



Automatic Transfer Switch Catalog

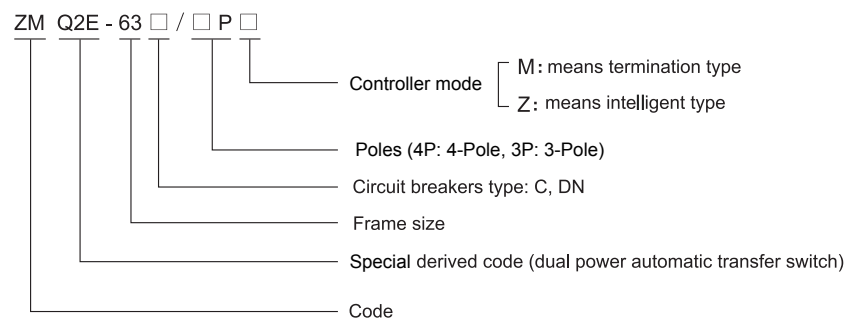




Applications

ZMQ2E dual power auto transfer switch (hereinafter called ATS), is suitable for operating in the power system of AC 50Hz, rated operating voltage 400V, rated current 63A and below, to perform the shift between two power sources according to the requirement. The product has the protection functions of overload, short circuit, under-voltage, etc., and provides firefighting, dual OFF and output the signal of closing. It is especially suitable for the illuminating circuits of commercial building, marketplaces, banks, and high buildings where need firefighting function.

ATS Type and Meaning



Working Conditions

- ◆ Altitude: no more than 2000m for the installation site.
- ◆ Ambient temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, and the average is no more than $+35^{\circ}\text{C}$ within 24 hours.
- ◆ Relative Humidity: no more than 50% RH at the highest temperature of $+40^{\circ}\text{C}$; higher relative humidity is allowable at lower temperature, for example, RH could be 90% at $+20^{\circ}\text{C}$. Some measures should be taken for the condensation occasionally due to the temperature change.
- ◆ Pollution degree: Class 3
- ◆ Mounting conditions: ATS shall be mounted in the place that has no impact and vibration, as well as no access of snow and rain.
The upper terminals of ATS are connected to power source, and the bottom terminals are connected to the load side. The ATS sloping angle against the vertical shall not exceed 5° .
- ◆ Installation category: III
The outer magnetic field around the mounting place shall not exceed 5 times of earth field.

ATS Structure & Working Principle

ZMQ2E dual power automatic transfer switch consists of two pieces of miniature circuit breaker, motor, controller and drive mechanism. The ATS has three positions for users' choice, i.e., normal power ON, dual OFF, standby power ON. High breaking miniature circuit breaker is used for the ATS which has same performances as it is. This automatic transfer switch features simple structure, practical, easy operation, no noise, small impact, long service life, etc. The ATS carries out the detection for two loops of power supply by its controller. When one loop has fault, ATS controller will give a logic decision and send a commanding of closing and opening the related operating mechanism, so as to guarantee the safe and reliability of power supply.

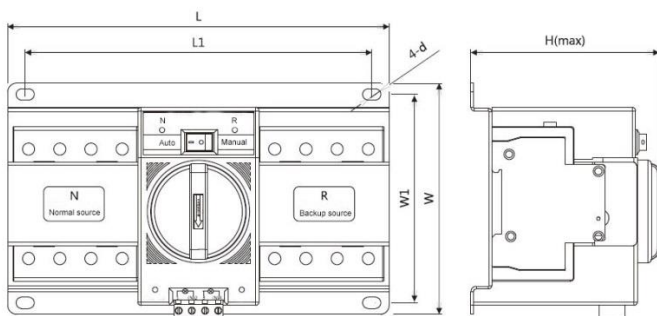
ATS Specifications

Model		Powerhome-ZMQ2E
Use Category		AC-33iB
Rated Operating Voltage Ue		220~400V AC
Rated Operating Frequency		50 Hz /60Hz
Rated Operating Current Ie (Optional)		6A, 10A, 16A, 20A, 25A, 32A, 40A, 63A
Switching Control Voltage		220V AC
Rated Insulation Voltage Ui		690V AC
Transfer Action Time		<3s (preset)
Service Life	Electrical	1,500 Times
	Mechanical	6,000 Times
Rated Short-circuit Making Capacity Icm		7.5kA
Rated Ultimate Breaking Capacity Icu		5kA
Miniature Circuit Breaker Type (Optional)		C or D (Trip characteristic)
Number of Poles (Optional)		3-Pole or 4-Pole
ATS Controller Model (Optional)		Terminal type or Intelligent type

