#### DECLARATION



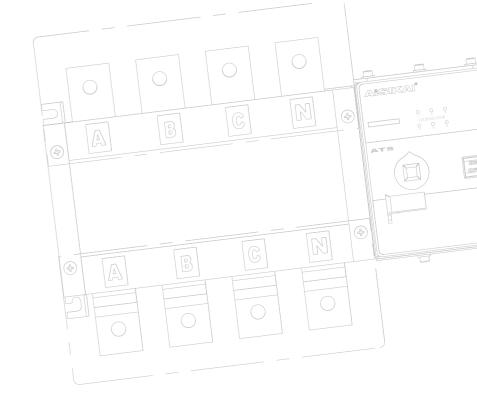








A\*SIKAI®





# **SKT SERIES**

**SELECTION GUIDE** 

# **AUTOMATIC TRANSFER SWITCH**

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## PRODUCTS CONTENTS

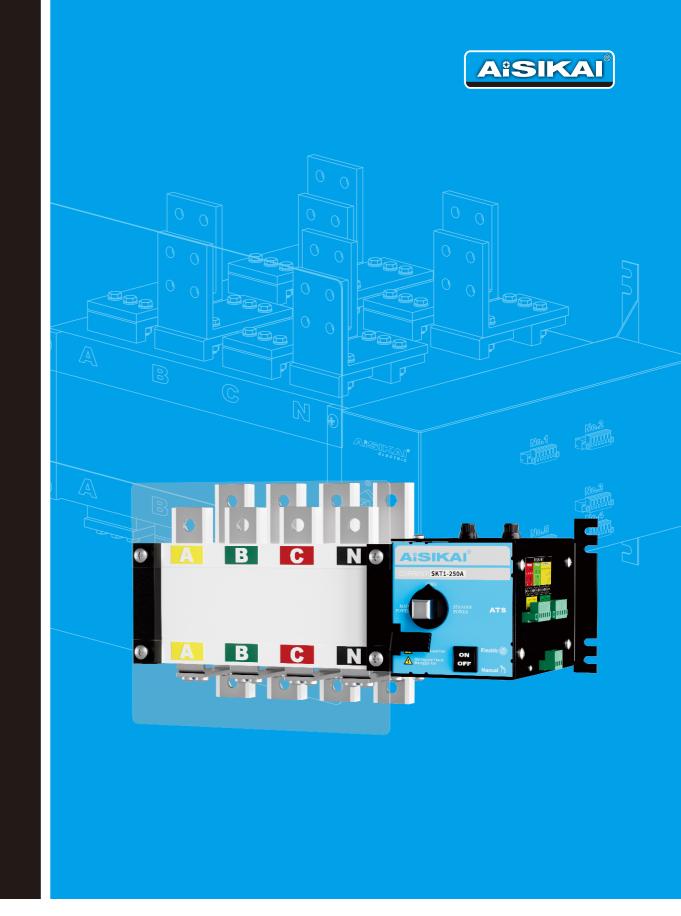
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## COMPANYPROFILE

