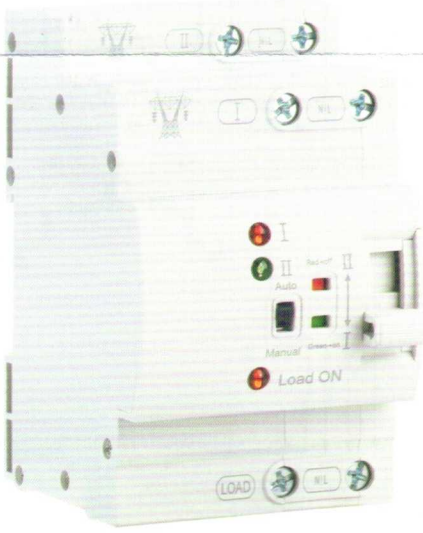
During installation and use, observe all safety precautions and carefully read the operating instructions.

Automatic Transfer Switch (ATS)

Operating Instructions



1. Product Overview

This series of household automatic transfer switch (ATS) equipment represents our company's latest micro-scale power transfer switch for residential applications. Classified as a PC-grade infrequent transfer switch with a two-stage mechanism, it is designed for AC distribution systems operating at 50/60Hz with rated currents from 10A to 80A.The primary function is continuous monitoring of the user's power supply integrity. Upon detection of abnormalities in either power source, it instantaneously transfers the load to the alternative supply. The switch incorporates dual mechanical-electrical interlocks to prevent simultaneous closure of both power circuits, thereby ensuring continuous, reliable, and secure power delivery.

2. Performance and Features

◇Utilizes field-excited electromagnet actuation for instantaneous transfer operation. Default control voltage: AC 220V (customizable to AC 110V upon request).
◇The switch body incorporates illuminated indicators for Normal Power Source, Emergency Power Source, and Load Power Source, providing clear visual status identification during operation.
◇In automatic mode, the switch provides autonomous transfer and restoration functionality. When both Source I and Source II are available, priority power delivery is assigned to Source I.
◇Featuring a modular structural design with same-side wiring terminals for simplified customer connection. With total mass ≤0.50 kg, the compact footprint and minimized dimensions enable exceptionally convenient installation and maintenance.
◇The product incorporates an internal arc quenching system where electrical arcs are split into multiple series arcs upon entering the arc chute. Under electromagnetic forces, these arcs are elongated, cooled, and extinguished. The enclosure utilizes UL 94 V-0 rated flame-retardant material to eliminate fire hazards. All PCBs are coated with IPC-CC-830B certified conformal coating to withstand harsh operating environments.
◇With integrated power-sensing leads (eliminating the need for external control wiring), the switch achieves autonomous transfer functionality upon completion of main circuit connections only.

3. Normal Service Conditions

◇Operating ambient temperature range: -5°C to +40°C, with 24-hour average not exceeding +35°C. Storage temperature range: -25°C to +55°C, allowing transient peaks up to +70°C for ≤24 hours.

◇Installation altitude shall not exceed 2000 meters above sea level.
◇The relative humidity of the installation site shall not exceed 50% at +40°C ambient temperature. Higher relative humidity is permissible at lower temperatures - for instance, may reach 90% during the month of highest humidity when the monthly average minimum temperature is +20°C. Appropriate countermeasures must be implemented to prevent condensation caused by temperature fluctuations.
◇Pollution Degree 3 (where conductive pollution occurs, or dry non-conductive pollution becomes conductive due to condensation). The ATS may be installed vertically or horizontally within the enclosure. Contact our technical support for special mounting requirements.
◇The enclosure protection grade of the product is Ip30.
◇Overvoltage Category: Main circuits - Category III; Control and auxiliary circuits - Category I.

4. Model Designation and Coding System

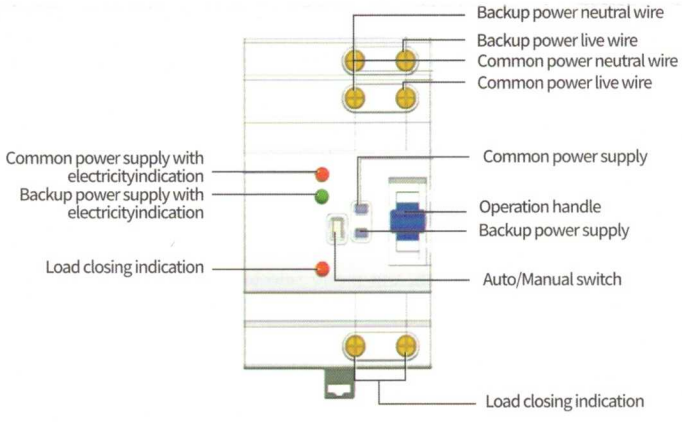
□□□-80□/□□□

- Rated operational voltage: AC 220V , AC 110V
- Rated operational current: 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A
- Number of poles: 2P, 3P, 4P
- Product designation: MA Series two-stage mechanism
- Frame size rating: 80
- Design serial number
- Product Category: Power Category Class Automatic Transfer Switching Equipment
- Enterprise code

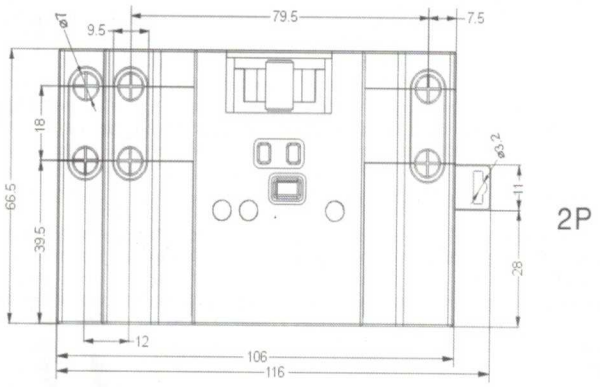
5.Key Technical Parameters

Case grade	80								
Rated working current(A)	10A	16A	20A	25A	32A	40A	50A	63A	80A
Rated Insulation Voltage (Ui)	690V								
Rated Impulse Withstand Voltage (Uimp)	8kV								
Rated Operational Voltage (Ue)	AC220*								
Rated Frequency	50/60Hz								
Transfer Action Time	20ms								
Mechanical Durability (M)	≥6000次								
Electrical Endurance (E)	≥1500次								
Utilization Category	AC-31B								

