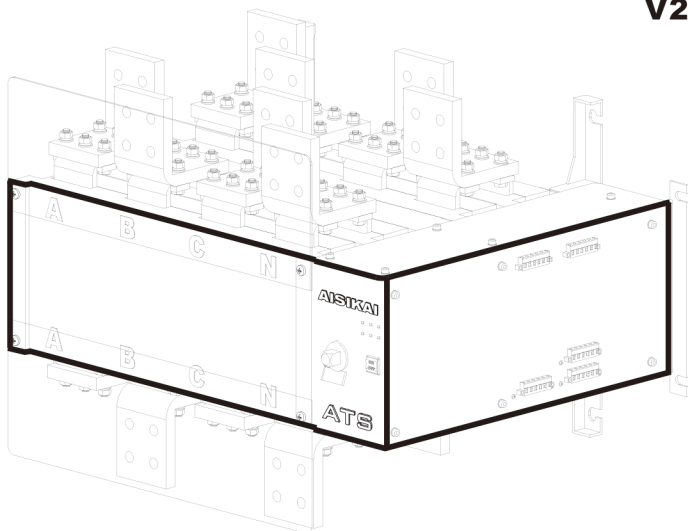


SKT SERIES X FORM ATS USER MANUAL V2.0



**AUTOMATIC TRANSFER SWITCH
800 828 6568**

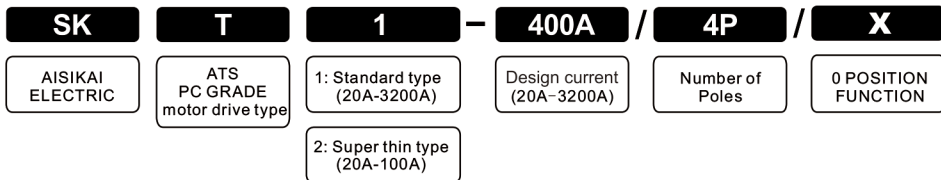
Company Profile

JIANGSU AISIKAI ELECTRIC CO., LTD has been committed to the manufacture and R & D of the high-quality low voltage electric switch. Our company has passed UKAS ISO9001 quality management system and SGS authentication. All products have China compulsory certification CCC and European CE certification along with technology patents.

The standard SKT series ATS (PC Grade) is AC-33A in utilization category, which is suitable for frequent on load switching occasions as airports, subways etc. SKT series is provided with 0-position function, has a large separation distance between the contacts, is able to withstand extremely high impulse voltage (8kV and above), has dual-row composite contact internally, in which the conductive contact area is twice that of the electromagnetic ATS switch, and the copper bar is punched into forming at one stroke.

Compact volume, long lifespan and small arc are the main features of SKT series ATS.

Model Description



Technical Parameters

Agreed thermal current Ith	20A	40A	63A	80A	100A	125A	160A	250A	400A	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	
Rated insulation voltage Ui	750V								1000V									
Rated impulse withstand voltage Uimp	8KV								12KV									
Rated voltage of the switch copper Ue	AC440V																	
Rated work current Ie	AC-33A	20	40	63	80	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3200
Rated connection capability	10Ie																	
Rated breaking capability	10Ie																	
Rated conditional short-circuit current	7KA			10KA				13KA			50KA			75KA				
Electric control unit working voltage	Standard type:AC220V, AC110V, AC280V, AC380V, DC12V and DC24V may be custom-made as required.																	
Instructions	The use category of the standard type products is AC-33A and, if used for AC-31A and AC-35A, is all the same as AC-33A.																	

Application environment requirements

Temperature: -20 to +45°C. The average value shall be no more than +35°C within 24h.
 Humidity: The average humidity shall be no more than 50% without condensation at +40°C.
 Altitude: Less than 2000 meters and, if used at higher than 2000 meters, please use the product at lower ratings.

The place where this switch is used should be free of strong vibration and impact ,harmful gases leading to corrosion against metals and damage to insulation ,thick dust ,electric conduction particles,explosive and dangerous substances or strong electromagnetic field interferences.

level of contamination: Grade III. IP classification: IP20.

Storage requirements: Stored at -30 to 70°C, in a dry environment without corrosion or salts and the longest period of storage shall be no more than 1 year.

