

ACB / MCCB / ELCB / ATS MCB / SPD / MS / MMS



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MCCB Frame Size Selection Table

| Frame Size | Type | Rated Breaking Capacity (kA) | | | | | Pole | Rated Current In(A) | Accessory | | |
|------------|------|------------------------------|------|------|------|------|---------|--|---|--------------------|--|
| | | IEC60947-2 | | | | | | | Blank | No Acc. | |
| | | 220V | 380V | 415V | 440V | 500V | | | | | |
| 30 | CN | 2.5 | 1.5 | 1.5 | - | - | 2, 3 | 3, 5, 10, 15, 20, 30. | Blank | No Acc. | |
| | SN | 5 | 2.5 | 2.5 | 2.5 | 1.5 | 3 | | AX | Auxiliary Switch | |
| 50 | CN | 5 | 2.5 | 2.5 | 2.5 | 1.5 | 2, 3 | 10, 15, 20, 30, 40, 50. | AL | Alarm Switch | |
| | SN | 10 | 7.5 | 7.5 | 7.5 | 5 | 2, 3, 4 | | SHT | Shunt Trip | |
| 60 | HN | 25 | 15 | 10 | 10 | 7.5 | 2, 3, 4 | 10, 15, 20, 25, 30, 40, 50, 60. | UVT | Under Voltage Trip | |
| | HBN | 50 | 30 | 25 | 25 | 15 | 3 | | 10, 15, 20, 30, 40, 50, 60. | | |
| 63 | SN | 10 | 7.5 | 7.5 | 7.5 | 5 | 2, 3, 4 | 10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63 | | | |
| | HN | 25 | 15 | 10 | 10 | 5 | 2, 3, 4 | | | | |
| 100 | FTD | 25 | 5 | 5 | - | - | 1 | 15, 20, 30, 40, 50, 60, 75, 100 | | | |
| | MN | 15 | 10 | 10 | 7.5 | 5 | 2, 3 | | | | |
| | SN | 25 | 15 | 10 | 10 | 7.5 | 2, 3 | | 10, 15, 20, 30, 40, 50, 60, 75, 100. | | |
| | HN | 50 | 30 | 25 | 25 | 15 | 2, 3, 4 | | | | |
| | HS | 125 | 85 | 85 | 70 | 50 | 3, 4 | | 40, 50, 63, 80, 100. | | |
| | BTD | 25 | 15 | 10 | 10 | 5* | 2, 3, 4 | | | | |
| 125 | STD | 50 | 30 | 25 | 25 | 5* | 2, 3, 4 | 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100 | | | |
| | LTD | 85 | 36 | 36 | 32 | 5* | 2, 3, 4 | | | | |
| | SN | 30 | 22 | 22 | 15 | 7.5 | 2, 3, 4 | | 15, 20, 30, 40, 50, 60, 75, 100, 125. | | |
| | HN | 50 | 30 | 25 | 25 | 15 | 2, 3, 4 | | | | |
| | LTD | 85 | 36 | 36 | 32 | 5* | 2, 3, 4 | | 10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 70, 75, 80, 100, 125. | | |
| | HTA | 100 | 50 | 50 | 50 | 10* | 2, 3, 4 | | | | |
| 160 | RTA | 100 | 70 | 70 | 50 | 10* | 2, 3, 4 | 125, 140, 160. | | | |
| | SN | 50 | 30 | 25 | 25 | 15 | 2, 3, 4 | | | | |
| | HN | 85 | 36 | 36 | 32 | 20 | 3, 4 | | | | |
| | HS | 125 | 85 | 85 | 70 | 50 | 3, 4 | | | | |
| 250 | HTA | 100 | 50 | 50 | 50 | 10* | 3, 4 | 40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160. | | | |
| | RTA | 100 | 70 | 70 | 50 | 10* | 3, 4 | | | | |
| | CN | 30 | 22 | 15 | 15 | 7.5 | 2, 3, 4 | | 125, 150, 175, 200, 225, 250. | | |
| | SN | 50 | 30 | 25 | 25 | 15 | 3, 4 | | | | |
| 400 | HN | 85 | 36 | 36 | 32 | 20 | 3, 4 | 175, 200, 225, 250. | | | |
| | HTA | 100 | 50 | 50 | 50 | 10* | 3, 4 | | | | |
| | RTA | 100 | 70 | 70 | 50 | 10* | 3, 4 | | 175, 200, 225, 250. | | |
| | HS | 125 | 85 | 85 | 70 | 50 | 3, 4 | | | | |
| 630s | CN | 35 | 25 | 25 | 22 | 14 | 2, 3, 4 | 250, 300, 350, 400. | | | |
| | SN | 50 | 35 | 35 | 30 | 20 | 3, 4 | | | | |
| | HN | 85 | 50 | 50 | 42 | 25 | 3, 4 | | | | |
| | RN | 100 | 70 | 70 | 55 | 42 | 3, 4 | | | | |
| 630 | UN | 125 | 85 | 85 | 85 | 65 | 3, 4 | 400, 500, 600, 630. | | | |
| | STD | 36 | 25 | 25 | 25 | 10* | 3, 4 | | | | |
| | LTD | 65 | 36 | 36 | 36 | 10* | 3, 4 | | | | |
| | HTD | 85 | 50 | 50 | 50 | 10* | 3, 4 | | | | |
| 800 | RTD | 100 | 70 | 70 | 70 | 15* | 3, 4 | 500, 630. | | | |
| | CN | 35 | 25 | 25 | 22 | 14 | 2, 3, 4 | | | | |
| | SN | 50 | 35 | 35 | 30 | 20 | 3, 4 | | | | |
| | HN | 85 | 50 | 50 | 50 | 25 | 3, 4 | | | | |
| 1000 | RN | 100 | 70 | 70 | 70 | 42 | 3, 4 | 700, 800. | | | |
| | UN | 125 | 100 | 85 | 85 | 65 | 3, 4 | | | | |
| | CN | 50 | 35 | 35 | 30 | 20 | 3, 4 | | | | |
| | SN | 85 | 50 | 50 | 50 | 25 | 3, 4 | | | | |
| 1200 | HN | 100 | 70 | 70 | 70 | 42 | 3, 4 | 1000 | | | |
| | RN | 125 | 100 | 85 | 85 | 65 | 3, 4 | | | | |
| 1600 | HS | 130 | 100 | 85 | 85 | 65 | 3 | 1200 | | | |
| | HS | 130 | 100 | 85 | 85 | 65 | 3 | | 1400, 1600. | | |

Note 1. There is no SHT for 100HS, 30A and below.
 2. There is no UVT for 100HS, 160HS, 250HS.
 3. Mark * kA rating is 690V.

ELCB Frame Size Selection Table

| Frame Size | Rated Breaking Capacity (kA) | | | | Pole | Rated Current In(A) | Accessory | |
|------------|------------------------------|------------|------|------|------|----------------------------------|-----------|--------------------|
| | Type | IEC60947-2 | | | | | | |
| | | 220V | 380V | 440V | | | | |
| 50 | SN | 10 | 7.5 | 7.5 | 3, 4 | 15, 20, 30, 40, 50. | Blank | No Acc. |
| 100 | SN | 25 | 15 | 10 | 3, 4 | 15, 20, 30, 40, 50, 60, 75, 100. | AX | Auxiliary Switch |
| | HN | 50 | 30 | 25 | 3, 4 | | AL | Alarm Switch |
| 160 | SN | 50 | 30 | 25 | 3, 4 | 125, 140, 160. | SHT | Shunt Trip |
| 250 | SN | 50 | 30 | 25 | 3, 4 | 175, 200, 225, 250. | UVT | Under Voltage Trip |
| 400 | SN | 50 | 35 | 30 | 3, 4 | 250, 300, 350, 400. | | |
| | HN | 85 | 50 | 42 | 3, 4 | | | |
| | RN | 100 | 70 | 55 | 3, 4 | | | |
| | UN | 125 | 85 | 85 | 3, 4 | | | |
| 630 | HN | 85 | 50 | 50 | 3, 4 | 500, 630. | | |
| | RN | 100 | 70 | 70 | 3, 4 | | | |
| 800 | UN | 125 | 100 | 85 | 3, 4 | 700, 800. | | |
| | SN | 85 | 50 | 50 | 3, 4 | | | |
| | HN | 100 | 70 | 70 | 3, 4 | | | |
| | RN | 125 | 100 | 85 | 3, 4 | | | |

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BMA Series Frame Size Selection Table

| Frame Size | Type | Rated Breaking Capacity (kA) | | | Pole | I _r Adjustable | Rated Current I _n (A) | Accessory | |
|------------|------|------------------------------|------------|------|------|-------------------------------------|--|-----------|--------------------|
| | | IEC60947-2 | | | | | | Blank | No Acc. |
| | | 220V(240V) | 380V(415V) | 690V | | | | | |
| 125 | STA | 85 | 25 | 8 | 3, 4 | 0.8-0.9-1.0 | 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125 | Blank | No Acc. |
| | LTA | 85 | 36 | 8 | | | | AX | Auxiliary Switch |
| | HTA | 100 | 50 | 10 | | | | AL | Alarm Switch |
| 160 | STA | 85 | 25 | 8 | 3, 4 | 0.8-0.9-1.0 | 40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160 | SHT | Shunt Trip |
| | LTA | 85 | 36 | 8 | | | | UVT | Under Voltage Trip |
| | HTA | 100 | 50 | 10 | | | | | |
| 250 | STA | 85 | 25 | 8 | 3, 4 | 0.8-0.9-1.0 | 175, 200, 225, 250 | | |
| | LTA | 85 | 36 | 8 | | | | | |
| | HTA | 100 | 50 | 10 | | | | | |
| 400 | LTA | 70 | 36 | 8 | 3, 4 | 0.8-0.9-1.0 | 250, 300, 350, 400 | | |
| | HTA | 85 | 50 | 10 | | | | | |
| | RTA | 100 | 70 | 15 | | | | | |
| 630s | STD | 36 | 25 | 10 | 3, 4 | N/A | 400, 500, 600, 630 | | |
| | LTD | 65 | 36 | 10 | | | | | |
| | HTD | 85 | 50 | 10 | | | | | |
| | RTD | 100 | 70 | 15 | | | | | |
| 630 | HTD | 85 | 50 | 10 | 3, 4 | 0.8-0.9-1.0 | 500, 600, 630 | | |
| | RTD | 100 | 70 | 15 | | | | | |
| | HTA | 85 | 50 | 10 | | | | | |
| MS | HED | 85 | 50 | 10 | 3, 4 | 0.4-0.48-0.56-0.64-0.72-0.8-0.9-1.0 | 630 | | |
| | RED | 100 | 70 | 15 | | | | | |
| | HTD | 85 | 50 | 10 | | | | | |
| 800 | RTD | 100 | 70 | 15 | 3, 4 | 0.8-0.9-1.0 | 700, 800 | | |
| | HTA | 85 | 50 | 10 | | | | | |
| | HED | 85 | 50 | 10 | | | | | |
| 1250 | RED | 100 | 70 | 15 | 3, 4 | 0.4-0.48-0.56-0.64-0.72-0.8-0.9-1.0 | 800 | | |
| | HED | 85 | 50 | 10 | | | | | |
| | RED | 100 | 70 | 15 | | | | | |
| 1600 | HED | - | 50 | 35 | 3, 4 | 0.4-0.45-0.5-0.6-0.63-0.7-0.8-0.9-1 | 1250 | | |
| | RED | - | 70 | 45 | | | | | |
| | HED | - | 50 | 35 | | | | | |
| MMS | RED | 100 | 70 | 15 | 3, 4 | 0.4-0.45-0.5-0.6-0.63-0.7-0.8-0.9-1 | 1600 | | |
| | HED | 85 | 50 | 10 | | | | | |

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MCCB/ELCB Breaking Capacity Selection Table

| Series | Rated Breaking Capacity (kA) | Frame Size/ Rated Current In (A) | | | | | | | | | | | |
|--------|------------------------------|----------------------------------|----------------|-------------------|---------|---------|---------|--------|--------------------|--------|---------|---------|---------|
| | IEC60947-2 | 30 | 50/60 | 100 | 125 | 160 | 250 | 400 | 630 | 800 | 1000 | 1200 | 1600 |
| | AC380V | | | | | | | | | | | | |
| BM | 100kA | | | | | | | | 630-UN | 800-RN | 1000-HS | 1200-HS | 1600-HS |
| | 85kA | | | 100-HS | | 160-HS | 250-HS | 400-UN | | | | | |
| | 70kA | | | | 125-RTA | 160-RTA | 250-RTA | 400-RN | 630-RN 630s-RTD | 800-HN | | | |
| | 50kA | | | | 125-HTA | 160-HTA | 250-HTA | 400-HN | 630-HN 630s-HTD | 800-SN | | | |
| | 35/36kA | | | 100-LTD | 125-LTD | 160-HN | 250-HN | 400-SN | 630-SN 630s-LTD | 800-CN | | | |
| | 30kA | | 60-HBN | 100-HN 100-STD | | 160-SN | 250-SN | | | | | | |
| | 25kA | | | | 125-HN | | | | 630s-STD | | | | |
| | 15kA | | 60-HN 63-HN | 100-SN 100-BTD | 125-SN | | | | | | | | |
| | 10kA | | | 100-MN | | | | | | | | | |
| | 7.5kA | | 60-SN 63-SN | | | | | | | | | | |
| BL | 2.5kA | 30-SN | 50-CN | | | | | | | | | | |
| | 1.5kA | 30-CN | | | | | | | | | | | |
| | 100kA | | | | | | | | 630-UN | 800-RN | | | |
| | 85kA | | | | | | | 400-RN | | | | | |
| | 70kA | | | | | | | 400-RN | 630-RN | 800-HN | | | |
| | 50kA | | | | | | | 400-HN | 630-HN | 800-SN | | | |
| | 35kA | | | | | | | 400-SN | | | | | |
| | 30kA | | | 100-HN | | 160-SN | 250-SN | | | | | | |
| | 15kA | | | 100-SN | | | | | | | | | |
| | 7.5kA | | 50-SN | | | | | | | | | | |

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Molded Case Circuit Breaker

| Frame size (AF) (Inm) | | 30 | | | | 50 | | 60 | | | | | | | | |
|--|----------------------------------|-----------------------|------------|-----------------------|------|-------------------------|------|---------------------------------|------|---------------------------------|------|-----------------------------|------|--------------------|-----|--|
| Type | | BM30-CN | | BM30-SN | | BM50-CN | | BM60-SN | | BM60-HN | | BM60-HBN | | | | |
| Appearance | | | | | | | | | | | | | | | | |
| Rated current In (A) at ambient temp. 40°C | | 3, 5, 10, 15, 20, 30. | | 3, 5, 10, 15, 20, 30. | | 10, 15, 20, 30, 40, 50. | | 10, 15, 20, 25, 30, 40, 50, 60. | | 10, 15, 20, 25, 30, 40, 50, 60. | | 10, 15, 20, 30, 40, 50, 60. | | | | |
| Number of poles (P) | | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 2 | 3 | 4 | 3 | | |
| Rated insulation voltage Ui (V) | | AC | | 690 | | 690 | | 690 | | 690 | | 690 | | 800 | | |
| | | DC | | — | | — | | — | | — | | — | | — | | |
| Rated operational voltage Ue (V AC) | | 500 | | 500 | | 500 | | 500 | | 500 | | 500 | | 500 | | |
| Uimp(kV) | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 8 | | |
| Dimensions | | a | 45 | 67.5 | 50 | 75 | 50 | 75 | 50 | 75 | 100 | 50 | 75 | 100 | 90 | |
| | | b | 96 | | 130 | | 130 | | 130 | | 130 | | 130 | | 155 | |
| | | c | 52 | | 68 | | 68 | | 68 | | 68 | | 68 | | 68 | |
| | | ca | 67 | | 90 | | 90 | | 90 | | 90 | | 90 | | 90 | |
| | | bb | 84 | | 111 | | 111 | | 111 | | 111 | | 111 | | 132 | |
| | | aa | 23.5 | | 25 | | 25 | | 25 | | 25 | | 25 | | 30 | |
| Weight (kg) | | 0.3 | 0.4 | 0.45 | 0.65 | 0.45 | 0.65 | 0.45 | 0.65 | 0.85 | 0.45 | 0.65 | 0.85 | 1.3 | | |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 Icu | AC | 500V(690V) | — | | 1.5 | | 1.5 | | 5 | | 7.5 | | 15 | | |
| | | | 440V | — | | 2.5 | | 2.5 | | 7.5 | | 10 | | 25 | | |
| | | | 415V | 1.5 | | 2.5 | | 2.5 | | 7.5 | | 10 | | 25 | | |
| | | | 380V | 1.5 | | 2.5 | | 2.5 | | 7.5 | | 15 | | 30 | | |
| | | | 220V(240V) | 2.5 | | 5 | | 5 | | 10 | | 25 | | 50 | | |
| | DC | 250V | — | | — | | — | | — | | — | | — | | — | |
| 125V | | — | | — | | — | | — | | — | | — | | — | | |
| Connection | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | |
| Optional accessories | Alarm switch | (AL) | — | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |
| | Auxiliary switch | (AX) | — | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |
| | Shunt trip | (SHT) | — | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |
| | Under-voltage trip | (UVT) | — | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |
| | Rotary handle | (EH) | — | | ● | | ● | | ● | | ● | | ● | | ● | |
| | Terminal cover | (TC) | ● | | ● | | ● | | ● | | ● | | ● | | ● | |
| | Box lug | (TL) | ● | | ● | | ● | | ● | | ● | | ● | | ● | |
| Trip Unit | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | |
| Tripping button | | — | | Equipped | | Equipped | | Equipped | | Equipped | | Equipped | | Equipped | | |

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 Above accessories table is for 3P breaker.
 2. Ics= 50% Icu
 3. Adjustable thermal: 80%~100% In.

| 63 | | | 100 | | | | | | | | | | | | | | |
|---|------|------|---|------|------|---|------|------|---|------|------|---|-----|-----|---|---|--|
| BM63-SN | | | BM63-HN | | | BM100-FTD | | | BM100-MN | | | BM100-SN | | | BM100-HN | | |
|  | | |  | | |  | | |  | | |  | | |  | | |
| 10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63 | | | 10, 15, 16, 20, 25, 30, 32, 40, 50, 60, 63 | | | 15, 20, 30, 40, 50, 60, 75, 100. | | | 10, 15, 20, 30, 40, 50, 60, 75, 100. | | | 10, 15, 20, 30, 40, 50, 60, 75, 100. | | | 10, 15, 20, 30, 40, 50, 60, 75, 100. | | |
| 2 | 3 | 4 | 2 | 3 | 4 | 1 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 2 | 3 | 4 | |
| 800 | | | 800 | | | 690 | | | 690 | | | 690 | | | 800 | | |
| — | | | — | | | — | | | — | | | 250* | | | — | | |
| 500 | | | 500 | | | 415 | | | 500 | | | 500 | | | 500 | | |
| 8 | | | 8 | | | 6 | | | 6 | | | 6 | | | 8 | | |
| 50 | 75 | 100 | 50 | 75 | 100 | 25.4 | 50 | 75 | 50 | 75 | 50 | 75 | 60 | 90 | 120 | | |
| 130 | | | 130 | | | 130 | | | 130 | | | 130 | | | 155 | | |
| 68 | | | 68 | | | 60 | | | 68 | | | 68 | | | 68 | | |
| 90 | | | 90 | | | 91 | | | 90 | | | 90 | | | 90 | | |
| 111 | | | 111 | | | 111 | | | 111 | | | 111 | | | 132 | | |
| 25 | | | 25 | | | — | | | 25 | | | 25 | | | 30 | | |
| 0.45 | 0.65 | 0.85 | 0.45 | 0.65 | 0.85 | 0.29 | 0.45 | 0.65 | 0.45 | 0.65 | 0.45 | 0.65 | 0.9 | 1.3 | 1.6 | | |
| 5 | | | 5 | | | — | | | 5 | | | 7.5 | | | 15 | | |
| 7.5 | | | 10 | | | — | | | 7.5 | | | 10 | | | 25 | | |
| 7.5 | | | 10 | | | 5 | | | 10 | | | 10 | | | 25 | | |
| 7.5 | | | 15 | | | 5 | | | 10 | | | 15 | | | 30 | | |
| 10 | | | 25 | | | 25 | | | 15 | | | 25 | | | 50 | | |
| — | | | — | | | — | | | — | | | 10* | | | — | | |
| — | | | — | | | — | | | — | | | 15* | | | — | | |
| Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | |
| ○ | | | ○ | | | — | | | ○ | | | ○ | | | ○ | | |
| ○ | | | ○ | | | — | | | ○ | | | ○ | | | ○ | | |
| ○ | | | ○ | | | — | | | ○ | | | ○ | | | ○ | | |
| ○ | | | ○ | | | — | | | ○ | | | ○ | | | ○ | | |
| ● | | | ● | | | — | | | ● | | | ● | | | ● | | |
| ● | | | ● | | | — | | | ● | | | ● | | | ● | | |
| ● | | | ● | | | ● | | | ● | | | ● | | | ● | | |
| Hydraulic magnetic | | | Hydraulic magnetic | | | Thermal magnetic | | | Hydraulic magnetic | | | Hydraulic magnetic | | | Hydraulic magnetic | | |
| Equipped | | | Equipped | | | Equipped | | | Equipped | | | Equipped | | | Equipped | | |

Note 1. Breaking Capacity of BM100-FTD is 5kA at 380V/415V/440V
 2.* DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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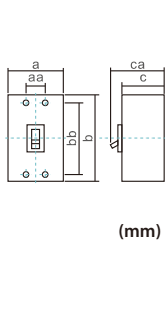
MCB

SPD

MS

MMS

Molded Case Circuit Breaker

| Frame size (AF) (Inm) | | 100 | | | | | | | | | | | |
|---|--|---|------------|---|-----|-----|---|-----|-----|---|-----|-------|-----|
| Model | | BM100-HS | | BM100-BTD | | | BM100-STD | | | BM100-LTD | | | |
| Appearance | |  | |  | | |  | | |  | | | |
| Rated current In (A) at ambient temp. 40°C | | 40, 50, 63, 80, 100. | | 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100 | | | 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100 | | | 10,15,16,20,25,30,32,40, 50,60,63,70,75,80,100 | | | |
| Number of poles (P) | | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 | |
| Rated insulation voltage Ui (V) | | AC | | 800 | | | 800 | | | 800 | | | |
| | | DC | | — | | | — | | | — | | | |
| Rated operational voltage Ue (V AC) | | 500 | | 690 | | | 690 | | | 690 | | | |
| Uimp(kV) | | 8 | | 8 | | | 8 | | | 8 | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 5px;">Dimensions</div>  <div style="margin-left: 10px;">(mm)</div> </div> | | a | 105 | 140 | 50 | 75 | 100 | 50 | 75 | 100 | 50 | 75 | 100 |
| | | b | 165 | | 130 | | | 130 | | | 130 | | |
| | | c | 86 | | 68 | | | 68 | | | 68 | | |
| | | ca | 112 | | 90 | | | 90 | | | 90 | | |
| | | bb | 126 | | 111 | | | 111 | | | 111 | | |
| | | aa | 35 | | 25 | | | 25 | | | — | 25 | |
| Weight (kg) | | 2.1 | 2.6 | 0.5 | 0.7 | 0.9 | 0.5 | 0.7 | 0.9 | 0.5 | 0.7 | 0.9 | |
| Rated breaking capacity (kA) | | IEC 60947-2 EN 60947-2 Icu | 500V(690V) | 50 | | (5) | | | (5) | | | 20(5) | |
| | | | 440V | 70 | | 10 | | | 25 | | | 32 | |
| | | | 415V | 85 | | 10 | | | 25 | | | 36 | |
| | | | 380V | 85 | | 15 | | | 30 | | | 36 | |
| | | | 220V(240V) | 125 | | 25 | | | 50 | | | 85 | |
| | | DC | 250V | — | | — | | | — | | | — | |
| | | | 125V | — | | — | | | — | | | — | |
| Connection | | Clamp terminal | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | |
| Optional accessories | | Alarm switch (AL) | ○ | | ● | | ● | | ● | | ● | | |
| | | Auxiliary switch (AX) | ○ | | ● | | ● | | ● | | ● | | |
| | | Shunt trip (SHT) | ○ | | ● | | ● | | ● | | ● | | |
| | | Under-voltage trip (UVT) | — | | ● | | ● | | ● | | ● | | |
| | | Rotary handle (EH) | ● | | ● | | ● | | ● | | ● | | |
| | | Terminal cover (TC) | ● | | ● | | ● | | ● | | ● | | |
| | | Box lug (TL) | ● | | ● | | ● | | ● | | ● | | |
| Trip Unit | | Thermal magnetic | | Thermal magnetic | | | Thermal magnetic | | | Thermal magnetic | | | |
| Tripping button | | Equipped | | Equipped | | | Equipped | | | Equipped | | | |

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 Above accessories table is for 3P breaker.
 2. Ics= 50% Icu
 3. Adjustable thermal: 80%~100% In.

