Model: Dual Power Automatic Transfer Switch (ATS)

Qty.: 1 PCS

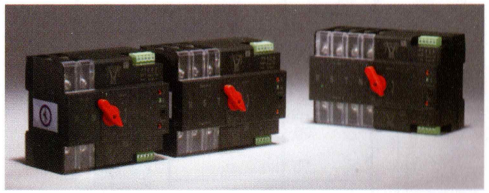
This product has been inspected and found to comply with the GB/T 14048 technical standard, and is approved for release from factory.

Inspector: Inspection 6

Model:

Uninterruptible Dual Power Automatic Transfer Switch (ATS)

User Manual



For optimal use of this product, please read this manual carefully before operation.

1.Product Overview

The dual power automatic transfer switch is a newly developed compact household power transfer switch. This switch is primarily used to detect whether the main power supply or backup power supply is functioning normally. When the primary power supply fails, the backup power supply will immediately activate to ensure continuous, reliable, and safe power supply. The product is specifically designed for household DIN rail installation and is tailored for PZ30 distribution boxes.

The dual power automatic transfer switch (ATS) is suitable for emergency power supply systems with rated AC 400V at 50Hz or 60Hz. The ATS features a robust construction, reliable switching, convenient installation and maintenance, and a long service life. It is widely used in various applications where continuous power supply is critical, supporting both automatic operation and manual control. The ATS consists of a Transfer Switch Equipment (TSE) and a controller.

According to GB/T 14048.11, Part 6-1: Multifunctional equipment and switchgear, the ATS (Automatic Transfer Switch) is the most compliant low-voltage switchgear and control device meeting the required standards.

2.Product Models and Classification

□ - 100A

- Current Rating
- Mini Rail-Type
- Enterprise Code

3.Basic Parameters

For details, please refer to Table 1 regarding the basic parameters of ATS

Table 1

Model	ATS-100A		
Rated Current (Ie A)	16 20 25	32 40 50 63	80 100
Rated Insulation Voltage(Ui)	AC690V,50Hz		
Rated Voltage (Ue)	AC400V,50Hz		
Class	PC Class: Can be manufactured and withstand operation without generating short-circuit current		
Utilization Category	AC-33iB	AC-31B	
Measuring Rod	2P	3P	4P
Weight(kg)	1.7	2.1	2.6
Electric Device	Electrical Life: 2000 operations;Mechanical Life: 5000 operations		
Rated Short-Circui Current(Iq)	50kA		
Short-Circuit Protectio Device (Fuse)	RT16-100A		
Rated Impuls Withstand Voltage	8kV		
Control Circuit	Rated Control Voltage (Us): AC 220V, 50Hz; Normal Operating Conditions: 85% to 110% of Us		
Auxiliary Circuit	1 relay,each with two sets of contact converter contact capacity :AC220V50Hz Ie=5A		
Switching Time	<50ms		
Operation Conversion Time	<50ms		
Return The Conversion Time	<50ms		
Power-off Time	<50ms		

4. Uptime and Installation Requirements

4.1 Ambient Air Temperature

The temperature shall not exceed 40°C maximum, shall not fall below -5°C minimum, and the 24-hour average temperature shall not be higher than 35°C.

4.2Altitude

The installation site altitude shall not exceed 2000 meters.

4.3 Atmospheric Conditions

When the maximum temperature reaches 40°C, the relative humidity of the installation site should not exceed 50%. When the temperature is at the lowest -5°C and the relative humidity is relatively high, for example, when the temperature is 25°C, the relative humidity is 90%. Due to temperature changes, special measures should be taken to deal with the occasional condensation on the product surface.

4.4Pollution Degree

The ATS pollution degree complies with Pollution Degree 3 as specified in GB/T 14048.11.

4.5 Installation Category

The installation category of the ATS complies with the specified classification in GB/T 14048.11.

4.6 Installation Conditions

The ATS shall be vertically mounted in control cabinets or distribution panels. Ensure the installation clearance complies with the requirements shown in Figure 1.

5.Overall Dimensions & Mounting Dimensions

5. 1The appearance dimensions and installation dimensions of ATS are shown in Figure 1

6.Precautions

6.1 Manual/Automatic Operation

ATS can ensure the performance of power generation and power

interruption during circuit operations. However, for manual operations, due to variations in the speed of power generation/interruption or operator differences, ATS cannot guarantee the aforementioned performance. During manual power generation and interruption, excessive silver alloy wear may occur.Therefore, when performing power-off inspections and maintenance on the operating system and contacts, simply move the selector switch to the manual position. Under normal circumstances, keep the selector switch in the automatic position. Move the selector switch to the manual position only when performing manual operations. After completing manual operations, return the selector switch from the manual position to the automatic position.

