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

Operating features:

Adjustable from 64 - 630A across 2 different frame units

EUREKA - Automatic Transfer Switch Product Information Booklet
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
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<td>29</td>
<td>Troubleshooting and Service</td>
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</tbody>
</table>

**Content**
Fail to follow the instructions can result in equipment damage.
Inconsistent power voltage may damage the ATS.
Indicated in the ATS nameplate.
Before powering on and configuring ATS, ensure the line voltage is in the power voltage range.

Warning

Disconnect all power.
Put a "no switching" sign on the switch.

Take the following safeguards before maintaining ATS line:
Look the switch in the off position.
Those ungrounded components or circuits in the current carrying terminals cannot be touched.
Many parts including printed circuit boards can only be touched by the insulated tools when at line voltage. Can install, adjust, repair and maintain the ATS.

Danger

Before installing or operating ATS, please read and understand the instructions.

Notice
Set AT5 operating parameters according to the actual situation by the instruction manual.

- Parameter Setting

- Connect the control line

- Connect busbar

- AT5 wiring

- Install all external parts

- Install AT5 according to the instructions

- Install AT5

- Check and make sure that the voltage is in the AT5 working voltage range

- Check the voltage

- Remove AT5 packaging, check if there is any damage during transportation

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

- AT5 confirmation

- Using the process
<table>
<thead>
<tr>
<th>Name</th>
<th>Quantity</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>B type controller</td>
<td>2 pcs</td>
<td>7</td>
</tr>
<tr>
<td>A type controller</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>M8x20mm (user self-prepared)</td>
<td>1 set</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1 piece</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- (1) Instruction manual
- (2) Manual handle
- (3) Screws
- (4) Clipboard
- (5) 2m R245 cable
- (6) Continental Terminals
- (7) Continental Terminals
For manual operating, put the controller onto the manual position.

OF-OF position

Reserved power side switch

Main power side switch

4. Rated Working Current

3. Product Standard

2. Product Performance Parameters

1. Product Model

- GB/T14048.11
- AC-33B
- CB Class
- Uimp 6kV
- Ue 380V 50Hz
- Automatic Transfer Switch
- XLDC3NMB-100/3

Product Identification: XLDC3NMB
The functions and features are shown below:

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 type. C or D type.

Controller Features and Functions

- Enterprise code
- CB class dual power automatic transfer switch
- Design number
- Circuit breaker type
- Specification
  - A: Below 100A molded case circuit breaker (A, B, C type controller optional)
  - B: Below 63A miniature circuit breaker (can only install the basic controller)
  - X: Below 63A miniature circuit breaker

Controller type:

- D: Intelligent type (function compatible with B type controller and communication function)
- C: Intelligent type (function compatible with B type controller and LED display)
- B: Intelligent type (LED display, power supply, short generation, fire alarm)
- A: Basic type (only provide automatic recovery integral ATS)

Shell class
- Circuit breaker rated current
- Switch position: 2, 3, 4
- Power and generator

Since there are missing
- R: Since the volt, since the compound
- E: Since the volt, since the compound
- N: Since the volt, since the compound
- 80/100
<table>
<thead>
<tr>
<th>Remote Communication Function</th>
<th>Voltage Display Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED display</td>
<td>Display mode</td>
</tr>
<tr>
<td>Automatic mode</td>
<td>Conversion mode</td>
</tr>
<tr>
<td>Passive contact input with a set of NO no power signal feedback</td>
<td>Fire control</td>
</tr>
<tr>
<td>A group of 10A relay dry contact</td>
<td>Generator control</td>
</tr>
<tr>
<td>Overvoltage, under-voltage, default phase</td>
<td>Voltage monitoring function</td>
</tr>
<tr>
<td>Automatic, manual and manual remote control</td>
<td>Operation mode</td>
</tr>
<tr>
<td>Three working positions</td>
<td>Working position</td>
</tr>
<tr>
<td>by the display pane unadjusted</td>
<td>Installation mode</td>
</tr>
<tr>
<td>Integrated form (can do split installation)</td>
<td>Power consumption</td>
</tr>
<tr>
<td>Equal and less than 10W</td>
<td>Over-voltage conversion value</td>
</tr>
<tr>
<td>240~290V adjustable</td>
<td>Under-voltage conversion value</td>
</tr>
<tr>
<td>160~200V adjustable</td>
<td>Voltage measurement range</td>
</tr>
<tr>
<td>40~300V</td>
<td>Auxiliary power supply voltage</td>
</tr>
<tr>
<td>DC15~30V</td>
<td>Working power</td>
</tr>
<tr>
<td>AC150~300V 50/60HZ</td>
<td>Controller</td>
</tr>
</tbody>
</table>

