YCQ9 series(PC class)

Automatic transfer switch

OPERATION INSTRUCTION

Standard：IEC 60947-6

CNC Deliver Power For Better Life

⚠ Before installing and using this product, please read this manual carefully and pay more attention to safety.

YCQ9 series
Automatic transfer switch
Dear use

Thank you for using the YCQ9 series automatic transfer switch produced by our company. We sincerely hope that this product can bring convenience and benefits to your work and life. We welcome your valuable opinions and suggestions during use. We will continue to provide you with warm and thoughtful service. In order to ensure your personal and property safety and use this series of products correctly and rationally to avoid unnecessary losses, please read this manual carefully before installation, circuit connection, operation, maintenance and inspection. This instruction manual introduces the structure, working principle, service conditions, installation and commissioning of the automatic transfer switch, which is helpful for you to use the product correctly and reasonably. If you have any questions, please consult our company. The user shall be responsible for any adverse consequences caused by failure to operate in accordance with the instruction manual.

Precautions

1. Please read this manual carefully before use, and operate in strict accordance with the operating specifications of the manual to avoid unnecessary losses.

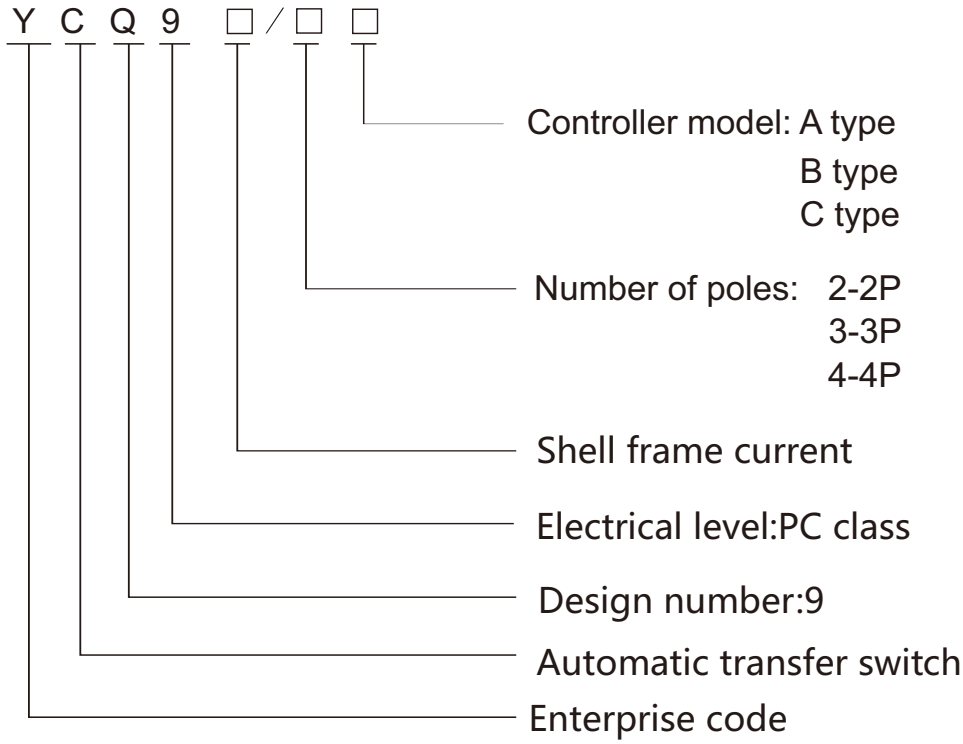
2. The YCQ9 series is a professional intelligent electrical product. Non-professionals are prohibited from operating and maintaining it, otherwise it may cause electric shock or product damage.
3. The dielectric performance test of this series of products has been carried out according to the standard before leaving the factory. If the test is repeated, the controller must be removed to prevent damage to the electronic components in the controller.
4. The neutral wires of the four-pole automatic transfer switch should be connected to the corresponding incoming wires of the N poles of the "normal power supply" and "standby power supply". , otherwise the automatic transfer switch cannot work normally.
5. For three-pole automatic transfer switch appliances, the neutral wire of the system must be connected to the neutral wire auxiliary terminal of the automatic transfer switch. Do not connect wrongly and the wiring must be reliable, otherwise the automatic transfer switch will not work.
6. The casing of the automatic transfer switch must be reliably grounded to ensure the safety of the operator.
7. Do not install the automatic transfer switch in

