GACIA

S Product Information

GACIA

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Pacemaker
of circuit breakers

GACIA

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of circuit breakers

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

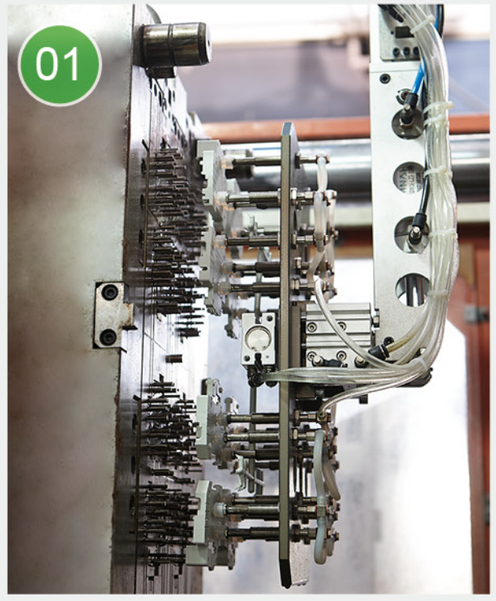
01 Independent Research and develop hot runner mold which can drop 8 pcs shells one time.

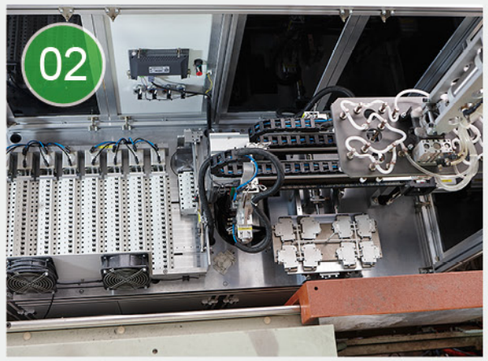
02 Injection closing unit device with automatic clamping and shaping process instead of traditional labour.

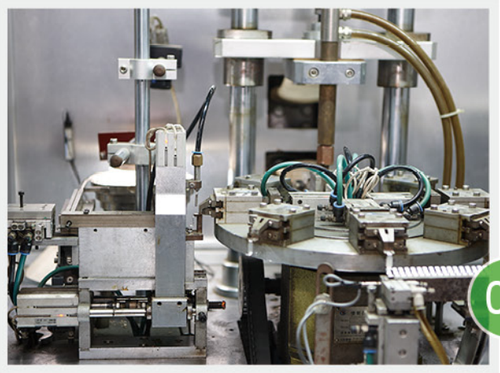
03 High-speed Punch Press Machine & Auto Welding Machine. The integration of stamping and welding process could reduce components damage and increase the qualification rate significantly for the metal parts.

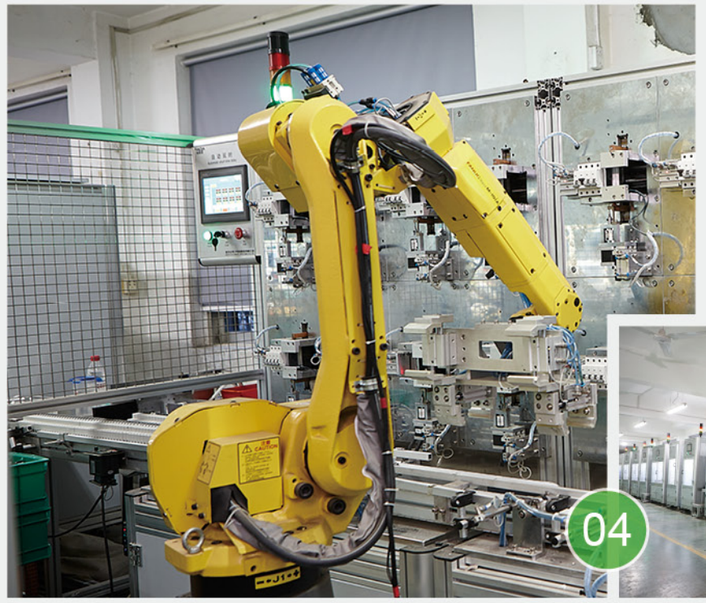
04 Intelligent Manufacturing with quality auto monitoring pack and data interconnection pack could avoid artificial errors and improve product reliability.

