

# BZMX series circuit breaker





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- **Aerospace solutions** that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- **Vehicle drivetrain and powertrain solutions** that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

Discover today's Eaton.



Molded Case Circuit Breaker  
BZMX

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|------------|---------------------------------------------------------|----|
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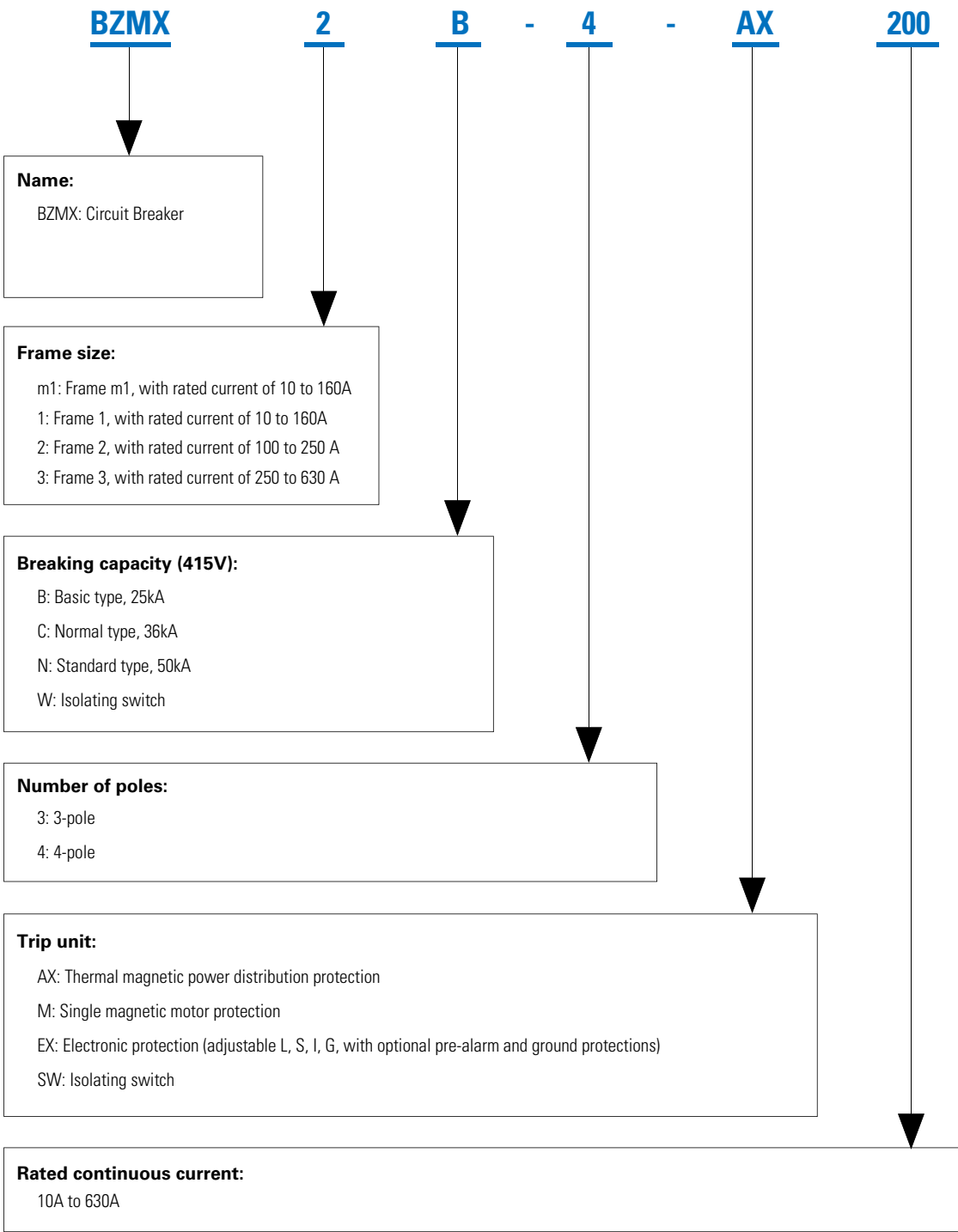
Molded Case Circuit Breaker  
BZMX2E

|            |                                                         |    |
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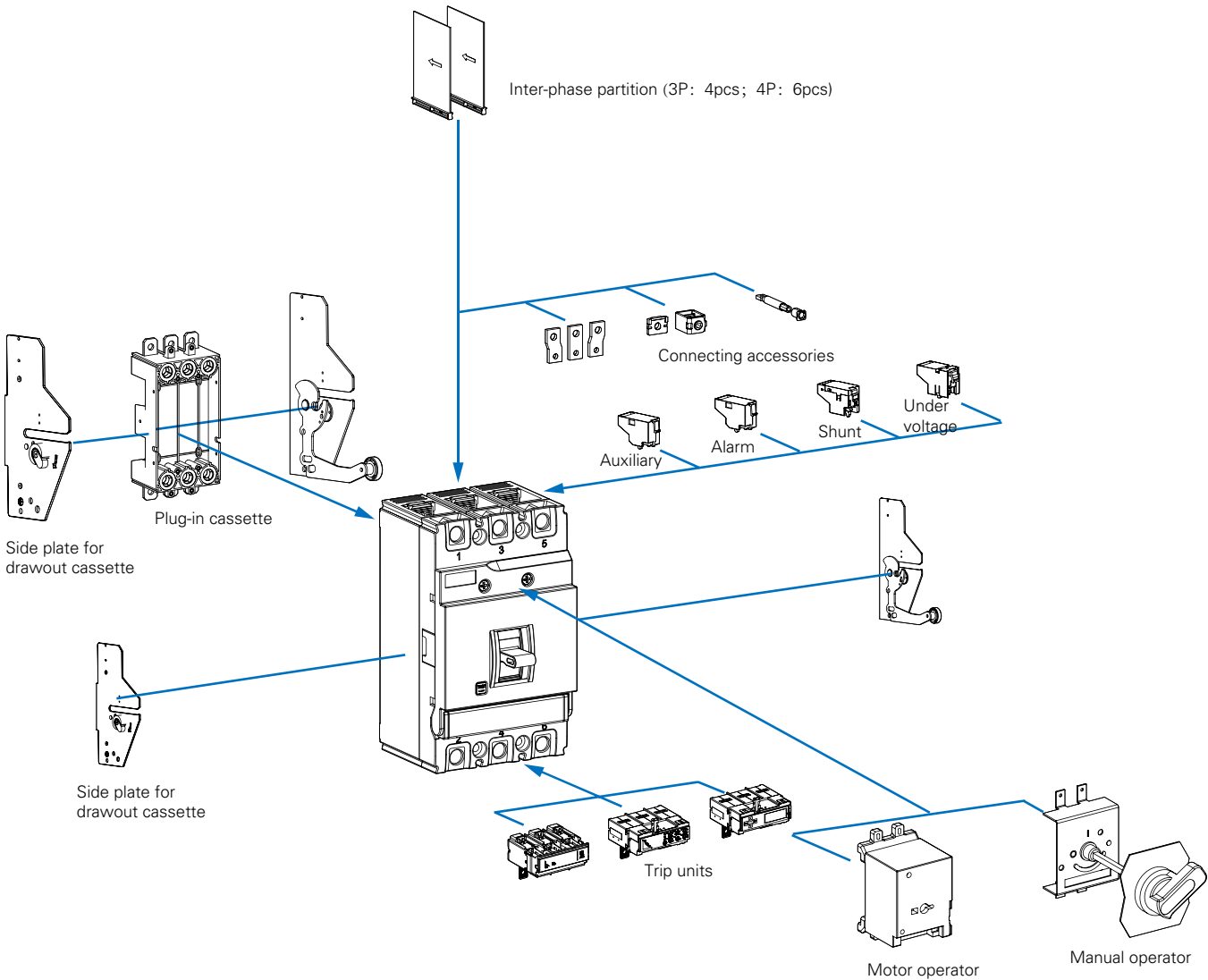
## Molded Case Circuit Breaker BZMX

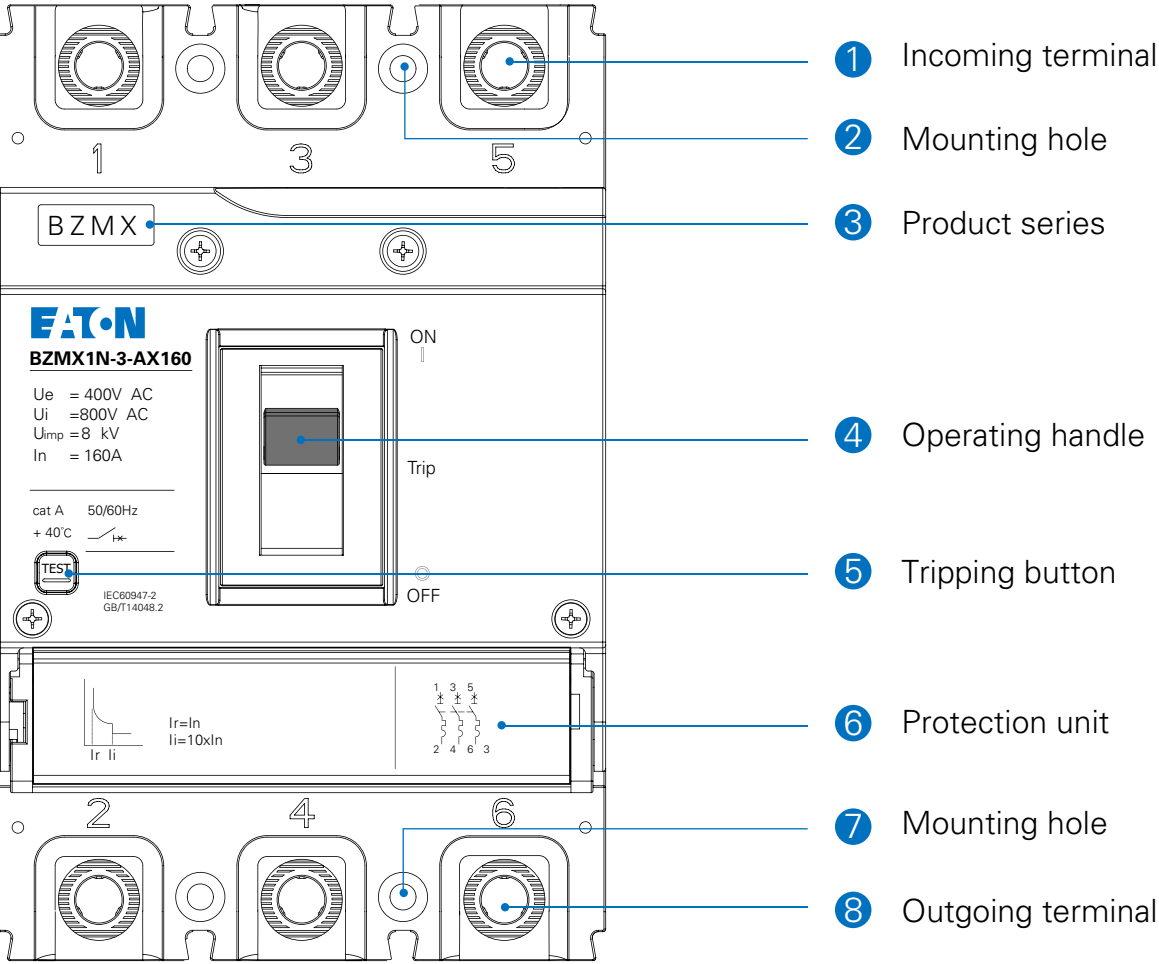
The BZMX series circuit breaker features high performance and multi-functions and is easy to use:

- Multiple protection functions: Power distribution protection and motor protection.
- Breaking capacity from 25kA to 50kA, and rated current range from 10A to 630A, meeting most application requirements
- The trip units offer electronic type with complex functions, and conventional thermal-magnetic type, to meet different needs.
- A variety of accessories are available, to satisfy different application needs by customers.
- Operating short-circuit breaking current Ics = ultimate shortcircuit breaking current Icu.



**Notes:**  
1. Either pre-alarming or ground protection can be selected as required; when without special agreement, pre-alarming is the default function for a 3-pole circuit breaker, with adjustable pre-alarm current  $I_p$ ; the ground protection is the default function for a 4-pole circuit breaker, with adjustable grounding protection current  $I_g$  and the pre-alarm current  $I_p$  equal to  $0.9I_r$ .  
2. The ground protection's action time  $t_g$  is not adjustable, with the default setting of 0.1s. If other setting time is required, please specify it upon ordering.



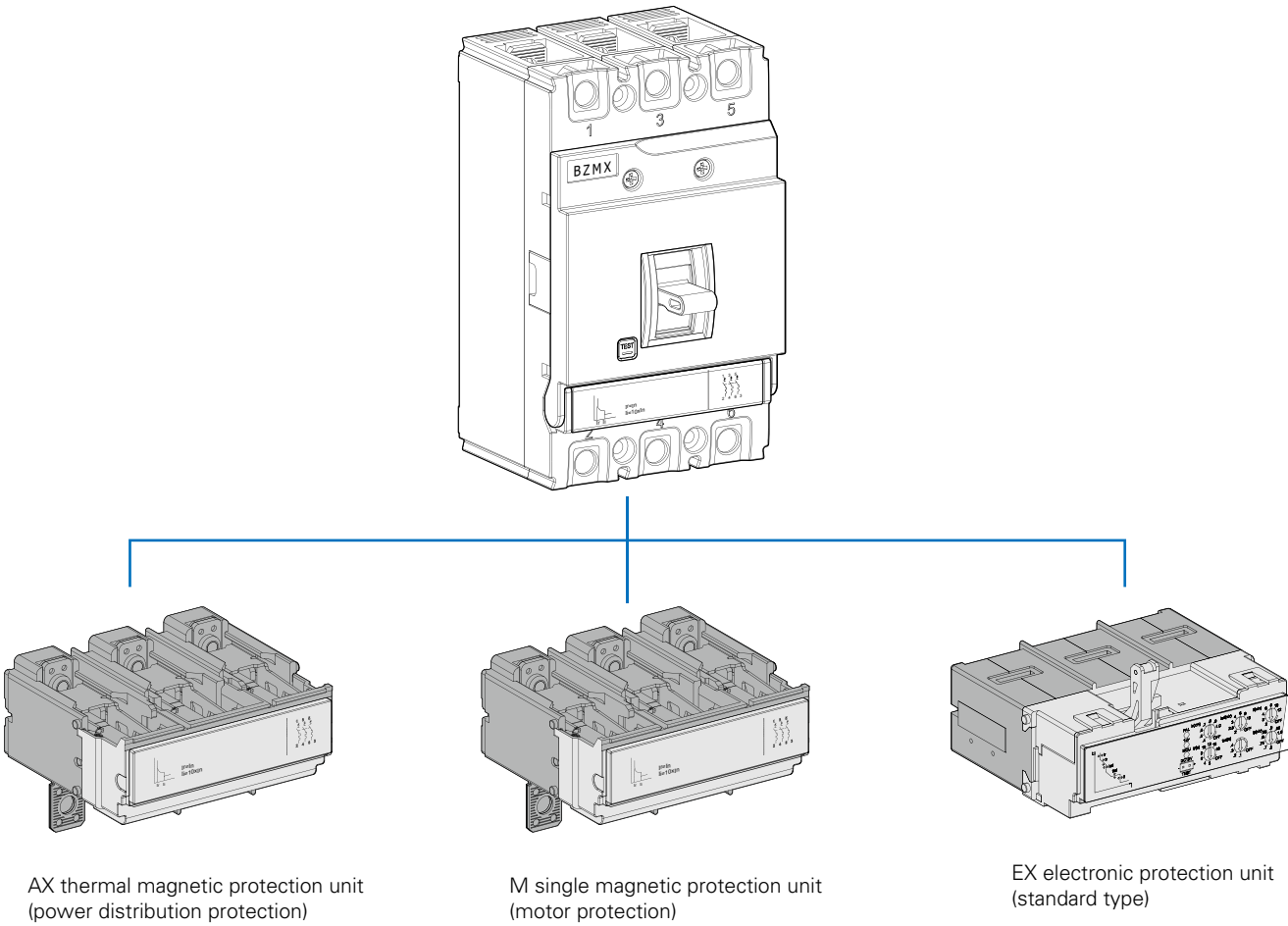


Protection unit overview

From the BZMX1 to BZMX3 circuit breakers, the standardized and modular design ensures maximum common use of accessories for thermal magnetic and electronic protection units.

Different protection units can be selected to different protection types.

- Protect the power distribution cables to the transformer;
- Suitable for overload and short circuit protection of motors;
- Offer lower thresholds, suitable for generator or long cable protection;
- Basic three-stage protection is available, offering measurement, alarm and communication functions.



BZMX series thermal magnetic molded case circuit breaker  
(AX for thermal magnetic, M for single magnetic)

| BZMXm1                                                                            |                      |                                       |             | BZMX1                                                                               |  |  |       |                                               |  |  |  |                   |  |  |  |
|-----------------------------------------------------------------------------------|----------------------|---------------------------------------|-------------|-------------------------------------------------------------------------------------|--|--|-------|-----------------------------------------------|--|--|--|-------------------|--|--|--|
|  |                      |                                       |             |  |  |  |       |                                               |  |  |  |                   |  |  |  |
| Number of poles                                                                   |                      |                                       |             | 3P/4P                                                                               |  |  |       | 3P/4P                                         |  |  |  |                   |  |  |  |
| Control                                                                           | Manual operator      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
|                                                                                   | Motor operator       |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
| Connection                                                                        | Front panel wiring   |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
|                                                                                   | Rear panel wiring    |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
|                                                                                   | Plug in type         |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
|                                                                                   | Drawout type         |                                       |             | —                                                                                   |  |  |       | —                                             |  |  |  |                   |  |  |  |
| Electrical performance in line with IEC 60947-2 and GB/T 14048.2                  |                      |                                       |             |                                                                                     |  |  |       |                                               |  |  |  |                   |  |  |  |
| Rated current of trip unit<br>In (A)                                              |                      |                                       |             | 10 16 20 25 32 40 50 63<br>80 100 125 140 160                                       |  |  |       | 10 16 20 25 32 40 50 63<br>80 100 125 140 160 |  |  |  |                   |  |  |  |
| Rated insulation voltage (V)                                                      |                      |                                       |             | Ui                                                                                  |  |  |       | AC690                                         |  |  |  | AC800             |  |  |  |
| Rated impulse voltage (kV)                                                        |                      |                                       |             | Uimp                                                                                |  |  |       | 8                                             |  |  |  | 8                 |  |  |  |
| Rated working voltage (V)                                                         |                      |                                       |             | Ue                                                                                  |  |  |       | AC400/AC415                                   |  |  |  | AC400/AC415/AC690 |  |  |  |
| Circuit breaker type                                                              |                      |                                       |             | B                                                                                   |  |  |       | C                                             |  |  |  | N                 |  |  |  |
| Rated ultimate short circuit breaking capacity (kA)                               | Icu                  | AC 50/60 Hz                           | 400 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 415 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 440 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 690 V       |                                                                                     |  |  |       |                                               |  |  |  | 10                |  |  |  |
| Rated operational short circuit breaking capacity (kA)                            | Ics                  | AC 50/60 Hz                           | 400 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 415 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 440 V       | 25                                                                                  |  |  |       | 36                                            |  |  |  | 50                |  |  |  |
|                                                                                   |                      |                                       | 690 V       |                                                                                     |  |  |       |                                               |  |  |  | 10                |  |  |  |
| Utilization category                                                              |                      |                                       |             | A                                                                                   |  |  |       | A                                             |  |  |  |                   |  |  |  |
| Number of operating cycles                                                        | Free maintenance     | Mechanical                            | 20000       |                                                                                     |  |  | 20000 |                                               |  |  |  |                   |  |  |  |
|                                                                                   |                      | Electrical                            | AC415V 8000 |                                                                                     |  |  | 8000  |                                               |  |  |  |                   |  |  |  |
|                                                                                   |                      | AC690V                                | —           |                                                                                     |  |  | 5000  |                                               |  |  |  |                   |  |  |  |
| Protection unit                                                                   |                      |                                       |             |                                                                                     |  |  |       |                                               |  |  |  |                   |  |  |  |
| Protection unit                                                                   |                      |                                       |             | Thermal magnetic                                                                    |  |  |       | Thermal magnetic                              |  |  |  |                   |  |  |  |
| Over load protection                                                              | Long delay           | I <sub>r</sub> (I <sub>n</sub> ×...)  | ■           |                                                                                     |  |  | ■     |                                               |  |  |  |                   |  |  |  |
| Short circuit protection                                                          | Short delay          | I <sub>sd</sub> (I <sub>r</sub> ×...) | —           |                                                                                     |  |  | —     |                                               |  |  |  |                   |  |  |  |
|                                                                                   | Instantaneous        | I <sub>i</sub> (I <sub>n</sub> ×...)  | ■           |                                                                                     |  |  | ■     |                                               |  |  |  |                   |  |  |  |
| Ground protection                                                                 |                      | I <sub>g</sub> (I <sub>n</sub> ×...)  | —           |                                                                                     |  |  | —     |                                               |  |  |  |                   |  |  |  |
| Indication and control accessories                                                |                      |                                       |             |                                                                                     |  |  |       |                                               |  |  |  |                   |  |  |  |
| Alarm switch                                                                      |                      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
| Auxiliary switch                                                                  |                      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
| Shunt release                                                                     |                      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
| Under-voltage release                                                             |                      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
| Mounting                                                                          |                      |                                       |             |                                                                                     |  |  |       |                                               |  |  |  |                   |  |  |  |
| Accessory                                                                         | Wiring terminal      |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |
|                                                                                   | Interphase partition |                                       |             | ■                                                                                   |  |  |       | ■                                             |  |  |  |                   |  |  |  |

- Notes:**
1. When selecting the thermal magnetic molded case circuit breaker, with the plug-in wiring method, the plug-in wiring must be derated to 140A for use with the BZMX1 frame with the rated current (In) of 160A. That is, the BZMX2 frame must be selected for the circuit breakers with the rated current (In) from 140A to 250A (250A included);
2. When selecting the thermal magnetic molded case circuit breaker, with the plug-in wiring method, the plug-in wiring must be derated to 570A for use with the BZMX3 frame with the rated current (In) of 630A;
3. When selecting the thermal magnetic molded case circuit breaker, with the drawout wiring method, the drawout wiring must be derated to 570A for use with the BZMX3 frame with the rated current (In) of 630A;

| BZMX2                                                                                 |     |     |     | BZMX3                                                                                 |     |     |     |     |     |     |
|---------------------------------------------------------------------------------------|-----|-----|-----|---------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|
|    |     |     |     |    |     |     |     |     |     |     |
| 3P/4P                                                                                 |     |     |     | 3P/4P                                                                                 |     |     |     |     |     |     |
|    |     |     |     |    |     |     |     |     |     |     |
|    |     |     |     |    |     |     |     |     |     |     |
|    |     |     |     |    |     |     |     |     |     |     |
|    |     |     |     |    |     |     |     |     |     |     |
|    |     |     |     |    |     |     |     |     |     |     |
| —                                                                                     |     |     |     |    |     |     |     |     |     |     |
| 100                                                                                   | 125 | 140 | 160 |                                                                                       | 250 | 315 | 350 | 400 | 500 | 630 |
| 180                                                                                   | 200 | 225 | 250 |                                                                                       |     |     |     |     |     |     |
| AC800                                                                                 |     |     |     | AC800                                                                                 |     |     |     |     |     |     |
| 8                                                                                     |     |     |     | 8                                                                                     |     |     |     |     |     |     |
| AC400/AC415/AC440/AC690                                                               |     |     |     | AC400/AC415/AC440/AC690                                                               |     |     |     |     |     |     |
| B                                                                                     | C   | N   |     | B                                                                                     | C   | N   |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
|                                                                                       |     | 10  |     |                                                                                       |     | 10  |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
| 25                                                                                    | 36  | 50  |     | 25                                                                                    | 36  | 50  |     |     |     |     |
|                                                                                       |     | 10  |     |                                                                                       |     | 10  |     |     |     |     |
| A                                                                                     |     |     |     | A                                                                                     |     |     |     |     |     |     |
| 20000                                                                                 |     |     |     | 15000                                                                                 |     |     |     |     |     |     |
| 10000                                                                                 |     |     |     | 8000                                                                                  |     |     |     |     |     |     |
| 3000                                                                                  |     |     |     | 2000                                                                                  |     |     |     |     |     |     |
| Thermal magnetic                                                                      |     |     |     | Thermal magnetic                                                                      |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
| —                                                                                     |     |     |     | —                                                                                     |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
| —                                                                                     |     |     |     | —                                                                                     |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |
|  |     |     |     |  |     |     |     |     |     |     |

BZMX series electronic molded case circuit breaker (EX for electronic type)

|                                                                  |                      |             |                                       | BZMX1                                                                             |  |  |  | BZMX2                                                                               |  |  |  |
|------------------------------------------------------------------|----------------------|-------------|---------------------------------------|-----------------------------------------------------------------------------------|--|--|--|-------------------------------------------------------------------------------------|--|--|--|
|                                                                  |                      |             |                                       |  |  |  |  |  |  |  |  |
| Number of poles                                                  |                      |             |                                       | 3P/4P                                                                             |  |  |  | 3P/4P                                                                               |  |  |  |
| Control                                                          | Manual operator      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Motor operator       |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Connection                                                       | Front panel wiring   |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Rear panel wiring    |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Plug in type         |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Drawout type         |             |                                       | —                                                                                 |  |  |  | —                                                                                   |  |  |  |
| Electrical performance in line with IEC 60947-2 and GB/T 14048.2 |                      |             |                                       |                                                                                   |  |  |  |                                                                                     |  |  |  |
| Rated current of trip unit In (A)                                |                      |             |                                       | 32 63 100 160                                                                     |  |  |  | 160 250                                                                             |  |  |  |
| Rated insulation volage (V)                                      |                      |             |                                       | Ui                                                                                |  |  |  | AC800                                                                               |  |  |  |
| Rated impulse voltage (kV)                                       |                      |             |                                       | Uimp                                                                              |  |  |  | 8                                                                                   |  |  |  |
| Rated working voltage (V)                                        |                      |             |                                       | Ue                                                                                |  |  |  | AC400/AC415/AC440/AC690                                                             |  |  |  |
| Circuit breaker type                                             |                      |             |                                       | C N                                                                               |  |  |  | C N                                                                                 |  |  |  |
| Rated ultimate short circuit breaking capacity (kA)              | Icu                  | AC 50/60 Hz | 400 V                                 | 36 50                                                                             |  |  |  | 36 50                                                                               |  |  |  |
|                                                                  |                      |             | 690 V                                 | 10                                                                                |  |  |  | 10                                                                                  |  |  |  |
| Rated operational short circuit breaking capacity (kA)           | Ics                  | AC 50/60 Hz | 400 V                                 | 36 50                                                                             |  |  |  | 36 50                                                                               |  |  |  |
|                                                                  |                      |             | 690 V                                 | 10                                                                                |  |  |  | 10                                                                                  |  |  |  |
| Utilization category                                             |                      |             |                                       | A                                                                                 |  |  |  | A                                                                                   |  |  |  |
| Number of operating cycles                                       | Free maintenance     | Mechanical  |                                       | 20000                                                                             |  |  |  | 20000                                                                               |  |  |  |
|                                                                  |                      | Electrical  | 415 V                                 | 8000                                                                              |  |  |  | 10000                                                                               |  |  |  |
|                                                                  |                      |             | 690 V                                 | 5000                                                                              |  |  |  | 3000                                                                                |  |  |  |
| Protection unit                                                  |                      |             |                                       |                                                                                   |  |  |  |                                                                                     |  |  |  |
| Protection unit                                                  |                      |             |                                       | Electronic                                                                        |  |  |  | Electronic                                                                          |  |  |  |
| Over load protection                                             | Long delay           |             | I <sub>r</sub> (I <sub>n</sub> ×...)  | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Short circuit protection                                         | Short delay          |             | I <sub>sd</sub> (I <sub>r</sub> ×...) | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Instantaneous        |             | I <sub>i</sub> (I <sub>n</sub> ×...)  | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Ground protection                                                |                      |             |                                       | I <sub>g</sub> (I <sub>n</sub> ×...)                                              |  |  |  | ■                                                                                   |  |  |  |
| Indication and control accessories                               |                      |             |                                       |                                                                                   |  |  |  |                                                                                     |  |  |  |
| Alarm switch                                                     |                      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Auxiliary switch                                                 |                      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Shunt release                                                    |                      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Under-voltage release                                            |                      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
| Mounting                                                         |                      |             |                                       |                                                                                   |  |  |  |                                                                                     |  |  |  |
| Accessory                                                        | Wiring terminal      |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |
|                                                                  | Interphase partition |             |                                       | ■                                                                                 |  |  |  | ■                                                                                   |  |  |  |

**Notes:**

1. When selecting the electronic molded case circuit breaker, with the plug-in wiring method, the plug-in wiring must be derated to 140A for use with the BZMX1 frame with the setting current (Ir) of 160A. That is, the BZMX2 frame must be selected for the circuit breakers with the setting current (Ir) from 140A to 250A (250A included);

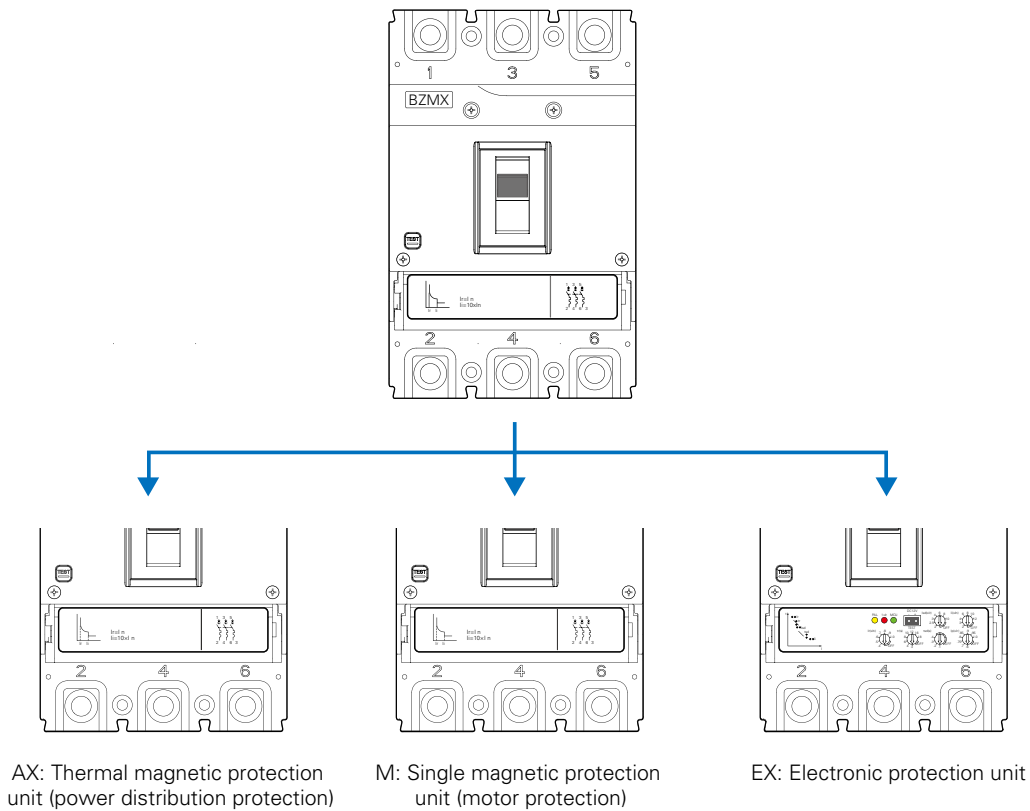
2. When selecting the electronic magnetic molded case circuit breaker, with the plug-in wiring method, the plug-in wiring must be derated to 570A for use with the BZMX3 frame with the setting current (Ir) of 630A;

3. When selecting the electronic magnetic molded case circuit breaker, with the drawout wiring method, the drawout wiring must be derated to 570A for use with the BZMX3 frame with the setting current (Ir) of 630A;

| BZMX3                                                                               |  |     |  |   |
|-------------------------------------------------------------------------------------|--|-----|--|---|
|  |  |     |  |   |
| 3P/4P                                                                               |  |     |  |   |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  |   |
| 400                                                                                 |  | 630 |  |   |
| AC800                                                                               |  |     |  |   |
| 8                                                                                   |  |     |  |   |
| AC400/AC690                                                                         |  |     |  |   |
| C                                                                                   |  | N   |  |   |
| 36                                                                                  |  | 50  |  |   |
|                                                                                     |  | 10  |  |   |
| 36                                                                                  |  | 50  |  |   |
|                                                                                     |  | 10  |  |   |
|                                                                                     |  |     |  |   |
| B                                                                                   |  |     |  |   |
| 15000                                                                               |  |     |  |   |
| 8000                                                                                |  |     |  |   |
| 2000                                                                                |  |     |  |   |
|                                                                                     |  |     |  |   |
| Electronic                                                                          |  |     |  |   |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |
|                                                                                     |  |     |  | ■ |

## BZMX series disconnected switches (SW)

Protection unit overview



AX: Thermal magnetic protection unit (power distribution protection)

Fixed thermal: Rated current from 10A to 630A  
Fixed magnetic: Tripping current from 100A to 6300A



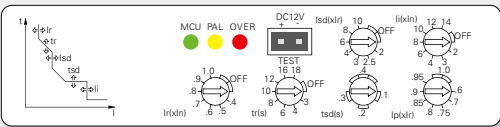
M: Single magnetic protection unit (motor protection)

Fixed magnetic: Tripping current from 120A to 7560A

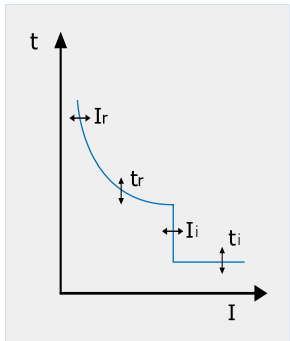


EX: Electronic protection unit (standard type)

- Adjustable rated current setting
- Adjustable short delay current setting
- Adjustable instantaneous current setting
- Adjustable pre-alarming setting



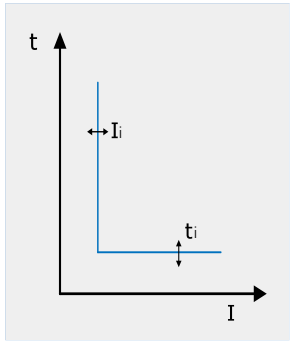
BZMX-AX/M protection unit



AX: Protection characteristic data table

| Rated current (A) | Inverse time action characteristics (ambient air temperature +40°C) |                                  |                                  |
|-------------------|---------------------------------------------------------------------|----------------------------------|----------------------------------|
|                   | No action time at 1.05In (cold state)                               | Action time at 1.3In (hot state) | Instantaneous action current (A) |
| In ≤ 63           | ≥ 1 h                                                               | < 1 h                            | 10 In ± 20%                      |
| 63 < In ≤ 630     | ≥ 2 h                                                               | < 2 h                            | 10 In ± 20%                      |

\*Note: Instantaneous action current is 500A±20% for 40A and below BZMX1 device.



