



Catalogue

Reliable made affordable





About Himel

Himel is a multinational manufacturer and provider of electrical products successfully combining global expertise with local knowledge.

Founded by a Spanish entrepreneur in 1958, the company pioneered in exporting quality electrical enclosures, establishing Himel brand globally. Today, our global footprint and technology enable us to provide the best combination of affordable and reliable offers for Low Voltage Power distribution, Industry Automation and Home Electric to our long-term customers and partners in over 50 countries where we are present.

Himel. Reliable made affordable



HDM3E Molded Case Circuit Breaker(Electronic)

Product selection
Standard:IEC/EN 60947-2



Reference HDM3E125M12533XXP7

| HD | M3E | 125 | M | 125 | 3 | 3 | XX |
|-------------|---------|---|-------------------|---|---|------------------------|---|
| Code | A | B | C | D | E | F | G |
| | Product | Frame Current | Breaking Capacity | Rated Current | Pole | Tripping Type | Product accessory |
| Description | HDM3E | 125 | M | 125 | 3 | 3 | XX |
| | HDM3E | 125: 125A 250: 250A 400: 400A 630: 630A 800: 800A 16X: 1600A ²⁾ | M: 50kA | 125: 125A 250: 250A 400: 400A 630: 630A 800: 800A 16X: 1600A | 3: 3 Pole C: 4 Pole(with tripping release, N phase can open and close) D: 4 Pole(without tripping release, N phase connection directly) | 3: Electronic tripping | XX:No accessory 08:Alarm 10:Shunt release ⁴⁾ 18:Shunt release+alarm ⁴⁾ 20:Single auxiliary 28: Auxiliary alarm 30:Under-voltage release ⁶⁾ 38:Under-voltage release+alarm ⁶⁾ 40:Shunt release+Single auxiliary ⁶⁾ 48:Shunt release+Auxiliary alarm ⁶⁾ 50:Shunt release+Under-voltage release 60:Double auxiliary(2K2B) 68:Single auxiliary+auxiliary alarm 70:Under-voltage release+Single auxiliary ⁶⁾ 78:Under-voltage release+auxiliary alarm ⁶⁾ 80:Shunt release+double auxiliary ⁶⁾ 90:Under-voltage release+double auxiliary ⁶⁾ |

- means specail use for 125–800 frame
- means application for all frame
- means specail use for 1600 frame

Example:

HDM3E125M12533XX HDM3E-125M 3P
HDM3E400M4003350 HDM3E-400M 3P shunt release/undervoltage release AC400V
HDM3E16XM16X33XX HDM3E-1600M 3P power module AC400V
HDM3E16XM16X3350AP7 HDM3E-1600M 3P shunt release/power module/undervoltage release/motor mechanism AC230V

HDM3E Molded Case Circuit Breaker(Electronic)

Product Features
Standard:IEC/EN 60947-2



| | | P | B | | |
|-------------------|------------------|----------------|--|---|-------------------------------|
| H | J | L | M | N | |
| Accessory voltage | | Operation Type | Motor Mechanism | Installation Type | Temperature |
| Code | MX/ Power module | MN | Defult | Motor Mechanism/ Closing release voltage | Defult |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Default | AC400V | AC400V | Default:manual operate | Default: -/ | Defult: 40 °C |
| A | AC230V | AC230V | P: motor mechanism | 4:DC24V | B:Fixed rear T: 50 °C |
| B | DC24V | -/ | Z: ratarion manual operate ⁵⁾ | 7:AC230V | F:Plug-in front ⁶⁾ |
| D | AC400V | AC230V | | 0:AC400V | R:Plug-in rear ⁶⁾ |
| E | DC24V | AC230V | | C:DC110V | D:Drawout ⁷⁾ |
| F | AC230V | AC400V | | F:DC220V | |
| H | DC24V | AC400V | | | |
| I | DC110V | -/ | | | |
| J | DC220V | -/ | | | |
| K | DC110V | AC230V | | | |
| L | DC110V | AC400V | | | |
| M | DC220V | AC230V | | | |
| N | DC220V | AC400V | | | |

Remark:

- 1) Can choose the product reference according to above table.
- 2) 1600 AF standard offer:power module,default voltage:400V; Auxiliary contact 2open2close; Alarm contact; 3E-1600 controller; Interphase barriers 3) 125-800 AF inter accessory is standard offer with wiring(length 600mm) except undervoltage release(with terminal), if need other length or with terminal, please remark.
- 4) General product offer: interphase barriers, installation screw.
- 5) There is no withdrawable connection product of 125/250 frame, and 400/630 frame don't have plug-in front connection product.
- 6) The default horizontal outlet bar is equipped for plug-in front connection product.
- 7) Please derating to 500A when choose plug-in rear connection and withdrawable connection of 630 frame, and must adjust the max setting current Ir=500A.

HDM3E Molded Case Circuit Breaker(Electronic)

Product selection
Standard:IEC/EN 60947-2



Product Features

Standard

- IEC 60947-1
- IEC 60947-2

Using Environment

Pollution degree: Class III
IEC 60947-1 and IEC 60664-1 standard defined environment(industry environment)
Rated working voltage to the ground is 600V, available for environment IV(power inlet line)

Wet and heat resistance

Dry cold,Dry heat andWet heat

Environment temperature

- Operating temperature: -5 degree~50 degree, average temperature don't exceed 35 degree in 24h. (Note: when you need to use this product in -35~-5 C and +50~+70 C , please refer to derating temperature table)
- Storage temperature:-40 C ~70 C

Altitude

- Normal installtion site do not exceed 2000m
- If altitude exceeds 2000m,must consider change factors of dielectric strength and air temperature drop. (Suggest breaking capacity derating 25%, rated impulse withstand voltage derating(12 kV reduce to 8kV, 8kV to 6kV); Rated insulation voltage derating(1000V reduce to 800V, 800V reduce to 690V)

Humidity

Normal operation conditions:

- If ambient air temperature is +40 ,the relative atmosphere humidity do not exceed 50%.
- The product can be used at high relative humidit if the temperature is lower.
- The wettest month of average relative humidity is 90%.
- The condensation impact on the product surface shall be considered.

Reliable contact indicate with isolating function

HDM3E series complies with the isolation defined in IEC 60947-2

- The isolated location show O(OFF)
- The operating handle can indicate "OFF"; when the contacts are really opened.
- Rotate handle and motor mechanism can not change the reliability of contact indicate system.Through testing,the isolating function must safe and reliable.

Protection class

- Circuit breaker body: IP 20
- Circuit breaker installed in switch cabint:
With toggle handle: IP 40
With motor mechanism: IP 40

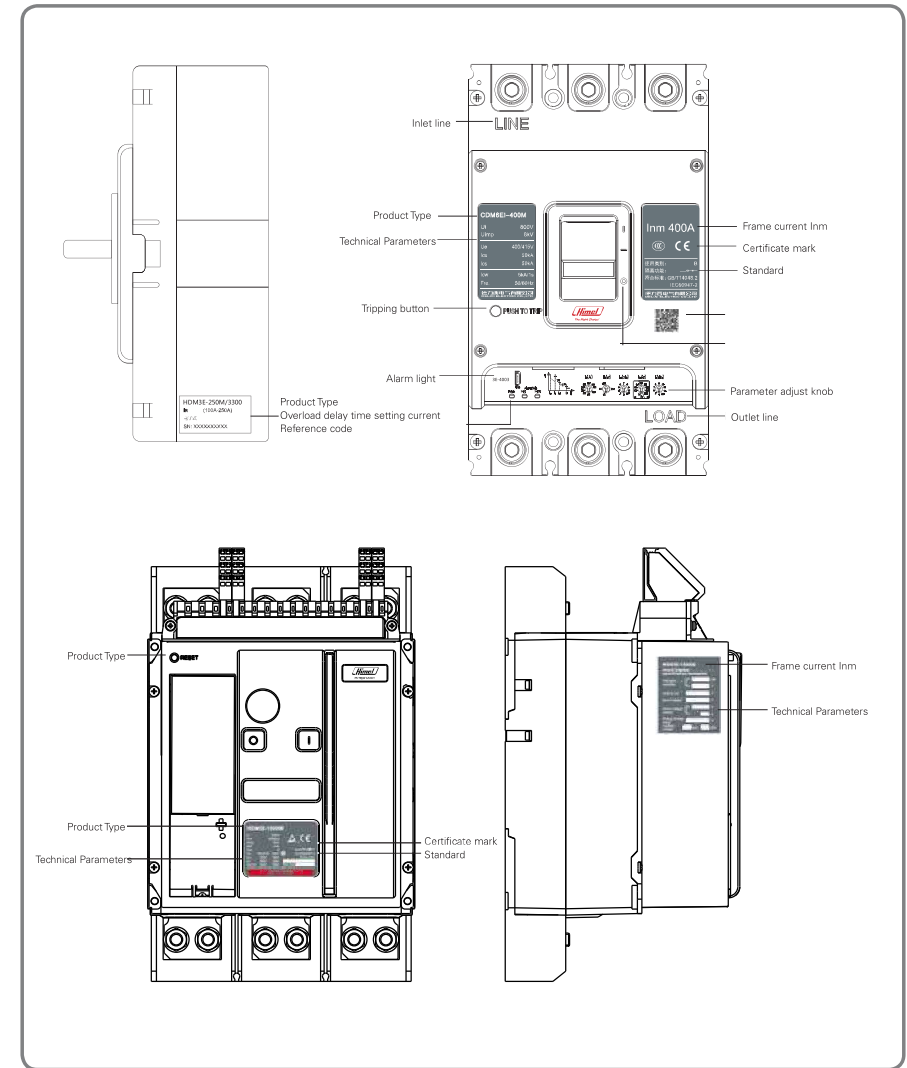


HDM3E Molded Case Circuit Breaker(Electronic)

Product Features
Standard:IEC/EN 60947-2



Nameplate Description



HDM3E Molded Case Circuit Breaker(Electronic)

Product selection
Standard:IEC/EN 60947-2



Technical parameters

| | | HDM3E-125 | HDM3E-250 |
|--|---------------------------------------|-----------|--------------|
| Rated Voltage Ue (V) | | 400/415 | 400/415 |
| Rated Insulation Voltage Ui (V) | | 800 | 800 |
| Rated Impulse withstand Voltage Uimp (V) | | 8000 | 8000 |
| Rated Frequency (HZ) | | 50 | 50 |
| Frame Current(A) | | 125 | 250 |
| Pole(3/4P) | | 3/4 | 3/4 |
| Use Category | | A | A |
| Breaking capacity | Breaking Class | M | M |
| | Icu (kA) AC 400/415V | 50 | 50 |
| | Ics (kA) AC 400/415V | 50 | 50 |
| | Icw (kA) | 2.5 (1s) | 2.5 (1s) |
| Mechanical life | With maintenance | 10000 | 10000 |
| | Without maintenance | 7000 | 70000 |
| Electrical life | AC 400/415V | 1000 | 1000 |
| Protection type | Power Distribution Protection | | |
| | Motor Protection | | |
| Tripping | Electronic tripping protection method | LSI | LSI |
| | Fixed front connection | | |
| Wiring mode | Fixed rear connection | | (screw type) |
| | Plug-in front connection | | |
| | Plug-in rear connection(horizontal) | | |
| | Withdrawable ²⁾ | - | - |
| Product accessories | Under-Voltage release | | |
| | Shunt release | | |
| | Alarm contact | | |
| | Auxiliary contacts(1 open 1 close) | | |
| | Auxiliary contacts(2 open 2 close) | | |
| | AC/DC motor mechanism | | |
| | Round direct manually handle | | |
| | Square direct manually handle | | |
| | Round extended manually handle | | |
| | Square extended manually handle | | |
| | Interphase barriers | | |
| Self-installation for Accessories | | | |
| Isolating Function | | | |
| Certificate | | TUV/CE | TUV/CE |

Notes: 1) Product rear horizontal connection can be revised to Vertical connection, refer to P40.
2) Product rear horizontal connection can be revised to fixed front connection and rear Vertical connection, refer to P43.