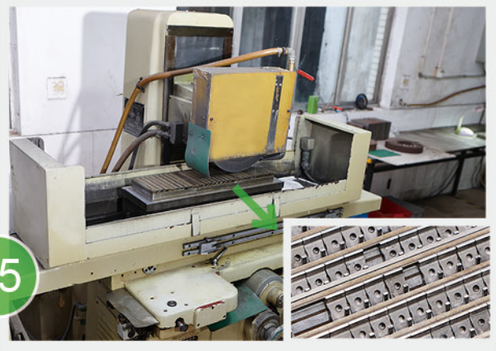
05 Operating Mechanism plant and Tripper plant.
The most important parts of RCD are produced by GACIA to insure quality warranty.











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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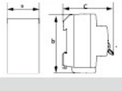
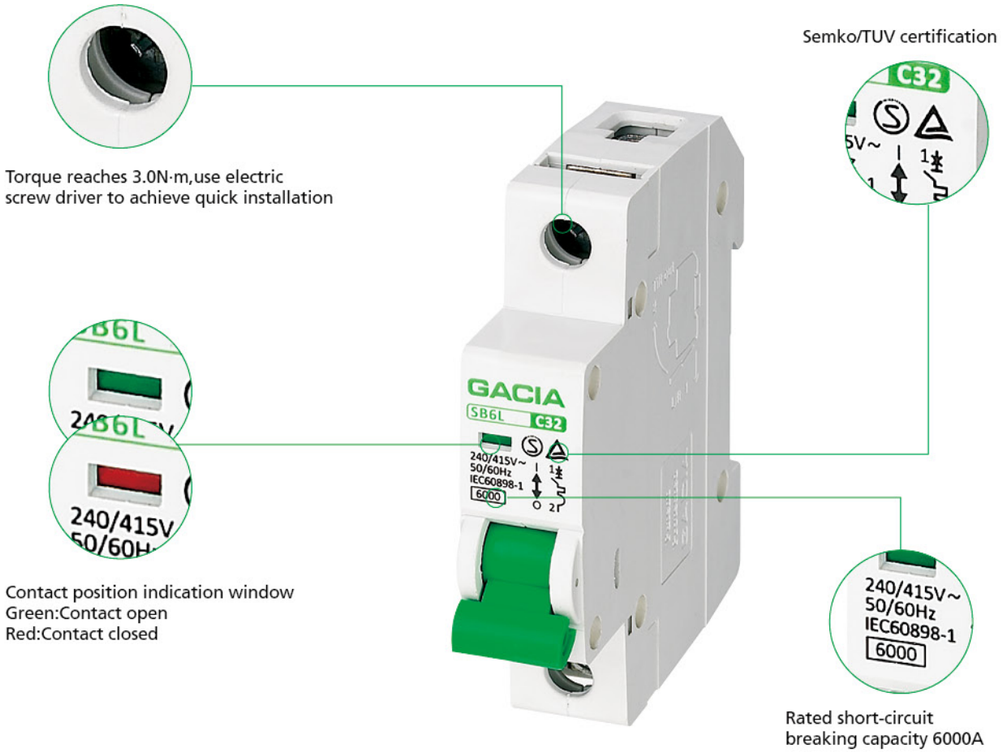
Model			SB6NZ	SB6HS	SB6H
IEC/EN 60898-1 IEC/EN 60947-2					
Poles			1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P
Certification			△CE	△CE	△CE
Electrical Specifiction					
Rated current(A)	In		1-63	1-63	1-63
Rated frequency(Hz)			50/60	50/60	50/60
Rated working voltage(V)	Ue		1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~
Rated insulated voltage(V)	Ui		500	500	500
Impulse withstand voltage(kV)	Uimp		6	6	6
Rated short-circuit breaking capacity(KA)	Icn		3	4.5	4.5
Instantaneous tripping type			B,C,D	B,C,D	B,C,D
Maximum working voltage	Umax		440	440	440
Dielectric test voltage(kV)			2	2	2
Service life	Mechanical	Standard value	10000	10000	10000
(O-C)	Electrical	Standard value	4000	4000	4000
Contorl 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(mm^2)			1-16	1-16	1-16
busbar(mm^2)			-	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) (WxHxL) 		a(1P/2P/3P/4P)		17.5/35/52.5/70	
		b(1P/2P/3P/4P)		83/83/83/83	
		c(1P/2P/3P/4P)		67/67/67/67	
Weight(kg)		1P		0.1	
		2P		0.2	
		3P		0.3	
		4P		0.4	

