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› GEYA W2R 2P 100A AC110V Automatic/Manual Transfer Switch Instruction Manual

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1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the GEYA W2R 2P 100A AC110V Automatic/Manual Transfer Switch. This device is designed to ensure a stable and continuous power supply by automatically switching between a main power source and a backup power source, minimizing interruptions during power outages.

2. PRODUCT FEATURES

- **High Quality and Durability:** Constructed from high-quality PA6 material, offering excellent heat resistance and insulation. It features a flame retardant grade of 94V-2, a compact and sturdy design, with a mechanical life of ≥ 8000 times and an electrical life of ≥ 1500 times.
- **Manual-Automatic Dual Mode:** The GEYA dual power supply offers both automatic and manual operation modes, allowing flexible selection based on specific application scenarios. In manual mode, the integrated handle facilitates direct power source selection.
- **Quick Switching:** In automatic mode, upon failure of the main power source (Source I), the GEYA ATS automatically switches to the backup power source (Source II) within 50 milliseconds. This rapid transfer ensures uninterrupted power supply and mitigates power outage-related issues.

3. TECHNICAL SPECIFICATIONS

| Parameter | Value |
|-----------------------------|--|
| Rated Current | 100A |
| Rated Insulation Voltage | 690V |
| Rated Voltage | AC 110V |
| Rated Frequency | 50/60Hz |
| Rated Short-Circuit Current | 5KA |
| Mechanical Life | ≥8000 times |
| Electrical Life | ≥1500 times |
| Operation Mode | Manual-automatic dual mode |
| Mounting Type | DIN Rail Mount |
| Operating Transfer Time | <50ms |
| Temperature Range | -5°C to +40°C (average not more than 35°C in 24 hours) |
| Material | Nylon (PA6), Copper (contacts) |

Note: For a complete list of specifications, refer to the product packaging or manufacturer's official documentation.

4. PRODUCT OVERVIEW AND COMPONENTS

Familiarize yourself with the main components of the GEYA W2R Automatic Transfer Switch before installation and operation.

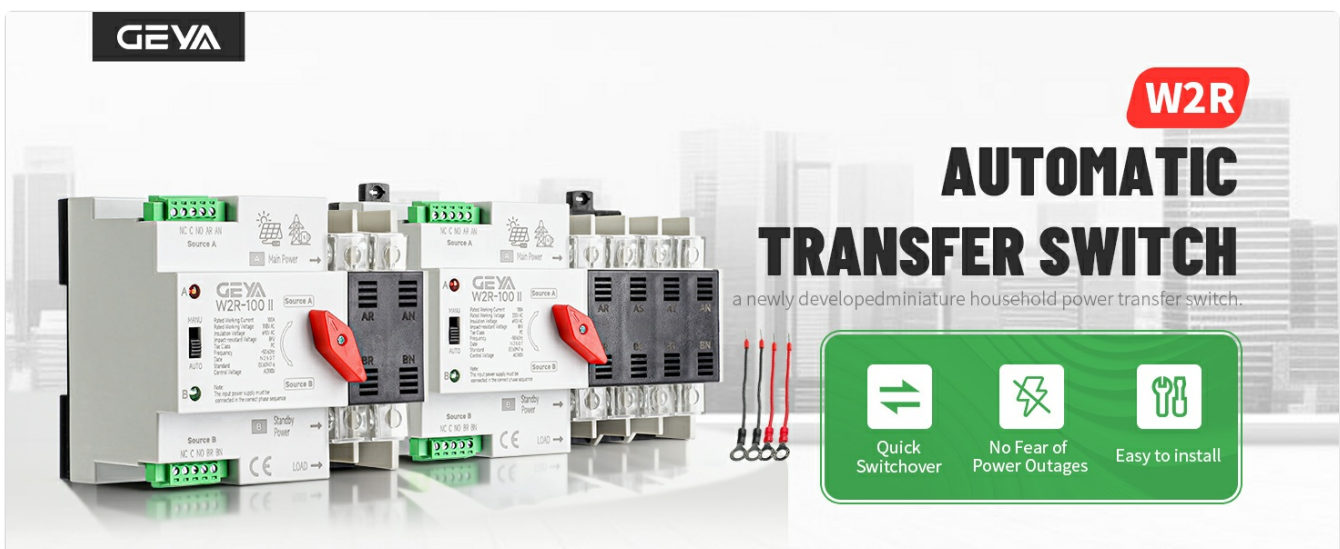


Figure 4.1: Component Identification

This diagram illustrates the key components of the GEYA W2R Automatic Transfer Switch, including Source A Power Inlet Terminal, Source B Power Inlet Terminal, Power Output (Load Port), Signal Terminals, Auto/Manual Mode Switch, and Transfer Handle.

