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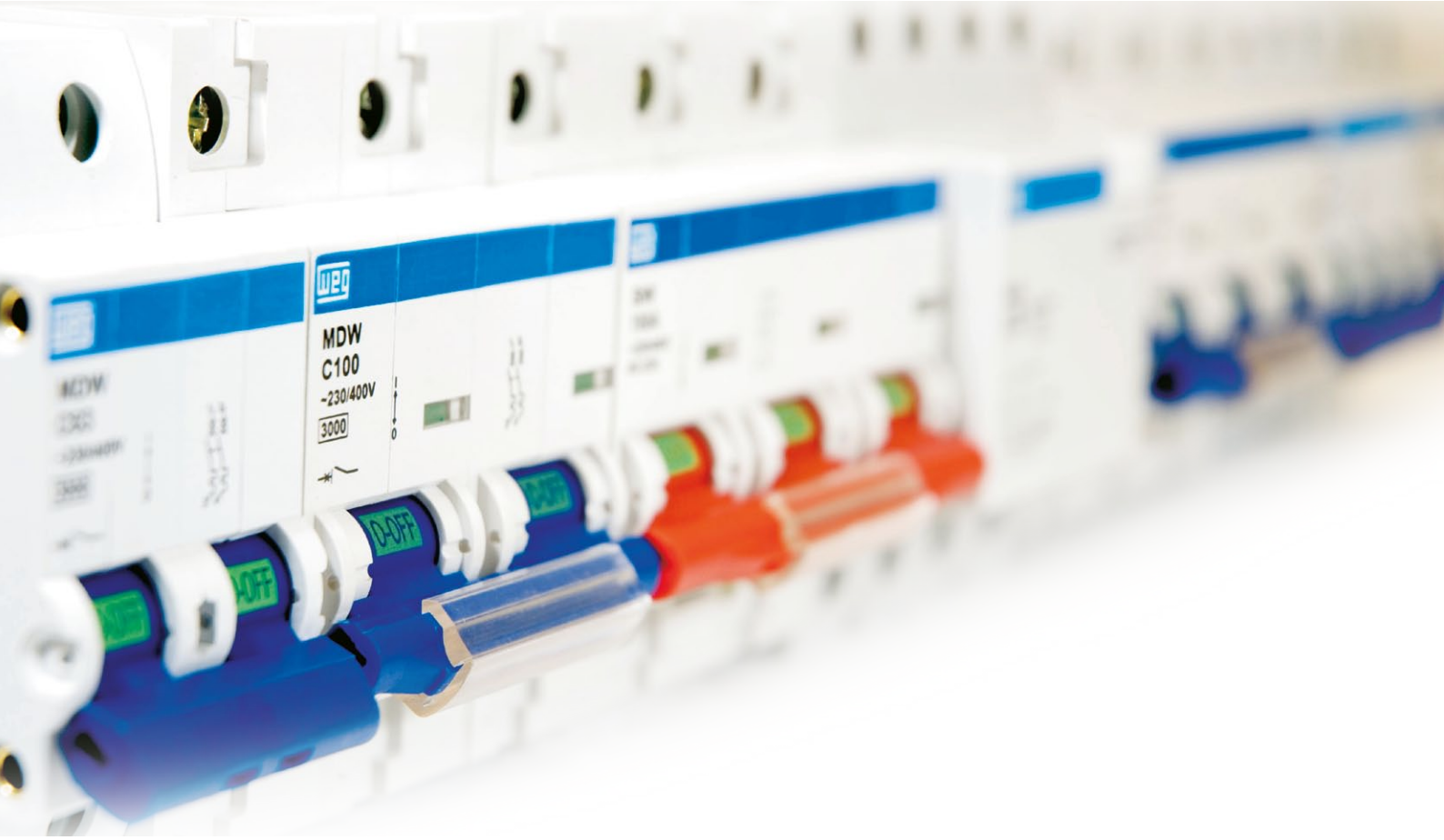
# Automation

## Miniature Circuit-Breakers MDW and MDWH

## Distribution Boards QDW

## Residual Current Circuit-Breakers RDW

## Surge Suppressors SPW




## Summary

Miniature Circuit-Breakers - MDW and MDWH ..... 4
Distribution Boards - QDW ..... 9
Distribution Accessories ..... 10
Switch-Disconnectors - SIW ..... 11
Residual Current Circuit-Breakers - RDW ..... 12
Surge Suppressors - SPW and SPWC ..... 15
Dimensions (mm) ..... 17
Wiring Diagrams ..... 18