BM125-SN

BM125-HN

BM125-LTD

BM125-HTA

BM125-RTA



| 10, 15, 20, 30, 40, 50, 60, 75, 100, 125. | | | 10, 15, 20, 30, 40, 50, 60, 75, 100, 125. | | | 15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125. | | | 10,15,16,20,25,30,32,40, 50,60,63,70,75,80,100,125. | | | 10,15,16,20,25,30,32,40, 50,60,63,70,75,80,100,125. | | |
|---|----|-----|---|----|-----|---|-----|-----|---|-----|-----|---|-----|-----|
| 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 |
| 800 | | | 800 | | | 800 | | | 800 | | | 800 | | |
| — | | | — | | | — | | | — | | | — | | |
| 500 | | | 500 | | | 690 | | | 690 | | | 690 | | |
| 8 | | | 8 | | | 8 | | | 8 | | | 8 | | |
| 60 | 90 | 120 | 60 | 90 | 120 | 50 | 75 | 100 | 90 | 120 | | 90 | 120 | |
| 155 | | | 155 | | | 130 | | | 155 | | | 155 | | |
| 68 | | | 68 | | | 68 | | | 68 | | | 68 | | |
| 90 | | | 90 | | | 90 | | | 90 | | | 90 | | |
| 132 | | | 132 | | | 111 | | | 132 | | | 132 | | |
| 30 | | | 30 | | | 25 | | | 30 | | | 30 | | |
| 0 | 30 | 30 | 0 | 30 | 30 | 0.5 | 0.7 | 0.9 | 1 | 1.2 | 1.5 | 1 | 1.2 | 1.5 |
| 7.5 | | | 15 | | | (5) | | | 25(10) | | | 25(10) | | |
| 15 | | | 25 | | | 32 | | | 50 | | | 50 | | |
| 22 | | | 25 | | | 36 | | | 50 | | | 70 | | |
| 22 | | | 30 | | | 36 | | | 50 | | | 70 | | |
| 30 | | | 50 | | | 85 | | | 100 | | | 100 | | |
| — | | | — | | | — | | | — | | | — | | |
| — | | | — | | | — | | | — | | | — | | |
| Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | |
| ○ | | | ○ | | | ● | | | ● | | | ● | | |
| ○ | | | ○ | | | ● | | | ● | | | ● | | |
| ○ | | | ○ | | | ● | | | ● | | | ● | | |
| — | ○ | ○ | — | ○ | ○ | ● | | | ● | | | ● | | |
| ● | | | ● | | | ● | | | ● | | | ● | | |
| ● | | | ● | | | ● | | | ● | | | ● | | |
| ● | | | ● | | | ● | | | ● | | | ● | | |
| Hydraulic magnetic | | | Hydraulic magnetic | | | Thermal magnetic | | | "Adjustable Thermal Fixed magnetic" | | | "Adjustable Thermal Fixed magnetic" | | |
| Equipped | | | Equipped | | | Equipped | | | Equipped | | | Equipped | | |

Index

MCCB
ELCB

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ACB

MCB






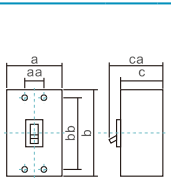
SPD

MS

MMS

Molded Case Circuit Breaker

80% ~ 100% Adj. (A)

| Frame size (AF) (Inm) | | 160 | | | | | | | | | | | | | |
|--|--|---|------|------------|---|-----|---|-----|---|--------|---|--------|-----|-----|--|
| Model | | BM160-SN | | | BM160-HN | | BM160-HTA | | BM160-RTA | | BM160-HS | | | | |
| Appearance | |  | | |  | |  | |  | |  | | | | |
| Rated current In (A) at ambient temp. 40°C | | 125, 140, 160. | | | 125, 140, 160. | | 40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160 | | 40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160 | | 125, 140, 160. | | | | |
| Number of poles (P) | | 2 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | | | |
| Rated insulation voltage Ui (V) | | AC | | 800 | | | 690 | | 800 | | 800 | | 690 | | |
| | | DC | | — | | | — | | — | | — | | — | | |
| Rated operational voltage Ue (V AC) | | 500 | | | 500 | | 690 | | 690 | | 500 | | | | |
| Uimp(kV) | | 8 | | | 8 | | 8 | | 8 | | 8 | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 5px;">Dimensions</div>  </div> | | a | 105 | 105 | 140 | 105 | 140 | 105 | 140 | 105 | 140 | 105 | 140 | | |
| | | b | 165 | | | 165 | | 165 | | 165 | | 165 | | | |
| | | c | 68 | | | 68 | | 68 | | 68 | | 86 | | | |
| | | ca | 92 | | | 92 | | 92 | | 92 | | 112 | | | |
| | | bb | 126 | | | 126 | | 126 | | 126 | | 126 | | | |
| | | aa | 35 | | | 35 | | 35 | | 35 | | 35 | | | |
| Weight (kg) | | 1.3 | 1.5 | 1.9 | 1.5 | 1.9 | 1.5 | 1.9 | 1.5 | 1.9 | 2.1 | 2.6 | | | |
| Rated breaking capacity (kA) | | IEC 60947-2 EN 60947-2 Icu | AC | 500V(690V) | 15 | | | 20 | | 25(10) | | 25(10) | | 50 | |
| | | | | 440V | 25 | | | 32 | | 50 | | 50 | | 70 | |
| | | | | 415V | 25 | | | 36 | | 50 | | 70 | | 85 | |
| | | | | 380V | 30 | | | 36 | | 50 | | 70 | | 85 | |
| | | | | 220V(240V) | 50 | | | 85 | | 100 | | 100 | | 125 | |
| | | DC | 250V | — | | | — | | — | | — | | — | | |
| | | | 125V | — | | | — | | — | | — | | — | | |
| Connection | | Clamp terminal | | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | | | |
| Optional accessories | | Alarm switch (AL) | ● | | | ● | | ● | | ● | | ○ | | | |
| | | Auxiliary switch (AX) | ● | | | ● | | ● | | ● | | ○ | | | |
| | | Shunt trip (SHT) | ● | | | ● | | ● | | ● | | ○ | | | |
| | | Under-voltage trip (UVT) | ● | | | ● | | ● | | ● | | — | | | |
| | | Rotary handle (EH) | ● | | | ● | | ● | | ● | | ● | | | |
| | | Terminal cover (TC) | ● | | | ● | | ● | | ● | | ● | | | |
| | | Box lug (TL) | ● | | | ● | | ● | | ● | | ● | | | |
| Trip Unit | | Adj. thermal Fixed magnetic | | | Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Thermal magnetic | | | | |
| Tripping button | | Equipped | | | Equipped | | Equipped | | Equipped | | Equipped | | | | |

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

80% ~ 100% Adj. (A)

250

BM250-CN

BM250-SN

BM250-HN

BM250-HTA

BM250-RTA

BM250-HS



| 125, 150, 175, 200, 225, 250. | | | 125, 150, 175, 200, 225, 250. | | 175, 200, 225, 250. | | 175, 200, 225, 250. | | 175, 200, 225, 250. | | 175, 200, 225, 250. | |
|--------------------------------|-----|-----|--------------------------------|-----|--------------------------------|-----|--------------------------------|-----|--------------------------------|-----|---------------------|-----|
| 2 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 690 | | | 800 | | 690 | | 800 | | 800 | | 690 | |
| 250* | — | — | — | — | — | — | — | — | — | — | — | — |
| 500 | | | 500 | | 500 | | 690 | | 690 | | 500 | |
| 8 | | | 8 | | 8 | | 8 | | 8 | | 8 | |
| 105 | 105 | 140 | 105 | 140 | 105 | 140 | 105 | 140 | 105 | 140 | 105 | 140 |
| 165 | | | 165 | | 165 | | 165 | | 165 | | 165 | |
| 68 | | | 68 | | 68 | | 68 | | 68 | | 86 | |
| 92 | | | 92 | | 92 | | 92 | | 92 | | 112 | |
| 126 | | | 126 | | 126 | | 126 | | 126 | | 126 | |
| 35 | | | 35 | | 35 | | 35 | | 35 | | 35 | |
| 1.3 | 1.5 | 1.9 | 1.5 | 1.9 | 1.5 | 1.9 | 1.5 | 1.9 | 1.5 | 1.9 | 2.1 | 2.6 |
| 7.5 | | | 15 | | 20 | | 25(10) | | 25(10) | | 50 | |
| 15 | | | 25 | | 32 | | 50 | | 50 | | 70 | |
| 15 | | | 25 | | 36 | | 50 | | 70 | | 85 | |
| 22 | | | 30 | | 36 | | 50 | | 70 | | 85 | |
| 30 | | | 50 | | 85 | | 100 | | 100 | | 125 | |
| 10* | — | — | — | — | — | — | — | — | — | — | — | — |
| 15* | — | — | — | — | — | — | — | — | — | — | — | — |
| Clamp terminal | | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — | — |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Adj. thermal Fixed magnetic | | | Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Thermal magnetic | |
| Equipped | | | Equipped | | Equipped | | Equipped | | Equipped | | Equipped | |

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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MCCB
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MS

MMS

Molded Case Circuit Breaker

| Frame size (AF) (Inm) | | 400 | | | | | | | | | | | | |
|--|----------------------------------|-----------------------------|------------|-----|---------------------|-----|---------------------|-----|---------------------|-----|---------------------|-----|-----|--|
| Model | | BM400-CN | | | BM400-SN | | BM400-HN | | BM400-RN | | BM400-UN | | | |
| Appearance | | | | | | | | | | | | | | |
| Rated current In (A) at ambient temp. 40°C | | 250, 300, 350, 400. | | | 250, 300, 350, 400. | | 250, 300, 350, 400. | | 250, 300, 350, 400. | | 250, 300, 350, 400. | | | |
| Number of poles (P) | | 2 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | | |
| Rated insulation voltage Ui (V) | | AC 690 | | | | | | | | | | | | |
| | | DC 250* — — — — — — — — — — | | | | | | | | | | | | |
| Rated operational voltage Ue (V AC) | | 500 | | | | | | | | | | | | |
| Uimp(kV) | | 8 | | | | | | | | | | | | |
| Dimensions | | a | 140 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | |
| | | b | 257 | | | 257 | | 257 | | 257 | | 257 | | |
| | | c | 103 | | | 103 | | 103 | | 103 | | 103 | | |
| | | ca | 155 | | | 155 | | 155 | | 155 | | 155 | | |
| | | bb | 194 | | | 194 | | 194 | | 194 | | 194 | | |
| | | aa | 44 | | | 44 | | 44 | | 44 | | 44 | | |
| Weight (kg) | | 5.0 | 5.7 | 7.5 | 5.7 | 7.5 | 5.7 | 7.5 | 5.7 | 7.5 | 5.7 | 7.5 | | |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 Icu | AC | 500V(690V) | | 14 | | 20 | | 25 | | 42 | | 65 | |
| | | | 440V | | 22 | | 30 | | 42 | | 55 | | 85 | |
| | | | 415V | | 25 | | 35 | | 50 | | 70 | | 85 | |
| | | | 380V | | 25 | | 35 | | 50 | | 70 | | 85 | |
| | | | 220V(240V) | | 35 | | 50 | | 85 | | 100 | | 125 | |
| | DC | 250V | | 10* | | — | | — | | — | | — | | |
| 125V | | 15* | | — | | — | | — | | — | | | | |
| Connection | | Busbar | | | | | | | | | | | | |
| Optional accessories | Alarm switch | (AL) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Auxiliary switch | (AX) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Shunt trip | (SHT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Under-voltage trip | (UVT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Rotary handle | (EH) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Terminal cover | (TC) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Box lug | (TL) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| Trip Unit | | Thermal magnetic | | | Thermal magnetic | | Thermal magnetic | | Thermal magnetic | | Thermal magnetic | | | |
| Tripping button | | Equipped | | | | | | | | | | | | |

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 Above accessories table is for 3P breaker.
 2. Ics= 50% Icu
 3. Adjustable thermal: 80%~100% In.
 4. * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

| BM630s-STD | | BM630s-LTD | | BM630s-HTD | | BM630s-RTD | | BM630s-STA | | BM630s-LTA | | BM630s-HTA | | BM630s-RTA | |
|---|------------------|---|------------------|---|------------------|---|-------------------------------------|---|-------------------------------------|--|-------------------------------------|---|-------------------------------------|---|-------------------------------------|
|  | |  | |  | |  | |  | |  | |  | |  | |
| 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | | 400, 500, 600, 630. | |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | |
| — | | — | | — | | — | | — | | — | | — | | — | |
| 690 | | 690 | | 690 | | 690 | | 690 | | 690 | | 690 | | 690 | |
| 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | |
| 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 |
| 257 | | 257 | | 257 | | 257 | | 257 | | 257 | | 257 | | 257 | |
| 103 | | 103 | | 103 | | 103 | | 103 | | 103 | | 103 | | 103 | |
| 155 | | 155 | | 155 | | 155 | | 155 | | 155 | | 155 | | 155 | |
| 194 | | 194 | | 194 | | 194 | | 194 | | 194 | | 194 | | 194 | |
| 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | |
| 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 |
| 14(10) | | 20(10) | | 25(10) | | 42(15) | | 14(10) | | 20(10) | | 25(10) | | 42(15) | |
| 25 | | 36 | | 50 | | 70 | | 25 | | 36 | | 50 | | 70 | |
| 25 | | 36 | | 50 | | 70 | | 25 | | 36 | | 50 | | 70 | |
| 25 | | 36 | | 50 | | 70 | | 25 | | 36 | | 50 | | 70 | |
| 36 | | 65 | | 85 | | 100 | | 36 | | 65 | | 85 | | 100 | |
| — | | — | | — | | — | | — | | — | | — | | — | |
| — | | — | | — | | — | | — | | — | | — | | — | |
| Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Thermal magnetic | Thermal magnetic | Thermal magnetic | Thermal magnetic | Thermal magnetic | Thermal magnetic | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" | "Adjustable Thermal Fixed magnetic" |
| Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped |

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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MCCB
ELCB

ATS

ACB






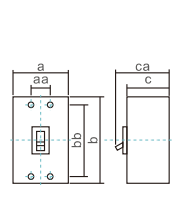
MCB

SPD








MS

MMS

Molded Case Circuit Breaker

| Frame size (AF) (Inm) | | 630 | | | | | | | | | | |
|--|----------------------------------|---|-----------------------------|---|-----------------------------|---|-----------------------------|---|-----------------------------|---|-----------------------------|----|
| Model | | BM630-CN | | BM630-SN | | BM630-HN | | BM630-RN | | BM630-UN | | |
| Appearance | |  | |  | |  | |  | |  | | |
| Rated current In (A) at ambient temp. 40°C | | 500, 600, 630. | | 500, 600, 630. | | 500, 630. | | 500, 630. | | 500, 630. | | |
| Number of poles (P) | | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | |
| Rated insulation voltage Ui (V) | | AC | | 690 | | 690 | | 690 | | 690 | | |
| | | DC | | 250* | | 250* | | 250* | | — | | |
| Rated operational voltage Ue (V AC) | | 500 | | 500 | | 500 | | 500 | | 500 | | |
| Uimp(kV) | | 8 | | 8 | | 8 | | 8 | | 8 | | |
| Dimensions  (mm) | a | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | |
| | b | 275 | | 275 | | 275 | | 275 | | 275 | | |
| | c | 103 | | 103 | | 103 | | 103 | | 103 | | |
| | ca | 155 | | 155 | | 155 | | 155 | | 155 | | |
| | bb | 243 | | 243 | | 243 | | 243 | | 243 | | |
| | aa | 70 | | 70 | | 70 | | 70 | | 70 | | |
| | Weight (kg) | | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 Icu | 500V(690V) | 14 | | 20 | | 25 | | 42 | | 65 | |
| | | 440V | 22 | | 30 | | 50 | | 70 | | 85 | |
| | | 415V | 25 | | 35 | | 50 | | 70 | | 85 | |
| | | 380V | 25 | | 35 | | 50 | | 70 | | 100 | |
| | | 220V(240V) | 35 | | 50 | | 85 | | 100 | | 125 | |
| | DC | 250V | 10* | — | 20* | — | 40* | — | — | — | — | — |
| | | 125V | — | | — | | — | | — | | — | |
| Connection | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | |
| Optional accessories | Alarm switch (AL) | ● | | ● | | ● | | ● | | ● | | |
| | Auxiliary switch (AX) | ● | | ● | | ● | | ● | | ● | | |
| | Shunt trip (SHT) | ● | | ● | | ● | | ● | | ● | | |
| | Under-voltage trip (UVT) | ● | | ● | | ● | | ● | | ● | | |
| | Rotary handle (EH) | ● | | ● | | ● | | ● | | ● | | |
| | Terminal cover (TC) | ● | | ● | | ● | | ● | | ● | | |
| | Box lug (TL) | ● | | ● | | ● | | ● | | ● | | |
| | Trip Unit | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | |
| Tripping button | | Equipped | | Equipped | | Equipped | | Equipped | | Equipped | | |

Note 1 "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 Above accessories table is for 3P breaker.
 2. Ics= 50% Icu
 3. * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

| 800 | | | | 1000 | 1200 | 1600 | | |
|---|------|---|------|---|---|--|---|---|
| BM800-CN | | BM800-SN | | BM800-HN | BM800-RN | BM1000-HS | BM1200-HS | BM1600-HS |
|  | |  | |  |  |  |  |  |
| 700, 800. | | 700, 800. | | 700, 800. | 700, 800. | 1000 | 1200 | 1400, 1600. |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 3 | 3 |
| 690 | | 690 | | 690 | 690 | 1000 | 1000 | 1000 |
| 250* | — | 250* | — | — | — | — | — | — |
| 500 | | 500 | | 500 | 500 | 500 | 500 | 500 |
| 8 | | 8 | | 8 | 8 | 8 | 8 | 8 |
| 210 | 280 | 210 | 280 | 210 | 280 | 210 | 210 | 210 |
| 275 | | 275 | | 275 | 275 | 406 | 406 | 406 |
| 103 | | 103 | | 103 | 103 | 140 | 140 | 140 |
| 155 | | 155 | | 155 | 155 | 190 | 190 | 190 |
| 243 | | 243 | | 243 | 243 | 375 | 375 | 375 |
| 70 | | 70 | | 70 | 70 | 70 | 70 | 70 |
| 10.5 | 13.5 | 10.5 | 13.5 | 10.5 | 13.5 | 23 | 23 | 23 |
| 20 | | 25 | | 42 | 65 | 65 | 65 | 65 |
| 30 | | 50 | | 70 | 85 | 85 | 85 | 85 |
| 35 | | 50 | | 70 | 85 | 85 | 85 | 85 |
| 35 | | 50 | | 70 | 100 | 100 | 100 | 100 |
| 50 | | 85 | | 100 | 125 | 130 | 130 | 130 |
| 20* | — | 40* | — | — | — | — | — | — |
| — | | — | | — | — | — | — | — |
| Busbar | | Busbar | | Busbar | Busbar | Busbar | Busbar | Busbar |
| ● | | ● | | ● | ● | ○ | ○ | ○ |
| ● | | ● | | ● | ● | ○ | ○ | ○ |
| ● | | ● | | ● | ● | ○ | ○ | ○ |
| ● | | ● | | ● | ● | ○ | ○ | ○ |
| ● | | ● | | ● | ● | — | — | — |
| ● | | ● | | ● | ● | — | — | — |
| ● | | ● | | ● | ● | ● | ● | ● |
| Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | Fixed thermal Adj. magnetic | Fixed thermal Adj. magnetic | Fixed thermal Adj. magnetic | Fixed thermal Adj. magnetic |
| Equipped | | Equipped | | Equipped | Equipped | Equipped | Equipped | Equipped |

Note * DC application MCCB trip characteristic is different from AC type, please specify when place the order.

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MCCB
ELCB

ATS

ACB





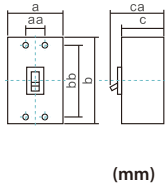
MCB

SPD

MS









MMS

Molded Case Circuit Breaker (BMA Series)

| Frame size (AF) (Inm) | | 125 | | | 160 | | | 250 | | | 400 | | | |
|--|--|---|----------------|----------------|---|----------------|----------------|--|----------------|----------------|---|-------------|-------------|--------|
| Model | | BMA 125-STA | BMA 125-LTA | BMA 125-HTA | BMA 160-STA | BMA 160-LTA | BMA 160-HTA | BMA 250-STA | BMA 250-LTA | BMA 250-HTA | BMA 400-LTA | BMA 400-HTA | BMA 400-RTA | |
| Appearance | |  | | |  | | |  | | |  | | | |
| Rated current In (A) at ambient temp. 40°C | | 15,16,20,25,30,32,40,50,60,63,75,80,100,125A | | | 40,50,60,63,70,75,80,100,125,140,150,160A | | | 175,200,225,250A | | | 250, 300, 350, 400A | | | |
| Number of poles (P) | | 3 | | 4 | | 3 | | 4 | | 3 | | 4 | | |
| Rated insulation voltage Ui (V) | | AC | | 800 | | 800 | | 800 | | 800 | | 800 | | |
| Rated operational voltage Ue(V AC) | | 690 | | 690 | | 690 | | 690 | | 690 | | 690 | | |
| Uimp(kV) | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | |
| Dimensions |  | a | 90 | 120 | 105 | 140 | 105 | 140 | 140 | 185 | | | | |
| | | b | 155 | 155 | 165 | 165 | 165 | 165 | 257 | 257 | | | | |
| | | c | 68 | 68 | 68 | 68 | 68 | 68 | 103 | 103 | | | | |
| | | ca | 92 | 92 | 92 | 92 | 92 | 92 | 155 | 155 | | | | |
| | | bb | 132 | 132 | 126 | 126 | 126 | 126 | 194 | 194 | | | | |
| | | aa | 30 | 30 | 35 | 35 | 35 | 35 | 44 | 44 | | | | |
| | | (mm) | | | | | | | | | | | | |
| Weight (kg) | | 0.7 | | 0.9 | | 1.5 | | 1.9 | | 5.7 | | 7.5 | | |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 Icu AC | 690V | 8 kA | 8 kA | 10 kA | 8 kA | 8 kA | 10 kA | 8 kA | 8 kA | 10 kA | 8 kA | 10 kA | 15 kA |
| | | 415V | 25 kA | 36 kA | 50 kA | 25 kA | 36 kA | 50 kA | 25 kA | 36 kA | 50 kA | 36 kA | 50 kA | 70 kA |
| | | 380V | 25 kA | 36 kA | 50 kA | 25 kA | 36 kA | 50 kA | 25 kA | 36 kA | 50 kA | 36 kA | 50 kA | 70 kA |
| | | 220V(240V) | 85 kA | 85 kA | 100 kA | 85 kA | 85 kA | 100 kA | 85 kA | 85 kA | 100 kA | 70 kA | 85 kA | 100 kA |
| Connection | | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Clamp terminal | Busbar | Busbar | Busbar | |
| Optional accessories | Alarm switch | (AL) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Auxiliary switch | (AX) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Shunt trip | (SHT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Under-voltage trip | (UVT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Rotary handle | (EH) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Terminal cover | (TC) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| Trip Unit | | Adjustable Thermal Fixed Magnetic | | | Adjustable Thermal Fixed Magnetic | | | Adjustable Thermal Fixed Magnetic | | | Adjustable Thermal Fixed Magnetic | | | |
| Tripping button | | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | |

Note 1. Ics=100%Icu

630

| BMA630s-STD | | BMA630s-LTD | | BMA630s-HTD | | BMA630s-RTD | | BMA630s-STA | | BMA630s-LTA | | BMA630s-HTA | | BMA630s-RTA | |
|---|------------------|---|------------------|---|-----------------------------------|---|-----------------------------------|---|-----------------------------------|--|-----------------------------------|---|-----------------------------------|---|-----|
|  | |  | |  | |  | |  | |  | |  | |  | |
| 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | | 400, 500, 600, 630A | |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | | 1000 | |
| 690 | | 690 | | 690 | | 690 | | 690 | | 690 | | 690 | | 690 | |
| 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | |
| 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 | 140 | 185 |
| 257 | | 257 | | 257 | | 257 | | 257 | | 257 | | 257 | | 257 | |
| 103 | | 103 | | 103 | | 103 | | 103 | | 103 | | 103 | | 103 | |
| 155 | | 155 | | 155 | | 155 | | 155 | | 155 | | 155 | | 155 | |
| 194 | | 194 | | 194 | | 194 | | 194 | | 194 | | 194 | | 194 | |
| 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | |
| 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 | 5.7 | 7 |
| 10 kA | | 10 kA | | 10 kA | | 15 kA | | 10 kA | | 10 kA | | 10 kA | | 15 kA | |
| 25 kA | | 36 kA | | 50 kA | | 70 kA | | 25 kA | | 36 kA | | 50 kA | | 70 kA | |
| 25 kA | | 36 kA | | 50 kA | | 70 kA | | 25 kA | | 36 kA | | 50 kA | | 70 kA | |
| 36 kA | | 65 kA | | 85 kA | | 100 kA | | 36 kA | | 65 kA | | 85 kA | | 100 kA | |
| Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | | Clamp terminal | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Thermal magnetic | Thermal magnetic | Thermal magnetic | Thermal magnetic | Thermal magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | Adjustable Thermal Fixed magnetic | |
| Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | |

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MCCB
ELCB

ATS

ACB

MCB

SPD

MS

MMS

Molded Case Circuit Breaker (BMA Series)

| Frame size (AF) (Inm) | | 630 | | | | 630 | | | | 630 | | | | 800 | | | | 800 | | | | 800 | | | | | | | | |
|--|-------------------------------------|-----------------------------------|----------|-------------|----------|-----------------------------------|----------|-------------|----------|-------------|----------|-------------|----------|-----------------------------------|----------|-------------|----------|-----------------------------------|----------|-------------|----------|-------------|----------|-------------|----------|----------|----------|-----|------|-----|
| Model | | BMA 630-HTD | | BMA 630-RTD | | BMA 630-HTA | | BMA 630-RTA | | BMA 630-HED | | BMA 630-RED | | BMA 800-HTD | | BMA 800-RTD | | BMA 800-HTA | | BMA 800-RTA | | BMA 800-HED | | BMA 800-RED | | | | | | |
| Appearance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated current In (A) at ambient temp. 40°C | | 500, 600, 630A | | | | 500, 600, 630A | | | | 630A | | | | 700, 800A | | | | 700, 800A | | | | 800A | | | | | | | | |
| Number of poles (P) | | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | |
| Rated insulation voltage Ui (V) | | AC 1000 | | | | 1000 | | | | 1000 | | | | 1000 | | | | 1000 | | | | 1000 | | | | | | | | |
| Rated operational voltage Ue(V AC) | | 690 | | | | 690 | | | | 690 | | | | 690 | | | | 690 | | | | 690 | | | | | | | | |
| Uimp(kV) | | 8 | | | | 8 | | | | 8 | | | | 8 | | | | 8 | | | | 8 | | | | | | | | |
| Dimensions | | a | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 |
| | | b | 275 | | | | 275 | | | | 275 | | | | 275 | | | | 275 | | | | 275 | | | | | | | |
| | | c | 103 | | | | 103 | | | | 103 | | | | 103 | | | | 103 | | | | 103 | | | | | | | |
| | | ca | 155 | | | | 155 | | | | 155 | | | | 155 | | | | 155 | | | | 155 | | | | | | | |
| | | bb | 243 | | | | 243 | | | | 243 | | | | 243 | | | | 243 | | | | 243 | | | | | | | |
| | | aa | 70 | | | | 70 | | | | 70 | | | | 70 | | | | 70 | | | | 70 | | | | | | | |
| | | (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight (kg) | | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 | 11.5 | 15.3 | 11.5 | 15.3 | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 | 10 | 13 | 12 | 15.8 | 12 | 15.8 | |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 AC lcu | 690V | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | 10kA | 15kA | | | | |
| | | 415V | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | | | | |
| | | 380V | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | | | | |
| | | 220V/240V | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | 85kA | 100kA | | | | |
| Connection | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | Busbar | | | | |
| Optional accessories | Alarm switch (AL) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | Auxiliary switch (AX) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | Shunt trip (SHT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | Under-voltage trip (UVT) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | Rotary handle (EH) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | Terminal cover (TC) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| Trip Unit | | Fixed Thermal Adjustable Magnetic | | | | Adjustable Thermal Fixed magnetic | | | | Electronic | | | | Fixed Thermal Adjustable Magnetic | | | | Adjustable Thermal Fixed magnetic | | | | Electronic | | | | | | | | |
| Tripping button | | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | Equipped | | | |

Note 1. lcs=100%lcu

| Frame size (AF) (Inm) | 1000 | | 1250 | | 1600 | |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Model | BMA 1000-RED | BMA 1000-RED | BMA 1250-RED | BMA 1250-RED | BMA 1600-RED | BMA 1600-RED |

