

**W Series Dual-power Automatic Transfer Switches**

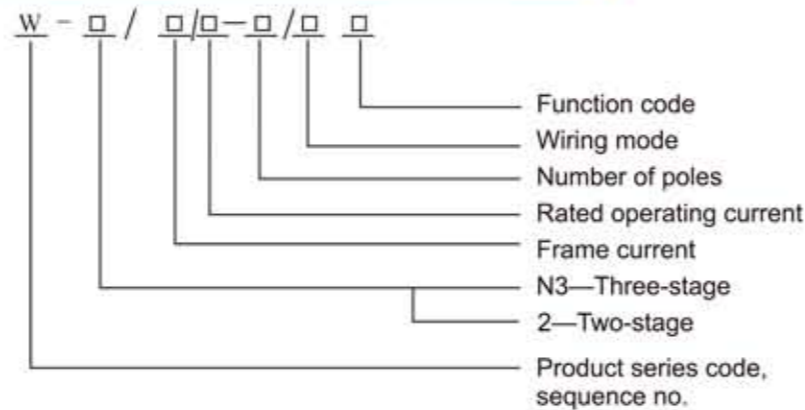
**W Series Dual-power Automatic Transfer Switches**

The W Series belong to the PC level, and include the types of W2 and W-N3.

W-2 is a two-stage automatic transfer switch. After a switching signal is received the switch transfers power immediately from one source to the other without stopping at an OFF position in the middle. The rated current is 20A~500A.

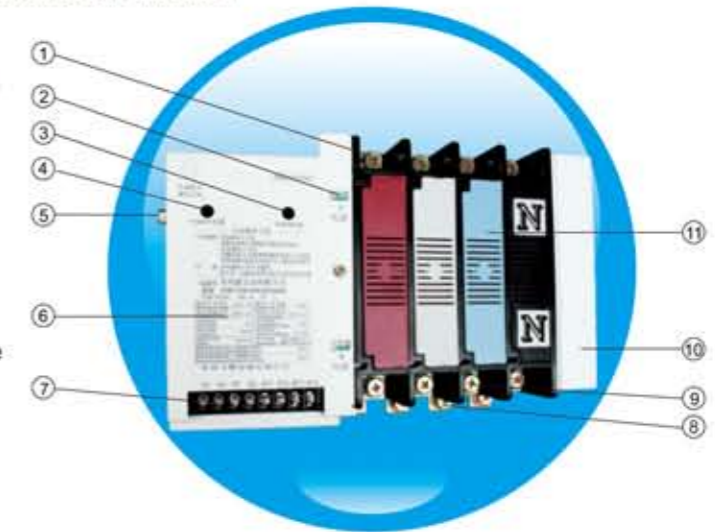
The W-N3 is a three-stage automatic transfer switch. After a switching signal is received the switch may transfer from one power source to another immediately, or after a preset delay, or stop at an OFF position in the middle. The rated current is 20A~5000A.

**I. Product codes and meaning**



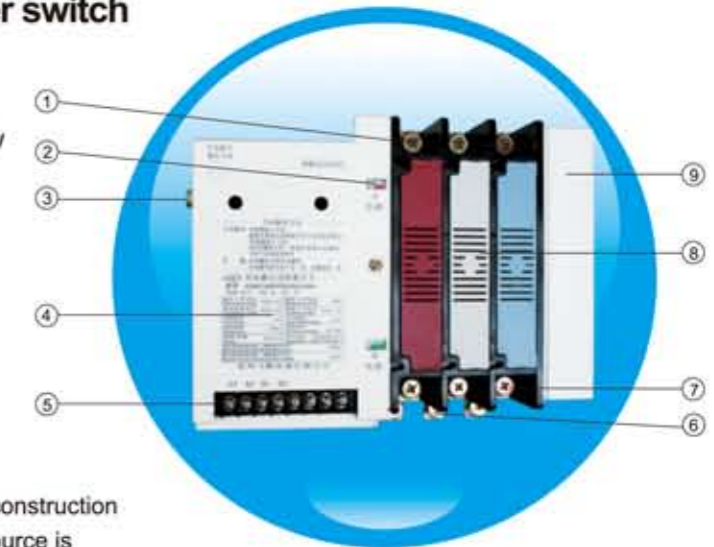
**W-N3 three-stage automatic transfer switch (20-5000A)**