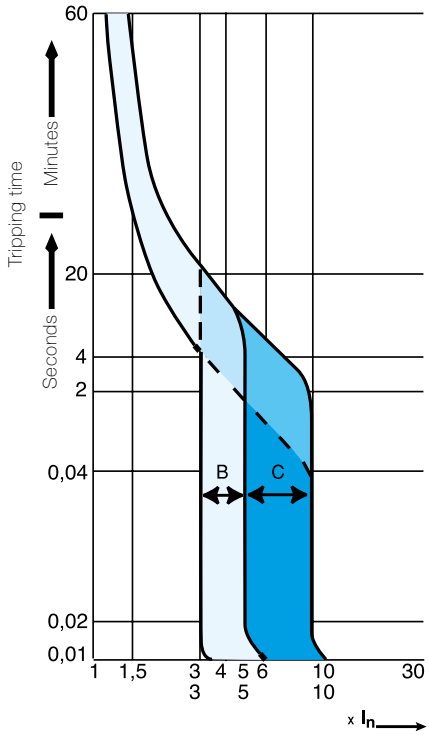
# Miniature Circuit-Breakers - MDW and MDWH

The MDW and MDWH miniature circuit-breaker (MCB) line offers protection against overload and short-circuit in electric conductors, complying with the tripping characteristic curves B and C, according to standards IEC 60898 and IEC 60947-2. Developed to be used in low voltage circuits with direct or alternating current from 2 to 125 A and short-circuit breaking capacity up to 10 kA, the miniature circuit-breaker line includes as accessories: auxiliary contact blocks, single, two and three-pole distribution busbar, and padlock, according to the requirement of safety standards. It also includes trip free mechanism, in which the trip is independent from the handle, and circuit-breaker status indication.

## Tripping Characteristic Curves

- Curve B
  The main characteristic of the miniature circuit-breaker of the B curve is the instantaneous trip for currents 3 to 5 times above the rated current. Therefore, they are applied mainly in the protection of circuits with resistive characteristics or with great cable lengths involved. E.g.: incandescent light bulbs, electric showers, electric heaters, etc.

- Curve C
  The characteristic of the miniature circuit-breaker of the C curve is the instantaneous trip for currents 5 to 10 times above the rated current. Therefore, they are used for the protection of circuits with installation of inductive loads. E.g.: fluorescent lamps, refrigerators, washing machines, etc.




## Reference MDW

### Single-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| - | - | - | - | - |
| - | - | - | - | - |
| MDW-B6 | 6 A | B | 3 | 5 |
| MDW-B10 | 10 A | B | 3 | 5 |
| MDW-B16 | 16 A | B | 3 | 5 |
| MDW-B20 | 20 A | B | 3 | 5 |
| MDW-B25 | 25 A | B | 3 | 5 |
| MDW-B32 | 32 A | B | 3 | 5 |
| MDW-B40 | 40 A | B | 3 | 5 |
| MDW-B50 | 50 A | B | 3 | 5 |
| MDW-B63 | 63 A | B | 3 | 5 |
| MDW-B70 | 70 A | B | 3 | 5 |
| MDW-B80 | 80 A | B | 3 | 5 |
| MDW-B100 | 100 A | B | 3 | 5 |
| MDW-B125 | 125 A | B | 3 | 5 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDW-C2 | 2 A | C | 1.5 | 3 |
| MDW-C4 | 4 A | C | 1.5 | 3 |
| MDW-C6 | 6 A | C | 3 | 5 |
| MDW-C10 | 10 A | C | 3 | 5 |
| MDW-C16 | 16 A | C | 3 | 5 |
| MDW-C20 | 20 A | C | 3 | 5 |
| MDW-C25 | 25 A | C | 3 | 5 |
| MDW-C32 | 32 A | C | 3 | 5 |
| MDW-C40 | 40 A | C | 3 | 5 |
| MDW-C50 | 50 A | C | 3 | 5 |
| MDW-C63 | 63 A | C | 3 | 5 |
| MDW-C70 | 70 A | C | 3 | 5 |
| MDW-C80 | 80 A | C | 3 | 5 |
| MDW-C100 | 100 A | C | 3 | 5 |
| MDW-C125 | 125 A | C | 3 | 5 |

