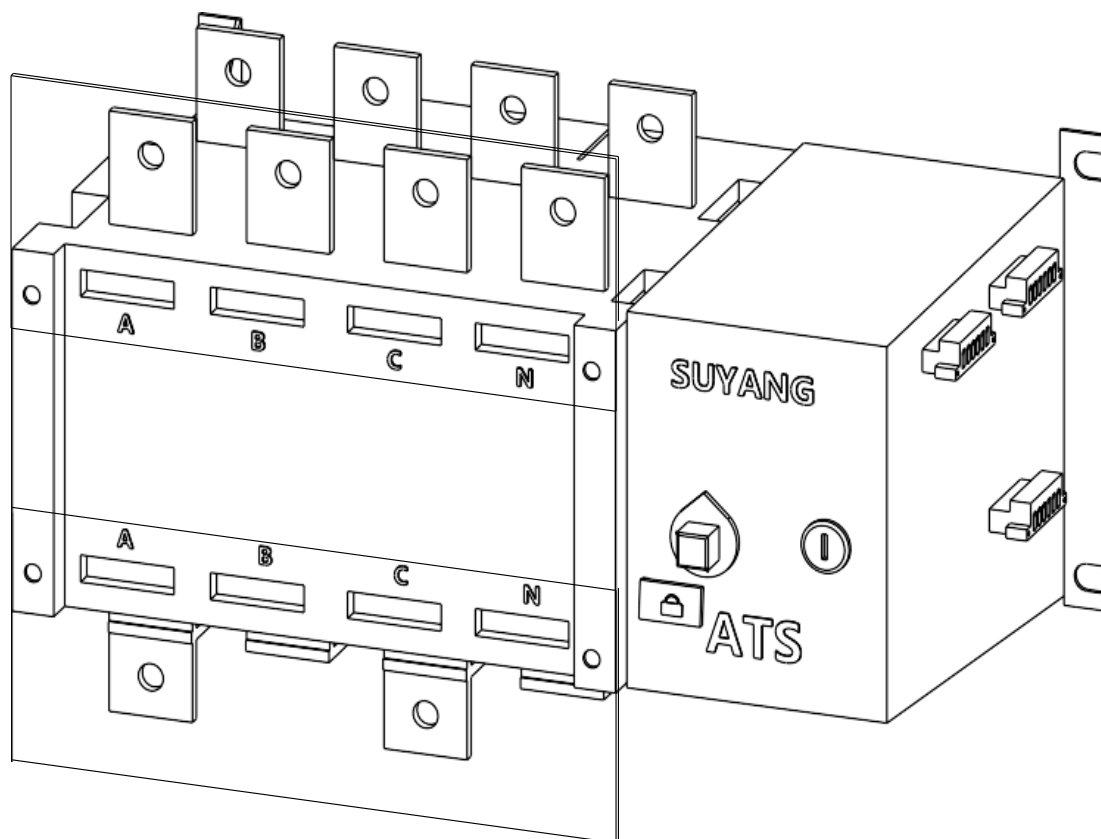




OWNERS AND OPERATIONAL MANUAL

1. OVERVIEW

1.1 The General

Suitable for AC voltages up to 660 V and a rated frequency of 50 Hz. As long as the operating conditions remain within the switch's technical specifications, it will function safely and reliably across all corresponding voltage levels.

1.2 Service Conditions

Ambient Air Temperature

- Maximum ambient temperature: $\leq +60^{\circ}\text{C}$
- Minimum ambient temperature: $\geq -20^{\circ}\text{C}$
- Maximum average ambient temperature: $\leq +60^{\circ}\text{C}$
- If the ambient temperature is above $+60^{\circ}\text{C}$ or below -20°C , the user must consult the manufacturer.
- For ambient temperatures above $+60^{\circ}\text{C}$ and up to $+80^{\circ}\text{C}$, a 20% derating should be applied.

