HONGFA GROUP

HONGFA

DC MCCB

UEM6H-400

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

Content List

UEM6H-400
DC MCCB

Product Overview

Scope of application

The UEM6H-400 DC MCCB is applicable in the power distribution circuits with a maximum rated operating voltage of DC1500V and a rated operating current from 250A to 400A, and take the role of protection circuits and equipment from being damaged by overload and short circuit, etc. The product can be used in DC power distribution systems such as new energy, DC energy storage power supply, power systems, rail transit, and electric trams, etc.

The product can be equipped with accessories such as shunt trip, auxiliary contact, and manual operating mechanism.

Product features

- High breaking capacity: each pole has the capacity of breaking DC1500V circuit.
- Zero arcing: improve product usage safety
- Low temperature rise: no deration under the ambient temperature of 55 ℃;
- Small size: compact and space saving
- Modularization: modular design, universal for AC and DC

Appearance

Certificates of compliance

CB	**CB**	IEC60947-2
CCC	**CCC**	GB/T 14048.2
VDE	**VDE**	EN60947-2
CE	**CE**	EN 60947-2

Standard operating environment and installation conditions

Operating temperatur

- Operating ambient temperature range: -40 ℃~+80 ℃(If the temperature is higher than 55 ℃, deration shall be considered, but if it is lower than 40 ℃, capacity increasing shall be considered)
- Storage temperature range: -40 ℃~+80 ℃
- Humidity： 5% ～ 85%RH
- 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-connector10 times, and test whether the incom ing 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 of accessories installed in circuit breakers: Level 2 Pollution level: level 3, and the built-in accessories inside the MCCB is level 2.
- IP degree: IP20
- Installation category: The main circuit is III, and the auxiliary and control circuits are II.
- 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 geomagnet ic field in any direction
- The performance of UEM6H-400 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

Product code

UE	M	6	H	-	400	H	/400	-2	3	00	0	1	W	-Z4

Manufacturer code: HESC

Product code: MCCB

Design serial code

H: High voltage type

Frame rating: 400A

Breaking capacity:

H: High breaking capacity

Rated current: 250A, 315A, 350A, 400A

Number of poles: 2P

Tripping unite type: 2: Electromechanical protection; 3: Thermal+electromechanical protection

Built-in accessory:

00: No accessories

20: Auxiliary contact;

10: Shunt trip;

40: Auxiliary contact+shunt trip

Built-in accessory voltage:

0: No voltage

1: AC220V;

2: AC380V;

3: DC24V;

4: DC110V;

5: DC220V;

Note: No voltage demand indicates that the product is not equipped with a shunt trip

Application type code:

1: For power distribution protection; 2: For motor protection;

Extended function:

Omitted: Conventional product; W: With zero arc function;

Operation type: Operated by manual operating mechanism with round handle: Z4: SC2-Y

Example:

UEM6H-400H/400-230001W-Z4: UEM6H MCCB, frame rating of 400A, breaking capacity of H, rated current of 400A, 2P, thermal+electromechanical protection, no built-in accessory, no built-in accessory voltage, for power distribution protection, with zero arc function, manual operating mechanism of SC2-Y round handle

Accessory Type

SHT1	-400	R	Y	/	AC220V

Accessory type:

SHT1/Shunt trip: SHT1

Auxiliary contact: AX1

Frame rating: 400

Installation position: R: on the right side

Wiring method: Y: lead-wire type

Operating voltage of shunt trip: AC220V; AC380V; DC24V; DC110V; DC220V

Example:

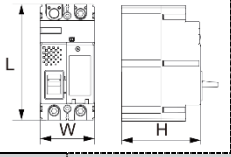
SHT1-400RY/AC220V: shunt trip of 400A frame rating, to be installed on the right side, lead wire type, operating voltage of AC220V

AX1-400RY: auxiliary contact of 400A frame rating, to be installed on the right side, lead wire type

Accessory Type Table

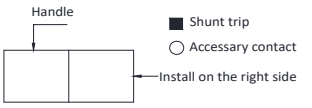
Built-in accessory			External accessory		
Shunt trip	SHT1		Zero arc terminal cover	HTC	
Auxiliary contact	AX1	1 Auxiliary contact	Manual operating mechanism	SC2-Y	Non-centered type, round handle