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## Two-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| - | - | - | - | - |
| - | - | - | - | - |
| MDW-B6-2 | 6 A | B | 3 | 5 |
| MDW-B10-2 | 10 A | B | 3 | 5 |
| MDW-B16-2 | 16 A | B | 3 | 5 |
| MDW-B20-2 | 20 A | B | 3 | 5 |
| MDW-B25-2 | 25 A | B | 3 | 5 |
| MDW-B32-2 | 32 A | B | 3 | 5 |
| MDW-B40-2 | 40 A | B | 3 | 5 |
| MDW-B50-2 | 50 A | B | 3 | 5 |
| MDW-B63-2 | 63 A | B | 3 | 5 |
| MDW-B70-2 | 70 A | B | 3 | 5 |
| MDW-B80-2 | 80 A | B | 3 | 5 |
| MDW-B100-2 | 100 A | B | 3 | 5 |
| MDW-B125-2 | 125 A | B | 3 | 5 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDW-C2-2 | 2 A | C | 1.5 | 3 |
| MDW-C4-2 | 4 A | C | 1.5 | 3 |
| MDW-C6-2 | 6 A | C | 3 | 5 |
| MDW-C10-2 | 10 A | C | 3 | 5 |
| MDW-C16-2 | 16 A | C | 3 | 5 |
| MDW-C20-2 | 20 A | C | 3 | 5 |
| MDW-C25-2 | 25 A | C | 3 | 5 |
| MDW-C32-2 | 32 A | C | 3 | 5 |
| MDW-C40-2 | 40 A | C | 3 | 5 |
| MDW-C50-2 | 50 A | C | 3 | 5 |
| MDW-C63-2 | 63 A | C | 3 | 5 |
| MDW-C70-2 | 70 A | C | 3 | 5 |
| MDW-C80-2 | 80 A | C | 3 | 5 |
| MDW-C100-2 | 100 A | C | 3 | 5 |
| MDW-C125-2 | 125 A | C | 3 | 5 |

## Three-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| - | - | - | - | - |
| - | - | - | - | - |
| MDW-B6-3 | 6 A | B | 3 | 5 |
| MDW-B10-3 | 10 A | B | 3 | 5 |
| MDW-B16-3 | 16 A | B | 3 | 5 |
| MDW-B20-3 | 20 A | B | 3 | 5 |
| MDW-B25-3 | 25 A | B | 3 | 5 |
| MDW-B32-3 | 32 A | B | 3 | 5 |
| MDW-B40-3 | 40 A | B | 3 | 5 |
| MDW-B50-3 | 50 A | B | 3 | 5 |
| MDW-B63-3 | 63 A | B | 3 | 5 |
| MDW-B70-3 | 70 A | B | 3 | 5 |
| MDW-B80-3 | 80 A | B | 3 | 5 |
| MDW-B100-3 | 100 A | B | 3 | 5 |
| MDW-B125-3 | 125 A | B | 3 | 5 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDW-C2-3 | 2 A | C | 1.5 | 3 |
| MDW-C4-3 | 4 A | C | 1.5 | 3 |
| MDW-C6-3 | 6 A | C | 3 | 5 |
| MDW-C10-3 | 10 A | C | 3 | 5 |
| MDW-C16-3 | 16 A | C | 3 | 5 |
| MDW-C20-3 | 20 A | C | 3 | 5 |
| MDW-C25-3 | 25 A | C | 3 | 5 |
| MDW-C32-3 | 32 A | C | 3 | 5 |
| MDW-C40-3 | 40 A | C | 3 | 5 |
| MDW-C50-3 | 50 A | C | 3 | 5 |
| MDW-C63-3 | 63 A | C | 3 | 5 |
| MDW-C70-3 | 70 A | C | 3 | 5 |
| MDW-C80-3 | 80 A | C | 3 | 5 |
| MDW-C100-3 | 100 A | C | 3 | 5 |
| MDW-C125-3 | 125 A | C | 3 | 5 |

## Four-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| - | - | - | - | - |
| - | - | - | - | - |
| MDW-C6-4 | 6 A | C | 3 | 5 |
| MDW-C10-4 | 10 A | C | 3 | 5 |
| MDW-C16-4 | 16 A | C | 3 | 5 |
| MDW-C20-4 | 20 A | C | 3 | 5 |
| MDW-C25-4 | 25 A | C | 3 | 5 |
| MDW-C32-4 | 32 A | C | 3 | 5 |
| MDW-C40-4 | 40 A | C | 3 | 5 |
| MDW-C50-4 | 50 A | C | 3 | 5 |
| MDW-C63-4 | 63 A | C | 3 | 5 |
| MDW-C70-4 | 70 A | C | 3 | 5 |
| MDW-C80-4 | 80 A | C | 3 | 5 |
| MDW-C100-4 | 100 A | C | 3 | 5 |
| MDW-C125-4 | 125 A | C | 3 | 5 |

