

## Zunate NLQ4-125

# Zunate NLQ4-125 4P Automatic Transfer Switch User Manual

Model: NLQ4-125 | Brand: Zunate

## 1. INTRODUCTION

The Zunate NLQ4-125 4P Automatic Transfer Switch (ATS) is designed to automatically switch between two power sources, typically a main power supply and a standby (emergency) power supply. This device ensures continuous power delivery to critical loads by seamlessly transferring the electrical load when the primary power source fails or recovers. It is suitable for applications requiring uninterrupted power, such as commercial centers, factories, homes, laboratories, and farms.

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your NLQ4-125 4P Automatic Transfer Switch.

## 2. SAFETY INFORMATION

**WARNING: Electrical installation and maintenance should only be performed by qualified personnel to prevent electric shock, injury, or damage to equipment.**

- Always disconnect all power sources before installing, servicing, or performing any work on the ATS.
- Ensure proper grounding of the device.
- Verify all wiring connections are secure and correct according to the wiring diagram.
- Do not operate the ATS if it is damaged or appears to be malfunctioning.

### Environmental Conditions:

- **Ambient Temperature:** Maximum 40°C, Minimum -5°C. The 24-hour average temperature must not exceed 35°C.
- **Installation Altitude:** Must not exceed 2000 meters above sea level.
- **Relative Humidity:** At 40°C, relative humidity should not exceed 50%. At lower temperatures (e.g., 25°C), higher humidity (e.g., 90%) is permissible. Special measures may be required to address occasional condensation on the product surface due to temperature changes.

### 3. PRODUCT OVERVIEW

The Zunate NLQ4-125 4P ATS is constructed from excellent flame-retardant PC material with silver contacts, ensuring high temperature resistance, anti-aging properties, safety, reliability, and good conductivity.

#### Key Features:

- **Millisecond Switching:** Transfers power in approximately 0.008 seconds without interruption.
- **Dual Operation Modes:** Supports both automatic and manual operation.
- **Stable Performance:** Designed for reliable and consistent power transfer.
- **Durability:** Safe, durable, and features excellent insulation.
- **Anti-interference:** Isolated design to minimize interference.
- **Automatic Recovery:** Automatically switches back to the main power supply upon its restoration.

Switched in milliseconds without interruption  
Switch to the backup power supply when there is a power failure  
Switch to the main power supply when power recovery  
Widely used in various places where continuous power failure is not allowed  
Factories, shopping malls, nurseries, etc.



Figure 1: The NLQ4-125 4P Automatic Transfer Switch shown in various application environments, including factories, shopping malls, and solar power installations, highlighting its millisecond switching capability and wide applicability.

# Product advantages

PRODUCT ADVANTAGES



|                     |                               |                                                  |
|---------------------|-------------------------------|--------------------------------------------------|
| 0.008s<br>time      | Manual<br>automatic           | Stable<br>performance                            |
| Safe and<br>durable | Isolated<br>anti-interference | Automatic switching<br>and<br>automatic recovery |

Figure 2: A visual representation of the product's advantages, including 0.008s switching time, manual/automatic operation, stable performance, safety, durability, isolated anti-interference, and automatic switching and recovery.

# What is an automatic transfer switch?

Dual power automatic transfer switch is used to switch two power supplies, including main power supply and standby power supply. When the main power supply suddenly fails or power failure, it will be automatically put into the standby power supply through the dual power transfer switch, so that the equipment can still operate normally.

