


• General Selection Table

| | | | | | | | | | | |
|---|---|--|----------|---------------------------------|--------|---------------------|----|-----|-------|-------|
| <div>PHOTO</div> <div>SPECIFICATIONS</div> | |  | | | | | | | | |
| | | | | | | | | | | |
| Type | | S-Type | | | H-Type | | | | | |
| Type and Pole | 2-pole | | CAMF1-S2 | | | CAMF1-H2 | | | | |
| | 3-pole | | CAMF1-S3 | | | CAMF1-H3 | | | | |
| | 4-pole | | CAMF1-S4 | | | CAMF1-H4 | | | | |
| Rated current, I_n | | A | | 16、20、25、32、40、50、63、80、100、125 | | | | | | |
| Adjustable part | Long-time current setting (0.8In~1.0In) | | ✓ | | | ✓ | | | | |
| | Lockup device for operating handle | | X | | | X | | | | |
| Rated operational voltage, U_e | | AC(V) | | 230、400、440 | | | | | | |
| Rated insulation voltage, U_i | | V | | 750V | | | | | | |
| Rated impulse withstand voltage, U_{imp} | | KV | | 8 | | | | | | |
| Standard | | IEC/EN 60947-2 | | | | | | | | |
| Rated frequency | | Hz | | 50 / 60 | | | | | | |
| Rated short-circuit breaking capacity (I_{cu}) kA | | | | | | | | | | |
| AC | 230V | | 50kA | | | 65kA | | | | |
| | 400V | | 25kA | | | 35kA | | | | |
| | 440V | | 22kA | | | 25kA | | | | |
| Ics=%*Icu | | 50~100 | | | 50~100 | | | | | |
| Mechanical life (circle) | | 20,000/8,500 (As defined by IEC/EN 60947-2) | | | | | | | | |
| Electrical life (circle) | | 4,000/1,500(As defined by IEC/EN 60947-2) | | | | | | | | |
| Extra Accessories | | | | | | | | | | |
| Pole | Left hole position | | | | | Right hole position | | | | |
| | AX | AL | SHT | AX+AX | AX+AL | AX | AL | SHT | AX+AX | AX+AL |
| 2P | - | - | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |


Ambient Temperature: Within the range of $-5^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (However, when the temperature exceed 40°C , it should be considered to reduce the capacity to use.)

Relative Humidity: Within the range of 45~85%

Altitude: 2,000m or less (However, if it exceeds 1,000m, atmosphere correction through humidity test and withstand voltage test can be considered.)

Atmosphere where excessive steam, oil steam, smoke, dust, salt and other corrosive materials do not exist.

• General Selection Table

| | | | | | | | | | | |
|---|---|--|---|----------------|-------|---------------------|----|-----|-------|-------|
| PHOTO | |  | | | | | | | | |
| | | | | SPECIFICATIONS | | | | | | |
| Type | | S-Type | H-Type | | | | | | | |
| Type and Pole | 2-pole | X | X | | | | | | | |
| | 3-pole | CAMF2-S3 | CAMF2-H3 | | | | | | | |
| | 4-pole | CAMF2-S4 | CAMF2-H4 | | | | | | | |
| Rated current, In | | A | 100 、 125 、 160 、 180 、 200 、 225 、 250 | | | | | | | |
| Adjustable part | Long-time current setting (0.8In~1.0In) | ✓ | ✓ | | | | | | | |
| | Lockup device for operating handle | ✓ | ✓ | | | | | | | |
| Rated operational voltage, Ue | | AC(V) | 230 、 400 、 440 | | | | | | | |
| Rated insulation voltage, Ui | | V | 750V | | | | | | | |
| Rated impulse withstand voltage, Uimp | | KV | 8 | | | | | | | |
| Standard | | IEC/EN 60947-2 | | | | | | | | |
| Rated frequency | | Hz | 50/60 | | | | | | | |
| Rated short-circuit breaking capacity (Icu) kA | | | | | | | | | | |
| AC | 230V | 65kA | 80kA | | | | | | | |
| | 400V | 36kA | 50kA | | | | | | | |
| | 440V | 25kA | 36kA | | | | | | | |
| Ics=%*Icu | | 50~100 | 50~100 | | | | | | | |
| Mechanical life (circle) | | 20,000/7,000 (As defined by IEC/EN 60947-2) | | | | | | | | |
| Electrical life (circle) | | 4,000/1,000(As defined by IEC/EN 60947-2) | | | | | | | | |
| Extra Accessories | | | | | | | | | | |
| Pole | Left hole position | | | | | Right hole position | | | | |
| | AX | AL | SHT | AX+AX | AX+AL | AX | AL | SHT | AX+AX | AX+AL |
| 3P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |


Ambient Temperature: Within the range of $-5^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (However, when the temperature exceed 40°C , it should be considered to reduce the capacity to use.)

