

YCQ9Ms


Automatic transfer switch

OPERATION INSTRUCTION

Standard: IEC60947-6-1

CNC

Deliver
Power For Better Life

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

1. Matters Needing Attention



Dangerous

- Before installing or operating the product, please read this user manual. Only professionals could install, adjust, repair or maintain the product.
- Many parts of this product include control circuit board could not touch when the switch at work situation. Must use insulated tools.
- Could not touch those unprotected components or electric terminal screw.
- Before maintenance the product, the following measures should be taken: 1. Disconnect all power. 2. Put a "Forbid closing" sign on the switch. 3. Lock switch in the off position.

Warning

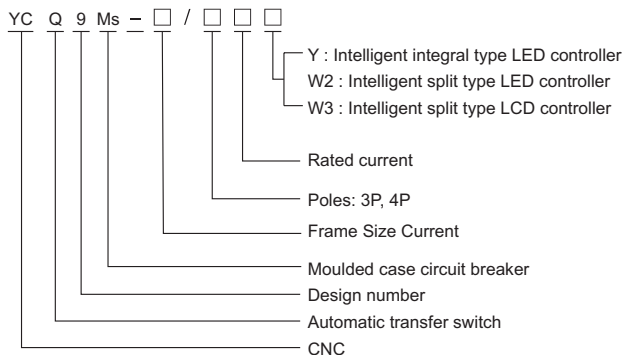
- **The voltage is not consistent**
Before input power supply, please ensure the power voltage suitable for the switch rated voltage. If the voltage is not consistent, the product may be damaged. If using not in accordance with the user manual, the product may be damaged too.

2. Installation Steps

- **Product delivery**
 1. Check and confirm the product is the product that you ordered.
 2. Open the package, check the product if it was damaged during the transit.
- **Check the voltage**
 1. Check and ensure the power voltage suitable for the switch rated voltage.
- **Install the product**
 1. Installing the product according to this user manual.
 2. Installing all the external parts.
- **Wiring**
 - Connect main circuit.
 - Connect control circuit.
- **Set**

According to the actual situation and user manual to setting the operating parameter.

3. Type designation

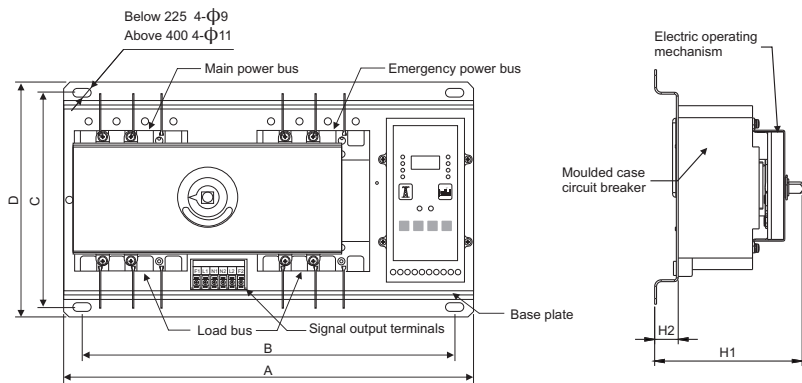


4. Features And Functionality Of Controller

Automatic transfer switch according power supply condition and the parameter that user set to choose if transfer from one power to the other power. It's function depends on the controller. There are 3 types(Y,YW2 and YW3) of controller. The features and functionality of controller as following.

Controller	Y type Controller	YW2 type Controller	YW3 type Controller
Working power supply	AC160-250V 50/60Hz	DC12V(Provided by the inside of Y type controller)	
Installation	Integral type	Split type	
Position	3 positions		
Mode of operation	Auto,manual and electro-manual operation		
Voltage monitoring function	3 phase over-voltage,under-voltage and phase loss monitoring		
Frequency monitoring function	Frequency monitoring		
Generator control	A set of 3A relay dry contact		
Fire linkage control	Passive contact input,with a set of normally open passive signal feedback contact		
Mode of conversion	According to user's requirement could set at Auto transfer and auto recovery,Auto transfer and non-auto recovery or Utility-Generator type mode		
Display	LED display		LCD display
Conversion time delay	0.5s-60s continuous adjustable		
Return time delay	0.5s-60s continuous adjustable		

