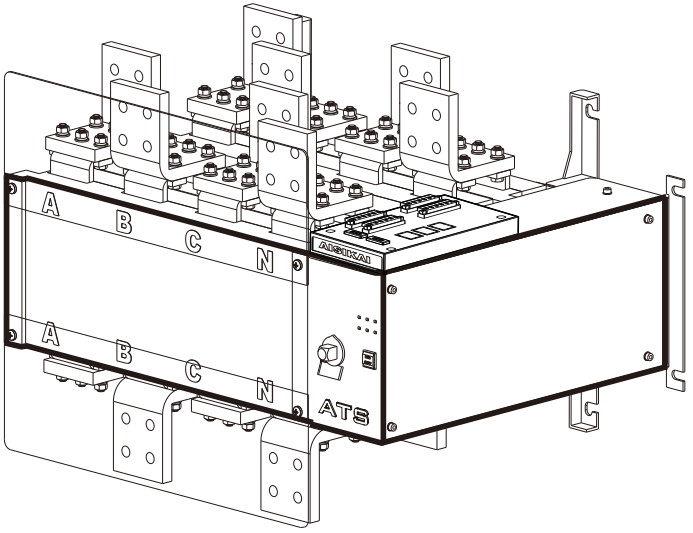
AiSIKAI®

POWER THE FUTURE

SKT SERIES ATS USER MANUAL

26V2.0



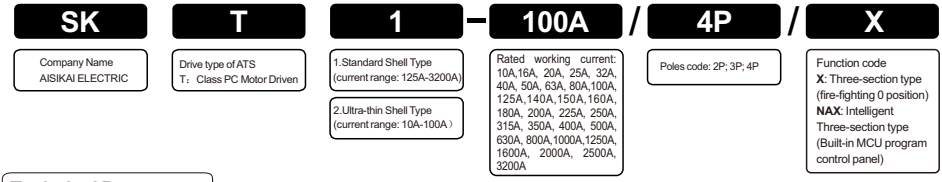
AUTOMATIC TRANSFER SWITCH

400 828 8338

Company Profile

Since established in 2007, AISIKAI has been committed to the manufacture, research, development and marketing of the high-quality high and low voltage electric switches. Our product lines cover level Ⅰ,Ⅱ,Ⅲ power distribution fields. We are awarded as the National High Tech Enterprise, Software Product Certified and Software Enterprise Certified Enterprise, Little Giant Science and Technology Enterprise of Jiangsu Province, and Contract-keeping and Trustworthy Enterprise. We have invention patents, utility model patents and appearance patents. All of AISIKAI products have China Compulsory Certification (CCC) and China Quality Certification (CQC). From 2014, we have been recognized as Yangzhou City Engineering Technology Center and National Adopting International Standard Enterprise. AISIKAI products have CE certification and IEC CB certification. We have passed the ISO9001 Quality Management System and ISO14001 Environment Management System, ISO45001 Occupational Health Management System, and SGS Global Qualified Supplier Authentication. The SKT series ATS is our company's own developed and produced Class PC dual power automatic transfer switch. It is the advanced automatic transfer switch with the highest usage category of AC-33A. Its making and breaking capacity is 10 times of rated current. Our ATS owns several patents and is awarded as the national high-tech product. Each current specification has passed China Compulsory Certification. Our ATS has advantages of long service life and reliable quality.

