

Automatic Transfer Switches



General introduction of automatic transfer switches

Continuous and reliable power distribution

- With the diversification of industrial process and IT applications, a secure and reliable electricity supply has become an important asset which is playing an important role in reducing production and maintenance costs. In emergency situations, it can become complex with mechanical devices looking after connecting, breaking, conducting and isolating power. In addition, when electricity use is restricted or the power supply is overloaded, the load may need to be transferred from one supply to another. With superior performance, SASSIN dual power automatic transfer switches meet all the above requirements to ensure continuity and security of power supply.

Reliability assurance of the device

- Automatic transfer switching equipment controller can maximize the affordability of various types of electromagnetic interference in industrial environments, and can as well as ensure the operation reliability of automatic switch by the motor drive conversion mechanism via reliability test.

Reliability assurance of electricity supply system

- When the major power supply encounters power failure, phase failure and undervoltage fault, the automatic switching equipment under the control of the controller will automatically switch to the backup power supply to ensure power system reliability.

Security assurance of electricity supply system

- Specially designed automatic transfer switch controller can automatically identify the over-current faults, the implementation original welding and mechanical failure in power supply system and place the implementation original in a safe location to ensure the security of power supply system.

Communication and signal system

- Power conversion under the conditions of non-fire special hazard should be considered in the design;
- Public power grid can be used as backup power;
- Need to use CB automatic switch device with over-current protection;
- C curve protection products in line with IEC60896 are suggested to be used as the end conversion electrical appliances;
- Power conversion time should be less than 5s. For critical load, please install uninterrupted power supply equipment like UPS.

Air condition and temperature control device

- Power control under the conditions of non-fire special hazard should be considered in design;
- Public power grid can be used as backup power;
- Need to use CB automatic switch device with over-current protection;
- D curve protection products in line with IEC60898 are suggested to be used as the end lighting electrical appliances;
- Power conversion time should be less than 5s.

Fire fighting system

- Fire design includes power supply protection for terminal conditions like fire pumps, exhaust fans and fire elevators in particular disaster conditions;
- Need to use special power source like generators as backup power;
- Need to use products with neutral line of 2 or 4 poles involved in the transformation Need to use PC automatic switch device without over-current protection whose rated current should be 125% greater than its load current;
- Need to use the switch products with the fire control function
- Power conversion delay time should be set to 0.

Emergency lighting in general location

- Emergency lighting under the conditions of non-fire special hazard should be considered in the distribution design;
- Another branch of public power grid can be used as backup power supply If the backup power is from same power transformer, neutral line will not participate in conversion;
- Need to use CB automatic switch device with over-current protection;
- C curve protection products in line with IEC60898 are suggested to be used as the end lighting electrical appliances; Power conversion time should be less than 5s.



Features

- Small size with simple structure
- Easy operation, long service life
- Both 3P and 4P are available
- Single electric drive, smooth and noise-free, small impact
- With mechanical interlock and electrical interlock, reliable switching, both manual and automatic switching are available
- Switch is wired with connection terminal in the internal for users, reflecting the circuit breaker status (open or closed)
- There are a variety of indicators listed on panel

Structure and performance

Structure

The automatic transfer switch consists of MCB, a single electric motor operating mechanism, mechanical interlocking, auxiliary systems, control circuit and other components and are closed with plastic shell. All components are installed on the same floor. There is a status indicator on the panel that accurately indicates the state of the MCB and the whole set of instructions.

Performance

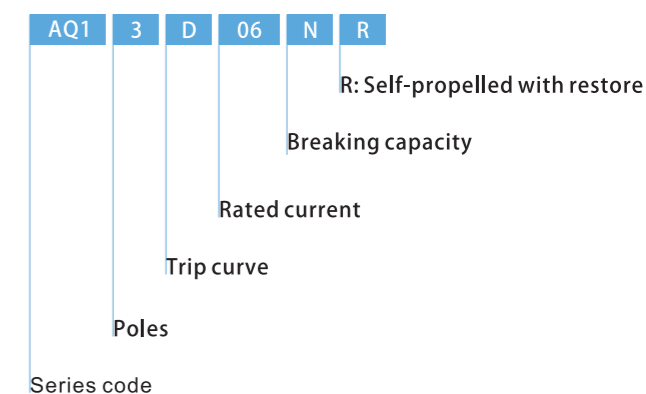
- Automatic controllers (only R-type:automatic transfer with automatic restore)detect the voltage of two-way power (commonly used power and backup power) at the same time. Common power will work under the normal state. when the common power supply failure occurs, namely loss of pressure or A phase-off, the controller will automatically make the command switch switch to the backup power supply;
- When common power is restored to normal, the controller will automatically make the command switch switch to the backup power supply, and no delay;
- Simultaneous two-way power anomalies are not allowed;
- When tripping occurs due to a small circuit breaker failure, the device will remain in the trip state and let out a warning signal. Wait for maintenance, and the the handle should be reset and re-closed manually after troubleshooting;
- In automatic mode, when there inputs DC24V fire signal, the controller will command all the disconnect switch, and then if undo the fire signal, restore the original state.

