

# Molded Case Switch Disconnect

## UEM6HG 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.



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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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## MOLDED CASE SWITCH DISCONNECTOR

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## Production overview




### Scope of Application

UEM6HG-500 DC Molded Case Switch Disconnectors are suitable for distribution circuits with a maximum rated operational voltage of DC1500V and a rated operating current of 250A to 500A. They can be used in new energy, DC energy storage, electric power system, rail transit and electric trolley and other DC distribution systems. They can be equipped with shunt release, auxiliary contact, manual operation mechanism and other accessories.

### Product Features

- **Small size:** With a new structural layout, small sized.
- **Low temperature rise:** No derating needed for ambient temperature up to 60 °C.
- **Easy Wiring:** Non-polarized and easy for mounting.

### Standards

|   |            |              |
|---|------------|--------------|
| <b>CB</b>   | <b>CB</b>  | IEC60947-2   |
|  | <b>CCC</b> | GB/T 14048.2 |
|  | <b>TUV</b> | EN60947-2    |
|  | <b>CE</b>  | EN60947-2    |

## Standard Operation and Installation Conditions

- Operating environment temperature: -40 °C to +85 °C

(Derating should be considered for temperature higher than 60 °C and uprating can be considered for temperature lower than 40 °C)

- Storage temperature range: -40 °C to +80 °C

- Relative Humidity: 5% to 85%

- Storage: The switch disconnecter is stored in a box

- Storage period: less than 18 months

- If it exceeds the storage period: open the packaging to observe the oxidation condition of the wiring terminals. If the wiring terminals are not oxidized, operate the switch disconnecter for 10 cycles to test whether the incoming and outgoing terminals can conduct. If the wiring terminal is seriously oxidized, do not use it.

- Pollution degree: 3; pollution degree of accessories installed in the switch disconnecter: 2

- Protection degree: IP20

- Installation category: The main circuit of the switch disconnecter is III, and the auxiliary and control circuit is II.

- Installation conditions: The switch disconnecter can be installed vertically or horizontally). The wiring can be upper incoming and lower outgoing, and also upper outgoing and lower incoming. The external magnetic field of the installation place should not exceed 5 times the geomagnetic field in any direction.

- The performance of the switch disconnecter is not affected by the altitude within 2000 meters.

- For above 2000m, the composition, insulation properties, cooling properties and pressure of the atmosphere change with the increase of the altitude. At this time, the performance of the switch disconnecter will be reduced, mainly in some major parameters, such as the maximum operational voltage and rated operating current and dielectric strength.

Technical Parameters

Ordering Information

|  |    |   |   |   |   |       |      |    |    |   |     |
|--|----|---|---|---|---|-------|------|----|----|---|-----|
|  | UE | M | 6 | H | G | - 500 | /500 | -2 | 00 | 0 | -Z4 |
| Manufacturer code  |    |   |   |   |   |       |      |    |    |   |     |
| UE:Hongfa  |    |   |   |   |   |       |      |    |    |   |     |
| Product code M: Molded case type   |    |   |   |   |   |       |      |    |    |   |     |
| Design code  |    |   |   |   |   |       |      |    |    |   |     |
| Derived code H: High Voltage   |    |   |   |   |   |       |      |    |    |   |     |
| Product code G: Switch disconnecter  |    |   |   |   |   |       |      |    |    |   |     |
| Frame size: 500  |    |   |   |   |   |       |      |    |    |   |     |
| Rated current: 250:250A; 315:315A; 350:350A; 400:400A; 500:500A                              |    |   |   |   |   |       |      |    |    |   |     |
| Number of poles: 2: 2P   |    |   |   |   |   |       |      |    |    |   |     |
| Internal accessory code:   |    |   |   |   |   |       |      |    |    |   |     |
| 00: No accessory;  |    |   |   |   |   |       |      |    |    |   |     |
| 20: Auxiliary contact;   |    |   |   |   |   |       |      |    |    |   |     |
| 10: Shunt release;   |    |   |   |   |   |       |      |    |    |   |     |
| 40: Auxiliary contact+ Shunt release;  |    |   |   |   |   |       |      |    |    |   |     |
| Internal accessory voltage   |    |   |   |   |   |       |      |    |    |   |     |
| 0: No voltage  |    |   |   |   |   |       |      |    |    |   |     |
| 1: AC220V;   |    |   |   |   |   |       |      |    |    |   |     |
| 2: AC380V;   |    |   |   |   |   |       |      |    |    |   |     |
| 3: DC24V;S   |    |   |   |   |   |       |      |    |    |   |     |
| 4: DC110V;   |    |   |   |   |   |       |      |    |    |   |     |
| 5: DC220V;   |    |   |   |   |   |       |      |    |    |   |     |
| Note: No voltage requirement indicates that the product is not equipped with a shunt release |    |   |   |   |   |       |      |    |    |   |     |
| Mode of operation mechanism:   |    |   |   |   |   |       |      |    |    |   |     |
| Blank:without manual operating mechanism   |    |   |   |   |   |       |      |    |    |   |     |
| Circular manual handle: Z4: SC2-Y type (The long handle is used by default)                  |    |   |   |   |   |       |      |    |    |   |     |
| Square manual handle Z3: SC2-F type (The long handle is used by default)                     |    |   |   |   |   |       |      |    |    |   |     |

