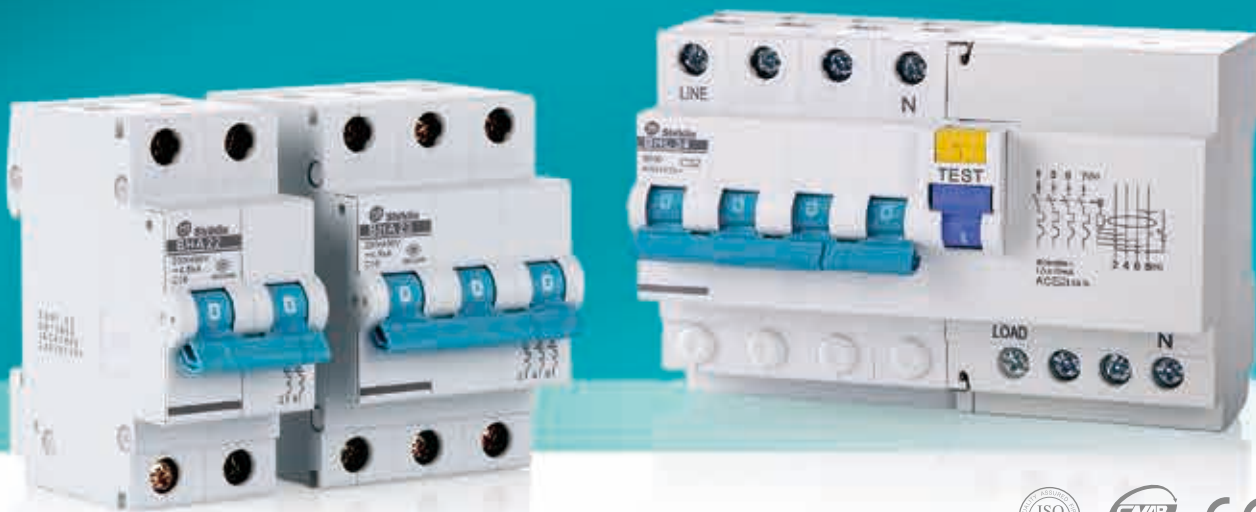


# MINIATURE CIRCUIT BREAKER



## MINIATURE CIRCUIT BREAKER BHA Series | 4.5kA/6kA/10kA

### Applications :

Applicable to the residential, industrial and commercial power distribution systems, provide circuit-control and protection on equipments against any impacts of overload and short-circuit.

### Type designation :

Type	Rated short-circuit breaking capacity (kA) Rated voltage (V)	Number of poles (P)	Tripping characteristics	Rated current I <sub>n</sub> (A)
BHA	2: 4.5kA; 3: 6kA; 4: 10kA 230/400V	1, 2, 3, 4	C type: 5~10I <sub>n</sub> D type: 10~15I <sub>n</sub>	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63

**Standard :** IEC 60898/ IEC 60947-2 / GB 10963

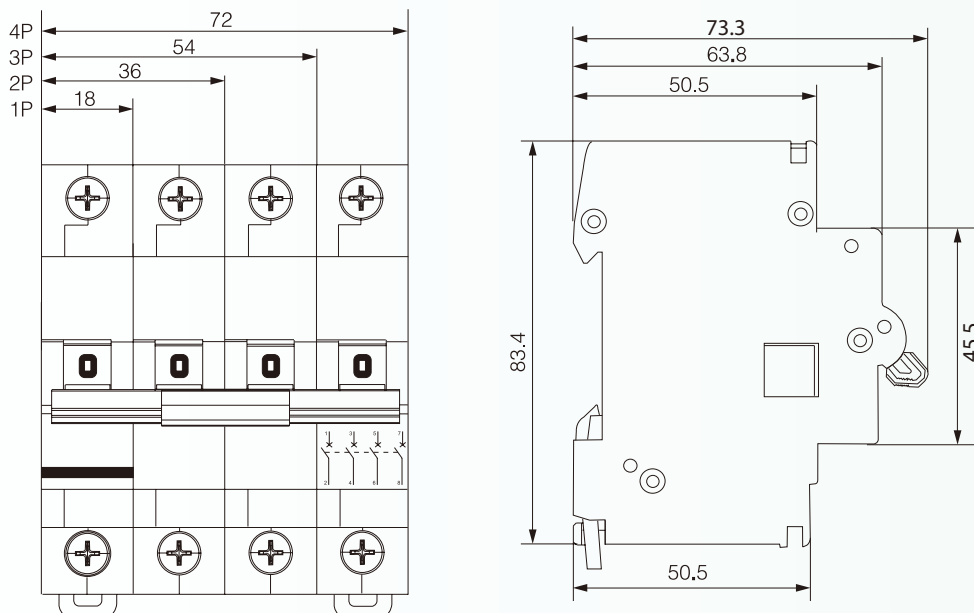
### Technical specification :

- Rated voltage : AC 230/400V
- Rated current : 1~63A
- Rated short-circuit breaking capacity : 4,500/6,000/10,000A
- Tripping characteristics :  
C type : 5~10I<sub>n</sub>  
D type : 10~15I<sub>n</sub>
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-16mm<sup>2</sup> / Rigid wire-25mm<sup>2</sup>
- Ambient temperature : -5°C~+40°C

### Features :

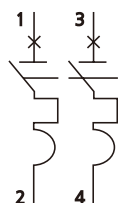
- Provide circuit protections –  
Good choice for overload and short-circuit protections.
- Complete accessories available –  
shunt trip(SHT), under-voltage trip(UVT), over-voltage trip(OVT), auxiliary switch(AX), alarm switch(AL).
- Easy installation –  
Modularized structure design can be tool-free installed on standard DIN-rail TH35mm.

