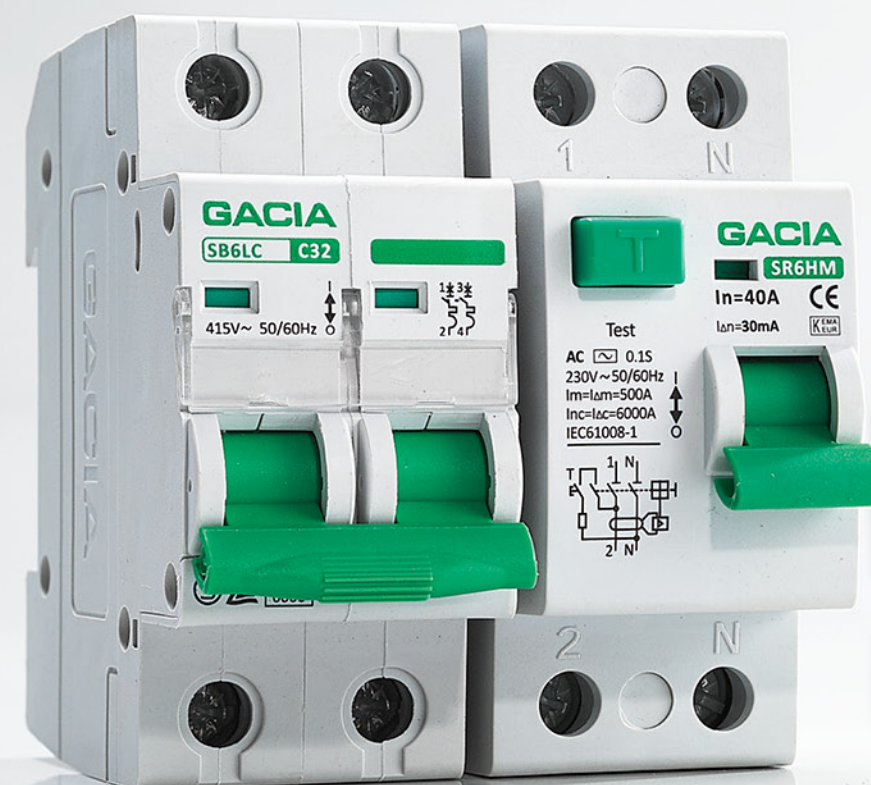




# GACIA



## S Product Information

# GACIA

**GACIA ELECTRICAL APPLIANCE CO., LTD.**

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Gacia Electrical Appliance Co., Ltd

is an export-oriented company, focus on R&D, manufacturing, and sales of circuit breakers. Through 16 years of rapid growth, Gacia has 1700 employees, including 100 technical talents, and 3 manufacturing bases around China. Gacia’ s headquarter located in Wenzhou, the Shanghai campus focus on R&D and high-end manufacturing, and the Jiang xi campus provide OEM manufacturing services for customers all over the world. Meanwhile, Gacia’ s products export to over 100 countries and regions, and 80% of them are independent developed by Gacia. A majority of Gacia’ s products authenticated by many international professional certifications including German TUV, VDE certifications, Dutch KEMA certification and ISO 9001 international quality system.

After more than a decade of development, Gacia adhere to business principle referring to “customer-centric, Altruism and Win-win” . Besides, Gacia devoted to utilize innovation to drive production improvement, take advantage of lean production to upgrade products quality and committed to become the pacemaker of the global circuit breaker industrial.

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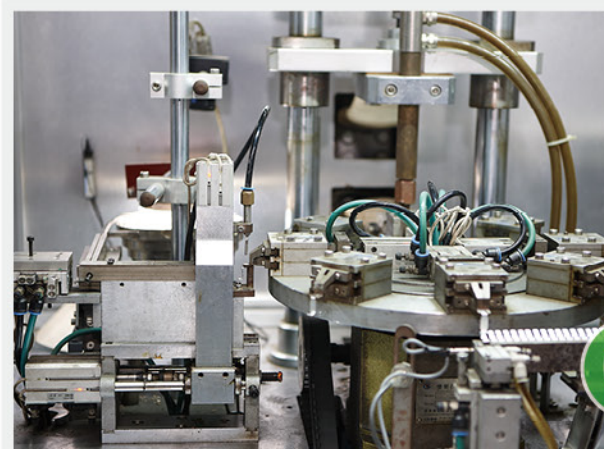
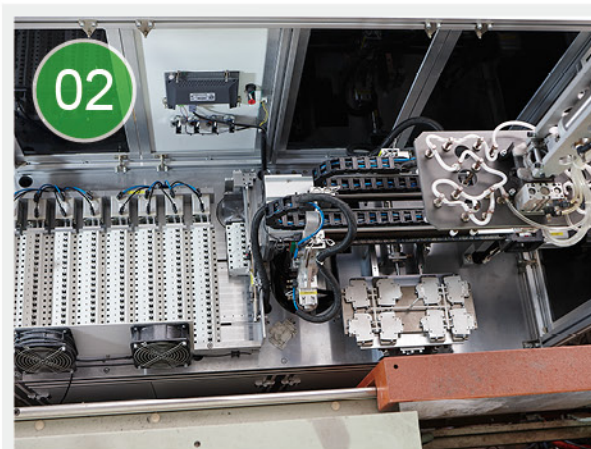
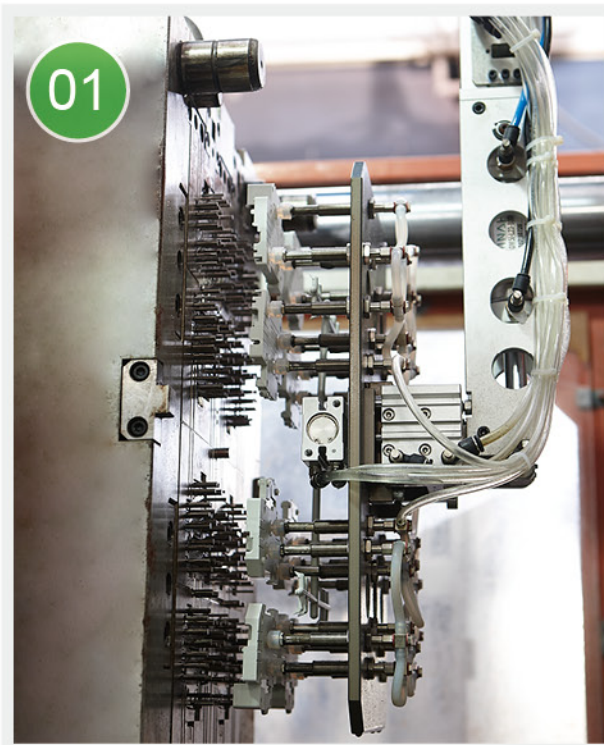


# Core Manufacturing Advantages

**GACIA**

- 01 Independent Research and develop hot runner mold which can drop 8 pcs shells one time.
- 02 Injection closing unit device with automatic clamping and shaping process instead of traditional labour.
- 03 High-speed Punch Press Machine & Auto Welding Machine. The integration of stamping and welding process could reduce components damage and increase the qualification rate significantly for the metal parts.