outdoor, humid, direct sunlight, high temperature, large vibration shock, conductive dust, etc., otherwise it will shorten the service life of the product or cause adverse reactions.
8. When both the normal power supply and the standby power supply fail, manual closing is prohibited.
9. In order to ensure the reliability of the automatic transfer switch, a switching test should be carried out regularly to confirm the normal operation of the switch and ensure the continuity of power supply for important loads.
10. When carrying out normal maintenance and roubleshooting of the load circuit, the automatic control function of the automatic transfer switch must be turned off, so that the automatic transfer switch is in a double-point state, and the power supply of the load is cut off to avoid unnecessary property loss and personal injury.
11. Please use the "manual" mode for debugging when the automatic transfer switch is overhauled or regularly checked.
12. Products that are not used for a long time should be protected from moisture and dust. Before use, they must be debugged according to the specified content, and they can be put into operation after normal operation.

1. Applications

YCQ9 series automatic transfer switch is suitable for AC 50Hz, rated working voltage AC230V (2P)/ AC400V, and rated working current up to 800A in two-phase/three-phase four wire dual circuit power grids. They automatically connect one or several load circuits from one power source to another power source to ensure the normal power supply of the load circuit. This product is suitable for important places such as industrial, commercial, high-rise, and residential buildings.

2. Type designation



Note: There is no B type and C type for the 63 frame.

3. Standard

IEC 60947-6

4. Normal operating conditions

4.1 Ambient air temperature: the upper limit of the ambient air temperature is +40°C, the lower limit is -5°C, and the average temperature within 24 hours does not exceed +35°C;

4.2 Altitude: the altitude of the installation site does not exceed 2000m;

4.3 Atmospheric conditions: The relative humidity of the atmosphere does not exceed 50% when the ambient maximum temperature is +40°C. It can have a higher relative humidity at a lower temperature, for example, it can reach 90% at + 20°C. Special measures should be taken for occasional condensation caused by temperature changes;

4.4 Pollution degree: Degree 3.

5. Technical data

Model	YCQ9 -63	YCQ9 -80	YCQ9 -125	YCQ9 -225	YCQ9 -250	YCQ9 -400	YCQ9 -630	YCQ9 -800
Rated current(A)	16,20,25,32 40,50,63	63,80	63,80,100, 125	100,125,160 180,200,225	100,125,160 180,200,225 250	250,315, 350,400	400,500,630	630,700, 800
Standard	IEC 60947-6							
Rated working voltage(V)	AC-230/50Hz (2P)、AC-400/50Hz(4P)							
Rated insulation voltage	800V					1000V		
Impulse withstand voltage(KV)	8kV					12kV		

Rated impulse withstand current Icw(KA)	5/30ms		10/30ms			18/30ms	25/1s	
Rated short-time making capacity Icm(KA)	8kA		17kA			35kA	52.5kA	
Use category	AC-33iB	AC-32B	AC-33iB	AC-32B	AC-33iB	AC-32B		
Number of poles	2P/3P/4P							
Contact transfer time(S)	0.6±20%							
Transfer action time (S)	1.3±10%							
Return time (S)	1.3±10%							
Power off time (S)	0.6±20%							
Electrical level	PCclass							
Installation and connection	Vertical fixed installation							
Wiring method	Screw wiring							
Connection method	Front panel							
Operating method	Auto/Manual							
EMC environment	Environment B							
The maximum number of conductors allowed to be clamped	1					2		
Protection degree	IP20 (Except for the main circuit wiring terminal)							
Screw tightening torque	3				10	15	22	
Screw breaking torque	3				10	15	26	
Power supply voltage deviation range	160 ± 10% (Economy, Standard) also with edge dyeing							
Normal working range	85%Ue~110%Ue							
Special requirements	None (Normal installation conditions)							
Whether the product is suitable for isolation	Yes							
Switch position	Normal (I), Power Off (O), Standby (II)							
Mechanical life	8000(*)					4000(*)	3000(*)	
Electrical life	2000(*)					1000(*)	1000(*)	