Atmospheric Conditions

- At a maximum ambient temperature of $+60^{\circ}\text{C}$, the relative humidity should be $\leq 50\%$.
- In humid coastal environments, performance may be affected when the maximum monthly relative humidity reaches 90%.

Installation Altitude

- Standard installation altitude: $\leq 2000\text{ m}$.
- For installations above 2000 m, consult the manufacturer due to reduced electrical strength and cooling efficiency at higher elevations.

Pollution Level

- Pollution degree: Class 3.

Installation Category

- Installation category: Class IV.

Installation Tilt

- ATSE must be installed as a fixed rack-mounted device.
- Maximum allowable tilt: $\leq \pm 22.5^{\circ}$.

Utilization Category

- Utilization category: AC-33iB.

1.3 Product Features

- Excellent installation performance and stability.
- Equipped with double-row composite contacts, a horizontal pull-out mechanism, micro-motor energy storage, and microelectronic control technology, achieving near-zero arcing during operation.
- Utilizes reliable mechanical and electrical interlocking to ensure a high level of safety.
- Features a "zero-position" technology that allows both power sources to be forced to the zero (off) position simultaneously in an emergency.
- Provides clear ON/OFF position indicators, padlocking capability, and other safety functions. Ensures reliable isolation between power sources and the load, offering high reliability and a service life exceeding 10,000 operations.
- Excellent electromagnetic compatibility with strong anti-interference performance, ensuring stable operation without disturbances.
- High level of automation.
- The switch includes multiple input/output interfaces, making it easy to integrate with remote PLC systems and automation setups. It can operate independently without requiring any external controller.
- Attractive design with compact size and light weight. The logic control board manages the internal motor using optimized logic to ensure the switch remains securely in the correct position.

1.4 Features

The ATSE series, as a dual-power automatic transfer switch, is primarily used for first-class and second-class loads (loads that require backup power) as defined by national regulations. It is suitable for applications such as high-rise buildings, telecommunications, mining, marine vessels, industrial production lines, healthcare facilities, military installations, and other critical systems.

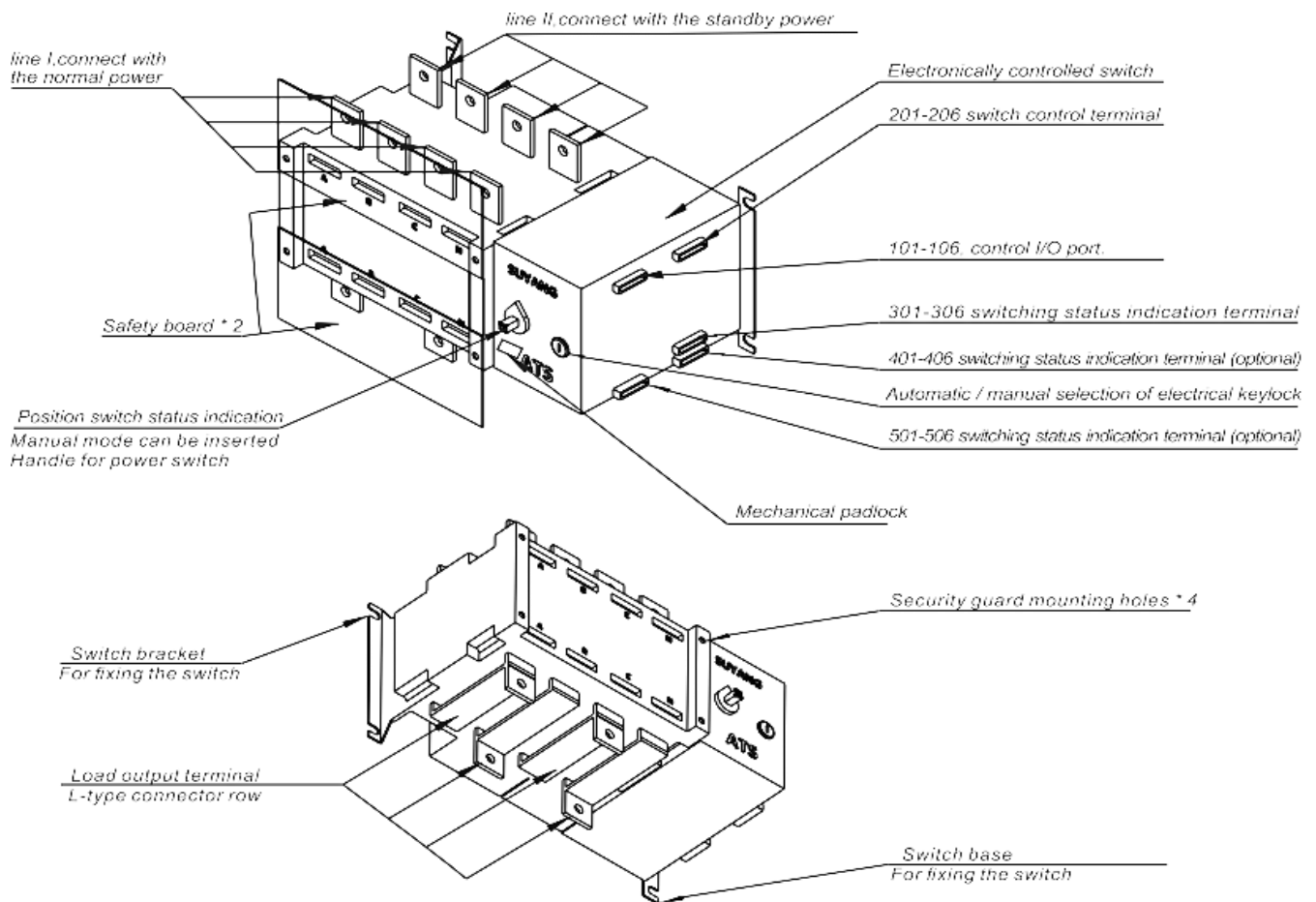
The main and standby power sources may include the utility grid, generators, batteries, or other user-specified options. The transfer time of the main switch body is not more than 18 ms, and users may request a custom delay if required.

