

<Please read instruction book carefully when you installation>

Automatic Transfer Switch (ATS) Manual Instruction GA model



Suggest send the instruction to final user
No.ZXS1GEN23062016

Contents Index

1.Types and meanings.....	03
2.Main technology parameters.....	03
3.Products structure instructio.....	04
4.Outline overall and installing dimensions	05
5.Usage method	08
6.Connection terminal using method	12
7.Correct installation method for switch	12
8.Wiring method of switch	13
9.Debug indication.....	13

Notice:

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

Dangerous

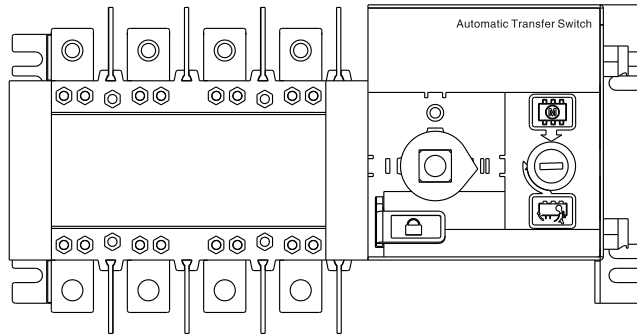
- ▲ Before you install or operate the ATS, please read and understand these instructions carefully. Only the professional ATS personnel can carry out this installation, adjustment, repair and maintenance.
- ▲ Many parts of the ATS, including printed circuit boards, when it work on-line voltage, cannot 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 will damage the ATS.Using it not according to the instructions it will damage the equipment.

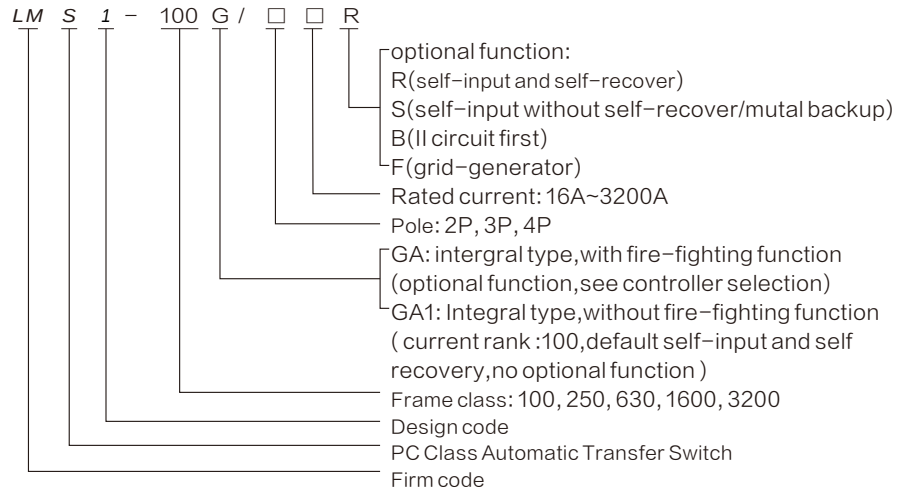
Check and install



Picture 1

- **ATS delivery**
Check and make sure the product is the ordering products.
- **Check the voltage**
Check and make sure the voltage and the working voltage of the ATS.
Whether it is in the scope of the voltage.
- **Install the ATS**
Install the ATS according this manual instruction.
Install all the external accessories.
- **Wiring the ATS**
Connect the bus bar of the switch which coincided with the rated current.
Connect the control wire and outside indication well according to the manual instruction.

