Product Certificate

Model：

Name：Dual power automatic transfer switch

The product is qualified after inspection and meets the standard GB/T 14048.11, and it is allowed to leave the factory.

Inspector：

Inspection date: see product packaging

LS GYVSA

MOULDED DUAL POWER SERIES AUTOMATIC TRANSFER SWITCH

OPERATING INSTRUCTION



Please read the instructions carefully, when product acceptance and installation, and retain it for future reference.

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PREFACE

Dear user:

Thank you for using our products, we believe this product will give your work and life benefits and convenience, welcome your valuable suggestions and comments in the use course, we will continue to provide you with enthusiastic and attentive service. Or if you have any questions, please contact the manufacturer directly with our vendors.

This manual is for reference only. If the product or version upgrades to change without notice. Paid product to prevail. Thank you for your cooperation and support.

Standard: GB14048.11

Utilization Category: AC-33iB

Electrical Classification: CB class

Electrical Installation Category: III

Electrical Protection: IP20

Controller Protection Grade: IP30

1. Safety precautions

1.1 Carefully read the operating specifications and strict compliance practices should avoid causing serious damage.

1.2 Warn those who do not regulate the operation caused serious damage to the product device.

1.3 Warnings

1.3.1 Not hot plug controller plug, otherwise it will cause electric shock or product damage.

1.3.2 Operation and maintenance of non-professionals prohibition that would otherwise result in electric shock or product damage.

1.3.3 Please read the instructions carefully when setting the parameters within the controller changes, otherwise it will damage the product or does not work properly.

1.3.4 The load capacity can not exceed the rated capacity of the switch, otherwise it will cause the switch to trip or burn.

1.3.5 Can not be neutral (N) mistakenly access phase, two -phase input circuit breaker must be consistent, the choice of the three-pole double. Power when the common power supply (NN) and standby power (RN) also received wiring terminals No.1 foot, otherwise it will cause damage to the switch. Ground should be connected reliably to ensure safe use.

1.3.6 Can not be installed directly outdoors, otherwise shorten the life or cause a bad product.

1.3.7 Can not be installed directly in explosive, humidity, direct sunlight high temperatures, vibration, shock and other places. Otherwise it will shorten the life of the product or cause a fire explosion.

1.3.8 Can not be directly installed in a conductive dust, metal wire invade the place, otherwise it will damage the product or mechanical failure.

1.3.9 Shall meet the requirements of the specification, otherwise it will shorten life.

2. Model and meaning

□ / □P □type □A

- Rated operating current: 16A~1250A
- M (I) terminal type (CM1)
- Y (II) integrated type LCD controller (CM1)
- N (III) split type LCD controller (CM1)
- Three poles, four poles
- Frame size current

3. Purpose and use of the environment

Intelligent dual power transfer switch (hereinafter referred to as switch) suitable for AC 50Hz, rated working voltage 400V, rated operating current 16A~1250A. Interchangeable for use in emergency power supply systems commonly used two -way power supply (N) and standby power (R) between (can also be set to manual) and as a control, signaling, interlocking and other uses of the switch control circuit, the products bearing on some models designed mouth communication, enabling remote control, allowing users to achieve unattended substation. Suitable for residential areas, military installations, hospitals, shopping malls and airports and other places.

4. Normal operating conditions

4.1. Altitude of over 2000 meters should be installed.

4.2. The upper limit of the ambient temperature is not higher than +40℃, the lower limit is not lower than -5℃, 24-hour average does not exceed +35℃.

4.3. The relative humidity of the ambient air atmosphere at a temperature of +40℃ not more than 50%, at lower temperatures, there can be higher temperatures, condensation products should take into account the surface temperature change.

4.4. No explosive medium, and the medium enough to corrode and damage the insulation of gas and dust.

4.5. No significant shake and shock vibration.

5. Structure and characteristics

The intelligent switch controller and two parts by a microcomputer switching device composed of a dedicated cable connection between the two.