When both the main and standby power sources are available, the main power source is given priority.

2. THE MAIN TECHNICAL PARAMETERS

Rated thermal current		80 A	100 A	125 A	160 A	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
Rated insulation voltage		750V					1000V								
The rated impulse withstand voltage		8KV					12KV								
The rated working current	AC33 B	80	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3200
Rated making ability		10Ie													
The rated breaking capacity		8Ie													
Rated conditional short-circuit current		100KA				70KA		100KA				80KA			
Rated short-time withstand current		7KA		9KA		13KA		50KA				55KA			
Conversion time		≤0.45s		≤0.45s		≤0.6s		≤1.2s				≤1.4s			
		≤3S (YC type)		≤3.5S (YC type)											
The supply voltage		Standard:AC220v, customizable AC110V, AC 380V, DC12 DC24V													

2.1 Switch Structure

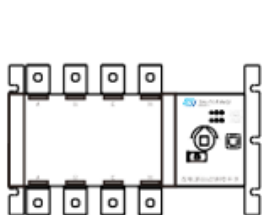


2.2 Terminal Function

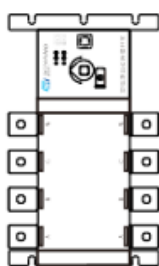
Terminal No.	Node Number	Features	Explanation
No.1 Terminal	101, 106	Power zero line, FireWire out	Active output, 1A AC220V
	102, 103	I work way power zero-line, FireWire input	AC 220V
	104, 105	II work way power zero-line, FireWire input	AC 220V See SYK 1 type Schematic
No. 2 Terminal	201, 206	Disconnect passive control closed for the active control	See SYK 1 type Schematic
	202	External passive control signal input common	
	203	I closed the road and after 202 closing	
	204	0 closed the road and after 202 closing	I / II line open
	205	II closed the road and after 202 closing	
No. 3 Terminal	301, 306	Unused, even inside has been	400A above assembly
	302	Passive position feedback signal output common	The basic model is an active output, other model passive output
	303	I closed the road after closing and 302	
	304	0 closed the road after closing and 302	
	305	II closed the road after closing and 302	
No. 4 Terminal	401, 406	Unused, even inside has been	400A above assembly
	402, 403	I closed the road after closing	Passive 1A AC220C
	404, 405	II Closed the road after closing	Passive 1A AC220C
No. 5 Terminal	501-506	Custom signal output terminal	400A above assembly Passive 1A AC220V