1. Main circuit terminal on A power side
2. Power connection/break indicator window
3. Selection button
4. Release button
5. Square shaft for manual operation
6. Name plate
7. Control power terminal
8. Main circuit terminal on load side
9. Main circuit terminal on B power side
10. Auxiliary contact cover
11. Protective cover



**W-2 two-stage automatic transfer switch (20-500A)**

1. Main circuit terminal on A power side
2. Power connection/break indicator window
3. Square shaft for manual operation
4. Name plate
5. Control power terminal
6. Main circuit terminal on load side
7. Main circuit terminal on B power side
8. Protective cover
9. Auxiliary contact cover



**Characteristics of ATS switches:**

- Reliable mechanical interlock: Special eccentric selection construction to ensure only one power source is connected.
- High arc-quenching performance: Extinguishes abnormal electrical arcing, short duration of electric arcing and low contact loss.
- Multi-disc main arc contract: Enhances the contact area and pressure of contact surfaces, eliminating overheating and contact welding and extending contact lifespan.
- High transfer speed: Rapid transfer between the active power and standby power, allowing a customized transfer delay for an ATS with a controller.
- Simple construction and small volume: Have reliable operation, a low failure rate and are convenient to install and maintain. Allow rotation with a handle during repair for convenient error detection and troubleshooting. The ATS of the W series are at PC level, are smaller than those of CB level, but have a higher current rating.

OFF position: The W-N3 three-stage transfer switch can be moved conveniently from ON to a disconnected OFF position, while the W-2 two-stage transfer switch does not have an OFF position.

Table 1

Product series code, sequence no.	Rated operating current (A)	Number of poles (P)	Wiring mode	Function code
W-N3 W-2	20, 40, 63, 80, 100, . . .	2, 3, 4	F, B	I Standard type
Frame grading current Inm A	63	20, 40, 63	2: Grade 2 3: Grade 3 4: Grade 4  F: Board front wiring B: Board back wiring	
	125	80, 100, 125		
	250	160, 200, 225, 250		
	500	350, 400, 500		
	800	630, 800		
	1250	1000, 1250		
	1600	1600		
	2500	1600, 2000, 2500		
4000	3150, 4000	II Automatic type		
5000	5000			

- Note: 1) Switch equipment has rated operating voltage of AC660V/690V and DC125V/250V, and control voltage of AC100V, 110V and DC110V, 1250V. Other voltage specifications can be provided to special order.  
 2) The communication from the back of the board. This is s interface details need to be specified with the order.  
 3) Switches of 500A or below are typically connected from the front of the board, while that of 500A and above are typically connected considered a special order.

## II. Parameters of W-2 stage transfer switch

Table 2

Type	W-2												
Isolation voltage	AC800V												
Impulse withstanding	8kV												
Rated voltage	AC400V (AC660V/690V, DC125V/250V)												
Rated current (A)	20, 40, 63	80, 100, 125	160, 200, 225, 250	350, 400, 500									
Number of throws	dual throw												
Wiring mode	board front												
Number of poles	2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P	
Weight (Kg)	4.5	5	5.5	5	6.3	6.8	6	6.6	7.3	11	15	18	
Operating current (A)	DC110V/125V	6	6	8	6	6	8	6	8	10	10	10	14
	AC100V/110V	6	6	8	6	6	8	6	8	10	10	10	14
	AC200V/220V/230V	3	3	4	3	3	4	3	4	5	5	5	7
Performance	Short-time withstanding current	10kA						15kA			20kA		
	Rated limited short-circuit current	50kA						65kA					
	Rated limited short-circuit current	100kA						120kA					
	Connection/disconnection capacity	AC-33B (10Ie connected, 10Ie disconnected) cos φ=0.35 (When Ie≤100A, cos φ=0.45) DC-33B(4Ie connected, 4Ie disconnected)L/R=2.5ms											
	Transfer time	Power A→Power B	≤0.2s										
		Power B→Power A											
	Lifespan	Electrical lifespan 6,000 cycles, mechanical lifespan 20,000 cycles											
Operating cycle frequency	120 cycles/hour												
Auxiliary switch	2 normally open and 2 normally closed on power sides A and B; contact capacity: AC 110V 5A/ AC 220V 3A, DC 200V 0.2A												
Accessory	Operating handle												