Relative Humidity: Within the range of 45~85%

Altitude: 2,000m or less (However, if it exceeds 1,000m, atmosphere correction through humidity test and withstand voltage test can be considered.)

Atmosphere where excessive steam, oil steam, smoke, dust, salt and other corrosive materials do not exist.

• General Selection Table

| SPECIFICATIONS | | PHOTO | | | | | | | | |
|--|---|--|------------------------|----------|-------------|------------------------|----------|-----|-------|-------|
| | |  | | | | | | | | |
| Type | | S-Type | | | H-Type | | | | | |
| Type and Pole | | 2-pole | 3-pole | 4-pole | 2-pole | 3-pole | 4-pole | | | |
| | | CAEF1-S2 | CAEF1-S3 | CAEF1-S4 | CAEF1-H2 | CAEF1-H3 | CAEF1-H4 | | | |
| Protective function | | Overload & Short-circuit & Ground fault | | | | | | | | |
| Rated current, I_n | A | 16、20、25、32、40、50、63、80、100、125 | | | | | | | | |
| Rated residual current | Operating, I_{Δn} (mA) (Non-operating, I_{Δno} (mA)) | <ul style="list-style-type: none">30 mA - 300mA - 500 mA Selectable (15 mA - 150mA - 250 mA)100 mA - 300mA - 500 mA Selectable (50 mA - 150mA - 250 mA) | | | | | | | | |
| Long-time current setting (0.8I _n ~1.0I _n) | | ✓ | | | ✓ | | | | | |
| Lockup device for operating handle | | X | ✓ | ✓ | X | ✓ | ✓ | | | |
| Rated operational voltage, U_e | AC(V) | 230、400、440 | | | | | | | | |
| Rated insulation voltage, U_i | V | 750V | | | | | | | | |
| Rated impulse withstand voltage, U_{imp} | KV | 8 | | | | | | | | |
| Residual current off-time at I_{Δn} | Sec | 0.1、0.3、0.5 | 0.1-0.3-0.5 Selectable | | 0.1、0.3、0.5 | 0.1-0.3-0.5 Selectable | | | | |
| Standard | | IEC / EN 60947-2 | | | | | | | | |
| Rated frequency | Hz | 50 / 60 | | | | | | | | |
| Rated short-circuit breaking capacity (I_{cu}) kA | | | | | | | | | | |
| AC | 230V | 50kA | | 65kA | | | | | | |
| | 400V | 25kA | | 35kA | | | | | | |
| | 440V | 22kA | | 25kA | | | | | | |
| I _{cs} =%*I _{cu} | | 50~100 | | 50~100 | | | | | | |
| Mechanical life (circle) | | 20,000 / 8,500 (As defined by IEC/EN 60947-2) | | | | | | | | |
| Electrical life (circle) | | 4,000 / 1,500(As defined by IEC/EN 60947-2) | | | | | | | | |
| Extra Accessories | | | | | | | | | | |
| Pole | Left hole position | | | | | Right hole position | | | | |
| | AX | AL | SHT | AX+AX | AX+AL | AX | AL | SHT | AX+AX | AX+AL |
| 2P | - | - | - | - | - | - | - | - | - | - |
| 3P | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | - | - | - |
| 4P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | - | - |

Ambient Temperature: Within the range of -5°C~+40°C (However, the average for the duration of 24 hours must not exceed 35°C.)


Altitude: 2,000m or less.

Installation class: III

The magnetic field near the installation site should not be more than five times the earth magnetic field in any direction.