6.2 Control circuit

The ATS will activate instantaneously. After the transfer is completed, the coil in the control circuit will be de-energized by the internal transfer switch.The coil can operate normally within 80% to 110% of the rated voltage. If the voltage is too low, it may cause the coil to overheat or even self-ignite.

7.Wiring diagram (refer to Figure 2 and Figure 3)

8.Installation & Wiring

8.1 Ensure that professionals read this manual before installation and wiring.

8. 2Before installation, inspect the ATS for completeness. Then, use the operating handle to open and close the ATS to check the flexibility of the transmission mechanism and verify the load transfer and interruption conditions for each phase of the normal and backup power supplies.

8. 3The correct installation steps are shown in the diagram. The trademark is located on the front of the product. If the installation cannot be performed according to the correct procedure due to wiring or other

reasons, please contact us.The safety distances S1 and S2 must not be less than the dimensions indicated in Figure 1 and Figure 2. (Refer to the adjacent illustration for details.) Figure 4 demonstrates the proper installation method.

8.4 Control Voltage Check: AC 220V, 50Hz,The wires in the control circuit should not be too long. The cross-section area of the copper wire should not exceed 2.0mm.

8.5 To comply with power distribution system installation requirements, please equip appropriate circuit breakers to ensure the safety of personnel and equipment.

9. Maintenance, Inspection & Storage

9.1 Maintenance and inspection shall be performed by qualified personnel only after disconnecting all power sources.

9. 2To ensure optimal ATS performance, the initial maintenance and inspection shall be conducted within 6 months of commissioning, followed by annual maintenance intervals at minimum. Under harsh installation conditions, increase the maintenance frequency accordingly.

9. 3Maintenance and Inspection Items

a.Please clear away dust and dirt when a malfunction occurs.

b.Check the electrical contact components for deformation or damage, and remove any burnt metal particles adhering to the surface or surrounding areas.

c.Rust, oxidation, and dust on the contact surface may cause poor contact. Manually operate the mechanism several times, and measure the contact resistance if necessary.

d.Due to prolonged exposure to moisture and being in a suspended state, please dry the ATS thoroughly before use. After removing dust and dirt, use a 500V megohmmeter to measure the insulation resistance between

normal supply, alternating power supply, load side rods, including live parts and metal plates. Moreover, the insulation resistance should be no less than 10mΩ.

9. 4The ATS shall be stored in conditions equivalent to its normal operating environment, with protective measures against dust, moisture, and mechanical impact.

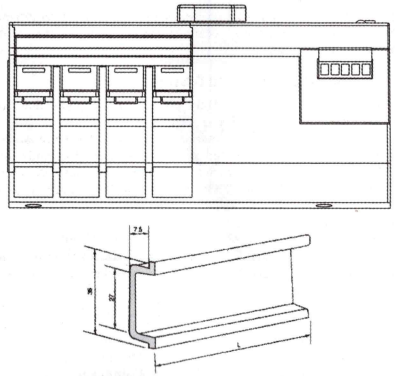
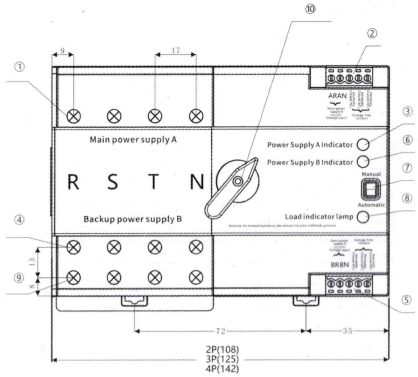
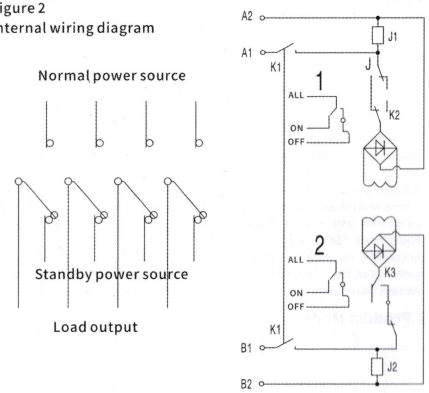


