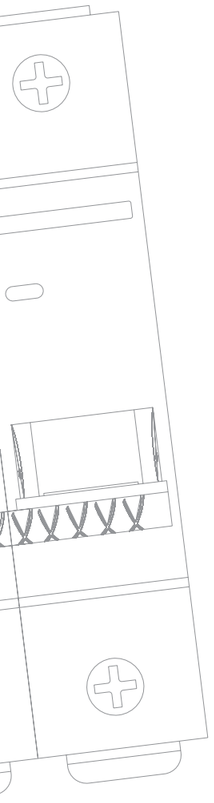
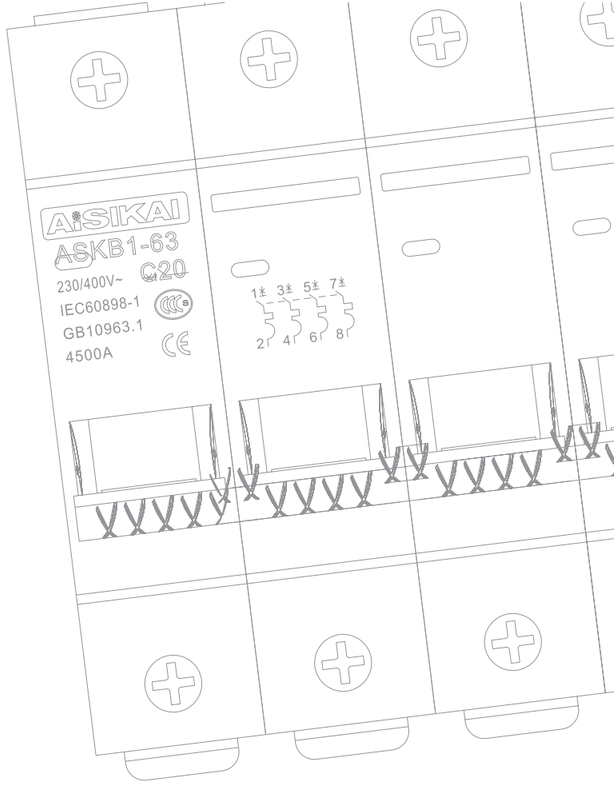
AISIKAI-2022OSG-ASKB-V1.0

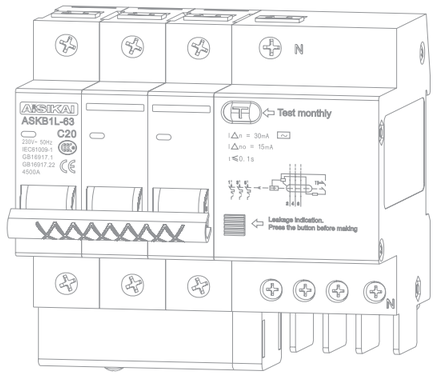
wechat contact



AiSIKAI®



MINIATURE CIRCUIT BREAKERS
SELECTION GUIDE



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JIANGSU AISIKAI ELECTRIC CO.,LTD

PRODUCTSCONTENTS

COMPANYPROFILE

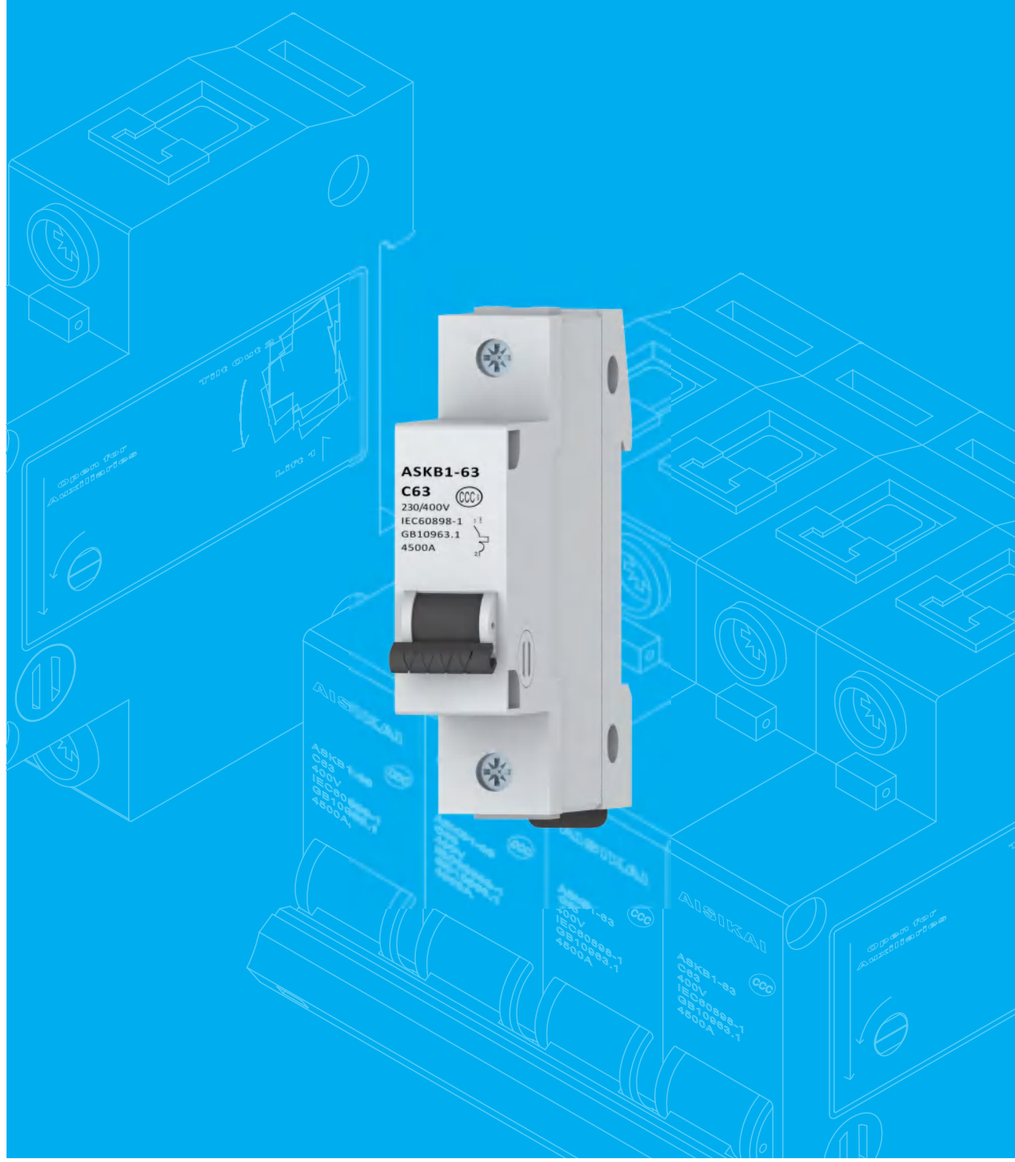
Since established in 2007, AISIKAI has been committed to the manufacture, research, development and marketing of the high-quality high and low voltage electric switches. Our product lines cover level Ⅰ, Ⅱ, Ⅲ power distribution fields. We are awarded as the National High Tech Enterprise, Double-Soft Certified Enterprise (i.e., software product certified and software enterprise certified), Little Giant Science and Technology Enterprise of Jiangsu Province, and Contract-keeping and Trustworthy Enterprise. We have invention patents, utility model patents and appearance patents. All of AISIKAI products have China Compulsory Certification (CCC) and China Quality Certification (CQC). From 2014, we have been recognized as Yangzhou City Engineering Technology Center and National Adopting International Standard Enterprise.

AISIKAI products have CE certification and IEC CB certification. We have passed the ISO9001 Quality Management System and ISO14001 Environment Management System, ISO45001 Occupational Health Management System, and SGS Global Qualified Supplier Authentication.

QUALITY, SERVICE, REPUTATION, INNOVATION is AISIKAI's unchanging company principle. We're always eager to make progress to offer reliable products and impeccable services. With your support and trust, AISIKAI will thrive and work towards a brighter future.

MINIATURE CIRCUIT BREAKERS

AiSIKAI



MCB

MINIATURE CIRCUIT BREAKER

MINIATURE CIRCUIT BREAKER

SMALL VOLUME, STRONG PERFORMANCE

ASKB1 series miniature circuit breaker (MCB for abbreviation) is a new generation of products developed by AISIKAI Electric for the latest market demands. MCB has compact main structure and small and beautiful appearance. Derived from the basic type, we provide several MCB with additional functions, e.g., residual current type MCB, electronic over-voltage under-voltage type MCB, prepaid type MCB. Through adjusting the internal components, we get the new series of miniature isolation switches ASKG2, which has the same outline dimensions and installation method as ASKB1, so they can be used together.

We have optimized the structure of the ASKB1 series in response to the demanding requirements of the household end market for MCB volume. We innovatively place the AC 220V fire and neutral lines in one shell to form the ASKB2 series, which achieves overload and short-circuit protection for household electricity.

Wide Range of Applications

ASKB series miniature circuit breakers comply with the IEC/GB standards and passed the China Compulsory Certification. MCB are suitable for the third level power grid systems with rated operational voltage up to AC 400V and rated current up to 125A, providing short-circuit protection, control and isolation functions.

Safe And Reliable Arc Extinguishing System

The arc extinguishing system of ASKB series MCB is composed of arc guide plate, arc separator and arc-extinguishing chamber. Relying on the scientific structure design, the arc can be transferred from the contact to the arc angle within 1ms, and the whole arc extinguishing process can be completed within 4ms, making the protection function reliably completed.

CLEAR ON/OFF INDICATION

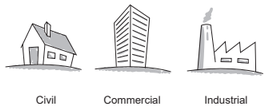
Carefully designed window can indicate the ON/OFF status through the red and green color, convenient to use

Extensive Optional Accessories

ASKB series miniature circuit breakers can be equipped with a wide range of optional accessories, thus meeting the requirements of customers in various industries for power distribution systems.

