

MOLDED CASE CIRCUIT BREAKER

HFUM3-225MAE



INTRODUCTION

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.



Sunban Industrial Park



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.

CONTENT

HFUM3-225MAE MCCB

01

Product Overview

05



02

Standard operating and
installation conditions

06



03

Technical parameters

07



04

Accessories

11



05

Outline dimensions

12



06

Ordering instruction

13

NOTE:

The contents and data in this catalogue are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice. The real order requirements and technical agreements shall prevail.

Product Overview

Scope of application

The HFUM3-225MAE MCCB is applicable in the power distribution circuits with a maximum rated operating voltage of AC240V and a rated operating current from 100A to 225A, and take the role of protection circuits and equipment from being damaged by overload and short circuit, etc.

Product features

- The base and cover, which is thermosetting material, have high strength and insulation quality, in order to ensure -the breaker's performance reliability.
- Advanced design of operation mechanism results in rapid breaking and slight tripping force.
- The advanced alloy material for moving contacts has been used to ensure high mechanical and electrical endurance.

Appearance



Certificates of compliance

	UL	UL489
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Standard operating and installation conditions

Operating temperatur

- Operating ambient temperature range: $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$, (If the temperature is higher than 40°C , deration shall be considered, but if it is lower than 40°C , capacity increasing shall be considered)
- Storage temperature range: $-40^{\circ}\text{C} \dots +70^{\circ}\text{C}$
- Relative humidity: At the upper limit of the temperature range ($+40^{\circ}\text{C}$), the relative humidity of air should not exceed 50%, with higher relative humidity permitted at lower humidity levels. E.g., 90% relative humidity is allowed at $+20^{\circ}\text{C}$.
- Storage method: The circuit breaker is stored in an inner package box.
- Storage period: less than 18 months.
- How to operate if the product is stored beyond the storage period: Open the packaging box, observe the oxidation status of the wiring terminals. If there is no oxidation, open and close the switch dis-connector 10 times, and test whether the incoming and outgoing wire terminals are conductive. If they are conductive, they can be used normally; If the wiring terminals are severely oxidized, it is recommended not to use them anymore.
- Pollution level: level 3.
- IP degree: IP20.
- Installation category: The main breaker is III.
- Installation condition: The circuit breaker can be installed vertically or horizontally; Wiring is usually up in down out, but down in up out is also ok. And the external magnetic field of the installation site should not exceed 5 times the geomagnetic field in any direction.
- The performance of HFUM3-225MAE MCCB will not be affected by altitude within an altitude of 2000 meters.
When the altitude is above 2000m, with the altitude increasing, atmospheric composition, cooling performance, insulation performance, and air pressure may change. At this time, the performance of the MCCB will decrease, mainly on some main parameters, such as maximum operating voltage, rated operating current, and dielectric strength.

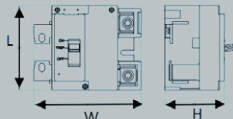
Technical Parameter

Part Number Description

	HFU	M	3	-225	M	AE	/200	-2	3	00	0	1
Manufacturer code: HESC												
Product code: MCCB												
Design serial code												
Frame rating: 225												
Breaking capacity: 25kA												
Approval and certification: UL489												
Rated current: 100A, 125A, 150A, 175A, 200A, 225A												
Number of poles: 2P												
Tripping unite type: 3: Thermal+electromechanical protection												
Built-in accessory: 00: No accessories												
Built-in accessory voltage: 0: No voltage												
Application type code: 1: For power distribution protection												

Example:
HFUM3-225MAE/200-230001: HFUM3 MCCB, frame rating of 225A, breaking capacity of 25kA, rated current of 200A, 2P, thermal+electromechanical protection, no built-in accessory, no built-in accessory voltage, for power distribution protection.

Main technical parameters (HFUM3-225MAE MCCB)

Frame rating (A)		225
Rated current I_n (A)		100, 125, 150, 175, 200, 225
Number of poles		2
Rated operating voltage U_e (V.a.c.)		120/240
Frequency (Hz)		50/60
Rated impulse withstand voltage U_{imp} (kV)		8
Pollution degree		3
Breaking capacity I_{cn} (kA)	AC240V	25
Outline dimensions (mm) 	L	106.6
	W	134.6
	H	74.8
Protection function		Overload, short circuit
Weight (kg)		1.0

Protection characteristics

Inverse time action characteristics of overcurrent protection for HFUM3-225MAE MCCB