5. Outline And Installation Dimension



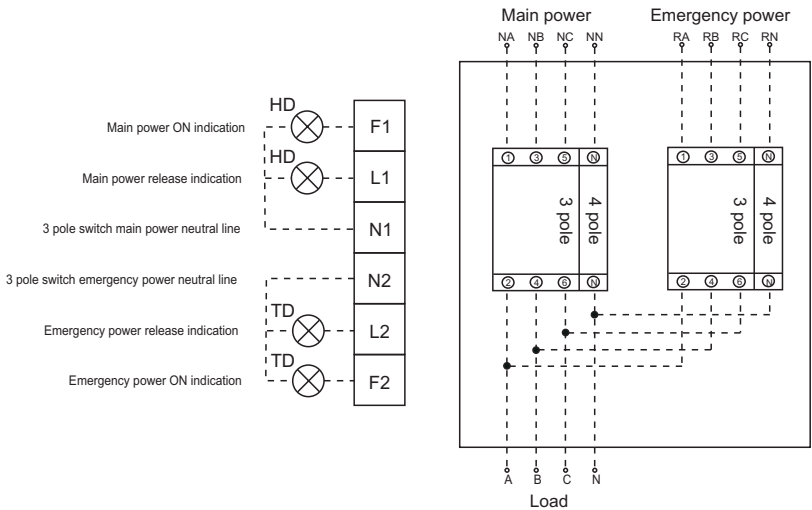
Dimension Specification	A		D	B		C	H1	H2
	3P	4P		3P	4P			
63	380	405	250	340	365	230	<160	25
125	405	435	250	365	395	230	<170	25
250	450	480	250	410	440	230	<190	25
400	570	620	330	510	560	300	<200	25
630	680	740	330	620	680	300	<250	25
800	750	820	330	690	760	300	<250	25

6. Technical Parameter

Type	63/125/250	400	630/800
Mechanical life	5000	3000	2500
Electrical life	1000	1000	500
Rated working	ongoing working		
Over-voltage transfer setting value	200-300VAC(adjustable)		
Under-voltage transfer setting value	200-300VAC(adjustable)		
Contacts conversion time	<4s		
Disconnect delay	0.5s-30s continuous adjustable		
Closing delay	0.5s-30s continuous adjustable		

7. Installation And Wiring Diagram

- Switching device installation: After fixed the switching device,according to the rated current to choose the appropriate wire to wiring. Note: The phase sequence of main power and emergency power must be consistent.
- Split type controller installation: Use 2 strutting pieces to fixed the split type controller on the panel.
- Please check if the controller plug into switching device and fastening screw.
- Please check each electrical contact part if is reliable. Check the fuse if is good.
- If user want to withstand voltage test,please remove the controller first. Otherwise will breakdown controller.
- For the 3 pole switch,user need to connect main power neutral line to terminal N1 port. Connect emergency power neutral line to terminal N2 port. Neutral line must be reliable and don't connect wrong. So that ATSE could proper work. For the 4 pole switch,main and emergency power neutral line must be connected to the corresponding circuit breaker N pole. In addition,switching device should ground connection at the grounding mark. User could connect indicator light to the terminal for observation. Refer to below.



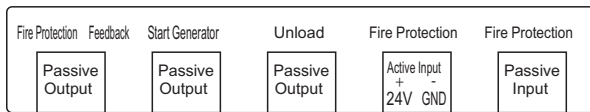
Note:

- This diagram applies to three-phase four-wire. When using three-phase three-wire system,the neutral line of Main power connect to terminal N1 port,neutral line of emergency power connect to terminal N2 port.
- HD main power indication AC220V(User provided).
- TD main power indication AC220V(User provided).

8. Y Type Controller

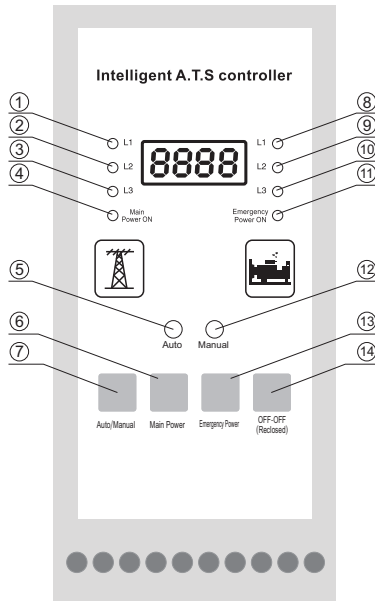
- Y type controller install together with the switch body,adopt the intelligent SCM program to control. Convenient to operat, with powerful functions.
- According to the working voltage if it is in the range, and the working mode of the automatic transfer switch to decide whether to transfer the power.
- Control the emergency generator to start or stop.
- Convenient button manually casting operation
- Fire linkage function