Over-voltage under-voltage tripper：MN+MV
Shunt tripper: MX+OF
Auxiliary contact: OF
Alarm access: SD

APPLICATIONS



Civil　Commercial　Industrial

STANDARDS

GB10963.1、IEC60898-1

Functional Derivation

ASKB1L series
63A frame: 3A-63A
125A frame: 63A-125A
No. of poles: 1P+N; 2P; 3P; 3P+N; 4P

Residual current action miniature circuit breaker

ASKB1-63GQ series
63A frame: 3A-63A
No. of poles: 1P+N; 3P+N

Over-voltage under-voltage protection miniature circuit breaker

ASKB1-63S series
63A frame: 16A-63A
125A frame: 63A-100A
No. of poles: 1P+N; 3P+N

Prepaid meter miniature circuit breaker

ASKB1 series
63A frame: 3A-63A
125A frame: 63A-125A

Structural Derivation

Ultra-thin household type miniature circuit breaker

ASKB2 series
32A frame: 6A-32A
No. of poles: 1P+N;

Ultra-thin residual current action miniature circuit breaker

ASKB2L series
32A frame: 6A-32A
No. of poles: 1P+N;

Miniature isolation switch

ASKG2 series
63A frame: 16A-63A
125A frame: 63A-125A
No. of poles: 1P; 2P; 3P; 4P

ASKB1 MINIATURE CIRCUIT BREAKER SELECTION TABLE

ASK	B	1	GQ	—	63	H	/	1P+N	/	C	40A
Company	Product code	Design serial	Function derivation code		Frame ratings	Breaking capacity		No. of poles		Tripper type	Rated current(A)
AISIKAI ELECTRIC	Miniature circuit breaker	1: basic type	No code: normal protection GQ: over-voltage under-voltage protection (63 frame only) S: prepaid special protection L:leakage protection		63: 63A frame 125: 125A frame	L: 4.5kA H: 6kA		B1: 1P: 1 poles; 2P: 2 poles; 3P: 3 poles; 4P: 4 poles B1L: 1P+N: single phase; 2P: 2 poles; 3P: 3 poles; 3P+N: 3 phases; 4P: 4 poles B1S/B1GQ: 1P+N: single phase protection; 3P+N: 3 phases protection		C: Lighting type D: Power type	3-125

Frame Classification:

Normal type(63A frame, 125A frame)
Over-voltage under-voltage protection type(GQ type, 63A frame)
Prepaid meter special type (S type, 63A frame, 125A frame)
Leakage protection type(L type, 63A frame, 125A frame)

Design marking	Design marking	Model definition 1:	Model definition 2:
ASKB1 ASKB2	ASKB1L ASKB2L	ASKB1L-125 / 4P / 100A 1. standard leakage protection type MCB; 2. 125A frame; 3. 4 poles, rated current 100A.	ASKB1-32 / 1P+N / 6A 1. compact leakage protection type MCB; 2. 32A frame; 3. single phase two lines, rated current 6A.

QUALIFICATION DOCUMENTS

CCC CCC CCC CCC CCC CE ISO

ASKB1 NORMAL PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

- ASKB1 normal protection type miniature circuit breaker has features as advanced structure, reliable performance, high breaking capacity, beautiful and compact appearance, etc. Shell and three parts are made of impact resistant and high flame retardant materials. ASKB1 are suitable for AC 50Hz or 60Hz, rated operational voltage below 400V, rated current below 125A. MCB are mainly used for the overload and short-circuit protection of lines and equipment in lighting and power distribution in office buildings, residences and similar buildings. Under normal conditions, MCB can also be used in infrequent on-off control of electrical devices and lighting lines. Through adding internal components with different functions , we provide residual current protection type MCB, over-voltage under-voltage protection type MCB and prepaid meter special type MCB.

CLASSIFICATION

- **Classified by the over-current tripper rated current(A)**

  Frame 63： 3, 6, 10, 16, 20, 25, 32, 40, 50, 63A;
  Frame 125： 63, 80, 100, 125A

- **Classified by over-current tripper type**

  C type: protect inductive load and high-inductive lighting system
  tripping characteristic: instantaneous trip range(5-10)In
  D type: protect high-inductive load and impact load with high starting current (motors, transformers, etc.)
  tripping characteristic: instantaneous trip range(10-16)In

FEATURES

- Innovative structural design. Breaking capacity up to 10KA
  Shell with ventilation slot design, active heat dissipation, reduce temperature rise
  Composite high conductive material. Longer service life
  Ergonomic operation design, non-slip handle for easy operation

APPLICATIONS

Civil Commercial Industrial

STANDARDS

GB10963.1、IEC60898-1

NORMAL OPERATIONAL CONDITIONS AND INSTALLATION METHODS

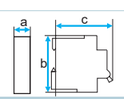
Category	Requirement
Operational temperature	Between -5℃ and +40℃. The average value in 24 hours does not exceed +35℃.
Altitude	Lower than 2000 meters.
Operational humidity	The relative humidity at +40℃ shall not exceed 50%. Higher relative humidity is allowed at lower temperature. The average maximum relative humidity is 90% in the most humid month
Installation level	The installation level is Ⅱ,Ⅲ.
Pollution level	Level 2
Installation method	Install vertically or horizontally. Use YH35-7.5 standard DIN rail.
Installation conditions	The inclination of the mounting surface to the vertical surface does not exceed 5 degrees. Use environment should be without strong impact and vibration.
Wiring method	Fasten the wires using screws.
Wire inlet method	Wiring reversely is acceptable for normal type. Wiring reversely is prohibited for leakage type.

ASKB1 MINIATURE CIRCUIT BREAKER SELECTION TABLE

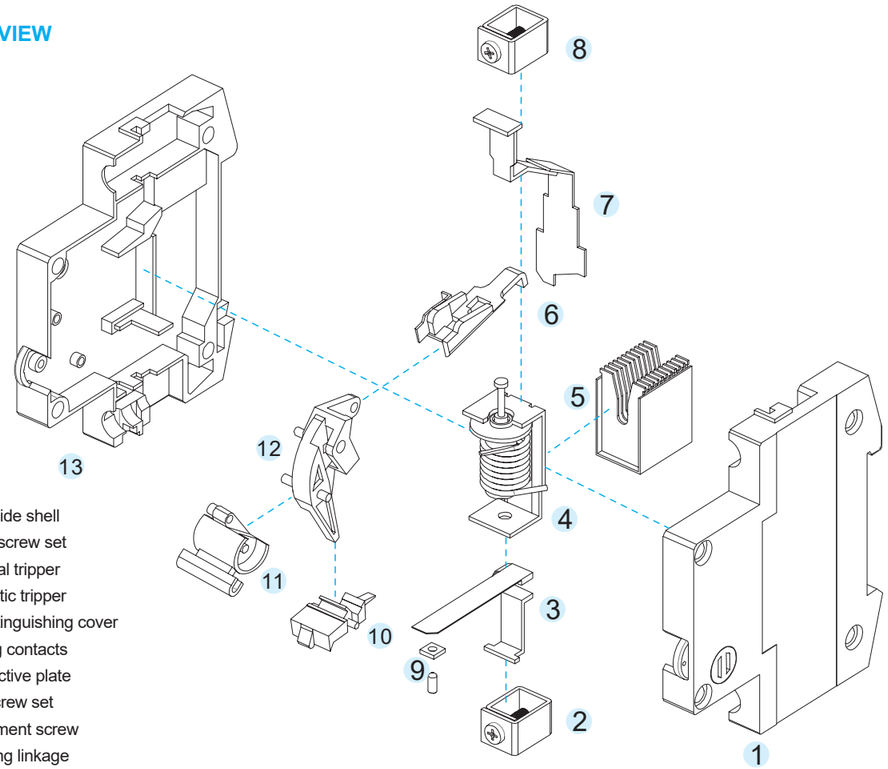
OVERVIEW

- ASKB1 normal protection type miniature circuit breaker has overload and short-circuit protection and isolation function. ASKB1 are suitable for AC 50Hz or 60Hz, rated operational voltage below 400V, rated current below 125A. MCB are mainly used for the overload and short-circuit protection of lines and equipment in lighting and power distribution in office buildings, residences and similar buildings. Under normal conditions, MCB can also be used in infrequent on-off control of electrical devices and lighting lines.

MAIN TECHNICAL PARAMETERS

63 Frame							
General power distribution protection							
No. of poles			**1P**	**2P**	**3P**	**4P**	
Electrical performance							
Functions			Short-circuit protection, overload protection, isolation, control				
Rated frequency	f	(Hz)	50				
Rated operational voltage	Ue	(V AC)	230/400	400	400	400	
Rated current	In	(A)	3, 6, 10, 16, 20, 25, 32, 40, 50, 63				
Impulse withstand voltage	Uimp	(kV)	4				
Instantaneous tripping type			C/D				
Rated short-circuit capacity	Icu	(kA)	L	Icu=Ics=4.5			
			H	Icu=Ics=6			
Tripper type			Thermomagnetic				
Service life	(0 ~ C)	Mechanical service life	20000				
		Electrical service life	8000				
Control and indication							
Optional accessories(multiple options available)			Alarm contact SD, auxiliary contact OF, shunt tripper MX+OF or over-voltage under-voltage tripper MN+MV (choose one of the two)				
Connection and installation							
Protection level			IP20				
Handle lock			None				
Wiring capacity	(mm²)		1~25				
Operational temperature	(℃)		-5 ~ +40				
Resistance to heat and humidity			2				
Altitude	(m)		⩽2000				
Air relative humidity			Not exceed 95% at +20℃; not exceed 50% at +40℃				
Pollution level			2				
Installation environment			Without strong impact and vibration				
Installation category			Ⅲ				
Installation method			DIN standard rail				
Outline dimensions Width*Height*Depth (mm) 		a	18	36	54	72	
		b	80.5				
		c	76	78			

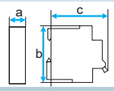
OVERVIEW



1. Right side shell
2. Outlet screw set
3. Thermal tripper
4. Magnetic tripper
5. Arc extinguishing cover
6. Moving contacts
7. Conductive plate
8. Inlet screw set
9. Adjustment screw
10. Tripping linkage
11. Open/close handle
12. Crescent plate
13. Left side shell

Structure overview	Working method	Magnetic tripper	Thermal tripper	Arc extinguishing cover
Normal protection type miniature circuit breaker is one-piece structure, which is made of precise combination of internal parts. The left and right shells enclose the operating mechanism, moving/fixed contacts, thermal tripper, magnetic tripper, and arc extinguishing cover. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or seriously overloaded, the magnetic tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit. When the circuit is overloaded, the thermal tripper pushes the free tripping mechanism into action, breaking the main circuit to realize the protection of the distribution lines.	The coil of the magnetic tripper is connected in series with the main circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper generate magnetic force due to electromagnetic induction, instantly making the armature pull in, pushing the free tripping mechanism into action and the main contact breaks the main circuit.	The coil of the thermal tripper is connected in series with the main circuit. When the circuit is overloaded, the thermal component of the thermal tripper heats up due to the increasing current, bending the bimetal strip, pushing the free tripping mechanism into action within a certain period of time and completing the protection breaking.	MCB adopts multi-layer stacked arc extinguishing cover. Its mounting position is below the contact. Each piece of arc extinguishing plate is at an angle of 60 degrees from the horizontal plane. In the breaking process, through the electromagnetic field induction force and the air flow, the arc is instantly imported into the arc extinguishing cover, realizing rapid arc extinguishing.