- 04 Intelligent Manufacturing with quality auto monitoring pack and data interconnection pack could avoid artificial errors and improve product reliability.
- 05 Operating Mechanism plant and Tripper plant.  
The most important parts of RCD are produced by GACIA to insure quality warranty.





**Pacemaker**  
of circuit breakers



### Quality Warranty:

Complete Manufacturing System for Components&Parts

Precise Manufacturing Process

Selecting High-class Raw Material

Strict Detecting System

Using Occasions:

Residential, Commercial, Industrial, Tender, Projects Uses | ★★★★★

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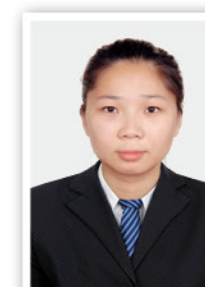
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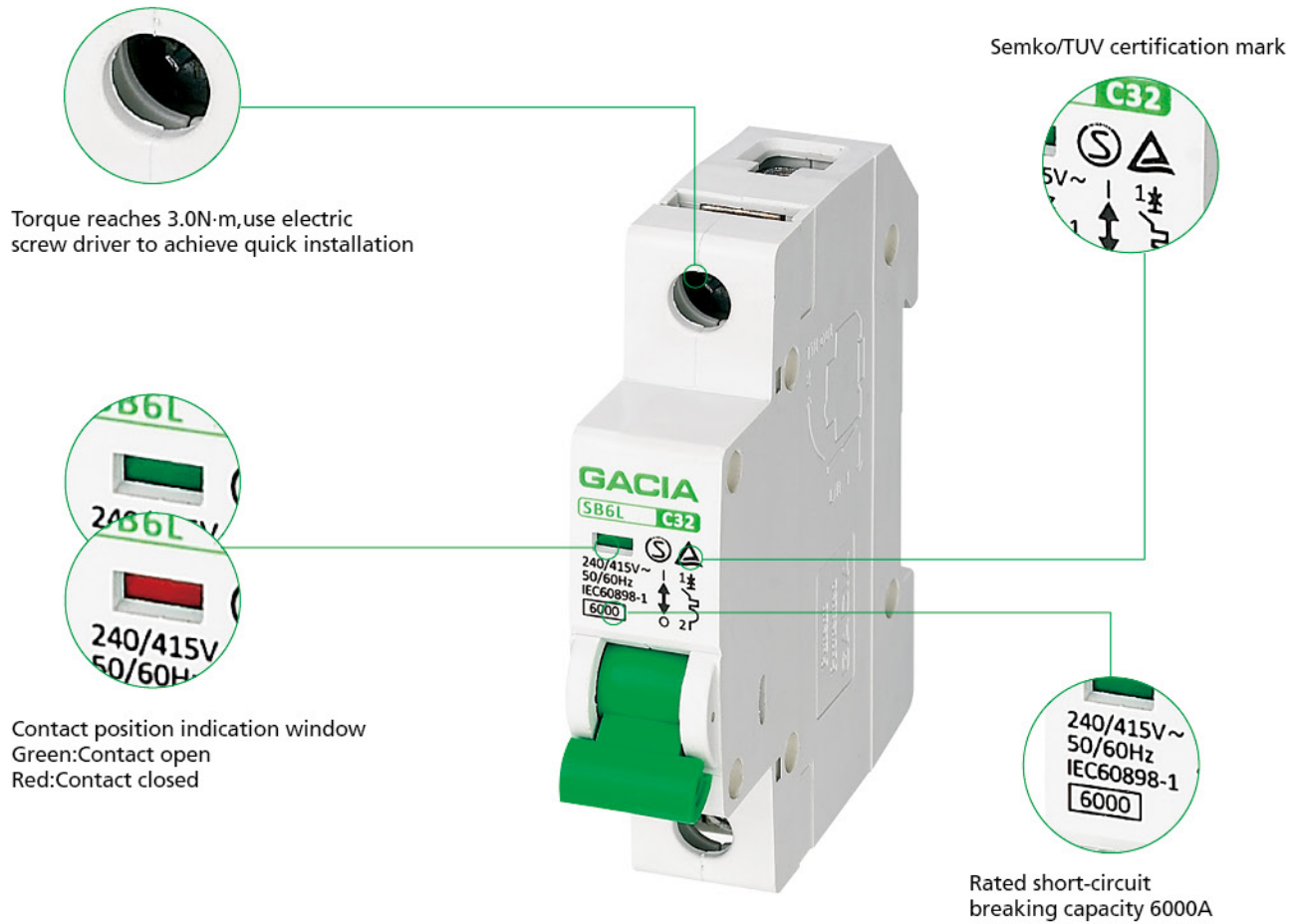


Model	SB6NZ	SB6HS	SB6H
IEC/EN 60898-1 IEC/EN 60947-2			
Poles	1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P
Certification			
<b>Electrical Specification</b>			
Rated current(A)	In	1-63	1-63
Rated frequency(Hz)		50/60	50/60
Rated working voltage(V)	Ue	1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~
Rated insulated voltage(V)	Ui	500	500
Impulse withstand voltage(kV)	Uimp	6	6
Rated short-circuit breaking capacity(KA)	Icn	4.5	4.5
Instantaneous tripping type		B,C,D	B,C,D
Maximum working voltage	Umax	440	440
Dielectric test voltage(kV)		2	2
Service life		10000	10000
Mechanical		4000	4000
Standard value			
(O-C)			
<b>Control And Indication</b>			
Shunt release(SHT)		<input type="checkbox"/>	
Undervoltage release(UVT)		<input type="checkbox"/>	
Auxiliary contact(AUX)		<input type="checkbox"/>	
Alarm contact(ALT)		<input type="checkbox"/>	
Contact position indicator		<input checked="" type="checkbox"/>	
Fault indication		-	
<b>Connection And Installation</b>			
Ambient temperature(with daily average≤35℃)		-5℃ ~+40℃	
Protection degree	ALL Sides	IP40	
Connection Terminal		IP20	
Wire(mm <sup>2</sup> )	1-16	1-16	1-16
busbar(mm <sup>2</sup> )	-	16	16
Mounting	Cable	Cable/Busbar	Cable/Busbar
Pollution degree		2	
Reference temperature for setting of thermal element(℃)		30	
Storage temperature(℃)		-25℃ ~+70℃	
Tightening torque		3.0	
Connection		Top and Bottom	
Dimensions(mm)		17.5/35/52.5/70	
(WxHxL)		83/83/83/83	
		67/67/67/67	
Weight(kg)	1P	0.1	
	2P	0.2	
	3P	0.3	
	4P	0.4	

