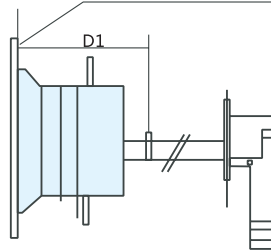
Installation size of handle seat outside board



Installation bottom plate for operation outside the board



SGLC-160A~630A/K operation outside board

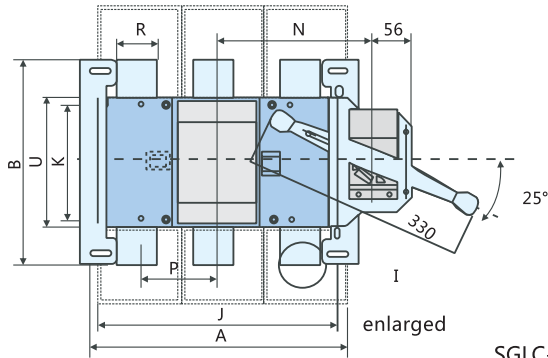


Installation bottom plate for operation outside the board

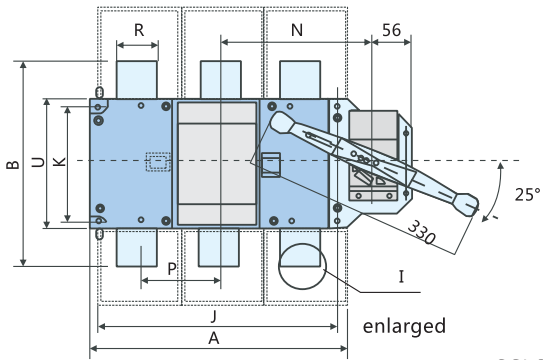
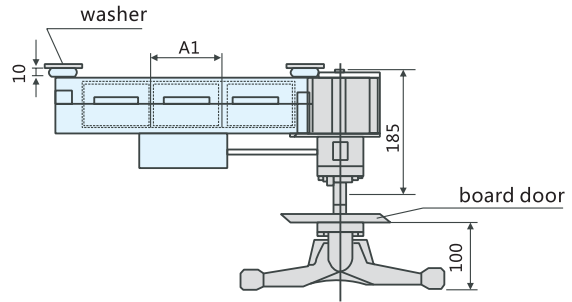
Specification	Dimension of bottom board					
	I	M	Z	W	Q	T
125~630A						
125A	60	6.5	115	240	270	3
160A	60	6.5	115	240	270	3
200A	62	8.5	115	240	270	3
250A	62	8.5	115	240	270	3
315A	65	11	170	280	311	4
400A	65	11	170	280	311	4
500A	65	11	170	280	311	4
630A	65	11	170	280	311	4

specification	External dimension and installation dimension																		
	In	A	A1	B	C	D	D1	E	J	J1	J2	K	P	R	T	U	ΦX	Y	L
125A/3	267	50	135	146	29	123	88	120	65	120	95	36	20	3.5	85	9	55	7	52
125A/4	297	50	135	146	29	123	88	150	65	150	95	36	20	3.5	85	9	55	7	52
160A/3	267	50	135	146	29	123	88	120	65	120	95	36	20	3.5	85	9	55	7	52
160A/4	297	50	135	146	29	123	88	150	65	150	95	36	20	3.5	85	9	55	7	52
200A/3	300	60	170	154	30	133	98	160	65	160	116	50	25	3.5	110	11	64	9	79
200A/4	350	60	170	154	30	133	98	210	65	210	116	50	25	3.5	110	11	64	9	79
250A/3	300	60	170	154	30	133	98	160	65	160	116	50	25	3.5	110	11	64	9	79
250A/4	350	60	170	154	30	133	98	210	65	210	116	50	25	3.5	110	11	64	9	79
315A/3	400	85	240	199	45	162	127	210	77	210	180	50	30	5	160	11	64	11	100
315A/4	460	85	240	199	45	162	127	270	77	270	180	50	30	5	160	11	83	11	100
400A/3	400	85	240	199	45	162	127	210	77	210	180	65	30	5	160	11	83	11	100
400A/4	460	85	240	199	45	162	127	270	77	270	180	65	30	5	160	11	83	11	100
500A/3	400	85	260	199	45	162	127	210	77	210	180	65	40	5	160	12	83	11	100
500A/4	460	85	260	199	45	162	127	270	77	270	180	65	40	5	160	12	83	11	100
630A/3	400	85	260	199	45	162	127	210	77	210	180	65	40	5	160	12	83	11	100
630A/4	460	85	260	199	45	162	127	270	77	270	180	65	40	5	160	12	83	11	100

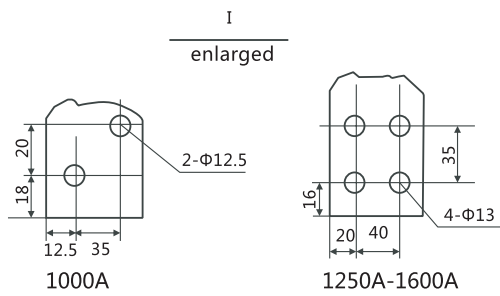
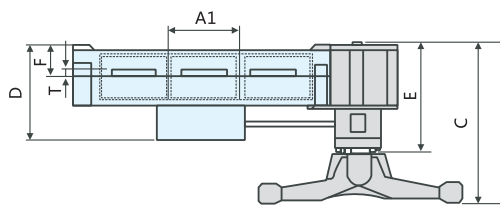
External dimension and installation dimension of SGLC-I 600A side operation isolation switch



SGLC-1600A/3J

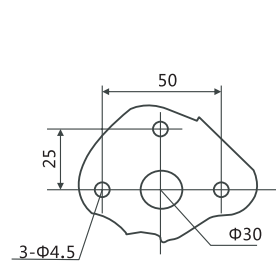


SGLC-1600A/3

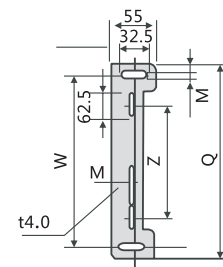


1000A

1250A-1600A



Installation of handle seat outside board

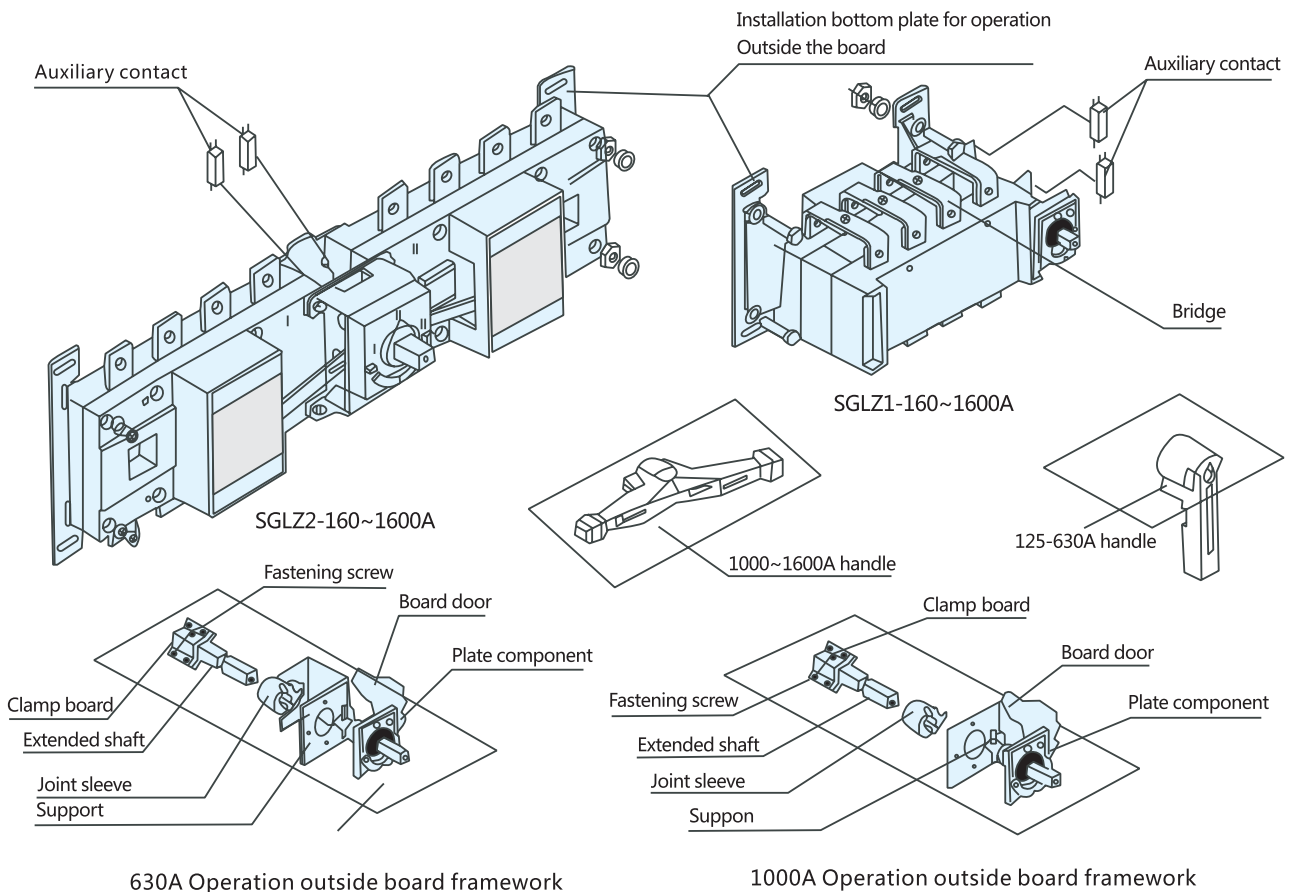


Installation bottom plate for operation outside the board

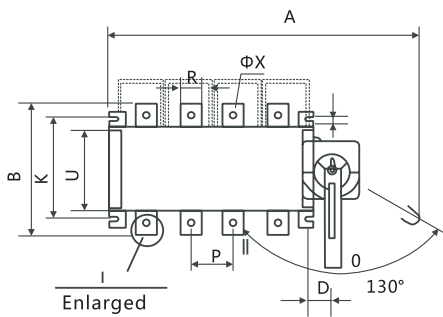
Specification	External dimension and installation dimension																
	A	A1	B	D	E	F	J	K	M	N	P	Q	R	U	T	W	Z
1000A/3	378	105	312	140.5	163	47.5	353	175	8.5	226	120	311	60	200	8	280	224
1000A/4	492	105	312	140.5	163	47.5	467	175	8.5	286	120	311	60	200	8	280	224
1250A/3	378	105	338	140.5	163	47.5	353	175	8.5	226	120	311	80	200	8	280	224
1250A/4	492	105	338	140.5	163	47.5	467	175	8.5	286	120	311	80	200	8	280	224
1600A/3	378	105	338	104.5	163	47.5	353	175	8.5	226	120	311	80	200	10	280	224
1600A/4	492	105	338	140.5	163	47.5	467	175	8.5	286	120	311	80	200	10	280	224

## SGLZ-160A~1600A Changeover load isolation switch

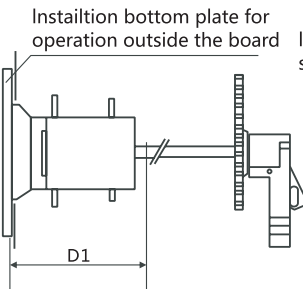
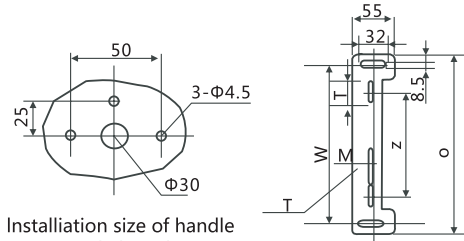
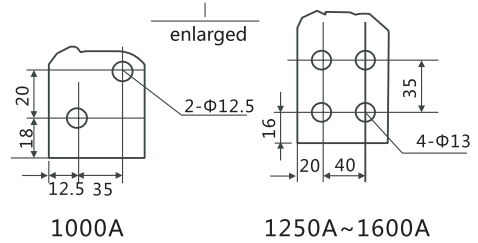
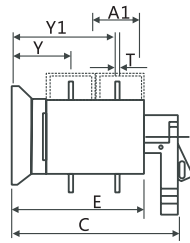
- SGLZ-160A-1600A.The load isolation switch is suitable for the changeover of two sets of low voltage electric circuit or the changeover of 2 sets of load devices or safety isolation.
- Mode of operation:  
 Direct operation: handle is installed on the switch.  
 Operation outside the board: handle is installed outside the door of power distributing board.
- Products with observation windows can be provided according to the demand to observe directly the on and off state of contact.
- The products have three poles,four poles (three poles+on and off neural pole).
- Extended shaft is used for the operation outside the board
- Two sets of auxiliary contacts can be assembled according to the demand.
- Mechanical performance and electrical performance correspond to the mechanical property of SGLZ-160A~1600A.
- A bridge can be provided to connect the inlet or outlet terminal of the switch.
- The electric cable insulating cover can be assembled.Note:The bridge connection is chosen,an explanation is needed to indicate the inlet or outlet is connected with it.



