



Eureka Automatic Transfer Switch Product Information booklet

Adjustable from 64 - 630A across 2 different frame units
Incorporates LS Electronic MCCB'S

Operating features -

- 3 pole / 3 pole Motorised transfer switch
- Manual operating handle
- Logic controller
- Quick connection wiring terminals

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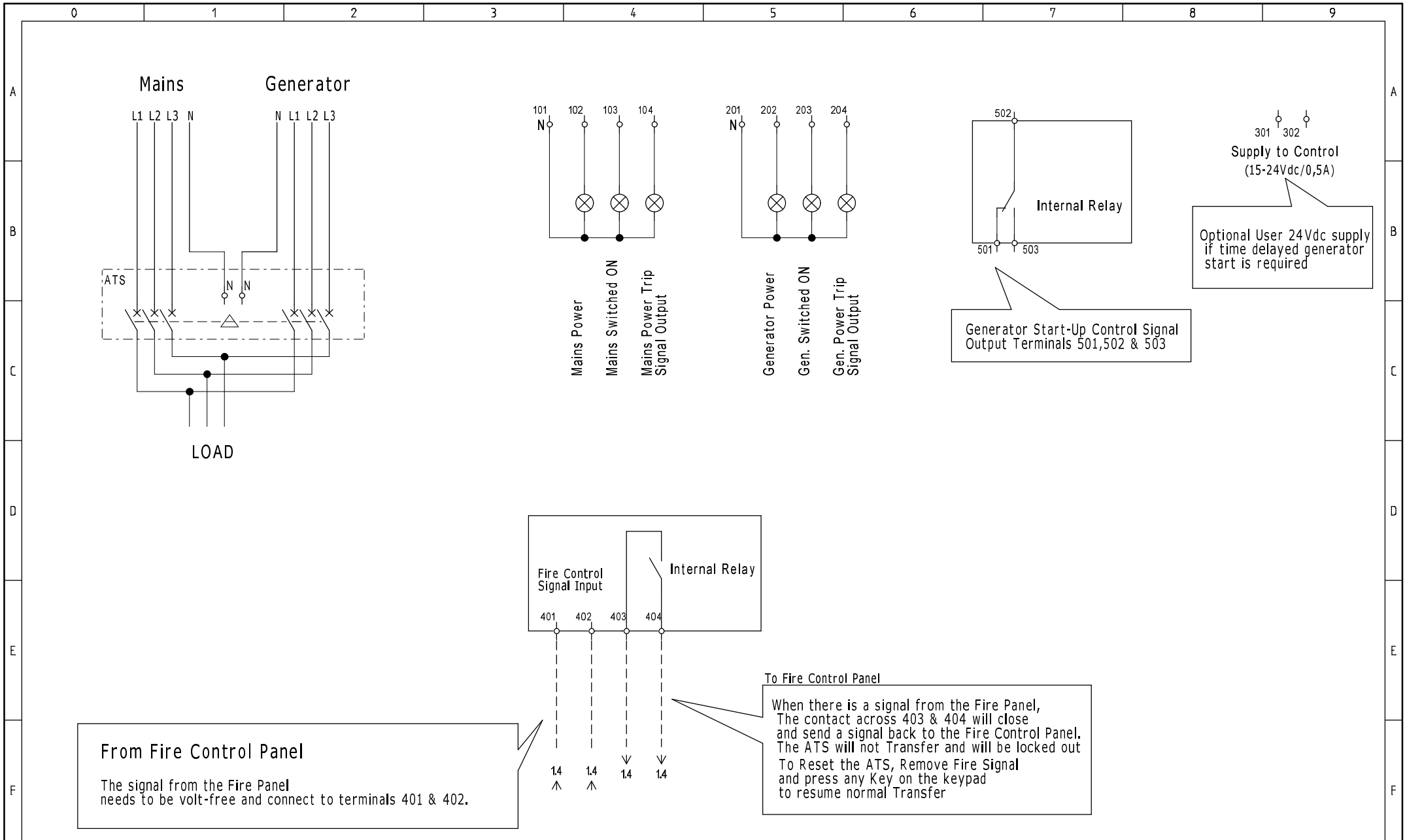
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Production Instructions

XLDQ3NM

Series Automatic Transfer Switch

Thank you for using CLIN automatic transfer switch. Please read the products instructions carefully before use!

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Notice

Before operating automatic transfer switch (hereinafter referred to as ATS), please read and understand the instructions.