Appearance



| Rated current In (A) at ambient temp. 40°C | 1000A | | 1250A | | 1600A | |
|---|---------|---|-------|---|-------|---|
| Number of poles (P) | 3 | 4 | 3 | 4 | 3 | 4 |
| Rated insulation voltage Ui (V) | AC 1000 | | 1000 | | 1000 | |
| Rated operationa voltage Ue(V AC) | 690 | | 690 | | 690 | |
| Uimp(kV) | 8 | | 8 | | 8 | |

| Dimensions | Diagram | a | | b | | c | | ca | | bb | | aa | |
|------------|---------|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|
| | | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 | 199 | 339 |
| | | 327 | | 327 | | 327 | | 327 | | 200 | | 199 339 | |
| | | 141 | | 141 | | 141 | | 141 | | 200 | | 199 339 | |
| | | 205 | | 205 | | 205 | | 205 | | 200 | | 199 339 | |
| | | 200 | | 200 | | 200 | | 200 | | 200 | | 199 339 | |
| | | 199 339 | | 199 339 | | 199 339 | | 199 339 | | 199 339 | | 199 339 | |
| | | 13.3 17.2 | | 13.3 17.2 | | 13.3 17.2 | | 13.3 17.2 | | 13.3 17.2 | | 13.3 17.2 | |

| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 AC | 690V | | 415V | | 380V | | 220V(240V) | | | | |
|------------------------------|---------------------------------|-----------------------------|----|-----------------------------|----|-----------------------------|----|-----------------------------|----|----|----|---|
| | | 35 | 45 | 35 | 45 | 35 | 45 | 35 | 45 | 35 | 45 | |
| | | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 | |
| | | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 | |
| | | — | — | — | — | — | — | — | — | — | — | — |
| Accessory | | AL/AX/SHT/ Rotary handle | | AL/AX/SHT/ Rotary handle | | AL/AX/SHT/ Rotary handle | | AL/AX/SHT/ Rotary handle | | | | |

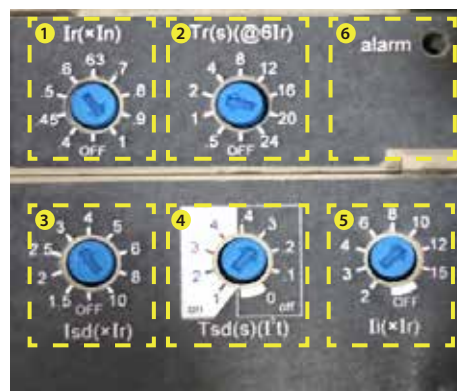
Condition:

1. Operation Temp.: -25°C ~ +70 °C
2. Storage Temp.: -40 °C ~ 85 °C
3. Altitude: ≤2000m
4. Pollution class: 3
5. Category: B
6. Relative humidity: ≤ 90%

Neutral Protection:



4P4D: 100% In 3D+N/2: 50% In 4P3D: No protection



1. Overload Setting Knob
(Ir=0.4/0.45/0.5/0.6/0.63/0.7/0.8/0.9/1/OFF)
2. Overload Tripping Time Setting Knob
(Tr=0.5/1/2/4/8/12/16/20/24/OFF)
3. (Isd=1.5/2/2.5/3/4/5/6/8/10/OFF)
4. (I2t on: Tsd=0.1/0.2/0.3/0.4; I2t off: Tsd=0/0.1/0.2/0.3/0.4)
5. Instantaneous Setting Knob
(Ii=2/3/4/6/8/10/12/15/OFF)
6. Alarm indicator: Overload (red light)

Protection

| Long-time | | | | | | | | | | | | |
|--|----------------|---------------------------|-----------|------|------|------|-----|------|------|------|-----|-----|
| Current setting(A) | Ir=Inx | 0.4 | 0.45 | 0.5 | 0.6 | 0.63 | 0.7 | 0.8 | 0.9 | 1 | OFF | |
| | Tr (s) | 0.5 | 1 | 2 | 4 | 8 | 12 | 16 | 20 | 24 | OFF | |
| Time Delay (s) | 1.5xIr | 8 | 16 | 32 | 64 | 128 | 192 | 256 | 320 | 384 | | |
| Accuracy: ±20% | 6xIr | 0.5 | 1 | 2 | 4 | 8 | 12 | 16 | 20 | 24 | | |
| | 7.2xIr | 0.35 | 0.7 | 1.39 | 2.78 | 5.56 | 8.3 | 11.1 | 13.9 | 16.7 | | |
| Short-time | | | | | | | | | | | | |
| Current setting(A) | Accuracy: ±10% | Isd=Irx | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | OFF |
| | | I²t off | 0 | 0.1 | 0.2 | 0.3 | 0.4 | | | | | |
| | | I²t on | | 0.1 | 0.2 | 0.3 | 0.4 | | | | | |
| Time Delay (ms) at 10xIr (I2t off or on) | | Tsd(Max. resettable time) | 20 | 80 | 140 | 230 | 350 | | | | | |
| | | Tsd(Max. trip time) | 80 | 140 | 200 | 320 | 500 | | | | | |
| Instantaneous | | | | | | | | | | | | |
| Current setting(A) | Accuracy: ±10% | Ii=Irx | 2 | 3 | 4 | 6 | 8 | 10 | 12 | 15 | OFF | |
| | | Tripping time | 60 ±20 ms | | | | | | | | | |



Molded Case Circuit Breaker (Electronic trip Unit)

| Frame size (AF) (Inm) | | 100 | | | 160 | | | 250 | | | |
|---|-------------------------------|--------------------------------------|-----------|----------|--|-----------|----------|--|-----------|----------|--|
| Type | | BM100-HE | BM100-RE | BM100-UE | BM160-HE | BM160-RE | BM160-UE | BM250-HE | BM250-RE | BM250-UE | |
| Rated current In (A) at ambient temp. 40 °C | | 100 | | | 160 | | | 250 | | | |
| Electronically adjustable current Ir (A) | | 40, 45, 50, 60, 70, 80, 90, 95, 100. | | | 64, 72, 80, 96, 112, 128, 144, 152, 160. | | | 100, 113, 125, 150, 175, 200, 225, 238, 250. | | | |
| Rated operational voltage Ue (V AC) | | 500 | | | 500 | | | 500 | | | |
| Rated insulation voltage Ui (V) | | 690 | | | 690 | | | 690 | | | |
| Rated impulse withstand voltage Uimp (kV) | | 8 | | | 8 | | | 8 | | | |
| Number of poles (P) | | 3P / 4P | | | 3P / 4P | | | 3P / 4P | | | |
| Model | | HE | RE | UE | HE | RE | UE | HE | RE | UE | |
| Rated breaking capacity Icu (kA) | | 50 | 70 | 85 | 50 | 70 | 85 | 50 | 70 | 85 | |
| Dimensions (mm) | <p>(mm)</p> | a | 105 / 140 | | | 105 / 140 | | | 105 / 140 | | |
| | | b | 165 | | | 165 | | | 165 | | |
| | | c | 86 | | | 86 | | | 86 | | |
| | | ca | 112 | | | 112 | | | 112 | | |
| | | bb | 126 | | | 126 | | | 126 | | |
| | | aa | 35 | | | 35 | | | 35 | | |
| Weight (kg) | | 2.5 / 3.0 | | | 2.5 / 3.0 | | | 2.5 / 3.0 | | | |
| Endurance | Electrical life (10 thousand) | 1,000 | | | 1,000 | | | 1,000 | | | |
| | Mechanical life (10 thousand) | 8,500 | | | 7,000 | | | 7,000 | | | |
| Connection | | Clamp terminal | | | Clamp terminal | | | Clamp terminal | | | |
| Trip unit | | Electronic | | | Electronic | | | Electronic | | | |
| Trip button | | Equipped | | | Equipped | | | Equipped | | | |
| Optional accessories | Alarm switch (AL) | ○ | | | ○ | | | ○ | | | |
| | Auxiliary switch (AX) | ○ | | | ○ | | | ○ | | | |
| | Shunt trip (SHT) | ○ | | | ○ | | | ○ | | | |
| | Under-voltage trip (UVT) | — | | | — | | | — | | | |
| | Lead wiring terminal (LT) | ○ | | | ○ | | | ○ | | | |
| | Motor operation device | ○ | | | ○ | | | ○ | | | |
| | Communication (COM) | ○ | | | ○ | | | ○ | | | |
| | Communication (HUB) | ○ | | | ○ | | | ○ | | | |

Note 1. Ics= 50% Icu

| 400 | | | 630 | | | 800 | | | 1000 | | 1250 | |
|--|----------|----------|--|----------|----------|--|----------|----------|---|-----------|--|-----------|
| BM400-HE | BM400-RE | BM400-UE | BM630-HE | BM630-RE | BM630-UE | BM800-SE | BM800-HE | BM800-RE | BM1000-SE | BM1000-HE | BM1250-SE | BM1250-HE |
| 400 | | | 630 | | | 800 | | | 1000 | | 1250 | |
| 160, 180, 200, 240, 280, 320, 360, 380, 400. | | | 252, 284, 315, 378, 441, 504, 567, 600, 630. | | | 320, 360, 400, 480, 560, 640, 720, 760, 800. | | | 400, 450, 500, 600, 700, 800, 900, 950, 1000. | | 500, 563, 625, 750, 875, 1000, 1125, 1188, 1250. | |
| 500 | | | 500 | | | 500 | | | 500 | | 500 | |
| 690 | | | 690 | | | 690 | | | 690 | | 690 | |
| 8 | | | 8 | | | 8 | | | 8 | | 8 | |
| 3P / 4P | | | 3P / 4P | | | 3P / 4P | | | 3P | | 3P | |
| HE | RE | UE | HE | RE | UE | SE | HE | RE | SE | HE | SE | HE |
| 50 | 70 | 85 | 50 | 70 | 85 | 50 | 70 | 85 | 70 | 85 | 70 | 85 |
| 140 / 185 | | | 210 / 280 | | | 210 / 280 | | | 210 | | 210 | |
| 257 | | | 275 | | | 275 | | | 406 | | 406 | |
| 103 | | | 103 | | | 103 | | | 140 | | 140 | |
| 144 | | | 155 | | | 155 | | | 190 | | 190 | |
| 194 | | | 243 | | | 243 | | | 375 | | 375 | |
| 44 | | | 70 | | | 70 | | | 70 | | 70 | |
| 7 / 8 | | | 11.5 / 14.5 | | | 11.5 / 14.5 | | | 26 | | 26 | |
| 1,000 | | | 1,000 | | | 500 | | | 500 | | 500 | |
| 4,000 | | | 4,000 | | | 2,500 | | | 2,500 | | 2,500 | |
| Busbar | | | Busbar | | | Busbar | | | Busbar | | Busbar | |
| Electronic | | | Electronic | | | Electronic | | | Electronic | | Electronic | |
| Equipped | | | Equipped | | | Equipped | | | Equipped | | Equipped | |
| ○ | | | ○ | | | ○ | | | ○ | | ○ | |
| ○ | | | ○ | | | ○ | | | ○ | | ○ | |
| ○ | | | ○ | | | ○ | | | — | | — | |
| ○ | | | ○ | | | ○ | | | — | | — | |
| — | | | — | | | — | | | — | | — | |
| ○ | | | ○ | | | ○ | | | — | | — | |
| ○ | | | ○ | | | ○ | | | — | | — | |
| ○ | | | ○ | | | ○ | | | — | | — | |

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MCCB
ELCB

ATS

ACB




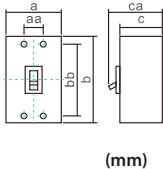
MCB

SPD

MS






MMS

Earth Leakage Circuit Breaker

| Frame size (AF) (Inm) | | 50 | | 100 | | | | |
|--|---|---|------|--|------|---|------|-----|
| Model | | BL50-SN | | BL100-SN | | BL100-HN | | |
| Appearance | |  | |  | |  | | |
| Rated current In (A) at ambient temp. 40°C | | 15, 20, 30, 40, 50. | | 15, 20, 30, 40, 50, 60, 75, 100. | | 15, 20, 30, 40, 50, 60, 75, 100. | | |
| Phase & wire (P) | | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | |
| Number of poles (P) | | 3 | 4 | 3 | 4 | 3 | 4 | |
| Rated voltage (VAC) | | 230, 400. | | 230, 400. | | 230, 400. | | |
| High speed | Rated current sensitivity I Δ n AC type (mA) | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | |
| | Rated current sensitivity I Δ n A type (mA) | 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | | |
| | 2I Δ n operating time (S) | 0.1 | | 0.1 | | 0.1 | | |
| | 5I Δ n operating time (S) | 0.04 | | 0.04 | | 0.04 | | |
| Delay | Rated current sensitivity I Δ n AC type (mA) | 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | | |
| | Rated current sensitivity I Δ n A type (mA) | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | |
| | 2I Δ n operating time (S) | 0.1- 0.4- 0.8- 2.0 adjustable | | 0.1- 0.4- 0.8- 2.0 adjustable | | 0.1- 0.4- 0.8- 2.0 adjustable | | |
| | 2I Δ n max. non-operating time (S) | 0, 0.2, 0.4, 1.0 | | 0, 0.2, 0.4, 1.0 | | 0, 0.2, 0.4, 1.0 | | |
| Leakage detection mode | | Mechanical push-button | | Mechanical push-button | | Mechanical push-button | | |
| Dimensions |  | a | 75 | 100 | 90 | 120 | 90 | 120 |
| | | b | 130 | | 155 | | 155 | |
| | | c | 68 | | 68 | | 68 | |
| | | ca | 90 | | 90 | | 90 | |
| | | bb | 111 | | 132 | | 132 | |
| | | aa | 25 | | 30 | | 30 | |
| | | Weight (kg) | | 0.7 | 0.9 | 1.5 | 1.8 | 1.5 |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 CNS 14816-2 | 440V | 7.5 | | 10 | | 25 | |
| | | 380V | 7.5 | | 15 | | 30 | |
| | | 220V | 10 | | 25 | | 50 | |
| Connection | | Clamp terminal | | Clamp terminal | | Clamp terminal | | |
| Optional accessories | Alarm switch | (AL) | ○ | | ○ | | ○ | |
| | Auxiliary switch | (AX) | ○ | | ○ | | ○ | |
| | Shunt trip | (SHT) | ○ | | ○ | | ○ | |
| | Under-voltage trip | (UVT) | — | | ○ | | ○ | |
| | Rptary handle | (EH) | ● | | ● | | ● | |
| | Terminal cover | (TC) | ● | | ● | | ● | |
| | Leakage alarm module | (AM) | — | | ○ | | ○ | |
| | Box lug | (TL) | ● | | ● | | ● | |
| Trip Unit | | Hydraulic magnetic | | Hydraulic magnetic | | Hydraulic magnetic | | |
| Tripping button | | Equipped | | Equipped | | Equipped | | |

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 2. Specify default rated current sensitivity when place the order.
 3. Ics= 50% Icu
 4. Adjustable thermal: 80%~100% In.
 5. Specify, when order delay type rated current sensitivity 30-100-500mA.

80% ~ 100% Adj. (A)

| 160 | | 250 | | 400 | | | | | |
|---|------|---|------|---|------|--|------|---|------|
| BL160-SN | | BL250-SN | | BL400-SN | | BL400-HN | | BL400-RN | |
|  | |  | |  | |  | |  | |
| 125, 140, 160. | | 175, 200, 225, 250. | | 250, 300, 350, 400. | | 250, 300, 350, 400. | | 250, 300, 350, 400. | |
| 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 230, 400. | | 230, 400. | | 230, 400. | | 230, 400. | | 230, 400. | |
| 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | |
| 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | | 30-100-300-500mA(adj) | |
| 0.1 | | 0.1 | | 0.1 | | 0.1 | | 0.1 | |
| 0.04 | | 0.04 | | 0.04 | | 0.04 | | 0.04 | |
| 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | |
| 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | |
| 0.1- 0.4- 0.8- 2.0 adjustable | | 0.1- 0.4- 0.8- 2.0 adjustable | | 0.1- 0.4- 0.8- 2.0 adjustable | | 0.1- 0.4- 0.8- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | |
| 0, 0.2, 0.4, 1.0 | | 0, 0.2, 0.4, 1.0 | | 0, 0.2, 0.4, 1.0 | | 0, 0.2, 0.4, 1.0 | | 0.1, 0.5, 1.0 | |
| Mechanical push-button | | Mechanical push-button | | Mechanical push-button | | Mechanical push-button | | Mechanical push-button | |
| 105 | 140 | 105 | 140 | 140 | 185 | 140 | 185 | 140 | 185 |
| 165 | | 165 | | 257 | | 257 | | 257 | |
| 68 | | 68 | | 103 | | 103 | | 103 | |
| 92 | | 92 | | 155 | | 155 | | 155 | |
| 126 | | 126 | | 194 | | 194 | | 194 | |
| 35 | | 35 | | 44 | | 44 | | 44 | |
| 1.7 | 2.3 | 1.7 | 2.3 | 6.6 | 8.4 | 6.6 | 8.4 | 5.7 | 7.5 |
| 25 | | 25 | | 30 | | 42 | | 55 | |
| 30 | | 30 | | 35 | | 50 | | 70 | |
| 50 | | 50 | | 50 | | 85 | | 100 | |
| Clamp terminal | | Clamp terminal | | Busbar | | Busbar | | Busbar | |
| ● | | ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | | ● | |
| ○ | | ○ | | ○ | | ○ | | ○ | |
| ● | | ● | | ● | | ● | | ● | |
| Adj. thermal Fixed magnetic | | Adj. thermal Fixed magnetic | | Thermal magnetic | | Thermal magnetic | | Thermal magnetic | |
| Equipped | | Equipped | | Equipped | | Equipped | | Equipped | |

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MCCB
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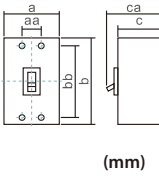
MCB

SPD





MS

MMS

Earth Leakage Circuit Breaker

| Frame size (AF) (Inm) | | 400 | | 630 | | | | |
|--|---|---|------|--|------|---|------|------|
| Model | | BL400-UN | | BL630-HN | | BL630-RN | | |
| Appearance | |  | |  | |  | | |
| Rated current In (A) at ambient temp. 40°C | | 250, 300, 350, 400. | | 500, 630. | | 500, 630. | | |
| Phase & wire (P) | | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | |
| Number of poles (P) | | 3 | 4 | 3 | 4 | 3 | 4 | |
| Rated voltage (VAC) | | 230, 400. | | 230, 400. | | 230, 400. | | |
| High speed | Rated current sensitivity IΔn AC type (mA) | 30-100-500mA (adj) *15mA, *30mA, *100mA *100-300-500mA (adj) | | 100-300-500mA (adj) | | 100-300-500mA (adj) | | |
| | Rated current sensitivity IΔn A type (mA) | 30-100-300-500mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | |
| | 2IΔn operating time (S) | 0.1 | | 0.1 | | 0.1 | | |
| | 5IΔn operating time (S) | 0.04 | | 0.04 | | 0.04 | | |
| Delay | Rated current sensitivity IΔn AC type (mA) | 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | | |
| | Rated current sensitivity IΔn A type (mA) | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | |
| | 2IΔn operating time (S) | 0.45- 1.0- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | | |
| | 2IΔn max. non-operating time (S) | 0.1, 0.5, 1.0 | | 0.1, 0.5, 1.0 | | 0.1, 0.5, 1.0 | | |
| Leakage detection mode | | Mechanical push-button | | Mechanical push-button | | Mechanical push-button | | |
| Dimensions |  | a | 140 | 185 | 210 | 280 | 210 | 280 |
| | | b | 257 | | 257 | | 257 | |
| | | c | 103 | | 103 | | 103 | |
| | | ca | 155 | | 155 | | 155 | |
| | | bb | 194 | | 243 | | 243 | |
| | | aa | 44 | | 70 | | 70 | |
| | | Weight (kg) | | 5.7 | 7.5 | 10.0 | 13.0 | 10.0 |
| Rated breaking capacity (kA) | IEC 60947-2 EN 60947-2 CNS 14816-2 | 440V | 85 | | 50 | | 70 | |
| | | 380V | 85 | | 50 | | 70 | |
| | | 220V | 125 | | 85 | | 100 | |
| Connection | | Busbar | | Busbar | | Busbar | | |
| Optional accessories | Alarm switch | (AL) | ● | | ● | | ● | |
| | Auxiliary switch | (AX) | ● | | ● | | ● | |
| | Shunt trip | (SHT) | ● | | ● | | ● | |
| | Under-voltage trip | (UVT) | ● | | ● | | ● | |
| | Rotary handle | (EH) | ● | | ● | | ● | |
| | Terminal cover | (TC) | ● | | ● | | ● | |
| | Leakage alarm module | (AM) | ○ | | ○ | | ○ | |
| | Box lug | (TL) | ● | | ● | | ● | |
| Trip Unit | | Thermal magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | |
| Tripping button | | Equipped | | Equipped | | Equipped | | |

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
 2. Specify default rated current sensitivity when place the order.
 3. Ics= 50% Icu
 4. Adjustable thermal: 80%~100% In.
 5. Specify, when order delay type rated current sensitivity 30-100-500mA.

| 630 | | 800 | | | | | |
|---|------|---|------|--|------|---|------|
| BL630-UN | | BL800-SN | | BL800-HN | | BL800-RN | |
|  | |  | |  | |  | |
| 500, 630. | | 700, 800. | | 700, 800. | | 700, 800. | |
| 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W | 1ø2W, 3ø3W. | 3ø4W |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 230, 400. | | 230, 400. | | 230, 400. | | 230, 400. | |
| 100-300-500mA (adj) | | 100-300-500mA (adj) | | 100-300-500mA (adj) | | 100-300-500mA (adj) | |
| 100-300-500-1000mA (adj) | | 100-300-500-1000mA (adj) | | 100-300-500-1000mA (adj) | | 100-300-500-1000mA (adj) | |
| 0.1 | | 0.1 | | 0.1 | | 0.1 | |
| 0.04 | | 0.04 | | 0.04 | | 0.04 | |
| 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | | 100-300-500mA(adj) | |
| 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | | 100-300-500-1000mA(adj) | |
| 0.45- 1.0- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | | 0.45- 1.0- 2.0 adjustable | |
| 0.1, 0.5, 1.0 | | 0.1, 0.5, 1.0 | | 0.1, 0.5, 1.0 | | 0.1, 0.5, 1.0 | |
| Mechanical push-button | | Mechanical push-button | | Mechanical push-button | | Mechanical push-button | |
| 210 | 280 | 210 | 280 | 210 | 280 | 210 | 280 |
| 257 | | 257 | | 257 | | 257 | |
| 103 | | 103 | | 103 | | 103 | |
| 155 | | 155 | | 155 | | 155 | |
| 243 | | 243 | | 243 | | 243 | |
| 70 | | 70 | | 70 | | 70 | |
| 10.0 | 13.0 | 10.5 | 13.5 | 10.5 | 13.5 | 10.5 | 13.5 |
| 85 | | 50 | | 70 | | 85 | |
| 100 | | 50 | | 70 | | 100 | |
| 125 | | 85 | | 100 | | 125 | |
| Busbar | | Busbar | | Busbar | | Busbar | |
| ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | |
| ● | | ● | | ● | | ● | |
| ○ | | ○ | | ○ | | ○ | |
| ● | | ● | | ● | | ● | |
| Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | | Fixed thermal Adj. magnetic | |
| Equipped | | Equipped | | Equipped | | Equipped | |

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MCCB
ELCB

ATS

ACB

MCB

SPD

MS

MMS

Molded Case Circuit Breaker

Bolt on type

| Frame (AF) | | 100 | | | 50 | 100 | | | 50 | 100 | | | 50 | 100 | | |
|--|--------------|--|------|------|---------------------------|------|-----|-------------------------------------|------|----------|-------------------------------------|---------|------|-----|--|--|
| Type | | BP | | | BPH | | | BKH | | | BKS | | | | | |
| Appearance | | | | | | | | | | | | | | | | |
| Rated Voltage (A.C) #1 | | 110 | 220* | 220 | 110 | 220* | 220 | 110/220* | 380 | 110/220* | 220 | | | | | |
| Rated Current In (A) At Ambient Temp. 40°C | | 10*, 15, 20, 30, 40, 50, 60, 75, 100. | | | 15, 20, 30, 40, 50. | | | 15, 20, 30, 40, 50, 60, 75, 100. | | | 15, 20, 30, 40, 50, 60, 75, 100. | | | | | |
| Number of poles (P) | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| Dimensions | a | 25 | 50 | 75 | 25 | 50 | 75 | 25 | 50 | 75 | 25 | 50 | 75 | | | |
| | b | 95 | | | 95 | | | 95 | | | 95 | | | | | |
| | c | 58.5 | | | 58.5 | | | 58.5 | | | 58.5 | | | | | |
| | ca | 77.5 | | | 77.5 | | | 77.5 | | | 77.5 | | | | | |
| | bb | 100 | | | 100 | | | 100 | | | 100 | | | | | |
| | aa | 0 | 25 | 50 | 0 | 25 | 50 | 0 | 25 | 50 | 0 | 25 | 50 | | | |
| Weight (kg) | | 0.15 | 0.31 | 0.46 | 0.2 | 0.4 | 0.6 | 0.22 | 0.44 | 0.66 | 0.22 | 0.44 | 0.66 | | | |
| Rated Breaking Capacity (kA) CNS 14816-2 Icu AC #2 #3 | 110V / 120V* | 5 | — | — | 10 | — | — | 15 | — | — | 25/22** | — | | | | |
| | 220V / 240V* | — | 5*** | 5 | — | 10 | 10 | 10 | 15 | — | — | 25/22** | | | | |
| | 380V / 400V* | — | — | — | — | — | — | — | 10 | — | — | — | | | | |
| Trip Unit | | Thermal Magnetic | | | Thermal Magnetic | | | Thermal Magnetic | | | Thermal Magnetic | | | | | |

Plug in type

| Frame (AF) | | 50 | | | 100 | | | 50 | | | 100 | | |
|---|--------------|-----------------------|------|------|------------------------------------|------|------|-----------------------|------|------|------------------------------------|------|--|
| Type | | BL | | | BLH | | | BLS | | | BKL | | |
| Appearance | | | | | | | | | | | | | |
| Rated Voltage (A.C) #1 | | 110/220* | | | 220 | | | 110/220* | | | 220 | | |
| Rated Current In (A) At Ambient Temp. 40°C | | 15, 20, 30 40, 50. | | | 15, 20, 30, 40, 50 60, 75, 100. | | | 15, 20, 30 40, 50. | | | 15, 20, 30, 40, 50 60, 75, 100. | | |
| Number of poles (P) | | 1 | 2 | 3 | 1 | 2 | 3 | 2 | 3 | 1 | 2 | 3 | |
| Dimensions | a | 25 | 50 | 75 | 25 | 50 | 75 | 50 | 75 | 25 | 50 | 75 | |
| | b | 74 | | | 74 | | | 74 | | | 79 | | |
| | c | 60.5 | | | 60.5 | | | 60.5 | | | 61 | | |
| | ca | 74 | | | 74 | | | 74 | | | 77.5 | | |
| | bb | — | | | — | | | — | | | — | | |
| | aa | 0 | 25 | 50 | 0 | 25 | 50 | 25 | 50 | 0 | 25 | 50 | |
| Weight (kg) | | 0.13 | 0.26 | 0.39 | 0.13 | 0.26 | 0.39 | 0.33 | 0.53 | 0.18 | 0.36 | 0.54 | |
| Rated Breaking Capacity (kA) CNS 14816-2 Icu AC | 110V / 120V* | 5 | — | — | 10 | — | — | — | — | 15 | — | | |
| | 220V / 240V* | — | 5 | — | — | 10 | — | 10 | — | 10 | 15 | | |
| | 380V / 400V* | — | — | — | — | — | — | — | — | — | 10 | | |
| Trip Unit | | Thermal Magnetic | | | Thermal Magnetic | | | Thermal Magnetic | | | Thermal Magnetic | | |

Note 1. ** 1 phase 3 wiring; L-L: 220V, L-N: 110V.
 2. *** Rated Breaking Capacity: asym/sym.
 3. **** BP 1P 220V 5kA Rated Current:15, 20, 30, 40, 50A.