## External dimension and installation dimension of SGLZ1-I 60A~I 600A changeover load isolation switch

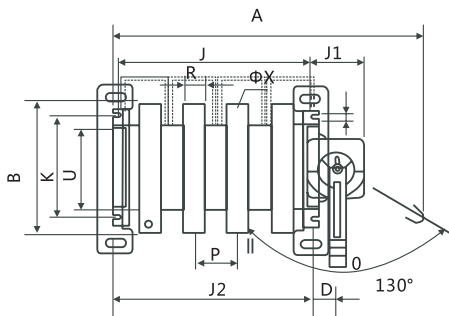


SGLZ1-160A~1600A Direct operation



Installation size of handle seat outside board

Installation bottom plate for operation outside the board

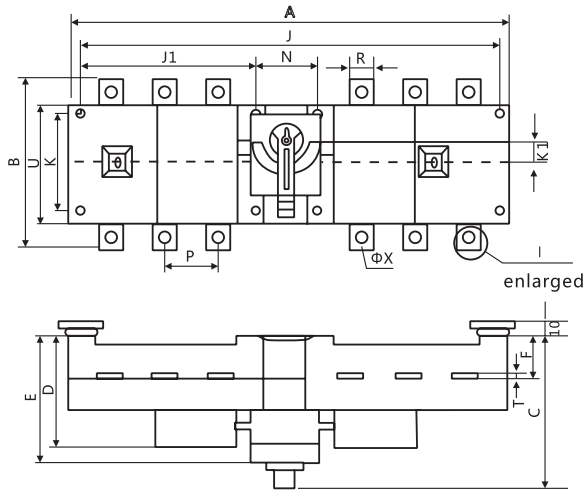


SGLZ1-160A~1600A operation outside board

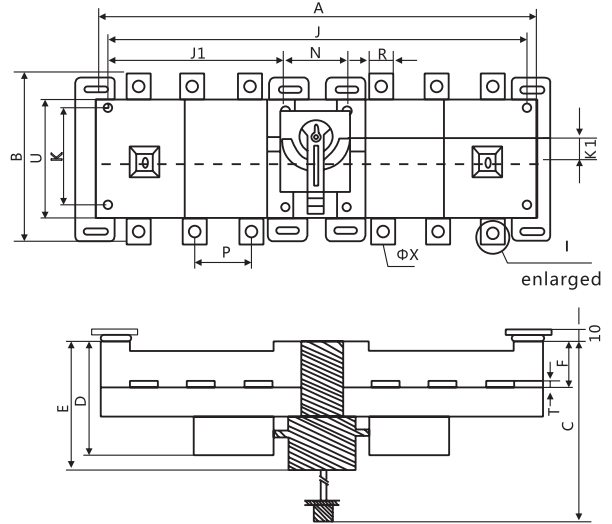
Specification	Dimension of bottom board					
	I	M	Z	W	Q	T
125~1600A						
125A	60	6.5	115	240	270	3
160A	60	6.5	115	240	270	3
200A	62	8.5	115	240	270	3
250A	62	8.5	115	240	270	3
315~400A	65	11	170	280	311	4
500~630A	65	11	170	280	311	4
1000~1600A	62	8.5	170	280	311	4

specification	External dimension and installation dimension																		
	In	A	A1	B	C	D	D1	E	J	J1	J2	K	L	P	R	T	U	ΦX	Y
125A~160A/3	267	50	135	212	29	189	154	120	65	120	95	7	36	20	3.5	85	9	55	121
125A~160A/4	267	50	135	212	29	189	154	150	65	150	95	7	36	20	3.5	85	9	55	121
200A~250A/3	300	60	170	236	30	215	180	160	65	160	116	9	50	25	3.5	110	11	64	146
200A~250A/4	350	60	170	236	30	215	180	210	65	210	116	9	50	25	3.5	110	11	64	146
315A~400A/3	400	85	240	309	45	272	237	210	77	210	180	11	65	30	5	160	11	83	193
315A~400A/4	460	85	240	309	45	272	237	270	77	270	180	11	65	30	5	160	11	83	193
500A~630A/3	400	85	260	309	45	272	237	210	77	210	180	11	65	40	6	160	12	83	193
500A~630A/4	460	85	260	309	45	272	237	270	77	270	180	11	65	40	6	160	12	83	193
1000A/3	574	105	312	389	52.5	340	307	353	108.5	353	212	18	120	60	6	200	12.5	107	251.5
1000A/4	685	105	312	389	52.5	340	307	467	108.5	467	211	18	120	60	8	200	12.5	107	251.5
1250A/3	574	105	338	389	52.5	340	307	353	108.5	353	212	18	120	80	8	200	13	107	251.5
1250A/4	685	105	338	389	52.5	340	307	467	108.5	467	212	18	120	80	8	200	13	107	251.5
1600A/3	574	105	338	389	52.5	340	307	353	108.5	353	212	18	120	80	10	200	13	108	251.5
1600A/4	685	105	338	389	52.5	340	307	467	108.5	467	212	18	120	80	10	200	13	108	251.5

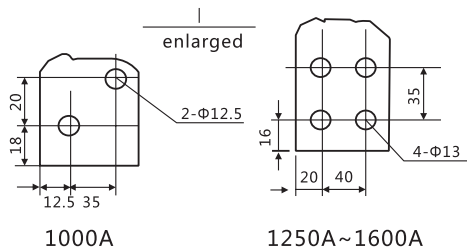
External dimension and installation dimension of SGLZ2-I60A~I600A side operation load isolation switch



SGLZ2-160A~1600A direct operation

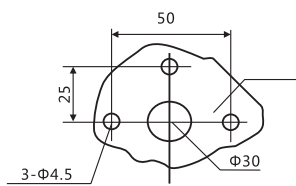


SGLZ2-160~1600A operation outside board

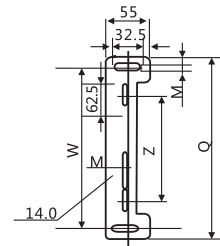


1000A

1250A~1600A



Installation size of handle seat outside board



Installation bottom plate for operation outside the board

specification	External dimension and installation dimension																				
	In	A	B	C	D	E	E1	F	J	J1	K	K1	M	N	P	Q	R	U	ΦX	T	W
125A~160A/3	319	135	141	67	89	117.5	24	299	120	65	8.5	5.5	59	36	218	20	85	9	3.5	190	85
125A~160A/4	379	135	141	67	89	117.5	24	259	150	65	8.5	5.5	59	36	218	20	85	9	3.5	190	85
200A~250A/3	405	170	146	79	94	122.5	25	385	160	90	18	5.5	65	50	218	25	110	11	3.5	190	85
200A~250A/4	505	170	146	79	94	122.5	25	485	210	90	18	5.5	65	50	218	25	110	11	3.5	190	85
315A~400A/3	535	240	191	108	130	157	36	515	210	140	25	6.5	95	65	270	30	160	11	5	240	130
315A~400A/4	655	240	191	108	130	157	36	635	270	140	25	6.5	95	65	270	30	160	11	5	240	130
500A~630A/3	535	260	191	108	130	157	36.5	515	210	140	25	6.5	95	65	270	40	160	12	6	240	130
500A~630A/4	655	260	191	108	130	157	36.5	635	270	140	25	6.5	95	65	270	40	160	12	6	240	130
1000A/3	836	312	239.5	141	163	190.5	48	811	353	175	10	8.5	105	120	311	60	200	12.5	8	280	170
1000A/4	1064	312	239.5	141	163	190.5	48	1039	467	175	10	8.5	105	120	311	60	200	12.5	8	280	170
1250A/3	836	338	239.5	141	163	190.5	48	811	353	175	10	8.5	105	120	311	80	200	13	8	280	170
1250A/4	1064	338	239.5	141	163	190.5	48	1039	467	175	10	8.5	105	120	311	80	200	13	8	280	170
1600A/3	836	338	239.5	141	163	190.5	48	811	353	175	10	8.5	105	120	311	80	200	13	10	280	170
1600A/4	1064	338	239.5	141	163	190.5	48	1039	467	175	10	8.5	105	120	311	80	200	13	10	280	170



## Cutoff function

1.Power supply changeover:

Main power supply changeover to standby power.

2.Changeover,reverse:

Changeover between two load equipment. (Emergency standby motor)Reversion by two phases changeover.

3.Bypas circuit:

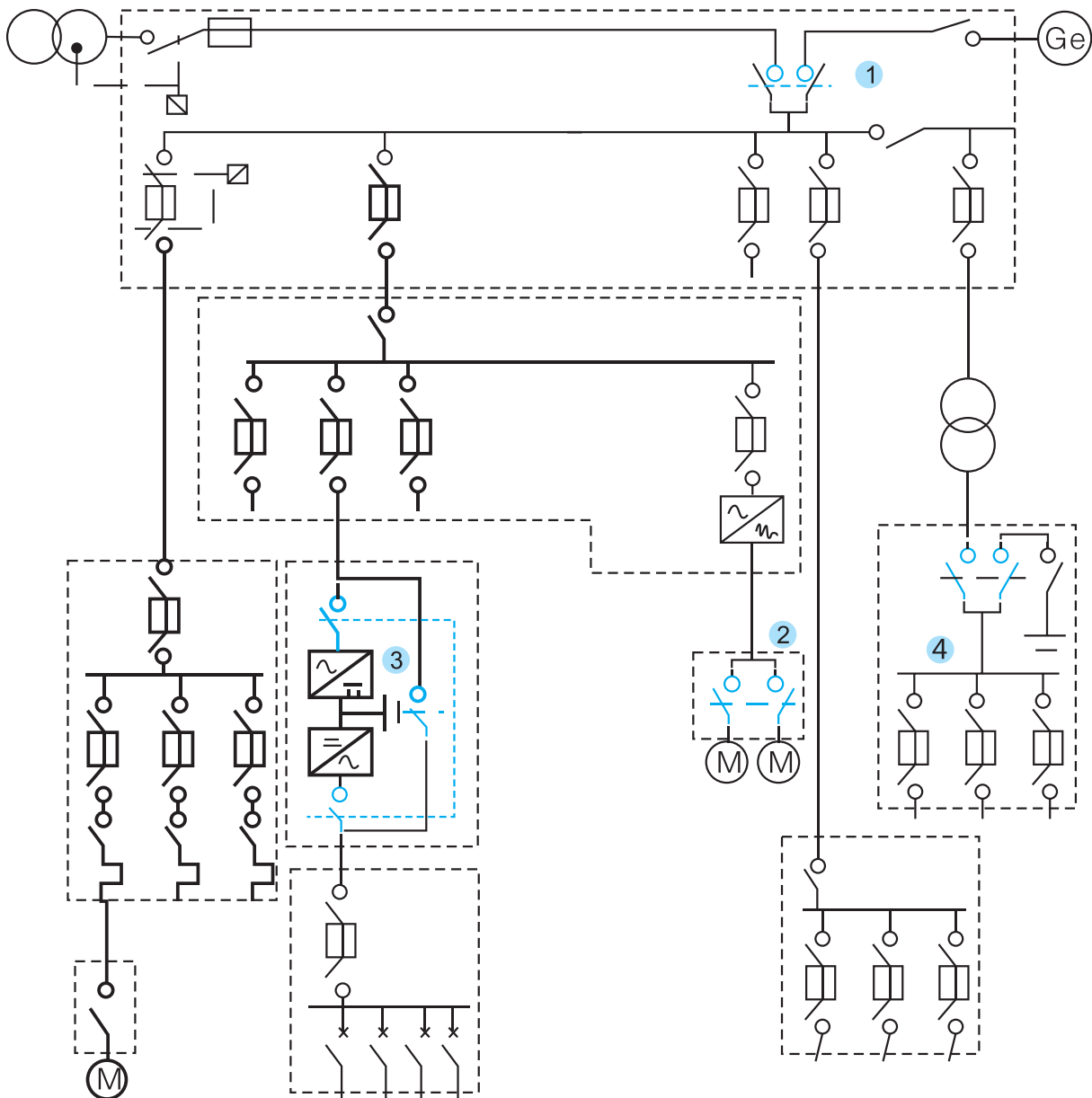
Full bypassing isolates the equipment From upstream and downstream currents,(With one operation)

4.Cutoff+the grounding:

One operation of grounding and short circuit realizes the isolation

(\*) ( $U_e > A_c$ )

※ General cutoff function meets with the standards of IEC947 and GB T1448



Keyword: Elastic-accumulating and accelerating instant-release device

### SGLR series fuse combination switches

SGLR series fuse combination switches (hereinafter called as switch for short) is a kind of multi-poles hand-operated switch, adopting the shell made of unsaturated polyester resin reinforced with glass-fibres, having very high dielectric performance, protective capability and safe operation.

The operating device is an elastic-accumulating and accelerating instant-release device, which makes instant making and breaking of the double gap contact. It has no relationship with the operation handle and thus greatly increase both the various electrical and mechanical performance.

The fuse combination switches can assure the circuit to be turned making and breaking under load, having reliable breaking protection against over-current or short circuit apparent visible the off state.

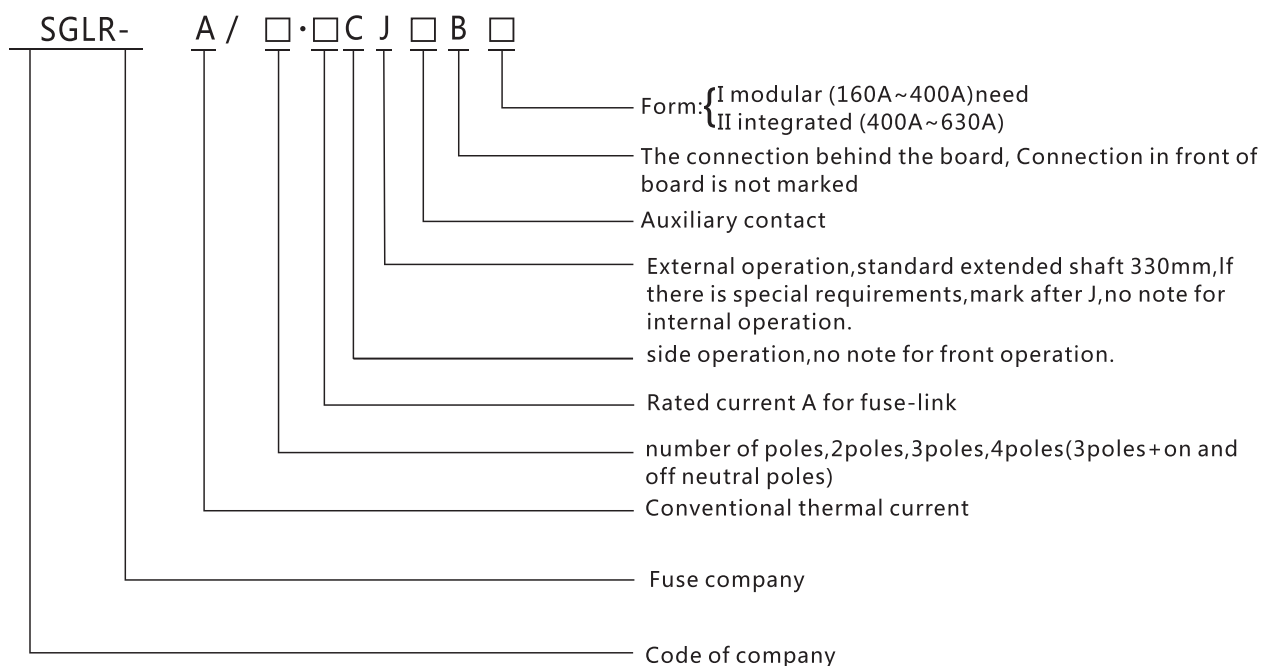
Having strong humidity and resistant properties.