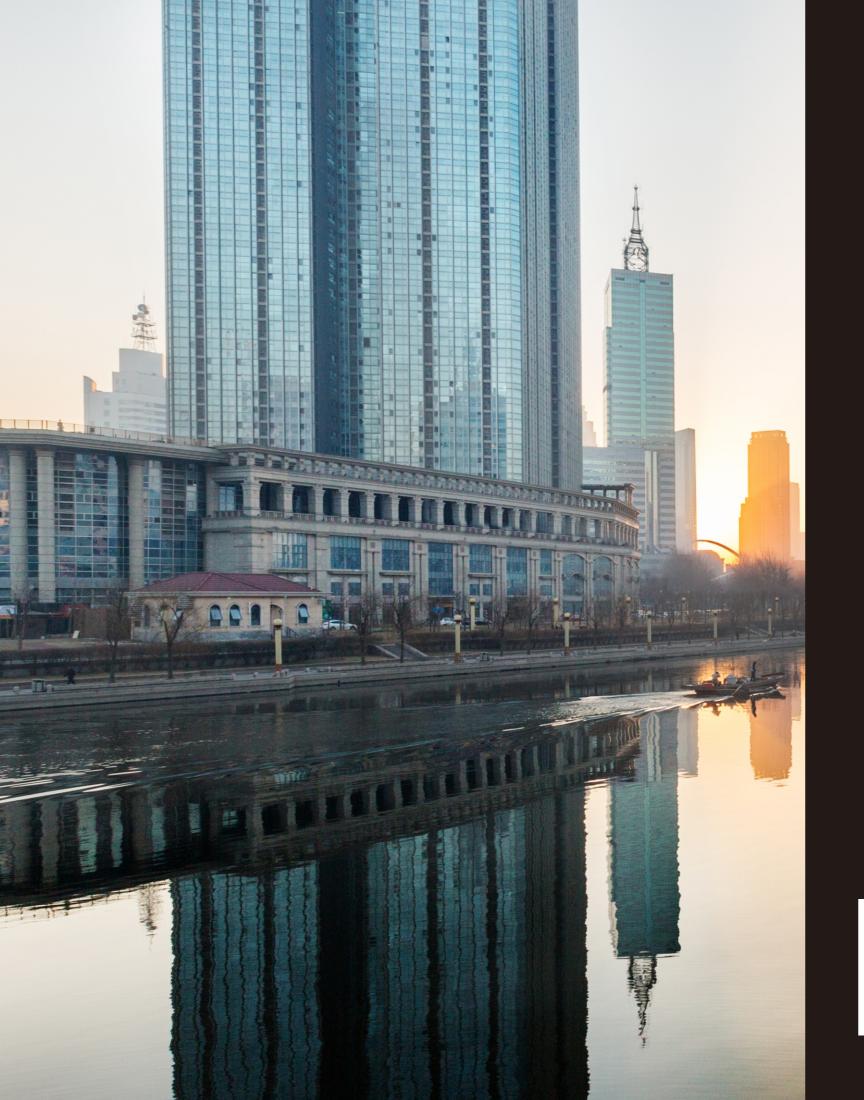
Since established in 2007, JIANGSU AISIKAI ELECTRIC CO.,LTD has been committed to the R&D, manufacture and marketing of the high-quality low voltage electric switch. Our product line covers level I、II、III power distribution field. We are awarded as the "National High Tech Enterprise" and "Contract-respecting and Promise-keeping Enterprise" and own UKAS ISO9001 Quality Management System Certification, the European Certification CE and SGS Global Qualified Supplier Certification. So far, We have several invention patents, utility model patent,appearance patent All products have Chinese Compulsory Certification CCC. From 2014, we have been recognized as "Yangzhou City Engineering Technology Center"and" Chinese Adopting International Standard Unit".

"QUALITY 、SERVICES 、REPUTATION 、INNOVATION" is AISIKAI company everlasting enterprise development concepts , we actively pursue progress , always standing inthe customer's point of view and improvement, we believe, AISIKAI IN your support and love, will flourish, vibration of wings and fly!













## **Intelligent Dual Power Automatic Transfer Switch**

#### Wide Range & Perfect Function

AISIKAI Automatic Transfer Switch consists of SKT series. We provide perfect solution with product from general performance CB class to high performance PC class, from none-frequently transfer to frequently transfer. Our product covers a wide current range from 6A to 3200A innovatively, and easily meets the various requirements of load in civil, industrial and commercial fields. Our product is suitable for 1, 2, 3 classes of low voltage power distribution system. Our perfect feature configuration satisfies the power switching between utility-utility, utility-generator, generator-generator and more load's uninterruptible backup power supply. Our product is in compliance with related IEC/GB technical standards, is manufactured according to international standards, and has obtained Chinese compulsory certificate (CCC) and European certificate (CE).







#### **High Technology Product**

SKT series ATS with leading structural design and innovative patented technology, has obtained the National High-Technology Product Certificate (Reference Number 141081G0537N), is in accordance with the standardsof IEC60947-1/IEC60947-3/ IEC60947-6-1/GB14048.1 /GB14048.3 /GB14048.11, follows international production standards and has obtained Chinese compulsory certificate(CCC)and European certificate (CE).

## **Highest Grade Usage Category AC-33A**

SKT series automatic transfer switch(ATS) reaches the highest AC-33A, covers most of the mixed loads requirements in areas like civil, industry, aviation, traffic, etc. ATS can be operated frequently. Its breaking and connecting capacity is up to 10 times the rated current, which is 67% higher than the Grade AC-33iA ATS.

