HUANYU ELECTRIC

Automatic Transfer Switch (ATS PC Class)

Model：EXT3PB-160

INSTALLATION & OPERATION MANUAL

Please read this manual carefully
before installation and operation

Certificate of Conformity

This product has passed inspection
and is ready to ship

Model and Meaning

EX T3 PB - 160 □ □

- Rated working current: 16,20,25,32,40,50,63,80,100,125,160
- Rated working voltage: AC220V, AC110V
- Pole: 2P/4P
- Case grade: 160
- Installation method: Din-rail installation
- Product Category
  PC class automatic transfer switch (two stations)
- Company code

Product Introduction

Control Device: Built-in Controller

Product Structure: No power interruption, rail-mounted, high current capacity, compact size, two-section design, simple structure, integrated ATS.

Features: Fast switching speed, low failure rate, easy maintenance, and reliable performance.

Wiring Method: Front panel wiring

Transfer Modes: Grid-to-grid, grid-to-generator, solar-to-grid, and automatic transfer with self-restoring function.

Frame Size: 160

Rated Current (A): 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160

Product Type: Direct load type

Number of Poles: 2P, 4P

Product Standard: GB/T 14048.11

ATS Class: PC Class

Transfer Time: 0.008s / 8ms

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Product Overview

The Dual Power Automatic Transfer Switch (ATS) is a newly developed compact power transfer switch designed for household applications. It is mainly used to monitor whether the main power supply or backup power supply is operating normally. When the main power supply fails, the backup power supply automatically starts operating to ensure continuity, reliability, and safety of the power supply. This product is specially designed for household DIN rail installation.

The Dual Power Automatic Transfer Switch is suitable for emergency power supply systems operating at 50Hz or 60Hz with a rated AC voltage of 400V. The ATS features a robust structure, reliable switching performance, easy installation and maintenance, and a long service life. It is widely used in applications where continuous power supply is required. It supports both automatic and manual operation. The ATS consists of a transfer switching device (TSE) and a controller.

In accordance with GB/T 14048.11, which is based on IEC 60947-6-1 (Low-voltage Switchgear and Controlgear – Part 6-1: Multiple Function Equipment – Transfer Switching Equipment), the ATS is designed to meet the requirements for low-voltage switching and control equipment.

Normal Operating and Installation Conditions

1. Ambient Air Temperature

The maximum ambient temperature shall not exceed +40°C, and the minimum temperature shall not be lower than -5°C. The average temperature within 24 hours shall not exceed +35°C.

2.Altitude

The altitude of the installation site shall not exceed 2,000 meters above sea level.

3. Atmospheric Conditions

When the maximum ambient temperature reaches +40°C, the relative humidity at the installation site shall not exceed 50%. Higher relative humidity is permitted at lower temperatures. For example, at +25°C, the relative humidity may reach 90%. Special measures should be taken to prevent condensation on the product surface caused by temperature variations.

4. Pollution Degree

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

5. Installation Category

The installation category of the ATS shall comply with the category specified in GB/T 14048.11.

6. Installation Conditions

The ATS can be installed vertically in a control cabinet or distribution panel. Ensure that the installation clearances meet the requirements specified in Figure 5.

Technical Specifications

Parameter	Specification	
Frame Size	160A	
Rated Current (Ie)	16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160A	
Rated Insulation Voltage (Ui)	AC 690V, 50Hz	
Rated Operational Voltage (Ue)	AC 400V, 50Hz	
Classification	PC Class: Capable of making and carrying current, but not intended for breaking short-circuit current	
Utilization Category	AC-33iB	AC-31B
Number of Poles	2P	4P
Weight	1.7	2.6
Electrical and Mechanical Endurance	Lifespan: 1,300 operations; manual operations: 4,000	
Rated Short-Circuit Current (Iq)	50kA	
Short-Circuit Protective Device (Fuse)	RT16-250A	
Rated Impulse Withstand Voltage(Uimp)	8kV	
Control Circuit	Rated control voltage (Us): AC 220V/50Hz; normal operating range: 85–110% of Us	
Auxiliary Circuit	1 relay, each equipped with two sets of changeover contacts; contact capacity: AC 220V/50Hz, Ie = 5A	
Contactor Transfer Time	<50ms	
Operating Transfer Time	<50ms	
Return Transfer Time	<50ms	
Power Supply Disconnection Time	<50ms	