Pollution levels: II

• General Selection Table

| SPECIFICATIONS | | PHOTO | | | | | | | | |
|---|---|--|----------|----------|----------|---------------------|----|-----|-------|-------|
| | |  | | | | | | | | |
| Type | | S-Type | | H-Type | | | | | | |
| Type and Pole | | 3-pole | 4-pole | 3-pole | 4-pole | | | | | |
| | | CAEF2-S3 | CAEF2-S4 | CAEF2-H3 | CAEF2-H4 | | | | | |
| Protective function | | Overload & Short-circuit & Ground fault | | | | | | | | |
| Rated current, I_n | A | 100、125、160、180、200、225、250 | | | | | | | | |
| Rated residual current | Operating, $I_{\Delta n}$ (mA) (Non-operating, $I_{\Delta no}$ (mA)) | <ul style="list-style-type: none">● 30 mA - 300mA - 500 mA Selectable (15 mA - 150mA - 250 mA)● 100 mA - 300mA - 500 mA Selectable (50 mA - 150mA - 250 mA) | | | | | | | | |
| Long-time current setting (0.8 I_n ~1.0 I_n) | | ✓ | | ✓ | | | | | | |
| Lockup device for operating handle | | ✓ | ✓ | ✓ | ✓ | | | | | |
| Rated operational voltage, U_e | AC(V) | 230、400、440 | | | | | | | | |
| Rated insulation voltage, U_i | V | 750V | | | | | | | | |
| Rated impulse withstand voltage, U_{imp} | KV | 8 | | | | | | | | |
| Residual current off-time at $I_{\Delta n}$ | Sec | 0.1 - 0.3 -0.5 Selectable | | | | | | | | |
| Standard | | IEC / EN 60947-2 | | | | | | | | |
| Rated frequency | Hz | 50 / 60 | | | | | | | | |
| Rated short-circuit breaking capacity (I_{cu}) kA | | | | | | | | | | |
| AC | 230V | 65kA | | 80kA | | | | | | |
| | 400V | 36kA | | 50kA | | | | | | |
| | 440V | 25kA | | 36kA | | | | | | |
| $I_{cs}=\%I_{cu}$ | | 50~100 | | 50~100 | | | | | | |
| Mechanical life (circle) | | 20,000 / 7,000 (As defined by IEC/EN 60947-2) | | | | | | | | |
| Electrical life (circle) | | 4,000 / 1,000(As defined by IEC/EN 60947-2) | | | | | | | | |
| Extra Accessories | | | | | | | | | | |
| Pole | Left hole position | | | | | Right hole position | | | | |
| | AX | AL | SHT | AX+AX | AX+AL | AX | AL | SHT | AX+AX | AX+AL |
| 3P | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | - | - | - |
| 4P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | - | - |

Ambient Temperature: Within the range of -5°C~+40°C (However, the average for the duration of 24 hours must not exceed 35°C.)

Altitude: 2,000m or less.

Installation class: III

The magnetic field near the installation site should not be more than five times the earth magnetic field in any direction.

Pollution levels: II



Shunt trip (SHT)

- The shunt trip is an accessory remote control.
- The shunt will trip when the input voltage is 70% - 110% of the rated operational voltage.
- Rated Voltage: 230V, 400V, 440V AC



Auxiliary Switch (AX)

- Auxiliary switch is used to indicate the "On" and "Off" status of the breaker.
- Each switch has two contacts with a common connection.
- One is open and the other closed when the circuit breaker is open, and vice versa.



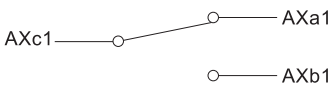
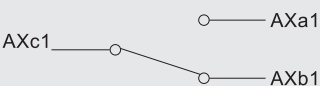
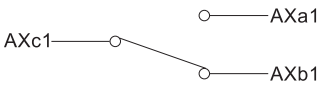
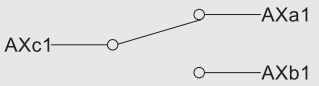
Alarm switch (AL)

- Alarm switch will make immediate audio or visual indication in a tripped breaker due to overload, short circuit or shunt trip to remind people.
- This switch features a closed contact when the circuit breaker is tripped automatically.
- In other words, this switch does not function when the breaker is operated manually.

Combination switch (AX + AL)

It has one auxiliary switch (AX) and one alarm switch (AL) in a body to connect into the same position of the breaker.

• Contact (AX + AL)

