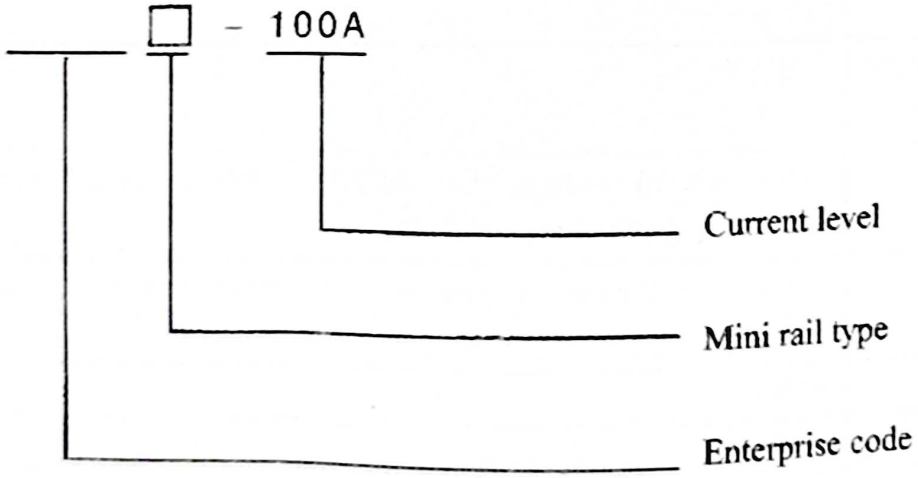
1. Product overview

The dual-power automatic transfer switch (ATS) is a newly developed miniature household power transfer switch, is mainly used to test whether the main power or reserve power is normal. When the normal power supply is abnormal, the reserve power supply will start work immediately to ensure continuity, reliability and safety of the power supply. It is specially designed for household rail installation for PZ30 distribution box.

The ATS is suitable for emergency power supply systems of AC50 or 60Hz and rated voltage 400V. It is featured with firm structure, reliable transfer, easy installation and maintenance, and long life, is widely used in places where frequent power outage is not allowed. Both electric and operation and manual operation are available. The ATS is composed of TSE and controller.

According to the standard *GB/T14048.11 Part 6-1: Multiple function equipment - Transfer switching equipment*, we can know that ATS is the most suitable low-voltage switchgear and control device.

2. Product model and classification



3. Basic parameters

Please refer to Table 1 [illegible] basic parameters of ATS

Table 1

Model	ATS-63A								ATS-100A	
Rated current Ie A	16	20	25	32	40	50	63		80	100
Insulation voltage Ui	AC 690V, 50Hz									
Rated voltage Ue	AC 400V, 50Hz									
Class	Class PC: can be manufactured and withstand without generating short-circuit current									
Use category	AC-33iB							AC-31B		
Measuring rod	2P			3P				4P		
Weight (kg)	1.7			2.1				2.6		
Electrical	Service life: 2,000 times; manual operation: 5,000 times									
Rated short-circuit current Iq	50kA									
Short-circuit protection device (fuse wire)	RT16-00-63A									
Rated impulse withstand voltage	8kV									
Control circuit	Rated control voltage Us: AC220V, 50Hz; normal service conditions: 85%Us-110%Us									
Auxiliary circuit	2 relays and each has two sets of contact converter, contact capacity: AC220V 50Hz Ie=5y									
Contactor transfer time	<50ms									
Operation transfer time	<50ms									
Return transfer time	<50ms									
Power off time	<50ms									

4. Normal running time and installation conditions

4.1 Ambient air temperature

Temperature should be within -5℃~40℃, and the average temperature within 24h should not exceed 35℃.

4.2 Altitude

Altitude of the installation site should not exceed 2000m.

4.3 Atmospheric conditions

The relative humidity of the installation site should not exceed 50% at maximum temperature 40℃, and it will be higher at minimum temperature -5℃, for instance, 90% at +20℃. Please take measures for the dew on product surface caused by temperature change.

4.4 Class of pollution

Pollution class of ATS meets the specified level of *GB/T14048.11*.

4.5 Installation category

Installation category of ATS meets the specified category in *GB/T14048.11*.

4.6 Installation conditions

The ATS can be installed vertically in control cabinet or power distribution cabinet. Make sure the installation distance meets the requirements in Fig.1.

5 External and installation dimensions

5.1 See Table 2 and Fig.1 for external and installation dimensions of ATS

6. Matters need attention

6.1 Manual / automatic operation

ATS with automatic operation can ensure power generation and power-off performances, but for ATS with manual operation, it cannot ensure the above performance due to the speed of power generation and power-off or operator differences. Excessive silver alloy loss may occur during manual power generation and power down. Therefore, set the selector switch at the manual position under normal condition, and pull it to the manual position when all power is turned off to check and maintain the operating system and contacts. After the manual operation is completed, pull the selector switch back to the automatic position.

6.2 Control circuit

ATS will be active in an instant. After the conversion is complete, the coils in the control circuit are disconnected by the internal converter. The coil can operate normally with a rated voltage of 80%-110%, and too low voltage may cause the coil to heat up or even ignite.

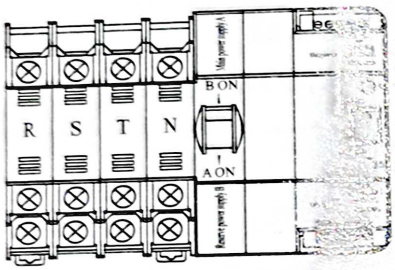
7. Wing diagram (see Fig.2, Fig.3)

8. Installation and wiring

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

8.2 Make sure that the ATS is in intact condition before installation. Then turn on/off the ATS with operating handle to check the flexibility of the transmission and detect the load connection and disconnection conditions for each stage of the normal and reserve power supplies.

8.3 The proper installation steps as follows. The trademark is in the front of the product. Please contact us if you are failed to install according to the proper installation steps. The safety distances S1, S2 should not be lower than those marks in Fig.1 and 2. (See figures for details)



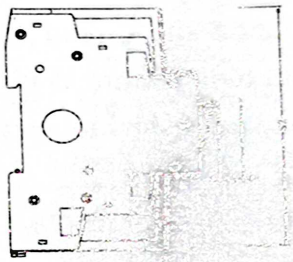


Fig.4 Proper installation instructions

8.4 Detection of control voltage: 50Hz, AC220V. The cord in the control circuit should not be too long. The sectional area of the copper wire should not exceed 2.0mm^2.

8.5 Please equip with suitable circuit breaker according to the installation requirements of power distribution system to ensure the safety of workers and equipment.

9 Maintenance, inspection and storage

9.1 Maintenance and inspections should be performed by professional staff and all power sources should be cut off in advance.

9.2 To ensure good performance of the ATS, the first maintenance and inspection should be carried out within 6 months of use, and the followed maintenance and inspection should be carried out annually at least. In the case of harsh installation conditions, the frequency of maintenance and inspection should be increased.

9.3 Maintenance and inspection items

a. Please remove dust and dirt in the event of a malfunction.

b. Check whether the electrical contact parts have any deformation or damage, and remove the burnt metallic particles attached to the surface.

c. The rust, acidification and dust on the contact surface may cause poor contact. Please operate manually for several times and measure the contact resistance if necessary.

d. As the ATS is affected with damp and in suspended state for a long time, dry it before use. After removing dust and dirt, use a 500V megger to measure the insulation resistance of normal power supply, alternative power supply, load side pole, and the insulation resistance between live parts and metal plates. And the insulation resistance should be not less than 10M Ω.

9.4 The ATS shall be stored in the same environment as normal service environment and should be protected against dust, moisture and bumps.