Note: *Maintainable

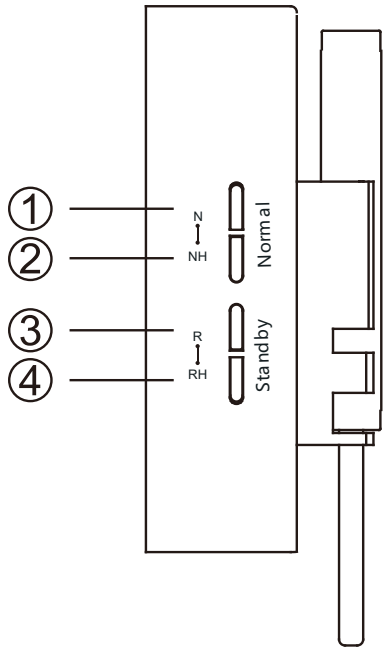
6. Features and functions

YCQ9 series automatic transfer switch is a new generation of PC-class products combined with advanced digital electronic control technology. The product has the characteristics of small size, energy saving, convenient installation,reliable double interlocking, etc., and has advanced and complete functions.

6.1 Small size, novel appearance, sliding cover design, flexible operation, safe and reliable.
6.2 Instantaneous structure design, using double springs to drive the design ingeniously with simple and stable structure.
6.3 Rotary contact structure, annular arc extinguishing device design, good arc extinguishing performance, and long working life of contacts.

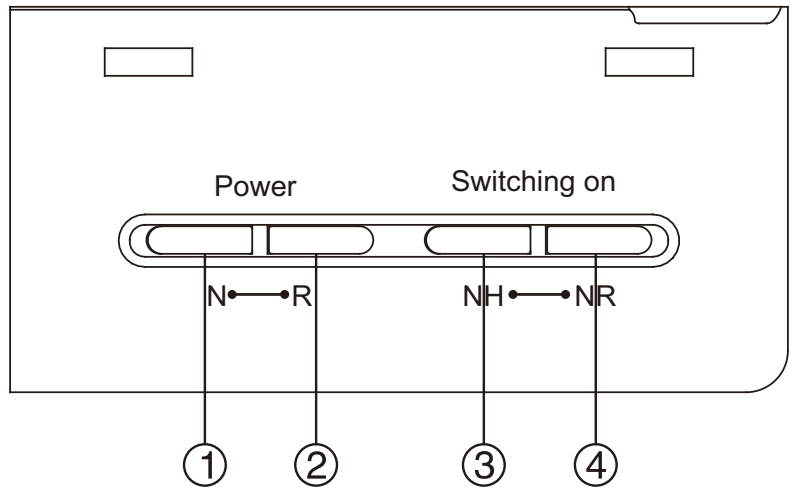
7. Controller Display and Operating Instructions