| MCCB | ON | OFF | TRIP |
|------|---|--|---|
| AX |  |  | |
| AL |  | |  |



Shunt Trip

SHT



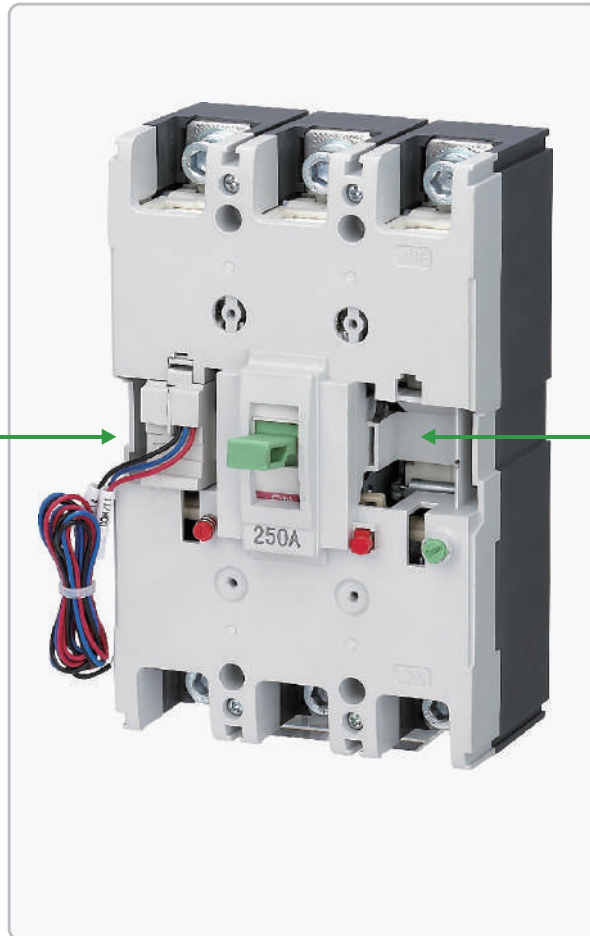
Auxiliary Switch

AX



Alarm Switch

AL



SHT



Shunt Trip

AX



Auxiliary Switch

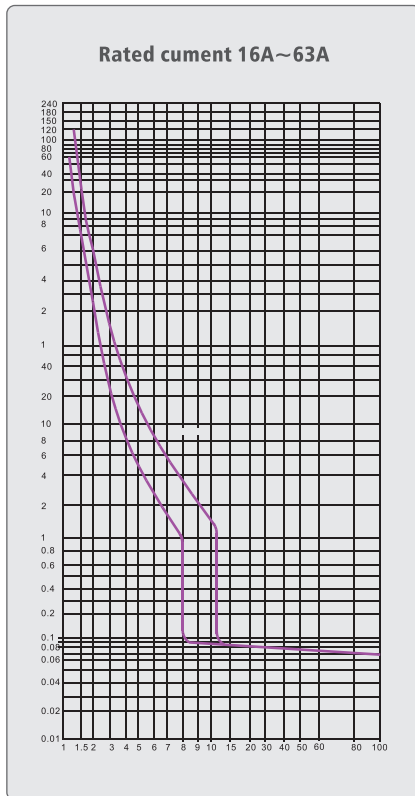
AL



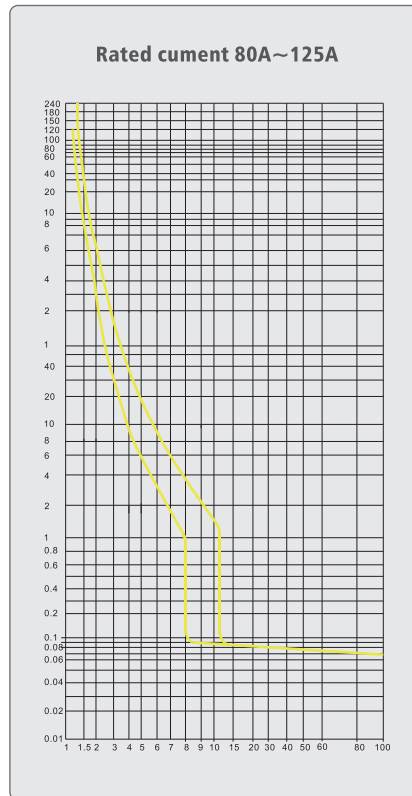
Alarm Switch

- CAM SERIES
- CAE SERIES

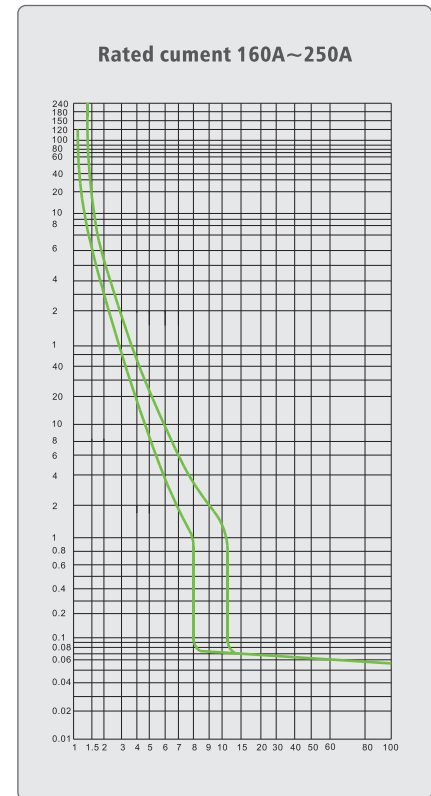
• Characteristics Curves



- Remark: When $I_n \leq 32$,
 $I_i = 400A (\pm 20\%)$.