Earth Leakage Circuit Breaker | Earth Leakage, Overload, and Short Circuit Protection

| Frame (AF) | 50 | | 50 | | 50 | | 50 | | 50 | | |
|--|---------------------------|------|---------|------|---------|------|----------|------|---------------------------|---------|----|
| Type | BL-50L | | BL-50UL | | BLP-50L | | BLP-50UL | | BL-50H | | |
| Appearance | | | | | | | | | | | |
| Rated Current In (A) At Ambient Temp. 40°C | 15, 20, 30, 40, 50. | | | | | | | | | | |
| Phase & Wire | 1φ2W | | | | | | | | | | |
| Number of poles (P) | 2P1E | 2P2E | 2P1E | 2P2E | 2P1E | 2P2E | 2P1E | 2P2E | 2P1E | 2P2E | |
| Rated Voltage (A.C.) #1. | 110 | 220 | 220*** | 220 | 110 | 220 | 220*** | 220 | 220*** | 220/380 | |
| Rated Current Sensitivity (mA) #2. | 30, (100, 200, 300, 500)* | | | | 30 | | | | 30, (100, 200, 300, 500)* | | |
| Max. Operating Time (s) | ≤0.1S | | | | | | | | | | |
| Rated Breaking Capacity (kA) CNS 5422 Icu AC | 110V | 5 | — | 10 | — | 5 | — | 10 | — | 15 | — |
| | 220V | — | 5 | 5 | 10 | — | 5 | 5 | 10 | 10 | 15 |
| Dimensions (mm) | a | 25 | 50 | 25 | 50 | 25 | 50 | 25 | 50 | 50 | 75 |
| | b | 110 | | | | 92 | | | | 95 | |
| | c | 60 | | | | 60.5 | | | | 58.5 | |
| | ca | 78.4 | | | | 78.4 | | | | 77.5 | |
| | bb | 120 | | | | — | | | | 100 | |
| | aa | 0 | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 50 |
| Weight (kg) | 0.22 | 0.39 | 0.22 | 0.39 | 0.2 | 0.34 | 0.2 | 0.34 | 0.4 | 0.58 | |
| Trip Unit | Thermal Magnetic | | | | | | | | | | |
| Earth Leakage Tripping Device | Mechanical | | | | | | | | | | |

| Frame (AF) | Earth Leakage, Overload Protection | | Earth Leakage Protection | |
|--|------------------------------------|------|---------------------------|-------------------|
| | 30 | | 40 | 30 |
| Type | BL-KLF | | BL-KF | BL-K30F |
| Appearance | | | | |
| Rated Current In(A) At Ambient Temp. 40°C | 15, 20, 30 | | 15, 20, 30, 40 | 15, 20, 30 |
| Phase & Wire | 1φ2W | | 1φ2W | 1φ3W 3φ3W |
| Poles (P) | 2P1E | 2P2E | 2 | 3 |
| Rated Voltage (A.C.) | 110~220 | | 110~220 | 110~220 380~440 |
| Rated Current Sensitivity (mA) #2. | 30 | | 30, (100, 200, 300, 500)* | 30 |
| Max. Operating Time (s) | ≤0.1S | | ≤0.1S | ≤0.1S |
| Rated Breaking Capacity (kA) CNS 5422 Icu AC | 110V~220V | 1.5 | 1.5, 2.5 | 1.5 — |
| | 380V~480V | — | — | — 1.5 |
| Dimensions (mm) | a | 66 | | 90 |
| | b | 70 | | 70 |
| | c | 42 | | 42 |
| | ca | 60 | | 60 |
| | bb | 59 | | 59 |
| | aa | 33 | | 57 |
| Weight (kg) | 0.2 | | — | 0.25 |
| Trip Unit | Thermal Magnetic | | — | |
| Earth Leakage Tripping Device | — | | Mechanical | |

Note 1. *** 3 phase 4 wiring, L-N: 220V
2. ** Special order.

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Optional Accessories Installation Table

■ AL: Alarm Switch / AX: Auxiliary Switch / SHT: Shunt Trip / UVT: Under Voltage Trip

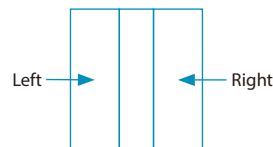
| Model | Poles | AL | AX | SHT or UVT | AL+AX | AL+ SHT or UVT | AX+ SHT or UVT | AL+AX+ SHT or UVT | | |
|--|----------|----|----|------------|-------|-------------------|-------------------|----------------------|--|---|
| BM30-SN BM50-CN BM60-SN/HN BM63-SN/HN BM100-SN/MN | 3P | | | | | | | — | | |
| BL50-SN | 3P 4P | | | | | | | | | — |
| BL100-SN BL100-HN | 3P 4P | | | | — | | | — | | |
| BM100-HS BM160-HS BM250-HS | 3P 4P | | | | | | | — | | |
| BM100-BTD/STD/LTD BM125-LTD/HTA/RTA BM160-SN/HN/HTA/RTA BM250-SN/HN/HTA/RTA BMA125-STA/LTA/HTA BMA160-STA/LTA/HTA BMA250-STA/LTA/HTA | 3P 4P | | | | | | | | | |
| BL160-SN BL250-SN/ CN | 3P 4P | | | | — | — | — | — | | |
| BM400-SN/HN/CN/RN/UN BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD BM630s-STA/LTA/HTA/RTA BMA630s-STD/LTD/HTD/RTD BMA630s-STA/LTA/HTA/RTA | 3P 4P | | | | | | | | | |
| BL400-SN/HN/RN/UN | 3P 4P | | | | | | | — | | |
| BM630-SN/HN/CN/RN/UN BM800-CN/SN/HN/RN BMA630-HTD/RTD/HTA/RTA/HED/RED BMA800-HTD/RTD/HTA/RTA/HED/RED | 3P 4P | | | | | | | | | |
| BL630-HN/RN/UN BL800-SN/HN/RN | 3P 4P | | | | | | | | | |
| BM1000-HS BM1200-HS BM1600-HS | 3P | | | | — | | | — | | |

2P, 125Af and below : Accessories are installed on the right side.

Note:

- Standard: AL and AX are installed on left side, SHT and UVT are installed on right side.
- SHT is equipped with coil anti-burn switch.
- BL series can not do right side installation.
- UVT of BM30-SN~BM100-HN can not install on its left side.
- #1 means have no UVT.
- #2 means only can apply to 4P breakers.

● : AL
○ : AX
■ : SHT or UVT



Optional Accessories | Application Table

Rotary Handle

| TYPE | Poles | Model |
|---------|----------|---|
| EH-100N | 3P~4P | BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN |
| EH-100T | 3P~4P | BM100-BTD/STD |
| EH-100L | 3P~4P | BM100-LTD, BM125-LTD |
| EH-125T | 2P~3P~4P | BM125-HTA/RTA |
| EH-125N | 3P~4P | BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA |
| EH-250N | 3P~4P | BM160-SN*/HN, BM250-CN*/SN/HN, BL160-SN, BL250-SN |
| EH-250T | 3P~4P | BM160-HTA/RTA, BMA160-STA/LTA/HTA, BM250-HTA/RTA, BMA250-STA/LTA/HTA |
| EH-400N | 3P~4P | BM400-CN*/SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA |
| EH-800N | 3P~4P | BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED |
| EH-250H | 3P~4P | BM100-HS, BM160-HS, BM250-HS |

Note: * indicates the value is can applied to 2P model.

Extended Rotary Handle

| TYPE | Poles | Model |
|---------|----------|---|
| MA-100N | 3P~4P | BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN |
| MA-100T | 3P~4P | BM100-BTD/STD |
| MA-100L | 3P~4P | BM100-LTD, BM125-LTD |
| MA-125T | 2P~3P~4P | BM125-HTA/RTA, BMA125-STA/LTA |
| MA-125N | 3P~4P | BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA |
| MA-250N | 3P~4P | BM160-SN/HN, BM250-SN/HN, BMA125-STA/LTA/HTA, BMA250-STA/LTA/HTA, BL160-SN, BL250-SN |
| MA-250T | 3P~4P | BM160-HTA/RTA, BMA160-STA/LTA/HTA, BM250-HTA/RTA, BMA250-STA/LTA/HTA |
| MA-400N | 3P~4P | BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA |
| MA-800N | 3P~4P | BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED |
| MA-250H | 3P~4P | BM100-HS, BM160-HS, BM250-HS |

Terminal Cover

| TYPE | Poles | Long cover | Short cover | Model |
|---------|-------|------------|-------------|--|
| TC-30N | 2 | TC30CN2P | — | BM30-CN |
| | 3 | TC30CN3P | — | |
| TC-100N | 2 | TC100N2P-K | TCS100N2P-K | BM30-SN, BM50-CN, BM60/63-SN/HN, BM100-MN/SN BL50-SN, BM100-BTD/STD, BM100/125-LTD |
| | 3 | TC100N3P-K | TCS100N3P-K | |
| | 4 | TC100N4P-K | TCS100N4P-K | |
| TC-125N | 2 | TC125N2P-K | TCS125N2P-K | BM60-HBN BM100-HN, BM125-SN/HN, BL100-SN/HN |
| | 3 | TC125N3P-K | TCS125N3P-K | |
| | 4 | TC125N4P | TCS125N4P | |
| TC-125A | 2~3 | TC125A3P-K | TCS125A3P-K | BM125-HTA/RTA, BMA125-STA/LTA/HTA |
| | 4 | TC125A4P-K | TCS125A4P-K | |
| TC-250N | 3 | TC250N3P-K | — | BM160-SN/HN, BM250-CN/SN/HN, BM160/250-HTA/RTA BMA160/250-STA/LTA/HTA, BL160-SN, BL250-SN |
| | 4 | TC250N4P-K | — | |
| TC-250H | 3 | TC250H3P | — | BM100-HS, BM160/250-HS |
| TC-400N | 3 | TC400N3P | — | BM400-CN/SN/HN/RN/UN, BM630s-STD/LTD/HTD/RTD BM630s-STA/LTA/HTA/RTA, BMA400-LTA/HTA/RTA BMA400-HTD/RTD/HMF/RMF, BMA630s-STD/LTD/HTD/RTD BMA630s-STA/LTA/HTA/RTA, BL400-SN/HN/RN/UN |
| | 4 | TC400N4P | — | |
| TC-630N | 3 | TC630N3P | — | BM630-CN/SN/HN/UN/RN, BM800-CN/SN/HN/RN BM630-HE/RE/UE, BM800-SE/HE/RE BMA630-HTD/RTD/HTA/RTA, BMA800-HTD/RTD/HTA/RTA BMA630-HED/RED, BMA800-HED/RED, BL630-HN/RN/UN, BL800-SN/HN/RN |
| | 4 | TC630N4P | — | |

Motor Operation Device

| TYPE | Poles | Model |
|---------|-------|---|
| MT-100N | 3P~4P | BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BM100-SN/MN, BL50-SN |
| MT-125N | 3P~4P | BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/RTA |
| MT-250N | 3P~4P | BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN, BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA |
| MT-400N | 3P~4P | BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA |
| MT-800N | 3P~4P | BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTD/RTD/HTA/RTA/HED/RED, BMA800-HTD/RTD/HTA/RTA/HED/RED |
| MT-250E | 3P~4P | BM100-HS, BM160-HS, BM250-HS |

Note: * Applicable voltage: ① DC 24V ② AC 110V/ DC 110V ③ AC 230V/ DC 220V

Rear Connection

| TYPE | Poles | Model |
|------------|----------|--|
| PGI-100N50 | 3P | BM30-SN, BM50-CN, BM60-SN/HN, BM63-SN/HN, BL50-SN (50A and below), BM50-CN |
| PGI-100N | 3P | BM60-SN/HN, BM100-SN/MN (60A and below) |
| PGI-125N50 | 3P | BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN (50A and below) |
| | 4P | BM100-HN, BM125-SN, BL100-SN/HN (50A and below) |
| PGI-125M | 2P~3P~4P | BM125-HTA/RTA |
| PGI-125N | 3P | BM60-HBN, BM100-HN, BM125-SN, BL100-SN/HN (60A and above) |
| | 4P | BM100-HN, BM125-SN, BL100-SN/HN (60A and above) |
| PGI-250N | 3P~4P | BM160-SN/HN, BM160-HTA/RTA, BM250-SN/HN, BM250-HTA/RTA, BL160-SN, BL250-SN |
| PGI-400N | 3P~4P | BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA |
| PGI-800N | 3P~4P | BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN |
| PGI-BM250 | 3P | BM100-HS, BM160-HS, BM250-HS |

Locking Device

| TYPE | Poles | Model |
|----------|----------|--|
| FHL-250M | 2P~3P~4P | BM125-HTA/RTA, BMA125-STA/LTA/HTA |
| | 3P~4P | BM160/250-HN/HTA/RTA/SN, BM250-CN, BMA160/250-STA/LTA/HTA, *BL160/250-SN |
| FHL-400M | 3P~4P | BM400-CN/SN/HN/RN/UN, BM400-HE/RE/UE, BMA400-LTA/HTA/RTA, BMA630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA, BM630s-STD/LTD/HTD/RTD/STA/LTA/HTA/RTA |
| FHL-800M | 3P~4P | BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BM630-HE/RE/UE, BM800-SE/HE/RE, BMA630-HED/RED, BMA800-HED/RED, BMA630/800-HTD/RTD |

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Optional Accessories | Dimensions

Rotary Handle

| Type | Poles | fig.1 | | | | fig.2 | | | fig.3 | | |
|---------|--------|-------|-----|----|----|-------|-----|----|-------|-------|----------|
| | | A | B | C | D | E | F | G | H | J | K |
| EH-100N | 3P, 4P | 104 | 105 | 39 | 44 | 90 | 78 | 10 | 25 | 111 | M4 or ø5 |
| EH-100T | 3P, 4P | 104 | 105 | 39 | 44 | 90 | 78 | 10 | 25 | 111 | |
| EH-100L | 3P, 4P | 104 | 105 | 39 | 44 | 90 | 78 | 10 | 35 | 126 | |
| EH-125N | 3P, 4P | 104 | 105 | 39 | 44 | 90 | 78 | 10 | 30 | 132 | |
| EH-250N | 3P, 4P | 104 | 105 | 39 | 44 | 90 | 78 | 10 | 35 | 126 | |
| EH-250H | 3P, 4P | 104 | 125 | 39 | 44 | 90 | 78 | 10 | 35 | 126.5 | |
| EH-400N | 3P, 4P | 150 | 173 | 60 | 77 | 108 | 112 | 10 | 44 | 194 | |
| EH-800N | 3P, 4P | 150 | 173 | 60 | 77 | 108 | 112 | 10 | 70 | 243 | |

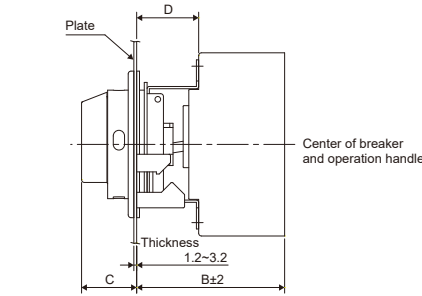
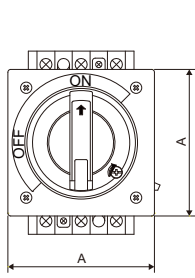
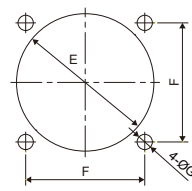
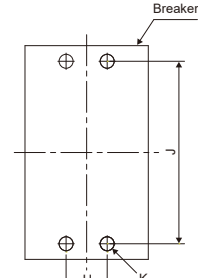


Fig. 1



Panel Dimension
Fig. 2

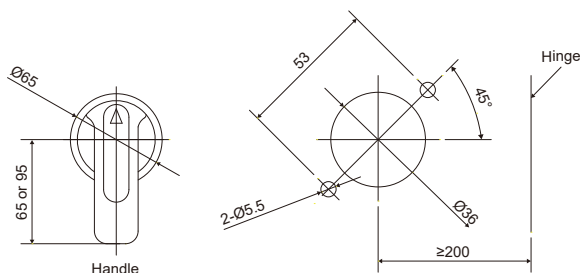
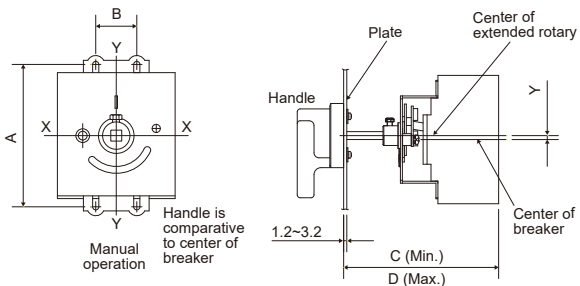


Breaker Dimension
Fig. 3

Note: 1. Optional for dust and water protection.

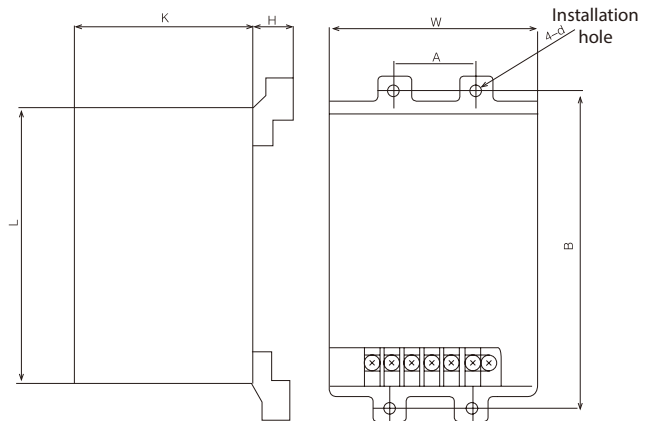
Extended Rotary Handle

| Type | Dimensions (mm) | | | | | Screw |
|---------|-----------------|----|-----|-----|-----|----------------|
| | A | B | C | D | Y | |
| MA-100N | 111 | 25 | 125 | 229 | +8 | M4x80 |
| MA-100T | 111 | 25 | 125 | 229 | 0 | M4x75 |
| MA-100L | 111 | 25 | 125 | 229 | 0 | M4x75 |
| MA-125N | 114 | 30 | 125 | 229 | +8 | M4x80 |
| MA-250N | 126 | 35 | 125 | 229 | 0 | ST3x10 |
| MA-250H | 126 | 35 | 143 | 247 | 0 | M4x50 |
| MA-400N | 221 | 44 | 190 | 290 | +10 | M5x50 |
| MA-800N | 242 | 70 | 190 | 290 | +10 | M6x125 & M6x12 |



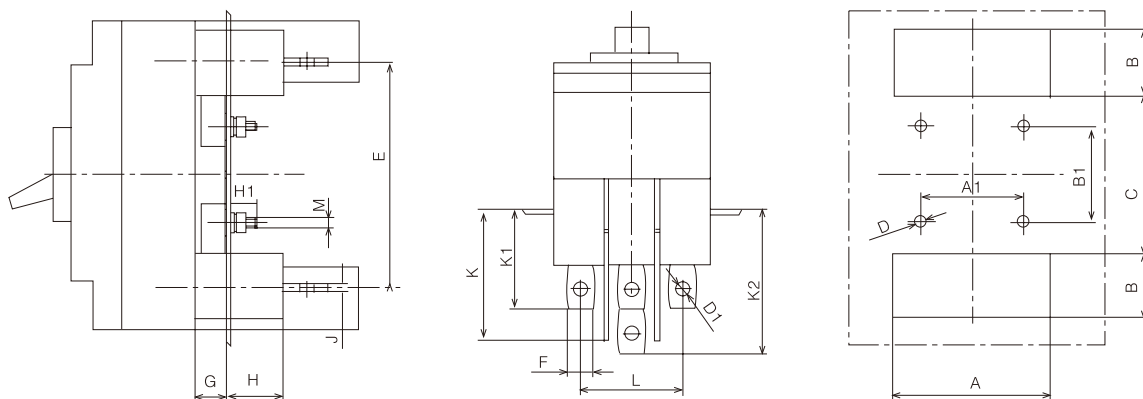
Motor Operation Device

| Type | Dimensions (mm) | | | | | | |
|---------|-----------------|-----|------|------|-----|-----|-----|
| | A | B | d | H | K | L | W |
| MT-100N | 25 | 111 | ø4.5 | 16.5 | 79 | 102 | 74 |
| MT-125N | 30 | 132 | ø4.5 | 15 | 77 | 116 | 90 |
| MT-250N | 30 | 126 | ø4.5 | 15 | 77 | 116 | 90 |
| MT-400N | 44 | 194 | ø4.5 | 36 | 115 | 176 | 130 |
| MT-800N | 70 | 234 | ø4.5 | 36 | 115 | 176 | 130 |
| MT-250E | 30 | 126 | ø4.5 | 15 | 77 | 116 | 90 |



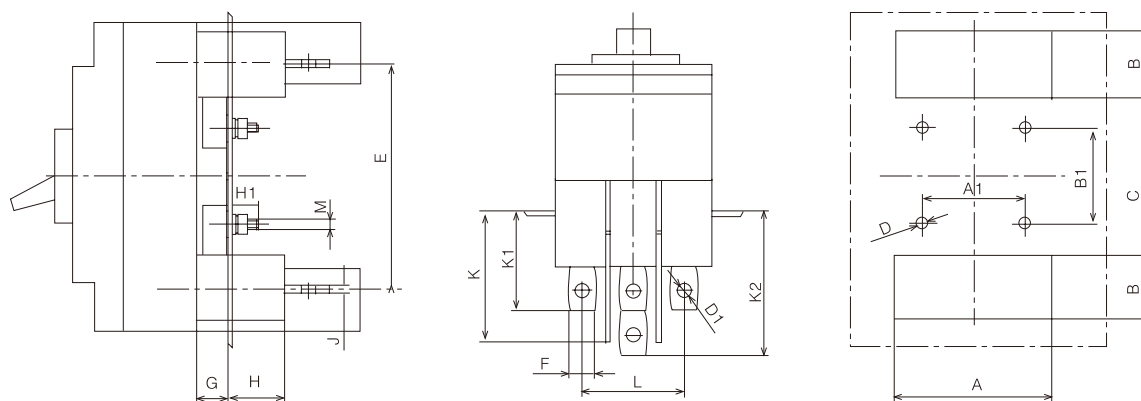
■ Rear Connection

| Type | Poles | Dimensions (mm) | | | | | | | | | | | | | | | | Connect Direction | | | |
|----------|-------|-----------------|-----|----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-------------------|----|------------|----------|
| | | A | A1 | B | B1 | C | D | D1 | E | F | G | H | H1 | J | K | K1 | K2 | L | M | Horizontal | Vertical |
| PGI-100N | 3 | 74 | 50 | 24 | 58 | 90 | ø5 | / | 116 | M10 | 9.5 | 28 | 12 | M10 | / | 62 | 122 | 50 | M4 | ⊙ | ⊙ |
| | 4 | 99 | 75 | | | | | | | | | | | | | | | 75 | | | |
| PGI-125N | 3 | 92 | 60 | 30 | 70 | 104 | ø6 | / | 134 | M10 | 13 | 26 | 16 | M10 | / | 62 | 122 | 60 | M5 | ⊙ | ⊙ |
| | 4 | 122 | 90 | | | | | | | | | | | | | | | 90 | | | |
| PGI-250N | 3 | 107 | 70 | 38 | 76 | 106 | ø6 | ø10 | 144 | 25 | 13 | 34 | 15 | 6 | / | 79 | 134 | 70 | M5 | ⊙ | ⊙ |
| | 4 | 142 | 105 | | | | | | | | | | | | | | | 105 | | | |
| PGI-400N | 3 | 137 | 44 | 50 | 135 | 175 | ø10 | ø13 | 225 | 28 | 18 | 40 | 24 | 8 | 120 | 79 | / | 44 | M8 | ⊙ | ⊙ |
| | 4 | 181 | 88 | | | | | | | | | | | | | | | 88 | | | |
| PGI-800N | 3 | 212 | 140 | 57 | 143 | 185 | ø10 | ø13 | 243 | 44 | 17 | 53 | 20 | 11 | / | 146 | / | 140 | M8 | ⊙ | ⊙ |
| | 4 | 282 | 210 | | | | | | | | | | | | | | | 210 | | | |



■ Rear Connection

| Type | Poles | Dimensions (mm) | | | | | | | | | | | | | | | | Connect Direction | | | |
|-----------|-------|-----------------|----|----|----|-----|----|-----|-----|----|----|----|----|---|---|----|-----|-------------------|----|------------|----------|
| | | A | A1 | B | B1 | C | D | D1 | E | F | G | H | H1 | J | K | K1 | K2 | L | M | Horizontal | Vertical |
| PGI-BM250 | 3 | 107 | 70 | 38 | 76 | 106 | ø6 | ø10 | 144 | 25 | 13 | 34 | 15 | 6 | / | 79 | 134 | 70 | M5 | ⊙ | ⊙ |





ATS (Automatic Transfer Switches)