Switching from the microcomputer controller, micro motors, gear machine, micro switch, keyboard, LCD display screen, moulded case circuit breakers and other components. With automatic and manual control switch, normally, spare closing indicator, dual mechanical and electrical interlocks and other characteristics, the maximum to meet supply and distribution needs.

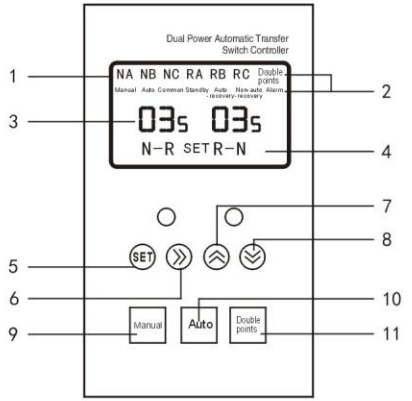
Work has three state position switch for users to choose: common power supply (N) together, two points, standby power (R) together. Switch has small size, light weight, stable, easy to use features.

6. The main technical parameters of the switch

Frame size current	100	225	400	630	800	1250
Models equipped with circuit breakers	CM1 series	CM1 series	CM1 series	CM1 series	TM30 series	TM30 series
Rated operating current(A)	10, 16, 20, 25, 32, 40, 50, 63, 80, 100	100, 125, 140, 160, 180, 200, 225	225, 250, 315, 350, 400	400, 500, 630	630, 700, 800	800, 1000, 1250
Rated operating voltage(V)	400	400	400	400	400	400
Rated control voltage(V)	230	230	230	230	230	230
Rated frequency(Hz)	50	50	50	50	50	50
Conversion action time(S) not including time delay deliberately introduced	≤5	≤5	≤6	≤6	≤6	≤6
Utilization category I/Ie-6.0 U/Ue-1.05 COSΦ0.50 Energizing time 0.05 Cycle≤5 Number of cycles5	AC-33iB	AC-33iB	AC-33iB	AC-33iB	AC-33iB	AC-33iB
Mechanical life	5000	5000	3000	2500	2500	2500
Electrical life	1000	1000	1000	500	500	500
Rated short-circuit impulse withstand voltage(Uimp)	8	8	8	8	12	12
Rated short-circuit breaking capacity Icn(kA)	10	10	10	12. 6	16	25

DUAL POWER AUTOMATIC TRANSFER SWITCH

7. Controller interface operating instructions



7.1. NA, NB, NC, RA, RB, RC standby state flag words were used, or if it flashes indicates that the relative lack of fault or loss of pressure;

7.2. Manual, AUTO, common, standby, auto–recovery, non–auto–recovery, reflecting the current mode and the state, "Alarm" by the words "decreasing key" ⊗Tap to set the alarm function on or off," when you double points "is displayed indicates fire reset or forced double points enabled;

7.3. In standby, the conversion delay time and delay time value returned is displayed in the setting mode for parameter code value. Code value for the parameter;

7.4. "N–R" Flashes indicates one way common patterns, "R–N" Flashes indicates two –way common mode, set the mode as a status symbol, "N–R"display for the conversion delay setting," R–N" is displayed as the return delay settings;

7.5. "SET" is set to enter the parameter to modify the function keys;

7.6. ⊗ "Right key"(overlay), in the setup mode as right and the next right to use, In standby mode point press to inquire NA, NB, NC, RA, RB, RC six–phase voltage of the voltage value;

7.7. ⊗ "Increment key" In the setting mode plus parameters keys;

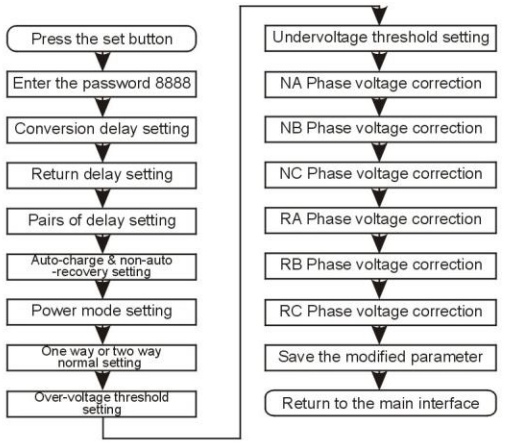
7.8. ⊗ "Decreasing key" (overlay) reduction in the parameter setting mode key. In standby mode to turn the tap on or off alarm function;