■ Default □ Optional – None

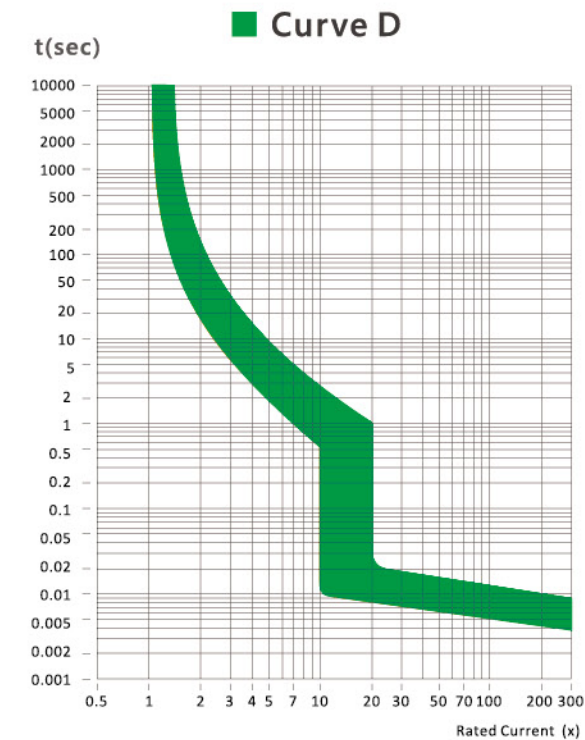
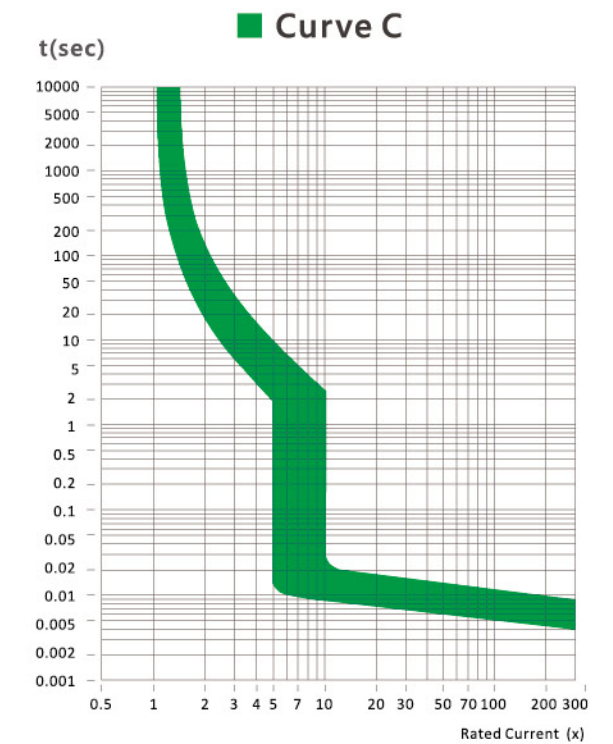
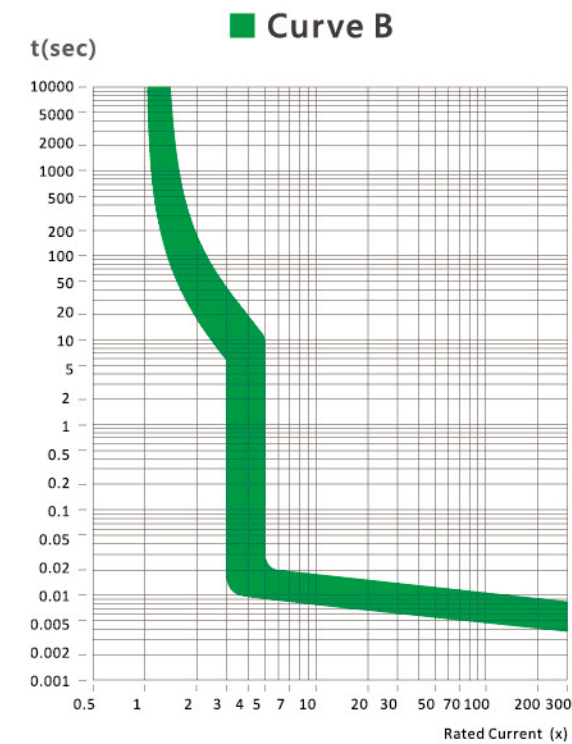
SB6L	SB6HC	SB6LC	SG6H	SN6N
1P,1P+N,2P,3P,3P+N,4P △CE	1P,1P+N,2P,3P,3P+N,4P △CE	1P,1P+N,2P,3P,3P+N,4P △CE	1P,2P,3P,4P CE	1P+N CE
1-63A	1-63	1-63	63-125	6-32
50/60	50/60	50/60	50/60	50/60
1P:230/400~,2/3/4P:400~ 500	1P:230/400~,2/3/4P:400~ 500	1P:230/400~,2/3/4P:400~ 500	1P:230/400~,2/3/4P:400~ 500	230~ 400
6	6	6	6	4
6	4.5	6	6	3
B,C,D	B,C,D	B,C,D	(8-12In)	B,C,D
440	440	440	440	240
2	2	2	2	2
10000	10000	10000	1500(In=63A 80A 100A) 1000(In=125A) 8500(In=63A 80A 100A) 7000(In=125A)	10000
4000	4000	4000		4000
		□	-	
		□		
		□		
		□		
		■		
		-	■	
-5°C ~+40°C				
IP40				
IP20				
1-16	1-16	1-16	25-50	1-10
16	16	16	-	-
Cable/Busbar	Cable/Busbar	Cable/Busbar	Cable	Cable
2				
30				
-25°C ~+70°C				
3.0			3.5	2.5
Top and Bottom				
17.5/35/52.5/70			26.9/53.8/80.7/107.6	17.8
83/83/83/83			83/83/83/83	83
67/67/67/67			78.5/78.5/78.5/78.5	77.5
0.1			0.15	0.11
0.2			0.3	0.22
0.2			0.45	0.33
0.4			0.6	0.44

## Characteristics Curve



## Normal Working Conditions and Installation Conditions:

- ◆ Ambient Temperature:  $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ , it's average over a period of 24 hours does not exceed  $+35^{\circ}\text{C}$ .
- ◆ Height above Sea Level:  $\leq 2000\text{m}$ .
- ◆ Atmospheric Condition:
  - When the maximum temperature is  $+40^{\circ}\text{C}$ , the relative humidity of the air is not exceed 50%, and it has higher humidity at lower temperature. The maximum monthly relative humidity is 90%, and the lowest temperature is  $+20^{\circ}\text{C}$ . Additionally, a frost might be present, with the temperature change.
  - Pollution Degree: 2
- ◆ Installation Conditions:
  - Installation Category and Type: Installation category is II or III, and the installation type adopts standard steel guide rail installation (TH35-7.5).
  - The circuit breaker shall be installed vertically, and the upward position of the handle shall be connected to the power.
  - The installation should be free from obvious impact and vibration, corrosive and explosive gases.