The switch has an artistic, novel, succinct, small-sized outline, but has various functions, being the best choice among the congeneric products.



### Product usage

SGLR series fuse combination switches mainly suitable for AC 50Hz, rated voltage up to 660V, DC rated voltage up to 440V, the rated current up to 800A, used for non-frequent on and off circuit.



## Type & meaning

- NOTE : Function in brackets will not be noted if it is not needed.
- I S-NO+NC S type auxiliary contacts.
- II F-NO+NC S type auxiliary contacts.
- Example for model selection.  
SGLR-160A/3C.  
Conventional thermal current 160A,3Poles,side operation.  
side the board.

Rated current A for fuse combination switches	160					250			400			630		
Rated current A for fuse-link	63	80	100	125	160	160	200	250	300	315	400	400	500	630
Fuse-link dimension	00					0	1		2			3		

## Conformed Standard

### International Standard:

- IEC60947-1(1998) 《Low-voltage switchgear and controlgear, part one:General Rules》  
IEC60947-3(1999) 《Low-voltage switchgear and controlgear,switches,disconnectors,switch-disconnectors and fuse-combination units》

### National standard:

- GB/T 14048.1-2000 《Low-voltage switchgear and Controlgear, part one: General Rules》  
GB 14048.3-2002 《Low-voltage switchgear and condrdgear, switches, disconnectors, switch-disconnectors and fuse combination units》  
GB/T4942.2-93 《Protection grade of low-voltage equipment shells》  
GB13539.1-92 《Low-voltage fuse box supplemental requirement on fuse box used by professional personnel》  
GB13539.1-92 《Low-voltage Fuse Supplemebtary Requirements for Technicians》

## Characteristics of products:

- The elastic-accumulation and instant-release mechanism realize the fast on and off(13.8m/s).Having no relation ship with the speed of the handle and thus increasing various electrical properties.
- The shell made of unsaturated polyester resin reinforced with glass fibres has fine flame retardant properties, dielectric and safe- operational properties.
- The parallel double gap contact has self-cleaning function.
- It can assure the circuit to be turned making and breaking under load and has reliable over-current and short-circuit protection function.
- When change fuse,it can be safety、 facility、 fast.

## Operation environment:

SGLR series fuse combination switches reliable operation under the following condition:

- Height above sea level does not exceed 2,000m;
- Amblent temperature is not higher than 40°C and not below than-5°C,Relative humidity is not larger than 95% ;
- No explosive dangerous medium environment;
- No rain snow attack environment;

Note: If the load isolation switch is expected to be used in the condition that the ambient temperature is higher than +40°C or is lower than-50°C~-45°C , customers should inform to the manufactory.

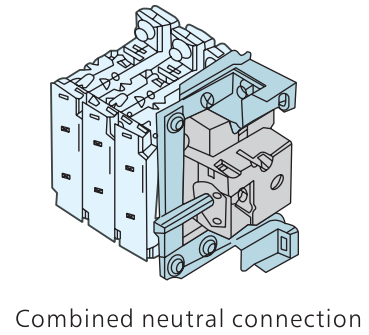
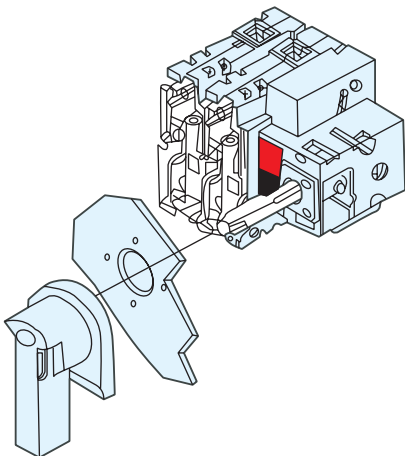
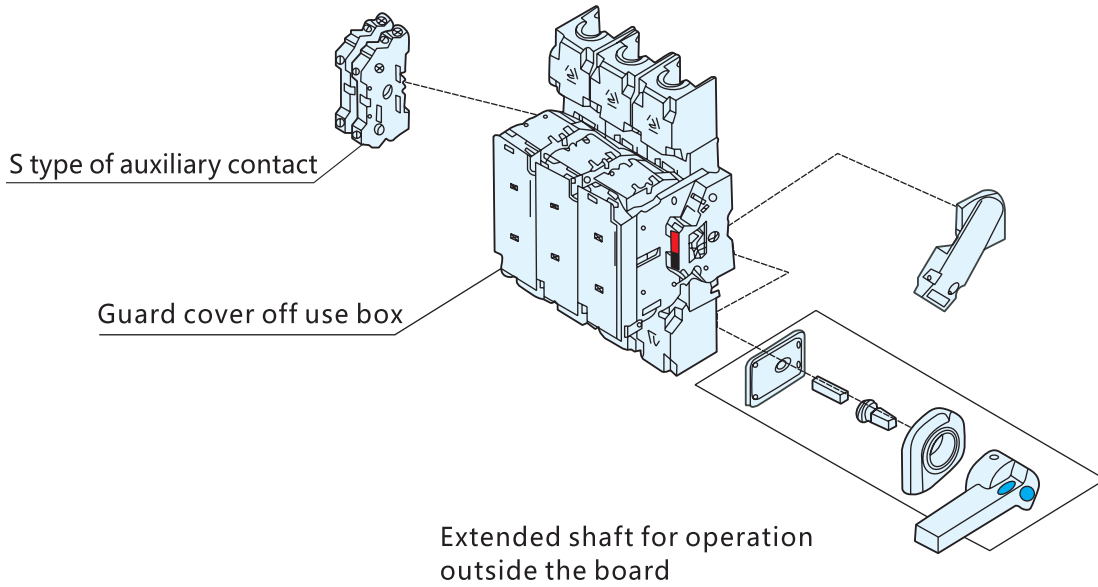
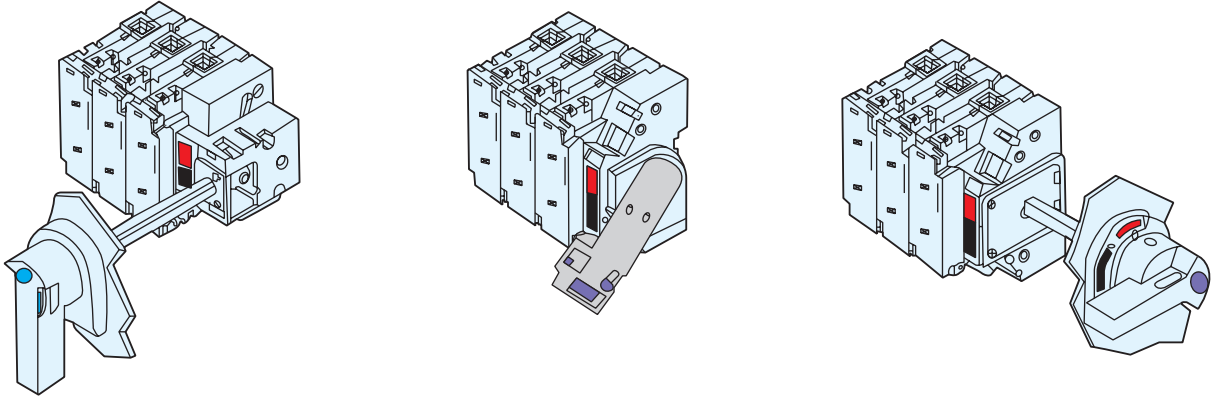
## SGLR-160~400A/I type of fuse combination switches)

- SGLR I type is of modular design structure.
- Ensure making and break under load reliable over current and short circuit off-protection.
- Apparent visible off state.
- 2 poles 3 poles 4 poles 3 poles on and off neutra pole .
- Total 10 sizes from 63~400A.

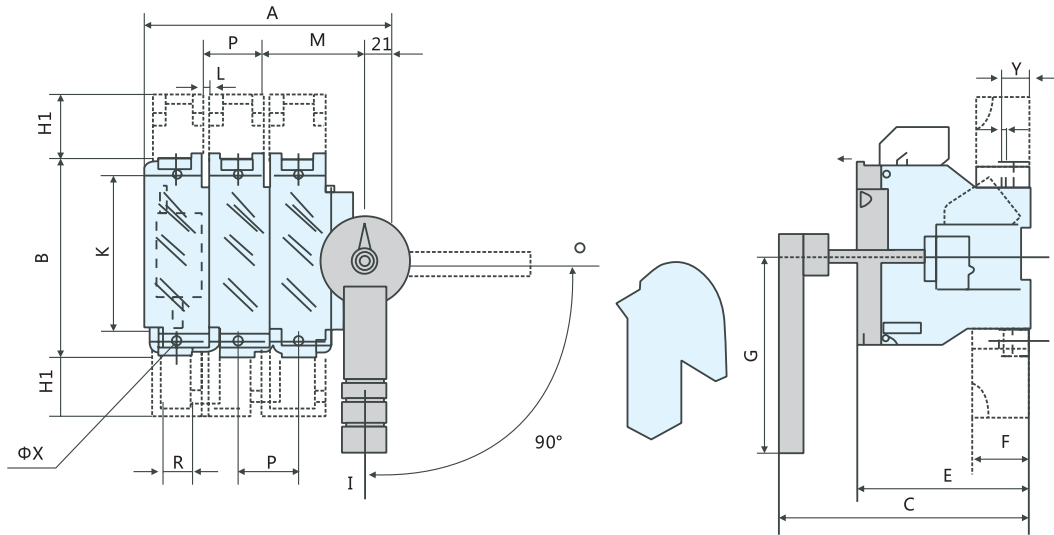
## Electrical and mechanical properties of SGLR-160~400A/type of fuse combination switches

Conventional thermal current I <sub>th</sub> (A)			160	250	400
Fuse-link dimension NT			00 or 0	1	2
Power-dissipation of a fuse-link 660V AC(V) (W)			9.6	18.3	26
Rated insulation voltage U <sub>i</sub> (v)			750	750	750
Dielectric strength(V)			6000	6000	6000
Rated impulse withstand voltage U <sub>imp</sub> KV(installed type IV)			8	8	8
Rated Working current I <sub>e</sub> (A)	380V	Ac22 Cosφ=0.65	160	250	400
		Ac23 Cosφ=0.35	160	250	400
	660V	Ac22 Cosφ=0.65	160	250	250
		Ac23 Cosφ=0.35	125	200	315
	220V	DC23L/R=15ms	160	250	315
	440V	DC23L/R=15ms	125	200	200
Motor power (kw)		380V	80	132	200
		660V	110	220	295
Rated short-circuit limiting current(KA Rms)		380V	100	100	100
		660V	50	50	50
Rated making ability			1600	2500	4000
Rated breaking ability			1280	2000	3200
Mechanical durability (operation cyclic times)			1000	10000	10000
Electric durability(operation cyclic times)			1000	1000	1000
Operation moment		Side operation	6	8	10
		Front operation	10	12	15
Weight(kg)		3poles	1.8	3.2	4.8
		4poles	2.3	4.5	6.1

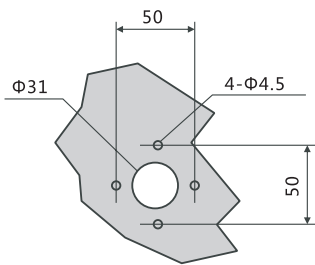
SGLR-160~400A/I sketch diagram of fuse combination switches



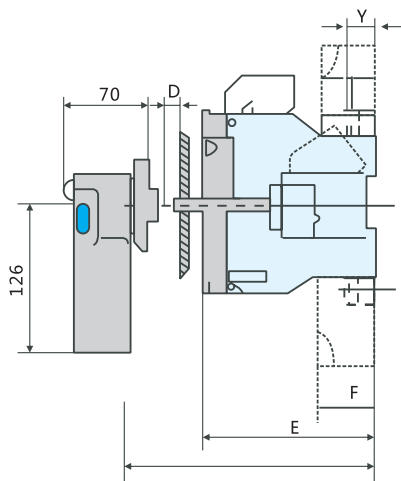
## Outline and installation dimensions of SGLR-160~400A/I type of fuse combination switches



Front operation 160-400A



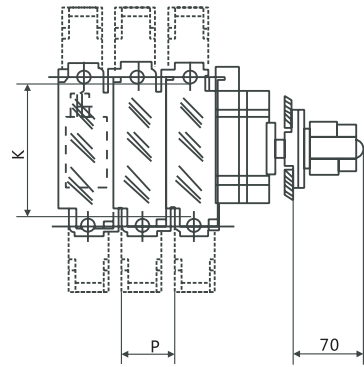
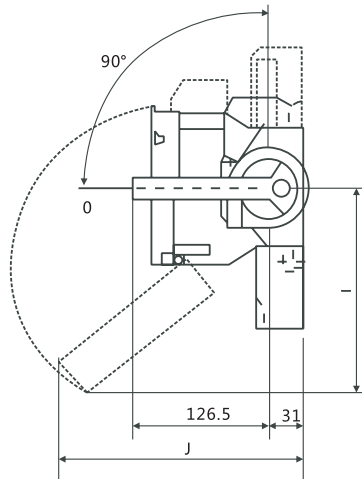
door hole