7.1 Explanation of display interface of economy type and standard type controller (63 frame)



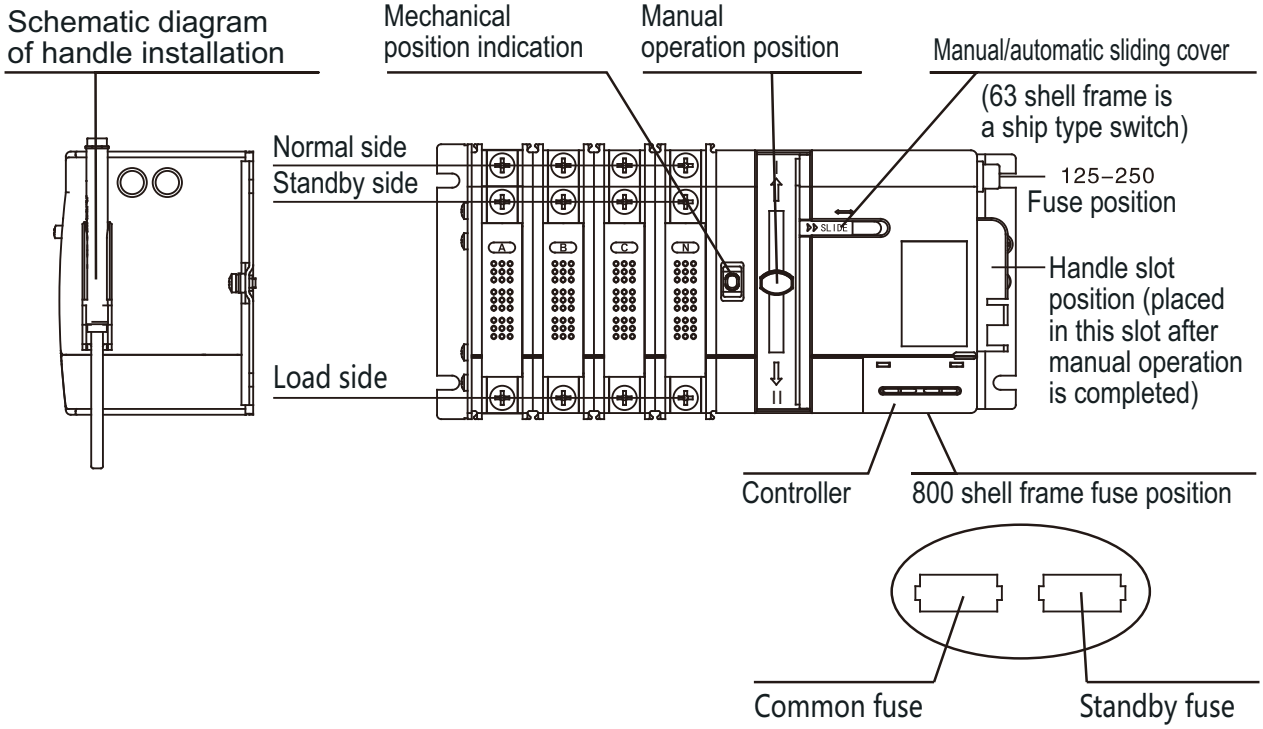
1. Normal power supply indication.
2. Normal closing instructions.
3. Standby power indication.
4. Standby closing indication.

7.2 Explanation of display interface of economy type and standard type controller (125-800 frame)



1. Normal power supply indication.
2. Normal closing instructions.
3. Standby power indication.
4. Standby closing indication.

8. Product structure



a. Manual/automatic sliding cover: the internal control circuit power supply of the control switch, the manual/automatic sliding cover is in the "automatic position", and the manual/automatic sliding cover is in the "automatic position", achieving automatic operation of the switch; The manual/automatic sliding cover is in the "manual position", and the switch can only be manually operated;

b. The operating handle is usually removed and inserted into the slot of the handle. It is installed and used only for emergency operations.

9. Technical data

Controller		A type	B type	C type
Installation mode: Integrated		Integrated	Integrated	Integrated
Rated working voltage		230V	230V	230V
Rated working frequency		50Hz	50Hz	50Hz
Working position	Normal power supply closing	■	■	■
	Standby power supply closing	■	■	■
	Two power sources disconnected	■	■	■
Auto operation	Auto operation	■	■	■
	Handle operation	■	■	■
	Controller button operation	–	–	–
	Remote control	–	–	–
Key operation	Key to normal	–	–	–
	Key to standby	–	–	–
	Key to fully open	–	–	–
Monitor	Phase monitoring	Normal three phase, Standby single phase		
	Monitoring common undervoltage	■	■	■
	Monitoring common overvoltage	–	–	–
	Monitoring common voltage loss	■	■	■
	Monitoring common phase failure	■	■	■