Basic parameters of terminal type and intelligent type of ATS

ATS Controller Model (Optional)	Terminal type	Intelligent type
Installation Method	Integrated	Integrated
Operation Method	Auto & Manual	Auto, Manual and Dual OFF
Monitoring Function	Phase failure detection	Three-phase under voltage, phase loss and phase failure detection
Conversion Method	Auto switch and auto reset	Auto switch and auto reset
Firefighting Linkage Control	N/A	Dual OFF with 12-24V DC input (Automatic cut-off function for fire)
Display Function	Signal lamp indicator	Signal lamp indicator

ATS Dimensions



Type	External Dimensions			Mounting Dimensions		
	L	W	H	L1	W1	φ d
4-pole ATS	220	132	120	200	120	4
3-pole ATS	185	132	120	165	120	4

Installation

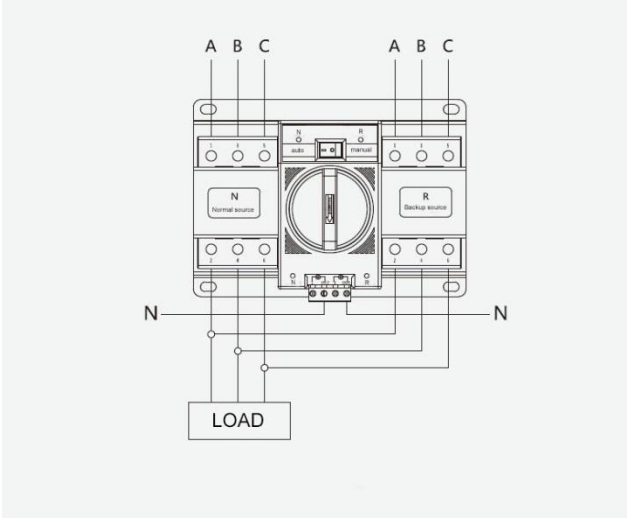
◆ Connected conductor for ATS

The used conductor for ATS is single core PVC insulated copper cable or equivalent copper busbar, and the cross-sectional area is determined according to the below table.

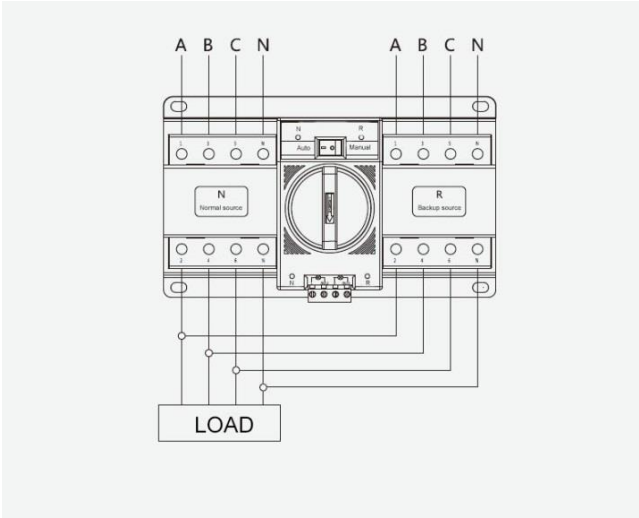
Rated Current (Amp)	6A	10A	16A/20A	25A	32A	40A/50A	63A
Cross-sectional area of conductor or copper busbar (mm ²)	1.0	1.5	2.5	4.0	6.0	10	16