Front operation outside the board 160-400A

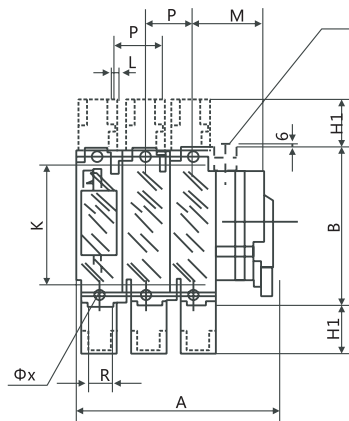
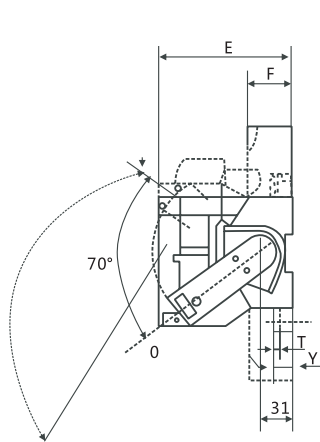
Specification	Fuse dimension	External dimension and installation dimension															
		A	b	C	D	E	F	G	H1	K	L	M	P	R	T	ΦX	Y
SGLR-160~400A/I																	
160/2	0~00	131	162	179	20~30	127	47.5	115	53	126	6	67	36	20	2.5	9	19
160/3	0~00	167	162	179	20~30	127	47.5	115	53	126	6	67	36	20	2.5	9	19
160/4	0~00	203	162	179	20~30	127	47.5	115	53	126	6	67	36	20	2.5	9	19
250/2	1	179	195	172	20~30	146	55	115	57	137	6	92	60	34	2.5	11	19
250/3	1	239	195	172	20~30	146	55	115	57	137	6	92	60	34	2.5	11	19
250/4	1	324	195	172	20~30	146	55	115	57	137	6	116	60	34	2.5	11	19
400/2	2	215	205	172	20~30	149	64	145	77	147	6	122	66	50	3	11	25
4700/3	2	281	205	172	20~30	149	64	145	77	147	6	122	66	50	3	11	25
400/4	2	347	205	172	20~30	149	64	145	77	147	6	122	66	50	3	11	25

## Outline and installation dimensions of SGLR-I 60~400A/C I type of fuse combination switches

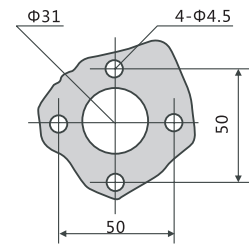


no connection lever extension

Side operation outside the board 160-400A



1or2 pre-breaking-off NO, NC



door hole

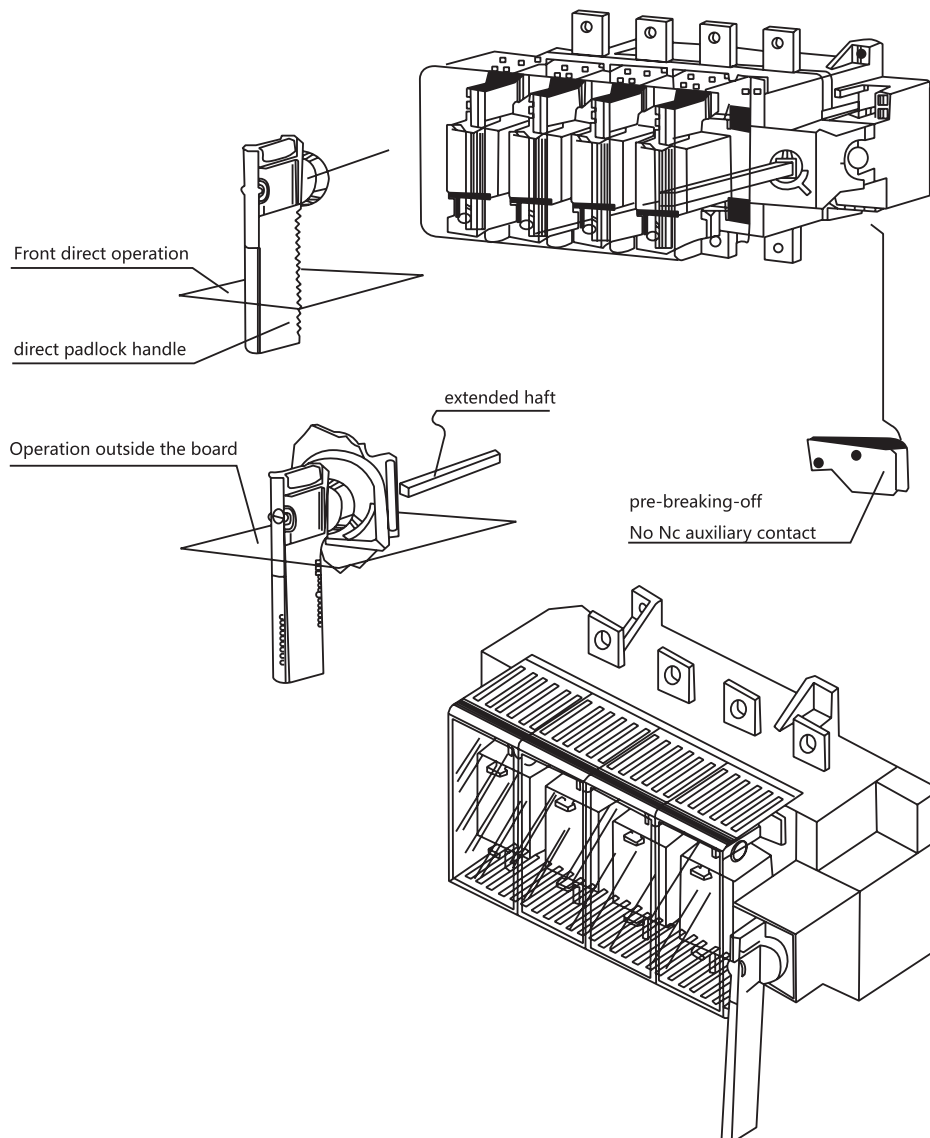
Side direction operation of 160~400A

Specification	Fuse dimension	External dimension and installation dimension														
		A	B	E	F	H1	I	J	K	L	M	P	R	T	ΦX	Y
SGLR-160~400a/CI																
160/3	0~00	207	162	127	28	21	145	171	127	5	67	36	20	2.5	8.5	19
160/4	0~00	243	162	127	28	21	145	171	127	5	67	36	20	2.5	8.5	19
250/3	1	284	195	146	31	17.5	179	245	162	5.5	93	60	32	2.5	11	19
250/4	1	344	195	146	31	17.5	179	245	162	5.5	93	60	32	2.5	11	19
400/3	2	329.5	205	149	31	16	202	255	172	7	122	66	50	3	11	25
400/4	2	392	205	149	31	16	202	255	172	7	122	66	50	3	11	25

## SGLR-630A/II fuse combination switches

- SGLR-II is of integrated design structure.
- It can assure on-load making and breaking and has reliable over-current and short-circuit protective.
- Apparent visible off state.
- Having 3 poles,4 poles,(3poles+on and off neutral pole)
- 4 sizes of 315A,400A,500A and 630A according to fuse.
- Structure and operation forms;
  - Front direct operation:The handle is directly installed at the switch front.
  - Side direct operation:The handle is installed at the right side of the switch.
  - Front operation outside the board:The handle is installed at the front of the door of the distributing board.
  - Side operation outside the board:he handle is installed at the right side of the distributing board.
- F type of auxiliary contacts can be provided.
  - Note:NO、 NC auxiliary contact,the electrical properties are the same with SGLR/1 type.

## SGLR-630A/II sketch diagram of fuse combination switches

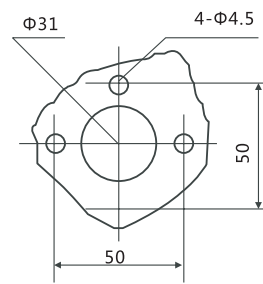
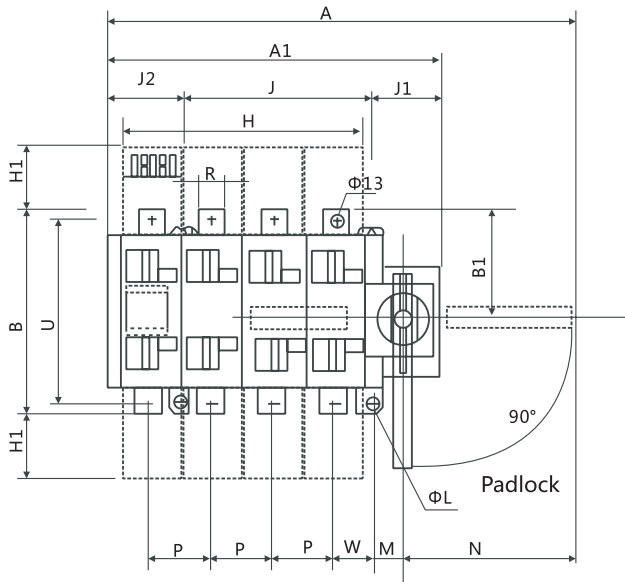




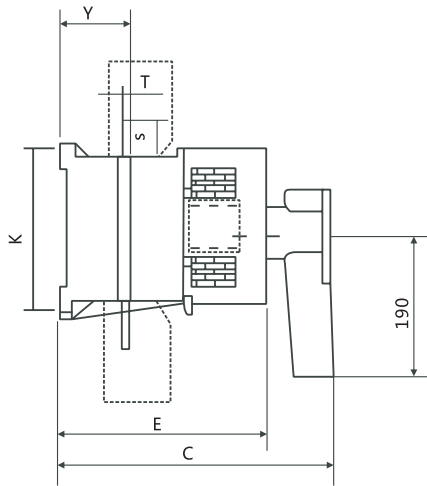
## Electric and mechanical properties of SGLR-630A/II type of fuse combination switches

Conventional thermal current I <sub>th</sub> (A)		630	
RT 16 Fuse-link dimension NT		3	
Power-dissipation of a fuse-link 660V AC(V)(W)		40.3	
Rated insulation voltage U <sub>i</sub> (V) (installation type IV)		1000	
Dielectric strength (V)		8000	
Rated impulse withstand voltage U <sub>imp</sub> KV (installed category IV)		12	
Rated Working current I <sub>e</sub> (A)	380V	Ac22 Cos φ =0.65	630
		AC23 Cos φ =0.35	630
	660V	AC22 Cos φ =0.65	500
		AC23 Cos φ =0.35	315
	220V	DC23L/R=15ms	400
	440	DC23L/R=15ms	315
Motor power(KW)		380V	355
		660V	400
Rated short-circuit limiting current(KA Rms)		380V	100
		660V	50
Rated making ability		6300	
Rated breaking ability		5000	
Mechanical durability(operation cyclic times)		5000	
Electric durability(operation cyclic times)		1000	
Operation moment		42	
Weight(kg)		3poles	16
		4poles	19

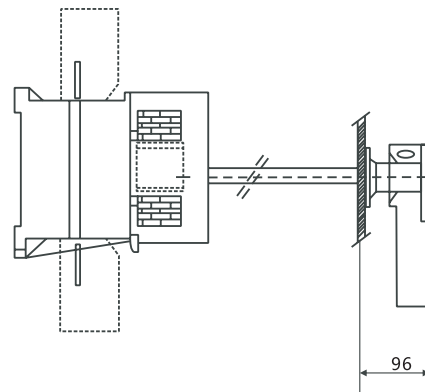
Outline and Installation dimensions of SGLR-630A/II type load fuse combination switches



door hole



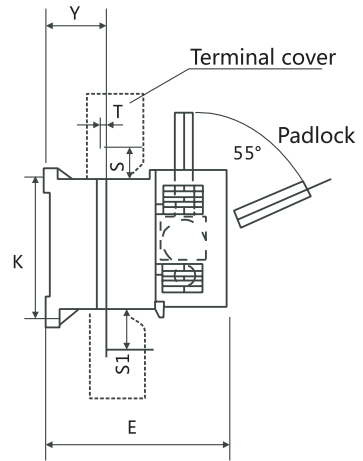
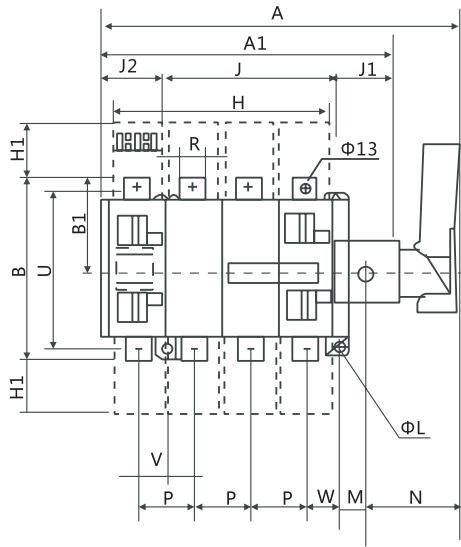
Front direct operation of SGLR-630A



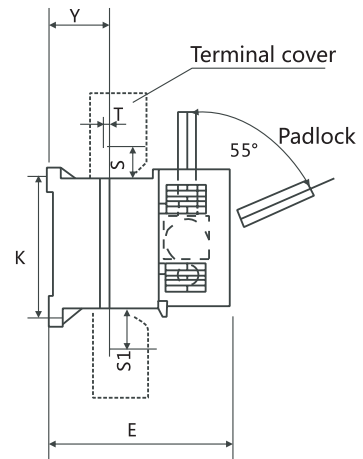
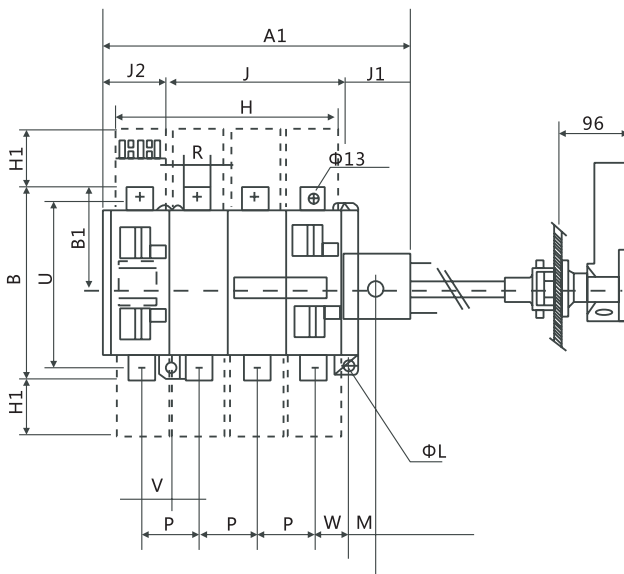
Front operation outside the board of SGLR-63A