HDM3E Molded Case Circuit Breaker(Electronic)

Product Features
Standard:IEC/EN 60947-2



| | HDM3E-400 | HDM3E-630 | HDM3E-800 | HDM3E-1600 |
|--|----------------------------|----------------------------|----------------------------|------------|
| Rated Voltage Ue (V) | 400/415 | 400/415 | 400/415 | 400/415 |
| Rated Insulation Voltage Ui (V) | 800 | 800 | 1000 | 1000 |
| Rated Impulse withstand Voltage Uimp (V) | 8000 | 8000 | 12000 | 12000 |
| Rated Frequency (HZ) | 50 | 50 | 50 | 50 |
| Frame Current(A) | 400 | 630 | 800 | 1600 |
| Pole(3/4P) | 3/4 | 3/4 | 3/4 | 3/4 |
| Use Category | B | B | B | B |
| Breaking capacity | M | M | M | M |
| | 50 | 50 | 50 | 50 |
| | 50 | 50 | 50 | 50 |
| | 5 (1s) | 8 (1s) | 10 (1s) | 42 (1s) |
| Mechanical life | 7000 | 7000 | 5000 | 1500 |
| | 4000 | 4000 | 2500 | 500 |
| Electrical life | 1000 | 1000 | 500 | 500 |
| Protection type | | | | |
| | | | | |
| Tripping | LSI | LSI | LSI | LSI/G |
| | | | | |
| Wiring mode | (Horizontal) ¹⁾ | (Horizontal) ¹⁾ | (Horizontal) ¹⁾ | - |
| | - | - | - | - |
| | (Horizontal) ²⁾ | (Horizontal) ²⁾ | (Horizontal) ²⁾ | - |
| | | | | - |
| Product accessories | | | | |
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| | | | | |
| Self-installation for Accessories | | | | |
| Isolating Function | | | | |
| Certificate | | TUV/CE | TUV/CE | TUV/CE |

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-800AF)
Standard:IEC/EN 60947-2



HDM3E series controller function and features

HDM3E-125~800

3P controller



4P controller



Controller Description

I_n :Overload long delay setting current
Isd :Short-circuit short delay setting current
Ii :Short-circuit instantaneous setting current
Ready :Run light
> 90% I_n :pre-alarm light

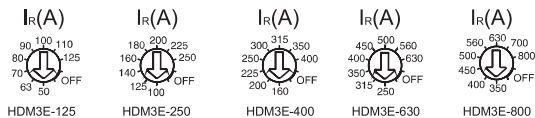
t_n :Overload long delay setting time
tsd :Short-circuit short delay setting time
 I_{Rn} :Short-circuit short delay setting time
Alarm :Alarm light
> 105% I_n :Overload alarm light

LSI three section protection curve

1) Overload long delay setting current I_n

Adjust I R knob, can select the different current value of HDM3E, to satisfy the rated operating current requirement of different electrical wiring.

Following sketch is the adjust knob: I_n



| Product Type | Overload long delay current, protection feature setting value, I_n (A) | Remark |
|--------------|--|--|
| HDM3E-125 | 50,63,70,80,90,100,110,125 | OFF means close overload long delay protection |
| HDM3E-250 | 100,125,140,160,180,200,225,250 | OFF means close overload long delay protection |
| HDM3E-400 | 160,200,225,250,300,315,350,400 | OFF means close overload long delay protection |
| HDM3E-630 | 250,315,350,400,450,500,560,630 | OFF means close overload long delay protection |
| HDM3E-800 | 350,400,450,500,560,630,700,800 | OFF means close overload long delay protection |

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-800AF)
Standard:IEC/EN 60947-2



2) Overload long delay setting time t_n



tR Action time @2I_n

The following table is action value corresponding for different overload long delay time when the fault current is 1.5I_n, 2I_n, 6I_n

| Actual Current | Action time to different knob t_n (s), accuracy $\pm 10\%$, $t = (2I_n / I)^2 \times t_n$ | | | | |
|-------------------|--|-------|-------|-------|-------|
| | 12 | 60 | 80 | 100 | 150 |
| 1.5I _n | 21.3 | 106.7 | 142.2 | 177.8 | 266.7 |
| 2I _n | 12 | 60 | 80 | 100 | 150 |
| 6I _n | 1.33 | 6.67 | 8.89 | 11.11 | 16.67 |

As example of HDM3E-400 product, how to set the overload long delay setting current and time. If select I_n 300, T_n is 60.

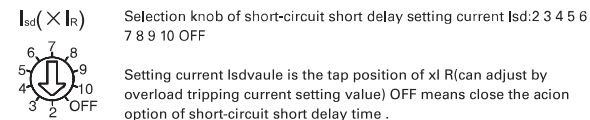
When overload current is 1.5I_n(450A), the range of overload action time is 106.7±10.67s.

When overload current is 2I_n(600A), the range of overload action time is 60±6s.

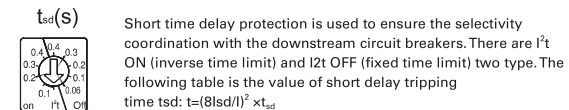
.When overload current is 6I_n(1800A), the range of overload action time is 6.67±0.667s.

It is the same theory for the other section knob value.

3) Short-circuit short delay setting current I_{sd}



4) Short-circuit short delay setting time t_{sd}



tsd action time @8I_{sd}

| I ^t ON @8I _{sd} | Setting time tsd(s) | - | 0.1 | 0.2 | 0.3 | 0.4 |
|-------------------------------------|-----------------------------------|------|-----|-----|-----|-----|
| | I > 8I _n delay time(s) | - | 0.1 | 0.2 | 0.3 | 0.4 |
| I ^t OFF | Setting time tsd(s) | 0.06 | 0.1 | 0.2 | 0.3 | 0.4 |
| | Return time(ms) | 20 | 80 | 140 | 230 | 350 |
| | Max break time(ms) | 100 | 140 | 220 | 320 | 500 |

As example of HDM3E-250, how can do set inverse time limit setting time of short-circuit short delay.

If I_n is selected 200, I_{sd} is selected on 2xI_n position, tsd is selected I^t ON, tsd is selected on 0.2 position When short-circuit current is 2xI_n (400A), the short-circuit short time delay action time is 3.2s.

Note: when I_n =OFF, short-circuit short delay action current I_{sd} is matching to I_{nm}.

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-800AF)
Standard:IEC/EN 60947-2



5) Short-circuit Instantaneous setting current I_i ($\times I_{nm}$)

I_i ($\times I_{nm}$)



| | | |
|---|----------------------------|--|
| Short-circuit Instantaneous setting current I_i ($\times I_{nm}$) | HDM3E-125/250 /400/630/800 | (4,5,6,7,8,9,10,11,12,OFF) $\times I_{nm}$ |
|---|----------------------------|--|

6) Neutral phase setting protection I_{RN} ($\times I_{R}/I_{nm}$)



Setting current I_{RN} value selected knob is $\times I_{R}/I_{nm}$. Neutral phase protection is special for 4 poles circuit breakers. There are three type:

- OFF: Close neutral phase protection function, used for power distribution system without neutral protection situation
- N/2: Used for neutral phase wiring conductor cross-section equal to half of phase line of power distribution system long time delay, short time delay are also equal to the 1/2 of setting value of phase line protection in this status
- N: Used for neutral phase wiring conductor cross-section equal to phase line of power distribution system long time delay, short time delay instantaneous setting value are also equal to setting value of phase line protection in this status.

Note: When I_{RN} is OFF, controller will automatically use the basic reference (I_{nm}) current as the neutral phase protection

7) Controller working status indicate

Following table is status of Run indicate light(Ready), Alarm indicate light(Alarm):

| Run status | Alarm | | | Remark |
|------------|----------------|------------|------------|--------------------------|
| | Ready Green | Yellow | Red | |
| Normal | Blink | Extinguish | Extinguish | $I < 0.9I_R$ |
| Pre-alarm | Blink | Blink | Extinguish | $0.9I_R \leq I \leq I_R$ |
| Tripping | Extinguish | Extinguish | Extinguish | $1.05I_R < I$ |

Note:

- 1, I is current of main circuit, I_R is overload long time delay setting current value.
- 2, When yellow light blink, that means intelligent controller had worked on overload long time delay, setting parameters on the controller board is unavailable in this process.

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-1600AF)
Standard:IEC/EN 60947-2

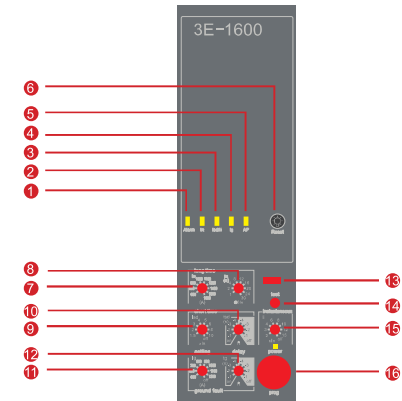


3E Controller Function and Characteristics

3E-1600(Basic type)

Indicate and button description

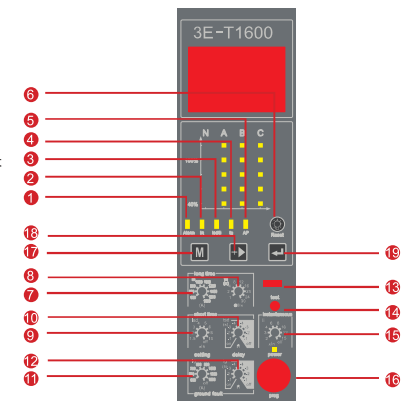
- | | |
|---|--|
| 1 Alarm indicate light | 9 Short time delay Isd |
| 2 Long time delay tripping indicate | 10 Short time delay tripping delay tsd |
| 3 Short time delay or Instantaneous tripping indicate | 11 Earthing fault tripping Ig |
| 4 Earthing tripping indicate | 12 Earthing fault tripping delay tg |
| 5 High level protection | 13 Lock position |
| 6 Reset button | 14 Testing button |
| 7 Long time delay current setting I_R | 15 Instantaneous tripping current |
| 8 Long time delay tripping delay t_R | 16 Testing connection port |



3E-T1600(Communication Type)

Indicate and button description

- | | |
|---|-------------------------------------|
| 1 Alarm indicate light | 11 Earthing fault tripping Ig |
| 2 Long time delay tripping indicate | 12 Earthing fault tripping delay tg |
| 3 Short time delay or Instantaneous tripping indicate | 13 Lock position |
| 4 Earthing tripping indicate | 14 Testing button |
| 5 High level protection | 15 Instantaneous tripping current |
| 6 Reset button | 16 Testing connection port |
| 7 Long time delay current setting I_R | 17 Setting button/Switch button |
| 8 Long time delay tripping delay t_R | 18 PgDn or PgUp button |
| 9 Short time delay Isd | 19 Confirmation button |
| 10 Short time delay tripping delay tsd | |



Note: 7 8 9 10 11 12 15 only stall indicate, don't adjust.