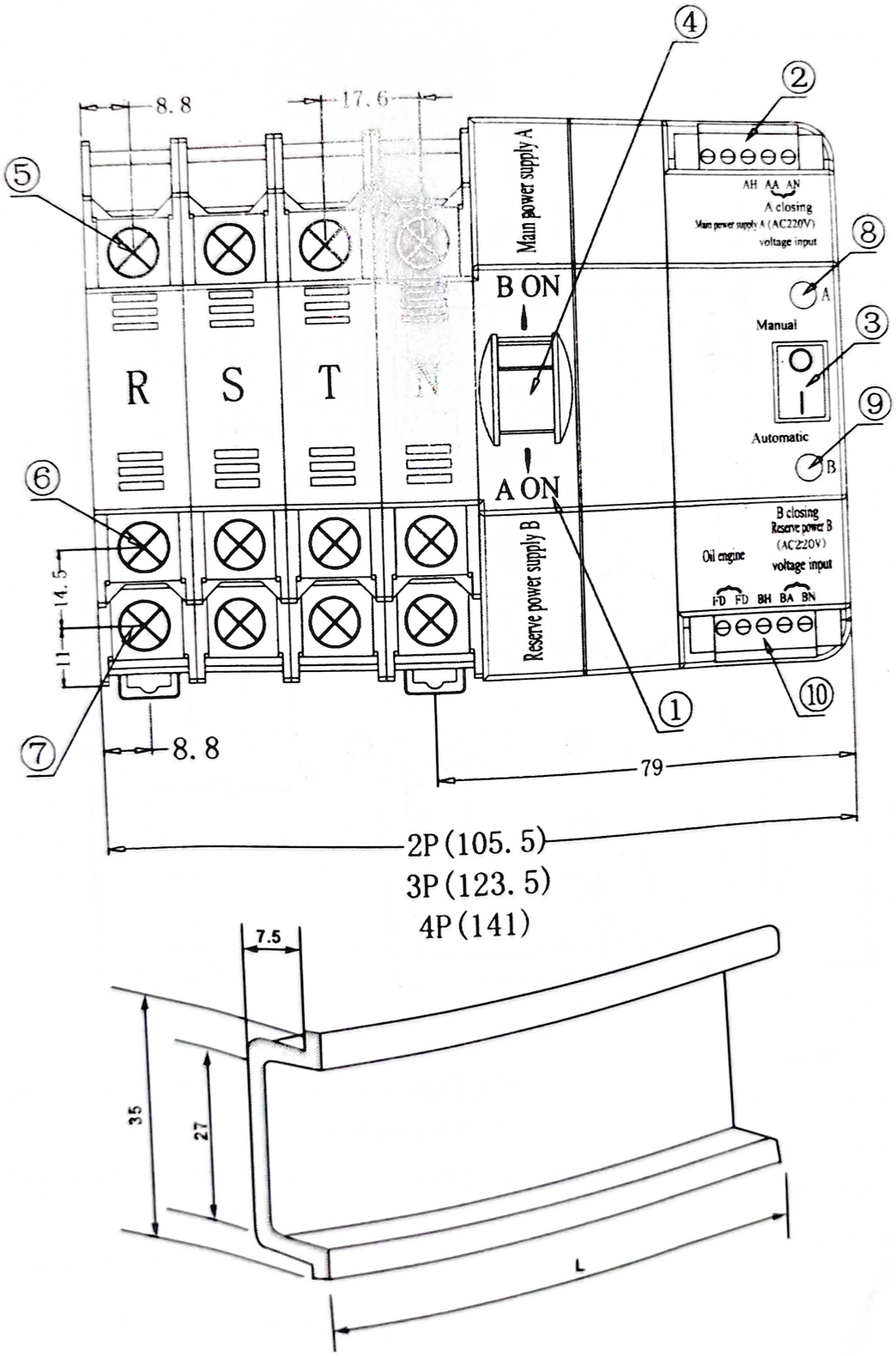
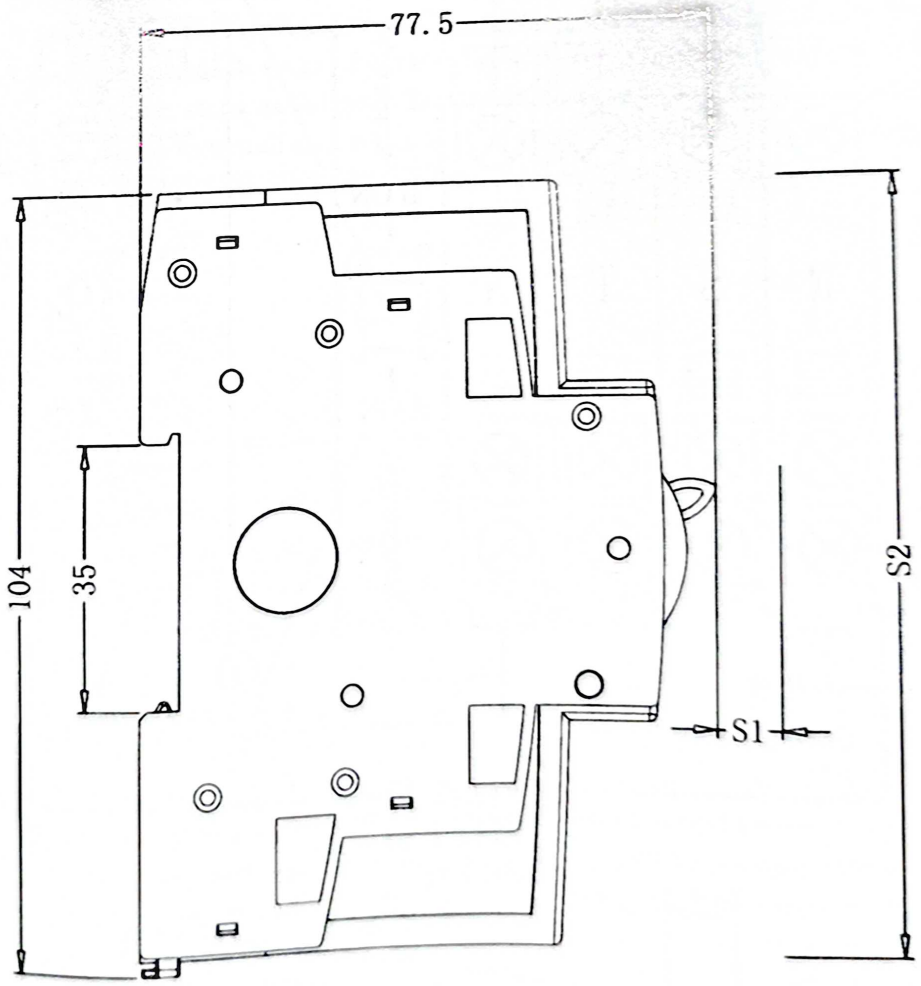


Fig.1 External and installation dimensions

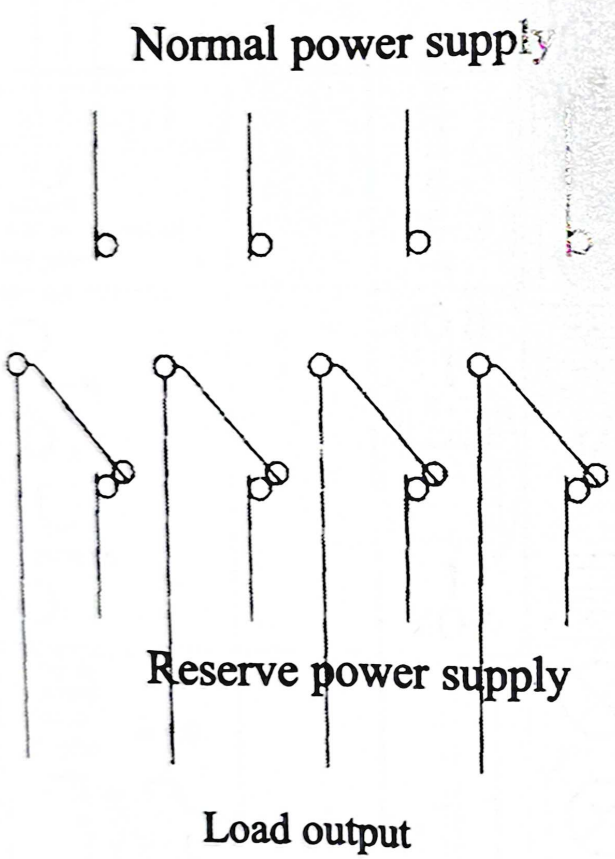


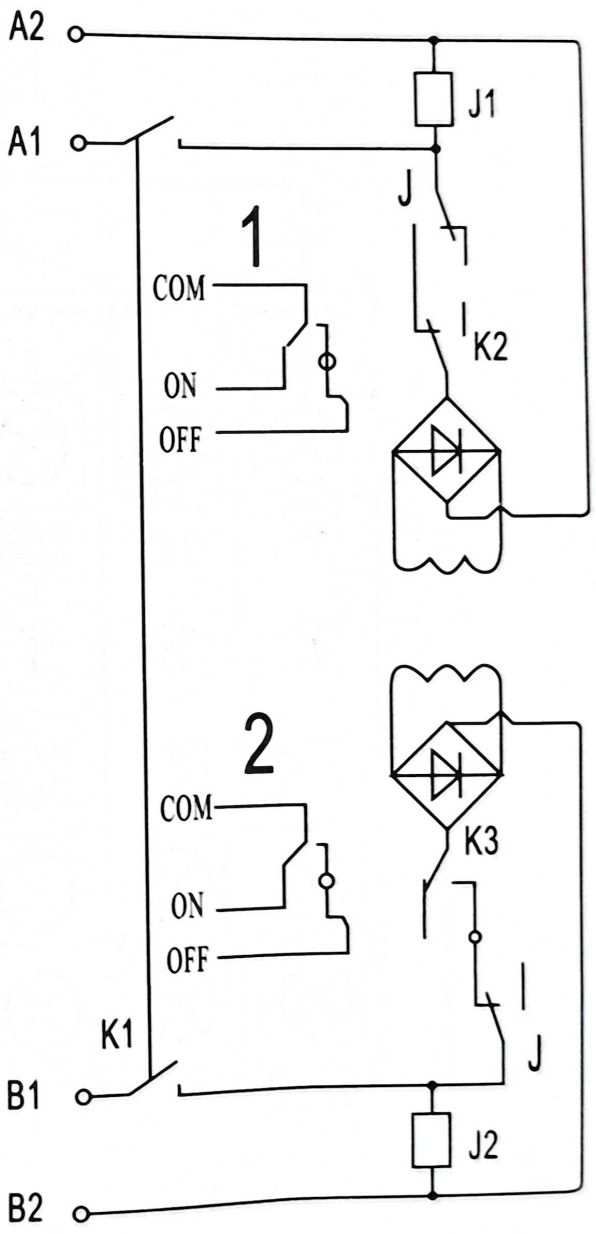
① Status position indicator
② Terminal block of normal power supply (AC220V)
③ Manual / automatic switch
④ Manual handle
⑤ Main terminal on normal power supply side
⑥ Main terminal on reserve power supply side
⑦ Main terminal on load wiring side
⑧ Indicator of power B
⑨ Indicator of power B
⑩ Terminal block of reserve power supply (AC220V)