B type controller
### Operating Ambient Temperature

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Adjusted</td>
<td>0~180°C</td>
</tr>
<tr>
<td>Continuous Adjustable</td>
<td>0~180°C</td>
</tr>
</tbody>
</table>

### Retaining Delay Function

- Conversion Delay Function
<table>
<thead>
<tr>
<th>XLDC3MN</th>
<th>XLDC3MN-630</th>
<th>XLDC3MN-400</th>
<th>XLDC3MN-225</th>
<th>XLDC3MN-100</th>
<th>XLDC3MN-63</th>
<th>XLDC3MN-800</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>320</td>
<td>665</td>
<td>735</td>
<td>790</td>
<td>720</td>
<td>680</td>
</tr>
<tr>
<td>300</td>
<td>320</td>
<td>620</td>
<td>680</td>
<td>740</td>
<td>720</td>
<td>XLDC3MN</td>
</tr>
<tr>
<td>505</td>
<td>300</td>
<td>555</td>
<td>520</td>
<td>615</td>
<td>565</td>
<td>XLDC3MN</td>
</tr>
<tr>
<td>410</td>
<td>220</td>
<td>438</td>
<td>400</td>
<td>470</td>
<td>470</td>
<td>XLDC3MN</td>
</tr>
<tr>
<td>358</td>
<td>220</td>
<td>388</td>
<td>350</td>
<td>420</td>
<td>420</td>
<td>XLDC3MN</td>
</tr>
<tr>
<td>412</td>
<td>120</td>
<td>448</td>
<td>380</td>
<td>480</td>
<td>480</td>
<td>XLDC3MN</td>
</tr>
</tbody>
</table>

**Product Dimension Table**

- **H**: Height
- **D**: Depth
- **A**: Width
Installation Steps:

1. Fix the switch body.

2. Connect output terminal A, B, C, N, one by one. Fix the bus screw by the appropriate tightening torque.

3. Connect output terminals for easy maintenance. Screws provided by the manufacturer.

Open four Ø8mm holes in the switch cabinet according to ATS outline dimension. Fix ATS by the

For mounting plate welding or screw mounting plate welding. Install the screws when the recommendations.
that the two-way power supply phase sequence must be consistent. Pay attention to the upper end of ATS, and connect the load bus to the ATS output terminal bus. According to the figure below, connect the main power supply bus and reserved power supply bus.

4. Connect bus

3. Connect protective ground wire.
the specific wiring, refer to the corresponding controller terminal instructions.

(AC220V/0.5A, active). User can decide the external indicators according to their own needs. For circuit breaker close indication and also those indication signal external output terminals.

In the switch control panel, there are main power indication, standby power supply indication,

5. Install external indicators

---

[Diagram with text annotations]
After inspection switch wiring, insert the supplied circuit breaker into the circuit breaker slot.

6. Install circuit breaker

7. B type controller split-type installation method

XLDO3MN 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 select one-piece or split type installation. For one-piece installation,
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.

Refer to "Wiring Installation" step 1-5 to install ATS. For split type installation, follow figures below.
4. Open a 65x110mm 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.