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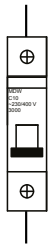
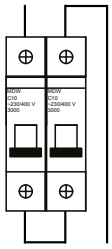
## Technical Data MDW

| | | | |
|---|---|---|---|
| Maximum operating voltage - Ue | | | 440 V ac / 250 V dc |
| Rated insulating voltage - Ui | | | 500 V ac |
| Rated frequency | | | 50 / 60 Hz - DC |
| Rated currents - In | | | 2 to 125 A |
| Short-circuit breaking capacity | IEC 60898 (Icn) | 127/220 V ac | (2 to 4 A) 3 kA, (6 to 25 A) 5 kA |
| | | 230/400 V ac | (2 to 4 A) 1,5 kA, (6 to 125 A) 3 kA |
| | IEC 60947-2 (Icu) | 127/220 V ac | (2 to 4 A) 3 kA, (6 to 125 A) 5 kA |
| | | 230/400 V ac | (2 to 4 A) 3 kA, (6 to 125 A) 5 kA |
| | | 440 V ac | (2 to 4 A) 3 kA, (6 to 125 A) 4,5 kA |
| Short-circuit breaking capacity in direct current Icu, acc. to IEC 60947-2 | 48 V dc | | (6 to 63 A) 10 kA[1] |
| | 60 V dc | | (6 to 63 A) 10 kA[1] |
| | 125 V dc | | (6 to 63 A) 5 kA[1] and 16 kA[2] |
| | 250 V dc | | (6 to 63 A) 10 kA[2] |
| Tripping characteristic curves | | | B (3 to 5 times In) |
| | | | C (5 to 10 times In) |
| Number of poles | | | 1, 2, 3 and 4P |
| Electrical lifespan | | | 4.000 operations |
| Ambient temperature | | | -25 to 45 ºC |
| Degree of protection | | | IP20 |
| Connection capacity | MDW (2 to 63 A) | | 1 to 25 mm² |
| | MDW (70 to 125 A) | | 10 to 35 mm² |
| Mounting position | | | No restriction |
| Tightening torque on the terminals | | | 2,0 to 4,0 N.m |
| Fixation | | | DIN Rail 35 mm |
| Weight (kg) | Single-pole | | 0,105 (2 to 63 A); 0,155 (80 A, 125 A) |
| | Two-pole | | 0,210 (2 to 63 A); 0,315 (80 A, 125 A) |
| | Three-pole | | 0,315 (2 to 63 A); 0,475 (80 A, 125 A) |
| | Four-pole | | 0,420 (2 to 63 A); 0,630 (80 A, 125 A) |

*Notes: 1- single-pole connection; 2- two-pole connection in series.*



*1 - Single-pole connection*



*2 -Two-pole connection in series*

## Dissipation of Power MDW (Standard IEC 60898)

| Rated current range $I_n$ (A) | Maximum dissipated active power per pole (W) |
|---|---|
| $I_n \leq 10$ | 3 |
| $10 < I_n \leq 16$ | 3,5 |
| $16 < I_n \leq 25$ | 4,5 |
| $25 < I_n \leq 32$ | 6 |
| $32 < I_n \leq 40$ | 7,5 |
| $40 < I_n \leq 50$ | 9 |
| $50 < I_n \leq 63$ | 13 |
| $63 < I_n \leq 100$ | 15 |
| $100 < I_n \leq 125$ | 20 |

## Accessories MDW

| Auxiliary contact blocks | | | |
|---|---|---|---|
| Reference | Application | Type | |
| MDW-BC1 | MDW 2 A - 63 A | 1 NOC (1 SPDT) | |
| MDW-BC2 | MDW 70 A - 125 A | | |
| Switching capacity of the MDW-BC1 and MDW-BC2 contacts | | AC-14 | 6A/230 V ac - 3A/400 V ac |
| | | DC-12 | 2A/60 V dc - 1A/125 V dc |
| | | DC-13 | 6A/24 V dc - 2A/48 V dc |
| Weight (kg) | | 0.040 | |

| Padlock | | | |
|---|---|---|---|
| Reference | Application | Padlock diameter | Units per package |
| MDW-PLW63 | MDW (2 to 63 A) | Up to 5 mm | 50 |
| MDW-PLW100 | MDW (70 A, 125 A) | | |