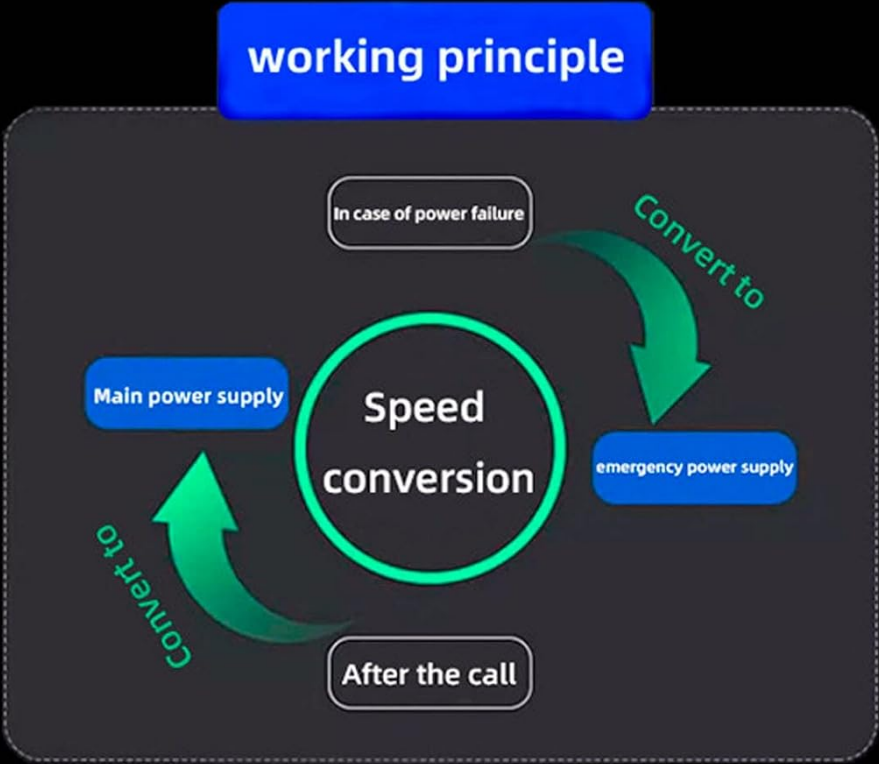


Figure 3: A flowchart illustrating the working principle: when the main power supply fails, the system converts to the emergency power supply; upon restoration of the main power, it converts back, ensuring continuous operation.

## 4. SPECIFICATIONS

| Parameter          | Value                                                 |
|--------------------|-------------------------------------------------------|
| Model              | NLQ4-125 4P (Manufacturer Model: Zunateqfxhwmc3pn-11) |
| Item Type          | Dual Power Automatic Transfer Switch                  |
| Material           | PC, Silver Contacts                                   |
| Rated Frequency    | 50Hz / 60Hz                                           |
| Insulation Voltage | AC690V 50HZ                                           |
| Rated Voltage      | AC400V 50HZ (Operating Voltage: 220 Volts)            |

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| Rated Current                            | 20A                                                        |
| Electrical Life                          | 2000 times                                                 |
| Mechanical Life                          | 5000 times                                                 |
| Rated Short-circuit Current              | 50kA                                                       |
| Fuse                                     | RT16-00-63A                                                |
| Rated Impulse Withstand Voltage          | 8kV                                                        |
| Control Circuit Rated Control Voltage Us | AC220V (85%Us - 110%Us)                                    |
| Auxiliary Circuit                        | Two relays, each with two sets of capacity: AC220V 50HZ 5y |
| Operating Mode                           | Automatic                                                  |
| Contact Type                             | Normally Open                                              |
| Connector Type                           | Screw Terminals                                            |
| Switch Type                              | Relay                                                      |
| Mounting Type                            | Panel Mount or Surface Mount (Guide Rail Installation)     |
| Actuator Type                            | Piston                                                     |
| Number of Positions                      | 4                                                          |
| Control Method                           | Push Button                                                |
| Power                                    | 8000 Watts                                                 |
| Color                                    | Black                                                      |
| Compliance                               | CE, Energy Rating                                          |
| Dimensions (L x W x H)                   | 142mm x 76mm x 105mm (approx. 5.59in x 2.99in x 4.13in)    |