M: Protection characteristic data table

| Rated current (A) | Inverse time action characteristics (ambient air temperature +40°C) | Instantaneous action current (A) |
|-------------------|---------------------------------------------------------------------|----------------------------------|
| In ≤ 630          | —                                                                   | 12 In ± 20%                      |

\*Note: Instantaneous action current is 500A±20% for 40A and below BZMX1 device.

Power loss

| Catalog No. of circuit breaker | Rated current (A) | Three-phase total power loss (W)  |                               |
|--------------------------------|-------------------|-----------------------------------|-------------------------------|
|                                |                   | Front panel and rear panel wiring | Plug-in and rear panel wiring |
| BZMX1                          | 160               | 20                                | 24                            |
| BZMX2                          | 250               | 35                                | 40                            |
| BZMX3                          | 630               | 43                                | 51                            |

Temperature derating factors

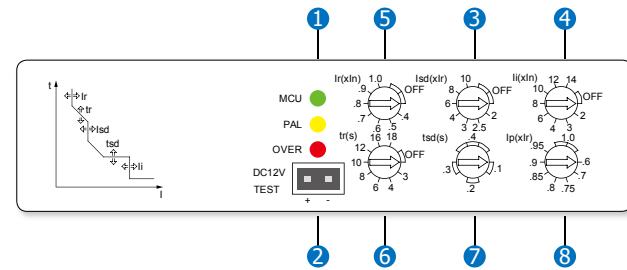
| Catalog No. of circuit breaker | +40°C  | +45°C  | +50°C  | +55°C  | +60°C   | +65°C   | +70°C   |
|--------------------------------|--------|--------|--------|--------|---------|---------|---------|
| BZMX1                          | 1.0 In | 1.0 In | 1.0 In | 1.0 In | 0.98 In | 0.95 In | 0.92 In |
| BZMX2                          | 1.0 In | 1.0 In | 1.0 In | 1.0 In | 0.98 In | 0.95 In | 0.92 In |
| BZMX3                          | 1.0 In | 1.0 In | 1.0 In | 1.0 In | 0.97 In | 0.94 In | 0.91 In |

High altitude derating factors

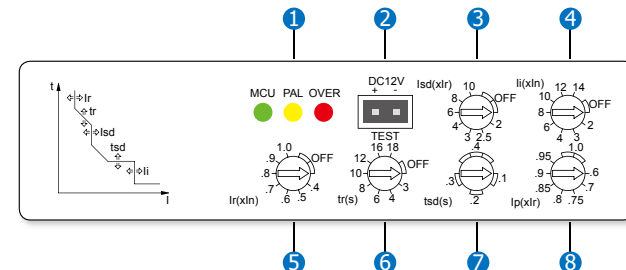
| Description                           | Data |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|
| Altitude (m)                          | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 |
| Power frequency withstand voltage (V) | 3000 | 3000 | 2500 | 2400 | 2200 | 2100 | 2000 |
| Insulation voltage (V)                | 1000 | 1000 | 900  | 850  | 800  | 720  | 700  |
| Maximum working voltage (V)           | 690  | 690  | 620  | 580  | 540  | 500  | 460  |
| Breaking capacity correction factor   | 1    | 1    | 0.9  | 0.82 | 0.78 | 0.75 | 0.7  |
| Working current correction factor     | 1    | 1    | 0.98 | 0.97 | 0.96 | 0.95 | 0.94 |

## BZMX-EX protection unit

## BZMX1-EX

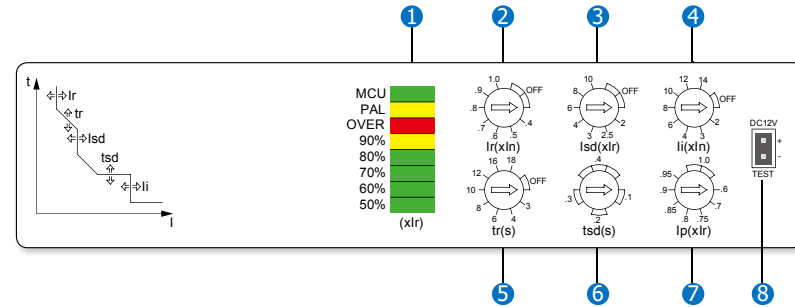


## BZMX2-EX



- 1 MCU: Operating indicator  
2 TSET port: Verify the reliability of the controller actions  
3 Short-circuit (short delay) current setting  $I_{sd}$   
4 Short-circuit (instantaneous) current setting  $I_i$   
5 Over load (long delay) current setting  $I_r$   
6 Over load (long delay) time setting  $t_r$   
7 Short-circuit (short delay) time setting  $t_{sd}$   
8 \*Pre-alarm current setting  $I_p$ /ground protection  $I_g$

## BZMX3-EX



- 1 OVER 90% 80% 70% 60% 50% PAL MCU  
2 Over load (long delay) current setting  $I_r$   
3 Short-circuit (short delay) current setting  $I_{sd}$   
4 Short-circuit (instantaneous) current setting  $I_i$   
5 Over load (long delay) time setting  $t_r$   
6 Short-circuit (short delay) time setting  $t_{sd}$   
7 \*Pre-alarm current setting  $I_p$ /ground protection  $I_g$   
8 TSET port: Verify the reliability of the controller actions

## Notes:

## MCU indicator

Green MCU operating indicator (always lit on when the current of the main circuit reaches the value for the controller to operate normally)

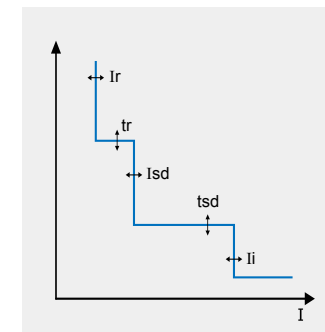
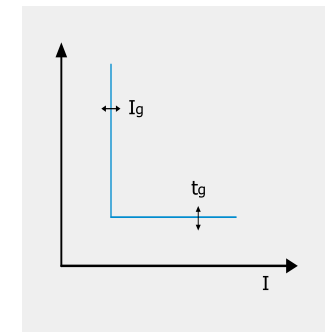
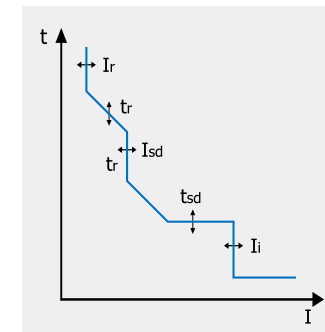
## Pre-alarm/fault indicator

Yellow pre-alarming/fault indicator (flashes when the actual current of the main circuit  $I$  is equal to or greater than  $I_p$ , and always lit on when  $I$  is equal to or greater than  $I_r$ )

## Overload indicator

Over (red, always lit on when  $I \geq I_r \times 115\%$ )  
70% (green, always lit on when  $I \geq I_r \times 70\%$ )  
90% (yellow, always lit on when  $I \geq I_r \times 105\%$ )  
80% (green, always lit on when  $I \geq I_r \times 80\%$ )  
60% (green, always lit on when  $I \geq I_r \times 60\%$ )  
50% (green, always lit on when  $I \geq I_r \times 50\%$ )

## BZMX-EX protection unit



## EX (standard type) protection characteristics

## Overload long delay

|                                |                              |                                                               |      |      |      |      |      |      |      |      |                  |
|--------------------------------|------------------------------|---------------------------------------------------------------|------|------|------|------|------|------|------|------|------------------|
| Action current set value $I_r$ | Current tolerance $\pm 10\%$ | $(0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0) \times I_n + \text{OFF}$ |      |      |      |      |      |      |      |      |                  |
| Action time $T_r$              | Current                      | Action time                                                   |      |      |      |      |      |      |      |      |                  |
|                                | $\leq 1.05I_r$               | No action within 2 hours                                      |      |      |      |      |      |      |      |      |                  |
| Tolerance $\pm 10\%$           | $> 1.3I_r$                   | Action within 1 hour                                          |      |      |      |      |      |      |      |      |                  |
|                                | Dial set value               | Set time $t_r$ (s)                                            | 3    | 4    | 6    | 8    | 10   | 12   | 16   | 18   | OFF              |
|                                | 1.5I <sub>r</sub>            | Action time $T_r$ (s)                                         | 48   | 64   | 96   | 128  | 160  | 192  | 256  | 288  | Alarm<br>No trip |
|                                | 2.0I <sub>r</sub>            | Action time $T_r$ (s)                                         | 27   | 36   | 54   | 72   | 90   | 108  | 144  | 162  |                  |
|                                | 6.0I <sub>r</sub>            | Action time $T_{rr}$ (s)                                      | 3    | 4    | 6    | 8    | 10   | 12   | 16   | 18   |                  |
|                                | 7.2I <sub>r</sub>            | Action time $T_r$ (s)                                         | 2.08 | 2.77 | 4.17 | 5.55 | 6.94 | 8.33 | 11.1 | 12.5 |                  |

## Short circuit short delay

|                                   |                              |                                                    |                       |  |            |            |                                     |            |  |  |  |
|-----------------------------------|------------------------------|----------------------------------------------------|-----------------------|--|------------|------------|-------------------------------------|------------|--|--|--|
| Action current set value $I_{sd}$ | Current tolerance $\pm 10\%$ | $(2, 2.5, 3, 4, 6, 8, 10) \times I_n + \text{OFF}$ |                       |  |            |            |                                     |            |  |  |  |
| Action time $T_{sd}$              | $I_{sd} \leq I < 1.5I_{sd}$  | Inverse time                                       |                       |  |            |            | $I^2 T_{sd} = (1.5I_{sd})^2 t_{sd}$ |            |  |  |  |
|                                   | $1.5I_{sd} \leq I < I_i$     | Fixed time                                         | Set time $t_{sd}$ (s) |  | 0.1        | 0.2        | 0.3                                 | 0.4        |  |  |  |
|                                   |                              |                                                    | Tolerance (s)         |  | $\pm 0.03$ | $\pm 0.04$ | $\pm 0.06$                          | $\pm 0.08$ |  |  |  |
|                                   |                              |                                                    | Return time (s)       |  | —          | 0.14       | 0.21                                | 0.28       |  |  |  |

## Short circuit instantaneous

|                                |                              |                                                |
|--------------------------------|------------------------------|------------------------------------------------|
| Action current set value $I_r$ | Current tolerance $\pm 15\%$ | (2、3、4、6、8、10、12、14) $\times I_n + \text{OFF}$ |
| Action characteristics         |                              | $< 0.2s$                                       |

## Ground protection

|                                |                                                                  |                                                          |            |            |            |  |
|--------------------------------|------------------------------------------------------------------|----------------------------------------------------------|------------|------------|------------|--|
| Action current set value $I_r$ | Current tolerance $\pm 10\%$                                     | ( 0.2、0.3、0.4、0.5、0.6、0.7、0.8、0.9、1 ) $I_n + \text{OFF}$ |            |            |            |  |
| Action characteristics         | No action when $I \leq 0.9I_g$ , and action when $I \geq 1.1I_g$ |                                                          |            |            |            |  |
| Action time $t_g$              | Set time(s)                                                      | 0.1                                                      | 0.2        | 0.3        | 0.4        |  |
|                                | Tolerance (s)                                                    | $\pm 0.03$                                               | $\pm 0.04$ | $\pm 0.06$ | $\pm 0.08$ |  |
|                                | Return time (s)                                                  | —                                                        | 0.14       | 0.21       | 0.28       |  |

## Overload pre-alarming

|                        |                                                          |  |  |  |  |  |  |  |  |  |  |
|------------------------|----------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|
| Setting current $I_p$  | $(0.6, 0.7, 0.75, 0.8, 0.85, 0.9, 0.95, 1.0) \times I_r$ |  |  |  |  |  |  |  |  |  |  |
| Action characteristics | Alarm when between $0.9I_p$ and $1.1I_p$                 |  |  |  |  |  |  |  |  |  |  |

## EX protection characteristics factory routine setting table

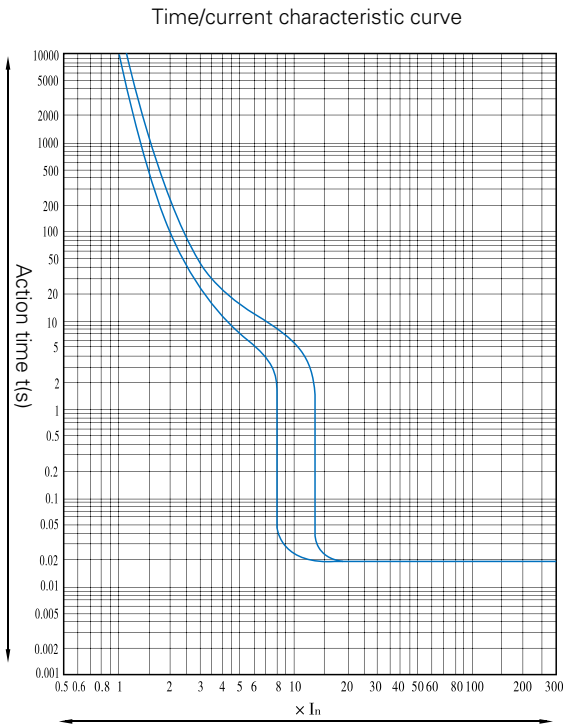
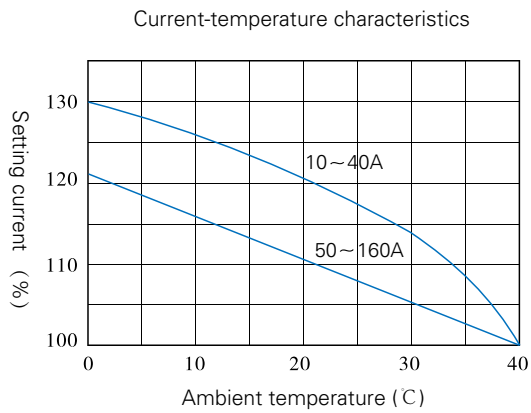
| Protection characteristics  | Note     |                  |  |  |  |  |  |  |  |  |
|-----------------------------|----------|------------------|--|--|--|--|--|--|--|--|
| Overload long delay         | $I_r$    | $1.0 \times I_n$ |  |  |  |  |  |  |  |  |
|                             | $t_r$    | 18s              |  |  |  |  |  |  |  |  |
| Short circuit short delay   | $I_{sd}$ | $6 \times I_r$   |  |  |  |  |  |  |  |  |
|                             | $t_{sd}$ | 0.1s             |  |  |  |  |  |  |  |  |
| Short circuit instantaneous | $I_i$    | $10 \times I_n$  |  |  |  |  |  |  |  |  |
| Ground protection           | $I_g$    | $0.6 \times I_n$ |  |  |  |  |  |  |  |  |
|                             | $t_g$    | 0.1s             |  |  |  |  |  |  |  |  |
| Pre-alarming                | $I_p$    | $0.9 \times I_r$ |  |  |  |  |  |  |  |  |

## Notes:

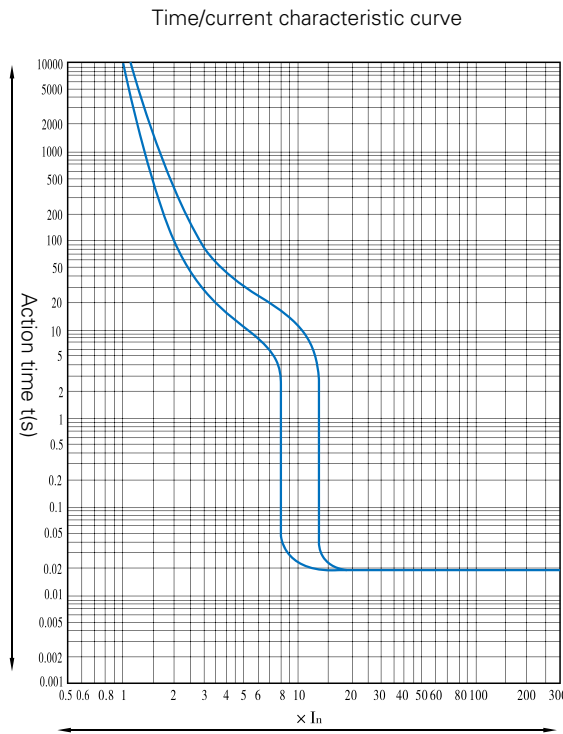
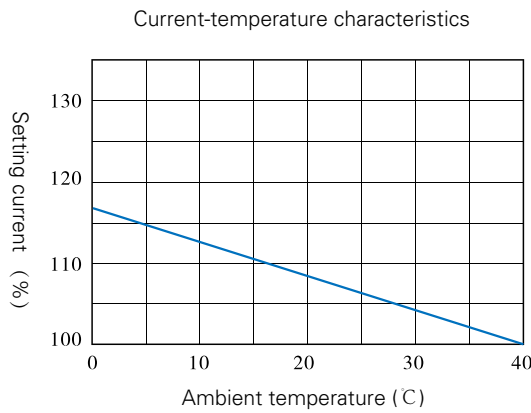
- Either pre-alarming or ground protection can be selected as required; when without special agreement, pre-alarming is the default function for a 3-pole circuit breaker, with adjustable pre-alarm current  $I_p$ ; the ground protection is the default function for a 4-pole circuit breaker, with adjustable grounding protection current  $I_g$  and the pre-alarm current  $I_p$  equal to  $0.9I_r$ .
- The ground protection's action time  $t_g$  is not adjustable, with the default setting of 0.1s. If other setting time is required, please specify it upon ordering.

BZMX protective action characteristic curve

BZMX1-AX (thermal magnetic)

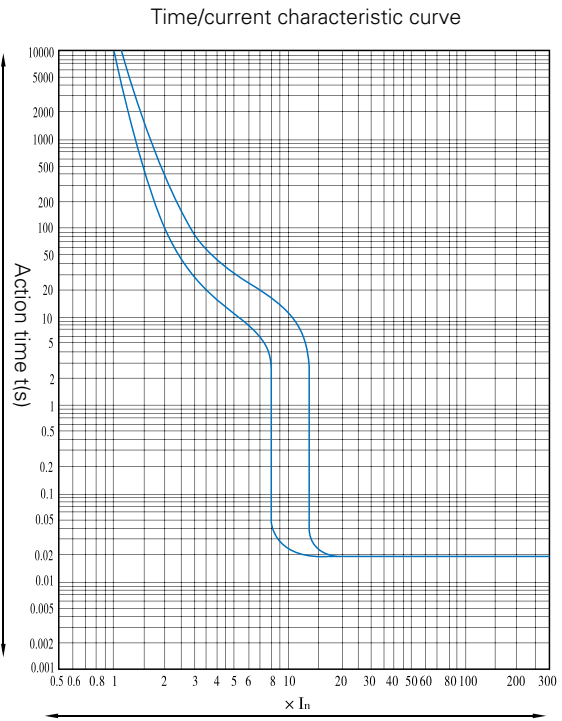
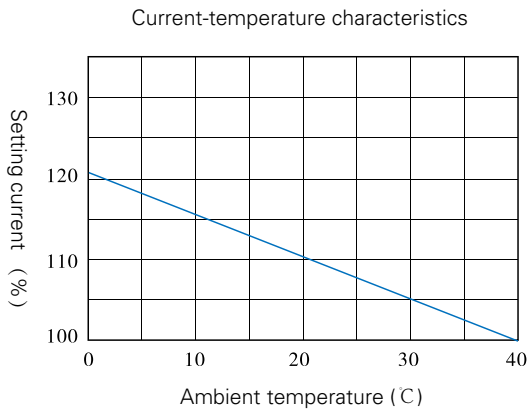


BZMX2-AX (thermal magnetic)

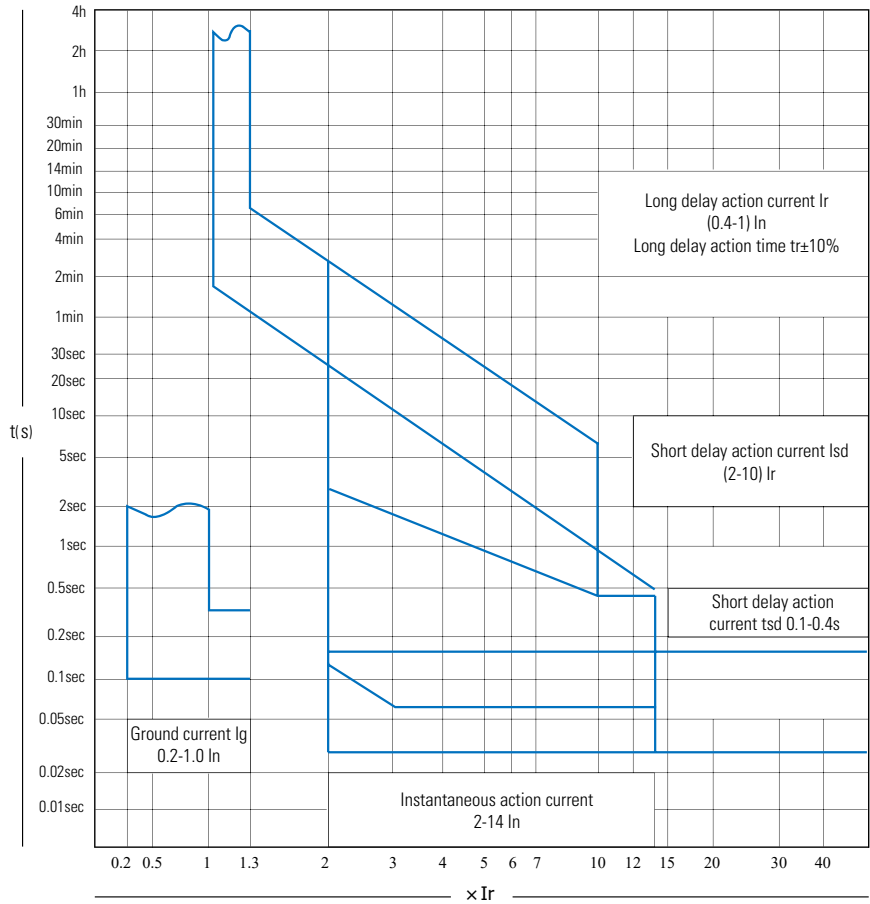


BZMX protective action characteristic curve

BZMX3-AX (thermal magnetic)



BZMX-EX (electronic type)

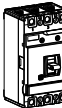




BZMX thermal magnetic power distribution protection

| Rated current =<br>Rated continuous<br>current<br>In=Iu<br>A | Basic breaking capacity<br>3P 25 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Basic breaking capacity<br>4P 25 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Normal breaking capacity<br>3P 36 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. |
|--------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 10                                                           | BZMXm1B-3-AX10<br>CCX00180                                                       | BZMXm1B-4-AX10<br>CCX00193                                                       | BZMX1C-3-AX10<br>CCX00292                                                         |
| 16                                                           | BZMXm1B-3-AX16<br>CCX00181                                                       | BZMXm1B-4-AX16<br>CCX00194                                                       | BZMX1C-3-AX16<br>CCX00293                                                         |
| 20                                                           | BZMXm1B-3-AX20<br>CCX00182                                                       | BZMXm1B-4-AX20<br>CCX00195                                                       | BZMX1C-3-AX20<br>CCX00294                                                         |
| 25                                                           | BZMXm1B-3-AX25<br>CCX00183                                                       | BZMXm1B-4-AX25<br>CCX00196                                                       | BZMX1C-3-AX25<br>CCX00295                                                         |
| 32                                                           | BZMXm1B-3-AX32<br>CCX00184                                                       | BZMXm1B-4-AX32<br>CCX00197                                                       | BZMX1C-3-AX32<br>CCX00296                                                         |
| 40                                                           | BZMXm1B-3-AX40<br>CCX00185                                                       | BZMXm1B-4-AX40<br>CCX00198                                                       | BZMX1C-3-AX40<br>CCX00297                                                         |
| 50                                                           | BZMXm1B-3-AX50<br>CCX00186                                                       | BZMXm1B-4-AX50<br>CCX00199                                                       | BZMX1C-3-AX50<br>CCX00298                                                         |
| 63                                                           | BZMXm1B-3-AX63<br>CCX00187                                                       | BZMXm1B-4-AX63<br>CCX00200                                                       | BZMX1C-3-AX63<br>CCX00299                                                         |
| 80                                                           | BZMXm1B-3-AX80<br>CCX00188                                                       | BZMXm1B-4-AX80<br>CCX00201                                                       | BZMX1C-3-AX80<br>CCX00300                                                         |
| 100                                                          | BZMXm1B-3-AX100<br>CCX00189                                                      | BZMXm1B-4-AX100<br>CCX00202                                                      | BZMX1C-3-AX100<br>CCX00301                                                        |
| 125                                                          | BZMXm1B-3-AX125<br>CCX00190                                                      | BZMXm1B-4-AX125<br>CCX00203                                                      | BZMX1C-3-AX125<br>CCX00302                                                        |
| 140                                                          | BZMXm1B-3-AX140<br>CCX00191                                                      | BZMXm1B-4-AX140<br>CCX00204                                                      | BZMX1C-3-AX140<br>CCX00303                                                        |
| 160                                                          | BZMXm1B-3-AX160<br>CCX00192                                                      | BZMXm1B-4-AX160<br>CCX00205                                                      | BZMX1C-3-AX160<br>CCX00304                                                        |
| 100                                                          | BZMX2B-3-AX100<br>CCX00080                                                       | BZMX2B-4-AX100<br>CCX00088                                                       | BZMX2C-3-AX100<br>CCX00112                                                        |
| 125                                                          | BZMX2B-3-AX125<br>CCX00081                                                       | BZMX2B-4-AX125<br>CCX00089                                                       | BZMX2C-3-AX125<br>CCX00113                                                        |
| 140                                                          | BZMX2B-3-AX140<br>CCX00082                                                       | BZMX2B-4-AX140<br>CCX00090                                                       | BZMX2C-3-AX140<br>CCX00114                                                        |
| 160                                                          | BZMX2B-3-AX160<br>CCX00083                                                       | BZMX2B-4-AX160<br>CCX00091                                                       | BZMX2C-3-AX160<br>CCX00115                                                        |
| 180                                                          | BZMX2B-3-AX180<br>CCX00084                                                       | BZMX2B-4-AX180<br>CCX00092                                                       | BZMX2C-3-AX180<br>CCX00116                                                        |
| 200                                                          | BZMX2B-3-AX200<br>CCX00085                                                       | BZMX2B-4-AX200<br>CCX00093                                                       | BZMX2C-3-AX200<br>CCX00117                                                        |
| 225                                                          | BZMX2B-3-AX225<br>CCX00086                                                       | BZMX2B-4-AX225<br>CCX00094                                                       | BZMX2C-3-AX225<br>CCX00118                                                        |
| 250                                                          | BZMX2B-3-AX250<br>CCX00087                                                       | BZMX2B-4-AX250<br>CCX00095                                                       | BZMX2C-3-AX250<br>CCX00119                                                        |
| 250                                                          | BZMX3B-3-AX250<br>CCX00001                                                       | BZMX3B-4-AX250<br>CCX00007                                                       | BZMX3C-3-AX250<br>CCX00025                                                        |
| 315                                                          | BZMX3B-3-AX315<br>CCX00002                                                       | BZMX3B-4-AX315<br>CCX00008                                                       | BZMX3C-3-AX315<br>CCX00026                                                        |
| 350                                                          | BZMX3B-3-AX350<br>CCX00003                                                       | BZMX3B-4-AX350<br>CCX00009                                                       | BZMX3C-3-AX350<br>CCX00027                                                        |
| 400                                                          | BZMX3B-3-AX400<br>CCX00004                                                       | BZMX3B-4-AX400<br>CCX00010                                                       | BZMX3C-3-AX400<br>CCX00028                                                        |
| 500                                                          | BZMX3B-3-AX500<br>CCX00005                                                       | BZMX3B-4-AX500<br>CCX00011                                                       | BZMX3C-3-AX500<br>CCX00029                                                        |
| 630                                                          | BZMX3B-3-AX630<br>CCX00006                                                       | BZMX3B-4-AX630<br>CCX00012                                                       | BZMX3C-3-AX630<br>CCX00030                                                        |

| Normal breaking capacity<br>4P 36 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard breaking capacity<br>3P 50 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard breaking capacity<br>4P 50 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard<br>package |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|
| BZMX1C-4-AX10<br>CCX00318                                                         | BZMX1N-3-AX10<br>CCX00240                                                           | BZMX1N-4-AX10<br>CCX00266                                                           | 1 unit              |
| BZMX1C-4-AX16<br>CCX00319                                                         | BZMX1N-3-AX16<br>CCX00241                                                           | BZMX1N-4-AX16<br>CCX00267                                                           | 1 unit              |
| BZMX1C-4-AX20<br>CCX00320                                                         | BZMX1N-3-AX20<br>CCX00242                                                           | BZMX1N-4-AX20<br>CCX00268                                                           | 1 unit              |
| BZMX1C-4-AX25<br>CCX00321                                                         | BZMX1N-3-AX25<br>CCX00243                                                           | BZMX1N-4-AX25<br>CCX00269                                                           | 1 unit              |
| BZMX1C-4-AX32<br>CCX00322                                                         | BZMX1N-3-AX32<br>CCX00244                                                           | BZMX1N-4-AX32<br>CCX00270                                                           | 1 unit              |
| BZMX1C-4-AX40<br>CCX00323                                                         | BZMX1N-3-AX40<br>CCX00245                                                           | BZMX1N-4-AX40<br>CCX00271                                                           | 1 unit              |
| BZMX1C-4-AX50<br>CCX00324                                                         | BZMX1N-3-AX50<br>CCX00246                                                           | BZMX1N-4-AX50<br>CCX00272                                                           | 1 unit              |
| BZMX1C-4-AX63<br>CCX00325                                                         | BZMX1N-3-AX63<br>CCX00247                                                           | BZMX1N-4-AX63<br>CCX00273                                                           | 1 unit              |
| BZMX1C-4-AX80<br>CCX00326                                                         | BZMX1N-3-AX80<br>CCX00248                                                           | BZMX1N-4-AX80<br>CCX00274                                                           | 1 unit              |
| BZMX1C-4-AX100<br>CCX00327                                                        | BZMX1N-3-AX100<br>CCX00249                                                          | BZMX1N-4-AX100<br>CCX00275                                                          | 1 unit              |
| BZMX1C-4-AX125<br>CCX00328                                                        | BZMX1N-3-AX125<br>CCX00250                                                          | BZMX1N-4-AX125<br>CCX00276                                                          | 1 unit              |
| BZMX1C-4-AX140<br>CCX00329                                                        | BZMX1N-3-AX140<br>CCX00251                                                          | BZMX1N-4-AX140<br>CCX00277                                                          | 1 unit              |
| BZMX1C-4-AX160<br>CCX00330                                                        | BZMX1N-3-AX160<br>CCX00252                                                          | BZMX1N-4-AX160<br>CCX00278                                                          | 1 unit              |
| BZMX2C-4-AX100<br>CCX00120                                                        | BZMX2N-3-AX100<br>CCX00144                                                          | BZMX2N-4-AX100<br>CCX00152                                                          | 1 unit              |
| BZMX2C-4-AX125<br>CCX00121                                                        | BZMX2N-3-AX125<br>CCX00145                                                          | BZMX2N-4-AX125<br>CCX00153                                                          | 1 unit              |
| BZMX2C-4-AX140<br>CCX00122                                                        | BZMX2N-3-AX140<br>CCX00146                                                          | BZMX2N-4-AX140<br>CCX00154                                                          | 1 unit              |
| BZMX2C-4-AX160<br>CCX00123                                                        | BZMX2N-3-AX160<br>CCX00147                                                          | BZMX2N-4-AX160<br>CCX00155                                                          | 1 unit              |
| BZMX2C-4-AX180<br>CCX00124                                                        | BZMX2N-3-AX180<br>CCX00148                                                          | BZMX2N-4-AX180<br>CCX00156                                                          | 1 unit              |
| BZMX2C-4-AX200<br>CCX00125                                                        | BZMX2N-3-AX200<br>CCX00149                                                          | BZMX2N-4-AX200<br>CCX00157                                                          | 1 unit              |
| BZMX2C-4-AX225<br>CCX00126                                                        | BZMX2N-3-AX225<br>CCX00150                                                          | BZMX2N-4-AX225<br>CCX00158                                                          | 1 unit              |
| BZMX2C-4-AX250<br>CCX00127                                                        | BZMX2N-3-AX250<br>CCX00151                                                          | BZMX2N-4-AX250<br>CCX00159                                                          | 1 unit              |
| BZMX3C-4-AX250<br>CCX00031                                                        | BZMX3N-3-AX250<br>CCX00049                                                          | BZMX3N-4-AX250<br>CCX00055                                                          | 1 unit              |
| BZMX3C-4-AX315<br>CCX00032                                                        | BZMX3N-3-AX315<br>CCX00050                                                          | BZMX3N-4-AX315<br>CCX00056                                                          | 1 unit              |
| BZMX3C-4-AX350<br>CCX00033                                                        | BZMX3N-3-AX350<br>CCX00051                                                          | BZMX3N-4-AX350<br>CCX00057                                                          | 1 unit              |
| BZMX3C-4-AX400<br>CCX00034                                                        | BZMX3N-3-AX400<br>CCX00052                                                          | BZMX3N-4-AX400<br>CCX00058                                                          | 1 unit              |
| BZMX3C-4-AX500<br>CCX00035                                                        | BZMX3N-3-AX500<br>CCX00053                                                          | BZMX3N-4-AX500<br>CCX00059                                                          | 1 unit              |
| BZMX3C-4-AX630<br>CCX00036                                                        | BZMX3N-3-AX630<br>CCX00054                                                          | BZMX3N-4-AX630<br>CCX00060                                                          | 1 unit              |