◆ Wiring diagram of automatic transfer switch

1. ATS with 3-pole circuit breaker

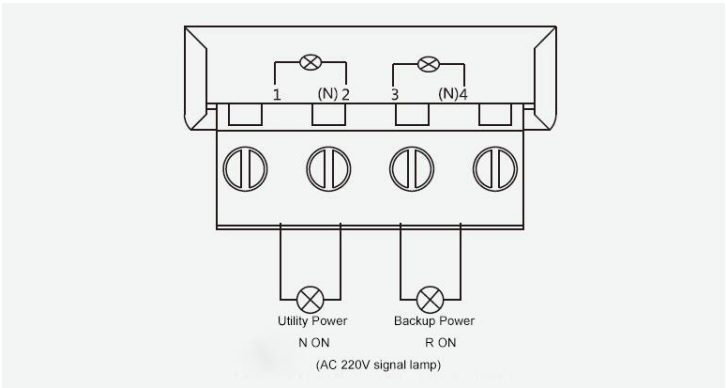


2. ATS with 4-pole circuit breaker

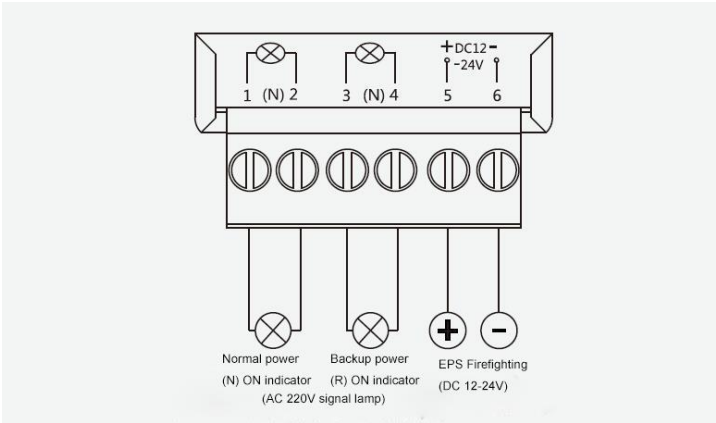


◆ Wiring diagram of ATS output terminals

1. Terminal-type ATS output ends wiring



2. Intelligent-type ATS output ends wiring

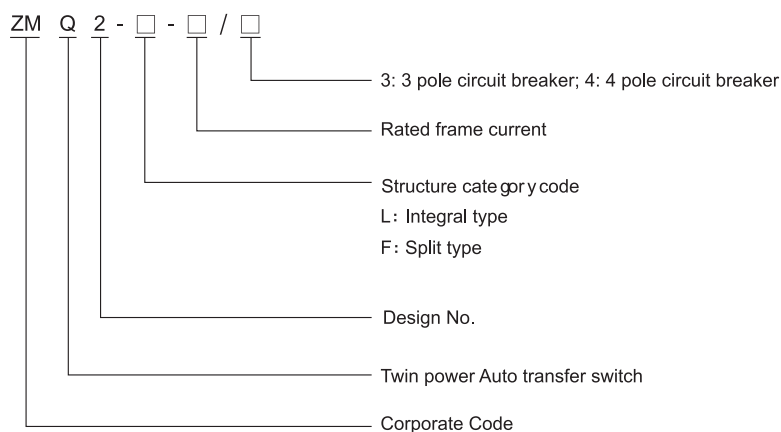


Applications



ZMQ2/F series intelligent self-protection dual power automatic transfer switch (hereinafter referred to as ATS) is suitable for rated working voltage AC 400V, 50Hz, rated current 16A ~2000A. This ATS is used as mutual conversion between common power supply (N) and standby power supply (R) in emergency power supply system (can also be set manually.) and also as a switch to control circuit with functions of controlling, signaling, interlocking, etc. Some models of this series ATS are designed with communication port, which enables remote control; that is to say, it allows users to achieve unattended substation. The ATS is suitable for residential areas, military facilities, hospitals, shopping malls, airports and other places.

ATS Type and Meaning



Working Conditions

- ◆ Altitude: no more than 2000m for the installation site.
- ◆ Ambient temperature: -5℃ ~ +40℃, and the average is no more than +35℃ within 24 hours.
- ◆ Relative Humidity: no more than 50% RH at the highest temperature of +40℃; Higher relative humidity is allowable at lower temperature. Some measures should be taken for the condensation occasionally due to the temperature change.
- ◆ Mounting conditions: ATS shall be mounted in the place that has no explosive medium, as well as no impact and vibration.