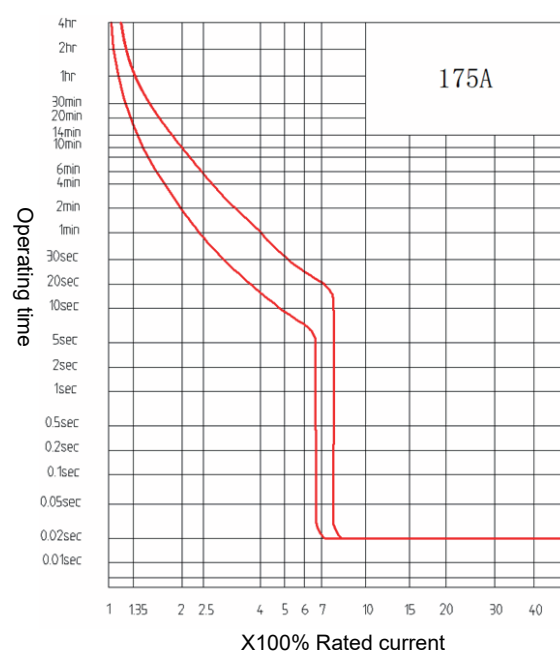
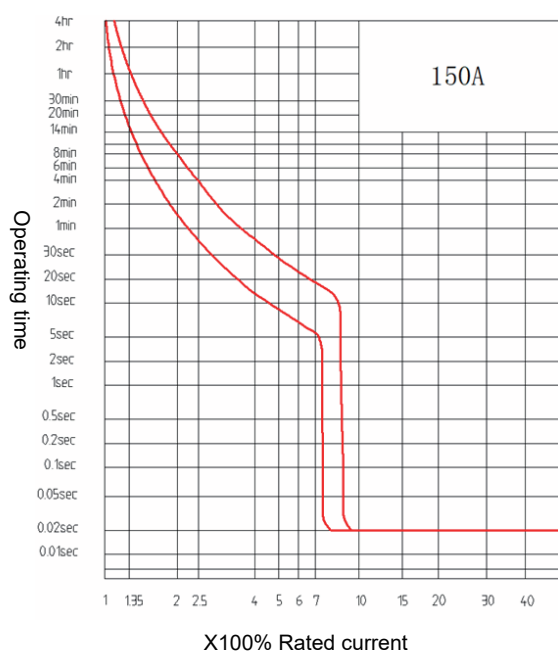
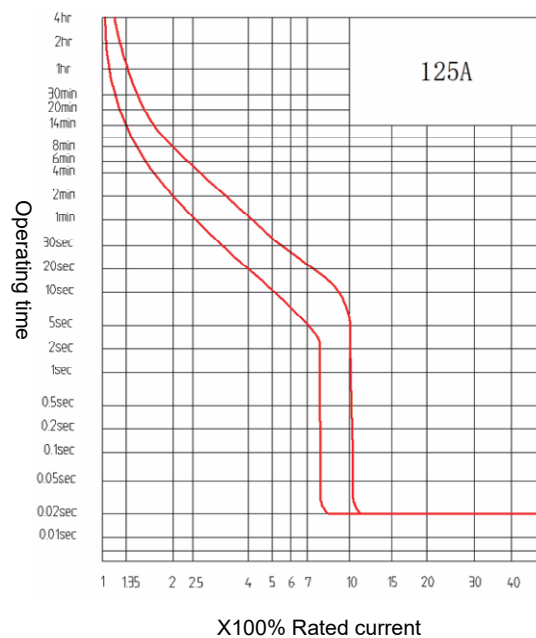
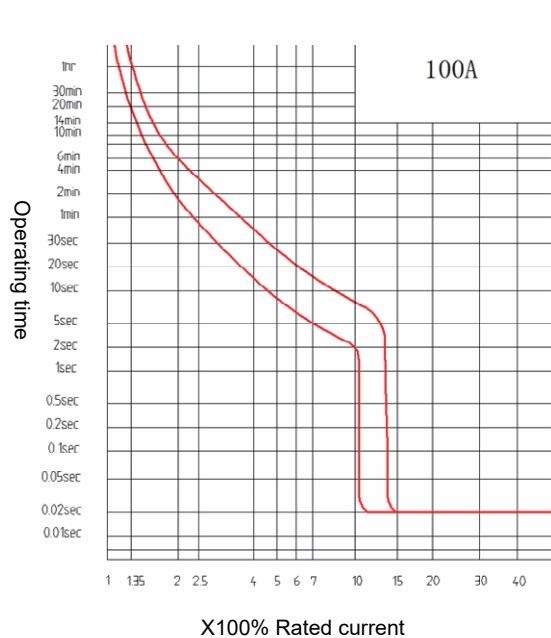
Action characteristics for power distribution protection

HFUM3-225MAE action characteristics

Serial number	Protection characteristic type	Name of test current	Test current	Appointed time	Initial state
1	Overload Long Delay	Agreed non tripping current	$1.00I_n$	$> 4h$	Cold state
		Agreed tripping current	$1.35I_n$	$< 2h$	Cold state
2	Short circuit instantaneous characteristics	Agreed non tripping current	$4.00I_n$	$\geq 200ms$	Cold state
		Agreed tripping current	1300A	$< 200ms$	