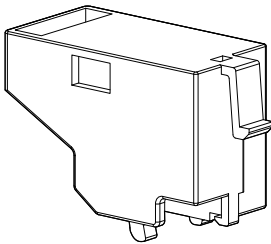


BZMX single-magnetic motor protection

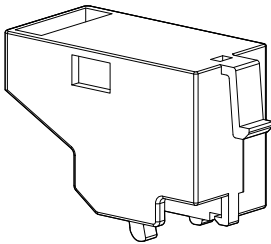
| Rated current =<br>Rated continuous<br>current<br>In=lu<br>A | Basic breaking capacity<br>3P 25 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Normal breaking capacity<br>3P 36 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard breaking capacity<br>3P 50 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. |
|--------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 10                                                           | BZMXm1B-3-M10<br>CCX00206                                                        | BZMX1C-3-M10<br>CCX00305                                                          | BZMX1N-3-M10<br>CCX00253                                                            |
| 16                                                           | BZMXm1B-3-M16<br>CCX00207                                                        | BZMX1C-3-M16<br>CCX00306                                                          | BZMX1N-3-M16<br>CCX00254                                                            |
| 20                                                           | BZMXm1B-3-M20<br>CCX00208                                                        | BZMX1C-3-M20<br>CCX00307                                                          | BZMX1N-3-M20<br>CCX00255                                                            |
| 25                                                           | BZMXm1B-3-M25<br>CCX00209                                                        | BZMX1C-3-M25<br>CCX00308                                                          | BZMX1N-3-M25<br>CCX00256                                                            |
| 32                                                           | BZMXm1B-3-M32<br>CCX00210                                                        | BZMX1C-3-M32<br>CCX00309                                                          | BZMX1N-3-M32<br>CCX00257                                                            |
| 40                                                           | BZMXm1B-3-M40<br>CCX00211                                                        | BZMX1C-3-M40<br>CCX00310                                                          | BZMX1N-3-M40<br>CCX00258                                                            |
| 50                                                           | BZMXm1B-3-M50<br>CCX00212                                                        | BZMX1C-3-M50<br>CCX00311                                                          | BZMX1N-3-M50<br>CCX00259                                                            |
| 63                                                           | BZMXm1B-3-M63<br>CCX00213                                                        | BZMX1C-3-M63<br>CCX00312                                                          | BZMX1N-3-M63<br>CCX00260                                                            |
| 80                                                           | BZMXm1B-3-M80<br>CCX00214                                                        | BZMX1C-3-M80<br>CCX00313                                                          | BZMX1N-3-M80<br>CCX00261                                                            |
| 100                                                          | BZMXm1B-3-M100<br>CCX00215                                                       | BZMX1C-3-M100<br>CCX00314                                                         | BZMX1N-3-M100<br>CCX00262                                                           |
| 125                                                          | BZMXm1B-3-M125<br>CCX00216                                                       | BZMX1C-3-M125<br>CCX00315                                                         | BZMX1N-3-M125<br>CCX00263                                                           |
| 140                                                          | BZMXm1B-3-M140<br>CCX00217                                                       | BZMX1C-3-M140<br>CCX00316                                                         | BZMX1N-3-M140<br>CCX00264                                                           |
| 160                                                          | BZMXm1B-3-M160<br>CCX00218                                                       | BZMX1C-3-M160<br>CCX00317                                                         | BZMX1N-3-M160<br>CCX00265                                                           |
| 100                                                          | BZMX2B-3-M100<br>CCX00096                                                        | BZMX2C-3-M100<br>CCX00128                                                         | BZMX2N-3-M100<br>CCX00160                                                           |
| 125                                                          | BZMX2B-3-M125<br>CCX00097                                                        | BZMX2C-3-M125<br>CCX00129                                                         | BZMX2N-3-M125<br>CCX00161                                                           |
| 140                                                          | BZMX2B-3-M140<br>CCX00098                                                        | BZMX2C-3-M140<br>CCX00130                                                         | BZMX2N-3-M140<br>CCX00162                                                           |
| 160                                                          | BZMX2B-3-M160<br>CCX00099                                                        | BZMX2C-3-M160<br>CCX00131                                                         | BZMX2N-3-M160<br>CCX00163                                                           |
| 180                                                          | BZMX2B-3-M180<br>CCX00100                                                        | BZMX2C-3-M180<br>CCX00132                                                         | BZMX2N-3-M180<br>CCX00164                                                           |
| 200                                                          | BZMX2B-3-M200<br>CCX00101                                                        | BZMX2C-3-M200<br>CCX00133                                                         | BZMX2N-3-M200<br>CCX00165                                                           |
| 225                                                          | BZMX2B-3-M225<br>CCX00102                                                        | BZMX2C-3-M225<br>CCX00134                                                         | BZMX2N-3-M225<br>CCX00166                                                           |
| 250                                                          | BZMX2B-3-M250<br>CCX00103                                                        | BZMX2C-3-M250<br>CCX00135                                                         | BZMX2N-3-M250<br>CCX00167                                                           |
| 250                                                          | BZMX3B-3-M250<br>CCX00013                                                        | BZMX3C-3-M250<br>CCX00037                                                         | BZMX3N-3-M250<br>CCX00061                                                           |
| 315                                                          | BZMX3B-3-M315<br>CCX00014                                                        | BZMX3C-3-M315<br>CCX00038                                                         | BZMX3N-3-M315<br>CCX00062                                                           |
| 350                                                          | BZMX3B-3-M350<br>CCX00015                                                        | BZMX3C-3-M350<br>CCX00039                                                         | BZMX3N-3-M350<br>CCX00063                                                           |
| 400                                                          | BZMX3B-3-M400<br>CCX00016                                                        | BZMX3C-3-M400<br>CCX00040                                                         | BZMX3N-3-M400<br>CCX00064                                                           |
| 500                                                          | BZMX3B-3-M500<br>CCX00017                                                        | BZMX3C-3-M500<br>CCX00041                                                         | BZMX3N-3-M500<br>CCX00065                                                           |
| 630                                                          | BZMX3B-3-M630<br>CCX00018                                                        | BZMX3C-3-M630<br>CCX00042                                                         | BZMX3N-3-M630<br>CCX00066                                                           |

BZMX Isolating switch

| 3P<br>Catalog No.<br>Part No. | 4P<br>Catalog No.<br>Part No. | Normal breaking<br>capacity 3P 36 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Normal breaking<br>capacity 4P 36 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard breaking<br>capacity 3P 50 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard breaking<br>capacity 4P 50 kA<br>415 V 50/60 Hz<br>Catalog No.<br>Part No. | Standard<br>package |
|-------------------------------|-------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               | BZMX1C-3-EX32<br>CCX00350                                                         | BZMX1C-4-EX32<br>CCX00354                                                         | BZMX1N-3-EX32<br>CCX00364                                                           | BZMX1N-4-EX32<br>CCX00368                                                           | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX1W-3-SW63<br>CCX00390     | BZMX1W-4-SW63<br>CCX00391     | BZMX1C-3-EX63<br>CCX00351                                                         | BZMX1C-4-EX63<br>CCX00355                                                         | BZMX1N-3-EX63<br>CCX00365                                                           | BZMX1N-4-EX63<br>CCX00369                                                           | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX1W-3-SW100<br>CCX00392    | BZMX1W-4-SW100<br>CCX00393    | BZMX1C-3-EX100<br>CCX00352                                                        | BZMX1C-4-EX100<br>CCX00356                                                        | BZMX1N-3-EX100<br>CCX00366                                                          | BZMX1N-4-EX100<br>CCX00370                                                          | 1 unit              |
| BZMX1W-3-SW125<br>CCX00394    | BZMX1W-4-SW125<br>CCX00395    |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX1W-3-SW160<br>CCX00396    | BZMX1W-4-SW160<br>CCX00397    | BZMX1C-3-EX160<br>CCX00353                                                        | BZMX1C-4-EX160<br>CCX00357                                                        | BZMX1N-3-EX160<br>CCX00367                                                          | BZMX1N-4-EX160<br>CCX00371                                                          | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX2W-3-SW160<br>CCX00383    | BZMX2W-4-SW160<br>CCX00386    | BZMX2C-3-EX160<br>CCX00378                                                        | BZMX2C-4-EX160<br>CCX00379                                                        | BZMX2N-3-EX160<br>CCX00380                                                          | BZMX2N-4-EX160<br>CCX00381                                                          | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX2W-3-SW200<br>CCX00388    | BZMX2W-4-SW200<br>CCX00389    |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
| BZMX2W-3-SW250<br>CCX00384    | BZMX2W-4-SW250<br>CCX00387    | BZMX2C-3-EX250<br>CCX00358                                                        | BZMX2C-4-EX250<br>CCX00359                                                        | BZMX2N-3-EX250<br>CCX00372                                                          | BZMX2N-4-EX250<br>CCX00373                                                          | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               | BZMX3C-3-EX400<br>CCX00360                                                        | BZMX3C-4-EX400<br>CCX00362                                                        | BZMX3N-3-EX400<br>CCX00374                                                          | BZMX3N-4-EX400<br>CCX00376                                                          | 1 unit              |
|                               |                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1 unit              |
|                               |                               | BZMX3C-3-EX630<br>CCX00361                                                        | BZMX3C-4-EX630<br>CCX00363                                                        | BZMX3N-3-EX630<br>CCX00375                                                          | BZMX3N-4-EX630<br>CCX00377                                                          | 1 unit              |



BZMX auxiliary contact



BZMX alarm contact

Auxiliary contact (BZMX/Z)

| Circuit breaker status                                    | Auxiliary switch status                   |
|-----------------------------------------------------------|-------------------------------------------|
| The position when the circuit breaker is in "Open" status | F14 ( F24 )<br>F12 ( F22 )<br>F11 ( F21 ) |
| Position when the circuit breaker is in "Closed" status   | F14 ( F24 )<br>F12 ( F22 )<br>F11 ( F21 ) |

Alarm contact (BZMX/ZA)

| Circuit breaker status                                               | Alarm switch status |
|----------------------------------------------------------------------|---------------------|
| The position when the circuit breaker is in "Open" / "Closed" status | B14<br>B12<br>B11   |
| The position when the circuit breaker is in "Tripped" status         | B14<br>B12<br>B11   |

Rated working current of alarm contact and auxiliary contact

| Category          | Rated current I <sub>nm</sub> | Conventional thermal current I <sub>th</sub> (A) | Rated working current I <sub>e</sub> (A) |        |
|-------------------|-------------------------------|--------------------------------------------------|------------------------------------------|--------|
|                   |                               |                                                  | AC400V                                   | DC220V |
| Auxiliary contact | ≤250                          | 3                                                | 0.3                                      | 0.15   |
|                   | 400 ≤ I <sub>nm</sub> ≤ 1000  | 3                                                | 0.4                                      | 0.2    |
| Alarm contact     | 10 ≤ I <sub>nm</sub> ≤ 1000   | -                                                | AC220V/1.0A                              | 0.15   |

Making and breaking capacity of alarm contact and auxiliary contact under normal conditions

| Utilization category | Making (ON)      |                  |       |                    | Breaking (OFF)   |                  |       |                    | Number of cycles | Number of cycles per minute | Energized time |
|----------------------|------------------|------------------|-------|--------------------|------------------|------------------|-------|--------------------|------------------|-----------------------------|----------------|
|                      | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  |                  |                             |                |
| AC-14                | 10               | 1                | 0.7   | -                  | 1                | 1                | 0.7   | -                  | 6050             | 6                           | ≥ 0.05s        |
| DC-13                | 1                | 1                | -     | 6 × P <sub>e</sub> | 1                | 1                | -     | 6 × P <sub>e</sub> |                  |                             | ≥ 0.05s        |

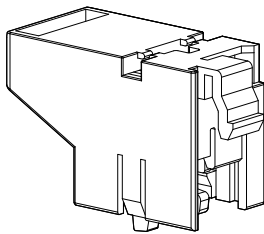
Making and breaking capacity of alarm contact and auxiliary contact under abnormal conditions

| Utilization category | Making (ON)      |                  |       |                    | Breaking (OFF)   |                  |       |                    | Number of cycles | Number of cycles per minute | Energized time |
|----------------------|------------------|------------------|-------|--------------------|------------------|------------------|-------|--------------------|------------------|-----------------------------|----------------|
|                      | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  |                  |                             |                |
| AC-14                | 6                | 1                | 0.7   | -                  | 1                | 1                | 0.7   | -                  |                  |                             | ≥ 0.05s        |
| DC-13                | 1.1              | 1.1              | -     | 6 × P <sub>e</sub> | 1.1              | 1.1              | -     | 6 × P <sub>e</sub> | 10               | 6                           | ≥ 0.05s        |

- Notes:
- ① T0.95=6Pe is an empirical formula, where Pe is in "watts" and T0.95 is in milliseconds;
  - ② When the total number of operating performance of the circuit breaker is less than 6050, the number of energized operating performance of the auxiliary contact can be the same as the total number of operating performance of the circuit breaker;
  - ③ The operating frequency and energized time are allowed to be consistent with the main circuit of the circuit breaker;
  - ④ If T0.95 is greater than 0.05s, the energized time is at least T0.95°

Auxiliary contact/alarm contact

| Accessory name                      | Frame  | Catalogue No. | Ordering No. | Note                                                                                  |
|-------------------------------------|--------|---------------|--------------|---------------------------------------------------------------------------------------|
| Auxiliary contact/<br>alarm contact | BZMXm1 | BZMXm1/Z L    | CCX09001     | L: Left mounting<br>R: Right mounting<br>Blank: Both left and right mounting are fine |
|                                     |        | BZMXm1/Z R    | CCX09002     |                                                                                       |
|                                     |        | BZMXm1/2Z L   | CCX09003     |                                                                                       |
|                                     |        | BZMXm1/2Z R   | CCX09004     |                                                                                       |
|                                     |        | BZMXm1/ZA L   | CCX09005     |                                                                                       |
|                                     |        | BZMXm1/ZA R   | CCX09006     |                                                                                       |
|                                     |        | BZMXm1/Z+ZA L | CCX09007     |                                                                                       |
|                                     |        | BZMXm1/Z+ZA R | CCX09008     |                                                                                       |
|                                     | BZMX1  | BZMX1/Z       | CCX09009     |                                                                                       |
|                                     |        | BZMX1/2Z      | CCX09010     |                                                                                       |
|                                     |        | BZMX1/ZA      | CCX09011     |                                                                                       |
|                                     |        | BZMX1/Z+ZA    | CCX09012     |                                                                                       |
|                                     | BZMX2  | BZMX2/Z L     | CCX09013     |                                                                                       |
|                                     |        | BZMX2/Z R     | CCX09014     |                                                                                       |
|                                     |        | BZMX2/2Z L    | CCX09015     |                                                                                       |
|                                     |        | BZMX2/2Z R    | CCX09016     |                                                                                       |
|                                     |        | BZMX2/ZA L    | CCX09017     |                                                                                       |
|                                     |        | BZMX2/ZA R    | CCX09018     |                                                                                       |
|                                     |        | BZMX2/Z+ZA L  | CCX09019     |                                                                                       |
|                                     |        | BZMX2/Z+ZA R  | CCX09020     |                                                                                       |
|                                     | BZMX3  | BZMX3/Z       | CCX09021     |                                                                                       |
|                                     |        | BZMX3/ZA      | CCX09022     |                                                                                       |
|                                     |        | BZMX3/Z+ZA    | CCX09023     |                                                                                       |
|                                     |        |               |              |                                                                                       |

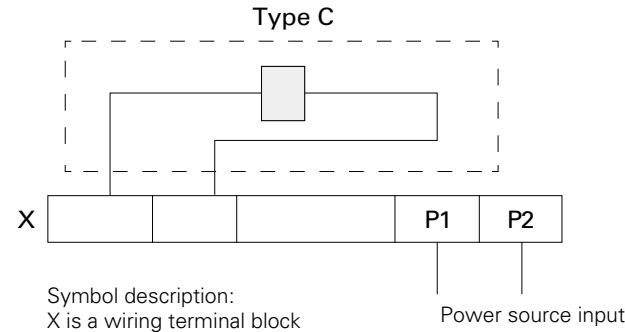


BZMX/UVT under-voltage release

Under-voltage release (BZMX/UVT)

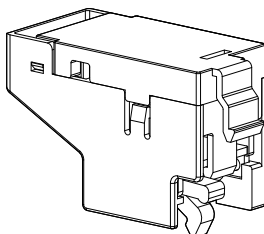
|                         |                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated operating voltage | AC400V AC230V                                                                                                                                                                                                                                                                                                                                                                               |
| Action characteristics  | The under-voltage release shall reliably trip the circuit breaker when between 35% and 70% of the rated operating voltage;<br>The under-voltage release shall enable the circuit breaker to close when between 85% and 110% of the rated operating voltage;<br>The under-voltage release shall prevent the circuit breaker from being closed when below 35% of the rated operating voltage. |

External module wiring diagram of the under-voltage release (the circuit breaker's internal accessories are within the dotted rectangle)



Under-voltage release

| Accessory name        | Frame  | Catalogue No.   | Ordering No. | Note           |
|-----------------------|--------|-----------------|--------------|----------------|
| Under-voltage release | BZMXm1 | BZMXm1/UVT 400V | CCX09024     | Right mounting |
|                       |        | BZMXm1/UVT 230V | CCX09025     |                |
|                       | BZMX1  | BZMX1/UVT 400V  | CCX09026     |                |
|                       |        | BZMX1/UVT 230V  | CCX09027     |                |
|                       | BZMX2  | BZMX2/UVT 400V  | CCX09028     |                |
|                       |        | BZMX2/UVT 230V  | CCX09029     |                |
|                       | BZMX3  | BZMX3/UVT 400V  | CCX09030     |                |
|                       |        | BZMX3/UVT 230V  | CCX09031     |                |

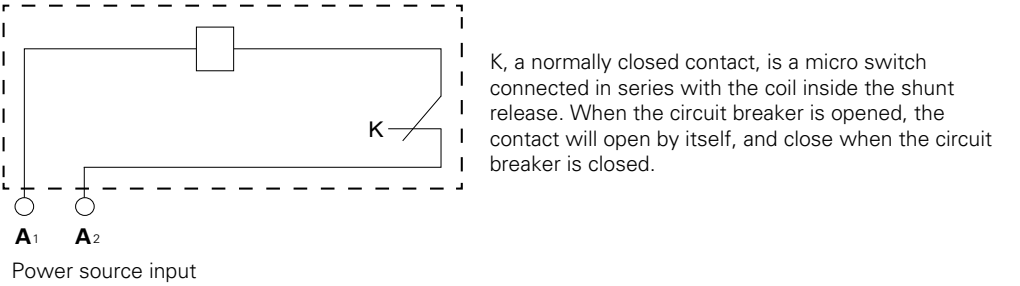


BZMX/SHT shunt release

Shunt release (BZMX/SHT)

|                        |                                                                                                              |
|------------------------|--------------------------------------------------------------------------------------------------------------|
| Voltage specification  | AC50Hz: 230V 400V<br>DC: 24V 220V                                                                            |
| Action characteristics | The shunt release enables the circuit breaker to trip when between 70% and 110% of the rated control voltage |

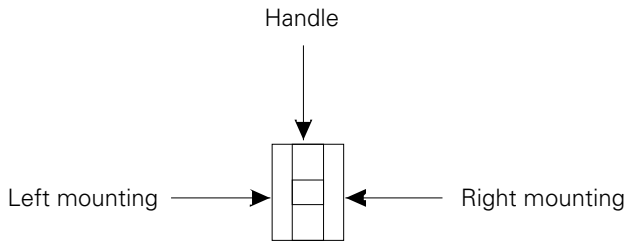
Wiring diagram (The circuit breaker's internal accessories are within the dotted rectangle)



Shunt release

| Accessory name | Frame  | Catalogue No.    | Ordering No. | Describe         | Note          |
|----------------|--------|------------------|--------------|------------------|---------------|
| Shunt release  | BZMXm1 | BZMXm1/SHT 400V  | CCX09032     | Line length 80cm | Left mounting |
|                |        | BZMXm1/SHT 230V  | CCX09033     |                  |               |
|                |        | BZMXm1/SHT DC24V | CCX09034     |                  |               |
|                | BZMX1  | BZMX1/SHT 400V   | CCX09035     |                  |               |
|                |        | BZMX1/SHT 230V   | CCX09036     |                  |               |
|                |        | BZMX1/SHT DC110V | CCX09037     |                  |               |
|                | BZMX2  | BZMX1/SHT DC24V  | CCX09038     |                  |               |
|                |        | BZMX2/SHT 400V   | CCX09039     |                  |               |
|                |        | BZMX2/SHT 230V   | CCX09040     |                  |               |
|                | BZMX3  | BZMX2/SHT DC110V | CCX09041     |                  |               |
|                |        | BZMX2/SHT DC24V  | CCX09042     |                  |               |
|                |        | BZMX3/SHT 400V   | CCX09043     |                  |               |
|                |        | BZMX3/SHT 230V   | CCX09044     |                  |               |
|                |        | BZMX3/SHT DC220V | CCX09045     |                  |               |
|                |        | BZMX3/SHT DC24V  | CCX09046     |                  |               |

Electrical accessory combination modes



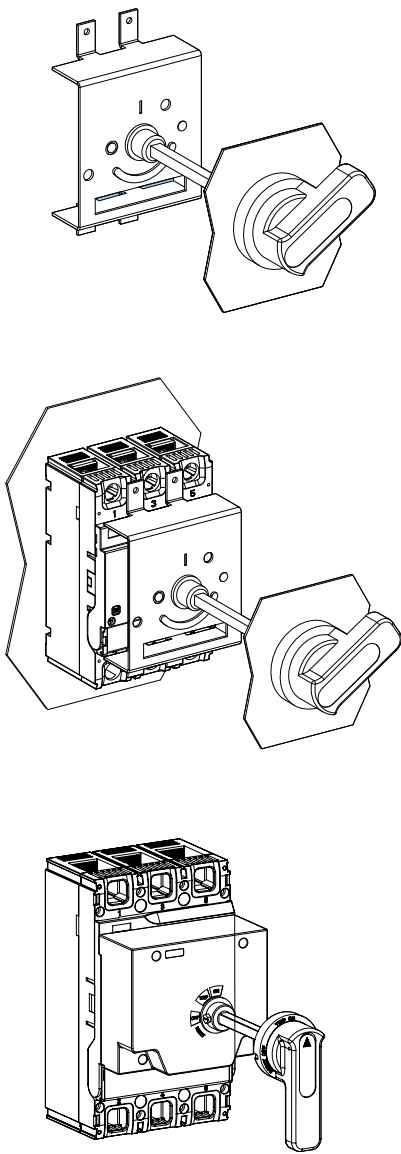
Legend

|   |                                |
|---|--------------------------------|
| ◇ | Single-auxiliary contact       |
| ◆ | Double-auxiliary contact       |
| ● | Alarm contact                  |
| ■ | Shunt release                  |
| ▲ | Under-voltage release          |
| ★ | Single auxiliary alarm contact |

Tripping mode accessory code comparison table

| Accessory code | Accessory name                                                                   | BZMXm1 |    | BZMX1 |    | BZMX2 |    | BZMX3 |    |
|----------------|----------------------------------------------------------------------------------|--------|----|-------|----|-------|----|-------|----|
|                |                                                                                  | 3P     | 4P | 3P    | 4P | 3P    | 4P | 3P    | 4P |
| 00             | N/A                                                                              | /      | /  | /     | /  | /     | /  | /     | /  |
| 10             | Shunt release                                                                    | ■      |    | ■     |    | ■     |    | ■     |    |
| 20             | Single-auxiliary contact                                                         | ◇      |    | ◇     |    | ◇     |    | ◇     |    |
| 30             | Double-auxiliary contact                                                         | ◆      |    | ◆     |    | ◆     |    | ◆     |    |
| 40             | Under-voltage release                                                            |        | ▲  |       | ▲  |       | ▲  |       | ▲  |
| 50             | Alarm contact                                                                    | ●      |    | ●     |    | ●     |    | ●     |    |
| 60             | Single-auxiliary alarm contact                                                   | ★      |    | ★     |    | ★     |    | ★     |    |
| 12             | Shunt release + single-auxiliary contact                                         | ■      | ◇  | ■     | ◇  | ■     | ◇  | ■     | ◇  |
| 13             | Shunt release + double-auxiliary contacts                                        | ■      | ◆  | ■     | ◆  | ■     | ◆  | ■     | ◆  |
| 14             | Shunt release + under-voltage release                                            | ■      | ▲  | ■     | ▲  | ■     | ▲  | ■     | ▲  |
| 15             | Shunt release + alarm contact                                                    | ■      | ●  | ■     | ●  | ■     | ●  | ■     | ●  |
| 16             | Shunt release + single-auxiliary alarm contact                                   | ■      | ★  | ■     | ★  | ■     | ★  | ■     | ★  |
| 17             | Shunt release + single-auxiliary contact + under-voltage release                 | /      | /  | /     | /  | /     | /  | ■     | ▲  |
| 18             | Shunt release + single-auxiliary alarm contact + single-auxiliary contact        | /      | /  | /     | /  | /     | /  | ★     | ◇  |
| 19             | Shunt release + alarm contact + under-voltage release                            | /      | /  | /     | /  | /     | /  | ●     | ▲  |
| 21             | Shunt release + single-auxiliary alarm contact + under-voltage release           | /      | /  | /     | /  | /     | /  | ★     | ▲  |
| 22             | Two groups of single-auxiliary contacts                                          | ◇      | ◇  | ◇     | ◇  | ◇     | ◇  | ◇     | ◇  |
| 32             | Double-auxiliary contact + single-auxiliary contact                              | ◆      | ◇  | ◆     | ◇  | ◆     | ◇  | ◆     | ◇  |
| 33             | Two groups of double-auxiliary contacts                                          | ◆      | ◆  | ◆     | ◆  | ◆     | ◆  | ◆     | ◆  |
| 35             | Double-auxiliary contact + alarm contact                                         | ●      | ◆  | ●     | ◆  | ●     | ◆  | ●     | ◆  |
| 36             | Double-auxiliary contact + single-auxiliary alarm contact                        | ★      | ◆  | ★     | ◆  | ★     | ◆  | ★     | ◆  |
| 42             | Under-voltage release + single-auxiliary contact                                 | ◇      | ▲  | ◇     | ▲  | ◇     | ▲  | ◇     | ▲  |
| 43             | Under-voltage release + double-auxiliary contact                                 | ◆      | ▲  | ◆     | ▲  | ◆     | ▲  | ◆     | ▲  |
| 23             | Under-voltage release + three groups of auxiliary contacts                       | /      | /  | /     | /  | /     | /  | ◇     | ▲  |
| 24             | Under-voltage release + single-auxiliary contact+ single-auxiliary alarm contact | /      | /  | /     | /  | /     | /  | ★     | ▲  |
| 45             | Under-voltage release + alarm contact                                            | ●      | ▲  | ●     | ▲  | ●     | ▲  | ●     | ▲  |
| 46             | Under-voltage release+ single-auxiliary alarm contact                            | ★      | ▲  | ★     | ▲  | ★     | ▲  | ★     | ▲  |

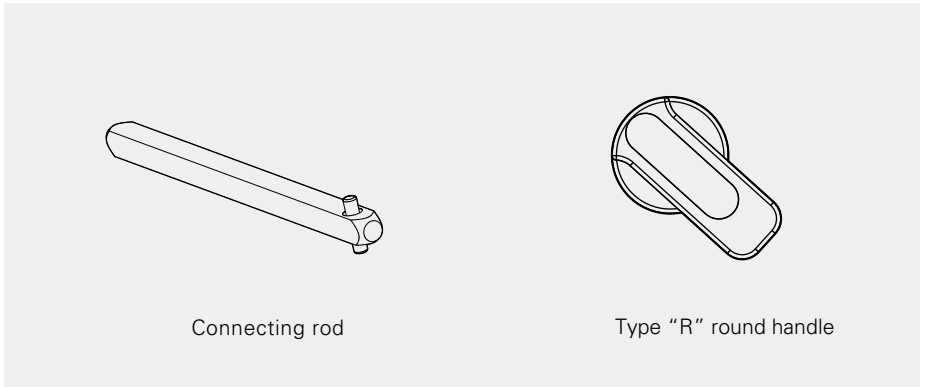
Manual operator (BZMX/CS)



Thanks for its unique design and transmission mechanism, the rotary handle operating mechanism enables the molded case circuit breaker to close, open and re-trip through the rotary handle;

The BZMX/CS series rotary manual operating mechanism has:

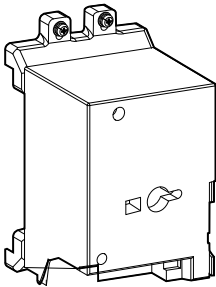
- A round rotary operating handle equipped
- The cabinet door cannot be opened when the circuit breaker is in the closed state, that is, the door is interlocked
- The handle can be used with relevant drawout cabinet and features interlocking function with the drawout cabinet
- If the rotary handle operating mechanism is faulty in the closed state, the cabinet door can be opened through the emergency unlocking device on the operating handle
- The extension rotary handle can be used, with its shaft length subject to the distance between the rotating outlet of the rotary handle operating mechanism and the door:
- 150 for the shortest distance and 500 for the longest
- CS1 is a centric type
- C2S is an eccentric type



Manual operator

| Accessory name                    | Frame              | Catalogue No.    | Ordering No. | Note                                                                                                          |
|-----------------------------------|--------------------|------------------|--------------|---------------------------------------------------------------------------------------------------------------|
| Standard manual operating toolkit | BZMXm1             | BZMXm1/CS1       | CCX09070     | A 200mm long connecting rod is equipped as standard                                                           |
|                                   |                    | BZMXm1/CS2       | CCX09071     |                                                                                                               |
|                                   |                    |                  |              |                                                                                                               |
|                                   | BZMX1              | BZMX1/CS1        | CCX09072     |                                                                                                               |
|                                   |                    | BZMX1/CS2        | CCX09073     |                                                                                                               |
|                                   |                    |                  |              |                                                                                                               |
|                                   | BZMX2              | BZMX2/CS1        | CCX09074     |                                                                                                               |
|                                   |                    | BZMX2/CS2        | CCX09075     |                                                                                                               |
|                                   |                    |                  |              |                                                                                                               |
| 500mm long connecting rod         | BZMXm1/BZMX1/BZMX2 | BZMXm1/X1/X2-500 | CCX09101     | For the 500mm long connecting rod, please order additionally a standard manual operating toolkit for use with |
|                                   |                    |                  |              |                                                                                                               |
|                                   | BZMX3              | BZMX3/CS1        | CCX09076     |                                                                                                               |
|                                   |                    | BZMX3/CS2        | CCX09077     |                                                                                                               |

Motor operator (BZMX/CD)

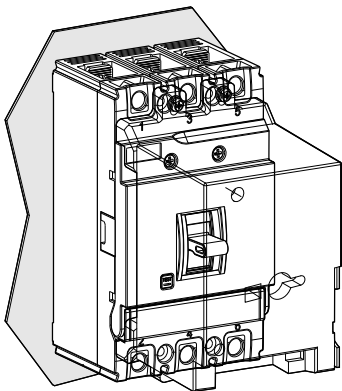
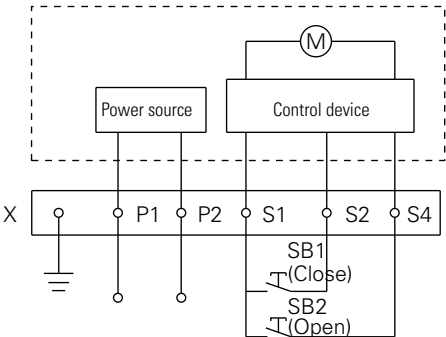


The motor operator is used to remotely control the closing and opening of the circuit breaker, composed of a charging spring equipped with an opening coil and a closing coil.