ATS Structure

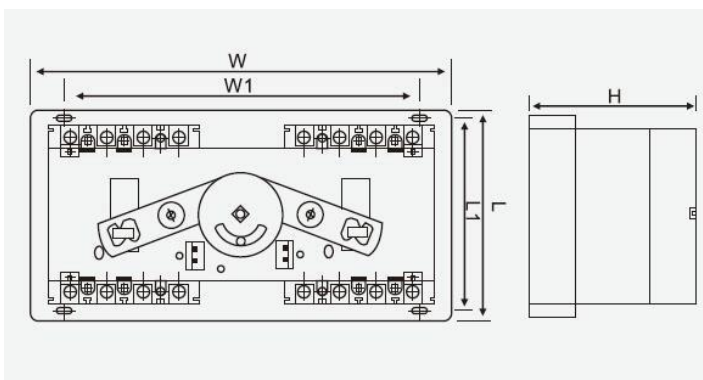
The intelligent ATS mainly consists of two parts: microcomputer controller and switching device, and a dedicated cable connects between the two.

More specifically, the switch is constituted of microcomputer controller, micro-motors, gear machine, micro switch, keyboard, LGD display, molded case circuit breakers and other components. It features automatic and manual operation, machinery and electrical double interlock, so as to meet supply and distribution needs to maximum extent. There are three switching positions at working for users' selection: common power supply (N) ON, Dual OFF, standby power (R) ON. The ATS has small size, light weight, stable running, and easy operation.

Main Technical Data

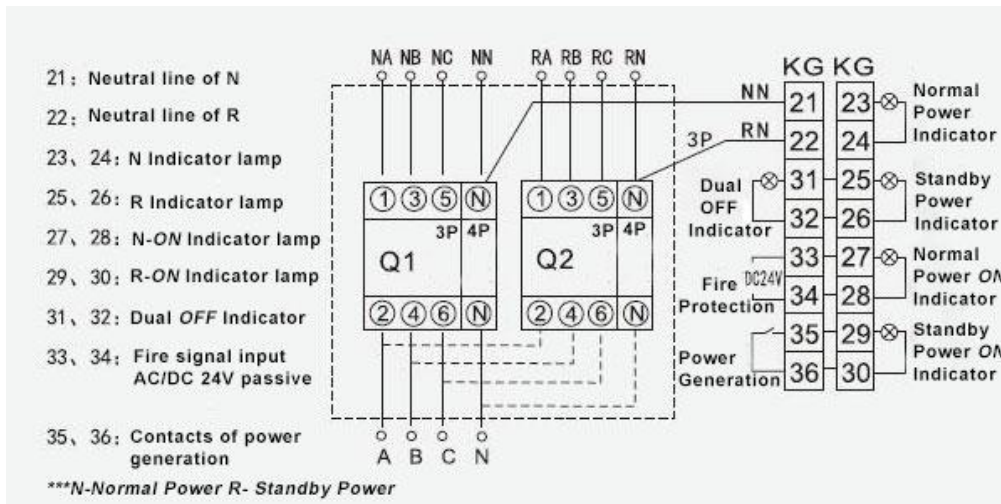
Type	ZMQ2F/L-100/3	ZMQ2F/L-225/3	ZMQ2F/L-400/3	ZMQ2F/L-630/3	ZMQ2F/L-800/3	ZMQ2F/L-1250/3
	ZMQ2F/L-100/4	ZMQ2F/L-225/4	ZMQ2F/L-400/4	ZMQ2F/L-630/4	ZMQ2F/L-800/4	ZMQ2F/L-2000/3
Frame Current (A)	100	225	400	630	800	2000
Rated Operating Current (A)	10, 16, 20, 32, 40, 50, 63, 80, 100	100, 125, 140, 160, 180, 200, 225	200, 250, 315, 350, 400	250, 315, 350, 400, 500, 630	630, 700, 800	1250, 1600, 2000
Rated Working Voltage	400V					
Insulation Voltage	2500V, no flicker and no breakdown for one minute					
Frequency	50~60Hz					
Delay Time	0~30s (Adjustable)					
Rated Working Voltage of Controller	AC 230V					
Mechanical Life	5,000 times					