Controller		A type	B type	C type
Monitor	Monitoring standby undervoltage	–	–	–
	Monitoring standby overvoltage	–	–	–
	Monitoring standby voltage loss	■	■	■
	Monitoring standby phase failure	–	–	–
	False fire alarm	–	–	–
Conversion method	Automatic switching and recovery	■	■	■
	Mutual backup	–	–	–
	Automatic switching without automatic recovery	–	–	–
Grid connection	Grid to grid	■	■ *	■ *
	Grid to generator	–	■	■
Display	Screen	Indicator	Indicator	Indicator
	Whether the common power supply is normal	■	■	■
	Whether the standby power supply is normal	■	■	■
	Normal power supply opening and closing	■	■	■
	Standby power supply opening and closing	■	■	■
	Common power supply voltage value	–	–	–
	Standby power supply voltage value	–	–	–
	Manual/auto	■	■	■
	Delay time display	–	–	–
	Fault alarm display	–	–	–
	Conversion times display	–	–	–
	Fire linkage status	–	–	–
	Generator start status	–	■	■
Parameter settings	Adjustable conversion delay(S)	Fixed value	Fixed value	Fixed value
	Adjustable return delay(S)	Fixed value	Fixed value	Fixed value
	Manual/automatic switchable	■	■	■
	Adjustable undervoltage	Fixed value	Fixed value	Fixed value
	Adjustable overvoltage	–	–	–
Other functions	Fire dual trip	–	■	■
	Fire feedback	–	–	■ *
	Fault alarm output	–	–	–
	Position feedback output	■	■	■
	Fault memory	–	–	–
	Communication	–	–	–

Controller		A type	B type	C type
Other functions	Three-phase unbalance setting	–	–	–
	Conversion rejection alarm	–	–	–
	Wrong wiring alarm	–	–	–

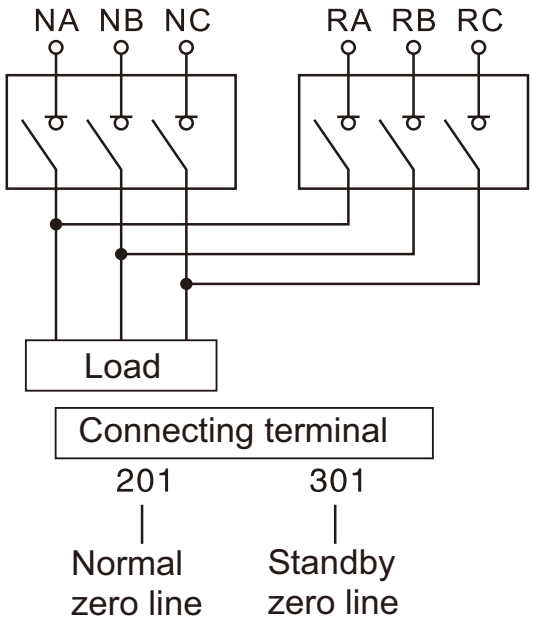
Note:"-"has no such function;

■"is a standard function; with * means that the 63 frame does not have this function.

10. Installation and Use

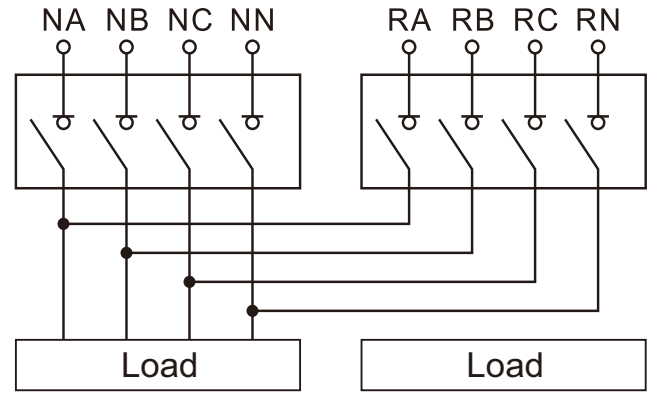
10.1 Product main circuit wiring diagram (Power phase sequence must be consistent)

3-pole main circuit wiring



Note: The 3-pole product can only operate normally when the neutral wire is connected to the controller terminals 201 and 301.