Specification	Fuse dimension	External dimension and installation dimension																					
		A	A1	B	B	C	E	h	H1	J	J1	J2	K	m	N	p	R	S	T	U	W	ΦL	Y
630/3	3	499	345	300	150	350	268	235	85	250	76	19	248	39	191	80	50	50	7	260	44.5	9	72
630/4	3	579	425	300	150	350	268	315	85	250	76	99	248	39	191	80	50	50	7	260	44.5	9	72

Outline and Installation dimension of SGLR-630A/II type load fuse combination switches



Side direct operation of SGLR-630A



Side operation outside the board of SGLR-630A

Specification	Fuse dimension	External dimension and installation dimension																						
		A	A1	B	B	E	H	H1	J	J2	J1	K	M	N	P	R	S	S1	T	V	U	W	ΦL	Y
400/3	2	550	345	300	150	268	235	85	250	19	76	250	38.5	119	80	50	50	50	7	45.5	260	44.5	9	72
400/4	2	630	425	300	150	268	315	85	250	99	76	250	38.5	119	80	50	50	50	7	34.5	260	44.5	9	72
630/3	3	550	345	300	150	268	235	85	250	19	76	250	38.5	119	80	50	50	50	7	45.5	260	44.5	9	72
630/4	3	530	425	300	150	268	315	85	250	99	76	250	38.5	119	80	50	50	50	7	34.5	260	44.5	9	72

The following circuit-breaking functions have been put into effect in accordance with the usage

### 1. transformer output

Isolation of electrical equipment power source, General over-current protection of electrical equipment.

To be combined with a special transformer transducer or an inspection heat relay to take a special protection against transformer overload.

### 3. Inlet wiring of distribution board

The total inlet current direct depends on all the branch current inside the board.

Being able to break-off under load without the need of using a contactor switch for isolation.

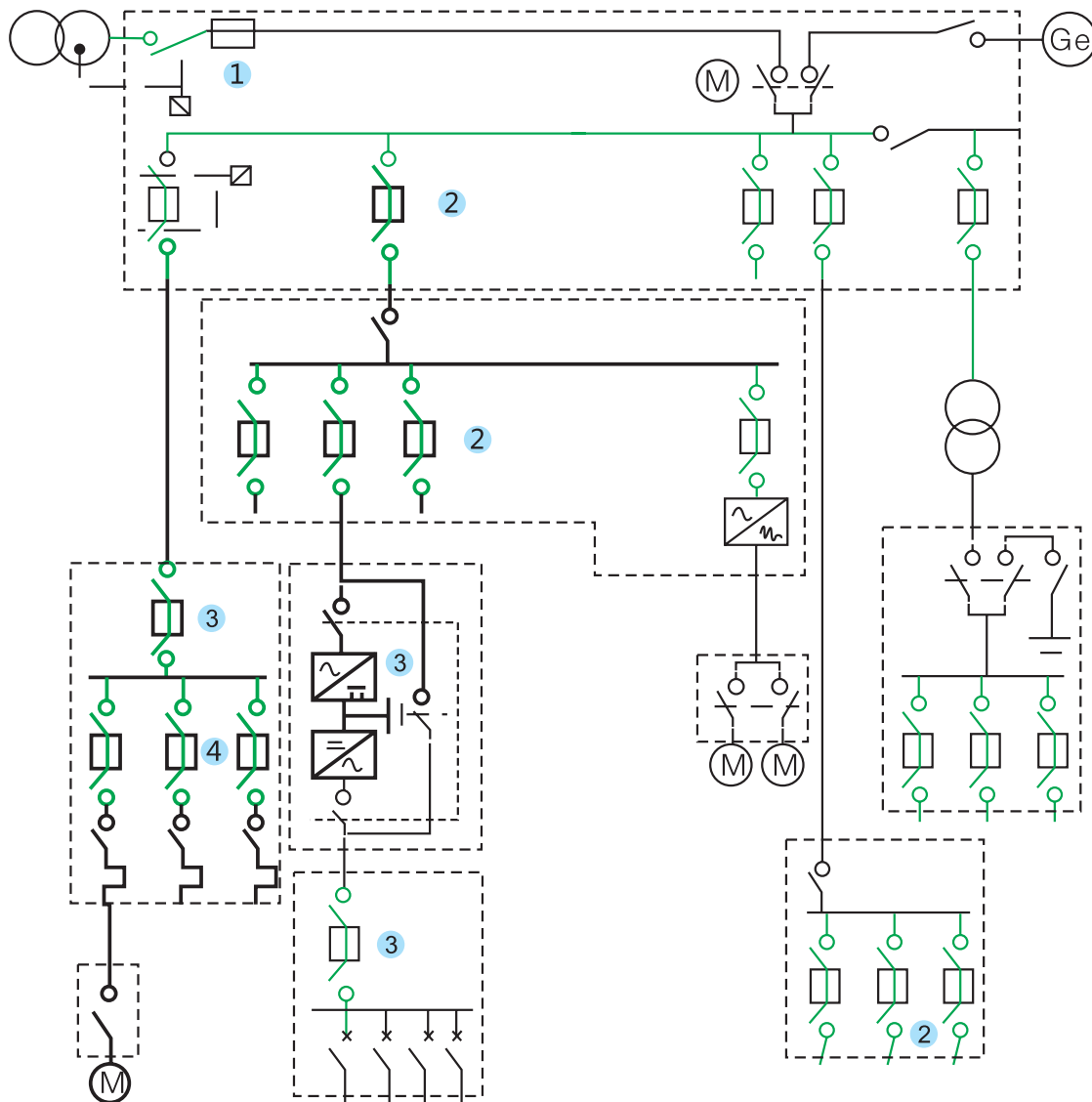
### 2. Cable

- Isolation
- Over-current protection and indirect human protection against contact injury.
- Switching or turning off the power for equipment maintenance.

### 4. motor loop

- Isolation
- To turn off the power for equipment maintenance

※General opening functions conform with the standards of IEC947 and GB/T14048





Dedicated to the photovoltaic system  
Max. tolerable DC1000V 630A  
Has passed IEC, CE, CB, TUV certification

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Keyword: DC isolator switch, has passed IEC, CE, TUV certification

## SGL-PV Photovoltaic Switch 750 V d.c. and 1000 V d.c. from 63 to 630 A

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### Function

- SGL-PV are manually operated multipolar load break switches.
- They break on and off load and provide safety isolation for any low voltage circuit of photovoltaic applications.

### General characteristics

- Patented switching technology.
- Fully visualised breaking.
- DIN rail or panel mounting.
- Up to 1000 V d.c.

### What you need to know

A solar electrical installation is an application that requires switching devices fully meet the needs of operational reliability and operational safety intervention for this type of installation.

According to IEC 60364 (Part 7-7-12), the characteristics must withstand overcurrents up to 1.25 times the rated shortcircuit current (Isc, Stc) modules.

To date, due to the absence of standard switchgear for PV installation, the manufacturer can only refer to IEC 60-947 and expressed his job categories depending on the type of loads and overloads of normal.

The load duty category DC21 defined withstand the device up to 1.5 times rated current of the installation with a time constant L/R 1ms, which is well above the requirements of IEC 60364-7-712 and the PV need on the basis of these criteria.

Against, the manufacturer has the responsibility to propose, according his expertise, devices whose performance respond to the specific needs identified and not necessarily standardized, because of the recent emergence of these applications.

### Available on request

- Other rating consult us.
- Enclosed devices : consult us.

### Available on request

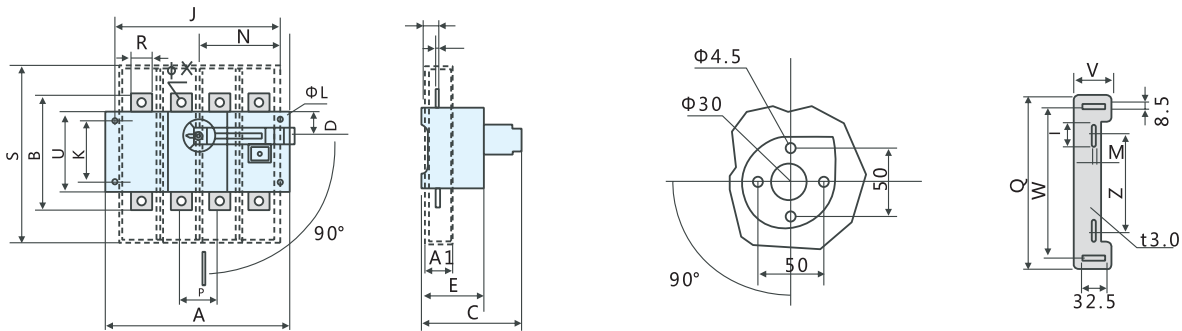
- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- IEC 60364-4-410 (They provide safety disconnection and protection against overcurrents)
- IEC 60364-7-712 (Buildings electrical installations - Part 7-712: rules for special locations - Solar photovoltaic power supplies (PV))

Front operation

References

Voltage (V d.c.)	Rating (A)	No. of poles	mechanical durability	electric durability	Direct handle	Auxiliary contacts
750 V d.c.	63 A	3 P	10000 times	3000 times	Black, Red	NO, NC, NO+NC,
	100 A					
	125 A					
	160 A					
	200 A					
	250 A					
	315 A					
	400 A					
	500 A					
1000 V d.c.	63 A	4 P	10000 times	3000 times	Black, Red	NO, NC, NO+NC,
	100 A					
	125 A					
	160 A					
	200 A					
	250 A					
	315 A					
	400 A					
	500 A					
	630 A					

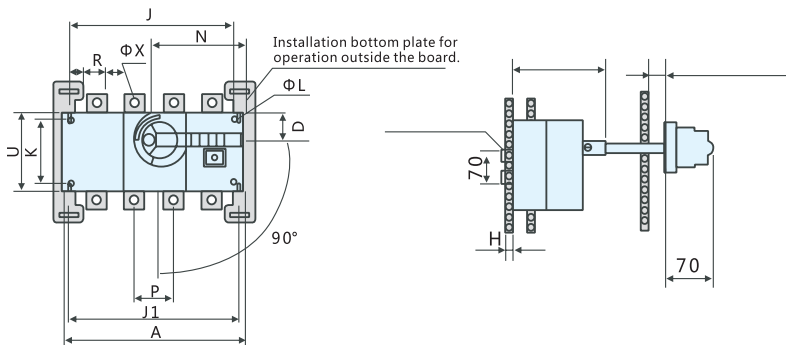
External dimension and installation dimension of SGL-PV 160~630A load isolation switch



Direct Operation of SGL-PV-160A~630A

Installation size of handle seat outside board.

Installation bottom plate for operation outside the board.

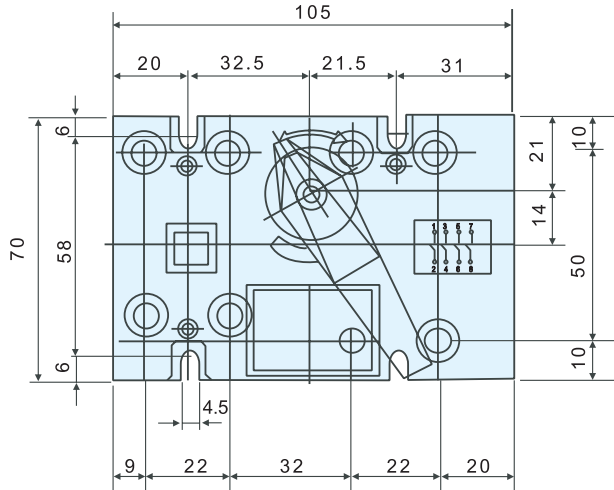


Direct Operation of SGL-PV-160A~630A/JK

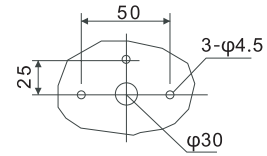
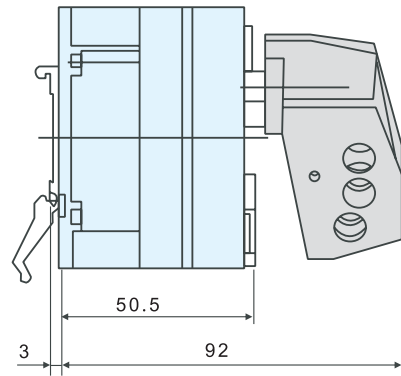
Specification	Dimension of bottom board					
	I	M	Z	W	Q	V
125~630A						
125A	55	5.5	85	190	218	54
160A	55	5.5	85	190	218	54
200A	55	5.5	85	190	218	54
250A	55	5.5	85	190	218	54
315A	60	6.5	130	240	270	55
400A	60	6.5	130	240	270	55
500A	60	6.5	130	240	270	55
630A	60	6.5	130	240	270	55

※Check page 45 for the Detailed dimensions

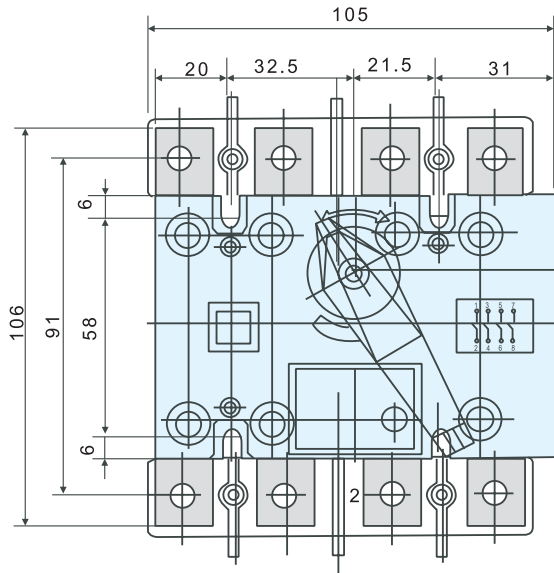
SGL-PV-63A~100A load isolation swtch side operation load isolation switch



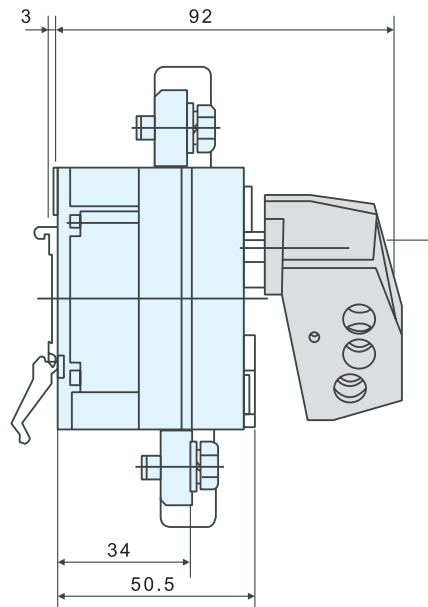
Direct operation of SGL-PV-63A



Installation Size of handle seat outside board.