7.9. "Manual key "In standby mode Tap to cycle through normal and standby conversion;

7.10. "Automatic key"in manual mode by pressing the automatic key, (power–on default automatic mode) according to the computer automatically detects the operation;

7.11. "Double points key " in automatic or manual mode, press this button to force the breaking load power supply.

8. Set parameters flowchart



9. Parameter modify operation example

Here in the automatic mode, for example, press the button ⓢ,as shown on the right figure



Figure 1

The highest bit becomes 0 and flickering, by incrementing key ⓤ or decrement keys ⓓ to adjust the flashing digit to 8, press the right button ⓡ shown in Figure 4



Figure 2

At this point the second of the left becomes 0 and flashing, ibid step. Operation adjusted to 8, pressing the right button ⓡ shown in Figure 5



Figure 3

At this point the third on the left becomes 0 and flashing, ibid step. Operation adjusted to 8, pressing the right button ⓡ shown in Figure 6



Figure 4

At this point the fourth on the left becomes 0 and flashing, ibid step. Operation adjusted to 8, pressing the right button ⓡ shown in Figure 7



Figure 5

Enter the correct password validation 8888 Figure 7, Figure 1 shows an error



Figure 6

N-R, set high in the words and flashing prompted the conversion delay time value 99S does not exceed the maximum. The excess will be blocked, click the right button ⓡ to go to the next one shown in Figure 11



Figure 7

R-N, set high in the words and flashing prompted the return conversion delay time value 99S does not exceed the maximum. The excess will be blocked, click the right button ⓡ to go to the next one shown in Figure 12



Figure 8

Pairs of delay time is set, this is generally no need to change. The factory has been configured, click the right button to ⓡ go to the next one shown in Figure 13



Figure 9

FFF1 is parameters for the auto-charge & auto-recovery



Figure 10

FFF0 is the auto-charge & non-auto-recovery parameters, without setpoint. Press the right button ⓡ to go to the next one parameter as shown in Figure 15



Figure 11

Fd0 Power mode to start oil machine shall modify power mode key point in ascending key ⓤ or descending key ⓓ to select



Figure 12

Fd1 Power generation mode to Normal mode operation to be modified as above step, go to the next option click the right button ⏩ as shown in Figure 17



Figure 13

one way Normal or two way Normal set of parameter options FC0. Normal mode all the way, if required to modify key point in ascending key ⏫ or descending key ⏬ to select the folder



Figure 14

Figure 15: FC1 two way common code, does not need to be amended. Press the right button ⏩ to go to the next option



Figure 15

Figure 16 is an overvoltage threshold setting value in the range of 100 to 150 class setting, for example: the value of H120, the overvoltage is 220V×120% = 264V, modify the values in ascending key ⏫ or descending key ⏬ to enter the next. Click the right button key ⏩



Figure 16

Figure 17 is under-voltage threshold setting, the value in the range of 40 to 100 class setting, for example: the value of H075, the undervoltage is 220V× 75% = 165V, modify the values in ascending key ⏫ or descending ⏬ key to enter the next click the right arrow key ⏩



Figure 17

Figure 18 shows the communication address setting. One computer can connect multiple switches. P001 is the serial number of the first switch.