### Dimension :

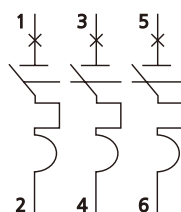




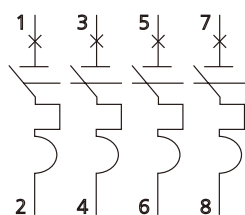
Poles (P)	Rated current (A)	Width (mm)	Weight (g)
1P	1	18	113
	2	18	113
	3	18	113
	4	18	113
	5	18	113
	6	18	113
	10	18	113
	16	18	113
	20	18	113
	25	18	113
	32	18	113
	40	18	113
	50	18	113
	63	18	113



2P	1	36	228
	2	36	228
	3	36	228
	4	36	228
	5	36	228
	6	36	228
	10	36	228
	16	36	228
	20	36	228
	25	36	228
	32	36	228
	40	36	228
	50	36	228
	63	36	228



3P	1	54	341
	2	54	341
	3	54	341
	4	54	341
	5	54	341
	6	54	341
	10	54	341
	16	54	341
	20	54	341
	25	54	341
	32	54	341
	40	54	341
	50	54	341
	63	54	341



4P	1	72	456
	2	72	456
	3	72	456
	4	72	456
	5	72	456
	6	72	456
	10	72	456
	16	72	456
	20	72	456
	25	72	456
	32	72	456
	40	72	456
	50	72	456
	63	72	456

# MINIATURE CIRCUIT BREAKER

## BHA Series | 125AF

### Applications :

Applicable to the residential, industrial and commercial power distribution systems, such as high-rise buildings, residential apartment and etc., providing circuit-control and protection on equipment against any impacts of overload and short-circuit. It also can be used for any of the application with low switching operation and can be used for circuit changeover.

### Type designation :

BHA	125	3	80
↓	↓	↓	↓
Type	Rated short-circuit breaking capacity (kA) Rated voltage (V)	Poles (P)	Rated current In (A)
BHA	125: 10kA 230/240V: 1P 400/415V: 2/3/4P	1, 2, 3, 4	80, 100, 125

**Standard :** IEC 60947-2 / GB 14048.2

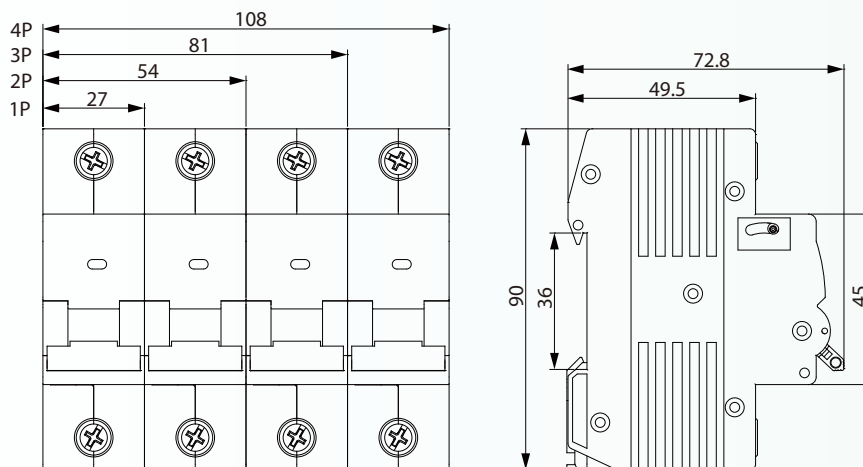
### Technical Specification :

- Rated voltage : AC 230/240/400/415V
- Rated current : 80/100/125A
- Rated short-circuit breaking capacity : 10,000A
- Tripping characteristics : 8~12In
- Mechanical life : 10,000 operations
- Wire capabilities : Cable cross section max. 50mm<sup>2</sup>
- Ambient temperature : -30°C~+70°C

### Features :

- Provide overload and short-circuit protections.
- Adoption of innovative new materials and manufacturing process with compact size, light weight and excellent appearance.
- Great capabilities in insulation, breaking capacity, arc-extinguishing, faster tripping with long service life and excellent reliabilities.
- Easy installation with the application of standard DIN-rail TH35mm.

### Dimension :

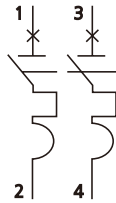




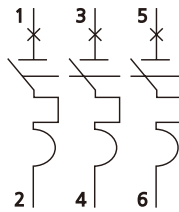
Poles (P)	Rated current (A)	Width (mm)	Weight (g)
1P	80	27	196
	100	27	196
	125	27	196



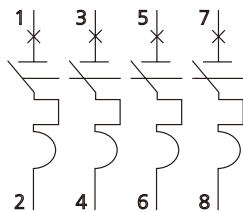
2P	80	54	393
	100	54	393
	125	54	393



3P	80	81	590
	100	81	590
	125	81	590



4P	80	106	787
	100	106	787
	125	106	787



# MINIATURE CIRCUIT BREAKER

## BHA DC Series | 10kA

### Applications :

Applicable to the residential, industrial and commercial power distribution systems, providing circuit-control and protection on equipment against any impacts of overload and short-circuit.