Example:

UEM6HG-500/500-2000-Z4:Switch disconnecter model UEM6HG, frame size 500A, high voltage, rated current 500A, 2P, no accessories, no voltage requirement for internal accessories, SC2-Y circular manual handle

# Technical Parameters

## Accessory type list

|   |      |      |   |   |         |
|---|------|------|---|---|---------|
|   | SHT1 | -400 | R | Y | /AC220V |
| <b>Accessory model:</b><br>Shunt release: SHT1<br>Auxiliary contact: AX1        |      |      |   |   |         |
| <b>Frame size:</b> 400A   |      |      |   |   |         |
| <b>Installation position:</b> R: Right side                                     |      |      |   |   |         |
| <b>Wiring:</b> Y: Lead type   |      |      |   |   |         |
| <b>Shunt release operational voltage:</b> AC220V; AC380V; DC24V; DC110V; DC220V |      |      |   |   |         |

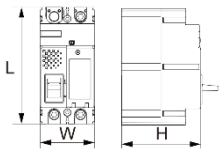
Accessory type example:

- SHT1-400RY/AC220V: 400A frame size, shunt release installed on the right, lead type, opeartional voltage AC220V
- AX1-400RY: 400A frame, auxiliary contact installed on the right, lead type

| Internal Accessory |      |             | External Accessory         |       |                                 |
|--------------------|------|-------------|----------------------------|-------|---------------------------------|
| Shunt release      | SHT1 |             | Manual operating mechanism | SC2-Y | Essentric type, circular handle |
| Auxiliary contact  | AX1  | 1 Auxiliary |                            | SC2-F | Essentric type, square handle   |