8.1 Y type controller terminal and wiring instruction



- Fire protection feedback for online communication interface
- Inside the unload interface, there is a normally closed contact, in the mode of Utility - Generator, when the main power is abnormal, and the generator is not start up, then unload will send out uninstal instructions,disconnect the secondary load, then the generator can startup with light load.
- Inside the Generator interface, there is a normally closed contact,when the main power is failed,Power interface connected and send out power command(the port will be effective and thecontroller must be utility - Generator)
- Fire protection is a port to provide fire alarm function to the user. When the fire port connect,the switch will transfer to the double point and stop supplying the power,after the double points return in place then the fire feedback send a signal to the fire control center (external of the Fire port must be a passive contact)
- The purpose to connect auxiliary power to the controller is control the startup time of the controller in the mode of Utility - Generator.If not connect the auxiliary then the generator startup time will be 0s,if no need the generator start up delay function then no need to connect the auxiliary power.

8.2 Y type controller panel instruction



- ① Main power A phase indicator light. When main power A phase is normal, the indicator light lit.
- ② Main power B phase indicator light. When main power B phase is normal, the indicator light lit.
- ③ Main power C phase indicator light. When main power C phase is normal, the indicator light lit.
- ④ Main power ON indicator light. When main power ON, the indicator light lit.
- ⑤ Automatic work status indicator light. When ATSE in automatic work status, the indicator light lit.
- ⑥ Main power ON button. When ATSE in manual work status, press the button, ATSE transfer to main power.
- ⑦ Auto/Manual button. Press the button, ATSE in manual work status and automatic work status to switch back and forth.
- ⑧ Emergency power A phase indicator light. When emergency power A phase is normal, the indicator light lit.
- ⑨ Emergency power B phase indicator light. When emergency power B phase is normal, the indicator light lit.
- ⑩ Emergency power C phase indicator light. When emergency power C phase is normal, the indicator light lit.
- ⑪ Emergency power ON indicator light. When emergency power ON, the indicator light lit.
- ⑫ Manual work status indicator light. When ATSE in manual work status, the indicator light lit.
- ⑬ Emergency power ON button. When ATSE in manual work status, press the button, ATSE transfer to emergency power.
- ⑭ Double off button. When ATSE in manual work status, press the button, ATSE double off.

8.3 Y type controller transfer failure alarm

When the controller send closing command(transfer to main power or transfer to emergency command),if have not detected closing signal in 10 second,it means closing failure.

When the controller send double off command, if detected main power or emergency power closing signal after 7 second,it means double off failure.

After transfer failure,controller display:"nErr",it means transfer to main power timeout. Controller display:"rErr",it means transfer to emergency power timeout. Controller display:"-Err",it means double off timeout.

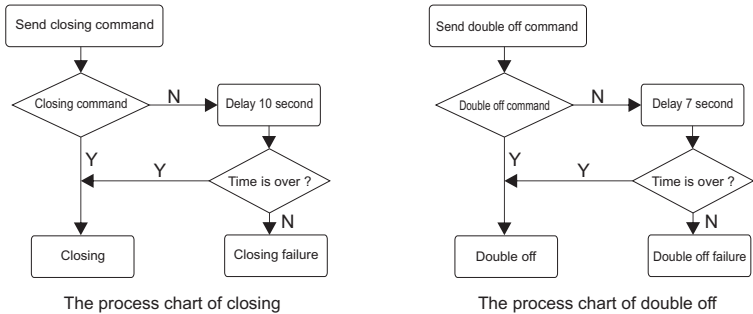


Figure 1 The process chart of closing and double off.

Note: Alarm reset:Click "Auto/Manual" button. At this time,if ATSE is in automatic work status,ATSE will repeat operation according to Figure 1 process.

8.4 Y type controller parameter setting

The way to enter into: Continue to click "Auto/Manual" button 10 times enter into the menu of parameter amendment. The fourth code display flicker.

Amend parameter: Click "Main" button to turn page down or "Emergency" button turn page up. Click "OFF-OFF" button to confirm enter into amend parameter. The last three code display flicker. Then click "Main" or "Emergency" button to increase or decrease the number. Click "OFF-OFF" button to save the parameter and into the next options.

Exit: In 10s no click action will automatic exit or click "Auto/Manual" button 10 times to exit.

Note: If you have not click "OFF-OFF" button to save the parameter,it will not save the amended parameter and exit directly.