### Type designation :

BHA	5		1	DC	32
Type	Rated short-circuit breaking capacity (kA)		Poles (P)	Voltage	Rated current In (A)
	DC125V (1P) DC250V (2P)	DC250V (1P) DC500V (2P) DC750V (3P) DC1000V (4P)			
	4	5			
BHA	10	10	1, 2, 3, 4	DC	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63

**Standard :** IEC 60947-2 / GB 14048.2

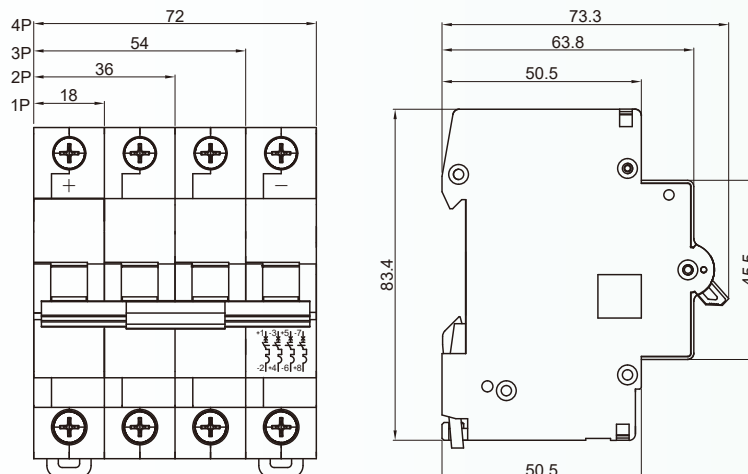
### Technical Specification :

- Rated voltage : DC 125V / 250V(1P) · DC 250V / 500V(2P) · DC750V(3P) · DC1000V(4P)
- Rated current : 1~63A
- Rated short-circuit breaking capacity : 10,000A
- Rated impulse voltage : 4kV
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-16mm<sup>2</sup> / Rigid wire-25mm<sup>2</sup>
- Ambient temperature : -40°C~+70°C
- \* Can't be used in IT system

### Features :

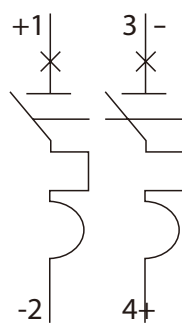
- Provide circuit protections -  
Good choice for overload and short-circuit protections.
- Variable accessories available -  
shunt trip(SHT), under-voltage trip(UVT), over-voltage trip(OVT), auxiliary switch(AX), alarm switch(AL).
- Easy installation -  
Modularized structure design can be tool-free installed on standard DIN-rail TH35mm.

### Dimension :





Poles (P)	Rated current (A)	Width (mm)	Weight (g)
1P	1	18	113
	2	18	113
	3	18	113
	4	18	113
	5	18	113
	6	18	113
	10	18	113
	16	18	113
	20	18	113
	25	18	113
	32	18	113
	40	18	113
	50	18	113
	63	18	113
2P	1	36	228
	2	36	228
	3	36	228
	4	36	228
	5	36	228
	6	36	228
	10	36	228
	16	36	228
	20	36	228
	25	36	228
	32	36	228
	40	36	228
	50	36	228
	63	36	228



## MINIATURE CIRCUIT BREAKER

**BHN Series** | Used in the "phase+neutral" circuit, single-phase or three -phase power system

### Applications :

In the residential power distribution system with neutral circuit, when the tripping occurs, it breaks the phase wire and the neutral wire simultaneously, isolate the circuit to avoid the electrical shock on the neutral wire even after tripping.

### Type designation :

BHN	2	1	C	32
↓	↓	↓	↓	↓
Type	Rated short-circuit breaking capacity (kA) Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)
BHN	2: 4.5kA; 3: 6kA; 230V	1P+N	C type: 5~10In	6, 10, 16, 20, 25, 32

**Standard :** IEC 60898 / GB 10963

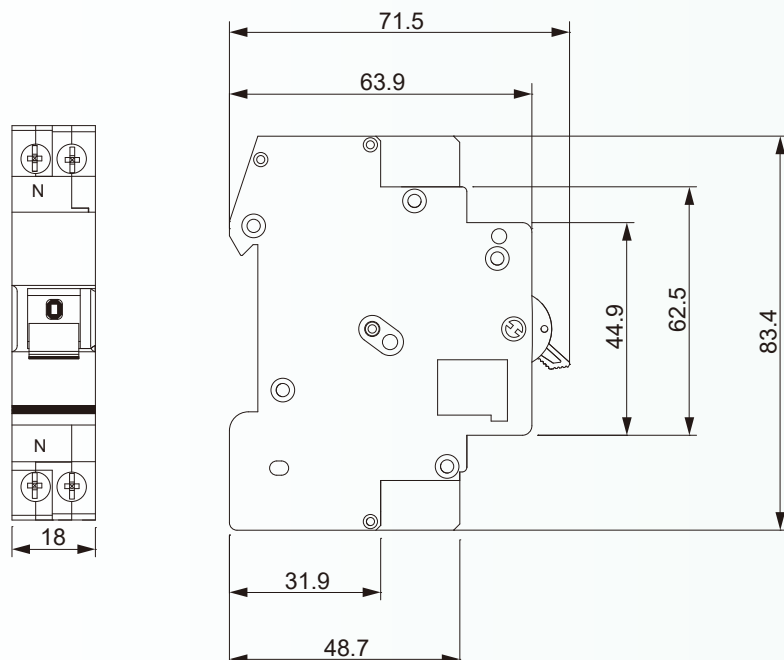
### Technical Specification :

- Rated voltage : AC 230V
- Rated current : 6~32A
- Rated short-circuit breaking capacity : 4,500 / 6,000A
- Tripping characteristics :  
C type : 5~10In
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-10mm<sup>2</sup> / Rigid wire-16mm<sup>2</sup>
- Ambient temperature : -5°C~+40°C

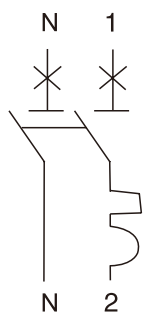
### Features :

- Adoption of innovative new materials and manufacturing process with compact size, light weight and excellent appearance.
- Breaking the phase wire and the neutral wire simultaneously.
- Great capabilities in insulation, breaking capacity, arc-extinguishing, faster tripping with long service life and excellent reliabilities.
- Bus bar wiring kit available for connection, easy and time-saving for wiring.
- Tool-free installation with the application of standard DIN-rail TH35mm, makes installation easy and convenient.