1. Electric Lock: control the power of control circuit inside the switch. When the electric lock turned on, the switch can be remotely operated, otherwise the switch will be hand operation.
2. Operation Handle: electric lock must be closed when using operation handle.
3. Mechanical Padlock: Before you overhaul, you must turn off the electric lock, use the operating handle to force the switch to "0" position, pull the mechanical padlock and lock it.
4. Position Indicator: Indicate working status of the switch
5. The Control Voltage: AC220V
6. The Switch Body: part in the frontline is I, connect with the normal power. Part at the back is II connect with the standby power.

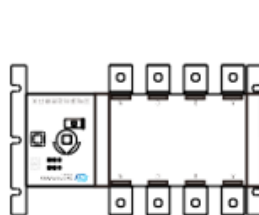
2.3 Correct Installation Schematic Diagram



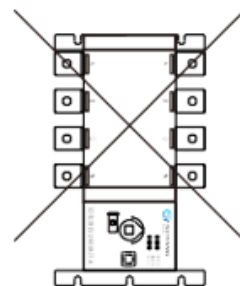
Correct installation



Correct installation



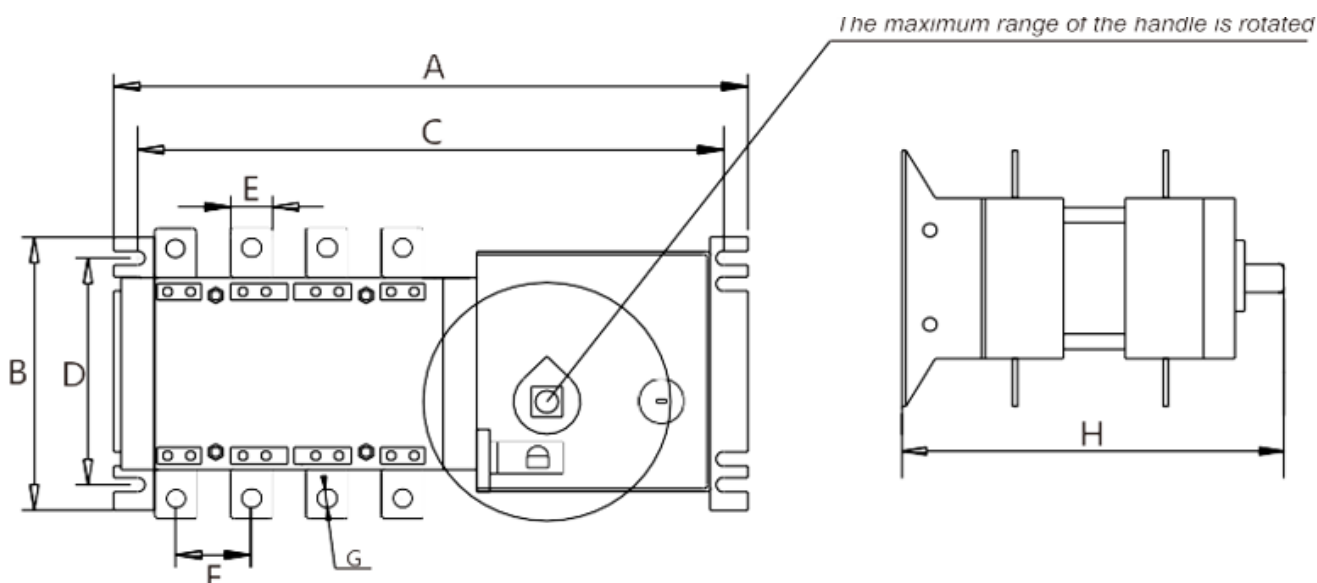