Direct operation of SGL-PV-100A







Real-time monitoring  
Functions of early warning, alarm and control  
Internal and external dual-CAN communication  
Fire-control linkage

---

## SL-380 series alarm and control system for electric fire prevention

### System overview

This new type alarm and control system for electric fire prevention adopts international advanced technologies, is mainly composed of graphic software for electric fire prevention, SL-380H alarm and control units for electric fire prevention, SL-380 series residual current detector for electric fire prevention and temperature sensor.

The system prevents electric fire through monitoring and controlling such parameters as residual current, over-current, temperature rise and so on to the power distribution circuits and electric equipment.

This alarm and control system for electric fire prevention adopts embedded computing technique, residual current detection technique and temperature detection technique, and employs field bus communication mode, has advantages of simple structure, convenient installation, high reliability, wide scope of application, etc., all technical indexes meet and even overmatch the requirements of the national standard GB14287-2005. This system can be widely used in residential areas, buildings, hospitals, libraries, machine rooms, marketplaces, entertainment venues, hotels, dormitories, schools, culture relic protection sites, workshops, free warehouse and so on for electric fire prevention.

### Design application

- **Alarm and control units for electric fire prevention (monitoring center equipment)**

It meets the national standard GB14287.1-2005 Alarm and control system for electric fire prevention - Part 1: Alarm and control units for electric fire prevention; model: SL-380H, capacity: 512 units, it monitors and controls each SL-380 series monitor unit through CHA bus.

- **Detector for electric fire prevention (field monitoring detector)**

It meets the national standard GB14287.2-2005 Alarm and control system for electric fire prevention - Part 2: Leakage current detectors for electric fire prevention, or Part 3: Heat detectors for electric fire prevention.

Model: the detector SL-380 is of stand alone type, can be used alone, or used under the control and management of the host machine SL-380H through CAN bus.

Installation: A. installed inside the power distribution box (cabinet); installed outside the power distribution box (cabinet); C. complete set type of power distribution box (cabinet).

- **Detectors SLS, SLG and SLT are specially designed for the SL-380S monitor unit.**

Model selection: residual current detector (select suitable residual current detector according to the total sectional area of loaded cables).

Over-current detector (select suitable over-current detector according to the load circuit current and conductor's sectional area);

Temperature sensor (monitoring range covers the temperature of key part of power distribution unit including wires and cables).

- **Communication transmission line**

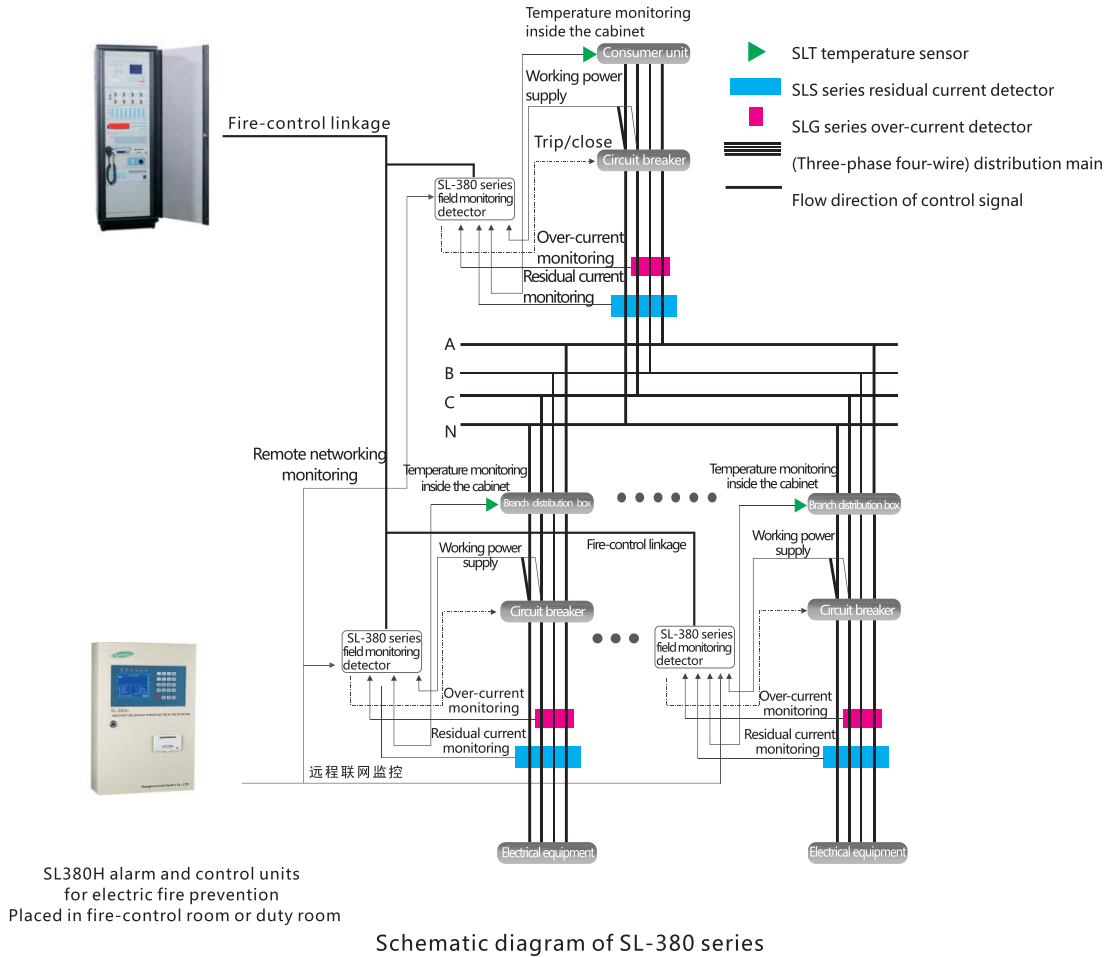
Transmission medium: use twisted pair if the communication distance is less than 500m, shielded twisted pair or optical fiber is recommended; lay out according to the requirements of fire control management.

Auxiliary materials: short-circuit isolator (should be highly placed) of bus, repeater, branch device, field configurable for other details.

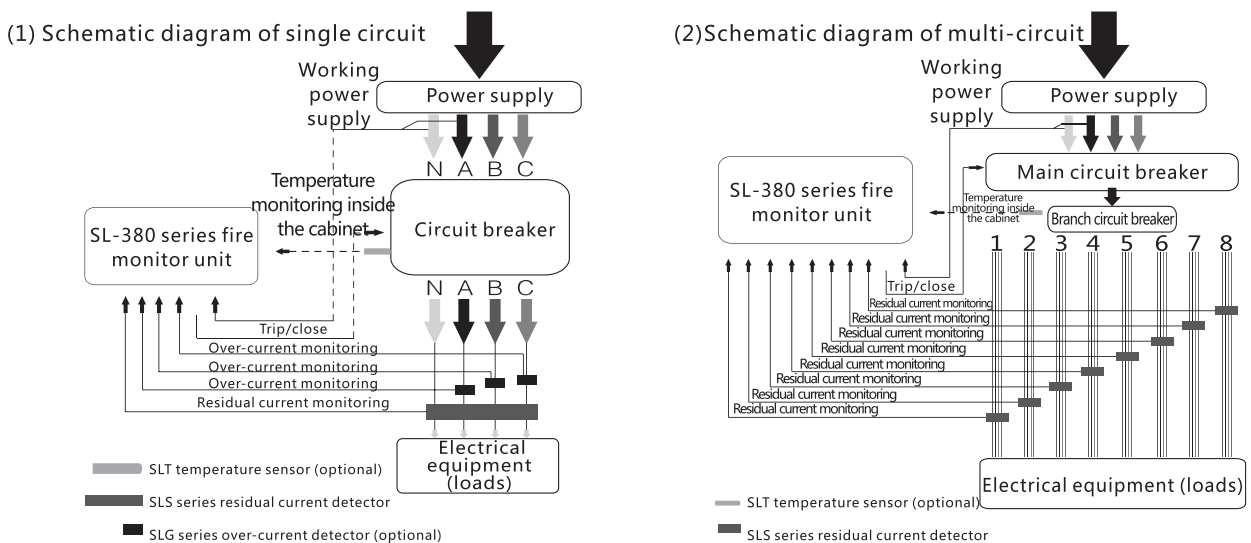
### Ambient conditions

- The products shall be installed indoors, where is free of stive or conductive dust, no corrosive or flammable/ explosive gas, far away from rain or snow attack;
- Altitude  $\leq 2000\text{m}$  (derated if the altitude  $> 2000\text{m}$ , that is to reduce the rated current);
- Ambient temperature  $-10^{\circ}\text{C} \sim +10^{\circ}\text{C}$ , daily mean max temperature  $\leq +35^{\circ}\text{C}$ ; relative temperature  $\leq 50^{\circ}\text{C}$  (ambient temperature  $+40^{\circ}\text{C}$ );
- External magnetic field interference of the installation site, magnetic field intensity should not exceed 5 times as much as earth magnetic field in any direction; no strong magnetic field interference near the remote communication line;
- No strong direct sunshine in the installation site, i.e. keep away from strong sunshine, otherwise, the liquid crystal display may be damaged;
- The products shall be installed in draughty environment with good heat dissipation.

Schematic diagram of SL-380 series



Connection diagram of SL-380S series and probe



Keyword: LCD display in english, Real-time display of remote measured parameters

## SL-380H series alarm and control units for electric fire prevention

### General

It enjoys high-performance 32R15C microcontroller and embedded software based on APM7TDM1, controls each monitoring detector (this monitoring unit can be installed in duty room or fire control room) through CAN field bus.



### Functions and features

- LCD display in english
- Real-time display of remote measured parameters
- Functions of early warning, alarm and control
- Field manual setting and remote setting of equipment parameters
- Internal and external dual-CAN communication
- Audible and visual alarm
- RS232 field maintenance interface
- Functions of event log storage, query and printing
- Classification of user operation
- Dual-power automatic transfer switching equipment

### Model description

S L-380 H 1 / □  
 ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤

①	Enterprise code
②	Fire monitoring
③	Host machine
④	Style (installation mode): 1- wall mounted type; 2- vertical type
⑤	Monitor unit

### Main technical parameters

Working power supply	AC22/50Hz	Store record	≥ 20,000 pieces
Monitoring capacity	512 units	Printer	Micro dot printer or thermal printer
Communication mode	CAN field bus	Dimension of H1 type equipment	L400mm×W130mm×H5500mm
Communication medium	Twisted pair, shielded twisted pair or optical fiber	Executive standard	GB1427.1-2005
Communication distance	≤ 10km	Dimension of H2 type equipment	L450mm×W5500mm×H1500mm

Keyword: Overload and short-circuit protection, temperature detection, residual current detection

## SL-380I series residual current detector for electric fire prevention

### Main functions

- Function of three-phase current monitoring
- Function of residual current detection
- Function of temperature detection
- Functions of overload/short-circuit protection
- Functions of early warning, alarm, tripping



- Real-time monitoring

SL-380I residual current detector for electric fire prevention realizes real-time monitoring and display of three-phase current, residual current, wire/cable temperature and other running parameters of the controlled circuit.

- Alarm protection function

SL-380I residual current detector for electric fire prevention realizes detection of three-phase current, residual current, wire/cable temperature of the controlled circuit, gives audible and visual signal alarm once there is off-limit, and cut off the power supply circuit in time (also can be set not cut off) to ensure safety utilization of electric power.

- Function of early warning

SL-380I residual current detector for electric fire prevention has early warning function, when the three-phase current, residual current and wire/cable temperature of the controlled circuit reach the preset prewarning value, it will send out prewarning visual signal only, to remind the operator to handle the trouble in time, to avoid unexpected tripping or failure.

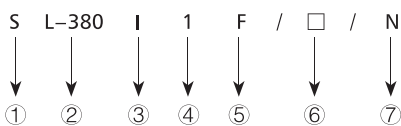
- Communication function

SL-380I residual current detector for electric fire prevention has been equipped with CAN bus communication interface, network communication with the host machine of monitoring equipment is available through the CAN bus, to realize remote management, maintenance and control.

- Fire-control linkage function

It can be linked with the host machine in fire control center to realize remote cutting off power supply of loads, and send feedback signal to the fire control center to give an alarm.