MAIN TECHNICAL PARAMETERS

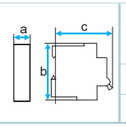
125 Frame							
General power distribution protection							
No. of poles			1P	2P	3P	4P	
Electrical performance							
Functions			Short-circuit protection, overload protection, isolation, control				
Rated frequency	f	(Hz)	50				
Rated operational voltage	Ue	(V AC)	230	400	400	400	
Rated current	In	(A)	63, 80, 100, 125				
Impulse withstand voltage	Uimp	(kV)	4				
Instantaneous tripping type			C/D				
Rated short-circuit capacity	Icu	(kA)	10				
Tripper type			Thermomagnetic				
Service life (0 ~ C)		Mechanical service life	20000				
		Electrical service life	8000				
Control and indication							
Optional accessories(multiple options available)			Alarm contact SD, auxiliary contact OF, shunt tripper MX+OF or over-voltage under-voltage tripper MN+MV (choose one of the two)				
Connection and installation							
Protection level			IP20				
Handle lock			None				
Wiring capacity	(mm²)		1~25				
Operational temperature	(℃)		-5 ~ +40				
Resistance to heat and humidity			2				
Altitude	(m)		⩽2000				
Air relative humidity			Not exceed 95% at +20℃; not exceed 50% at +40℃				
Pollution level			2				
Installation environment			Without strong impact and vibration				
Installation category			Ⅲ				
Installation method			DIN standard rail				
Outline dimensions Width*Height*Depth (mm) 		a	27	54	81	108	
		b	80.5				
		c	73.5	78.5			

ASKB1L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

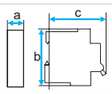
OVERVIEW

- ASKB1L leakage protection type miniature circuit breaker consist of ASKB1 normal protection type MCB and leakage tripper. ASKB1L is the latest type of current-action type electronic leakage circuit breaker. The main components include zero sequence current transformer, electronic detection board, tripper and the MCB body. ASKB1L is suitable for lighting and power distribution lines of AC 50Hz, rated operational voltage 230V/400V, rated current below 125A, protecting the lines against overload, short-circuit and leakage. The circuit breaker conforms to GB16917.1/22, IEC61009-1 standards.

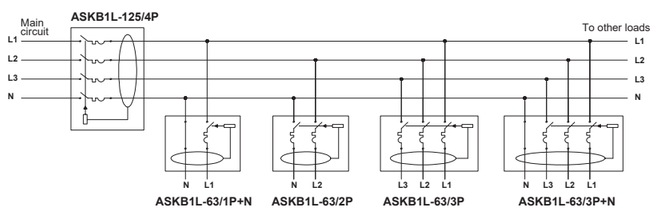
MAIN TECHNICAL PARAMETERS

40 Frame								
General power distribution protection (IEC/EN 61009-1; GB 16917.1)								
No. of poles				1P+N	2P	3P	3P+N	4P
Electrical performance								
Functions				Short-circuit protection, overload protection, leakage protection,isolation, control				
Residual current type				AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)				
Rated frequency	f	(Hz)		50				
Rated operational voltage	Ue	(V AC)		230	230	400	400	400
Rated residual action current	I△n	(mA)		Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable				
Rated current	In	(A)		3, 6, 10, 16, 20, 25, 32, 40, 50, 63				
Instantaneous tripping type				C/D				
Rated residual making and breaking capacity	Im	(A)		2000				
Rated short-circuit capacity	Icu	(kA)	L	Icu=Ics=4.5				
			H	Icu=Ics=6				
Tripper type				Thermomagnetic				
Service life (0 ~ C)		Mechanical service life		20000				
		Electrical service life		8000				
Control and indication								
Optional accessories(multiple options available)				Alarm contact SD, auxiliary contact OF				
Connection and installation								
Protection level				IP20				
Wiring capacity	(mm²)			1~25				
Operational temperature	(℃)			-25 ~ +60				
Resistance to heat and humidity				2				
Altitude	(m)			⩽2000				
Air relative humidity				Not exceed 95% at +20℃; not exceed 50% at +40℃				
Pollution level				2				
Installation environment				Without strong impact and vibration				
Installation category				Ⅲ				
Installation method				DIN standard rail				
Outline dimensions Width*Height*Depth (mm) 			a	1-32A	45	63	90	99	117
				40-63A	54	72	103	117	135
			b		96				
			c		76	78			

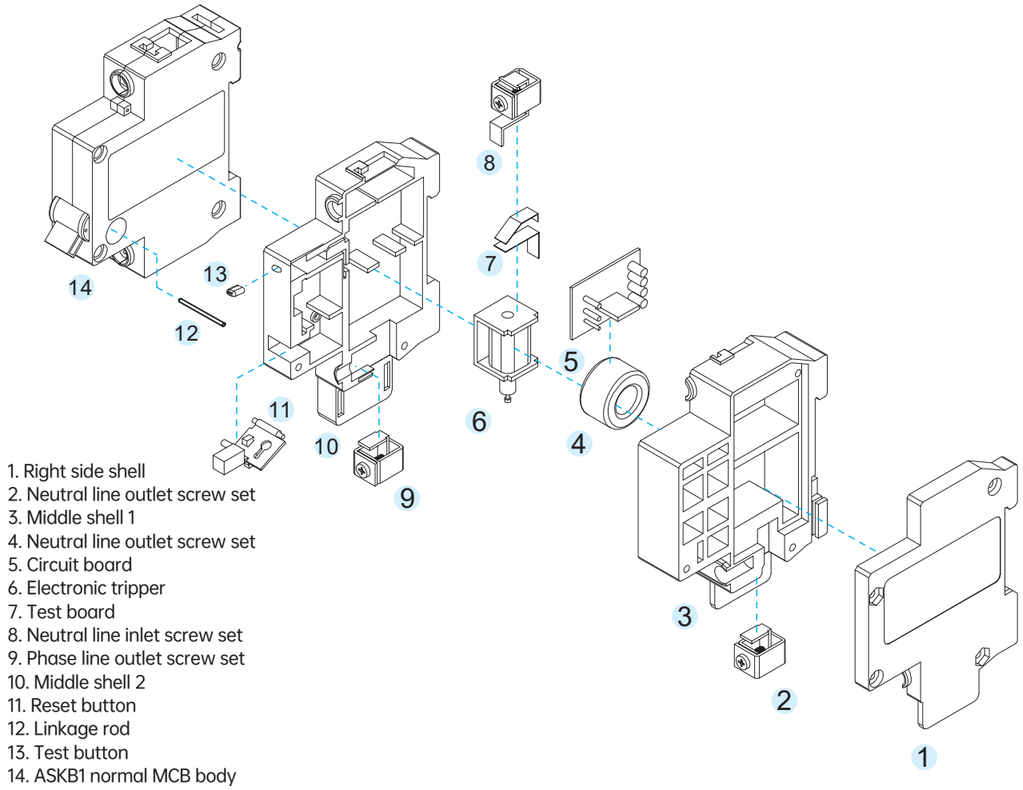
MAIN TECHNICAL PARAMETERS

125 Frame								
General power distribution protection (IEC/EN 61009-1； GB 16917.1)								
No. of poles			1P+N	2P	3P	3P+N	4P	
Electrical performance								
Functions								
Residual current type			AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)					
Rated frequency		f	(Hz)	50				
Rated operational voltage		Ue	(V AC)	230	230	400	400	400
Rated residual action current		I△n	(mA)	Default 50mA(non-action current 25mA). 30, 100, 200, 300mA is customizable				
Rated current		In	(A)	50, 63, 80, 100, 125				
Instantaneous tripping type				C/D				
Rated residual making and breaking capacity		Im	(A)	2000				
Rated short-circuit capacity		Icu	(kA)	10				
Tripper type				Thermomagnetic				
Service life	(0 ~ C)	Mechanical service life		20000				
		Electrical service life		8000				
Control and indication								
Optional accessories(multiple options available)				Alarm contact SD, auxiliary contact OF				
Connection and installation								
Protection level				IP20				
Wiring capacity		(mm²)		1~25				
Operational temperature		(℃)		-25 ~ +60				
Resistance to heat and humidity				2				
Altitude		(m)		⩽2000				
Air relative humidity				Not exceed 95% at +20℃； not exceed 50% at +40℃				
Pollution level				2				
Installation environment				Without strong impact and vibration				
Installation category				Ⅲ				
Installation method				DIN standard rail				
Outline dimensions Width*Height*Depth (mm) 			a	54	81	108	108	135
			b	113				
			c	78.5				

ELECTRICAL SCHEMATIC DIAGRAM



MAIN STRUCTURE INTRODUCTION



1. Right side shell
2. Neutral line outlet screw set
3. Middle shell 1
4. Neutral line outlet screw set
5. Circuit board
6. Electronic tripper
7. Test board
8. Neutral line inlet screw set
9. Phase line outlet screw set
10. Middle shell 2
11. Reset button
12. Linkage rod
13. Test button
14. ASKB1 normal MCB body

Structure overview	Working method	Circuit board	Electronic tripper	Test button
Leakage protection type miniature circuit breaker is modular structure, which is made of ASKB1 normal MCB body on the left and leakage detection mechanism on the right. The main components include circuit board, current transformer, electronic, etc. The left and right parts are tightly fixed together. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or overloaded, the magnetic tripper or thermal tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit, realizing the protection of the distribution lines.When there is a leakage situation, the current vector sum through the N line current transformer is not equal to zero. The circuit board amplifies the transformer voltage signal, driving the electronic tripping into action, pushing the tripping mechanism in ASKB1 normal type body through the linkage rod to achieve the breaking protection.	The main components use the bidirectional thyristor, which can sensitively detect the milliamp signal from the N-line transformer, and then analyze and process the signal to amplify the signal, relying on the principle of low power control of high power to drive the electronic tripper acts.	The electronic tripper is the main action component of the leakage protection mechanism. After the signal amplified by the circuit board reaches the required voltage to drive the tripper, it acts immediately, driving the linkage rod to drive the tripping mechanism in ASKB1 normal type to break the main circuit for the purpose of protecting the distribution lines.	Leakage protection miniature circuit breaker has test button. When the test button is pressed down, the driving circuit of the electronic tripper is turned on. The tripper acts immediately, driving the relevant mechanism to realize the breaking. It is used for periodic testing of the operating condition of leakage type circuit breakers.

ASKB1 SERIES OVER-CURRENT TRIPPING CHARACTERISTICS TABLE

Normal Protection Type 63 Frame

Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.13In	All values	T≤1h	Not trip	Cold	The current rises steadily to the specified value within 5s
1.45In	All values	T≤1h	Trip	Hot	Close the auxiliary switch to turn on the power
2.55In	In≤32A	1s＜T＜60S	Trip	Cold	Close the auxiliary switch to turn on the power
2.55In	In≤32A	1s＜T＜120S	Trip	Cold	Close the auxiliary switch to turn on the power
5In (C)	All values	T≤0.1S	Not trip	Cold	Close the auxiliary switch to turn on the power
10In (C)	All values	T＜0.1S	Trip	Cold	Close the auxiliary switch to turn on the power
10In (C)	All values	T≤0.1S	Not trip	Cold	Close the auxiliary switch to turn on the power
14In (C)	All values	T＜0.1S	Trip	Cold	Close the auxiliary switch to turn on the power

Normal Protection Type 125 Frame

Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.05In	In=63	T≤1h	Not trip	Cold	The current rises steadily to the specified value within 5s
1.05In	In＞63	T＜2h	Not trip	Hot	
1.30In	In=63	T＜1h	Trip	Performed immediately after the previous test	
1.30In	In＞63	T＜2h	Trip	Performed immediately after the previous test	
8In	In＞63	T≤0.2S	Not trip	Cold	
12In	In＞63	T＜0.2S	Trip	Cold	

L Leakage Protection Type 63 Frame

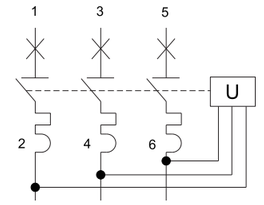
Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.13In	6-63	1≥In	Not trip	Cold	
1.45In	6-63	1≤1 In	Trip	Performed immediately after the previous test	The current rises steadily to the specified value within 5s
2.55In	6-63	1S＜t＜60S	Trip	Cold	In≤32
		1S＜t＜120S	Trip		In＞32
5In	6-63	t≥0.1S	Not trip	Cold	C
10In		t＜0.1S	Trip		
10In		t≥0.1S	Not trip		D
16In		t＜0.1S	Trip		

Note: the "cold" state means at the reference calibration temperature, without load before the test.

