

## Terminal Apparatus Product manual

UEB3-63



# INTRODUCTION



Sunban Industrial Park

Hongfa, (Shanghai Stock Exchange: 600885), founded in 1984, has been adhering to the enterprise spirit of “persevere for progress, strive for excellence”, and has built a complete industry system with complete categories and supporting facilities. At present, Hongfa has more than 30 subsidiaries and has established three districts of R & D and production bases. Its products cover various categories, such as medium and low voltage products, relays, high and low voltage switchgear, capacitors, precision parts and automation equipment.

Xiamen Hongfa Electrical Safety & Controls Co., Ltd. is a wholly-owned subsidiary of Hongfa, which specializes in R & D, design and manufacture medium and low voltage products. Its distribution apparatus, terminal apparatus, control apparatus and other products are widely used in real estate, electric power, new energy, industry, HVAC, transportation, information and other fields.

In the United States, Europe, Southeast Asia and other regions, Hongfa has established localized marketing and service networks with global market operation and technical service. Relying on professional and rigorous technical support, fast response and all-round service, safe and reliable product quality and high cost performance, Hongfa has reached business cooperation relationship with many global top 500 enterprises and other well-known enterprises, such as Enel, GE, Honeywell, Carrier, Trane, Johnson Controls, Danfoss, State Grid, China Southern Power Grid, CRRC, China Mobile, China Unicom, etc.





Donglin Industrial Park



Haicang Industrial Park



Zhongjiang Industrial Park



Zhangzhou Industrial Park



Zhoushan Industrial Park



Xi'an Factory

In terms of technology R & D and manufacturing, taking the national enterprise technology center as the platform, Hongfa has set up postdoctoral research workstation, academician and expert workstation. Now it has developed into a leading scientific research and production base in the industry. From product development, mold manufacturing, parts manufacturing, automated product assembly and online testing, Hongfa has successfully built an integrated whole industry chain of medium and low voltage products. In terms of product testing, Hongfa testing center has passed the certification of VDE, UL, CNAS and other international organizations, and has complete testing and analysis equipment for low-voltage products, such as 50kA ultimate short circuit test, 8kA electrical life test, 80kA characteristic test, mechanical simulation and testing system, electro-magnetic simulation and testing system.

Hongfa always adheres to the policy of "focused on the market, winning through quality", and has a completed quality assurance system. Its products have passed UL / CUL, VDE, CQC, CCC and other international safety certification. In the process of quality management, Hongfa actively implements the advanced quality concept, constantly improves the quality management system, continuously promotes the product process quality control and testing, strengthens the supply chain management, and is committed to providing each customer with high-quality products and creating greater value.

Advanced technology and strict quality control have created Hongfa's brand strength. Hongfa is willing to work hand in hand with global customers to share the convenience and well-being brought by science and technology.