Technical Parameter

Frame rating (A)		**400**
Rated current In (A)		**250, 315, 350, 400**
Number of poles		**2**
Rated insulation voltage Ui (V)		**1500**
Rated operating voltage Ue (Vd.c.)		**1500**
Power frequency withstand voltage U (Vd.c.)		**3820**
Rated impulse withstand voltage Uimp (kV)		**12**
Utilization category		**A**
Pollution degree		**3**
Rated ultimate short-circuit breaking capacity Icu (kA)	**DC1500V**	**15 (τ0.63:10ms)**
Rated operating short-circuit breaking capacity Ics (kA)		**15 (τ0.63:10ms)**
Short-circuit breaking capacity of single pole Isu(kA)		**2.5 (τ0.63:5ms)**
Arc distance (mm)		**0 (with zero arc terminal cover)**
Electrical life (number of times)		**1000**
Mechanical life (number of times)		**10000**
Outline dimensions (mm) 	**L**	**205**
	W	**96**
	H	**135**
Accessory	**Shunt trip**	√
	Auxiliary contact	√
	Manual operating mechanism	√
Protection function		**Overload, short circuit**
Weight (kg)		**3.8**

Technical Parameter

Accessory code



Accessory code	Accessory name	Installation position
00	No accessories	——
20	Auxiliary contact	
10	Shunt trip	
40	Auxiliary contact / Shunt trip	

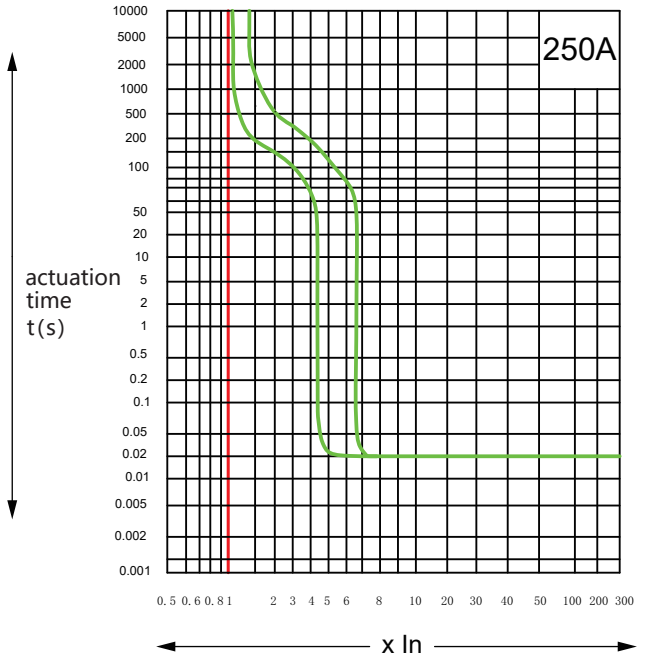
Protection characteristics

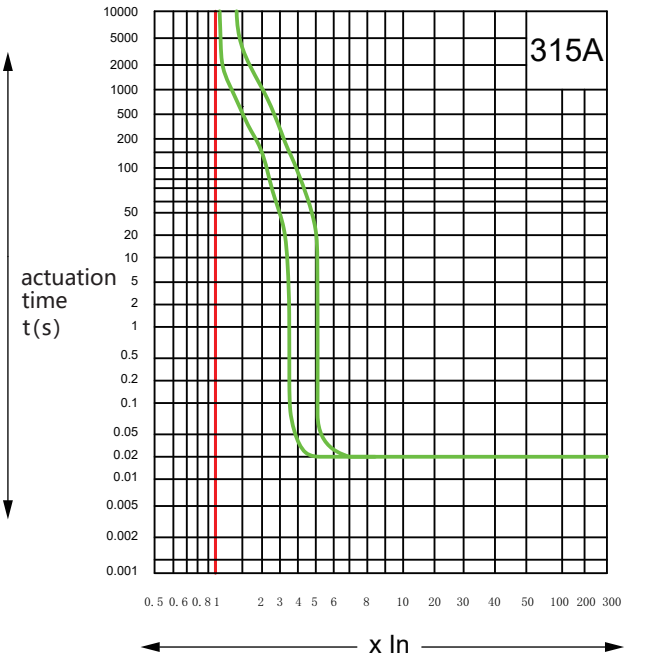
UEM6H-400 action characteristics (reference temperature+40 ℃)