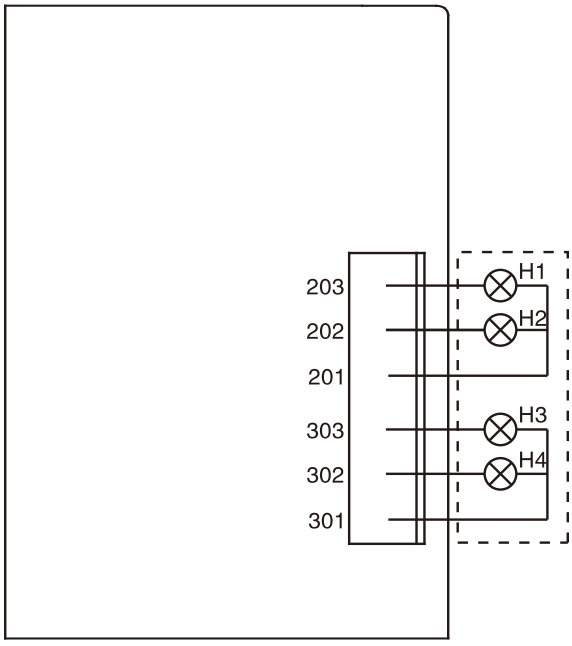
4-pole main circuit wiring



Note: When connecting the main circuit of the product, the ports on the normal power supply and standby power supply need to be connected by the user themselves (SCPD) to protect the electrical appliances to prevent load short circuits and burning of the product and circuit.

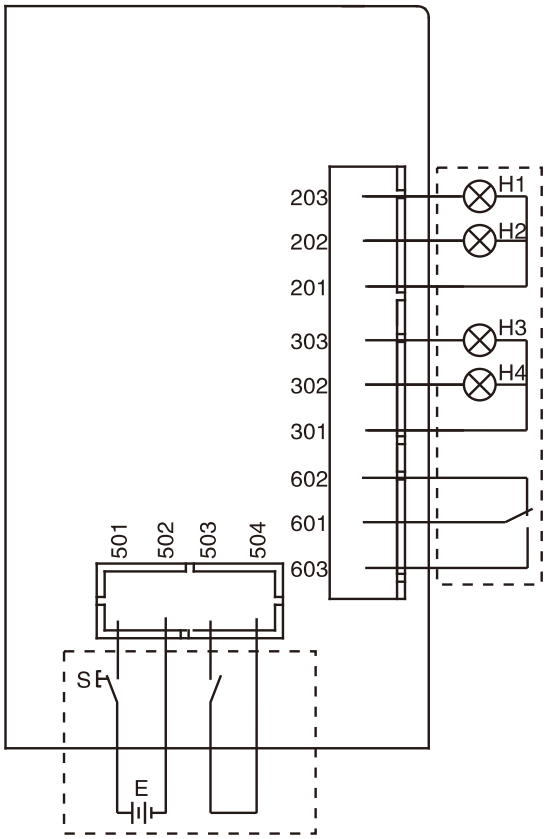
10.2 Controller secondary wiring diagram

10.2.1 Economy type controller secondary wiring diagram



1. Common signal AC220V output (201, 202, 203): 201 is the common terminal (3-pole, neutral wire input), 202 is the power indicator, and 203 is the closing indicator.
2. Standby signal AC220V output (301, 302, 303); 301 is the common terminal (for 3-pole, neutral wire input), 302 is the power indicator, and 303 is the closing indicator.
3. The dashed part is connected by the user, and H1~H4 are AC signal indicator lights.

