ATO

USER MANUAL

ZMQ5 serise
Dual Power Automatic Transfer Switch

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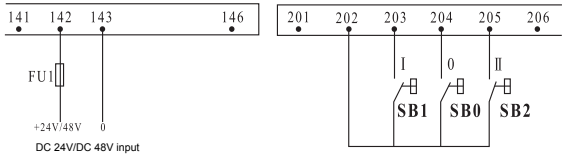
● Letter and symbol description

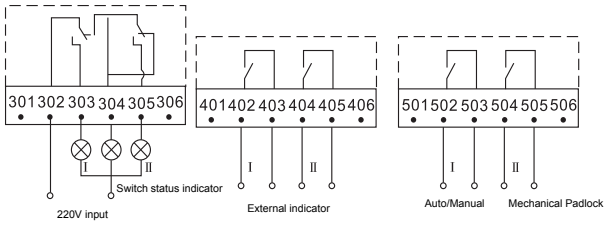
1. C1 and N1 are the live line and neutral line of normal power supply respectively.
2. C2 and N2 are the live line and neutral line of standby power supply respectively.
3. HL1 and HL2 are indications for normal power supply and standby power supply.
4. HD1 and HD2 are normal power supply and standby power input indications.
5. FU1 and FU2 are 2A fuses.
6. 101-106, 201-206 are the automatic transfer switch secondary terminals.
7. 301-306 are the automatic transfer switch external indicator terminals.
8. 401-406, 501-506 ATS terminals can be optional.
9. "Full auto" wiring method, 201, 206 must be short connection.
10. Forcedly switching off "0" contact (passive) can also be DC 24V power supply input.
11. K1 is the power generator signal output (when commonly-used power is cut off).
12. SA is the automatic / manual function selection switch.
13. SB1, SB2 are normal power supply, standby power manual input button (passive contact).

11. Wiring method of DC 24V/48V

1. Basic wiring method



2. Other terminal wiring

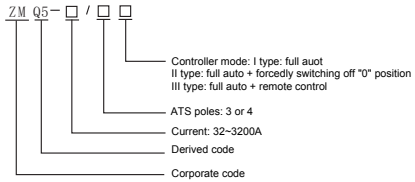


*** The dotted lines are the auxiliary contacts inside the automatic transfer switch.

1. Application

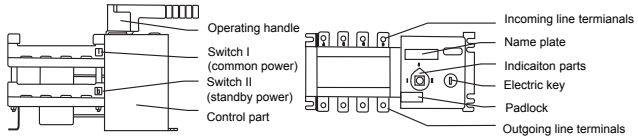
ZMQ5 series automatic transfer switch (ATS) is an automatic transfer switch that integrates switch and logic control and realizes mechatronics. It is suitable for power distribution equipment of AC 50Hz, rated voltage AC 400V, and conventional thermal current to 1600A. It provides function of voltage detection, forcedly switch off "0" position, emergency manual operation, and widely used in the automatic conversion of the main power supply and backup power supply in the power supply system or the automatic conversion and safety isolation of the two load devices. The ATS is controlled by the control circuit board to send various logic commands to manage the motor. The motor drives the operating mechanism of the main part of the ATS to quickly turn on the breaking circuit or perform circuit conversion, and realize safety isolation through the visible state.

2. Model



3. Introduction of switch structure

3.1. Electric key: Control the power source of inner control circuit in the ATS, when electric lock is ON, full auto operation, remote control, forcedly switching off “0” operations can be executed; while electric lock is OFF, the ATS can only be operated by hand.
3.2. Operating handle: Before using the operating handle, please switch off electric lock.
3.3. Padlock: Special for inspection and repair, first use the operating handle to make the ATS in the “0” position, pull up the padlock mechanism for lockup and then do repairing. (Pull the padlock to cut off the internal control power of the switch, thus the ATS transfer switch cannot be automatically and manually operated.)
3.4. Indication parts: Indicate the working positions: (I, O, II)