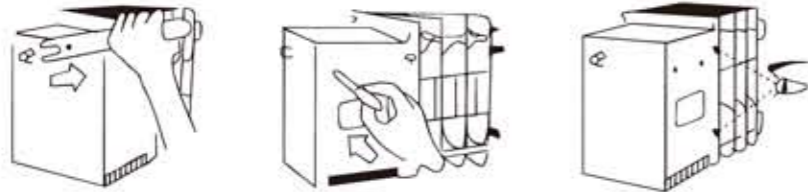
Note: See notes 1) ~ 3) in Table 1.

V. Manual operation methods and notices

The connection and disconnection capacity of the W series switches is ensured under electric operation, but when they are operated manually the capacity is uncertain because the speed with which connection and disconnection is made will vary. Loaded connection and disconnection in manual mode will result in excessive damage to the silver alloy contacts. Therefore, manual operation should only be done during inspection and maintenance of the operating mechanism and contacts, or in the case of an electrical fault.

**Note:** Cut off all the power before manual operation. Make sure the operating handle is removed from the transfer switch after use.

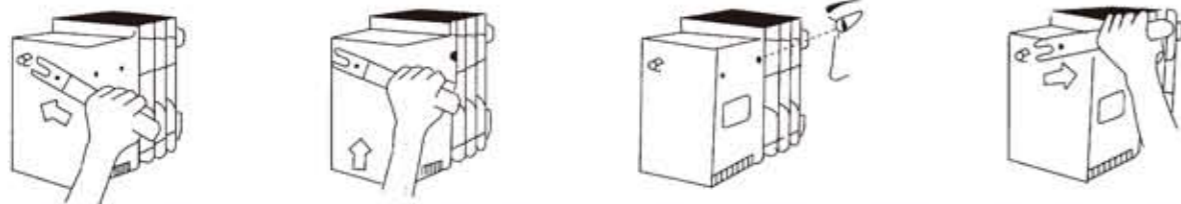
1) Manual tripping is available for W-N3 switches only. The W-2 switches do not have this facility.



After removing the operating handle, insert a screwdriver into the TRIP hole on the left side and push it inwards to trip the switch. Check this in the ON/OFF indicator window.

2) Input method on the A power side

**Note:** For W-N3 switches, perform this step after finishing step 1); for W-2 switches, perform this step before completing step 1).



Fit the operating handle on the square shaft on the left hand side of the switch.

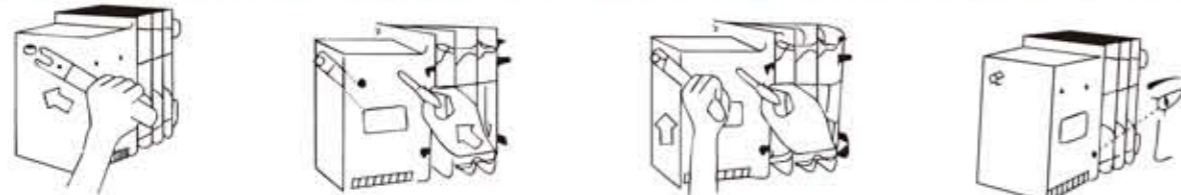
For a W-N3 switch: lift the handle upwards to connect input. For a W-2 switch: turn the handle downwards until you hear two clicks that indicate input.

Check the ON/OFF indicator window to ensure input.

Remove the operating handle after use.

3) Input method on the B power side

**Note:** For W-N3 switches, perform this step after finishing step 1); for W-2 switches, perform this step before completing step 1).



on the square shaft on the left hand side of the switch.