5. Take out the cable R435 from the accessories, plug the both ends of R435 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.
directly queried by LED display screen.

System measurement and control parameters (voltage, time delay, conversion mode etc.) can be
setting controller working mode and transfer parameter by controlling buttons.

Features:

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.

XLDO3MN controller
Conversion Delay: 0s~180s adjustable
Over-Voltage Conversion Value: 240V~290V adjustable
Power Consumption: ≤1W
Main Working Power Voltage Range: AC160~260V
Return Delay: 0s~180s adjustable
Under-Voltage Conversion Value: 160~200V adjustable
Voltage Measurement Range: 40~300V
Auxiliary Working Power Supply Voltage Range: DC15~24V
Working Temperature: -30~+60

Technical Parameter:

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

DC15-24V auxiliary power supply (need to connect start and stop, it can be artificially set the start time delay and stop time delay. (need to connect
Generator start-stop control function: controller has a dry contact relay to control the generator
Signal output terminal which can put the switch signal back to the firefighting equipment. Signal input is opto-isolated with strong anti-jamming capability. And it is with a passive feedback.

The control function: Intelligent controller has a set of passive fire control signal input terminal.
The indicator is on when the controller works.

③ Power indicator
④ Panel and control host.
⑤ It is used for connecting between the control and external signal control, such as speed and other functions.
⑥ Terminal cover
⑦ When using the one-piece type installation, it is used for connecting between the control and external signal control.
⑧ When using the split type installation, it is used for connecting between the control and external signal control.
⑨ Controller handle
⑩ USB port
⑪ RS485 port
⑫ This keyboard can directly control switch and conversion parameters. Display information such as supply voltage. Switch stile, and conversion parameters.
⑬ LED segment code Chinese display screen
⑭: By connecting external output
⑮: By connecting external output

Controller Structure:

XLDO39M type controller uses a unique structure to make two parts of controller: control host and equipment to connect, move, repair, and replace. All wires are connected by the pin terminals, which is very easy and convenient for the user. By a simple combination, users can install ATSE by split type or one-piece display control panel.
This port is used for remotely controlling the switch and cutting off the power after the fire-fighting equipment alarms.

When the generator start-up delay function is not required, it can not connect auxiliary power grid-generator mode. If no auxiliary power input, the generator start-up delay time is 0 second.

The purpose of inputting auxiliary power is to control generator start-up delay time under the control of auxiliary power.

⑧:301~302 controller DC auxiliary power input terminal (DC15V~24V/0.5A)

⑨:201~204 reserved power input signal output

203---Reserve power switching on signal output

202---Reserved power indication signal output

201---Indicator public null line

⑩:201~204 standby power external state indicator signal (active AC220V/0.5A)

104---main power signal output

103---main power switching on signal output

102---main power indication signal output

101---Indicator public null line

⑪:101~104 main power external state indicator signal (active AC220V/0.5A)

Terminals and Wiring Instructions:
Turn over automatically to the reserved power side to supply electrical to the load, break and give out generator starting signal, then the generator starts successfully and the ATS power, then 503 and 502 are closed after the generator starts up delay, meanwhile 502 and 501 are closed, 502 and 503 open. If the main power fail and the reserved power supply has no function well.

The grid-generator working mode and the controller in automatic control are the terminals. The terminal of 503 is relay normally closed contact, 501 is normally open contact, only when it is under the inner side of the 501-503 terminal is a group of passive relay node, 502 is relay common function by connecting 501-503 terminal with the generator controller when the reserved power is a self-starting generator, user can make automatic start generator.

