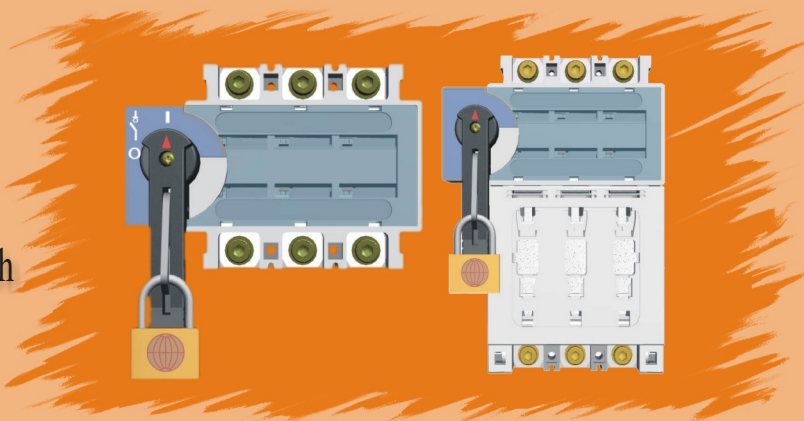


State High-tech Enterprise  
State exemption Products  
Shanghai Famous Brand



## SG5 series load-isolation switch

SGR5 series  
fuse combination units load isolation switch



- Novel, exquisite, practical
- Small volume, be able to operate in making or breaking with load (800A and below)
- Various wiring types, protection grade up to Ip30, reliable in safety of use.
- Parallel double breakpoint, big isolation
- Direct indication of contact's ON/OFF status
- The fuse combination unit isolation switch has the function of interlocks.



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2007

Shanghai Huatong Electricity Co., Ltd was founded in 1982. It is a key state high and new-tech enterprise whose core business is engaged in manufacturing and distributing high and low voltage electric apparatuses and complete sets of switchgear equipment. Most of our products are well known in the industry, such as ZW1 series Intelligent Air Circuit Breaker, SM40 series Moulded Case Circuit Breaker and SQ40 series Auto-transfer Switch are highly demanded by our customers and also are highly paid close attention to by our fellow competitor due to our infinite creative renovation in technology.

We have been equipped with advanced soft-hardware products exploitation and research centre, machining centre, verifying-centre, moulded-case centre, sales transaction centre, cooperation with pressing-punch workshop, spot-welding workshop, fitting-on workshop, debug workshop, and package workshop. Meanwhile, we have fetched in modern robot auto-welding station, boring mill station, large scale laser cutting station, three dimensional coordinate admeasuring apparatus, other auto-check precise equipments. We pay high attention to our material quality from the very beginning, with strict supervision in components machining until final-end product to make our products' process and design meet and exceed to the international standardization.

We mainly produce and distribute products including Moulded-case Circuit-breaker, Intelligent Air Circuit-breaker, Automatic Transfer Switch, Terminal Apparatus, Load-isolation Switch, AC Motor Soft-starter, Outdoor High-voltage Vacuum Circuit-breaker, Outdoor High-voltage Vacuum Isolating Load Switch, Outdoor AC High-voltage Vacuum Circuit-breaker, High and Low-voltage complete sets equipments, DC power supply cabinet and so on. All these products have obtained CCC certificates issued by China Quality Centre .All products are insured against product liability with PICC. And all of them have been used widely in national defense, traffic hinge, electric power or plants, communication and finance field, medical treatment and sanitation system, education industry, administration, hotel and restaurant, commerce net, house project, and other synthesis engineering. The quantity of our product and sales has continuously been occupying the front of the industry related since many years ago. Furthermore, the quality of our products and our services are both highly appraised by our national and oversea customers.

Totally with around 500 employee, among them around 40% are high educated from national famous university and now so many of them are super engineer in their position. We have always been seeking persons with ability for we believe “No talents No development” simultaneously ,We have been striving to keep great faith in our customers for we believe in “Customer is god” We have also been pursuing our brand connotation “Rooting in china, Erecting in East, Open up to the world, Developing with five continents!” Sustainability is integral to all aspects of our business. We strive to balance economic, environmental, and social objectives and integrate them into our daily business decisions to create more value to all our stakeholders. Our mission is to become a well-known global company that specializes best in electrical intelligence with innovative solutions and services.