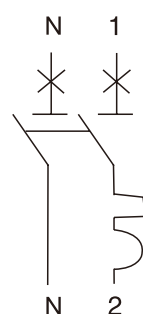
### Dimension :







Poles (P)	Rated current (A)	Width (mm)	Weight (g)
1P+N (4.5kA)	6	18	108
	10	18	108
	16	18	108
	20	18	108
	25	18	108
	32	18	108



1P+N (6kA)	6	18	108
	10	18	108
	16	18	108
	20	18	108
	25	18	108
	32	18	108

## RESIDUAL CURRENT CIRCUIT BREAKER WITH OVERCURRENT PROTECTION

**BHL-A Series** | Used in the "phase+neutral" circuit, single-phase or three -phase power system

### Applications :

Applicable to the residential, industrial and commercial power distribution systems.

Compact size, provide with short-circuit, overload, earth-leakage and overvoltage protection.

Excellent short circuit and overload protection are able to break phase and neutral simultaneously

### Type designation :

BHL-A	3	1	C	32	A	30	G
Type	Rated short-circuit breaking capacity (kA)	Poles (P)	Tripping characteristics	Rated current I <sub>n</sub> (A)	Residual current type	Rated sensitivity current (mA)	Optional function
	Rated voltage (V)						
BHL-A	2: 4.5kA; 3: 6kA; 230V	1P+N	C type: 5~10I <sub>n</sub> D type: 10~15I <sub>n</sub>	6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	10, 30, 100, 300	over-voltage protection (230V, internal built)

**Standard :** IEC 61009 / GB 16917

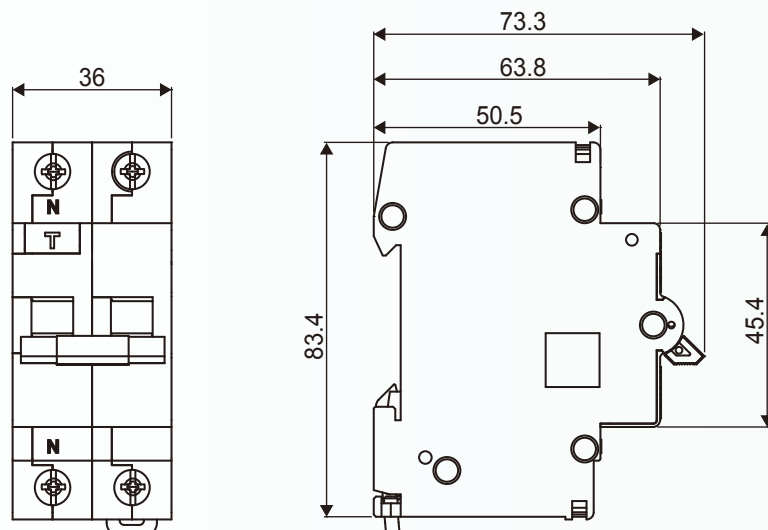
### Technical specification :

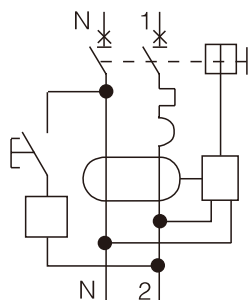
- Rated voltage : AC 230V
- Rated current : 6~63A
- Rated sensitivity current : 10mA, 30mA, 100mA, 300mA
- Rated short-circuit breaking capacity : 4,500 / 6,000A
- Tripping characteristics :  
C type : 5~10I<sub>n</sub>  
D type : 10~15I<sub>n</sub>
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-10mm<sup>2</sup> / Rigid wire-16mm<sup>2</sup>
- Ambient temperature : -30°C~+70°C
- Residual current type : A, AC

### Features :

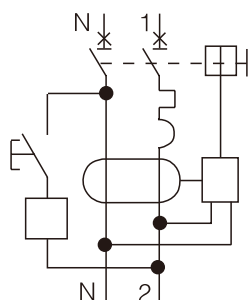
- Excellent anti-electromagnetic interference capability which avoid the fault trip caused by a transient over-voltage.
- Tool-free installation with the application of standard DIN-rail TH35mm, makes installation easy and convenient.
- Reliable usage with N phase breakpoint.
- Electronic type A/AC type leakage protection.
- AC class: Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.
- A class: Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase.

### Dimension :





Poles (P)	Rated current (A)	Width (mm)	Weight (g)
1P+N (4.5kA)	6	36	205
	10	36	205
	16	36	205
	20	36	205
	25	36	205
	32	36	205
	40	36	205
	50	36	205
	63	36	205



1P+N (6kA)	6	36	205
	10	36	205
	16	36	205
	20	36	205
	25	36	205
	32	36	205
	40	36	205
	50	36	205
	63	36	205

## RESIDUAL CURRENT CIRCUIT BREAKER WITH OVERCURRENT PROTECTION BHL Series

### Applications :

Applicable to the residential, industrial and commercial power distribution systems provided with short-circuit, overload and earth-leakage protection.