Safety distance S1: ≥30mm

S2: ≥203mm

Fig.2 Internal wiring diagram





K1: Manual / automatic selector switch
K2, K3: valve position switches inside product
J1: Relay of 220V normal power supply A
J2: Relay of 220V reserve power supply B
1: passive signal output of power supply A
2: passive signal output of power supply B

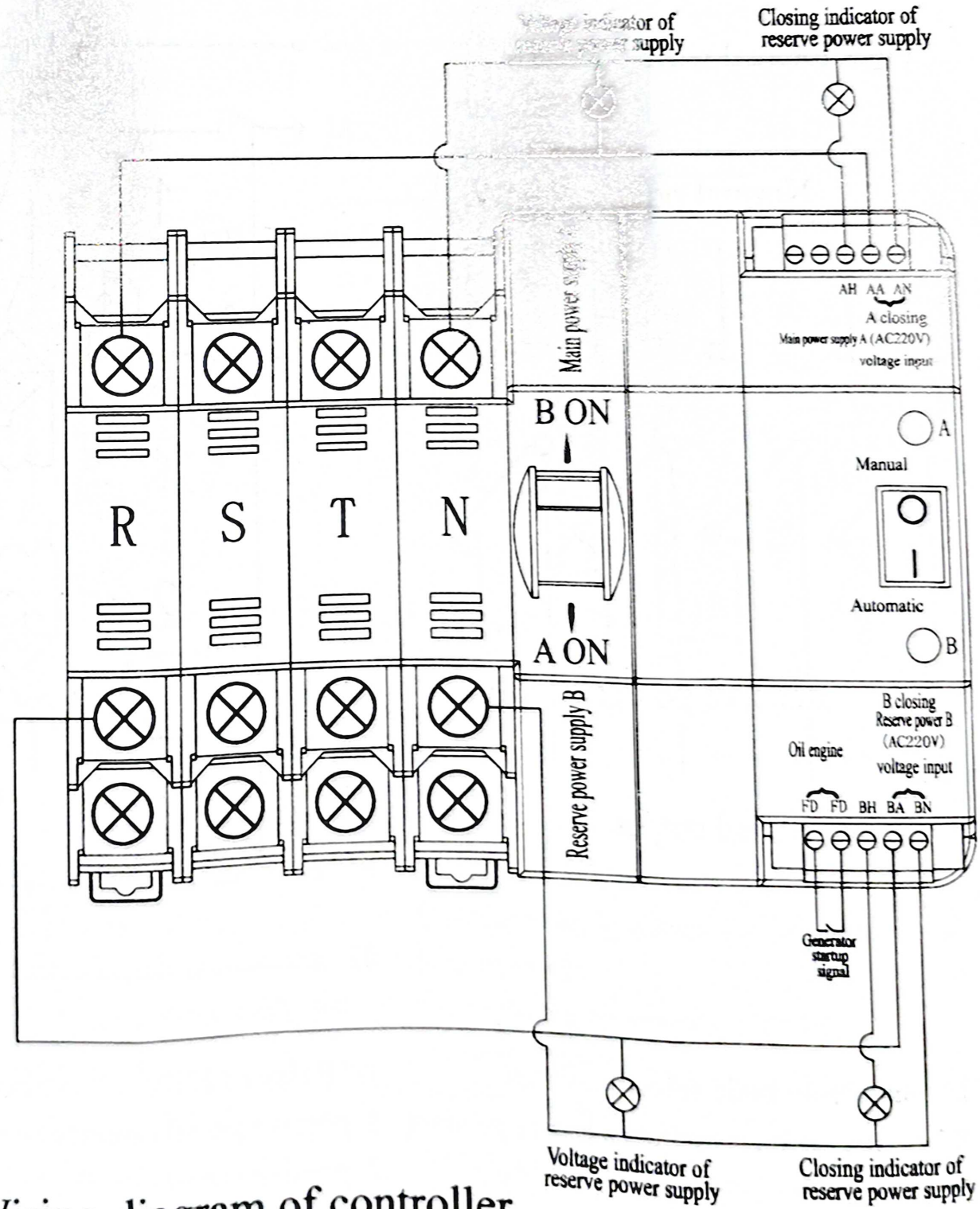
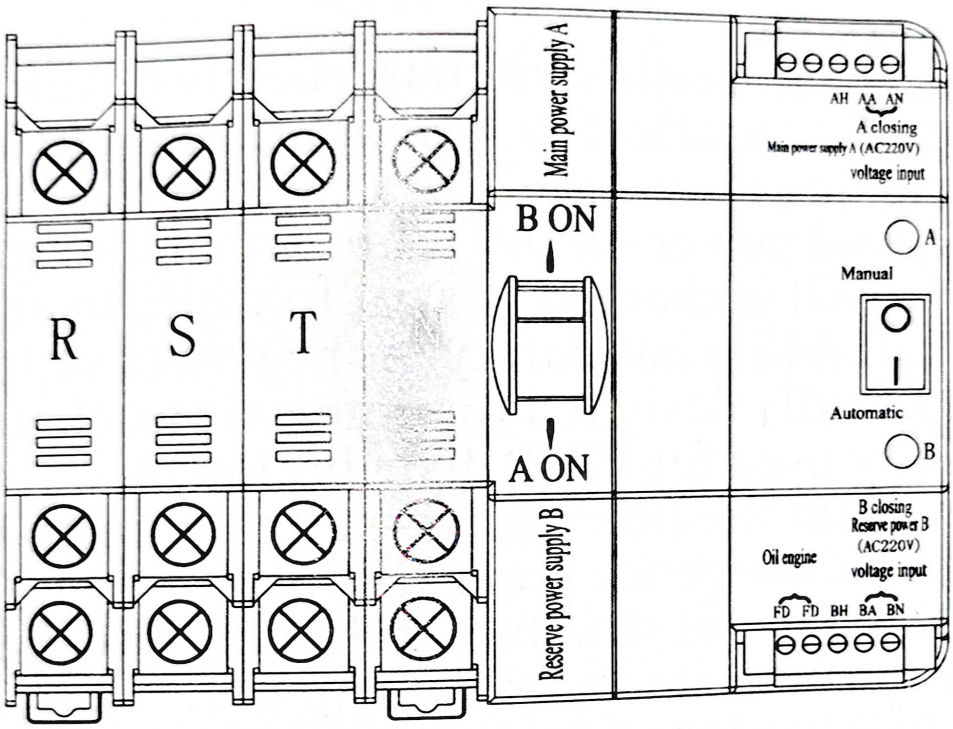


Fig.3 Wiring diagram of controller



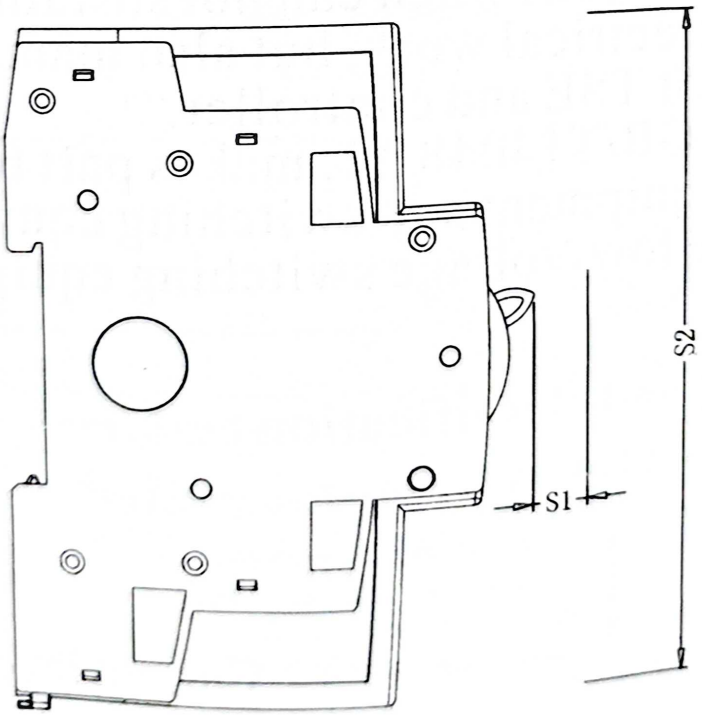


Fig.4 Proper installation direction

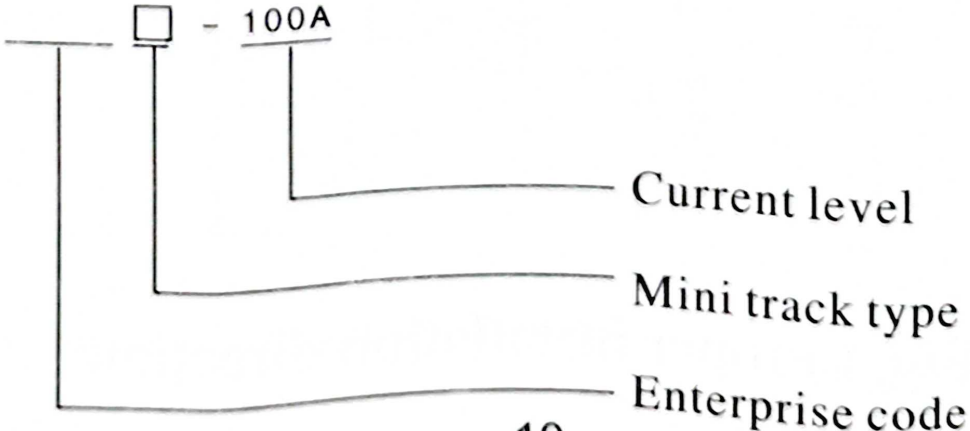
1.Product overview

Dual power automatic switch is a newly developed micro household power switch. The switch is mainly used to test whether the main power supply or standby power is normal. When the normal power supply is abnormal, the standby power supply will immediately start to work, to ensure the continuity, reliability and safety of the power supply. This product is specially designed for domestic track installation and is specially used for PZ30 distribution box.