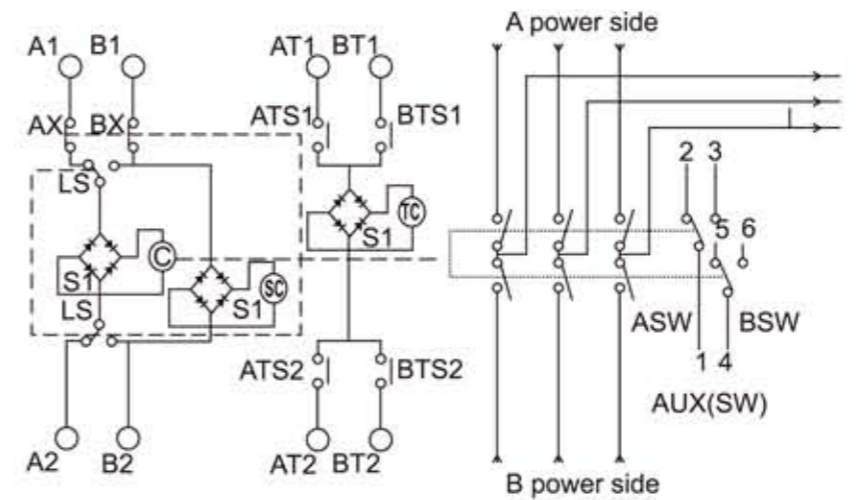
For a W-N3 switch: insert a screw driver into the SELECT hole on the right side and push it inwards. For a W-2 switch: turn the handle downwards until you hear two clicks.

For a W-N3 switch: keep pushing the screw driver and at the same time lift the handle upwards to connect input on the B side.

Check the ON/OFF indicator window to ensure input. Remove the operating handle after use.

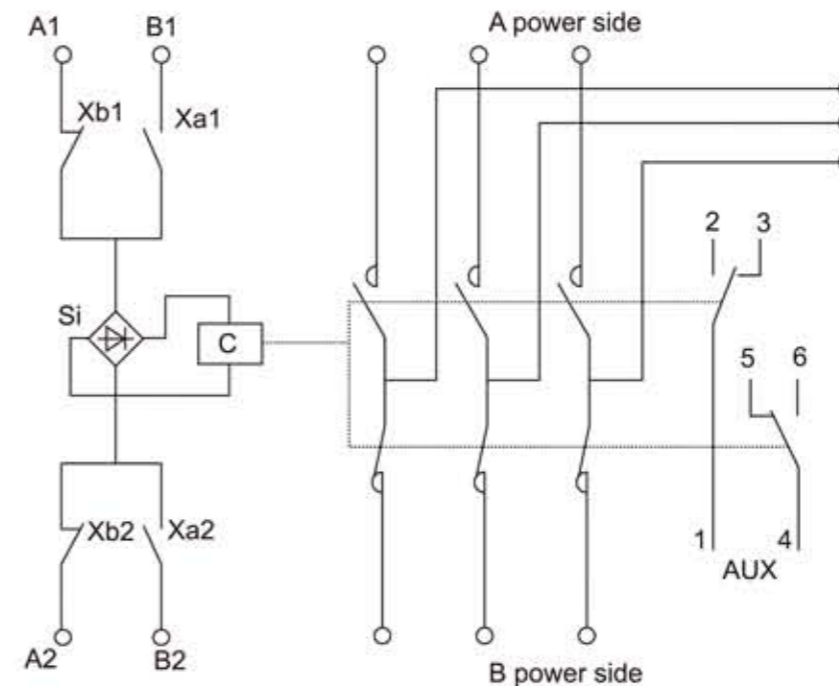
VI. Switch's internal wiring diagrams

1) W-N3 Internal wiring diagram  
Two power sources are OFF.



C= Input coil  
SC= Selection coil  
TC= Tripping coil  
S1= Rectifier  
LS= Selection switch  
ATS1, ATS2=A power OFF terminal  
BTS1, BTS2=B power OFF terminal  
AX, BX=Control switch  
AUX=Auxiliary switch  
A1-A2= Input terminal on A power side  
B1-B2= Input terminal on B power side  
AT1-AT2=Tripping terminal on A power side  
BT1-BT2=Tripping terminal on B power side

2) W-2 (two-stage) internal wiring diagram



Xb1, Xb2: Internal control switch  
Xa1, Xa2: Internal control switch  
C: Input coil  
Si: Rectifier  
AUX: Auxiliary switch  
A1-A2: Input terminal on A power side  
B1-B2: Input terminal on B power side