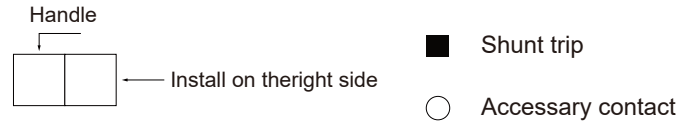
## Technical Parameters

### Main technical parameters (UEM6HG-500 molded case switch disconnecter)

|  |                         |                         |
|--|-------------------------|-------------------------|
| Frame rating (A)   |                         | 500                     |
| Rated current $I_n$ (A)  |                         | 250, 315, 350, 400, 500 |
| Number of poles  |                         | 2                       |
| Rated insulation voltage $U_i$ (V)   |                         | 1500                    |
| Rated operating voltage $U_e$ (Vd.c.)  |                         | 1500                    |
| Frequency withstand voltage $U$ (Vd.c.)  |                         | 3820                    |
| Rated impulse withstand voltage $U_{imp}$ (kV)   |                         | 12                      |
| Type   |                         | DC-22A, DC-PV2          |
| Pollution degree   |                         | 3                       |
| Rated short-time withstand current $I_{cw}$ (kA)   |                         | 6/1s                    |
| Rated short-circuit making capacity $I_{cm}$ (kA)  |                         | 6                       |
| Electrical durability (cycle)  |                         | 1,000                   |
| Mechanical durability (cycle)  |                         | 10,000                  |
| <div>Overall dimension (mm)</div> <div></div> | Length                  | 205                     |
|  | Width                   | 96                      |
|  | Height                  | 135                     |
| Accessories  | Shunt release           | √                       |
|  | Auxiliary contact       | √                       |
|  | Manual operating handle | √                       |
| Weight (kg)  |                         | 3.8                     |

## Technical Parameters

### Accessory code



| Code | Accessories                       | Install Position |
|------|-----------------------------------|------------------|
| 00   | No accessory                      | —                |
| 20   | Auxiliary contact                 |                  |
| 10   | Shunt release                     |                  |
| 40   | Auxiliary contact / Shunt release |                  |

### Connecting wire requirement

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

| Rated current (A)                                   | 250 | 315/350 | 400 | 500   |
|---|-----|---------|-----|-------|
| Cross-sectional area of the wire (mm <sup>2</sup> ) | 120 | 185     | 240 | 2*150 |

### Derating factor

Derating factor of the ambient temperature

| Ambient temperature                   | +40°C | +45°C | +50°C | +60°C | +70°C | +85°C |
|---------------------------------------|-------|-------|-------|-------|-------|-------|
| Operational current correction factor | 1     | 1     | 1     | 1     | 0.9   | 0.8   |


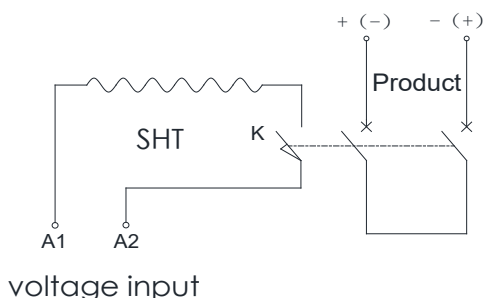
| Altitude (m)  | 2000 | 2500  | 3000  | 3500  | 4000  | 5000  |
|---|------|-------|-------|-------|-------|-------|
| Operational current correction factor               | 1    | 0.988 | 0.973 | 0.954 | 0.933 | 0.886 |
| Operational voltage correction factor               | 1    | 1     | 1     | 1     | 1     | 1     |
| Power frequency withstand voltage correction factor | 1    | 1     | 1     | 1     | 1     | 1     |

## Accessories and functions

### Internal accessories

#### Shunt release

- Shunt release is used to remotely control the opening of the switch disconnecter.
- When the external voltage of the shunt release is 70% to 110% of the rated control voltage of the shunt release, the shunt release should reliably make the switch disconnecter trip.

| Appearance  | Wiring diagram   |
|---|--|
|  |  |

| Voltage (V) | Duration of power on (ms) | Power (W) | Time from being energized of the shunt release to be completely opened of the contacts (ms) |
|-------------|---------------------------|-----------|---|
| DC24        | < 50                      | < 20      | < 20  |
| DC220       | < 50                      | < 20      | < 20  |
| AC220       | < 50                      | < 20      | < 40  |
| AC380       | < 50                      | < 30      | < 40  |

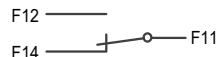
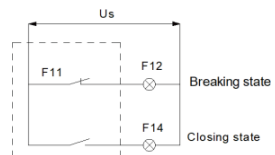
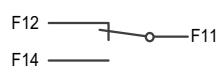
#### Auxiliary contact

- The auxiliary contact is used for automatic control of the control circuit of the switch disconnecter, such as signal indication of switch disconnecter opening and closing.
- Operatinal voltage: AC 50Hz, 220V or 380V; DC 220V.