Dual power automatic switch is suitable for 50 or 60Hz rated 400V AC emergency power supply system. ATS has the characteristics of solid structure, reliable conversion, easy installation and maintenance and long life. It is widely used in a variety of occasions when can not sustain power failure, that is, reliable electrical work, but also manual operation. ATS is made up of TSE and controller.

According to GB/T14048.11, makes part 6-1: multi-function equipment and switching equipment, ATS is the most suitable low-voltage switching equipment and control device.

2.Product model and classification



3.Basic parameters

Please refer to table 1 for details about basic ATS parameters

Table1

Model	ATS-63A			ATS-100A
Rated current le A	16 20 25	32 40 50 63		80 100
Insulation voltage Ui	AC69OV.5OHZ			
Rated voltage Ue	AG400V,50Hz			
level	PC can be manufactured and sustained, without short			
Using categories	AC-33iB		AC-31B	
Rod	2P	3P		4P
Weight （kg）	1.7	2.1		2.6
Electrical appliances	life; 2000times; manual operation: 5000times			
Rated short charge	50kA			
Short circuit	RT16-00-63A			
The cap withstands	8kV			
Control circuit	Rated control voltage Us:AC220V, 85%Us-110%Us			
Auxiliary circuit	Two relays, each with two sets of contact capacity for the contact converter:AC220V50HZ le=5y			
Contactor conversion	<50ms			
Operation	<50ms			
Return conversion	<50ms			
Power off time	<50ms			

4.Normal operation time and installation conditions

4.1 Ambient air temperature

The highest temperature shall not exceed 40℃, the lowest shall not be lower than -5℃, and the average temperature within 24h shall not be higher than 35℃.

4.2 Altitude

The elevation of the installation site shall not be higher than 2000m.

4.3 Atmospheric conditions

When the highest temperature reaches 40℃, the relative humidity of the installation site shall not exceed 50%, when the lowest temperature is - 5℃. The relative humidity is high, for example, the temperature is 25℃, while the relative humidity is 90%. Due to temperature changes, special measures should be taken to deal with the occasional condensation on the surface of the product.

4.4 Pollution levels

ATS pollution level conforms to the specified level 3 of GB/T14046.11

4.5 Installation category

ATS is installed in accordance with the category specified in GB/T14048.11

4.6 Installation conditions

The ATS can be installed vertically in the control cabinet or distribution cabinet. Make sure the installation distance is as shown in figure 1

5.View dimensions and mounting dimensions

5.1 The appearance and installation dimensions of ATS are shown in table 2 and figure 1.

6.Notes

6.1 Manual/Automatic operation

The ATS can guarantee power generation and power outage performance during circuit operation, but for manual operation, due to the difference in power generation and power outage speed or operator, the ATS cannot guarantee such performance. Excessive loss of silver alloys may occur during manual power generation and power outages.

Therefore, when all the power is turned off to check and maintain the operating system and contacts, simply reverse the selection switch to the manual position. In general, the selection switch will be pulled to the automatic position.

After the manual operation is completed, pull the selection switch from the manual position to the automatic position.

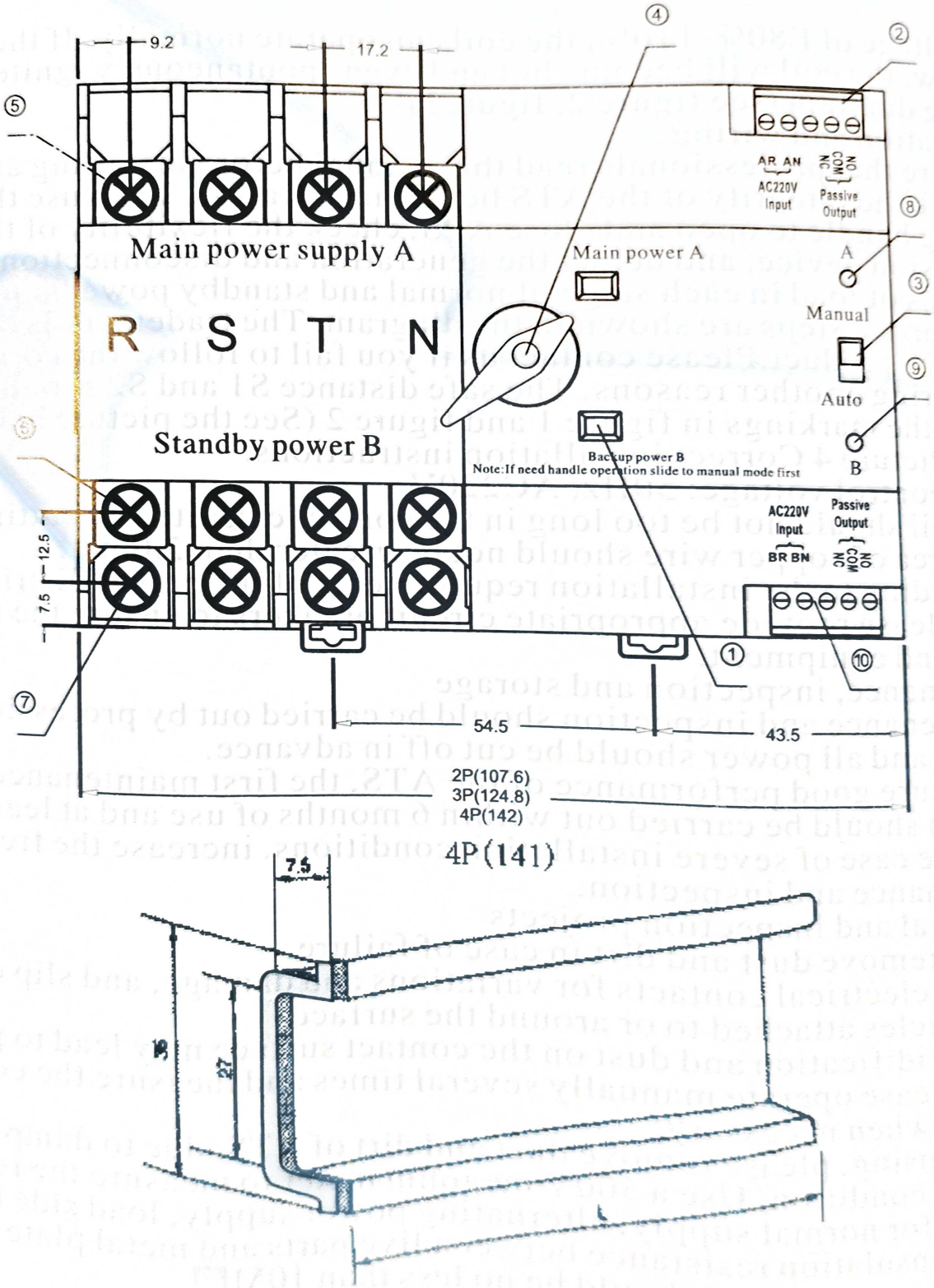
6.2 control circuit

ATS will active instantly. After conversion, the line diagram in the control circuit will be disconnected by the internal converter. Under the

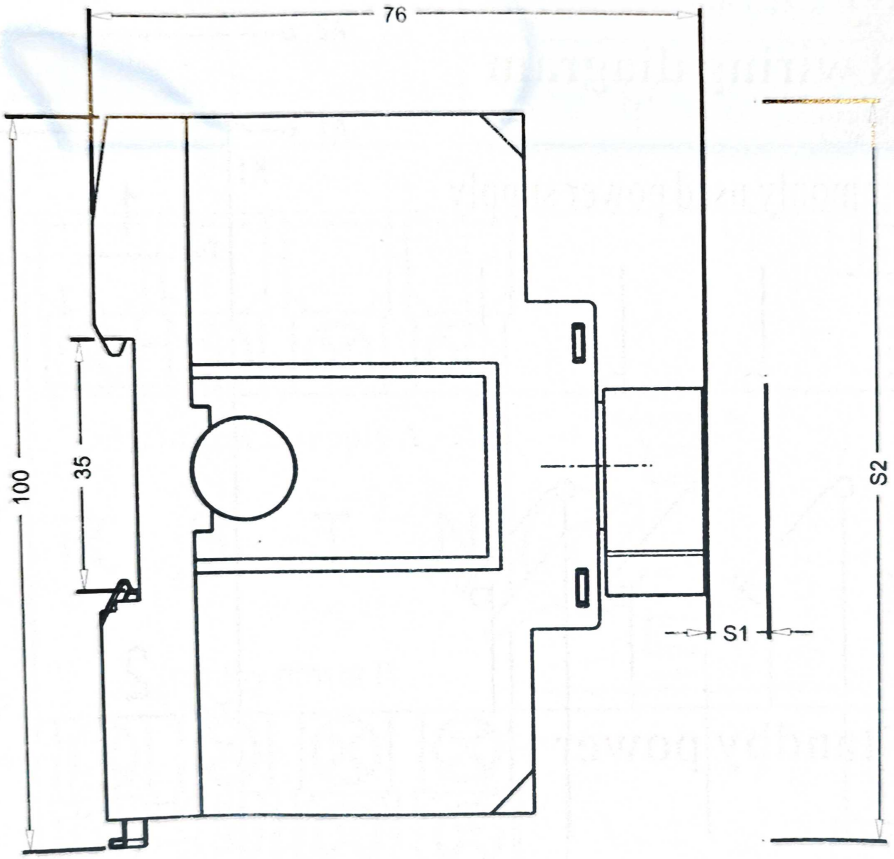
rated voltage of E80%-110%, the coil can operate normally. If the voltage is too low, the coil will become hot and even spontaneously ignite.
7.Wiring diagram (see figure 2, figure3)
8.Installation and wiring
8.1 Ensure that professionals read this manual before installing and wiring.
8.2 Check the integrity of the ATS before installation. Then use the operating handle to open and close APS, check the flexibility of the transmission device, and detect the generation and disconnection conditions of load in each stage of normal and standby power supply.