■ Default □ Optional – None

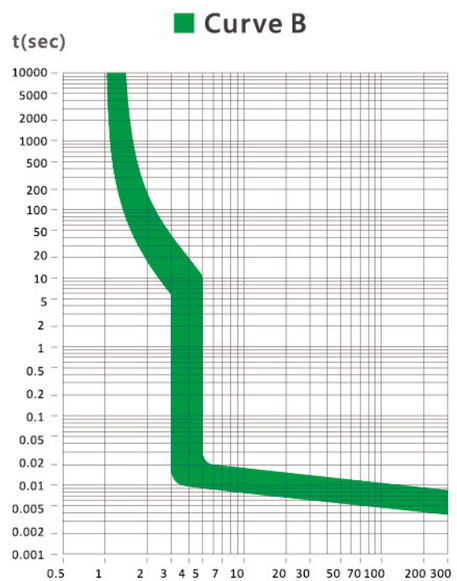
SB6L	SB6HC	SB6LC	SG6H	SN6N
1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P	1P,1P+N,2P,3P,3P+N,4P	1P,2P,3P,4P	1P+N
△CE	△CE	△CE	CE	CE
1-63A	1-63	1-63	63-125	6-32
50/60	50/60	50/60	50/60	50/60
1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~	1P:230/400~,2/3/4P:400~	230~
500	500	500	500	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)	10000
4000	4000	4000	8500(In=63A 80A 100A) 7000(In=125A)	4000
		□		
		□		
		□		
		□		
		■		–
		–		■
		-5℃ ~+40℃		
		IP40		
		IP20		
1-25	1-16	1-16	25-50	1-10
16	16	16	-	-
Cable/Busbar	Cable/Busbar	Cable/Busbar	Cable	Cable
		2		
		30		
		-25℃ ~+70℃		
	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

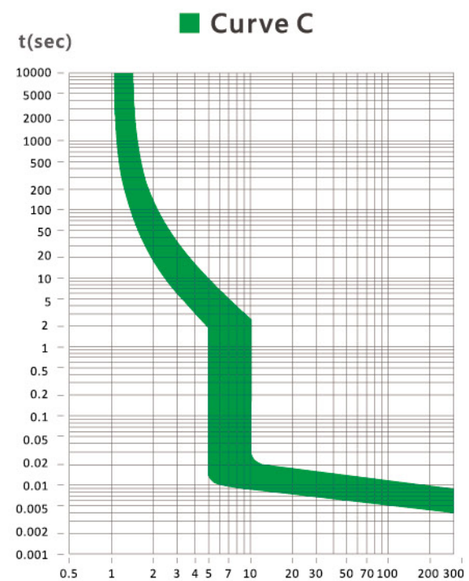


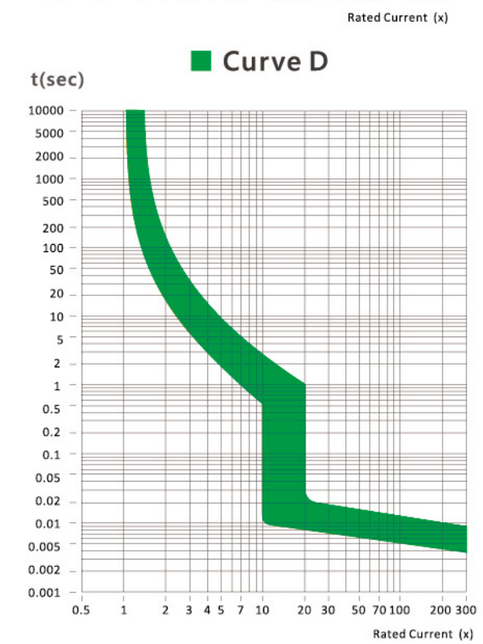
Normal Working Conditions and Installation Conditions:

- Ambient Temperature: -5℃ ~+40℃ , it's average over a period of 24 hours does not exceed +35℃ .
- Height above Sea Level: ≤ 2000m.
- Atmospheric Condition:
  - When the maximum temperature is +40℃ , the relative humidity of the air is not exceed 50%, and it has higher humidity at lower temperature. The maximum monthly relative humidity is90%, and the lowest temperature is +20℃ . 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.