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(1600AF)
Standard:IEC/EN 60947-2

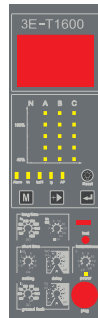


Function Description

3E-1600



3E-T1600



| Protection Function | 3E-1600 | 3E-T1600 |
|--------------------------------------|--------------------------------------|--------------------------------------|
| Long-time delay protection I_R | Long-time delay protection I_R | Long-time delay protection I_R |
| Short-time delay protection I_{sd} | Short-time delay protection I_{sd} | Short-time delay protection I_{sd} |
| Instantaneous protection I_i | Instantaneous protection I_i | Instantaneous protection I_i |
| Earthing protection I_g | Earthing protection I_g | Earthing protection I_g |
| MCR protection | MCR protection | MCR protection |
| HSISC protection | HSISC protection | HSISC protection |
| | Current unbalance | Current unbalance |
| | Maximum required current | Maximum required current |
| | Earthing alarm | Earthing alarm |
| Measure Function | Current measure | Current measure |
| | Voltage measure | Voltage measure |
| | Power measure | Power measure |
| | Frequency measure | Frequency measure |
| | Electric energy measure | Electric energy measure |
| Miscellaneous Function | Pre-alarm | Pre-alarm |
| | Self-diagnosis function | Self-diagnosis function |
| | Fault history record | Fault history record |
| | Measure function | Measure function |
| | Displacement record | Displacement record |
| | Alarm record | Alarm record |
| | Clock | Clock |
| Display Function | LCD Display ¹⁾ | LCD Display ¹⁾ |
| Communication Function | Modbus | Modbus |

1) LCD will freeze when environment under minus 5°C, it will cause undisplay, but it don't affect the protection function and normal operating of circuit breakers.

HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-800AF)
Standard:IEC/EN 60947-2



Intelligent Controller Protection Characteristics

Intelligent controller protection characteristics have inverse time limit and fixed time limit. When fault current exceed the setting value of inverse time limit, controller will work on the delay time protection according to fixed time limit setting. Inverse time limit curve conform to characteristics curve $I^2 t$

1) Overload long time delay protection characteristics I_R

Overload long time delay protection action threshold value

$< 1.05 I_R > 2h$ inaction

$\geq 1.2 I_R$; action delay

I_R current setting range:630A,800A,900A,1000A,1100A,1250A,1400A,1500A,1600A

| Inverse time limit action characteristics | $I^2 t = (6/N)^2 * I_R$ | | | | | | | | |
|---|-------------------------|-----|-----|------|------|------|------|------|------|
| Setting current | Action time s | | | | | | | | |
| $1.5 I_R$ | 16s | 32s | 64s | 128s | 192s | 256s | 320s | 384s | 480s |
| $2 I_R$ | 9s | 18s | 36s | 72s | 108s | 144s | 180s | 216s | 270s |
| $6 I_R$ | 1s | 2s | 4s | 8s | 12s | 16s | 20s | 24s | 30s |

Notes: N---- Fault current divide by setting current I_R

t----Fault action delay time

t_R ----Long time delay setting value

Action time permissible error $\pm 10\%$

2) Short-circuit short time delay protection characteristics I_{sd}

Short-circuit short time delay protection action threshold value

$< 0.9 I_{sd}$ inaction

$\geq 1.1 I_{sd}$; action delay

I_{sd} current setting range:1.5 I_R , 2 I_R , 3 I_R , 4 I_R , 5 I_R , 6 I_R , 8 I_R , 10 I_R , OFF

| Setting current | Action time | | | | | |
|-----------------------|--|------------------|-----------------------------------|--------------------|------|------|
| $I_{sd} < 1.1 I_{sd}$ | Inverse time limit | Action character | $I^2 t = (8 I_{sd} / t)^2 t_{sd}$ | | | |
| | | | Delay time s | 0.1, 0.2, 0.3, 0.4 | | |
| $I \geq 1.1 I_{sd}$ | Fixed time limit, returned time is minimum value | Setting time s | 0.1 | 0.2 | 0.3 | 0.4 |
| | | Min s | 0.08 | 0.14 | 0.23 | 0.35 |
| | | Max s | 0.14 | 0.2 | 0.32 | 0.5 |

Notes: I_{sd} ---- Short time delay current setting value

I ---- Fault current value

I_R ---- Long delay time current setting value

t ---- Fault action delay time

t_{sd} ---- Short time delay inverse time limit setting value

Action time permissible error $\pm 20\%$

(The off of time means I2 t is inverse time limit closed, this state is fixed inverse limit; use current knob is off, that means short time delay protection function is closed.)

3) Instantaneous Protection Characteristics I_i

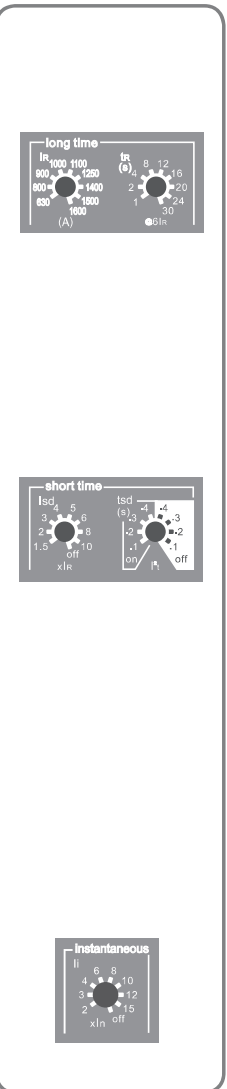
Short-circuit instantaneous protection action threshold value

$< 0.85 I_i$ inaction

$> 1.15 I_i$ action

Instantaneous action current setting value 2In, 3In, 4In, 6In, 8In, 10In, 12In, 15In, OFF

Note: Action time permissible error $\leq 50ms$.



HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(1600AF)
Standard:IEC/EN 60947-2



4) Earthing Fault Protection Action Characteristics I_g

Earthing fault protection action threshold value

< 0.9 I_g; inaction

≥ 1.1 I_g; action delay

I_g current setting range:500A, 600A, 700A, 800A, 900A, 1000A, 1100A, 1200A, OFF

| tg(s) | Inverse time limit | Action Charater |
|--|--------------------|--------------------------------------|
| | | $t = \frac{(I_f)^2}{I^2} \times t_g$ |
| Fixed time limit, returned time is minimum value | Settingtime (s) | 0.1 0.2 0.3 0.4 |
| | Settingtime (s) | 0.1 0.2 0.3 0.4 |
| | Min (s) | 0.08 0.14 0.23 0.35 |
| | Max (s) | 0.14 0.2 0.32 0.5 |

Notes: IJ Earthing protection setting value IJ =1200A

I Fault current value

T Fault action delay time

t_g Earthing inverse time limit setting value

Inverse time limit action permissiable error ± 20%

(The off means is inverse time limit closed, this state is fixed time limit. Use current knob is off, that means earthing protection function is closed.)

5) Intelligent controller setting value

| Tripping curve | Long time delay | | Short time delay | | Instantaneous | Earthing fault | | Thermal memory |
|------------------|-----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|
| | I _R | t _R | I _{sD} | t _s | I _i | I _g | t _g | |
| I _Δ t | 1600A | 30s | 6In | 0.2s | 10In | 1100A | 0.4s | 20min |

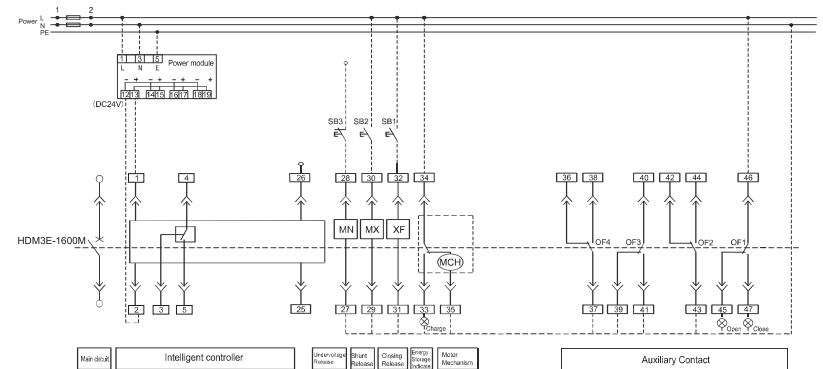
HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(125-1600AF)
Standard:IEC/EN 60947-2



Secondary wiring diagram

3E-1600



Controller Introduction:

Power: Power supply

1#,2# is auxiliary power DC24V , 1# is connect to positive terminal, and 2# is connect to negative terminal.

SWT: Fault tripping contact outlet(alarm contact)

3#,4#,5# are a set of transfer contact, and 4# is the common terminal, AC 400V,5A.

Note 1: 27#, 28# is under-voltage release terminal, connect from main circuit.

Note 2: controller must connect power supply, when voltage power is AC220/230V, use iAPU331 power module; when power is AC380/400V, use iAPU332 power module, when power is DC220/110V, use iAPU332D power module.

Note 3: HDM3E-1600M standard equipped with 2 open 2 close contact.

Note 4: MN, MX, XF,MCH are also optional accessories.

Note 5: Terminal 35# can not only be connected to power supply directly, achieve pre-storage energy automatically, but also can connect to the power supply by tandem connection with normal open button (achieve pre-storage energy manually). The dotted line part need connect by user.

Button by users:

SB1—closing button

SB2—opening button

SB3—emergency cut-off button

Components:

MN— Under-voltage release

MX— Shunt release

XF— Closing release

MCH— Motor mechanism

OF1-OF4—Auxiliary contacts

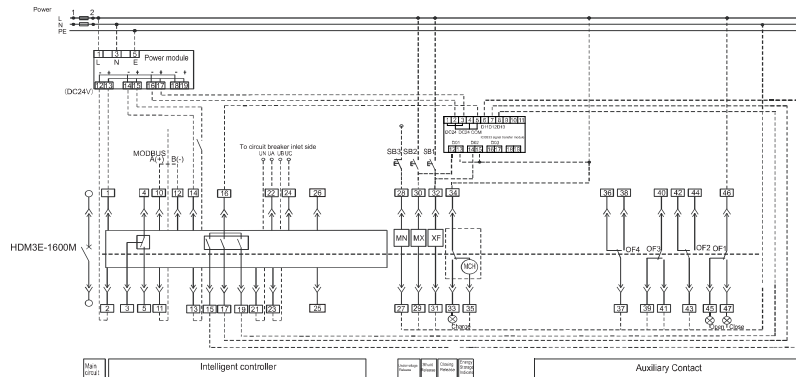
HDM3E Molded Case Circuit Breaker(Electronic)

Controller Parameters(1600AF)
Standard:IEC/EN 60947-2



Secondary wiring diagram

3E-T1600



Controller Introduction:

UM: Voltage measure signal input

21#, 22#, 23#, 24# is the input of N.A.B.C phase voltage.

ZSI: switch value in common, DI, DO function is defined by customer

13#, 14# is input of DC24V, 13# is connect to positive terminal, and 14# is connect to negative terminal.