Optional accessories - ASKB1 Series

Over-voltage under-voltage tripper: MN+MV

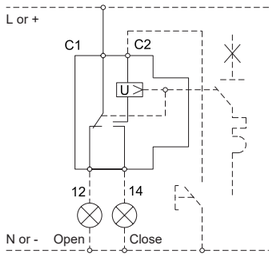
Over-voltage under-voltage tripper (MN+MV): for automatic protection in case of over/under voltage in the main circuit
Under-voltage protection value:170V±10%(153-187V)
Over-voltage protection value:280V±5%(266-294V)
Assembly: mounted on the right side of the circuit breaker
Application: automatic protection in case of over/under voltage in the main circuit
Width:18mm



MN+MV

Shunt tripper: MX+OF

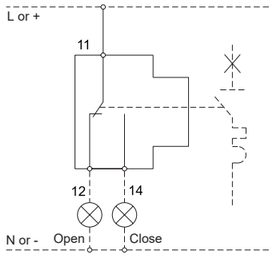
Shunt tripper (MX+OF): for remote control tripping
Tripping voltage: DC24, AC220/380V
Assembly: mounted on the right side of the circuit breaker
Application: remote control the lines to break
Width: 18mm



MX+OF

Auxiliary contact: OF

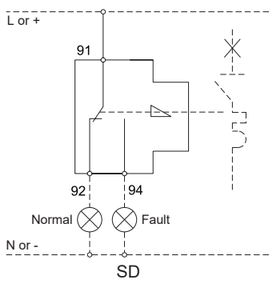
Auxiliary contact (OF): for indication of the circuit breaker status
Assembly: mounted on the left side of the circuit breaker
Application: indicate the status of the circuit breaker
Width: 9mm



OF

Alarm contact: SD

Alarm contact (SD): for indication of the circuit breaker status in the event of fault tripping
Assembly: mounted on the left side of the circuit breaker
Application: fault alarm indication of equipment and other devices
Width: 9mm



SD

ASKB2 MINIATURE CIRCUIT BREAKER SELECTION TABLE

ASK	B	2	L	–	32	/	1P+N	/	C	32A
Company: AISIKAI ELECTRIC	Product code: Miniature circuit breaker	Design serial: 2: DPN type	Function derivation code: No code: normal protection; L: leakage protection		Frame ratings: 32: 32A frame		No. of poles: 1P+N, single phase two lines, N line is involved in breaking		Tripper type: C: Lighting type; D: Power type	Rated current(A): 6 - 32

Frame Classification:
Normal type(32A frame)
Leakage protection type(L type, 32A frame)

Design marking	Design marking	Model definition 1:	Model definition 2:
ASKB1 ASKB2	ASKB1L ASKB2L	ASKB2L-125 / 4P / 100A 1. standard leakage protection type MCB; 2. 125A frame; 3. 4 poles, rated current 100A.	ASKB2-32 / 1P+N / 6A 1. compact leakage protection type MCB; 2. 32A frame; 3. single phase two lines, rated current 6A.

QUALIFICATION DOCUMENTS


CCC


CCC


CCC


CCC


CCC


CE


ISO

ASKB2 NORMAL PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

- ASKB2 series household miniature circuit breakers are suitable for the end power distribution lines of office buildings, residences and general industrial use. ASKB2 can protect lines against overload and short-circuit, and provide functions of isolation and control. Under normal conditions, MCB can also be used in infrequent on-off control of electrical devices and lighting lines. The MCB are suitable for AC 50/60Hz, rated voltage below 230V, rated current below 32A.

  The MCB adopts the innovative "phase line+ N line" design, which can cut off the phase and neutral lines at the same time, achieving higher safety performance and avoiding personal and fire hazards caused by reverse wiring of the phase and neutral lines or high neutral-to-ground potential when using single-pole circuit breakers. The compact design makes its thickness only 18mm, which fully meets the high standard requirements for component volume of household distribution box. MCB has high breaking capacity, adopts modular design, and can be used with a variety of accessories to meet customers' requirements for other additional functions.

CLASSIFICATION

- **Classified by the over-current tripper rated current(A)**
  Frame 32： 3, 6, 10, 16, 20, 25, 32A

- **Classified by instantaneous tripper type**
  B type: protect pure resistive load and low-inductive lighting system
  tripping characteristic: instantaneous trip range(3-5)In

  C type: protect inductive load and high-inductive lighting system
  tripping characteristic: instantaneous trip range(5-10)In

FEATURES

- Innovative "phase line+ N line" structural design. Thickness only 18mm. Save 50% space
  Shell with ventilation slot design, active heat dissipation, reduce temperature rise
  Composite high conductive material. Longer service life
  Ergonomic operation design, non-slip handle for easy operation

APPLICATIONS


Civil　Commercial　Industrial

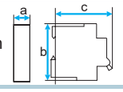
STANDARDS

GB10963.1、IEC60898-1

NORMAL OPERATIONAL CONDITIONS AND INSTALLATION METHODS

Category	Requirement
Operational temperature	Between -5℃ and +40℃. The average value in 24 hours does not exceed +35℃.
Altitude	Lower than 2000 meters.
Operational humidity	The relative humidity at +40℃ shall not exceed 50%. Higher relative humidity is allowed at lower temperature. The average maximum relative humidity is 90% in the most humid month
Installation level	The installation level is Ⅱ,Ⅲ.
Pollution level	Level 2
Installation method	Install vertically or horizontally. Use YH35-7.5 standard DIN rail.
Installation conditions	The inclination of the mounting surface to the vertical surface does not exceed 5 degrees. Use environment should be without strong impact and vibration.
Wiring method	Fasten the wires using screws.
Wire inlet method	Wiring reversely is acceptable for normal type. Wiring reversely is prohibited for leakage type.

MAIN TECHNICAL PARAMETERS

32 Frame			
General power distribution protection			
No. of poles			1P+N: single phase two lines, N line is involved in breaking
Electrical performance			
Functions			Short-circuit protection, overload protection, isolation, control
Rated frequency	f	(Hz)	50
Rated operational voltage	Ue	(V AC)	230
Rated current	In	(A)	6, 10, 16, 20, 25, 32
Impulse withstand voltage	Uimp	(kV)	4
Instantaneous tripping type			C/D
Rated short-circuit capacity	Icu	(kA)	3
Tripper type			Thermomagnetic
Service life (0 ~ C)		Mechanical service life	20000
		Electrical service life	8000
Connection and installation			
Optional accessories			
Control and indication			
Protection level			IP20
Handle lock			None
Wiring capacity	(mm²)		1~25
Operational temperature	(℃)		-5 ~ +40
Resistance to heat and humidity			2
Altitude	(m)		⩽2000
Air relative humidity			Not exceed 95% at +20℃; not exceed 50% at +40℃
Pollution level			2
Installation environment			Without strong impact and vibration
Installation category			Ⅲ
Installation method			DIN standard rail
Outline dimensions Width*Height*Depth (mm) 		a	18
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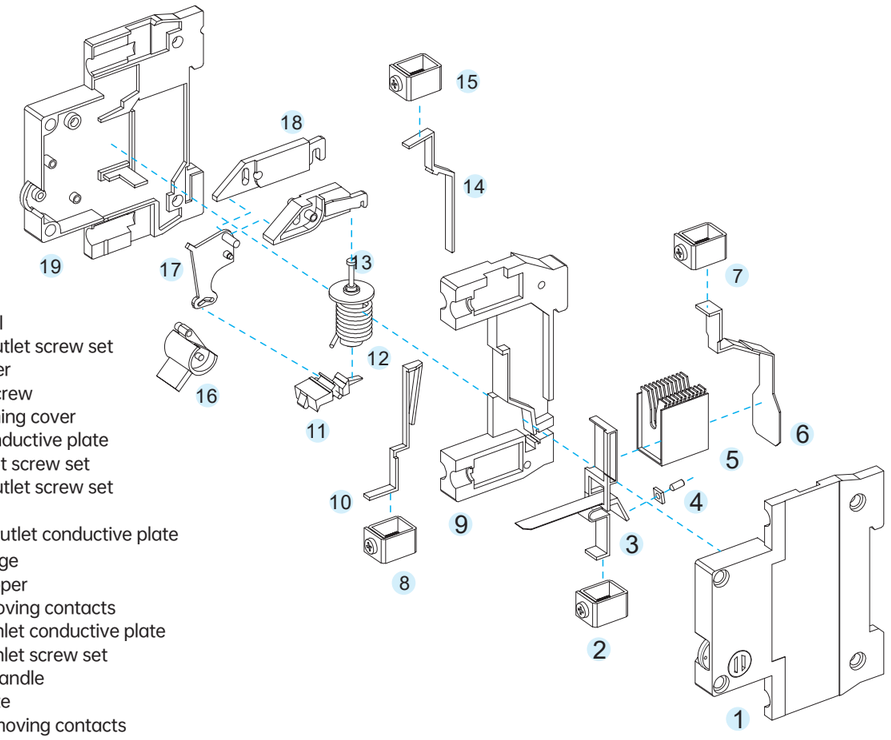
		c	76

MAIN STRUCTURE INTRODUCTION



1. Right side shell
2. Neutral line outlet screw set
3. Thermal tripper
4. Adjustment screw
5. Arc extinguishing cover
6. Phase line conductive plate
7. Phase line inlet screw set
8. Neutral line outlet screw set
9. Middle shell
10. Neutral line outlet conductive plate
11. Tripping linkage
12. Magnetic tripper
13. Phase line moving contacts
14. Neutral line inlet conductive plate
15. Neutral line inlet screw set
16. Open/close handle
17. Crescent plate
18. Neutral line moving contacts
19. Left side shell

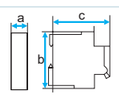
Structure overview	Working method	Magnetic tripper	Thermal tripper	Arc extinguishing cover
Normal protection type miniature circuit breaker is one-piece structure, which is made of precise combination of internal parts. The left and right shells enclose the operating mechanism, moving/fixed contacts, thermal tripper, magnetic tripper, and arc extinguishing cover. Manual operation is used for open/close operation.	The manual operation on the open/close handle makes the phase lines and neutral line switch on/off simultaneously, realizing the on-off of the circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper pushes the free tripping mechanism into action, breaking the phase lines and neutral line of the main circuit. When the circuit is overloaded, the thermal tripper pushes the free tripping mechanism into action, breaking the phase lines and neutral line of the main circuit to realize the protection of the distribution lines.	The coil of the magnetic tripper is connected in series with the main circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper generate magnetic force due to electromagnetic induction, instantly making the armature pull in, pushing the free tripping mechanism into action and the main contact breaks the main circuit.	The coil of the thermal tripper is connected in series with the main circuit. When the circuit is overloaded, the thermal component of the thermal tripper heats up due to the increasing current, bending the bimetal strip, pushing the free tripping mechanism into action within a certain period of time and completing the protection breaking.	MCB adopts multi-layer stacked arc extinguishing cover. Its mounting position is below the contact. Each piece of arc extinguishing plate is at an angle of 60 degrees from the horizontal plane. In the breaking process, through the electromagnetic field induction force and the air flow, the arc is instantly imported into the arc extinguishing cover, realizing rapid arc extinguish-ing.