The correct steps are shown in the diagram. The trademark is on the front of the product.Please contact us if you fail to follow the correct steps due to wiring or other reasons. The safe distance S1 and S2 should be no less than the markings in figure 1 and figure 2 (See the picture below for details) Picture 4 is correct installation instructions.
8.4 Test control voltage: 50Hz, AC 220V.

The coil should not be too long in the control circuit. The cutting surface area of copper wire should not be greater than 2.0mm.
8.5 According to the installation requirements of the power distribution system, please provide appropriate circuit breakers to ensure the safety of the staff and equipment.
9. Maintenance, inspection and storage
9.1 Maintenance and inspection should be carried out by professional personnel and all power should be cut off in advance.
9.2 To ensure good performance of the ATS, the first maintenance and inspection should be carried out within 6 months of use and at least once a year. In the case of severe installation conditions, increase the frequency of maintenance and inspection.
9.3 Renewal and inspection projects
A. Please remove dust and dirt in case of failure.
B. Inspect electrical contacts for variations and damage, and slip out any metal particles attached to or around the surface.
C. Rust, acidification and dust on the contact surface may lead to poor contact. Please operate manually several times and measure the contact resistance when necessary.
D. Before using, please remove dust and dirt of ATS, due to damp and suspended condition. Use a 500V megohm meter to measure the rejection resistance for normal supply, alternating power supply, load side bars, including insulation resistance between live parts and metal plates. And the insulation resistance should be no less than 10M■.
9.4 ATS shall be stored in an environment comparable to the normal working environment and shall be protected from dust, moisture and knock.

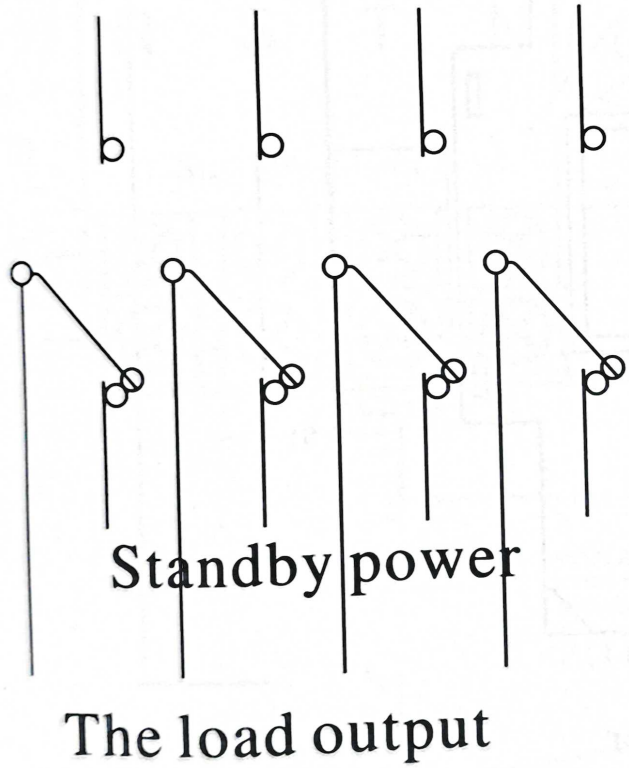


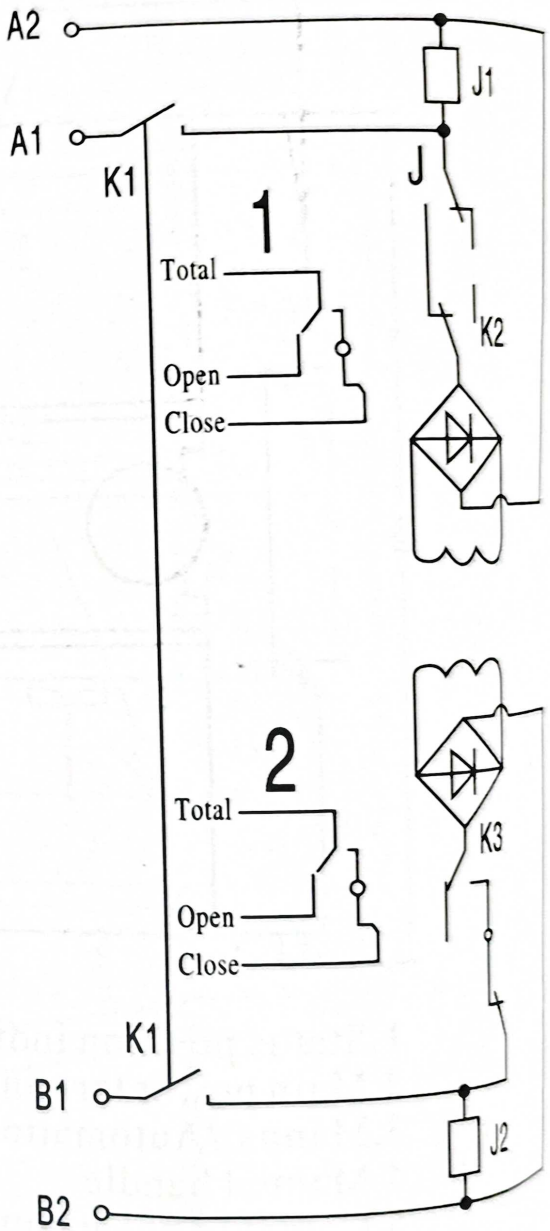
Picture 1 Appearance dimensions and Installation dimensions



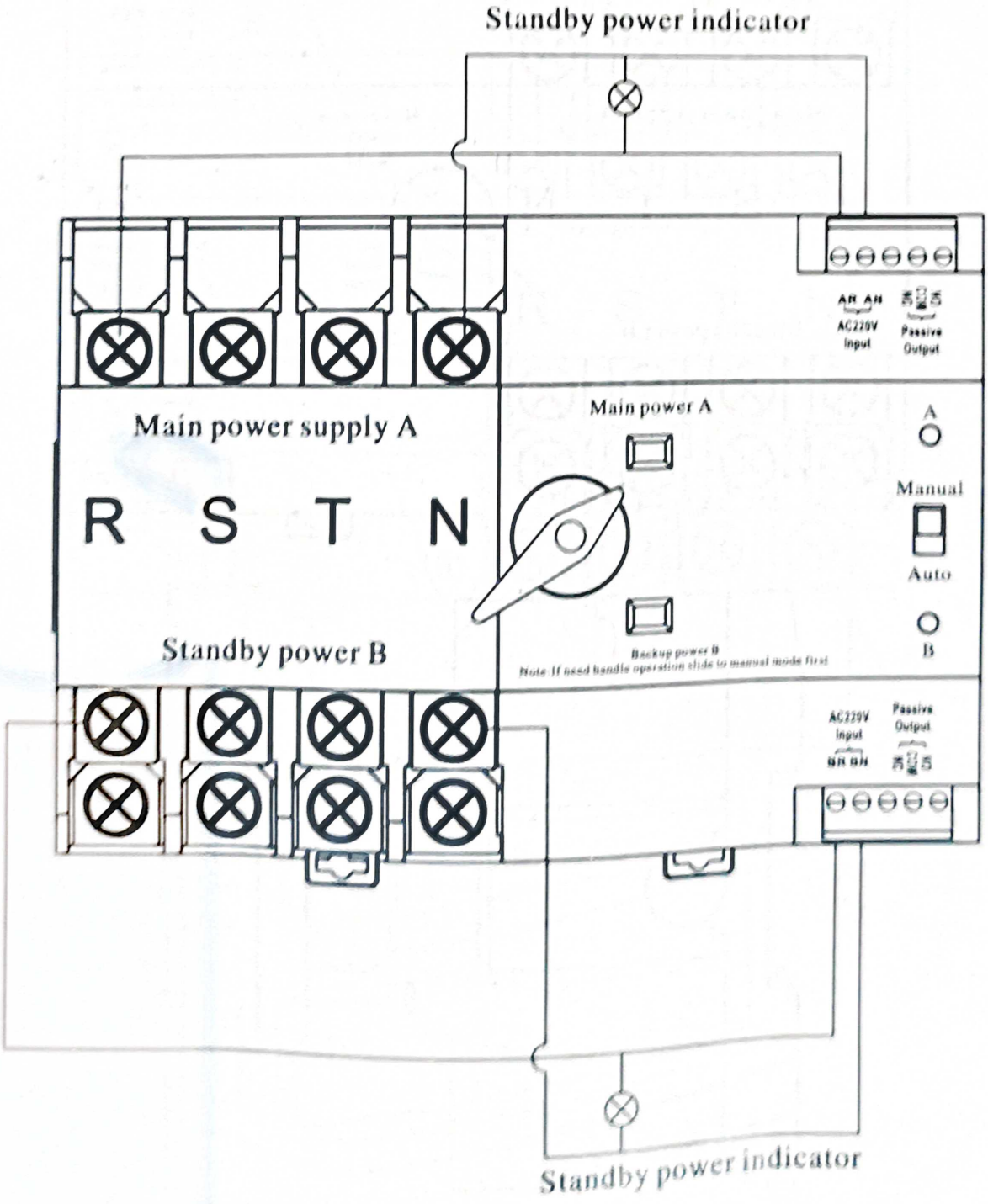
1.Status position indicator
2.Main power terminal and passive signal (AC220V)
3.Manual/Automatic switch
4.Manual handle
5.Common power supply side main terminal
6.Backup power side main terminal
7.Main terminal on load side
8.A Power indicator
9.B Power indicator
10.Standby power terminal and passive signal (AC220V)
Safe distance:S1:>30mm
S2:>203mm