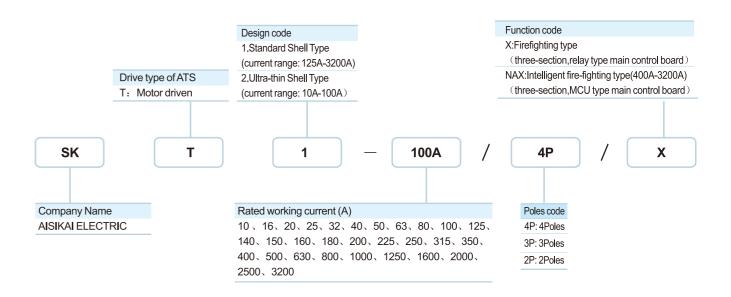
#### Application field







### SKT1, SKT2 series PC class intelligent ATS (motor driven type) quick selection table



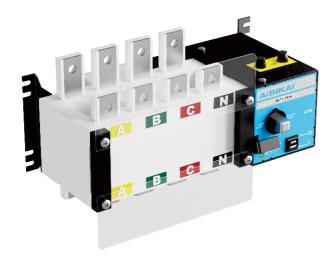
#### Normal working conditions and installation methods

Category	Requirements
Operating temperature	−20 to 45 °C.The average value for 24 hours shall not exceed +35 °C;
Operating humidity	The average humidity at +40°C shall not exceed 50% without condensation; If humidity exceed 50%, the ife time of ATS will be reduced.  The influence of humidity on service life: There is no specific test performed, therefore we cannot provide accurate data. Maintain proper ventilation and inspect use conditions regularly to keep the humidity in appropriate level.
Altitude	Lower than 2000 meters and, if higher than 2000 meters, please use reduce product rated value for use; <b>Specification of reducing rated value according to the altitude:</b> Generally, when every time the height increases by 1000 meters, the value should be reduced by 10%. For example,100% of rated value when at 2000m, and 90% of rated value when at 3000m.
Vibration and gas	The vibration or shock caused by external force shall not be stronger than normal operation of genset; there shall be no harmful gases to corrode the metals and to damage the insulation within the environment of its use. Otherwise, the life time of ATS will be reduced.  The influence of vibration and gas on service life:  There is no specific test performed, therefore we cannot provide accurate data.
Surrounding material	There shall be no serious dust, conductive particles or explosive hazardous substances
Class of pollution	Class
IP rating	IP20
Storage requirements	To be stored under -30 to 70 ☐ and in a dry, non-corrosive and saline environment and the longest period of storage shall be 1 year
Packing	630A and below packed in carton boxes;800A and above packed in wooden boxes
Stacking	630A and below stacked no more than 5 layers; 800Aand above stacked no more than 3 layers.
Installation	Vertically or horizontally. Upside down installation is not allowed
Wiring	Standard wiring is upper in and lower out. Wiring reversely (lower in and upper out) can be customized.





#### **PRODUCT OVERVIEW**



- SKT series dual power automatic transfer switch is the most advanced 3rd generation product. It's suitable to be used in 50/60HZ 10A-3200A low voltage AC power distribution system for reliable transfer between two power supplies
- The guarantee period is 1 year. We provide the service of supplying components to replace in 3 years. We will notify if we change or update the product.

#### **Product Grade**

PC Class

#### Use Classes

AC -33A frequently operation

#### **Working Modes**

Four working modes: Automatic, Electric, Emergency Manual and Locking

#### The standard life span of motor and operation

15000 times
10000 times
7000 times
5000 times

#### **ADVANTAGE OF RAW MATERIALS**



99.9% High Purity T2 Copper Material

DMC Main Body

### • 99.9% High Purity T2 Copper Material

T2 pure copper material, achieving high breaking capacity.

#### DMC Main Body

The main body is made of reinforced unsaturated polyester glass fiber Dough Molding Compounds(DMC), which has extremely high mechanial strength and insulation performance. DMC has advantages in strength, corrosion resistance and fire retardancy over ABS(Acrylonitrile Butadiene Styrene).

#### Self-restoring Drive Motor

Select polychloroprene rubber insulation damp & heat type motor or permanent-magnet synchronous motor (patent technology), which is large in torque, low in noise, long in service life. Motor is provided with overheating and over-current self-restoring protection, and is better than that of the electromagnet in the comprehensive performance.



Self-restoring Drive Motor

#### Components Brand Assurance

The electronic components adopted are those of the well-known brands (Samsung, YAGEO etc). The master control boards are produced in the domestic first-tier electronic OEM factory. The boards are treated with three-proofing process, thus making them reliable in use, high in performance and long in service life.





#### STRUCTURAL DESIGN



Double-row composite contacts

#### Double-row composite contacts

A double-row composite design is adopted for the moving contacts, the conductive area of which istwice as much as that of the single-sided contact switches.

#### Transverse-pull moving mechanism

The moving contact makes reciprocating motion in the transverse direction, which has the advantages of zero arc and high safety factor as compared with the longitudinal separation type switches.

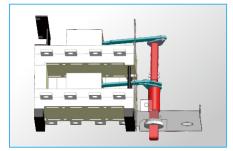
#### Double interlocking mechanically and electrically

The precise mechanical design ensures complete separation between the two power supplies. The logical management of the control circuit board achieves the electrical interlocking.