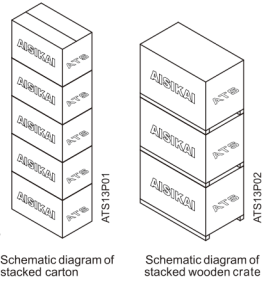
Applicable standards: International standards: IEC60947-1/GB/T.14048.1-2008
 IEC60947-1/GB/T.14048.3/11

China National compulsory CCC rules, CNCA-01C-011:2007

European CE certification: EN60947-6-1:2005 EN 60947-1:2004

Packing: Carton packaging for 630A and below and wooden box packaging for 800A and above.

Stacking: No more than 5 layers for 630A and below and no more than 3 layers for 800A and above.



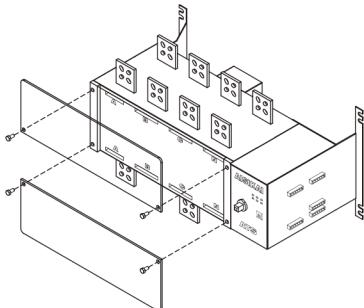
Schematic diagram of stacked carton

Schematic diagram of stacked wooden crate

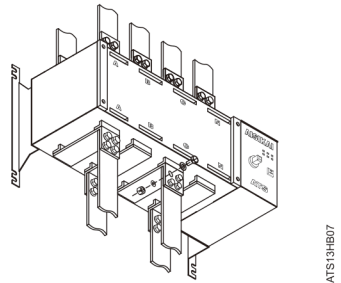
List of accessories

Current (A)	Number of wiring terminals	Manual handle number/material	Safety guard plate number/material	Users Manual quantity	Cable fixing bolt number/ specifications (set)
2000-3200	5 pcs/No.1-5	1 pc/steel	2 pcs/ PMMA	1 copy	M12*45/48
1600	5 pcs/No.1-5	1 pc/steel			M12*40/48
1250	5 pcs/No.1-5	1 pc/steel			M10*35/48
800-1000	5 pcs/No.1-5	1 pc/steel			M8*35/48
400-630	5 pcs/No.1-5	1 pc/ABS			M12*30/12
250	3 pcs/No.1-3	1 pc/ABS			M10*25/12
125-160	3 pcs/No.1-3	1 pc/ABS			M8*25/12
20-100	3 pcs/No.1-3	1 pc/ABS			M6*20/12

Schematic Diagram of Accessories Installation Method



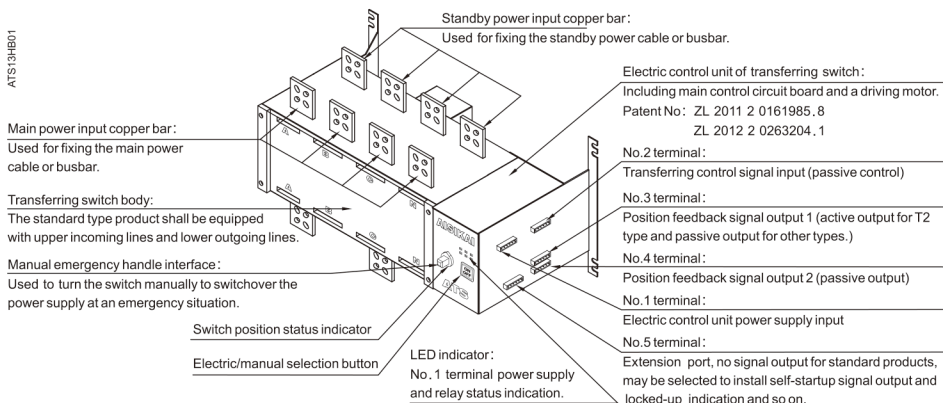
Schematic Diagram of Safety Guard Plate Installation



Schematic Diagram of Cable/Busbar fixation

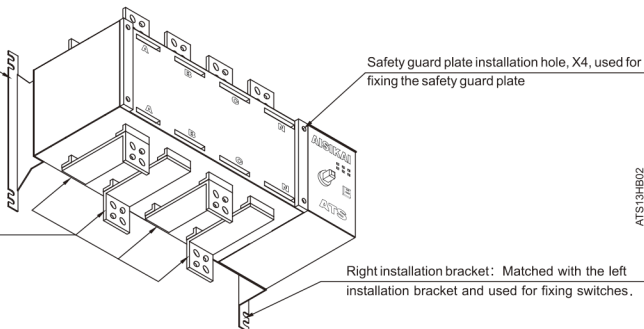
Switch structure introduction

ATS19HB01



Left installation bracket:
Matched with the right installation bracket and used for fixing switches.

