
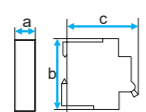



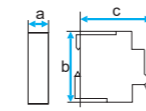
## ASKB5L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

### 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		<b>1P+N</b>	<b>2P</b>	<b>3P</b>	<b>3P+N</b>	<b>4P</b>	
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	U <sub>e</sub> (V AC)	230	230	400	400	400	
Rated residual action current	I <sub>Δn</sub> (mA)	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable					
Rated current	I <sub>n</sub> (A)	6, 10, 16, 20, 25, 32, 40					
Instantaneous tripping type		C/D					
Rated residual making and breaking capacity	I <sub>m</sub> (A)	2000					
Impulse withstand voltage	U <sub>i</sub> (A)	500					
Rated insulation voltage	U <sub>imp</sub> (kV)	4					
Rated short-circuit capacity	I <sub>cu</sub> (kA)	I <sub>cn</sub> =I <sub>cs</sub> =6 I <sub>cn</sub> =I <sub>cs</sub> =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	(mm <sup>2</sup> )	1~ 25					
Operational temperature	(°C)	-25 ~ +60					
Resistance to heat and humidity		2					
Altitude	(m)	< 2000					
Air relative humidity		Not exceed 95% at +20 °C ; not exceed 50% at +40 °C					
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		<b>1P+N</b>	<b>2P</b>	<b>3P</b>	<b>3P+N</b>	<b>4P</b>	
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	U <sub>e</sub> (V AC)	230	230	400	400	400	
Rated residual action current	I <sub>Δn</sub> (mA)	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable					
Rated current	I <sub>n</sub> (A)	50, 60					
Instantaneous tripping type		C/D					
Rated residual making and breaking capacity	I <sub>m</sub> (A)	2000					
Rated short-circuit capacity	I <sub>cu</sub> (kA)	I <sub>cn</sub> =I <sub>cs</sub> =6 I <sub>cn</sub> =I <sub>cs</sub> =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	(mm <sup>2</sup> )	1~ 25					
Operational temperature	(°C)	-25 ~ +60					
Resistance to heat and humidity		2					
Altitude	(m)	< 2000					
Air relative humidity		Not exceed 95% at +20 °C ; not exceed 50% at +40 °C					
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


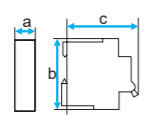
GB10963.1、IEC60898-1


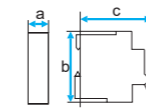
## ASKB5L LEAKAGE PROTECTION MINIATURE CIRCUIT BREAKER

### 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		<b>1P+N</b>	<b>2P</b>	<b>3P</b>	<b>3P+N</b>	<b>4P</b>	
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	U <sub>e</sub> ( V AC )	230	230	400	400	400	
Rated residual action current	I <sub>Δn</sub> ( mA )	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable					
Rated current	I <sub>n</sub> ( A )	6, 10, 16, 20, 25, 32, 40					
Instantaneous tripping type		C/D					
Rated residual making and breaking capacity	I <sub>m</sub> ( A )	2000					
Impulse withstand voltage	U <sub>i</sub> ( A )	500					
Rated insulation voltage	U <sub>imp</sub> ( kV )	4					
Rated short-circuit capacity	I <sub>cu</sub> ( kA )	I <sub>cn</sub> =I <sub>cs</sub> =6 I <sub>cn</sub> =I <sub>cs</sub> =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	(mm <sup>2</sup> )	1~ 25					
Operational temperature	(°C)	-25 ~ +60					
Resistance to heat and humidity		2					
Altitude	(m)	≤ 2000					
Air relative humidity		Not exceed 95% at +20°C ; not exceed 50% at +40°C					
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		<b>1P+N</b>	<b>2P</b>	<b>3P</b>	<b>3P+N</b>	<b>4P</b>	
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	U <sub>e</sub> ( V AC )	230	230	400	400	400	
Rated residual action current	I <sub>Δn</sub> ( mA )	Default 30mA(non-action current 15mA). 50, 100, 200, 300mA is customizable					
Rated current	I <sub>n</sub> ( A )	50 , 60					
Instantaneous tripping type		C/D					
Rated residual making and breaking capacity	I <sub>m</sub> ( A )	2000					
Rated short-circuit capacity	I <sub>cu</sub> ( kA )	I <sub>cn</sub> =I <sub>cs</sub> =6 I <sub>cn</sub> =I <sub>cs</sub> =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	(mm <sup>2</sup> )	1~ 25					
Operational temperature	(°C)	-25 ~ +60					
Resistance to heat and humidity		2					
Altitude	(m)	≤ 2000					
Air relative humidity		Not exceed 95% at +20°C ; not exceed 50% at +40°C					
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			