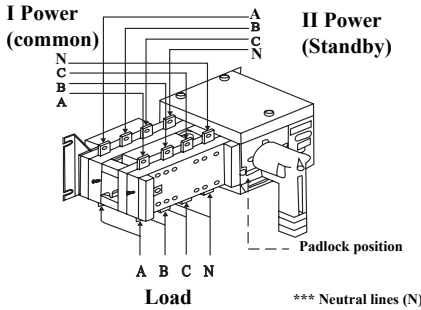


4. Main technical date

- Conforming standard: IEC6094-6-1, GB14048.11-2008
- Rated operating voltage (Ue): AC 400V
- Rated insulation voltage (Ue): AC 690V
- Rated operating current (Ie): 10~3200A
- Control supply voltage: DC 24V, DC 48V, AC230V

Conventional thermal current (A)		100	160	250	400	630	1000	1250	1600	2000	2500	3200
Rated insulation voltage		750V					1000V					
Rated impulse withstand current		8KV					12KV					
Rated operating current (A)	AC-31A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-35A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-33A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
Rated short time withstand current		7KA	9KA		13KA			50KA				55KA
Rated short-circuit current limit		100KA			70KA		100KA	120KA		80KA		
Control supply voltage		DC24V、48V、110V AC220V										
Conversion time (s)		0.5	1	1.1	1.2		1.25			2.45		

5. Wring diagram

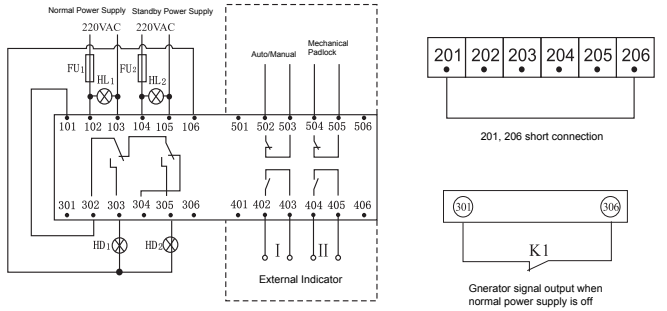


*** Neutral lines (N) must be connected.

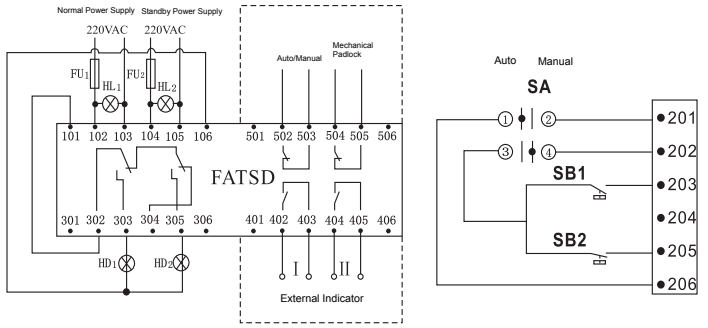
6. Usage Method

1. Full auto function: When the commonly-used power is cut off, the ATS will automatically transferred to the standby power; when the common power recovers, ATS will automatically switched back to the common-used power from the standby power.
2. Forcedly switching off “0” position: Push “0” button forcedly, ATS will cut off two loops of power supply.
3. Remote control function: Push “I” button, normal power will be in service; push “II” button, then standby power will put into use; push “0” button, to cut off two loops of power supply.
4. Please select the switching function according to requirement and correctly connect the wires base on the switching function.
5. For ordering the product, please indicate the ATS model, current rating and the function you need.

• Wiring method of 100~3200A ATS with full auto mode + starting generator signal output

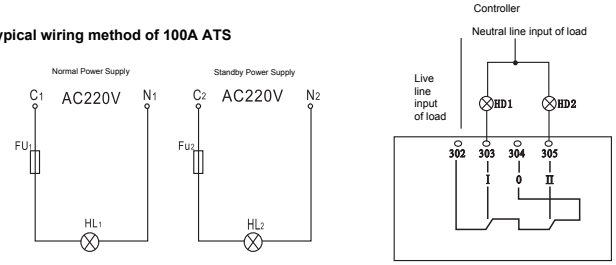


• Wiring method of 100~3200A ATS with full auto mode + starting generator signal output