Load power output integrated copper bar,
used for fixing the load cables or busbars
Patent No: ZL 2010 3 0242257. 0
ZL 2010 2 0664285. 6

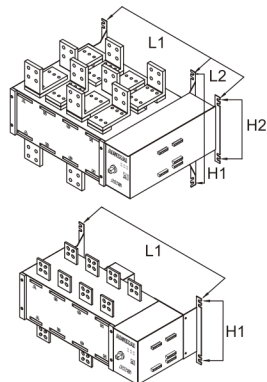


ATS19HB02

- No. 1-5 wiring terminals are equipped according to the different types of the switches. See the List of Accessories for details.
- For the convenience of customers to use the products manufactured in this company in a simpler way, the SKT1 series ATS are equipped with a LED indicator. This LED indicator is used to indicate the operating voltage of the electric control unit of the switches and the internal relay status, which is described as follows:
 - No. 1 and No. 4 indicator lights are lit up, which stands for that the working power supply of the lines I and II are powered on (102, 103; 104, 105).
 - No. 2 and No. 5 indicator lights are lit up, which stands for that the fuses of the working power supply of the lines I and II are normal (F1, F2).
 - No. 3 indicator light is lit up, which stands for that the control relay of the line I is working normally (for 250A and below switches, only when No. 4 indicator light is not lit up, can No. 3 indicator light have this function).
 - For 400A to 3200A switches, No. 6 indicator light is lit up, which stands for that the control relay of the line II is working normally.
 - For 125A to 250A switches, No. 6 indicator light is lit up, which stands for that the key switch or the button is on the ON position.

Fast reading diagram for installation dimensions

Current (A)	Transverse hole center distance L1 (mm)	Auxiliary angle transverse center distance L2 (mm)	Longitudinal hole center distance H1 (mm)	Auxiliary Angle longitudinal center distance H2 (mm)	Hole diameter (mm)
2000-3200	464	139	361	220	11
800-1600	608		221		11
400-630	416		175		9
250	335		110		7
125-160	271		110		7
20-100	225		84		7



ATS13HB03

ATS13HB04

Notes:

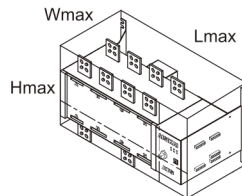
1. The left and the right installation bracket must be fixed in the same flat plane, the installation hole dimensions shall be adjusted according to the actual situation and it is prohibited to use the wrong hole dimensions to make forced installation of the switch, which will cause the switch to be deformed internally or even destroy the switch directly.
2. For 2000A and above switches, it is recommended to use a busbar for arrangement. If the use of a cable for installation will increase the stress of the installation bracket, please increase the effective reinforcement measures.
3. The dimension parameters said above are suitable for end users to be used for the on-site installation. If more detailed dimension parameters are required, please call us or visit www.aisikai.cc to download the book of the ATS.

Fast reading diagram for cabinet body installation

Current (A)	Switch maximum length Lmax (mm)	Switch maximum width Wmax (mm)	Switch maximum height Hmax (mm)	Recommended cabinet (L × W × H mm)	Compact cabinet (L × W × H mm)
2000-3200	633	493	466	800*800*2200	720*800*2000
1600	633	321	392	800*600*2200	720*600*2000
800-1250	633	321	350	800*600*2000	720*600*1800
400-630	438	260	268	600*500*1800	550*450*1600
250	351	194	192	500*400*800	500*250*600
125-160	292	188	158		
20-100	244	135	126		

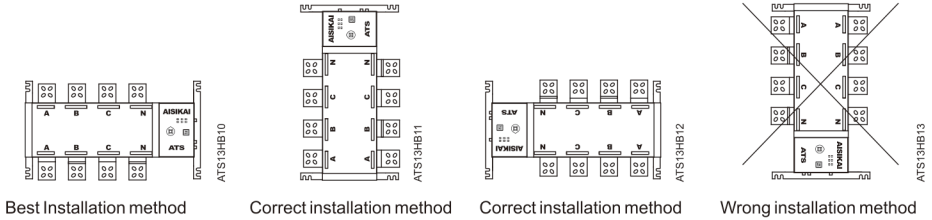
Notes:

1. Switch maximum length (Lmax) is the distance from the left elevation of the left installation bracket to the right elevation of the right installation bracket.
2. Switch maximum width (Wmax) is the distance from the rear elevation of the installation bracket to the front elevation of the manual emergency handle interface.
3. Switch maximum height (Hmax) is the distance from the top elevation of the upper copper bar to the bottom elevation of the bottom copper bar.
4. For the cabinet height, please consider the actual situation of the space required for the operation and connection of the cables.