#### Auxiliary contact technical parametes

| Accessory type    | Frame size | Conventional heating current $I_{th}$ (A) | Rated operational current $I_o$ (A) |        |
|-------------------|------------|---|-------------------------------------|--------|
|                   |            |   | AC380V                              | DC220V |
| Auxiliary contact | ≤500       | 3   | 0.30                                | 0.15   |

#### Auxiliary contact wiring diagram

| Switch disconnecter status                       | Auxiliary contact status  | Auxiliary contacts wiring diagram   |
|--|---|---|
| The switch disconnecter is in the "On" position  | One auxiliary contact<br> |  |
| The switch disconnecter is in the "OFF" position | One auxiliary contact<br> |   |


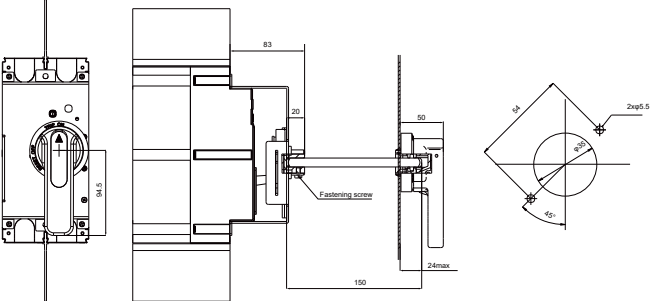

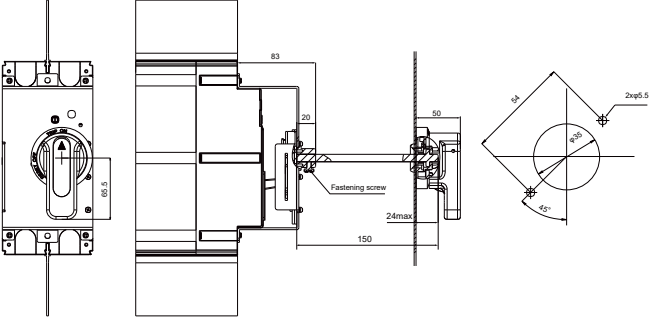
Accessories and functions

External accessories

Manual operating handle

The manual operating handle is installed on the outer cover of the switch disconnect, which is suitable for the switch disconnecter installed in the cabinet, and realizes the closing, resetting and opening of the switch disconnecter by rotating the handle, and has position limiting, which can prevent the switch disconnecter handle from breaking due to improper operation.