15#, 16# is remote open, 16#, 17# is remote closing, 16#, 19# is general DO, and 16# is common terminal.

Power: Power supply input

1#, 2# is auxiliary power DC24V, 1# is connect to positive terminal, and 2# is connect to negative terminal.

SWT: Fault tripping contact outlet(alarm contact)

3#, 4#, 5# are a set of transfer contact, and 4# is the common terminal, AC 400V, 5A.

Com: Communication output

10#, 11# is communication connection, 12# is communication ground

Button by users:

SB1—closing button

SB2—opening button

SB3—emergency cut-off button

Components:

MN— Under-voltage release

MX— Shunt release

XF— Closing release

MCH— Motor mechanism

OF1—OF4—Auxiliary contacts

Note 1: 27#, 28# is under-voltage release terminal, connect from main circuit.

Note 2: controller must connect power supply, when voltage power is AC220/230V, use iAPU331 power module; when power is AC380/400V, use iAPU332 power module, when power is DC220/110V, use iAPU332D power module.

Note 3: When controller by remote, need to install signal transfer module(ICIO333, contact capacity is AC240V, 10A); the signal transfer module is equipped standard for four communication type product. It only can have three communication function (remote measure, remote test, remote communication) without signal transfer module

Note 4: HDM3E-1600M standard equipped with 2 open 2 close contact.

Note 5: Modbus-RTU is communication protocol, input terminal connect to 10#, 11#(cCom), output connect to bus of related protocol

Note 6: Terminal 35# can not only be connected to power supply directly, achieve pre-storage energy automatically, but also can connect to the power supply by tandem connection with normal open button (achieve pre-storage energy manually). The dotted line part need connect by user.

HDM3E Molded Case Circuit Breaker(Electronic)

Product selection
Standard:IEC/EN 60947-2



Accessories Selection

| HDM3E | Frame | Accessories |
|-------|--------------|--|
| | 125 | H1 |
| | 125A | AL1: Alarm contact(with wire) |
| | 250A | AL2: Alarm contact(with terminal) |
| | 400A | MX1: Shunt release(with wire) |
| | 630A | MX2: Shunt release(with terminal) |
| | 800A | OF11K1B: Auxiliary contact 1K1B(with wire) |
| | 1600A | OF21K1B: Auxiliary contact 1K1B(with terminal) |
| | | OF12K2B: Auxiliary contact 2K2B(with wire) |
| | | OF22K2B: Auxiliary contact 2K2B(with terminal) |
| | | MN: Undervoltage release |
| | | C3:3P Expanding terminal(6pcs) |
| | | C4:4P Expanding terminal(8pcs) |
| | | H1: Round direct handle |
| | | H2: Square direct handle |
| | | IB3:3P Interphase barriers(6pcs) |
| | | IB4:4P Interphase barriers(8pcs) |
| | | HL1 :Round extended rotation handle |
| | | HL2 :Square extended rotation handle |
| | | D: AC/DC motor mechanism |
| | | M3EMKAC230DC24: Input AC230V output DC24V |
| | | M3EMKAC400DC24: Input AC400V output DC24V |
| | | M3EMKDC110DC24: Input DC110V output DC24V |
| | | M3EMKDC220DC24: Input DC220V output DC24V |

means application for 125–800 frame

means application for all frame

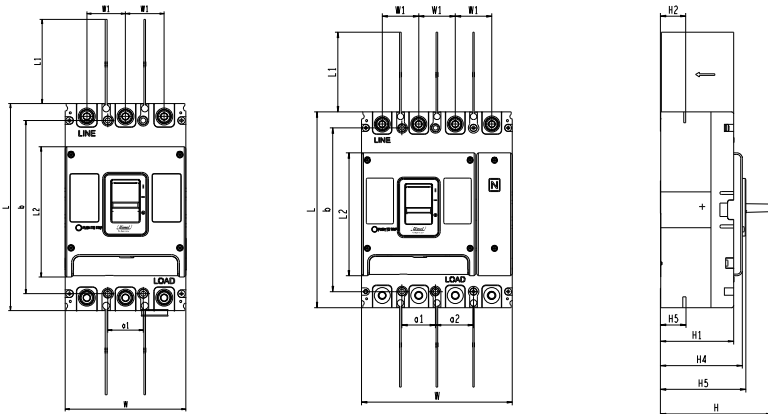
means application for 1600 frame

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Product appearance and installation dimension of 125A-800A



Unit: mm

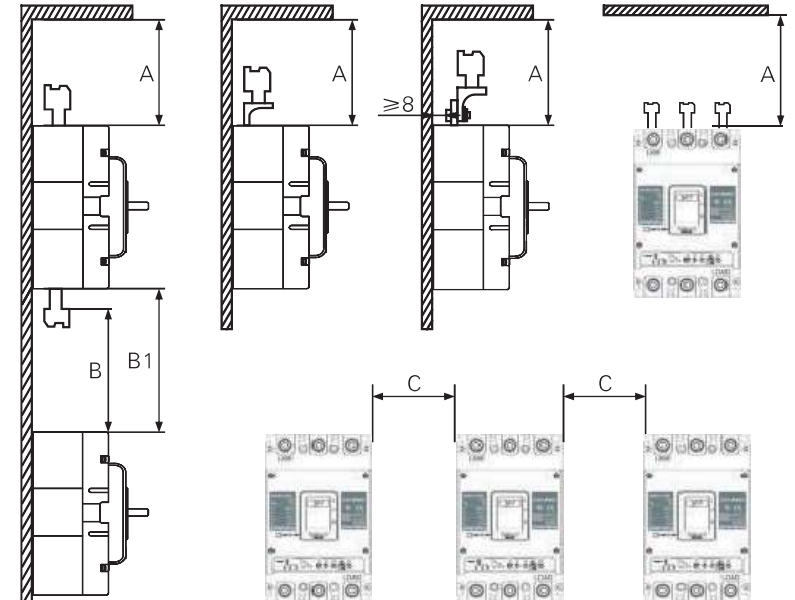
| Product | Pole | Appearance dimension | | | | | | | | | | Installation dimension | | | |
|-----------|------|----------------------|-------|-------|-----|----|-------|------|------|------|-------|------------------------|----|----|-----|
| | | L | L1 | L2 | W | W1 | H | H1 | H2 | H3 | H4 | H5 | a1 | a2 | b |
| HDM3E-125 | 3 | 165 | 80 | 102.5 | 107 | 35 | 112.5 | 86 | 21.5 | 23 | 94 | 95.5 | 35 | 35 | 126 |
| | 142 | | | | | | | | | | | | | | |
| HDM3E-250 | 3 | 165 | 80 | 102.5 | 107 | 35 | 112.5 | 86 | 23 | 23 | 94 | 95.5 | 35 | 35 | 126 |
| | 142 | | | | | | | | | | | | | | |
| HDM3E-400 | 3 | 257 | 104.5 | 161.5 | 150 | 48 | 145.9 | 96.2 | 36.5 | 37 | 107.5 | 112.2 | 44 | - | 215 |
| | 198 | | | | | | | | | | | | | | |
| HDM3E-630 | 3 | 257 | 104.5 | 161.5 | 150 | 48 | 145.9 | 96.2 | 38.5 | 39.5 | 107.5 | 112.2 | 44 | - | 215 |
| | 198 | | | | | | | | | | | | | | |
| HDM3E-800 | 3 | 280 | 104.5 | 170 | 210 | 70 | 154 | 103 | 40.5 | 47 | 116 | 121 | 70 | 70 | 243 |
| | 280 | | | | | | | | | | | | | | |

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Safety clearance(125A-800A MCCB)



| Product | A (mm) | B (mm) | B1 (mm) | C (mm) |
|---------------|--------|--------|-------------------------|--------|
| HDM3E-125/250 | 60 | 60 | Length of bare cable +B | 30 |
| HDM3E-400/630 | 110 | 110 | | 70 |
| HDM3E-800 | 110 | 110 | | 70 |

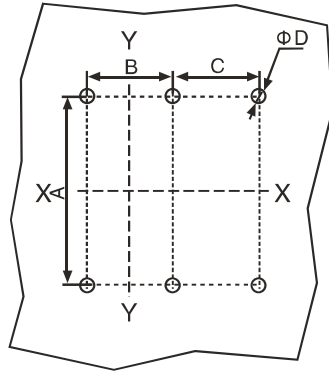
Note:No matter there is product with accessory or not,safety clearance must meet requirement of C.

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Fixed front installation hole dimensions(125-800A MCCB)



Note:X-X and Y-Y is the center of the three-pole breaker.

Unit: mm

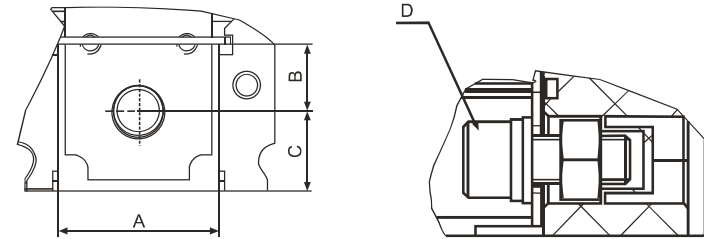
| Product | Pole | A | B | C | ΦD |
|-----------|------|-----|----|----|-----|
| HDM3E-125 | 3 | 126 | 35 | - | 5.5 |
| | 4 | | | 35 | |
| HDM3E-250 | 3 | 126 | 35 | - | 5.5 |
| | 4 | | | 35 | |
| HDM3E-400 | 3 | 215 | 44 | - | 6.5 |
| | 4 | | | - | |
| HDM3E-630 | 3 | 215 | 44 | - | 6.5 |
| | 4 | | | - | |
| HDM3E-800 | 3 | 243 | 70 | - | 7.5 |
| | 4 | | | 70 | |

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Safety clearance(125A-800A MCCB)



Unit: mm

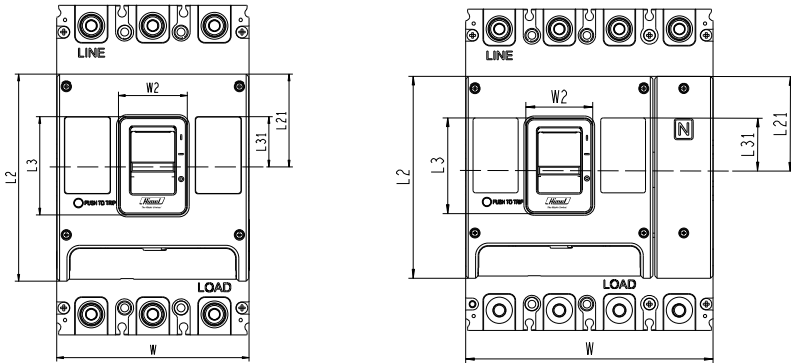
| Product | A | B | C | D |
|-----------|------|------|------|--------|
| HDM3E-125 | 25.5 | 12 | 10 | M8x20 |
| HDM3E-250 | 25.5 | 12 | 10 | M8x20 |
| HDM3E-400 | 32 | 13 | 16 | M10x25 |
| HDM3E-630 | 32 | 13 | 16 | M10x35 |
| HDM3E-800 | 45.5 | 16.8 | 18.5 | M12x35 |

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Fixed and plug-in rear plate hole dimension



Unit:mm

| Product | Pole | Cover and handle reveal | | | Only handle reveal | | |
|-----------|------|-------------------------|-------|------|--------------------|------|------|
| | | W | L2 | L21 | W2 | L3 | L31 |
| HDM3E-125 | 3 | 107 | 102.5 | 51 | 26 | 50.5 | 26.5 |
| | 4 | 142 | | | | | |
| HDM3E-250 | 3 | 107 | 102.5 | 51 | 26 | 50.5 | 26.5 |
| | 4 | 142 | | | | | |
| HDM3E-400 | 3 | 150 | 161.5 | 75 | 52.5 | 75.5 | 41 |
| | 4 | 198 | | | | | |
| HDM3E-630 | 3 | 150 | 161.5 | 75 | 52.5 | 75.5 | 41 |
| | 4 | 198 | | | | | |
| HDM3E-800 | 3 | 210 | 170 | 67.5 | 55 | 85 | 42.5 |
| | 4 | 280 | | | | | |

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Product connection

1 Notice

- 1,Wiring connection must be implemented by qualified persons
- 2,wiring connection after ensuring incoming power is cut off
- 3,wiring connection after MCCB installation
- 4,MCCB wire connection must be correct,connecting "LINE"to power supply,and"LOAD" to equipments, upside down is forbidden.