*Example of application*

## Reference MDWH

### Single-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-B6 | 6 A | B | 10 | 10 |
| MDWH-B10 | 10 A | B | 10 | 10 |
| MDWH-B16 | 16 A | B | 10 | 10 |
| MDWH-B20 | 20 A | B | 10 | 10 |
| MDWH-B25 | 25 A | B | 10 | 10 |
| MDWH-B32 | 32 A | B | 10 | 10 |
| MDWH-B40 | 40 A | B | 10 | 10 |
| MDWH-B50 | 50 A | B | 10 | 10 |
| MDWH-B63 | 63 A | B | 10 | 10 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-C6 | 6 A | C | 10 | 10 |
| MDWH-C10 | 10 A | C | 10 | 10 |
| MDWH-C16 | 16 A | C | 10 | 10 |
| MDWH-C20 | 20 A | C | 10 | 10 |
| MDWH-C25 | 25 A | C | 10 | 10 |
| MDWH-C32 | 32 A | C | 10 | 10 |
| MDWH-C40 | 40 A | C | 10 | 10 |
| MDWH-C50 | 50 A | C | 10 | 10 |
| MDWH-C63 | 63 A | C | 10 | 10 |

### Two-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-B6-2 | 6 A | B | 10 | 10 |
| MDWH-B10-2 | 10 A | B | 10 | 10 |
| MDWH-B16-2 | 16 A | B | 10 | 10 |
| MDWH-B20-2 | 20 A | B | 10 | 10 |
| MDWH-B25-2 | 25 A | B | 10 | 10 |
| MDWH-B32-2 | 32 A | B | 10 | 10 |
| MDWH-B40-2 | 40 A | B | 10 | 10 |
| MDWH-B50-2 | 50 A | B | 10 | 10 |
| MDWH-B63-2 | 63 A | B | 10 | 10 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-C6-2 | 6 A | C | 10 | 10 |
| MDWH-C10-2 | 10 A | C | 10 | 10 |
| MDWH-C16-2 | 16 A | C | 10 | 10 |
| MDWH-C20-2 | 20 A | C | 10 | 10 |
| MDWH-C25-2 | 25 A | C | 10 | 10 |
| MDWH-C32-2 | 32 A | C | 10 | 10 |
| MDWH-C40-2 | 40 A | C | 10 | 10 |
| MDWH-C50-2 | 50 A | C | 10 | 10 |
| MDWH-C63-2 | 63 A | C | 10 | 10 |

### Three-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-B6-3 | 6 A | B | 10 | 10 |
| MDWH-B10-3 | 10 A | B | 10 | 10 |
| MDWH-B16-3 | 16 A | B | 10 | 10 |
| MDWH-B20-3 | 20 A | B | 10 | 10 |
| MDWH-B25-3 | 25 A | B | 10 | 10 |
| MDWH-B32-3 | 32 A | B | 10 | 10 |
| MDWH-B40-3 | 40 A | B | 10 | 10 |
| MDWH-B50-3 | 50 A | B | 10 | 10 |
| MDWH-B63-3 | 63 A | B | 10 | 10 |

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-C6-3 | 6 A | C | 10 | 10 |
| MDWH-C10-3 | 10 A | C | 10 | 10 |
| MDWH-C16-3 | 16 A | C | 10 | 10 |
| MDWH-C20-3 | 20 A | C | 10 | 10 |
| MDWH-C25-3 | 25 A | C | 10 | 10 |
| MDWH-C32-3 | 32 A | C | 10 | 10 |
| MDWH-C40-3 | 40 A | C | 10 | 10 |
| MDWH-C50-3 | 50 A | C | 10 | 10 |
| MDWH-C63-3 | 63 A | C | 10 | 10 |

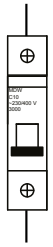
### Four-Pole Miniature Circuit-Breakers

| Reference | Current | Curve | IEC 60898 230/400 V ac Icn (kA) | IEC 60947-2 230/400 V ac Icu (kA) |
|---|---|---|---|---|
| MDWH-C6-4 | 6 A | C | 10 | 10 |
| MDWH-C10-4 | 10 A | C | 10 | 10 |
| MDWH-C16-4 | 16 A | C | 10 | 10 |
| MDWH-C20-4 | 20 A | C | 10 | 10 |
| MDWH-C25-4 | 25 A | C | 10 | 10 |
| MDWH-C32-4 | 32 A | C | 10 | 10 |
| MDWH-C40-4 | 40 A | C | 10 | 10 |
| MDWH-C50-4 | 50 A | C | 10 | 10 |
| MDWH-C63-4 | 63 A | C | 10 | 10 |