160 Wiring Diagram

Figure 1: 2P Wiring Diagram

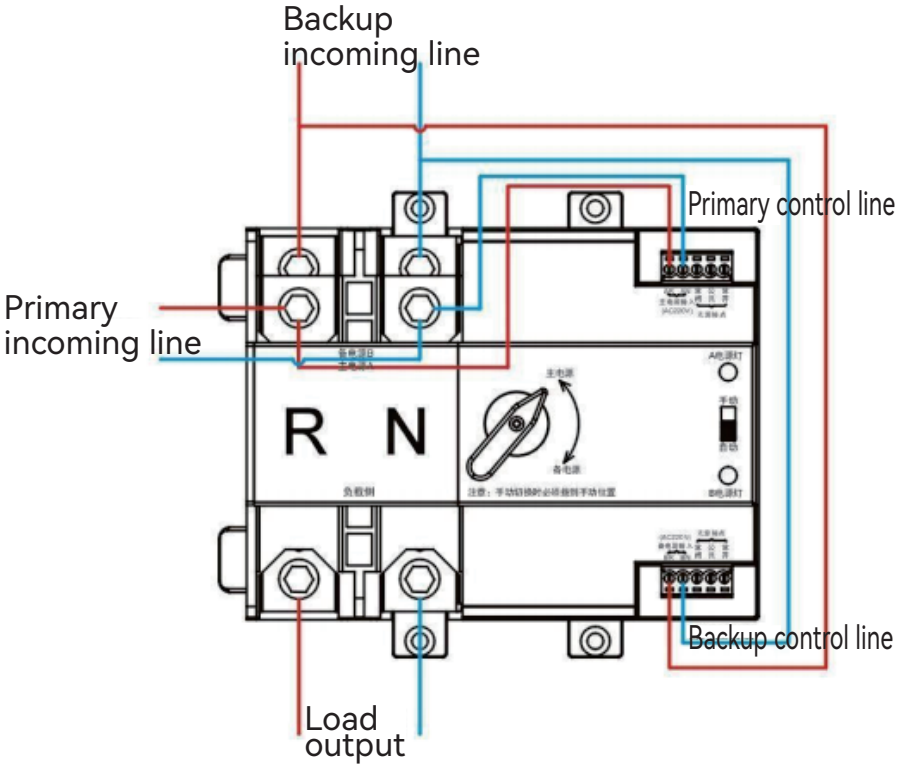


Figure 2: 4P Wiring Diagram

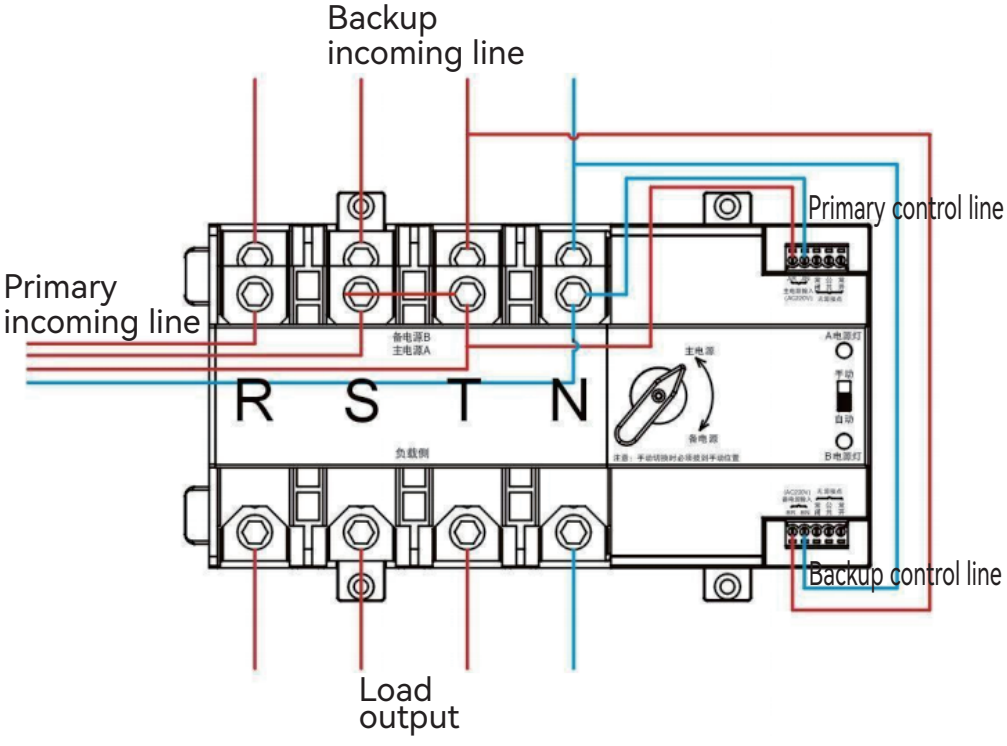


Figure 3:
Wiring Method for PV Inverters

Note: The inverter output must reach 2 kW to supply power to the AR and AN terminals of the dual-power transfer switch.