ATS13HB05

Schematic diagram of correct installation method



Best Installation method

Correct installation method

Correct installation method

Wrong installation method

Terminal Function

Terminal No	Access point No.	Function	Notes
No. 1 terminal work power input	101、106	Feedback power supply neutral wire and live wire output	Active output, 1A AC220V
	102、103	No.1 operating power supply live wire and neutral wire input	> 5A AC 220V
	104、105	No.2 operating power supply live wire and neutral wire input	> 5A AC 220V
No. 2 terminal control signal input	201、206	Passive control when disconnected and active control when closed.	See SKT1 Type Principle Diagram
	202	External passive control signal input common terminal	
	203	Line I is switched on, when closed with 202.	
	204	Line 0 is switched on, when closed with 202.	Line I / II switched off
No. 3 terminal position feedback signal output 1	301、306	Not used, directly connected internally.	400A and above assembly
	302	Passive position feedback signal output common terminal	Passive output
	303	Closed with 302, when Line I is switched on.	
	304	Closed with 302, when Line 0 is switched on.	
No. 4 terminal position feedback signal output 2	305	Closed with 302, when Line II is switched on.	
	401、406	Not used, directly connected internally.	400A and above assembled
	402、403	closed after Line I is switched on.	Passive output
No. 5 terminal extended port signal output	404、405	closed after Line II is switched on.	Passive output
	501	Self-starting signal output normally open point	Optional parts Passive output
	502	Self-starting signal output common terminal	
	503	Self-starting signal output normally closed point	Optional parts Passive output
	504	Locked-up signal output normally open point	
	505	Locked-up signal output common terminal	
506	Locked-up signal output normally closed point		

Quick troubleshooting method

Please, see Page3 Operation Instructions for LED Indicators for fast fault diagnosis or follow the steps below for troubleshooting.

1. Fuse test

First use a multimeter to detect the flaky fuse to find out whether it is normal. If the fuse is burned, please **exclude** the external electrical fault before the fuse is inserted. Then turn the key to the manual position, use the handle attached to turn the switch from position 1 to position 2 for several times. Finally, turn the key to the electric-operated position to test each function to find out whether they are normal. For the fuse capacity, see the table on the right for details.

2. Motor test

Connect 104 and 105 of the terminal No. 1 with the 220V live wire and the neutral wire respectively and short-connect the common point 202 of the terminal No. 2 with 203, 204, and 205 respectively. If the motor can run, any fault in the motor can be excluded.

3. Main control circuit board test:

Connect 102 and 103 of the terminal No. 1 with the 220V live wire and the neutral wire respectively and short-connect 202 with 203, 204, and 205 once again respectively. If the switch can be connected with the line I, the line 0 and the line II respectively, any fault in the main control circuit can be excluded.

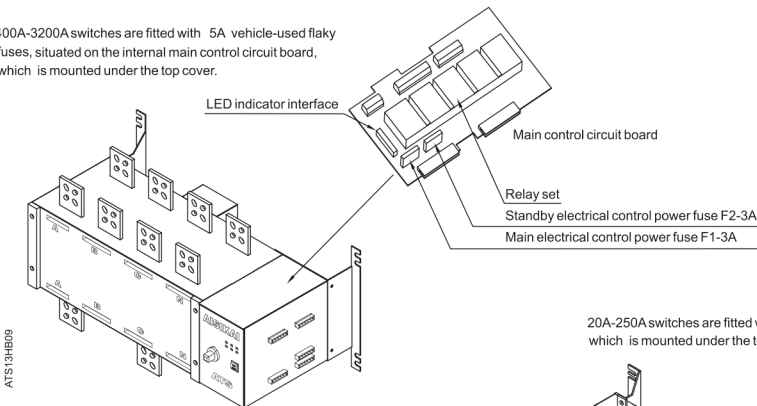
Switch current \ Control voltage	AC220V AC280V	DC24V
20A-250A	3A Self recovery fuse	10A flaky fuse
400A-3200A	5A flaky fuse	10A flaky fuse

Note: The ATS switch is fitted with a vehicle-used flaky fuse and, when replacing it, please refer to the table for details. It is prohibited to use any large-capacity fuse, as this will cause damage to the electric control unit.

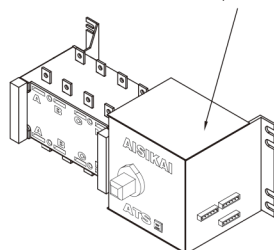
Notice:

As the fuse burnout is usually caused by voltage leap or short-circuit of external power source, please make sure the external voltage is normal, and any fault of short-circuit should be excluded before inserting fuse and testing the switch in case of damage to the circuit board.