- Remark: When $I_n > 32$,
 $I_i = 10 * I_n (\pm 20\%)$



- Remark: When $I_n > 32$,
 $I_i = 10 * I_n (\pm 20\%)$

• Characteristics Curves Table

Over-load

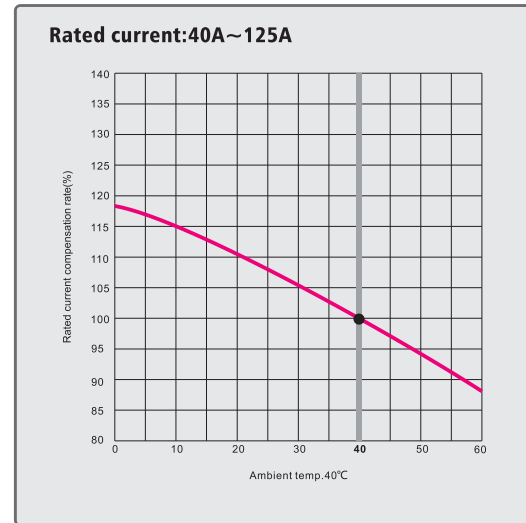
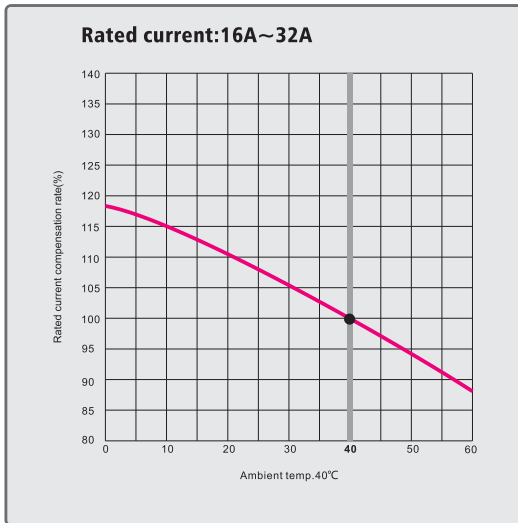
| Test No. | Load current | Rated current | Initial state | Time limit to trip | Estimated result |
|----------|--------------|----------------|---------------------|--------------------|------------------|
| 1. | 1.05 I_n | $I_n \leq 63A$ | cold state | $t \leq 1h$ | Non tripping |
| | | $I_n > 63A$ | | $t \leq 2h$ | |
| 2. | 1.30 I_n | $I_n \leq 63A$ | continuing the test | $t < 1h$ | Trip |
| | | $I_n > 63A$ | | $t < 2h$ | |

Short circuit

| | | | | | |
|----|----------------|------------|------------|---------------|--------------|
| 3. | 400A*80% | $\leq 32A$ | cold state | $t \leq 0.2s$ | Non tripping |
| | 400A*120% | | | $t < 0.2s$ | Trip |
| 4. | 10 I_n *80% | $> 32A$ | cold state | $t \leq 0.2s$ | Non tripping |
| | 10 I_n *120% | | | $t < 0.2s$ | Trip |

- CAM SERIES
- CAE SERIES

• Temperature Compensation Curves



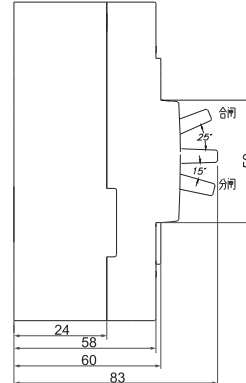
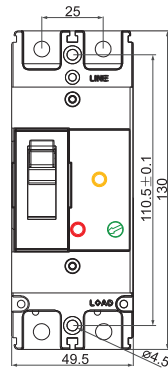
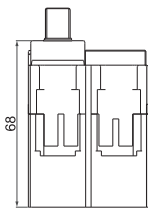
• Temperature Compensation table (IEC/EN 60947-2)

| Current range | Compensation Coefficient | | | | | | | | | | | | | |
|---------------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -5°C | 0°C | 5°C | 10°C | 15°C | 20°C | 25°C | 30°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C |
| 16-32A | 1.18 | 1.17 | 1.16 | 1.14 | 1.12 | 1.09 | 1.07 | 1.05 | 1.03 | 1 | 0.97 | 0.95 | 0.92 | 0.87 |
| 40-125A | 1.16 | 1.16 | 1.15 | 1.14 | 1.12 | 1.10 | 1.08 | 1.06 | 1.03 | 1 | 0.97 | 0.94 | 0.87 | 0.82 |
| 100-250A | 1.14 | 1.13 | 1.13 | 1.12 | 1.10 | 1.08 | 1.07 | 1.05 | 1.03 | 1 | 0.97 | 0.93 | 0.86 | 0.76 |