Picture 2
Internal wiring diagram

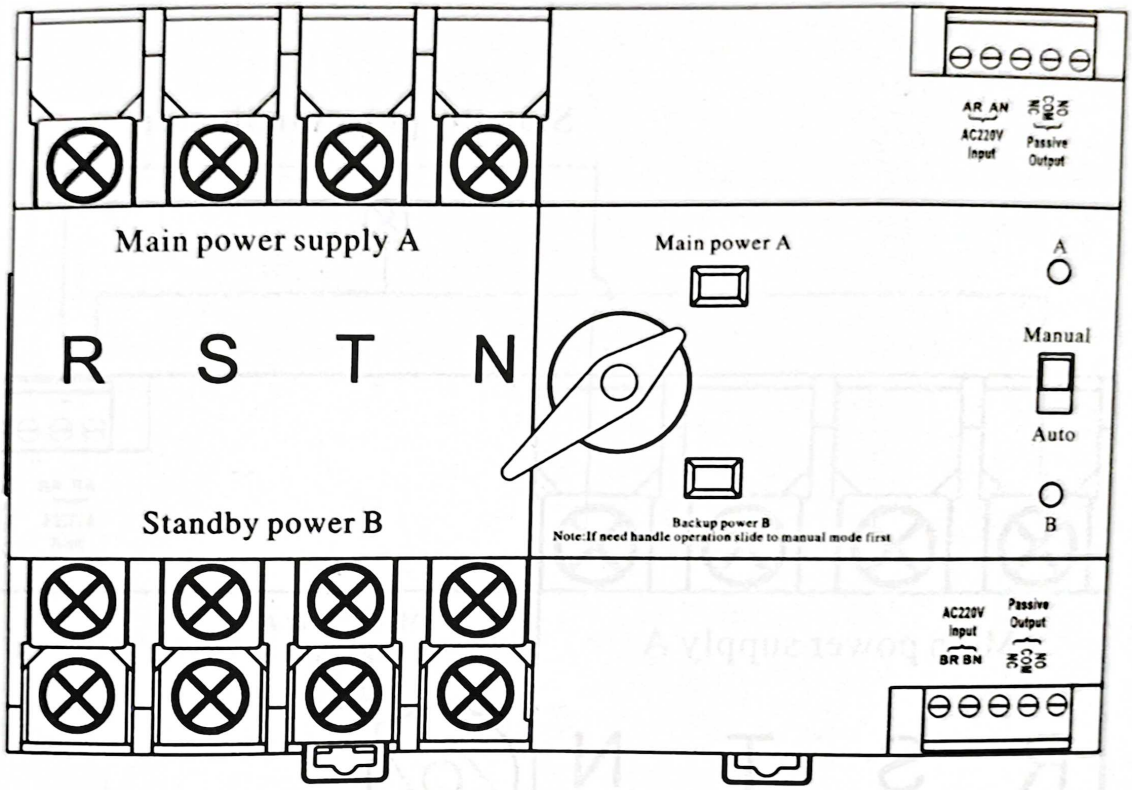


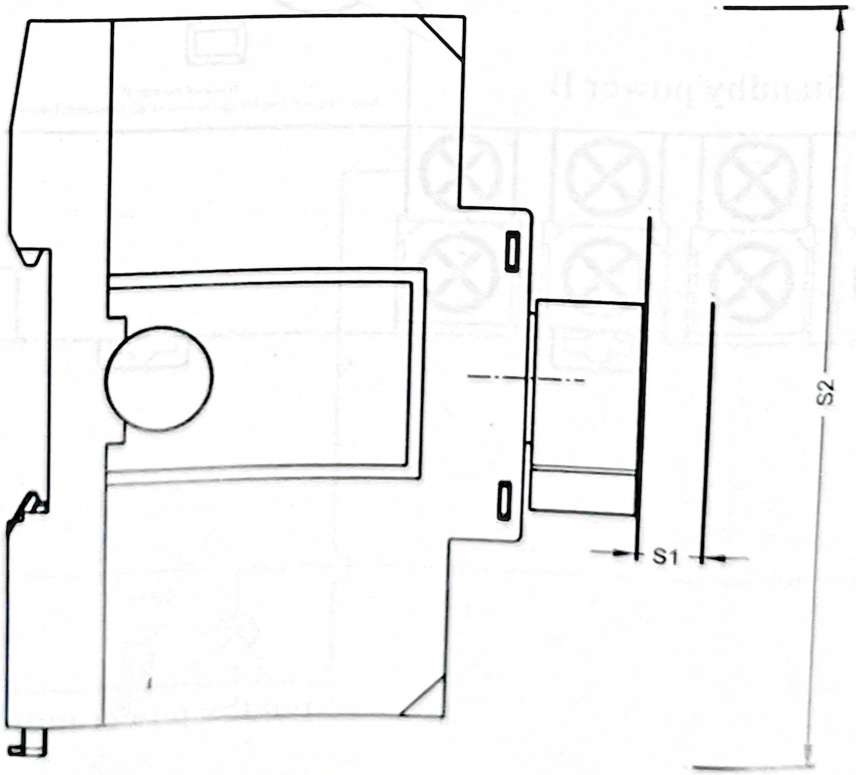


K1.Manual/automatic selection switch
K2. K3 Internal valve switch
J1Commonly used 220VA power supply relay
J2 Standby 220VA power supply relay
1: A power supply passive signal output
2: B power supply passive signal output