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# UEB3-63 Series

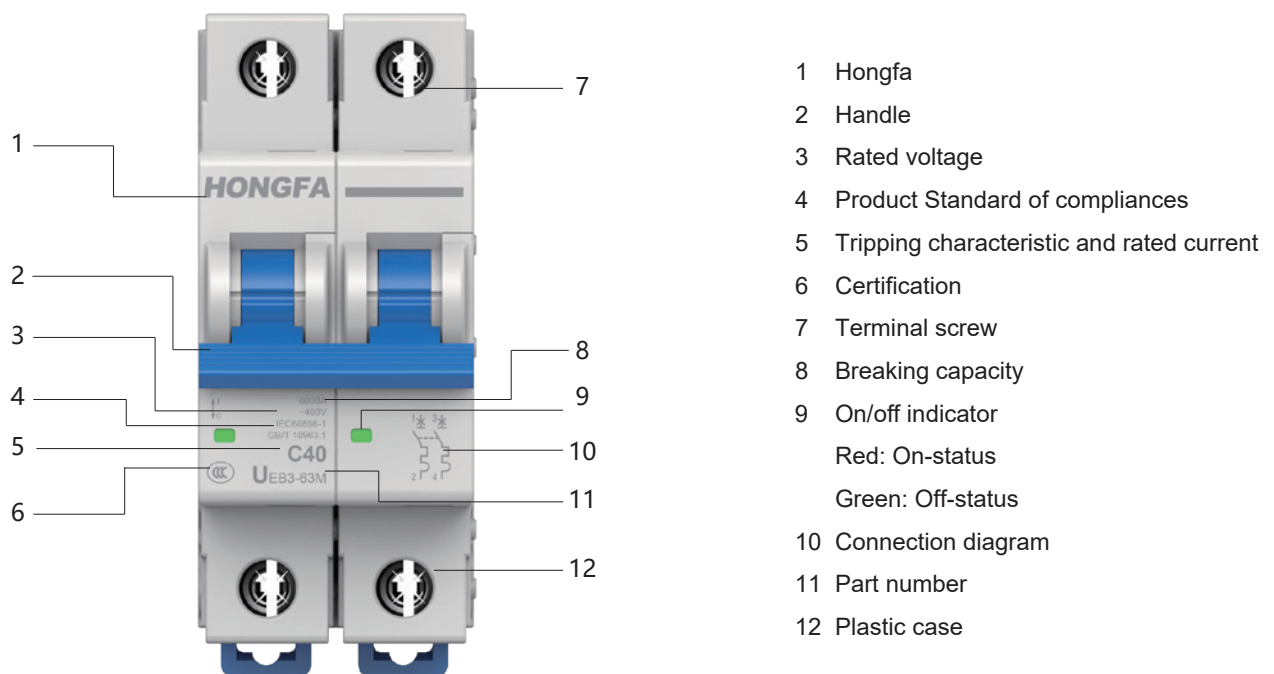
## Product Overview



UEB3-63 series miniature circuit breakers are mainly used in the circuit of rated voltage 230V/400VAC (50Hz/60Hz), with up to rated operational current 63A. Its purpose is to protect the circuit and electric installation from over current, short circuit with isolating function. it is also applicable for the infrequent manual making and breaking operation.

### Product Features

- Independent property rights: UEB3-63 series circuit breakers have complete product independent property rights and automatic production lines.
- Intelligent Manufacturing: UEB3-63 Series Circuit Breaker Project is a national Intelligent Manufacturing Project
- Characteristic adjustment-free: UEB3-63 series circuit breaker is a time delay adjustment-free circuit breaker.
- High reliability: integrated design of metal mechanism and thermal release mechanism, high breaking capacity, long electrical life, accurate overload release.
- Low-carbon environmental-friendly: shorter internal circuit determines that UEB3-63 series circuit breakers have lower power consumption, low-carbon and are environmental-friendly.
- Series matching: adopt modular structure which can be combined freely and matched by series

### Product Structure



Approval Certificate			
<b>CB</b>	CB	IEC 60898-1	UEB3-63 Series
<b>CE</b>	CE	EN 60898-1	UEB3-63 Series
	CCC	GB/T 10963.1	UEB3-63 Series
	VDE	EN 60898-1	Only applicable to UEB3-63L/M (6~63A)

## Standard Operation and Installation Conditions

- Operation temperature range: -30°C... +70°C
- Storage temperature range: -40°C...+85°C
- Relative humidity: <50% @ 40°C; < 90% @ 20°C
- Altitude: < 2000m
- Pollution degree: II
- Mounting category: II / III
- Mounting condition: Install on 35mm DIN rail, inclination between the mounting plane and the vertical plane not exceed  $\pm 5^\circ$
- Products should avoid significant vibration and shock.