8.5 Y type controller voltage calibration operating process

The display voltage of Y type controller has already be calibrated before leave factory. Normally user no need to calibrate. If under special circumstances, need to calibrate voltage,please according to following steps:

The way to enter into: In automatic work status,click "Emergency" button 10 times enter into. The fourth code display "3" and flicker.



Calibrate voltage: Must debug all the main power and emergency power voltage to AC220V. Then click "OFF-OFF" button to save present calibrate data.

Exit: In 10s no click action will automatic exit or click "Emergency" button 10 times to exit.

8.6 Y type controller parameter content and range

In order to convenient for user,controller provide some common parameter for user modify. These common parameters has already be set before leave factory. In factory,the Settings of the parameters in detail as follows:

Parameter code	Parameter name	No.	Range	Default value
U 260	Main over-voltage threshold	1	AC230-AC300	260
u 175	Main under-voltage threshold	2	AC150-AC210	175
□ 010	Main voltage return value	3	0-50v	10
Γ 005	Main transfer delay time	4	0-240s	2
U.260	Emergency over-voltage threshold	5	AC230-AC300	260
u. 175	Emergency under-voltage threshold	6	AC150-AC210	175
□.010	Emergency voltage return value	7	0-50V	10
Γ .005	Emergency transfer delay time	8	0S-240S	2
q.005	Start generator delay time	9	0S-120S	5
d.005	Stop generator delay time	10	0S-120S	5
J.001	Machine address	11	1 - 32	1
b.001	Baud rate choose	12	1=2400 2=4800 3=9600 4=19200	3
E.000	Auto transfer and auto recovery, Auto transfer and non-auto recovery, As emergency for each other	13	0=Auto transfer and auto recovery, 1=Auto transfer and non-auto recovery, 2=As emergency for each other	0
F.001	Work frequency	14	1=50Hz(40-60)0=60Hz(50-70)	1
H.001	Restore the initial factory setting	15	1=Restore the initial factory setting	0

8.7 Transfer record query

The way to enter into: In automatic work status, meanwhile click "Main" and "Emergency" button to enter into the recently transfer record.

Click "Main" button to turn page down or "Emergency" button to turn page up to query record.

E-01: Recently first transfer record.

E-02: Recently second transfer record.

E-03: Recently third transfer record.

Click "OFF-OFF" button to enter into query transfer reason.

u-00: Means no transfer record.

u-01: Means main A phase fault transfer record.

u-02: Means main B phase fault transfer record.

u-03: Means main C phase fault transfer record.

(Note: Fault only include phase loss, under-voltage, over-voltage record. Due to the power outage lead to ATSE transfer from main power to emergency power or transfer from emergency power to main power, fault will not make records.)

Exit: In 10s no click action will automatic exit.

8.8 Communication configuration and connection

This series ATSE controller has RS485 serial port, be allowed to connect the local area network with open structure. It's apply protocols of Mod Bus communication and value the PC or data acquisition system running software provide a simple practical dual power switch management plan to factories, telecom, industrial and civil building, achieve dual power monitor and "remote controlling, remote measuring, remote communication" functions.

Detail information of Communication protocol, please see "Q3 V1.0 communication protocol".

- Module address: 1 (range: 1-32, user can set it)
- Baud rate: 9600bps (option)
- Data bit: 8 bit
- Parity bit: None
- Stop bit: 1 or 2 bits

8.9 Troubleshooting and after-sales service

Fault phenomenon	Failure checking	Troubleshooting
Controller light is not bright after electrify	The power sampling wire fall off	To connect the corresponding wire
	3 pole switch,the neutral line have not connect to neutral terminal	
	The fuse of controller is fusing	Change fuse
Controller display phase loss	Input terminal of Corresponding circuit breaker contact undesirable, single-phase fault phase or the power voltage is below than the normal range.	To eliminate the power wire fault
Controller display normal but ATSE could not transfer normally	Test sliding plate if is in the "TEST" position	Push test sliding plate to "WORK" position
The power is normal and ATSE in ON position but load no electricity	Check the circuit breaker if is tripped	After load fault eliminate, please re-trip the circuit breaker by manual.



CERTIFICATE

Product Model: YCQ9Ms

Standard : IEC60947-6-1

Inspector : CNC 001

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC

YCQ9Ms series

CNC ELECTRIC

Tel: 0086-577-61989999 Fax: 0086-577-61891122

wwwcncele.com E-mail: cncele@cncele.com