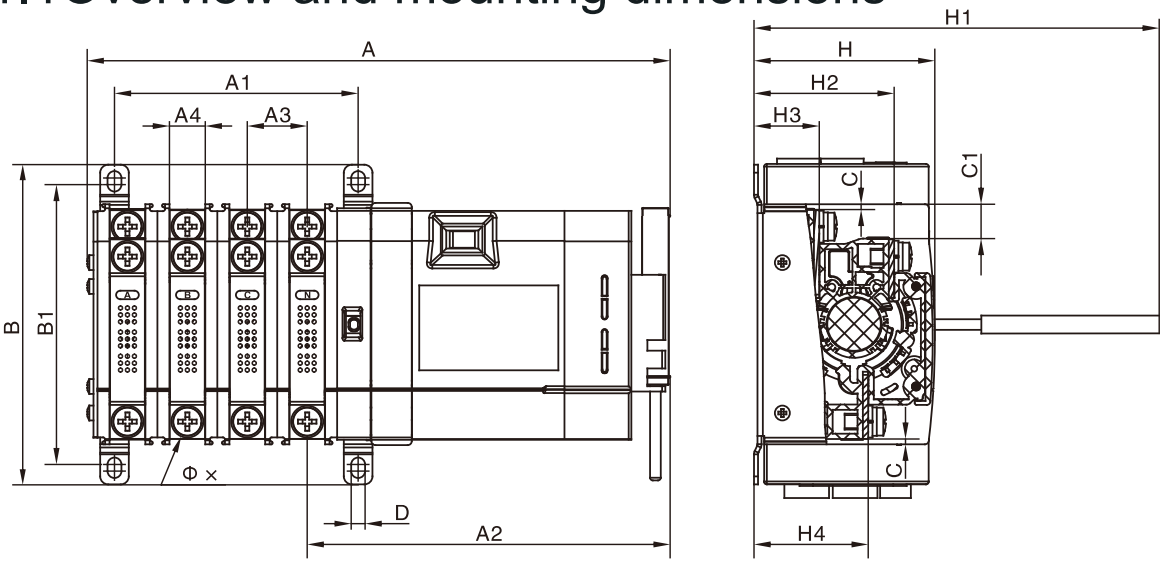
10.2.2 Standard type controller secondary wiring diagram



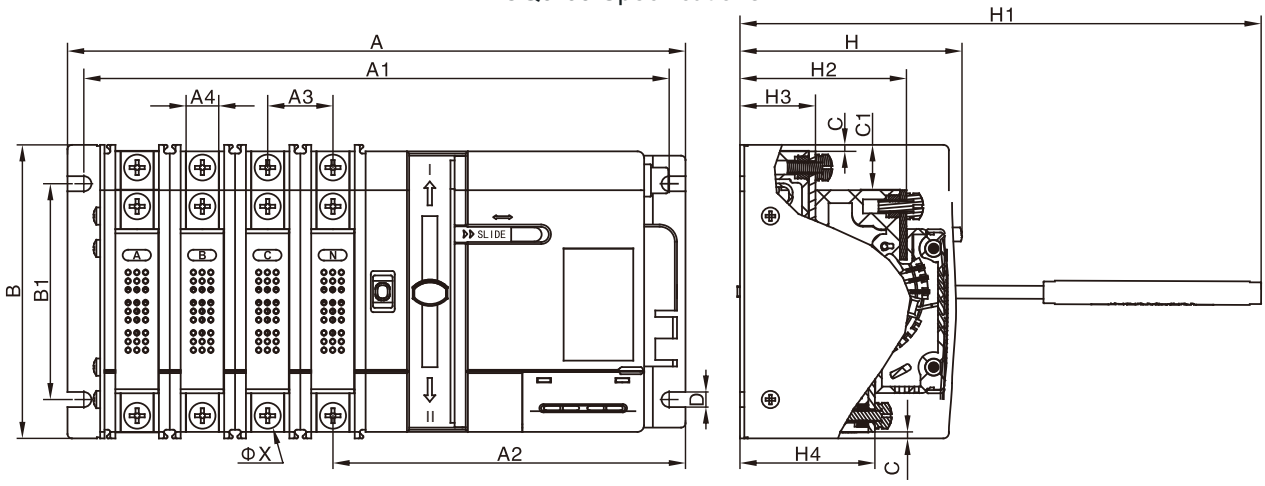
1. Common signal AC220V output (201, 202, 203): 201 is the common terminal (3-pole, neutral wire input), 202 is the power indicator, and 203 is the closing indicator.
2. Standby signal AC220V output (301, 302, 303) 301 is the common terminal (for 3-pole, neutral wire input), 302 is the power indicator, and 303 is the closing indicator.
3. Fire linkage control (501, 502, 503, 504): 501 and 502 are DC24V fire signal power inputs, and 503 and 504 are passive feedback contact outputs after executing fire protection. (63 shell rack only has 501 and 502 ports, without 503 and 504 ports)
4. Power generation start stop control(601, 602, 603): 601 is the common terminal, 602 is the start passive contact output, and 603 is the stop passive contact output. (63 shell rack without ports 601, 602, 603)
5. The dashed part is connected by the user, and H1~H4 are AC signal indicator lights; S is the self-locking button, and E is the DC24V signal provided by the fire center.