Model Description



Technical Parameters

Type		SKT2 series	SKT1 series											
Shell frame grade current (Inm)		100A	160A		250A	630A		1600A				3200A		
Rated current (In)		100	125A	160	250	400	630	800	1000	1250	1600	2000	2500	3200
Conventional thermal current (Ith)		10,16,20,25,32, 40,50,63,80,100A	63,80,100,125, 140,150,160A		160,180,200, 225,250A	315,350,400, 500,630A		800,1000,1250, 1600A				2000,2500,3200A		
Rated insulation voltage of copper bar (Ui)		1000V												
Rated impulse withstand voltage (Uimp)		12KV												
Rated operating voltage of copper bar (Ue)		AC400V / AC690V												
Mechanical durability		≥ 12,000 times	≥ 8,000 operating cycles without current											
Electrical durability		≥ 7,500 times	≥ 1,500 operating cycles with current											
Use category		AC-33A												
Rated operating current of copper bar (Ie)		10,16,20,25,32,40,50,63,80,100,125,140,150,160,180,200,225,250,315,350,400,500,630						800,1000,1250,1600,2000,2500,3200						
Rated making capacity (Icm)		17KA			40KA	67.2KA						105KA		
Rated limiting short-circuit current (Iq)	Fuses for protection	100KA	100KA		100KA	120KA		120KA				120KA		
	Breaker for protection	50KA	50KA		50KA	65KA		65KA				65KA		
Transferring time Ⅰ-Ⅱ or Ⅱ-Ⅰ		1.2S				0.6S		1.2S				2.4S		
Rated operating voltage of the control power Us		AC220V, special voltages: AC110V, AC208V, AC280V, AC180-280V, DC24V, DC12V/DC48V (optional for 250A and below)												
Start		40W				325W		355W		400W	440W	600W		
Normal		18W				62W		74W		90W	98W	120W		
Net weight(kg) 4 poles		3.5	5.3	5.5	7	17	17.5	37			44	98		

The derating of circuit breaker at different altitude

When the altitude is higher than 2000m, the insulation characteristic, cooling characteristic, pressure etc. in atmosphere change. Revise theperformance according to the form below:

Voltage

Altitude(m)	Power frequency withstand voltage(V)	Insulation voltage(V)	Rated operational voltage(V)
2000	2200	1000	690
3000	1955	800	580
4000	1760	700	500
5000	1600	600	400

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Operating Environment Requirements

Operating temperature:	-25℃ to +70℃. The average value for 24 hours shall not exceed +35℃;
Operating humidity:	Up to 95% RH without condensation, provided that the ATS is installed inside a properly sealed IP65 enclosure equipped with an anti-condensation heater to prevent moisture accumulation. Direct exposure of the switch body to water, salt spray or condensation is not permitted;
Altitude:	Below 2000 meters. For altitudes exceeding 2000m, the rated operating current is derated by 10% for every 1000m increase in altitude;
Vibration and gas:	There shall be no strong vibration or shock and no harmful gases to corrode the metals and to damage the insulation within the environment of its use;
Surrounding material:	There shall be no serious dust, conductive particles or explosive hazardous substances;
Class of pollution:	Class III;
IP rating:	IP20;
Storage requirements:	To be stored at -30℃ to 70℃ and in a dry environment without corrosion or saline. The longest period of storage is 1 year;
Packing:	630A and below packed in cartons; 800A and above packed in wooden crates;
Stacking:	630A and below stacked no more than 5 layers; 800A and above stacked no more than 3 layers.



Carton stacking diagram

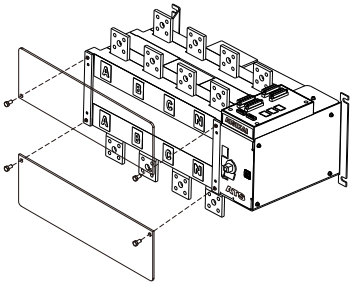


Wooden crates stacking diagram

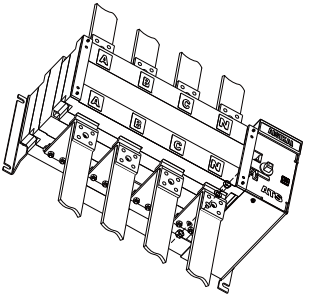
List of Accessories

Current(A)	Wiring terminals quantity (pcs)	Manual handle quantity/material	Safety guard plate quantity/material	Users Manual quantity	Cable fixing bolt specification/quantity(sets)
2000~3200	5	1 pcs/steel	2 pcs/PMMA	1 copy	M12×45/48
1600	5				M12×40/48
1250	5				M10×35/48
800~1000	5				M8×35/48
400~630	5	1 pcs/ABS			M12×30/12
250	3				M10×25/12
125~160	3				M8×25/12
10~100	3				M6×20/12