#### Safety zero position

All the products of this series have a safety zero position, which is used to cut off both the two power supplies simultaneously, thus making them better than the two-stage switches in the safety performance.

#### **FUNCTIONAL ADVANTAGES**



Mechanical interlocks

#### Prevention of early failure and damage to equipment

In each piece of the moving contact, a high strength spring leaf made of the silicon manganese steel is fixed reliably in the base and the pressure between the moving and the fixed contacts is kept constantduring the transfer process and after the closing of the switch.

#### Load isolation function

The precise safe distance can isolate effectively the power supply from the load and meet the creepage requirements, is provided with the obvious on-off position display and can be operated under a load.

#### Zero line overlapping switching

This patented function is used to prevent the equipment from being damaged caused by the zero linepotential drift, when the switch is switching (this function is not needed in most cases. We provide this function only when it's clearly stated in technical documentation that it is indispensable)

#### **PERFORMANCE ADVANTAGES**



Ultra-thin design

#### High breaking and making capacity

10 times rated current breaking capacity, 10 times rated current making capacity,

#### High-grade use category

AC-33A use category, can be frequently operated, has a much wider scope of application than AC-33B none-frequently operable type.

#### Meeting Grade I and I power distribution requirements

The good electrical properties can meet the technical requirements of the Grade I and II power distribution systems and have a higher impact resistance than that of the circuit breaker type ATS to avoid the masterswitch from tripping caused by the short-circuit of a single load.

#### Ultra-thin volume (20A-100A)

The precise mechanical design achieves an ultra-thin volume and the volume of an electrical box assembled is only 25% of a floor tile (60\*60) in size.



MCU microcomputer

#### The MCU microcomputer intelligent circuit board(NAX TYPE)

(1)Overvoltage / undervoltage detection function

(2)LED light indication function

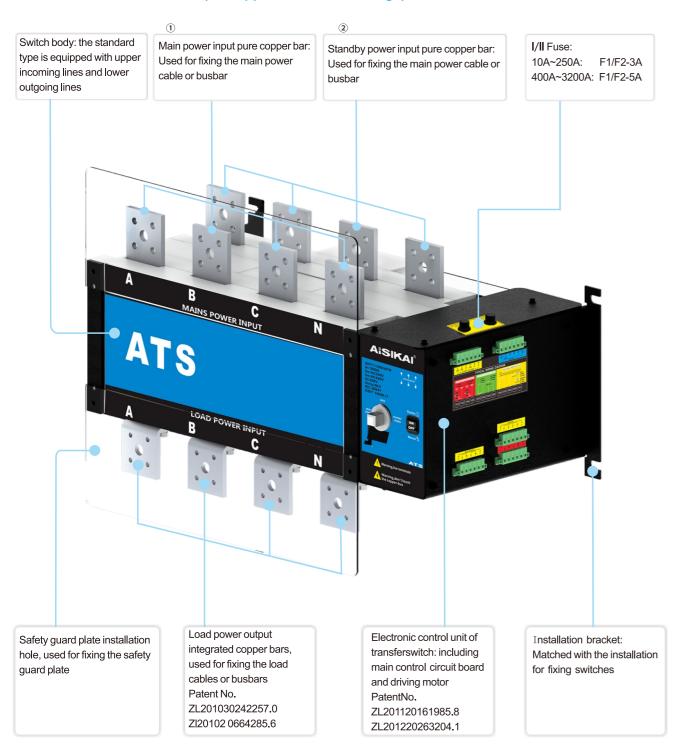
(3)Error command judgment function

(4)Automatic judgment of city power to city power and city order to power generation function