# Catalogue

4

## SG5series load-isolation switch SGR5series fuse combination units load isolation switch

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### Patent product, counterfeit not allowed!

Patent No.: Z L 2 0 0 6 1 1 5 1 1 5 . 1    Z L 2 0 0 6 1 1 5 1 1 4 . 7  
                  Z L 2 0 0 6 1 1 5 1 1 2 . 8    Z L 2 0 0 6 1 0 0 9 6 6 2 0 . 5  
                  Z L 2 0 0 6 1 1 5 1 1 3 . 2    Z L 2 0 0 6 2 0 1 2 6 3 5 3 . 7



## ◆ Outline

SG5 series load-isolation switch is an upgrade new product developed by our company with its main structure features in conformity with the state patents.

There are deprived products types of outer-box operation, rear-board wiring, isolation switch with fuse disconnecter group, automatic power converting load isolation switch and so on. And widely used in the construction, power, chemical and other industries in transmission and distribution and automated systems.

## ◆ Scope of Application

SG5 series load-isolation switch is applicable in the circuit of AC 50Hz, rated current 100 A~3150 A (1000 A and above only for electric appliance isolation), rated insulating voltage 800 V and below, rated working voltage 690 V and below. And it is used in the circuits of the distribution or the networks of the motors for non-frequent making, breaking, and isolating.

SGR5 series fuse combination units load isolation switch is applicable in the circuit of AC 50Hz, rated insulating voltage 800V, rated current 63A~630A, rated working voltage 400V and below in the circuits of the distribution or the networks of motors to distribute the power. Normally with utilization for non-frequent making, breaking, short-circuit protection and isolation

## ◆ Conformed standards

IEC60947-1, IEC60947-3, GB/T 14048.1-2000

《Low-voltage switchgear and control-gear general rules》

IEC60947-1, IEC60947-3, GB/T 14048.3-2002

《Low-voltage switchgear and control-gear switches, isolator, disconnecter and fuse-combination units》

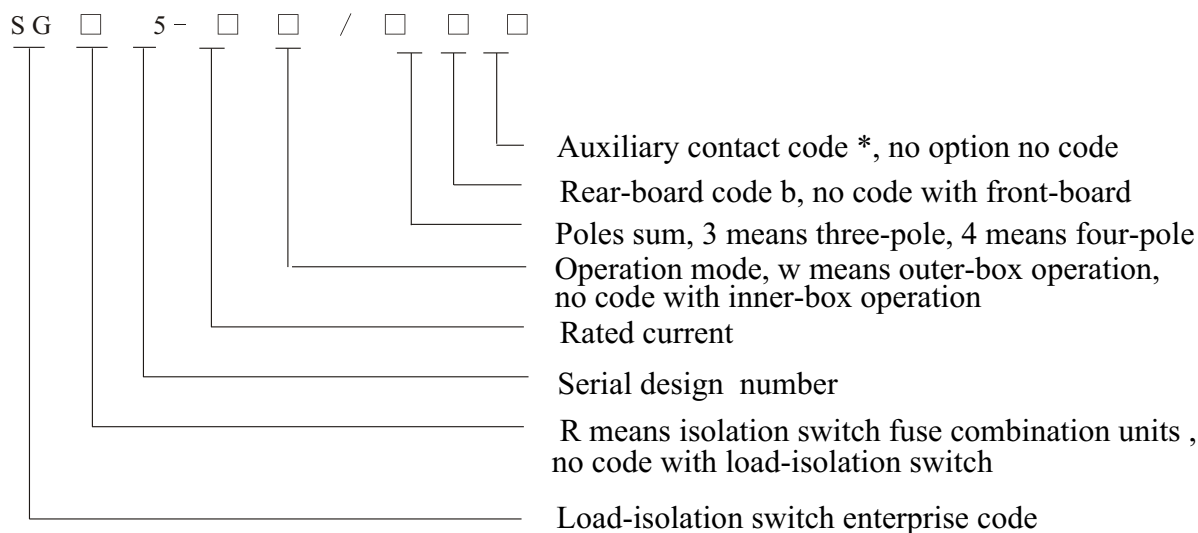
## ◆ Suitable working environment

- The elevation at the installation place not over 2000m.
- Ambient air temperature  $-5 \sim +40^{\circ}\text{C}$ , and the average value during 24h not over  $35^{\circ}\text{C}$ .
- The RH not over 50% at the maximum temperature  $+40^{\circ}\text{C}$ ; can be higher at a lower temperature, the average lowest temperature in the most humidity month not over  $+25^{\circ}\text{C}$ , the average maximum RH of the said month not over 90%, and the condensed dewdrops produced on the product surface due to temperature variation should be taken into consideration.
- No bomb danger and storm damage
- Pollution grade: 3
- Installation grade, III and IV
- Utilization type AC-23A