Danger

Before installing or operating ATS, please read and understand this instructions. Only professionals can install, adjust, repair and maintain the ATS.

Many parts including printed circuit boards can only be touched by the insulated tools when at line voltage. Those unprotected components or screw in the current carrying terminals cannot be touched.

Take the following safeguards before maintaining ATS line:

Disconnect all power

Put a "no switching on" sign on the switch

Lock the switch in the off position

Warning

Before powering on and configuring ATS, ensure the line voltage is in the power voltage range indicated in the ATS nameplate.

Inconsistent power voltage may damage the ATS.

Fail to follow the instructions can result in equipment damage.

-01-

Using the Process

○ ATSE Confirmation

Check and confirm if the product is the same as you ordered

Remove ATS packaging, check if there is any damage during transportation.

○ Check the voltage

Check and make sure that the voltage is in the ATS working voltage range.

○ Install ATS

Install ATS according to the instructions

Install all external parts.

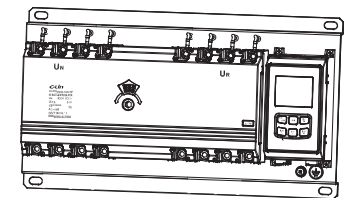
○ ATS wiring

Connect busbar

Connect the control line

○ Parameter Setting

Set ATS operating parameters according to the actual situation by the instruction manual.



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Accessories

Number	Name	Quantity	marks
(1)	Instruction manual	1	-----
(2)	Manual handle	1 piece	-----
(3)	Screws	1 set	M8*20mm) user self-prepared
(4)	Clapboard	1 set	-----
(5)	2m RJ45 cable	1	A type controller, no such accessory
(6)	Continental Terminals	2 pcs	-----
(7)	Continental Terminals	1 pcs each	B type controller, user option



(1)



(2)



(3)



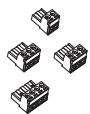
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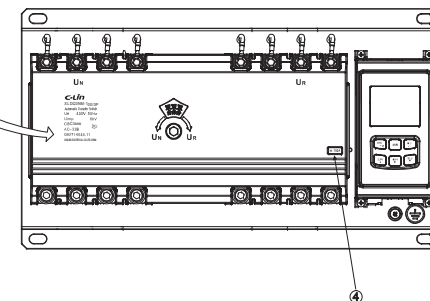
Note:

- If any accessories are missing or damaged, please contact the manufacturer.
- Keep the instructions manual for the future use.

Product Identification

■ XLDQ3NM product identification:

- ① → XLDQ3NMB-100/3 Automatic Transfer Switch
- ② → Ue 400V 50Hz
Uimp 6kV
CBClass AC-33B
- ③ → GB/T14048.11

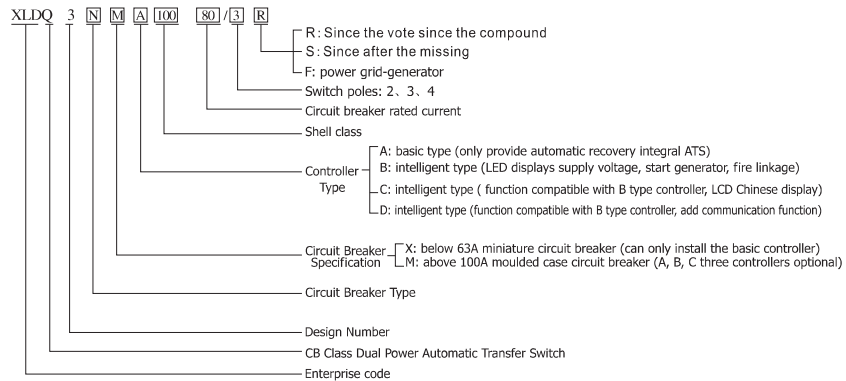


1. Product Model
2. Product Performance Parameters
3. Product Standard
4. Rated Working Current

Main power side switch
reserved power side switch
OFF-OFF position
For manual operating , put the controller onto the manual position.