Schematic Diagram of Cable/Busbar Fixing

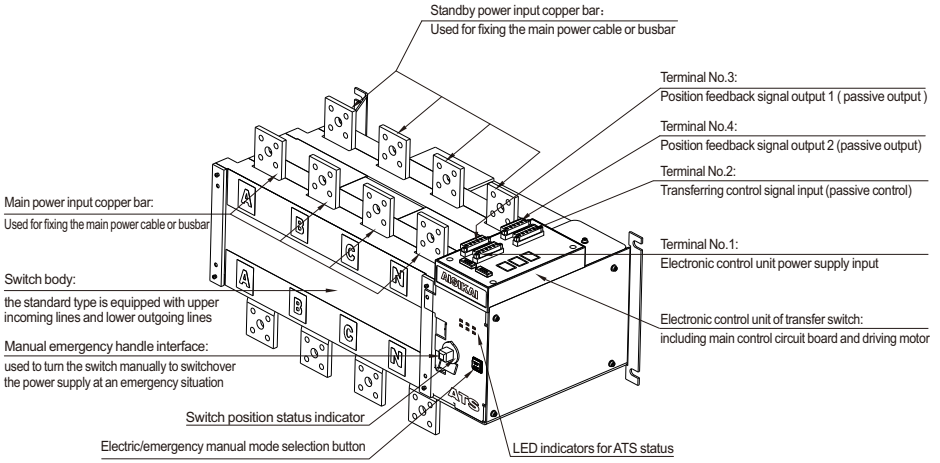


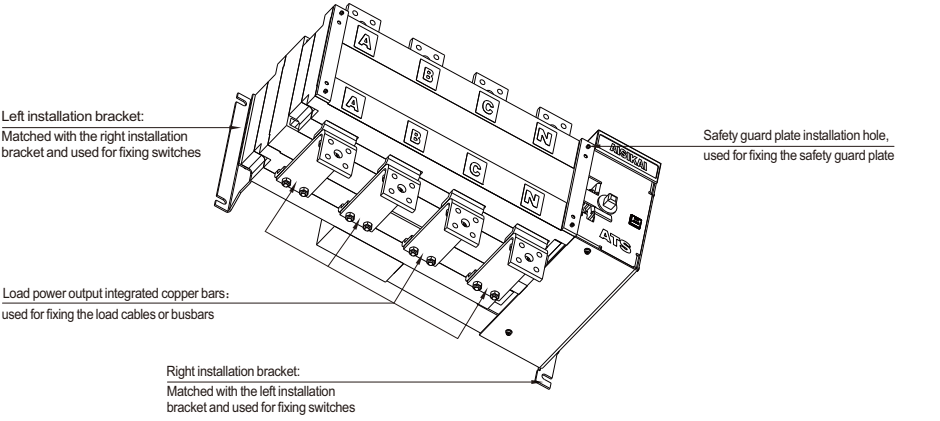
Schematic Diagram of Safety Guard Plate Installation



Schematic Diagram of Cable/Busbar Fixation

Structure Introduction



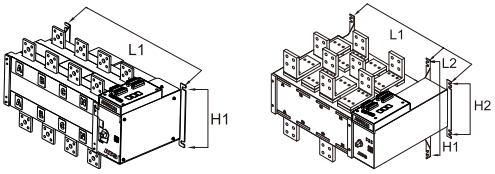


Quick Lookup Table for Installation Dimensions

Current(A)	Transverse distance of opening center L1(mm)	Transverse distance of auxiliary mounting bracket opening center L2(mm)	Longitudinal distance of opening center H1(mm)	Longitudinal distance of auxiliary mounting bracket opening center H2(mm)	Hole diameter(mm)
2000~3200	464	139	356	220	11
800~1600	608		220		11
400~630	416		180		9
250	335		110		7
125~160	271		110		7
10~100	225		84		7

Note:

1.The left and right installation bracket must be fixed on the same flat plane. The installation opening hole dimensions shall be adjusted according to the actual situation. It's prohibited to use the wrong opening dimensions to install switch, which will cause the internal deformation or even destroy switch directly.



2.For 2000A and above switches, it's recommended to use busbar for installation. Please increase the effective reinforcement measures if using cable installation, because the stress condition of installation bracket will be increased.

3.The dimensions above are suitable for end users for the on-site installation. If more detailed dimensions are required, please call us or visit our website.