A. PC Class

| Frame size | | 63 | | | 125 | | | 250 | | | 500 | | |
|---|-----------------|---|---|---|--------------|---|---|--------------------|---|---|---------------|---|---|
| Insulation Voltage, Ui | | AC800V | | | | | | | | | | | |
| Rated Impulse Withstand Voltage, Uimp | | 12kV | | | | | | | | | | | |
| Rated Voltage, Ue | | 2P: AC220 / 230 / 240V 3/4P: AC380 / 400 / 415V | | | | | | | | | | | |
| Control Voltage , Us | | AC220 / 230 / 240V, 50/60Hz | | | | | | | | | | | |
| Rated Current, In (A) | | 16, 20 , 25, 32, 40, 50, 63 | | | 80, 100, 125 | | | 160, 200, 225, 250 | | | 350, 400, 500 | | |
| Pole | | 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 | 2 | 3 | 4 |
| Operation current (A) | AC220/230 /240V | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | 6 |
| Tripping current (A) | AC220/230 /240V | 1 | | | | | | | | | 1.4 | | |
| Rated condition short circuit current (fuse) | | 100kA | | | 100kA | | | 120kA | | | 120kA | | |
| Rated condition short circuit current (breaker) | | 50kA | | | 50kA | | | 65kA | | | 65kA | | |
| Making and Breaking Capacity | | AC-33B, DC-33B | | | | | | | | | | | |
| Switching time | I -> II | ≤1s | | | | | | | | | | | |
| | II -> I | | | | | | | | | | | | |
| Endurance | | Electrical: 6000 Mechanical: 20000 | | | | | | | | | | | |
| Switching frequency | | 120 times / hr | | | | | | | | | | | |
| Auxiliary switch | | 2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A | | | | | | | | | | | |

Note : AC-33A: Making & Breaking: 10Ie, cosφ=0.35
 AC-33B: Making & Breaking: 10Ie, cosφ=0.35 (Ie≤100A, cosφ=0.45)
 DC-33B: Making & Breaking: 4Ie, L/R=2.5ms



ATS Controller Specification

• XST-5

| Type | Standard |
|--------------------------------|---|
| Poles | 2 / 3 / 4 |
| Rated operation voltage (V) | AC380 / 220 AC400 / 230 AC415 / 240 |
| Rated operation frequency (Hz) | 50 / 60 |
| Operation voltage (V) | 165~300 (Phase voltage) |
| Operation temperature (°C) | -25 ~ 60 |
| Optional functions | — |

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| 800 | | 1250 | | 2500 | | 5000 | |
|---|---|------------|---|------------------|---|------------------|----|
| AC800V | | | | | | | |
| 12kV | | | | | | | |
| AC400V | | | | | | | |
| AC220V, 50Hz | | | | | | | |
| 630, 800 | | 1000, 1250 | | 1600, 2000, 2500 | | 3200, 4000, 5000 | |
| 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| 6 | 6 | 6 | 8 | 8 | 9 | 18 | 20 |
| 2 | | | | | | | |
| 120kA | | 120kA | | — | | 200kA | |
| 50kA | | 50kA | | 50kA | | — | |
| AC-33B, DC-33B | | | | | | AC-33A, DC-33B | |
| ≤1s | | | | | | | |
| Electrical: 6000 Mechanical: 10000 | | | | | | | |
| 120 times / hr | | | | | | | |
| 2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A | | | | | | | |

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ATS Controller Specification

• XST-6

| Type | Multifunction |
|--------------------------------|---|
| Poles | 2 / 3 / 4 |
| Rated operation voltage (V) | AC380 / 220 AC400 / 230 AC415 / 240 |
| Rated operation frequency (Hz) | 50 / 60 |
| Operation voltage (V) | 165~300 (Phase voltage) |
| Operation temperature (°C) | -25 ~ 60 |
| Optional functions | Current measurement + communication |



(Controller voltage: AC 220V)

ATS (Automatic Transfer Switches)

A. MCCB Type

| Type | Pole | Rated current In (A) | Rated Breaking Capacity Sym r.m.s. (kA) IEC 60947-2 AC Icu | |
|----------|------------|--------------------------------------|---|------|
| | | | 220V | 380V |
| BS100SN | 2P, 3P, 4P | 10, 15, 20, 30, 40, 50, 60, 75, 100. | 25 | 15 |
| BS100HN | 2P, 3P, 4P | | 50 | 30 |
| BS250SN | 2P, 3P, 4P | 125, 150, 175, 200, 225, 250. | 50 | 30 |
| BS400SN | 2P, 3P, 4P | | 50 | 35 |
| BS400HN | 2P, 3P, 4P | 250, 300, 350, 400. | 85 | 50 |
| BS630SN | 3P, 4P | | 50 | 35 |
| BS630HN | 3P, 4P | 500, 600, 630. | 85 | 50 |
| BS800SN | 3P, 4P | | 85 | 50 |
| BS1000HS | 3P | 1000 | 130 | 100 |
| BS1200HS | 3P | 1200 | 130 | 100 |
| BS1600HS | 3P | 1400, 1600. | 130 | 100 |

Note: 1. Standard: IEC 60947-2
 2. Special breaking capacity, please contact sales representative.
 3. BS225SN rated current 250A is optional order.



B. MS Type

| Type | ATS Protection Switch | Rated current In (A) | Pole | Voltage |
|-------|--|----------------------|------|---------|
| BS-MB | Miniature Circuit Breaker Protection Switch | 20A | R, N | 110V |
| | | | R, T | 220V |

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Air Circuit Breaker

| Frame Size | | 1600AF | | 2000AF | | 2500AF | | 3200AF | | 4000AF | | 6300AF | | 6300 | | |
|---------------------------------------|--------------------------|----------------------|---------------|------------------|--------------------|---|-------------------|-----------------|-------------|-----------|-------------|-----------|-----------------|--------------------------|-----------------|-----------------|
| Model | | BW-1600 | | BW-2000 | | BWA-2500 | | BW-3200 | | BW-4000 | | BW-6300 | | BW-6300HN | | |
| Rated Current, In | | 400/630/ 800/1000 | 1250/ 1600 | 630/ 800/1000 | 1250/ 1600/2000 | 400/630/800/ 1000/1250/ 1600/2000 | 2500 | 2000/ 2500 | 3200 | 4000 | 5000 | 6300 | 4000/ 5000 | 6300 | | |
| Pole | | 3P / 4P | | 3P / 4P | | 3P / 4P | | 3P / 4P | | 3P / 4P | | 3P / 4P | | 3P / 4P | | |
| Frequency (Hz) | | 50 / 60HZ | | 50 / 60HZ | | 50/60HZ | | 50 / 60HZ | | 50 / 60HZ | | 50 / 60HZ | | 50 / 60HZ | | |
| Rated Voltage, Ue | | AC690V | | AC690V | | AC 400/415/690V | | AC690V | | AC690V | | AC690V | | AC380 / 400 / 415, AC690 | | |
| Rated Impulse Withstand Voltage, Uimp | | 12kV | | 12kV | | 12kV | | 12kV | | 12kV | | 12kV | | 12kV | | |
| Insulation Voltage, Ui | | AC1000V | | AC1000V | | AC1000V | | AC1000V | | AC1000V | | AC1000V | | AC1000V | | |
| Rated Current of Neutral (%) | | 100%In | | 100%In | | 100%In | | 100%In | | 100%In | | 100%In | | 100%In | | |
| Breaking Capacity | Model | SN | HS | HN | H | HS | HN | HS | HN | HS | HN | HS | HN | | | |
| | Icu / Ics (kA) | 690V | 50/50 | 50/50 | 55/55 | 65 / 65 | 60/50 | 55/55 | 60/50 | 55/55 | 85/85 | 85 | | | | |
| | | 380/400/415V | 65/65 | 80/50 | 85/85 | 85 / 85 | 100/65 | 100/100 | 100/65 | 100/100 | 120/100 | 120 | | | | |
| | | 240V | — | 80/50 | 85/85 | — | 100/65 | 100/100 | 100/65 | 100/100 | 120/100 | - | | | | |
| | Icw (kA) 1sec | 400/415V | 50 | 50 | 65 | 85 | 65 | 85 | 65 | 85 | 100 | 100 | | | | |
| | | 690V | 50 | 50 | 65 | 65 | 65 | 65 | 65 | 75 | 85 | 85 | | | | |
| Operating time (ms) | Max. total breaking time | ≤ 30 | | 40 | | 40 | | 40 | | 40 | | 40 | 40 | 40 | | |
| | Max. closing time | ≤ 70 | | 80 | | 80 | | 80 | | 80 | | 80 | 80 | 80 | | |
| Endurance | Mechanical | With maintenance | 20,000 | | 20,000 | | 15000 | | 20,000 | | 20,000 | | 10,000 | 10,000 | 6500 | |
| | | Without maintenance | 15,000 | | 10,000 | | 30000 | | 10,000 | | 10,000 | | 2,500 | 2,500 | 13000 | |
| | Electrical | With maintenance | 10,000 | 8,000 | 15,000 | | 8000 | | 13,000 | | 12,000 | | 2,000 | 2,000 | 4000 | |
| | | Without maintenance | 10,000 | 8,000 | 8,000 | | 6000 | | 6,500 | | 6,000 | | 500 | 500 | 4000 | |
| Dimension HxWxD (mm) | Fixed Type | 3P | 312x265x201 | | 402x362x332 | | 397x365x364 | | 402x422x332 | | 402x422x377 | | — | — | 402x800x377 | |
| | | 4P | 312x335x201 | | 402x455x332 | | 397x460x364 | | 402x537x332 | | 402x537x377 | | — | — | 402x915x377 | |
| | Drawout Type | 3P | 345x275x300 | | 430x375x421 | | 435x 405x448.5 | 435x 405x473 | 430x435x421 | | 430x465x466 | | 435x 842x505 | 435x 960x505 | 435x 842x495 | 435x 958x495 |
| | | 4P | 345x345x300 | | 430x470x421 | | 435x 500x448.5 | 435x 500x473 | 430x550x421 | | 430x580x466 | | 435x956x492 | | 435x958x495 | |

Note: Icu/Ics/Icw for HS type only labeled 400V and 690V on the name plate, other voltage are for reference.

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MCB (Miniature Circuit Breaker) | BHA Series

Applications:

Applicable to the residential, industrial and commercial power distribution systems, provide circuit-control and protection on equipments against any impacts of overload, short-circuit and earth leakage.

- DIN rail TH 35mm
- Ambient temperature: -5°C~ +40°C



BHA

• Overload, Short Circuit

| BHA | 2 | 2 | C | 32 | | | |
|-------------|--|---|------------------|-------------------------------------|--|-----------------|------------------------|
| Type | Rated short-circuit breaking capacity (kA) | | Poles (P) | Tripping characteristics | Rated current In (A) | Standard | Mechanical life |
| | Rated voltage (V) | | | | | | |
| BHA | 2: 4.5kA; 3: 6kA; 4: 10kA 230/400V | | 1, 2, 3, 4 | C type: 5~ 10In D type: 10~ 15In | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63. | IEC 60898 | 20,000 operations |
| BHA | 125: 10kA 230/240V: 1P 400/415V: 2/3/4P | | 1, 2, 3, 4 | 8~12In | 80, 100, 125 | IEC 60947-2 | 10,000 operations |
| BHA | 10kA 4: DC125V(1P) / DC250V(2P) 5: DC220V(1P) / DC440V(2P) | | 1, 2 | DC Type | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63. | IEC 60947-2 | 20,000 operations |

• BHA5 can't be used in IT system



BHL

• Overload, Short Circuit, Leakage

| BHL | 2 | 2 | C | 32 | G | |
|-------------|---|---|------------------|-------------------------------------|--|---|
| Type | Rated short-circuit breaking capacity (kA) | | Poles (P) | Tripping characteristics | Rated current In (A) | Optional function (2P) |
| | Rated voltage (V) | | | | | |
| BHL | 2: 4.5kA 230V: 2P ; 400V: 3P/4P | | 2, 3, 4 | C type: 5~ 10In D type: 10~ 15In | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63. | Over-voltage protection (230V, internal built) |
| BHL | 3: 6kA 230/400V | | 2, 3, 4 | C type: 5~ 10In D type: 10~ 15In | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63. | Over-voltage protection (230V, internal built) |

• Standard: IEC 61009

• Internal OVT over voltage range AC 280V ± 5%



BHL-A

• Overload, Short Current, Leakage

| BHL-A | 3 | 1 | C | 32 | A | 30 | G | |
|-------------|---|---|------------------|-------------------------------------|--------------------------------------|------------------------------|---------------------------------------|---|
| Type | Rated short-circuit breaking capacity (kA) | | Poles (P) | Tripping characteristics | Rated current In (A) | Residual current type | Rated sensitivity current (mA) | Optional function (2P) |
| | Rated voltage (V) | | | | | | | |
| BHL-A | 2: 4.5kA; 3: 6kA 230V | | 1P+N | C type: 5~ 10In D type: 10~ 15In | 6, 10, 16, 20, 25, 32, 40, 50, 63 | A, AC | 10, 30, 100, 300 | Over-voltage protection (230V, internal built) |



BL-BF

· Overload, Short Current, Leakage

| BL-BF | V | 15 | 015 | 20 |
|-------|---------------------------------|----------------------|--|--|
| ↓ | ↓ | ↓ | ↓ | ↓ |
| Model | Type | Rated current In (A) | Rated sensitivity current IΔn (mA) | Pole |
| BL-BF | V : RCCB L : RCBO C : MCB | 15, 20, 30 | 000 : N/A (C Type) 015 : 15 (V/L Type) 030 : 30 (V/L Type) | 20 : 2P0E (V type) 21 : 2P1E (C type) 22 : 2P2E (L type) |



BHR-A

· Residual Current

| BHR-A | 42 | 25 | A | 030 |
|-------|------------------|----------------------|-----------------------|------------------------------------|
| ↓ | ↓ | ↓ | ↓ | ↓ |
| Type | Poles (P) | Rated current In (A) | Residual current Type | Rated sensitivity current IΔn (mA) |
| BHR-A | 42: 2P 44: 4P | 25, 32, 40, 63 | A, AC | 030: 30 100: 100 300: 300 |

BHG

· Disconnect Switch

| BHG | | 2 | 32 | | |
|------|-------------------|------------|---------------------------|-------------|-------------------|
| ↓ | | ↓ | ↓ | | |
| Type | Rated voltage (V) | Poles (P) | Rated current In (A) | Standard | Mechanical life |
| BHG | 230/400V | 1, 2, 3, 4 | 32A, 40A, 63A, 80A, 100A. | IEC 60947-3 | 50,000 operations |



BHN

· N+L Overload, Short Circuit

| BHN | 2 | 1 | C | 32 | |
|------|------------------------------|---|-----------|--------------------------|------------------------|
| ↓ | ↓ | ↓ | ↓ | ↓ | |
| Type | Rated breaking capacity (kA) | | Poles (P) | Tripping characteristics | Rated current In (A) |
| | Rated voltage (V) | | | | |
| BHN | 2: 4.5kA; 3: 6kA 230V | | 1P+N | C type: 5~ 10In | 6, 10, 16, 20, 25, 32. |



· Standard: IEC 60898

BHZ

· Over / Under Voltage Protective Device with Auto-reset

| BHZ2 | 25 | | | | | | | |
|------|----------------------|-----------------|------------------|-----------------|------------------|---|---------------|--------|
| ↓ | ↓ | | | | | | | |
| Type | Rated current In (A) | Over voltage | | Under voltage | | Operation time | | Reset |
| | | Operating value | Reset value | Operating value | Reset value | Over voltage | Under voltage | |
| BHZ2 | 25, 32, 40, 50, 63 | > 275V | 255V-265V 260 | 50V~160V | 180V~190V 185 | 275V: 3-15s 300V: 1-3s 350V: 0.25-0.75s 400V: 0.1-0.2s | 0.7s | 30s±5s |



· Standard: IEC 60898

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BHK

· Accessories

| BHK | 2 | | | | | | 1 | | 0 | | | | | |
|------|----------------|----|-----|-----|------|------|--------------|--------|-----------------|------------|-------|----------------------|-------|--------------------------|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Type | Accessory Code | | | | | | Installation | | Control Voltage | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 0 | 1 | 2 | 3 | 4 | 5 |
| | AL | AX | SHT | UVT | OVT | OUVT | Standard | Option | — | AC220~240V | DC48V | AC24~48V DC12~48V | AC12V | AC230~415V DC110~130V |
| BHK | AL | | | | | | ○ | | ○ | | | | | |
| | | AX | | | | | ○ | ○ | ○ | | | | | |
| | | | SHT | | | | ○ | ○ | | | | ○ | ○ | ○ |
| | | | | UVT | | | ○ | ○ | | ○ | ○ | | | |
| | | | | | OVT | | ○ | ○ | ○ | | | | | |
| | | | | | OUVT | ○ | ○ | ○ | | | | | | |

Note: 1. Standard: Attached on left side of breaker
2. Option: Attached on left side of accessory

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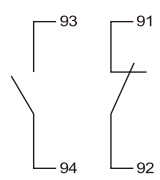

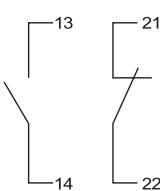
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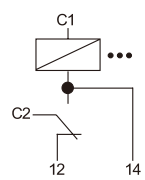

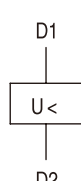
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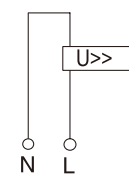
SPD

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| Type | Auxiliary Contact | | Width (mm) | Product Code |
|---|--------------------------------|---|----------------|--------------|
| | AC/12 | | | |
|  <p>AL Alarm Switch</p>  | 1NO. 1NC 230V 6A 440V 3A | 9 | BHK11 | |
|  <p>AX Auxiliary Contact</p>  | 1NO. 1NC 230V 6A 440V 3A | 9 | BHK21 BHK22 | |

| Type | Control Voltage | | Width (mm) | Product Code |
|---|------------------------|------------------|---------------|----------------|
| | V AC | V DC | | |
|  <p>SHT Shunt Trip</p>  | 12 24-48 230-415 | 12-48 110-130 | 18 | BHK31 BHK32 |
|  <p>UVT Under Voltage Trip</p>  | 220-240 | 48 | 18 | BHK41 BHK42 |

| Type | Rated voltage | Current | Over voltage range | Trip time | Width (mm) | Product Code |
|--|---------------|---------|--------------------|-----------|------------|----------------|
|  <p>OVT Over Voltage Trip</p>  | 230V | 15mA | 280V±5% | ≤0.2S | 18 | BHK51 BHK52 |

MCB (Miniature Circuit Breaker) | RP Series

Applications:

Applicable to power distribution, provide circuit to againsts overload, short-circuit and leakage.

- Windows display
- Din-rail TH35mm

RPC

· Overload, Short Circuit

| Type | Poles (P) | Tripping characteristics | Rated current In(A) | Rated short-circuit breaking capacity(kA) | Standard | Mechanical life (times) |
|-------|------------|--------------------------|---|---|------------------------|-------------------------|
| | | | | Rated voltage (V) | | |
| RPC | 1, 2, 3, 4 | B,C,D Type or 8~12In | 1, 2, 3, 4, 5, 6,10, 16, 20, 25, 32, 40, 50, 63 | 6kA @240/415Vac | IEC60898-1, IEC60947-2 | 20000 |
| RPC-H | 1, 2, 3, 4 | B,C,D Type or 8~12In | 1, 2, 3, 4, 5, 6,10, 16, 20, 25, 32, 40, 50, 63 | 10kA @240/415Vac | IEC60898-1, IEC60947-2 | 20000 |



RPV

· Residual Current

| Type | Poles (P) | Rated current In(A) | Rated conditional short-circuit current (Inc) | Residual current type | Rated residual current |
|------|--------------|---------------------|---|-----------------------|------------------------|
| RPV | 1P+N 3P+N | 16,20,25,32,40,63 | 6kA=C 10kA=H | A=A AC=C | 10~300mA |

· Note: Rated residual current 10 is below 40A



RPL

· Overload, Short Current, Leakage

| Type | Poles (P) | Tripping characteristics | Rated current In(A) | Residual current type | Rated short-circuit breaking capacity(kA) | Rated residual current |
|------|-----------|--------------------------|-----------------------------------|-----------------------|---|------------------------|
| | | | | | Rated voltage (V) | |
| RPL | 1P+N | C,D Type | 6, 10, 16, 20, 25, 32, 40, 50, 63 | A~AC Type | 6kA 2P: AC240V | 10, 30, 100, 300mA |



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Surge Protective Device | BHP Series



| | | | | |
|-----|----|----|---|-----|
| BHP | 20 | 3P | R | 320 |
|-----|----|----|---|-----|

| Type | I _{max} /I _{limp} (kA) | Waveform (μs) | Pole (P) | Alarm auxiliary contact R: with Blank: without | U _c (V) | U _n (V) | U _p (kV) | Waveform (μs) | I _n (kA) | Connection wire diameter | |
|--------|--|---------------|--|--|--------------------|--------------------|---------------------|---------------|---------------------|--------------------------|--------------------|
| | | | | | | | | | | L-N | PE |
| BHP20 | 20: 20kA | 8/20 | 1P: 1P 1P1: 1P+1 2P: 2P 3P: 3P 3P1: 3P+1 4P: 4P | R | 275 320 | 230/400 | 1.1 1.2 | 8/20 | 10 | ≧ 2.5mm ² | ≧ 6mm ² |
| BHP40 | 40: 40kA | 8/20 | | R | 275 385 | | 230/400 | | | 1.3 1.8 | 8/20 |
| BHP80 | 80: 80kA | 8/20 | | R | 275 385 | 230/400 | | 1.8 2.1 | 8/20 | 40 | |
| BHP100 | 100: 100kA | 8/20 | | R | 275 385 | | 230/400 | 2.1 2.3 | | | 8/20 |
| BHP250 | 250: 25kA | 10/350 | | | 275 440 | 230/400 | | 2.3 2.3 | 10/350 | - | |

To enable the surge protective device to work, please read the following note:

1. The grounding system type of the protected device and maximum operating voltage of the power grid U_s. Max.
2. The impulse withstand voltage of the protected device.

Note: 1. BHP20, 40 are plug-in type; BHP80, 100, 250 are fixed type.
2. The standard operation voltage U_c(V) is below table. Max operation voltage U_c(V): 660V.

SPD Counter

| Model | TAD-04-99 |
|----------------|-----------|
| Rated Voltage | AC85~250V |
| Max. Count | 99 |
| Display | LED |
| Dimension (mm) | 91X69X18 |

Normal working conditions

- Frequency: the AC power frequency shall be 50/60Hz.
- Voltage: the voltage continuously supplied between the wiring terminals of the surge protective device shall not exceed its maximum continuous operating voltage U_c.
- Altitude: less than 2,000m.
- Use and storage temperature: -Normal range: -5°C ~ +40°C;
-Ultimate range: -40°C ~ +80°C;
- Humidity: Relative humidity 30%~90% under ambient temperature.

Magnetic Contactor / Motor Starter ◆ AC control



| Model | | 9T | 11 | 12T | 15 | | | |
|---------------------------------|--|---|-------------------|------------------|-------------|--------------|--------------|-------------|
| Type | Magnetic Contactor | Nonreversing | S-P9T | S-P11 | S-P12T | S-P15 | | |
| | | Reversing | S-2XP9T | S-2XP11 | S-2XP12T | S-2XP15 | | |
| | Motor Starter | without enclosure | Nonreversing | MSO-P9T | MSO-P11 | MSO-P12T | MSO-P15 | |
| | | | Reversing | MSO-2xP9T | MSO-2xP11 | MSO-2xP12T | MSO-2xP15 | |
| | | with enclosure | Nonreversing | MS-P9T | MS-P11 | MS-P12T | MS-P15 | |
| | | | Reversing | MS-2xP9T | MS-2xP11 | MS-2xP12T | MS-2xP15 | |
| | | with enclosure (push button) | Nonreversing | MS-P9TPB | MS-P11PB | MS-P12TPB | MS-P15PB | |
| | TOR | Standard | TH-P12ES | TH-P12ES | TH-P12ES | TH-P12ES | | |
| | | Differential | TH-P12ES PP | TH-P12ES PP | TH-P12ES PP | TH-P12ES PP | | |
| | Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | AC 3 (kW/HP/A) | 3 Ø | 240V | 2.5/3/11 | 3.5/ 4.5/ 13 | 3.5/4.5/13 |
| 380/415V | | | | | 4/5.5/9 | 5.5/ 7.5/ 12 | 5.5/7.5/12 | 7.5/ 10/ 18 |
| 440V | | | | | 4/5.5/9 | 5.5/ 7.5/ 12 | 5.5/7.5/12 | 7.5/ 10/ 16 |
| 550V | | | | | 4/5.5/7 | 5.5/ 7.5/ 9 | 7.5/10/12 | 7.5/ 10/ 13 |
| 660V | | | | | 4/5.5/6 | 5.5/ 7.5/ 7 | 7.5/10/9 | 7.5/ 10/ 9 |
| Operation current (lth) AC1 (A) | | 25 | 20 | 25 | 25 | | | |
| Rated insulation voltage (V) | | AC690 | AC660 | AC690 | AC660 | | | |
| UL 508 CSA-C22.2 | | AC3 (HP/A) | 1 Ø | 100~120V | 0.5/9.8 | 0.5/ 9.8 | 0.75/13.8 | — |
| | | | | 200~240V | 1.5/10 | 2/ 10 | 2/12 | — |
| | | 3 Ø | 200~240V | 3/9.6 | 3/ 9.6 | 5/15.2 | — | |
| | | | 380~480V | 5/7.6 | 7.5/ 11 | 7.5/11 | — | |
| | | | 550~600V | 7.5/9 | 10/ 11 | 10/11 | — | |
| | | Operation current (lth) AC1 (A) | | 25 | 24 | 25 | — | |
| Rated insulation voltage (V) | | AC600 | AC600 | AC600 | — | | | |
| NEMA | | — | 0 | — | 0 | | | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 GB14048.4 | AC 15 | Contact | Standard | 1No 1NC | 1NO | 1No 1NC | 1NO |
| | | | | Special | — | 1NC | — | 1NC |
| | | | | 220V | 1.6 | 1.6 | 1.6 | 1.6 |
| | | | | 380V | 0.95 | 0.95 | 0.95 | 0.95 |
| | Operation current (lth) AC1 (A) | | 16 | 16 | 16 | 16 | | |
| | Contact class (UL) | | A600 · Q300 | A600, P600, Q300 | A600 · Q300 | — | | |
| Electrical Life AC3 | | 1.6 Mil. | 1.6 Mil. | 1.6 Mil. | 1.3 Mil. | | | |
| Mechanical Life | | 10 Mil. | 10 Mil. | 10 Mil. | 10 Mil. | | | |
| Operation (Time/Hour) | | 1200 | 1200 | 1200 | 1200 | | | |
| Magnetic Contactor | Weight (kg) | | 0.34 | 0.33 | 0.34 | 0.33 | | |
| | Appearance Dimensions (W×H×D) (mm) | | 43×81×86 | 43×81×83.5 | 43×81×86 | 43×81×83.5 | | |
| | Installation Dimension (mm) | | | | | | | |
| | Mechanical Interlock | | MPU-11 | MPU-11 | MPU-11 | MPU-11 | | |