400A-3200A switches are fitted with 5A vehicle-used flaky fuses, situated on the internal main control circuit board, which is mounted under the top cover.



20A-250A switches are fitted with self recovery fuse, which is mounted under the top cover.



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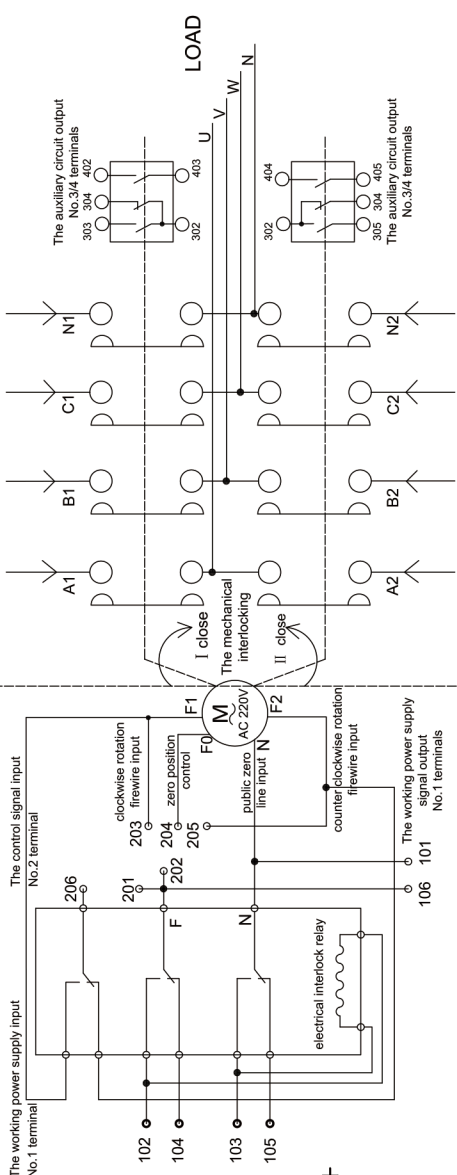
Internal Principle Diagram of SKT Series Switches

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The mechanical part-3 section type

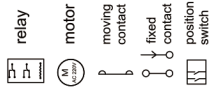
The electrical part-3 section type

Electronic control unit



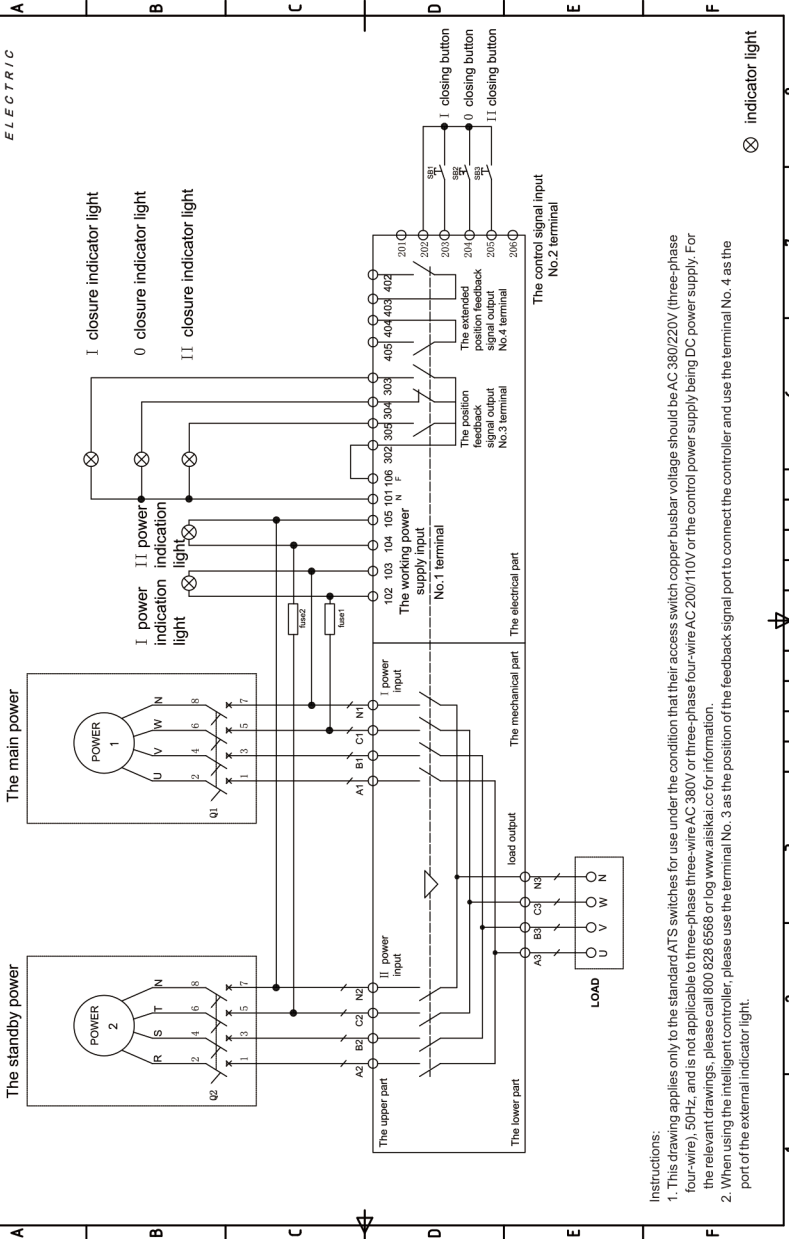
Instructions:

1. Electric part:
 - A. For the standard products, the rated voltage of the working power supply of the electronic control unit is AC 220V and the minimum capacity is 5A. 102 and 104 are connected with the live wires of the working power supply and the zero wire of the working power supply respectively. 103 and 105 are connected with the live wires of the working power supply and the zero wire output respectively after interlocking and, coordinated with the terminals No. 3 and 4, are used as the external indicator light power supply or the active feedback signals of the intelligent controller.
 - B. The electric interlocking relay is used to achieve fully the electric interlocking between the two lines of the control power supplies, so as to ensure that only one power supply is used to operate and control the switch.
2. Mechanical part:
 - The ATS switch shell is made of two layers of module groups, same in their internal structure stacked together, in which the closing of the dynamic and static contacts of the lines I and II is controlled by the motor rotating clockwise and counterclockwise respectively, and the internal mechanical interlocking mechanism makes the motor having enough space in the course of rotation to guarantee that the motor can rotate smoothly.
3. Control mode:
 - The use of the control modes provided in the Standard SKT1 and SK2 series switches.
 - Mode 1: Passive signal control—Connect the terminal No. 1 to the working power supply, use three sets of the passive contacts to control the connection of 203, 204 and 205 of the terminal No. 2 with the common terminal 202, so as to achieve the switchover of the lines I, 0 and II respectively in the switch, and the electric requirements of the passive contacts are AC 220V, 5A. This control mode is usually used in matching with the intelligent controller or is used in coordination with the special-purpose electrical control system.
 - Mode 2: Active signal control—Connect 201 of the terminal No. 2 to 208 and control the working power supply input of 102 and 103 and 104 and 105 respectively, so as to achieve switchover of the lines I and II respectively. This control mode is usually used in coordination with the intelligent controller, when the working power supply is higher than AC 180V (relay pulling-in voltage). When there are the lines I and II existing simultaneously, the line I power supply holds the priority.
- Notice: The mode 2 is applicable to the terminal power supply application switchover without time delay requirements, which is usually the switchover between the two lines of the municipal electricity. If it is cooperated with the startup type generator set for use, it is recommended to install a normal/standby power supply time relay additionally, so as to adapt to the technical requirement of the self-startup generator set and to prevent any damage to the electric control unit of the switch.
4. The preventive measures for the use of the SKT1 and SK2 series are:
 - 1. The SKT1 and SK2 series are 1A passive contact output. When the switch is in the position I, 302 is closed with 305, 404 is closed with 405.
 - 2. When the switch is in the position II, 302 is closed with 303, 402 is closed with 403.



Typical Control Principle Diagram of SKT Series Switches

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Instructions:
 1. This drawing applies only to the standard ATS switches for use under the condition that their access switch copper busbar voltage should be AC 380/220V (three-phase four-wire), 50Hz, and is not applicable to three-phase three-wire AC 380V or three-phase four-wire AC 200/110V or the control power supply being DC power supply. For the relevant drawings, please call 800 828 6568 or log www.aisikai.cc for information.
 2. When using the intelligent controller, please use the terminal No. 3 as the position of the feedback signal port to connect the controller and use the terminal No. 4 as the port of the external indicator light.



PROFESSIONAL MANUFACTURER

MANUFACTURER INFORMATION

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