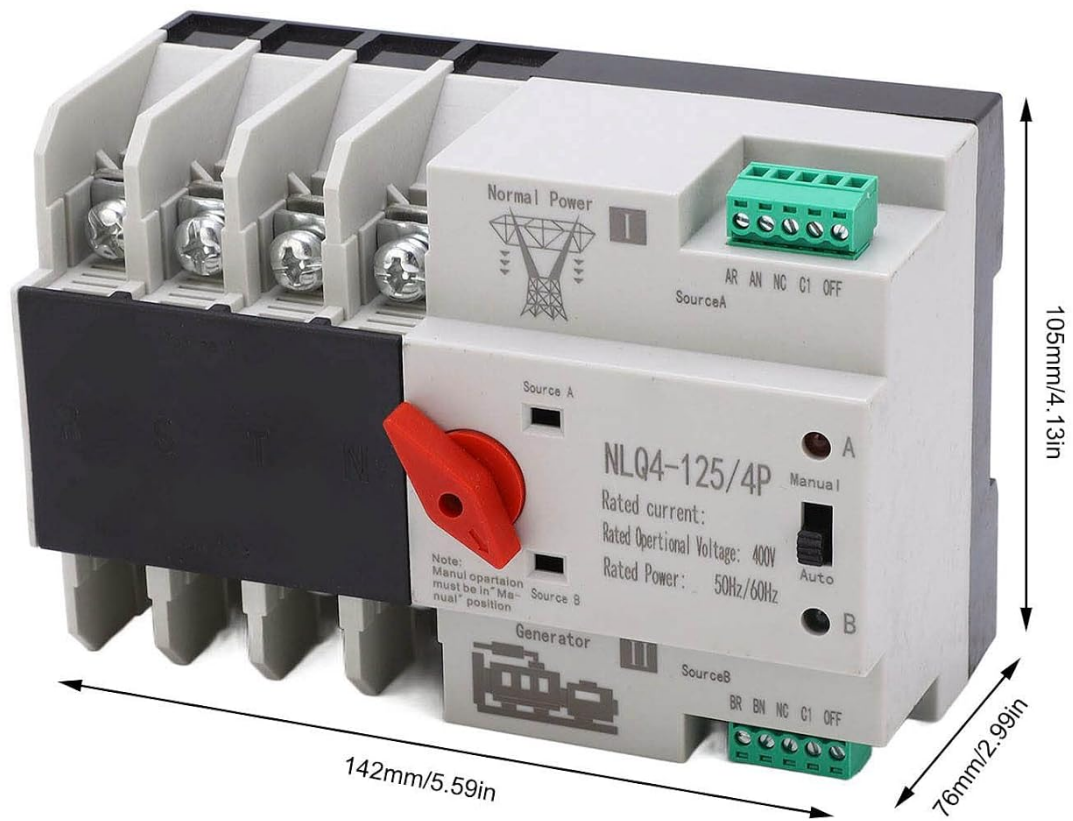


Figure 4: Detailed dimensions of the NLQ4-125 4P Automatic Transfer Switch, showing its length (142mm), width (76mm), and height (105mm).

## 5. SETUP AND INSTALLATION

**Installation must be performed by a qualified electrician in accordance with all local and national electrical codes.**

### Mounting:

The NLQ4-125 4P ATS supports guide rail installation, as well as panel or surface mounting. Ensure the mounting location is stable, dry, well-ventilated, and within the specified environmental conditions.

## Guide rail installation



Figure 5: The NLQ4-125 4P Automatic Transfer Switch demonstrating guide rail installation, a common mounting method for electrical components.

# Waterproof Plastic Box for electric ATS



Figure 6: The NLQ4-125 4P Automatic Transfer Switch shown installed within a waterproof plastic enclosure, illustrating a potential setup for enhanced protection (note: the waterproof box is not included with the ATS).

## Wiring:

Refer to the wiring diagram below for correct connections. Ensure all connections are tight and properly insulated.

- **Common Incoming Line:** Connect the main power supply.
- **Emergency Power Supply:** Connect the standby power source (e.g., generator).
- **Load Output:** Connect to the electrical loads that require continuous power.
- **Common Control Line & Standby Control Line:** Connect these for automatic operation and status signaling.