Correct installation



Error Installation

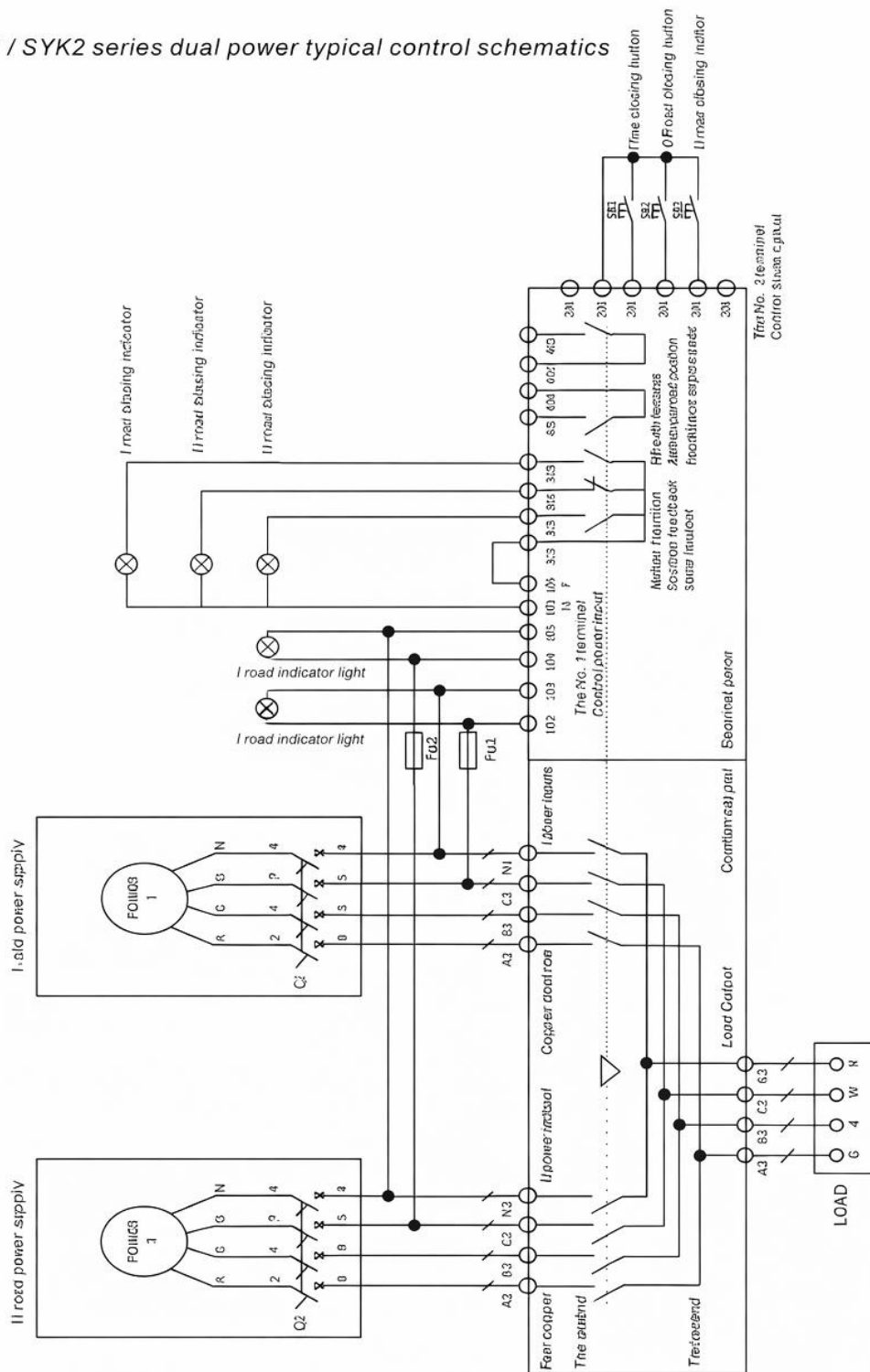
2.4 Installation Size

Model Specifications		A	B	C	D	E	F	G	H
SYK2-20-100A		245	106	233	84	14	30	6	133
SYK1-20-160A	JD	303	135	280	110	20	36	9	195
	YC				80				190
SYK1-200-300A	JD	360	160	345	110	25	50	11	195
	YC				80				
SYK1-400-630A		435	260	415	180	40	65	13	262
SYK1-800-1000A		635	326	610	220	63	120	9	321
SYK1-1250A		635	326	610	220	63	120	11	321
SYK1-1600A		635	360	610	220	80	120	13	321
SYK1-2000-3200A		635	400	475	350	80	120	13	505



2.5 All Types Of Wiring

SYK1 / SYK2 series dual power typical control schematics



Fu1 / FU2 is 2A fuse

101 to 106, 201-206, 3001-306 as SYK switch terminal

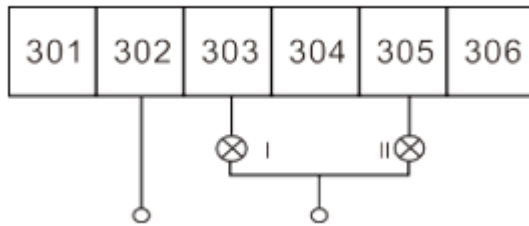
630A switch terminal can be used for more than 401 terminal.

630A switch terminal can be used for more than 401-406, 501 ~ 501-506