ATS Dimensions (Split & integrated type)

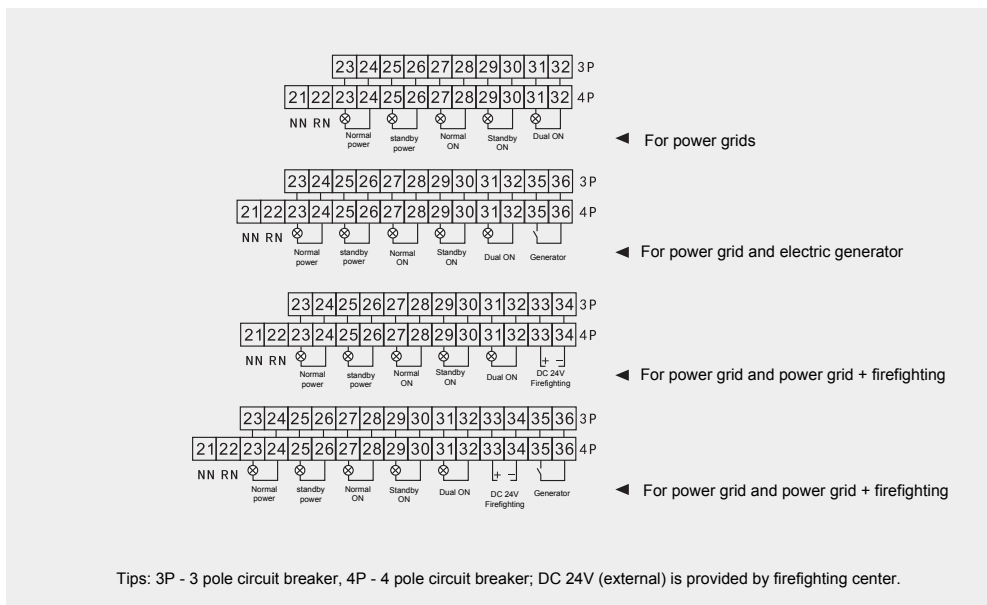


Type	W	W1	L	L1	H
ZMQ2F/L-100/3	390	350	210	190	120
ZMQ2F/L-100/4	495	460	210	190	135
ZMQ2F/L-225/3	430	395	215	195	140
ZMQ2F/L-225/4	545	510	215	195	140
ZMQ2F/L-400/3	565	510	310	285	190
ZMQ2F/L-400/4	635	585	320	285	190
ZMQ2F/L-630/3	630	575	320	295	195
ZMQ2F/L-630/4	715	665	320	295	195
ZMQ2F/L-800/3	710	655	335	315	190
ZMQ2F/L-800/4	785	725	335	315	190
ZMQ2F/L-1250/3	735	680	480	365	280
ZMQ2F/L-2000/3	800	750	480	365	280

ATS Installation



- *The above wiring diagram is just for your reference. With the different types and functions, the wiring is also different.
- *When the fire takes place, EPS signal is on (provided by firefighting center) and the circuit breakers Q1 & Q2 is released or cut off.
- *Q1 and Q2 refer to circuit breakers.
- *KG refers to the wiring terminals.
- *The R & N power ON indicator lamp is external (provided by users).
- *The dashed part is supplied by users.