Figure 1 Overall Dimensions & Mounting Dimensions



① Main terminal (power supply side) for normal source
② Main power terminal and no-power signal (AC220V)
③ Power Supply A Indicator Light
④ Main terminals (standby power supply side)
⑤ Backup power supply terminal and no-power signal (AC220V)
⑥ Power Supply B Indicator Light
⑦ Manual/Auto switch
⑧ Load indicator lamp
⑨ Load-side main terminals
⑩ Manual operating handle

Figure 2
Internal wiring diagram



K1. Manual/Auto selector switch
K2/K3 Internal valve switch
J1 General-purpose 220V power relay
J2 Backup 220V power relay
Power Source A voltage-free signal output
Power Source B voltage-free signal output

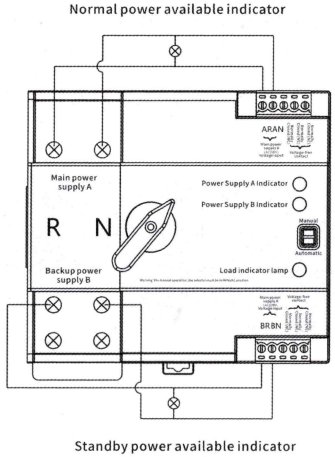


Figure 3 Controller wiring diagram

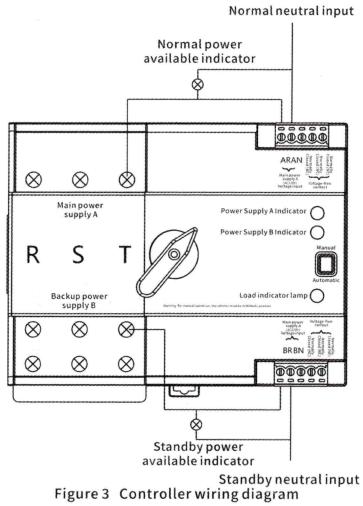


Figure 3 Controller wiring diagram

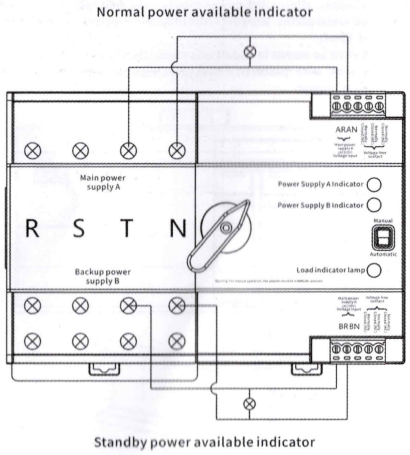
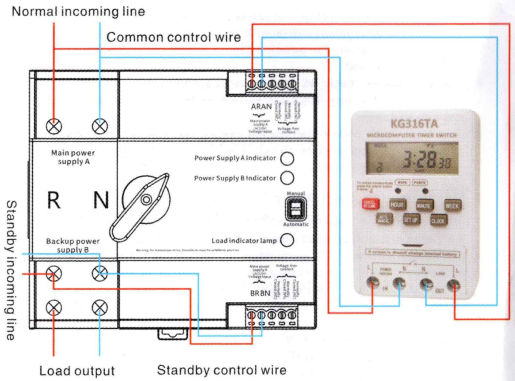
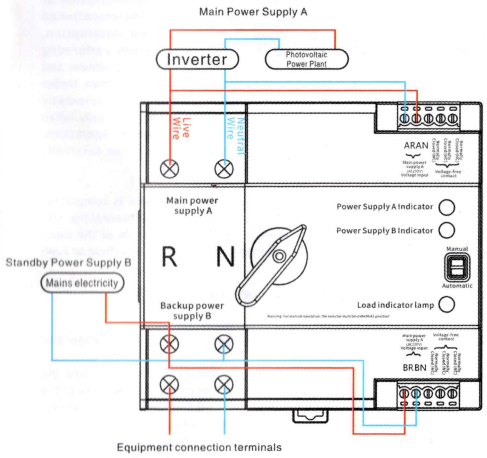


Figure 3 Controller wiring diagram





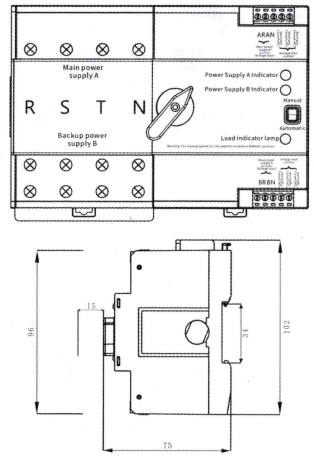


Figure 4 Correct installation orientation