Figure 18

NA-phase voltage correction, according to the NA phase external standard voltmeter readings to be adjusted in ascending key ⏫ or descending key ⏬ to modify the key, go to the next one click right button ⏩



Figure 19

NB-phase voltage correction, according to the NB phase external standard voltmeter readings to be adjusted in ascending key ⏫ or descending key ⏬ to modify the key, go to the next one click right button ⏩



Figure 20

NC-phase voltage correction, according to the NC phase external standard voltmeter readings to be adjusted in ascending key ⏫ or descending key ⏬ to modify the key, go to the next one click right button ⏩



Figure 21

RA-phase voltage correction, according to the RA phase external standard voltmeter readings to be adjusted in ascending key ⏫ or descending key ⏬ to modify the key, go to the next one click right button ⏩



Figure 22

RB-phase voltage correction, according to the RB phase external standard voltmeter readings to be adjusted in ascending key ⏬ or descending key ⏫ to modify the key, go to the next one click right button ⏩



Figure 23

RC-phase voltage correction, according to the RC phase external standard voltmeter readings to be adjusted in ascending key ⏫ or descending key ⏬ to modify the key, go to the next one click right button ⏩

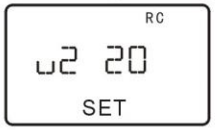


Figure 24

After setting, press the right button ⏩ to save. After saving a good return to the main interface

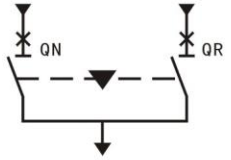


Figure 26

10. Detailed function explanation

10.1 Truth Table

QN common power	QR standby power
1	0
0	0
0	1

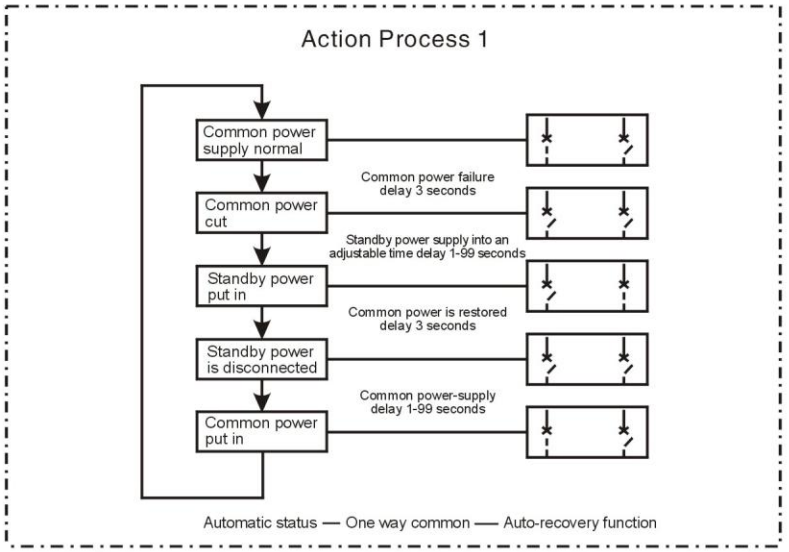


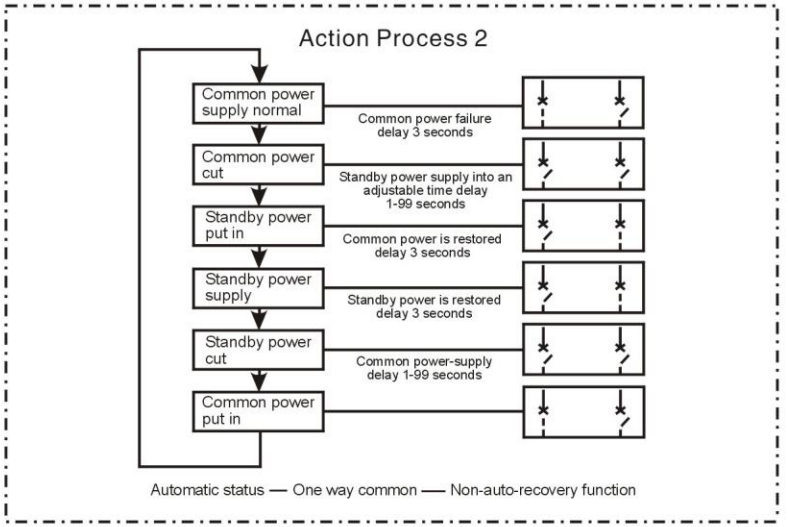
10.2 The controller has the following features