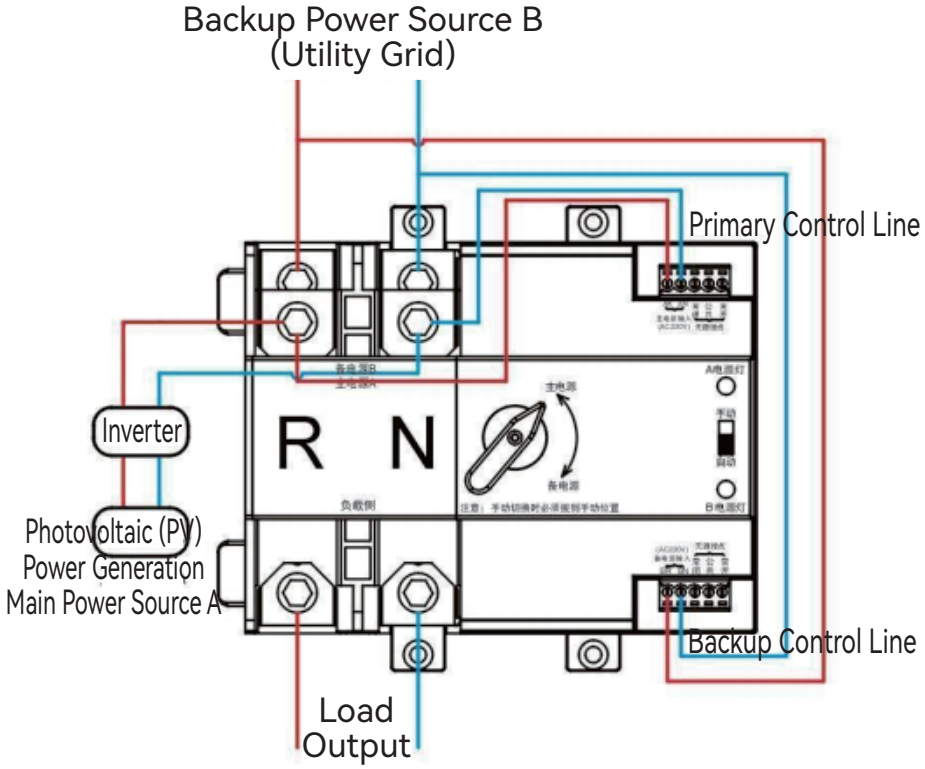
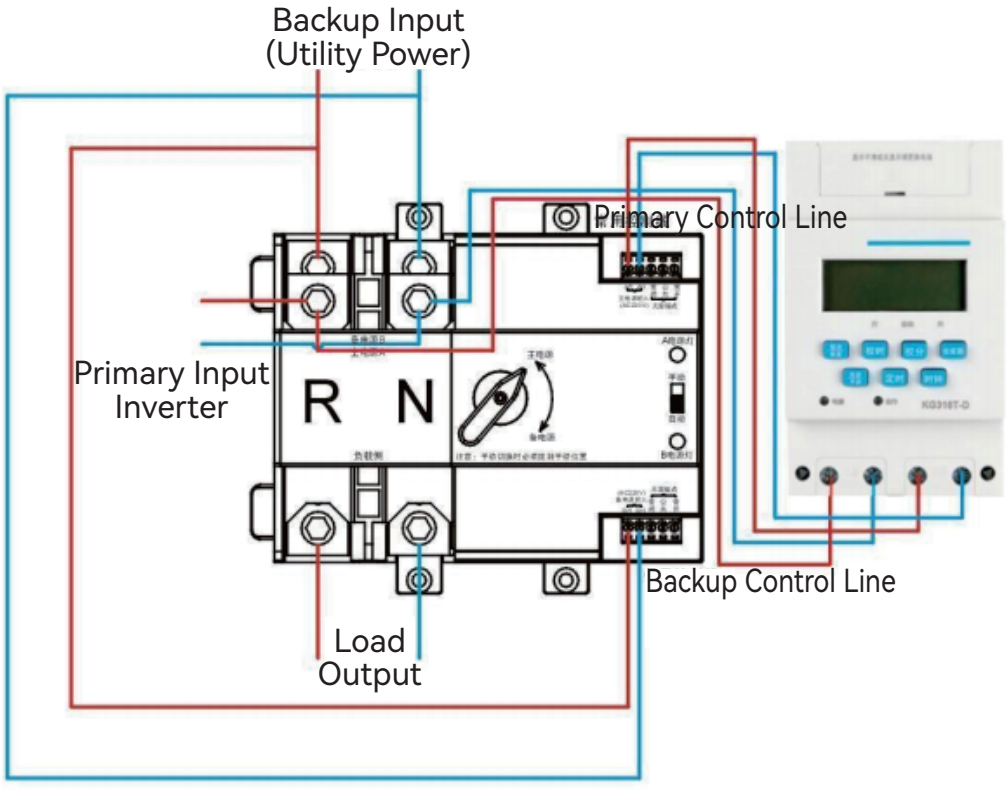