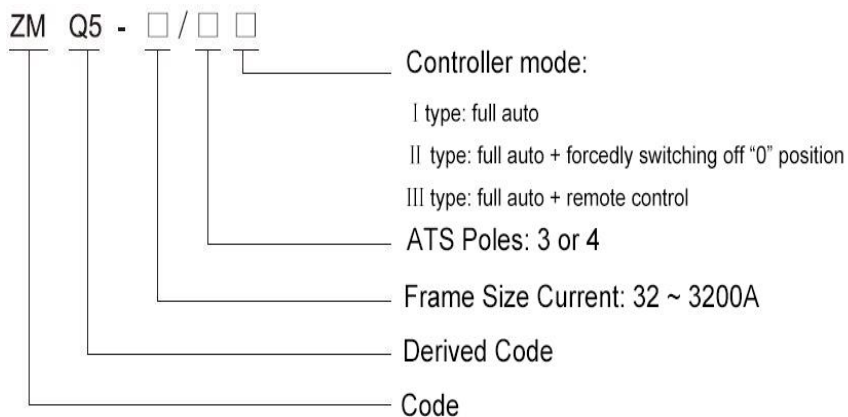




Application

Auto transfer switching equipment (ATSE) or Automatic transfer switch (ATS) is a device that integrates the switching function with logic control, to realize electromechanical integration function. It is suitable for the distribution system of AC 50Hz, rated voltage 400V and conventional thermal current up to 1600A in mineral and other enterprises. This ATS has voltage detection, forcedly switching off "0" position, manual operation for emergency and so on. It can be widely used to shift