11. Installation and Use

11.1Overview and mounting dimensions



YCQ9-63 Specifications



YCQ9-125~800 Specifications

Product Size

Specifications	A			B	H	A1			B1	A2	A3	A4	H1	H2	H3	H4	C	C1	D	ΦX
	2P	3P	4P			2P	3P	4P												
YCQ9 -63	171	193	215	138	68	44	66	88	106	136	22	13	152	52	24	43	2	13	5.2	6
YCQ9 -80	171	193	215	138	68	44	66	88	106	136	22	13	152	52	24	43	2	13	5.2	6
YCQ9 -125	228	259	290	136	102	212	243	274	100	164	30	15	240	76	35	62	5	21	7	6
YCQ9 -225	228	259	290	136	102	212	243	274	100	164	30	15	240	76	35	62	5	21	7	6
YCQ9 -250	298	344	390	170	125	282	328	374	125	210	45	25	257	92	44	79	4	22	8.7	8
YCQ9 -400	357	410	463	212	158	344	397	450	156	258	53	40	333	119	53	97	5	33	10	10
YCQ9 -630	357	410	463	212	158	344	397	450	156	258	53	40	333	119	53	97	5	33	10	10
YCQ9 -800	460	528	596	255	192	433	501	569	188	325	68	49	367	144	65	118	6	40	13	12

Note: The operating handle is usually removed and used for emergency or manual operation.

11. 2 Troubleshooting

Common fault phenomena	Fault cause	Exclusion method
The indicator light does not display after power on	Poor contact of the main circuit wire	Check and connect the corresponding wires properly
	The product is not connected to the neutral wire, especially for 3-pole products	
	Power supply phase loss or phase failure	Check whether the voltage of each phase of the main circuit is normal
	Fuse blown	Replace the fuse
Controller light flashes frequently (economy, standard)	One power supply of the product is not connected to the neutral wire, or the N-pole of the product is wrongly connected to the live wire	Correctly connect the wires (main circuit) according to the instructions, and wrong connection will burn the controller

12. Packaging list

Name	Unit	Quantity	Note
Automatic Transfer Switch	Set	1	Including controller and operating handle
User manual	Piece	1	
External signal wiring terminal	Set	1	

13. Ordering Instructions

Users should provide the following detailed information when ordering:

1. Users should indicate the product model, current specifications, number of poles, and other information when ordering.

2. If there are special installation conditions or special site usage requirements, the user shall provide corresponding technical in formation or negotiate with our company For example, ordering automatic transfer switch appliances with a frame current of 125A, 4-pole integrated type, B type controller, grid power generation, rated current of 100A, 50 units. Namely written as: YCQ9-125/4B 100A 50 units.Kind reminder: When the lifespan of this product ends, in order to protect our environment, please do a good job in recycling the product or component materials. For materials that cannot be recycled, please handle them properly and do not discard them randomly. Thank you very much for your support!

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CERTIFICATE

Product Model: YCQ9 series (PC class)
Standard: IEC 60947-6
Inspector: CNC001
Production date: Printed on the product or package.
This product is qualified according to the delivery inspection

CNC ELECTRIC

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