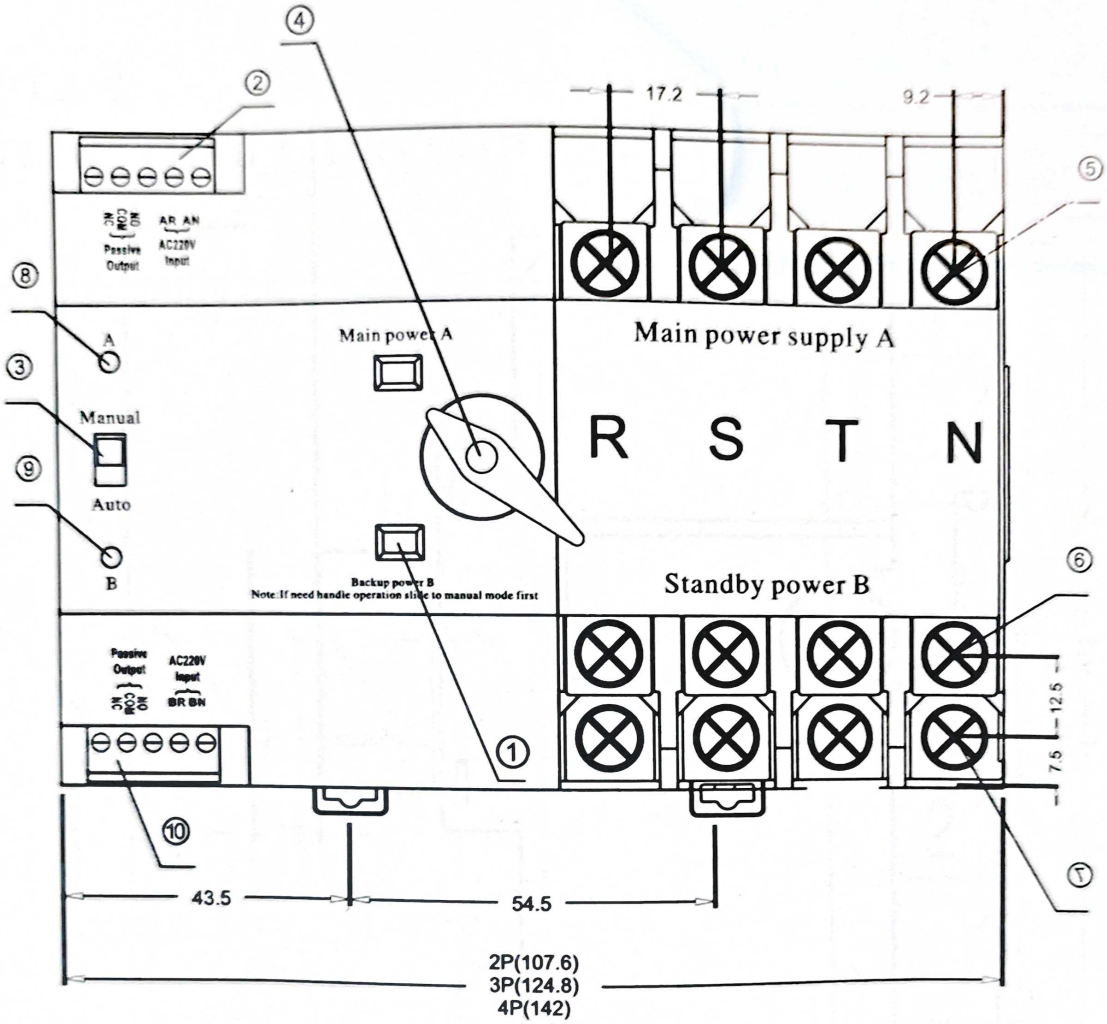


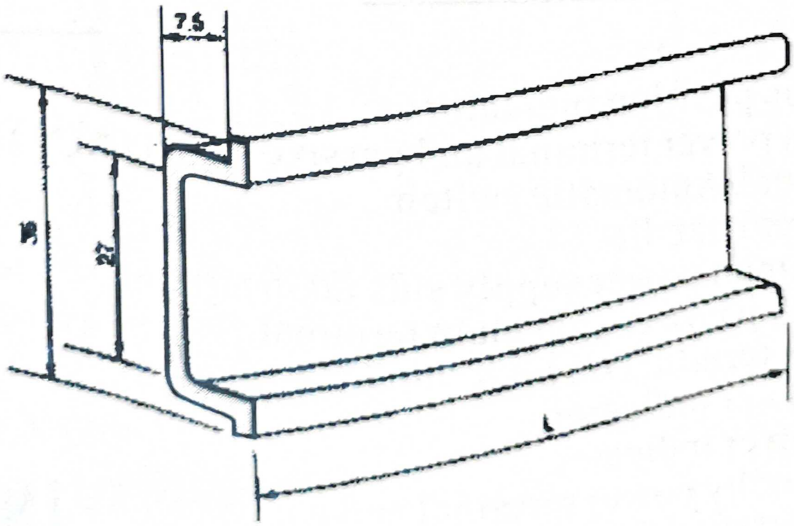
Picture 3 Controller wiring diagram



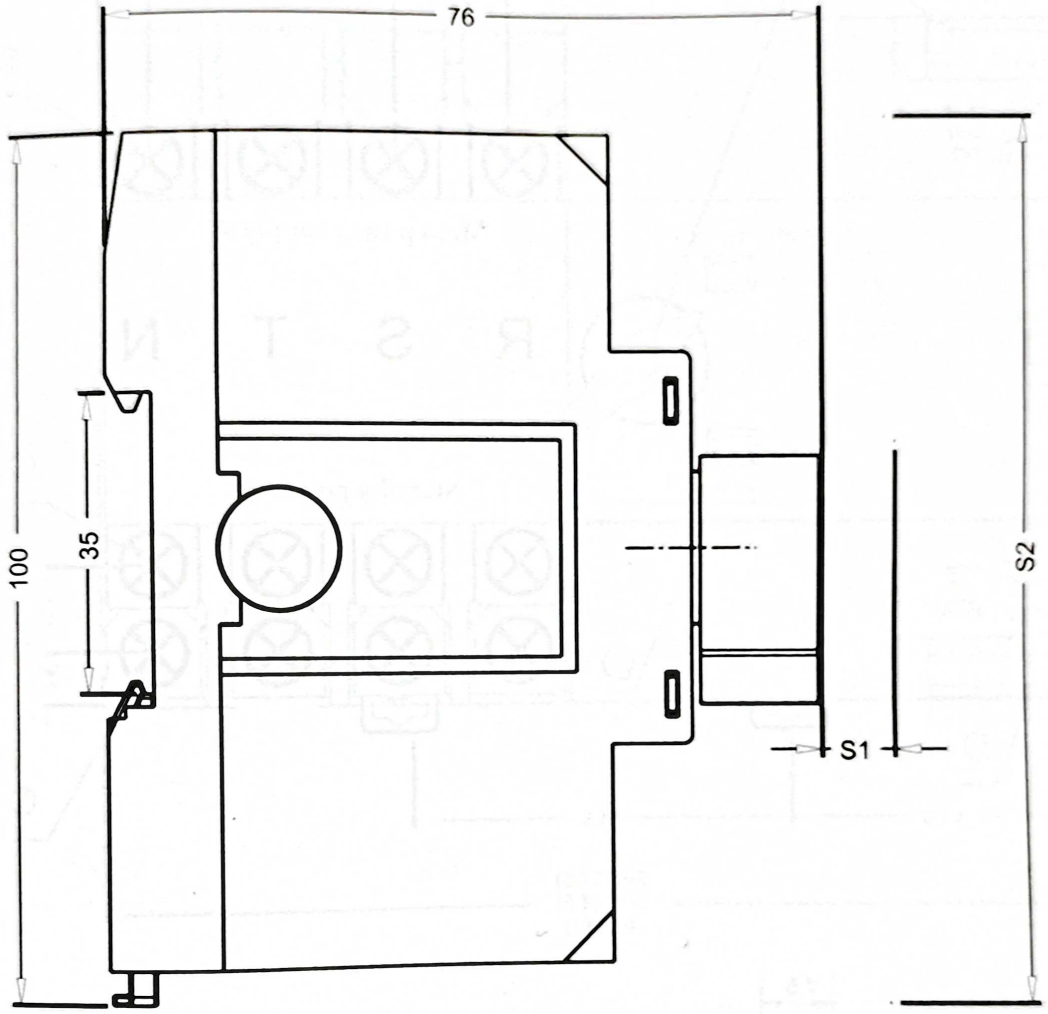


Picture 4 Correct mounting direction



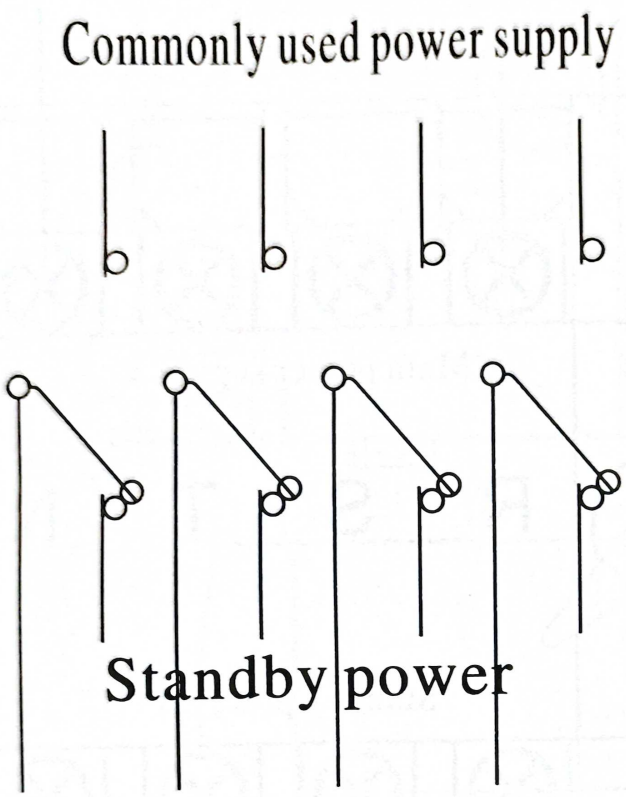


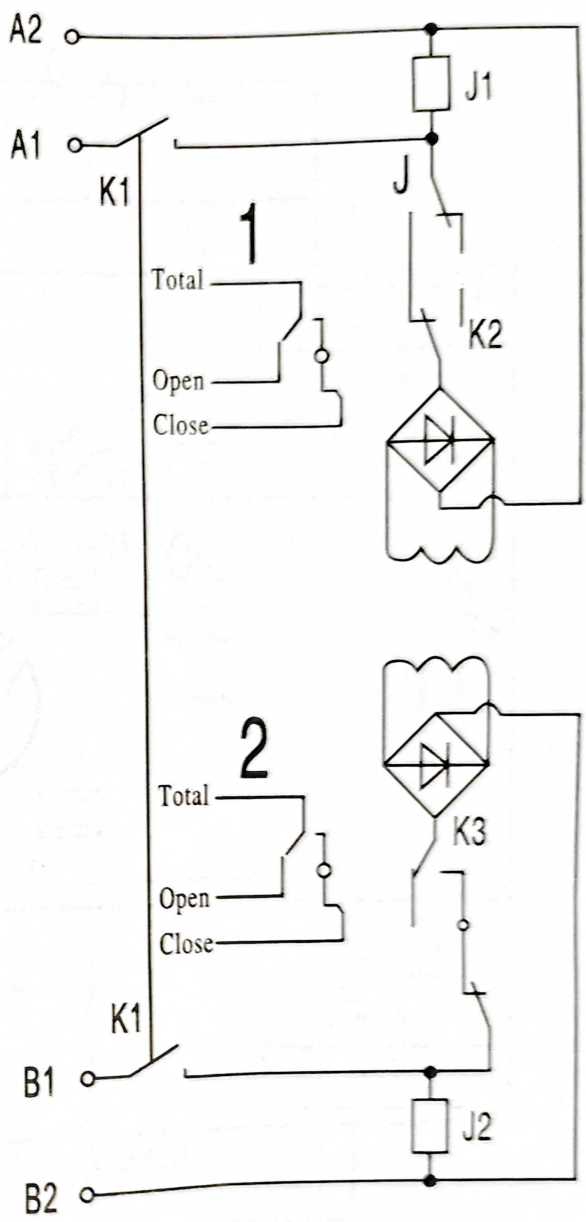
Picture 1 Appearance dimensions and Installation dimensions