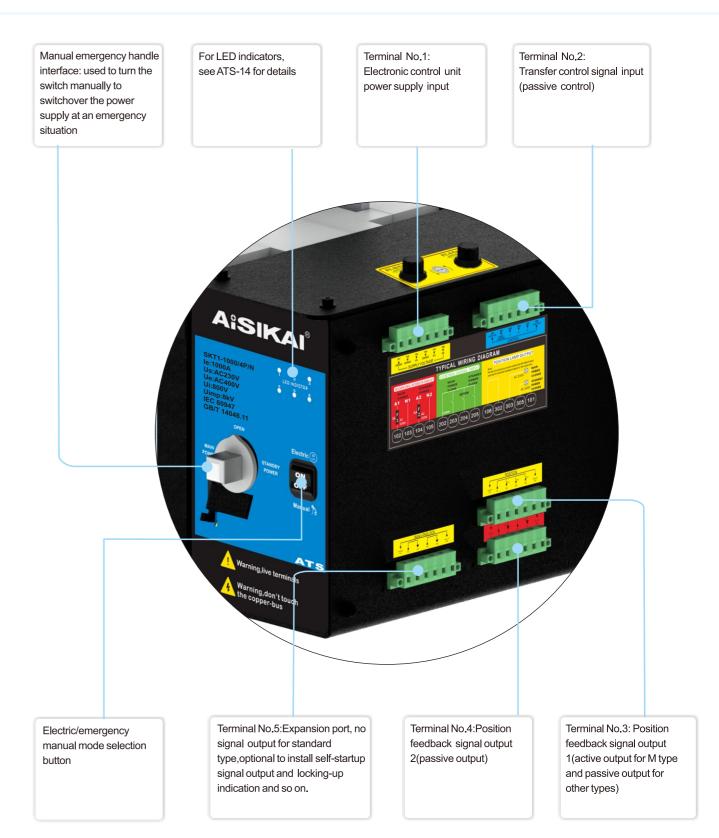
(5)Action command time limit function



#### STRUCTURE INTRODUCTION (See appendix for clear image)



- ① Main power is the city power. The front copper bars are connected with main power.
- ② Standby power is the generator power or sometimes another line of backup city power. The rear copper bars are connected with standby power.



No.1-5 wiring terminals are equipped according to the different types of the switches. See the Terminal Functions Introduction for details.





#### **FUNCTION CODE TABLE**

Application type	Fire-fighting type	Intelligent fire-fighting type
Function Code	X	NAX
Electrical three-Stage type	Υ	Υ
Manual three-Stage type	Υ	Υ
Relay type main control board	Υ	
MCU type main control board		Υ
External control	Y	Υ
Locking mode	Optional	Optional
Fire-fighting signal (forced to zero)	Passive closed signal	Passive closed signal
Overvoltage protection		Single phase
Undervoltage protection		Single phase
Feedback signal	Passive(I、II、0)	Passive ( I 、 II 、 0)
-		

#### MAIN TECHNICAL PARAMETERS

		SKT2 SERIES	KT2 SERIES SKT1 SERIES										
Shell frame grade cur	rent (Inm)	100A	160A		250A	630A			1600A		3200A		
Rated current (In)		100	125A 160		250	400 630		800 1000 1250 160		0 1600	2000	2500	3200
Conventional thermal c	urrent (Ith)	10,16,20,25, 32,40,50,63, 80,100A	63,80,100, 125,140, 150,160A		160,180,200, 225,250A	160,180,200, 225,250,315, 350,400,500, 630A		800,1000,1250, 1600A		50,	, 2000,2500,3200		200A
Rated insulation voltage of c	opper bar (Ui)	1000V											
Rated impulse withstand vol	tage (Uimp)	12KV											
Rated operating voltage of co	opper bar (Ue)	AC400V											
Use category		AC-33A											
Rated operating current of c	opper bar (le)	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 capacit	у	17KA	17	KA	40KA	67.2	67.2KA			105KA			
Rated conditional short-circuit current	with Fuse	100KA 100KA			100KA	100	KA		100KA			100KA	
lg or lcc	with MCCB	50KA	50KA		65KA	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 supply (Us)	Standard products: AC220V (customized voltage DC24V、DC110V、DC220V、AC110V、AC280V、AC220-280V)											
Start			32	5W	440W			600W					
Normal			18W				62W				120W		
Net weight(kg) 4 po	es	3.5	5.3	5.5	7	17	17.5		37	44		98	

Note: The parameters of SKT1 series 20A-100A is exactly same as the SKT1 125A product.

#### SCHEMATIC DIAGRAM OF CORRECT INSTALLATION METHOD



Best (front installation)

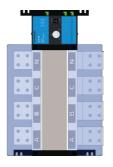


Right (back installation)

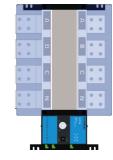








Right (vertical installation)

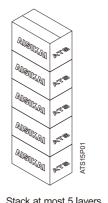


Wrong (inverted installation)

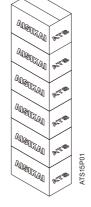




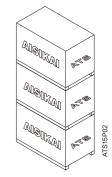
#### SCHEMATIC DIAGRAM OF PACKAGING STACKED



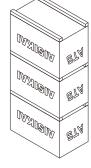
Stack at most 5 layers.



Stacking more than 5 layers is strictly prohibited.



Schematic diagram of wooden box packaging stacked



Upside-down stacking is strictly prohibited.