## ◆ Structure and performance

- Novel,exquisite,practical
- Small volume , on-and-off operation with load (800A and below)
- Various wiring types, the protection grade up to IP30(SG5 series), reliable in safety of use
- Parallel double breakpoint, big isolation
- Indicate directly on/off status of the contacts
- Fast on-and-off with spring stored-energy outfit
- With tight iron-nut to raise the mechanism intensity of the line-connected terminal.
- SGR5 series isolation switch and fuse combination unit are relatively independent components with interlock function. The change-over operation of the fuse combination units can be done only when the isolation switch has break.
- With wiring types of three-pole, four-pole, inner-box, outer-box operation and front-board, rear-board (SGR5 without rear-board type).

## ◆ Model and meaning



**\* ONE N.O. ONE N.C. “11” 。**

## ◆ Main technical indexes

(See table1, 2, and 3)

**The electrical and mechanical performance of AC-23A type of SG5 series****Table 1**

Model	Rated thermo-current $I_{th}$ A	Rated working voltage $U_e$ (V)	Rated working current $I_e$ (A)	Rated insulating voltage $U_i$ (V)	Rated impulse-withstand voltage $U_{imp}$ (kV)	Rated short-time current withstand effective value $I_{cw}$ (kA/1S)	Rated short-circuit making capacity peak value $I_{cm}$ (kA)	Operation cycle times	
								Idle	Loaded
SG5-63	63	400	63	800	8	3.5	10	8500	1500
		690	32						
SG5-160	100	400	100			7	12	7000	1000
		690	50						
	125	400	125						
		690	63						
	160	400	160						
		690	80						
SG5-250	200	400	200	1000	8	9	12		
		690	100						
	250	400	250						
		690	125						
SG5-630	315	400	315	800	12	15	30	7000	1000
		690	160					4000	1000
	400	400	400						
		690	200						
	500	400	500						
		690	250						
	630	400	630						
		690	315						
SG5-1600	1000	400	1000	1000	12	50	70		
		690	500						
	1250	400	1250						
		690	630						
	1600	400	1600						
		690	800						
SG5-2000	2000	400	2000	1000	12	60	85	2500	500
		690	1000						
SG5-2500	2500	400	2500						
		690	12500						
SG5-3150	31500	400	3150					1500	500
		690	1600						



## The electrical and mechanical performance of DC-23A type of SG5 series

**Table 2**

Model	Rated thermo-current $I_{th}$ A	Rated working voltage $U_e$ (V)	Rated working current $I_e$ (A)	Rated insulating voltage $U_i$ (V)	Rated impulse-withstand voltage $U_{imp}$ (kV)	Rated short-time current withstand effective value $I_{cw}$ (kA/1S)	Rated short-circuit making capacity peak value $I_{cm}$ (kA)	Operation cycle times	
								Idle	Loaded
SG5-63	63	250	63	1200	8	3.5	10	8500	1500
		440	32						
SG5-160	100	250	100			7	12	7000	1000
		440	50						
	125	250	125						
		440	63						
	160	250	160						
		440	80						
SG5-250	200	250	200	1200	8	9	12		
		440	100						
	250	250	250						
		440	125						
SG5-630	315	250	315	1200	12	15	30	7000	1000
		440	160						
	400	250	400					4000	1000
		440	200						
	500	250	500						
		440	250						
	630	250	630						
		440	315						
SG5-1600	1000	250	1000	1200	12	50	70	2500	500
		440	500						
	1250	250	1250						
		440	630						
	1600	250	1600						
		440	800						
SG5-2000	2000	250	2000	1200	12	60	85		
		440	1000						
SG5-2500	2500	250	2500						
		440	12500						
SG5-3150	3150	250	3150					1500	500
		440	1600						