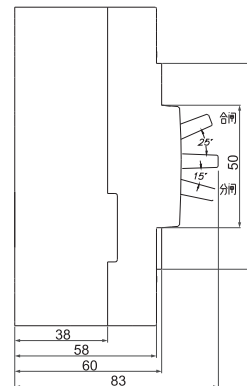
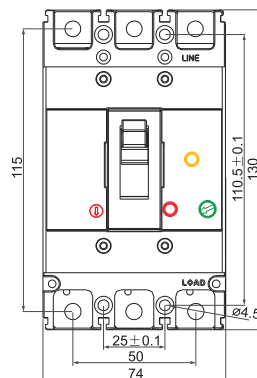
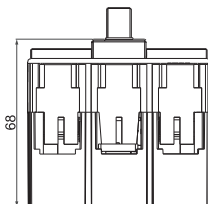
OUTLINE DIMENSIONS

- NO FUSE CIRCUIT BREAKER CAM SERIES
- EARTH LEAKAGE CIRCUIT BREAKER CAE SERIES

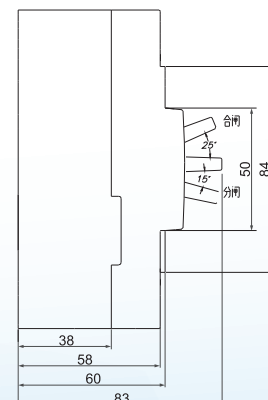
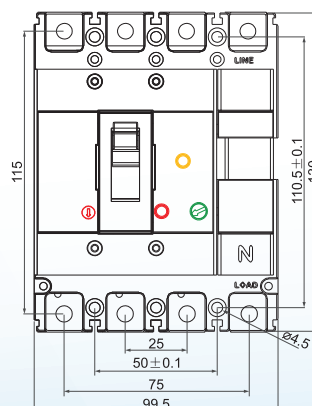
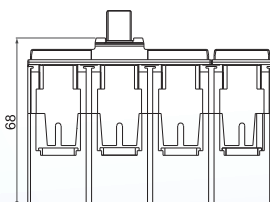
CAMF 1 (2P)
CAEF 1 (2P)



CAMF 1 (3P)
CAEF 1 (3P)



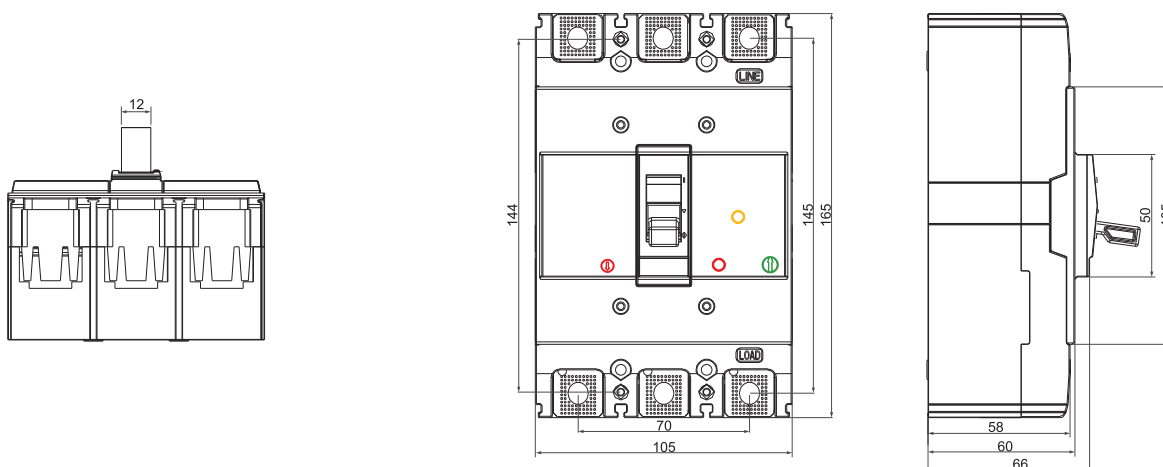
CAMF 1 (4P)
CAEF 1 (4P)



