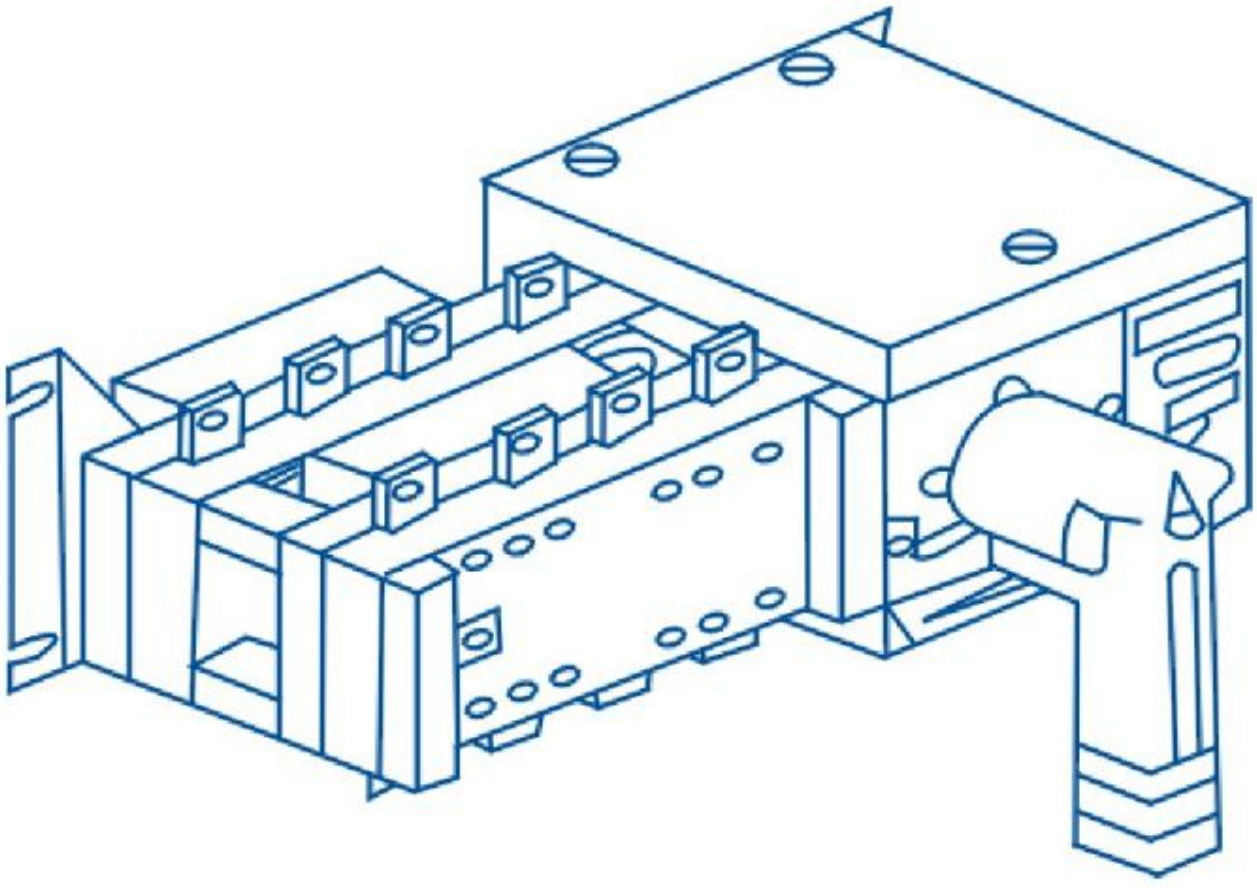
Dual power supply automatic transfer switch

