

Smart miniature circuit breaker

UEZ3-40 series



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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UEZ3-40 smart breaker overview

Scope of Application

UEZ3-40 series smart Breaker is an integrated smart product developed for the realization of smart control and the application of Internet of Things. It is a new type of product composed of sensors, microelectronics, computers and communication technology on the basis of conventional circuit breakers. In addition to overload and short-circuit protection functions of conventional circuit breaker, it also has remote control, electric parameter measurement, over-voltage and under-voltage self-recovery, fault analysis, fault early warning, local reclosing, RS485 communication, etc.; it is suitable for AC 50Hz, rated operational voltage of 230V, rated operating current up to 40A, widely used in intelligent power distribution, video monitoring, communication base station, data center, charging pile, intelligent home, fire, security etc.

Product characteristics

Multi-function With overload protection, short-circuit protection, remote control, electric parameter measurement, overvoltage and under-voltage auto reclosing, fault analysis, fault alarm, RS485 communication.

Miniaturization The high integration of the mechanical structure, DC motor, reduction mechanism, sensors, and electronic components are integrated in a miniaturized structure with a width of 18mm.

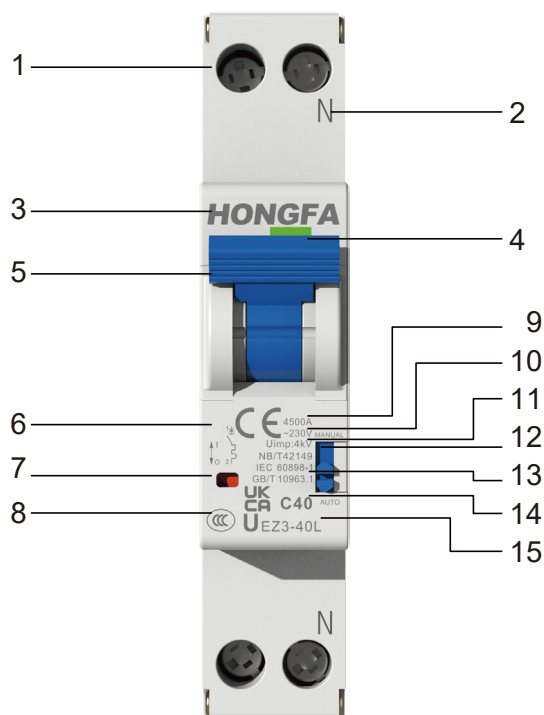
Safety Overload, overvoltage, undervoltage, over power, over temperature and other protections can be integrated with refined protections; short-circuit protection uses mechanical protection with fast action and high breaking capacity.

Intelligent Edge computing strategy, and circuit protection of local important processing execution; remote multiple information collection and multiple program control to meet the needs of the Internet of Things.

High Reliability The operating mechanism adopts high-efficiency and reliable DC motor to provide stable power for opening and closing; the positioning system adopts high-precision detection switch for accurate positioning with strong anti-interference ability; the circuit board adopts anti-interference design to meet the EMC requirements.

Easy to install Adopts modular design of MCB, which can be mounted on standard 35mm DIN rail; control power supply and RS485 communication are wired by quick connect terminals, and there are a variety of communication cable accessories available for optional.

Product Structure Diagram



1. Fastening screw
2. N-pole
3. Brand logo
4. Indicator lamp
5. Operating handle
6. Wiring diagram
7. Opening and Closing indications
8. Approval
9. Breaking capacity
10. Rated voltage
11. Rated impulse withstand capacity
12. Manual/auto switch
13. Standard
14. Tripping characteristics and rated current
15. Circuit breaker series code

Standard

	CCC	GB/T10963.1
	CB	IEC 60898-1
	CE	IEC 60898-1
	UKCA	IEC 60898-1

Standard Operation and Installation Conditions

- Operating temperature: -25℃...+70℃ (Monthly average temperature ≤35℃)
- Storage temperature: -40℃...+80℃
- Relatively humidity: Annual average: <75%, 30 days (these days are distributed in a natural way throughout the year): 95%; occasional occurrences on other days: 85%
- Altitude: no more than 2000m
- Pollution degree: 2
- Installation category: II / III
- Installation conditions: Install in standard DIN-rail of 35mm. The gradient of mounting surface and vertical plane does not exceed ±5°. No more than 5 times the geomagnetic field in any direction.