between normal power and standby power or two loading equipment, or perform safe isolation, etc. The control circuit board of ATS will govern the motor through logic commands and then the motor will drive the operating mechanism of main body of ATS, to quickly connect or disconnect the circuit or switch the between, so that the safe isolation of main switch is obviously achieved.

ATS Type



Main Technical Data

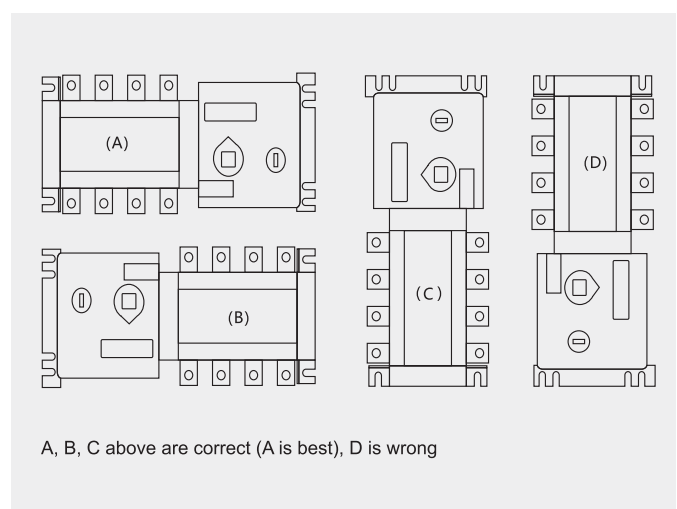
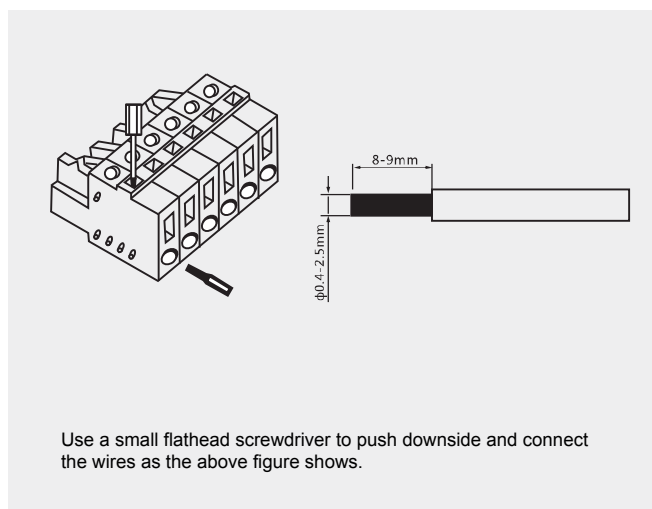
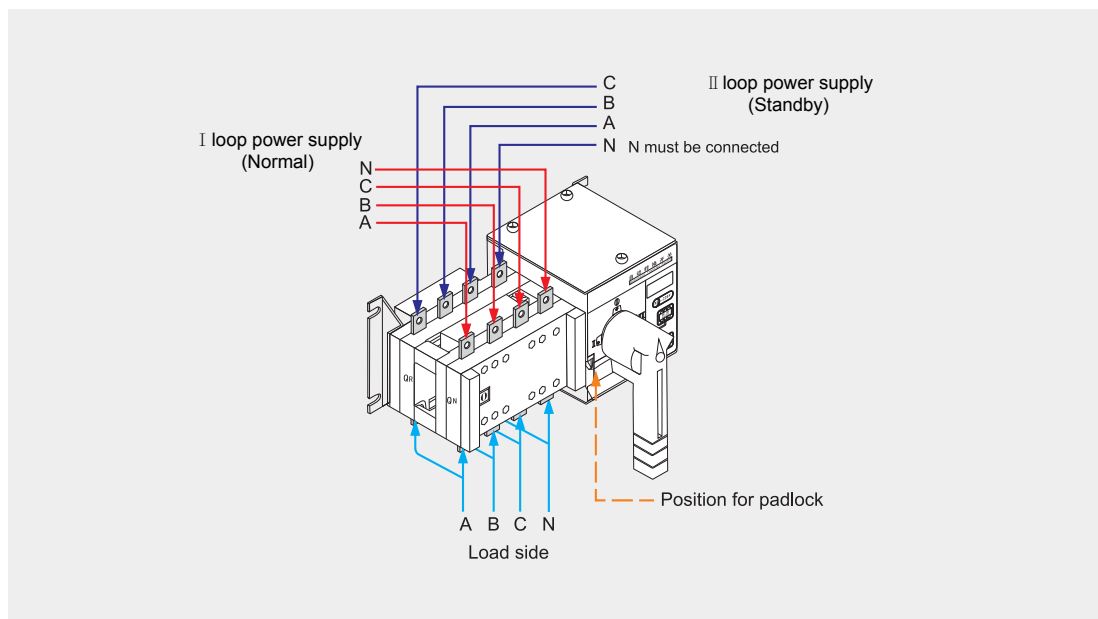
◆ Basics