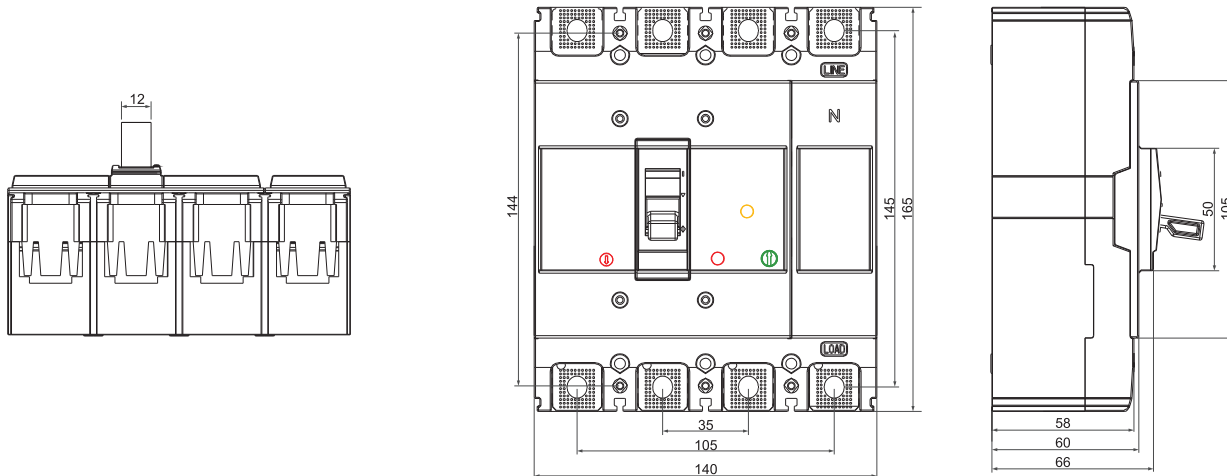
OUTLINE DIMENSIONS

- NO FUSE CIRCUIT BREAKER CAM SERIES
- EARTH LEAKAGE CIRCUIT BREAKER CAE SERIES




CAMF 2
CAEF 2 (3P)



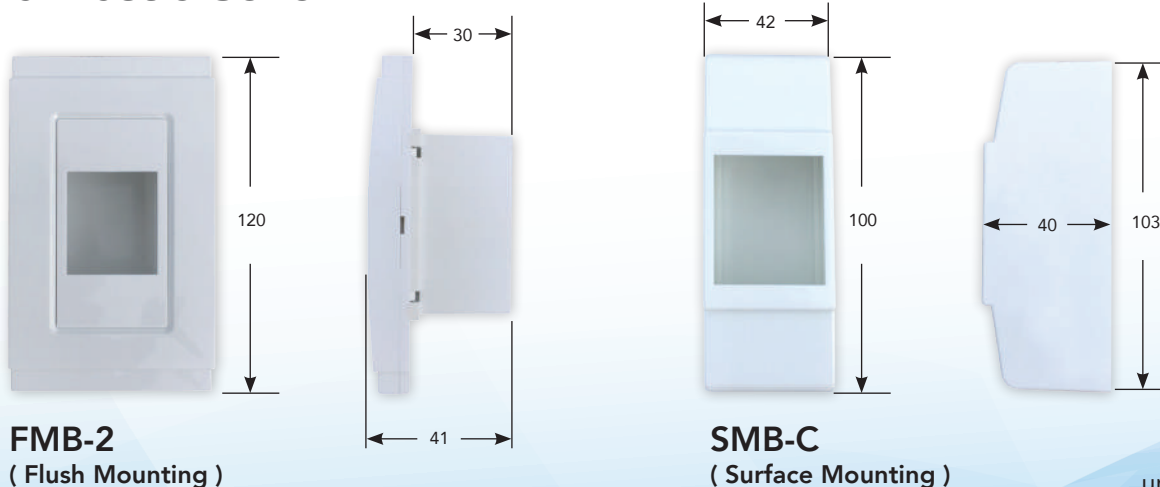
CAMF 2
CAEF 2 (4P)