Model Explanation

Model Explanation Description



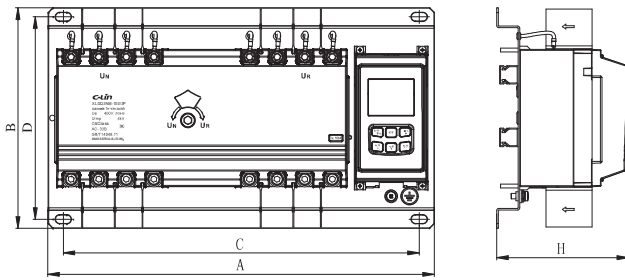
Controller Features and Functions

Automatic transfer switch decides whether to change one power source to another based on the power supply voltage state and working mode set by the user. Their function depends on the matched controller(B, C or D type). The functions and features are shown below:

Controller	B type controller
Working power	AC150~300V 50/60HZ
Auxiliary power supply voltage	DC15~30V
Voltage measurement range	40~300V
Under-voltage conversion value	160~200V adjustable
Over-voltage conversion value	240~290V adjustable
Power consumption	Equal and less than 10W
Installation mode	Integrated form (can do split installation by the display panel unloaded)
Working position	Three working positions
Operation mode	Automatic, manual and manual remote control
Voltage monitoring function	Overvoltage, under-voltage, default phase
Generator control	A group of 10A relay dry contact
Fire control	Passive contact input with a set of NO no power signal feedback
Conversion mode	automatic switch and automatic reset mode, automatic switch without reset mode, grid-generator mode for choice.
Display mode	LED display
Voltage display function	√
Remote communication function	/

Conversion delay function	0~180s continuous adjustable
Returning delay function	0~180s continuous adjustable
Operating ambient temperature	-30°C~+60°C

Dimension Drawings

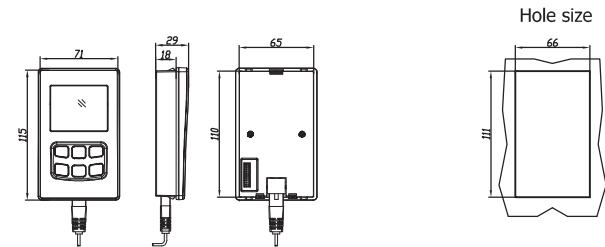


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Product dimension table

Dimension Specification	A		B	C		D	H
	3P	4P	4P	3P	4P		
XLDQ3NM-63	355	380	240	320	348	220	120
XLDQ3NM-100	390	420	240	358	388	220	120
XLDQ3NM-225	435	470	240	400	438	220	120
XLDQ3NM-400	565	615	330	505	555	300	200
XLDQ3NM-630	680	740	330	620	680	300	200
XLDQ3NM-800	720	790	350	665	735	320	200

XLDQ3NM controller panel outline dimension



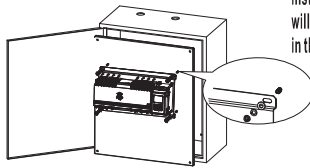
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Installation Steps

XLDQ3NM Series installation steps

1. Fix the switch body

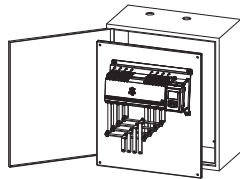
Open four \varnothing 8mm holes in the switch cabinet according to ATS outline dimension. Fix ATS by the screws provided by the manufacturer.



Install the screws when the recommendations will be tapping or screw mountingplate welding in the mountingplate for easy maintenance

2. Connect output terminal

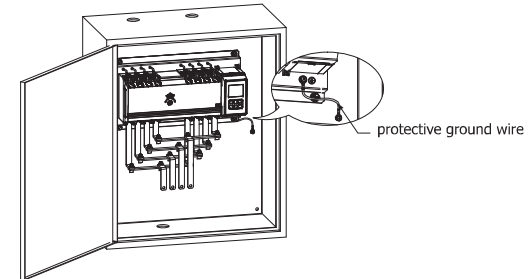
According to ATS rated current level, choose the right size copper bar to connect two circuit breakers output terminals A, B, C, N one by one. Fix the bus screw by the appropriate tightening torque



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3. Connect protective ground wire

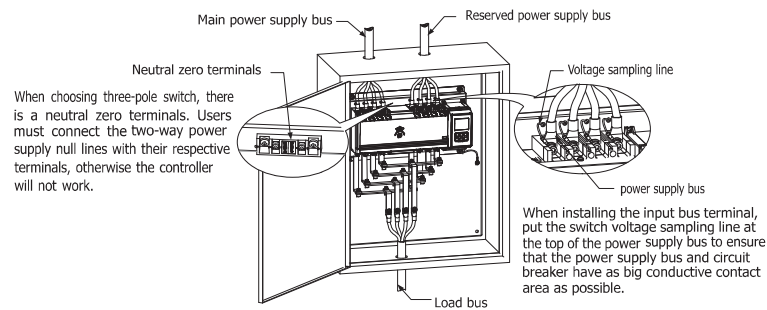
There is a ground bolt in the bottom right corner of ATS. Connect ATSE with the protective ground wire in the switch cabinet. Protective ground wire must be reliable in order to ensure the operator safe.



