

A.T.S. AUTOMATIC TRANSFER SWITCH OPERATION MANUAL



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1. Summary

SGQ Automatic Transfer Switch (ATS) is used in conditions from AC660V 50/60HZ to DC250V which under electromagnetism drive structure. SGQ ATS can make fast load transfer (transfer from <80ms) of 2 way power supply. Also ATS can be widely used in high buildings, post, telecommunications, mines, ships, industry, health care, military facilities and so on. 2-way power can be grid, auto start genset, storage battery and etc.

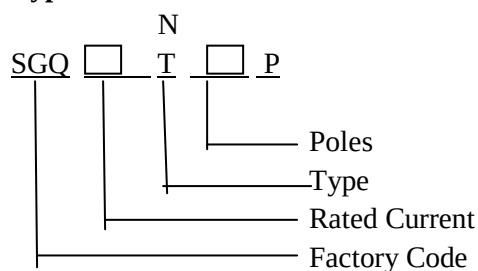
2. Operating Conditions

Item	Specification
Operating Voltage	AC220V (176-265)V
Ambient Temperature	(-40-+70)C
Humidity	(20-90)%
Installation Altitude	<500m
Pollution Class	3
Installation Category	IV
Installation Gradient	<22.5

3. Classification

Type	Capacity	Specification
N	<125A	63A,125A
T	160A-630A	160A,200A,250A,400A,630A
M	630A-1250A	630A,800A,1000A,1250A
Note: All types of ATS series have 3 poles and 4 poles (only 63A and 125A have 2-pole switch).		

4. Type Instruction

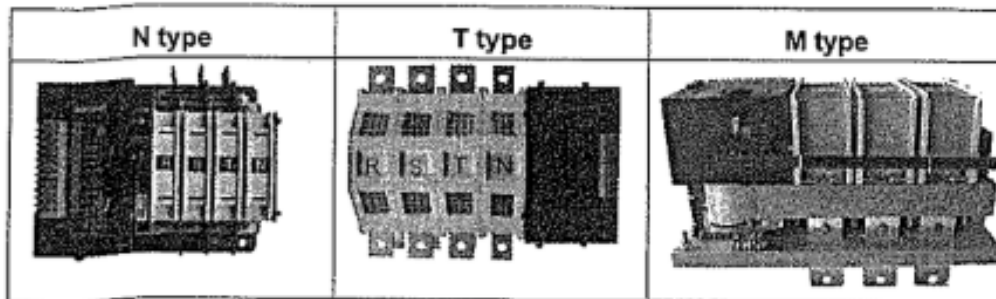


5. Structure

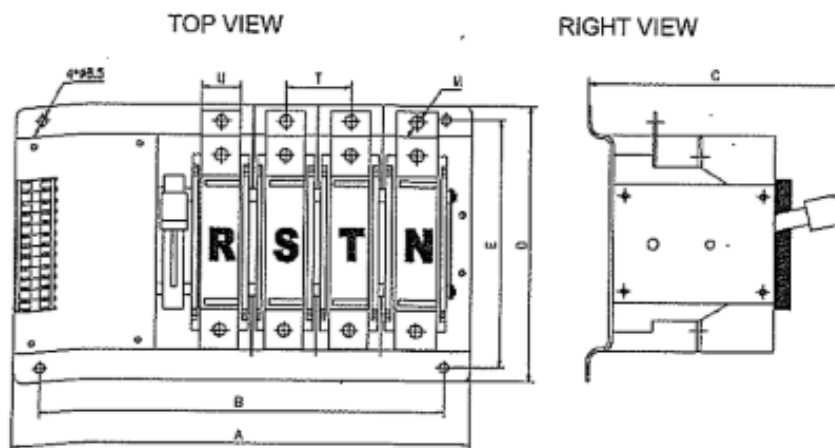
SGQ Automatic Transfer Switch (ATS) adopts the structure of magnet coil driving and interlocking of electric and mechanical. The structure of major loop contact consists of one dynamic and two static contacts. And the dynamic contact is in "V" type design, in order to ensure there is no short circuit of the 2 way power supply. "N" and "T" type use structure of double coils while "M" type uses single coil operation, that only energizes the coil while it is transferred can extremely extend the using life of the switch. The control power of coil is supplied from priority AC power, so there is no need to add

another control power. The switch has electric and mechanical close indication by itself and also offers 2 way NO/NC voltage free auxiliary contacts at the same time.