## The electrical and mechanical performance of AC-23A type of SGR5

Table 3

Model	Rated working voltage $U_e$ (V)	Rated working current $I_e$ (A)	Rated insulating voltage $U_i$ (V)	Rated impulse-withstand voltage $U_{imp}$ (kV)	Rated limited short-circuit current		Operation cycle times	
					Fuse protection short-time withstand capacity $I_{cw}$ effective value (kA)	Fuse protection short-time making capacity peak value $I_{cm}$ (kA)	Idle	Loaded
SGR5-100	400	63, 50, 40, 32	800	8	Conformed with selected fuse combination units	Conformed with selected fuse combination units	8500	1500
SGR5-160		160, 125, 100, 80, 63, 50, 40					7000	1000
SGR5-250		250, 224, 200, 160, 125					4000	1000
SGR5-630		500, 425, 400, 355, 315		12				

## ◆ Main overall and mounting dimensions

(See table 4, 5, 6 and chart 1-9)

## ● SG5-63A ~ 630A front-board wiring direct operation

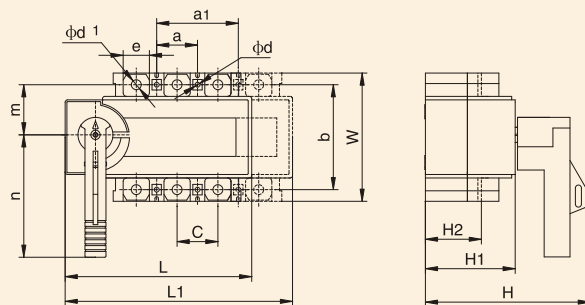


Figure 1

## ● SG5-63A ~ 630A rear-board wiring direct operation

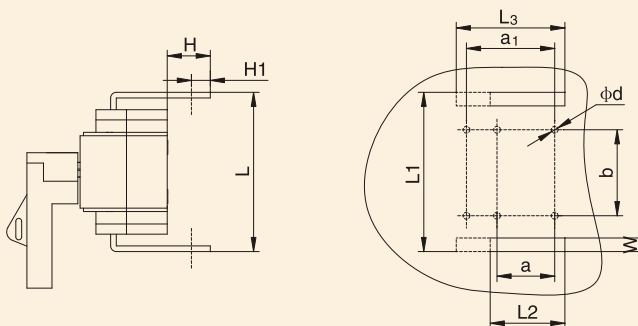


Figure 2



SG5 series front-board direct operation  
overall and mounting dimensions

Table 4

Unit : mm

Model	Three-pole													Four-pole												
	Overall dimensions mm										Mounting dimensions mm			Overall dimensions mm										Mounting dimensions mm		
	L	H	H <sub>1</sub>	H <sub>2</sub>	W	C	m	n	φd <sub>1</sub>	a	b	e	φd	L <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	W	C	m	n	φd <sub>1</sub>	a <sub>1</sub>	b	e	φd
SG5-63	142	101	68	45	90	30	41	70	6.5	30	75	16	4.2	172	101	68	45	90	30	41	70	6.5	60	75	16	4.2
SG5-160	160	144	78	49	110	35	43	105	8.5	35	90	22.5	4.2	195	144	78	49	110	35	43	105	8.5	70	90	22.5	4.2
SG5-250	213	159	94.5	61	151	50	75	150	11	50	120	34	5.2	263	159	94.5	61	151	50	75	150	11	100	120	34	5.2
SG5-630	313	205	121	78	234	80	117	150	17	80	164	40	6.5	393	205	121	78	234	80	117	150	17	160	164	40	6.5