## Ordering Information

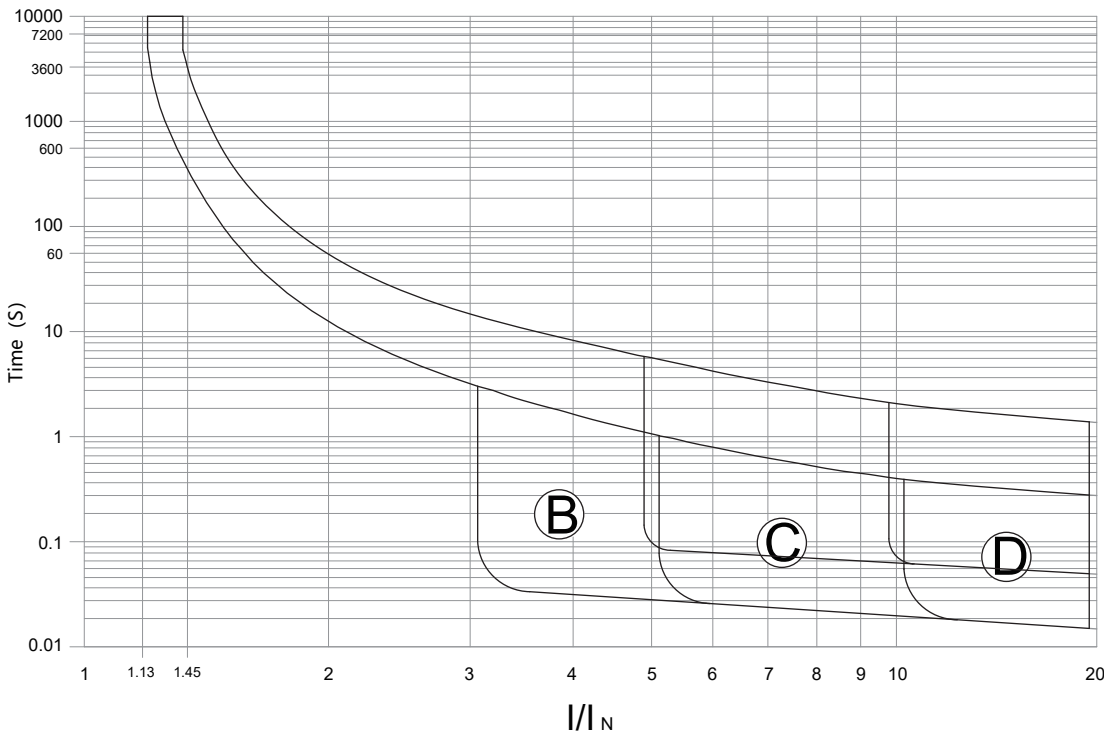
	<b>UEB3</b>	<b>- 63</b>	<b>M</b>	<b>/C</b>	<b>06</b>	<b>1N</b>
Miniature Circuit Breaker Series						
Maximum rated current: 63: 63A						
Breaking capacity: L: 4.5kA; M: 6kA; H: 10kA						
Instantaneous tripping characteristics: B: 3In...5In; C: 5In...10In; D: 10In...20In						
Rated Current: 01: 1A; 02: 2A; 03: 3A; 04: 4A; 06: 6A; 10: 10A; 13: 13A; 15: 15A; 16: 16A; 20: 20A; 25: 25A; 32: 32A; 40: 40A; 50: 50A; 63: 63A						
Number of poles: 1: 1P; 1N: 1P+N; 2: 2P; 3: 3P; 3N: 3P+N; 4: 4P						

Note: Only B curve and C curve are available for L type breaking capacity of breakers from 1A to 4A.

## Main Technical Data

Type		UEB3-63
Number of poles		1P, 1P+N, 2P, 3P, 3P+N, 4P
Instantaneous tripping characteristics		B:3In~5In; C:5In~10In; D:10In~20In
Short-circuit breaking capacity		UEB3-63L: $I_{cn}=I_{cs}=4.5kA$ ; UEB3-63M: $I_{cn}=I_{cs}=6kA$ ; UEB3-63H: $I_{cn}=10kA$ , $I_{cs}=7.5kA$
Rated current In		1A, 2A, 3A, 4A,6A, 10A, 13A, 15A,16A, 20A, 25A, 32A, 40A, 50A, 63A
Rated voltage Ue		AC230V/400V(1P); AC230V(1P+N); AC400V(2P/3P/3P+N/4P)
Rated insulation voltage Ui		AC500V
Rated impulse withstand voltage Uimp		4kV
Power frequency withstand voltage		2kV
Mechanical endurance (cycles)		20000
Electrical endurance (cycles)		10000
Protection degree		IP20
Weight (g)	1P	94.5
	1P+N	208
	2P	210.5
	3P	281.5
	3P+N	378.5
	4P	420.5
Product packaging		( Carton:520mm×313mm×177mm)
Wiring method		Upper terminal incoming