2 Choosing standrand wire

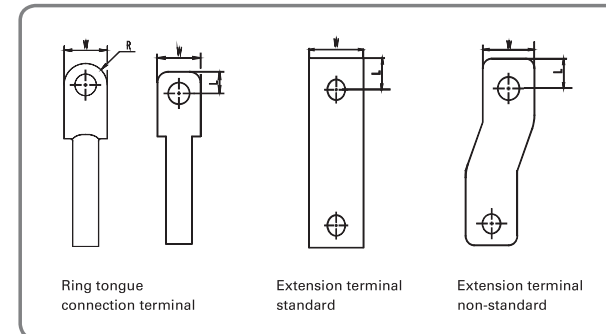
The size of wire for different frame of product

Table1:

| Product | The size of wire (mm ²) | Quantity |
|-----------|-------------------------------------|----------|
| HDM3E-125 | 50 | 1 |
| HDM3E-250 | 120 | 1 |
| HDM3E-400 | 240 | 1 |
| HDM3E-630 | 185 | 2 |
| HDM3E-800 | 240 | 2 |

Note:If product connect with Busbar,it will need to use with extension terminal.

3 Choosing ring tongue connection terminal and connection terminal



HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



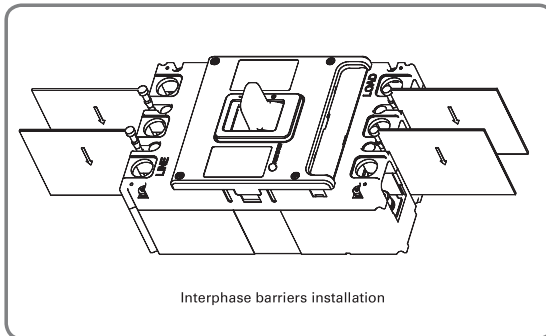
| Product | Ring tongue connection terminal | | |
|-----------|---------------------------------|-------|---|
| | W | R (L) | part number of ring tongue connection terminal |
| HDM3E-125 | ≤ 25 | ≤ 12 | 35mm ² : DT035SGD/DT035SED/DTG035SHD/DTL035MGD/SC35M8ZXD/SC35M10ZXD 50mm ² : DT050SGD/DT050SED/DTG050SHD/DTL050MGD/SC50M8ZXD/SC50M10ZXD/SC50M12ZXD OT : OT100ASD/OT150ASD |
| HDM3E-250 | | | 70mm ² : DT070SED/DTG070SHD/SC70M10ZXD/SC70M12ZXD 95mm ² : SC95M10ZXD/SC95M13ZXD OT : OT250ASD/OT300ASD |
| HDM3E-400 | ≤ 32 | ≤ 13 | 120mm ² : DT120SGD/DT120SED/DTG120SHD/DTL120MGD/DHADT120M13W28FT 150mm ² : DT150SED/DHADT150M13W30FT 185mm ² : DHADT185M13W31FT OT : OT400ASD |
| HDM3E-630 | | | 240mm ² : DT240SGD/DT240SED/DHADT240M14W398FT |
| HDM3E-800 | | | |

Note

- The type and part number of terminals in the table are Himel's type and part number
- The size of cable matched with terminal must be bigger than the size in the table, standard type is recommended

4

The screw must be tightened, torque shall be bigger than the table below. Interphase barriers must be installed as picture below. In case of short circuit between the phase, insulated end of cable is necessary.



| Product | Screw for connection | Torque(N.m) |
|----------------|----------------------|-------------|
| CDM6EI-125/250 | M8 × 20mm | 9.5 -10.5 |
| CDM6EI-400/630 | M10 × 25mm | 19.5-20.5 |
| CDM6EI-800 | M12 × 35mm | 29.5-30.5 |

HDM3E Molded Case Circuit Breaker(Electronic)

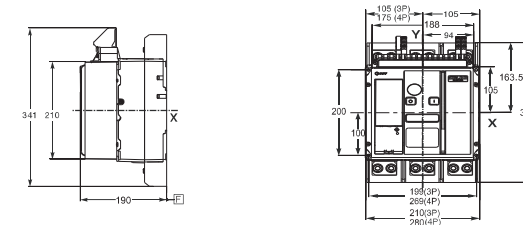
Installation Dimension
Standard:IEC/EN 60947-2



Fixed installation of 3 and 4 poles of 1600A

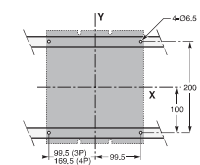
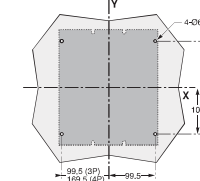
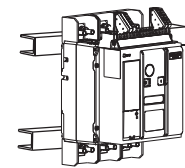
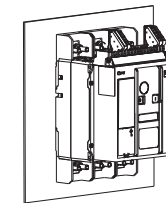
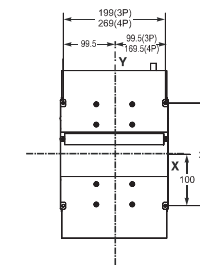
Fixed rear installation dimensions

Unit:mm



Vertical installation

Unit:mm

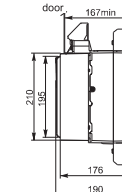
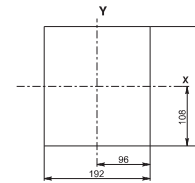
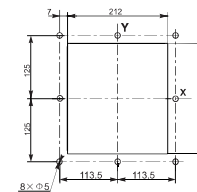


Note: X and Y are plane of symmetry of 3 pole breaker Z is back plane of breaker.

With doorframe: Holes dimension on door

Without doorframe: Holes dimension on door

Unit:mm



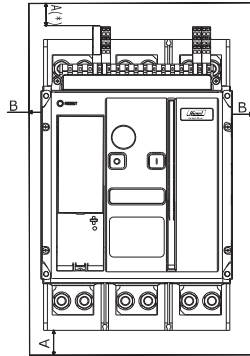
HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



Fixed rear installation dimension 1600A

Safety distance



| | Insulation part | Metal part | Charged part |
|---|-----------------|------------|--------------|
| A | 0 | 120 | 180 |
| B | 0 | 10 | 60 |

注: X and Y are front plane symmetric axis.

(*) 50mm safety distance for removing arcing cover, 20mm safety distance for removing terminals.

F : Reference point.

HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



1600A appearance and installation dimension

The table below based on assumption below:

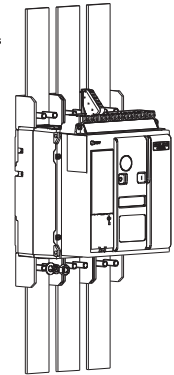
- The highest temperature is 100°C on busbar
- Ti Environment temperature around breaker and connection parts
- Copper varnished wire

Note:

The date in the table below comes from test and theoretical calculation under assumption condition above.

The table below is helpful to connection part design, but need to test to be confirmed.

Front connection parts

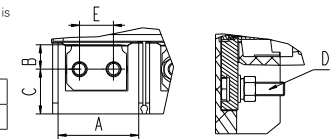


| Max current | Ti:40°C the number of busbar | | Ti:50°C the number of busbar | | Ti:60°C the number of busbar | |
|-------------|------------------------------|----------------|------------------------------|----------------|------------------------------|----------------|
| | 5mm Thickness | 10mm Thickness | 5mm Thickness | 10mm Thickness | 5mm Thickness | 10mm Thickness |
| 630 | 2b.40x5 | 1b.40 x 10 | 2b.40x5 | 1b.40 x 10 | 2b.40x5 | 1b.40 x 10 |
| 800 | 2b.50x5 | 1b.50 x 10 | 2b.50x5 | 1b.50 x 10 | 2b.50x5 | 1b.63 x 10 |
| 1000 | 3b.50x5 | 1b.63 x 10 | 3b.50x5 | 2b.50 X 10 | 3b.63x5 | 2b.50 x 10 |
| 1250 | 3b.50x5 | 2b.40 x 10 | 3b.50x5 | 2b.50 X 10 | 3b.63x5 | 2b.50 x 10 |
| | 2b.80x5 | 2b.40 x 10 | 2b.80x5 | | | |
| 1600 | 3b.80x5 | 2b.63 x 10 | 3b.80x5 | 2b.63 x 10 | 3b.80x5 | 2b.50 x 10 |

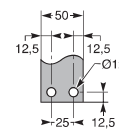
Note

The data in the tables above are derived from experiments and theoretical calculations, and it is not possible to substitute industrial experience or temperature rise tests for guidance only.

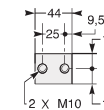
| Product | A | B | C | screw | E | Torque range(N.M) |
|-------------|----|------|------|----------|----|-------------------|
| HDM3E-1600M | 59 | 17.2 | 32.8 | M10×40mm | 25 | 50 |



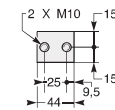
Front connection size



Recommended the size of busbar



The size of top terminal



The size of bottom terminal

HDM3E Molded Case Circuit Breaker(Electronic)

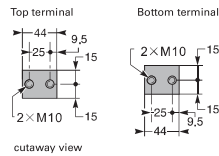
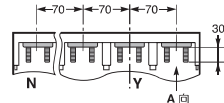
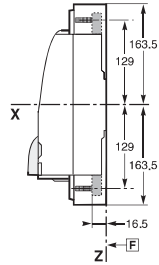
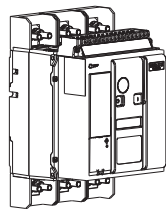
Installation Dimension
Standard:IEC/EN 60947-2



1600A Fixed busbar

Front Connexion

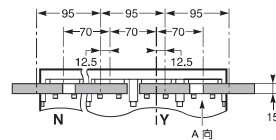
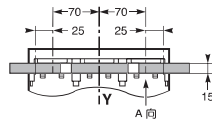
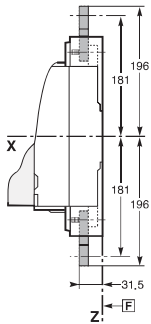
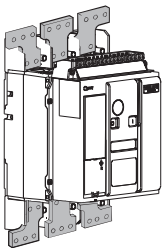
Unit:mm



Remark:
Recommend screw: M10,
Torque:50 N.M.