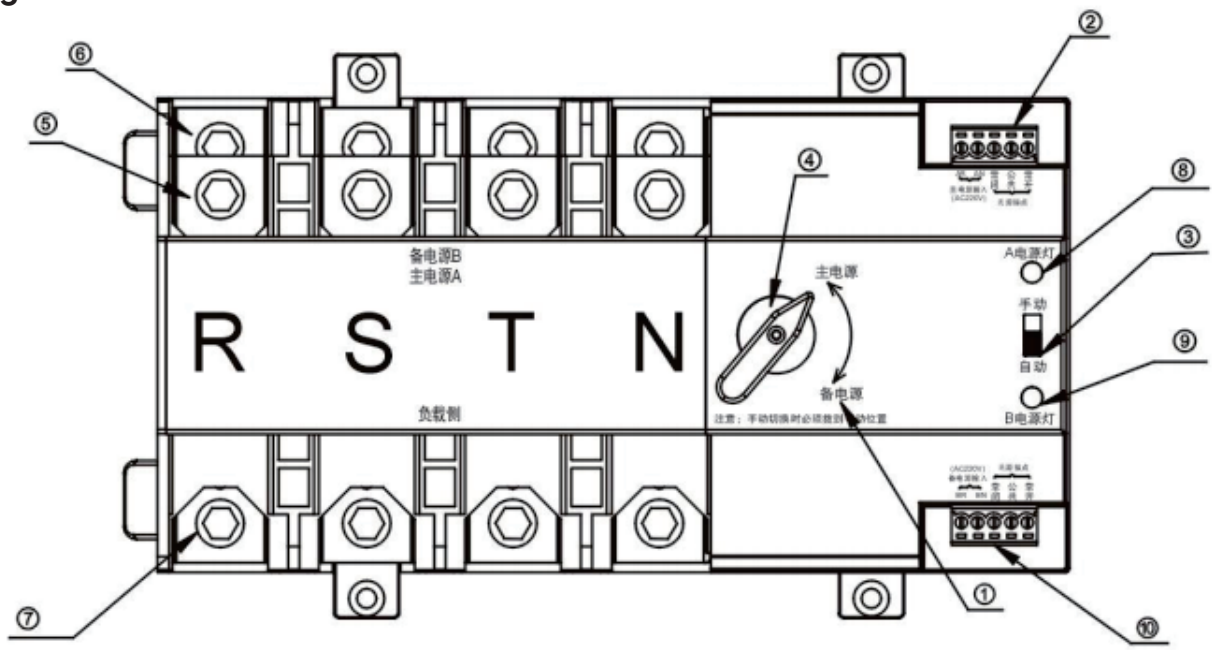