ASKB2L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

- ASKB2L leakage protection type miniature circuit breaker is suitable for lines of AC 50Hz, rated operational voltage 230V, rated current below 32A, used for indirect contact protection for people, and over-current protection for buildings and lines for similar purposes. ASKB2L also provide protection against fires caused by persistent ground faults due to the inaction of the over-current protection devices. Leakage circuit breakers with over-voltage protection also protect against excessive voltage increases due to grid faults.
  This series of residual current-action circuit breakers have been increasingly used in low-voltage distribution systems as backup protection for ground faults and direct contact and indirect contact electric shocks.

MAIN TECHNICAL PARAMETERS

63 Frame			
General power distribution protection (IEC/EN 61009-1； GB 16917.1)			
No. of poles			1P+N: single phase two lines, N line is involved in breaking
Electrical performance			
Functions			Short-circuit protection, overload protection, isolation, control
Residual current type			AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)
Rated frequency	f	(Hz)	50
Rated operational voltage	Ue	(V AC)	230
Rated residual action current	I△n	(mA)	Default 30mA(non-action current 15mA)
Rated current	In	(A)	6, 10, 16, 20, 25, 32
Instantaneous tripping type			C/D
Rated residual making and breaking capacity	Im	(A)	2000
Rated short-circuit capacity	Icu	(kA)	3
Tripper type			Thermomagnetic
Service life (0 ~ C)	Mechanical service life		20000
	Electrical service life		8000
Control and indication			
Optional accessories(multiple options available)			None
Connection and installation			
Protection level			IP20
Wiring capacity		(mm²)	1~25
Operational temperature		(℃)	-25 ~ +60
Resistance to heat and humidity			2
Altitude		(m)	⩽2000
Air relative humidity			Not exceed 95% at +20℃； not exceed 50% at +40℃
Pollution level			2
Installation environment			Without strong impact and vibration
Installation category			Ⅲ
Installation method			DIN standard rail
Outline dimensions Width*Height*Depth (mm) 		a	36
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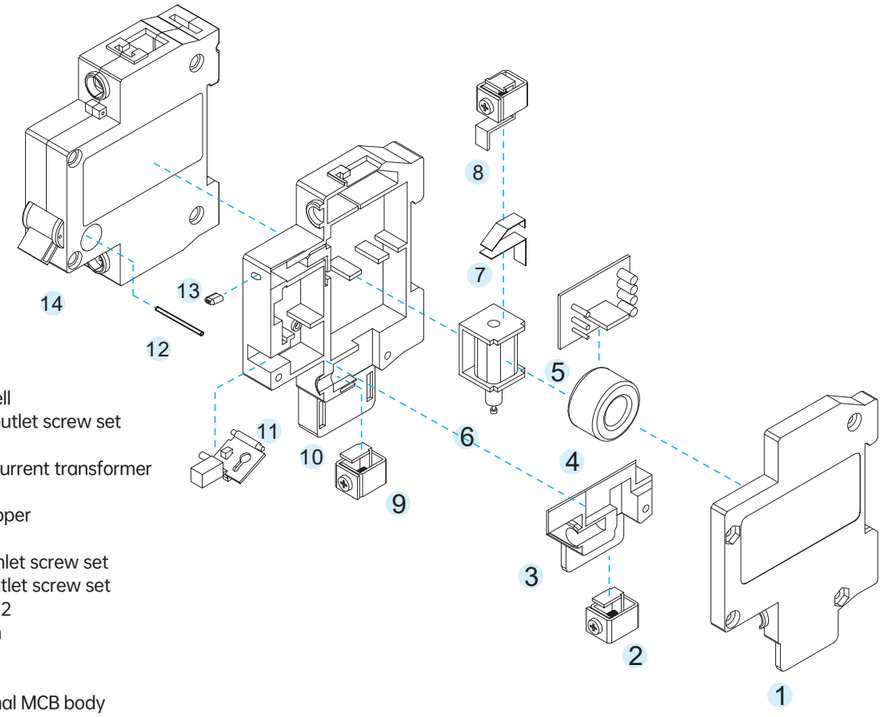
		c	76

MAIN STRUCTURE INTRODUCTION



1. Right side shell
2. Neutral line outlet screw set
3. Middle shell 1
4. Neutral line current transformer
5. Circuit board
6. Electronic tripper
7. Test board
8. Neutral line inlet screw set
9. Phase line outlet screw set
10. Middle shell 2
11. Reset button
12. Linkage rod
13. Test button
14. ASKB2 normal MCB body

Structure overview	Working method	Magnetic tripper	Thermal tripper	Arc extinguishing cover
Leakage protection type miniature circuit breaker is modular structure, which is made of ASKB2 normal MCB body on the left and leakage detection mechanism on the right. The main components include circuit board, current transformer, electronic, etc. The left and right parts are tightly fixed together. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or overloaded, the magnetic tripper or thermal tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit, realizing the protection of the distribution lines. When there is a leakage situation, the current vector sum through the N line current transformer is not equal to zero. The circuit board amplifies the transformer voltage signal, driving the electronic tripping into action, pushing the tripping mechanism in ASKB2 normal type body through the linkage rod to achieve the breaking protection.	The coil of the magnetic tripper is connected in series with the main circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper generate magnetic force due to electromagnetic induction, instantly making the armature pull in, pushing the free tripping mechanism into action and the main contact breaks the main circuit.	The coil of the thermal tripper is connected in series with the main circuit. When the circuit is overloaded, the thermal component of the thermal tripper heats up due to the increasing current, bending the bimetal strip, pushing the free tripping mechanism into action within a certain period of time and completing the protection breaking.	MCB adopts multi-layer stacked arc extinguishing cover. Its mounting position is below the contact. Each piece of arc extinguishing plate is at an angle of 60 degrees from the horizontal plane. In the breaking process, through the electromagnetic field induction force and the air flow, the arc is instantly imported into the arc extinguishing cover, realizing rapid arc extinguishing.

ASKB5 MINIATURE CIRCUIT BREAKER SELECTION TABLE

ASK	B	5	L	—	63	H	/	1P+N	/	C	40A

Product code
Miniature circuit breaker

Function derivation code
No code: normal protection
L:leakage protection

Breaking capacity
L: 6 kA
H: 10 kA

Tripper type
C: Lighting type
D: Power type

Company
AISIKAI ELECTRIC

Design serial
5: basic type

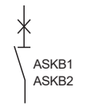
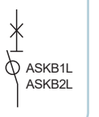
Frame ratings
40: 40A frame(leakage type)
63: 63A frame(normal type, leakage type)

Frame ratings

B5 type	B5L type
1P: 1 poles	1P+N: single phase
2P: 2 poles	2P: 2 poles
3P: 3 poles	3P: 3 poles
4P: 4 poles	3P+N: 3 phases
	4P: 4 poles

Rated current (A)
6 - 63

Frame Classification:
Normal type(63A frame)
Leakage protection type(L type, 40A frame, 63A frame)

Design marking	Design marking	Model definition 1:	Model definition 2:
 ASKB1 ASKB2	 ASKB1L ASKB2L	ASKB5-63 / L /4P / 40A 1. standard normal protection type MCB; 2. 63A frame; 3. 4 poles, rated current 40A.	ASKB5L-63 / 3P+N / 63A 1. standard leakage protection type MCB; 2. 63A frame; 3. three phases four lines, rated current 63A.

QUALIFICATION DOCUMENTS


CCC


CCC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CE


ISO

ASKB5 NORMAL PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

- ASKB5 normal protection type miniature circuit breaker has features as advanced structure, reliable performance, high breaking capacity, beautiful and compact appearance, etc. Shell and three parts are made of impact resistant and high flame retardant materials. ASKB5 are suitable for AC 50Hz or 60Hz, rated operational voltage below 400V, rated current below 63A. MCB are mainly used for the overload and short-circuit protection of lines and equipment in lighting and power distribution in office buildings, residences and similar buildings. Under normal conditions, MCB can also be used in infrequent on-off control of electrical devices and lighting lines.

CLASSIFICATION

- **Classified by the over-current tripper rated current (A)**
  Frame 63： 6, 10, 16, 20, 25, 32, 40, 50, 63A

- **Classified by over-current tripper type**
  C type: protect inductive load and high-inductive lighting system
  tripping characteristic: instantaneous trip range(5-10)In
  D type: protect high-inductive load and impact load with high starting current
  (motors, transformers, etc.)
  tripping characteristic: instantaneous trip range(10-16)In

FEATURES

- Innovative structural design. Breaking capacity up to 10KA
  Shell with ventilation slot design, active heat dissipation, reduce temperature rise
  Composite high conductive material. Longer service life
  Ergonomic operation design, non-slip handle for easy operation

APPLICATIONS


Civil Commercial Industrial

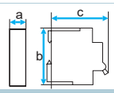
STANDARDS

GB10963.1、IEC60898-1

NORMAL OPERATIONAL CONDITIONS AND INSTALLATION METHODS

Category	Requirement
Operational temperature	Between -5℃ and +40℃. The average value in 24 hours does not exceed +35℃.
Altitude	Lower than 2000 meters.
Operational humidity	The relative humidity at +40℃ shall not exceed 50%. Higher relative humidity is allowed at lower temperature. The average maximum relative humidity is 90% in the most humid month
Installation level	The installation level is Ⅱ, Ⅲ.
Pollution level	Level 2
Installation method	Install vertically or horizontally. Use YH35-7.5 standard DIN rail.
Installation conditions	The inclination of the mounting surface to the vertical surface does not exceed 5 degrees. Use environment should be without strong impact and vibration.
Wiring method	Fasten the wires using screws.
Wire inlet method	Wiring reversely is acceptable for normal type. Wiring reversely is prohibited for leakage type.