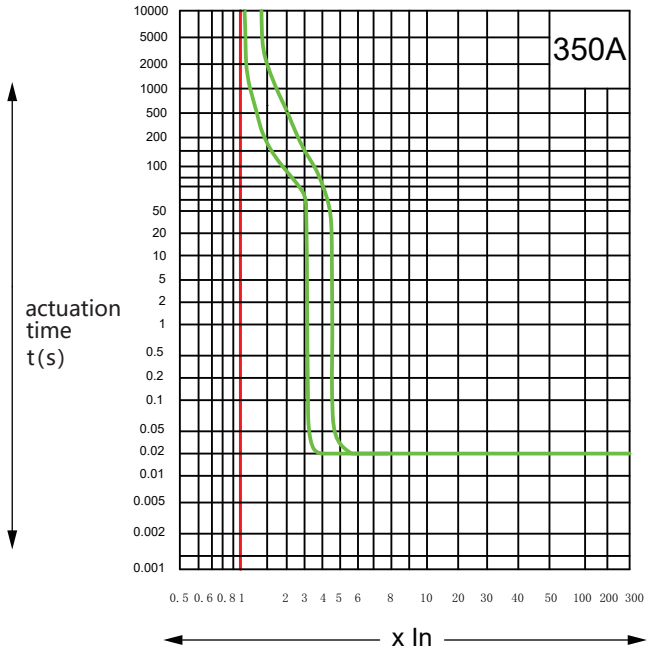
Serial number	Protection characteristic type	Name of test current	Test current	Appointed time	Initial state
1	Overload Long Delay	Agreed non tripping current	1.05In	≥2h	Cold state
		Agreed tripping current	1.3In	< 2h	Hot state
2	Short circuit instantaneous characteristics	Agreed non tripping current	1120A	≥200ms	Cold state
		Agreed tripping current	1680A	< 200ms	

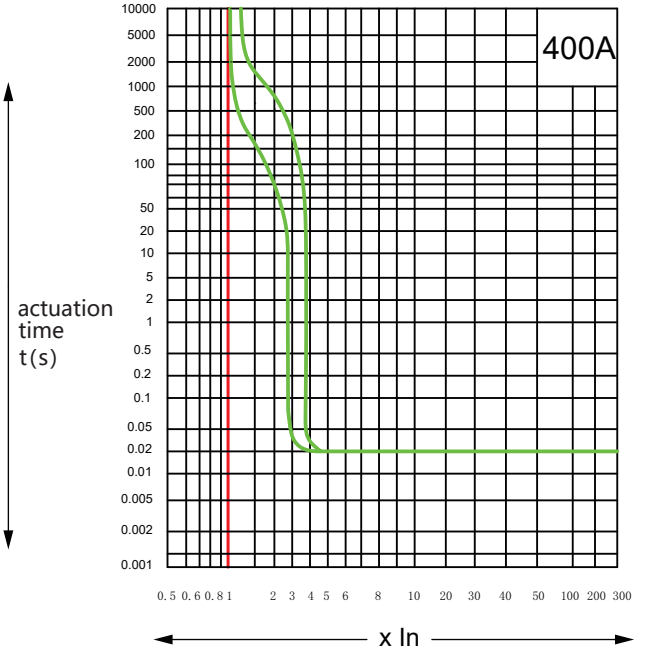
Note: The setting value for instantaneous bipolar testing is 1400A, and the setting value for single pole tripping is 3000A. If customers require different tripping multiples, they need to communicate with our company in advance when placing an order

Tripping curve









Technical Parameter

Connecting wire requirement

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

Rated current (A)	250	315/350	400
Cross-sectional area(mm²) of the wire	120	185	240

Derating factor

Derating factor with environmental temperature changing.