Front connection with extension terminal

Unit:mm



HDM3E Molded Case Circuit Breaker(Electronic)

Installation Dimension
Standard:IEC/EN 60947-2



1600A Fixed busbar

Extension terminal drawing

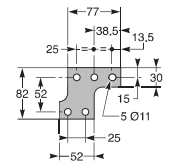
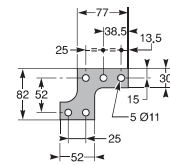
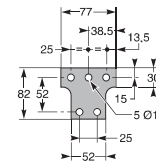
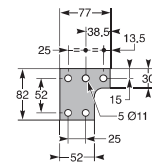
Unit:mm

Extension terminal for A phase or B phase of 4 pole

Extension terminal for B phase of 3 pole

Extension terminal for N phase or C phase of 4 pole

Extension terminal for A phase or C phase of 3 pole



Cutaway view

HDM3E Molded Case Circuit Breaker(Electronic)

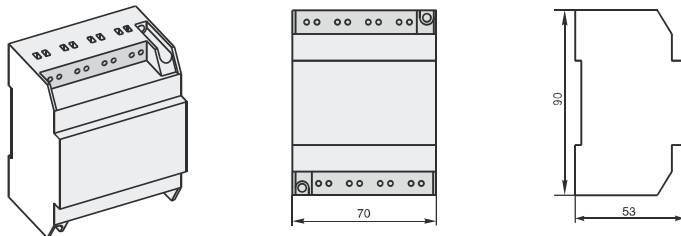
Installation Dimension
Standard:IEC/EN 60947-2



1600A Power supply module&signal conversion module dimension

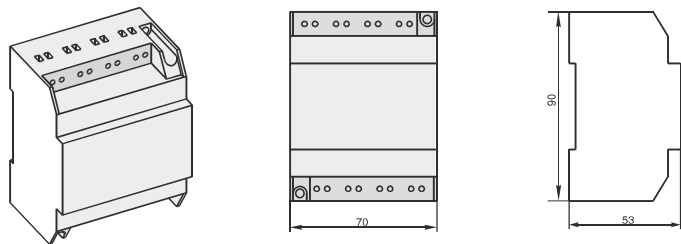
Supply power module can be installed on 35mm DIN rail.

Unit:mm



Signal conversion module can be installed on 35mm DIN rail

Unit:mm



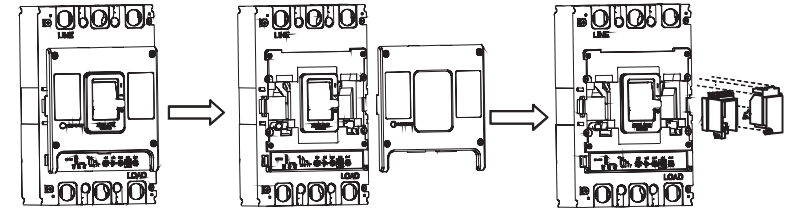
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



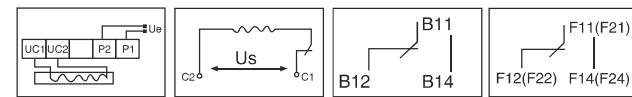
Internal accessories installation(125A-800A MCCB)

Diagram of inside accessories installation



Take the top cover down, and put accessories into left and right chamber of the middle cover and compress it. and install the top cover, tighten the screws. An accessory can be installed in the left or right position,including shunt release,undervoltage release,auxiliary contact,alarm and auxiliary contact.

Internal accessory wiring diagram

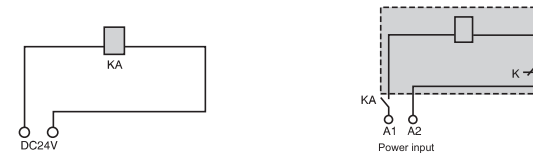


Undervoltage release Shunt release Alarm contact Auxiliary contact

When rated voltage of shunt release is DC24V,the longest of copper wire is no more than data below:

| Rate voltage for control power U_s (DC24V) | Sectional area 1.5mm ² | Sectional area 2.5mm ² |
|--|-----------------------------------|-----------------------------------|
| 100% U_s | 150m | 250m |
| 80% U_s | 100m | 160m |

If you can not match requirement the above table , the following diagram is used to design the control circuit of the shunt release:



KA: DC24V relay Current capacity :1A

Voltage of power input
AC50Hz 230V 400V; DC110V 220V

HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Internal accessories test

- 1,Shut down power supply for undervoltage release, breaker should be off, handle is on trip position
- 2,Shunt release is under reted voltage,breaker should be off,handle is on trip position
- 3,Switch on or off breaker with auxiliary contact,auxiliary contact can conversion normally singal
- 4,Switch on or trip(press red button) breaker,alarm contact can conversion normally singal

Note:The electrified time of shunt release lasts no more than 5s, otherwise shunt release will burnt out.When rated voltage of control power is DC24V,rated current of control circuit is 4.5~5.5A.

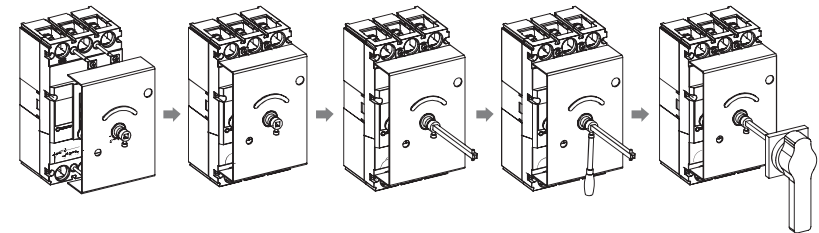
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2

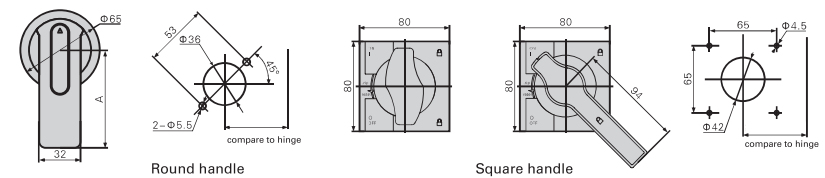


Outside accessories installation(125A-800A MCCB)

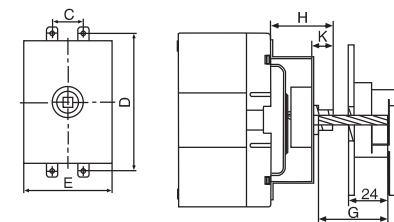
Handle operation mechanism installation drawings.



Rotary handle and installation dimension Unit: mm



Dimension of mechanism



| 产品型号 | C | D | E | H | K |
|----------------|----|-----|-----|----|----|
| CDM6E1-125/250 | 35 | 143 | 100 | 49 | 20 |
| CDM6E1-400/630 | 44 | 215 | 140 | 76 | 20 |
| CDM6E1-800 | 70 | 243 | 210 | 76 | 20 |

Installed rotary handle, operation should be flexible, and the handle in the horizontal, circuit breaker should be switched on, handle in the vertical position, circuit breaker should be closed.

Note

1 G means the shortest connection bar is 40mm,standard is 150mm,can be customizational.

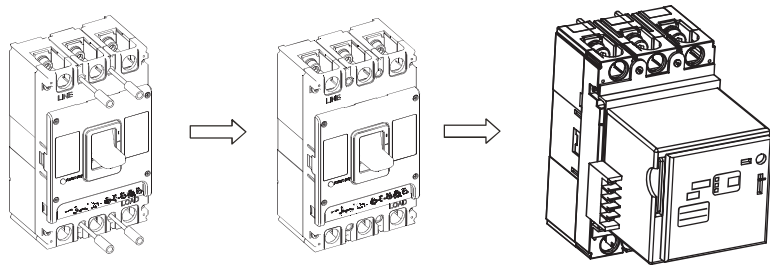
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2

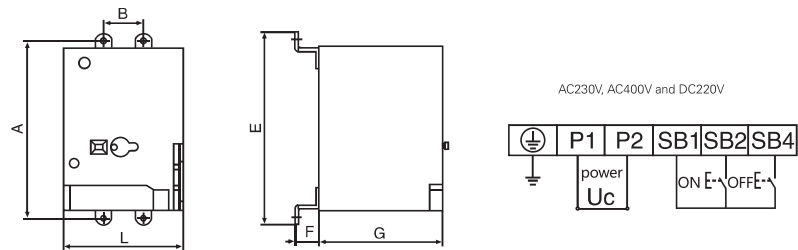


Motor operating mechanism(125A-800A MCCB)

Motor operating mechanism installation diagrams.



Installation dimension of motor operating mechanism and wiring diagram.



Unit: mm

| Product | A | B | L | E | F | G |
|---------------|-----|----|------|-----|----|-----|
| HDM3E-125/250 | 126 | 35 | 90.5 | 140 | 12 | 77 |
| HDM3E-400/630 | 215 | 44 | 130 | 232 | 32 | 115 |
| HDM3E-800 | 243 | 70 | 130 | 260 | 31 | 115 |

Note

- 1,When the breaker with motor operating mechanism trips, motor operating mechanism must be switched off before being switched on.
- 2,The breaker can be remoted control by motor operating mechanism.Only qualified people can remove motor operating mechanism when operating on USB connection and dial switch.

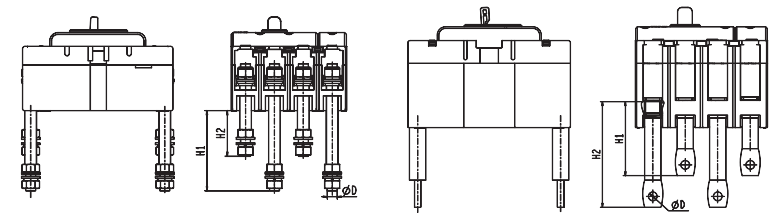
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Fixed rear connection(125A-800A MCCB)

Installation dimension of fixed rear connection



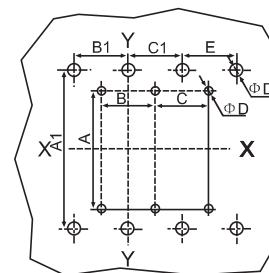
HDM3E-125/250

HDM3E-400/630/800

Unit: mm

| Product | H1 | H2 | ϕD |
|---------------|-----|-----|----------|
| HDM3E-125/250 | 102 | 72 | 10 |
| HDM3E-400/630 | 92 | 128 | 12.5 |
| HDM3E-800 | 129 | 129 | 13 |

Installation hole dimension of fixed rear connection



Note: X-X,Y-Y is the center of the three pole breaker

Unit: mm

| Product | Pole | A | B | C | ϕD | A1 | B1 | C1 | E | $\phi D1$ |
|---------------|------|-----|----|----|----------|-----|----|----|---|-----------|
| HDM3E-125/250 | 3 | 126 | 35 | - | 5.5 | 145 | 35 | 35 | - | 15 |
| | 4 | | | 35 | | | | | | |
| HDM3E-400/630 | 3 | 215 | 44 | - | 6.5 | 225 | 48 | 48 | - | 32 |
| | 4 | | | 48 | | | | | | |
| HDM3E-800 | 3 | 243 | 70 | - | 7.5 | 243 | 70 | 70 | - | 40 |
| | 4 | | | 70 | | | | | | |