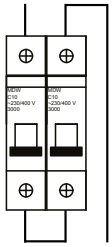
## Technical Data MDWH

| | | | |
|---|---|---|---|
| Maximum operating voltage - Ue | | | 440 V ac / 250 V dc |
| Rated insulating voltage - Ui | | | 500 V ac |
| Rated frequency | | | 50 / 60 Hz - DC |
| Rated currents - In | | | 6 to 63 A |
| Short-circuit breaking capacity | IEC 60898 | 127/220 V ac | 10 kA |
| | | 230/400 V ac | Icn 10 kA / Ics 7.5 kA |
| | IEC 60947-2 | 127/220 V ac | 10 kA |
| | | 230/400 V ac | 10 kA |
| | | 440 V ac | 7.5 kA |
| Short-circuit breaking capacity in direct current Icu, acc. to IEC 60947-2 | 48 V dc | | (6 to 63 A) 16 kA[1] |
| | 60 V dc | | (6 to 63 A) 15 kA[1] |
| | 125 V dc | | (6 to 63 A) 10 kA[1] and 15 kA[2] |
| | 250 V dc | | (6 to 63 A) 5 kA[1] and 10 kA[2] |
| Tripping characteristic curves | | | B (3 to 5 times In) |
| | | | C (5 to 10 times In) |
| Number of poles | | | 1, 2, 3 and 4P |
| Electrical lifespan | | | 4.000 operations |
| Ambient temperature | | | -25 to 45 ºC |
| Degree of protection | | | IP20 |
| Connection capacity | MDWH (6 to 63 A) | | 1 to 25 mm² |
| Mounting position | | | No restriction |
| Tightening torque on the terminals | | | 2.0 to 3.0 N.m |
| Fixation | | | DIN rail 35 mm |
| Weight (kg) | Single-pole | | 0.130 (6 to 63 A) |
| | Two-pole | | 0.260 (6 to 63 A) |
| | Three-pole | | 0.390 (6 to 63 A) |
| | Four-pole | | 0.520 (6 to 63 A) |

*Notas: 1- single-pole connection; 2- Two-pole connection in series.*



*1 - Single-pole connection*



*2 - Two-pole connection in series*

## Dissipation of Power MDW (Standard IEC 60898)

| Rated current range $I_n$ (A) | Maximum dissipated active power per pole (W) |
|---|---|
| $I_n \leq 10$ | 3 |
| $10 < I_n \leq 16$ | 3.5 |
| $16 < I_n \leq 25$ | 4.5 |
| $25 < I_n \leq 32$ | 6 |
| $32 < I_n \leq 40$ | 7.5 |
| $40 < I_n \leq 50$ | 9 |
| $50 < I_n \leq 63$ | 13 |
| $63 < I_n \leq 100$ | 15 |
| $100 < I_n \leq 125$ | 20 |

## Accessories - MDWH

| Auxiliary contact blocks | | | |
|---|---|---|---|
| References | Contact configuration | Application | Type |
| MDWH-BC1 | 1 NOC (1 SPDT) | MDWH (6 to 63 A) | Auxiliary Contact |
| MDWH-AL | 1 NOC (1 SPDT) | MDWH (6 to 63 A) | Alarm Contact |
| MDWH-AX | 2 NOC (1 SPDT) | MDWH (6 to 63 A) | Auxiliary Contact + Alarm Contact |
| Switching capacity of contacts MDWH-BC1 and MDWH-AL and MDWH-AX | AC-14 | | 6 A/230 V ac - 3 A/400 V ac |
| | DC-12 | | 2 A/60 V dc - 1 A/125 V dc |
| | DC-13 | | 6 A/24 V dc - 2 A/48 V dc |
| Weight (kg) | 0,040 | | |

| Padlock | | | |
|---|---|---|---|
| Reference | Application | Padlock diameter | Units per package |
| MDW-PLW63 | MDWH (6 to 63 A) | Up to 5 mm | 50 |

*Example of application*

# Distribution Boards - QDW

The QDW distribution board line provides your home with quality, reliability and the tradition of the WEG brand, already known in industrial electric installations.

The QDWs are plastic panels with wall and flush mounting, dimensioned for the installation of 4 to 36 DIN standard circuit-breaker modules with smoked or white doors.

## Reference QDW

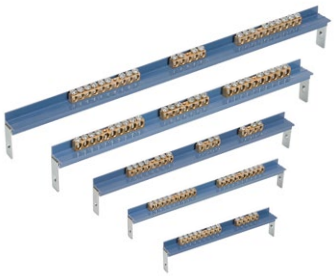
### Flush Distribution Boards

| Reference | Capacity of poles [1] | Cover Type |
|---|---|---|
| QDW02-4-FE | 4 | Smoked |
| QDW02-6-FE | 6 | |
| QDW02-8-FE | 8 | |
| QDW02-12-FE | 12 | |
| QDW02-18-FE | 18 | |
| QDW02-24-FE | 24 | |
| QDW02-36-FE | 36 | |
| QDW02-4-BE | 4 | White |
| QDW02-6-BE | 6 | |
| QDW02-8-BE | 8 | |
| QDW02-12-BE | 12 | |
| QDW02-18-BE | 18 | |
| QDW02-24-BE | 24 | |
| QDW02-36-BE | 36 | |