Ambient air temperature	+40℃	+45℃	+50℃	+55℃	+60℃	+65℃	+70℃	+75℃	+80℃
Correction factor of operating current	1	1	1	1	0.963	0.915	0.89	0.872	0.86

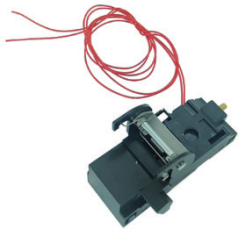
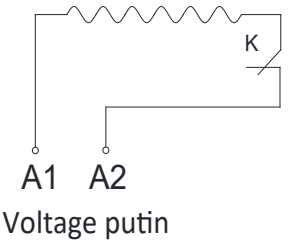
Altitude(m)	2000	2500	3000	3500	4000
Correction factor of operating current	1	0.988	0.973	0.954	0.933
Correction factor of operating voltage	1	1	1	1	1
Correction factor of power frequency withstand voltage	1	0.941	0.88	0.84	0.8

Accessory and function

Built-in accessory

Shunt trip

- The shunt trip is used to remotely control the opening of the circuit breaker
- When the applied voltage on the shunt trip is 70% to 110% of the rated control voltage of the shunt trip, the shunt trip should reliably trip the circuit breaker.

Appearance diagram	Wiring diagram
	

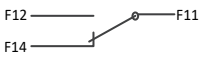
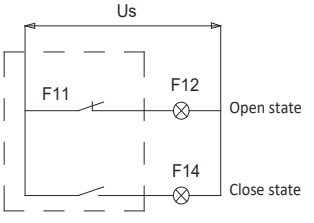
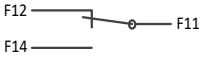
Voltage(V)	Power-on time (ms)	Power (W)	The time from the energization of the shunt trip to the complete separation of the contacts (ms)
DC24	< 50	< 20	< 20
DC220	< 50	< 20	< 20
AC220	< 50	< 20	< 40
AC380	< 50	< 30	< 40

- Auxiliary contact is used to automatically control the control circuit of circuit breakers. Such as signal indication of the opening and closing status of circuit breakers
- Rated operating voltage: AC 50Hz, 220V or 380V; DC 220V.

Technical parameters of auxiliary contact

Type	Frame rating	Conventional thermal current I_{th}(A)	Rated operating current I_e(A)	
			AC380V	DC220V
Auxiliary contact	400A	3	0.30	0.15

Auxiliary contact wiring diagram

Circuit breaker state	Auxiliary contact state	Wiring diagram of one auxiliary contact
The circuit breaker is in the "closed" position	One auxiliary contacts: 	
The circuit breaker is in the "open" position	One auxiliary contacts: 	

Accessory and function

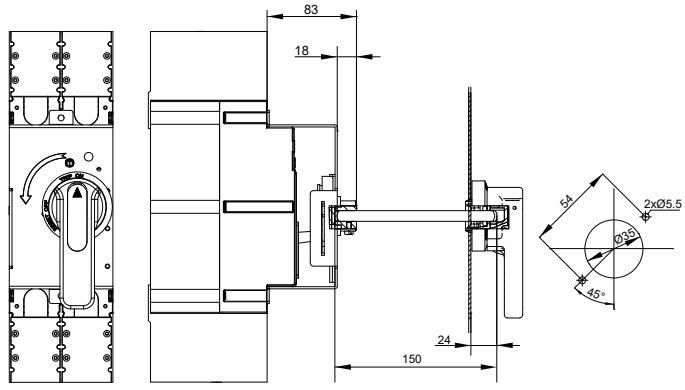
External accessory

Manual operation mechanism

The manual operating mechanism is installed on the cover of the circuit breaker and is suitable for circuit breakers installed on electrical control cabinets. The circuit breaker can be closed, re tripped, and opened by rotating the handle, and has a guiding positioning to prevent the circuit breaker handle from breaking due to improper or excessive operation.

Manual operation mechanism

SC2- non-center type operating mechanism Y-round handle

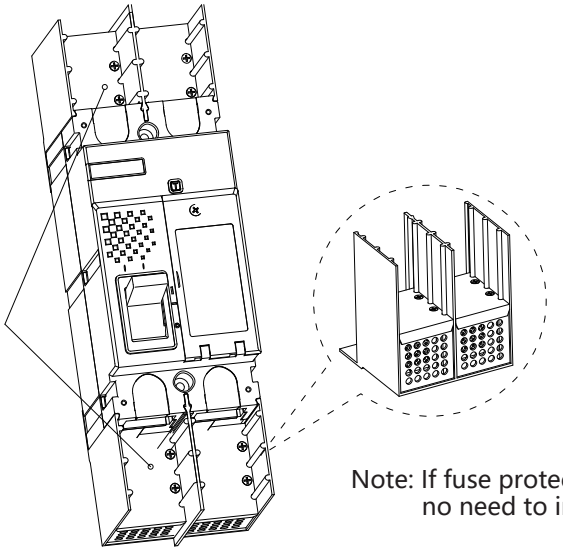
Z4: SC2-Y	SC2 Appearance and Installation Diagram
	