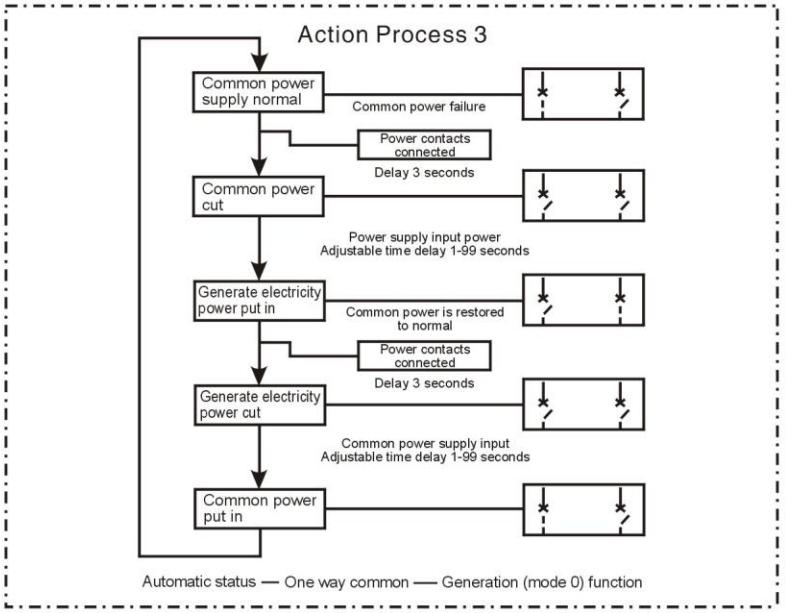
- Dual voltage detection by the right key ⏩query
- Conversion delay 1 ~ 99s adjustable
- Return delay 1 ~ 99s adjustable
- Auto–charge & non–auto–recovery function is set
- Generator start signal mode setting (optional function)
- One way common or two way common setting
- Overvoltage threshold from 100% to 150% range adjustable settings (rated voltage of AC220V)
- Under–voltage threshold of 40% to 100% range adjustable settings (rated voltage of AC220V)
- NA, NB, NC, RA, RB, RC phase correction voltage ± 1%
- Standby fault alarm (by descending key ⏬ on or off)
- Phase failure protection function
- Fire DC24V function (optional)
- Trip alarm contact function, 485 communication function (optional)

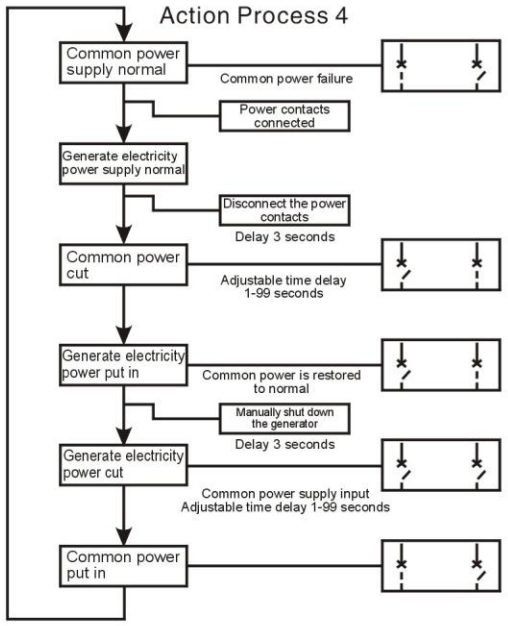
Note: The function items above with (optional feature) words not in the default configuration, you need to be customized consultation.