The motor operator features:

- Manual or automatic operating modes can be selected
- The manual drive handle is located at the front of the cover

The wiring diagram of the BZMX/CD motor operator is shown below (the circuit breaker's internal accessories are within the dotted rectangle)



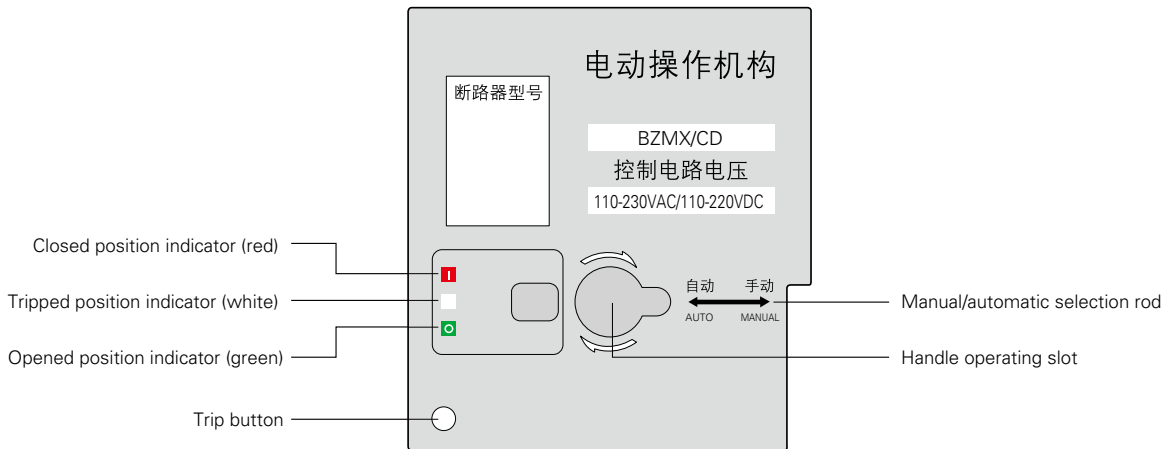
Manual operation

- Turn the toggle switch to the "manual" position, and the internal power supply will be automatically turned off
- Insert the manual drive handle into the handle operating slot on the front of the motor operator and turn it clockwise
- It is forbidden to turn counterclockwise

Motor operation

- Turn on automatically
- The operating frequency should not exceed 3 times per minute
- Use the ON/OFF switch within the frequency range
- ON/OFF signals shall not be input simultaneously during automatic operation
- If the circuit breaker is equipped with an undervoltage release (UVT), the rated voltage shall be applied to the UVT before performing motor operations

Motor operator's outlook



Starting current, power and life table of BZMX/CD motor operator

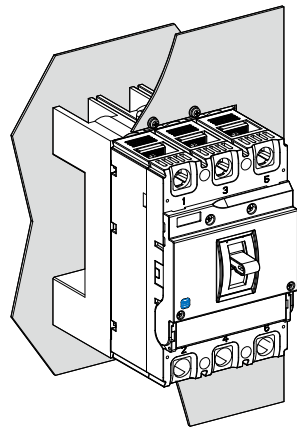
| Catalog No. of equipped circuit breaker | Catalog No. of motor operator | Starting current (A) | Response time (ms) |      | Power loss (w) | Life (operation) |
|-----------------------------------------|-------------------------------|----------------------|--------------------|------|----------------|------------------|
|                                         |                               |                      | Closed             | Open |                |                  |
| BZMXm1                                  | CD2                           | ≤ 0.5                | 310                | 200  | 14             | 14000            |
| BZMX1                                   | CD2                           | ≤ 0.5                | 310                | 200  | 14             | 14000            |
| BZMX2                                   |                               | ≤ 0.5                | 310                | 200  | 14             | 10000            |
| BZMX3                                   | CD2                           | ≤ 0.5                | 500                | 350  | 14             | 10000            |

**Note:** After the circuit breaker trips, the motor operator must trip the circuit breaker again before it can be closed.

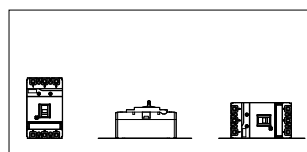
Motor operator

| Accessory name | Frame  | Catalogue No.            | Ordering No. | Note |
|----------------|--------|--------------------------|--------------|------|
| Motor operator | BZMXm1 | BZMXm1/CD2 AC230V/DC220V | CCX09047     |      |
|                |        | BZMXm1/CD2 AC/DC110V     | CCX09048     |      |
|                |        | BZMXm1/CD2 DC24V         | CCX09049     |      |
|                | BZMX1  | BZMX1/CD2 400V           | CCX09050     |      |
|                |        | BZMX1/CD2 AC230V/DC220V  | CCX09051     |      |
|                |        | BZMX1/CD2 AC/DC110V      | CCX09052     |      |
|                |        | BZMX1/CD2 DC24V          | CCX09053     |      |
|                | BZMX2  | BZMX2/CD2 400V           | CCX09054     |      |
|                |        | BZMX2/CD2 AC230V/DC220V  | CCX09055     |      |
|                |        | BZMX2/CD2 AC/DC110V      | CCX09056     |      |
|                |        | BZMX2/CD2 DC24V          | CCX09057     |      |
|                | BZMX3  | BZMX3/CD2 400V           | CCX09058     |      |
|                |        | BZMX3/CD2 AC230V/DC220V  | CCX09059     |      |
|                |        | BZMX3/CD2 AC/DC110V      | CCX09060     |      |
|                |        | BZMX3/CD2 DC24V          | CCX09061     |      |

## Plug-in cassette (BZMX/P)

**Advantages of plug-in circuit breakers**

- The circuit breaker can be withdrawn or replaced quickly with no need to access the incoming and outgoing lines and mounting cassette;
- The plug-in cassette can be pre-mounted, convenient for users to add circuit breakers in the future;
- When with bottom panel mounting or through panel mounting for the circuit breaker, the power circuit can be isolated. Complete insulation can be achieved through the short terminal sheath (must be equipped) on the device. The protection levels are as follows:
  - IP4 when the circuit breaker is pulled in;
  - IP2 when the circuit breaker is withdrawn;
  - IP4 when the circuit breaker is withdrawn and equipped with a shutter on the bottom panel



Mounting method

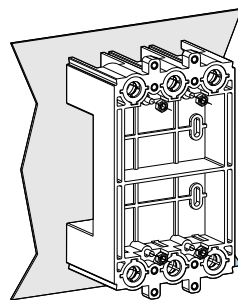
**Plug-in circuit breaker's configuration**

- The pluggable device is the securing section of the plug-in circuit breaker;
- It can be directly mounted on the rear panel of the switchboard;
- The circuit breaker is mounted on the pluggable device with fixing screws.

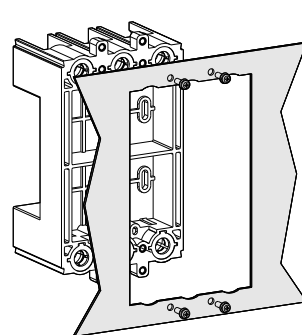
**Accessories**

Optional insulation accessories are available:

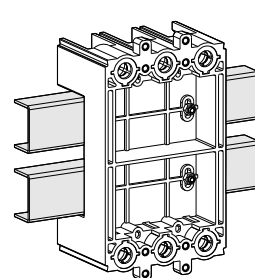
- Terminal sheath, to prevent direct contact with the wiring terminal;
- Inter-phase partition, to enhance inter-phase insulation.

**Mounting**

Bottom panel mounting

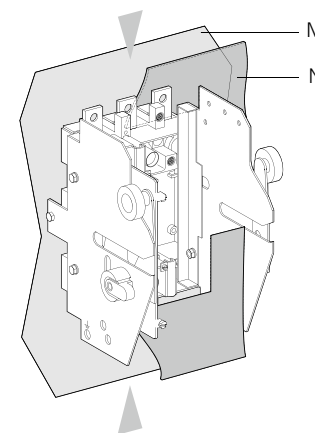


Through panel mounting



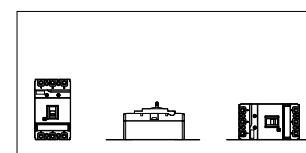
Rail mounting

## Drawout wiring (BZMX/W)

**Advantages of drawout circuit breakers**

The drawout circuit breaker offers all the advantages that a plug-in type has, and is very easy to operate. The drawout circuit breaker has three positions:

- Connected position: Indicates that the power circuit is connected;
- Test position: Indicated that the power circuit is disconnected, and the circuit breaker can be operated to check the auxiliary circuit;
- Disconnected position: Indicates that the circuit breaker can be withdrawn from the cassette.

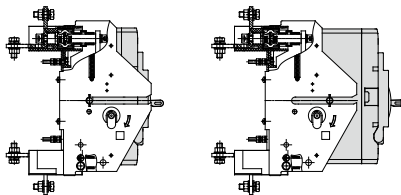


Mounting method

**Drawout circuit breaker's configuration**

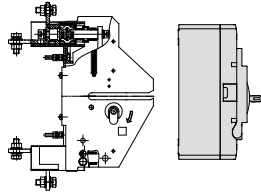
When configuring the drawout circuit breaker, two side panels need to be installed separately on both the cassette and circuit breaker. Similar to the configuration for the plug-in type, when the circuit breaker is pulled in or out, the safety tripping device will automatically trip it if in the ON state, allowing it to be pulled in or out in the "Disconnected" position.

Drawout cassette

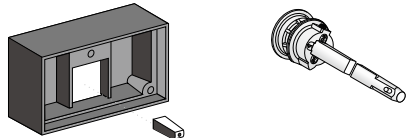


Connecting position

Withdraw the circuit breaker



Withdrawal position



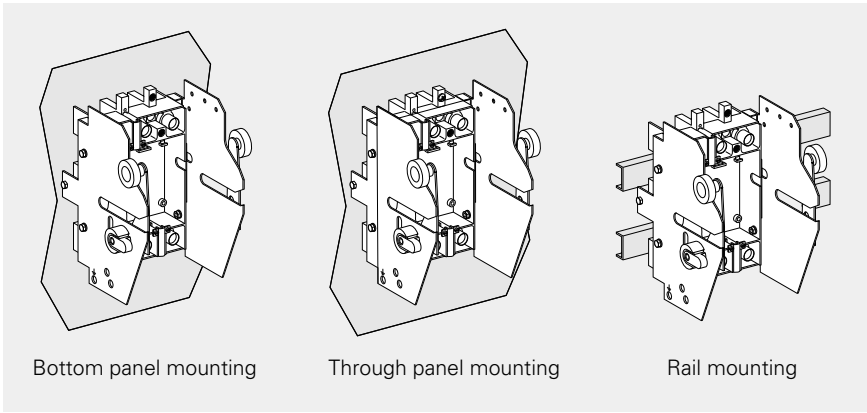
The cover is used for the dial switch, to ensure the IP4 protection level when at the “Connected” and “Disconnected” positions

Telescopic shaft

Accessory

The cassette used is the same as the plug-in base, in addition:

- Chassis auxiliary contacts, indicating the "connection position" and "test position" of the circuit breaker;
- Use 1 to 3 padlocks (5 to 8mm in diameter) to lock, you can achieve:
  - Prevent the insertion of the circuit breaker;
  - Lock the circuit breaker in the "connected position" or "withdrawn position";
- By flipping the switch sheath, the circuit breaker can ensure the appropriate protection level no matter where it is;
- Telescopic shaft used to extend the rotating handle. The door can be closed when the device is in the "connected position" and "withdrawn position".



Bottom panel mounting

Through panel mounting

Rail mounting

Plug-in cassette/drawout cassette

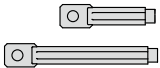
| Accessory name   | Frame  | Catalogue No. | Ordering No. | Note |
|------------------|--------|---------------|--------------|------|
| Plug-in cassette | BZMXm1 | BZMXm1-3/P    | CCX09078     |      |
|                  | BZMX1  | BZMX1-3/P     | CCX09079     |      |
|                  | BZMX2  | BZMX2-3/P     | CCX09080     |      |
|                  | BZMX3  | BZMX3-3/P     | CCX09081     |      |
| Drawout cassette | BZMX3  | BZMX3-3/W     | CCX09082     |      |

Rear panel wiring (BZMX/F)

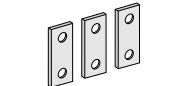
The circuit breaker is mounted on the bottom plate, and can be wired behind the bottom plate through the rear panel wiring terminal.

- Two lengths are available for the rear wiring terminal;
- The busbars can be placed at multiple angles, such as horizontal, vertical, or at a 45-degree angle to the horizontal level

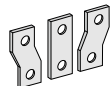
Two lengths



Extension wiring board (BZMX/K)

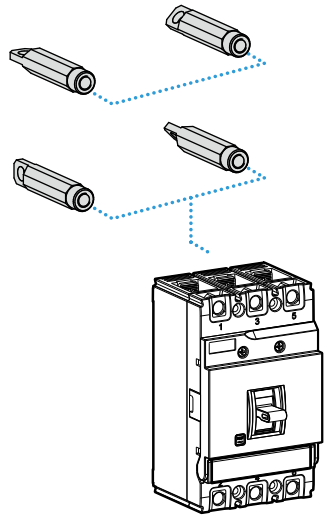


Straight terminal extension board



Inter-pole gap extension board

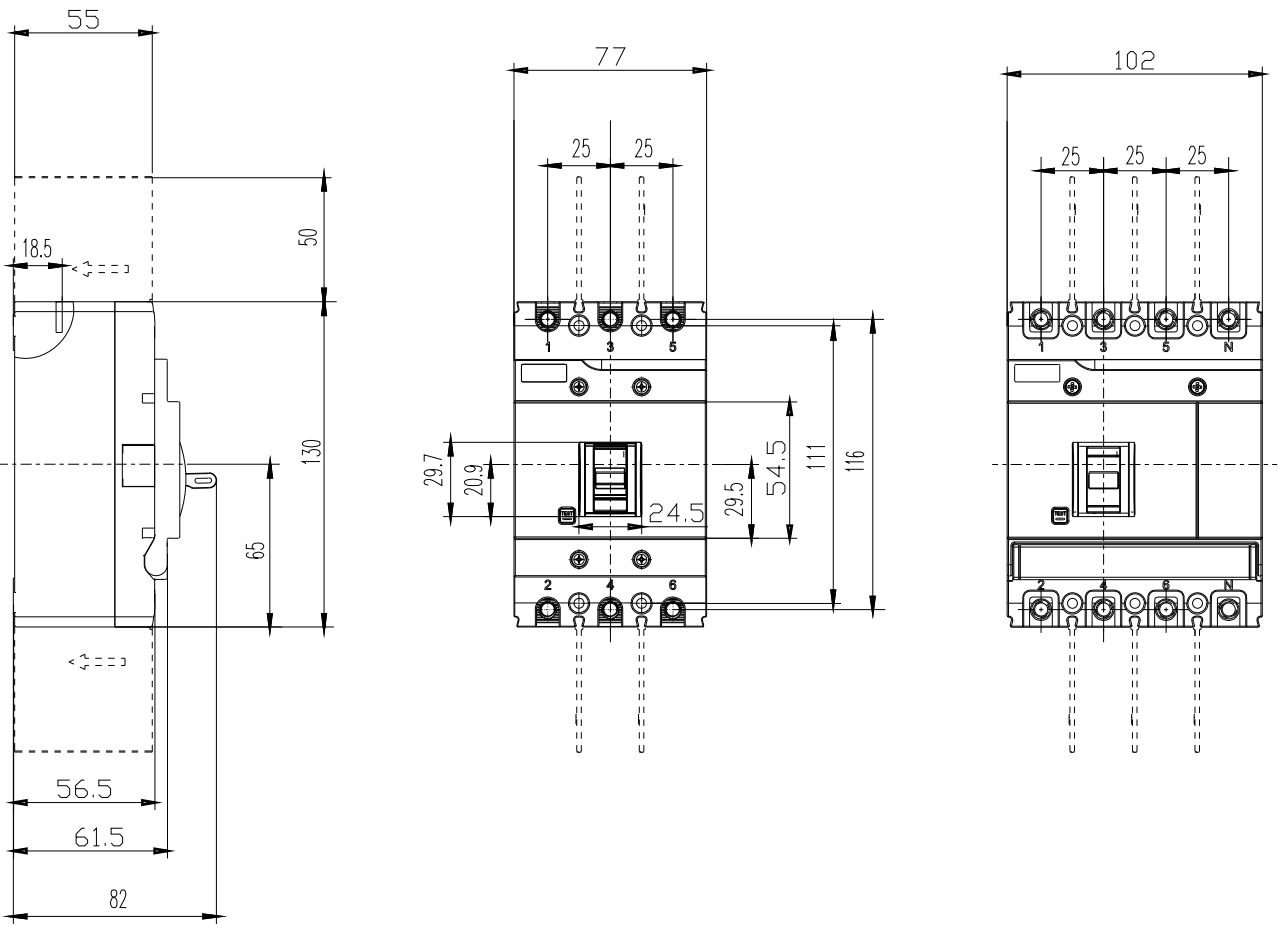
- Increase the distance between the circuit breaker terminals according to the incoming equipment, to improve inter-phase insulation



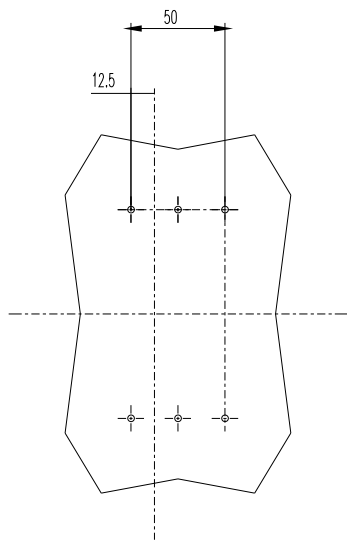
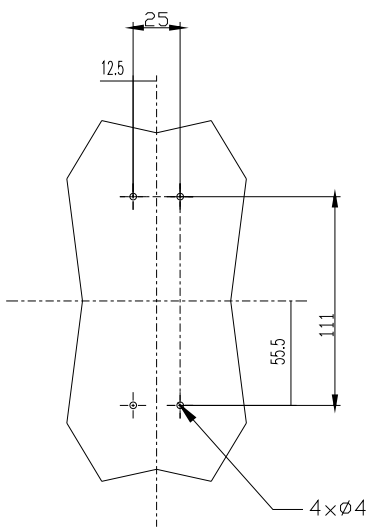
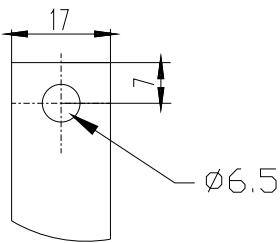
Rear panel wiring / extension wiring board

| Accessory name         | Frame  | Catalogue No.              | Ordering No. | Note                                  |
|------------------------|--------|----------------------------|--------------|---------------------------------------|
| Rear panel wiring      | BZMXm1 | BZMXm1-3/F                 | CCX09062     | Fixed rear panel wiring               |
|                        |        | BZMXm1-4/F                 | CCX09063     |                                       |
|                        | BZMX1  | BZMX1-3/F                  | CCX09064     |                                       |
|                        |        | BZMX1-4/F                  | CCX09065     |                                       |
|                        | BZMX2  | BZMX2-3/F                  | CCX09066     |                                       |
|                        |        | BZMX2-4/F                  | CCX09067     |                                       |
|                        | BZMX3  | BZMX3-3/F                  | CCX09068     |                                       |
|                        |        | BZMX3-4/F                  | CCX09069     |                                       |
| Extension wiring board | BZMXm1 | BZMXm1-3/K2 BZMX1-3/K2(EX) | CCX09083     | K2: Straight terminal extension board |
|                        |        | BZMXm1-4/K2 BZMX1-4/K2(EX) | CCX09084     |                                       |
|                        |        | BZMXm1-3/K3 BZMX1-3/K3(EX) | CCX09085     |                                       |
|                        |        | BZMXm1-4/K3 BZMX1-4/K3(EX) | CCX09086     |                                       |
|                        | BZMX1  | BZMX1-3/K2(AX)             | CCX09087     | K3: Inter-pole gap extension board    |
|                        |        | BZMX1-4/K2(AX)             | CCX09088     |                                       |
|                        |        | BZMX1-3/K3(AX)             | CCX09120     |                                       |
|                        |        | BZMX1-4/K3(AX)             | CCX09121     |                                       |
|                        | BZMX2  | BZMX2-3/K2                 | CCX09089     |                                       |
|                        |        | BZMX2-4/K2                 | CCX09090     |                                       |
|                        |        | BZMX2-3/K3                 | CCX09091     |                                       |
|                        |        | BZMX2-4/K3                 | CCX09092     |                                       |
|                        | BZMX3  | BZMX3-3/K2 400A            | CCX09093     |                                       |
|                        |        | BZMX3-4/K2 400A            | CCX09094     |                                       |
|                        |        | BZMX3-3/K2 630A            | CCX09095     |                                       |
|                        |        | BZMX3-4/K2 630A            | CCX09096     |                                       |
|                        |        | BZMX3-3/K3 400A            | CCX09097     |                                       |
|                        |        | BZMX3-4/K3 400A            | CCX09098     |                                       |
|                        |        | BZMX3-3/K3 630A            | CCX09099     |                                       |
|                        |        | BZMX3-4/K3 630A            | CCX09100     |                                       |

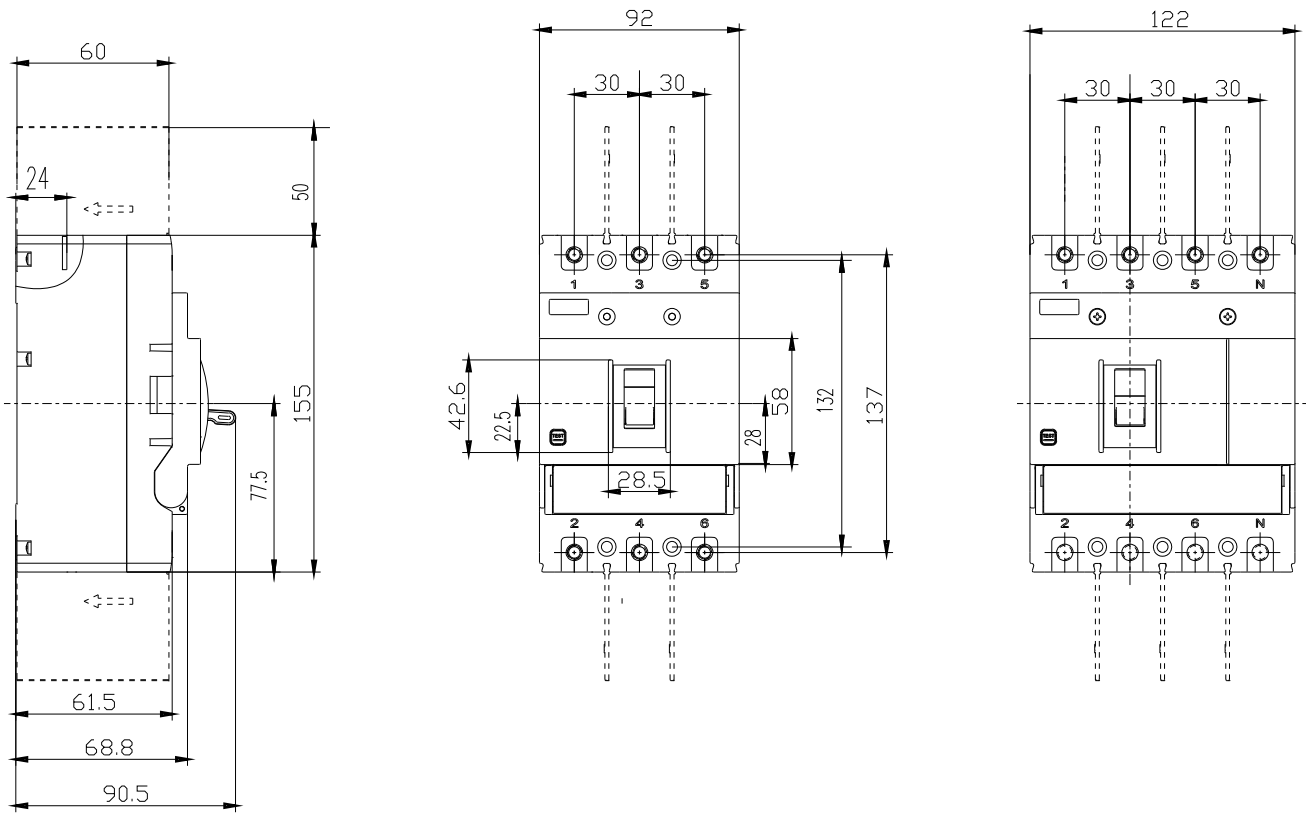
BZMXm1-AX/ BZMXm1-M's basic devices



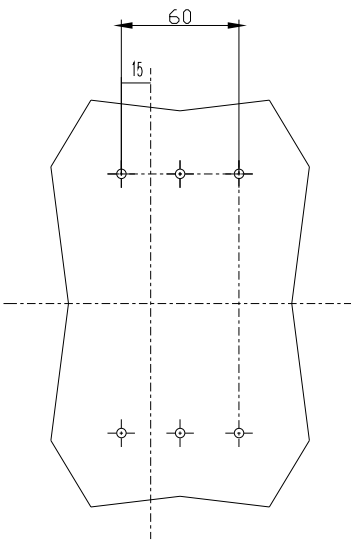
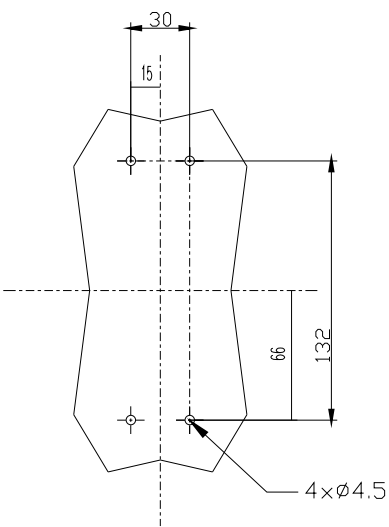
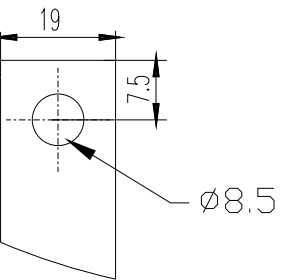
Wiring board dimensions