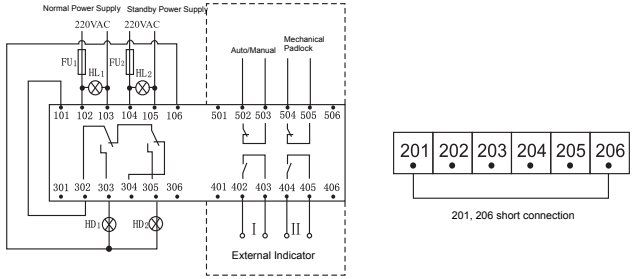


11. Wiring diagram of external terminals

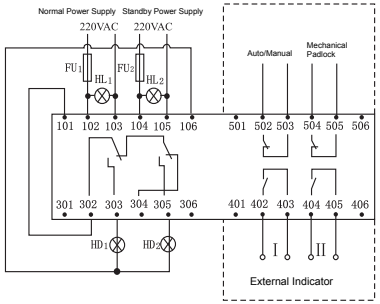
● **Typical wiring method of 100A ATS**

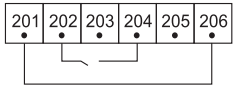


● **Wiring method of 160~3200A ATS with full auto mode**

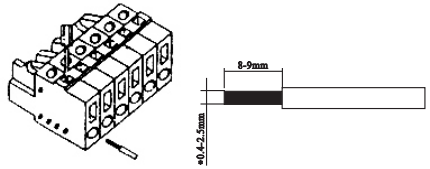


● **Wiring method of 160~3200A ATS with full auto mode + forcedly switching off "0"**



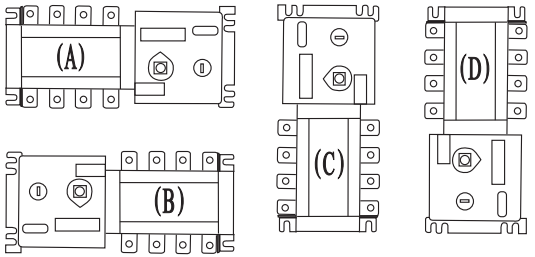


7. Terminal wiring method



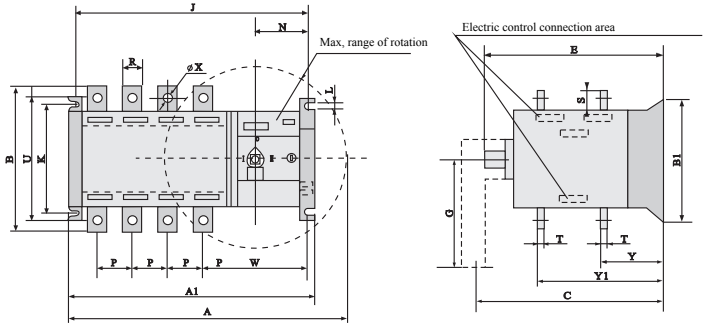
*** Use small screwdriver to push downside and lines are inserted as figure shown.

8. Correct mounting method



*** A, B, C above are correct (A is best), D is wrong.

9. Installation size



Item	Dimensions (mm)																			
In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
100A/3	235	232	106	105	134	143	115	221.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
100A/4	247	244	106	105	134	143	115	233.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
125A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
125A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
250A/3	356	312	170	142	261	208	145	293	102	7	91	50	25	30	3.5	142	168	11	60	145
250A/4	406	362	170	142	261	208	145	343	102	7	91	50	25	30	3.5	142	168	11	60	145
400A/3	487	368	260	222	284	273	189	351	180	9	93	65	32	40	5	222	203	11	83	193
400A/4	552	433	260	222	284	273	189	416	180	9	93	65	32	40	5	222	203	11	83	193
630A/3	487	368	260	222	284	273	189	351	180	9	93	65	40	50	6	222	203	12	83	193
630A/4	552	433	260	222	284	273	189	416	180	9	93	65	40	50	6	222	203	12	83	193
800A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
800A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	270	12.5	109	254
1000A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
1000A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
1250A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	8	250	207	13	110	255
1250A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	8	250	207	13	110	255
1600A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	10	250	207	13	110	255
1600A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	10	250	207	13	110	255
2000A	800	633	460		542		447	610			84.5		80	120	10					169
2500A	800	633	460		542		447	610			84.5		80	125	15					174
3200A	800	633	460		542		447	610			84.5		80	130	20					179