Characteristics Curve







Time-current operating characteristics

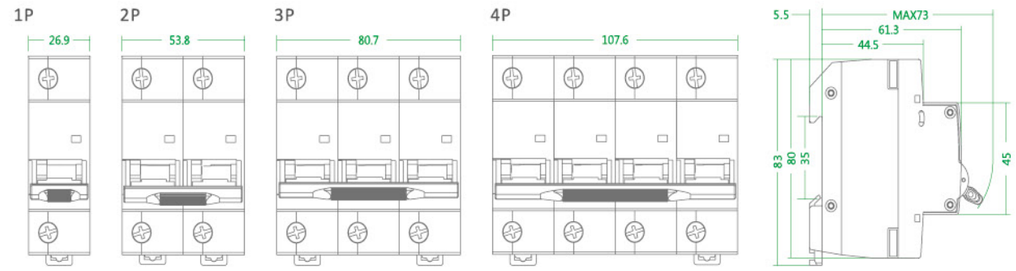
Test	Type	Test current	Inital condition	Limits of tripping or non-tripping time	Result to be obtained	Remarks
a	B, C, D	1,13 I_n	Cold[a]	t ≤ 1h(for I_n ≤ 63A) t ≤ 2h(for I_n > 63A)	No tripping	
b	B, C, D	1,45 I_n	Immediately following test a	t < 1h(for I_n ≤ 63A) t < 2h(for I_n > 63A)	Tripping	Current steadily increased within 5 s
c	B, C, D	2,55 I_n	Cold[a]	1s < t < 60s (for I_n ≤ 32A) 1s < t < 120s (for I_n > 32A)	Tripping	
d	B C D	3 I_n 5 I_n 10 I_n	Cold[a]	t ≤ 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[a]	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.						

[a] The term "cold" means without previous loading, at the reference calibration temperature.
[b] 50 /n for special cases.