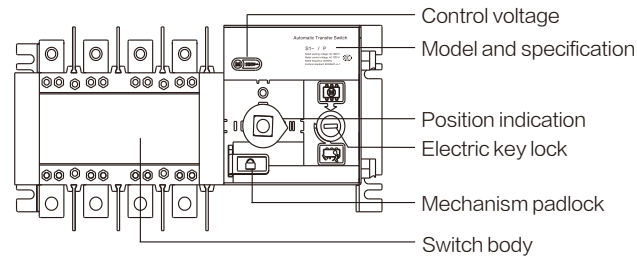
1.Type and meaning



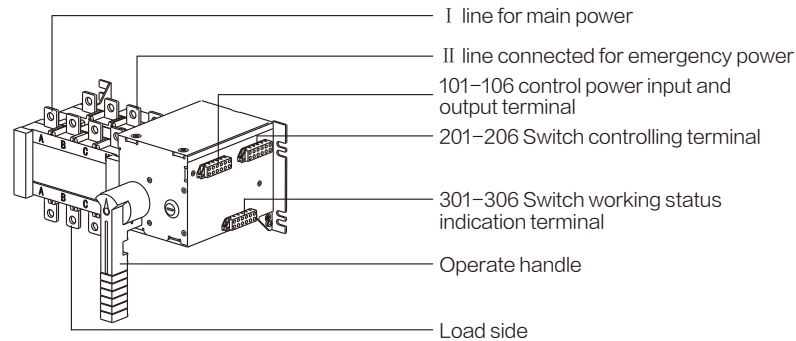
2.Main technology parameters

Frame class	100										250					630					1600					3200						
Rated current In(A)	16	20	25	32	40	50	63	80	100	125	160	200	225	250	315	350	400	500	630	800	1000	1250	1600	2000	2500	3200						
Rated insulation voltage(Ui)	690V															800V																
Rated concussion withstand voltage(Uimp)	8kV																															
Rated working voltage(Ue)	AC400V																															
Using category	AC-33B																				AC-33iB											
Rated short-circuit connection capacity	8KA										17KA					26KA					67.5KA											
Rated short-time withstand current(Icw)	5kA/30ms										10kA/60ms					12.6kA/60ms					32kA/60ms											
Transfer time I-II or II-I	2.5s										2.2s					0.9s					2s											
Control voltage	DC24V、AC110V、AC220V																															
Rated frequency	Start	11W										13W					355W					400W	440W					600W				
	Normal																74W					90W	98W					120W				
Weight(kg) 4Pole	3.4										6.0	7.6				15.8		16.8			36	36	37	38.6	55	61	67					

3.Switch structure explain



Picture 2

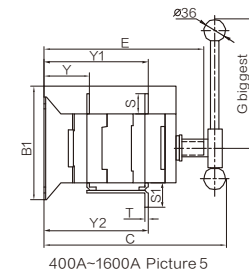
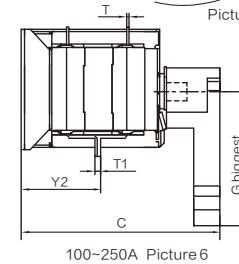
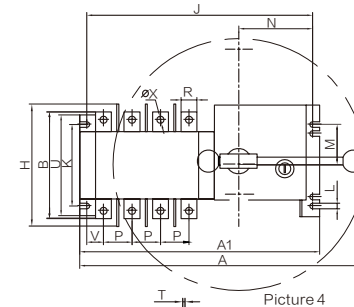


Picture 3

- ① Electric key lock:Control the inside controlling line power supply of the switch,when the Electric lock open,the switch could be operated automatically and remotely, when the electric lock closed,the switch could be operated by handle only.
- ② Operating handle: When operate the switch by the operating handle, the electric lock must be closed.
- ③ Mechanic padlock:When inspection,firstly turn the switch to the"0" position by operation handle,then pull the padlock mechanism and close the padlock,then the inspection can be arranged:(Pull the mechanism padlock will cut off the inside controlling power supply of the switch.The switch couldn't be inelectric position and also couldn't be manual operation.
- ④ Position indication:It means the position of the switch working estate(I ,0, II)
- ⑤ Controlling voltage: AC220V.

4.Outline and installation dimensions

□ 16A~1600A installation diagram(2 input 1 output)



□ 16A~1600A installation dimensions(2 input 1 output)