Automatic Transfer Switches

Series 3SAQ1 CB Class



Instruction of type code



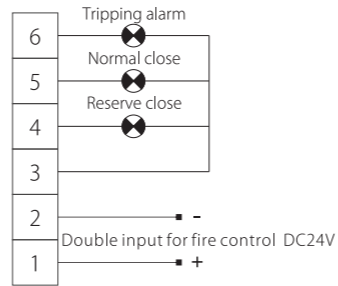
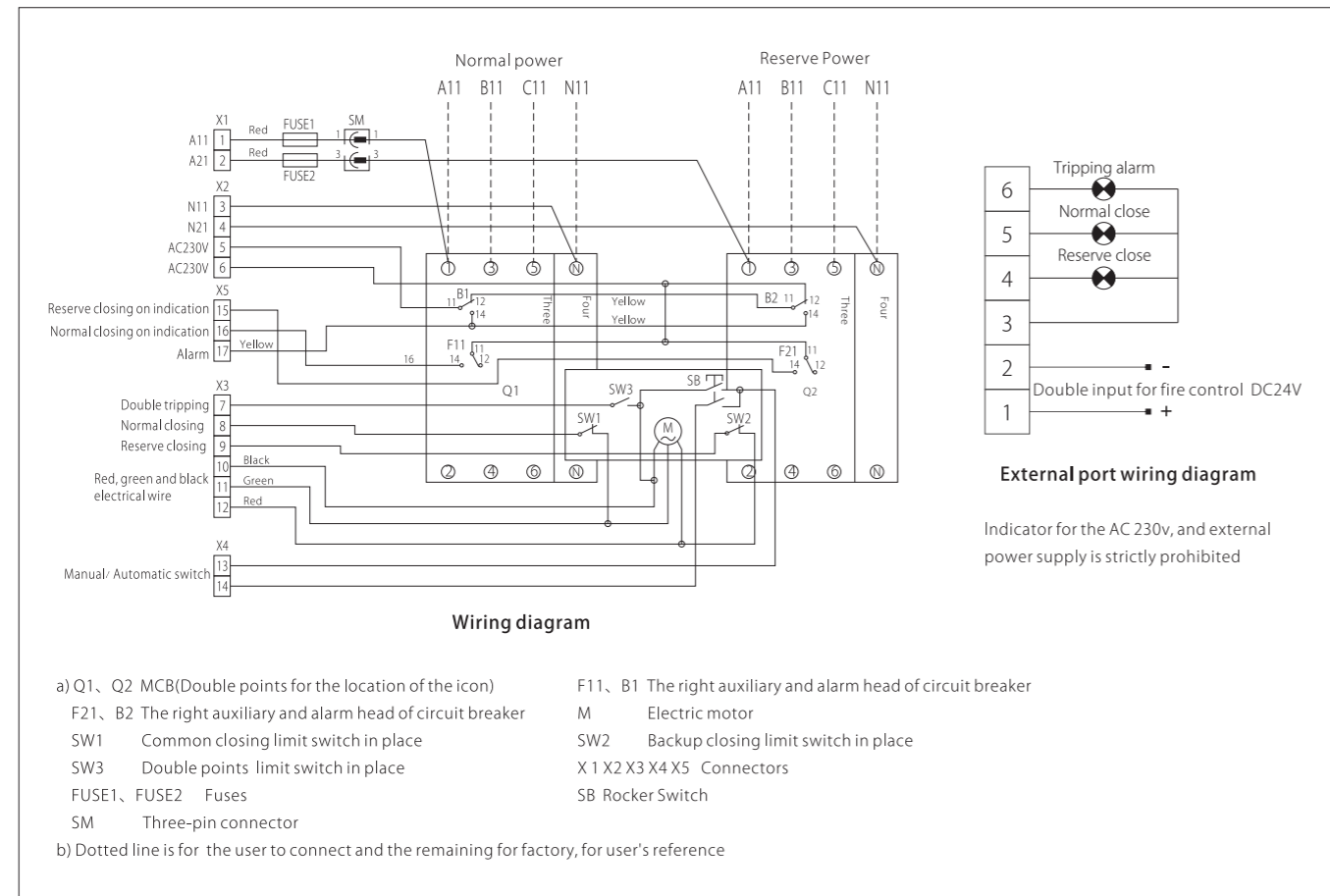
- There is only R type for 3SAQ1 series ATS at present.
- Automatic transfer with automatic restore:
If deviation of common power is monitored, ATS will automatically switch the load from the common power to backup power; if the power returns to normal, it will automatically return to common power supply.

