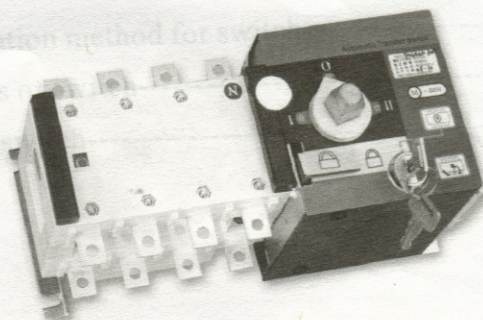


Automatic transfer switch Instruction Manual

GA(20A-3200A)

I. Introduction	01
II. Main Technical Parameters	02
III. Product Structure Instruction	03
IV. Outline Overall and installing	04
V. Usage Method	08
VI. DC24V/DC48V	14
VII. Method of terminal connection	14
VIII. Correct installation method for switch	15
IX. Wiring methods	15
X. Note of debug	16



NOTES:

Before you operate this Automatic transfer switch (hereinafter ATS), please read and understand these instructions carefully

! Dangers

- ▲ Before you install or operate the ATS, please read and understand these instructions carefully. Only professional ATS personnel can carry out this installation, adjustment, repair and maintenance.
- ▲ Many parts of the ATS, including printed circuit boards, when it work on-line voltage, can not touch these parts. Use insulated tools only.
- ▲ Do not touch the components which not protected.
- ▲ Before maintenance the line of ATS, we should take the following preventive measures:
 - Disconnect all power.
 - Put a "prohibited closing" signs before the locate of the switch
 - switch to "0" position and then hang padlock.

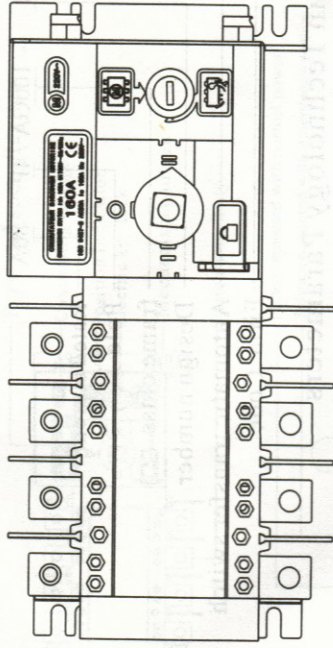
Warning

Inconsistent with the line voltage

Before Power and configuration for the ATS, we must ensure the line voltage is in the scope of the power supply voltage in the name plate of the ATS. If the line voltage and power supply voltage range is different, it is possible to damage ATS.

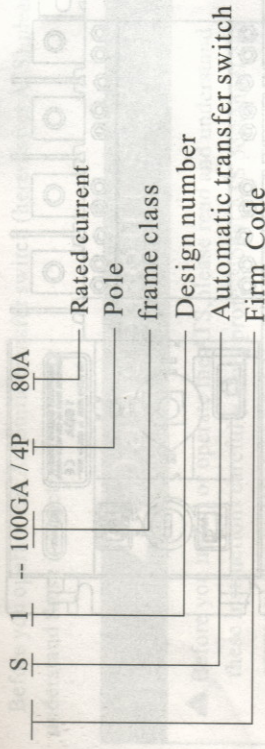
Not in accordance with the instructions will result in the damage of the equipment.

Check and Install



- ATS delivery
- Check to make sure the product is the same as ordering product.
- Remove the ATS package, check whether there is any damage in the transit.
- Check the voltage
- Check to make sure voltage and operating voltage of the ATS
- whether in the scope of the voltage
- Install the ATS
- According to this instructions document, then install the ATS.
- Install all of the external Accessories.
- wiring the ATS
- Connect the bus line of the switch which coincide with the rated current.
- According to the wiring diagram in the Manual, then connect the line of the control with the line of external instructions.