Operating Instruction



1. Product overview

a.Introduction

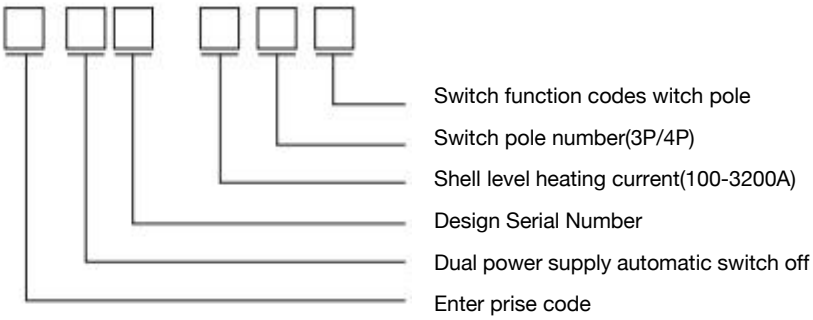
Double power automatic transfer switch (here in after referred to as transfer switch) is suitable for AC50Hz or 60Hz, rated working voltage to 400V, automatic, remote control, forced0-position, emergency manual operation etc., widely used for the automatic conversion of main power supply and standby power supply of power supply system or automatic conversion and safety isolation of two load fighting equipment.

The switch is issued by various logical commands by the control circuit board to manage the motor, and the operating mechanism of the main part of the motor dynamic switch quickly turns on the split circuit or line circuit conversion, and realizes safe isolation through the obvious visible state.At the same time, it can also match the switch with fire double division function, especially suitable for the office buildings, shopping malls, banks, stations, hospitals and high-rise buildings installation and use.

Optional double power switch with intelligent automatic controller, can monitor the six-phase power supply voltage, with conversion delay, return delay and adjustable delay.

The transfer switch shall comply with the GB/T14048.11-2008IEC60947-6-1 standard of LV Switch gear and Control Equipment. Electrical appliance level is PC level.

b.Model and meaning



1) Description of the switch function code name:
No code name-fully automatic
D-with a split-type intelligent controller
F-with generator oil machine interface
2) Model 100 is fully automatic; model160~3200 is fully automatic,manual(remote control).

c.Normal working conditions and installation conditions

1) The upper limit of the surrounding air temperature shall not exceed +40 ˚ C, the lower limit shall not be lower than -5 ˚ C and the average value of 24h shall not exceed+35 ˚ C;

2) The atmospheric relative humidity does not exceed +50 ˚ C when the ambient air temperature is 40 ˚ C, and can have high relative humidity at lower temperature. The monthly average maximum relative humidity

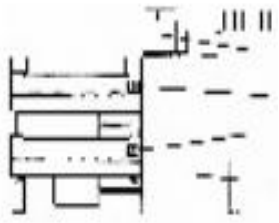
in wet months is 90%, and the average minimum temperature of that month is+25 ° C. And considering the condensation on the product surface due to temperature.

3) The installation site shall not exceed 2000m in elevation the installation category is IV;

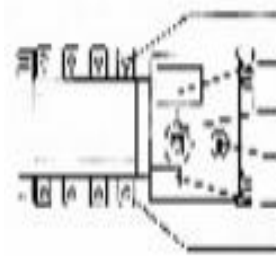
4) This product should be installed in no violent vibration and impact, not enough to make the electrical components should not be corroded place.

2. Description of the switch structure

The structure of the conversion switch is shown in the following figure, which consists of two layers of conversion contacts, electric conversion mechanism and control line.



Operating handle
Handle-body Ⅰ
Handle-body Ⅱ
controller



Controller
Data plate
Position indicator
Electrical key lock
Padlock
In to the line end