4. Connect bus

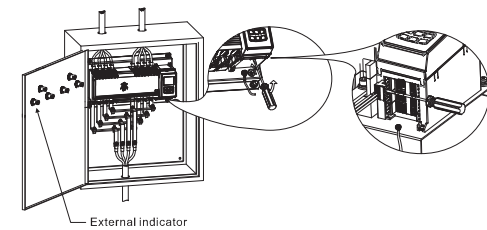
According to the figure below: connect the main power supply bus and reserved power supply bus to the upper end of ATS, and connect the load bus to the ATS output terminal bus. Pay attention that the two-way power supply phase sequence must be consistent.

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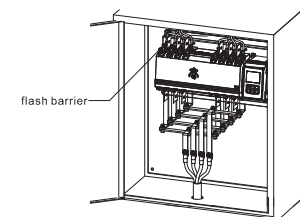
5. Install external indicators

In the switch control panel, there are main power indication, standby power supply indication, circuit breaker close indication and also those indication signal external output terminals (AC220V/0.5A, active). User can decide the external indicators according to their own needs. For the specific wiring, refer to the corresponding controller terminal instructions.



6. Install clapboard

After inspection switch wiring, insert the supplied clapboard into the circuit breaker clapboard slot.

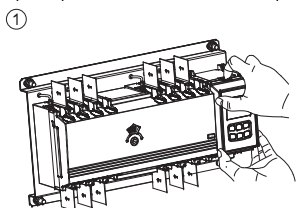


7. B type controller split type installation methods

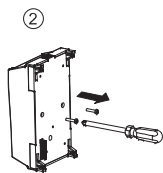
XLDQ3NM Series ATS has one-piece and split type installation modes. If the switch chooses the matching controller is RNM-A type, then only one-piece installation is available; if choosing HATS7 type controller, then user can select one-piece or split type installation. For one-piece installation,

refer to "Wiring Installation" step 1~5 to install ATS. For split type installation, follow figures below to install.

1. Press "push" button and pull up the controller cover component.



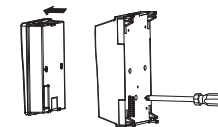
2. Use a screwdriver to loosen two M4 screws on the controller cover subassembly.



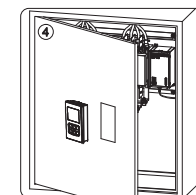
3. Use a screwdriver to open the top cover bracket and a controller in a little gap, then take the controller off by hand.

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③

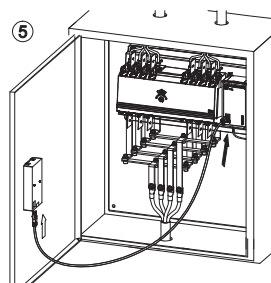


4. Open a 65*110mm square hole on the switch cabinet door. Push the control panel firmly in the square hole and the elastic buckle on the upper and lower sides of the panel will automatically lock on the cabinet..



5. Take out the the cable RJ45 from the accessories , Plug the both ends of RJ45 cable into the controller and control panel sockets. Check if there is any objects falling into the sockets before connecting. Pay attention to the plug and socket directions when inserting and do not plug hard. When a click sound which indicates the plug has been inserted in an appropriate place of the socket.

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XLDQ3NM Controller

■ XLDQ3NM Controller

The controller is a multifunction power monitoring instrument, which combines many features such as measurement, analysis, control, protection etc. The product is widely used in generator set control for high degree of automation, and power automation systems.

■ Features:

Setting controller working mode and transfer parameter by controlling buttons.

Common measurement and control parameters (voltage, time delay, conversion mode etc.) can be directly queried by LED display screen.

Fire control function: Intelligent controller has a set of passive fire control signal input terminal. Signal input is opto-isolated with strong anti-jamming capability. And it is with a passive feedback signal output terminal which can put the switch signal back to the firefighting equipment.

Generator start-stop control function: controller has a dry contact relay to control the generator start and stop; it can be artificially set the start time delay and stop time delay (need to connect DC15-24V auxiliary power supply)

Users can remove the display control panel and mount on the switch cabinet door so that they can check the state of the switch without opening the cabinet door.