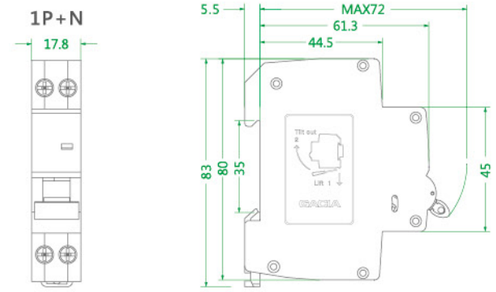
Dimensions

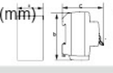
SB6NZ/SB6HS/SB6H/SB6L/SB6HC/SB6LC

◆ SG6H

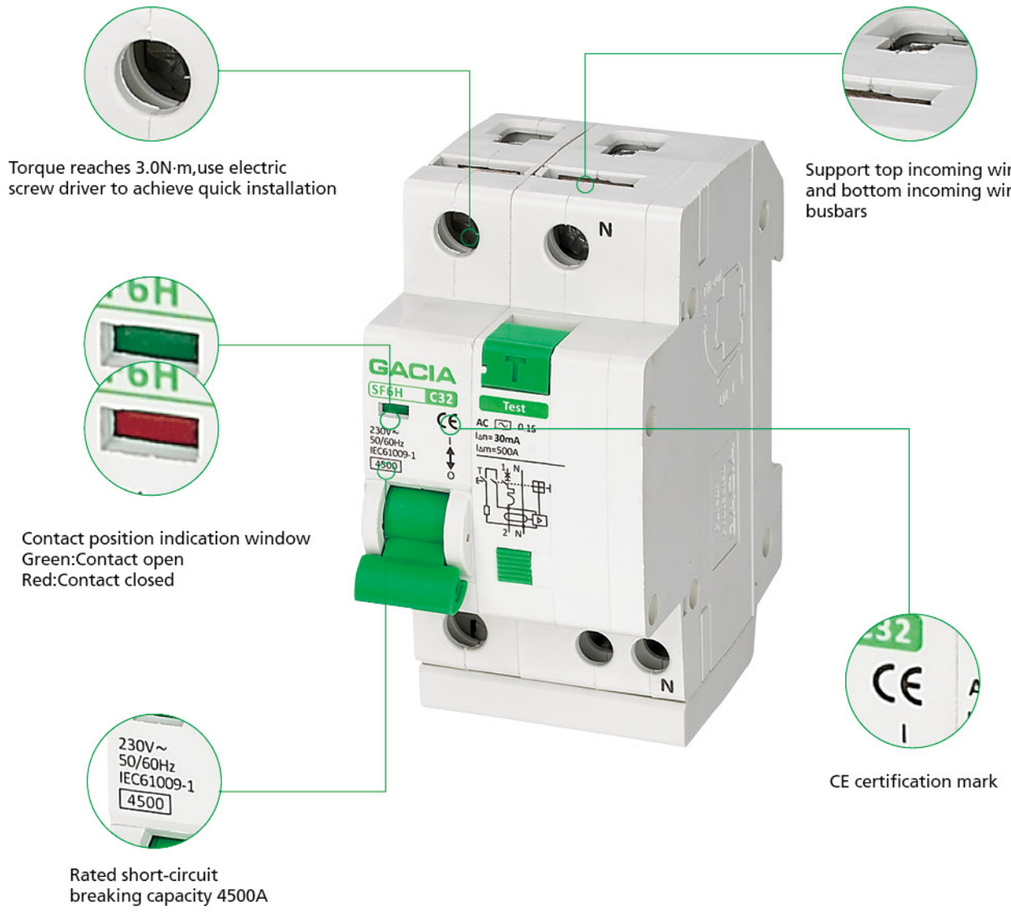


◆ SN6N



Model			SL6N	SF6H	SH6H
IEC/EN 61009-1					
Poles			1P+N	1P+N, 2P, 3P+N4P	1P+N, 2P, 3P+N4P
Certification					
Electrical Specifiction					
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/IΔm	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(mm^2)			1-6	1-16	1-35
busbar(mm^2)			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