1.Status position indicator
2.Main power terminal and passive signal (AC220V)
3.Manual/Automatic switch
4.Manual handle
5.Common power supply side main terminal
6.Backup power side main terminal
7.Main terminal on load side
8.A Power indicator
9.B Power indicator
10.Standby power terminal and passive signal (AC220V)
Safe distance:S1:>30mm
S2:>203mm

Picture 2
Internal wiring diagram





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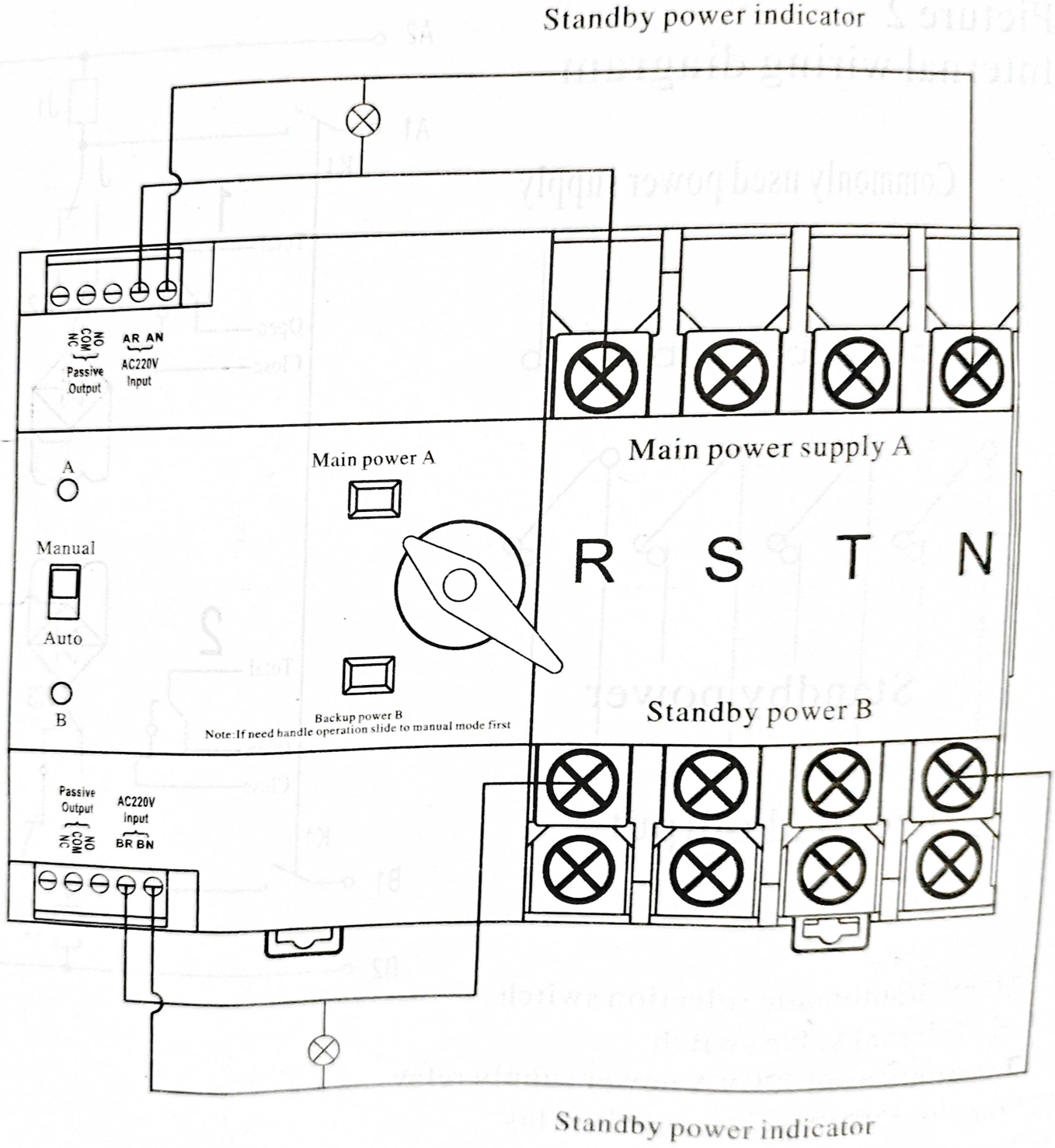
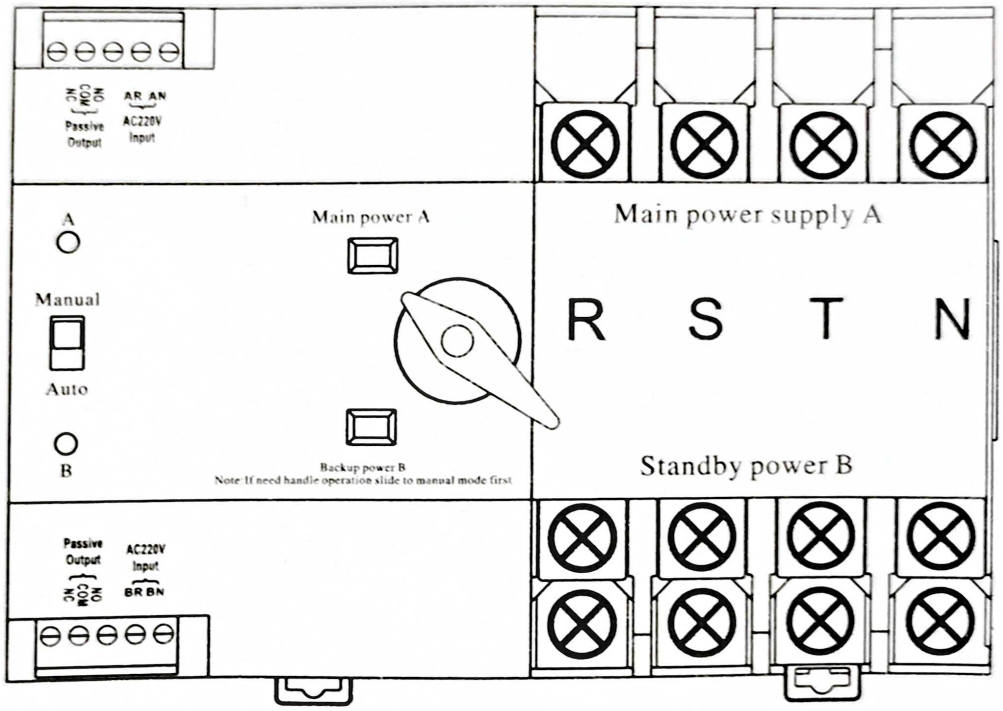
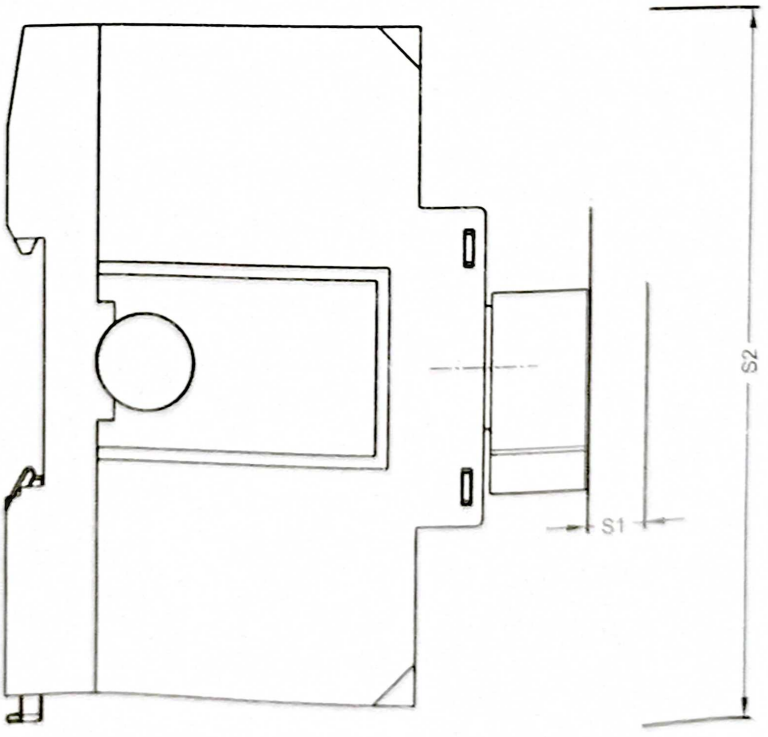


Picture 3 Controller wiring diagram





Picture 4 Correct mounting direction