Warning to users: Manual operation mechanisms must be ordered from our company to ensure product quality and reliable cooperation. If users purchase by their own, HF will not be responsible for any adverse consequences.

Note: The default length of the square shaft at the factory is 150mm. Users can customize it for special needs.

Zero arc terminal cover

zero arc terminal cover

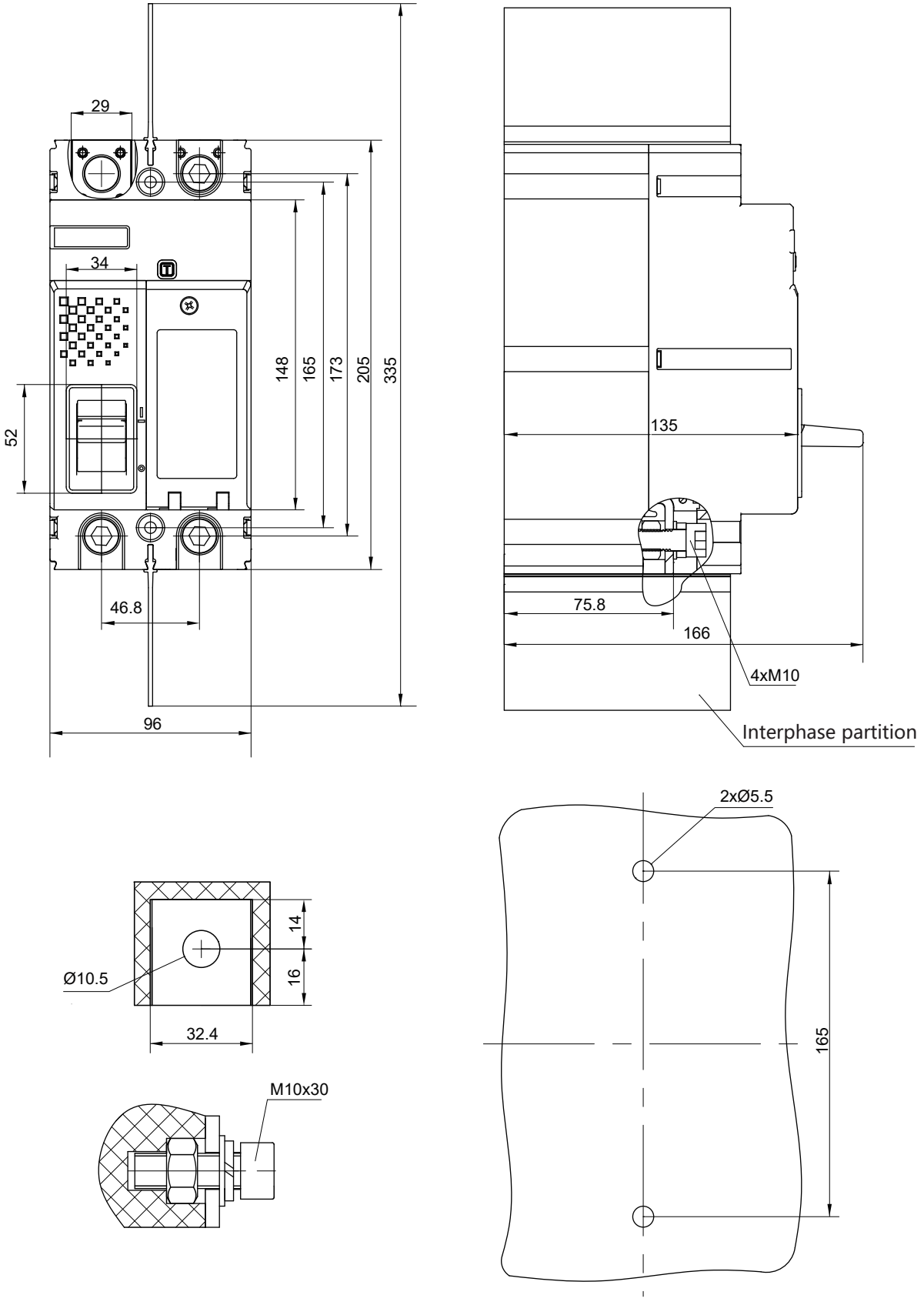


Note: If fuse protection is installed in the circuit, no need to install a zero arc terminal cover!