Time-current operating characteristics

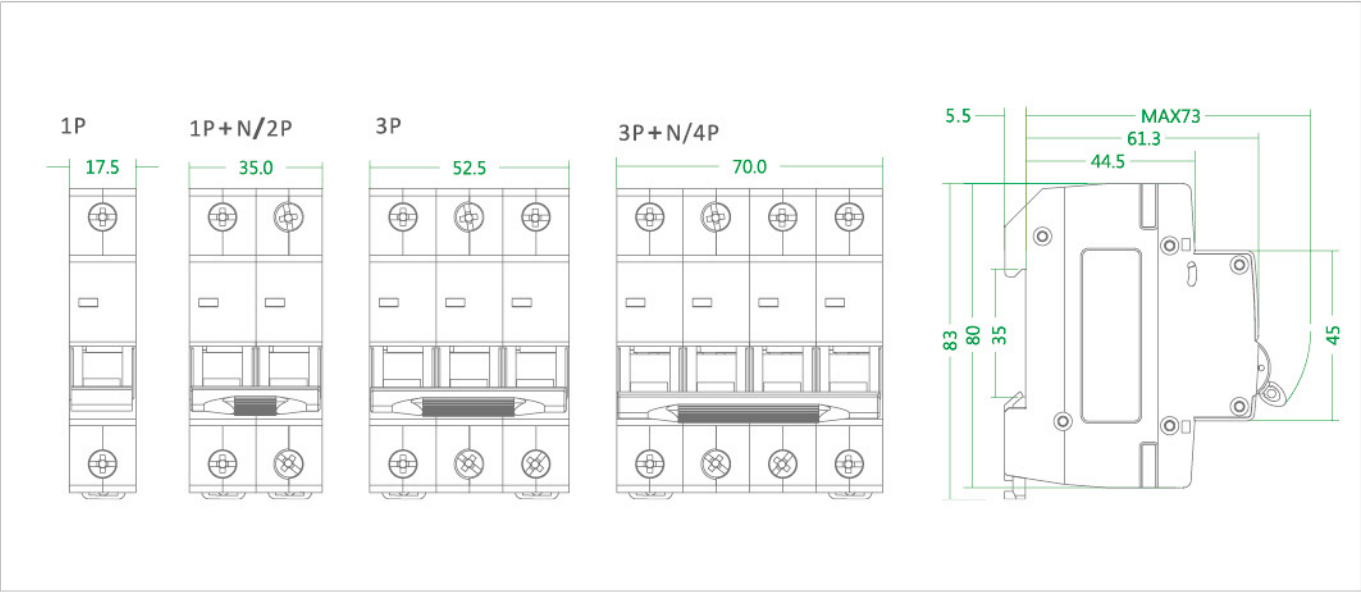
Test	Type	Test current	Initial condition	Limits of tripping or non-tripping time	Result to be obtained	Remarks
a	B, C, D	1,13 $I_n$	Cold <sup>a</sup>	$t \leq 1h$ (for $I_n \leq 63A$ ) $t \leq 2h$ (for $I_n > 63A$ )	No tripping	
b	B, C, D	1,45 $I_n$	Immediately following test a	$t < 1h$ (for $I_n \leq 63A$ ) $t < 2h$ (for $I_n > 63A$ )	Tripping	Current steadily increased within 5 s
c	B, C, D	2,55 $I_n$	Cold <sup>a</sup>	$1s < t < 60s$ (for $I_n \leq 32A$ ) $1s < t < 120s$ (for $I_n > 32A$ )	Tripping	
d	B C D	3 $I_n$ 5 $I_n$ 10 $I_n$	Cold <sup>a</sup>	$t \leq 0,1s$	No Tripping	Current established by closing an auxiliary switch
e	B C D	5 $I_n$ 10 $I_n$ 20 $I_n^b$	Cold <sup>a</sup>	$t < 0,1s$	Tripping	Current established by closing an auxiliary switch

NOTE An additional test, intermediate between c and d, is under consideration for circuit-breakers of type D.

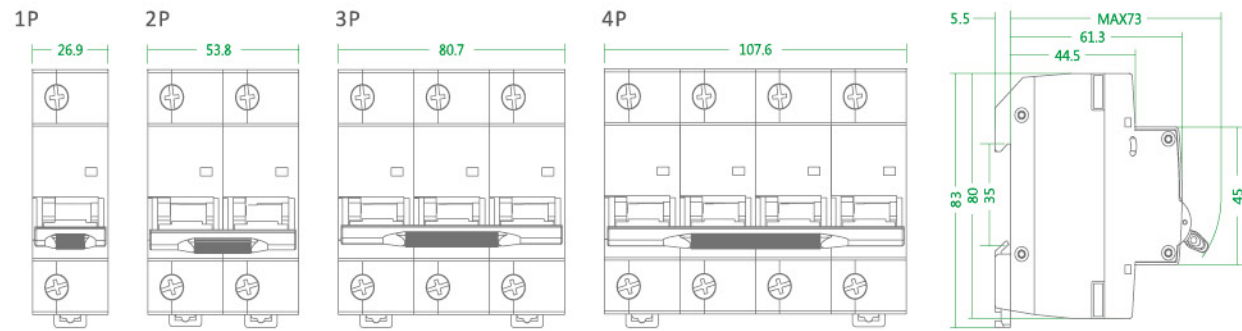
<sup>a</sup> The term "cold" means without previous loading, at the reference calibration temperature.  
<sup>b</sup> 50  $I_n$  for special cases.