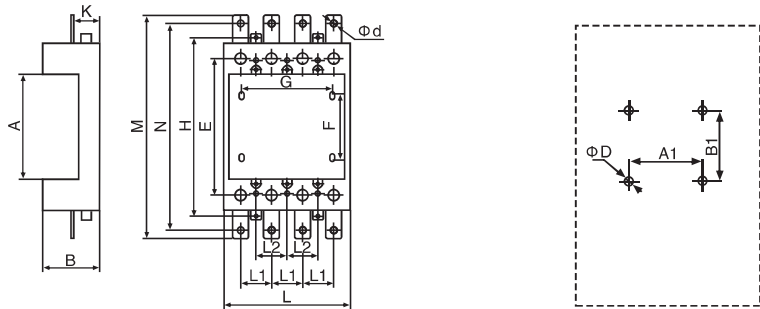
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Plug-in front connection(125A-250A MCCB)

Installation dimension and installation hole dimension of plug-in front connection



Installation dimension of plug-in connection

Installation hole dimension of plug-in connection

Unit: mm

| Product | Pole | A | B | E | F | G | H | L | L1 | L2 | M | N | K | Φd | A1 | B1 | ΦD |
|---------------|------|-------|------|-----|----|-----|-----|-----|----|----|-----|-----|------|-----|----|-----|----|
| HDM3E-125/250 | 3 | 108.5 | 73.2 | 144 | 74 | 70 | 191 | 105 | 35 | 35 | 243 | 223 | 37.5 | 8.5 | 35 | 150 | 5 |
| | 4 | | | | | 105 | | 140 | | | | | | | | | |

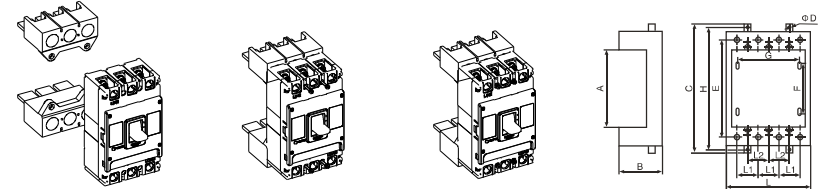
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Plug-in rear connection(125A-800A)

Installation dimension of plug-in rear connection



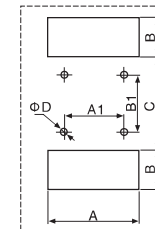
Installation diagram of plug-in rear connection accessory

Installation dimension of plug-in rear connection accessory

Unit: mm

| Product | Pole | A | B | C | D | E | F | G | H | L | L1 | L2 |
|---------------|------|-------|------|-----|----|-----|-----|-----|-----|-----|----|----|
| HDM3E-125/250 | 3 | 108.5 | 73.2 | 203 | M4 | 144 | 74 | 70 | 191 | 105 | 35 | 35 |
| | 4 | | | | | | | 105 | | 140 | | |
| HDM3E-400/630 | 3 | 170 | 60 | - | - | 225 | 130 | 60 | - | 152 | 48 | 44 |
| | 4 | | | | | | | 108 | | 200 | | |
| HDM3E-800 | 3 | 187 | 125 | 342 | M5 | 243 | 143 | 140 | 328 | 210 | 70 | 70 |
| | 4 | | | | | | | 210 | | 280 | | |

Installation hole dimension of plug-in rear connection accessory



Unit: mm

| Product | Pole | A | A1 | B | B1 | C | ΦD |
|---------------|------|-----|-----|----|-----|-----|-----|
| HDM3E-125/250 | 3 | 110 | 70 | 45 | 74 | 100 | 6.5 |
| | 4 | 145 | 105 | | | | |
| HDM3E-400/630 | 3 | 157 | 88 | 60 | 145 | 170 | 8.5 |
| | 4 | 205 | 132 | | | | |
| HDM3E-800 | 3 | 212 | 140 | 64 | 143 | 185 | 11 |
| | 4 | 282 | 210 | | | | |

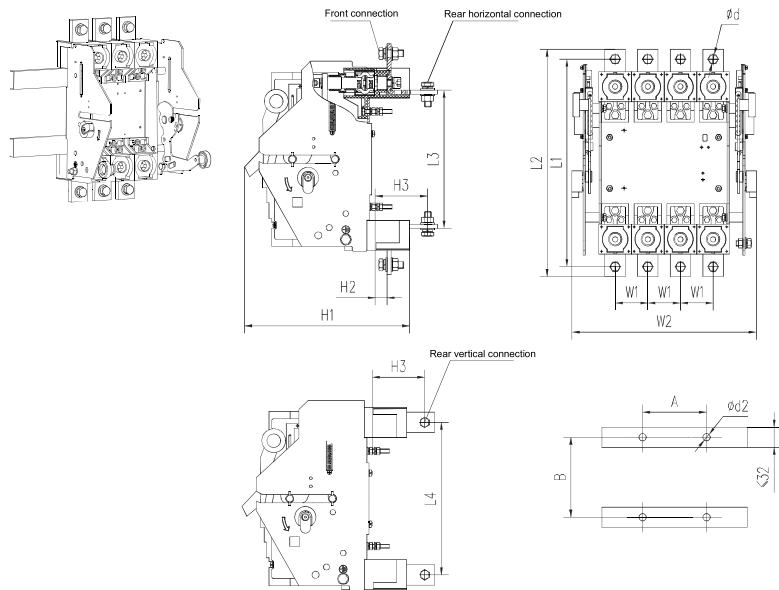
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Withdrawable connection(400~800 frame)

Installation dimension of withdrawable connection accessory



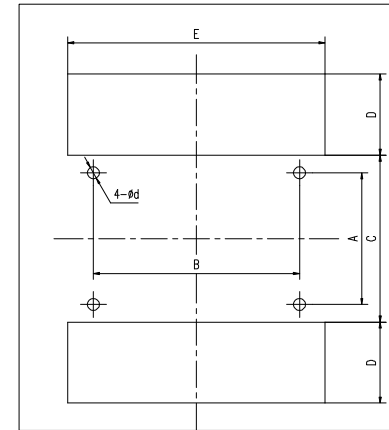
| Product | Pole | Appearance dimension | | | | | | | | | | Installation dimension | | |
|-----------|------|----------------------|-----|-----|-----|-----|------|----|----|-----|-----|------------------------|-----|-----|
| | | L1 | L2 | L3 | L4 | H1 | H2 | H3 | W1 | W2 | φd1 | A | B | φd2 |
| HDM3E-400 | 3P | 310 | 339 | 203 | 223 | 253 | 17.5 | 77 | 48 | 223 | φ11 | 96 | 140 | φ7 |
| | 4P | 310 | 339 | 203 | 223 | 253 | 17.5 | 77 | 48 | 271 | φ11 | 144 | 140 | φ7 |
| HDM3E-630 | 3P | 310 | 339 | 207 | 223 | 253 | 17.5 | 77 | 48 | 223 | φ11 | 96 | 140 | φ7 |
| | 4P | 310 | 339 | 207 | 223 | 253 | 17.5 | 77 | 48 | 271 | φ11 | 144 | 140 | φ7 |
| HDM3E-800 | 3P | 367 | 410 | 241 | 231 | 238 | -26 | 73 | 70 | 289 | φ13 | 140 | 131 | φ7 |
| | 4P | 367 | 410 | 241 | 231 | 238 | -26 | 73 | 70 | 359 | φ13 | 210 | 131 | φ7 |

HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Installation hole dimension of withdrawable connection



| Product | Opening hole on plate | | | | | | | d |
|-----------|-----------------------|-----|-----|-----|----|-----|-----|---|
| | A | B | | C | D | E | | |
| | | 3P | 4P | | | 3P | 4P | |
| HDM3E-400 | 140 | 96 | 144 | 178 | 47 | 147 | 195 | 7 |
| HDM3E-630 | 140 | 96 | 144 | 178 | 47 | 147 | 195 | 7 |
| HDM3E-800 | 131 | 140 | 210 | 170 | 77 | 213 | 283 | 7 |

Note 1. 630A HDM3E need to reduce capacity to 500A to use withdrawable connection.
2. If customer has no special requirement, withdrawable connection will not equip with electrical interlock

HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation
Standard:IEC/EN 60947-2



Accessories installation position(125A-800A MCCB)

□ Alarm contact ■ Auxiliary contact ● Shunt release ○ Undervoltage release



| Accessory code | Accessory name | Product type | | | | |
|----------------|--|--------------|-----------|-----------|-----------|-----------|
| Electronic | | HDM3E-125 | HDM3E-250 | HDM3E-400 | HDM3E-630 | HDM3E-800 |
| 308 | Alarm contact (can be installed on the right or left side, default left side) | □ □ □ | □ □ □ | □ □ □ | □ □ □ | □ □ □ |
| 310 | Shunt release (can be installed on the right or left side, default right side) | □ □ ● | □ □ ● | □ □ ● | □ □ ● | □ □ ● |
| 320 | Auxiliary contact (can be installed on the right or left side, default right side) | ■ □ □ | ■ □ □ | ■ □ □ | ■ □ □ | ■ □ □ |
| 330 | Undervoltage release | ○ □ □ | ○ □ □ | ○ □ □ | ○ □ □ | ○ □ □ |
| 340 | Shunt release + auxiliary contact | ■ □ ● | ■ □ ● | ■ □ ● | ■ □ ● | ■ □ ● |
| 350 | Shunt release+ undervoltage release | ○ □ ● | ○ □ ● | ○ □ ● | ○ □ ● | ○ □ ● |
| 360 | Two pieces of auxiliary contact (can be installed on the right or left side, default left side) | ■ ■ □ | ■ ■ □ | ■ ■ □ | ■ ■ □ | ■ ■ □ |
| 370 | Auxiliary contact+ undervoltage release | ○ □ ■ | ○ □ ■ | ○ □ ■ | ○ □ ■ | ○ □ ■ |
| 318 | Shunt release + alarm contact | □ □ ● | □ □ ● | □ □ ● | □ □ ● | □ □ ● |
| 328 | Auxiliary contact+alarm contact (can be installed on the right or left side, default left side) | □ ■ □ | □ ■ □ | □ ■ □ | □ ■ □ | □ ■ □ |
| 338 | Undervoltage release+ alarm contact | ○ □ □ | ○ □ □ | ○ □ □ | ○ □ □ | ○ □ □ |
| 348 | Shunt release+ auxiliary contact+ alarm contact | □ ■ ● | □ ■ ● | □ ■ ● | □ ■ ● | □ ■ ● |
| 368 | Two piece of auxiliary contact +alarm contact | □ ■ ■ | □ ■ ■ | □ ■ ■ | □ ■ ■ | □ ■ ■ |
| 378 | Auxiliary contact+undervoltage release+alarm contact | ○ □ ■ | ○ □ ■ | ○ □ ■ | ○ □ ■ | ○ □ ■ |

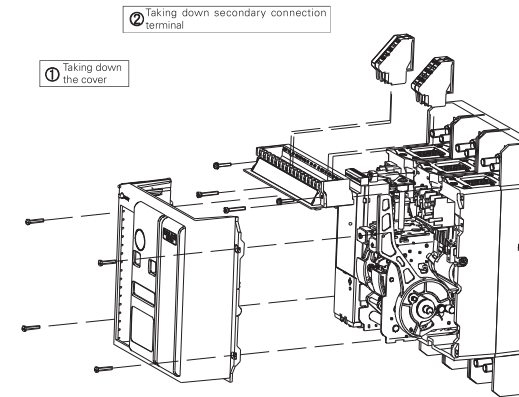
HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation(1600A)
Standard:IEC/EN 60947-2



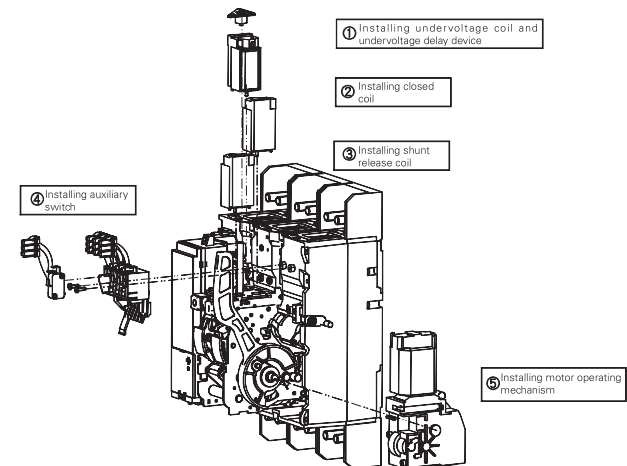
1600A Inside accessories

Taking down the cover and secondary connection terminal.