Rated Operating Voltage (Ue): AC 400V
 Rated Insulation Voltage (Ue): AC 690V
 Rated Operating Current (Ie): 100~3200A
 Control Supply Voltage: DC 24V, DC 48V, AC 230V
 Complied Standard: IEC6094-6-1, GB14048.11-2008
 ATS Poles (Optional): 3-pole or 4-pole
 Controller Mode (Optional): type I, type II, or type III

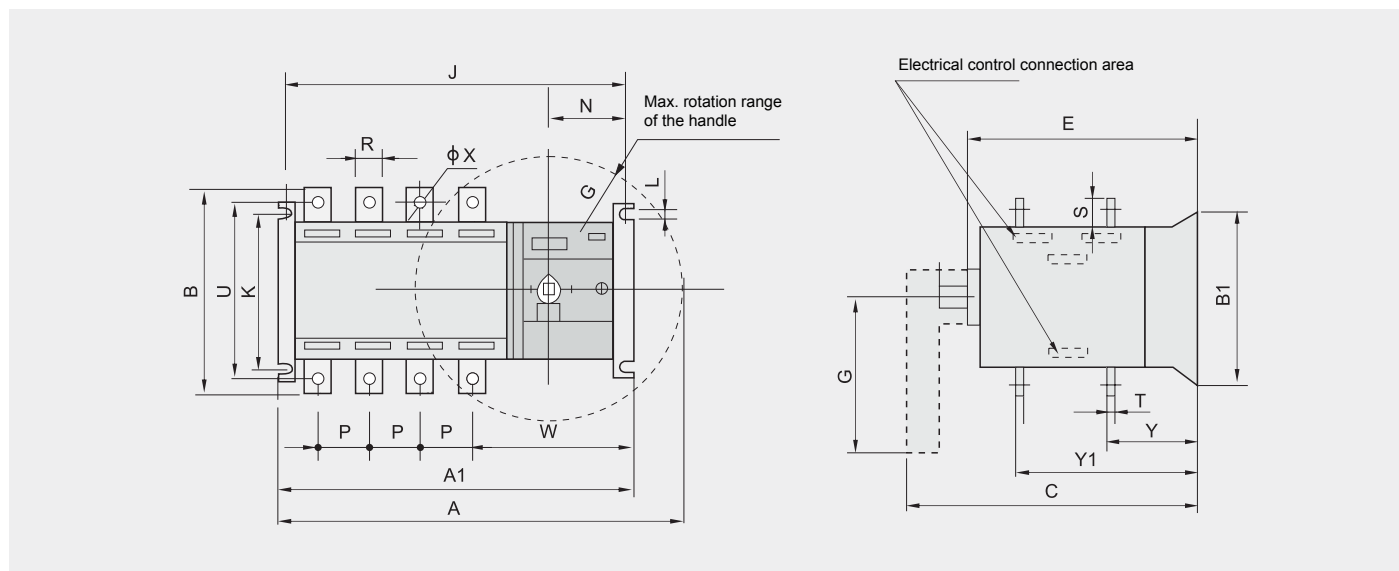
◆ Specification

Conventional Thermal Current (A)		100	160	250	400	630	1000	1250	1600	2000	2500	3200
Rated Insulation Voltage		750V					1000V					
Rated Impulse Withstand Current		8kV					12kV					
Rated Operating Current (A)	AC-31A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-35A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
	AC-33A	100	160	250	400	630	1000	1250	1600	2000	2500	3200
Rated Short-time Withstand Current		7kV	9kV		13kV			50kV				55kV
Rated Short-circuit Current Limit		100kA			70kA		100kA	120kA		80kA		
Control Supply Voltage		DC 24V, 48V, AC 110V, 220V										
Conversion Time (s)		0.5	1	1.1	1.2		1.25			2.45		

ATS Wiring Diagram & Mounting



ATS Dimensions



Type	Dimensions																			
	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
100A/3	235	232	106	105	134	133	115	221.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
100A/4	247	244	106	105	134	133	115	233.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
125A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
125A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
160A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
250A/3	356	312	170	142	261	208	145	293	102	7	91	50	25	30	3.5	142	158	11	60	145
250A/4	406	362	170	142	261	208	145	343	102	7	91	50	25	30	3.5	142	168	11	60	145
400A/3	487	368	260	222	284	273	189	351	180	9	93	65	32	40	5	222	168	11	83	193
400A/4	552	433	260	222	284	273	189	416	180	9	93	65	32	40	5	222	203	11	83	193
630A/3	487	368	260	222	284	273	189	351	180	9	93	65	40	50	6	222	203	12	83	193
630A/4	552	433	260	222	284	273	189	416	180	9	93	65	40	50	6	222	203	12	83	193
800A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	203	12.5	109	254
800A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
1000A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
1000A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
1250A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	8	250	207	13	110	255
1250A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	8	250	207	13	110	255
1600A/3	676	519	357	250	363	350	443	499	220	11	87	120	80	69	10	250	207	13	110	255
1600A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	10	250	207	13	110	255
2000A/4	800	464	405	247	480	467	447	613	215	12	84.5	120	80	112	10	244	204.5	13	105	317
2500A/4	800	646	427	247	480	467	447	613	215	12	84.5	120	80	113	15	244	204.5	13	98	314
3200A/4	800	646	458	247	480	467	447	613	215	12	84.5	120	120	118	15	244	204.5	13	101	313

Terminal Diagram

Output Connection	Inside the unit	Terminal Colour
AC200V ----- I AC200V ----- II AC200V ----- 0 ----- 101 102 103 104 105 106 Output 2nd power source	Terminal Main Power 230VAC 0V Standby Power 230VAC 0V 101 102 103 104 105 106	
Instruction/automatic selection Common Contact. Position I Position 0 Position II 201 202 203 204 205 206 Control	Terminal Instruction/automatic selection 220V Common Contact. I 0 II 201 202 203 204 205 206	
Common Contact. Position I Position 0 Position II 301 302 303 304 305 306 Position Indication	Terminal Position Position I Position 0 Position II 301 302 303 304 305 306	
Position I Position II 401 402 403 404 405 406 The First Pre-break-off Auxiliary Contact	Terminal Pre-break-off Position I Position II 401 402 403 404 405 406	
“manual” the contact off “Auto” the contact on mode padlock “Padlock” the contact off “Non Padlock” the contact on 501 502 503 504 505 506 Indication Auto/manual mode and padlock	Terminal Padlock mode Auto/manual mode Padlock 501 502 503 504 505 506	