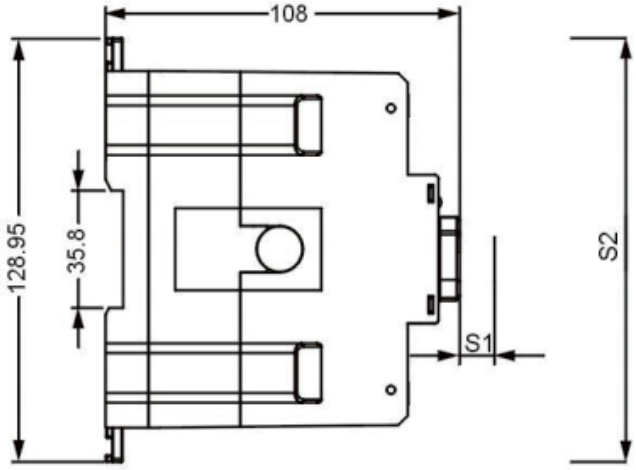
Figure 4: Wiring Configuration for Timed Switching

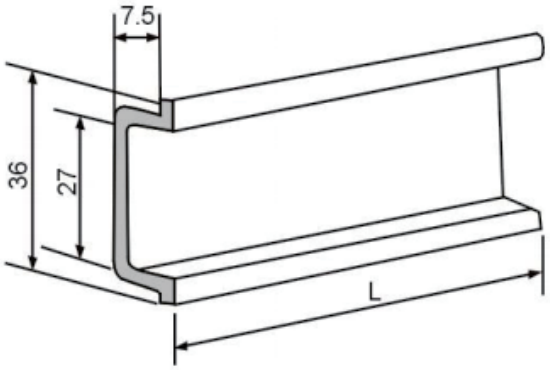


External and Mounting Dimensions

Figure 5







Safety distances: S1: ≥30mm, S2: ≥203mm

① Status/position indicator

② Main power supply terminals and passive signal (AC220V)

③ Manual/Automatic switch

④ Manual operating handle

⑤ Main terminals for the primary (normal) power supply

⑥ Main terminals for the backup (standby) power supply

⑦ Main terminals for the load side

⑧ Power supply A indicator

⑨ Power supply B indicator

⑩ Backup power supply terminals and passive signal (AC220V)