I、Types and Meanings

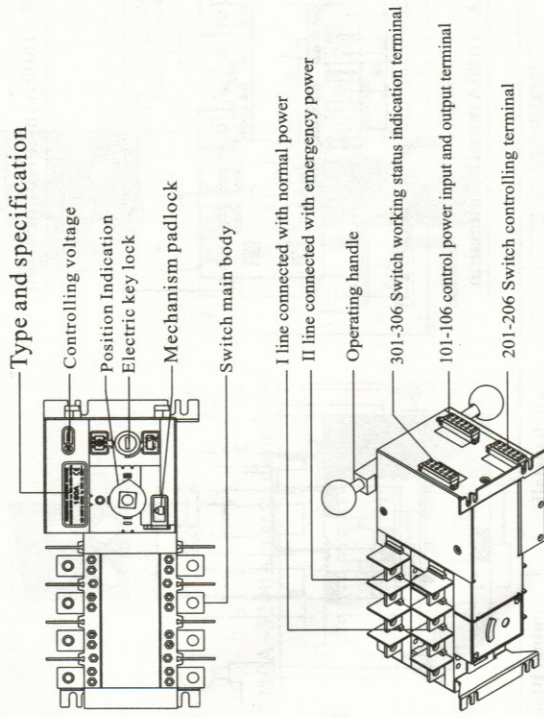


II、Main Technology Parameters

According to the Standard: IEC 60947-2-1/GB 14048.11-2002

Conventional thermal current Ith		20A	40A	63A	80A	100A	125A	160A	250A	400A	630A	800A	1000A	1250A	1600A	
Rated impulse withstanding voltage U _i		750V														
Rated surge-resistant voltage U _{imp}		8kV														
Rated working current U _e		AC440V														
Rated working current		20	40	63	80	100	125	160	250	400	630	800	1000	1250	1600	
Rated limited short-circuit current		50kA														
Rated short-time withstand current I _s		20	40	63	80	100	125	160	250	400	630	800	1000	1250	1600	
Change-over time I-I or II-I		0.45S														
Control power supply voltage		DC24V, 48V, 110V														
Power consumption of electrical machine		AC220V														
Rated controlling voltage		300W	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
Start		55W	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
Normal		300W	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
Weight (kg)		7.0	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	
4 Pole		7.0	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	

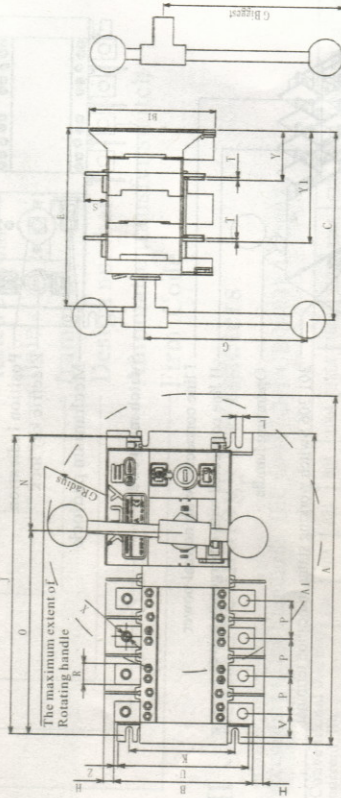
III、Products structure illustration



- 1. Electric key lock:** Control switch inside controlling line power supply, when the electric lock open, the switch could be operated automatically and remotely, then the electric lock closed, the switch could be only operated by handle.
- 2. Operating handle:** When operate the switch by operating handle, the electric lock must be closed.
- 3. Mechanic padlock:** When inspection, firstly the switch turned into the position of 0 by operation handle, then pull the padlock mechanism and close the padlock, then the inspection could be arranged. (Pull the mechanism padlock will cut off the inside controlling power supply of the switch. The switch couldn't be in electromotion position and also couldn't be manual drive.)
- 4. Position indication:** Indicate the position of the switch working estate (I, 0, II)
- 5. Controlling voltage:** Switch controlling voltage grade 220VAC, 24VDC, 110VDC and 220VDC.
- 6. Switch main body:** The front part is I line, connecting to "Normal power"; the rear part is II line, connecting to "Emergency power".