Dimensions

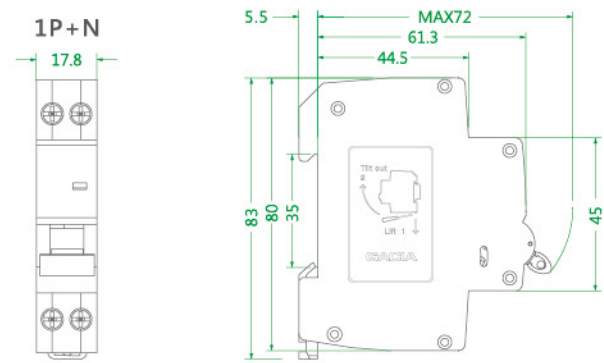
SB6NZ/SB6HS/SB6H/SB6L/SB6HC/SB6LC






◆ SG6H



◆ SN6N





Model			SL6N	SF6H	SH6H
IEC/EN 61009-1					
Poles			1P+N	1P+N, 2P, 3P+N/4P	1P+N, 2P, 3P+N/4P
Certification					
Electrical Specification					
Rated current(A)	In		6-32A	6-32A	63-125A
Rated frequency(Hz)			50/60	50/60	50/60
Rated working voltage(V)	Ue		230~	1P+N/2P:230~,3/3P+N/4P:400~	1P+N/2P:230~,3/3P+N/4P:400~
Rated insulated voltage(V)	Ui		400	400	400
Rated impulse withstand voltage(kV)	Uimp		4	4	4
Rated short-circuit breaking capacity(KA)	Icn		3	4.5	6
Rated Residual current(mA)	IΔn		30,100,300	30,100,300	30,100,300
Thermo-magnetic release characteristic			B,C,D	B,C,D	B,C,D
Residual current protection type				Electronic	
Residual current working type				AC	
Rated residual making and breaking capacity	Im/I Δ m		500A	500(In≤50A),630(In=63A)	10In
Dielectric test voltage(kV)				2.5	
Service life (O-C)	Mechanical	Standard value	10000	10000	8500(In=63A 80A 100A)
	Electrical	Standard value	4000	4000	1500(In=63A 80A 100A)
Control And Indication					
Shunt release(SHT)				-	
Undervoltage release(UVT)				-	
Auxiliary contact(AUX)			-	-	-
Alarm contact(ALT)			-	-	-
Contact position indicator				■	
Fault indication				-	
Connection And Installation					
Ambient temperature(with daily average≤35℃ )				-5℃ ~+40℃	
Protection degree	ALL sides			IP40	
	Connection terminal			IP20	
Wire(mm²)			1-6	1-16	1-35
busbar(mm²)			16	16	-
Mounting			Cable/Busbar	Cable/Busbar	Cable
Pollution degree				2	
Reference temperature for setting of thermal element(℃ )				30	
Storage temperature(℃ )				-25℃ ~+70℃	
Tightening torque			3.0	3.0	3.5
Connection				Top	
Dimensions(mm) (WxHxL)	a(1P+N)		35	44.5	107.5
	b(1P+N)		80	88	81.5
	c(1P+N)		75	77.5	78.5
Weight(kg)	1P+N		0.18	0.12	0.44

■ Default □ Optional - None

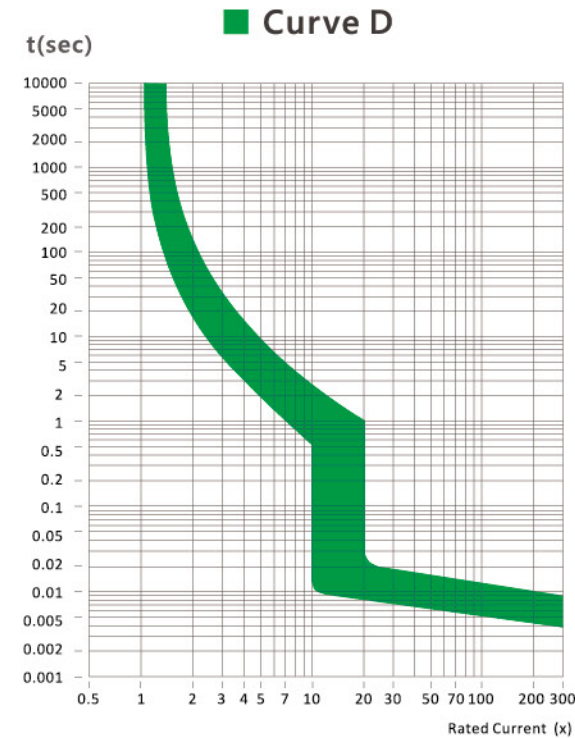
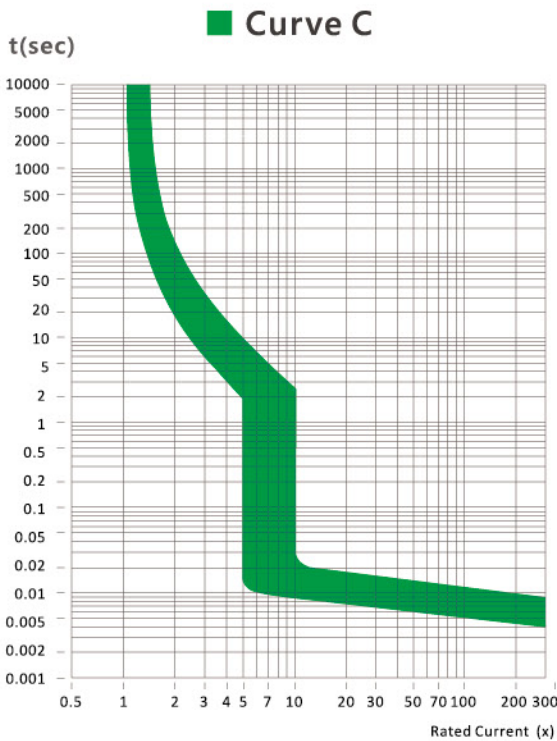
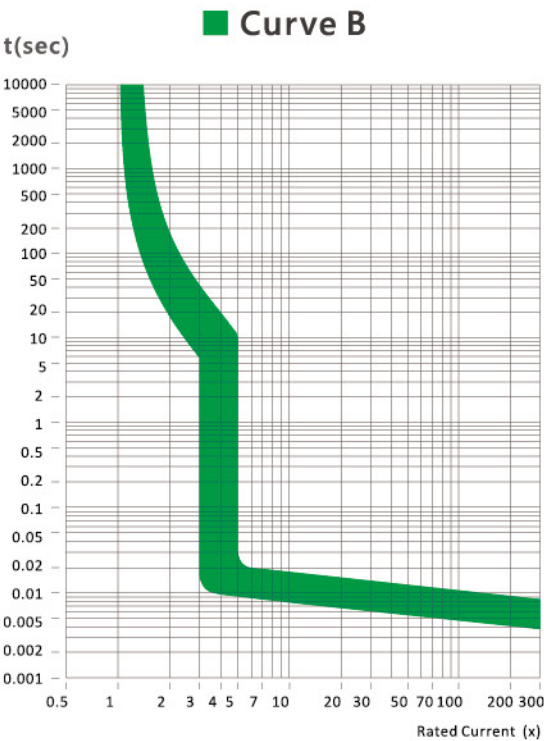


Normal Working Conditions and Installation Conditions

- ◆ Ambient Temperature: -5℃ ~+40℃ .
- ◆ Height above Sea Level: ≤ 2000m
- ◆ Installation Category: II, III
- ◆ Pollution Degree: 2
- ◆ The installation type adopts standard steel guide rail installation (TH35-7.5).
- ◆ Installation Conditions: The external magnetic field of the installation site shall not exceed 5 times of the earth's magnetic field in any direction.
  - When over voltage residual current moves, the circuit breaker shall be installed vertically, and the upward position of the handle shall be connected to the power. The installation should be free from obvious impact and vibration.
- ◆ Mode of Connection: Use screws to press the wiring.