■ Technical Parameter:

Working Temperature: -30 ~+60

Auxiliary Working Power Supply Voltage Range: DC15~24V

Voltage Measurement Range: 40~300V

Under-voltage Conversion Value: 160~200V adjustable

Return Delay: 0s~180s adjustable

Main Working Power Voltage Range: AC160~260V

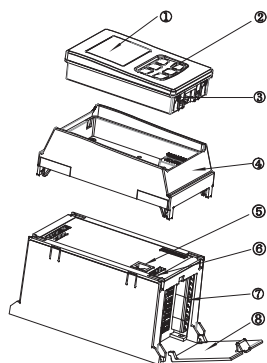
Power Consumption: ≤10W

Over-voltage Conversion Value: 240V~290V adjustable

Conversion Delay: 0s~180s adjustable

■ Controller Structure:

XLDQ3NM type controller uses a unique structure to make two parts of controller: control host and display control panel. By a simple combination, users can install ATSE by split type or one-piece type. All wires are connected by the pin terminals, which is very easy and convenient for the equipment to connect, move, repair, and replace.



- ①: LED segment code Chinese display screen
Display information such as supply voltage, switch state, and conversion parameters.
- ②: Keyboard
This keyboard can directly control switch conversion and set conversion parameters.
- ③/⑤: RJ45 port
When using the split type installation, it is used for connecting between the control panel and control host.
- ④: controller bracket
When using the one-piece type installation, it is used for connecting between the control panel and control host.
- ⑥: power indicator
The indicator is on when the controller works.

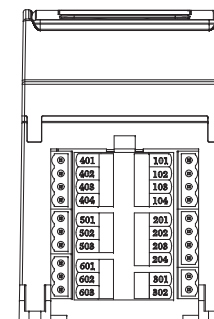
- ⑦: by connecting external output signal and the control signal terminals and terminal 7, the product can achieve external signal indicator output, start the generator, fire control and other functions.
- ⑧: terminal cover
When functions such as external signal control are no needed, this board can be covered.

■ Terminals and Wiring Instructions:

- ①:101~104 main power external state indicator signal(active AC220V/0.5A)
 - 101----indicator public null line
 - 102----main power indication signal output
 - 103----main power switching on signal output
 - 104----main power trip signal output
- ②:201~204 standby power external state indicator signal(active AC220V/0.5A)
 - 201----indicator public null line
 - 202----reserved power indication signal output
 - 203----reserved power switching on signal output
 - 204----reserved power trip signal output
- ③:301~302 controller DC auxiliary power input terminal (DC15V~24V/0.5A)

The purpose of inputting auxiliary power is to control generator start-up delay time under the grid--generator mode. If no auxiliary power input, the generator start-up delay time is 0 second. When the generator start-up delay function is not required, it can not connect auxiliary power.
- ④:401~404 fire control port

This port is used for remotely controlling the switch and cutting off the power after the fire-fighting equipment alarms.



401, 402---fire control signal input, this port can only be connected to a set of NO passive contact(if the fire-fighting equipment sends active signal, it need a miniature relay conversion and the relay NO contact to input the controller. Otherwise the controller will be burnt. 403,404----it is a group NO dry contact relay inside for firefighting action signal return. The terminal is normally open when it is normal. When a fire signal sends into the controller and the switch turns to the separating brake, 403 and 404 are connected. (note: when the fire linkage function starts, the automatic transfer switch will stop working. If switch is needed to transfer normally again, users should dismantle fire signal first and press any key in the control panel to resume normal transfer.

⑤: 501~503 generator start-up control signal output terminal

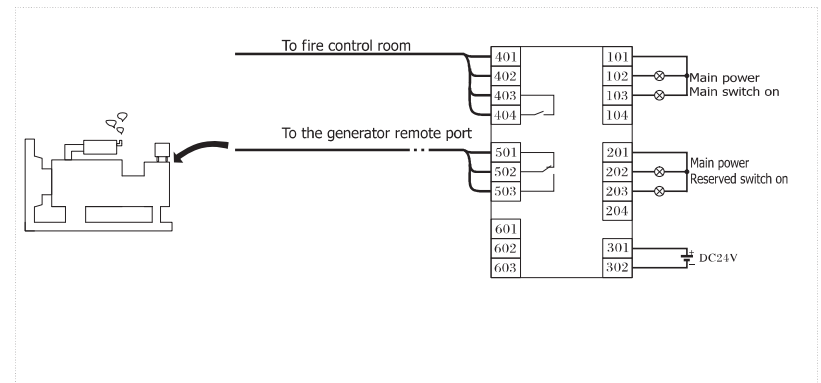
When the reserved power is a self -starting generator, user can make automatic start generator function by connecting 501-503 terminal with the generator controller.