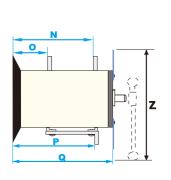


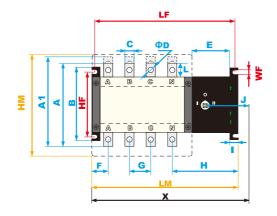


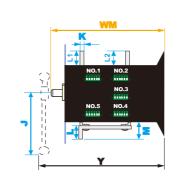


#### **OUTLINE DRAWING 1**

20A-1600A outline dimensions

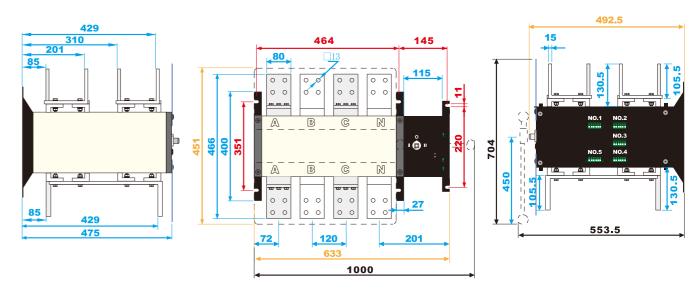






#### **OUTLINE DRAWING 2**

2000A-3200A outline dimensions



#### 20A-1600A outline and installation dimensions table

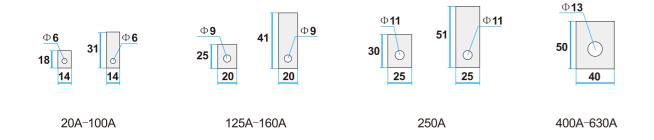
Series	ries Current range Installation data Maximum size of the body						Ot	ner detailed dimensions of switch  Other detailed dimensions of switch							Reference dimensions															
		LF	WF	HF	LM	WM	НМ	A	A1	В	С		E	F	G	Н	l l	J	K	L	L1	L2	M	N	0	P	Q	X	Υ	Z
SKT2	20-100A	225	6. 5	84	244	138	136	126	115	106	14	6	103	20	30	134	16	142	2. 5	20	18	31	26	87.5	37.5	89	114	303.5	173	210
	125-160A	271	6.5	110	290	188	180	155	140	130	20	9	103	30	36	152	18	188	3. 5	25	25	41	31	133	56	133.5	167	392.5	220	279
	250A	334	6.5	110	348	194	216	192	166	130	25	11	103	38	50	160	18	188	3. 5	28. 5	30	51	36	136	56	138	171	460	227	303
	400A	416	8.5	180	435	262	324	270	-	200	40	13	125.5	48	64	195	24	188	5	45	51	51	59	187	77	205	237	522	293	365
	630A	416	8.5	180	435	262	324	270	-	200	40	13	125.5	48	64	195	24	188	6	45	51	51	59	187	77	205	237	522	293	365
01/74	800A	608	11	220	633	321	451	350	-	250	63	15	120	72	120	201	27	473	7	72	66	66	88	247	103	254	298.5	1000	381	704
SKT1	1000A	608	11	220	633	321	451	350	-	250	63	15	120	72	120	201	27	473	7	72	66	66	88	247	103	254	298.5	1000	381	704
	1250A	608	11	220	633	320.5	451	350	-	250	63	16	120	72	120	201	27	473	7	72	66	66	88	247	103	254	298.5	1000	381	704
	1600A	608	11	220	633	320.5	451	392	-	250	80	13	120	72	120	201	27	473	10	100	80	80	125	247	103	254	298.5	1000	381	704

Note: X, Y and Z are the maximum width, depth and height of the switch assembled with a manual emergency handle.

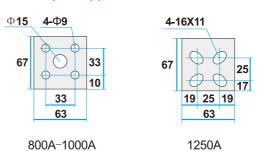
Depending on the angle of the handle when installing or the difference of positions of the slider moving, the corresponding dimensions will be smaller than the data listed in the table above, which are listed for reference only.

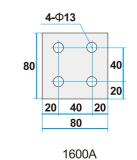
The parameters of SKT1 series 20A-100A is exactly same as the SKT1 125A product.