IV. outline overall and installing dimensions

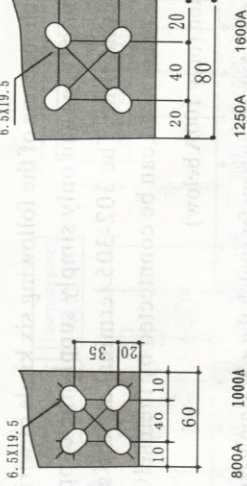
20A~1600A install dimension



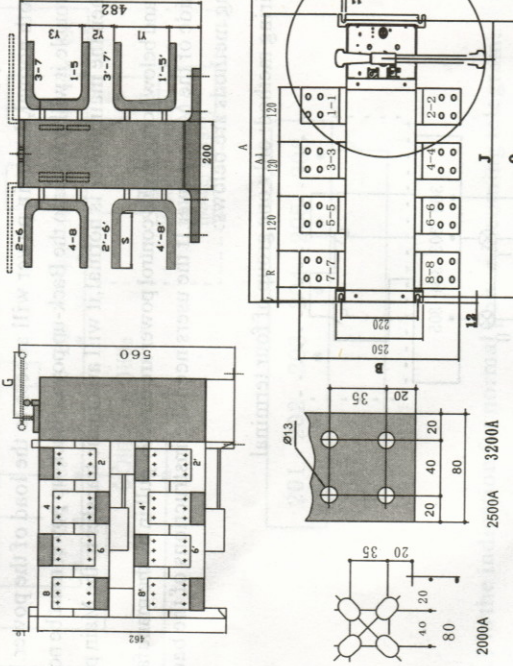
20A~1600A install dimension

Current	total dimension																			Switch install							Terminal Blocks							
	A	AI	B	B1	C	E	G	H	J	K	L	N	O	P	R	S	T	U	V	W	φX	Y	Y1	Z										
20A	279	243	106	103	169	145	115	19	229	85	7	76	153	30	14	18	2.5	103	20	134	6	41	94	3										
40A	279	243	106	103	169	145	115	19	229	85	7	76	153	30	14	18	2.5	103	20	134	6	41	94	3										
63A	279	243	106	103	169	145	115	19	229	85	7	76	153	30	14	18	2.5	103	12	134	6	41	94	3										
80A	279	243	106	103	169	145	115	19	229	85	7	76	153	30	14	18	2.5	103	12	134	6	41	94	3										
100A	279	243	106	103	169	145	115	19	229	85	7	76	153	30	14	18	2.5	103	12	134	6	41	94	3										
125A	322	300	135	128	230	189	115	10	284	102	7	91	190	36	20	25	3.5	127	18	162	9	55	125	4										
160A	322	300	135	128	230	189	115	10	284	102	7	91	190	36	20	25	3.5	127	18	162	9	55	125	4										
250A	406	362	163	142	230	189	143	4	343	80/103	7	91	252	36	25	31	3.5	142	15	180.5	11	57	125	11										
400A	552	433	260	222	230	273	189	14	416	180	9	93	323	50	40	50	5	222	18	180.5	13	85	193	19										
630A	552	433	260	222	284	273	189	14	416	99/180	9	93	323	65	40	50	6	222	18	188.5	13	83	193	19										
800A	760	633	357	250	284	350	443	28	613	220	11	87	526	65	60	78	8	250	31	188.5	13	109	254	54										
1000A	760	633	357	250	363	350	443	28	613	220	11	87	526	120	60	78	8	250	31	188.5	13	109	254	54										
1250A	760	633	357	250	363	350	443	28	613	220	11	87	526	120	80	78	8	250	21	188.5	13	110	254	54										
1600A	760	633	357	250	363	350	443	28	613	220	11	87	526	120	80	78	10	250	21	188.5	13	110	255	54										