Figure 6

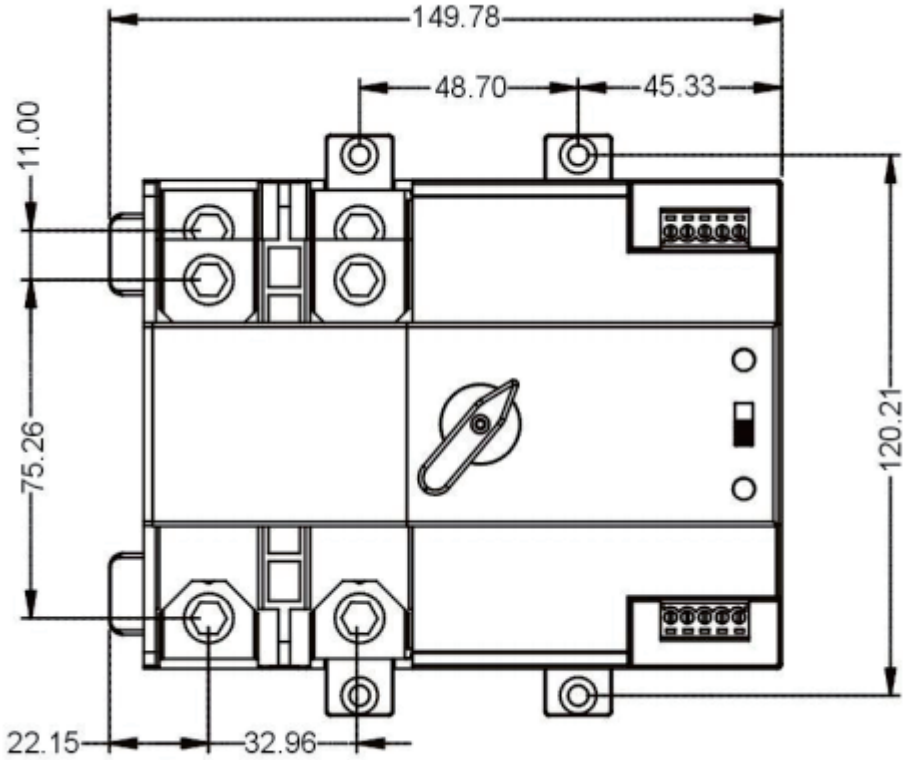
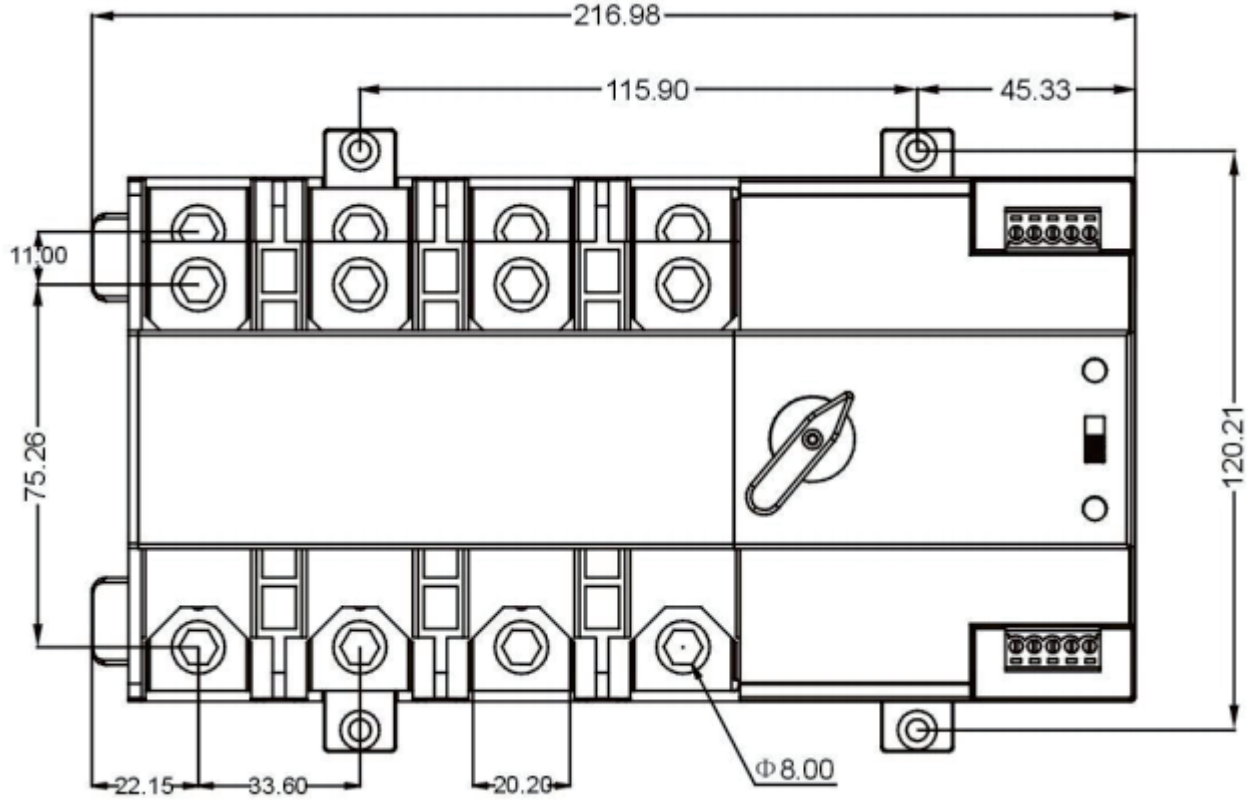


Figure 7



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