Specification	Total dimension								Switch installation										Connection terminal						
	A	A1	B	B1	C	E	G	H	J	K	L	M	N	P	R	S	S1	T	T	U	V	φX	Y	Y1	Y2
16~100A	270	245	110	103	170	142	115	146	226	84	7	44	81	30	14	18	23	2.5	5	103	12	6	40.5	92	67.5
125~160A	344	304.5	139.5	142.5	218.5	186	145	185	283.5	102	7	52.5	94.5	36	20	25	29.5	3.5	7	127.5	19	9	57	129	95
250A	408.5	368.5	163	166	223	186	145	200.5	347	102	7	49	94.5	50	25	29	33.7	3.5	7	141.5	28	11	57	130.5	95.5
400A/3P	525	374	249	222	305	268	250	290	354	179	9	96	91	65	32	37	52	5	/	222	38	11	83	193	193
400A/4P	585	435	249	222	305	268	250	290	415	179	9	96	91	65	32	37	52	5	/	222	38	11	83	193	193
630A/3P	525	374	265	222	305	268	250	290	354	179	9	96	91	65	40	45	61	6	/	222	38	12	83.5	193.5	196
630A/4P	585	435	265	222	305	268	250	290	415	179	9	96	91	65	40	45	61	6	/	222	38	12	83.5	193.5	196
800~1000A/3P	785	520	352	250	390	326	360	/	496	220	11	115	84	120	60	64	88	8	/	250	60.5	13	109	254	254
800~1000A/4P	1080	635	352	250	390	326	540	/	610	220	11	115	84	120	60	64	88	8	/	250	60.5	13	109	254	254
1250A/3P	785	520	368	250	390	326	360	/	496	220	11	115	84	120	80	68	100	8	/	250	60.5	13	109	254	254
1250A/4P	1080	635	368	250	390	326	540	/	610	220	11	115	84	120	80	68	100	8	/	250	60.5	13	109	254	254
1600A/3P	785	520	376	250	390	326	360	/	496	220	11	115	84	120	80	68	108	10	/	250	60.5	13	110	255	255
1600A/4P	1080	635	376	250	390	326	540	/	610	220	11	115	84	120	80	68	108	10	/	250	60.5	13	110	255	255

Technical drawing of a mechanical part, likely a pump or valve component. The drawing shows a cross-section of the part with various dimensions and labels. Key dimensions include:

- $\varnothing 36$: Diameter of the top flange.
- E : Total length of the part.
- $B1$: Height of the main body.
- Y : Distance from the left face to the start of the internal thread.
- $Y1$: Distance from the left face to the start of the internal thread (labeled as $Y1$ in the drawing).
- C : Distance from the left face to the end of the internal thread.
- S : Thickness of the internal thread.
- G : Distance from the right face to the end of the internal thread.
- G_{biggest} : Distance from the right face to the end of the internal thread (labeled as G_{biggest} in the drawing).

Specification	Total dimension								Switch installation										Connection terminal			
	A	A1	B	B1	C	E	G	H	J	K	L	M	N	P	R	S	T	U	V	ΦX	Y	Y1
16~100A	270	245	106	103	170	142	115	146	226	84	7	44	81	30	14	18	2.5	103	12	6	40.5	92
125~160A	344	304.5	135	142.5	218.5	186	145	185	283.5	102	7	52.5	94.5	36	20	25	3.5	127.5	19	9	57	129
250A	408.5	368.5	158.5	166	223	186	145	200.5	347	102	7	49	94.5	50	25	29	3.5	141.5	28	11	57	130.5
400A/3P	525	374	234	222	305	268	250	290	354	179	9	96	91	65	32	37	5	222	38	11	83	193
400A/4P	585	434	234	222	305	268	250	290	414	179	9	96	91	65	32	37	5	222	38	11	83	193
630A/3P	525	374	250	222	305	268	250	290	354	179	9	96	91	65	40	45	6	222	38	12	83.5	193.5
630A/4P	585	434	250	222	305	268	250	290	414	179	9	96	91	65	40	45	6	222	38	12	83.5	193.5
800~1000A/3P	785	520	328	250	390	326	360	/	496	220	11	115	84	120	60	64	8	250	56.5	13	109	254
800~1000A/4P	1080	635	328	250	390	326	540	/	610	220	11	115	84	120	60	64	8	250	60.5	13	109	254
1250A/3P	785	520	336	250	390	326	360	/	496	220	11	115	84	120	80	68	8	250	56.5	13	109	254
1250A/4P	1080	635	336	250	390	326	540	/	610	220	11	115	84	120	80	68	8	250	60.5	13	109	254
1600A/3P	785	520	336	250	390	326	360	/	496	220	11	115	84	120	80	68	10	250	56.5	13	110	255
1600A/4P	1080	635	336	250	390	326	540	/	610	220	11	115	84	120	80	68	10	250	60.5	13	110	255