6. Case Dimensions



6.1 Case dimensions and technical data of “N” type



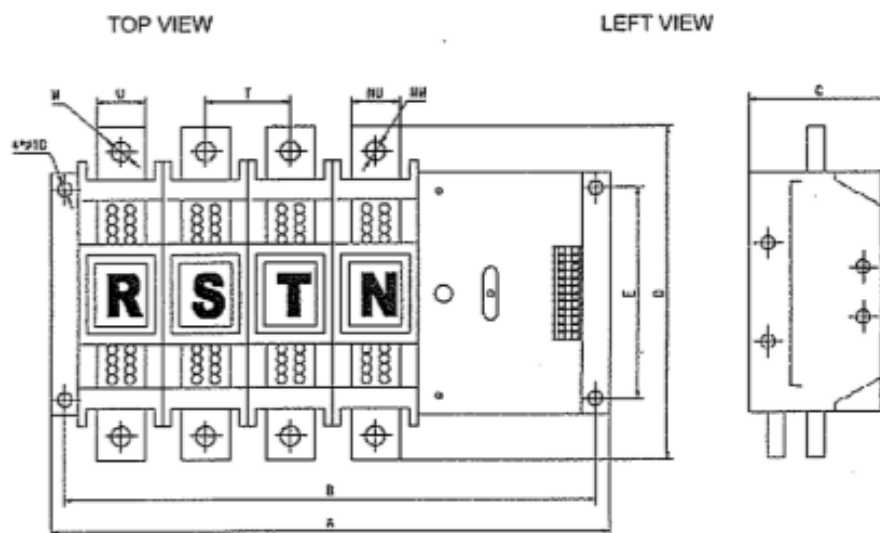
Case dimensions of “N” type

Specification	Case size					Installation size				Copper bar		
	A2P	A3P	A4P	D	C	B2P	B3P	B4P	E	M	U	T
Q63N	172	200	228	186	155	139	167	195	165	5	12	27
Q125N	193	228	265	186	155	159	195	231	165	1	20	37

Technical data of “N” type

Type		Q63N			Q125N		
Rated current (A)		63			125		
Operation current (A)		3.5					
Rated short-time with stand current (A)		5					
Working time (times)	Mechanical	5000					
	Electric	1000					
Number of poles		2P	3P	4P	2P	3P	4P
Net weight (kg)		4	4.5	4.7	4.5	5	5.65
Operation cycle (second / times)		15					

6.2 Case dimensions and technical data of “T” type



Case dimensions of “T” type

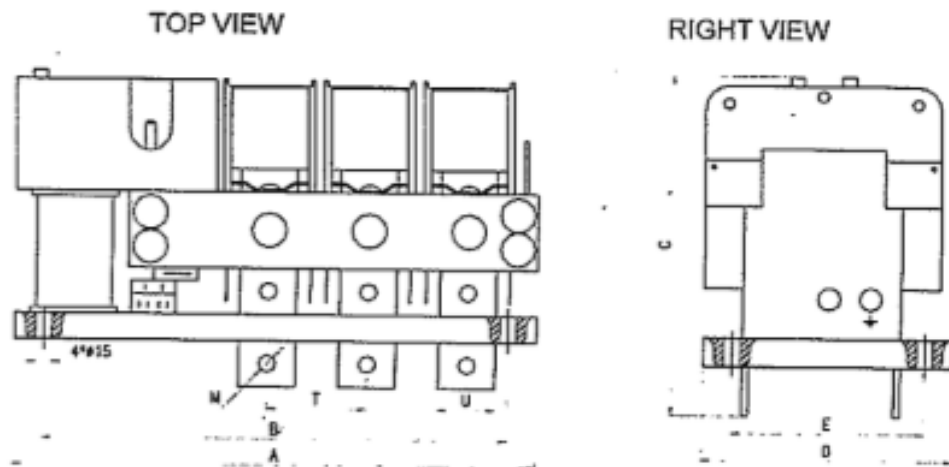
Type (A)	Case size				Installation size			Copper bar				
	A3P	A4P	D	C	B3P	B4P	E	M	NM	U	NU	T
Q160T	326	375	292	150	309	357	200	9	9	20	20	50
Q200T	326	375	292	150	309	357	200	9	9	20	20	50
Q250T	326	375	292	150	309	357	200	9	9	20	20	50
Q400T	355	406	292	150	337	387	200	11	9	30	20	60
Q630T	364	424	310	150	345	408	200	15	15	40	30	64

(NU and NM are dimensions of N bar corresponded to 4P switch)

Technical data of “T” type

Type		Q160T		Q200T			Q250T		Q400T		Q630T
Rated current (A)		160		200			250		400		630
Operation current (A)		7									
Rated short-time with stand current (A)		10									
Working time (times)	Mechanical	5000					3000			2500	
	Electric	1000					1000			500	
Number of poles		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
Net weight (kg)		16.5	18.5	16.5	18.5	16.5	18.5	18	20	20	22
Operation cycle (second / times)		15									