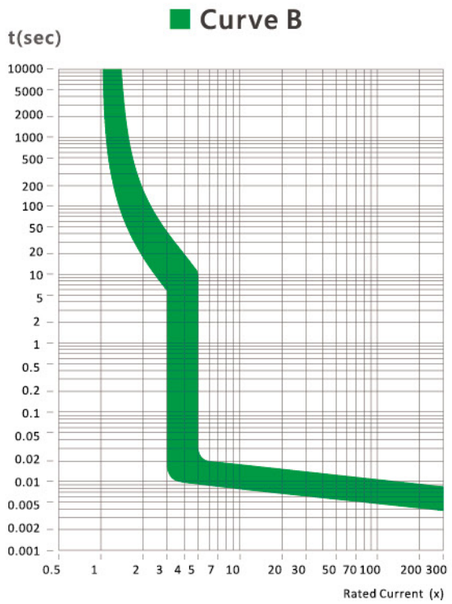
■ Default □ Optional – None

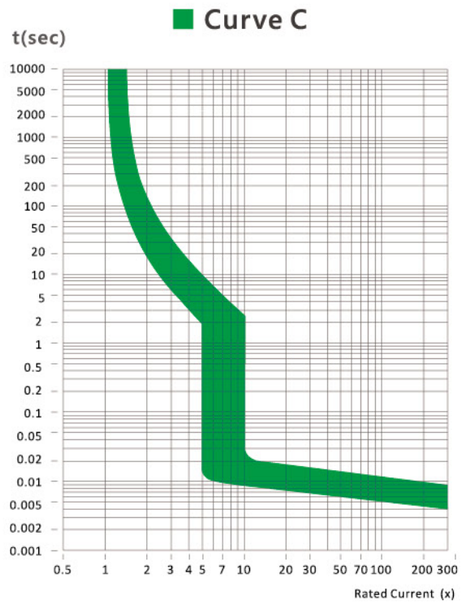


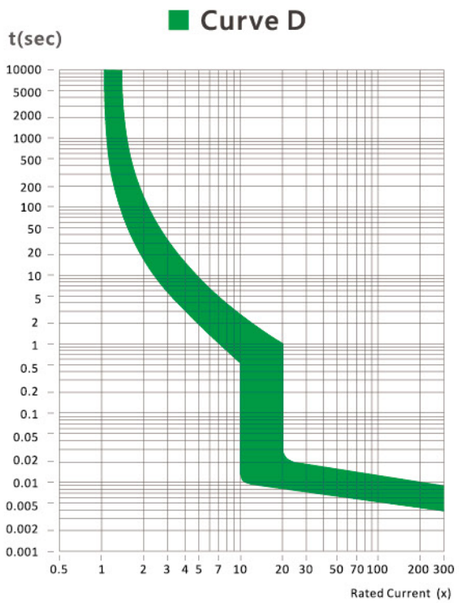
Normal Working Conditions and Installation Conditions