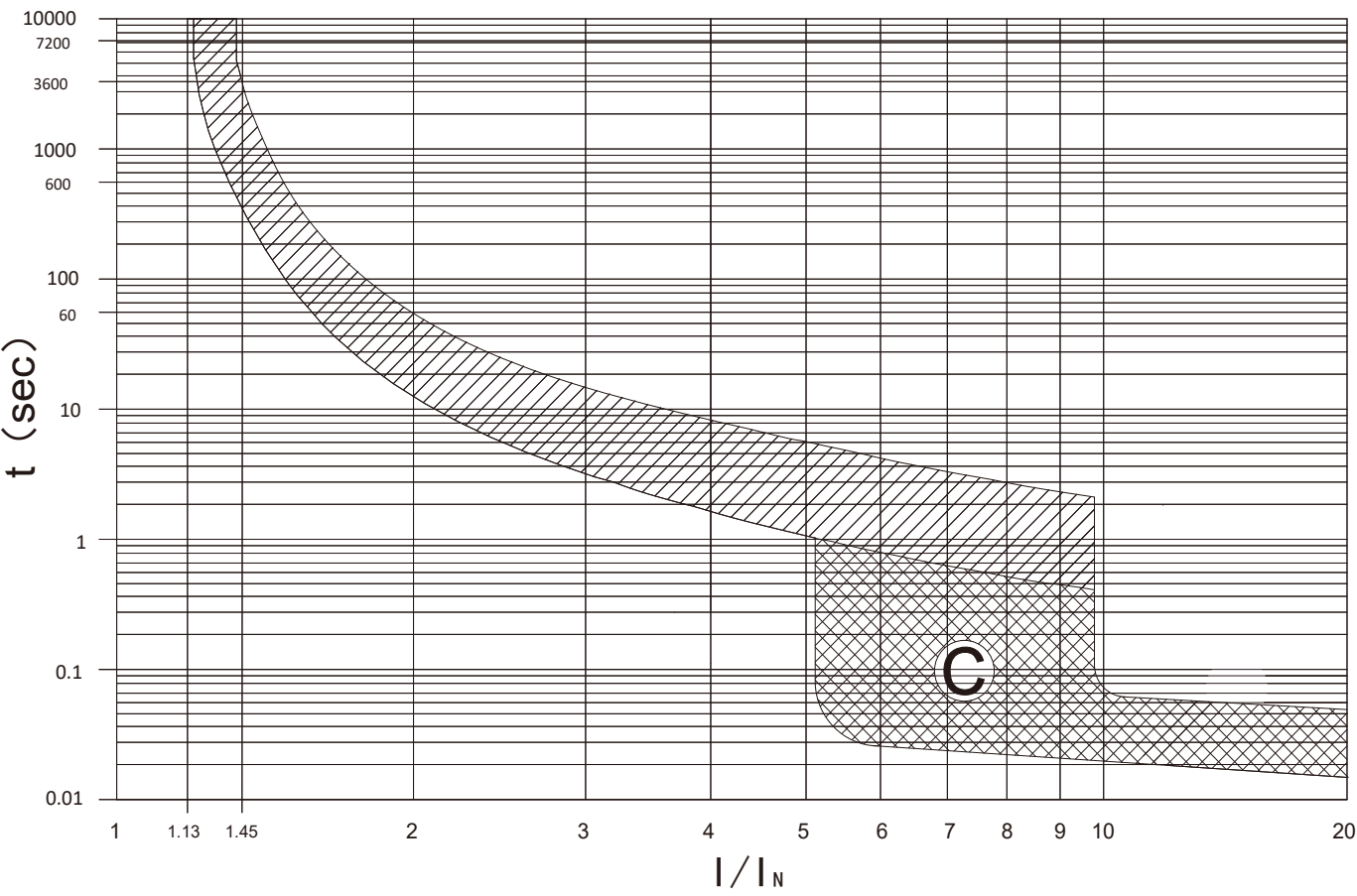
Ordering Information

	UE	Z	3	-40	L	/C	40	1	-M		-L	
Manufacturer Code: Hongfa												
Product Code: Smart MCB												
Design Code: 3												
Frame size: 40: 40A												
Breaking Capacity: L: 4.5kA												
Instantaneous Tripping Characteristics: C: 5In...10In												
Rated current: 10A, 16A, 20A, 25A, 32A, 40A												
Number of Poles: 1: 1P; 1N: 1P+N (N-pole straight through)												
Application type: M: smart measurement												
Communication and control mode: Blank: RS485 communication												
Monitoring function: blank: no monitoring function, L: with leakage monitoring function (without leakage protection) (only for 1P+N)												
Power supply: blank: DC12V												
Electricity metering external wiring: blank: no external wiring, N: external N pole wiring (only for 1P)												