### Type designation :

Type	Rated short-circuit breaking capacity (kA) Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Optional function (2P)
BHL	2: 4.5kA; 3: 6kA; 230/400V	2, 3, 4	C type: 5~10In D type: 10~15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	over-voltage protection (230V, internal built)

**Standard :** IEC 61009 / GB 16917

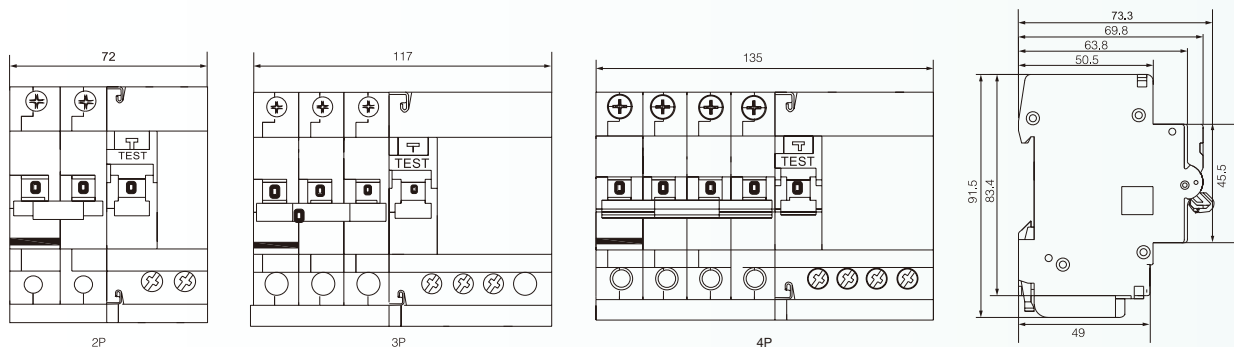
### Technical Specification :

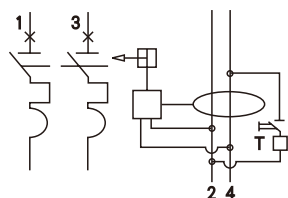
- Rated voltage : AC 230V(2P) · AC 400V(3P/4P)
- Rated current : 1~63A
- Rated sensitivity current : 30mA
- Rated short-circuit breaking capacity : 4,500/6,000A
- Tripping characteristics :  
C type : 5~10In  
D type : 10~15In
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-16mm<sup>2</sup> / Rigid wire-25mm<sup>2</sup>
- Ambient temperature : -5°C~+40°C
- Internal OUT over voltage range AC 280V ± 5%

### Features :

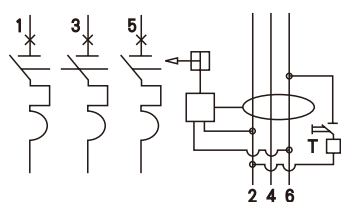
- Excellent anti-electromagnetic interference capability which avoid the faulty trip caused by a transient over-voltage.
- Tripping indication : Red- indicates earth-leakage tripped; white- no earth-leakage tripping.
- Test button(yellow) provides earth-leakage testing function during the regular maintenance.
- Unique installation design, tool-free installation is realized.

### Dimension :

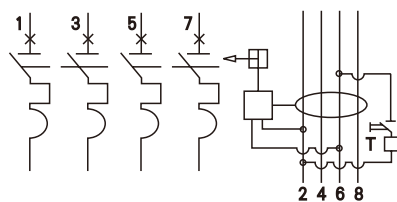




Poles (P)	Rated current (A)	Width (mm)	Weight (g)
2P	1	72	423
	2	72	423
	3	72	423
	4	72	423
	5	72	423
	6	72	423
	10	72	423
	16	72	423
	20	72	423
	25	72	423
	32	72	423
	40	72	423



3P	1	117	630
	2	117	630
	3	117	630
	4	117	630
	5	117	630
	6	117	630
	10	117	630
	16	117	630
	20	117	630
	25	117	630
	32	117	630
	40	117	630



4P	1	135	770
	2	135	770
	3	135	770
	4	135	770
	5	135	770
	6	135	770
	10	135	770
	16	135	770
	20	135	770
	25	135	770
	32	135	770
	40	135	770

## RESIDUAL CURRENT CIRCUIT BREAKER

### BHR-A Series

#### Applications :

Applicable to the residential, industrial and commercial power distribution systems to prevent shocks caused by earth leakage which could be fatal.

#### Type designation :

Model	Poles (P)	Rated current In(A)	Residual current Type	Rated sensitivity current I $\Delta$ n (mA)
BHR-A	42: 2P 44: 4P	25, 32, 40, 63	A, AC	030: 30 100: 100 300: 300

**Standard :** IEC61008-1

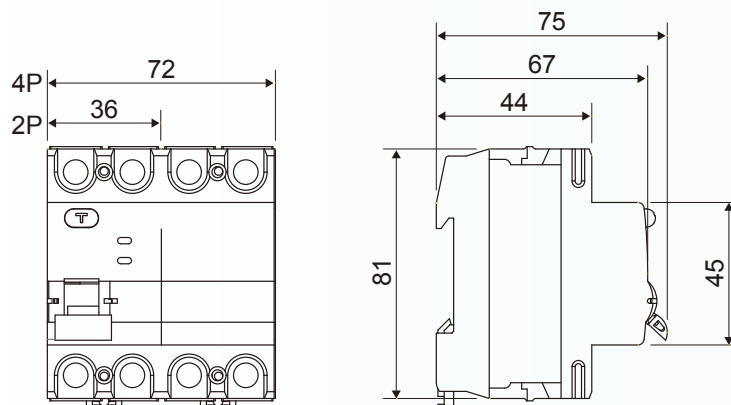
#### Technical Specification :

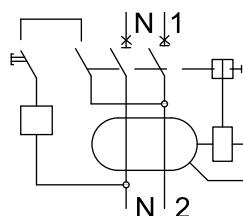
- Rated voltage : AC240V (2P), AC415V (4P)
- Rated current : 25A, 32A, 40A, 63A
- Rated sensitivity current : 30mA, 100mA, 300mA
- Rated short-circuit breaking capacity : 10,000 A
- Residual current type : A, AC
- Mechanical life : 20,000 Operations
- Wiring capabilities : Stranded wire-4~25mm<sup>2</sup>
- Ambient temperature : +30°C

#### Features :

- Test button (yellow) provides earth-leakage testing function during the regular maintenance.
- Tool-free installation with the application of standard DIN-rail TH35mm, makes installation easy and convenient.
- AC class: Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.
- A class: Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase.