10.3 Action Process

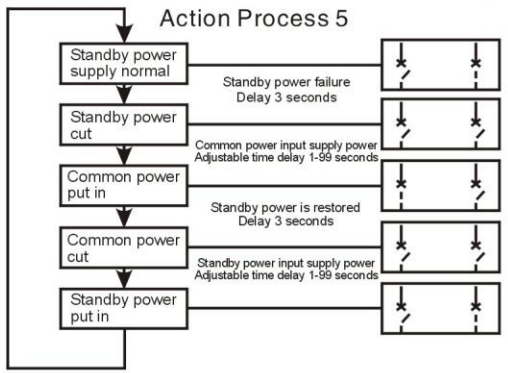






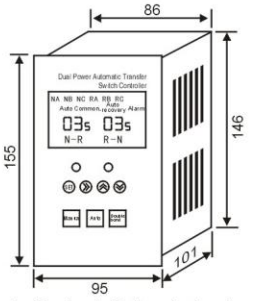


Automatic status — One way common — Generation (mode 1) function



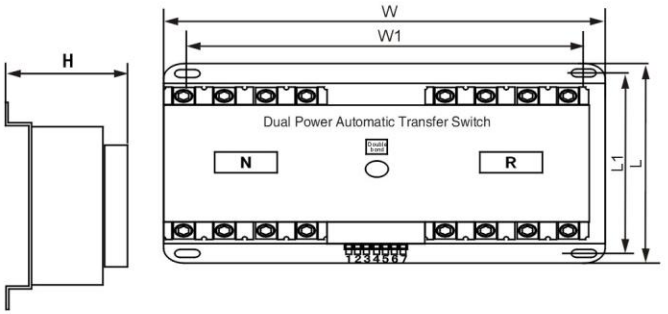
Automatic status — Auto-recovery — Two way common function

11. Controller installation hole size



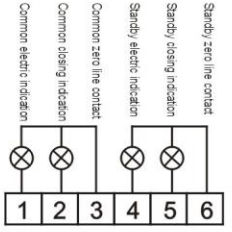
▲ Split controller installation hole size: 87×147

12. Overall and installation dimension of terminal type dual power automatic transfer switch



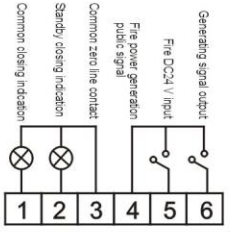
Terminal type external terminal

Note: when the switch is three pole, please connect the zero line to 3 and 6 indicator lights for AC220 V output, and it is strictly prohibited to connect external power supply.



Common wiring mode

Note: when the switch is three pole, please connect the zero line to 3 indicator lights for AC220 V output, and it is strictly prohibited to connect external power supply.

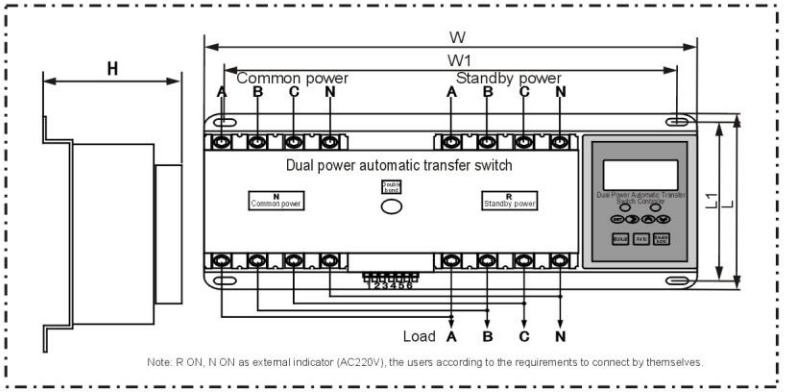


Fire connection mode

Overall and installation dimension table of terminal type dual power automatic transfer switch

Specification	W	W1	L	L1	H
100/3P	288	259	202	180	122
100/4P	320	290	205	182	122
250/3P	330	300	211	189	144
250/4P	365	335	209	186	144
400/3P	453	400	328	298	192
400/4P	497	444	328	298	192
630/3P	572	515	328	298	205
630/4P	632	575	325	294	205
800/3P	613	556	345	315	205
800/4P	683	627	345	315	205

13. Overall and installation dimension of liquid crystal display (intelligent integrated and intelligent split) dual power automatic transfer switch



Liquid crystal display (intelligent integrated and intelligent split) dual power automatic transfer switch:

1. External common zero line
2. Common closing indication
3. Standby closing indication
4. Fire power generation public
5. Fire input point
6. Power output signal

When the dual power supply is three poles, please connect the common zero line to terminal 1.