SC2—Essentric type      Y—Circular handle   F—Square handle

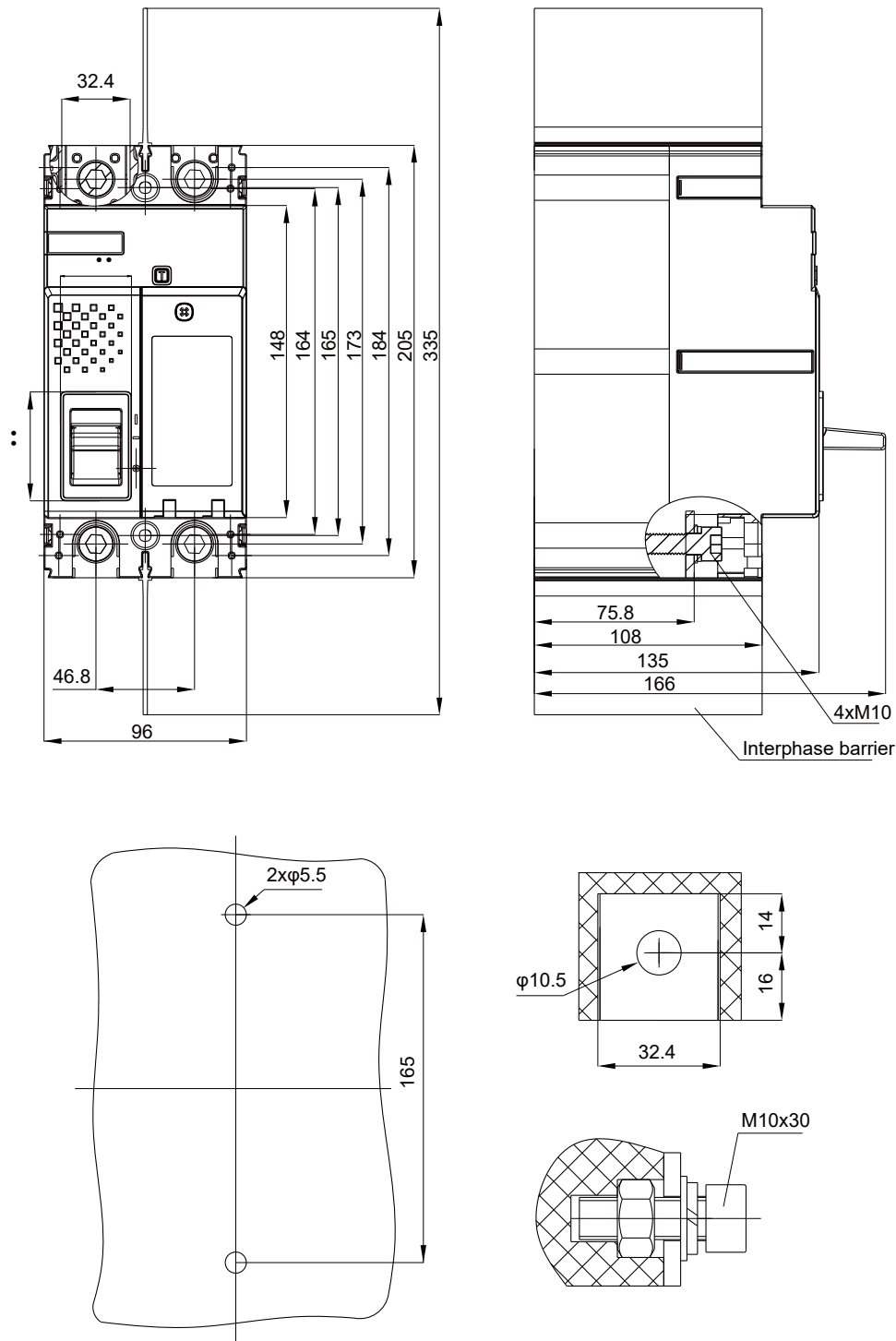
|  |  |
|--|--|
| <div>Z4:SC2-Y</div> <div>Default selection</div> <div></div> | <div>Z4 type circular long handle manual operation mechanism (IP20 protection grade, default selection)</div> <div></div> |
| <div>Z4:SC2-Y</div> <div></div> <div></div>                 | <div>Z4 circular short handle manual operation mechanism (IP20 protection grade)</div> <div></div>                       |