MAIN TECHNICAL PARAMETERS

63 Frame							
General power distribution protection							
No. of poles				**1P**	**2P**	**3P**	**4P**
Electrical performance							
Functions				Short-circuit protection, overload protection, isolation, control			
Rated frequency	f	(Hz)		50/60			
Rated operational voltage	Ue	(V AC)		230/400	400	400	400
Rated current	In	(A)		6, 10, 16, 20, 25, 32, 40, 50, 63			
Impulse withstand voltage	Uimp	(kV)		4			
Rated insulation voltage	Ui	(V)		500			
Instantaneous tripping type				C/D			
Rated short-circuit capacity	Icu	(kA)	L	Icu=Ics=6			
			H	Icu=Ics=10			
Tripper type				Thermomagnetic			
Service life	(0 ~ C)	Mechanical service life		20000			
		Electrical service life		10000			
Control and indication							
Optional accessories(multiple options available)				Alarm contact SD, auxiliary contact OF, shunt tripper MX+OF or over-voltage under-voltage tripper MN+MV (choose one of the two)			
Connection and installation							
Protection level				Ip20			
Handle lock				None			
Wiring capacity	(mm²)			1~25			
Operational temperature	(℃)			-5 ~ +40			
Resistance to heat and humidity				2			
Altitude	(m)			⩽2000			
Air relative humidity				Not exceed 95% at +20℃; not exceed 50% at +40℃			
Pollution level				2			
Installation environment				Without strong impact and vibration			
Installation category				Ⅱ ; Ⅲ			
Installation method				DIN standard rail			
Outline dimensions Width*Height*Depth (mm)			a	18	36	54	72
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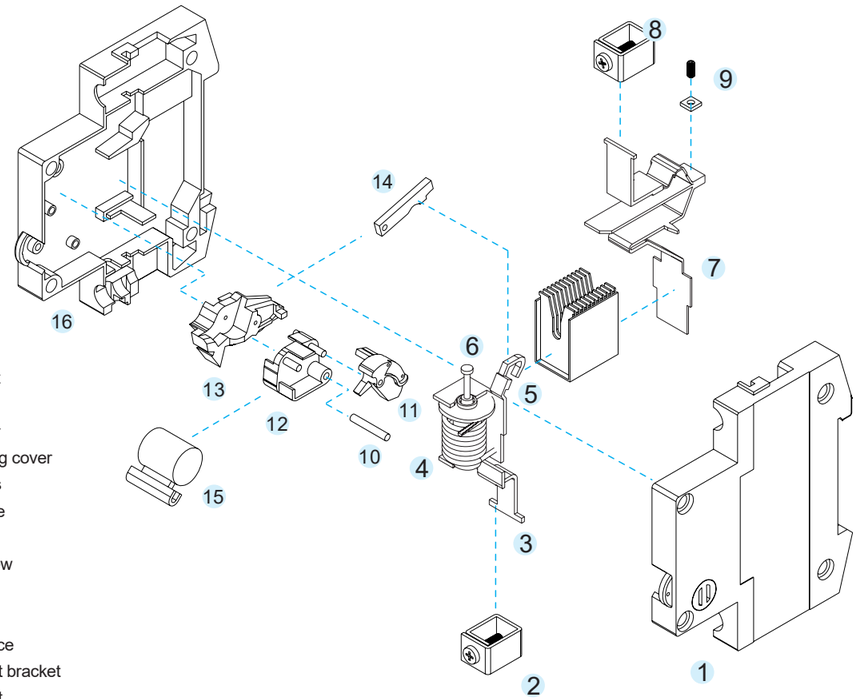
			c	78			

MAIN STRUCTURE INTRODUCTION



1. Right side shell
2. Outlet screw set
3. Thermal tripper
4. Magnetic tripper
5. Arc extinguishing cover
6. Moving contacts
7. Conductive plate
8. Inlet screw set
9. Adjustment screw
10. Shaft
11. Crescent plate
12. Indication device
13. Moving contact bracket
14. Moving contact
15. Handle
16. Base shell

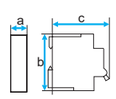
Structure overview	Working method	Magnetic tripper	Thermal tripper	Arc extinguishing cover
Normal protection type miniature circuit breaker is one-piece structure, which is made of precise combination of internal parts. The left and right shells enclose the operating mechanism, moving/fixed contacts, thermal tripper, magnetic tripper, and arc extinguishing cover. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or seriously overloaded, the magnetic tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit. When the circuit is overloaded, the thermal tripper pushes the free tripping mechanism into action, breaking the main circuit to realize the protection of the distribution lines.	The coil of the magnetic tripper is connected in series with the main circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper generate magnetic force due to electromagnetic induction, instantly making the armature pull in, pushing the free tripping mechanism into action and the main contact breaks the main circuit.	The coil of the thermal tripper is connected in series with the main circuit. When the circuit is overloaded, the thermal component of the thermal tripper heats up due to the increasing current, bending the bimetal strip, pushing the free tripping mechanism into action within a certain period of time and completing the protection breaking.	MCB adopts multi-layer stacked arc extinguishing cover. Its mounting position is below the contact. Each piece of arc extinguishing plate is at an angle of 60 degrees from the horizontal plane. In the breaking process, through the electromagnetic field induction force and the air flow, the arc is instantly imported into the arc extinguishing cover, realizing rapid arc extinguishing.

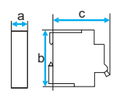
ASKB5L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

● ASKB5L leakage protection type miniature circuit breaker consist of ASKB5 normal protection type MCB and leakage tripper. ASKB5L is the latest type of current-action type electronic leakage circuit breaker. The main components include zero sequence current transformer, electronic detection board, tripper and the MCB body. ASKB1L is suitable for lighting and power distribution lines of AC 50Hz, rated operational voltage 230V/400V, rated current below 63A, protecting the lines against overload, short-circuit and leakage.

MAIN TECHNICAL PARAMETERS

40 Frame								
General power distribution protection (IEC/EN 61009-1; GB 16917.1)								
No. of poles			1P+N	2P	3P	3P+N	4P	
Electrical performance								
Functions			Short-circuit protection, overload protection, leakage protection,isolation, control					
Residual current type			AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)					
Rated frequency	f	(Hz)	50/60					
Rated operational voltage	Ue	(V AC)	230	230	400	400	400	
Rated residual action current	I△n	(mA)	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable					
Rated current	In	(A)	6, 10, 16, 20, 25, 32, 40					
Instantaneous tipping type			C/D					
Rated residual making and breaking capacity	Im	(A)	2000					
Impulse withstand voltage	Ui	(A)	500					
Rated insulation voltage	Uimp	(kV)	4					
Rated short-circuit capacity	Icu	(kA) L	Icn=Ics=6					
		H	Icn=Ics=10					
Tripper type			Thermomagnetic					
Service life	(0 ~ C)	Mechanical service life	20000					
		Electrical service life	10000					
Control and indication								
Optional accessories(multiple options available)			Alarm contact SD, auxiliary contact OF					
Connection and installation								
Protection level			IP20					
Wiring capacity	(mm²)		1~ 25					
Operational temperature	(℃)		-25 ~ +60					
Resistance to heat and humidity			2					
Altitude	(m)		⩽2000					
Air relative humidity			Not exceed 95% at +20℃; not exceed 50% at +40℃					
Pollution level			2					
Installation environment			Without strong impact and vibration					
Installation category			Ⅲ					
Installation method			DIN standard rail					
Outline dimensions Width*Height*Depth (mm) 		a	45	63	90	99	117	
		b	98.5					
		c	76.8	77.8				

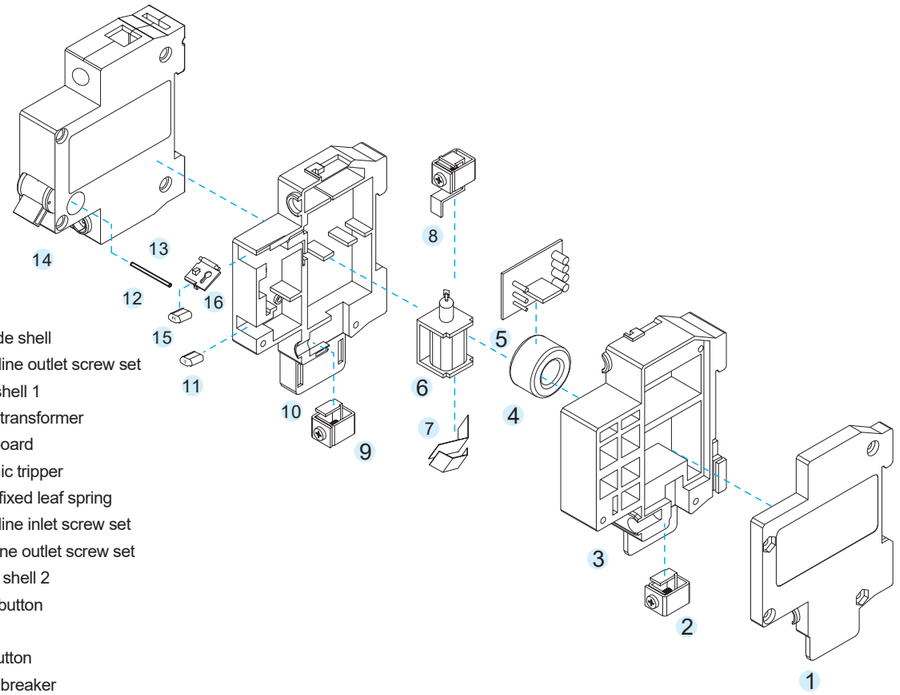
63 Frame							
General power distribution protection (IEC/EN 61009-1; GB 16917.1)							
No. of poles			1P+N	2P	3P	3P+N	4P
Electrical performance							
Functions			Short-circuit protection, overload protection, leakage protection,isolation, control				
Residual current type			AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)				
Rated frequency	f	(Hz)	50/60				
Rated operational voltage	Ue	(V AC)	230	230	400	400	400
Rated residual action current	I△n	(mA)	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable				
Rated current	In	(A)	50 , 60				
Instantaneous tipping type			C/D				
Rated residual making and breaking capacity	Im	(A)	2000				
Rated short-circuit capacity	Icu	(kA) L	Icn=Ics=6				
		H	Icn=Ics=10				
Tripper type			Thermomagnetic				
Service life	(0 ~ C)	Mechanical service life	20000				
		Electrical service life	10000				
Control and indication							
Optional accessories(multiple options available)			Alarm contact SD, auxiliary contact OF				
Connection and installation							
Protection level			IP20				
Wiring capacity	(mm²)		1~ 25				
Operational temperature	(℃)		-25 ~ +60				
Resistance to heat and humidity			2				
Altitude	(m)		⩽2000				
Air relative humidity			Not exceed 95% at +20℃; not exceed 50% at +40℃				
Pollution level			2				
Installation environment			Without strong impact and vibration				
Installation category			Ⅲ				
Installation method			DIN standard rail				
Outline dimensions Width*Height*Depth (mm) 		a	54	72	117	117	135
		b	98.5				
		c	77	78.5			