# Overload Release Characteristic Curve



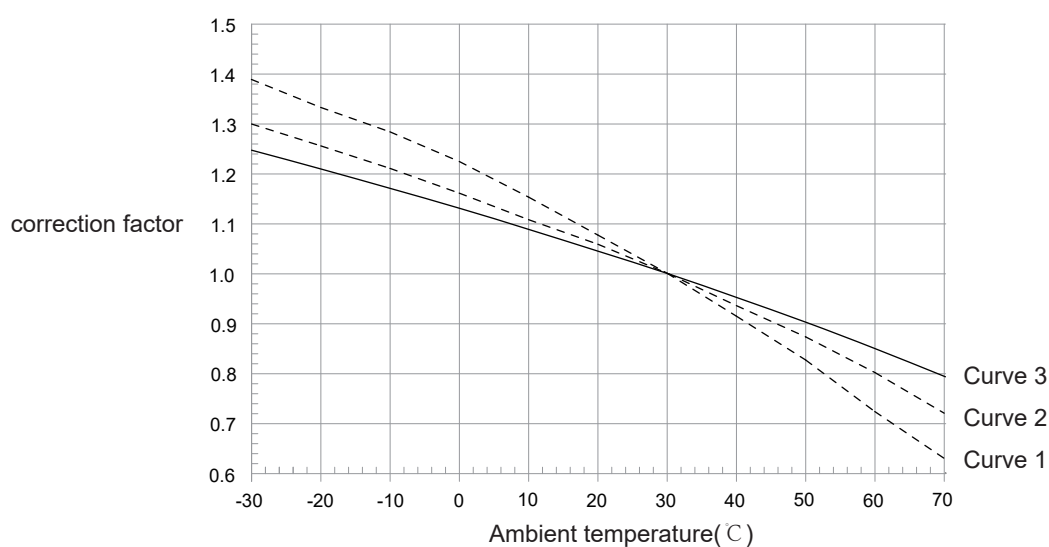


## Derating coefficients

### Temperature Compensation Coefficient

At different ambient temperature, the rated value of the equipment normally should not exceed the corresponding supplement coefficient to which the overload tripping current.

The curve corresponding to the correction coefficient															
Rated current(A)	01	02	03	04	06	10	13	15	16	20	25	32	40	50	63
Curve B	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3
Curve C	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3
Curve D	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3



### Frequency Coefficient

Thermal release: invariant

Electromagnetic release: Multiplying the corresponding value and frequency coefficient K