The inner side of the 501-503 terminal is a group of passive relay node. 502 is relay common terminal, 503 is relay normally closed contact, 501 is normally open contact. Only when it is under the grid-generator working mode and the controller is in automatic control are the terminals functions valid.

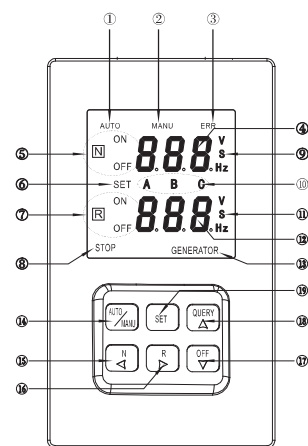
501 are closed, 502 and 503 open . If the main power failure and the reserved power supply has no power, then 503 and 502 are closed after the generator starts up delay, meanwhile 502 and 501 break and give out generator starting signal, then the generator starts successfully and the ATS turn over automatically to the reserved power side to supply electrical to the load.

During the reserved power supplies the electrical to the load, if the main power recoveries to normal state, then the controller will control the ATS to turn over and back to the main power automatically by the returning delay, at this time, the common circuit breaker is closed, then 502 and 501 will be closed after the generator stop and delay time, then 502 and 503 break and give out the stop signal.

■ Typical Applications:



■ Display and Key Functions:



- ①: Automatic working mode indication;
- ②: Manual working mode indication;
- ③: Fault indication
When the switch is faulty or the load short circuit causes circuit breaker tripping, this indicator is on.
- ④: main power voltage parameter display area
It displays main power voltage parameters and switching delay time under working state; setting bullets under setting state.
- ⑤: main power side power circuit breaker close, break indication
- ⑥: setting state indication
- ⑦: reserved power side power circuit breaker close, break indication
- ⑧: fire linkage function start indication
- ⑨: main power side voltage, time, frequency units
- ⑩: A, B, C phase
- ⑪: reserved power side voltage, time, frequency units
- ⑫: reserved power voltage parameter display area
It displays reserved power voltage parameters and switching delay time under working state; it displays setting bullets under setting state.

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- ⑬: generator start signal indication
- ⑭: automatic/manual conversion mode selection button
When in the normal state, it is used as automatic, manual conversion mode selection; when in the setting state, it has saving and exiting functions.
- ⑮: main power transfer button
In manual control mode, if the main power is normal, pressing this button can make the switch be forced to transfer to the main power. In the setting state, this button is for turning up setting bullets
- ⑯: reserved power transfer button
In manual control mode, if the reserved power is normal, pressing this button can make the switch be forced to transfer to the reserved power. In the setting state, this button is for turning down separating brake button
- ⑰: setting bullets
In manual control mode, if any of two-way power is normal, press this button, the switch is transferred to the separating brake position; in the setting state, this button is for minus parameters setting.
- ⑱: fault query button
When the fault occurs, the faulty indicator is on. Pressing this button can check detailed fault codes. In the setting state, this button is for plus parameters setting.
- ⑲: setting button
Pressing this button can enter into parameters tuning menu of the controller.

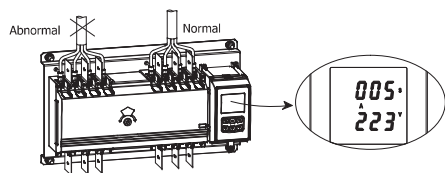
■ Inspections before the power on:

After you finished the ATS wiring working, You are request to have a inspection on the installations to prevent the errors coming.

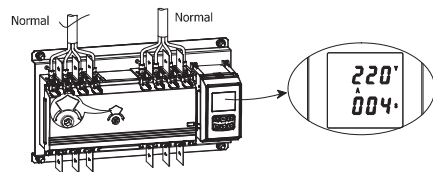
- Inspect if it is right about the installation and wiring on the ATS,. Especially to check the main wiring terminals, such as the power bus and 24V auxiliary power.
- Inspect the connection of the external signal indicator is right or not, to see if there is short circuit .