### Wall mounted Distribution Boards

| Reference | Capacity of poles [1] | Cover Type |
|---|---|---|
| QDW02-4-FS | 4 | Smoked |
| QDW02-6-FS | 6 | |
| QDW02-8-FS | 8 | |
| QDW02-12-FS | 12 | |
| QDW02-18-FS | 18 | |
| QDW02-24-FS | 24 | |
| QDW02-36-FS | 36 | |
| QDW02-4-BS | 4 | White |
| QDW02-6-BS | 6 | |
| QDW02-8-BS | 8 | |
| QDW02-12-BS | 12 | |
| QDW02-18-BS | 18 | |
| QDW02-24-BS | 24 | |
| QDW02-36-BS | 36 | |

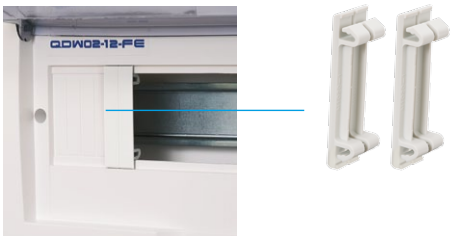
### Neutral and Ground Bar Kit for Distribution Boards



| Reference | For Panel | Mount |
|---|---|---|
| BTN02-8 | QDW02-8 | Flush and wall mounted |
| BTN02-12 | QDW02-12 | Flush and wall mounted |
| BTN02-18 | QDW02-18 | Flush and wall mounted |
| BTN02-24 | QDW02-24 | Flush and wall mounted |
| BTN02-36 | QDW02-36 | Flush and wall mounted |

## Protection Cover for Empty Poles of QDW

| Reference | Description | Units per package |
|---|---|---|
| TQW-2 | Protection cover for QDW | 5 |



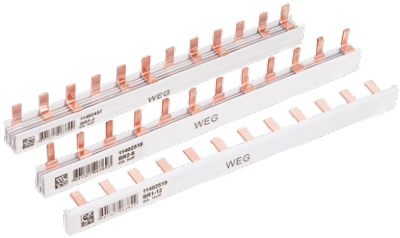

*Note: 1) Maximum number of poles considering MCBs MDW and MDWH up to 63 A or switch-disconnectors SIW up to 63 A .*

# Distribution Board Accessories

In order to ensure simple and safe installation, WEG developed the distribution accessory line. Among the accessories are the distribution bars, available in single, two and three-pole versions with capacity for 12 or 54 poles and current capacity up to 100 A, the insulators, which insulate the sides of the distribution bars or the bar terminals not used, the AL-BR connector, which simplifies and ensures the connection of cables from 6 to 25 mm² up to 100 A to the terminals of the components which already have a distribution bar connected.

## Distribution Bars

| Reference | Maximum current | To be used with MCB | Number of poles [1] | Units per package |
|---|---|---|---|---|
| BR1-12 | 100 A | Single-pole | 12 | 10 |
| BR2-6 | | Two-pole | | |
| BR3-4 | | Three-pole | | |
| BR1-54 | | Single-pole | 54 | 1 |
| BR2-27 | | Two-pole | | |
| BR3-18 | | Three-pole | | |




## Insulators

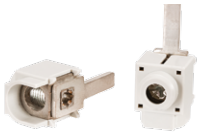
| Reference | Material | Application | Units per package |
|---|---|---|---|
| IS1 | Plastic | Side of single-pole bar | 50 |
| IS2 | | Side of two-pole bar | |
| IS3 | | Side of three-pole bar | |
| IPB | | Bar pin | 10 |

*IPB - 1 unit*

*Example of application de IPB*

## Connector

| Reference | Maximum current | Connection capacity | Number of poles | Units per package |
|---|---|---|---|---|
| AL-BR | 100 A | 6 - 25 mm² | 1 | 20 |



*Note: 1) To be used with MDW or MDWH.*

# Switch-Disconnectors - SIW

The SIW switch-disconnectors have the same frames as those of the MDW miniature circuit-breakers in two, three and four-pole versions, but they do not feature thermal and magnetic releases. Their function is only to disconnect electric circuits with currents up to 100 A, according to standard IEC 60943-3. The SIW switch-disconnectors feature auxiliary contact blocks and padlock supplied as accessories.