F(Hz)	16Hz~60Hz	100 Hz	200 Hz	300 Hz	400 Hz
K	1	1.1	1.2	1.4	1.5

### Derating Coefficient in High Altitude Area

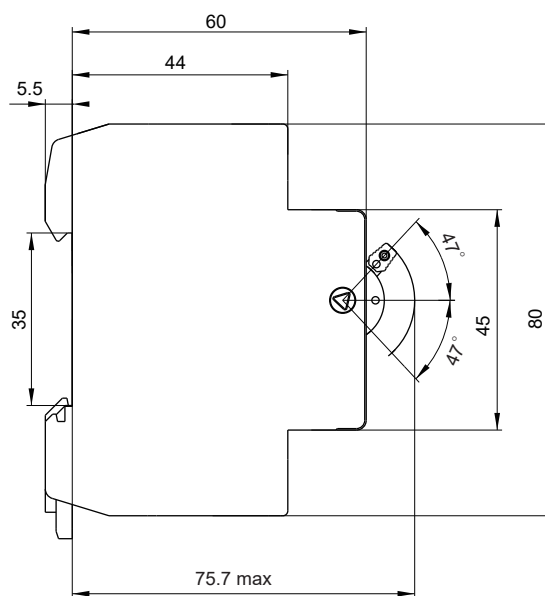
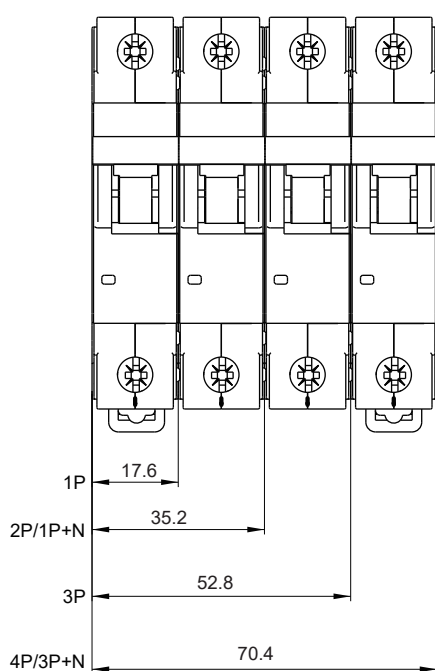
Altitude(m)	2000	3000	4000	5000
Rated current $I_n$	1	0.97	0.91	0.86
Rated insulation voltage $U_i$	1	0.90	0.82	0.76
Power frequency withstand voltage	1	0.90	0.82	0.76
Rated impulse withstand voltage $U_{imp}$	1	0.90	0.82	0.76
Rated breaking capacity	1	0.87	0.77	0.67
Electrical endurance	1	0.87	0.77	0.67

## Wiring Capability

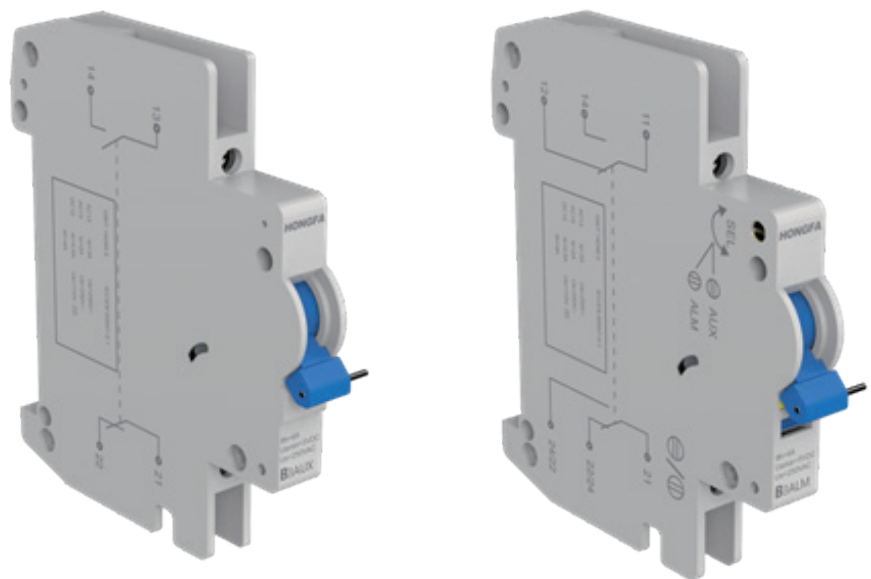
Terminal screw specification	Rated torque	Max torque	EN/IEC standard torque	Solid wire	Stranded copper wire
M5	2.0N·m	3.2N·m	2.0N·m	1mm <sup>2</sup> - 25mm <sup>2</sup>	1mm <sup>2</sup> - 25mm <sup>2</sup>

## Mechanical Dimensions

Unit: mm



# Auxiliary contact, Alarm contact



## Scope of Application

This series of accessories is auxiliary functional element matching with UEB3 series circuit breakers. Individual accessory can be selected to match the UEB3 circuit breakers for electrical circuits according to the demands to realize remote control of the circuit breakers, providing auxiliary signals, opening and closing state indication and alarm signals.