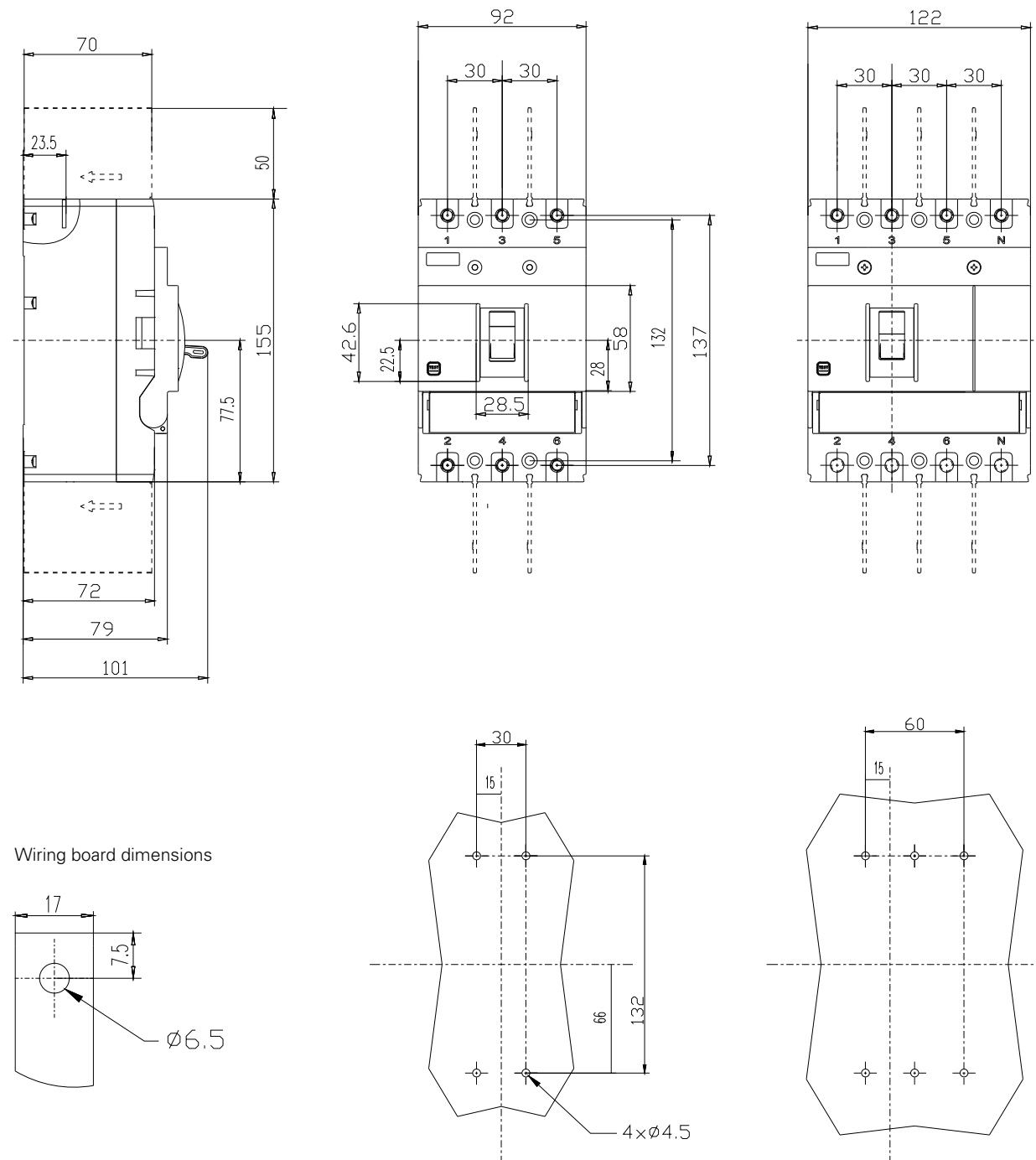
BZMX1-AX/ BZMX1-M's basic devices



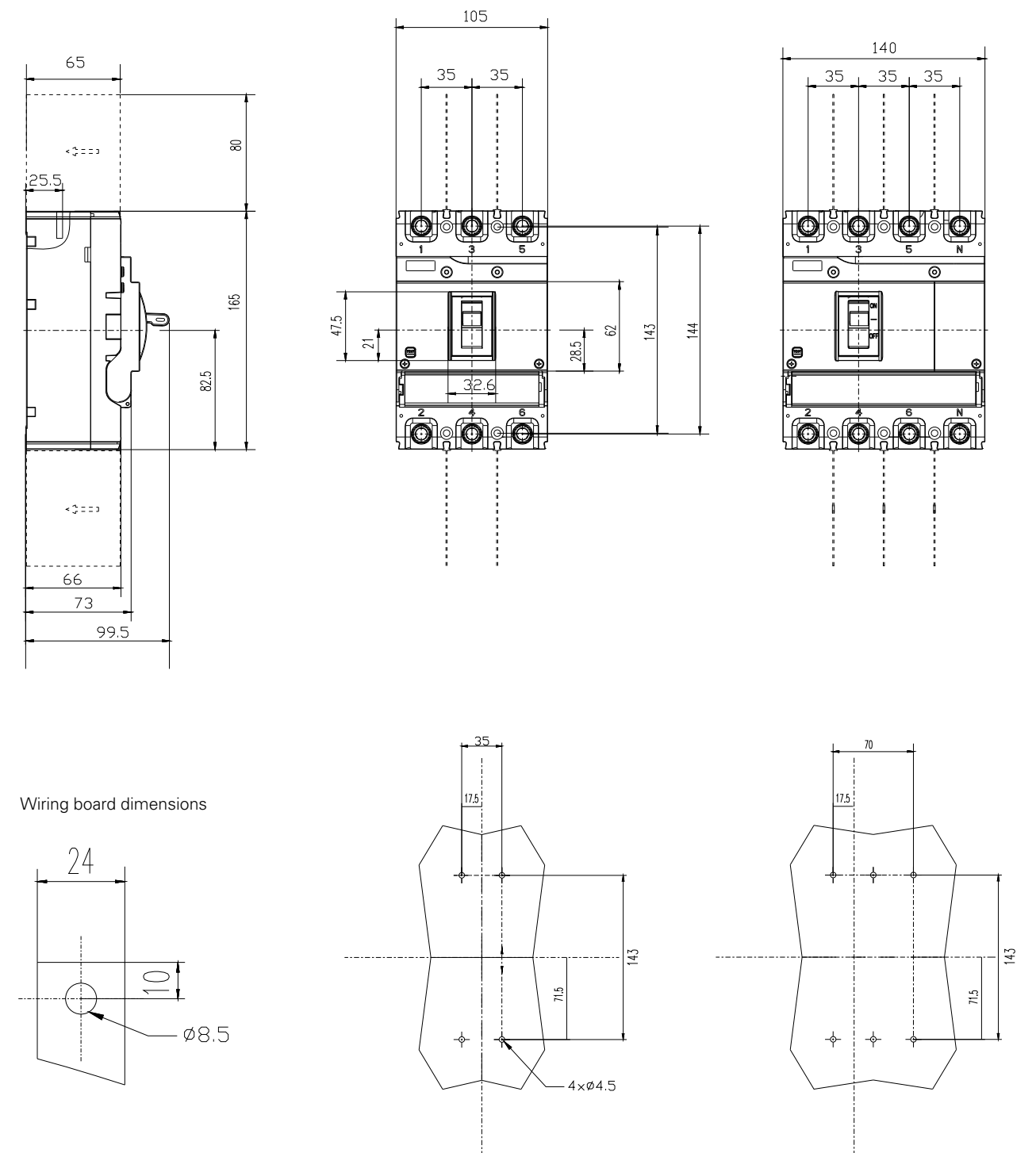
Wiring board dimensions



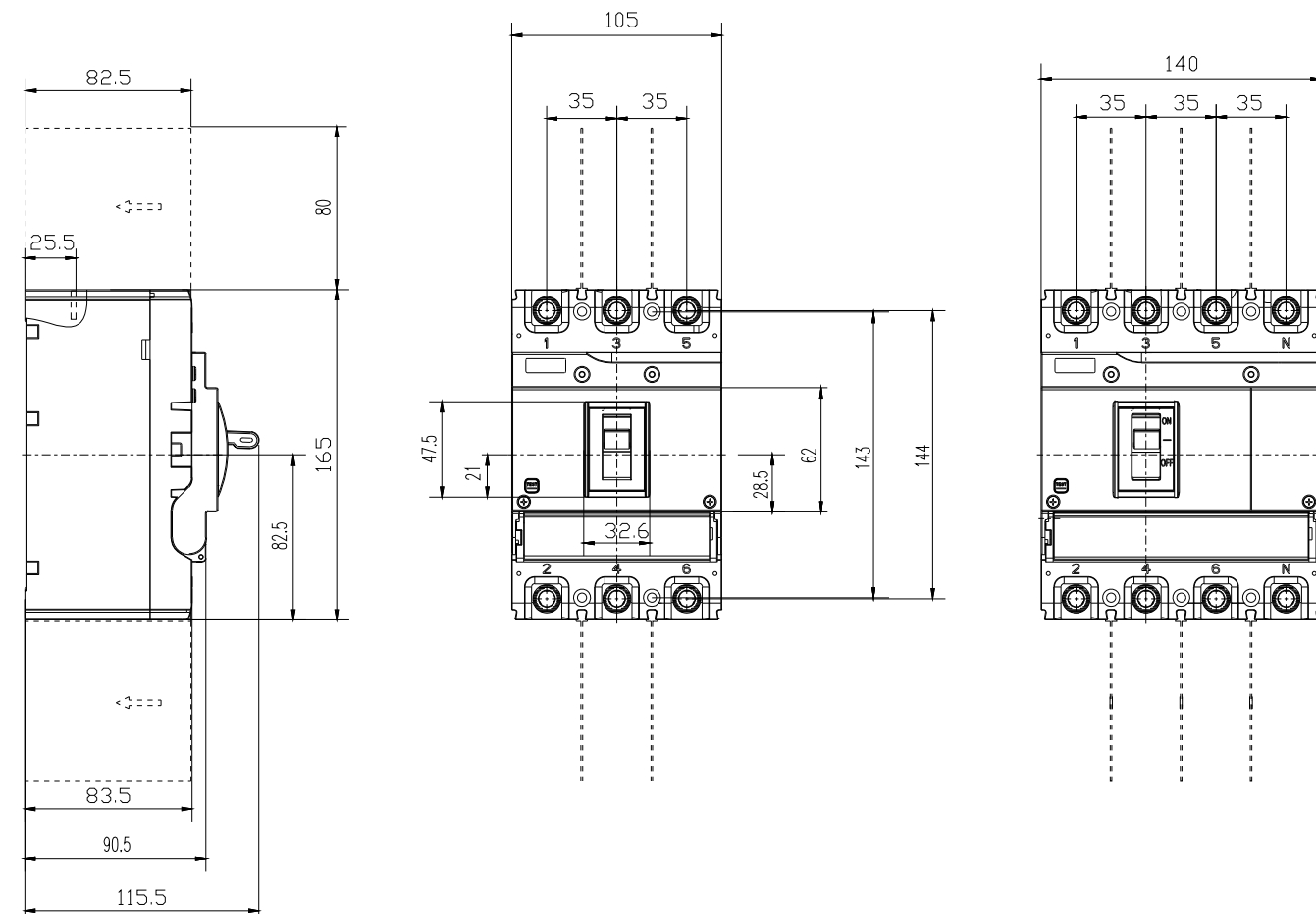
## BZMX1-EX's basic devices



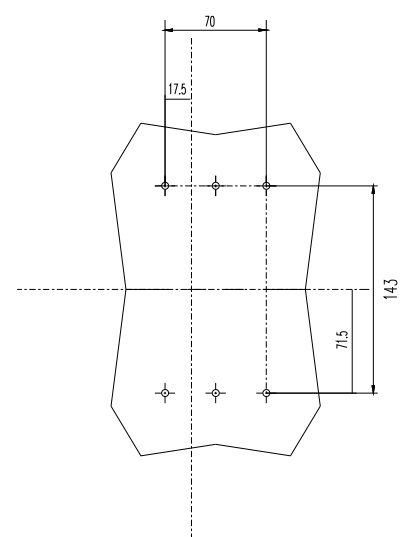
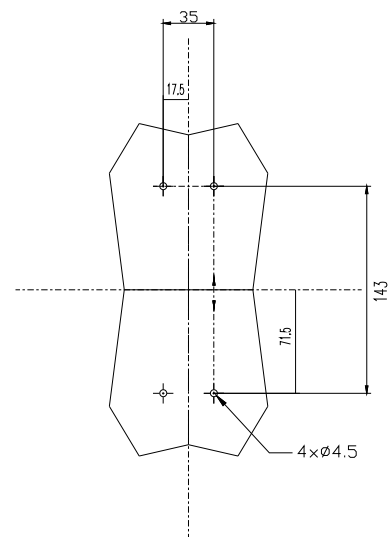
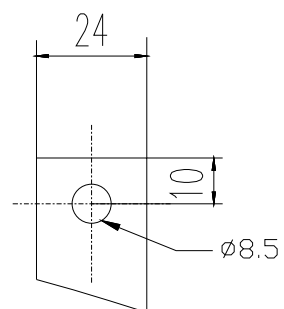
## BZMX2-AX/BZMX2-M/BZMX2-SW basic devices



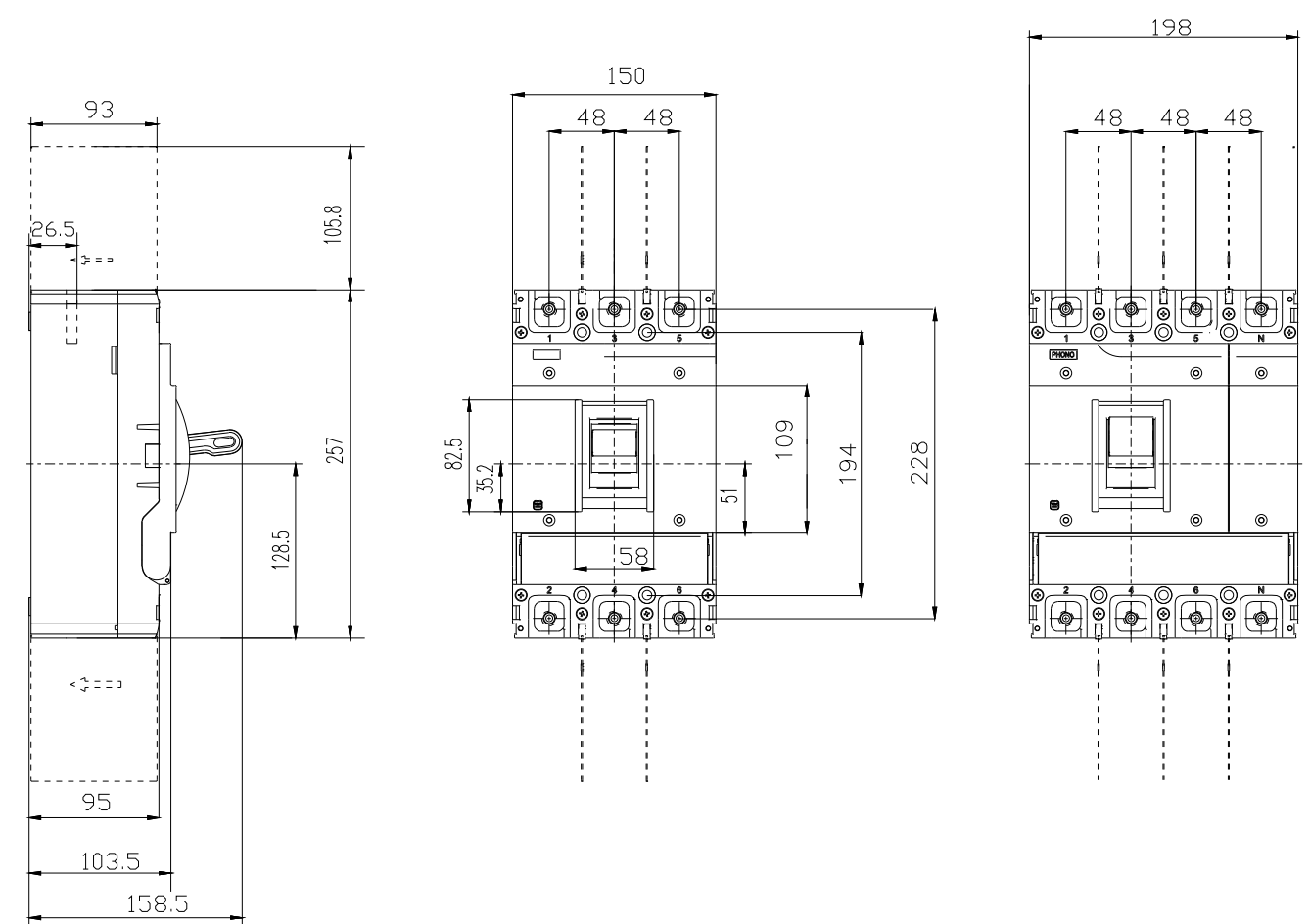
## BZMX2-EX's basic devices



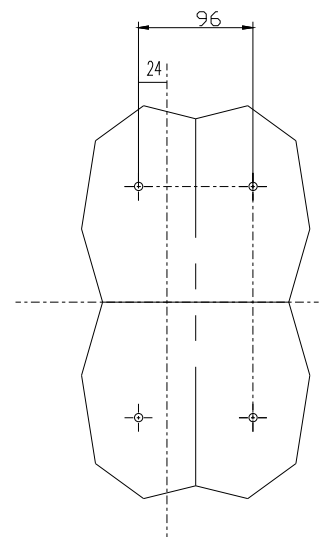
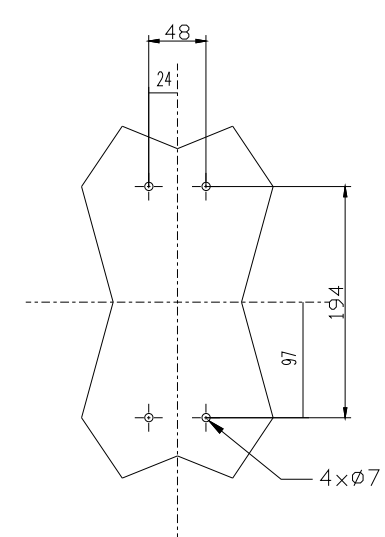
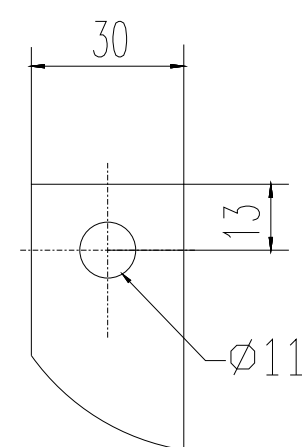
Wiring board dimensions



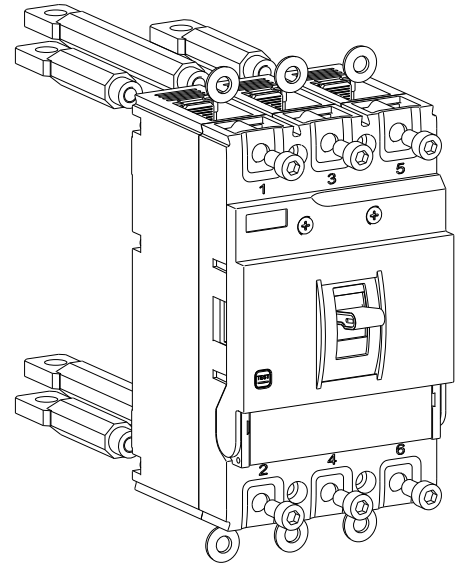
## BZMX3-AX / BZMX3-M / BZMX3-EX's basic devices



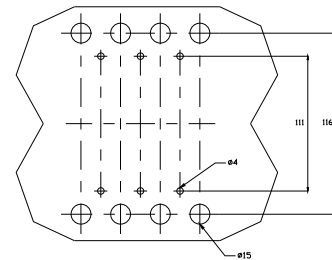
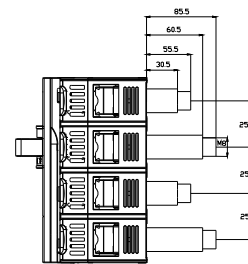
Wiring board dimensions



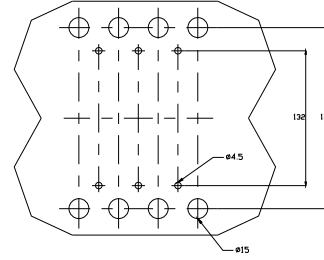
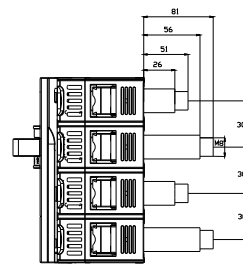
## Rear panel wiring and mounting



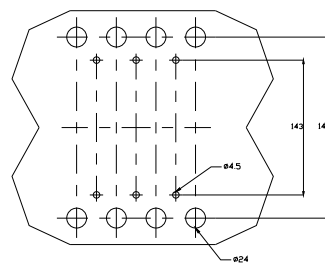
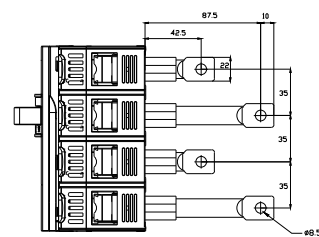
BZMXm1



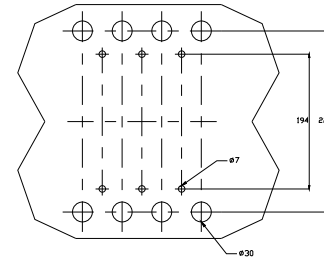
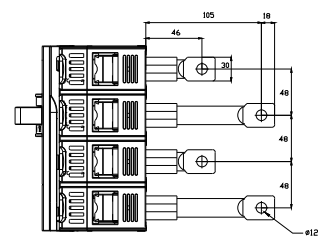
BZMX1



BZMX2

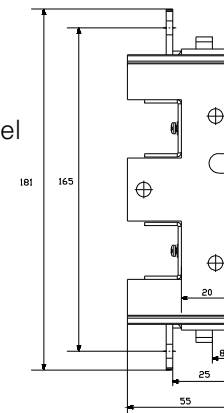


BZMX3

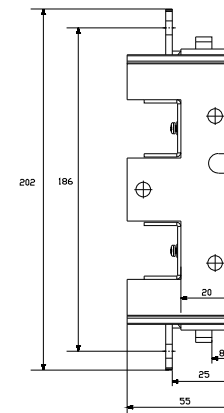


## Plug-in wiring and mounting

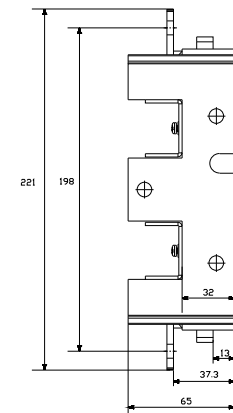
BZMXm1



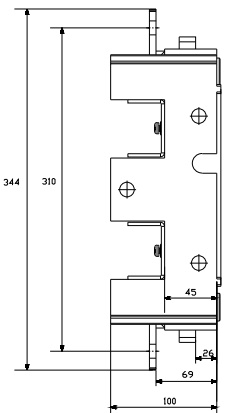
BZMX1



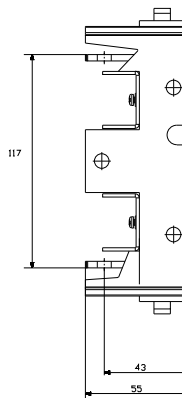
BZMX2



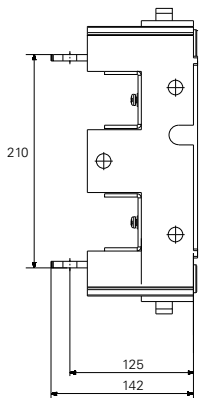
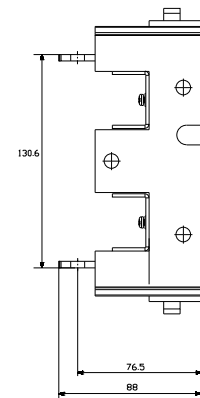
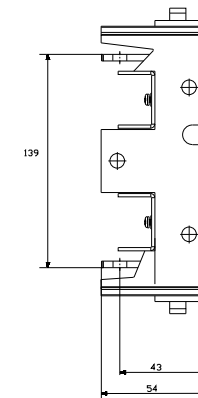
BZMX3



Front panel

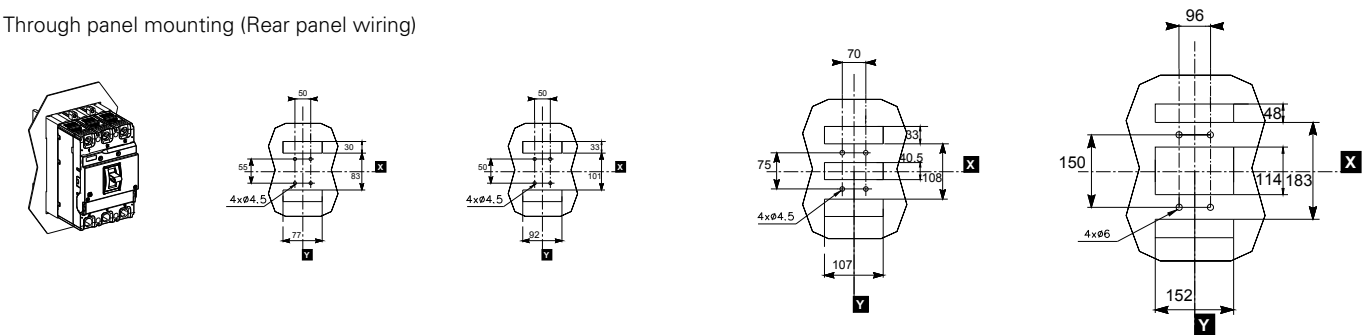


Rear panel

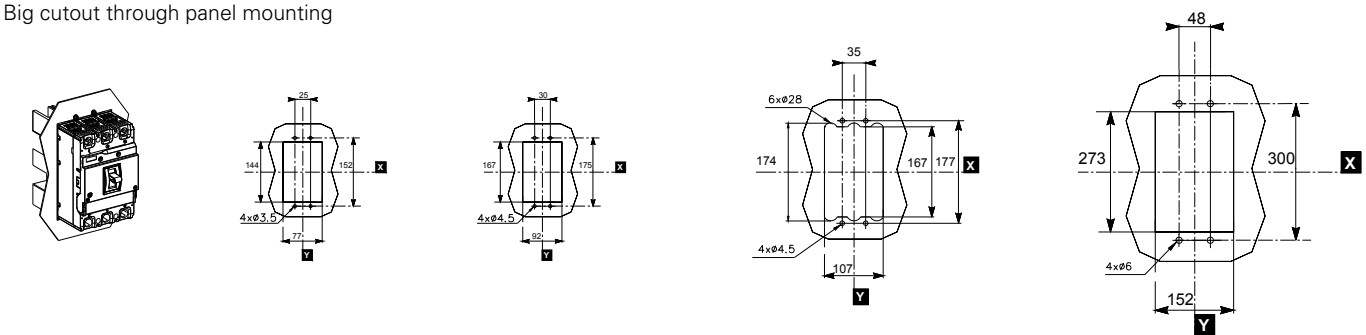


Plug-in wiring and mounting

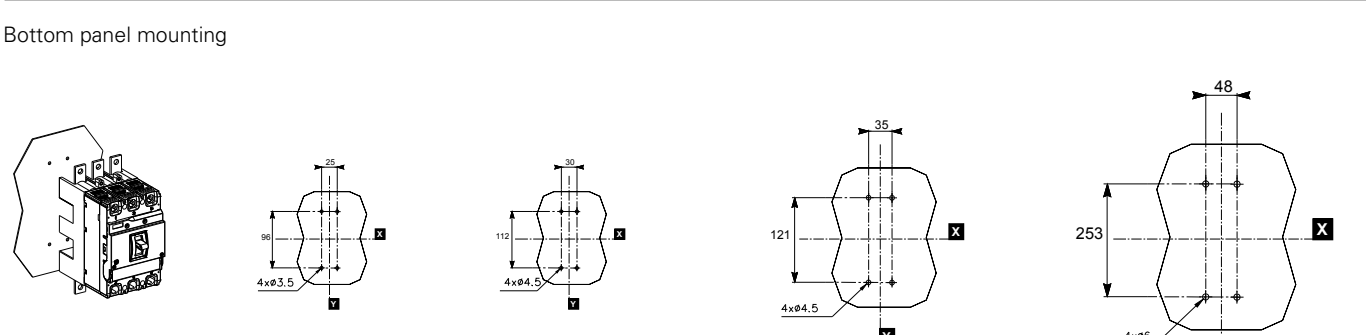
Through panel mounting (Rear panel wiring)



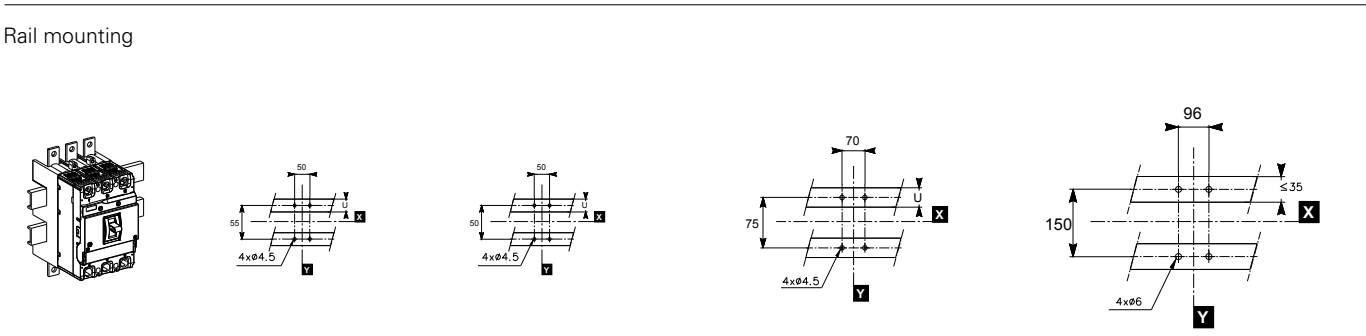
Big cutout through panel mounting



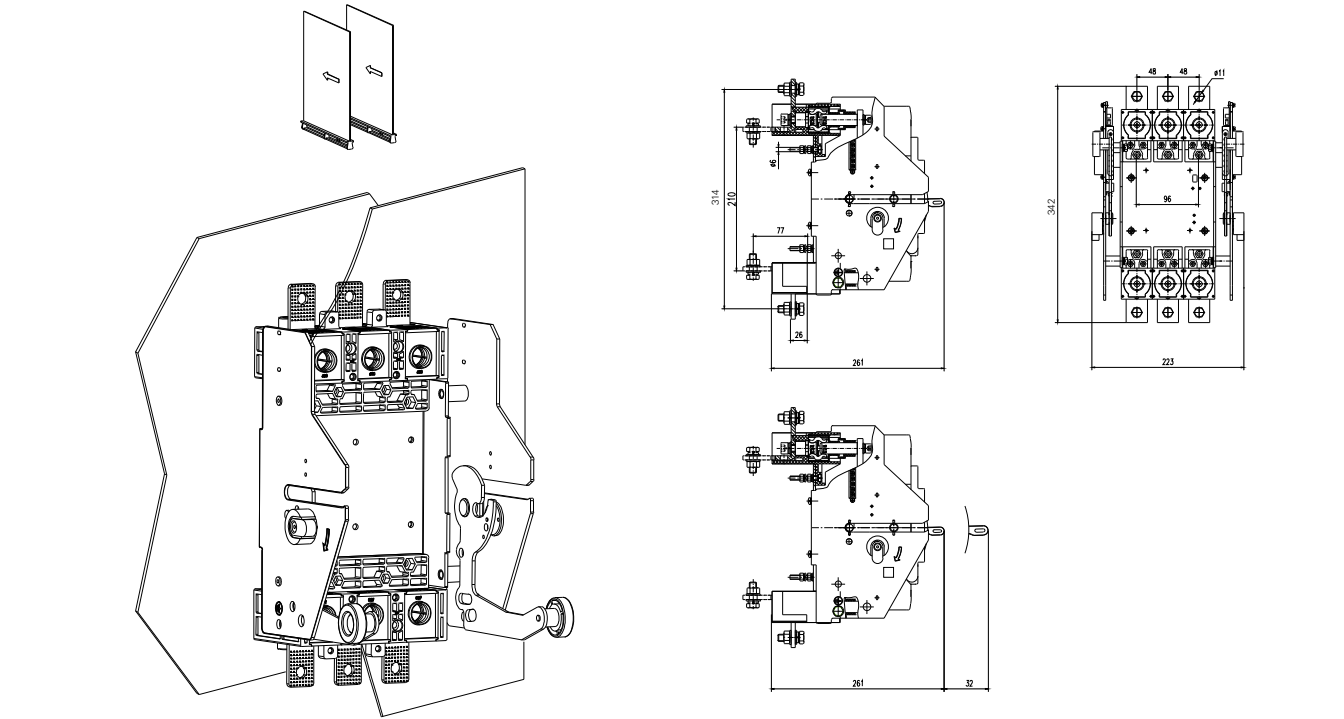
Bottom panel mounting



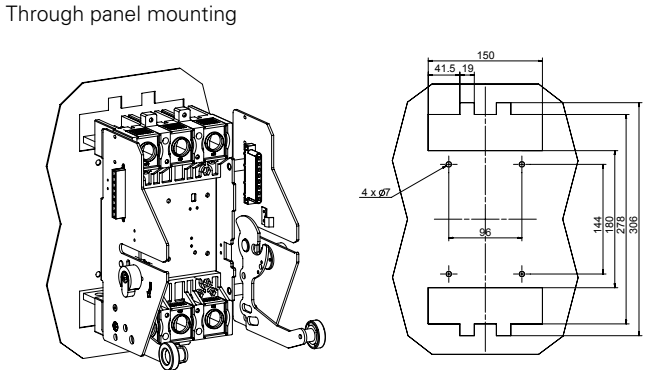
Rail mounting



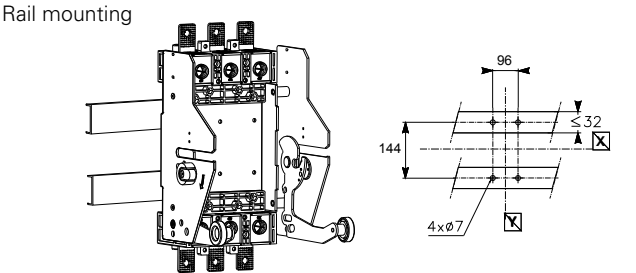
Drawout wiring and mounting



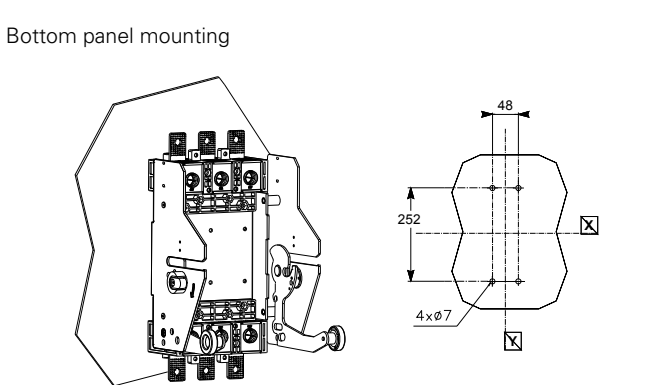
Through panel mounting



Rail mounting

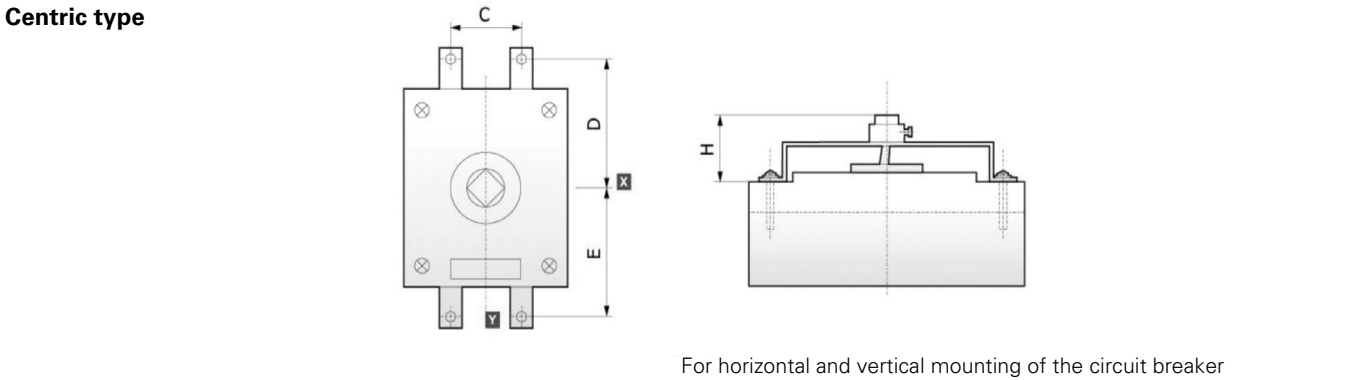


Bottom panel mounting

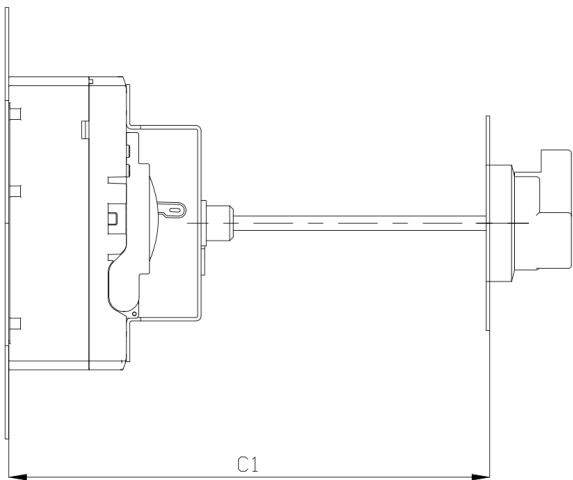


BZMX manual operator dimensions

Centric type

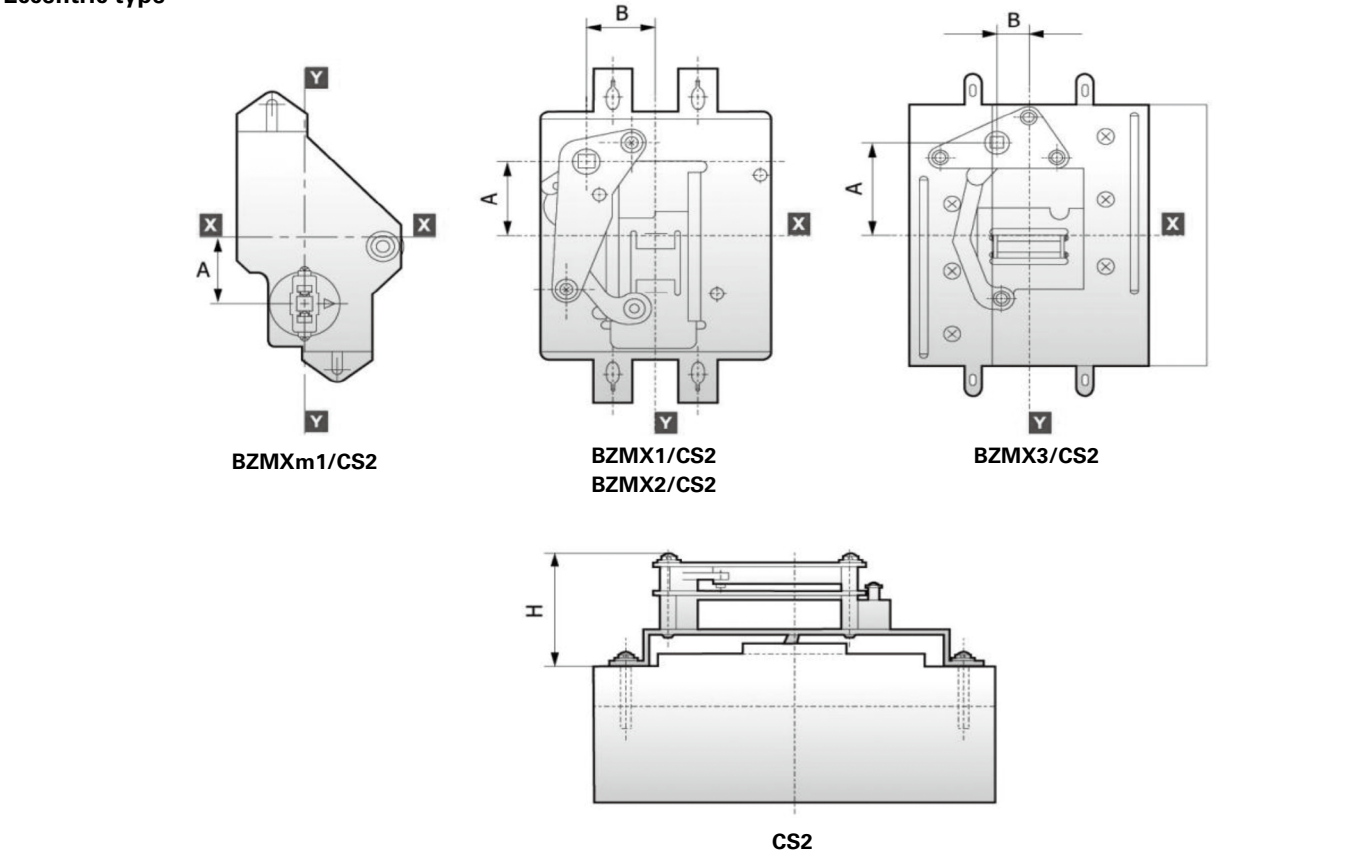


| Catalog No. | C  | D    | E    | H  | Note                                                                        |
|-------------|----|------|------|----|-----------------------------------------------------------------------------|
| BZMXm1/CS1  | 25 | 55.5 | 55.5 | 52 | For horizontal and vertical mounting of the circuit breaker (center cutout) |
| BZMX1/CS1   | 30 | 66   | 66   | 52 |                                                                             |
| BZMX2/CS1   | 35 | 71.5 | 71.5 | 56 |                                                                             |
| BZMX3/CS1   | 48 | 97   | 97   | 87 |                                                                             |



| Catalog No. of equipped circuit breaker | Catalog No. of manual operator | C1 minimum | C1 maximum | Manual operating rod Minimum retention value |
|-----------------------------------------|--------------------------------|------------|------------|----------------------------------------------|
| BZMXm1                                  | BZMXm1/CS1                     | 116.5      | 267.5      | 49                                           |
| BZMX1-AX/M/SW                           | BZMX1/CS1                      | 122.5      | 273.5      | 49                                           |
| BZMX1-EX                                | BZMX1/CS1                      | 133        | 284        | 49                                           |
| BZMX2-AX/M/SW                           | BZMX2/CS1                      | 132        | 283        | 49                                           |
| BZMX2-EX                                | BZMX2/CS1                      | 149.5      | 300.5      | 49                                           |
| BZMX3                                   | BZMX3/CS1                      | 188        | 339        | 49                                           |