SG5 series rear-board direct operation  
overall and mounting dimensions

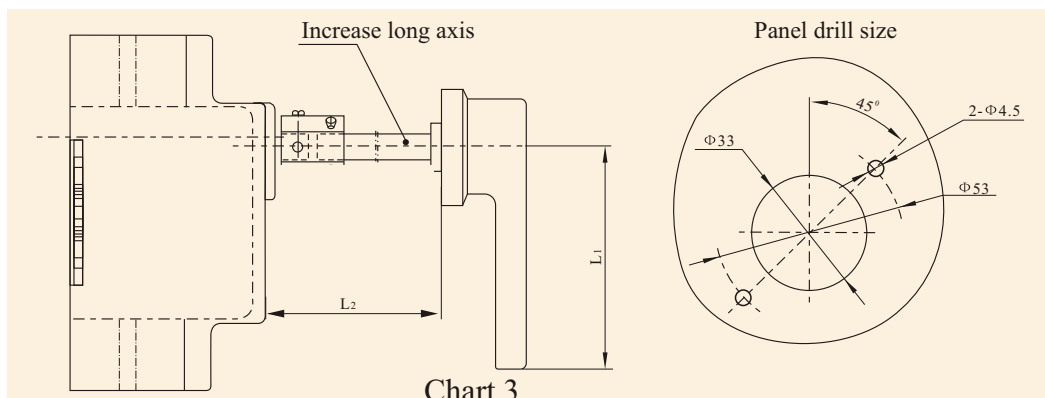
Table 5

Unit : mm

Model	Overall dimensions mm							Mounting hole dimensions mm			
	H	H <sub>1</sub>	L	L <sub>1</sub>	b	φd	w	3-pole	4-pole	3-pole	4-pole
								L <sub>2</sub>	L <sub>3</sub>	a	a <sub>1</sub>
SG5-63	84	8	108	110	75	5	7	80	110	60	90
SG5-160	69	10	129	131	90	5	7	96	126	70	105
SG5-250	106	14.5	168	170	120	6	7	136	186	100	150
SG5-630	200	16	222	225	164	7	8	205	285	160	240



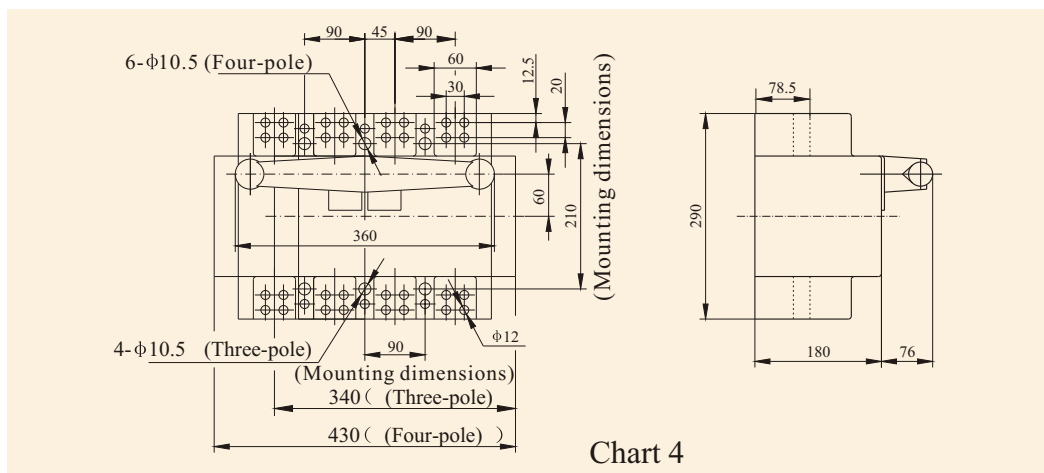
● SG5-63A~630A  
SGR5-63A~630A outer-box operation panel drill dimensions



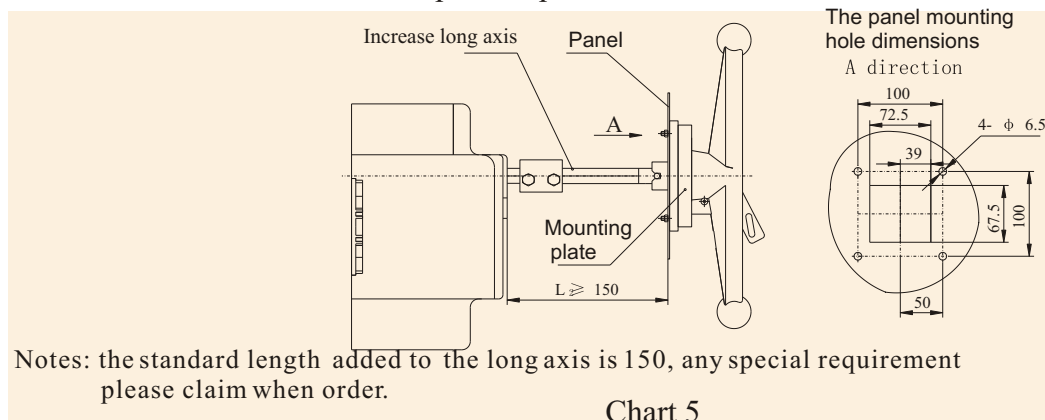
Products model		Dimensions L1	Dimensions L2
SG5-63	SGR5-63	65	150
SG5-160~SG5-250	SGR5-160~SGR5-250	95	150
SG5-630	SGR5-630	125	150