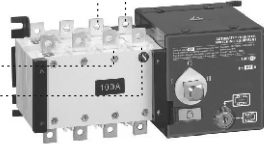
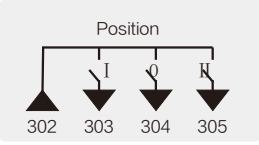
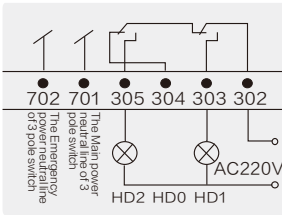
Technical drawing of a rectangular plate with dimensions and features. The plate has a total width of 260 and a total height of 220. It features eight circular holes arranged in two rows of four. The top row holes are labeled 1, 3, 5, and 7. The bottom row holes are labeled 2, 4, 6, and 8. A central horizontal slot is labeled 'R'. A vertical slot is labeled 'V'. A circular feature on the right side is labeled '11'. A dimension of 120 is shown for the distance between the vertical slots. A dimension of 85 is shown for the distance from the right edge to the center of the circular feature. The plate is labeled 'A1' at the top and 'J' at the bottom.

Specification	A	A1	B	G	J	R	S	T	V	Y1	Y2
2000A/3P	785	537	423	360	496	80	81	10	56	113	121
2000A/4P	1080	651	423	540	610	80	81	10	60	113	121
2500A/3P	785	537	433	360	496	80	81	15	56	118	116
2500A/4P	1080	651	433	540	610	80	81	15	60	118	116
3200A/3P	785	537	443	360	496	80	81	20	56	123	111
3200A/4P	1080	651	443	540	610	80	81	20	60	123	111

5. Manual instruction

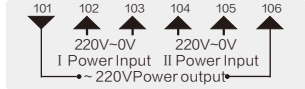
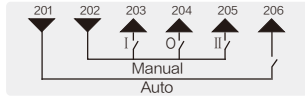
5.1: GA1 type Economic ATS manual instruction(Fit for rated current:16A-100A)

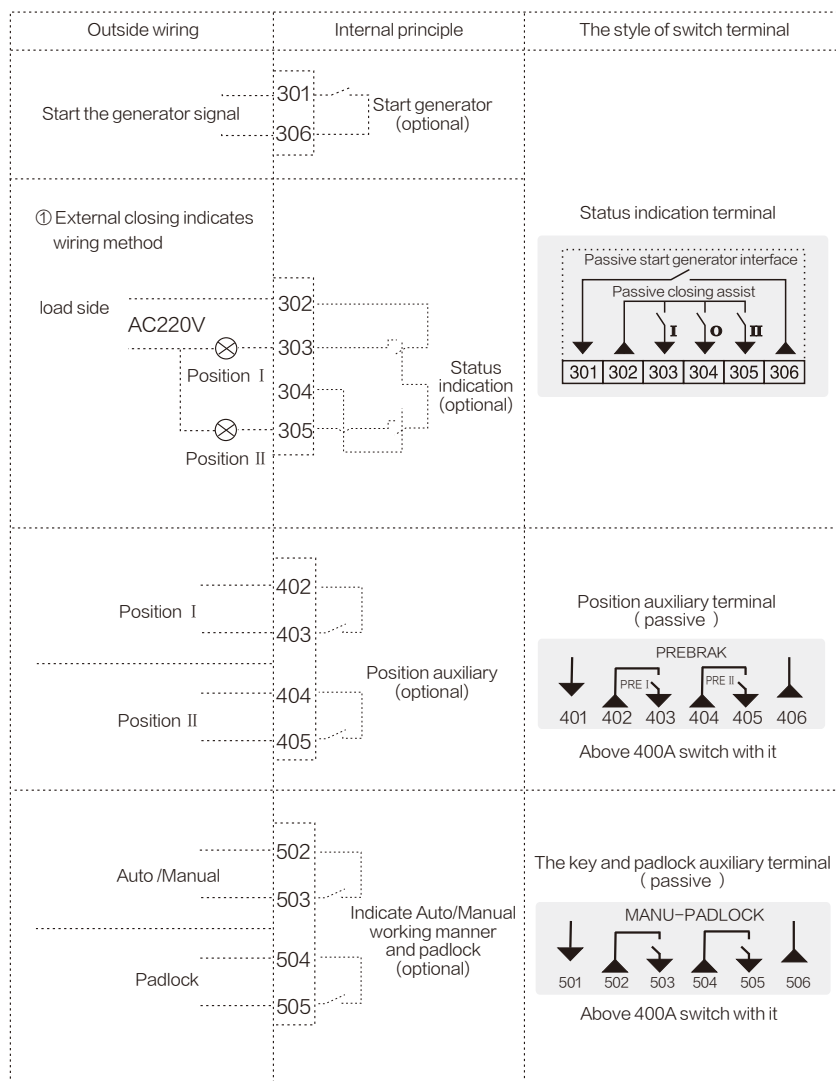
Note: Please pay attention to Main power and Emergency power phase sequence corresponding relation when you are wiring the switch.