Product outline dimensions and opening hole diagrams

UEM6HG-500 Standard product

Unit: mm



## Ordering instruction

### Model Code

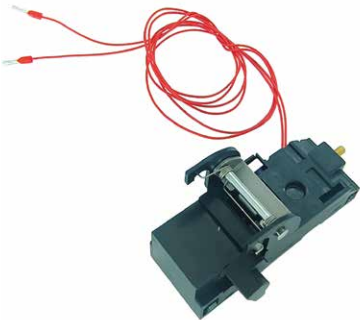
|  |    |   |   |   |   |       |      |    |    |   |     |
|--|----|---|---|---|---|-------|------|----|----|---|-----|
|  | UE | M | 6 | H | G | - 500 | /500 | -2 | 00 | 0 | -Z4 |
| <b>Manufacturer code</b>   |    |   |   |   |   |       |      |    |    |   |     |
| UE: Hongfa   |    |   |   |   |   |       |      |    |    |   |     |
| <b>Product code M:</b> molded case type  |    |   |   |   |   |       |      |    |    |   |     |
| <b>Design code</b>   |    |   |   |   |   |       |      |    |    |   |     |
| <b>Derived code H:</b> High Voltage  |    |   |   |   |   |       |      |    |    |   |     |
| <b>Product Code G:</b> Switch disconnecter   |    |   |   |   |   |       |      |    |    |   |     |
| <b>Frame size:</b> 500A  |    |   |   |   |   |       |      |    |    |   |     |
| <b>Rated current:</b> 250:250A; 315:315A; 350:350A; 400:400A; 500:500A               |    |   |   |   |   |       |      |    |    |   |     |
| <b>Number of poles:</b> 2: 2P  |    |   |   |   |   |       |      |    |    |   |     |
| <b>Internal accessory code:</b>  |    |   |   |   |   |       |      |    |    |   |     |
| 00: No accessory;  |    |   |   |   |   |       |      |    |    |   |     |
| 20: Auxiliary contact;   |    |   |   |   |   |       |      |    |    |   |     |
| 10: Shunt release;   |    |   |   |   |   |       |      |    |    |   |     |
| 40: Auxiliary contact+ Shunt release   |    |   |   |   |   |       |      |    |    |   |     |
| <b>Internal accessory voltage:</b>   |    |   |   |   |   |       |      |    |    |   |     |
| 0: No voltage  |    |   |   |   |   |       |      |    |    |   |     |
| 1: AC220V;   |    |   |   |   |   |       |      |    |    |   |     |
| 2: AC380V;   |    |   |   |   |   |       |      |    |    |   |     |
| 3: DC24V;  |    |   |   |   |   |       |      |    |    |   |     |
| 4: DC110V;   |    |   |   |   |   |       |      |    |    |   |     |
| 5: DC220V;   |    |   |   |   |   |       |      |    |    |   |     |
| Note: No voltage indicates that the product is not equipped with a shunt trip device |    |   |   |   |   |       |      |    |    |   |     |
| <b>Mode of operation</b>   |    |   |   |   |   |       |      |    |    |   |     |
| Blank:without manual operating mechanism   |    |   |   |   |   |       |      |    |    |   |     |
| Circular handle manual operation: Z4: SC2-Y type                                     |    |   |   |   |   |       |      |    |    |   |     |
| Square handle manual operation: Z3: SC2-F type                                       |    |   |   |   |   |       |      |    |    |   |     |


### Quick reference table

| Model  | Frame size | High voltage | Rated current (In) |     |     |     |     | Number of poles | Internal accessory |        |        |        | Utility voltage code |   |   |   |   |   | Operating mode |    |
|--------|------------|--------------|--------------------|-----|-----|-----|-----|-----------------|--------------------|--------|--------|--------|----------------------|---|---|---|---|---|----------------|----|
| UEM6HG | 500        | H            | 250                | 315 | 350 | 400 | 500 | 2               | 0<br>0             | 2<br>0 | 1<br>0 | 4<br>0 | 0                    | 1 | 2 | 3 | 4 | 5 | Z3             | Z4 |
|        | √          | √            | √                  | √   | √   | √   | √   | √               | √                  | √      | √      | √      | √                    | √ | √ | √ | √ | √ | √              | √  |