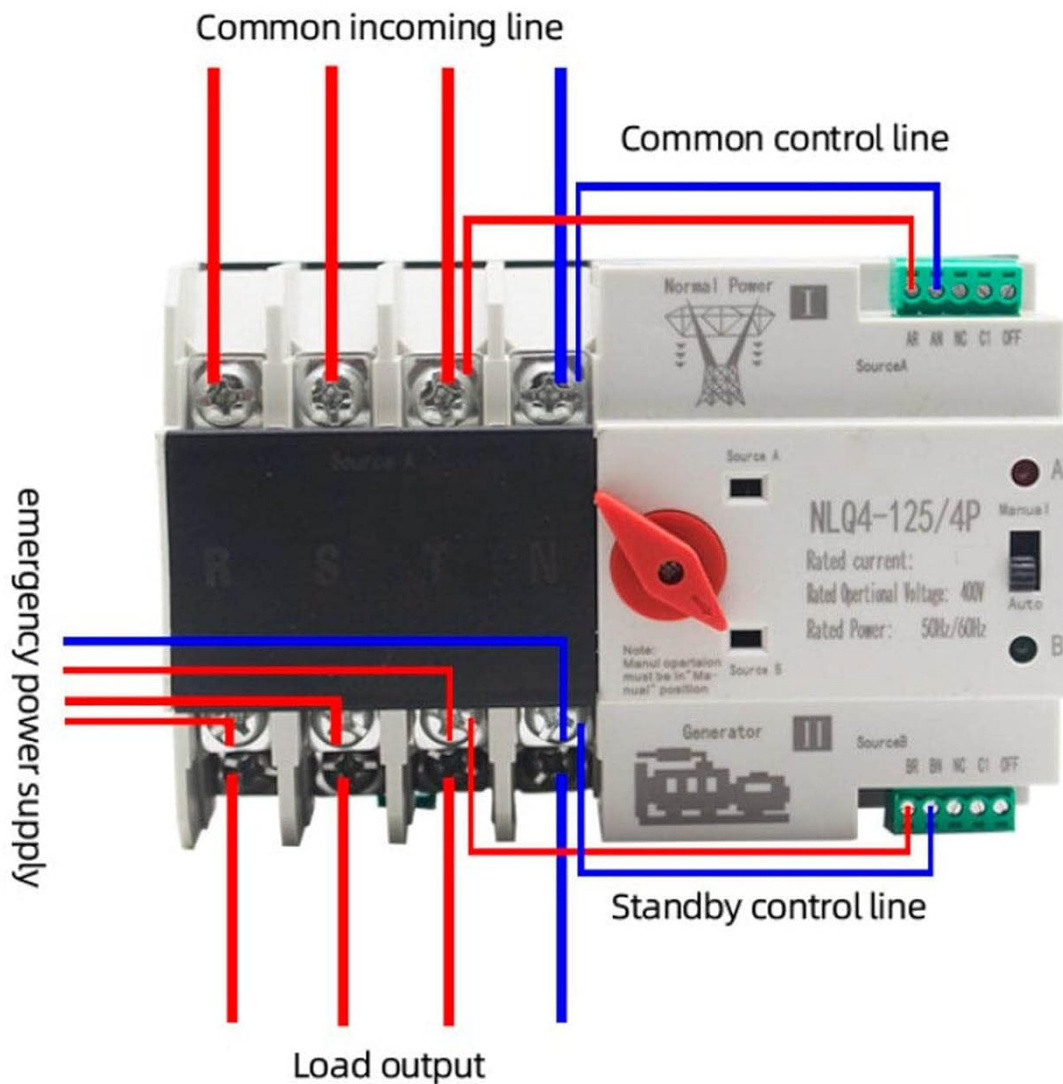


Figure 7: Detailed wiring diagram for the NLQ4-125 4P ATS, showing connections for common incoming line, emergency power supply, load output, and control lines.

## 6. OPERATING INSTRUCTIONS

The NLQ4-125 4P ATS offers both automatic and manual operation modes.

### Automatic Mode:

In automatic mode, the switch continuously monitors the main power supply. If the main power fails or becomes abnormal, the ATS will automatically transfer the load to the emergency power supply within milliseconds. When the main power supply is restored, the ATS will automatically switch the load back to the main power source.

### Manual Mode:

The device features a red selector switch on its front panel. To operate manually, ensure the switch is in the 'Manual' position. This allows for direct selection between Source A (Normal Power) and Source B (Generator/Emergency Power) as needed. Always ensure the switch is fully engaged in the desired position.



Figure 8: Front view of the NLQ4-125 4P ATS, displaying the red selector switch for manual/auto operation and indicators for Source A (Normal Power) and Source B (Generator).

## 7. MAINTENANCE

Regular maintenance ensures the longevity and reliable operation of your ATS.

- **Periodic Inspection:** Annually inspect the ATS for any signs of physical damage, loose connections, or corrosion.
- **Cleaning:** Keep the unit clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Environmental Check:** Periodically verify that the operating environment meets the specified temperature and humidity requirements. Address any condensation issues promptly.
- **Functional Test:** Periodically test the automatic transfer function by simulating a main power failure (if safe and feasible) to ensure it switches correctly.

## 8. TROUBLESHOOTING

This section provides solutions to common issues. For complex problems, consult a qualified electrician.

| Problem                           | Possible Cause                                                                                      | Solution                                                                                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| No power to load                  | Main or emergency power source failure; loose wiring connections; ATS in manual mode (off position) | Check power sources; inspect and tighten all wiring; ensure ATS is in 'Auto' mode or manually switch to an active source.                      |
| ATS fails to switch automatically | Control circuit issue; ATS in manual mode; mechanical obstruction; sensor malfunction               | Verify control circuit voltage (AC220V); ensure ATS is in 'Auto' mode; check for physical obstructions; consult electrician for sensor issues. |
| Unusual noise or smell            | Overload; internal component failure; loose connections                                             | Immediately disconnect all power to the unit. Do not attempt to operate. Contact a qualified electrician for inspection and repair.            |
| Condensation on unit surface      | High humidity and temperature fluctuations                                                          | Improve ventilation in the installation area; consider using a dehumidifier or other environmental controls to maintain stable conditions.     |

## 9. WARRANTY AND SUPPORT

Specific warranty information for the Zunate NLQ4-125 4P Automatic Transfer Switch is not provided in this manual. Please refer to the product packaging or contact your retailer or the manufacturer directly for warranty details and customer support.

For technical assistance or inquiries, please reach out to Zunate customer service or your authorized distributor.