### Model description

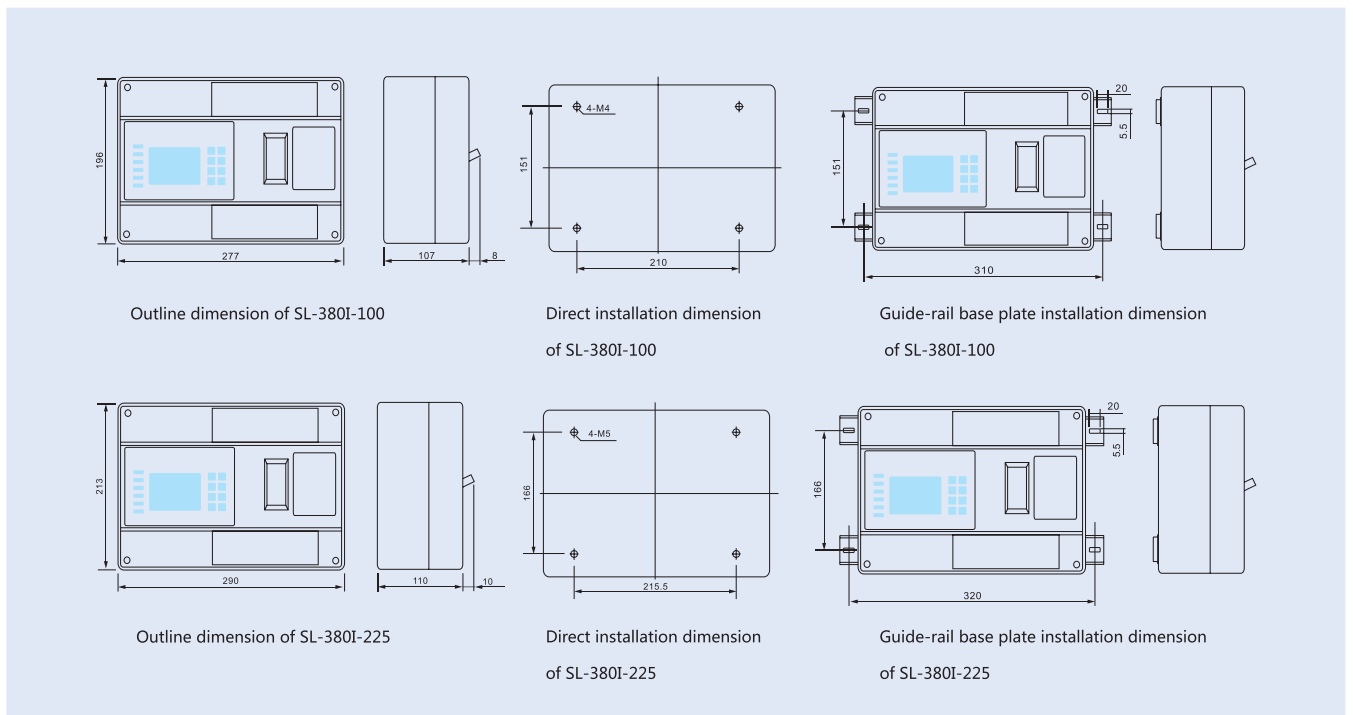


①	Enterprise code
②	Fire monitoring
③	Integrated type
④	Specification: 1: 100 type; 2: 225 type
⑤	Branch leakage is available, can be omitted if need not the branch leakage
⑥	Function: G – over-current; A – leakage; T – temperature; K – trip; function code can be combined at will
⑦	Communication mode: N: networking type; stand alone type can be omitted;

Main technical parameters

Model	SL-380
Rated operating current In(A)	16A~225A
Rated operating voltage Ue(V)	AC380V/220V
Early warning and alarm value of residual current	20mA-1000mA set at will
Early warning and alarm value of three-phase current	20A-1000A set at will
Early warning and alarm value of temperature	20°C ~150°C set at will
Leakage circuit number	4 branch circuits available
Temperature circuit number	1~4 circuits
Alarm protection	It can be set with or without this protection
Protection action	≤0.5s
Alarm output	Capacity of dry contact AC220V/5A
Tripping output	Capacity of dry contact AC220V/5A
Display mode	LCD display in english
Fire-control linkage	DC24V
Communication mode	CAN bus ( ≤ 10kM)
Alarm sound	≥70dB
Ambient temperature	-20°C~+40°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005 GB14287.3-2005

Outline and installation dimensions



## SL-380S series residual current monitor unit for electric fire prevention

### General

SL-380S series residual current monitor unit for electric fire prevention integrates many functions such as detection of over-current, residual current and temperature, as well as early warning, alarm, fire-control linkage and communication, it is applicable for electric circuits of three-phase four-wire system of 380V and single-phase system of 220V, is a new type fire prevention apparatus with intelligent analysis function. If there is something wrong with the power supply equipment, the monitor unit will give an alarm to remind the operator to inspect the equipment, to avoid any possible electric danger or accident.

SL-380S series residual current monitor unit for electric fire prevention can be widely used in residential areas, buildings, hospitals, libraries, machine rooms, marketplaces, entertainment venues, hotels, dormitories, schools, culture relic protection sites, workshops, free warehouse, etc, but is not suitable for flammable, combustible, or severe corrosive environment. It can be used in network or be used alone.

### Model description

S L-380 S A / □ / □ / N  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦

①	Enterprise code
②	Fire monitoring
③	Separated type
④	Style A: inside-cabinet LCD display; B: inside-cabinet nixie tube display; C: embedded LCD display; D: embedded nixie tube display; E: economical type; F: combined type
⑤	Function: G – over-current; A – leakage; T – temperature; K – trip; function code can be combined at will
⑥	Monitoring circuit number
⑦	Communication mode: N: networking type; stand alone type can be omitted;

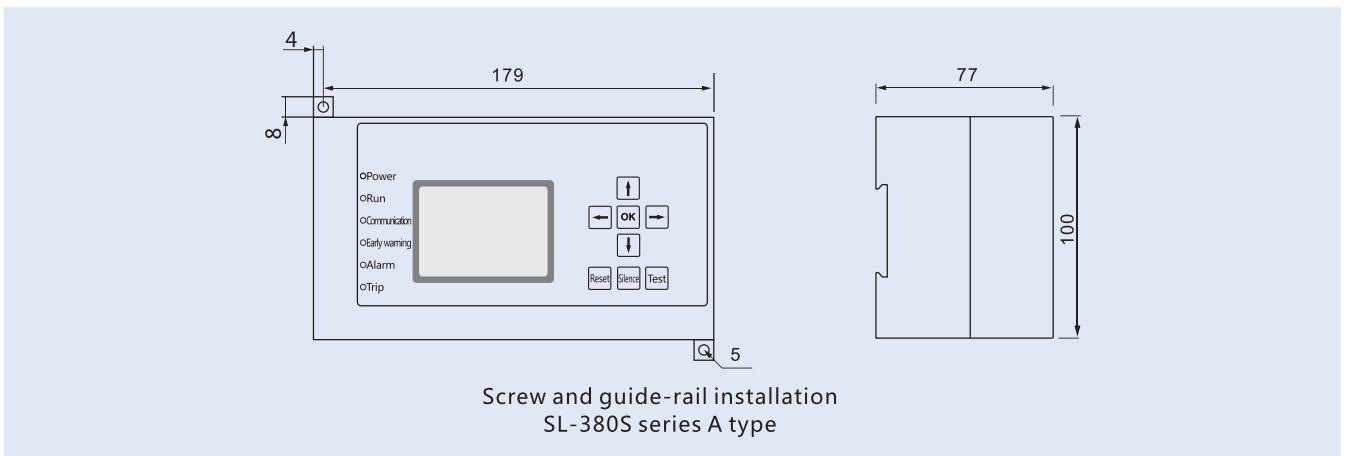
Keyword: Function; over-current; leakage; temperature; trip,alarm log query

### SL-380S series monitor unit of type A

- Function of three-phase current monitoring
  - Function of residual current monitoring
  - Function of temperature monitoring
  - Functions of early warning、alarm、tripping
  - CAN bus communication function
  - Fire-control linkage function
  - Function of LCD display in english
  - Function of alarm log query
- Note: this unit should be used with the detector



### Outline and installation dimensions



### Main technical parameters

Model	SL-380S series A type
Rated operating current $I_n$ (A)	16A~1600A
Rated operating voltage $U_e$ (V)	AC220V
Early warning and alarm value of residual current	20mA-1000mA set at will
Early warning and alarm value of three-phase current	20A-1000A set at will
Early warning and alarm value of temperature	20°C ~150°C set at will
Leakage circuit number	1~16 circuits
Temperature circuit number	1~4 circuits
Alarm protection	It can be set with or without this protection
Protection action	≤0.5s
Alarm output	Capacity of dry contact AC220V/5A
Tripping output	Capacity of dry contact AC220V/5A
Tripping channel	1~16 channels
Installation mode	Guide rail or base plate screw
Display mode	LCD display in English
Fire-control linkage	DC24V
Communication mode	CAN bus (≤ 10Km)
Alarm sound	≥ 70dB
Ambient temperature	-20°C~+40°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005 GB14287.3-2005



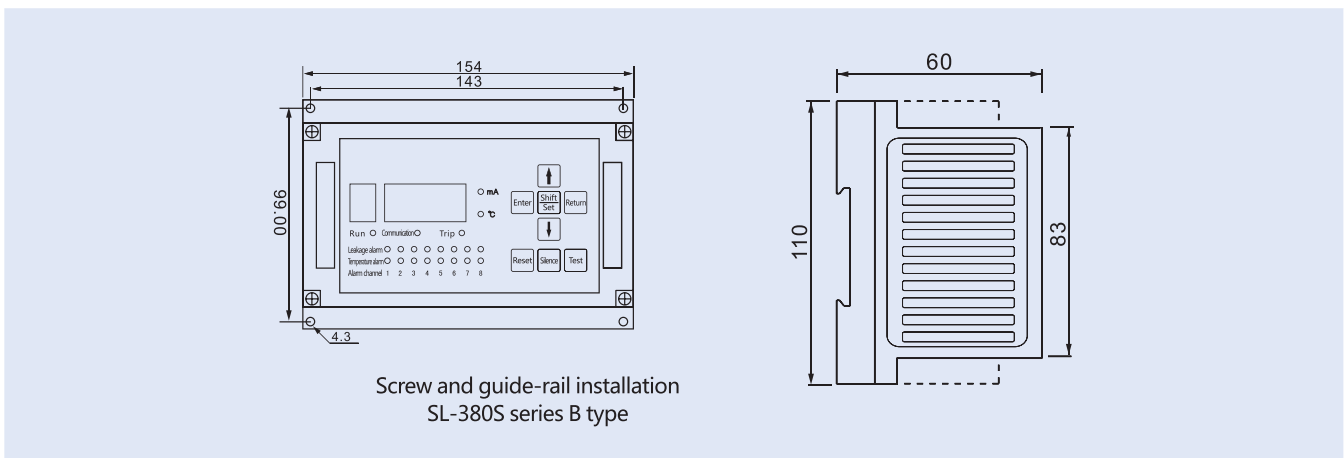
Keyword: Early warning and alarm of residual current, Alarm protection

SL-380S series monitor unit of type B

- Function of residual current detection
  - Function of temperature monitoring
  - Functions of early warning, alarm, tripping
  - CAN bus communication function
  - Fire-control linkage function
  - Digital display function
- Note: this unit should be used with the detector



Outline and installation dimensions



Main technical parameters

Model	SL-380S series B type
Rated operating current In(A)	16A~1600A
Rated operating voltage Ue(V)	AC220V
Early warning and alarm value of residual current	20mA-1000mA set at will
Early warning and alarm value of three-phase current	Null
Early warning and alarm value of temperature	20°C ~150°C set at will
Leakage circuit number	1~8 circuits
Temperature circuit number	1~4 circuits
Alarm protection	It can be set with or without this protection
Protection action	≤ 0.5s
Alarm output	Capacity of dry contact AC220V/5A
Tripping output	Capacity of dry contact AC220V/5A
Tripping channel	1~8 channels
Installation mode	Guide rail or base plate screw
Display mode	Digital display
Fire-control linkage	DC24V
Communication mode	CAN bus (≤ 10Km)
Alarm sound	≥ 70dB
Ambient temperature	-20°C ~ +4 0°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005 GB14287.3-2005

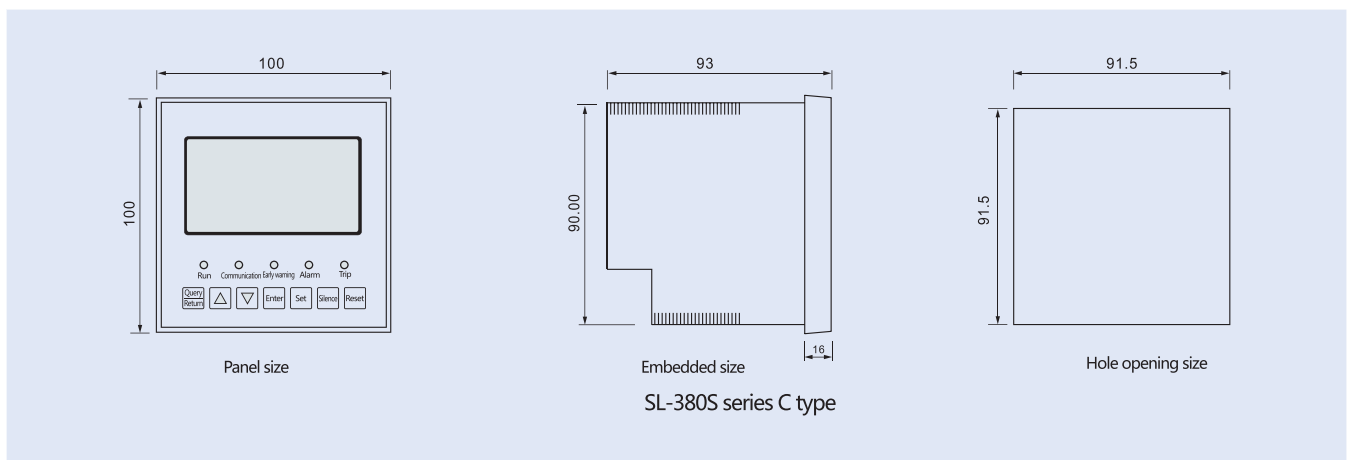
Keyword: Fire-control linkage, Alarm output , Tripping output