20A~1600A install dimension



2000A~3200A install dimension



2000A~3200A install dimension

Current	A	AI	B	C	G	J	O	R	S	T	V	Y1	Y2	Y3
2000A	800	633	460	542	447	610	524	80	120	10	30	169	65	169
2500A	800	633	460	542	447	610	524	80	125	15	30	174	60	174
3200A	800	633	460	542	447	610	524	80	130	20	30	179	55	179

V、 Usage method

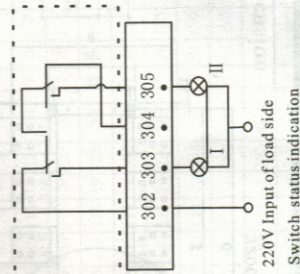
Note: The users can choose one of the following six kinds of wiring methods, The users of economic types can only simply supply the copper power, no need wiring the second time. The 302-305 terminal are the switch status indicators, When the users need, can be connected by themselves.

1: Economy Connection (only 100A below)

▲ 100GA economy type Automatic transfer switch, the user simply connect the Main power and Back-up power to the copper bus, then it can work. When the two-way power supply are both normal, the main power will access to the load of the power. If the common is trouble, it will transfer to the Back-up power (Back-up power must be normal). However, when the main power is normal, it will automatic transfer to the Main power.

▲ 100GA and below economy, its control power are directly pull in by the manufacture from the inside of the Main power. If the users need the instructions of the back-up power wiring methods are belows:

Terminal wiring method: only one group of four terminal

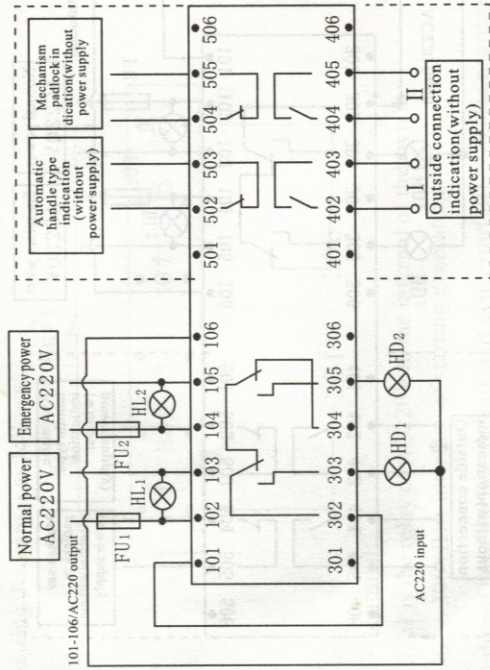


Note: The dashed box for internal auxiliary contact of S1 switch.

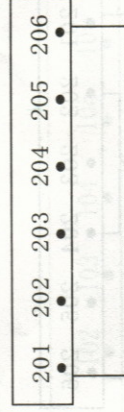
I : the instructions for the Main power supply

II : the instructions for the Back-up power supply

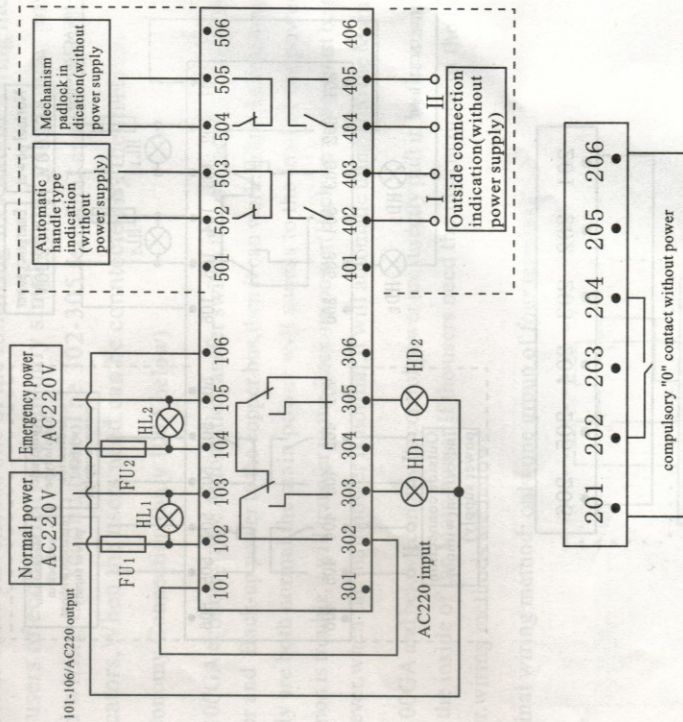
2. Automatic wiring method (for rated current 20A ~ 3200A)