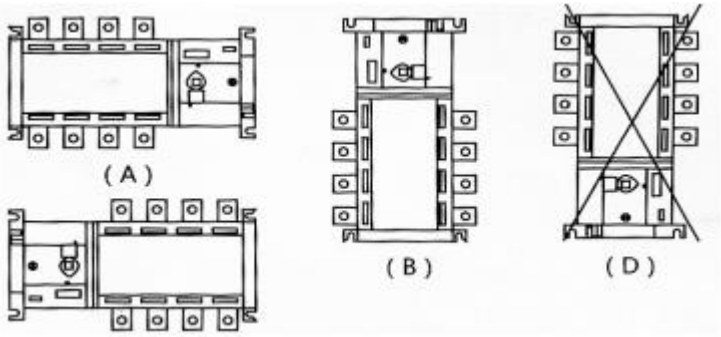
1) Electrical key lock: control the power supply of internal control switch. When electrical forging is opened, the switch can realize automatic, remote control and forced placement. Bit operation; the switch is operated by manual handle only when the electrical lock is closed.

2) Operation handle: The handle can be removed. When using the operation handle manually, the electrical must be closed first.

3) Mechanism padlock: special maintenance, that is, first use the operating handle to make the switch in the "0" gear, and then pull up the padlock mechanism to hang the padlock before maintenance (pull up the pad lock to cut off the power supply of the internal control line, the switch cannot be automatic, and cannot achieve manual).

4) Indicator: operating status of the switch(I,0,||

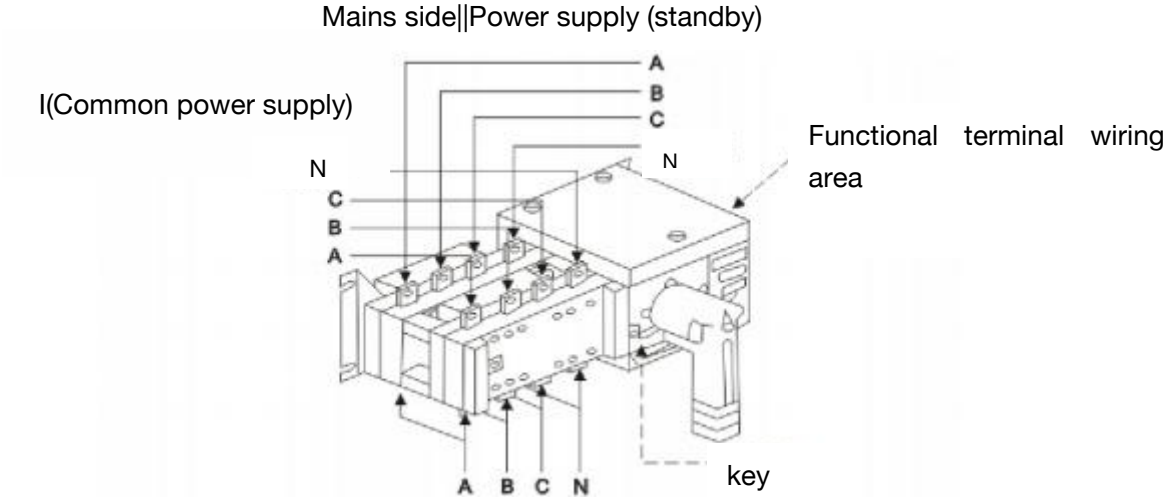
5) Correct method of installation of the switch:



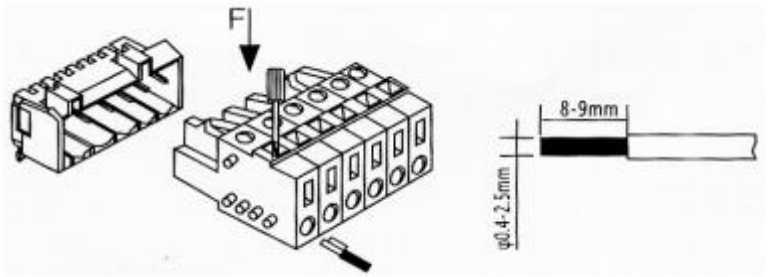
(c)

(A)(B)(C)is correct, (D)incorrect

6) Schematic diagram of the switch wiring



7) Functional terminal wiring area



Use a small word starter, force down in the direction shown, and the wire is embedded in the figure.