Magnetic Contactor / Motor Starter ◆ AC control



| Model | | 16 | 21 (A) | 25 | 30T | | |
|-----------------------------------|--|---|---------------------------------|--------------|-------------------|---------------|--------------|
| Type | Magnetic Contactor | Nonreversing | S-P16 | S-P21 (A) | S-P25 | S-P30T | |
| | | Reversing | S-2×P16 | S-2×P21 (A) | S-2×P25 | S-2×P30T | |
| | Motor Starter | without enclosure | Nonreversing | MSO-P16 | MSO-P21 (A) | MSO-P25 | MSO-P30T |
| | | | Reversing | MSO-2×P16 | MSO-2×P21 (A) | MSO-2×P25 | MSO-2×P30T |
| | | with enclosure | Nonreversing | MS-P16 | MS-P21 (A) | MS-P25 | MS-P30T |
| | | | Reversing | MS-2×P16 | MS-2×P21 (A) | MS-2×P25 | MS-2×P30T |
| | | with enclosure (push button) | Nonreversing | MS-P16PB | MS-P21PB (A) | MS-P25PB | MS-P30TPB |
| | TOR | Standard | TH-P20ES | TH-P20ES | TH-P20ES TA | TH-P20ES TA | |
| | | Differential | TH-P20ES PP | TH-P20ES PP | TH-P20ES TAPP | TH-P20ES TAPP | |
| | Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | 3 Ø | 240V | 4.5/ 6/ 18 | 5.5/ 7.5/ 24 | 6.5/ 8.5/ 26 |
| 380/415V | | | | 7.5/ 10/ 18 | 11/ 15/ 21 | 12/ 16/ 25 | 15/ 20/ 30 |
| 440V | | | | 7.5/ 10/ 16 | 11/ 15/ 21 | 12/ 16/ 23 | 15/ 20/ 27 |
| 550V | | | | 7.5/ 10/ 13 | 11/ 15/ 17 | 12/ 16/ 20 | 15/ 20/ 22 |
| 660V | | | | 7.5/ 10/ 9 | 11/ 15/ 14 | 12/ 16/ 16 | 15/ 20/ 18 |
| AC 3 (kW/HP/A) | | Continuous current (Ith) AC1 (A) | 30 | 32 | 32 | 50 | |
| | | Rated insulation voltage (Ui) (V) | AC660 | AC660 | AC660 | AC660 | |
| UL 508 CSA-C22.2 | | 1 Ø | 100~120V | 1/ 16 | 2/ 24 | 2/ 24 | 2/ 24 |
| | | | 200~240V | 3/ 17 | 3/ 17 | 3/ 17 | 5/ 28 |
| | | 3 Ø | 200~240V | 5/ 15.2 | 7.5/ 22 | 10/ 28 | 10/ 28 |
| | | | 380~480V | 10/ 14 | 15/ 21 | 15/ 21 | 20/ 27 |
| | | | 550~600V | 10/ 11 | 15/ 17 | 15/ 17 | 30/ 32 |
| | | AC3 (HP/A) | Operation current (Ith) AC1 (A) | 30 | 35 | 40 | 50 |
| Rated insulation voltage (Ui) (V) | | | AC600 | AC600 | AC600 | AC600 | |
| NEMA | | 0 | 1 | 1 | 2 | | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 GB14048.4 | Contact | Standard | 1NO 1NC | 1NO 1NC (2NO 2NC) | 1NO 1NC | 2NO 2NC |
| | | | Special | — | — | — | — |
| | | 220V | 1.6 | 1.6 | 1.6 | 1.6 | |
| | | 380V | 0.95 | 0.95 | 0.95 | 0.95 | |
| | AC 15 | Continuous current (Ith) AC1 (A) | 16 | 16 | 16 | 16 | |
| | | Contact class (UL) | A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 | |
| Electrical Life AC3 | | 1.3 Mil. | 1.3 Mil. | 1.3 Mil. | 1.3 Mil. | | |
| Mechanical Life | | 10 Mil. | 10 Mil. | 10 Mil. | 10 Mil. | | |
| Operation (Time/Hour) | | 1200 | 1200 | 1200 | 1200 | | |
| Magnetic Contactor | Weight (kg) | | 0.37 | 0.38 | 0.38 | 0.55 | |
| | Appearance Dimensions (W×H×D) (mm) | | 53.5×81×83.5 | 53.5×81×83.5 | 53.5×81×83.5 | 73×95×93 | |
| | Installation Dimension (mm) | | | | | | |
| | Mechanical Interlock | | MPU-21 | MPU-21 | MPU-21 | MPU-11 | |



| 32T | 35T | 38T | 40T | 50T | 60T |
|---------------|---------------|---------------|---------------|--------------|---------------|
| S-P32T | S-P35T | S-P38T | S-P40T | S-P50T | S-P60T |
| S-2XP32T | S-2XP35T | S-2XP38T | S-2XP40T | S-2XP50T | S-2XP60T |
| MSO-P32T | MSO-P35T | MSO-P38T | MSO-P40T | MSO-P50T | MSO-P60T |
| MSO-2XP32T | MSO-2XP35T | MSO-2XP38T | MSO-2XP40T | MSO-2XP50T | MSO-2XP60T |
| MS-P32T | MS-P35T | MS-P38T | MS-P40T | MS-P50T | MS-P60T |
| MS-2XP32T | MS-2XP35T | MS-2XP38T | MS-2XP40T | MS-2XP50T | MS-2XP60T |
| MS-P32TPB | MS-P35TPB | MS-P38TPB | MS-P40TPB | MS-P50TPB | MS-P60TPB |
| TH-P20ES TA | TH-P20ES TA | TH-P20ES TA | TH-P20ES TA | TH-P60ES | TH-P60ES TA |
| TH-P20ES TAPP | TH-P20ES TAPP | TH-P20ES TAPP | TH-P20ES TAPP | TH-P60ES PP | TH-P60ES TAPP |
| 7.5/10/32 | 9/ 12.5/ 35 | 11/15/39 | 11/ 15/ 44 | 15/ 20/ 58 | 19/ 25/ 65 |
| 15/20/32 | 18.5/ 25/ 35 | 18.5/25/38 | 22/ 30/ 40 | 30/ 40/ 52 | 37/ 50/ 65 |
| 15/20/32 | 18.5/ 25/ 27 | 18.5/25/38 | 22/ 30/ 40 | 30/ 40/ 52 | 37/ 50/ 65 |
| 15/20/22 | 18.5/ 25/ 22 | 18.5/25/29 | 22/ 30/ 32 | 30/ 40/ 41 | 37/ 50/ 52 |
| 15/20/18 | 18.5/ 25/ 18 | 18.5/25/22 | 22/ 30/ 26 | 30/ 40/ 34 | 37/ 50/ 43 |
| 50 | 50 | 60 | 60 | 115 | 115 |
| AC660 | AC660 | AC660 | AC660 | AC660 | AC660 |
| — | 2/ 24 | — | 3/ 34 | 5/ 56 | 5/ 56 |
| — | 5/ 28 | — | 7.5/ 40 | 10/ 50 | 10/ 50 |
| — | 10/ 28 | — | 15/ 42 | 20/ 54 | 20/ 54 |
| — | 20/ 27 | — | 20/ 27 | 30/ 40 | 40/ 52 |
| — | 30/ 32 | — | 30/ 32 | 40/ 41 | 50/ 52 |
| — | 50 | — | 60 | 115 | 115 |
| — | AC600 | — | AC600 | AC600 | AC600 |
| 2 | 2 | 2 | 2 | 2 | 2 |
| 1NO 1NC | 2NO 2NC | 2NO 2NC | 2NO 2NC | 2NO 2NC | 2NO 2NC |
| — | — | — | — | — | — |
| 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| 16 | 16 | 16 | 16 | 16 | 16 |
| A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 |
| 1.3 Mil. | 1.3 Mil. | 1.3 Mil. | 1.3 Mil. | 1.3 Mil. | 1.3 Mil. |
| 10 Mil. | 10 Mil. | 10 Mil. | 10 Mil. | 6 Mil. | 6 Mil. |
| 1200 | 1200 | 1200 | 1200 | 1200 | 1200 |
| 0.38 | 0.55 | 0.55 | 0.55 | 1.05 | 1.05 |
| 53.5x81x83.5 | 73x95x93 | 73x95x93 | 73x95x93 | 87.9x115x107 | 87.9x115x107 |
| | | | | | |
| MPU-21 | MPU-11 | MPU-11 | MPU-11 | MPU-11 | MPU-11 |

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MCCB
ELCB

ATS

ACB

MCB

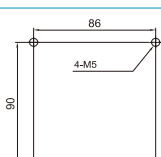
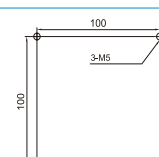
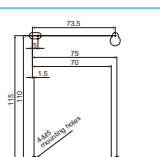
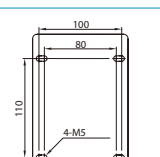
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MS

MMS

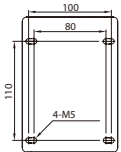
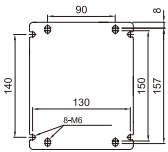
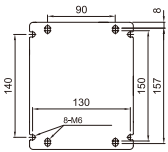
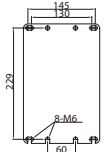
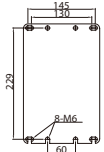
Magnetic Contactor / Motor Starter ◆ AC control



| Model | | 80T | 100T | 100E | 125T | | |
|-----------------------|---|-----------------------------------|---|---|---|---|--------------|
| Type | Magnetic Contactor | Nonreversing | S-P80T | S-P100T | S-P100E | S-P125T | |
| | | Reversing | S-2xP80T | S-2xP100T | S-2xP100E | S-2xP125T | |
| | Motor Starter | without enclosure | Nonreversing | MSO-P80T | MSO-P100T | MSO-E100 | MSO-P125T |
| | | | Reversing | MSO-2xP80T | MSO-2xP100T | MSO-2xE100 | MSO-2xP125T |
| | | with enclosure | Nonreversing | MS-P80T | MS-P100T | MS-E100 | MS-P125T |
| Reversing | MS-2xP80T | | MS-2xP100T | MS-2xE100 | MS-2xP125T | | |
| | with enclosure (push button) | Nonreversing | — | — | MS-E100PB | — | |
| TOR | Standard | TH-P60ES TA | TH-P120 E(TA) | TH-E100E | TH-P120 E(TA) | | |
| | Differential | TH-P60ES TAPP | TH-P120(TA)PP | TH-E100PP | TH-P120(TA)PP | | |
| Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | 3 Ø | 240V | 22/ 30/ 80 | 30/ 40/ 105 | 30/ 40/ 105 | 37/ 50/ 135 |
| | | | 380/415V | 45/ 60/ 80 | 60/ 80/ 105 | 55/ 75/ 100 | 75/ 100/ 130 |
| | | | 440V | 45/ 60/ 75 | 60/ 80/ 105 | 60/ 80/ 100 | 75/ 100/ 130 |
| | | | 550V | 45/ 60/ 60 | 60/ 80/ 85 | 60/ 80/ 85 | 75/ 100/ 105 |
| | | | 660V | 45/ 60/ 50 | 60/ 80/ 70 | 60/ 80/ 70 | 75/ 100/ 90 |
| | AC 3 (kW/HP/A) | Continuous current (Ith) AC1 (A) | 115 | 150 | 135 | 170 | |
| | | Rated insulation voltage (Ui) (V) | AC660 | AC660 | AC690 | AC660 | |
| | UL 508 CSA-C22.2 | 1 Ø | 100~120V | 7.5/ 80 | — | — | — |
| | | | 200~240V | 15/ 68 | — | — | — |
| | | 3 Ø | 200~240V | 25/ 68 | 30/ 80 | — | 50/ 130 |
| | | | 380~480V | 50/ 65 | 60/ 77 | — | 100/ 124 |
| | | | 550~600V | 60/ 62 | 60/ 62 | — | 100/ 99 |
| | | Continuous current (Ith) AC1 (A) | 115 | 150 | — | 170 | |
| | Rated insulation voltage (Ui) (V) | AC600 | AC600 | — | AC600 | | |
| | NEMA | | 3 | 3 | — | 3 | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 GB14048.4 | Contact | Standard | 2NO 2NC | 2NO 2NC | 1NO 1NC | 2NO 2NC |
| | | | Special | — | — | — | — |
| | | | 220V | 1.6 | 1.6 | 3* | 3.3 |
| | | | 380V | 0.95 | 0.95 | 1.9 | 1.6 |
| | AC 15 | Operation current (Ith) AC1 (A) | 16 | 16 | 10 | 16 | |
| | Contact class (UL) | A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 | | |
| Electrical Life | | AC3 | 1.2 Mil. | 1.2 Mil. | 1 Mil. | 1.2 Mil. | |
| Mechanical Life | | | 6 Mil. | 6 Mil. | 6 Mil. | 6 Mil. | |
| Operation (Time/Hour) | | | 1200 | 1200 | 1200 | 1200 | |
| Magnetic Contactor | Weight (kg) | | 1.5 | 2.35 | 1.34 | 2.7 | |
| | Appearance Dimensions (W×H×D) (mm) | | 100×142×116 | 120×116×128 | 85×125×127 | 106×152.5×140 | |
| | Installation Dimension (mm) | |  |  |  |  | |
| Mechanical Interlock | | | MPU-50 | Assembled and adjusted by the factory. | MEU-11 | MPU-125 | |

Note: Mark * means the value is @240V



| 150T | 200T | 220T | 300T | 400T |
|---|---|---|---|---|
| S-P150T | S-P200T | S-P220T | S-P300T | S-P400T |
| S-2xP150T | S-2xP200T | S-2xP220T | S-2xP300T | S-2xP400T |
| MSO-P150T | MSO-P200T | MSO-P220T | MSO-P300T | MSO-P400T |
| MSO-2xP150T | MSO-2xP200T | MSO-2xP220T | MSO-2xP300T | MSO-2xP400T |
| MS-P150T | MS-P200T | MS-P220T | — | — |
| MS-2xP150T | MS-2xP200T | MS-2xP220T | — | — |
| — | — | — | — | — |
| TH-P120 E(TA) | TH-P220T E | TH-P220T E | TH-P400T E | TH-P400T E |
| TH-P120(TA)PP | TH-P220TTPP | TH-P220TTPP | TH-P400TTPP | TH-P400TTPP |
| 45/ 60/ 165 | 55/ 75/ 200 | 65/ 85/ 225 | 90/ 125/ 300 | 110/ 150/ 400 |
| 90/ 125/ 160 | 110/ 150/ 190 | 120/ 160/ 220 | 160/ 220/ 300 | 220/ 300/ 400 |
| 90/ 125/ 160 | 110/ 150/ 190 | 120/ 160/ 220 | 185/ 250/ 300 | 250/ 340/ 400 |
| 90/ 125/ 130 | 110/ 150/ 150 | 132/ 180/ 180 | 185/ 250/ 263 | 250/ 340/ 360 |
| 90/ 125/ 110 | 110/ 150/ 125 | 132/ 180/ 150 | 200/ 300/ 220 | 280/ 380/ 305 |
| 225 | 275 | 315 | 500 | 635 |
| AC660 | AC660 | AC660 | AC1000 | AC1000 |
| — | — | — | — | — |
| — | — | — | — | — |
| 60/ 154 | 75/ 192 | 75/ 192 | 100/ 248 | 125/ 312 |
| 125/ 156 | 150/ 180 | 150/ 180 | 200/ 240 | 250/ 302 |
| 125/ 125 | 150/ 144 | 150/ 144 | 200/ 192 | 300/ 289 |
| 225 | 275 | 315 | 500 | 635 |
| AC600 | AC600 | AC600 | AC1000 | AC1000 |
| 3 | 4 | 4 | 5 | 5 |
| 2NO 2NC | 2NO 2NC | 2NO 2NC | 2NO 2NC | 2NO 2NC |
| — | — | — | — | — |
| 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| 16 | 16 | 16 | 10 | 10 |
| A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 | A600, Q300 |
| 1.2 Mil. | 1.2 Mil. | 1.2 Mil. | 1.2 Mil. | 1.2 Mil. |
| 6 Mil. | 6 Mil. | 6 Mil. | 6 Mil. | 6 Mil. |
| 1200 | 1200 | 1200 | 1200 | 1200 |
| 2.7 | 4.35 | 4.35 | 9.75 | 9.75 |
| 106×152.5×140 | 138×185×159.5 | 138×185×159.5 | 164×246×196.5 | 164×246×196.5 |
|  |  |  |  |  |
| MPU-125 | MPU-125 | MPU-125 | MPU-125 | MPU-125 |

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ACB

MCB

SPD

MS

MMS

Magnetic Contactor / Motor Starter ◆ AC control



| Model | | 630T | 800T | 1260T | | |
|-----------------------------------|---|-----------------------------------|--------------|-----------------|-----------------|---|
| Type | Magnetic Contactor | Nonreversing | S-P630T | S-P800T | S-P1260T | |
| | | Reversing | S-2XP630T | S-2XP800T | S-2XP1260T | |
| | Motor Starter | without enclosure | Nonreversing | — | — | — |
| | | | Reversing | — | — | — |
| | | with enclosure | Nonreversing | — | — | — |
| Reversing | — | | — | — | | |
| with enclosure (push button) | Nonreversing | — | — | — | | |
| TOR | Standard | TH-P600(E) | TH-P600(E) | — | | |
| | Differential | TH-P600PP | TH-P600PP | — | | |
| Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | 3 Ø | 240V | 200 / 270 / 630 | 250 / 340 / 800 | — |
| | | | 380/415V | 335 / 450 / 630 | 450 / 610 / 800 | — |
| | | | 440V | 400 / 545 / 630 | 450 / 610 / 800 | — |
| | | | 550V | 400 / 545 / 552 | 450 / 610 / 620 | — |
| | | | 660V | 450 / 610 / 450 | 475 / 645 / 475 | — |
| | AC 3 (kW/HP/A) | Continuous current (Ith) AC1 (A) | 800 | 1000 | 1260 | |
| | | Rated insulation voltage (Ui) (V) | AC1000 | AC1000 | AC1000 | |
| | UL 508 CSA-C22.2 | 1 Ø | 100~120V | — | — | — |
| | | | 200~240V | — | — | — |
| | | 3 Ø | 200~240V | — | — | — |
| | | | 380~480V | — | — | — |
| | | | 550~600V | — | — | — |
| Continuous current (Ith) AC1 (A) | | — | — | — | | |
| Rated insulation voltage (Ui) (V) | — | — | — | | | |
| NEMA | | 3 | 3 | 4 | | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 GB14048.4 | Contact | Standard | 2NO 2NC* | 2NO 2NC* | — |
| | | | Special | — | — | — |
| | | | 220V | — | — | — |
| | | | 380V | — | — | — |
| | AC 15 | Operation current (Ith) AC1 (A) | — | — | — | |
| Contact class (UL) | — | — | — | | | |
| Electrical Life | AC3 | 500000 | 500000 | — | | |
| Mechanical Life | | 3000000 | 3000000 | 3000000 | | |
| Operation | (Time/Hour) | — | — | — | | |
| Magnetic Contactor | Weight (kg) | 16.4 | 18.3 | 18.3 | | |
| | Appearance Dimensions (W×H×D) (mm) | 309×304×255 | 309×338×255 | 309×338×255 | | |
| | Installation Dimension (mm) | | | | | |
| Mechanical Interlock | | — | — | — | | |

*Note: S-P630T and S-P800T is equipped with AP-22N (2NO2NC) when ordered, S-P1260T can be purchase separated.

Magnetic Contactor / Motor Starter ◆ AC control

Mini Contactor



Thermal Overload Relay



| Model | | 06 | 09 | | | |
|-----------------------|--|---|----------------------------------|----------------------------------|-------------|--------------|
| Type | Magnetic Contactor | Nonreversing | S-P06 | S-P09 | | |
| | | Reversing | S-2×P06 | S-2×P09 | | |
| | Motor Starter | without enclosure | Nonreversing | MSO-P06 | MSO-P09 | |
| | | | Reversing | — | — | |
| | | with enclosure | Nonreversing | — | — | |
| | | | Reversing | — | — | |
| | with enclosure (push button) | Nonreversing | — | — | | |
| | TOR | Standard | — | — | | |
| | | Differential | TH-P09PP | TH-P09PP | | |
| | Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | 3 ∅ | 240V | 1.5/ 2/ 7.5 | 2.2/ 3/ 10.1 |
| 380/415V | | | | 3/ 4/ 6.6 | 4/ 5.5/ 9 | |
| 440V | | | | 3/ 4/ 6.5 | 4/ 5.5/ 8.5 | |
| 550V | | | | 3/ 4/ 5 | 4/ 5.5/ 6.5 | |
| 660V | | | | 3/ 4/ 4 | 4/ 5.5/ 5 | |
| AC 3 (kW/HP/A) | | | | Continuous Current (Ith) AC1 (A) | 20 | 20 |
| UL 508 CSA-C22.2 | | 1 ∅ | 100~120V | 0.25/ 5.8 | 0.5/ 9.8 | |
| | | | 200~240V | 1/ 8 | 1.5/ 10 | |
| | | | 3 ∅ | 200~240V | 2/ 6.8 | 3/ 9.6 |
| | | | | 380~480V | 3/ 4.8 | 5/ 7.6 |
| | | AC3 (HP/A) | 550~600V | 3/ 3.9 | 5/ 6.1 | |
| | | | Continuous Current (Ith) AC1 (A) | 20 | 20 | |
| | | Rated insulation voltage (V) | AC600 | AC600 | | |
| | | NEMA | | 00 | 00 | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 GB14048.4 | Contact | Standard | 1NO | 1NO | |
| | | | Special | 1NC | 1NC | |
| | | | 220V | 3.3 | 3.3 | |
| | | | 380V | 1.9 | 1.9 | |
| | AC 15 | Continuous Current (Ith) AC1 (A) | 10 | 10 | | |
| Contact class (UL) | A600 | A600 | | | | |
| Electrical Life | | AC3 | 1.6 Mil. | 1.6 Mil. | | |
| Mechanical Life | | | 10 Mil. | 10 Mil. | | |
| Operation (Time/Hour) | | | 1200 | 1200 | | |
| Magnetic Contactor | Weight (kg) | | 0.15 | 0.15 | | |
| | Appearance Dimensions (W×H×D) (mm) | | 46×58×51 | 46×58×51 | | |
| | Installation dimension (mm) | | | | | |
| Mechanical Interlock | | — | — | — | | |

| Type | | 09 | |
|-------------------------------|------------------------------|--------------------|-----------|
| Standard | Contact Assembled Type | — | |
| | Independently Installed Type | — | |
| With phase failure protection | Contact Assembled Type | TH-P09PP | |
| | Independently Installed Type | — | |
| Reset Mode | | Manual / Automatic | |
| Magnetic Contactor | | S-P06, S-P09. | |
| TOR Adjustment Range (A) | | Rating (A) | Range (A) |
| | | 0.13 | 0.1~0.16 |
| | | 0.20 | 0.16~0.24 |
| | | 0.32 | 0.24~0.4 |
| | | 0.5 | 0.4~0.6 |
| | | 0.8 | 0.6~1 |
| | | 1.3 | 1~1.6 |
| | | 2.0 | 1.6~2.4 |
| Auxiliary Contact | | 1NO 1NC | |
| Weight | | 0.075 | |
| Dimensions (mm) (W×H×D) | | 45.5×64.8×50 | |

Coil Specification Table

| ◆ S-P06, S-P09 | | | | | | |
|-----------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|
| Description | AC12V | AC24V | AC48V | AC110V | AC120V | AC220V |
| Coil rated specifications marking | 12V 50Hz | 24V 50Hz | 48~50V 50Hz | 100V 50Hz | 110~120V 50Hz | 200~220V 50Hz |
| | 12V 60Hz | 24V 60Hz | 48~50V 60Hz | 100~110V 60Hz | 115~120V 60Hz | 220V 60Hz |
| Description | AC230V | AC240V | AC380V | AC440V | AC480V | AC550V |
| Coil rated specifications marking | 230V 50Hz | 220~240V 50Hz | 346~380V 50Hz | 400V 50Hz | 415~440V 50Hz | 500V 50Hz |
| | 230V 60Hz | 240~260V 60Hz | 380V 60Hz | 400~440V 60Hz | 460~480V 60Hz | 500~550V 60Hz |

Magnetic Contactor / Motor Starter ◆ DC control



| Model | | | 06 | 09 | 11 | 16 | 21 | |
|-------------------------------|---|--------------------------|--------------------------------|--------------|----------------|--|---------------|----------------|
| Magnetic Contactor | Nonreversing | | SD-P06 | SD-P09 | SD-P11 | SD-P16 | SD-P21 | |
| | Reversing | | SD-2xP06 | SD-2xP09 | SD-2xP11 | SD-2xP16 | SD-2xP21 | |
| Type | Motor Starter | without enclosure | Nonreversing | - | - | MDO-P11 | MDO-P16 | MDO-P21 |
| | | | Reversing | - | - | MDO-2xP11 | MDO-2xP16 | MDO-2xP21 |
| | | with enclosure | Nonreversing | - | - | - | - | - |
| | Reversing | | - | - | - | - | - | |
| | with enclosure (push button) | Nonreversing | - | - | - | - | - | |
| | TOR | Standard | - | - | TH-P12ES | TH-P20ES | TH-P20ES | |
| Differential | | TH-P09PP | TH-P09PP | TH-P12ES PP | TH-P20ES PP | TH-P20ES PP | | |
| Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 | 3 ø | 240V | 1.5 / 2 / 6 | 2.2 / 3 / 9 | 3.5 / 4.5 / 13 | 4.5 / 6 / 18 | 5.5 / 7.5 / 24 |
| | | | 380/440V | 3 / 4 / 6 | 4 / 5.5 / 9 | 5.5 / 7.5 / 12 | 7.5 / 10 / 18 | 11 / 15 / 21 |
| | | | 550V | 3 / 4 / 6 | 4 / 5.5 / 9 | 5.5 / 7.5 / 9 | 7.5 / 10 / 13 | 11 / 15 / 17 |
| | | | 660V | - | - | 5.5 / 7.5 / 7 | 7.5 / 10 / 9 | 11 / 15 / 14 |
| | AC 3 (kW/HP/A) | Continuous Current (Ith) | AC1 (A) | 20 | 20 | 20 | 30 | 32 |
| | | Rated insulation voltage | | (Ui) | 690 | 690 | 660 | 660 |
| | UL 508 CSA-C22.2 | 1 ø | 110~120V | 0.25 / 5.8 | 0.5 / 9.8 | 0.5 / 9.8 | 1 / 16 | 2 / 24 |
| | | | 220~240V | 1 / 8 | 1.5 / 10 | 2 / 12 | 3 / 17 | 3 / 17 |
| | | 3 ø | 220~240V | 2 / 6.8 | 3 / 9.6 | 3 / 9.6 | 5 / 15.2 | 7.5 / 22 |
| | | | 440~480V | 3 / 4.8 | 5 / 7.6 | 7.5 / 11 | 10 / 14 | 15 / 21 |
| 550~600V | | | 3 / 3.9 | 5 / 6.1 | 10 / 11 | 10 / 11 | 15 / 17 | |
| Continuous Current (Ith) | | AC1 (A) | 20 | 20 | 24 | 30 | 35 | |
| Rated insulation voltage | | (Ui) | 600 | 600 | 600 | 600 | 600 | |
| NEMA | | | 0 | 0 | 0 | 0 | 1 | |
| Auxiliary Contact | Auxiliary contact | Standard | 1NO | 1NO | 1NO | 1NO1NC | 1NO1NC | |
| | | Special | 1NC | 1NC | 1NC | - | - | |
| Control coil voltage DC (V) | | | 24 / 36 / 48 / 110 / 220 / 240 | | | 12 / 24 / 30 / 48 / 72 / 110 / 125 / 220 | | |
| EC 60947-5-1 EN 60947-5-1 | 220V | | 3.3 | 3.3 | 1.6 | 1.6 | 1.6 | |
| | 380V | | 1.9 | 1.9 | 0.95 | 0.95 | 0.95 | |
| Rated heating current (Ith) | | (A) | 10 | 10 | 16 | 16 | 16 | |
| Contact class | | (UL) | A600 | A600 | A600 | A600 | A600 | |
| Performanc | Electrical life (AC3) (10 thousand) | | 120 | 120 | 120 | 120 | 120 | |
| | Mechanical life (10 thousand) | | 600 | 600 | 600 | 600 | 600 | |
| Weight | | (kg) | 0.43 | 0.43 | 0.33 | 0.37 | 0.38 | |
| Appearance Dimensions (WxHxD) | | (mm) | 46 x 58 x 51 | 46 x 58 x 51 | 43 x 81 x 83.5 | 53.5x81x83.5 | 53.5x81x83.5 | |
| Installation dimension | | (mm) | | | | | | |