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	492.5	458.5	800×800×2200	720×800×2000
1600	633	321	392	800×600×2200	720×600×2000
800~1250	633	321	353	800×600×2000	720×600×1800
400~630	436	263	270	600×500×1800	550×450×1600
250	351	192	187	500×400×800	500×250×600
125~160	290	188	158.5		
10~100	242.5	135.5	127		

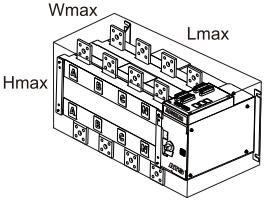
Notes:

1.Switch maximum length(Lmax) is the distance from the left elevation of the left installation bracket to the right installation bracket.

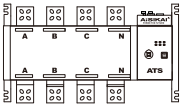
2.Switch maximum width(Wmax) is the distance from the rear elevation of the installation bracket to the front elevation of the manual emergency handale interface.

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.

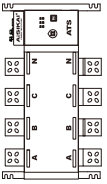
4.For the cabinet height,please consider the actual situation of the space required for the operation and connection of the cables.



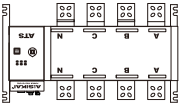
Schematic Diagram of Correct Installation Method



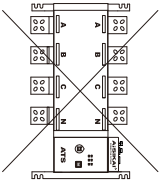
Best



Right



Right

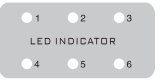


Wrong

Terminal Functions

Terminal Serial No.	Access point serial No.	Function	Notes
Terminal No. 1 (Control unit power input)	101、106	Power supply neutral wire and live wire output for feedback	Active output, 1AAC220V
	102、103	Power 1 supply live wire and neutral wire input	＞5A AC 220V
	104、105	Power 2 supply live wire and neutral wire input	＞5A AC 220V
Terminal No. 2 (Control signal input)	201、206	If 201 is closed with 206, switch will work in full-automatic mode	Automatic switch and automatic recovery. Utility power is prior.
	202	Common terminal of external passive control signal input	Passive control signals
	203	When closed with 202, Line Ⅰ is switched on	
	204	When closed with 202, Line 0 is switched on	
	205	When closed with 202, Line Ⅱ is switched on	
Terminal No. 3 (Position feedback signal output 1)	301、306	Not used	
	302	Common terminal of passive position feedback signal output	Passive output
	303	Closed with 302 when Line Ⅰ is switched on.	
	304	Closed with 302 when Line 0 is switched on.	
	305	Closed with 302 when Line Ⅱ is switched on.	
Terminal No. 4 (Position feedback signal output 2)	401、406	Not used	
	402、403	Closed when Line Ⅰ is switched on	Passive 3A AC 220V
	404、405	Closed when Line Ⅱ is switched on	Passive 3A AC 220V
Terminal No. 5 (Extended port signal output)	501	Not used	Need to be customized
	502	Not used	
	503	Not used	
	504	Not used	
	505	Not used	
	506	Not used	

Instructions for LED Indicators



Model	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
X TYPE SKT1-125~250A	Line Ⅰ control power supply is powered-on. (There is AC 220V between the access points 102 and 103 of No. 1 terminal)	Line Ⅰ control power supply fuse is normal	Line Ⅰ control relay is normal (the relay is mounted on the internal circuit board. No. 3 light is used forthis function, only when No. 4 light is not lit up).	Line Ⅱ control power supply is powered-on (There is AC 220V between the access points 104 and 105).	Line Ⅱ control power supply fuse is normal.	125A-250A switch, key lock or button is in AUTO position (the key lock or the button is mounted on the front side of the switch).
X TYPE SKT1-400~3200A	Line Ⅰ control power supply is powered-on. (There is AC 220V between the access points 102 and 103 of No. 1 terminal)	Line Ⅰ control power supply fuse is normal	Line Ⅰ control relay is normal (the relay is mounted on the internal circuit board)	Line Ⅱ control power supply is powered-on (There is AC 220V between the access points 104 and 105).	Line Ⅱ control power supply fuse is normal.	Line Ⅱ control relay is normal (the relay is mounted on the internal circuit board)
NAX TYPE SKT1-400~3200A	If the light is on, the voltage of Line Ⅰ power is normal (There is AC 220V between the access points 102 and 103 of No. 1 terminal). If the light flashes, the voltage of Line Ⅰ power is abnormal.	If the light is on, the switch is in Automatic mode (key lock or button is in AUTO position)	If the light is on, the voltage of LineⅡ power is normal (There is AC 220V between the access points 104 and 105 of No. 1 terminal, measure voltage range AC220V ±15%). If the light flashes, the voltage of Line Ⅱpower is abnormal.	Light on indicates Line Ⅰ closed	Light on indicates both Line Ⅰ and Line Ⅱ are open	Light on indicates Line Ⅱ closed