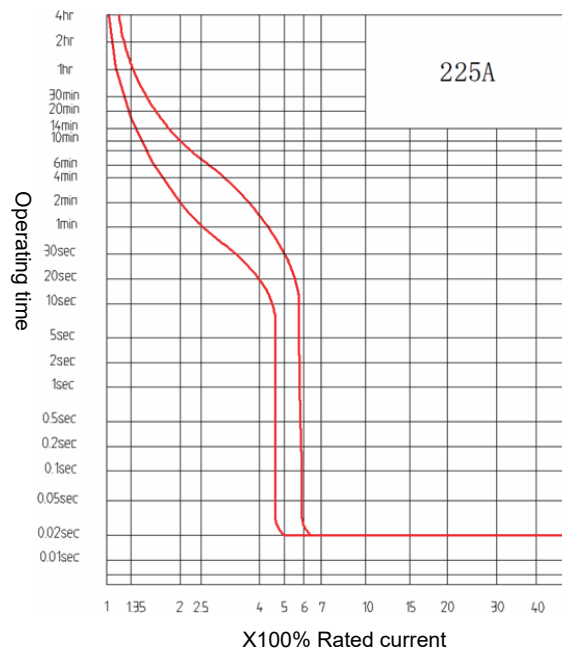
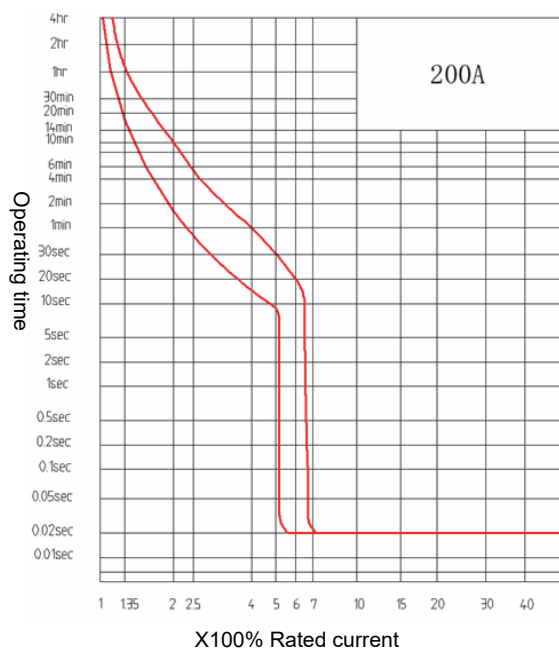
Tripping curve

Action characteristic curve



Tripping curve

Action characteristic curve



Connecting wire requirement

The cross-sectional area of wire and the corresponding rated current are shown in the table below.

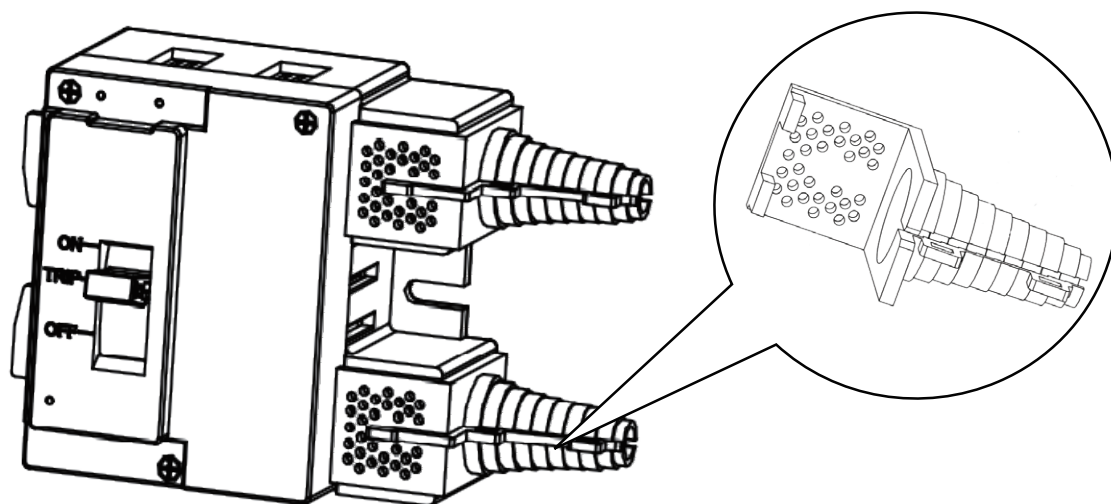
Rated current (A)	100	125	150	175	200	225
Cable requirement (AWG)	1	1/0	1/0	2/0	3/0	4/0