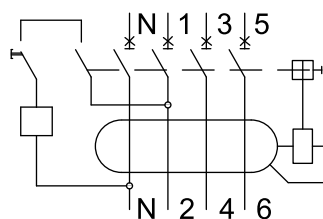
#### Dimension :





2P

Poles (P)	Rated current (A)	Width (mm)	Weight (g)
2P	25	36	216
	32	36	216
	40	36	216
	63	36	216



4P

4P	25	72	366
	32	72	366
	40	72	366
	63	72	366

## ISOLATION SWITCH BHG Series

### Applications :

Applicable to the residential, industrial and commercial power distribution systems which provided with the protection and control of the circuit, mainly used as a main switch for the subsidiary circuits. It also can be used in the application with low switching and low consumption electrical appliances and illumination, providing On/Off and isolation of the circuit.

### Type designation :

BHG	4P	32A
↓	↓	↓
Type	Poles (P)	Rated current In (A)
BHG	1, 2, 3, 4	32, 40, 63, 80, 100

Standard : IEC 60947-3 / GB 14048.3

### Technical Specification :

- Rated voltage : AC 230/400V
- Rated current : 32~100A
- Mechanical life : 50,000 operations
- Wiring capabilities : Stranded wire-16mm<sup>2</sup> / Rigid wire-25mm<sup>2</sup>
- Ambient temperature : -5°C~+40°C



Poles (P)	Rated current (V)	Rated current (A)	Width (mm)	Weight (g)
<b>1P</b> 	230	32	18	85
	230	40	18	85
	230	63	18	85
	230	80	18	85
	230	100	18	85
<b>2P</b> 	400	32	36	172
	400	40	36	172
	400	63	36	172
	400	80	36	172
	400	100	36	172
<b>3P</b> 	400	32	54	259
	400	40	54	259
	400	63	54	259
	400	80	54	259
	400	100	54	259
<b>4P</b> 	400	32	72	346
	400	40	72	346
	400	63	72	346
	400	80	72	346
	400	100	72	346



## Accessories :

### Features :

Tool-free, left-mounted on the MCBs.

For one circuit breaker, maximum three (3) accessories can be installed. Maximum, two (2) auxiliary switch (AX) can be installed for one circuit breaker.

### Type designation :

#### BHK

##### • Accessories

BHK	2						1		0					
Type	Accessory Code						Installation		Control Voltage					
	1	2	3	4	5	6	1	2	0	1	2	3	4	5
	AL	AX	SHT	UVT	OVT	OVRT	Standard	Option	—	AC220~240V	DC48V	AC24~48V DC12~48V	AC12V	AC230~415V DC110~130V
	AL						○		○					
BHK		AX					○	○	○					
			SHT				○	○				○	○	○
				UVT			○	○		○	○			
					OVT		○		○					

Note: 1. Standard: Left side mounting of breaker

2. Option: Left side mounting of other accessory

3. Maximum 3 accessories can be installed, Only 1 tripping device (UVT/OVT/SHT) can be installed on the same MCB.



Type	Auxiliary Contact AC/12	Width (mm)	Product Code
AL Alarm Switch	 1NO. 1NC 230V 6A 440V 3A	9	BHK11



Type	Auxiliary Contact AC/12	Width (mm)	Product Code
AX Auxiliary Contact	 1NO. 1NC 230V 6A 440V 3A	9	BHK21 BHK22



Type	Control Voltage		Width (mm)	Product Code
	V AC	V DC		
SHT Shunt Trip	 12 24-48 230-415	 12~48 110-130	18	BHK31 BHK32



Type	Control Voltage		Width (mm)	Product Code
	V AC	V DC		
UVT Under Voltage Trip	 220-240	48	18	BHK41 BHK42



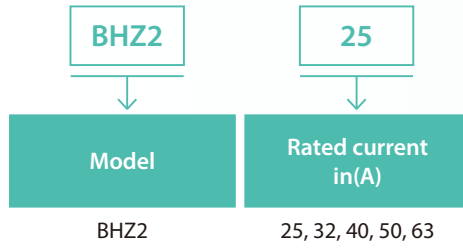
Type	Rated voltage	Current	Over voltage range	Trip time	Width (mm)	Product Code
OVT Over Voltage Trip	 230V	15mA	280V±5%	≤0.25	18	BHK51

## Over / Under Voltage Protective Device with Auto-reset BHZ Series

### Applications :

Use in single phase AC circuit to provide protection when over-voltage or under-voltage occurred cause by a break in neutral line or voltage unbalanced cause by the loads.