- HL1 is the indication for normal power incoming telegram;
- HL2 is the indication for emergency power incoming telegram;
- HD1 is the indication for normal power devotion;
- HD2 is the indication for emergency power devotion;
- FU1, FU2 are the fuse for 2A.
- 101~106, 201~206, 301~306 is the switch terminal for S1-GA.
- 401~406, 501~506 the switch terminal could be choosed if the current up to 630A..

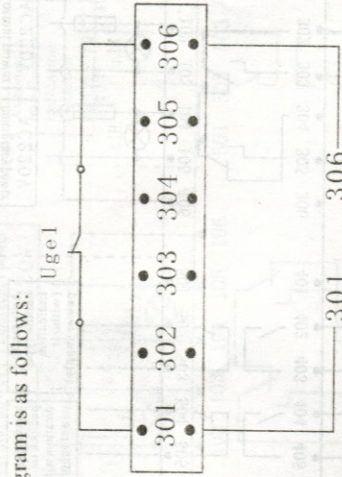


3. Automatic + compulsory purchase "0" (for rated current 20A ~ 3200A)
(Fire / dual power supplies are disconnected) wiring method.



- HL1 is the indication for normal power incoming telegram;
- HL2 is the indication for emergency power incoming telegram;
- HD1 is the indication for normal power deviation;
- HD2 is the indication for emergency power deviation;
- FU1, FU2 are the fuse for 2A.
- 101~106, 201~206, 301~306 is the switch terminal for YES1-GA.
- 401~406, 501~506 the switch terminal could be choosed if current up to 630A.

4. Generator wiring method (for rated current 20A ~ 3200A)
1).have the interface of start generator(301~306,also character of Uge1)
wiring diagram is as follows:

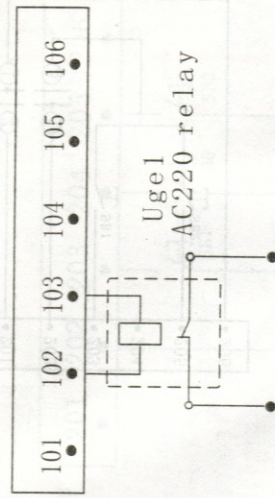


Description:

Uge1 is the relay of AC220V in the internal of the switch.

301 ~ 306 is the interface of starting generating.

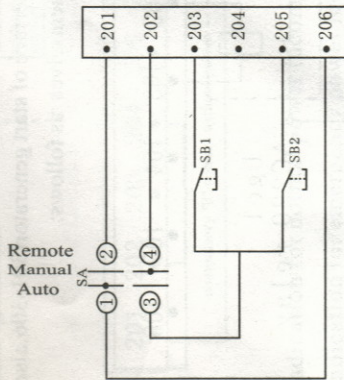
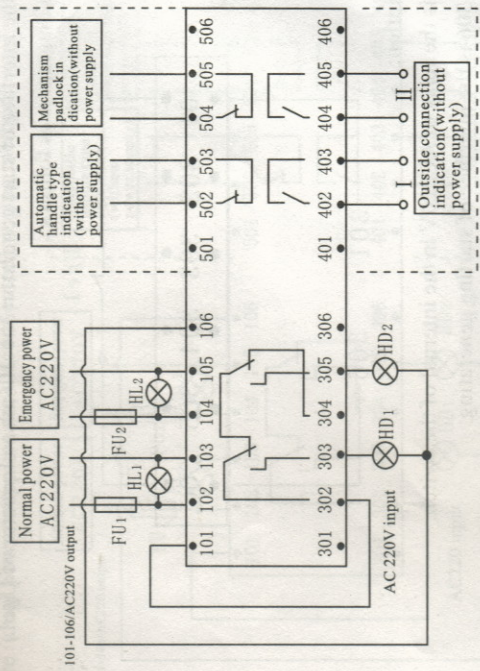
2).do not have the interface of start generator(301~306,also nocharacter of Uge1)
User can wire by themselves as follows:



Interface of dry contact to start the generator

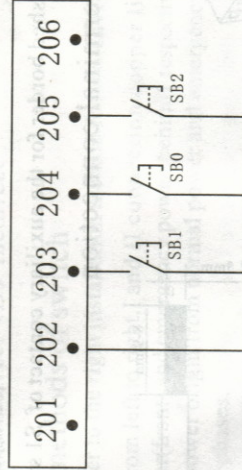
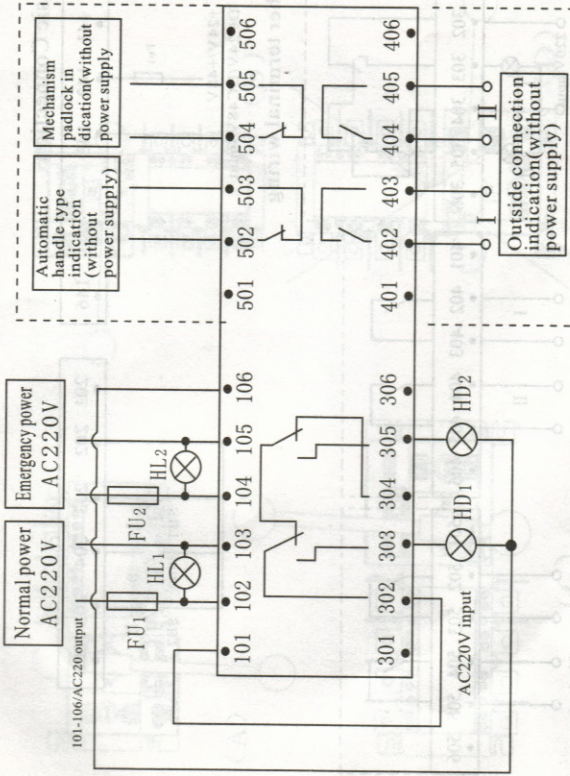
Note: The contact output capacity: 250VAC/5A, 380VAC/3A.

5. Automatic + Manual (Remote Control) wiring method (for rated current 20A ~ 3200A)



- SA: Auto/Manual function selection switch
- SB1, SB2: are respective for normal power, emergency power handle input push button (contact without power)
- 401~406, 501~506: the switch terminal could be choosed.

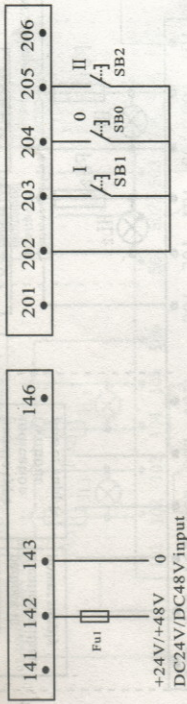
6. Remote Control (for manual operate) wiring method (for rated current 20A ~ 3200A)