Outside wiring	Internal principle	The style of switch terminal
(The lower) II AC220V (The upper) I AC220V	N L L N Control voltage (must connected) 	Neutral line wiring method of the 3Pole switch, please see the third diagram in this page.
① The wiring method of 4 pole switch Connect to the load AC220V Position I Position II	302 303 304 305 Status indication (optional)	The plug-in terminal of 4 pole switch 
② The wiring method of 3 pole switch Connect to the load AC220V Position I Position II The Main power neutral line of 3 pole switch The Emergency power neutral line of 3 pole switch	302 303 304 305 701 N1 702 N2	The plug-in terminal of 3 pole switch 

5.2 GA type fire type ATS manual instruction(Fit for rated current:16A-3200A)

Note: Please pay attention to Main power and Emergency power phase sequence corresponding relations when you are wiring the switch.

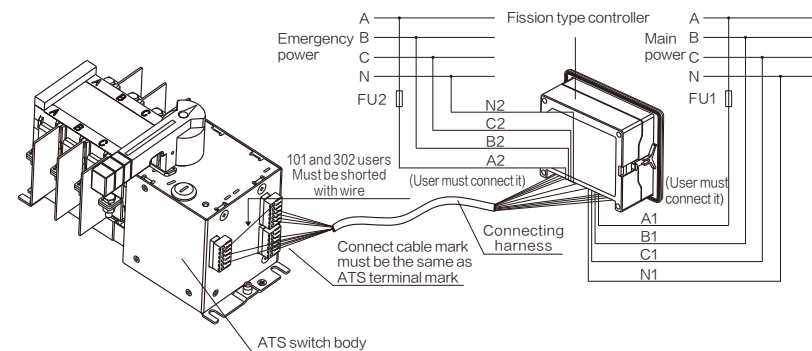
Outside wiring	Internal principle	The style of switch terminal
I AC220V FU1 II AC220V FU2 Fu1, FU2 fuse is 2A	102 L 103 N 104 L 105 N Control voltage (must connected)	Power terminal 
① Automatic wiring method Automatic	201 206	Attach: SB0: Constraint double-off(fire protection) button SB1: Main power closing indication SB2: Emergency power closing indication 
Manual SB1 SB0 SB2	202 203 204 205	
③ Automatic and Manual (remote control) wiring method Two in one SA is the selectiveswitch Constraint double-off(fire protection) Fire protection	① ② ③ ④ 201 202 203 204 205 206 202 204	



5.3 Passive closing assist (Fit for 16A-3200A split type)

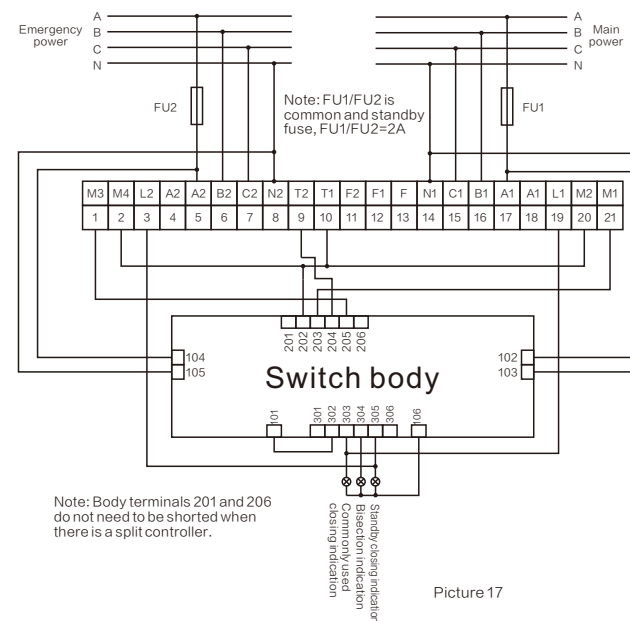
□ Wiring diagram (manufacturer's standard wiring)