### Type designation :



### Technical Specification :

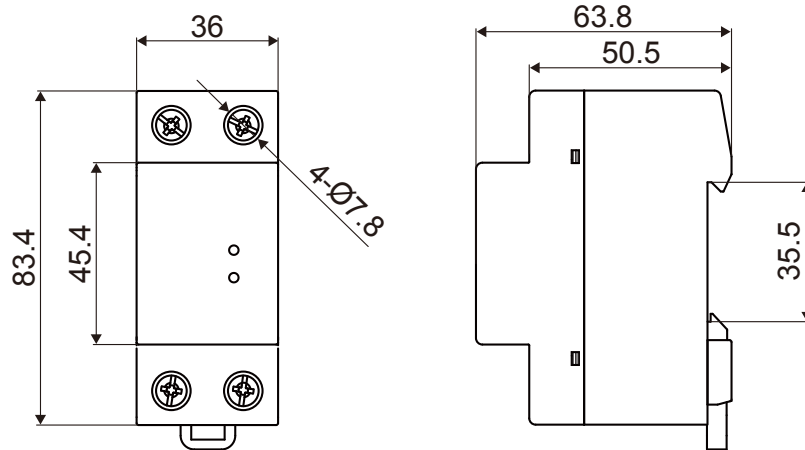
- Rated voltage : AC230V, 50Hz
- Rated current : 25A, 32A, 40A, 50A, 63A
- Rated insulation voltage : 690V
- Rated impulse withstand voltage : 4kV
- Voltage protection range : 0~450V
- Mechanical life : 20,000 operations
- Wiring capabilities : Stranded wire-10mm<sup>2</sup> / Rigid wire-16mm<sup>2</sup>
- Ambient temperature : -40°C~+70°C, cannot exceed average of 35°C in 24hr
- Pollution degree : 3

Model	Rated current (A)	Over voltage		Under voltage		Operation time		Reset	Weight(g)
		Operating value	Reset value	Operating value	Reset value	Over voltage	Under voltage		
BHZ2-25	25	> 275V	255V~265V 260	50V~160V	180V~190V 185	275V: 3-15s 300V: 1-3s 350V: 0.25-0.75s 400V: 0.1-0.2s	0.7s	30s±5s	210
BHZ2-32	32								
BHZ2-40	40								
BHZ2-50	50								
BHZ2-63	63								

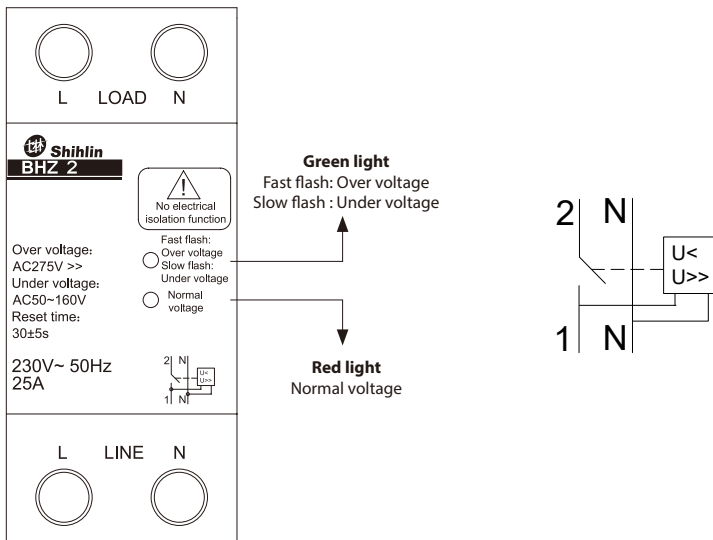
### Features :

- With over and under voltage protection, the device will trip when the voltage supply is over or under value. If the voltage supply return to normal, the device will automatically reset without any manual intervention.
- High voltage detection accuracy and precision operating time using microcontroller, reliable protection .
- Using magnetic latching relay as internal part, energy conservation and environmental protection with low power consumption under normal operation.

Dimension :

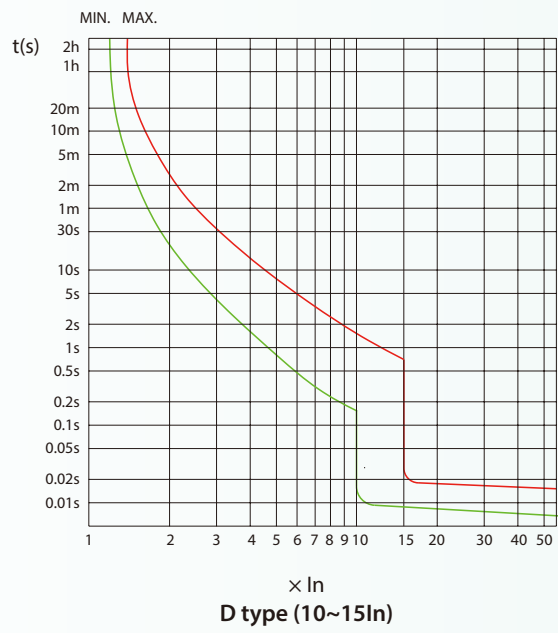
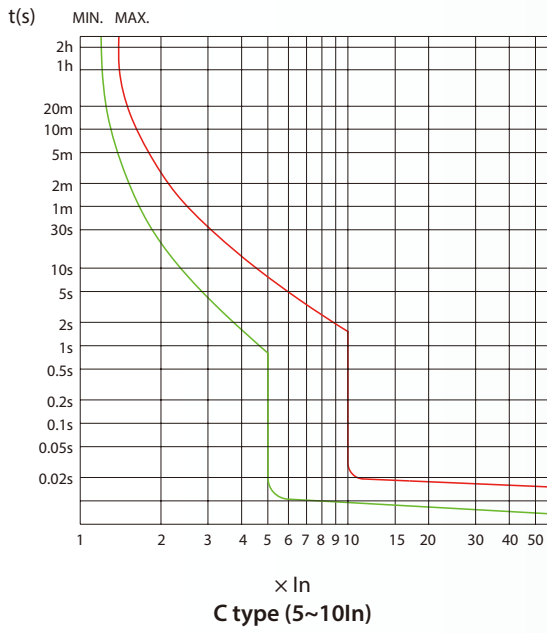