3.Main technical parameters

Main technical parameters of the switch are shown in the following table:

Rated heating current of shell frame Ith(A)	100	160	250	400	630	1600	2500	3200
Rated operational voltage Ue	AC400V 50Hz							
Rated insulation voltage Ui	690V							
Rated impulse withstand voltage Uimp	6kV							
Rated working current Ie(A) (AC-33iB)	10/16/20 25/32/40 50/63/80 100	100/125 140/160 200/225 250	160 200 225 250	250 315 350 400	400 500 630	800 1000 1250 1600	2000 2500	2500 3200
Rated short-time withstand current Icm(kA)	17	25		50		50	55	
Rated conditional short-circuit current Icw(kA)	10/15ms	15/30ms		25/30ms		25/30ms	25/30ms	
Contact transfer time(s)	1.1	0.5		0.5		1.0	2.0	
Control Supply voltage	AC220V							

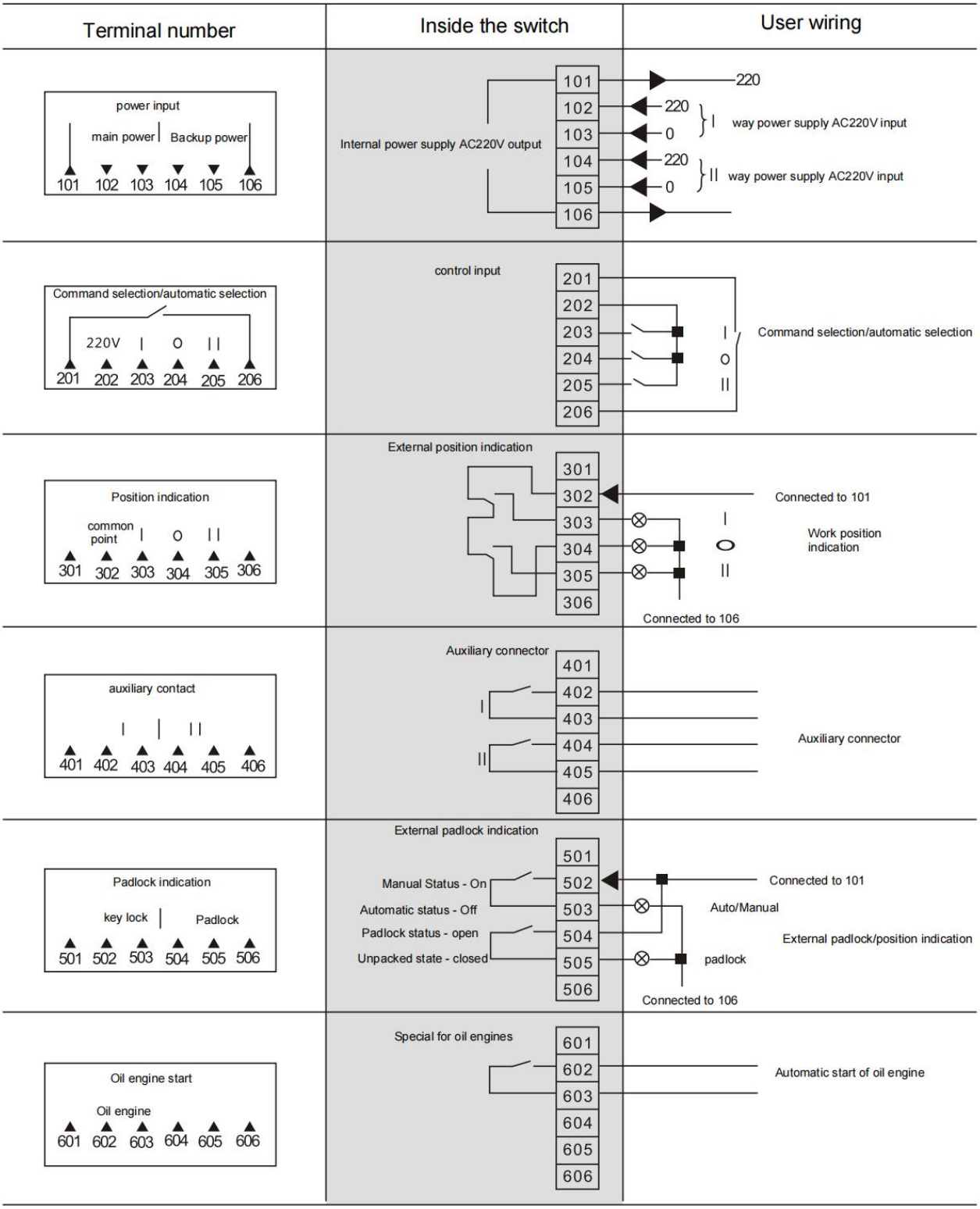
4.Method of application

Switch function:

- Automatic function: When the common power supply is cut off, The switch is automatically converted to the standby power supply; when the common power supply returns to normal the switch returns to the common power supply.
- Force"0”function: start the" 0"button and lock, the switch will cut off two power supplies.
- Remote control function: remote control, press the I gear button, the common power supply will work; press the "II" gear button,the back up power supply will work; press the"0"gear button, cut off two power supplies.
- Select the switch function according to the need, and press the corresponding function wiring.
- When the line needs to be repaired, pull up the mechanism padlock and hang the lock before the maintenance.
- Place the key lock in the"manual" position when using the handle for operation.

5.User wiring diagram of functional terminals

a. The function and number of each terminal of the dual power switch are fixed according to user requirements, and the terminals are different during normal supply. The terminal function are provided as follows:



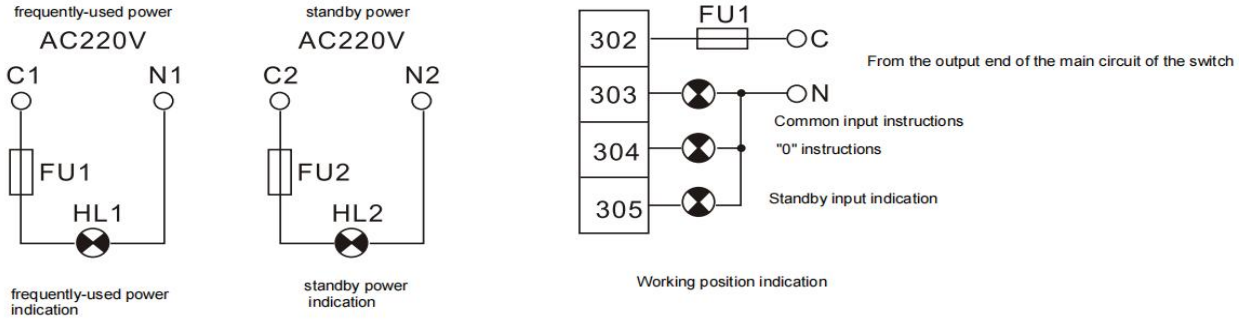
b. Symbolic description

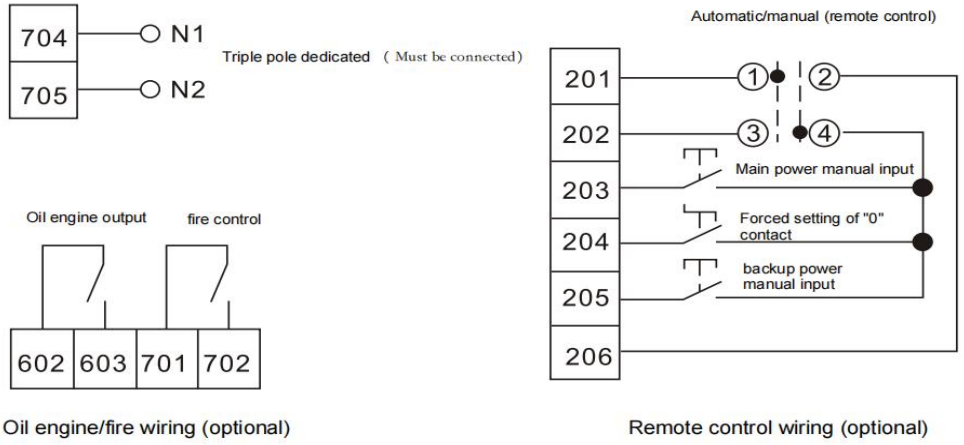
1) C1 and N1 are live wire and zero lines of common power supply respectively, and C2 and N2 are live wire and zero lines of standby power supply respectively. HL1. HL2 is indicated by the common power supply and the backup power supply respectively. HD1 and HD2 are the input indication of common power supply and standby power supply respectively. FU 1 and FU 1 are 2A fuses.
2) 101-106.201-206 is the secondary wiring terminal of the automatic transfer switch.
3) 301-306 connects the external indicator light terminal to the automatic transfer switch.
4) 401-406.501-506 automatic conversion switch terminal can be selected.

5) SA is the manual / automatic function selection switch, and SB1 and SB2 are the manual input buttons for common power supply and standby power supply respectively