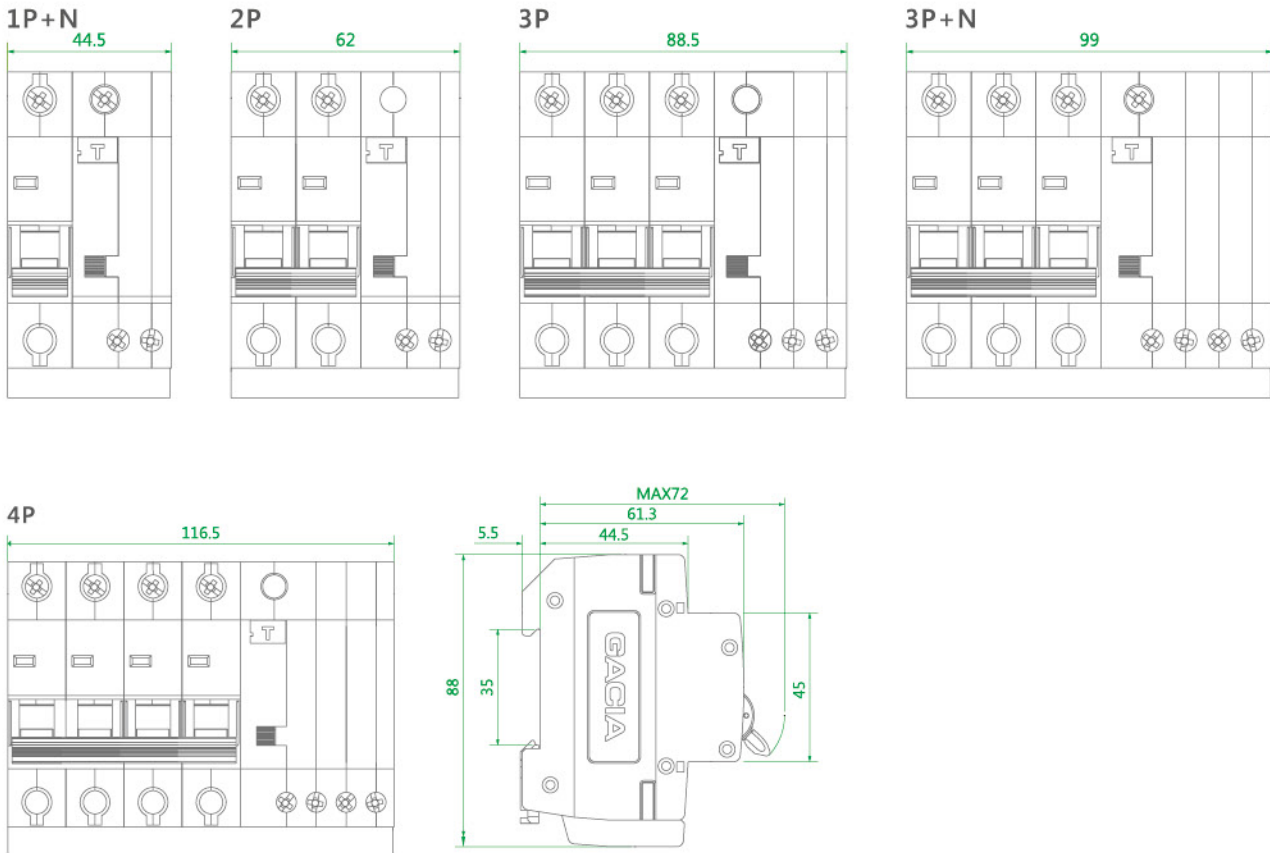


Characteristics Curve

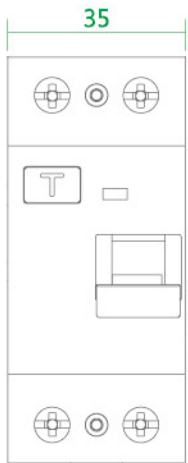


Dimensions

◆ SN6H 1-32A

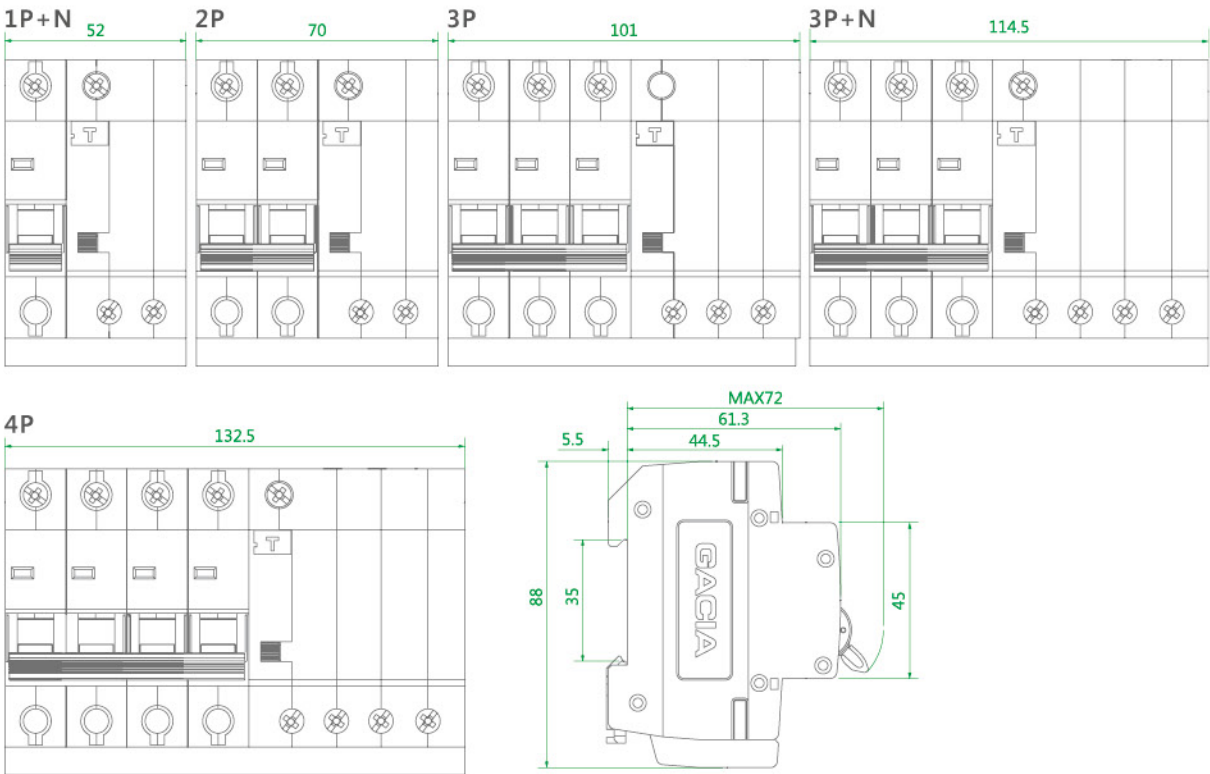


◆ SL6N

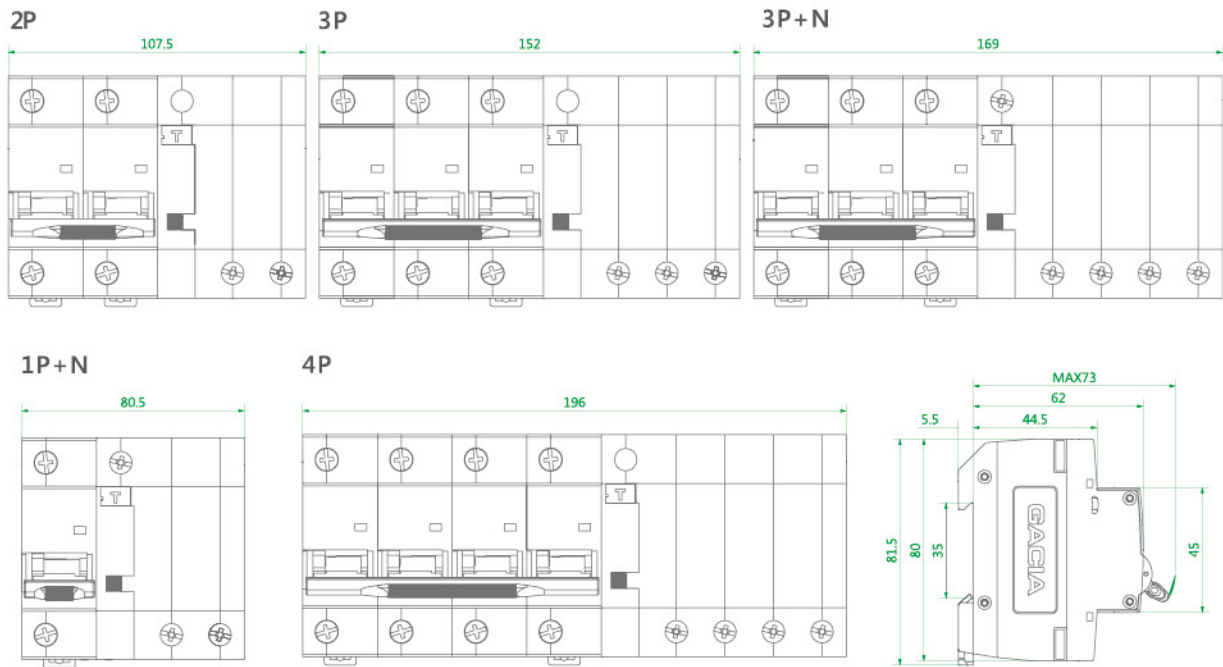








◆ SN6H 40-63A



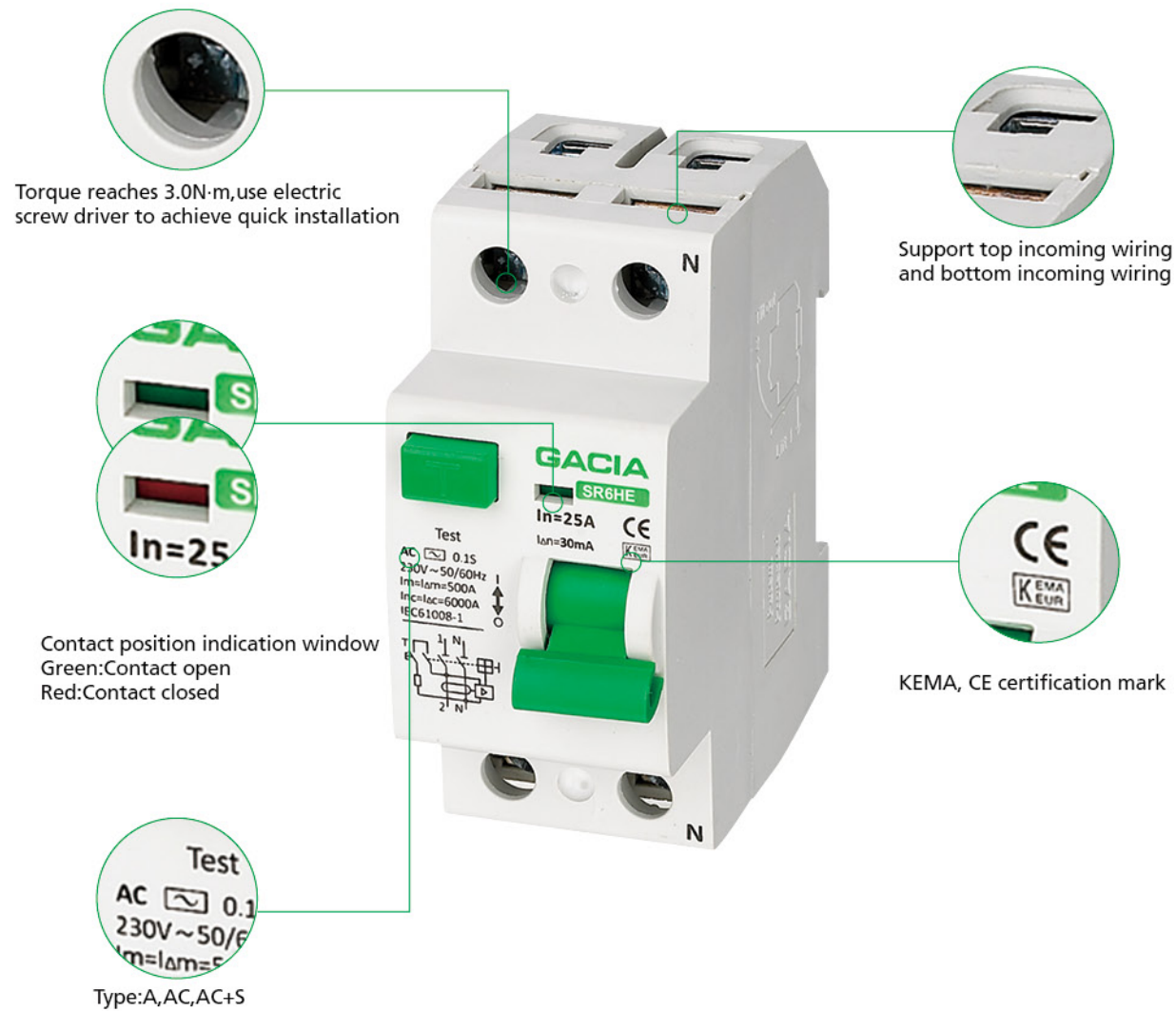
◆ SH6H



Model	SR6HE	SR6HM
		
IEC/EN 61008-1		
Poles	2P, 4P	2P, 4P
Certification		
Electrical Specification		
Rated current(A)	In	16-63A
Rated working voltage(V)	Ue	2P:230,4P:400
Rated insulated voltage(V)	Ui	500
Impulse withstand voltage(kV)	Uimp	6
Rated conditional short-circuit breaking capacity(KA) Ics		6
Rated Residual current(mA)	IΔn	10,30,100,300
Rated Residual making and breaking capacity IΔm		500(≤50A),630(63A)
Residual current working type		AC,AC+S,A
Residual current Protection type		Electronic
Dielectric test voltage(kV)		2.5
Service life		4000
Mechanical	Standard value	
(O-C) Electrical	Standard value	2000
Control And Indication		
Shunt release(SHT)		-
Undervoltage release(UVT)		-
Auxiliary contact(AUX)		-
Alarm contact(ALT)		-
Contact position indicator		<input type="checkbox"/>
Fault indication		-
Connection And Installation		
Ambient temperature(with daily average≤35℃)		-5℃ ~+40℃
Protection degree	ALL sides	IP40
	Connection terminal	IP20
Wire(mm²)		16
busbar(mm²)		25
Mounting		Cable/Busbar
Reference temperature for setting of thermal element		30
Pollution degree		2
Storage temperature (℃)		-25℃ ~+70℃
Connection	Top	Top and bottom
Dimensions(mm)		
(WxHxL)	a(2P/4P)	35/70
	b(2P/4P)	80/80
	c(2P/4P)	77.5/77.5
Weight(kg)	2P	0.17
	4P	0.34

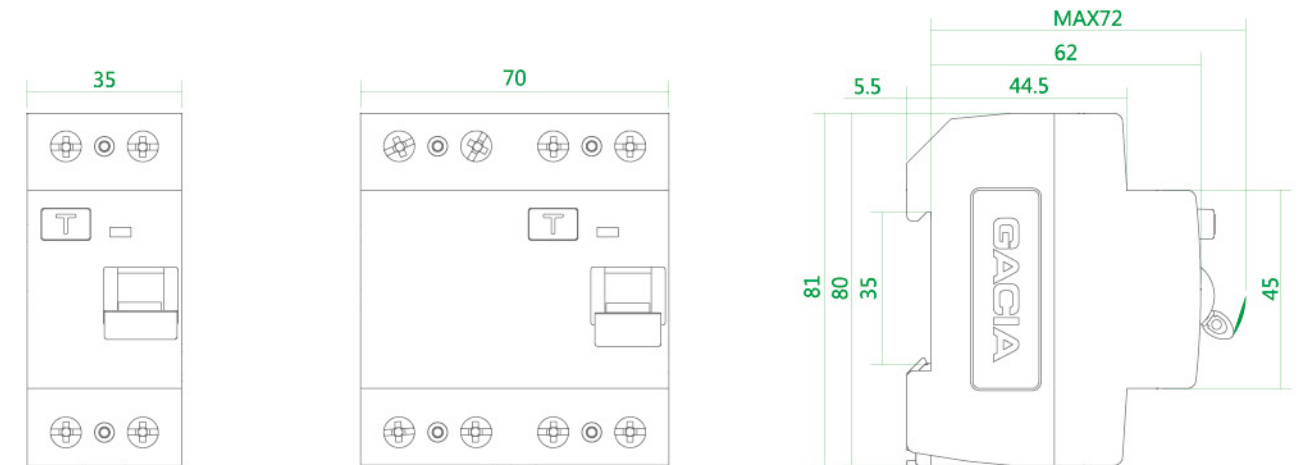
■ Default □ Optional - None





## Dimensions

### ◆ SR6HN/SR6HE



## Normal Working Conditions and Installation Conditions

- ◆ Ambient Temperature: -5℃ ~+40℃ .