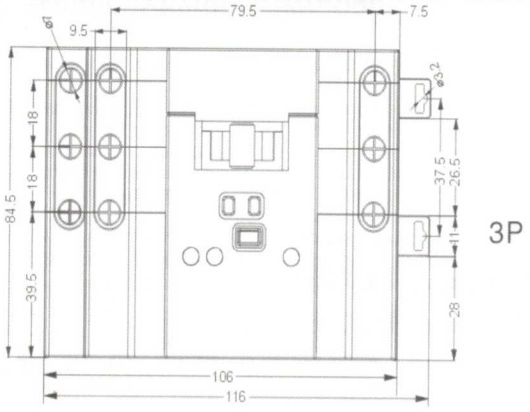
6.Construction and Wiring Instructions



7.Overall and Mounting Dimensions

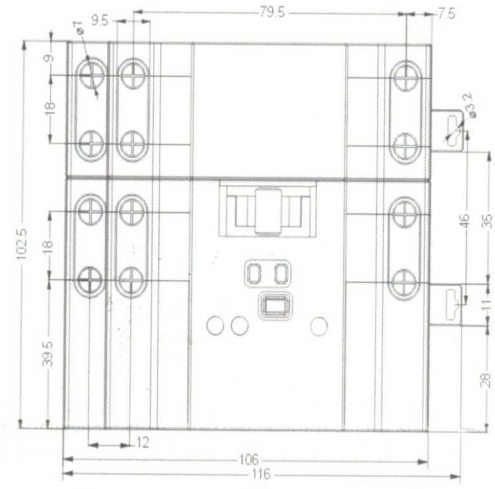


2P

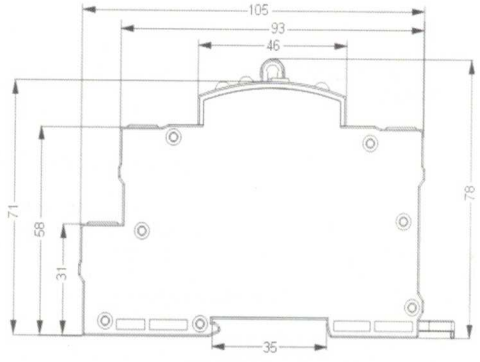


3P

7.Overall and Mounting Dimensions



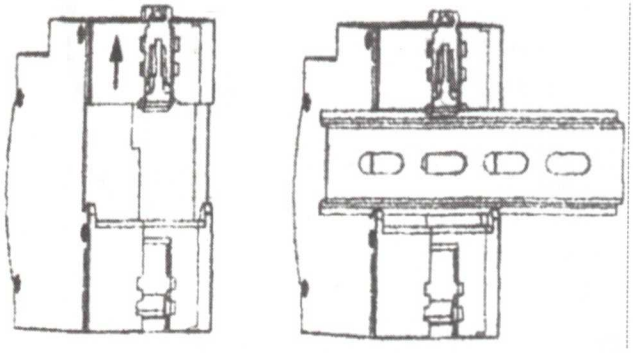
4P



Note:
◇ Terminal wiring area: fit for (1～25)mm²
◇ Wire connection screw is M5, torque: 2.5N.m

8.Mounting Method

■ DIN Rail Mounting



9.Safety Precautions Before Operation

◇ Before operation, verify that input voltage complies with specifications: For a rated operational voltage (Ue) of AC 220V, the functional voltage range is AC 187V to AC 253V.

◇ This switch incorporates under/over-voltage detection. When Source I experiences phase loss, voltage below 175V, or above 275V, it transfers the load to Source II (provided Source II voltage is within 187V-253V). Upon restoration of Source I voltage to 187V-253V range, the switch automatically retransfers to Source I after a 30-second delay.

◇ First, test whether the ATS functions properly in manual mode. Then, set the toggle switch to the automatic position for testing. Only after passing the test can it be put into operation.

◇ To manually operate the switch, the mode selector must first be set to the "Manual" position.

10.Inspection and Storage

◇ Before performing any maintenance or inspection, all external power sources must be disconnected, and the work must be carried out exclusively by qualified personnel.

◇ To ensure the ATS maintains optimal performance, the initial maintenance and inspection must be performed within six months after installation. Subsequent maintenance and inspection shall be conducted at least annually thereafter. In demanding installation conditions, the frequency of maintenance and inspection must be increased.

11.Maintenance and Inspection Items

◇ Promptly remove dust and dirt to prevent malfunctions.

◇ Visually inspect the electrical contact areas for deformation or damage. Clean off any metal particles and arc marks from the contact surfaces and surrounding areas.

◇ Rust, oxidation, or dust accumulation on contact surfaces may cause poor electrical contact. Manually operate the ATS several times and measure contact resistance if necessary.

◇ If the ATS has been slightly dampened or remains idle for an extended period, it must be dried before energizing. After removing dust and contaminants, measure the insulation resistance using a 500V megohmmeter (megger) between

◇ Normal/Standby/Load terminals, across poles, and between all live parts and mounting rails. The ATS shall only be energized when insulation resistance measures no lower than 10MΩ.