Note: This wiring diagram applies 2, 3, 4, 5

1. Only one existing source is input and a ATS is activated to have one voltage.
2. The sign and indication management and the can be very existing source.
3. These with terminal capacity must be confirmed to be the same voltage level and the terminal indicator

1. The main wiring (basic)

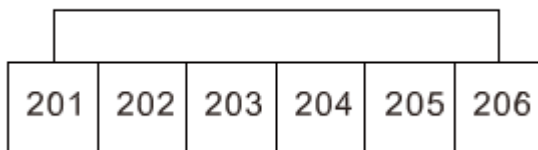


220V input load side switch status indicator.

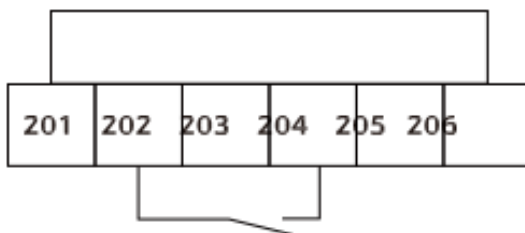
/ main power indicator.

// standby power indicator.

2. Automatic Wiring

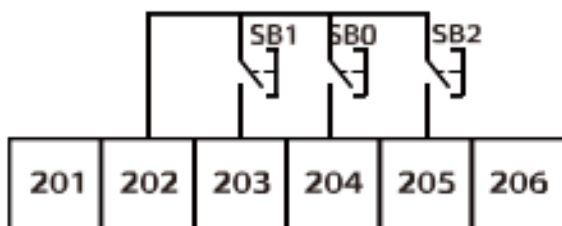


3. Automatic + forced zero protection (firefighting, dual power supply are disconnected)



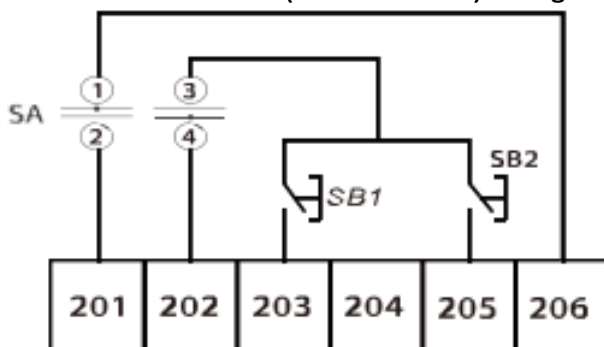
Forced zero contacts Passive input

4. Remote Control (manual only) Wiring



SB1, SB0, SB2 respectively common power, forced to zero, spar power-control buttons (passive contact).