- ◆ Height above Sea Level: ≤ 2000m
- ◆ Installation Category: II, III
- ◆ Pollution Degree: 2
- ◆ The installation type adopts standard steel guide rail installation (TH35-7.5).
- ◆ Installation Conditions: The external magnetic field of the installation site shall not exceed 5 times of the earth's magnetic field in any direction. When over voltage residual current moves, the circuit breaker shall be installed vertically, and the upward position of the handle shall be connected to the power. The installation should be free from obvious impact and vibration.
- ◆ Mode of Connection: Use screws to press the wiring.



## The combination of electrical accessory devices



## Remote indicating accessories

### AUX auxiliary contact

Function: indicate the open and close state of circuit breaker.  
Application: distant indication of circuit breaker state.

### ALT Alarming contact

Function: send signal at the time of fault tripping of circuit breaker.  
On the front panel, there is mechanical indication which can indicate fault tripping.

### AUX+ALT/AUX double switching contact

Function: two switching contact can indicate the "open" or "closed" state of circuit breaker with OFF.  
Indicate the failure trip of circuit breaker.  
Application: two loops Up :AUX  
Down: ALT and AUX  
Select functions with the rotating switch on the right.  
Selecting function indicated on the front cover of the device.  
Be a red indicator on the front cover of the device when failure trips.

## Tripping accessories

Red tripping indicator on the front cover of the device.

SHT shunt release, SHTA shunt release+aux

Function: when it gets signal, it triggers the circuit breaker to trip.  
SHTA: it includes a condition indication contact to indicate the on/off state of circuit breakers.  