Notes: the standard length L2 added to the long axis is 150, any special requirement please claim when order.

● SG5-1000A~1600A front-board wiring direct operation



● SG5-1000A~1600A outer-box operation panel drill dimensions



Notes: the standard length added to the long axis is 150, any special requirement please claim when order.





● SGR5-63~250A overall and mounting dimensions (see chart9, table 6)

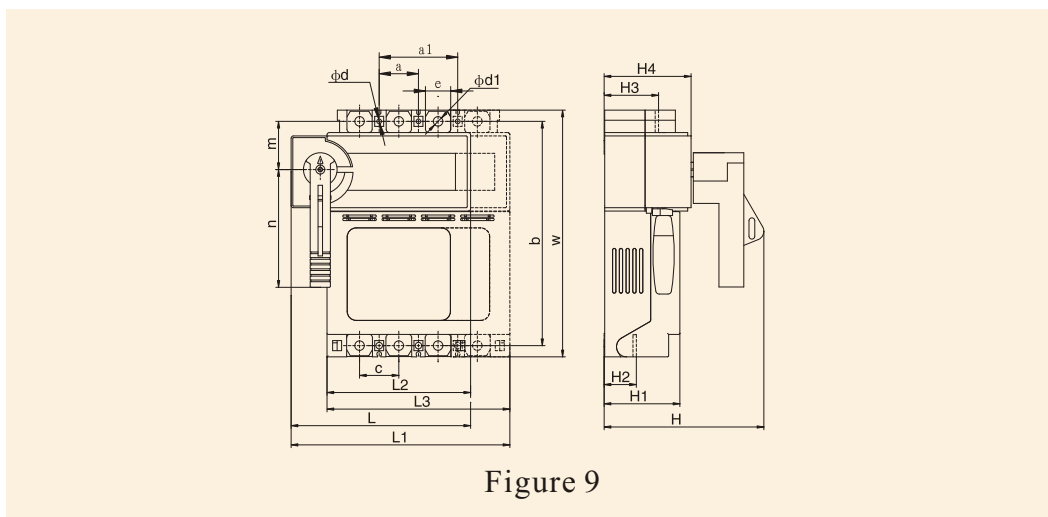


Figure 9

Table 6 SGR5 series overall and mounting dimensions

Unit: mm

Model	Rated working current A	Three-pole																Four-pole																Unit: mm
		Overall dimensions mm												Mounting dimensions mm	Overall dimensions mm												Mounting dimensions mm							
		L	L <sub>2</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	W	C	m	n	φ d <sub>1</sub>		a	b	e	φ d	L <sub>1</sub>	L <sub>3</sub>	H	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	W		C	m	n	φ d <sub>1</sub>	a <sub>1</sub>	b	
SGR5-63	63, 40, 32	110	110	144	62	60	58	69	173	30	16.5	70	6.5	30	158	16	4.2	140	140	100	62	100	62	62	173	30	16.5	70	6.5	60	158	16	4.2	
SGR5-160	160, 125, 100, 80, 63, 50, 40	160	128	100	67	23	49	78	220	35	43	105	8.5	35	200	22.5	4.2	195	163	144	67	23	49	78	220	35	43	105	8.5	70	200	22.5	4.2	
SGR5-250	250, 224, 200, 160, 125	213	176	163	89	40	61	94.5	332	50	75	150	11	50	301	34	5.2	263	226	159	89	40	61	94.5	332	50	75	150	11	100	301	34	5.2	
SGR5-630	630, 500, 425, 400, 355, 315	313	260	205	116	45	121	78	435	80	117	150	17	80	364	40	6.5	393	340	205	116	45	121	78	435	80	117	150	11	160	364	40	6.5	