- 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

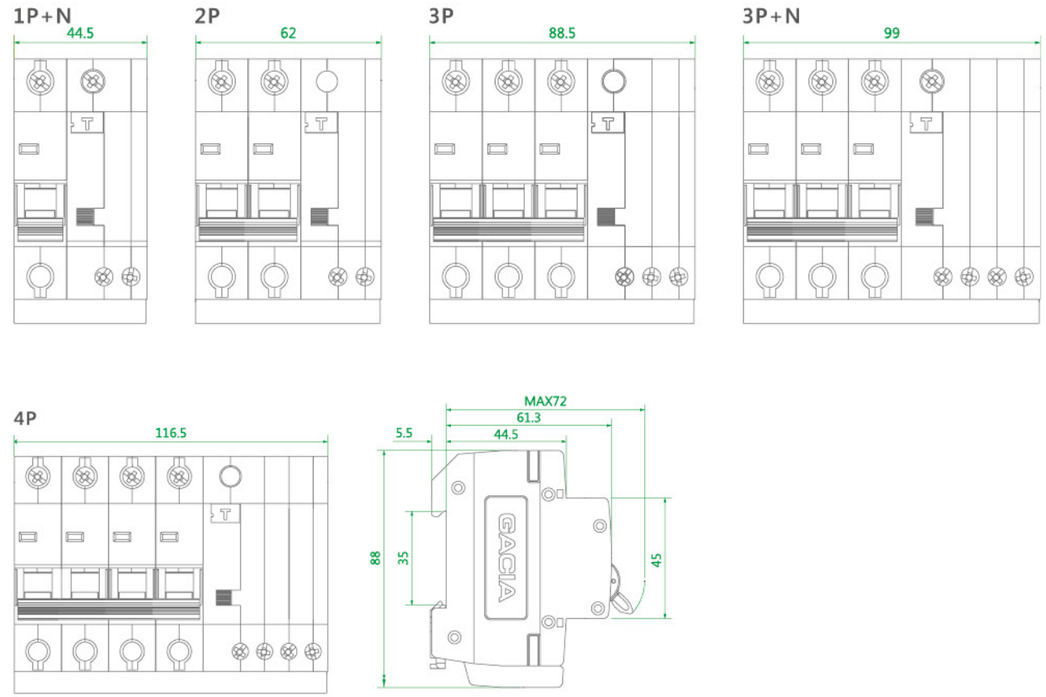




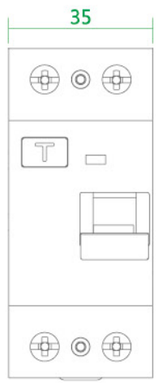


Dimensions

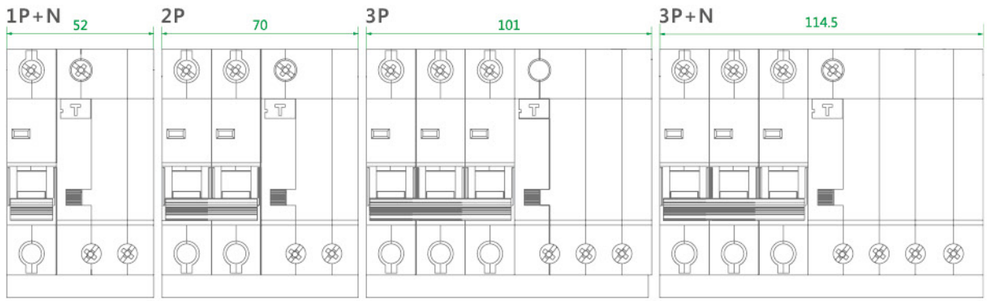
◆ SN6H 1-32A

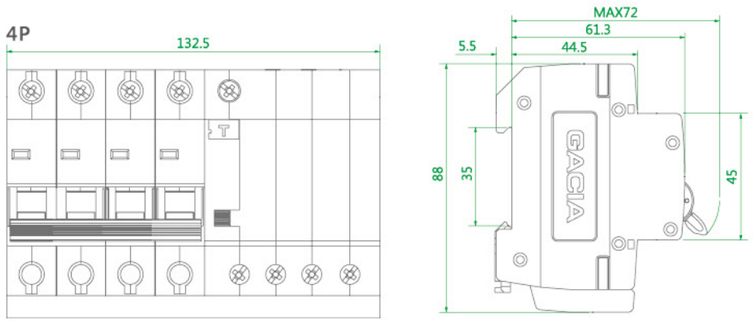


◆ SL6N

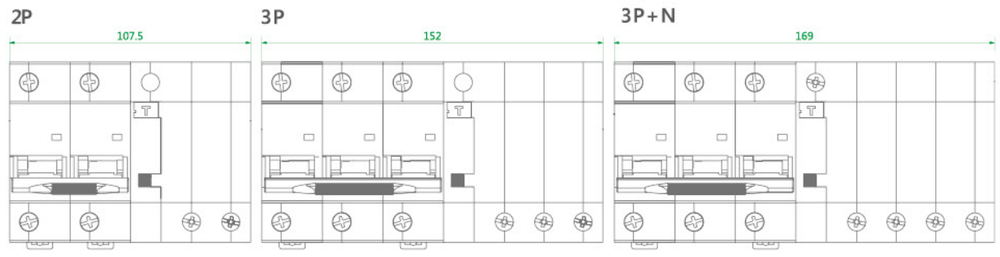


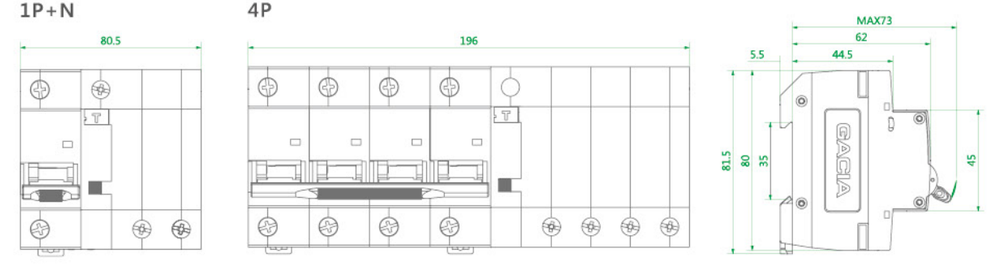
◆ SN6H 40-63A

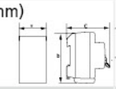




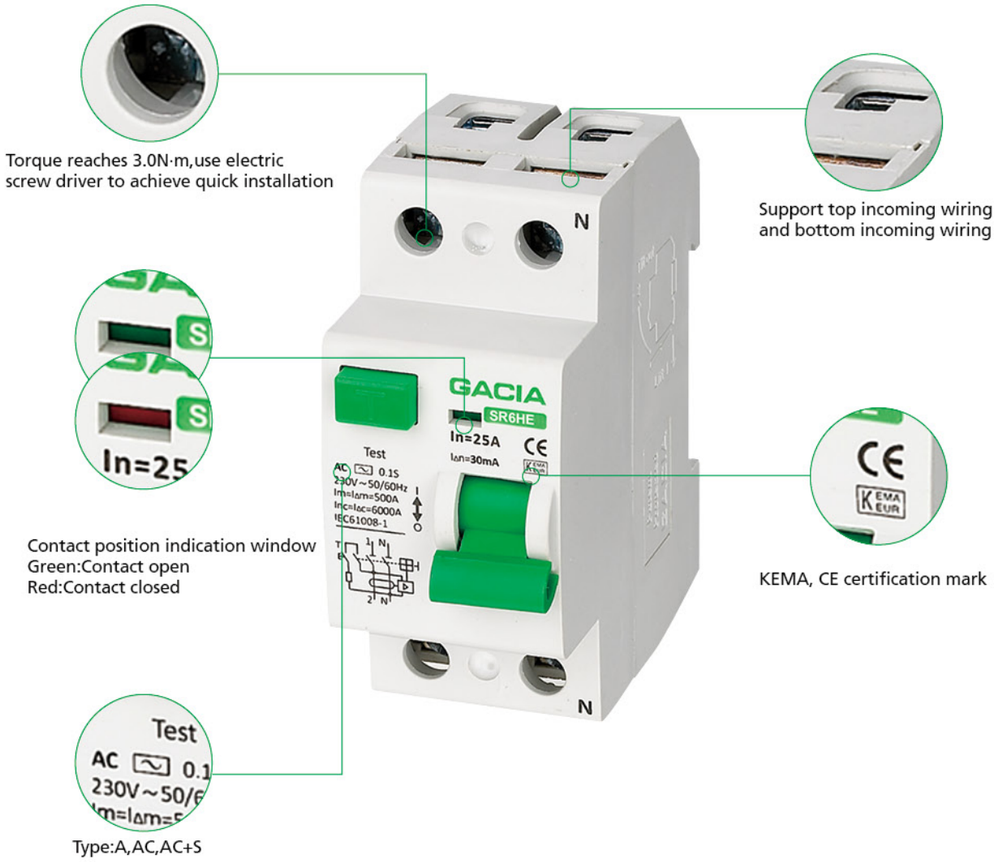
◆ SH6H





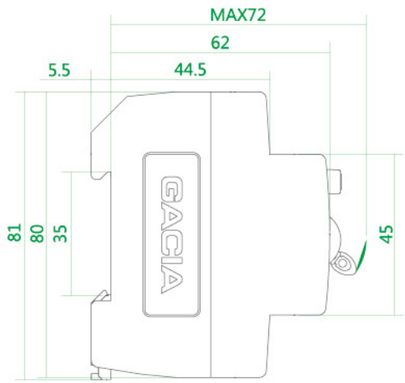
Model		SR6HE	SR6HM
IEC/EN 61008-1			
Poles		2P, 4P	2P, 4P
Certification		KEMA EUR CE	KEMA EUR CE
Electrical Specifiction			
Rated current(A)	In	16-63A	16-63A
Rated working voltage(V)	Ue	2P:230,4P:400	2P:230,4P:400
Rated insulated voltage(V)	Ui	500	500
Impulse withstand voltage(kV)	Uimp	6	6
Rated conditional short-circuit breaking capacity(KA)	Ics	6	6
Rated Residual current(mA)	IΔn	10,30,100,300	10,30,100,300
Rated Residual making and breaking capacity	IΔm	500(≤50A),630(63A)	500(≤50A),630(63A)
Residual current working type		AC,AC+S,A	AC,A
Residual current Protection type		Electronic	Electromagnetic
Dielectric test voltage(kV)		2.5	
Service life Mechanical	Standard value	4000	
(O-C) Electrical	Standard value	2000	
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(mm^2)		16	
busbar(mm^2)		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

AUX
Auxiliary contact

ALT
Alarm contact

SHTA
Shunt release+aux

OUVT
Over&under-voltage release

Mini circuit breaker

Remote indicating accessories

AUX auxlilary 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 pevice 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

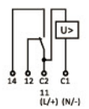
Function: when power voltage lowers(35%~70%Un), it makes circuit breaker trip; when power is not supplied normally, it prevents circuit breaker from reconnecting to the circuit.
0.2S time delay prevents the temporary lowering of voltage from causing mistrip.
Application: preventing machine from restarting 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 equipement.

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-Volatage Release				
	AC 230V	230V	-	-
	DC -	-	-	
			-	
OverVolatage Release				
	AC 230V	230V	-	-
	DC -	-	-	
			-	
Over&under-voltage release				
	AC 230V	230V	-	-
	DC -	-	-	
			-	