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Mechanic position display window in the electric operating mechanism shows "normally close"; LED display screen in the control panel will take turns to display A, B, C three phase voltage of main power supply and standby power supply.



②: When the main power provides the power to the load, if the main power supply is abnormal and the standby power supply is normal, controller will immediately enter the transfer delay, display screen will no longer display main power supply voltage. Instead, it will display the delay countdown. When the delay is completed, while the main power supply has not been restored normally, the controller will immediately stop delay, and the switch continues to use the main power to the load.



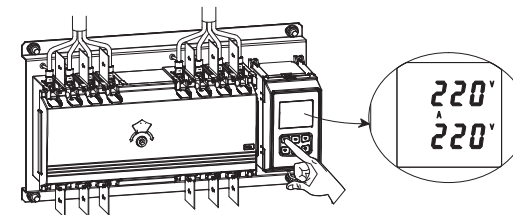
- Inspect if the bus screw is reliable or not, tightened or not.
- For the first time's power-on debugging, please make the load disconnected.

When all the above inspections passed and confirmed there is no erroneous operation, then you can make the power on and do debugging using.

■ **How to operate :**

Automatic transfer

When the switch is in the normal use, the controller should work under "automatic transfer" working mode. Under the "automatic transfer" working modes, the switch working modes and operation ways are as follows:

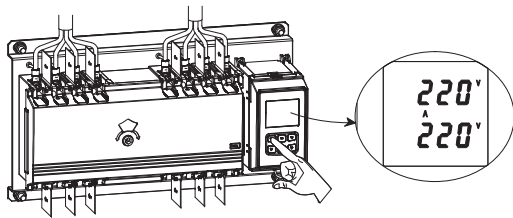


①: Press the automatic/manual button on the control panel, and "automatic" indicator in the controller display screen is on. Thus the switch enters into "automatic transfer" working mode. In "automatic transfer" working modes, when two-way power is normal, the switch will automatically close main power circuit breaker.

③: During the reserved power is supplying power, If the main power supply recovery to the normal state, if the controller is set in the mode of the automatic switching and resetting or the mode of the grid - generator, The ATS will automatically close the main power circuit breakers by conversion delay time. If the ATS is set on the position code of the automatic switching but not automatic resetting , then the ATS will return back to the main power after the reserved power is failed.

■ Manual conversion

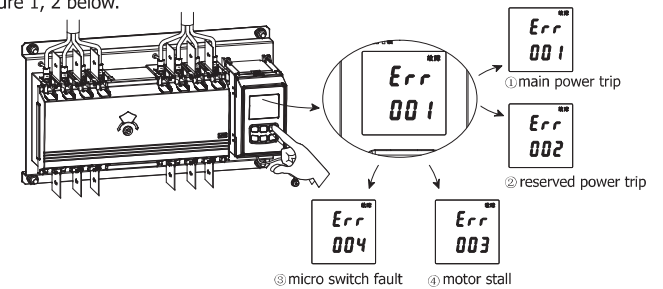
If in some special cases, when the user don't need automatic conversion, then we use "manual conversion" function on the controller to do manual switch control . First press the automatic / manual key ,when the screen displays the word "manual", then the controller will exit the automatic conversion mode, the user can press the "main power ", "reserved power", and "double line position " to control ATS for switching.



Note: if in the manual mode, when the power supply occurs fault, the controller will not obey the instructions from the Key press to run, at this moment, You can use handle to switch the ATS, (the handle is in the switch accessories) The switching method is the same as when you do manual conversion for controller A type.)

■ Solutions to the switch tripping

This ATS (Automatic transfer switch) is a class CB switch electrical equipment ,. When during the switch supplies the power to the load ,if overload or short circuit occurs to the load, then the circuit breaker on the switch will break immediately . After the circuit breaker broken, the ATS will stop its automatic conversion working mode, the LED screen displaying on the control panel will show "fault" at this time, if you press the "search" key , then the controller will display the fault code, it shown as Figure 1, 2 below.



Now first the user should find out the reason for the overload and short circuit of the load, and do troubleshooting. then use "manual conversion" or "handle switching" ways to make the ATS convert to the double line position (because convert to this position can make the the circuit breaker rebates), then make the switch recover the original conversion mode so that it runs in a normal conversion way..