## Standard

IEC/EN60947-5-1 Low-voltage switchgear and controlgear	Part 5-1	Control circuit devices and switching elements --Electromechanical control circuit devices
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## Standard Operation and Installation Conditions

- Operating temperature range: -30℃...+70℃
- Altitude: < 2000m
- Environment condition: There shall be no medium causing explosion hazard, harmful gas and conductive dust that corrode and damage insulation.
- Mounting condition: Install on 35mm DIN rail

## Ordering Information

	<b>B</b>	<b>3</b>	<b>AUX</b>
Productcategory code <b>B:</b> MCB			
Design series number  <b>3:</b> Series 3			
Accessory type <b>AUX:</b> auxiliary contact; <b>ALM:</b> alarm contact			

## Main Technical Data

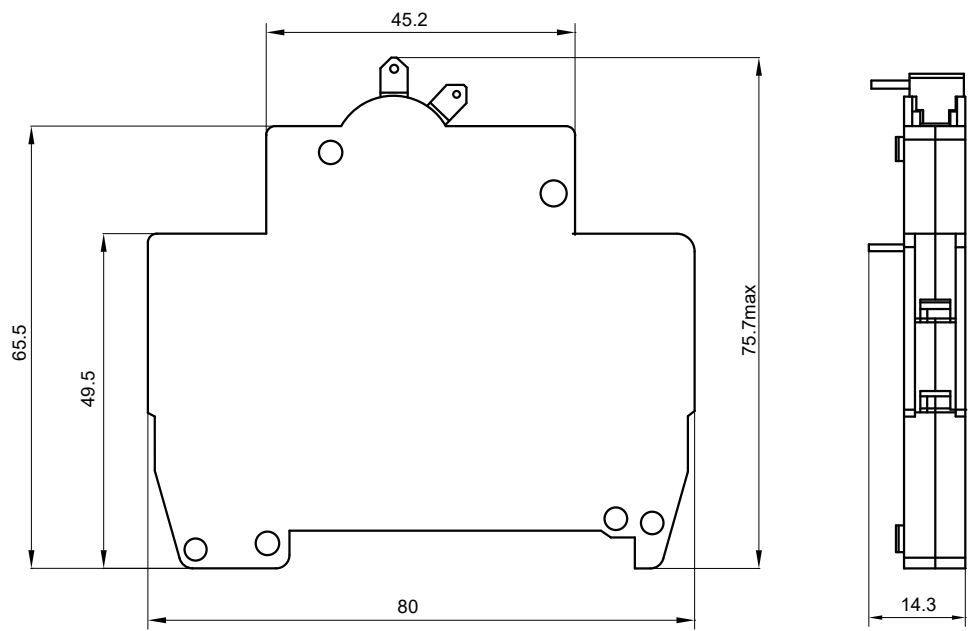
Type	B3AUX/ B3ALM
Contact breaking capacity	AC13: Ie=3A;Ue=250V AC15: Ie=2A;Ue=250V DC12: Ie=0.5A ; Ue=110V
Minimum operational voltage	5V
Minimum operational current	10mA
Rated insulation voltage U <sub>e</sub>	500V
Rated conditional short-circuit current I <sub>k</sub>	1000A
Conventional thermal current I <sub>th</sub>	4A
Mechanical endurance (cycles)	4000
Electrical endurance (cycles)	2000
Weight (g)	40
Packaging dimension (Length× Height × Width)	80mm×75.7mm×14.3mm

## Wiring capability

Wiring screw specification	Rated torque	Wire sectional area
M3	0.8 N·m	1×0.5 mm <sup>2</sup> ~ 1×2.5 mm <sup>2</sup>

## Mechanical Dimensions

Unit: mm



## Selection table

Type	Contact number	Remarks
B3AUX	1NO+1NC	Auxiliary contact
B3ALM	2CO	Alarm contact



## Shunt Release Product Overview

### Scope of Application

Shunt trips are auxiliary functional element matching UEB3 series circuit breakers. When a shunt trip receives a tripping signal, it will trip the breaker on which the shunt trip is mounted to realize remote control.