Danger:
Make sure power supply shut down
before installation

Installing coil,motor operating mechanism and auxiliary contact



HDM3E Molded Case Circuit Breaker(Electronic)

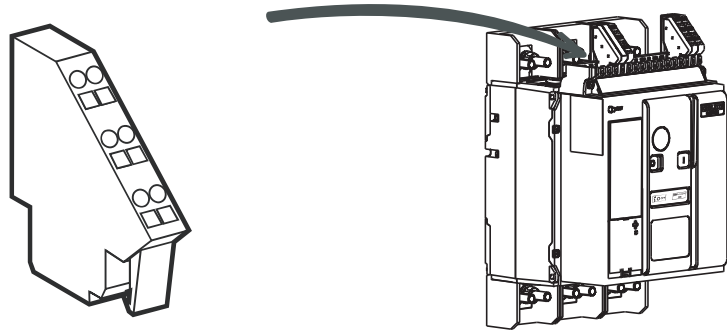
Accessory Installation(1600A)
Standard:IEC/EN 60947-2



1600A Secondary circuit connection

Fixing auxiliary terminal

Fixed type
Inserting auxiliary terminal into groove directly



Terminal layout

DC24V

| Res/SWT | UM | ZSI | Pow | SWT | Com | CT | MN | MX | XF | MCH | PF | OF4 | OF3 | OF2 | OF1 |
|--------------|-------|-------|-----|-----|-----|------------------|----|----|----|-----|------------------|-----|-----|-----|-----|
| | 22 | 13/17 | 1 | 5 | 10 | 25 | 27 | 29 | 31 | 35 | | 38 | 41 | 44 | 47 |
| | 23 | 16/19 | | 3 | 12 | | | | | 33 | | 36 | 39 | 42 | 45 |
| | 21/24 | 14/15 | 2 | 4 | 11 | 26 | 28 | 30 | 32 | 34 | | 37 | 40 | 43 | 46 |
| Control Unit | | | | | | Remote Operating | | | | | Auxiliary Switch | | | | |

- 1 Check terminal serial number
- 2 Inserting same serial number of connection port
- 3 Pow 1,2 is DC24V power supply port, make sure use with DC 24V from factory. Note:DC24V can be positive and negative connection, do not access directly to 230V power

HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation(1600A)
Standard:IEC/EN 60947-2



Wiring for auxiliary terminal

- mini S: 0.6mm²
- maxi S: 2.5mm²

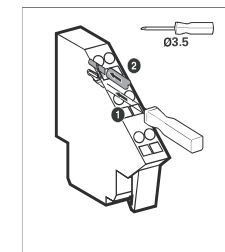


Sectional area of wire

Min 0.6mm²

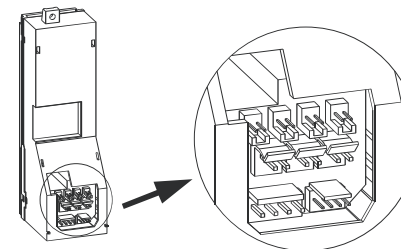
Max 2.5mm²

The stripper wire needs at least 8mm



- 1 Insert screwdriver into the box and press down
- 2 Meanwhile insert wire into circle
- 3 Release screwdriver, make sure wire connect with auxiliary terminal

Transform installation



connect the transform with control unit terminal
(match number in transform and control unit terminal)

HDM3E Molded Case Circuit Breaker(Electronic)

Accessory Installation(1600A)
Standard:IEC/EN 60947-2



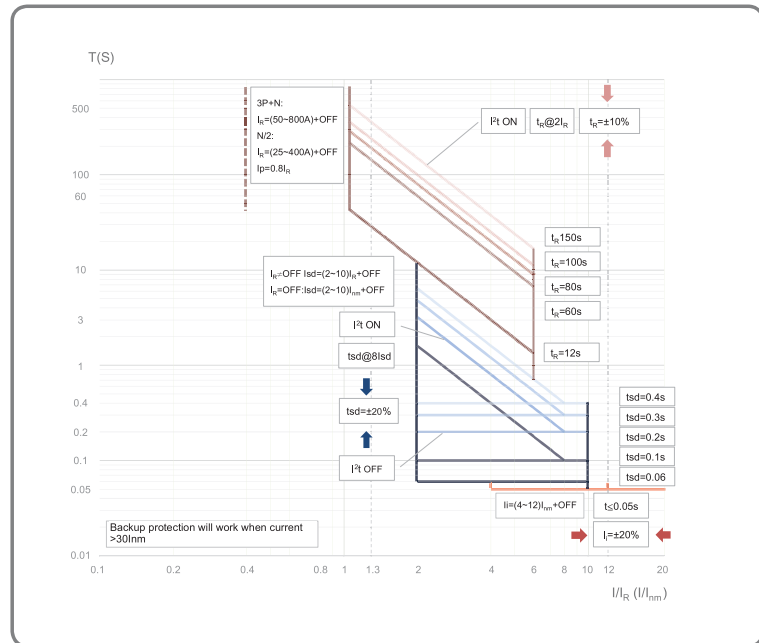
Temperature derating table

| Frame | +40°C | +50°C | +60°C | +70°C |
|-------|-------|-----------|-----------|-----------|
| 125A | - | - | Inm=80A | Inm=63A |
| 250A | - | - | Inm=200A | Inm=160A |
| 400A | - | - | Inm=315A | Inm=250A |
| 630A | - | - | Inm=500 A | Inm=400A |
| 800A | - | - | Inm=560A | Inm=500A |
| 1600A | - | Inm=1500A | Inm=1250A | Inm=1000A |

Note:Max I_n is smaller than Inm.

If the breaker is applied to the high temperature area,please refer the table above

HDM3E(125~800AF) Tripping curve



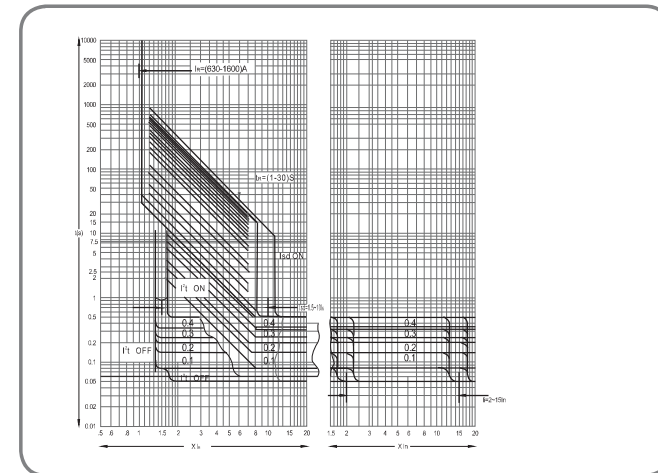
HDM3E Molded Case Circuit Breaker(Electronic)

Tripping curve(1600A)
Standard:IEC/EN 60947-2

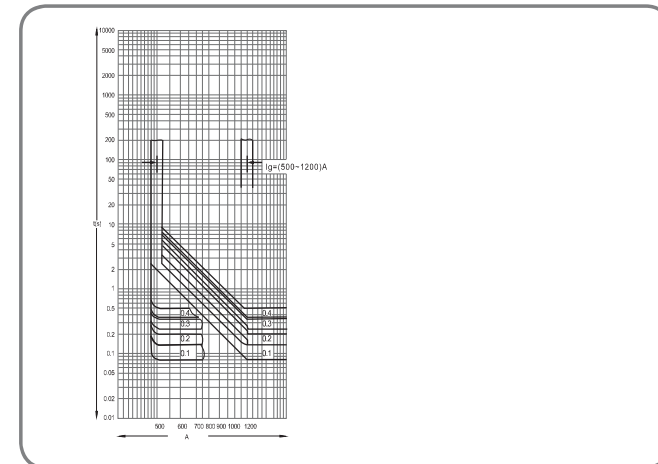


HDM3E-1600AF Tripping characteristic

Triple protection



Underground protection



HDM3E Molded Case Circuit Breaker(Electronic)

Standard product type
Standard:IEC/EN 60947-2



125A-800A MCCB

Standard products can be provided for 125-800A

Standard electronic, LSI triple protection.

- Each protection can be open and closed,can be set up for distribution or motor protection



1600A

2 standard product can be provided for 1600A

1.Standard electronic ,LSIG protection.

- Each protection can be open and closed except long time delay protection,can be set up for distribution or motor protection
- Control unit is 3E-1600,power supply module,alarm contact, auxiliary contact(2 NO 2 NC), interphase barriers

2.Four remote control and communication function,LSIG protection.

- Each protection can be open and closed except long time delay protection,can be set up for distribution or motor protection
- Equipped RS485, and support Modbus-RTU is communication protocol
- 1600 AF standard offer: power module(AC400V/DC24V); Auxiliary contact 2open2close; Alarm contact; 3E-T1600 controller; motor mechanism(including motor, shunt release, close coil),the voltage must be the same of the above accessory; signal transfer module; Interphase barriers



HDM3E Molded Case Circuit Breaker(Electronic)

Product reference
Standard:IEC/EN 60947-2



| Order reference | Product description |
|-------------------|--------------------------|
| HDM3E125M12533XX | HDM3E-125M 3 pole 125A |
| HDM3E250M25033XX | HDM3E-250M 3 pole 250A |
| HDM3E400M40033XX | HDM3E-400M 3 pole 400A |
| HDM3E630M63033XX | HDM3E-630M 3 pole 630A |
| HDM3E800M80033XX | HDM3E-800M 3 pole 800A |
| HDM3E16XM16X33XX | HDM3E-1600M 3 pole 1600A |
| HDM3E125M125C3XX | HDM3E-125M 4 pole 125A |
| HDM3E250M250C3XX | HDM3E-250M 4 pole 250A |
| HDM3E400M400C3XX | HDM3E-400M 4 pole 400A |
| HDHDM3E630M630D3X | HDM3E-630M 4 pole 630A |
| HDM3E800M800D3XX | HDM3E-800M 4 pole 800A |
| HDM3E16XM16XC3XX | HDM3E-1600M 4 pole 1600A |



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