Technical Parameters

Technical Parameters							
Model	UEZ3-40						
Number of poles	1P, 1P+N						
Power supply method	DC12V						
Instantaneous tripping characteristics	C: 5In...10In						
Short-circuit breaking capability	Ics= Icn=4.5kA						
Rated current In	10A, 16A, 20A, 25A, 32A, 40A						
Rated voltage Ue	230VAC						
Rated insulation voltage Ui	500V						
Rated impulse withstand voltage Uimp	4kV						
Automatic closing time	Tc≤3s						
Automatic breaking time	Td≤2s						
Mechanical endurance	10,000						
Electrical endurance	6,000 (power factor 0.85...0.9)						
Protection degree	IP20						
EMC degree	Degree 3, should be tested with Z3PW power supply						
Functions			1P-M	1P-M-N	1PN-M	1PN-M-L	
	Protection functions	Short-circuit protection	C-type	C-type	C-type	C-type	
		Overload protection	√	√	√	√	
		Overload setting current protection	√	√	√	√	
		Overvoltage and under-voltage auto reclosing		√	√	√	
	Local reclosing function（default off）		√	√	√	√	
	Control function	Remote control function	√	√	√	√	
	Metering functions	Current metering	√	√	√	√	
		Voltage metering (power, electricity)		√	√	√	
		Residual current metering				√	
	Timing		√	√	√	√	
	Cost control function		√	√	√	√	
	Alarm, fault analysis, fault record		√	√	√	√	
	communication function	RS485	√	√	√	√	
	Indication function		Closing indication: the indicator light is green; Breaking indication: the indicator light is red; Fault indication: the indicator light is flashing red; Fault to be closed: the indicating light is flashing green; Manual state: The indicating light is flashing red and green alternately				
	Weight (g)	1P-M		104			
		1P-M-N		107			
1PN-M		112					
1PN-M-L		115					
Product Packaging	Master carton 405mm×223mm×248mm						
Wiring method	Upper incoming						

Tripping Characteristic Curve



Derating Factor

Temperature Compensation Curve

M-Series do not require temperature compensation.

Frequency Factor

Only apply to 50Hz

Derating Coefficient in High Altitude Area

Altitude (m)	2,000	3,000	4,000
Rated current I_n	1	0.97	0.91
Rated insulation voltage U_i	1	0.90	0.82
Power frequency withstand voltage	1	0.90	0.82
Rated impulse withstand voltage U_{imp}	1	0.90	0.82
Rated breaking capacity I_{cn}	1	0.87	0.77
Electrical endurance	1	0.87	0.77

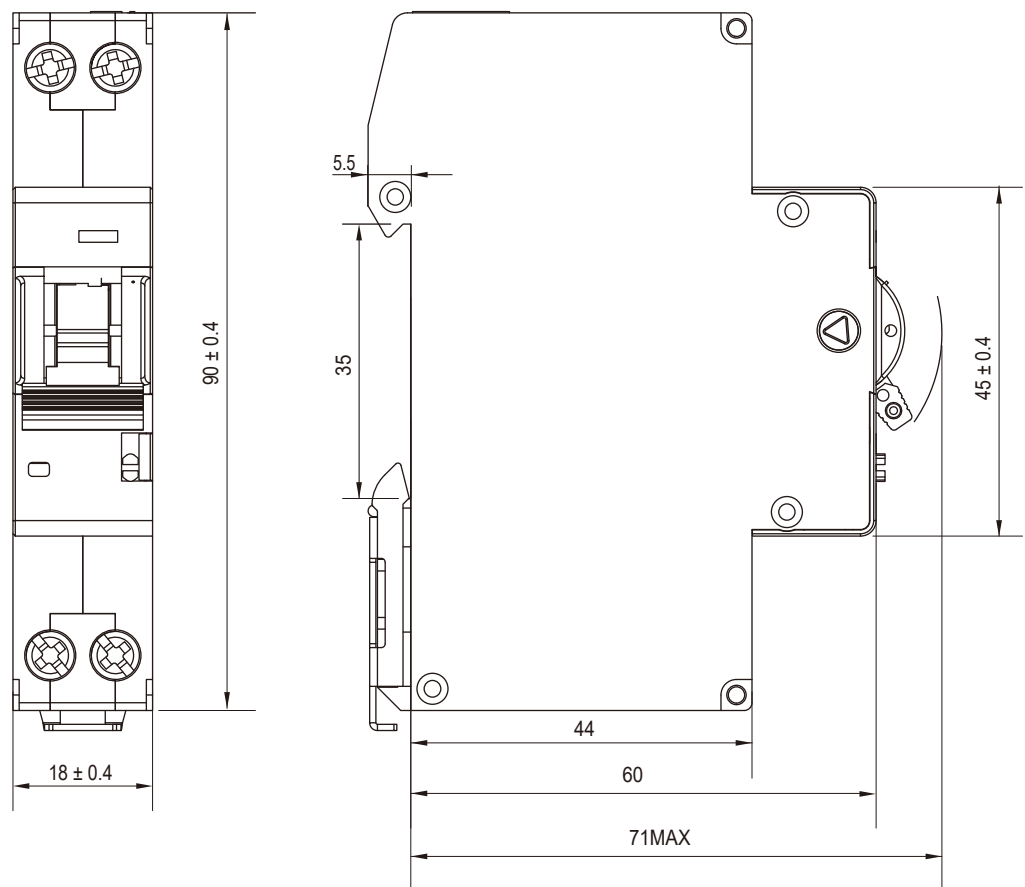
Wiring Capability

Terminal Screw Specifications	Rated torque	Max torque	IEC standard torque	Rigid (solid or stranded) wire	Flexible wire
M4	1.2N·m	2.0N·m	1.2N·m	1.0mm ² ... 16mm ²	1.0mm ² ...16mm ²

Screw clamp terminals, and wires of 1.0mm²...16mm² can be connected.

Overall Dimensions

Unit: mm





Learn more information, please visit our website

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