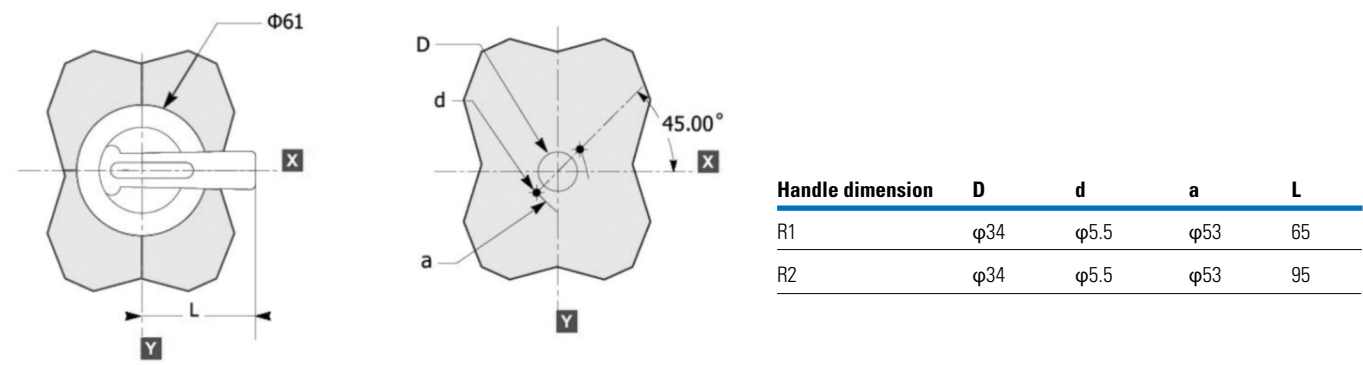
Eccentric type



| Catalog No. | A  | B   | H  | Note                                                                           |
|-------------|----|-----|----|--------------------------------------------------------------------------------|
| BZMXm1/CS2  | 28 | -   | 44 | For horizontal and vertical mounting of the circuit breaker (eccentric cutout) |
| BZMX1/CS2   | 35 | 8.5 | 50 |                                                                                |
| BZMX2/CS2   | 35 | 31  | 46 |                                                                                |
| BZMX3/CS2   | 68 | 15  | 59 |                                                                                |

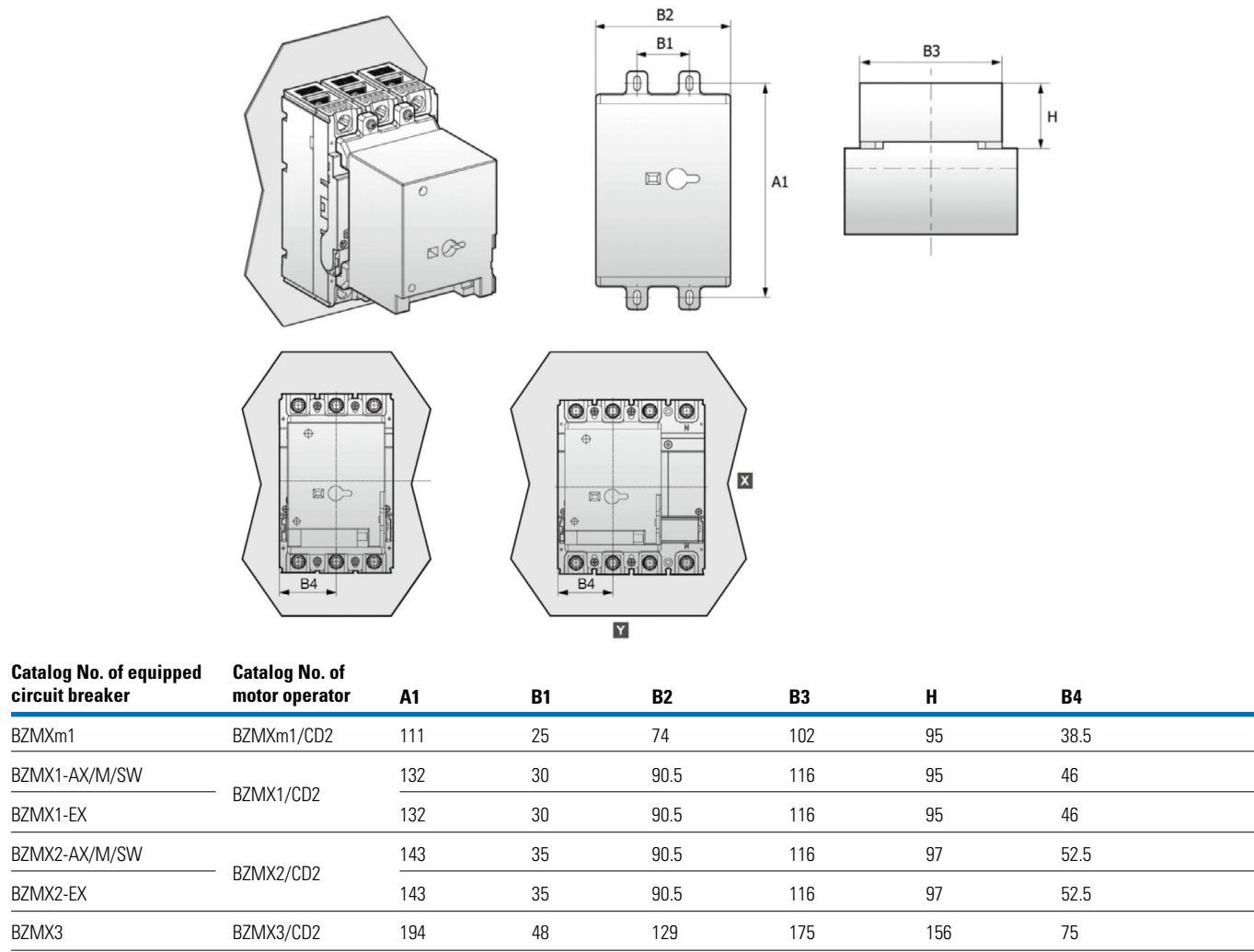
Dimensions and door cutouts

Type R (R1 dimensions for BZMXm1/BZMX1/BZMX2 and R2 dimensions for BZMX3)

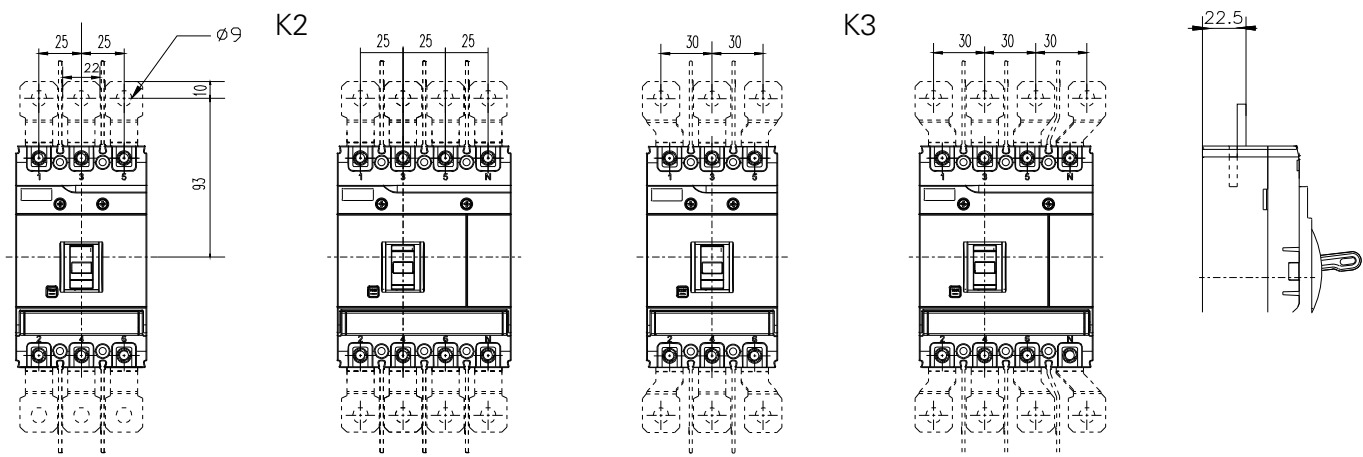


**Note:** The standard length for the CS1 and CS2’s connecting rotary handle and the operator’s square shaft is 200mm.

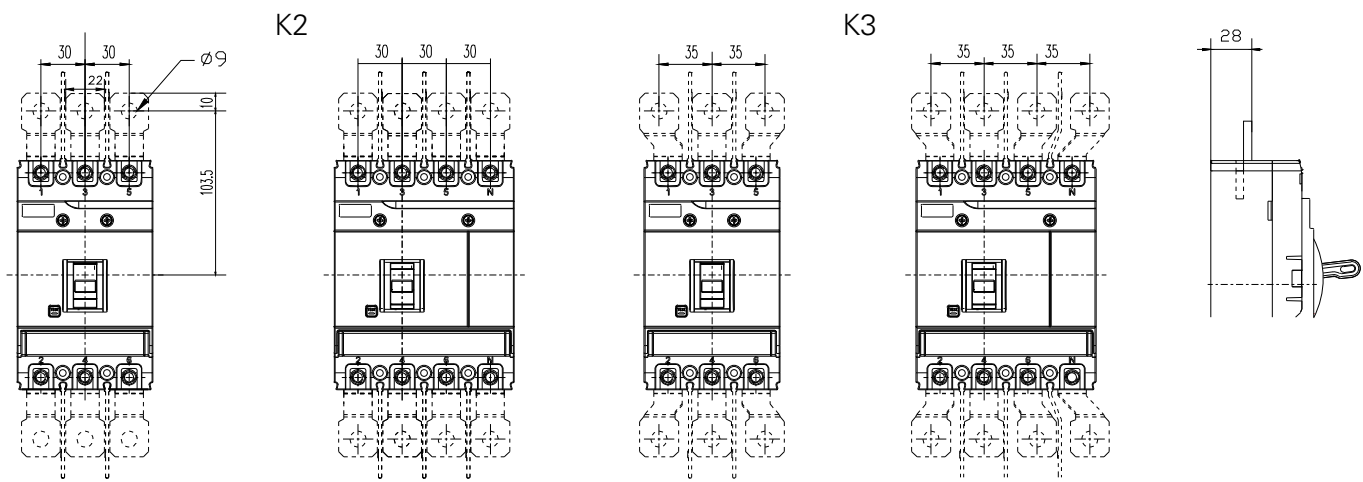
BZMX motor operator dimensions



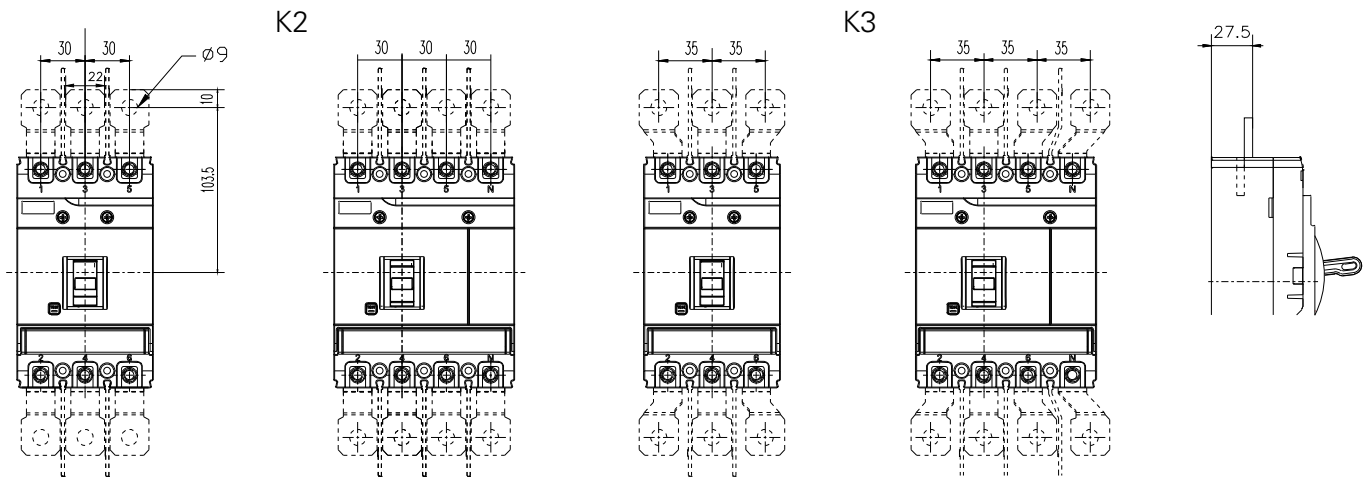
Extension board of BZMXm1-AX (22mm width x 4mm thickness)



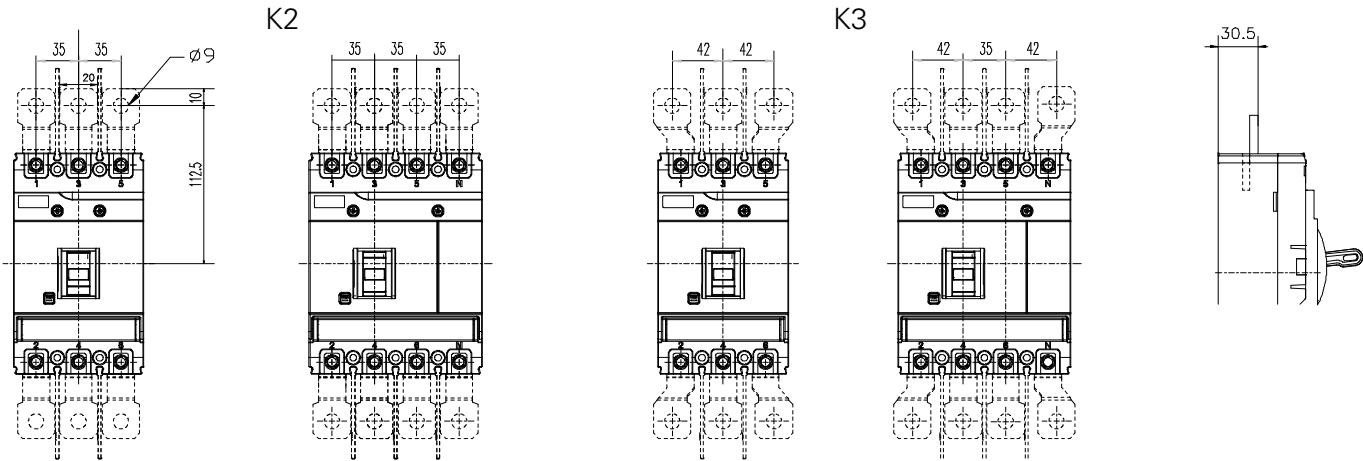
Extension board of BZMX1-AX (22mm width x 4mm thickness)



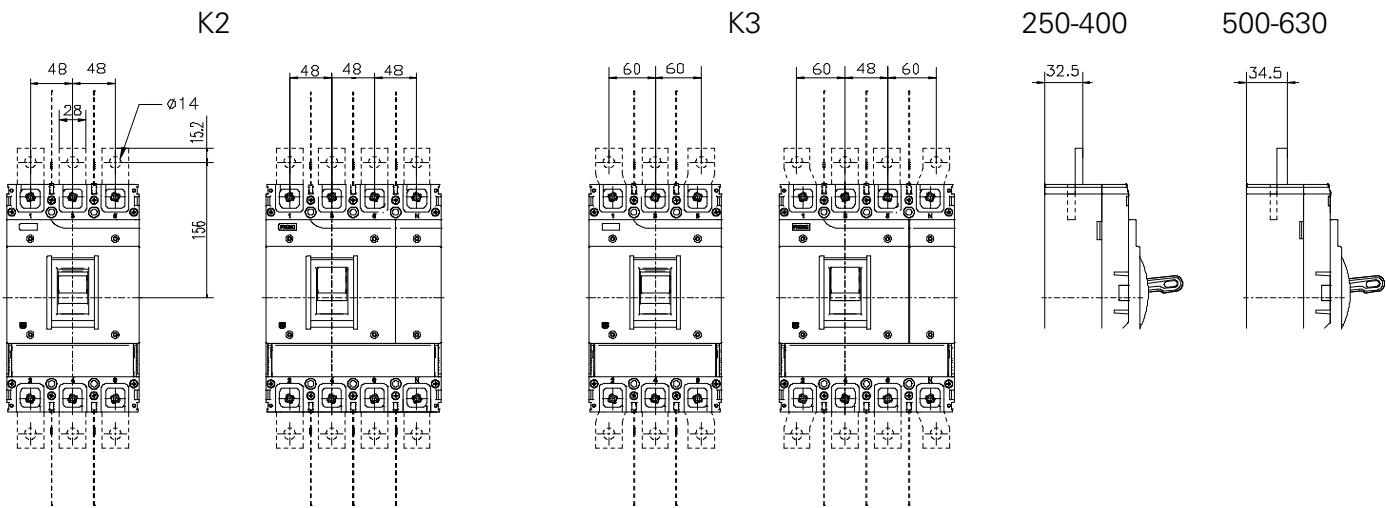
Extension board of BZMX1-EX (22mm width x 4mm thickness)

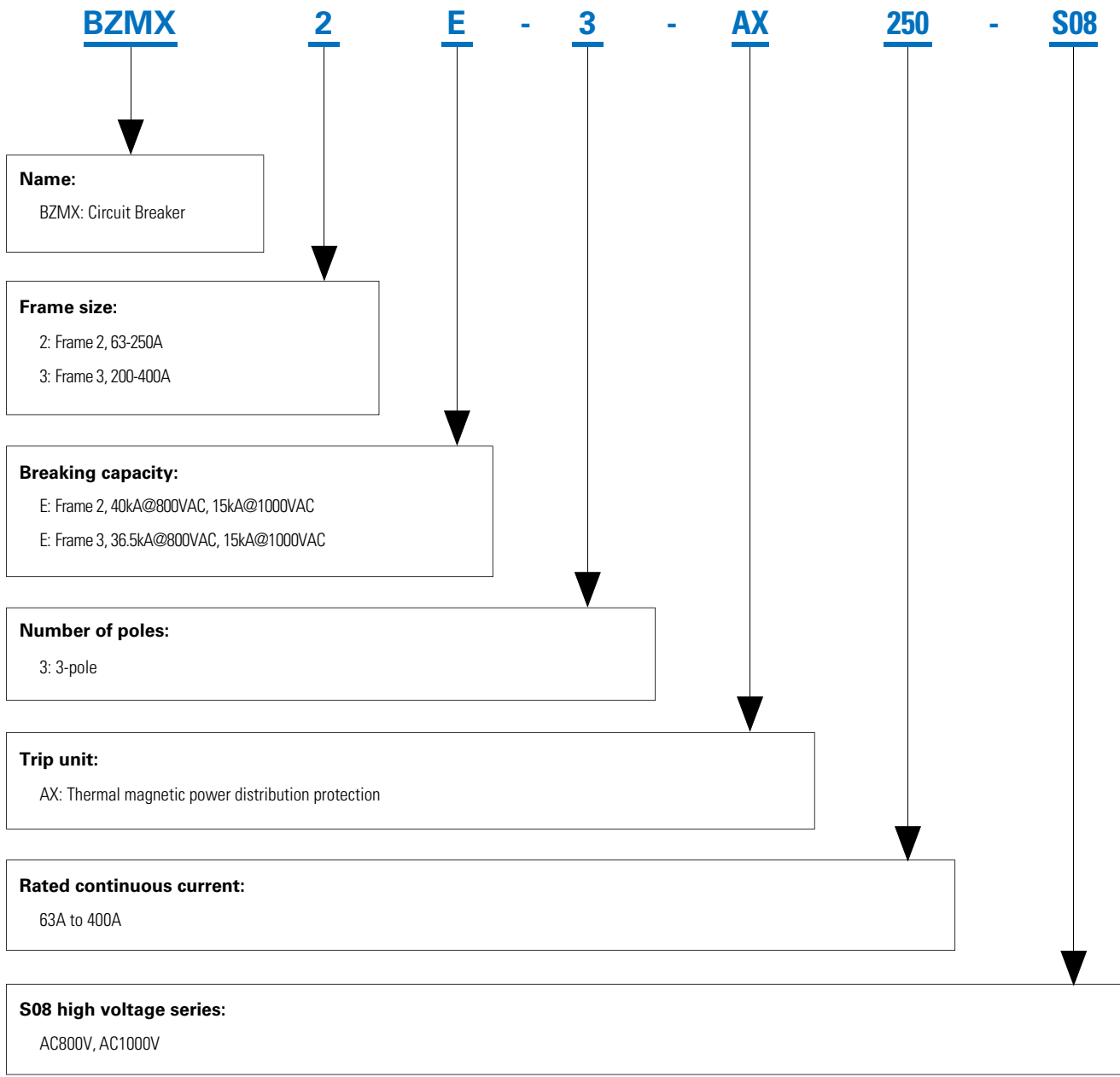


Extension board of BZMX2-AX, BZMX2-M and BZMX2-EX (20mm width x 5mm thickness)

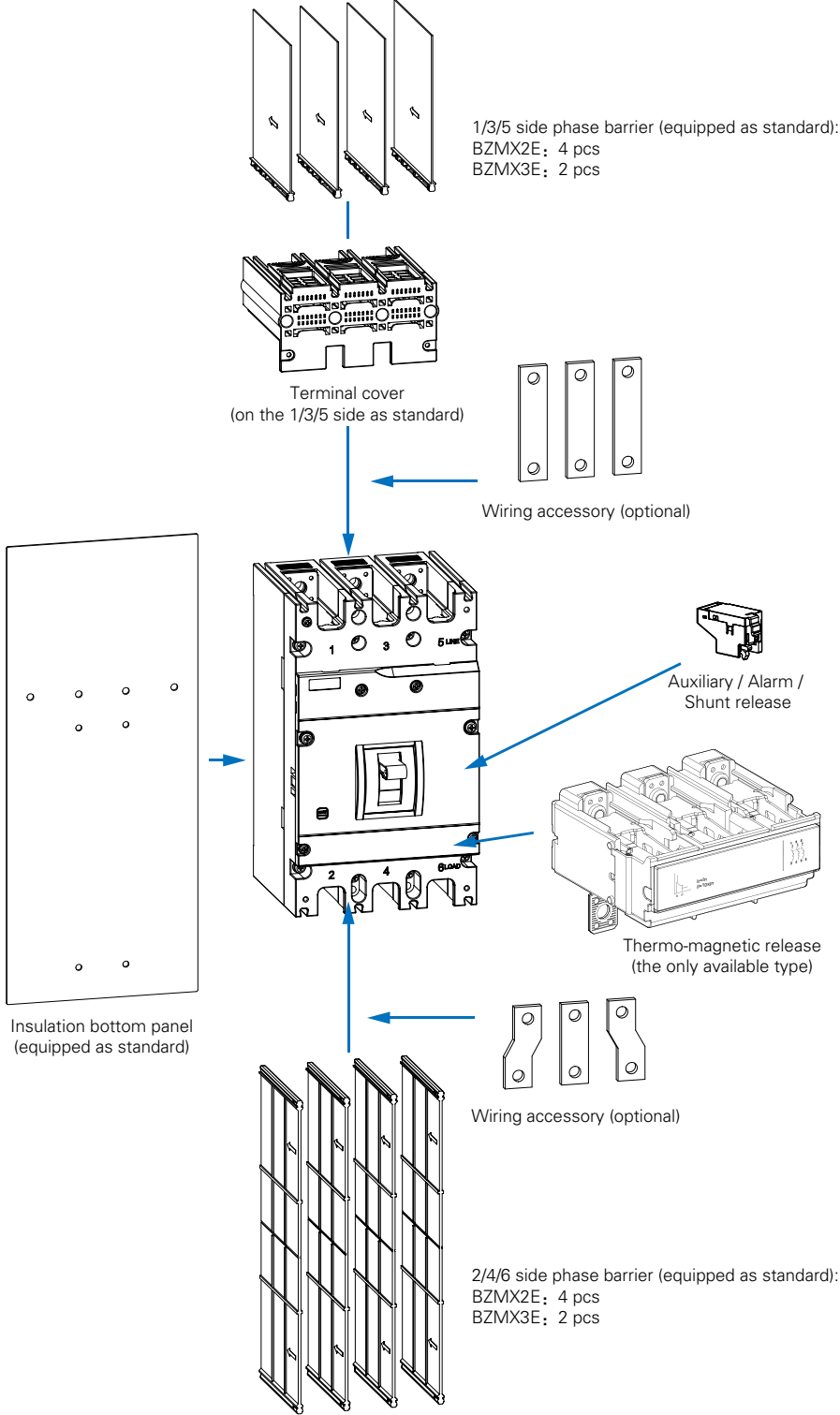


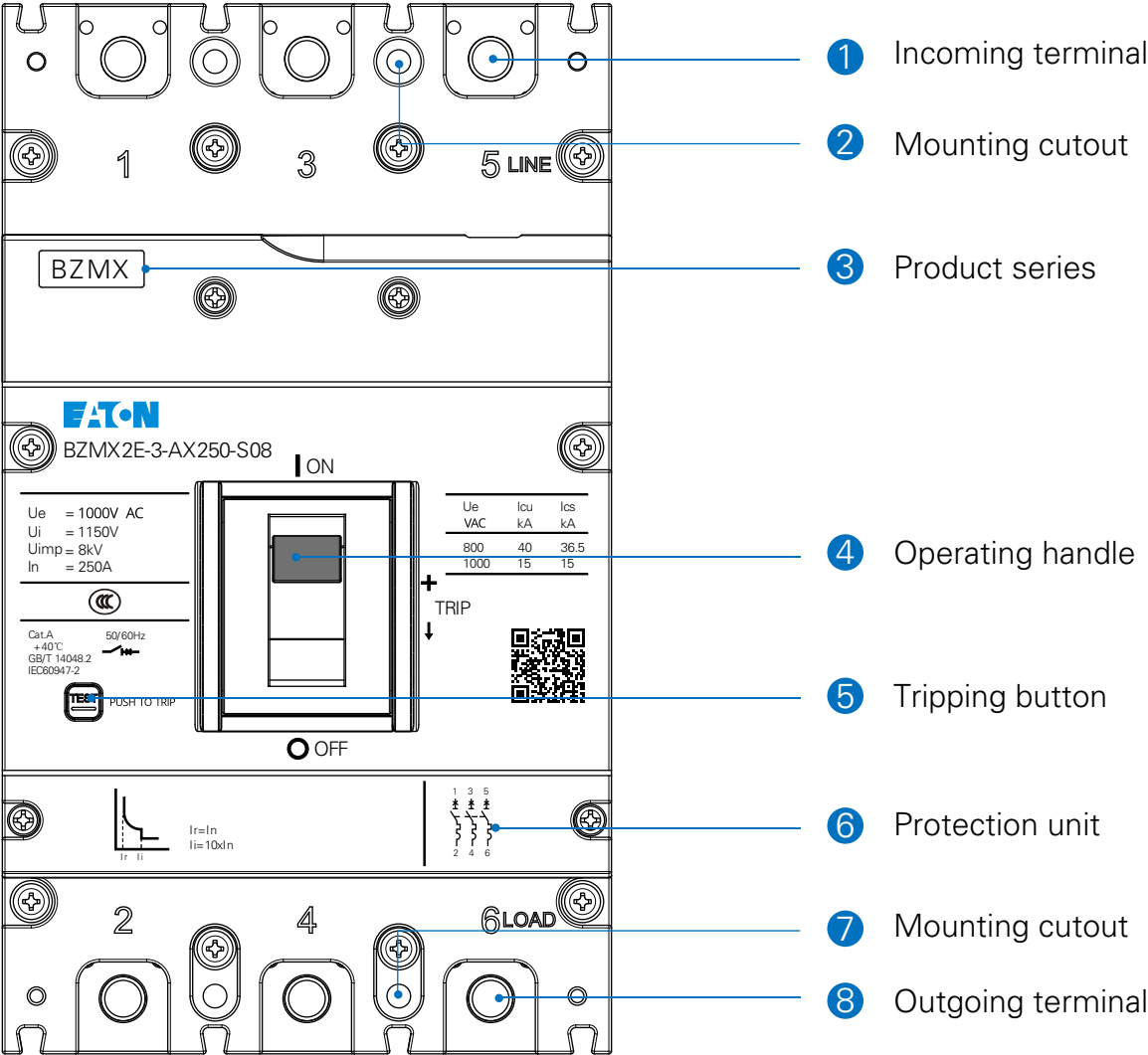
Extension board of BZMX3-AX, BZMX3-M, and BZMX3-EX  
(28mm width x 6mm thickness for 250- 400A and 28mm width x 8mm thickness for 500- 630A)





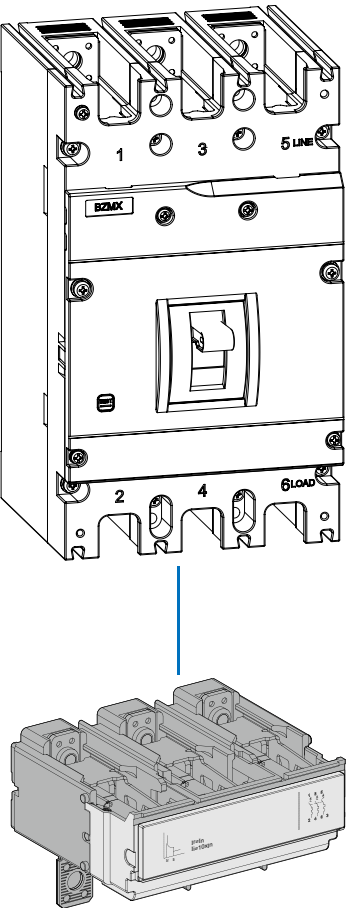
**Notes:**  
1. The circuit breaker is wired to the transformer at its 1/3/5 side, and to the inverter at its 2/4/6 side;  
2. Only 3P devices are avaialbe for S08 high voltage series.