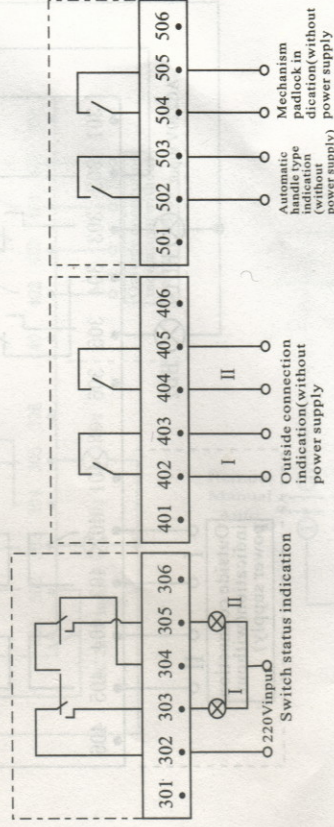
- SB0, SB1, SB2 are respective for compulsory position "0", normal power, emergency power handle input push button (contact without power)
- 401~406, 501~506 the switch terminal could be choosed
- Rated Current 20A ~ 630A compulsory "0" function can be selected.

VI、DC24V/DC48V wiring method

1. Basic Connection

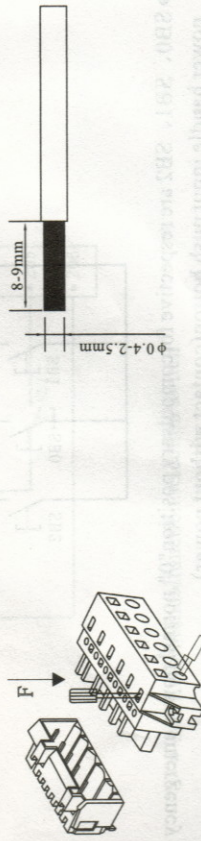


2. Other terminal wiring



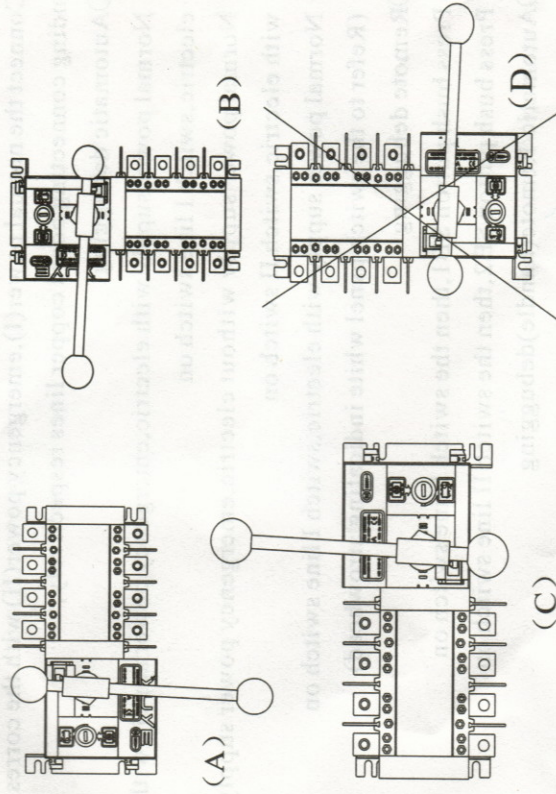
Note: Within the dashed border for the auxiliary contact of S1 switch

VII、Method of terminal connection



Use the screw driver use force downwards as the picture indicated direction, the line imbedding as the picture shows

VIII、Correct installation method for switch



(A) (B) (C) correct (D) Incorrect

IX、wiring methods of switch

(Please refer to the right installation method for switch A)

- The switch from left to right, I and II connection copper lines connected with normal power (front) and emergency power (behind) respectively with A, B, C phases
- Controlling power origin from normal power and emergency power respectively with C and N phases.
- I and II line controlling power AC220V connected with terminal 102~103, 104~105 respectively, therein 102 and 104 are normal power and emergency power live line respectively.
- Terminal 101, 106 are act as signal lamp to control power supply, therein 106 is the live line. Note: 101 and 106 couldn't be connected with any other lines.
- When above (under) input line, above (under) terminal I and II line A, B, C phases will be connected with copper lines or lines acting as output.