Poles (P)	Rated current (A)	Width (mm)	Weight (g)
2	25	36	210
2	32	36	210
2	40	36	210
2	50	36	210
2	63	36	210

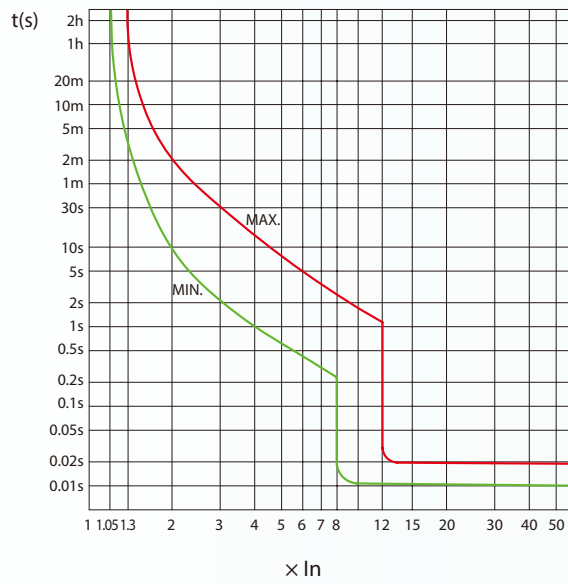


### Over-current protection characteristic

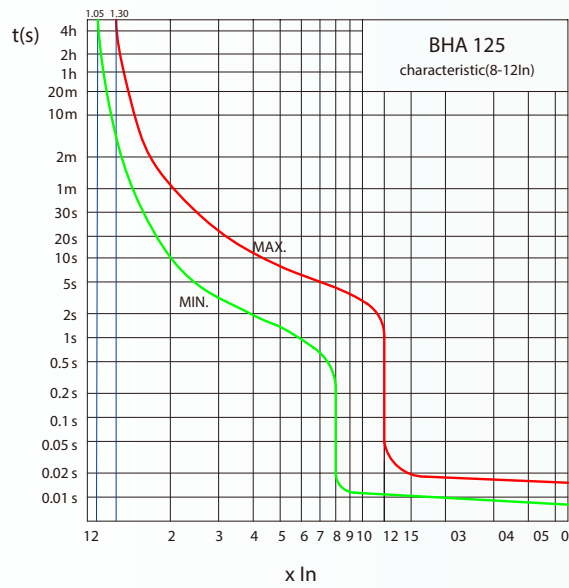
BHA series (4.5/6/10kA) · BHN series · BHL series (4.5/6kA)



BHA DC series



BHA series (125AF)



Wiring connection:

Connection	Rating	Tightening torque	Bare copper wire (without clamp)		Bare copper wire (with clamp)	Multi-cables (with clamp)	
			Rigid	Flexible	Flexible	Rigid	Flexible
	—		Cu	Cu	Cu	Cu	
	1-25A		2N.m	1-25mm <sup>2</sup>	1-16mm <sup>2</sup>	1-25mm <sup>2</sup>	—
	32-63A	2N.m	1-35mm <sup>2</sup>	1-25mm <sup>2</sup>	1-35mm <sup>2</sup>	3x16mm <sup>2</sup>	3x10mm <sup>2</sup>



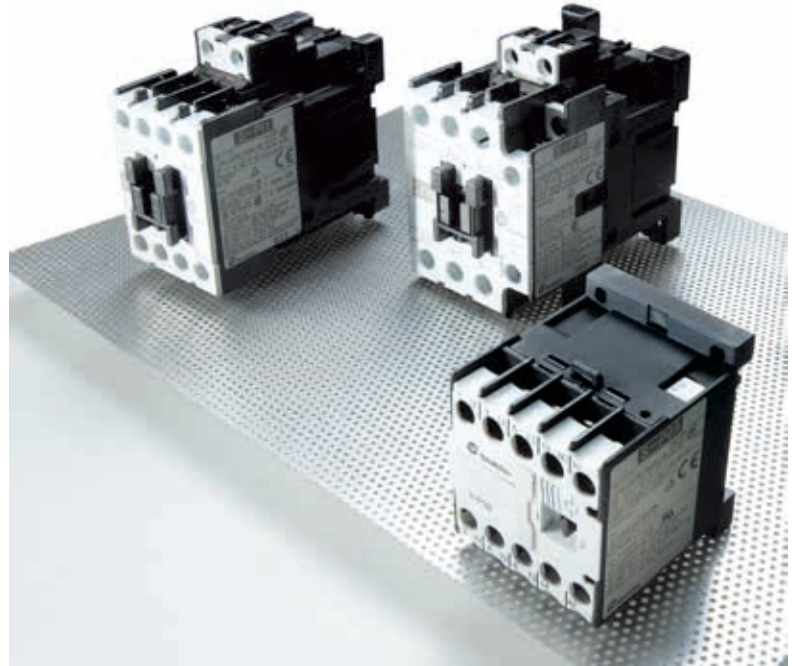


CIRCUIT BREAKER ( MCCB / ELCB / EMCCB / MCB )

## Breaker & Switchgear System



AIR CIRCUIT BREAKER



MAGNETIC CONTACTOR / SWITCH ( CONTACTOR / MS / MMS )



AUTOMATIC TRANSFER SWITCHES



SURGE PROTECTIVE DEVICE



SMART METER



INVERTER



LOW VOLTAGE POWER CAPACITORS

# SHIHLIN ELECTRIC & ENGINEERING

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