Protection unit description

- Only thermo-magnetic power distribution protection is available for the protection unit of the BZMX-S08 series molded case circuit breakers.
- Protects the power source cable on the PV inverter side;
  - Offers two-stage protection functions - overload and short circuit.



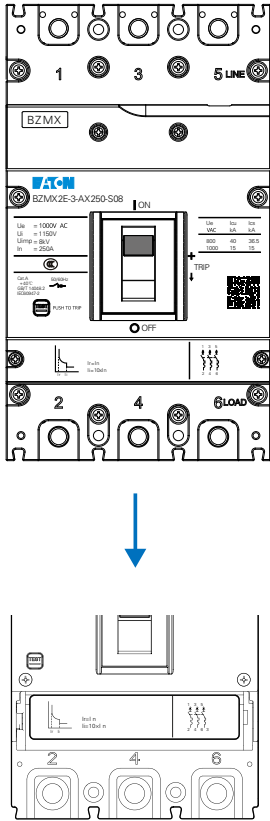
AX thermo-magnetic protection unit  
(power distribution protection)

BZMX-S08 series thermo-magnetic MCCBs (AX: thermo-magnetic)

|                                                                        |                                    |                                       |               | BZMX2E-3-AX**-S08                                                                 | BZMX3E-3-AX**-S08                                                                   |
|------------------------------------------------------------------------|------------------------------------|---------------------------------------|---------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                        |                                    |                                       |               |  |  |
|                                                                        |                                    |                                       |               | 3P                                                                                | 3P                                                                                  |
| Number of poles                                                        |                                    |                                       |               | —                                                                                 | —                                                                                   |
|                                                                        |                                    |                                       |               | —                                                                                 | —                                                                                   |
| Control                                                                | Manual operator                    |                                       |               | —                                                                                 | —                                                                                   |
|                                                                        | Motor operator                     |                                       |               | —                                                                                 | —                                                                                   |
|                                                                        | Front panel wiring                 |                                       |               | ■                                                                                 | ■                                                                                   |
|                                                                        | Rear panel wiring                  |                                       |               | —                                                                                 | —                                                                                   |
|                                                                        | Plug-in type                       |                                       |               | —                                                                                 | —                                                                                   |
| Wiring                                                                 | Drawout type                       |                                       |               | —                                                                                 | —                                                                                   |
|                                                                        |                                    |                                       |               | —                                                                                 | —                                                                                   |
| Electrical specifications in accordance with IEC 60947-2, GB/T 14048.2 |                                    |                                       |               |                                                                                   |                                                                                     |
| Rated current of trip units In (A)                                     |                                    |                                       |               | 63 80 100 125 140 160 180 200 225 250                                             | 200 250 315 350 400                                                                 |
| Rated insulation voltage (V)                                           |                                    | Ui                                    |               | AC1150                                                                            | AC1150                                                                              |
| Rated impulse withstand voltage (kV)                                   |                                    | Uimp                                  |               | 8                                                                                 | 8                                                                                   |
| Rated operating voltage (V)                                            |                                    | Ue                                    |               | AC800/AC1000                                                                      | AC800/AC1000                                                                        |
| Circuit breaker type                                                   |                                    |                                       |               | E                                                                                 | E                                                                                   |
| Rated ultimate short-circuit breaking capacity (kA)                    | Icu                                | AC 50/60 Hz                           | 800V          | 40                                                                                | 36.5                                                                                |
|                                                                        |                                    |                                       | 1000V         | 15                                                                                | 15                                                                                  |
| Rated operational short-circuit breaking capacity (kA)                 | Ics                                | AC 50/60 Hz                           | 800V          | 36.5                                                                              | 36.5                                                                                |
|                                                                        |                                    |                                       | 1000V         | 15                                                                                | 15                                                                                  |
| Rated ultimate short-circuit making capacity (kA)                      | Icm                                | AC 50/60 Hz                           | 800V          | 84                                                                                | 76.6                                                                                |
|                                                                        |                                    |                                       | 1000V         | 31.5                                                                              | 31.5                                                                                |
| Utilizaiton category                                                   |                                    |                                       |               | A                                                                                 | A                                                                                   |
| Number of o<br>perating<br>cycles                                      | Maintenance-<br>free               | Mechanical                            |               | 10000                                                                             | 10000                                                                               |
|                                                                        |                                    | Electrical                            | AC800V        | 1500                                                                              | 1500                                                                                |
|                                                                        |                                    |                                       | AC1000V       | 1000                                                                              | 1000                                                                                |
| Protection unit                                                        |                                    |                                       |               |                                                                                   |                                                                                     |
| Protection unit                                                        |                                    |                                       |               | Thermo-magnetic                                                                   | Thermo-magnetic                                                                     |
| Over-load protection                                                   | Long delay                         | I <sub>r</sub> (I <sub>n</sub> ×...)  |               | ■                                                                                 | ■                                                                                   |
|                                                                        |                                    |                                       |               | —                                                                                 | —                                                                                   |
| Short-circuit protection                                               | Short delay                        | I <sub>sd</sub> (I <sub>n</sub> ×...) |               | —                                                                                 | —                                                                                   |
|                                                                        |                                    |                                       | Instantenouse | I <sub>i</sub> (I <sub>n</sub> ×...)                                              | ■                                                                                   |
| Ground protection                                                      |                                    | I <sub>g</sub> (I <sub>n</sub> ×...)  |               | —                                                                                 | —                                                                                   |
|                                                                        |                                    |                                       |               |                                                                                   |                                                                                     |
| Indication and control accessories                                     |                                    |                                       |               |                                                                                   |                                                                                     |
| Alarm switch                                                           |                                    |                                       |               | ■                                                                                 | ■                                                                                   |
| Auxiliary switch                                                       |                                    |                                       |               | ■                                                                                 | ■                                                                                   |
| Shunt release                                                          |                                    |                                       |               | ■                                                                                 | ■                                                                                   |
| Under-voltage release                                                  |                                    |                                       |               | —                                                                                 | —                                                                                   |
| Mounting                                                               |                                    |                                       |               |                                                                                   |                                                                                     |
| Accessory                                                              | Wiring terminal (optinal)          |                                       |               | ■                                                                                 | ■                                                                                   |
|                                                                        | Phase barrier (standard)           |                                       |               | ■                                                                                 | ■                                                                                   |
|                                                                        | Insulation bottom panel (standard) |                                       |               | ■                                                                                 | ■                                                                                   |
|                                                                        | Zero arcing shield (standard)      |                                       |               | ■                                                                                 | ■                                                                                   |
| Storage temperature                                                    |                                    |                                       |               | -40°C ~ +70°C                                                                     | -40°C ~ +70°C                                                                       |
| Operating temperature                                                  |                                    |                                       |               | -40°C ~ +70°C                                                                     | -40°C ~ +70°C                                                                       |

**Notes:**  
1. The circuit breaker can operate at the ambient temperature of -40°C to +70°C, and the 24-hour average temperature does not exceed 35°C.  
When between +40°C ~ +70°C, derating is needed for customer use. For derating coefficients, please refer to the "Temperature Derating Coefficient Table".

Protection unit overview



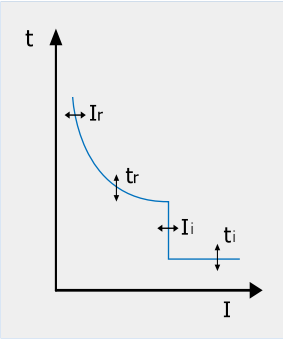
AX: Thermo-magnetic protection unit (power distribution protection)

AX: Thermo-magnetic protection unit (power distribution protection)

Thermal fixed type: rated currents of 63A to 400A  
Magnetic fixed type: rated currents of 630A to 4000A



BZMX-S08-AX protection units



AX: Protection characteristic data table

| Rated current (A) | Inverse time action characteristics<br>(ambient air temperature +40°C) |                                   |                                     |
|-------------------|------------------------------------------------------------------------|-----------------------------------|-------------------------------------|
|                   | 1.05 In (cold state)<br>no-action time                                 | 1.3 In (hot state)<br>action time | Instantaneous<br>action current (A) |
| In ≤ 63           | ≥ 1 h                                                                  | < 1 h                             | 10 In ± 20%                         |
| 63 < In ≤ 400A    | ≥ 2 h                                                                  | < 2 h                             | 10 In ± 20%                         |

Power loss

| Circuit breaker type | Rated current (A) | 3-phase total power loss (W)  |
|----------------------|-------------------|-------------------------------|
|                      |                   | Fixed type front panel wiring |
| BZMX2E               | 250               | 47                            |
| BZMX3E               | 400               | 96                            |

Temperture derating coefficient

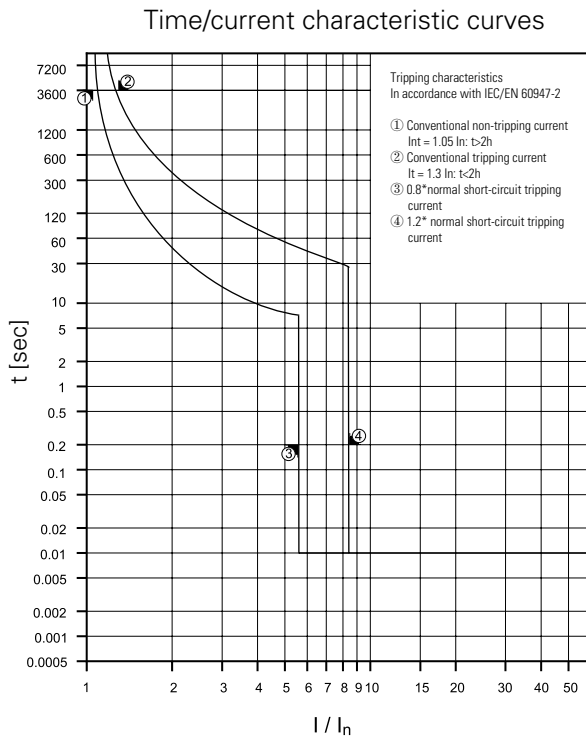
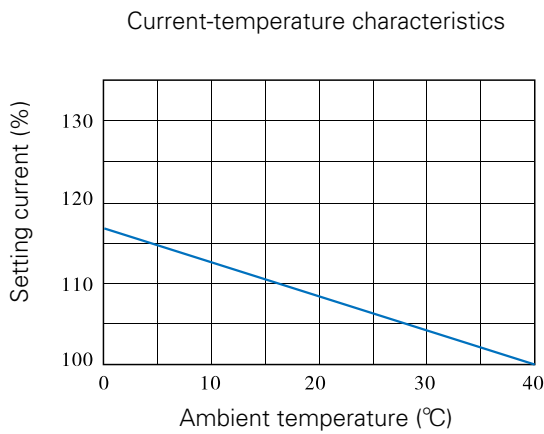
| Circuit breaker type | +40°C  | +45°C  | +50°C  | +55°C  | +60°C   | +65°C   | +70°C   |
|----------------------|--------|--------|--------|--------|---------|---------|---------|
| BZMX2E               | 1.0 In | 1.0 In | 1.0 In | 1.0 In | 0.98 In | 0.95 In | 0.92 In |
| BZMX3E               | 1.0 In | 1.0 In | 1.0 In | 1.0 In | 0.97 In | 0.94 In | 0.91 In |

High altitude derating coefficent

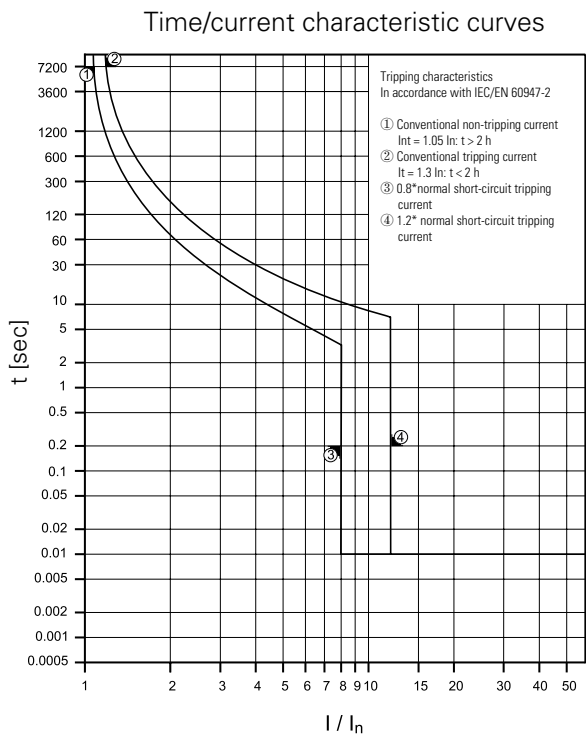
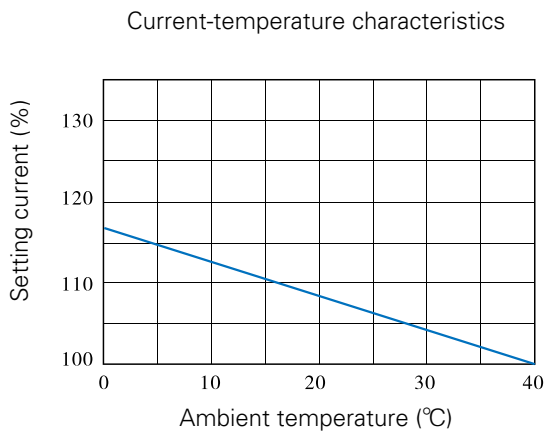
| Description                                               | Specifications |      |      |      |      |      |      |
|-----------------------------------------------------------|----------------|------|------|------|------|------|------|
| Altitude (m)                                              | 2000           | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 |
| Power frequency withstand voltage (V)                     | 3000           | 3000 | 2500 | 2400 | 2200 | 2100 | 2000 |
| Insulation voltage (V)                                    | 1150           | 1150 | 1030 | 970  | 920  | 880  | 835  |
| Maximum operating voltage (V)                             | 1000           | 1000 | 900  | 850  | 810  | 770  | 730  |
| Short-circuit breaking capacity<br>correction coefficient | 1              | 1    | 0.9  | 0.82 | 0.78 | 0.75 | 0.7  |
| Operating current correction coefficient                  | 1              | 1    | 0.98 | 0.97 | 0.96 | 0.95 | 0.94 |

BZMX protective action characteristic curves

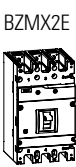
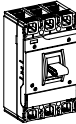
BZMX2E-AX (thermo-magnetic type)

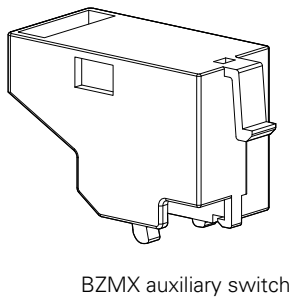


BZMX3E-AX (thermo-magnetic type)

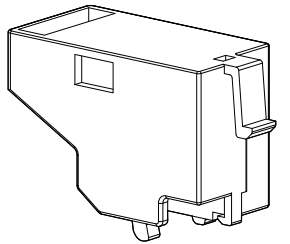


BZMX-S08 thermo-magnetic power distribution protection

|                                                                                      |                                                                           |                                                                           |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Rated current =<br>Rated continuous current<br>$I_n = I_u$<br>A                      | <b>3P</b><br>800V/1000V<br>50/60Hz<br><b>Catalogue No.</b><br>Article No. | <b>3P</b><br>800V/1000V<br>50/60Hz<br><b>Catalogue No.</b><br>Article No. |
|   | 63                                                                        | <b>BZMX2E-3-AX63-S08</b><br>CCX10001                                      |
|                                                                                      | 80                                                                        | <b>BZMX2E-3-AX80-S08</b><br>CCX10002                                      |
|                                                                                      | 100                                                                       | <b>BZMX2E-3-AX100-S08</b><br>CCX10003                                     |
|                                                                                      | 125                                                                       | <b>BZMX2E-3-AX125-S08</b><br>CCX10004                                     |
|                                                                                      | 140                                                                       | <b>BZMX2E-3-AX140-S08</b><br>CCX10005                                     |
|                                                                                      | 160                                                                       | <b>BZMX2E-3-AX160-S08</b><br>CCX10006                                     |
|                                                                                      | 180                                                                       | <b>BZMX2E-3-AX180-S08</b><br>CCX10007                                     |
|                                                                                      | 200                                                                       | <b>BZMX2E-3-AX200-S08</b><br>CCX10008                                     |
|                                                                                      | 225                                                                       | <b>BZMX2E-3-AX225-S08</b><br>CCX10009                                     |
|                                                                                      | 250                                                                       | <b>BZMX2E-3-AX250-S08</b><br>CCX10010                                     |
|  | 200                                                                       | <b>BZMX3E-3-AX200-S08</b><br>CCX10011                                     |
|                                                                                      | 250                                                                       | <b>BZMX3E-3-AX250-S08</b><br>CCX10012                                     |
|                                                                                      | 315                                                                       | <b>BZMX3E-3-AX315-S08</b><br>CCX10013                                     |
|                                                                                      | 350                                                                       | <b>BZMX3E-3-AX350-S08</b><br>CCX10014                                     |
|                                                                                      | 400                                                                       | <b>BZMX3E-3-AX400-S08</b><br>CCX10015                                     |



BZMX auxiliary switch



BZMX alarm contact

Auxiliary contact (BZMX/Z)

| Circuit breaker state                  | Auxiliary switch state                                                        |
|----------------------------------------|-------------------------------------------------------------------------------|
| Circuit breaker in the Open position   | <div><div>F14 ( F24 )</div><div>F12 ( F22 )</div><div>F11 ( F21 )</div></div> |
| Circuit breaker in the Closed position | <div><div>F14 ( F24 )</div><div>F12 ( F22 )</div><div>F11 ( F21 )</div></div> |

Alarm contact (BZMX/ZA)

| Circuit breaker state                   | Alarm switch state                                    |
|-----------------------------------------|-------------------------------------------------------|
| Circuit breaker in Open/Closed position | <div><div>B14</div><div>B12</div><div>B11</div></div> |
| Circuit breaker in the Tripped position | <div><div>B14</div><div>B12</div><div>B11</div></div> |

Rated operating currents of alarm contacts and auxiliary contacts

| Contact type      | Rated current I <sub>nm</sub> | Conventional thermal current I <sub>th</sub> (A) | Rated operating current I <sub>e</sub> (A) |        |
|-------------------|-------------------------------|--------------------------------------------------|--------------------------------------------|--------|
|                   |                               |                                                  | AC400V                                     | DC220V |
| Auxiliary contact | ≤250                          | 3                                                | 0.3                                        | 0.15   |
|                   | 400 ≤ I <sub>nm</sub> ≤ 1000  | 3                                                | 0.4                                        | 0.2    |
| Alarm contact     | 10 ≤ I <sub>nm</sub> ≤ 1000   | -                                                | AC220V/1.0A                                | 0.15   |

Making and breaking capacity of alarm contacts and auxiliary contacts under normal conditions

| Utilization category | Makinig (ON)     |                  |       |                    | Breaking (OFF)   |                  |       |                   | Power-on operation cycles | Number of operating cycles per minute | Power-on duration |
|----------------------|------------------|------------------|-------|--------------------|------------------|------------------|-------|-------------------|---------------------------|---------------------------------------|-------------------|
|                      | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub> |                           |                                       |                   |
| AC-14                | 10               | 1                | 0.7   | -                  | 1                | 1                | 0.7   | -                 | 6050                      | 6                                     | ≥ 0.05s           |
| DC-13                | 1                | 1                | -     | 6 × P <sub>e</sub> | 1                | 1                | -     | 6×P <sub>e</sub>  |                           |                                       | ≥ 0.05s           |

Making and breaking capacity of alarm contacts and auxiliary contacts under abnormal conditions

| Utilization category | Makinig (ON)     |                  |       |                    | Breaking (OFF)   |                  |       |                   | Power-on operation cycles | Number of operating cycles per minute | Power-on duration |
|----------------------|------------------|------------------|-------|--------------------|------------------|------------------|-------|-------------------|---------------------------|---------------------------------------|-------------------|
|                      | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub>  | I/I <sub>e</sub> | U/U <sub>e</sub> | cos φ | T <sub>0.95</sub> |                           |                                       |                   |
| AC-14                | 6                | 1                | 0.7   | -                  | 1                | 1                | 0.7   | -                 |                           |                                       | ≥ 0.05s           |
| DC-13                | 1.1              | 1.1              | -     | 6 × P <sub>e</sub> | 1.1              | 1.1              | -     | 6×P <sub>e</sub>  | 10                        | 6                                     | ≥ 0.05s           |

- Notes:
- ①

T0.95=6Pe formula is a rule of thumb, where Pe is in Watts" and T0.95 in Milliseconds;
- ②

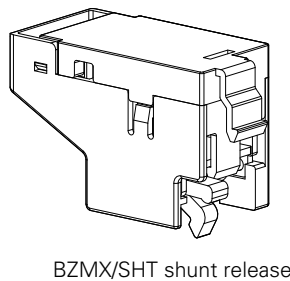
When the total operations of the circuit breaker is less than 6,050, the number of power-on operations of the auxiliary contacts can be the same as the circuit breaker's total operations;
- ③

The operating frequency and power-on duration are allowed to be consistent with the main circuit of the circuit breaker;
- ④

The power-on duration is at least T0.95° if T0.95 is greater than 0.05s.

Auxiliary cotnacts / alarm contacts

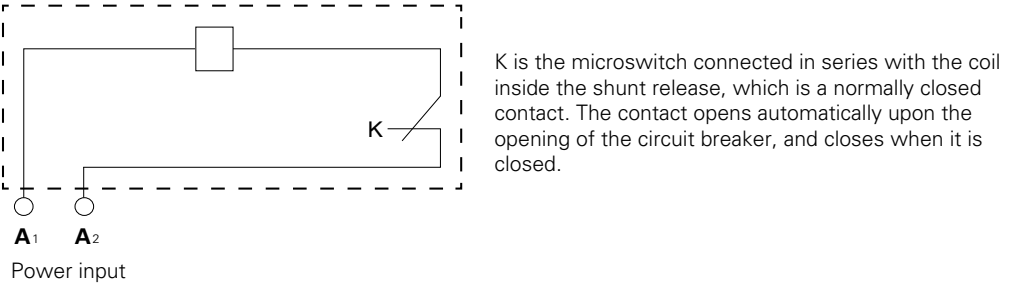
| Accessory name                      | Frame  | Catalogue No.    | Article No. | Note                                                                               |
|-------------------------------------|--------|------------------|-------------|------------------------------------------------------------------------------------|
| Auxiliary cotnacts / alarm contacts | BZMX2E | BZMX2/Z R        | CCX09014    | BZMX2E Auxiliary contact/alarm contact only supports right mounting, 80cm long     |
|                                     |        | BZMX2/2Z R       | CCX09016    |                                                                                    |
|                                     |        | BZMX2/ZA R-S08   | CCX09133    |                                                                                    |
|                                     |        | BZMX2/Z+ZA R-S08 | CCX09134    |                                                                                    |
|                                     | BZMX3E | BZMX3/Z          | CCX09021    | BZMX3E Auxiliary contact/alarm contact supports left and right mounting, 80cm long |
|                                     |        | BZMX3/ZA         | CCX09022    |                                                                                    |
|                                     |        | BZMX3/Z+ZA       | CCX09023    |                                                                                    |



Shunt releases (BZMX/SHT)

|                        |                                                                                                     |
|------------------------|-----------------------------------------------------------------------------------------------------|
| Voltage specification  | AC50Hz: 230V 400V                                                                                   |
|                        | DC: 24V 220V 110V                                                                                   |
| Action characteristics | The shunt release enables circuit breakers to trip when at 70% to 110% of the rated control voltage |

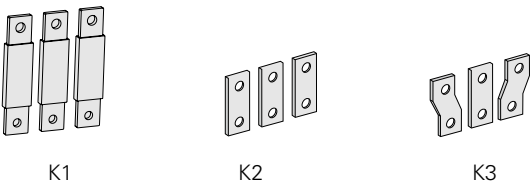
Wiring diagram (within the dotted box are the internal accessories of the circuit breaker)



Shunt releases

| Accessory name | Frame  | Catalogue No.    | Aritcle No. | Description | Note                                                                                                   |
|----------------|--------|------------------|-------------|-------------|--------------------------------------------------------------------------------------------------------|
| Shunt release  | BZMX2E | BZMX2/SHT 400V   | CCX9039     | Length 80cm | BZMX2E and BZMX3E series are universal to standard type products.<br><br>Left mounting for all devices |
|                |        | BZMX2/SHT 230V   | CCX9040     | Length 80cm |                                                                                                        |
|                |        | BZMX2/SHT DC110V | CCX9041     | Length 80cm |                                                                                                        |
|                |        | BZMX2/SHT DC24V  | CCX9042     | Length 80cm |                                                                                                        |
|                | BZMX3E | BZMX3/SHT 400V   | CCX9043     | Length 80cm |                                                                                                        |
|                |        | BZMX3/SHT 230V   | CCX9044     | Length 80cm |                                                                                                        |
|                |        | BZMX3/SHT DC110V | CCX9045     | Length 80cm |                                                                                                        |
|                |        | BZMX3/SHT DC24V  | CCX9046     | Length 80cm |                                                                                                        |

Extension wiring board (BZMX/K)

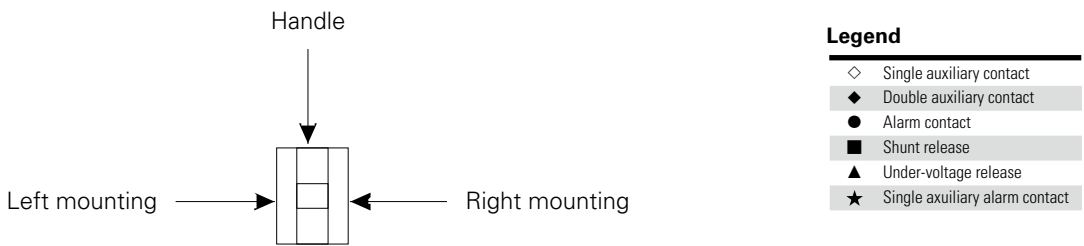


- Increase the distance between circuit breaker terminals according to incoming devices, to improve inter-phase insulation

Extension wiring board BZMX/K

| Accessory name         | Frame  | Catalogue No.   | Aritcle No. | Description                                                    | Note                                        |
|------------------------|--------|-----------------|-------------|----------------------------------------------------------------|---------------------------------------------|
| Extension wiring board | BZMX2E | BZMX2-1/K1 250A | CCX09122    | Straight terminal extension board, suitable for 135 & 246 side | Three terminalas are included for each set. |
|                        |        | BZMX2-1/K2 250A | CCX09123    | Standard straight terminal extension board, only for 246 side  |                                             |
|                        |        | BZMX2-1/K3 250A | CCX09124    | Inter-phase extension board, only for 246 side                 |                                             |
|                        | BZMX3E | BZMX3-1/K1 400A | CCX09127    | Straight terminal extension board, suitable for 135 & 246 side |                                             |
|                        |        | BZMX3-1/K2 400A | CCX09125    | Standard straight terminal extension board, only for 246 side  |                                             |
|                        |        | BZMX3-1/K3 400A | CCX09126    | Inter-phase extension board, only for 246 side                 |                                             |

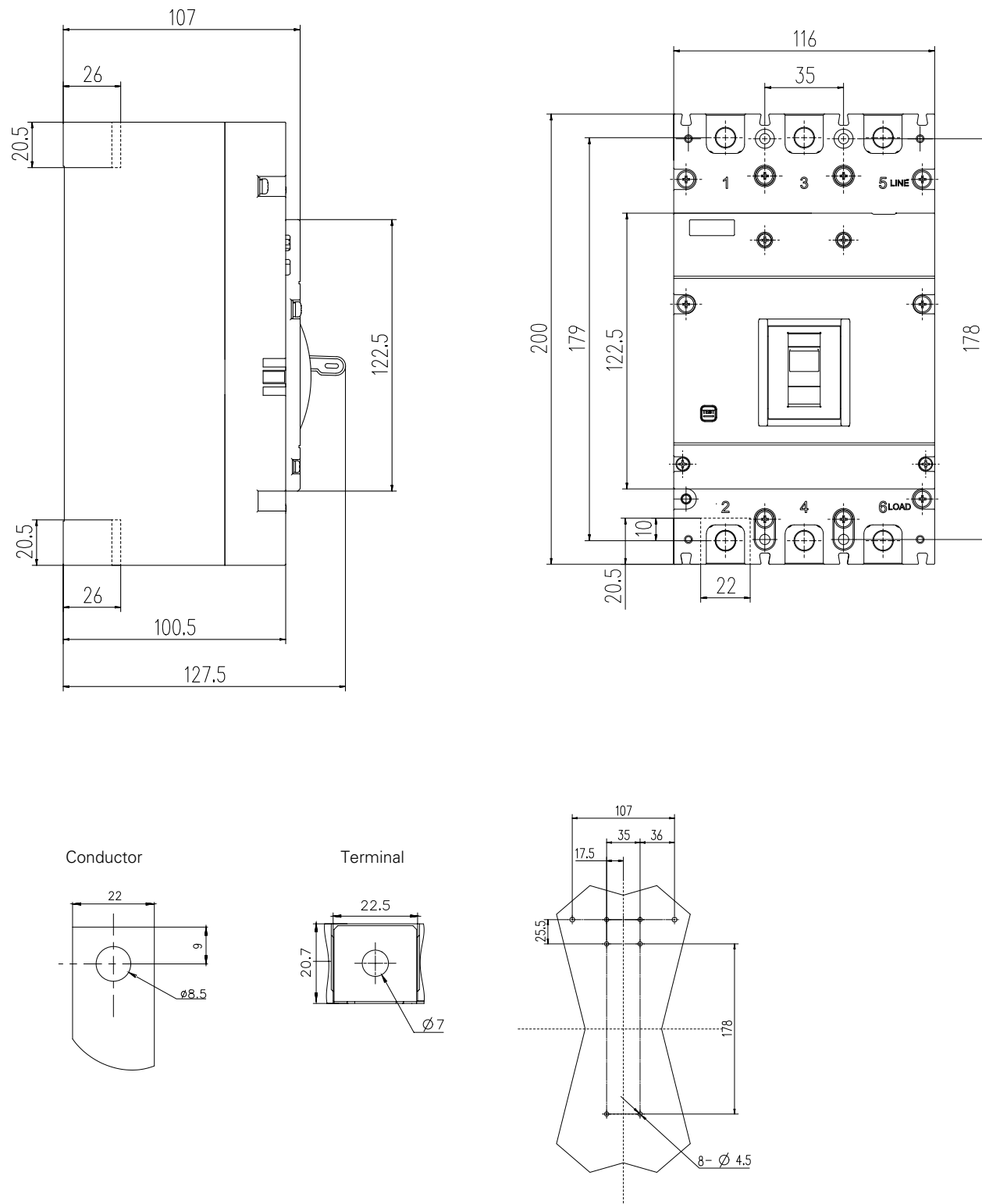
Electrical accessory ombination mode



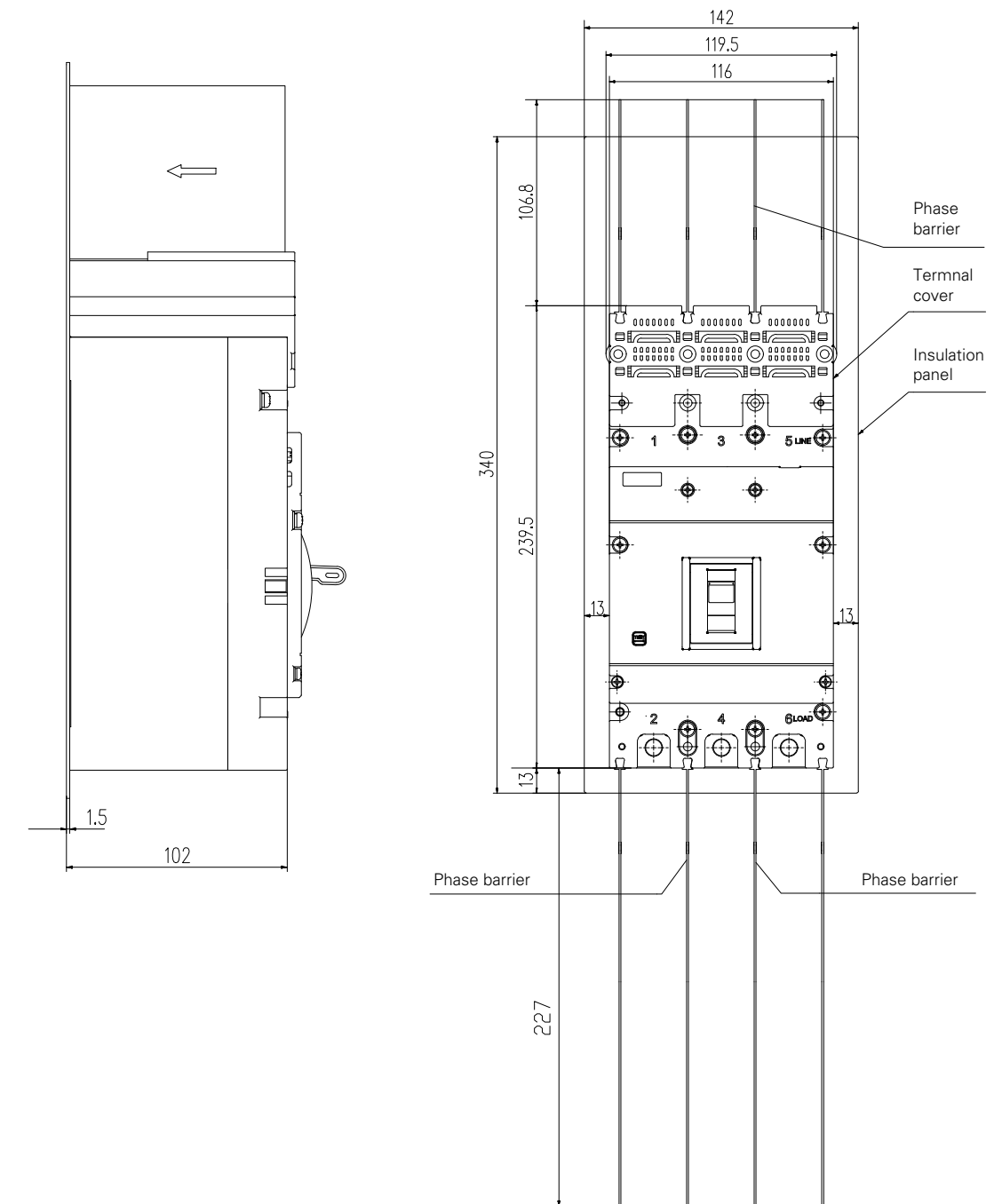
Tripping mode accessory code comparison table

| Accessory code | Accessory name                                                                      | BZMX2E-AX**-S08 | BZMX3E-AX**-S08 |
|----------------|-------------------------------------------------------------------------------------|-----------------|-----------------|
|                |                                                                                     | 3P              | 3P              |
| 00             | N/A                                                                                 | /               | /               |
| 10             | Shunt release                                                                       | ■               | ■               |
| 20             | Single auxiliary contact                                                            | ◇               | ◇               |
| 30             | Double auxiliary contact                                                            | ◆               | ◆               |
| 40             | Under-voltage release                                                               | /               | /               |
| 50             | Alarm ccontact                                                                      | ●               | ●               |
| 60             | Single auxiliary alarm contact                                                      | ★               | ★               |
| 12             | Shunt release + single auxiliary contact                                            | ■◇              | ■◇              |
| 13             | Shunt release + double auxiliary contact                                            | ■◆              | ■◆              |
| 14             | Shunt release + under-voltage release                                               | /               | /               |
| 15             | Shunt release + alarm ccontact                                                      | ■●              | ■●              |
| 16             | Shunt release + single auxiliary alarm contact                                      | ■★              | ■★              |
| 17             | Shunt release + single auxiliary contact + under-voltage release                    | /               | /               |
| 18             | Shunt release + single auxiliary alarm contact + single auxiliary contact           | /               | ★◇              |
| 19             | Shunt release + alarm contact + under-voltage release                               | /               | /               |
| 21             | Shunt release + single auxiliary alarm contact + under-voltage release              | /               | /               |
| 22             | Two sets of single auxiliary contacts                                               | ◇◇              | ◇◇              |
| 32             | Double auxiliary contact + single auxiliary contact                                 | ◆◇              | ◆◇              |
| 33             | Two sets of double auxiliary contacts                                               | ◆◆              | ◆◆              |
| 35             | Double auxiliary contact + alarm contact                                            | ◆●              | ◆●              |
| 36             | Double auxiliary contact + single auxiliary alarm contact                           | ◆★              | ◆★              |
| 42             | Under-voltage release + single auxiliary contact                                    | /               | /               |
| 43             | Under-voltage release + double auxiliary contact                                    | /               | /               |
| 23             | Under-voltage release + three sets of auxiliary contacts                            | /               | /               |
| 24             | Under-voltage release + + single auxiliary contact + single auxiliary alarm contact | /               | /               |
| 45             | Under-voltage release + alarm contact                                               | /               | /               |
| 46             | Under-voltage release + single auxiliary alarm contact                              | /               | /               |