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

Resume normal transfer normally again users should dismantle the signal first and press any key in the control panel to automatically start, the automatic transfer switch will stop working. If switch is needed to transfer switch turns to the separating break, 403 and 404 are connected. (Note: when the fire intake terminal is normally open when it is normal. When a fire signal sends into the controller and the fire-fighting equipment relay inside for fire-fighting action signal return. The relay NO contact to impulse the controller. Otherwise the controller will be burn.)
Typical Applications:

1. Turn the stop signal out and the stop signal will be closed after the generator stops and delay time, then 502 and 503 break and give automatically by the return delay time, the common circuit breaker is closed, then 502 normal state, then the controller will control the ATS to turn over and back to the main power.

2. During the reserved power suppliers the electrical to the load, if the main power recovers to
Displays setting buttons under setting state.

It displays reserved power voltage parameters,
reserved power voltage parameter display area.

①: A, B, C phase
②: main power side voltage, time, frequency units
③: setting state indication
④: reserved power side power circuit breaker
⑤: main power side power circuit breaker close
⑥: setting buttons under setting state
⑦: switching delay time under working state
⑧: main power voltage parameters and reserved power voltage parameter display area
⑨: causes circuit breaker tripping, this indicator is on when the switch is faulty or the load short circuit
⑩: fault indication
⑪: Manual working mode indication
⑫: Automatic working mode indication

Display and Key Functions:
Inspection of the external signal indicator is right or not, to see if there is short circuit.

- Inspect the connection of the external signal indicator is right or not, to see if there is short circuit.
- Inspect the external signal terminal, such as the power bus and 24V auxiliary power.
- Inspect if it is right about the installation and wiring on the ATS.
- Especially to check the main power supply, it is necessary to check the main power supply.
- After you finish the ATS wiring working, you are request to have an inspection on the installations

**Inspections before the power on:**

Pressing this button can enter into parameters tuning menu of the controller.

- Setting button
- Parameter setting

In the setting state, this button is for plus parameters setting. When the fault occurs, the fault indicator is on. Pressing this button can check detailed fault codes.

When the fault occurs, the fault indicator is on. Pressing this button can check detailed fault codes.

- Setting button
- Parameter setting

In manual control mode, if any of the ways power is normal, press this button, the switch is transferred to the separating break position. In the setting state, this button is for minus.

- Setting button
- Setting button

In manual control mode, if the reserved power is normal, pressing this button can make the switch be turned down.

- Setting button
- Setting button

In manual control mode, if the main power is normal, pressing this button can make the switch be turned up.

- Setting button
- Setting button

In manual control mode, if the main power is normal, pressing this button can make the switch be turned up.

- Setting button
- Setting button

In manual control mode, if the main power is normal, pressing this button can make the switch be turned up.

- Setting button
- Setting button
Close main power circuit breaker.

"Automatic transfer working modes": When two-way power is normal, the switch will automatically controller display screen is on. Thus the switch enters into "Automatic transfer" working mode. In ①: Press the automatic/manual button on the control panel, and "Automatic indicator in the operation ways are as follows:

With the switch in the normal use, the controller should work under "Automatic transfer"

How to operate:

"Automatic transfer"

Can make the power on and do debugging using.

When all the above inspections passed and confirmed there is no erroneous operation, then you

For the first time power-on debugging, please make the load disconnected;

Inspect if the bus screw is reliable or not, tightened or not.
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.
Line position "to control ATS for switching."

Automatic conversion mode, the user can press the "main power", "reserved power", and "double manual" key. When the screen displays the word "manual", then the controller will exit the manual conversion function on the controller to do manual switch control. First press the automatic power supply recovery button, then we use manual conversion. In some special cases, when the user don't need automatic conversion, then we use manual conversion.

Manual conversion

Resetting, then the ATS will return back to the main power after the reserved power is failed.

If the ATS is set on the position code of the automatic switching but not automatic switching, then the ATS will automatically close the main power circuit breakers by conversion the grid - generator. The ATS will automatically close the main power circuit breakers by conversion in the mode of the automatic switching and resetting on the mode of the grid-generator, the ATS is set on the position code of the automatic switching but not automatic switching. Wireframe all the ATS power supply is supplying power. If the main power supply recovery to the normal
Shown as Figure 1, 2 below.