Note: SKT2 series have no LED indicators

Quick Troubleshooting Method

Please refer to the instructions of LED indicators for quick fault determination or troubleshoot following the steps below:

1. Fuse detection:

First, check whether the fuse is normal with the multimeter. If the fuse burns out, please troubleshoot the external electrical fault first before inserting the fuse. Set the switch in Manual mode, turn the switch between position 1 and position 2 several times with the attached handle. Set the switch in Auto mode, test again whether each function is normal. The fuse capacity is shown in the table below:

Control voltage / Current	AC220V AC280V	DC12V DC24V
10A~250A	3A Tube fuse	3A Tube fuse
400A~3200A	5A Tube fuse	5A Tube fuse
Warning: please use the qualified fuses of correct capacity. It is prohibited to use fuses of large capacity or illegally short connect. For product damage due to the above wrong measures, our company do not provide warranty.		

2. Motor detection:

Connect 104 of terminal 1 with 220V live wire. Connect 105 of terminal 1 with 220V neutral wire. Short connect 202 (the common port of terminal 2) with 203, 204, 205 respectively, if the motor can work, the motor fault can be eliminated.

3.Main control board detection:

Connect 102 of terminal 1 with 220V live wire. Connect 103 of terminal 1 with 220V neutral wire. Short connect 202 with 203, 204, 205 respectively, if the switch can turn to position 1, 0, 2 correspondingly, the main control board fault can be eliminated.

Notice:

As the fuse burnout is usually caused buy 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.

SKT-10A~250A Series Dual Power Configuration Fuse Schematic Diagram.

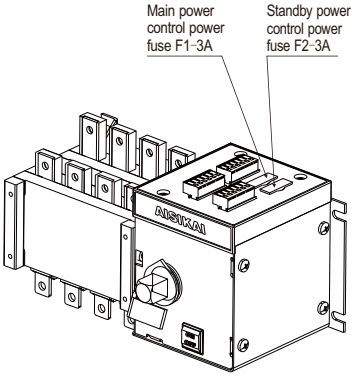
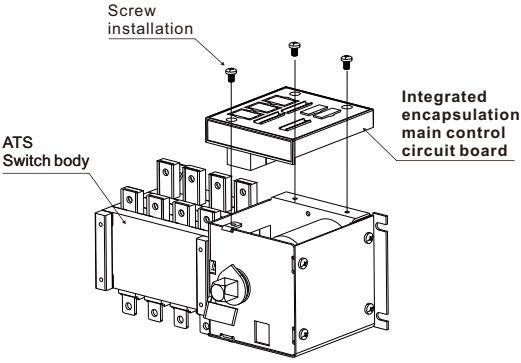


Diagram for Replacing Circuit Boards in SKT Series Dual Power Supplies.