Product outline dimensions and opening hole diagrams

Conventional MCCB without zero arc terminal cover

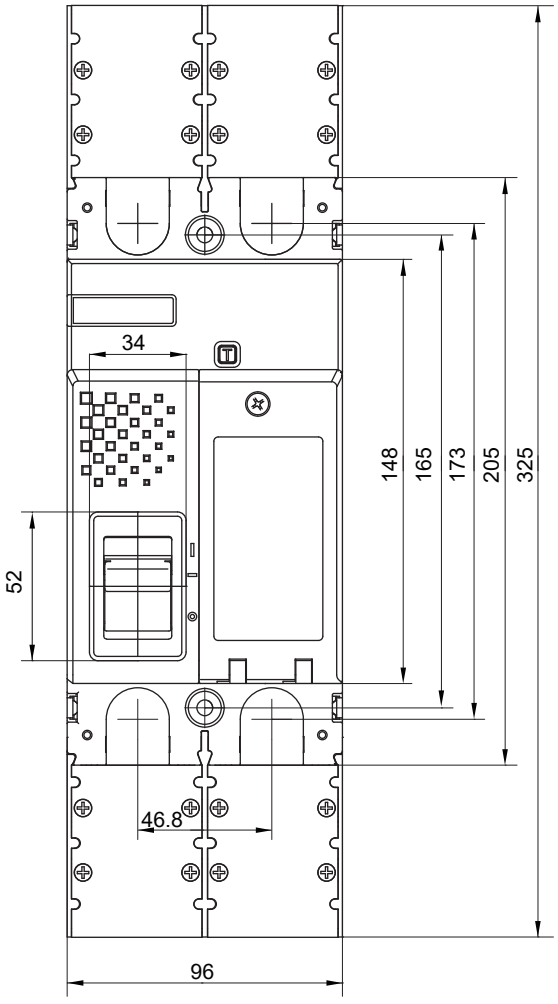
unit: mm

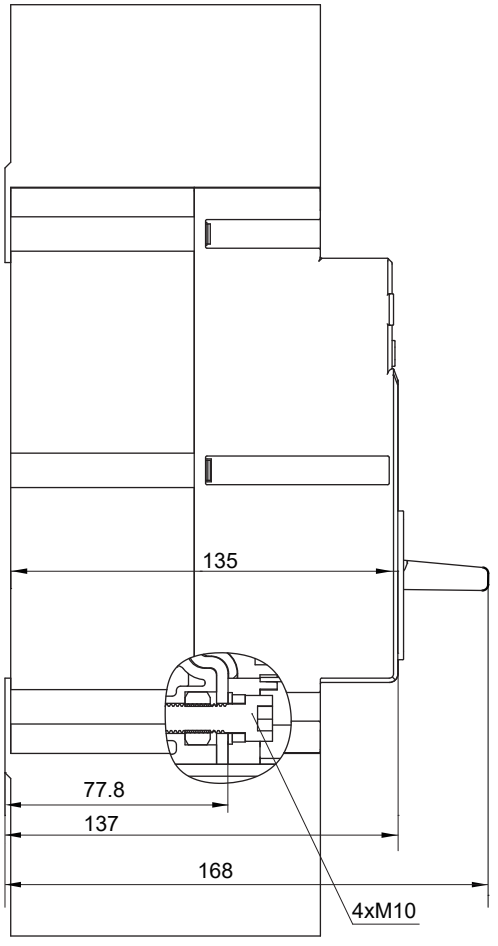


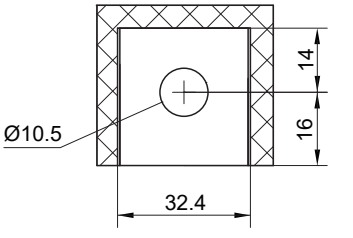
Product outline dimensions and opening hole diagrams