### Product standard

EN60947-5-1 Low-voltage switchgear and control gear Part 5-1:Control circuit devices and switching elements - Electromechanical control circuit devices

EN60947-2 Low-voltage switchgear and control gear Part 2:Circuit breaker

## Standard Operation and Installation Conditions

- Operation temperature range: -30 °C ... +70 °C
- Altitude: < 2000m
- Environment condition: There shall be no medium causing explosion hazard, harmful gas and conductive dust that corrode and damage insulation
- Mounting condition: Install on 35mm DIN rail

## Ordering Information

	<b>B</b>	<b>3</b>	<b>SH</b>
Product category code <b>B:</b> MCB			
Design series number <b>3:</b> Series 3			
Accessory type <b>SH:</b> Shunt release			

## Main Technical Data

Type	B3SH		
Rated control voltage	AC/DC: 12V ~ 24V	AC/DC: 48V	AC: 110V ~ 415V DC: 110 V ~ 130V
Maximum tripping time	≤10ms		
Minimum operating voltage	4.2V	16.8V	38.5V
Tripping power consumption	4.8Ω	72Ω	400Ω
Operating characteristics	At any voltage between 35%-110%Us can trip		
Mechanical endurance (cycles)	10000		
Electrical endurance (cycles)	4000		
Packaging dimension (Length× Height× Width)	80mm×76mm×18mm		
Weight (g)	78		

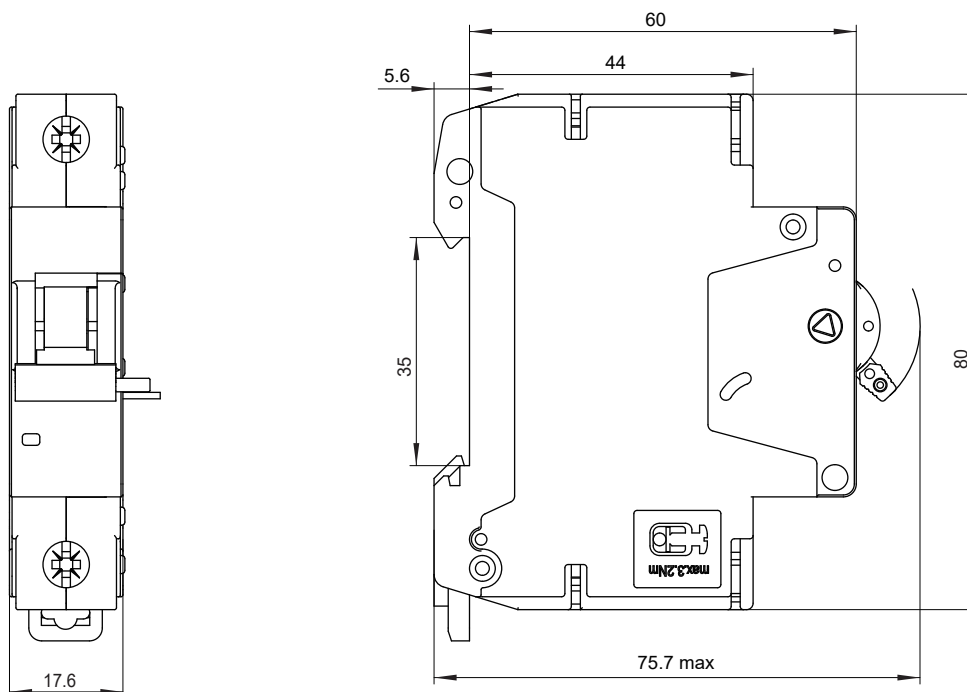
## Wiring capability

Screw clamp terminals, and wires of 1mm<sup>2</sup>... 25mm<sup>2</sup> can be connected.

Wiring screw specification	Rated torque	Ultimate torque	Solid wire	Stranded copper wire
M5	2.0 N·m	3.2N·m	1mm <sup>2</sup> ~ 25mm <sup>2</sup>	1mm <sup>2</sup> ~ 25mm <sup>2</sup>

## Mechanical Dimensions

Unit: mm



## Selection table

Type	Remark
B3SH	AC/DC: 12V~24V
B3SH	AC/DC: 48V
B3SH	AC: 110V~415V DC: 110 V~130V

## Under voltage release, Under voltage/overvoltage release, Overvoltage release

### Scope of Application

This series of accessories is auxiliary functional elements matching UEB3 series circuit breakers. Individual accessory can be selected to match the UEB3 circuit breakers in electrical circuits according to the demand to realize the function of under voltage protection and overvoltage protection.