6.3 Case dimensions and Technical data of “M” type



Case dimensions of “M” type

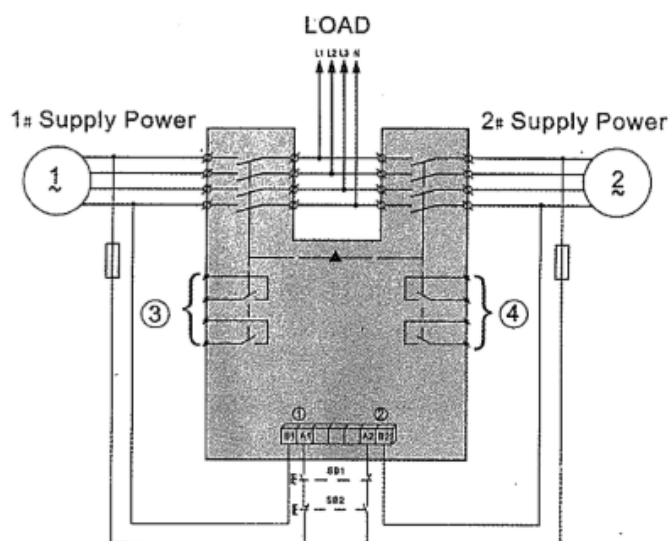
Specification	Case size				Installation size			Copper bar		
(A)	A3P	A4P	D	C	B3P	B4P	E	M	U	T
Q630M	510	600	260	340	470	562	210	12	30	90
Q800M	510	600	260	340	47	562	210	15	40	90
Q1000M	510	600	260	340	470	562	210	15	45	90
Q1250M	510	600	260	340	470	562	210	15	55	90

Technical data of “M” type

Type		Q630M		Q800M		Q1000M		Q1250M	
Rated current (A)		630		800		1000		1250	
Operation current (A)		16							
Rated short-time with stand current (A)		15		18		20		25	
Working time (times)	Mechanical	2500							
	Electric	500							
Number of poles		3P	4P	3P	4P	3P	4P	3P	4P
Net weight (kg)		42.3	49.7	45.3	54.4	48.3	59.4	51.3	64.5
Operation cycle (second / times)		15		20		25		25	

7. ATS Wiring diagram and Working principal

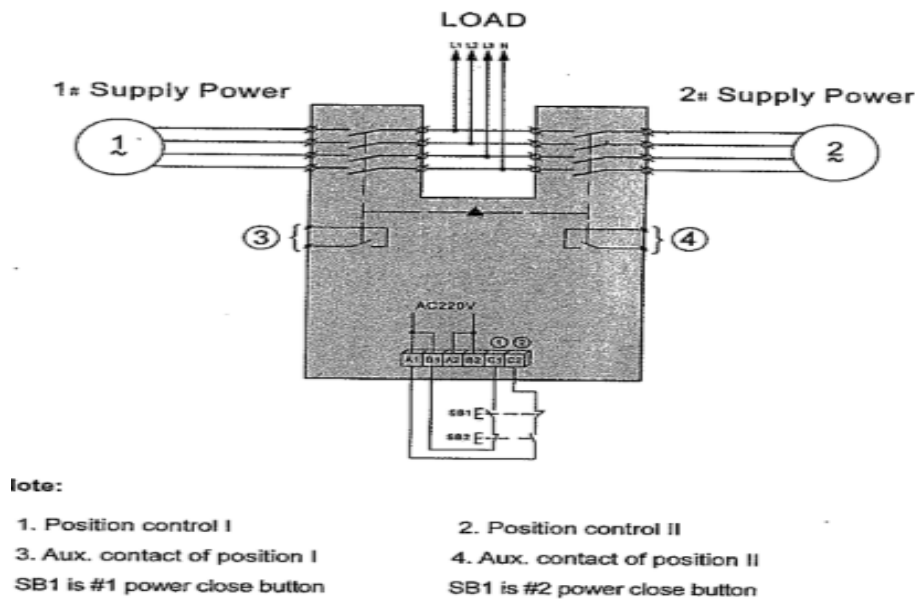
7.1 Wiring diagram of “N” type and “T” type



Note:

- | | |
|-------------------------------|--------------------------------|
| 1. Position control I | 2. Position control II |
| 3. Aux. contact of position I | 4. Aux. contact of position II |
| SB1 is #1 power close button | SB1 is #2 power close button |

7.2 Wiring diagram of “N” type and “M” type



8. Installation and Debugging

The installation and debugging of ATS must be operated by qualified electrician who have extensive knowledge about the switch device. Protection and preventive measures must be considered during the operation. The connection of switch major loop must make its down-lead away from any pressure and strong force. Before installation and debugging, it is necessary to check if there is any damage to switch or any harmful condition. Meanwhile, check if the wire connection is loose during transportation.

Also clean the smudge, especially any smudge on the surface of insulation parts. The smudges could be caused from the packing materials during transportation or storage. When connecting main loop, make sure that phase sequences of 2 way power are as same. Operators must strictly follow to wiring diagram in the manual when connecting to the second loop and pay attention to control the voltage class of power. Switch must be grounded when installing. Operators must consider personal safety and rapidity of switch transfer, the debugging handle should only be used for testing and use should never operate it with load. When debugging, use the handle to operate the switch firstly. If everything goes well you can start the power-driven operation with manual button. ATS enters into normal running when there is no error.