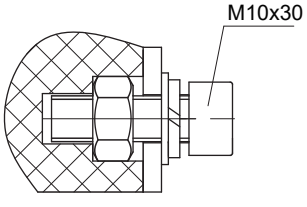
MCCB with zero arc terminal cover

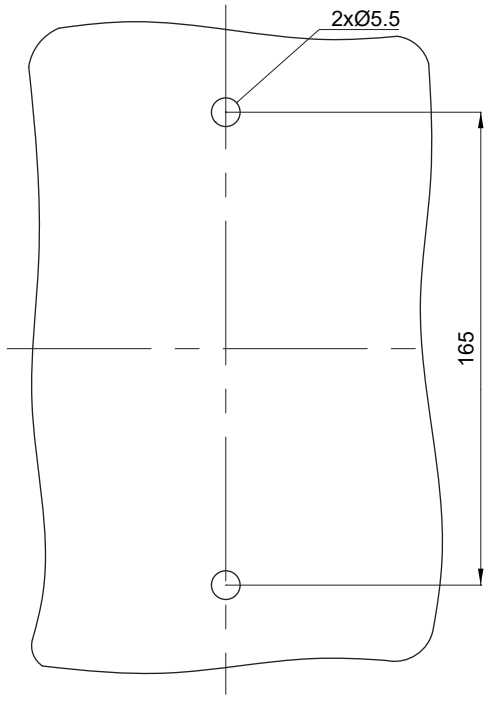
unit: mm











Ordering instruction

Number description

UE	M	6	H	-	400	H	/400	-2	3	00	0	1	W	-Z4

Manufacturer code: HESC

Product code: MCCB

Design serial code

H: High voltage type

Frame rating: 400A

Breaking capacity:

H: High breaking capacity

Rated current: 250A, 315A, 350A, 400A

Number of poles: 2P

Tripping unite type:

2: Electro mechanical protection; 3: Thermal+electromechanical protection

Built-in accessory:

00: No accessories

20: Auxiliary contact;

10: Shunt trip;

40: Auxiliary contact+shunt trip

Built-in accessory voltage:

0: No voltage

1: AC220V;

2: AC380V;

3: DC24V;

4: DC110V;

5: DC220V;

Note: No voltage demand indicates that the product is not equipped with a shunt trip

Application type code:

1: For power distribution protection; 2: For motor protection;

Extended function:

Omitted: Conventional product; W:With zero arc function;

Operation type: Operated by manual operating mechanism with round handle Z4: SC2-Y

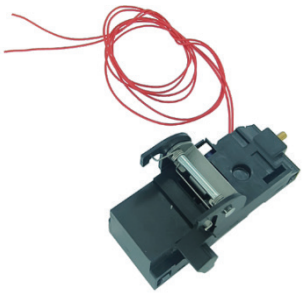
Quick Selection Table

Part number	Frame rating	Breaking Capacity	/Rated current(In)				Number of poles	Trip unit code		Built-in accessory				Built-in accessory voltage						Application type code		Extended function		Operation type
UEM6H	400	H	250	315	350	400	2	2	3	00	20	10	40	0	1	2	3	4	5	1	2	Vacancy	W	Z4
	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Ordering instruction

Built-in accessories

Shunt trip SHT1

Name		Type
	Shunt trip, to be installed on the right side, AC220V, lead-wire type	SHT1-400RY/AC220V
	Shunt trip, to be installed on the right side, AC380V, lead-wire type	SHT1-400RY/AC380V
	Shunt trip, to be installed on the right side, DC24V, lead-wire type	SHT1-400RY/DC24V
	Shunt trip, to be installed on the right side, DC220V, lead-wire type	SHT1-400RY/DC220V

Auxiliary contact AX1

Name		Type
	Auxiliary contact, to be installed on the right side, 1 NO 1 NC, lead-wire type	AX1-400RY

External accessory

Manual operating mechanism SC2-Y

Name		Type
	Manual operating mechanism, non-center operating mechanism, round handle	SC2-Y/400

Zero arc terminal cover HTC

Name		Type
	Zero arc terminal cover	HTC

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June 2023

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