● SGR5 series isolation switch fuse combination units model and overall dimensions (see chart 10, 11, and table7) (the fuse combination units provided separately)

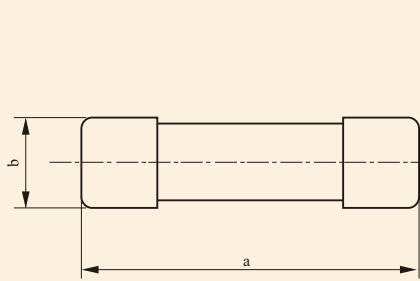


Chart 10: RT14 dimension 22\*58  
dimensions of tubular cylinder hat-shape  
type of fuse combination

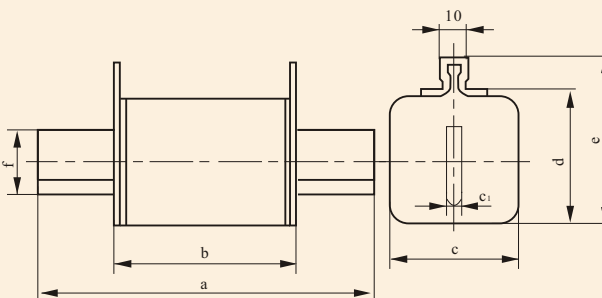


Chart 11: NT00, NT1, NT3  
the dimensions of  
the knife-shaped  
fuse combination units



## SGR5 series selected matching fuse combination units specification and overall dimensions

**Table 7**

Model	Rated Working Current, A	Matching reference model selected for the fuse combination units	Fuse combination units rated voltage V	Fuse combination units rated current A	Maximum power loss W	Fuse combination units overall dimensions, mm						
						A	B	c	c1	d	e	f
SGR5 -63	63	RT14	380	63	≤9.5	58	φ 22					
	50			50								
	40			40								
	32			32								
SGR5 -160	160	NT00	500	160	9.6	78.5	49	29	6	46.5	56.5	15
	125			125	7.8							
	100			100	7.3							
	80			80	6							
	63			63	4.6							
	50			50	4.5							
	40			40	4.3							
	250			250	18.3							
SGR5 -250	224	NT1		224	16.8	135	68	48	6	52	62	21
	200			200	15.2							
	160			160	13							
	125			125	10.2							
SGR5 -630	630	NT3		630	40.3	150	68	67	6	74.5	84.5	33
	500			500	32							
	425			425	28.9							
	400			400	26.8							
	355			355	22.7							
	315			315	21.7							
	Notes: the selected matching fuse combination units must be in conformity with state standards GB13539.1-2002. The one made in Shanghai electric appliance ceramics factory is recommended											

Notes: the selected matching fuse combination units must be in conformity with state standards GB13539.1-2002.  
The one made in Shanghai electric appliance ceramics factory is recommended

### ◆ Utilization and maintenance

The switch should be vertically mounted, and before mounting, check if the nameplate conforms to the requirements of utilization.

When breaking a bigger current during use of the switch, a general overhaul has to be carried out to see if the ON and- OFF operation is normal and the contact position indication is correct, then use it after overhaul. ( Please set it on position of “break” when need to overhaul the circuit or maintain the device or need to change over the fuse combination units)

Maintenance should be taken once every six months of use. To coat with MP-3 lubricating oil if the moving part of the switch is found inflexible and check if the fastener is loose. take repair upon different conditions and stop use in case of serious damages.



## ◆ Ordering notice

Please make a note of the switch's model, norm, quantity etc. to be selected at order.

Example: SG5-250W/3B11 ~380V 200A 5 pcs

i.e. 5 pcs of the isolation switch with the rated current 200A, rated working voltage 380V, outer-box operation, three-pole, rear panel wiring, with an auxiliary contact of 1 N.O. and 1 N.C..

Example: SGR5-160w/311~380V 5 purchase

i.e. 5pcs of the SGR5 series with the rated current 160A, the rated working voltage AC 380V, outer-box operation, three-pole, with an auxiliary contact of one of N.O and one of N.C. the fuse combination units supply separately. Please provide the related technical data if you have the special requirements on the elevation, ambient temperature etc., We may supply it upon an agreement.