## BZMX2E's basic device

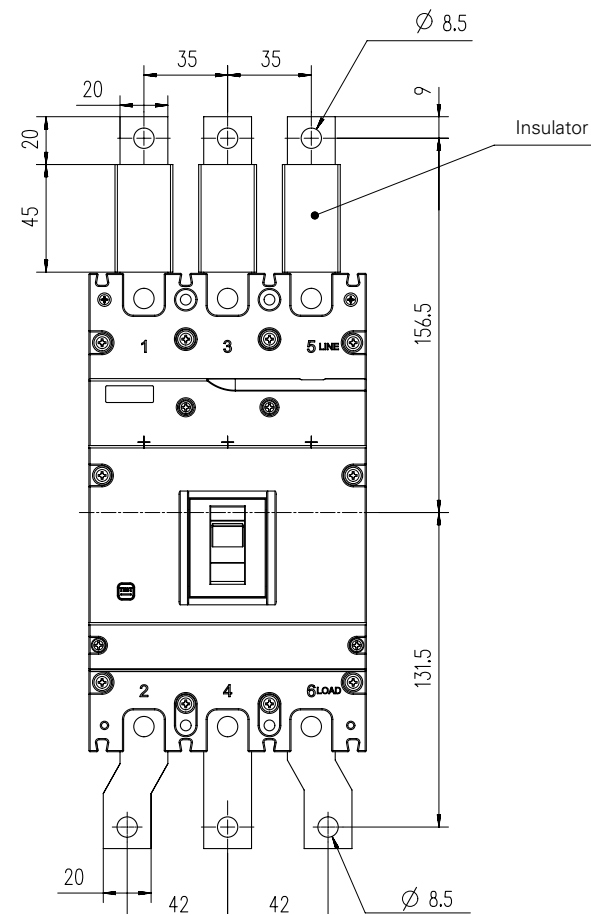


## BZMX2E devices equipped with insulating bottom panel, phase barrier and terminal cover

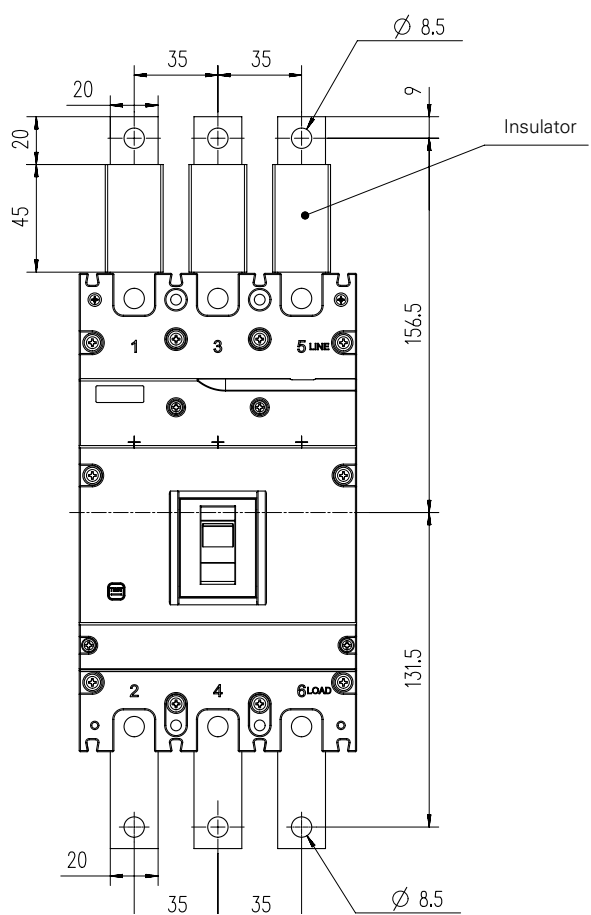


BZMX2E’s optional extension board dimensions

Straight terminal extension board on the 1/3/5 side and pole-spacing extension board on the 2/4/6 side

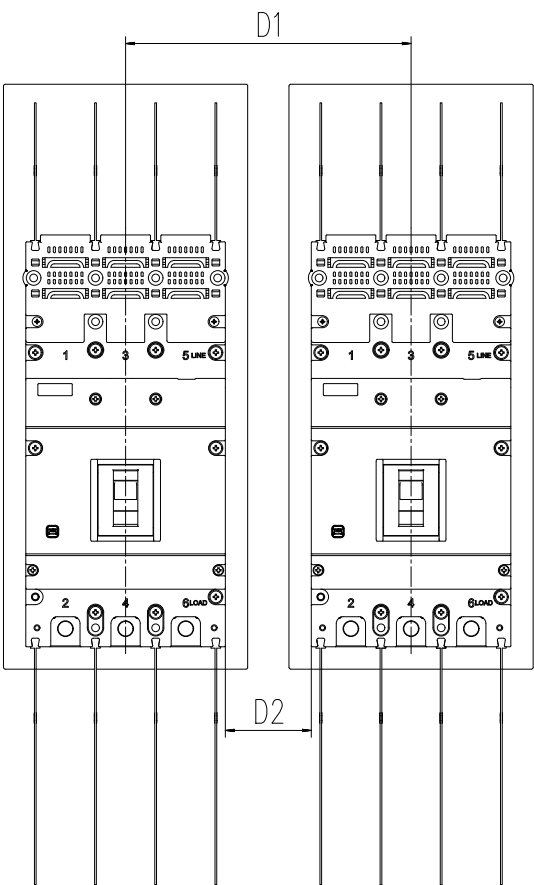


Straight terminal extension boards on the 1/3/5 and 2/4/6 sides

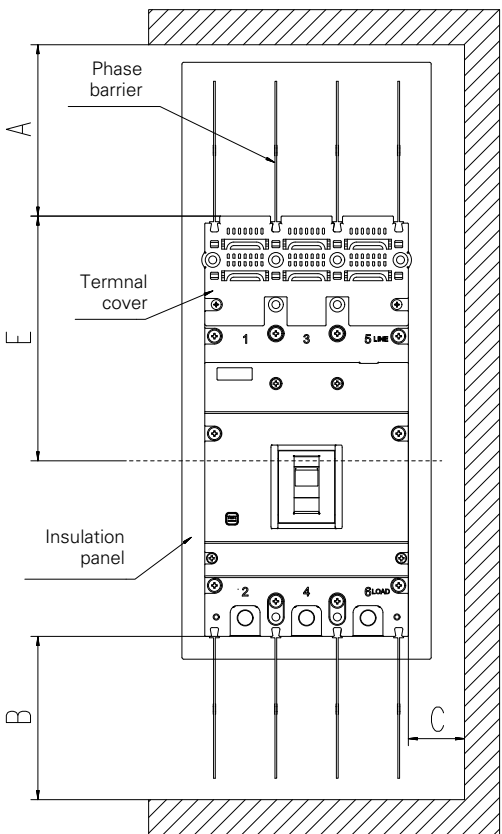


BZMX2E mounting diagrams

The minimum clearance between adjacent circuit breakers

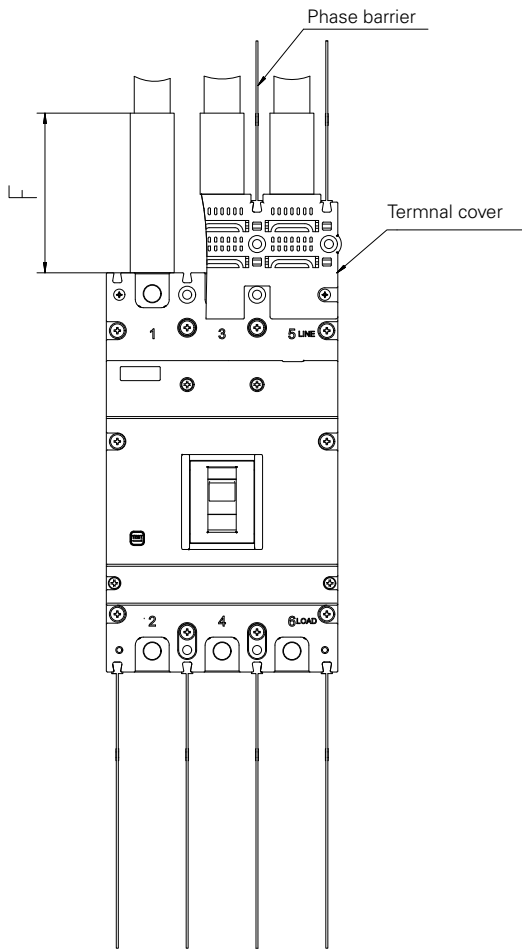


The minimum clearance between circuit breaker and top, bottom and side panels

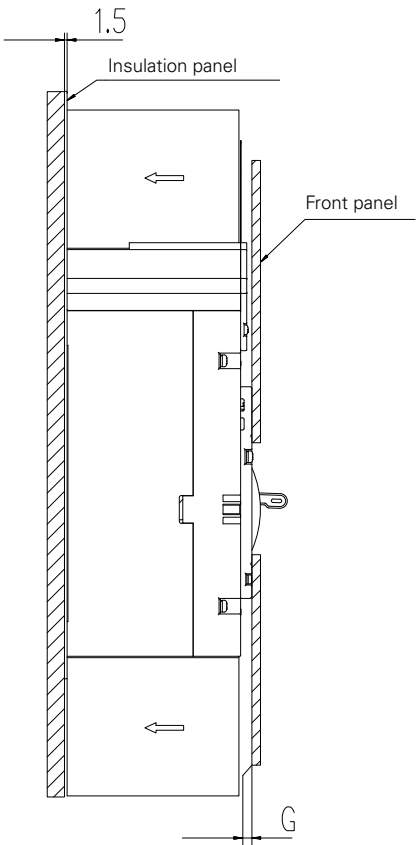


BZMX2E mounting diagrams

The minimum insulation length of the wiring board for front panel wiring



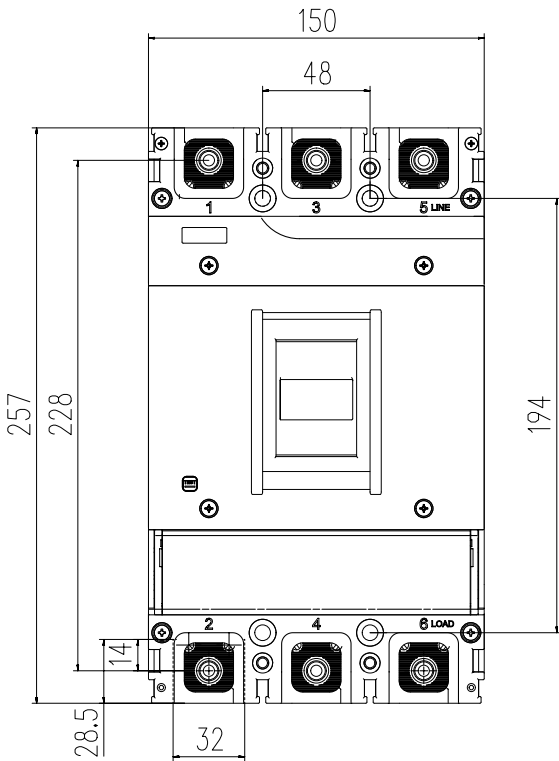
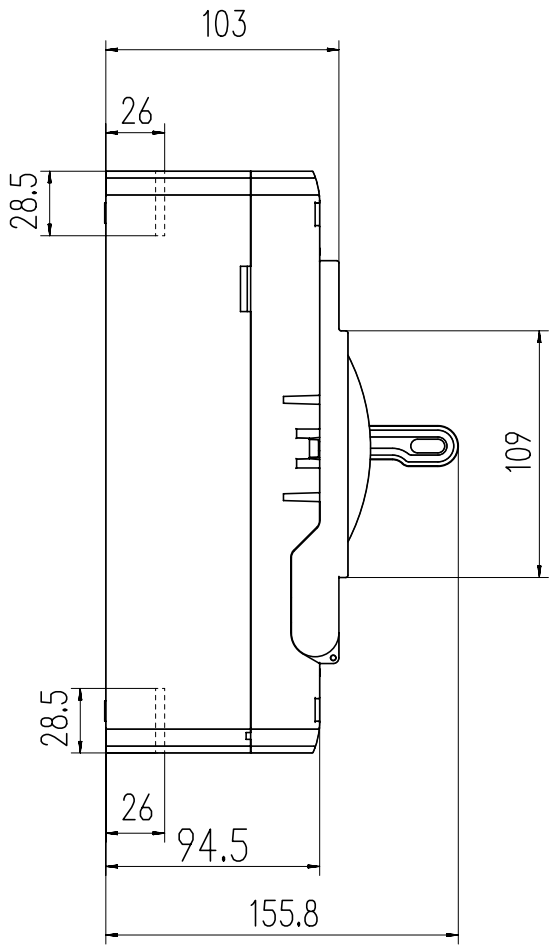
The minimum clearance between circuit breaker and front panel



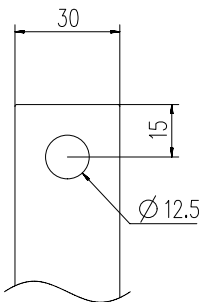
Mounting dimension table

| Catalogue No. | Dimensions (mm) |     | C  | D1  | D2 | E     | F   | G<br>Insulation panel | G<br>Metal panel |
|---------------|-----------------|-----|----|-----|----|-------|-----|-----------------------|------------------|
|               | A               | B   |    |     |    |       |     |                       |                  |
| BZMX2E        | 150             | 228 | 30 | 146 | 30 | 139.5 | 350 | 0                     | 30               |

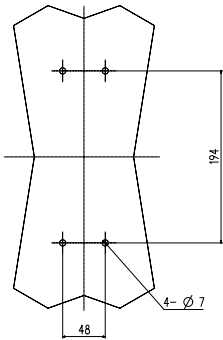
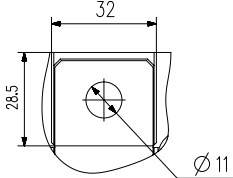
BZMX3E's basic device



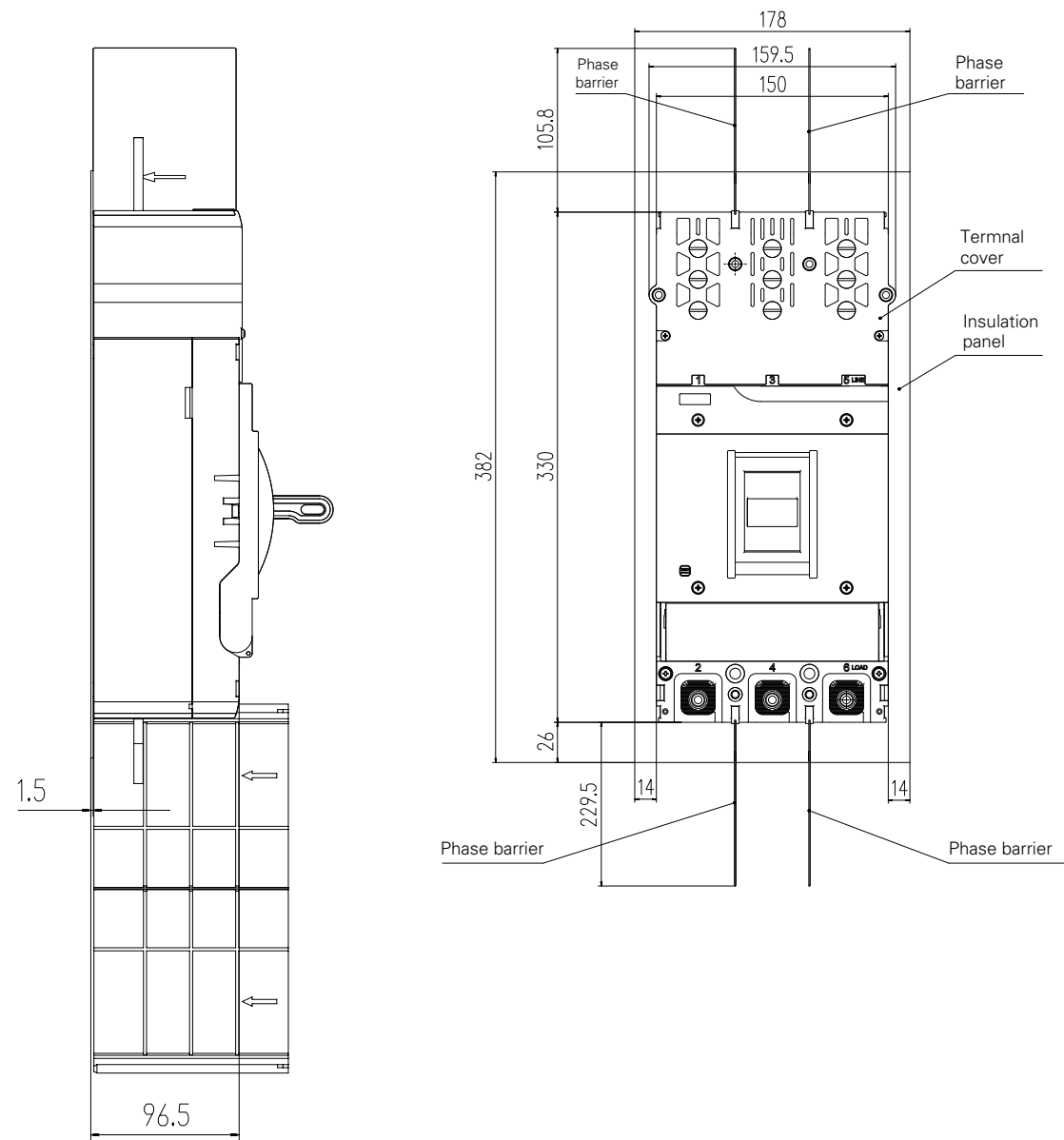
Conductor



Terminal

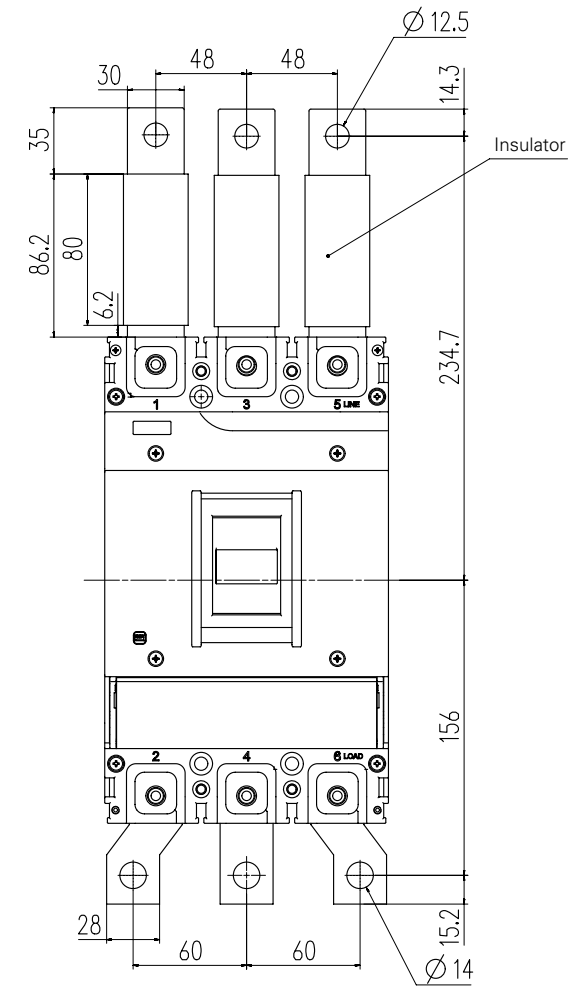


## BZMX3E devices equipped with insulating bottom panel, phase barrier and terminal cover

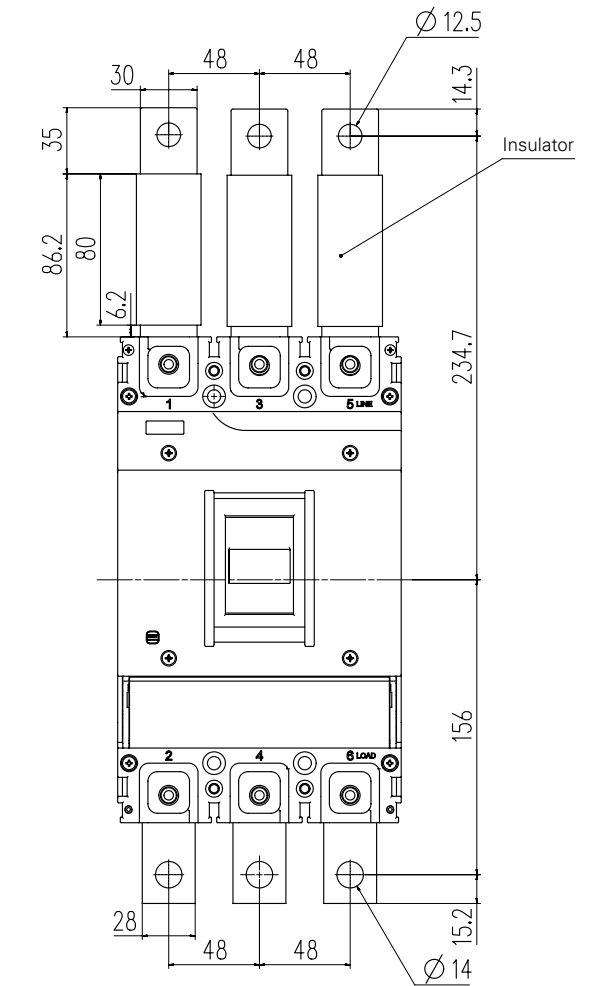


## BZMX3E's optional extension board dimensions

Straight terminal extension board on the 1/3/5 side and pole-spacing extension board on the 2/4/6 side

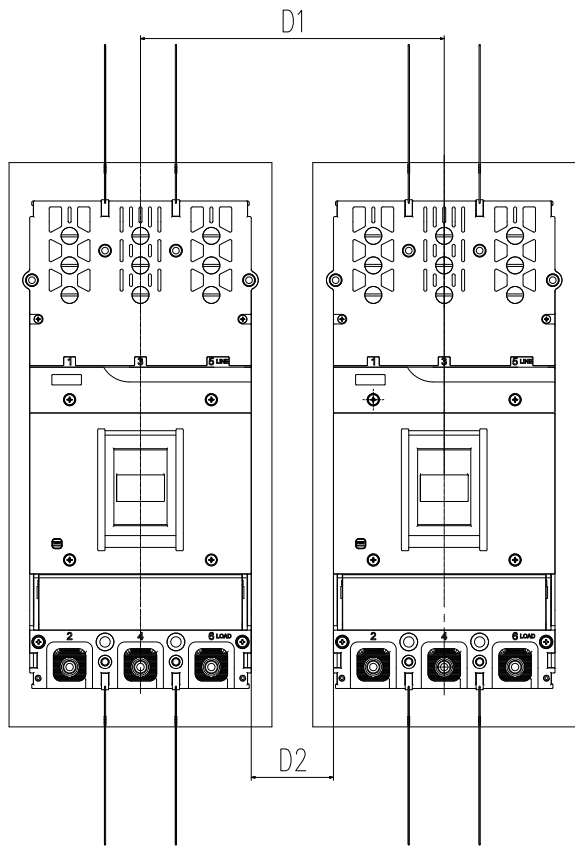


Straight terminal extension boards on the 1/3/5 and 2/4/6 sides

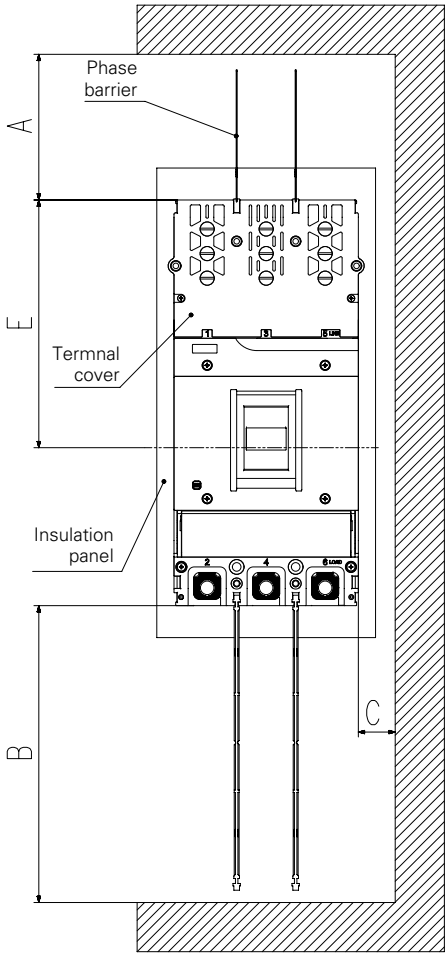


BZMX2E mounting diagrams

The minimum clearance between adjacent circuit breakers

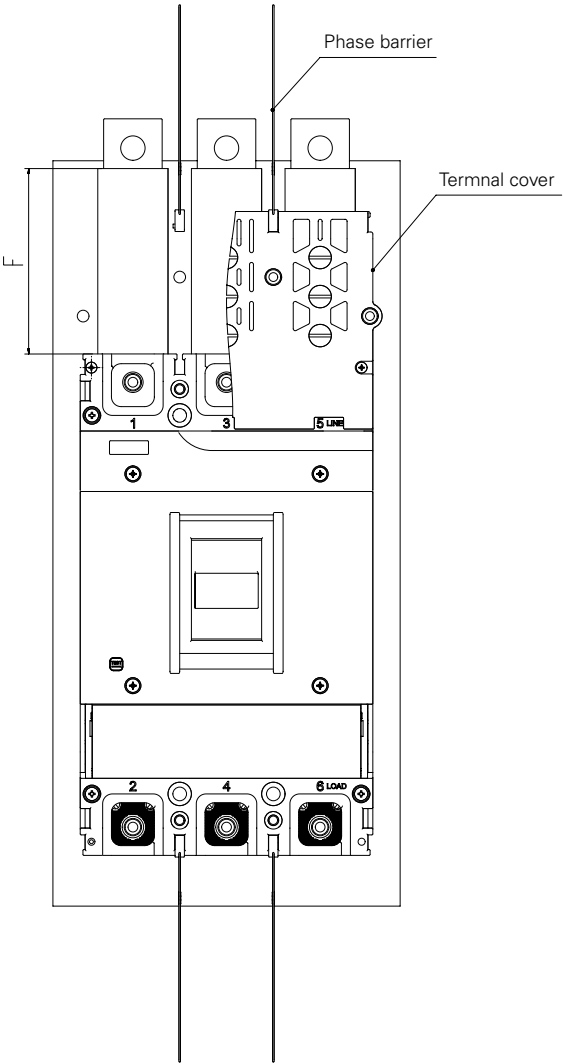


The minimum clearance between circuit breaker and top, bottom and side panels

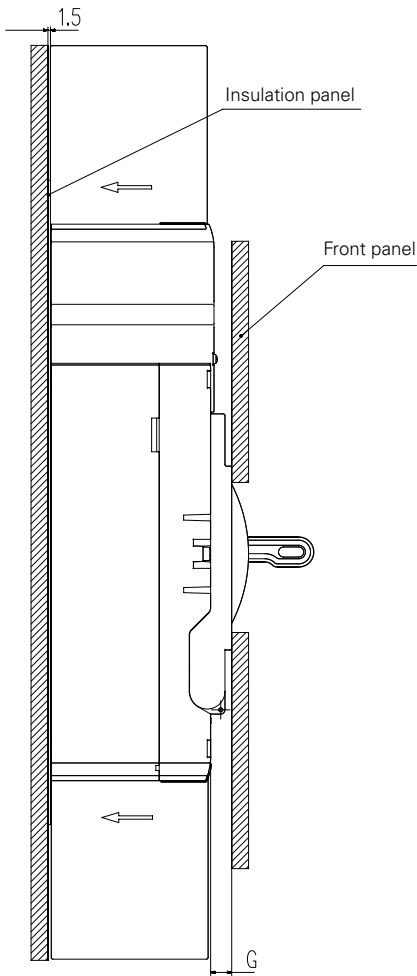


BZMX3E mounting diagrams

The minimum insulation length of the wiring board for front panel wiring



The minimum clearance between circuit breaker and front panel



Mounting dimension table

| Catalogue No. | Dimensions (mm) |     | C  | D1  | D2 | E     | F   | G<br>Insulation panel | G<br>Metal panel |
|---------------|-----------------|-----|----|-----|----|-------|-----|-----------------------|------------------|
|               | A               | B   |    |     |    |       |     |                       |                  |
| BZMX3E        | 150             | 235 | 30 | 180 | 30 | 201.5 | 400 | 0                     | 30               |

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