SL-380S series monitor unit of type C

- Function of residual current detection
  - Function of temperature monitoring
  - Functions of early warning、alarm、tripping
  - CAN bus communication function
  - Fire-control linkage function
  - Function of LCD display in english
  - Function of alarm log query
- Note: this unit should be used with the detector



Outline and installation dimensions



Main technical parameters

Model	SL-380S series C type
Rated operating current In(A)	16A~1600A
Rated operating voltage Ue(V)	AC220V
Early warning and alarm value of residual current	20mA-1000mA set at will
Early warning and alarm value of three-phase current	Null
Early warning and alarm value of temperature	20°C ~150°C set at will
Leakage circuit number	1~8 circuits
Temperature circuit number	1~4 circuits
Alarm protection	It can be set with or without this protection
Protection action	≤ 0.5s
Alarm output	Capacity of dry contact AC220V/3A
Tripping output	Capacity of dry contact AC220V/3A
Tripping channel	1~8 channels
Installation mode	Embedded type (panel installation)
Display mode	LCD display in English
Fire-control linkage	DC24V
Communication mode	CAN bus (≤ 10Km)
Alarm sound	≥ 70dB
Ambient temperature	-20°C ~+4 0°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005 GB14287.3-2005

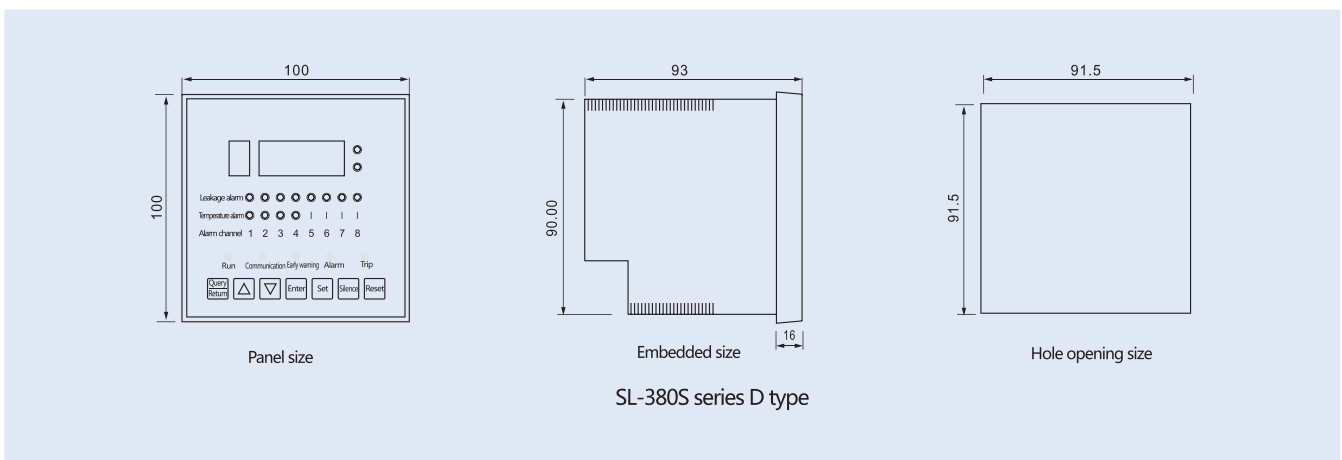
Keyword: It can be set with or without this protection

SL-380S series monitor unit of type D

- Function of residual current detection
  - Function of temperature monitoring
  - Functions of early warning, alarm, tripping
  - CAN bus communication function
  - Fire-control linkage function
  - Digital display function
- Note: this unit should be used with the detector



Outline and installation dimensions



Main technical parameters

Model	SL-380S series D type
Rated operating current In(A)	16A~1600A
Rated operating voltage Ue(V)	AC220V
Early warning and alarm value of residual current	20mA-1000mA set at will
Early warning and alarm value of three-phase current	Null
Early warning and alarm value of temperature	20°C ~150°C set at will
Leakage circuit number	1~8 circuits
Temperature circuit number	1~4 circuits
Alarm protection	It can be set with or without this protection
Protection action	≤ 0.5s
Alarm output	Capacity of dry contact AC220V/3A
Tripping output	Capacity of dry contact AC220V/3A
Tripping channel	1~8 channels
Installation mode	Embedded type (panel installation)
Display mode	Digital display
Fire-control linkage	DC24V
Communication mode	CAN bus (≤ 10Km)
Alarm sound	≥ 70dB
Ambient temperature	-20°C ~ +4 0°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005 GB14287.3-2005

Keyword:Residual current detection, early warning、 alarm、 tripping

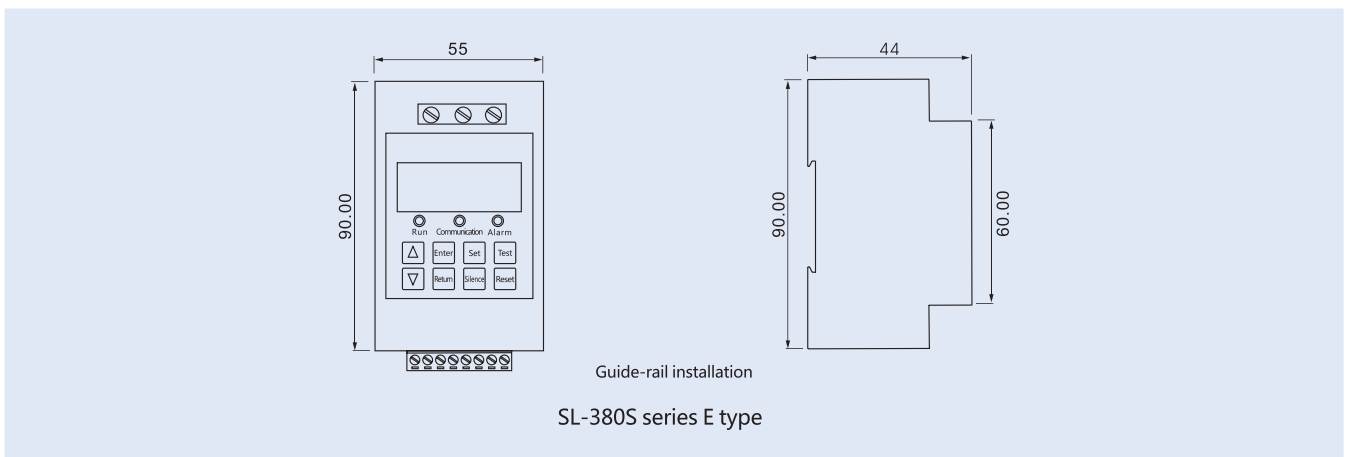
### SL-380S series monitor unit of type E

- Function of residual current detection
- Functions of early warning、 alarm、 tripping
- CAN bus communication function

Note: this unit should be used with the detector



### Outline and installation dimensions



### Main technical parameters

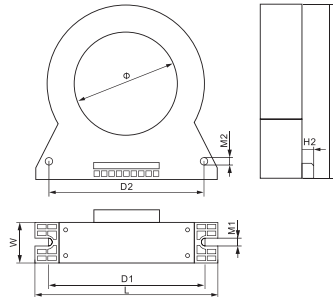
Model	SL-380S series E type
Rated operating current $I_n$ (A)	16A~1600A
Rated operating voltage $U_e$ (V)	AC220V
Early warning and alarm value of residual current	20mA-1000mA
Early warning and alarm value of three-phase current	Null
Early warning and alarm value of temperature	Null
Leakage circuit number	1 circuit
Temperature circuit number	Null
Alarm protection	It can be set with or without this protection
Protection action	$\leq 0.5s$
Alarm output	Capacity of dry contact AC220V/3A
Tripping output	Capacity of dry contact AC220V/3A
Tripping channel	1 channel
Installation mode	Guide-rail installation
Display mode	Digital display
Fire-control linkage	DC24V
Communication mode	CAN bus ( $\leq 10Km$ )
Alarm sound	$\geq 70dB$
Ambient temperature	$-20^{\circ}C \sim +40^{\circ}C$
Altitude	Not exceed 3000m
Executive standard	GB14287.3-2005

Keyword: Light weight, fully closed, high insulation

## SL-380S series F type combined monitoring detector

- Function of residual current detection
- Functions of early warning、alarm、tripping
- CAN bus communication function

Note: this unit can be used alone without additional detector



### Outline dimension

Specification	Main circuit current	Window Φ	Outline dimension					Fixed dimension		
			L	H	W	H2	D1	M1	D2	M2
SL-380SF/65	0-250A	65	129	120	32	9	114	5	-	-
SL-380SF/80	0-400A	80	140	135	32	9	120	6	118	6
SL-380SF/100	0-630A	100	144	159	32	9	120	6	119	5
SL-380SF/120	0-1000A	120	164	179	32	9	140	6	126.5	6

### Main technical parameters

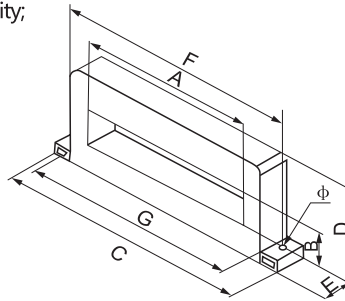
Model	SL-380S series F type
Rated operating current In(A)	16A~1600A
Rated operating voltage Ue(V)	AC220V/DC12V
Early warning and alarm value of residual current	20mA-1000mA factory setting
Early warning and alarm value of three-phase current	Null
Early warning and alarm value of temperature	Null
Leakage circuit number	1 circuit
Temperature circuit number	Null
Alarm protection	Factory setting
Protection action	≤ 0.5s
Alarm output	Capacity of dry contact AC220V/3A
Tripping output	Capacity of dry contact AC220V/3A
Tripping channel	1 channel
Installation mode	Base plate screw
Display mode	Light display
Fire-control linkage	Null
Communication mode	CAN bus ( ≤ 10Km)
Alarm sound	≥ 70dB
Ambient temperature	-20°C ~ +40°C
Altitude	Not exceed 3000m
Executive standard	GB14287.2-2005

Keyword: Elegant appearance, compact volume, convenient installation

SLS-F bus type residual current detector

Functions and features:

- High linearity, high inductive sensitivity, high overload resistibility;
- Test range 0-1000mA/2.5mA;
- Rated frequency 50Hz-60Hz;
- The shell is made of flame retardant ABS;
- Elegant appearance, compact volume, convenient installation;
- Current error  $\leq 5\%$ ;
- Light weight, fully closed, high insulation;
- Withstand voltage 3000V/min.

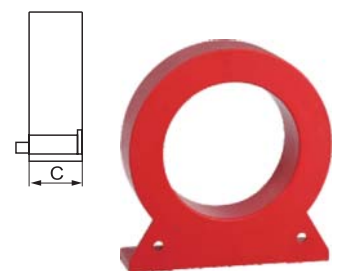
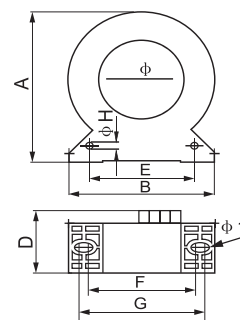


Model	Range of phase current	Dimension (mm)							
		A	B	C	D	E	F	G	Φ
SLS-F1020	0-100A	100	20	157	50	16	147	133	5
SLS-F1025	0-160A	100	25	162	60	24	187	132	5
SLS-F1432	0-225A	140	32	202	72	24	187	172	5
SLS-F1832	0-250A	180	32	242	72	24	227	212	6
SLS-F2245	0-400A	220	45	282	85	24	267	252	6
SLS-F2645	0-630A	260	45	322	85	24	307	292	6
SLS-F3045	0-1600A	300	45	363	85	24	347	332	6

SLS-Y cable type residual current detector

Functions and features:

- High linearity, high inductive sensitivity, and strong overload resistibility;
- Test range 0-1000mA/2.5mA;
- Rated frequency 50Hz-60Hz;
- The shell is made of flame retardant ABS;
- Elegant appearance, compact volume, convenient installation;
- Current error  $\leq 5\%$ ;
- Light weight, fully closed, high insulation;
- Withstand voltage 3000V/min.



Model	Range of phase current	Dimension (mm)									
		Φ	A	B	C	D	E	F	G	H	I
SLS-Y25	0-40A	25	55	50	24	30	36	38	42	4	4
SLS-Y45	40-160A	45	85	77	24	30	55	56	66	4	4
SLS-Y65	160-250A	65	106	98	24	30	70	72	81	5	5
SLS-Y80	250-400A	80	120	112	28	35	80	80	90	5	5
SLS-Y100	400A-630A	100	140	132	28	35	100	110	120	5	5
SLS-Y150	630-1000A	150	188	180	28	35	150	165	175	6	6

Keyword: Waterproof and dampproof, small volume, Technical multi-networking, SLT temperature sensor can be used in parallel

### SLT temperature sensor

Functions and features:

- Digital single port (1-wire) temperature measurement technology;
- Waterproof and dampproof, small volume;
- Technical multi-networking, SLT temperature sensor can be used in parallel;
- Various encapsulation modes that satisfy all kinds of installation needs;
- Direct cable outgoing that is convenient for connection with other devices.



Model	Range of phase current	Dimension (mm)							
		$\phi$	A	B	C	D	E	F	G
SLG10-3	0-100A	10	100	92	28	38	5	30	8
SLG20-3	0-250A	20	115	108	30	40	2	33	5
SLG30-3	0-630A	30	200	187	36	75	5	56	8

### SLG series over-current detector

SLG over-current sensor is a new type high-precision current transformer, is used with SL-380S monitor unit.

Functions and features:

- Adoption of magnetic elements of high initial permeability, with high sensitivity and high accuracy;
- Higher saturation induction, and strong overload resistibility;
- Small volume, various installation modes;
- Light weight, fully closed, high insulation.