Technical specifications

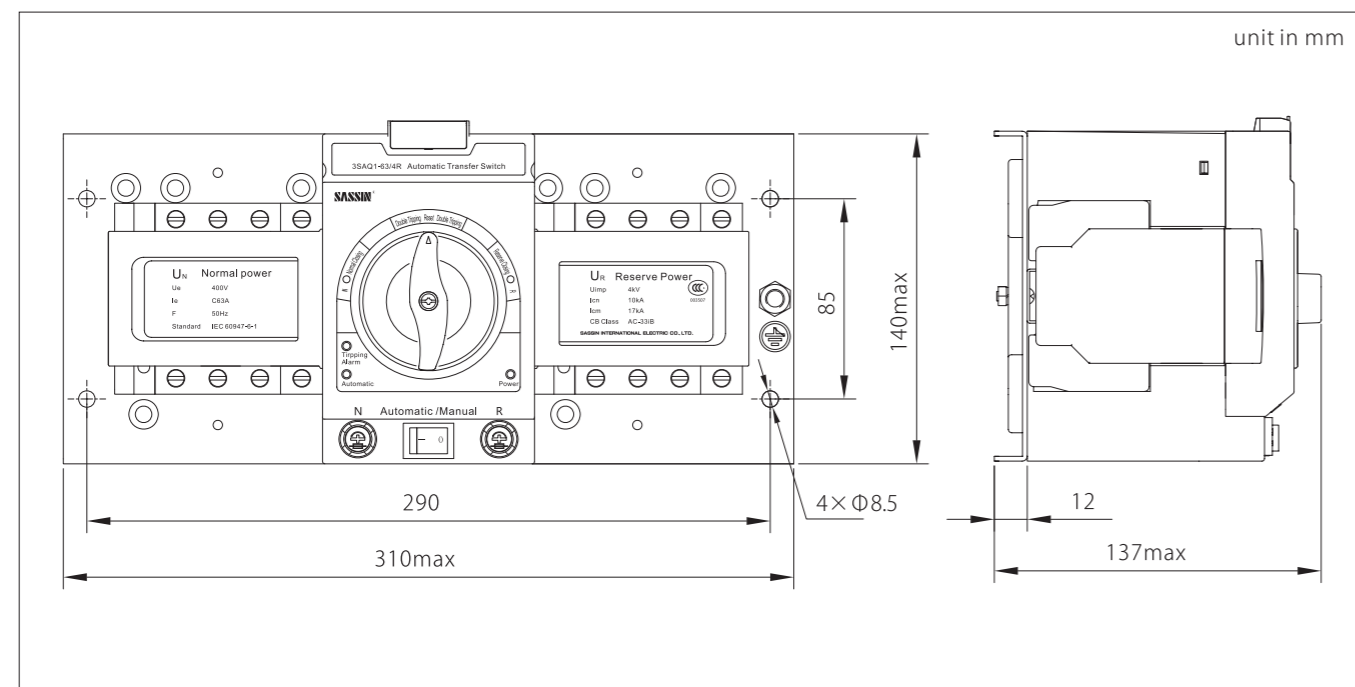
Type	3SAQ1-63
Execution circuit breaker	3SB71-63
Number of poles (P)	3,4
Rated operating current (A)	6,10,16,20,32,25,32,40,50,63
Rated operating voltage (VAC)	230/400
Rated control voltage (VAC)	230
Rated insulation voltage(VAC)	500
Rated ultimate short circuit breaking capacity at 400V AC (kA)	6 10
Rated short circuit connecting capacity (kA)	17
Use category	AC-33iB
Mechanical life (times)	10,000
Electrical life (times)	4,000
Ambient temperature	-5~40°C, max. 95% humidity
Storage temperature	-40~+75°C
Altitude (Max.)	2,000