APPLICATIONS

STANDARDS

GB10963.1、IEC60898-1

MAIN STRUCTURE INTRODUCTION



1. Right side shell
2. Neutral line outlet screw set
3. Middle shell 1
4. Current transformer
5. Circuit board
6. Electronic tripper
7. Moving fixed leaf spring
8. Neutral line inlet screw set
9. Phase line outlet screw set
10. Middle shell 2
11. Reset button
12. Shaft
13. Test button
14. Circuit breaker

Structure overview	Working method	Circuit board	Electronic tripper	Test button
Leakage protection type miniature circuit breaker is modular structure, which is made of ASKB5 normal MCB body on the left and leakage detection mechanism on the right. The main components include circuit board, current transformer, electronic, etc. The left and right parts are tightly fixed together. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or overloaded, the magnetic tripper or thermal tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit, realizing the protection of the distribution lines. When there is a leakage situation, the current vector sum through the N line current transformer is not equal to zero. The circuit board amplifies the transformer voltage signal, driving the electronic tripping into action, pushing the tripping mechanism in ASKB5 normal type body through the linkage rod to achieve the breaking protection.	The main components use the bidirectional thyristor, which can sensitively detect the milliamp signal from the N-line transform-er, and then analyze and process the signal to amplify the signal, relying on the principle of low power control of high power to drive the electronic tripper acts.	The electronic tripper is the main action component of the leakage protection mechanism. After the signal amplified by the circuit board reaches the required voltage to drive the tripper, it acts immediately, driving the linkage rod to drive the tripping mechanism in ASKB5 normal type to break the main circuit for the purpose of protecting the distribution lines.	Leakage protection miniature circuit breaker has test button. When the test button is pressed down, the driving circuit of the electronic tripper is turned on. The tripper acts immediately, driving the relevant mechanism to realize the breaking. It is used for periodic testing of the operating condition of leakage type circuit breakers.

ASKB5 SERIES OVER-CURRENT TRIPPING CHARACTERISTICS TABLE

Normal Protection Type 63 Frame

Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.13In	All values	T≤1h	Not trip	Cold	The current rises steadily to the specified value within 5s
1.45In	All values	T≤1h	trip	Hot	Close the auxiliary switch to turn on the power
2.55In	In≤32A	1s＜T＜60S	trip	Cold	Close the auxiliary switch to turn on the power
2.55In	In≤32A	1s＜T＜120S	trip	Cold	Close the auxiliary switch to turn on the power
5In(C)	All values	T≤0.1S	Not trip	Cold	Close the auxiliary switch to turn on the power
10In(C)	All values	T＜0.1S	trip	Cold	Close the auxiliary switch to turn on the power
10In(C)	All values	T≤0.1S	Not trip	Cold	Close the auxiliary switch to turn on the power
14In(C)	All values	T＜0.1S	trip	Cold	Close the auxiliary switch to turn on the power

L Leakage Protection Type 63 Frame

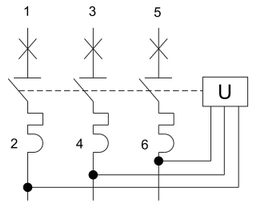
Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.13In	6-63	1≥In	Not trip	Cold	
1.45In	6-63	1≤1 In	Trip	Performed immediately after the previous test	The current rises steadily to the specified value within 5s
2.55In	6-63	1S＜t＜60S	Trip	Cold	In≤32
		1S＜t＜120S	Trip		In＞32
5In	6-63	t≥0.1S	Not trip	Cold	C
10In		t＜0.1S	Trip		
10In		t≥0.1S	Not trip		D
16In		t＜0.1S	Trip		

Note: the "cold" state means at the reference calibration temperature, without load before the test.

Optional accessories - ASKB5 Series

Over-voltage under-voltage tripper: MN+MV

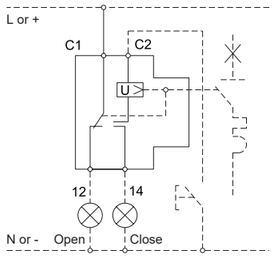
Over-voltage under-voltage tripper (MN+MV): for automatic protection in case of over/under voltage in the main circuit
Under-voltage protection value:170V±10%(153-187V)
Over-voltage protection value:280V±5%(266-294V)
Assembly: mounted on the right side of the circuit breaker
Application: automatic protection in case of over/under voltage in the main circuit
Width:18mm



MN+MV

Shunt tripper: MX+OF

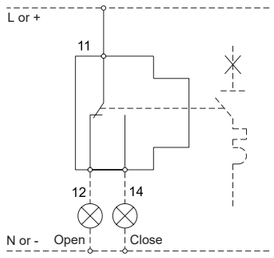
Shunt tripper (MX+OF): for remote control tripping
Tripping voltage: DC24, AC220/380V
Assembly: mounted on the right side of the circuit breaker
Application: remote control the lines to break
Width: 18mm



MX+OF

Auxiliary contact: OF

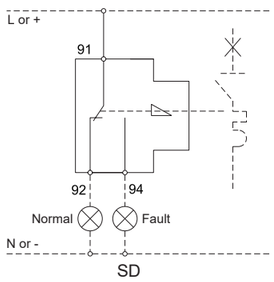
Auxiliary contact (OF): for indication of the circuit breaker status
Assembly: mounted on the left side of the circuit breaker
Application: indicate the status of the circuit breaker
Width: 9mm



OF

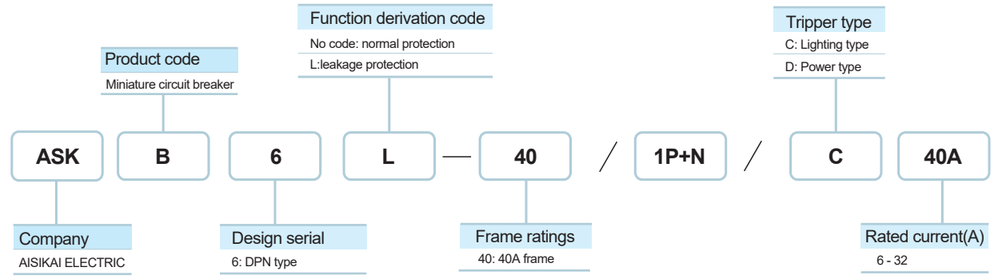
Alarm contact: SD

Alarm contact (SD): for indication of the circuit breaker status in the event of fault tripping
Assembly: mounted on the left side of the circuit breaker
Application: fault alarm indication of equipment and other devices
Width: 9mm



SD

ASKB6 MINIATURE CIRCUIT BREAKER SELECTION TABLE



Frame Classification:
Normal type(40A frame)
Leakage protection type(L type, 40A frame)

Design marking	Design marking	Model definition 1:	Model definition 2:
ASKB1 ASKB2	ASKB1L ASKB2L	ASKB6- 40 / 2P / 40A 1. compact normal protection type MCB; 2. 40A frame; 3. 2 poles, rated current 40A.	ASKB6L- 40 / 1P+N / 40A 1. compact leakage protection type MCB; 2. 40A frame; 3. single phase two lines, rated current 40A.

QUALIFICATION DOCUMENTS


CCC


CCC


CCC


CCC


CCC


CE


ISO

ASKB6 NORMAL PROTECTION MINIATURE CIRCUIT BREAKER

OVERVIEW

● ASKB6 series household miniature circuit breakers are suitable for the end power distribution lines of office buildings, residences and general industrial use. ASKB2 can protect lines against overload and short-circuit, and provide functions of isolation and control. Under normal conditions, MCB can also be used in infrequent on-off control of electrical devices and lighting lines. The MCB are suitable for AC 50/60Hz, rated voltage below 230V, rated current below 40A.

The MCB adopts the innovative "phase line+ N line" design, which can cut off the phase and neutral lines at the same time, achieving higher safety performance and avoiding personal and fire hazards caused by reverse wiring of the phase and neutral lines or high neutral-to-ground potential when using single-pole circuit breakers. The compact design makes its thickness only 18mm, which fully meets the high standard requirements for component volume of household distribution box. MCB has high breaking capacity, adopts modular design, and can be used with a variety of accessories to meet customers' requirements for other additional functions.

CLASSIFICATION

● **Classified by the over-current tripper rated current(A)**

Frame 40： 3, 6, 10, 16, 20, 25, 32, 40

● **Classified by instantaneous tripper type**

B type: protect pure resistive load and low-inductive lighting system
tripping characteristic: instantaneous trip range(3-5)In

C type: protect inductive load and high-inductive lighting system
tripping characteristic: instantaneous trip range(5-10)In

FEATURES

● Innovative "phase line+ N line" structural design. Thickness only 18mm. Save 50% space
Shell with ventilation slot design, active heat dissipation, reduce temperature rise
Composite high conductive material. Longer service life
Ergonomic operation design, non-slip handle for easy operation

APPLICATIONS

Civil　Commercial　Industrial

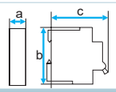
STANDARDS

GB10963.1、IEC60898-1

NORMAL OPERATIONAL CONDITIONS AND INSTALLATION METHODS

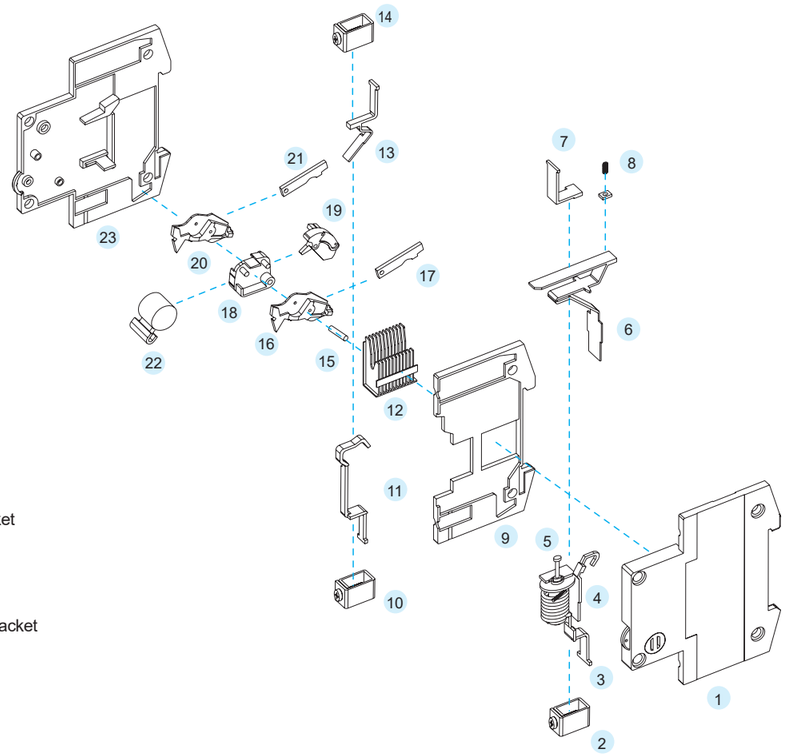
Category	Requirement
Operational temperature	Between -5℃ and +40℃. The average value in 24 hours does not exceed +35℃.
Altitude	Lower than 2000 meters.
Operational humidity	The relative humidity at +40℃ shall not exceed 50%. Higher relative humidity is allowed at lower temperature. The average maximum relative humidity is 90% in the most humid month
Installation level	The installation level is Ⅱ,Ⅲ.
Pollution level	Level 2
Installation method	Install vertically or horizontally. Use YH35-7.5 standard DIN rail.
Installation conditions	The inclination of the mounting surface to the vertical surface does not exceed 5 degrees. Use environment should be without strong impact and vibration.
Wiring method	Fasten the wires using screws.
Wire inlet method	Wiring reversely is acceptable for normal type. Wiring reversely is prohibited for leakage type.