Application: distant control can achieve emergency breaking.  
Distant indication of circuit breaker state.

### UVT under-voltage release

Function: when power voltage lowers (35%~70%Un), it makes circuit breaker trip; when power is not supplied normally, it prevents circuit breaker from reconnecting to the circuit.  
0.25 time delay prevents the temporary lowering of voltage from causing mistrip.  
Application: preventing machine from restarting without control signal, ensuring safety.

### OVT over-voltage release

Function: monitor voltage between phase line and neutral line. When voltage rises (for example, neutral line is broken), it triggers circuit breakers to trip.  
Rated tripping voltage range: 280vac±5%.  
Application: preventing over-voltage from damaging circuit and equipment.

### OUVT Over&under-voltage release

Function: it has function of over-voltage release, and function of making circuit breaker trip when power voltage lowers.  
Rated tripping voltage range: 280vac±5%.  
Rated under-voltage tripping range: 55 ~160v.  
Application: preventing over-voltage and under-voltage from damaging circuit and equipment.



Model	Voltage Ue	Working current	Contact Number
Auxiliary contact			
	AC 230/400V	230V AC 6A	1NO/NC
	DC 120V	400V AC 3A	
		120V DC 1A	

Alarm contact			
	AC 230/400V	230V AC 6A	1NO/NC
	DC 120V	400V AC 3A	
		120V DC 1A	

Shunt release					
	AC 120/400V	48V	12/24V	-	-
	DC 120V	48V	12/24V	-	-

Shunt release+Aux					
	AC 120/400V	48V	12/24V	230V AC 6A	1NO/NC
	DC 120V	48V	12/24V	400V AC 3A	
					120V DC 1A

Model	Voltage Ue	Working current	Contact Number
Under-Voltage Release			
	AC 230V	230V	-
	DC -	-	-
			-

OverVoltage Release			
	AC 230V	230V	-
	DC -	-	-
			-

Over&under-voltage release			
	AC 230V	230V	-
	DC -	-	-
			-