SKT-400A~3200A Series Dual Power Configuration Fuse Schematic Diagram

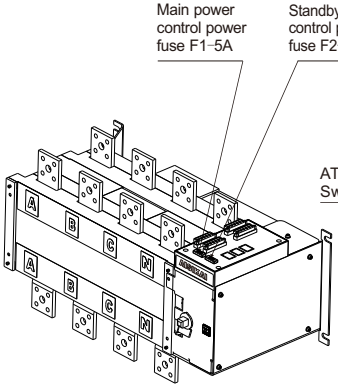
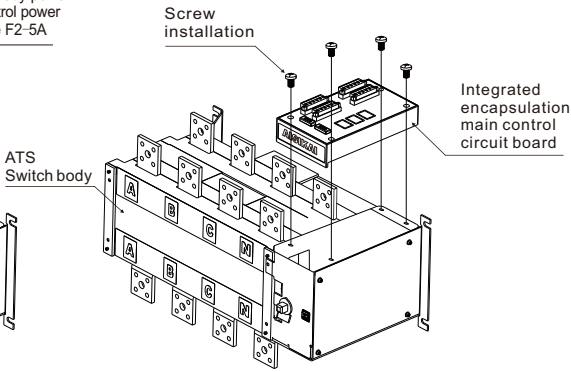
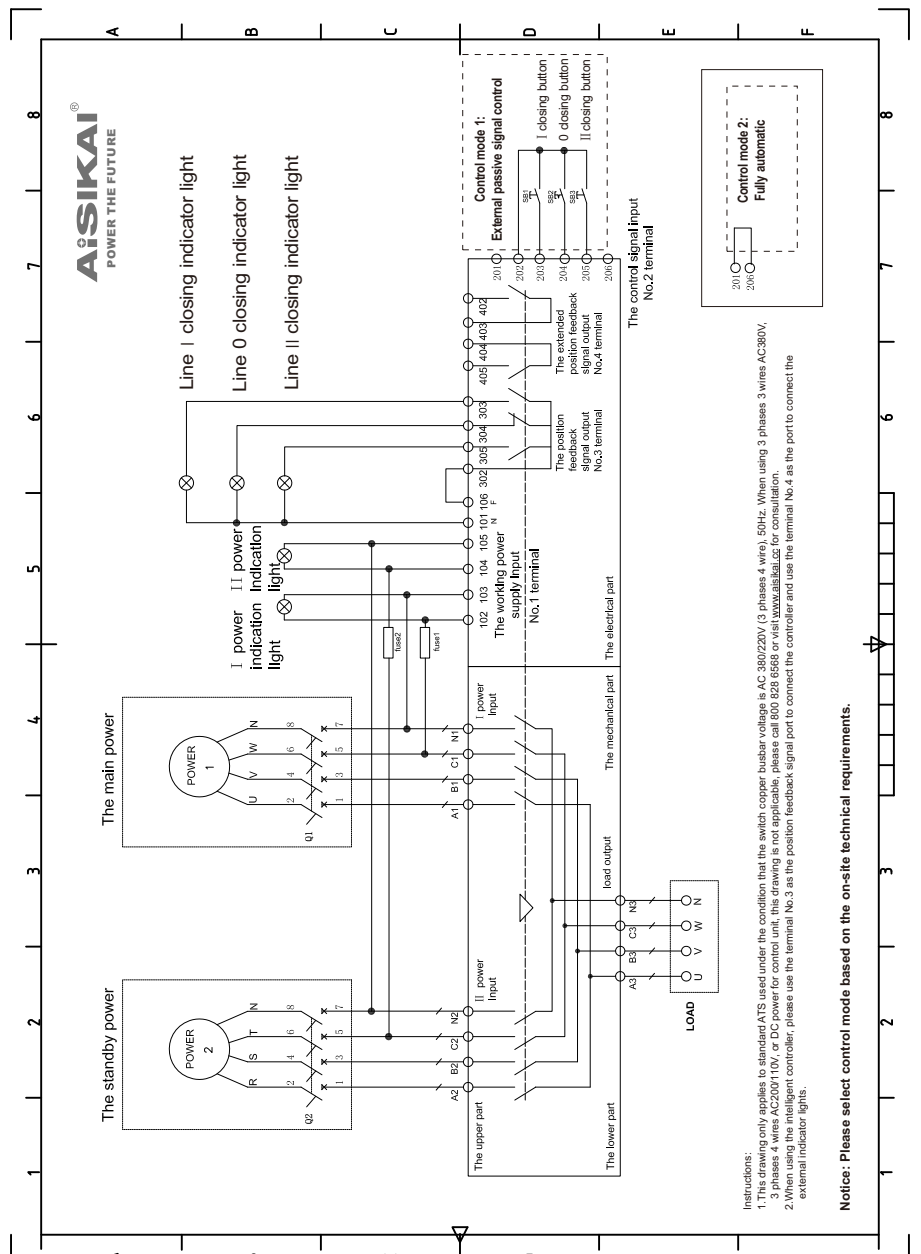


Diagram for Replacing Circuit Boards in SKT Series Dual Power Supplies.



The main control board of switch is mounted inside the shell. The fuses are mounted outside the shell and connected to the board through the terminal lines.

Typical Control Principle Diagram of SKT Series Switches



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