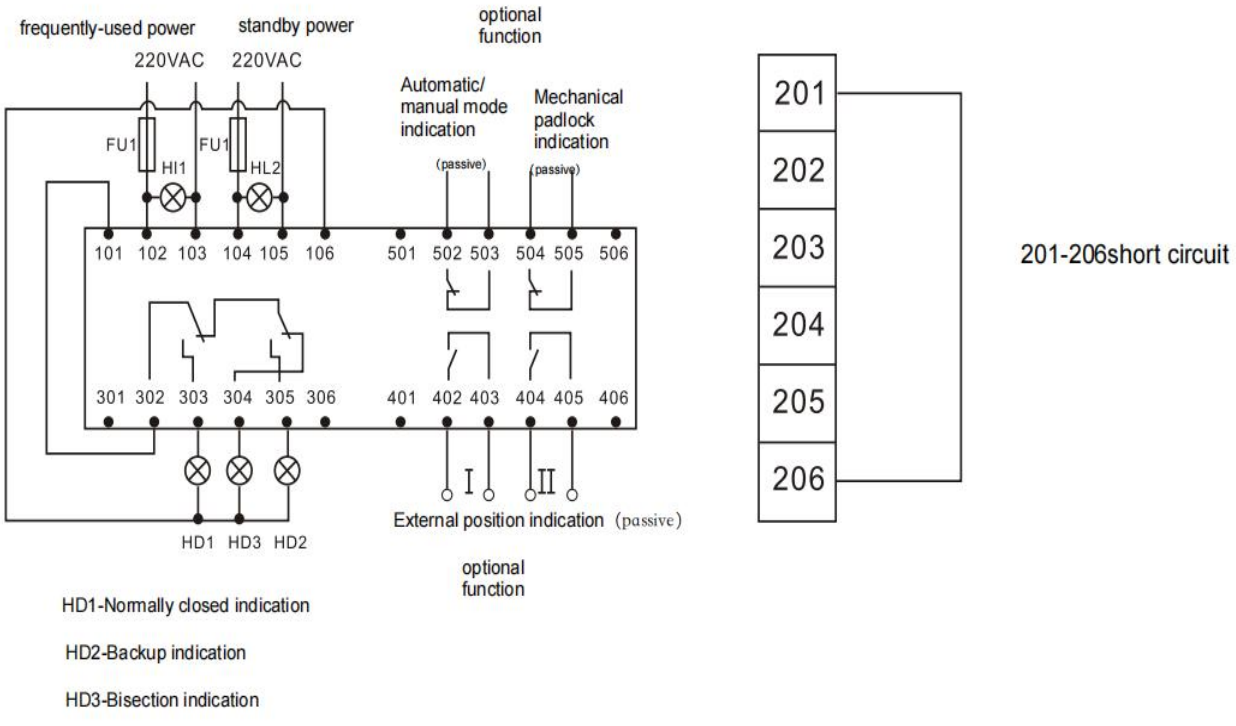
c. Type 100 fully automatic wiring mode

The Model 100 transfer switch has introduced common and standby control power to the internal controller so that the 101-106 and 201-206 terminals are not supplied. Other wiring figures are shown below:

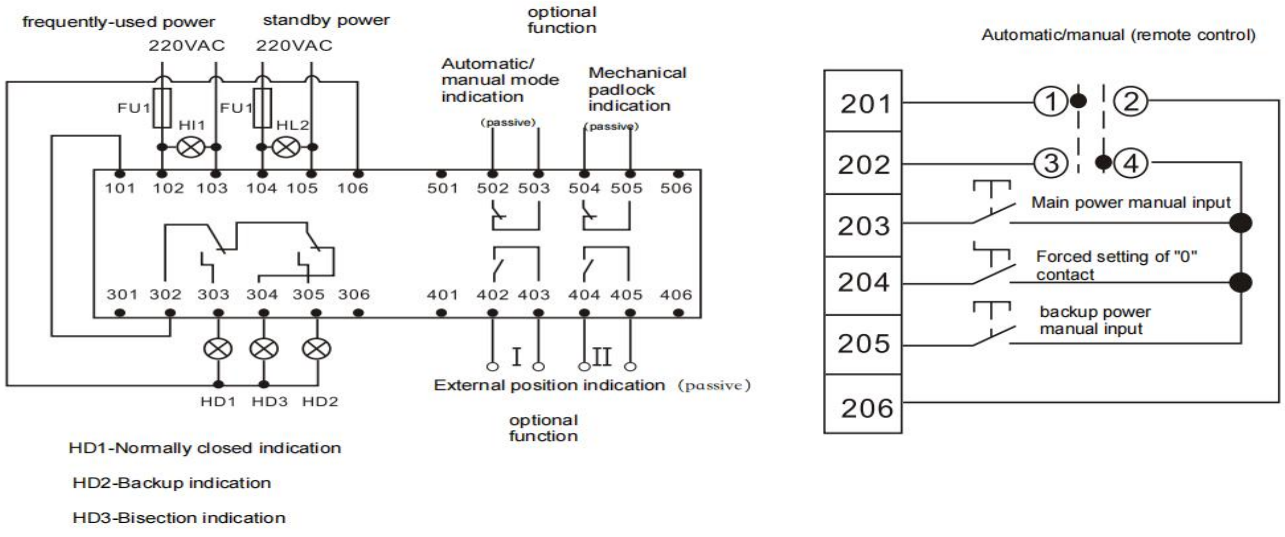


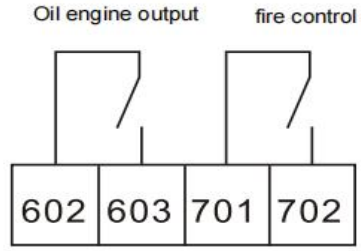


d. 160-3200 fully automatic wiring mode



e. 160-3200 fully automatic+manual (remote control) wiring mode

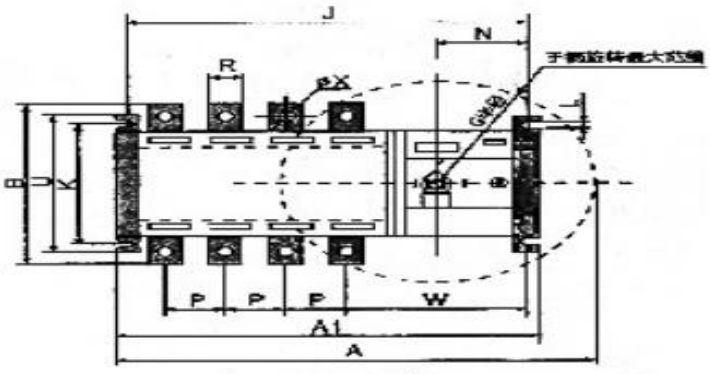


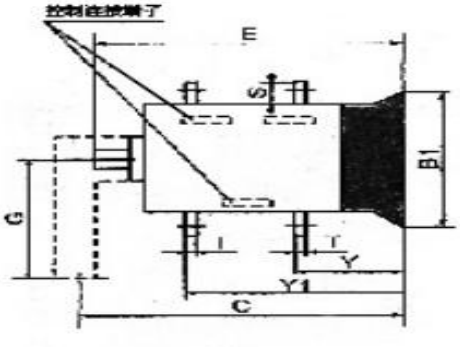


Oil engine/fire wiring (optional)

6. Appearance and installation dimensions

Appearance and Installation Dimension Diagram (Unit: mm)





Specs	Overall dimensions							Installation dimensions				Terminal size								
Ie	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
100/3	240	214	106	106	170	145	115	202	84	6.2	83	30	14	18	2.5	91	126	6	40	91
100/4	270	244	106	106	170	145	115	232	84	6.2	83	30	14	18	2.5	91	126	6	40	91
160/3	317	260	135	134	227	193	145	246	78/102	7	87	36	20	25	3.5	125	155	9	56	126
160/4	350	293	135	134	227	193	145	279	78/102	7	87	36	20	25	3.5	125	155	9	56	126
250/3	372	312	170	142	248	212	166	308	78/108	7	87	50	25	30	3.5	140	160	9	60	142
250/4	422	362	170	142	248	212	166	358	781108	7	87	50	25	30	3.5	140	160	9	60	142
400/3	525	378	240	220	310	275	240	360	179	9	96	65	32	40	5	206	185	11	82	195
400/4	585	438	240	220	310	275	240	420	179	9	96	65	32	40	5	206	185	11	82	195