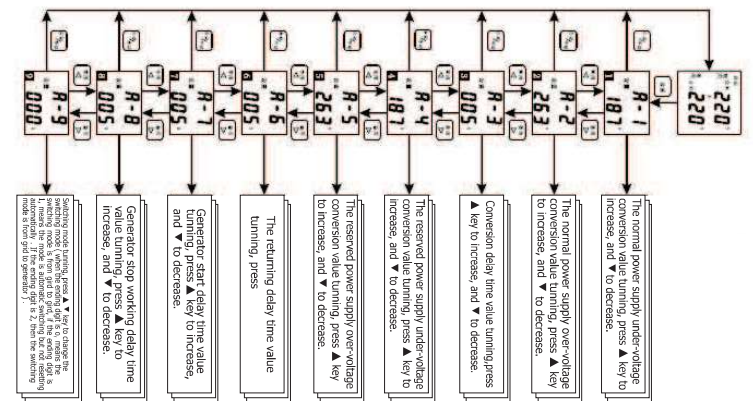
When the fault make the ATS not work in normally, the controller will give out the fault indicating signal as it shows in the figure 3 and 4, if the fault comes in such cases, please inform your seller or contact with our factory for troubleshooting.

■ Parameter settings

For the convenience of users, the xLDQ3NM type controller provides commonly used for user to modify some parameters in the design, before leaving our factory , these parameters in the switch have passed factory settings, the factory setting parameters are as follows,

- ①: main power supply under-voltage conversion value: 187V
- ②: main power supply over-voltage conversion value: 253V
- ③: Conversion delay time 5s
- ④: reserved power supply under-voltage conversion value: 187V
- ⑤: reserved power supply over-voltage conversion value: 253V
- ⑥: returning delay time: 5s (reserved power ---main power delay time)
- ⑦: Generator start delay time: 5s
- ⑧: Generator stop working delay time: 5s
- ⑨: conversion mode: grid, to grid

If the parameters need to be modified, refer to the following instructions:



■ key-press description

When the controller runs, press the setting key "LED", the menu interface displays the parameters as it is shown in the Figure 1 . In the setting menu press ◀ to up-page ▶ to down-page, if press automatic / manual key is to exit the setting menu; to modify the parameters please press " ▲ " key and " ▼ " key.

Troubleshooting and after - sale service

■ System maintenance

In order to ensure the ATS runs stably and reliably, You'd better to make switching experiments regularly (every three months) to make sure the switch works normally, and supply the load continually.

■ The common faults and exclusion

When the ATS can not switch smoothly, please refer to the following table tips for troubleshooting, if refers to the solution from the below table, still can not solve your problem ,please contact with our company or your local distributors.

Symptom	troubleshooting	fault resolution
Power on but the indicator doesn't light	Check if the power sampling line is off	Make the corresponding line connected
	3-pole switch's system neutral hasn't been connected to neutral terminal.	
	The fuse on the switch blown	Change a new fuse
The controller shows lack-phase	The bad contact on the input line terminal of the corresponding power circuit breaker or single-phase lose phase or the supply voltage is below the normal range	Eliminate the power line fault
The controller displays normally but the switch can not do normal conversion.	Check if the controller is at the manual operation position	Put the controller in the automatic gear shifting
The power is normal, switch in the closed position, but the load end has no power.	check whether the switch is tripping.	After eliminating the load failure, then make the switch buckle manually.

■ Warranty and after- sale service

This product is manufactured under the perfect quality management system, in case of failure, my company supplies product warranty and after -sale service, please read the following statement :

The ATS switch body should be checked and maintained regularly according to the requirement of the selected Circuit breaker and the electric operating mechanism. For long-term without being used product, pay attention to take precautions against rust, moisture .Before use, please debug the ATS according to the above operation instruction, if all is normal, then begin to operate.

Warranty period: When the user comply with the custody and use conditions, our company is responsible for Three guarantees for our products (guaranteed repairing, replacement, taking back the product) within 12 months since the product is used .(but not more than 18 months from the date of the delivery), during the three -guarantee period, the user is requested to debug the ATS according to product instruction. But the seal of the ATS must be kept intact. If the quality problems make the product not to be used in normally ,our company supply maintenance and replacement in free for the users.

However,if the failure due to the following causes,even in the warranty period,our company also can only provide paid repair or replacement.

If the damage reasons from user self- modified or inappropriate repair .

Exceed the standard and criterion to use.

The fall and damage occurred after the purchase or during installation.

Earthquake,fire,lightning,abnormal voltage,other natural disasters and secondary disaster causes the product cannot be used.