# Ordering instruction





## Internal accessory

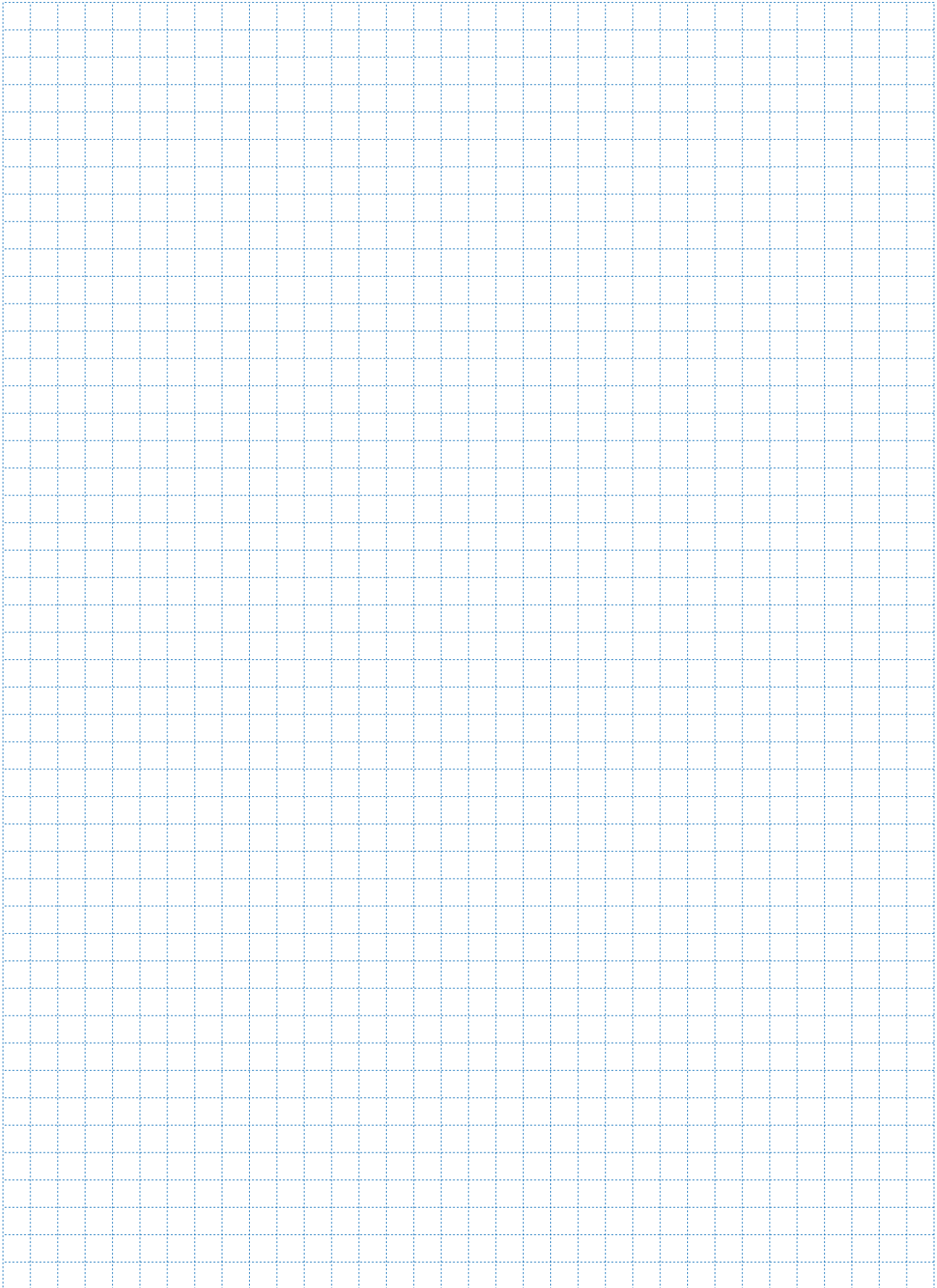
| Shunt release SHT1  |   |                   |
|---|---|-------------------|
| Accessoy name   |   | Model             |
|  | Shunt release mounted on the right, AC220V, lead type | SHT1-400RY/AC220V |
|   | Shunt release mounted on the right, AC380V, lead type | SHT1-400RY/AC380V |
|   | Shunt release mounted on the right, DC24V, lead type  | SHT1-400RY/DC24V  |
|   | Shunt release mounted on the right, DC220V, lead type | SHT1-400RY/DC220V |

| Auxiliary contact AX1   |  |           |
|---|--|-----------|
| Accessoy name   |  | Model     |
|  | Auxiliary contact mounted on the right, 1NO 1NC, lead type | AX1-400RY |

Ordering instruction

External accessory

| Manual operating mechanism  |  |           |
|---|--|-----------|
| Accessory name  |  | Model     |
| Default selection   | <div>Manual operating mechanism,<br/>essentric type operating mechanism,<br/>circular handle ,</div> | SC2-Y/400 |
|    |  |           |
|   |  |           |
| Default selection   | <div>Manual operating mechanism,<br/>essentric type operating mechanism,<br/>square handle</div>     | SC2-F/400 |
|  |  |           |
|  |  |           |



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