Wiring diagram



Outline and installation dimensions



Selection and ordering data

- Rated working voltage (VAC): 230/400
- Rated control voltage (VAC): 230

Rated breaking capacity (kA)	Rated current (A)	Poles (p)	Curve B		Curve C		Curve D		
			Type code	Order code	Type code	Order code	Type code	Order code	
6	6	3	AQ1 3B06NR	19809	AQ1 3C06NR	19818	AQ1 3D06NR	19827	
		4	AQ1 4B06NR	19836	AQ1 4C06NR	19845	AQ1 4D06NR	19854	
		3	AQ1 3B10NR	19810	AQ1 3C10NR	19819	AQ1 3D10NR	19828	
		4	AQ1 4B10NR	19837	AQ1 4C10NR	19846	AQ1 4D10NR	19855	
		3	AQ1 3B16NR	19811	AQ1 3C16NR	19820	AQ1 3D16NR	19829	
		4	AQ1 4B16NR	19838	AQ1 4C16NR	19847	AQ1 4D16NR	19856	
	10	20	3	AQ1 3B20NR	19812	AQ1 3C20NR	19821	AQ1 3D20NR	19830
		4	AQ1 4B20NR	19839	AQ1 4C20NR	19848	AQ1 4D20NR	19857	
		25	3	AQ1 3B25NR	19813	AQ1 3C25NR	19822	AQ1 3D25NR	19831
		4	AQ1 4B25NR	19840	AQ1 4C25NR	19849	AQ1 4D25NR	19858	
		32	3	AQ1 3B32NR	19814	AQ1 3C32NR	19823	AQ1 3D32NR	19832
		4	AQ1 4B32NR	19841	AQ1 4C32NR	19850	AQ1 4D32NR	19859	
10	10	3	AQ1 3B40NR	19815	AQ1 3C40NR	19824	AQ1 3D40NR	19833	
		4	AQ1 4B40NR	19842	AQ1 4C40NR	19851	AQ1 4D40NR	19860	
		3	AQ1 3B50NR	19816	AQ1 3C50NR	19825	AQ1 3D50NR	19834	
		4	AQ1 4B50NR	19843	AQ1 4C50NR	19852	AQ1 4D50NR	19861	
		3	AQ1 3B63NR	19817	AQ1 3C63NR	19826	AQ1 3D63NR	19835	
		4	AQ1 4B63NR	19844	AQ1 4C63NR	19853	AQ1 4D63NR	19862	
	16	6	3	AQ1 3B06HR	19755	AQ1 3C06HR	19764	AQ1 3D06HR	19773
		4	AQ1 4B06HR	19782	AQ1 4C06HR	19791	AQ1 4D06HR	19800	
		3	AQ1 3B10HR	19756	AQ1 3C10HR	19765	AQ1 3D10HR	19774	
		4	AQ1 4B10HR	19783	AQ1 4C10HR	19792	AQ1 4D10HR	19801	
		3	AQ1 3B16HR	19757	AQ1 3C16HR	19766	AQ1 3D16HR	19775	
		4	AQ1 4B16HR	19784	AQ1 4C16HR	19793	AQ1 4D16HR	19802	
20	20	3	AQ1 3B20HR	19758	AQ1 3C20HR	19767	AQ1 3D20HR	19776	
	4	AQ1 4B20HR	19785	AQ1 4C20HR	19794	AQ1 4D20HR	19803		
	25	3	AQ1 3B25HR	19759	AQ1 3C25HR	19768	AQ1 3D25HR	19777	
	4	AQ1 4B25HR	19786	AQ1 4C25HR	19795	AQ1 4D25HR	19804		
	32	3	AQ1 3B32HR	19760	AQ1 3C32HR	19769	AQ1 3D32HR	19778	
	4	AQ1 4B32HR	19787	AQ1 4C32HR	19796	AQ1 4D32HR	19805		
32	20	3	AQ1 3B40HR	19761	AQ1 3C40HR	19770	AQ1 3D40HR	19779	
		4	AQ1 4B40HR	19788	AQ1 4C40HR	19797	AQ1 4D40HR	19806	
		3	AQ1 3B50HR	19762	AQ1 3C50HR	19771	AQ1 3D50HR	19780	
		4	AQ1 4B50HR	19789	AQ1 4C50HR	19798	AQ1 4D50HR	19807	
		3	AQ1 3B63HR	19763	AQ1 3C63HR	19772	AQ1 3D63HR	19781	
		4	AQ1 4B63HR	19790	AQ1 4C63HR	19799	AQ1 4D63HR	19808	

Utilization categories:

- AC-33iB: for system loads including cage motor and resistive loads.
- AC-33B: for motor load or mixture load including motors, resistive load and 30% incandescent load.
- Standard: IEC 60947-6-1