Main power A/B/C/N phase and Emergency power A/B/C/N phase sequence corresponding



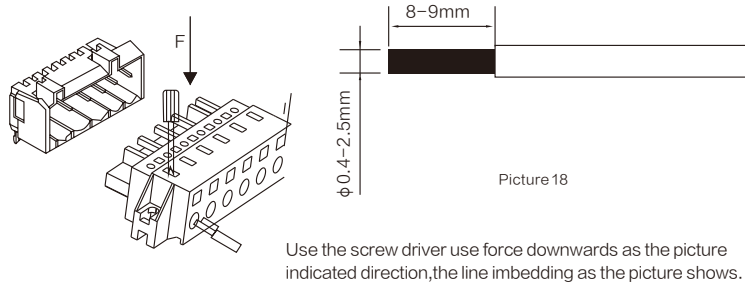
Picture 16

□ User connection diagram



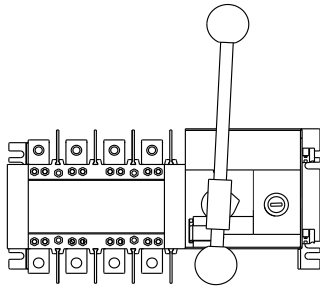
Picture 17

6.Method of terminal connection

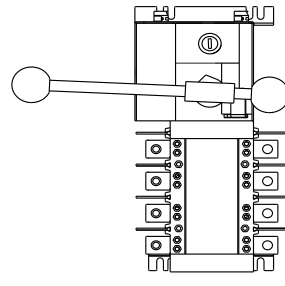


Picture 18

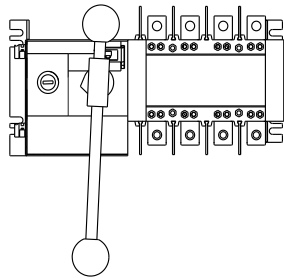
7. Correct installation method of the switch



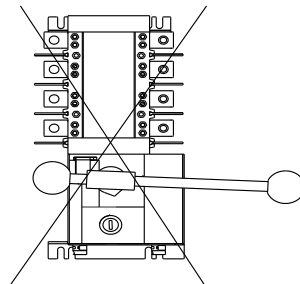
Picture19 correct



Picture20 correct



Picture21 correct



Picture 22 incorrect

8.Wiring methods of the switch

8.1 The primary wiring diagram to see the picture 3.

8.2 The control power is derived from normal power , emergency power cand N phases.

8.3 I and II line control power AC220V connected with terminal 102~103,104~105 respectively,102 and 104 are normal power and emergency power live line respective.

8.4 Terminal 101,106 are act as signal lamp to control the power supply.

Note:101 and 106 couldn't be connected with any other lines.

8.5 When above(under) input line, under(above)terminal I and II line A,B,C phases will be connected with copper lines or lines acting as output.

9.The instruction of debug the switch

9.1 Connect the normal power(I),emergency power(II) to the corresponding copper bar respectively;

① Automatic debugging

Normal power supply with electric,emergency power supply with Electric,switch I line switch on

Normal power supply without electric,emergency power supply with electric,switch II switch

on

Normal power supply with electric,switch I line switch on

(Refer to the switch panel white indicating arrowhead)

② Remote debugging

Press the bush button SB1,then the switch I line switch on

Press bush button SB2,then the switch II line switch on

③ Automatic/Remote(Manual)debugging

When dial the function selection switch to the automatic position: the switch should act as the ① item required

When dial the function selection switch to the remote (manual) position, the switch should act as the ② item required

9.2 When the switch is in the position of switch on I line or II line,the signal lamp on the panel should indicate correspondingly;

9.3 After finished the debugging,close the power supply firstly,and transfer the switch to the "0" position by handle.(Middle position,refer to the switch panel white indicating arrowhead).