This ATS (Automatic Transfer Switch) is a class CB switch electrical equipment. When during the conversion for controller A type.

1. When doing manual operations, the switch operation is the same as when you do manual

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

- Conversion mode: grid to grid
- Generator stop working delay time: 55
- Generator start delay time: 55
- Retaining delay time: 55 (reserved power – main power delay time)
- Reserved power supply over voltage conversion value: 253V
- Reserved power supply under voltage conversion value: 187V
- Conversion delay time: 55
- Conversion voltage conversion value: 253V
- Main power supply over voltage conversion value: 187V

If the parameters in the switch have passed factory settings, the factory setting parameters are as follows:

For the convenience of users, the Xl3343nm type controller provides commonly used for user to modify some parameters in the design, before leaving our factory. Those parameters in the switch default with our factory for troubleshooting. Contact with our factory or seller of the switch as shown in the figure 3 and 4, if the fault comes in such cases, please inform your seller or controller will give out the fault indicating conversion way.

When the fault make the ATS not work in normally, the controller will give out the fault indicating conversion way. If the fault comes in such cases, please inform your seller or controller will recover the original conversion mode so that it runs in a normal mode. Then make the switch to the double line position (because convert to this position can make the circuit breaker to the double line position). Then use “manual conversion” or “handle switching” ways to make the ATS convert to double line position. Now first the user should find out the reason for the overload and short circuit of the load, and do something to solve it.
Key: "▲"  Key is to exit the setting menu; to modify the parameters please press "▼".

When the controller runs, press the setting Key "LED", the menu interface displays the parameters.
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Fault Resolution</th>
<th>Make the corresponding 3-pole switch's system neutral harness</th>
<th>Check if the power sampling line is off</th>
<th>Power on but the indicator doesn't light</th>
<th>The bad contact on the input line terminal of the corresponding power circuit breaker or single-phase loss phase of the supply voltage is below the normal range.</th>
<th>Replace the Manual Operation Position of the controller if the controller is at the default position but the switch can not do normal conversion normally.</th>
<th>The fault displays in the controller.</th>
<th>The Power is normal, switch in the closed position but the load end has no power.</th>
<th>The Power is normal, switch failure, then make the switch failure manually.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- **Troubleshooting and Analysis**

  Our company or your local distributor, if you have any problem, please contact us. When the ATS can not switch smoothly, please refer to the following table tips for troubleshooting. When the ATS cannot switch smoothly, you can solve your problem by referring to the solution from the below table. When the ATS works normally and supply the regular (every three months) to make sure the switch works normally and supply the System maintenance.
The product cannot be used if any of the following causes exist:

- Earthquake, fire, lightning, abnormal voltage, other natural disasters, and secondary disaster causes
- The fall and damage occurred after the purchase or during installation.
- Exceed the standard and criteria to use.
- If the damage results from self-modified or inappropriate repair.
- However, if the failure due to the following causes, even in the warranty period, our company also cannot provide paid repair or replacement.

Free for the users:

- The product not to be used in normally, our company supply maintenance and replacement in accordance with the above operation instructions. 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 is responsible for its return.
- When the user comply with the custody and use conditions, our company is responsible for three guarantees for one year's product. If the product is used within 12 months since the product is used (but not more than 18 months from the date of delivery), during the three guarantee period, the user is requested to debug the ATS according to the above operation instructions. Before use, please debug the selected circuit breaker and set the electric operating mechanism. For long-term without being used products, pay attention to take precautions against rust, moisture. Before use, please debug the selected circuit breaker and set the electric operating mechanism. For long-term without being used products, pay attention to take precautions against rust, moisture. Before use, please debug the selected circuit breaker and set the electric operating mechanism. For long-term without being used products, pay attention to take precautions against rust, moisture. Before use, please debug the selected circuit breaker and set the electric operating mechanism.

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