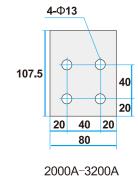
#### Input and output copper bar dimensions chart



#### Input and output copper bar dimensions chart







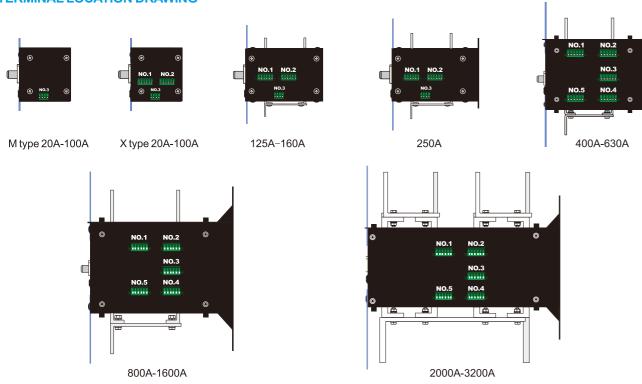




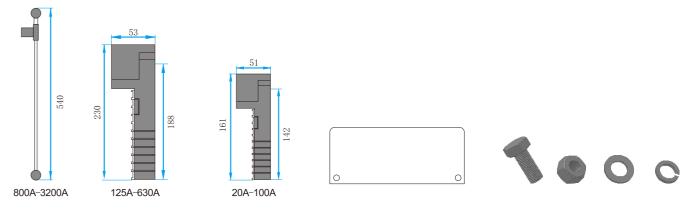
#### TERMINAL FUNCTIONS INTRODUCTION

Terminal Serial No.	Access point serial No.	Function	Notes			
	101、106	Power supply neutral wire and live wire output for feedback	Active output, 1A AC220V			
Terminal No. 1	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			
	201、206	Passive control when disconnected and active control when closed	See SKT Type Principle Diagram for details			
	202	Common terminal of external passive control signal input				
Terminal No. 2	203	When closed with 202, Line $\ensuremath{\mathbb{I}}$ is switched on	Paggive control signals			
	204	When closed with 202, Line 0 is switched on	Passive control signals			
	205	When closed with 202, Line II is switched on				
	301□306	Not used	Not assembled on 20A-250A			
	302	Common terminal of passive position feedback signal output	M type is active output, the other			
Terminal No. 3	303	Closed with 302 when Line I is switched on.	types are passive output, see the			
	304	Closed with 302 when Line 0 is switched on.	principle diagram for details.			
	305	Closed with 302 when Line ${\mathbin{\parallel}}$ is switched on.	1A AC 220V			
	401□406	Not used	Assembled on 400A and above			
Terminal No. 4	<b>402</b> 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			
	501	Not used				
	502	Not used	Optional parts, passive 3A AC 220V			
Terminal No. 5	503	Not used				
Terrinia No. 3	504	Not used				
	505	Not used	Optional parts, passive 3A AC 220V			
	506	Not used				

#### **TERMINAL LOCATION DRAWING**



#### STANDARD ACCESSORIES

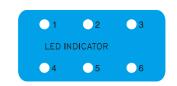


Safety guard plate

Current(A)	Number of wiring terminals (pieces)	Manual handle number/material	Safety guard plate number/material	Users Manual quantity	Cable fixing bolt number/specifications(set)
2000-3200	5	1 pc/steel			M12*45/48
1600	5	1 pc/steel		M12*40/48	
1250	5	1 pc/steel		1 сору	M10*35/48
800-1000	5	1 pc/steel	2 pcs/PMMA		M8*35/48
400-630	5	1个/ABS	- poor mins		M12*30/12
250	3	1个/ABS			M10*25/12
125-160	3	1个/ABS			M8*25/12
20-100	3 (M type is equipped with only one)	(M type is equipped with only one) 1个/ABS			M6*20/12

#### **INSTRUCTIONS FOR USE OF LED INDICATORS**

Manual handle



Cable fixing bolt

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 Line II 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 II power is abnormal.	Light on indicates Line I closed	Light on indicates both Line I and Line II are open	Light on indicates Line Π closed

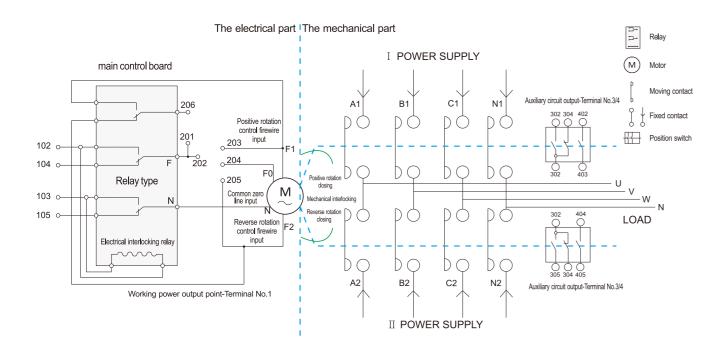
Note: SKT2 series have no LED indicators