### Product standard

EN60947-5-1 Low-voltage switchgear and controlgear  
Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices  
EN60947-2 Low-voltage switchgear and controlgear Part 2: Circuit breaker

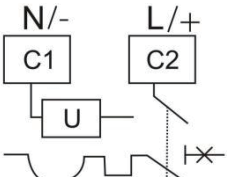
## Standard Operation and Installation Conditions

- Operating temperature range:  $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$
- Altitude:  $< 2000\text{m}$
- There shall be no medium causing explosion hazard, harmful gas and conductive dust that corrode and damage insulation
- Mounting condition: Install on 35mm DIN rail, max inclination mounting surface from vertical:  $\pm 5^{\circ}$

## Ordering Information

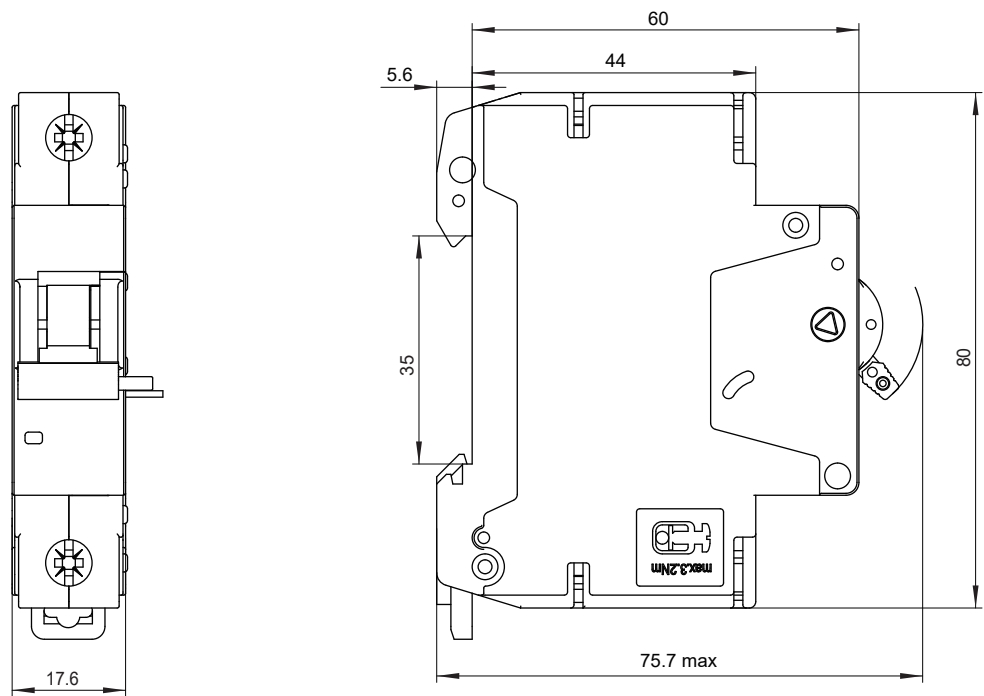
			<b>B</b>	<b>3</b>	<b>UV</b>
Product category code <b>B:</b> MCB					
Design series number3:Series 6					
Accessory type <b>UV:</b> Under voltage release; <b>OV:</b> Overvoltage release; <b>OU:</b> Under voltage/overvoltage release					

## Main Technical Data

Type	B3UV	B3OV	B3OU
Rated operational voltage	AC:230V		
Operational voltage	$0.35U_n \leq V \leq 0.7U_n$	$280V \pm 5\%$	Under voltage: $0.35U_n \leq V \leq 0.7U_n$ ; Over voltage: $280V \pm 5\%$
Circuit diagram			
Rated frequency	50/60 Hz		
Coil resistance	400Ω		
Mechanical endurance(cycles)	10000		
Electrical endurance (cycles)	4000		
Product packaging	Carton 80mm×76mm×18mm		
Weight (g)	85		

Mechanical Dimensions

Unit: mm



Selection table

Type	Remark
B3UV	Under voltage release
B3OV	Overvoltage release
B3OU	Under voltage/overvoltage release



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