Overall and installation dimension table of liquid crystal display (intelligent integrated and intelligent split) dual power automatic transfer switch

Specification	W	W1	L	L1	H
100/3P	388	358	203	180	126
100/4P	420	390	208	185	126
225/3P	430	400	203	180	144
225/4P	465	435	204	183	144
400/3P	565	510	322	292	192
400/4P	607	552	322	292	192
630/3P	683	650	325	295	205
630/4P	740	680	319	290	205
800/3P	720	668	345	315	205
800/4P	790	735	345	315	205
1250/4P	800	750	395	370	290

14. Switch commissioning and maintenance

Hazard warning

This device can only have professional installation, commissioning and mainten –ance. Failure to specification requirements for all damage caused by the operation, the manufacturer will not be liable.

a) The device must be installed by professionals, commissioning and maintenance and maintenance.

b) When installation and maintenance, please cut off the power supply.

c) the device must be grounded as required.

d) illegal operation may cause electric shock, fire or explosion!

14.1. Switch commissioning instructions

a) The first use of the operating handle is not energized, the switch three times repeated operation, the switch should operate flexible cable wiring;

b) Confirm that the main circuit and auxiliary circuit wiring is correct electrical operation inspection;

c) Press the manual button, click the manual used, points again to press the manual button to display alternate characters on the screen this time manually.

Thus, dual power should immediately turn to standby power, dual power button is pressed the parties unconditionally transferred to the position of the double points;

d) All the way to the automatic mode according to the usual or common mode debugging road, see the instructions detailed functional description 10.3 Action specific functions to analyze the debug process.

14.2. Routine maintenance

To prevent dual power failure to ensure normal operation, long life, dual power supplies are required to be routine maintenance, routine maintenance as follows:

a) Check that the ambient temperature at 0 ℃ ~ 40℃, the temperature at 20 to 90% and non–condensing;

b) Confirm the input supply voltage and frequency within the allowable range;

c) Confirmed that no oil mist and dust within dual power, no condensation.

14.3. Regular maintenance

In order to prevent double power failure, ensuring its high performance and stable operation for a long time, the user must periodically (six months or less) for the dual power for inspections as follows:

a) Check the main circuit line busbar contact is good;

b) Check the external wiring terminal screws are loose;

c) Check the electrical instructions and instructions or external LCD controller LED indicates whether the same.

15. After–sales service

The product implements three bags within six months from the date of default, users should regulate the use of the period, care and maintenance. Product quality problems not work properly, the company responsible for repair or replacement. If the user does not click manual specification requires the operator, resulting in damage to the product does not fall within the three bags.

16. Belong to paid range

- Due to the use of the wrong, to make alterations and inadequate maintenance and other reasons.
- Require the use of more than the standard specification.
- Since the fall and damage during installation and other reasons after purchase.
- Earthquake, fire, lightning, abnormal voltage; reasons for natural disasters and other secondary disasters.

17. Common troubleshooting list

Fault	Troubleshooting		Troubleshooting Methods
Access to power dual power automatic transfer switch does not work	No LCD screen on the controller power and data display	Breaker line side signal line No access or off	
		3–pole switch, neutral (NN, RN) is not connected to terminals or poor contact	Tighten the corresponding line is good
	Buzzer continuous alarm	No power or standby power supply abnormality (Standby power failure alarm function is turned on)	Click this button to turn off the alarm function or repair the power supply normal
	Dual power switch frequently	Voltage power supply overvoltage, Undervoltage or load with Electric phase imbalance...	Repair or adjust the power supply to make it balanced three–phase load

18. Ordering information

The user should provide the following details:

1. Product Name Model specification and quantity;
2. If there are special mounting conditions or special places to use, should provide technical information or consultation with the company.