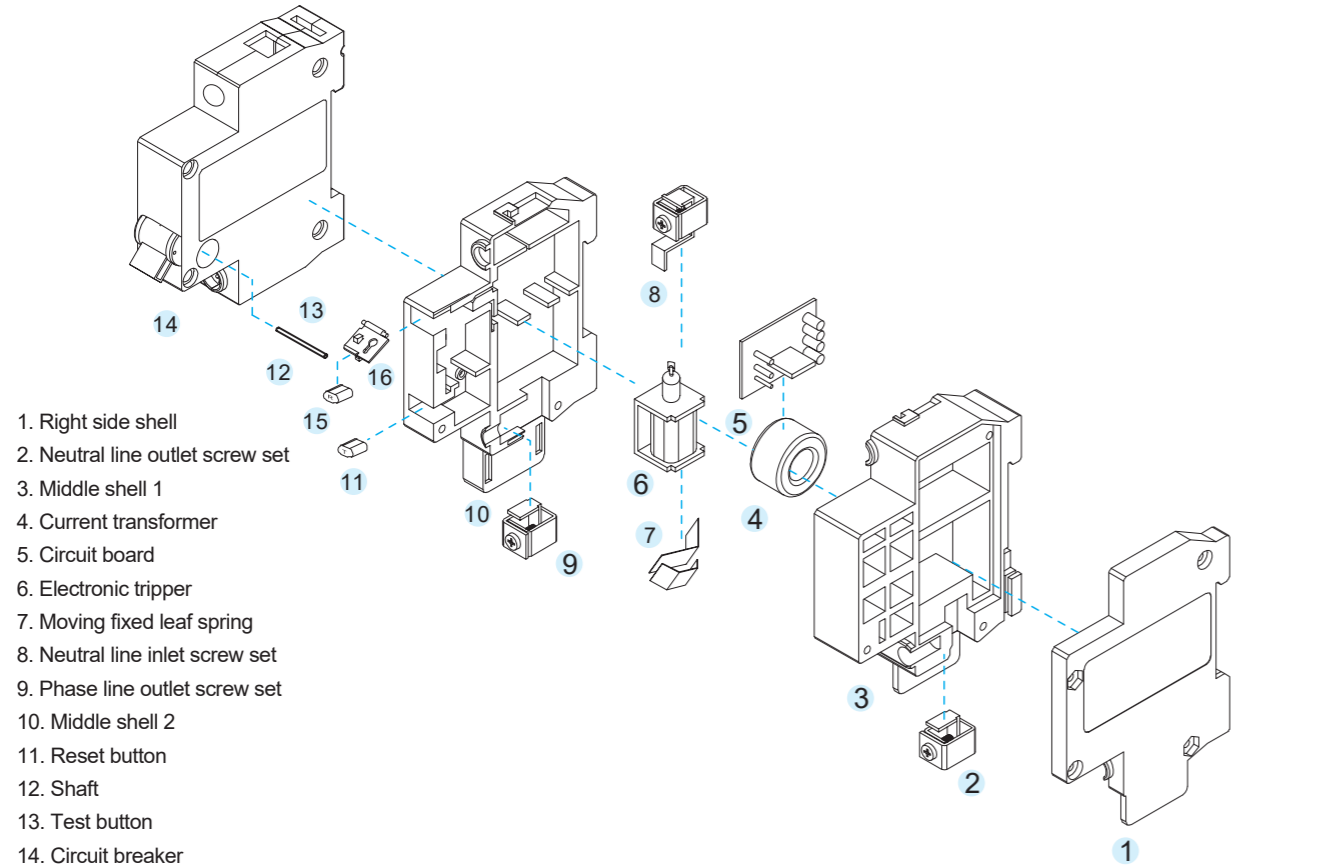
### APPLICATIONS



### STANDARDS

GB10963.1、IEC60898-1

## MAIN STRUCTURE INTRODUCTION



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 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 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

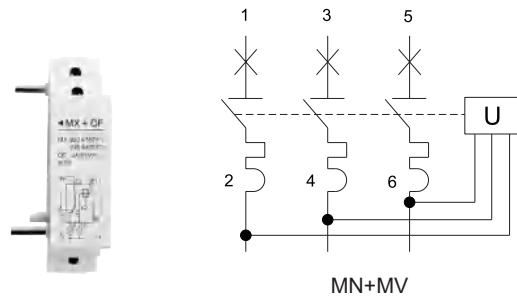
Test current (A)	Rated current (A)	Rated time	Expected result	Initial result	Notes
1.13In	6-63	1≥In	Not trip	Cold	
1.45In	6-63	1≤1 In	Trip	Performed immediately after the previous test	The current rises steadily to the specified value within 5s
2.55In	6-63	1S<t<60S	Trip	Cold	In≤32 In>32
		1S<t<120S	Trip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

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

**Optional accessories - ASKB5 Series**

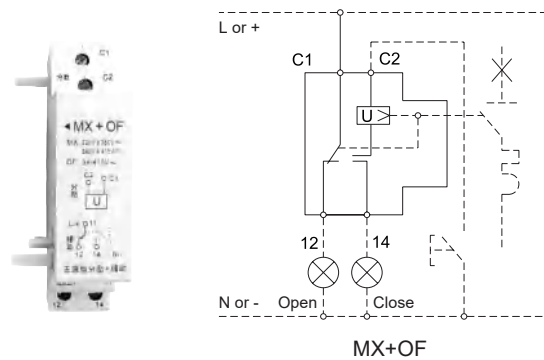
**Over-voltage under-voltage tripper: MN+MV**

Over-voltage under-voltage tripper (MN+MV): for automatic protection in case of over/under voltage in the main circuit  
 Under-voltage protection value:  $170V \pm 10\%$  (153-187V)  
 Over-voltage protection value:  $280V \pm 5\%$  (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



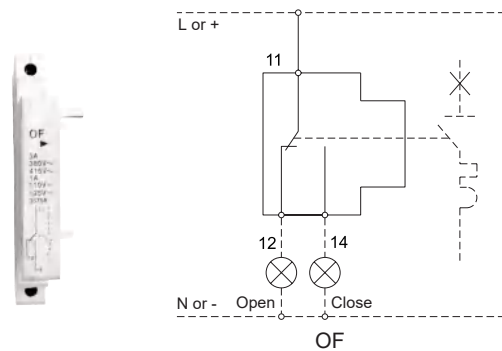
**Shunt tripper: MX+OF**

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



**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



**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