5. Automatic + Manual (remote control) Wiring



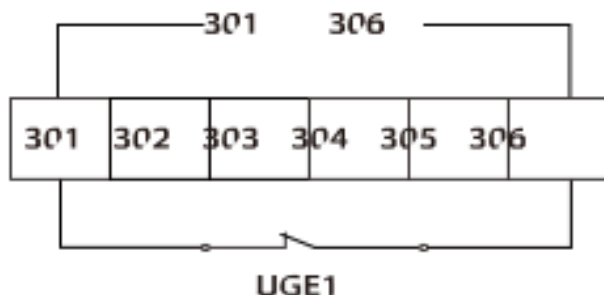
SA is the switch choose automatic or manual mode. SB1 is the manually input button for main power (passive contact).

SB2 is the manually input button for standby power (passive contact).

6. The Starter-alternator signal wiring.

Has brought a generator interface (301-306 words have UGE1)

Wiring diagram is as follows.



Description: UGE1 internal AC220V relay to switch 301, 306 starter alternator interface.

Note: The above description applies to the second switch terminal control wiring. The user may select one control method only. If automatic power transfer is introduced via copper wiring, a second control line is not required.

Terminals 302–305 provide switching status indication and may be connected by the user if needed.

Terminal Configuration: Only one set of six terminals is provided.

3. SWITCH WIRING INSTRUCTIONS

Viewed from left to right, Line I is connected by copper busbars to terminals A, B, C, and N of the normal (utility) power supply at the front of the switch, while Line II is connected to the standby power supply at the rear; the control power is taken from phase C of the normal supply and neutral of the standby supply, with AC 220 V for Line I connected to terminals 102–103 (102 as the live wire) and AC 220 V for Line II connected to terminals 104–105 (104 as the live wire), while terminals 101 and 106 are used only for indicator lamp control power (106 as live) and must not be connected to any other circuits; for Line I, if the incoming cables are connected at the top (bottom), the output A, B, C, and N must be taken from the bottom (top) via copper busbars, and Line II uses cable connections.

4. COMMON PROBLEMS AND SOLUTIONS

	Problems	Reasons	Solutions
1	Power on ATS does not work	Whether the button pressed on the automatic position	Choose the automatic position
		Whether working power of the switch is connected	Access to the control power correctly
		Connection mode of terminal 2 is correct	Access to signal control line correctly
		The fuse is damaged	Replace the fuse
2	Power on, circuit board burned	Check line 101-106 to make sure it is normal	Replace the circuit board

5. PACKING LIST

The ATS includes 1 control station, 1 mechanical operating handle, and 1 set of cable fixing bolts, with a safety guard available as an optional accessory. The unit is supplied with an operation manual, factory inspection report, and product certification.

6. MOUNT THE CABINET REFERENCE DIMENSIONS

Current (A)	The maximum length switch Lmax (mm)	The maximum width switch Wmax (mm)	The maximum height switch Hmax (mm)	Recommended cabinet (L x W x H mm)
2000-3000	635	505	470	800 x 800 x 2200
1600	635	321	407	800 x 600 x 2200
800-1250	635	321	350	800 x 600 x 1800
400-630	435	262	270	600 x 500 x 1500
250	360	195	170	500 x 400 x 1200
125-160	303	195	142	
20-100	245	133	106	

The maximum length (Lmax) is the distance from the left to the right side of the switch mounting bracket to the adjacent vertical mounting surface. The maximum width (Wmax) is the distance from the front face of the switch, after the mounting bracket is installed, to the face of the manual emergency operating handle. The maximum height (Hmax) is the distance from the top to the bottom of the front face of the copper terminals. When determining the required cabinet installation space, allowance must be made for safe operation and cable connections based on the actual site conditions.