WHAT IS THE FUNCTION OF THE AUTOMATIC TRANSFER SWITCH ?

When the normal power supply is abnormal, the backup power supply will immediately start working to ensure the continuity, reliability, and safety of power supply.



Working principle



Common Power supply

FAST SWITCHING

The power switch is completed within 100 milliseconds, which is better than the 2-3 second switching speed of traditional mechanical ATS, reducing the risk of device restart.



INTELLIGENT CONTROL

The product has the function of self-restoring, over-voltage and under-voltage protection, and can be switched by itself when the power is unstable.

Figure 4.2: Product Dimensions and Internal Features

This image provides the physical dimensions of the transfer switch and highlights important features such as silver contacts for improved conductivity, durable copper terminals, and the secure DIN rail mounting mechanism.

5. INSTALLATION AND WIRING

Installation should only be performed by a qualified electrician in accordance with all local and national electrical codes. Ensure all power sources are disconnected before beginning installation.

5.1 Mounting

The GEYA W2R transfer switch is designed for DIN rail mounting. Securely attach the device to a standard DIN rail within an appropriate electrical enclosure.

5.2 Wiring Connections

Refer to the wiring diagram below for correct connections. Ensure all connections are tight and secure to prevent arcing or overheating.

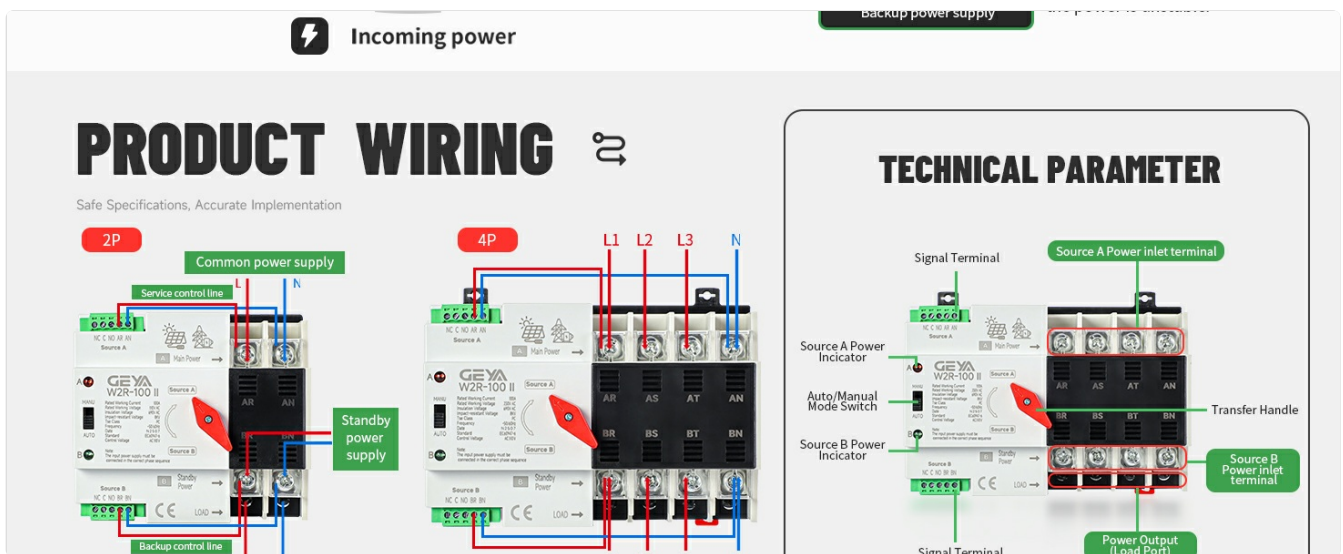


Figure 5.1: Wiring Diagram (2P and 4P)

This diagram illustrates the correct wiring connections for both 2-pole and 4-pole configurations of the GEYA W2R Automatic Transfer Switch, showing connections for common power supply, standby power supply, and load output. Follow the specific instructions for your model (2P-100A-AC110V).

1. **Common Power Supply (Source A):** Connect the live wire (AR) and neutral wire (AN) from your main power

source to the designated terminals on the switch.

2. **Standby Power Supply (Source B):** Connect the live wire (BR) and neutral wire (BN) from your backup power source (e.g., generator) to the designated terminals.
3. **Load Output:** Connect the load (devices requiring power) to the output terminals of the transfer switch.
4. **Control Wiring:** Ensure any necessary control wiring for generator signals or remote monitoring is correctly connected to the signal terminals (NC, C, NO, AR, AN, BR, BN).