ATS - 15

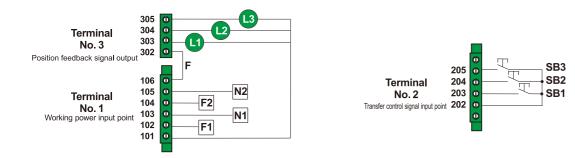


#### SKT-X type automatic transfer switch

#### X Type Internal Principle Schematic Diagram



#### Secondary Wiring Schematic Diagram: X Type

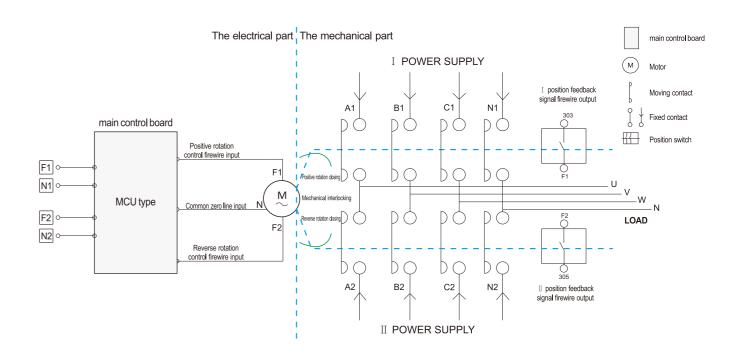


- F1 / N1: Power I fire line/zero line  $\boxed{\text{F2}} \ / \boxed{\text{N2}}$  : Power  $\mathbb I$  fire line/zero line
- L1: Main power powered on indicator light, Line I close
- L2: Line 0 close indicator light
- SB3: Standby power switch on button (Line II close)
- SB2: Double off button (Line 0 close)
- L3: Standby power powered on indicator light, Line II close SB1: Main power switch on button (Line I close)

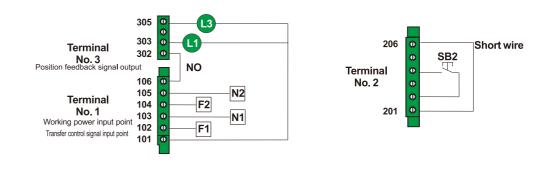
#### Note: X type ATS is suitable for the end places that have technical requirements for the transfer delay, and is generally used in conjunction with the generator unit.

#### SKT-X type automatic transfer switch

#### X Type Internal Principle Schematic Diagram



#### Secondary Wiring Schematic Diagram: NAX Type (400A-3200A)



- F1 / N1 : Power I fire line/zero line L1: Power I indicator, Line I closed
- $\boxed{\text{F2}}$  /  $\boxed{\text{N2}}$  : Power  $\blacksquare$  fire line/zero line L2: Power  $\blacksquare$  indicator, Line  $\blacksquare$  closed

SB2: Double off button (Line 0 close)



#### **APPENDIX**

#### **CERTIFICATIONS**



Ref. Certif. No.

HU-004641

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product

Automatic Transfer Switching Equipment

JIANGSU AISIKAI ELECTRIC CO., LTD.
No.5, ChuangYe road, ChenJi Industrial Zone, YiZheng City, Jiangsu
P.R. China

JIANGSU AISIKAI ELECTRIC CO., LTD. No.5, ChuangYe road, ChenJi Industrial Zone, YiZheng City, Name and address of the manufacturer P.R. China JIANGSU AISIKAI ELECTRIC CO.,LTD. No.5, ChuangYe road, ChenJi Industrial Zone, YiZheng City, Name and address of the factory Jiangsu lote: When more than one factory, please report on page 2 P.R. China Ui:1000V; Uimp:12kV; Class PC; AC-33A; Ue:AC400V, 50/60Hz; Number of Poles:3P,4P; Ratings and principal characteristics Ie:315/350/400/500/630/800/1000/1250/1600/ 2000/2500/3200A: Iq:120kA(SCPD:RT36) or 65kA(SCPD:ASKM1) AISIKAI Trademark / Brand (if anv) Customer's Testing Facility (CTF) Stage used SKT1 Model / Type Ref. Additional information (if necessary may also be reported on page 2) IEC 60947-6-1:2021 IEC 60947-1:2020 A sample of the product was tested and found to be in conformity with As shown in the Test Report Ref. No. which CN23XRGG 001

forms part of this Certificate

This CB Test Certificate is issued by the National Certification Body

Date:

TÜV Rheinland InterCert Kft., MEEI Division
H-1143 Budapest, Gizella út 51-57., Hungary
Web: www.tuv.com

2023-10-29 Signature: Wencai Zhang

Disclaimer: This is an electronically released document. The authenticity can be verified on the IECEE Website "http://certificates.iecee.org" (1.29 / 0)