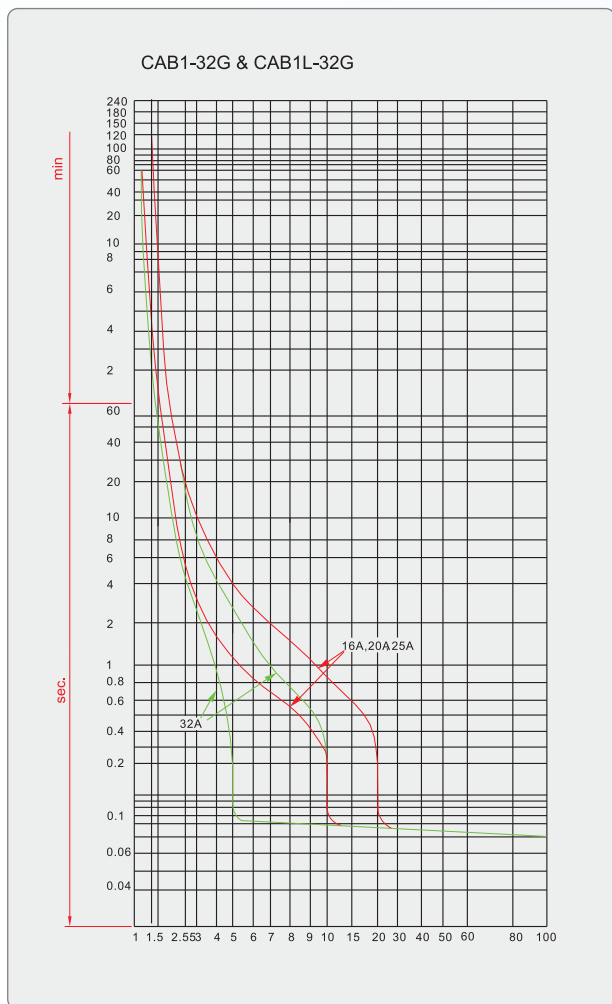
• General Selection Table

| SPECIFICATIONS | | PHOTO | | |
|---|---------------------|---|--|---|
| | |  |  |  |
| Item No. | | CAB1-32G | CAB1L-32G | CAB1L-32 |
| Protection | | Overload & Short Circuit | Overload & Short Circuit & Ground fault | Ground fault |
| Rated current | | ● C CURVE: 16A, 20A, 25A, 32A ● D CURVE: 16A, 20A, 25A | | 16A 、 20A 、 25A 、 32A |
| Rated residual current | Operating, IΔn | X | 10mA 、 15 mA 、 30 mA 、 100 mA | |
| | Non-operating, IΔno | X | 5 mA 、 7.5 mA 、 15 mA 、 50 mA | |
| Poles | | 2 Poles | | |
| Rated voltage | | 230V AC 50/60Hz | 110V AC, 230V AC 50/60Hz | |
| Residual current off-time | | X | 0.1 Sec. | |
| Standard | | IEC/EN 60898 | IEC/EN 61009-1 | IEC/EN 61008-1 |
| Type of trip | Ground fault | X | Electronic | Electronic |
| | Overload | Thermal / Bimetal 2P2E | Thermal / Bimetal 2P2E | X |
| | Short Circuit | Magnetic | Magnetic | X |
| Breaking capacity | | 2,500A | | |
| Endurance | Electrical | 2,000 operations | | |
| | Mechanical | 3,000 operations | | |
| Type of operation | | AC | | |
| Ambient temperature | | -5℃ ~ +40℃ | | |
| Altitude | | 2,000m or less | | |
| Installation class | | III | | |
| Pollution levels | | II | | |
| The magnetic field near the installation site should not be more than five times the magnetic field in any direction. | | | | |

• Extra Plastic Cover



• Characteristics Curves



Over-load

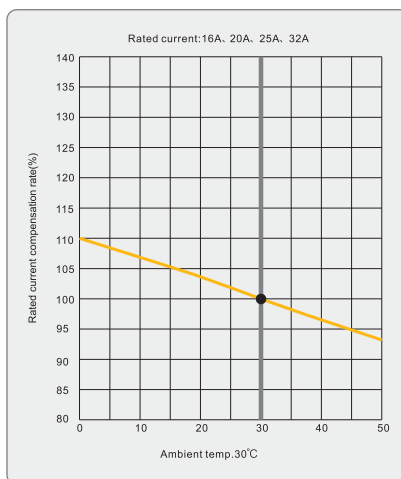
| Test No. | Curve type | Load current | Initial state | Time limit to trip | Estimated result |
|----------|------------|--------------|---------------------|--------------------|------------------|
| 1. | C, D | 1.13 In | cold state | $t \leq 1h$ | Not trip |
| 2. | C, D | 1.45 In | continuing the test | $t < 1h$ | Trip |
| 3. | C, D | 2.55 In | cold state | $1s < t < 60s$ | Trip |

Short circuit

| Test No. | Curve type | Load current | Initial state | Time limit to trip | Estimated result |
|----------|------------|--------------|---------------|--------------------|------------------|
| 4. | C | 5 In | cold state | $t \leq 0.1s$ | Not trip |
| | D | 10 In | | | |
| 5. | C | 10 In | cold state | $t < 0.1s$ | Trip |
| | D | 20 In | | | |

• Temperature Compensation Curves CAB1-32G & CAB1L-32G

| Ambient temperature Rated current(A) ↘ | -10°C | 0°C | 10°C | 20°C | 30°C | 40°C | 50°C | 60°C |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| 16 | 19.20 | 18.40 | 17.76 | 16.96 | 16.00 | 15.36 | 14.88 | 14.24 |
| 20 | 24.00 | 23.00 | 22.20 | 21.20 | 20.00 | 19.20 | 18.60 | 17.80 |
| 25 | 30.00 | 28.75 | 27.75 | 26.50 | 25.00 | 24.00 | 23.25 | 22.25 |
| 32 | 38.72 | 37.12 | 35.52 | 33.92 | 32.00 | 30.72 | 29.76 | 28.16 |



• Dimension