Important: Always verify wiring against the specific diagram for your model and local electrical standards. Incorrect wiring can lead to equipment damage or personal injury.

6. OPERATION

The GEYA W2R transfer switch offers both automatic and manual operation modes.

6.1 Automatic Mode

To operate in automatic mode, set the Auto/Manual Mode Switch to 'AUTO'.

- In this mode, the switch continuously monitors the main power source (Source A).
- If Source A fails or its voltage drops below a preset threshold, the ATS will automatically switch the load to the backup power source (Source B) within 50 milliseconds.
- When Source A is restored and stable, the switch will automatically revert the load back to Source A.

| Load output | | Backup power | |
|---|----------------------------------|--|----------------------------|
| Rated current Ie A 100A | Current frequency 50/60Hz | Rated conditional short-circuit current Iq 50kA | Pole 2P / 4P |
| Insulation voltage Ui AC 690V | Contact transfer time <50ms | Rated impulse withstand voltage 8kV | Weight(kg) 0.62 |
| Input voltage Ue AC 110V / AC 230V | Operating transfer time <50ms | Life Electrial:2000times;Mechanical:5000times | SCPD (fuse) RT16-00-63A |
| Grade Grade PC:able to male and withstand not to break short-circuit current | Return transfer time <50ms | Temperature range -5°C~+40°C average temperature not more than 35°C in 24 hours | |
| Use category AC-33iB | Off-time <50ms | Control circuit Rated control voltage Us:AC220V,50Hz Correct working condition 85%Us~110%Us | |

Figure 6.1: Automatic Transfer Functionality

This graphic explains the core function of the Automatic Transfer Switch, demonstrating how it seamlessly switches from main power to backup power in milliseconds during an outage, and back to main power when restored, ensuring continuous supply.

6.2 Manual Mode

To operate in manual mode, set the Auto/Manual Mode Switch to 'MANU'.

- In manual mode, the transfer handle on the device allows for direct, manual selection between Source A and Source B.
- This mode is typically used for maintenance, testing, or specific operational requirements where automatic switching is not desired.
- Ensure the handle is fully engaged in the desired position (Source A or Source B) after manual selection.

7. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your GEYA W2R Automatic Transfer Switch.

- **Regular Inspection:** Periodically inspect the transfer switch for any signs of physical damage, wear, or loose connections. Check for discoloration or burning smells, which may indicate overheating.
- **Cleaning:** Ensure the area around the switch is clean and free from dust, debris, and moisture. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Connection Checks:** With power disconnected, periodically verify that all wiring connections are tight and secure.
- **Professional Servicing:** All maintenance and repairs should be performed by qualified personnel. Always disconnect all power sources to the device before performing any maintenance.

8. TROUBLESHOOTING

If you encounter issues with your GEYA W2R Automatic Transfer Switch, refer to the following basic troubleshooting steps:

- **No Power Transfer:**
 - Verify that both Source A (main power) and Source B (backup power) are active and providing correct voltage.
 - Check all wiring connections for looseness or damage.
 - Ensure the Auto/Manual Mode Switch is set to 'AUTO' for automatic operation.
- **Intermittent Switching:**
 - Check for unstable voltage or frequency from either power source.
 - Inspect for loose control wiring connections.
- **Device Not Responding:**
 - Ensure the device is receiving power.
 - If the issue persists, consult a qualified electrician for further diagnosis and repair. Do not attempt to open or repair the device yourself.

9. APPLICATIONS

The GEYA W2R Automatic Transfer Switch is suitable for a wide range of applications requiring a stable and continuous power supply.

VARIETY OF SCENARIOS

In the event that the primary or secondary power supply utilises an inverter, it is imperative that this is a sine wave inverter with a rated power that exceeds 3000W.

2P/4P



Ports and terminals



Household electricity



Bank office



Machinery production



District elevator



Fire fighting



Figure 9.1: Application Scenarios

This image showcases various environments where the GEYA W2R Automatic Transfer Switch can be effectively used, including household electricity, bank offices, district elevators, fire fighting systems, machinery production, and ports and terminals, highlighting its versatility.

- **Residential:** Ensuring continuous power for homes during utility outages.
- **Commercial:** Maintaining power in bank offices, data centers, and other business establishments.
- **Industrial:** Supporting machinery production and critical infrastructure like ports and terminals.
- **Public Services:** Essential for hospitals, airports, and fire departments where uninterrupted power is crucial for safety and operations.

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the manufacturer's official website or contact your authorized GEYA distributor. Keep your purchase receipt and product model number handy for any warranty claims or support requests.