MAIN TECHNICAL PARAMETERS

63 Frame				
General power distribution protection				
No. of poles				1P+N: single phase two lines, N line is involved in breaking
Electrical performance				
Functions				Short-circuit protection, overload protection, isolation, control
Rated frequency	f	(Hz)		50
Rated operational voltage	Ue	(V AC)		230
Rated current	In	(A)		6, 10, 16, 20, 25, 32, 40
Impulse withstand voltage	Uimp	(kV)		4
Instantaneous tripping type				C/D
Rated short-circuit capacity	Icu	(kA)	L	Icu=Ics=4
			H	Icu=Ics=6
Tripper type				Thermomagnetic
Service life	(0 ~ C)	Mechanical service life		20000
		Electrical service life		8000
Control and indication				
Optional accessories(multiple options available)				None
Connection and installation				
Protection level				IP20
Handle lock				None
Wiring capacity	(mm²)			1~25
Operational temperature	(℃)			-5 ~ +40
Resistance to heat and humidity				2
Altitude	(m)			⩽2000
Air relative humidity				Not exceed 95% at +20℃; not exceed 50% at +40℃
Pollution level				2
Installation environment				Without strong impact and vibration
Installation category				Ⅲ
Installation method				DIN standard rail
Outline dimensions Width*Height*Depth (mm)			a	18
			b	83
			c	76

OVERVIEW

1. Right side shell
2. Phase line outlet screw set
3. Thermal tripper
4. Fixed contact
5. Tripper
6. Thermal bimetal component
7. Conductive plate
8. Adjustment screw
9. Middle shell
10. Wiring frame part
11. Tripper linkage plate
12. Arc extinguishing cover
13. Phase moving contact
14. Neutral line inlet wiring frame
15. Shaft
16. Live line moving contact bracket
17. Live line moving contact
18. Indication device
19. Crescent plate
20. Neutral line moving contact bracket
21. Neutral line moving contact
22. Handle
23. Base shell



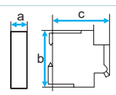
Structure overview	Working method	Magnetic tripper	Thermal tripper	Arc extinguishing cover
Normal protection type miniature circuit breaker is one-piece structure, which is made of precise combination of internal parts. The left and right shells enclose the operating mechanism, moving/fixed contacts, thermal tripper, magnetic tripper, and arc extinguishing cover. Manual operation is used for open/close operation.	The manual operation on the open/close handle makes the phase lines and neutral line switch on/off simultaneously, realizing the on-off of the circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper pushes the free tripping mechanism into action, breaking the phase lines and neutral line of the main circuit. When the circuit is overloaded, the thermal tripper pushes the free tripping mechanism into action, breaking the phase lines and neutral line of the main circuit to realize the protection of the distribution lines.	The coil of the magnetic tripper is connected in series with the main circuit. When the circuit is short-circuited or seriously overloaded, the magnetic tripper generate magnetic force due to electromagnetic induction, instantly making the armature pull in, pushing the free tripping mechanism into action and the main contact breaks the main circuit.	The coil of the thermal tripper is connected in series with the main circuit. When the circuit is overloaded, the thermal component of the thermal tripper heats up due to the increasing current, bending the bimetal strip, pushing the free tripping mechanism into action within a certain period of time and completing the protection breaking.	MCB adopts multi-layer stacked arc extinguishing cover. Its mounting position is below the contact. Each piece of arc extinguishing plate is at an angle of 60 degrees from the horizontal plane. In the breaking process, through the electromagnetic field induction force and the air flow, the arc is instantly imported into the arc extinguishing cover, realizing rapid arc extinguishing.

ASKB6L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

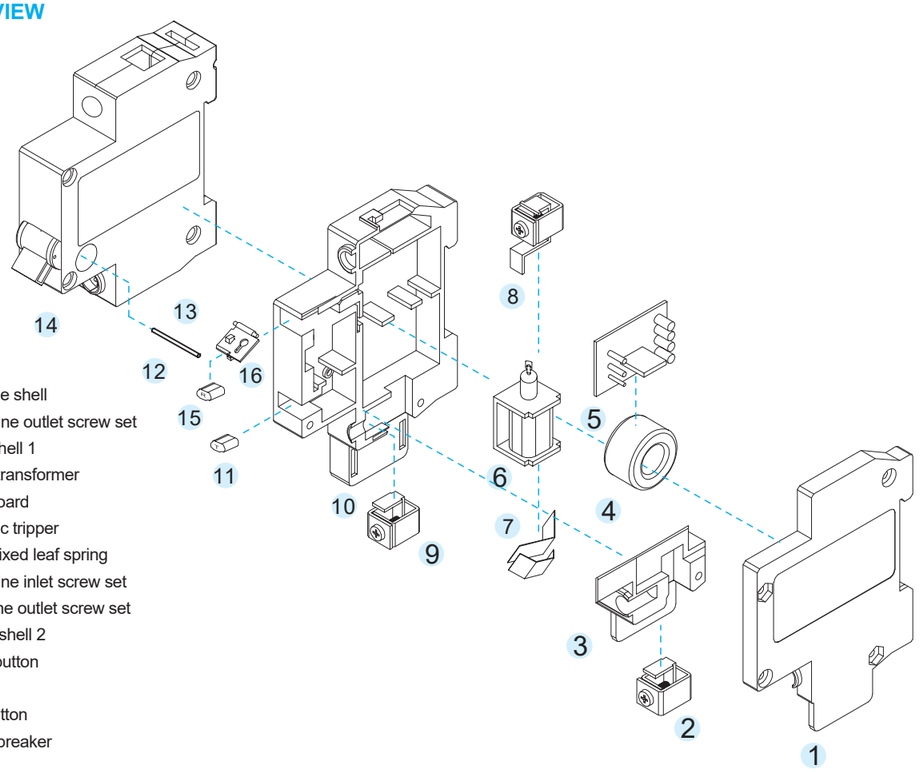
OVERVIEW

- ASKB6L leakage protection type miniature circuit breaker is suitable for lines of AC 50Hz, rated operational voltage 230V, rated current below 32A, used for indirect contact protection for people, and over-current protection for buildings and lines for similar purposes. ASKB6L also provide protection against fires caused by persistent ground faults due to the inaction of the over-current protection devices. Leakage circuit breakers with over-voltage protection also protect against excessive voltage increases due to grid faults.
  This series of residual current-action circuit breakers have been increasingly used in low-voltage distribution systems as backup protection for ground faults and direct contact and indirect contact electric shocks.

MAIN TECHNICAL PARAMETERS

63 Frame				
General power distribution protection (IEC/EN 61009-1； GB 16917.1)				
No. of poles				1P+N: single phase two lines, N line is involved in breaking
Electrical performance				
Functions				Short-circuit protection, overload protection, isolation, control
Residual current type				AC type(ensure tripping for sudden applied or slowly rising residual sinusoidal AC currents)
Rated frequency	f	(Hz)		50
Rated operational voltage	Ue	(V AC)		230
Rated residual action current	I△n	(mA)		Default 30mA(non-action current 15mA).
Rated current	In	(A)		6, 10, 16, 20, 25, 32, 40
Instantaneous tripping type				C/D
Rated residual making and breaking capacity	Im	(A)		2000
Rated short-circuit capacity	Icu	(kA)	L	Icu=Ics=4.5
			H	Icu=Ics=6
Tripper type				Thermomagnetic
Service life	(0 ~ C)	Mechanical service life		20000
		Electrical service life		8000
Control and indication				
Optional accessories(multiple options available)				Not available
Connection and installation				
Protection level				IP20
Wiring capacity	(mm²)			1~25
Operational temperature	(℃)			-25 ~ +60
Resistance to heat and humidity				2
Altitude	(m)			⩽2000
Air relative humidity				Not exceed 95% at +20℃； not exceed 50% at +40℃
Pollution level				2
Installation environment				Without strong impact and vibration
Installation category				Ⅲ
Installation method				DIN standard rail
Outline dimensions Width*Height*Depth (mm)			a	36
			b	92
			c	76

OVERVIEW



1. Right side shell
2. Neutral line outlet screw set
3. Middle shell 1
4. Current transformer
5. Circuit board
6. Electronic tripper
7. Moving fixed leaf spring
8. Neutral line inlet screw set
9. Phase line outlet screw set
10. Middle shell 2
11. Reset button
12. Shaft
13. Test button
14. Circuit breaker

Structure overview	Working method	Circuit board	Electronic tripper	Test button
Leakage protection type miniature circuit breaker is modular structure, which is made of ASKB6 normal MCB body on the left and leakage detection mechanism on the right. The main components include circuit board, current transformer, electronic, etc. The left and right parts are tightly fixed together. Manual operation is used for open/close operation.	Miniature circuit breakers achieve the on-off of the circuit through the manual operation on the open/close handles. When the circuit is short-circuited or overloaded, the magnetic tripper or thermal tripper pushes the free tripping mechanism into action and the main contact breaks the main circuit, realizing the protection of the distribution lines. When there is a leakage situation, the current vector sum through the N line current transformer is not equal to zero. The circuit board amplifies the transformer voltage signal, driving the electronic tripping into action, pushing the tripping mechanism in ASKB6 normal type body through the linkage rod to achieve the breaking protection.	The main components use the bidirectional thyristor, which can sensitively detect the milliamp signal from the N-line transformer, and then analyze and process the signal to amplify the signal, relying on the principle of low power control of high power to drive the electronic tripper acts.	The electronic tripper is the main action component of the leakage protection mechanism. After the signal amplified by the circuit board reaches the required voltage to drive the tripper, it acts immediately, driving the linkage rod to drive the tripping mechanism in ASKB6 normal type to break the main circuit for the purpose of protecting the distribution lines.	Leakage protection miniature circuit breaker has test button. When the test button is pressed down, the driving circuit of the electronic tripper is turned on. The tripper acts immediately, driving the relevant mechanism to realize the breaking. It is used for periodic testing of the operating condition of leakage type circuit breakers.