Derating factor

Derating factor with environmental temperature changing

Ambient air temperature	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
Correction factor of operating current	1	0.974	0.948	0.921	0.883	0.865	0.835

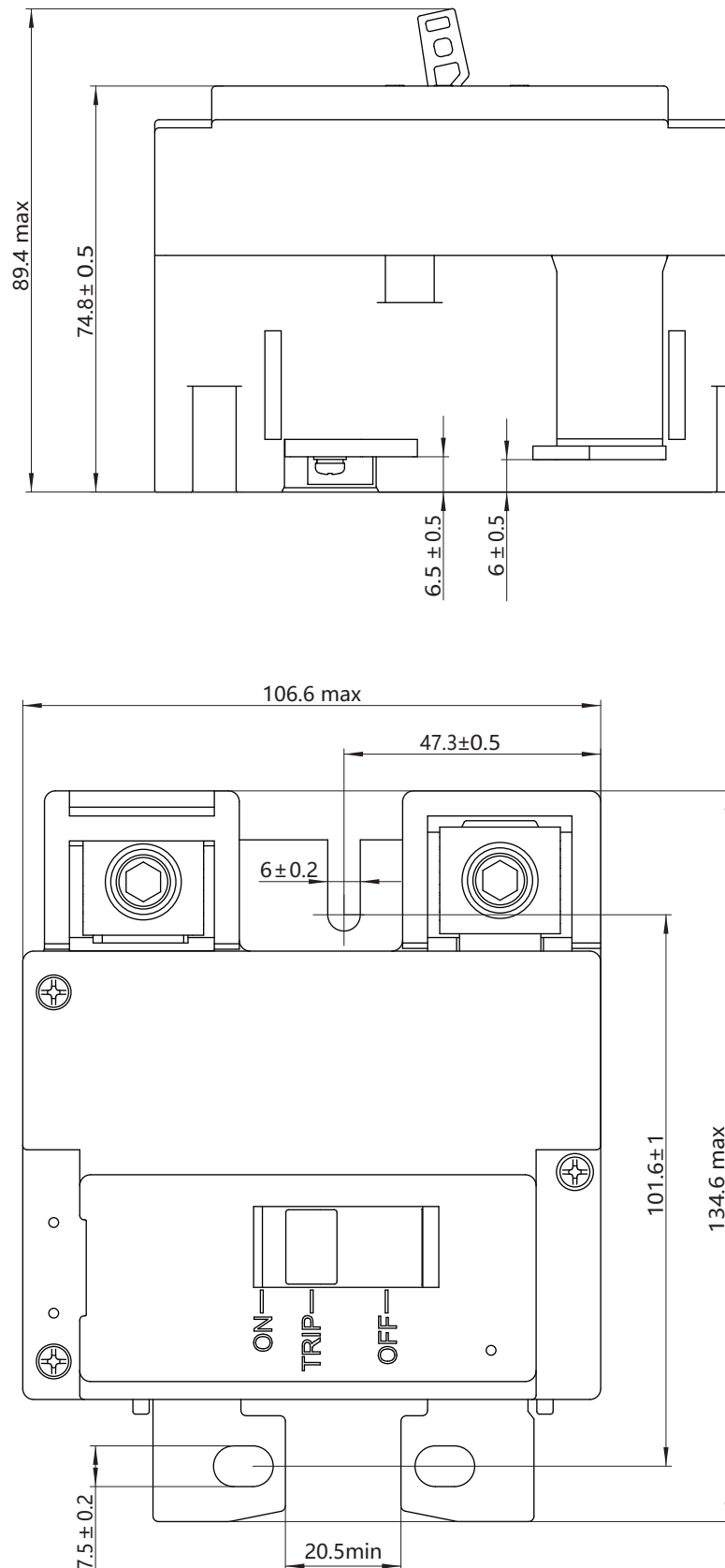
Altitude(m)	2000	2500	3000	3500	4000
Correction factor of operating current	1	0.988	0.973	0.954	0.933
Correction factor of operating voltage	1	1	1	1	1
Correction factor of power frequency withstand voltage	1	0.941	0.88	0.84	0.8



Product outline dimensions and opening hole diagrams

Conventional MCCB

Unit: mm



Ordering instruction

Part number description

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Built-in accessory voltage: 0: No voltage												
Application type code: 1: For power distribution protection;												

Quick Selection Table

Part number	Frame rating	Breaking Capacity	Certification	/Rated current(In)						Number of poles	Trip unit code	Built-in accessory	Built-in accessory voltage	Application type code
				100	125	150	175	200	225					
HFUM3	225	M	AE	√	√	√	√	√	√	2	3	00	0	1
	√	√	√	√	√	√	√	√	√	√	√	√	√	√



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