Capacitor Contactors



| Type | | SC-P12 | SC-P16 | SC-P20 | SC-P25 | SC-P33 | SC-P45 | SC-P60 | SC-P70 | | |
|--|--|-------------------------------|----------------|------------|------------|------------|------------|------------|------------|-------------|-----------------|
| Rated insulation voltage (Ui) | | (V) | 690 | 690 | 690 | 690 | 690 | 690 | 690 | | |
| Rated Capacity | IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A) | AC-6b 3 ϕ (kVar/A) | 200~240V | 6.7/ 18 | 8.5/ 22 | 10/ 26 | 15/ 39 | 20/ 48 | 25/ 66 | 35/ 92 | 60/118 |
| | | | 400~440V | 12.5/ 16 | 16.7/ 22 | 20/ 26 | 25/ 33 | 33.3/ 44 | 45/ 59 | 60/ 86 | 70/101 |
| | | | 660~690V | 18/ 15 | 24/ 20 | 30/ 25 | 36/ 30 | 48/ 40 | 58/ 49 | 75/ 63 | 90/78 |
| | Continuous Current (Ith) | | AC1 (A) | 20 | 30 | 40 | 50 | 80 | 90 | 100 | 135 |
| Auxiliary Contact | | | 2NO or 1NO 1NC | 2NO 1NC | 2NO 1NC | 3NO 2NC | 3NO 2NC | 3NO 2NC | 3NO 2NC | 3NO 2NC | |
| Auxiliary Contact | IEC 60947-5-1 EN 60947-5-1 | AC12 (A) | 110V | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| | | | 220V | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| | | | 440V | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | | 550V | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | Continuous Current (Ith) | | (A) | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Mechanical Life / Electrical Life (AC-6b) \leq 440V (10 thousand) | | | 100 / 30 | 100 / 30 | 100 / 30 | 100 / 30 | 100 / 30 | 100 / 30 | 100 / 30 | 600/20 | |
| Operation Frequency | | (time/ hour) | 240 | 240 | 240 | 240 | 240 | 240 | 100 | 100 | |
| Magnetic Contactor | Weight | | (kg) | 0.42 | 0.47 | 0.47 | 0.63 | 1.14 | 1.14 | 1.59 | 2.4 |
| | Installation Dimensions (WxHxD) | | (mm) | 44x108x134 | 54x112x134 | 54x112x134 | 74x185x144 | 89x185x158 | 89x185x158 | 101x195x168 | 120 x 180 x 169 |
| | Dimensions | | (mm) | | | | | | | | |

Capacitor Unit

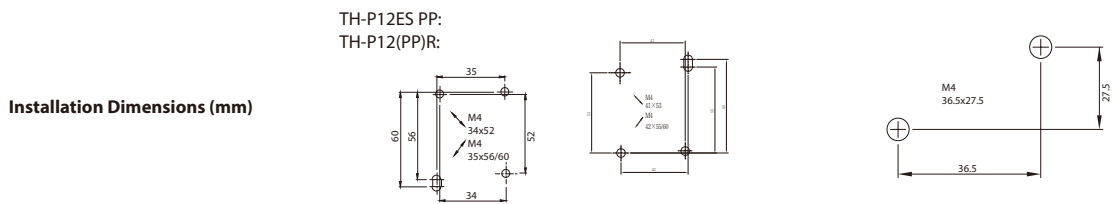


| Capacitor Unit | Magnetic Contactor | Maximum operating power(kvar) | | | Max. peak current(A) |
|----------------|--------------------|-------------------------------|----------|----------|----------------------|
| | | 220~240V | 400~440V | 660~690V | |
| AP-40 A | S-P11 | 6.7 | 12.5 | 18 | 560 |
| | S-P16 | 8.5 | 16.7 | 24 | 560 |
| | S-P21 | 10 | 20 | 30 | 1250 |
| AP-40 B | S-P40T | 15 | 25 | 36 | 1900 |
| | S-P50T | 20 | 33.3 | 48 | 2160 |
| | S-P60T | 25 | 45 | 58 | 3040 |
| | S-P80T | 35 | 60 | 75 | 3040 |

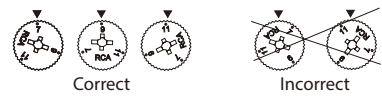
Thermal Overload Relay



| Type | | 12 | | 18 | | 20 | | | |
|--|----------------------------|--|-----------|--------------------|-------------|--|-----------|--|-----------|
| Standard | Contactor Assembled Type | TH-P12ES | | TH-P18E | | TH-P20ES | | TH-P20ES TA | |
| | #3 Separate Installed Type | Install UATP12 | | TH-P18ER | | - | | - | |
| Differential type | Contactor Assembled Type | TH-P12ES PP | | TH-P18PP | | TH-P20ES PP | | TH-P20ES TAPP | |
| | #3 Separate Installed Type | Install UATP12 | | TH-P18PPR | | - | | - | |
| Reset Mode | | Manual / Automatic | | Manual / Automatic | | Manual / Automatic | | | |
| Magnetic Contactor | | S-P09T, S-P11, S-P12T, S-P15. | | S-P16, S-P21 | | S-P16, S-P21, S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T. | | S-P25, S-P30T, S-P32T, S-P35T, S-P38T, S-P40T. | |
| Index MCCB ELCB ATS ACB MCB SPD MS MMS | TOR Adjustment Range (A) | Rating (A) | Range (A) | Rating | Range | Rating (A) | Range (A) | Rating (A) | Range (A) |
| | | 0.25 | 0.19~0.31 | 0.25 | 0.19 - 0.31 | 0.25 | 0.19~0.31 | 28 | 22~34 |
| | | 0.4 | 0.3~0.5 | 0.4 | 0.3 - 0.5 | 0.4 | 0.3~0.5 | 33 | 28~38 |
| | | 0.6 | 0.45~0.75 | 0.6 | 0.45 - 0.75 | 0.6 | 0.45~0.75 | 40 | 32~48 |
| | | 0.9 | 0.7~1.1 | 0.9 | 0.7-1.1 | 0.9 | 0.7~1.1 | | |
| | | 1.2 | 0.9~1.5 | 1.2 | 0.9-1.5 | 1.2 | 0.9~1.5 | | |
| | | 1.7 | 1.3~2.1 | 1.7 | 1.3-2.1 | 1.7 | 1.3~2.1 | | |
| | | 2.1 | 1.6~2.6 | 2.1 | 1.6-2.6 | 2.1 | 1.6~2.6 | | |
| | | 3.3 | 2.5~4.1 | 3.3 | 2.5-4.1 | 3.3 | 2.5~4.1 | | |
| | | 4.4 | 3.4~5.4 | 4.4 | 3.4-5.4 | 4.4 | 3.4~5.4 | | |
| | | 6.5 | 5~8 | 6.5 | 5 - 8 | 6.5 | 5~8 | | |
| | | 9 | 7~11 | 9 | 7-11 | 9 | 7~11 | | |
| | | 11 | 9~13 | 11 | 9-13 | 11 | 9~13 | | |
| | | *15 | 12~18 | 15 | 12-18 | 15 | 12~18 | | |
| | | | | 21 | 17-24 | 21 | 17~24 | | |
| Auxiliary Contact | | 1NO 1NC | | 1NO 1NC | | 1NO 1NC | | | |
| Weight | | 0.11/0.12 | | 0.15 | | 0.18/0.19 | | 0.20/0.21 | |
| Appearance Dimensions (W×H×D) | | TH-P12ES PP: 45.5×55.5×78 TH-P12ES PP: 47×71×86.2 | | 53.5×55.5×78.5 | | TH-P12ES PP: 64.5×46.1×80 | | TH-P12ES TAPP: 64.5×56.2×80 | |



Note. 1. The purpose of using TOR is protecting load tripping. For protecting circuit, please choose circuit breaker.
 2. When adjusting the rated current; please refer to the TOR range table above. Do not exceed its range.
 3. (E): 3 Elements
 4. *: The rating current of TH-P12 can only use up to "11A" when combined with S-P11.





| 60 | | 120 | | 220T | | 400T | | 600CT | | | | | |
|----------------------------|----------------------|--------------------------------|----------------------|----------------------------|----------------------|--------------------------------|----------------------|--------------------|----------------------|-------------------|----------------------|---|---------|
| TH-P60ES | TH-P60ES TA | TH-P120E | TH-P120ETA | TH-P220TE | TH-P400TE | TH-P600CTE | | | | | | | |
| TH-P60PP | TH-P60ES TAPP | TH-P120PP | TH-P120TAPP | TH-P220TPP | TH-P400TPP | TH-P600CTPP | | | | | | | |
| Manual / Automatic | | Manual / Automatic | | Manual / Automatic | | Manual / Automatic | | Manual / Automatic | | | | | |
| S-P50T, S-P60T, S-P80T. | | S-P60T, S-P80T. | | S-P100T, S-P125T, S-P150T. | | S-P200T, S-P220T. | | S-P300T, S-P400T. | | S-P630T, S-P800T. | | | |
| Rated (A) | Adjustable Range (A) | Rated (A) | Adjustable Range (A) | Rated (A) | Adjustable Range (A) | Rated (A) | Adjustable Range (A) | Rated (A) | Adjustable Range (A) | Rated (A) | Adjustable Range (A) | | |
| 11 | 9~13 | 67 | 54~80 | 40 | 32~48 | 105 | 80~130 | 80 | 60~100 | 105 | 80~130 | 260 | 200~320 |
| 15 | 12~18 | 80 | 60~100 | 54 | 43~65 | 130 | 100~160 | 105 | 80~130 | 130 | 100~160 | 350 | 260~440 |
| 21 | 17~24 | | | 67 | 54~80 | 160 | 120~200 | 130 | 100~160 | 160 | 120~200 | 500 | 400~600 |
| 28 | 22~34 | | | 80 | 60~100 | | | 160 | 120~200 | 200 | 150~250 | | |
| 33 | 28~38 | | | | | | | 200 | 150~250 | 260 | 200~320 | | |
| 40 | 32~48 | | | | | | | | | 350 | 260~440 | | |
| 54 | 43~65 | | | | | | | | | | | | |
| 1NO 1NC | | 1NO 1NC | | 1NO 1NC | | 1NO 1NC | | 1NO 1NC | | 1NO 1NC | | 1NO 1NC | |
| 0.28/ 0.30 | | 0.34/ 0.36 | | 0.55 | | 0.76 | | 2.25 | | 2.65 | | 3.93/ 3.95 | |
| TH-P60ES PP: 98x50.5x78 | | TH-P60ES TAPP: 64.5x65.5x80 | | TH-P120(PP): 133x54x105 | | TH-P120TA(PP): 133x85.5x105 | | 140x151.5x158.7 | | 164x165x163.7 | | TOR: 64.5x46.1x80 TOR W/CT: 106x46.8x104.5 | |

Index

MCCB
ELCB

ATS

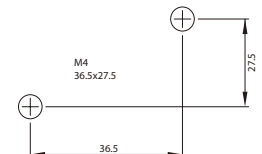
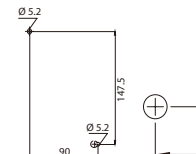
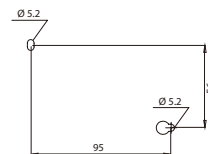
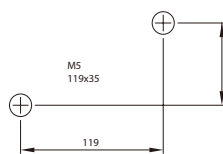
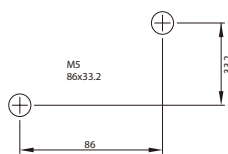
ACB

MCB

SPD

MS

MMS



Magnetic Control Relays



| Type | | SR-P40 | SR-P50 | SR-P80 |
|--|--------------------------|---------------------------|--------------------------------------|---|
| Auxiliary Contact | | 4NO 3NO 1NC 2NO 2NC | 5NO 4NO 1NC 3NO 2NC 2NO 3NC | 8NO 7NO 1NC 6NO 2NC 5NO 3NC 4NO 4NC |
| Rated Capacity IEC 60947-4-1 AC15 (A) | 220V | 1.6 | 1.6 | 1.6 |
| | 380V | 0.95 | 0.95 | 0.95 |
| Rated insulation voltage | (Ui) (V) | 660 | 660 | 660 |
| Operation current | (Ith) (A) | 16 | 16 | 16 |
| Contact Class | (UL) | A600, Q300 | A600, Q300 | A600, Q300 |
| Electrical Life | (10 thousand) | 50 and up | 50 and up | 50 and up |
| Mechanical Life | (10 thousand) | 500 | 500 | 500 |
| On/ Off Frequency | (time per / hour) | 500 | 500 | 500 |

Definite Purpose Magnetic Contactor | SF Series

| Type | | 20 | 25 | 30 | 35 | 40 |
|--|-------------------|--|---|--|--------|--------|
| | |  C1 |  C2 |  C3 | | |
| Type | 1 Pole | SF20C1 | SF25C1 | SF30C1 | SF35C1 | SF40C1 |
| | 2 Pole | SF20C2 | SF25C2 | SF30C2 | SF35C2 | SF40C2 |
| | 1Pole w/shunt | SF20C3 | SF25C3 | SF30C3 | SF35C3 | SF40C3 |
| Start Current(A) (Per Pole) | AC 240V / AC 277V | 120 | 150 | 180 | 180 | 180 |
| | AC 480V | 100 | 125 | 150 | 150 | 150 |
| | AC 600V | 80 | 100 | 120 | 120 | 120 |
| Start Current(A) (Single Phase) (2 Pole) | AC 240V / AC 277V | 120 | 150 | 180 | 210 | 240 |
| | AC 480V | 100 | 125 | 150 | 175 | 200 |
| | AC 600V | 80 | 100 | 120 | 140 | 160 |
| Rated Current w/resistance load (A) | | 30 | 35 | 40 | 50 | 50 |
| Full Rated Current (A) | | 20 | 25 | 30 | 35 | 40 |
| Mechanical / Electrical life (10 thousand) | | 50/25 | 50/25 | 50/25 | 50/25 | 50/25 |
| Operation frequency (time / hour) | | 360 | 360 | 360 | 360 | 360 |
| Coil Control Voltage 50/60 Hz | | 24 / 110-120 / 200 / 220 / 208-240 / 277 | | | | |

Star-delta Starter

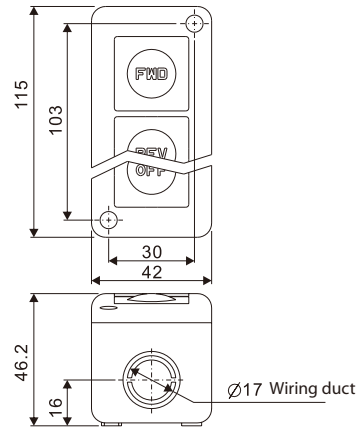
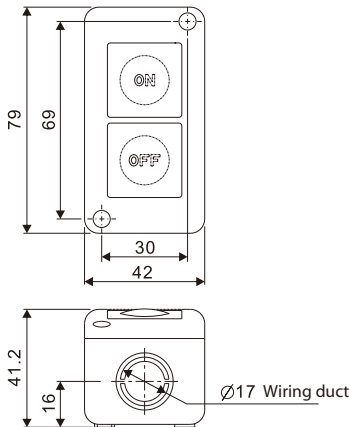


| Model | | 21 | 35 | 50 | 60 | 80 | 100 | 125 | 150 | 220 |
|--|-------------------------------|--------------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------|
| Type | Without enclosure (no CT) | SDO-P21 | SDO-P35 | SDO-P50 | SDO-P60 | SDO-P80 | SDO-P100 | SDO-P125 | SDO-P150 | SDO-P220 |
| | Without enclosure (with CT) | SDO-P21T | SDO-P35T | SDO-P50T | SDO-P60T | SDO-P80T | SDO-P100T | SDO-P125T | SDO-P150T | SDO-P220T |
| | With enclosure (no Ammeter) | SDE-P21 | SDE-P35 | SDE-P50 | SDE-P60 | SDE-P80 | SDE-P100 | SDE-P125 | SDE-P150 | SDE-P220 |
| | With enclosure (With Ammeter) | SDA-P21 | SDA-P35 | SDA-P50 | SDA-P60 | SDA-P80 | SDA-P100 | SDA-P125 | SDA-P150 | SDA-P220 |
| Rated Capacity (kW/HP) | 200V~220V | 11/ 15 | 19/ 25 | 22/ 30 | 30/ 40 | 37/ 50 | 45/ 60 | 55/ 75 | 75/ 100 | 110/ 150 |
| | 380V~440V | 19/ 25 | 30/ 40 | 45/ 60 | 55/ 75 | 75/ 100 | 90/ 125 | 110/ 150 | 132/ 180 | 200/ 260 |
| AC Magnetic Contactor | MCM | S-P21 | S-P35T | S-P50T | S-P60T | S-P80T | S-P100T | S-P125T | S-P150T | S-P220T |
| | MCD | S-P21 | S-P35T | S-P50T | S-P60T | S-P80T | S-P100T | S-P125T | S-P150T | S-P220T |
| | MCS | S-P11 | S-P16 | S-P21 | S-P21 | S-P35T | S-P35T | S-P50T | S-P50T | S-P60T |
| Thermal Overload Relay | | TH-P20 TH-P20TA | TH-P60 TH-P60TA | TH-P60 TH-P60TA | TH-P120 TH-P120TA | TH-P120 TH-P120TA | TH-P120 TH-P120TA | TH-P220T TH-P220T | TH-P220T TH-P400T | TH-P400T |
| Conducting wire size of motor (mm ²) | Line side | 2.5~16 | 2.5~25 | 2.5~35 | 2.5~50 | 10~70 | 10~95 | 35~150 | 35~150 | 35~240 |
| | Load side | 2.5~10 | 2.5~16 | 2.5~25 | 2.5~35 | 4~50 | 4~70 | 10~95 | 10~90 | 16~150 |
| | Control side | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 | 1~2.5 |

Push Button | PB Series

| Type | PB2 | PB3 |
|----------------|-----|-----|
| Contact schema | | |

External dimensions (mm)



WET.

72.5g

110g

Separate Mounting Unit



| Type | UATP12 |
|------|--------|
| TOR | TH-P12 |



Auxiliary Contact Block

◆ AP Series

| Installation | | 2P FRONT MOUNTED TYPE | | | | | | 4P FRONT MOUNTED TYPE | | | | | | |
|-------------------------------------|------------------|--|---------|-------|--|---------|--------|--|---------|---------|--|---------|---------|---------|
| Model | | AP-20 | AP-11 | AP-02 | AP-20N | AP-11N | AP-02N | AP-40 | AP-31 | AP-22 | AP-40N | AP-31N | AP-22N | AP-13N |
| Contact | | 2NO | 1NO 1NC | 2NC | 2NO | 1NO 1NC | 2NC | 4NO | 3NO 1NC | 2NO 2NC | 4NO | 3NO 1NC | 2NO 2NC | 1NO 3NC |
| Applicable contactor | | SR-P40, SR-P50 S-P09T~S-P80T SD-P11~SD-P21 | | | S-P100E S-P100T S-P630T~S-P1260T | | | SR-P40, SR-P50 S-P09T~S-P80T SD-P11~SD-P21 | | | S-P100E S-P100T S-P630T~S-P1260T | | | |
| Rated Capacity AC 15 (A) | 220V | 1.6 | | | 3 | | | 1.6 | | | 3 | | | |
| | 380V | 0.95 | | | 1.9 | | | 0.95 | | | 1.9 | | | |
| Operation current | (Ith) (A) | 16 | | | 10 | | | 16 | | | 10 | | | |

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Auxiliary Contact Block

◆ AP Series



| Installation | | SIDE MOUNTED TYPE | | | |
|-------------------------------------|------------------|--|--|---|--|
| Model | | APS-11 | | APL-11 | |
| Contact | | 1NO 1NC | | 1NO 1NC | |
| Applicable contactor | | SR-P40, SR-P50 S-P09T~S-P60T SD-P11~SD-P21 | | S-P125, S-P150T S-P200T, S-P220T S-P300T, S-P400T | |
| Rated Capacity AC 15 (A) | 220V | | | 1.6 | |
| | 380V | | | 0.95 | |
| Operation current | (Ith) (A) | | | 16 | |

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Auxiliary Contact Block

◆ MAP Series

| Installation | | 2P FRONT MOUNTED TYPE | | | 4P FRONT MOUNTED TYPE | | |
|-------------------------------------|------------------|-----------------------|---------|--------|-----------------------|---------|---------|
| Model | | MAP-20 | MAP-11 | MAP-02 | MAP-40 | MAP-31 | MAP-22 |
| Contact | | 2NO | 1NO 1NC | 2NC | 4NO | 3NO 1NC | 2NO 2NC |
| Applicable contactor | | S-P06, S-P09. | | | | | |
| Rated Capacity AC 15 (A) | 220V | | | | 3.3 | | |
| | 380V | | | | 1.9 | | |
| Operation current | (Ith) (A) | | | | 10 | | |

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Timer

| Model | | PTR-30 | PRT-30F | PTR-180 | PRT-180F |
|-------------------------------------|-------------|---------------------------------------|-----------|----------|-----------|
| Delay type | | On Delay | Off Delay | On Delay | Off Delay |
| Ajustable time (Sec) | | 0~30 | | 0~180 | |
| Rated Capacity AC 15 (A) | 220V | | | | 1.6 |
| | 380V | | | | 0.95 |
| Operation current (Ith) (A) | | | | | 16 |
| Applicable contactor | | SR-P40, SR-P50, S-P09T~60T, SD-P11~21 | | | |



Surge unit

| Model | BMSACW220V | BMSACW380V |
|----------------------|--------------------------------|------------|
| Applicable contactor | SR-P40, SR-P50, S-P9T~ S-P60T. | |

Mechanical Interlock

| Model | MPU-11 | MPU-21 | MPU-50 |
|----------------------|------------------------|-----------------|--------|
| Applicable contactor | S-P11/S-P15/S-P35T~60T | S-P12/S-P16~30T | S-P80T |

Coil Characteristics

| Model | S-P06 S-P09 | S-P9T S-P12T | S-P11 S-P15 | S-P16 S-P21 S-P25 S-P30T S-P32T | S-P35T S-P38T S-P40T | S-P50T S-P60T S-P80T | S-P100T | S-P125T S-P150T | S-P200T S-P220T | S-P300T S-P400T | S-P630T S-P800T S-P1260T | | | |
|-----------------------|----------------|-----------------|----------------|---|----------------------------|----------------------------|---------|--------------------|--------------------|--------------------|--------------------------------|-----------|--------|----------|
| Coil type | AC | AC | AC | AC | AC | AC | AC | AC | AC/DC | AC | AC/DC | AC/DC | AC/DC | |
| Coil Capacity (VA) | Impulse | 35 | 76 | 76 | 76 | 72 | 250 | 319 | 370 | 350 | 440 | 350 | 420 | 500~1000 |
| | Operation | 8 | 9 | 9 | 9 | 12 | 28 | 36 | 42 | 20 | 50 | 20 | 27 | 15~35 |
| Power Consumption (W) | 2.5 | 2.7 | 2.7 | 2.7 | 3 | 7 | 11 | 10 | 1.3~8 | 12 | 1.3~8 | 3 | 4~8 | |
| Operation Volt. (Us) | On | 55~70% | 55~75% | 55~75% | 59~75% | 60~75% | 63~75% | 65~75% | 75~80% | Above 75% | 75~80% | Above 75% | 65~80% | Above77% |
| | Off | 25~50% | 35~50% | 34~48% | 36~52% | 40~57% | 40~57% | 40~55% | 40~55% | 20~62% | 40~60% | 20~62% | 20~50% | 20~60% |
| Close Time (ms) | Aux. OFF | 8~15 | 6~14 | 6~14 | 6~14 | 6~13 | 6~13 | 18~28 | 9~20 | 15~45 | 10~19 | 20~45 | 22~37 | - |
| | Aux. ON | 10~18 | 12~20 | 12~20 | 12~25 | 12~20 | 12~20 | 22~32 | 15~24 | 18~45 | 17~25 | 20~45 | 25~40 | - |
| | Contact ON | 10~18 | 12~20 | 12~20 | 12~25 | 12~20 | 12~20 | 22~32 | 10~20 | 18~50 | 12~27 | 24~50 | 30~45 | 50~70 |
| Open Time (ms) | Aux. OFF | 9~20 | 13~22 | 13~22 | 13~24 | 10~17 | 10~17 | 50~100 | 9~18 | 30~70 | 10~20 | 40~70 | 40~60 | - |
| | Aux. ON | 12~23 | 6~17 | 6~17 | 6~17 | 5~12 | 5~12 | 48~98 | 7~15 | 30~70 | 7~18 | 25~70 | 31~51 | - |
| | Contact ON | 9~20 | 6~17 | 6~17 | 6~17 | 5~12 | 5~12 | 46~96 | 7~15 | 40~70 | 7~20 | 40~70 | 30~50 | 40~60 |