630/3	525	378	260	220	310	275	240	360	179	9	96	65	40	50	6	206	185	11	84	196
630/4	585	438	260	220	310	275	240	420	179	9	96	65	40	50	6	206	185	13	84	196
800/3	872	526	310	250	387	320	448	496	220	11	85	120	60	55	8		190	13	109	255
80014	976	630	310	250	387	320	448	610	220	11	85	120	60	55	8		190	13	109	255
1000/3	872	526	320	250	387	320	448	496	220	11	85	120	60	55	8		190	13	109	255
1000/4	976	630	320	250	387	320	448	610	220	11	85	120	60	55	8		190	13	109	255
1250/3	872	526	320	250	387	320	448	496	220	11	85	120	80	68	8		190	13	109	255
1250/4	976	630	320	250	387	320	448	610	220	11	85	120	80	68	8		190	13	109	255
1600/3	872	526	320	250	387	320	448	496	220	11	85	120	80	68	10		190	13	111	257
1600/4	976	630	460	250	387	320	448	610	220	11	85	120	80	68	10		190	13	111	257
2000/3	887	526	460	250	565	495	470	496	220	11	85	120	80	80	10		190	13	225	457
2000/4	1007	633	460	250	565	495	470	610	220	11	85	120	80	80	10		190	13	225	457
2500/3	887	526	460	250	565	495	470	496	220	11	85	120	80	100	10		190	13	230	462
2500/4	1007	633	460	250	565	495	470	610	220	11	85	120	80	100	10		190	13	230	462
3200/3	887	526	505	250	565	495	470	496	220	11	85	120	100	100	15		190	13	230	462
3200/4	1007	633	505	250	565	495	470	610	220	11	85	120	100	100	15		190	13	230	462