Coil Specifications Table

| ◆ S-P9T~S-P25, S-P30T~P220T, SR-P40~P80, SC-P12~P60 | | | | | | |
|---|------------------------|--------------------------------|----------------------------|----------------------------|--------------------------------|----------------------------|
| Description | AC12V | AC24V | AC48V | AC110V | AC120V | AC220V |
| Coil rated specifications marking | 12V 50Hz 12V 60Hz | 24V 50Hz 24V 60Hz | 48~50V 50Hz 48~50V 60Hz | 100V 50Hz 100~110V 60Hz | 110~120V 50Hz 115~120V 60Hz | 200~220V 50Hz 220V 60Hz |
| Description | AC230V | AC240V | AC380V | AC440V | AC480V | AC550V |
| Coil rated specifications marking | 230V 50Hz 230V 60Hz | 220~240V 50Hz 240~260V 60Hz | 346~380V 50Hz 380V 60Hz | 400V 50Hz 400~440V 60Hz | 415~440V 50Hz 460~480V 60Hz | 500V 50Hz 500~550V 60Hz |

"Note: Control voltage of SR-P40 can be customized DC 12/24/30/48/72/110/125/220V."

| ◆ S-P300T~P400T | | | | | |
|-----------------------------------|-----------------------------|------------------------------------|------------------------------------|---------------------|---------------------|
| Description | AC48V | AC100V | AC220V | AC380V | AC550V |
| Coil rated specifications marking | AC 48~50V 50/60Hz DC 48V | AC 100~127V 50/60Hz DC 100~127V | AC 220~250V 50/60Hz DC 200~250V | AC 265~450V 50/60Hz | AC 440~575V 50/60Hz |

| ◆ S-P630T~S-P1260T | | | |
|-----------------------------------|------------------------------------|------------------------------------|---------------------|
| Description | AC110V | AC220V | AC380V |
| Coil rated specifications marking | AC 100~127V 50/60Hz DC 100~127V | AC 200~250V 50/60Hz DC 200~250V | AC 380~440V 50/60Hz |

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Selection Table ◆ Direct On-Line Starter

| Motor rated capacity kW (HP) | | 3 φ 200V~220V | | | | | | | | | | | | | | |
|------------------------------|----------|----------------------------|------------|----------------------------|--------|--------|--|--|--|----------------------|--------------|---------|---------|----------------|----------------|--------|
| | | Heating element rating (A) | | Selection of the contactor | | | | | | | | | | | | |
| 0.016 | (1/47) | 0.13A | 0.1~0.16A | S-P06 | S-P09 | | | | | | | | | | | |
| 0.025 | (1/30) | 0.2A | 0.16~0.24A | | | | | | | | | | | | | |
| 0.04 | (1/19) | 0.32A | 0.24~0.4A | | | | | | | | | | | | | |
| 0.09 | (1/8) | 0.5A | 0.4~0.6A | | | | | | | | | | | | | |
| 0.12 | (1/6) | 0.8A | 0.6~1.0A | | | | | | | | | | | | | |
| 0.25 | (1/3) | 1.3A | 1.0~1.6A | | | | | | | | | | | | | |
| 0.37 | (1/2) | 2.0A | 1.6~2.4A | | | | | | | | | | | | | |
| 0.75 | (1) | 3.2A | 2.4~4.0A | | | | | | | | | | | | | |
| 1.1 | (1 1/2) | 5A | 4.0~6.0A | S-P09 | | | | | | | | | | | | |
| 1.5 | (2) | 7.5A | 6.0~9.0A | | | | | | | | | | | | | |
| 0.03 | (1/25) | 0.25A | 0.19~0.31A | | | | | | | S-P9T, S-P11, S-P12T | S-P15, S-P16 | S-P21 | S-P25 | S-P30T, S-P32T | S-P35T, S-P38T | S-P40T |
| 0.05 | (1/15) | 0.4A | 0.3~0.5A | | | | | | | | | | | | | |
| 0.1 | (1/8) | 0.6A | 0.45~0.75A | | | | | | | | | | | | | |
| 0.15 | (1/5) | 0.9A | 0.7~1.1A | | | | | | | | | | | | | |
| 0.2 | (1/4) | 1.2A | 0.9~1.5A | | | | | | | | | | | | | |
| 0.3 | (2/5) | 1.7A | 1.3~2.1A | | | | | | | | | | | | | |
| 0.4 | (1/2) | 2.1A | 1.6~2.6A | | | | | | | | | | | | | |
| 0.75 | (1) | 3.3A | 2.5~4.1A | | | | | | | | | | | | | |
| 1.1 | (1 1/2) | 4.4A | 3.4~5.4A | | | | | | | | | | | | | |
| 1.5 | (2) | 6.5A | 5~8A | | | | | | | | | | | | | |
| 2.2 | (3) | 9A | 7~11A | S-P50T | S-P60T | S-P80T | | | | | | | | | | |
| 3 | (4) | 11A | 9~13A | | | | | | | | | | | | | |
| 3.7 | (5) | 15A | 12~18A | | | | | | | | | | | | | |
| 5.5 | (7 1/2) | 21A | 17~24A | | | | | | | | | | | | | |
| 6.5 | (8 1/2) | 28A | 22~34A | | | | | | | S-P100T | S-P125T | S-P150T | S-P200T | S-P220T | S-P300T | |
| 7.5 | (10) | 33A | 28~38A | | | | | | | | | | | | | |
| 9 | (12 1/2) | 40A | 32~48A | | | | | | | | | | | | | |
| 11 | (15) | 54A | 43~65A | | | | | | | | | | | | | |
| 15 | (20) | 67A | 54~80A | | | | | | | | | | | | | |
| 19 | (25) | 80A | 60~100A | | | | | | | | | | | | | |
| 22 | (30) | 105A | 80~130A | | | | | | | | | | | | | |
| 25 | (35) | 130A | 100~160A | | | | | | | | | | | | | |
| 30 | (40) | 160A | 120~200A | S-P400T | | | | | | | | | | | | |
| 37 | (50) | 200A | 150~250A | | | | | | | | | | | | | |
| 45 | (60) | 260A | 200~320A | | | | | | | | | | | | | |
| 55 | (75) | 350A | 260~440A | | | | | | | | | | | | | |
| 65 | (85) | 500A | 400~600A | | | | | | | | | | | | | |
| 75 | (100) | | | | | | | | | | | | | | | |
| 90 | (125) | | | | | | | | | | | | | | | |
| 110 | (150) | | | | | | | | | | | | | | | |
| 132 | (180) | | | | | | | | | | | | | | | |
| 160 | (220) | | | | | | | | | | | | | | | |

Selection Table ◆ Direct On-Line Starter

| Motor rated capacity kW (HP) | | 3 φ 380V~440V | | Heating element rating (A) | | Selection of the contactor | | | | | | | | | | |
|------------------------------|---------|---------------|------------|----------------------------|--------------|----------------------------|-------|----------------|----------------|--------|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | |
| 0.025 | (1/30) | 0.13A | 0.1~0.16A | S-P06 | S-P09 | | | | | | | | | | | |
| 0.04 | (1/19) | 0.2A | 0.16~0.24A | | | | | | | | | | | | | |
| 0.09 | (1/8) | 0.32A | 0.24~0.4A | | | | | | | | | | | | | |
| 0.18 | (1/4) | 0.5A | 0.4~0.6A | | | | | | | | | | | | | |
| 0.25 | (1/3) | 0.8A | 0.6~1.0A | | | | | | | | | | | | | |
| 0.37 | (1/2) | 1.3A | 1.0~1.6A | | | | | | | | | | | | | |
| 0.55 | (3/4) | 2.0A | 1.6~2.4A | | | | | | | | | | | | | |
| 0.75 | (1) | 3.2A | 2.4~4.0A | | | | | | | | | | | | | |
| 1.1 | (1 1/2) | 5A | 4.0~6.0A | | | | | | | | | | | | | |
| 1.5 | (2) | 7.5A | 6.0~9.0A | | | | | | | | | | | | | |
| 2.2 | (3) | 0.25A | 0.19~0.31A | S-P09T, S-P11, S-P12T | S-P15, S-P16 | S-P21 | S-P25 | S-P30T, S-P32T | S-P35T, S-P38T | S-P40T | | | | | | |
| 0.1 | (1/8) | 0.4A | 0.3~0.5A | | | | | | | | | | | | | |
| 0.2 | (1/4) | 0.6A | 0.45~0.75A | | | | | | | | | | | | | |
| 0.3 | (2/5) | 0.9A | 0.7~1.1A | | | | | | | | | | | | | |
| 0.4 | (1/2) | 1.2A | 0.9~1.5A | | | | | | | | | | | | | |
| 0.75 | (1) | 1.7A | 1.3~2.1A | | | | | | | | | | | | | |
| 1.1 | (1 1/2) | 2.1A | 1.6~2.6A | | | | | | | | | | | | | |
| 1.5 | (2) | 3.3A | 2.5~4.1A | | | | | | | | | | | | | |
| 2.2 | (3) | 4.4A | 3.4~5.4A | | | | | | | | | | | | | |
| 3 | (4) | 6.5A | 5~8A | | | | | | | | | | | | | |
| 3.7 | (5) | 9A | 7~11A | | | | | | | | | | | | | |
| 4 | (5 1/2) | 11A | 9~13A | | | | | | | | | | | | | |
| 4.5 | (6) | 15A | 12~18A | | | | | | | | | | | | | |
| 5.5 | (7 1/2) | 21A | 17~24A | | | | | | | | | | | | | |
| 7.5 | (10) | 28A | 22~34A | | | | | | | | | | | | | |
| 11 | (15) | 33A | 28~38A | | | | | | | | | | | | | |
| 12 | (16) | 40A | 32~48A | | | | | | | | | | | | | |
| 15 | (20) | 54A | 43~65A | | | | | | | | | | | | | |
| 19 | (25) | 67A | 54~80A | | | | | | | | | | | | | |
| 22 | (30) | 80A | 60~100A | | | | | | | | | | | | | |
| 25 | (35) | 105A | 80~130A | | | | | | | | | | | | | |
| 30 | (40) | 130A | 100~160A | | | | | | | | | | | | | |
| 37 | (50) | 160A | 120~200A | | | | | | | | | | | | | |
| 45 | (60) | 200A | 150~250A | | | | | | | | | | | | | |
| 50 | (70) | 260A | 200~320A | | | | | | | | | | | | | |
| 60 | (80) | 350A | 260~440A | | | | | | | | | | | | | |
| 75 | (100) | 500A | 400~600A | | | | | | | | | | | | | |
| 90 | (125) | | | | | | | | | | | | | | | |
| 110 | (150) | | | | | | | | | | | | | | | |
| 132 | (180) | | | | | | | | | | | | | | | |
| 150 | (200) | | | | | | | | | | | | | | | |
| 160 | (220) | | | | | | | | | | | | | | | |
| 220 | (330) | | | | | | | | | | | | | | | |
| 250 | (350) | | | | | | | | | | | | | | | |
| 315 | (420) | | | | | | | | | | | | | | | |

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Selection Table ◆ Direct On-Line Starter

| Motor rated capacity kW (HP) | | 3 φ 500V~550V | | | | | | | | | | |
|------------------------------|---------|----------------------------|------------|----------------------------|--------------|---------|---------|----------------|----------------|--------|--|--|
| | | Heating element rating (A) | | Selection of the contactor | | | | | | | | |
| 0.06 | (1/12) | 0.13A | 0.1~0.16A | S-P06 | S-P09 | | | | | | | |
| 0.09 | (1/8) | 0.2A | 0.16~0.24A | | | | | | | | | |
| 0.12 | (1/6) | 0.32A | 0.24~0.4A | | | | | | | | | |
| 0.18 | (1/4) | 0.5A | 0.4~0.6A | | | | | | | | | |
| 0.37 | (1/2) | 0.8A | 0.6~1.0A | | | | | | | | | |
| 0.55 | (3/4) | 1.3A | 1.0~1.6A | | | | | | | | | |
| 0.75 | (1) | 2.0A | 1.6~2.4A | | | | | | | | | |
| 1.1 | (1 1/2) | | | | | | | | | | | |
| 1.5 | (2) | 3.2A | 2.4~4.0A | | | | | | | | | |
| 2.2 | (3) | 5A | 4.0~6.0A | | | | | | | | | |
| 3 | (4) | | | | | | | | | | | |
| 4 | (5 1/2) | 7.5A | 6.0~9.0A | | | | | | | | | |
| 0.12 | (1/6) | 0.25A | 0.19~0.31A | S-P9T, S-P11, S-P12T | S-P15, S-P16 | S-P21 | S-P25 | S-P30T, S-P32T | S-P35T, S-P38T | S-P40T | | |
| 0.18 | (1/4) | 0.4A | 0.3~0.5A | | | | | | | | | |
| 0.25 | (1/3) | 0.6A | 0.45~0.75A | | | | | | | | | |
| 0.37 | (1/2) | 0.9A | 0.7~1.1A | | | | | | | | | |
| 0.55 | (3/4) | 1.2A | 0.9~1.5A | | | | | | | | | |
| 0.75 | (1) | 1.7A | 1.3~2.1A | | | | | | | | | |
| 1.1 | (1 1/2) | 2.1A | 1.6~2.6A | | | | | | | | | |
| 1.5 | (2) | 3.3A | 2.5~4.1A | | | | | | | | | |
| 2.2 | (3) | 4.4A | 3.4~5.4A | | | | | | | | | |
| 4 | (5 1/2) | 6.5A | 5~8A | | | | | | | | | |
| 4.5 | (6) | 9A | 7~11A | | | | | | | | | |
| 5.5 | (7 1/2) | 11A | 9~13A | | | S-P50T | S-P60T | S-P80T | | | | |
| 7.5 | (10) | 15A | 12~18A | | | | | | | | | |
| 11 | (15) | 21A | 17~24A | | | | | | | | | |
| 12 | (16) | 21A | 17~24A | | | | | | | | | |
| 15 | (20) | 28A | 22~34A | | | S-P100T | S-P125T | S-P150T | | | | |
| 19 | (25) | 33A | 28~38A | | | | | | | | | |
| 22 | (30) | 40A | 32~48A | | | | | | | | | |
| 30 | (40) | 54A | 43~65A | | | | | | | | | |
| 37 | (50) | 67A | 54~80A | | | S-P200T | S-P220T | S-P300T | S-P400T | | | |
| 45 | (60) | 80A | 60~100A | | | | | | | | | |
| 50 | (70) | 105A | 80~130A | | | | | | | | | |
| 60 | (80) | 130A | 100~160A | | | | | | | | | |
| 75 | (100) | 160A | 120~200A | | | | | M-600C | | | | |
| 90 | (125) | 200A | 150~250A | | | | | | | | | |
| 110 | (150) | 260A | 200~320A | | | | | | | | | |
| 132 | (180) | 350A | 260~440A | | | | | | | | | |
| 150 | (200) | 500A | 400~600A | | | | | | | | | |
| 160 | (220) | | | | | | | | | | | |
| 220 | (330) | | | | | | | | | | | |
| 315 | (420) | | | | | | | | | | | |

Selection Table ◆ λ-Δ Starter

| Heater selection table (A) | Motor output kW (HP) | | | | TH selection of λ-Δ Starter | | | | | | | | | | | | | | | | | |
|----------------------------|----------------------|----------|----------|---------|-----------------------------|----------|----------|----------|--------|-----------|-----------|-----------|-----------|---|-----|---|-----|---|-----|----------|----------|---|
| | A | | B | | 21 | | 35 | | 50 | | 60 | | 80 | | 100 | | 125 | | 150 | | 220 | |
| | 200~220V | | 380~440V | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 6.5 | 1.5 | (2) | 3 | (4) | TH-P20 | TH-P20 | | | | | | | | | | | | | | | | |
| 9 | 1.9 | (2 1/2) | 3.7 | (5) | | | | | | | | | | | | | | | | | | |
| 9 | 2.2 | (3) | 4.5 | (6) | | | | | | | | | | | | | | | | | | |
| 11 | 3 | (4) | 5.5 | (7 1/2) | | | | | | | | | | | | | | | | | | |
| 15 | 3.7 | (5) | 7.5 | (10) | | | | | | | | | | | | | | | | | | |
| 15 | 4.5 | (6) | 10 | (13) | | | | | | | | | | | | | | | | | | |
| 21 | 5.5 | (7 1/2) | 11 | (15) | TH-P20TA | TH-P20TA | TH-P60 | TH-P60 | TH-P60 | TH-P60 | | | | | | | | | | | | |
| 28 | 6.5 | (8) | 14 | (19) | | | | | | | | | | | | | | | | | | |
| 28 | 7.5 | (10) | 15 | (20) | | | | | | | | | | | | | | | | | | |
| 33 | 9 | (12 1/2) | 19 | (25) | | | | | | | | | | | | | | | | | | |
| 40 | 11 | (15) | 22 | (30) | | | | | | | | | | | | | | | | | | |
| 40 | 14 | (19) | 26 | (35) | | | | | | | | | | | | | | | | | | |
| 54 | 15 | (20) | 30 | (40) | | | | | | | | | | | | | | | | | | |
| 67 | 19 | (25) | 37 | (50) | | | TH-P60TA | TH-P60TA | | | | | | | | | | | | | | |
| 80 | 22 | (30) | 45 | (60) | | | | | | | | | | | | | | | | | | |
| 80 | 25 | (34) | 50 | (67) | | | | | | | | | | | | | | | | | | |
| 105 | 30 | (40) | 55 | (75) | | | | | | TH-P120TA | TH-P120TA | | | | | | | | | | | |
| 130 | 37 | (50) | 75 | (100) | | | | | | | | TH-P120TA | TH-P120TA | | | | | | | | | |
| 160 | 45 | (60) | 90 | (125) | | | | | | | | | | | | | | | | | | |
| 200 | 55 | (75) | 110 | (150) | | | | | | | | | | | | | | | | | | |
| 200 | 65 | (85) | 132 | (200) | | | | | | | | | | | | | | | | | | |
| 260 | 75 | (100) | 150 | (200) | | | | | | | | | | | | | | | | TH-P400T | TH-P400T | |
| 350 | 110 | (150) | 200 | (260) | | | | | | | | | | | | | | | | | | |

Motor Starter

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Modular Contactor



| Model | Modular Contactors | Standard | SMC16-S | | SMC25-S | | SMC40-S | | SMC63-S | |
|--|--------------------|------------|---------|-----|---------|-----|---------|-----|---------|-----|
| | | Manual | SMC16-M | | SMC25-M | | SMC40-M | | SMC63-M | |
| | | Pole | 2P | 4P | 2P | 4P | 2P | 4P | 2P | 4P |
| Rated insulation voltage (Ui) IEC | | (V) | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Rated operational voltage (Ue) IEC / UL | | (V) | 230 | 400 | 250 | 400 | 250 | 400 | 250 | 400 |
| Rated impulse withstand voltage (Uimp) IEC | | (kV) | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Rated operational current | | AC-7a (A) | 16 | 16 | 25 | 25 | 40 | 40 | 63 | 63 |
| | | AC-7b (A) | 6 | 6 | 8.5 | 8.5 | 15 | 15 | 20 | 20 |
| Continuous Current (Ith) | | (A) | 25 | 25 | 25 | 25 | 63 | 63 | 63 | 63 |
| Mechanical Life (Thousand) | | (Thousand) | 100 | | | | | | | |
| Electrical Life AC-7a (Thousand) | | (Thousand) | 10 | | | | | | | |
| IP Level | | — | IP20 | | | | | | | |

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Accessory

- Side mount auxiliary contacts



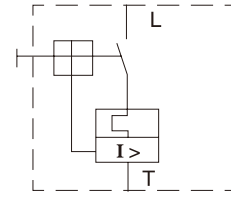
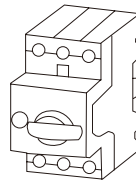
| Model | Contacts | Voltage |
|--------|----------|---------|
| smAX11 | 1NO1NC | 500V |

- 9mm spacing block



| Model | Usage |
|-------|--|
| smSB | When modular contactor is installed in distribution box, attach spacing block on both side of the contactor for heat radiation |

MANUAL MOTOR STARTER

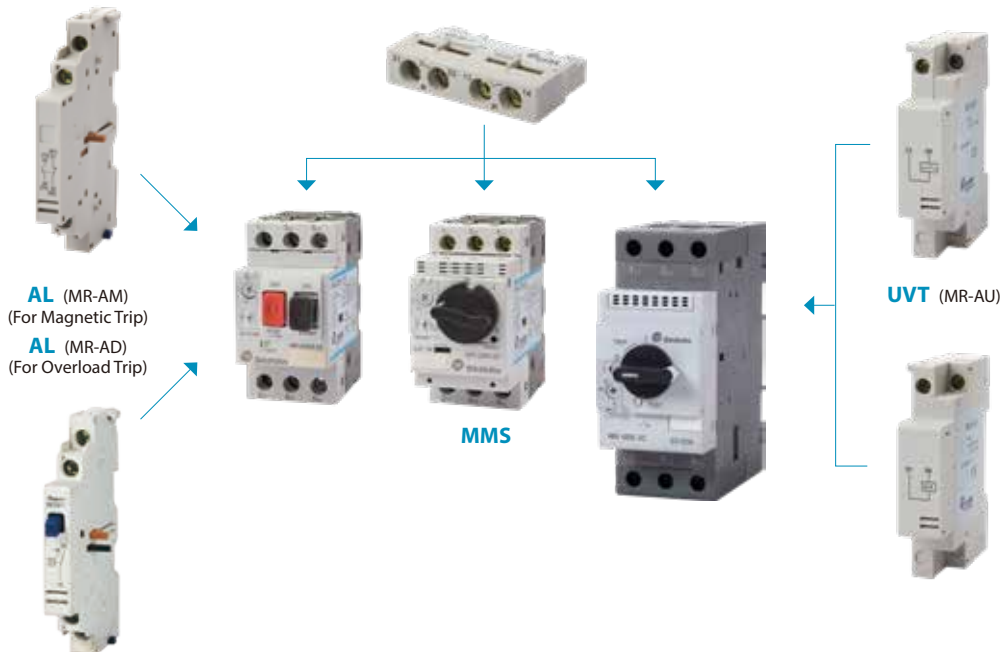


| Power factor AC-3 | | Rated current In (A) | Overload adjustable range Ie (A) | Tripping current (A) Id ± 20% | Type | |
|-------------------|-----------|-------------------------|-------------------------------------|----------------------------------|-------------|-------------|
| 220V (kW) | 400V (kW) | | | | Button | Rotary |
| — | — | 0.16 | 0.1-0.16 | 1.92 | MR-32S-0.16 | MR-32R-0.16 |
| — | — | 0.25 | 0.16-0.25 | 3 | MR-32S-0.25 | MR-32R-0.25 |
| — | — | 0.4 | 0.25-0.4 | 4.8 | MR-32S-0.4 | MR-32R-0.4 |
| — | — | 0.63 | 0.4-0.63 | 7.56 | MR-32S-0.63 | MR-32R-0.63 |
| — | — | 1 | 0.63-1 | 12 | MR-32S-1 | MR-32R-1 |
| — | 0.37 | 1.6 | 1-1.6 | 19.2 | MR-32S-1.6 | MR-32R-1.6 |
| 0.37 | 0.75 | 2.5 | 1.6-2.5 | 30 | MR-32S-2.5 | MR-32R-2.5 |
| 0.55 | 1.5 | 4 | 2.5-4 | 48 | MR-32S-4 | MR-32R-4 |
| 1.1 | 2.2 | 6.3 | 4-6.3 | 75.6 | MR-32S-6.3 | MR-32R-6.3 |
| 2.2 | 4 | 10 | 6-10 | 120 | MR-32S-10 | MR-32R-10 |
| 2.2 | 5.5 | 14 | 9-14 | 168 | MR-32S-14 | MR-32R-14 |
| 3.7 | 7.5 | 18 | 13-18 | 216 | MR-32S-18 | MR-32R-18 |
| 5.5 | 11 | 23 | 17-23 | 276 | MR-32S-23 | MR-32R-23 |
| 5.5 | 11 | 25 | 20-25 | 300 | MR-32S-25 | MR-32R-25 |
| 7.5 | 15 | 32 | 24-32 | 384 | MR-32S-32 | MR-32R-32 |
| 3 | 5.5 | 13 | 9-13 | 182 | — | MR-65R-13 |
| 4 | 7.5 | 18 | 12-18 | 252 | — | MR-65R-18 |
| 5.5 | 11 | 25 | 17-25 | 350 | — | MR-65R-25 |
| 7.5 | 15 | 32 | 23-32 | 448 | — | MR-65R-32 |
| 7.5 | 18.5 | 40 | 30-40 | 560 | — | MR-65R-40 |
| 11 | 22 | 50 | 37-50 | 700 | — | MR-65R-50 |
| 15 | 30 | 65 | 48-65 | 910 | — | MR-65R-65 |

Side AX (MR-AN)

Front AX (MR-AE)

SHT (MR-AS)



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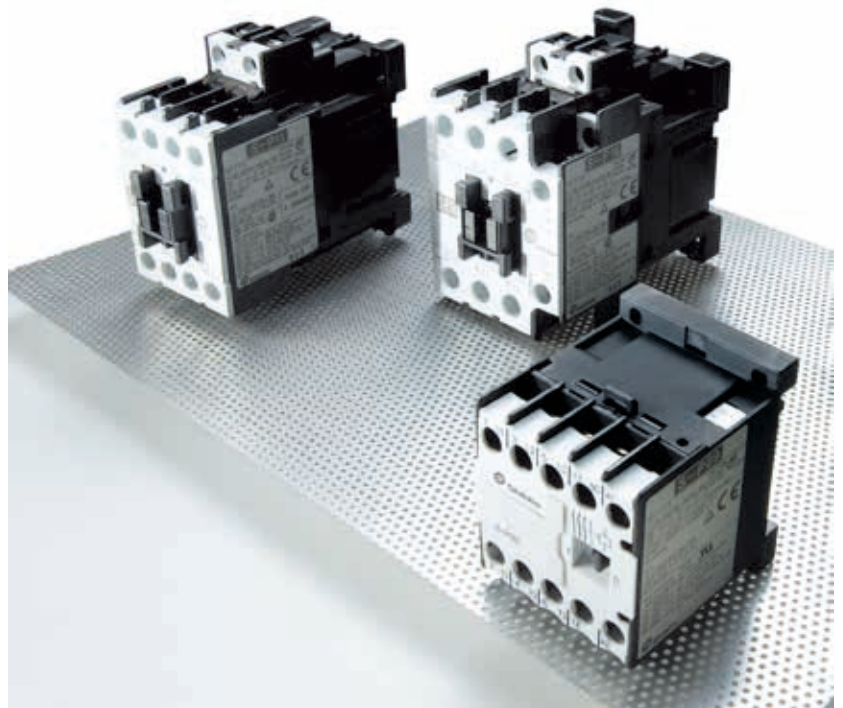


CIRCUIT BREAKER (MCCB / ELCB / EMCCB / MCB)

Breaker & Switchgear System



AIR CIRCUIT BREAKER



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AUTOMATIC TRANSFER SWITCHES



SURGE PROTECTIVE DEVICE



SMART METER



INVERTER



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