## Reference SIW

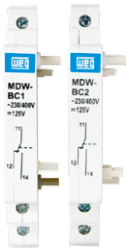
| Rated current $I_n$ (A) | Number of poles | References |
|---|---|---|
| 40 | 2 | SIW-40-2 |
| 63 | 2 | SIW-63-2 |
| 80 | 2 | SIW-80-2 |
| 100 | 2 | SIW-100-2 |
| 40 | 3 | SIW-40-3 |
| 63 | 3 | SIW-63-3 |
| 80 | 3 | SIW-80-3 |
| 100 | 3 | SIW-100-3 |
| 40 | 4 | SIW-40-4 |
| 63 | 4 | SIW-63-4 |
| 80 | 4 | SIW-80-4 |
| 100 | 4 | SIW-100-4 |

## Technical Data

| | | |
|---|---|---|
| Standard | | IEC 60947-3 |
| Rated operating voltage - Ue | | 400 V ac |
| Rated insulating voltage - Ui | | 500 V ac |
| Rated frequency | | 50/60 Hz |
| Rated currents - In | | 40 to 100 A |
| Number of poles | | 2, 3 and 4P |
| Ambient temperature | | -25 to 45 ºC |
| Electrical lifespan | | 6,000 operations |
| Mechanical lifespan | | 20,000 operations |
| Degree of protection | | IP20 |
| Connection capacity | SIW (40 to 63 A) | 1 to 25 mm² |
| | SIW (80 A, 100 A) | 10 to 35 mm² |
| Tightening torque on the terminals | | 2.0 to 4.0 N.m |
| Mounting position | | No restriction |
| Fixation | | DIN Rail 35 mm |
| Weight (kg) | Two-pole | 0,165 (40 to 63 A); 0,285 (80 A, 100 A) |
| | Three-pole | 0,248 (40 to 63 A); 0,428 (80 A, 100 A) |
| | Four-pole | 0,330 (40 to 63 A); 0,570 (80 A, 100 A) |

## Accessories

| Auxiliary contact blocks | | |
|---|---|---|
| Reference | Application | Type |
| MDW-BC1 | SIW (40 to 63 A) | 1 NOC (1 SPDT) |
| MDW-BC2 | SIW (80 A, 100 A) | |
| Technical data - auxiliary contact blocks | | |
| Switching capacity of contacts MDW-BC1 and MDW-BC2 | AC-14 | 6 A/230 V ac - 3 A/400 V ac |
| | DC-12 | 2 A/60 V dc - 1 A/125 V dc |
| | DC-13 | 6 A/24 V dc - 2 A/48 V dc |
| Weight (Kg) | | 0.040 |




| Padlock | | | |
|---|---|---|---|
| References | Application | Padlock diameter | Units per package |
| MDW-PLW63 | SIW (40 to 63 A) | Up to 5 mm | 50 |
| MDW-PLW100 | SIW (80 A, 100 A) | | |

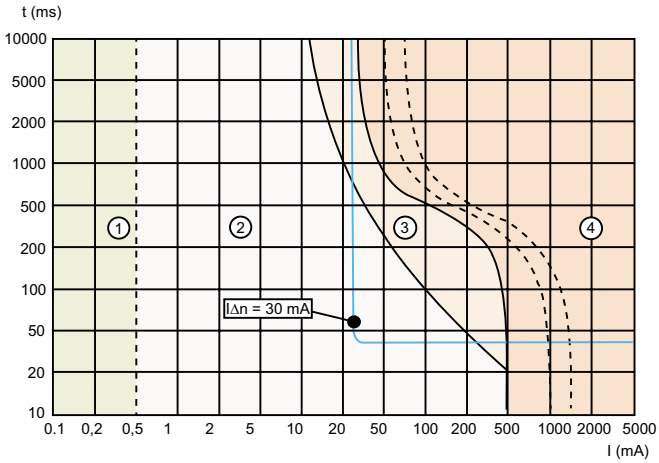
# Residual Current Circuit-Breakers - RDW

Available in two and four-pole versions, the RDW encompasses all possible supply schemes - single, two and three-phase with or without neutral. It works with currents up to 100 A and features earth leakage detection of 30 mA for personal protection, or 300 mA for property protection. The RDW includes padlock supplied as accessory.
The RDW residual current circuit-breaker analyzes the phasor sum of the currents that pass through it. The trip occurs when the sum of those currents is equal to or above the rated trip current. Electric shocks, improper installations or equipment are the factors that cause the trip.

## Perception Zones

- Zone 1
  No noticeable effect.
- Zone 2
  Physiological effects generally not harmful.
- Zone 3
  Noticeable physiological effects (cardiac arrest, respiratory arrest, muscle contractions, generally reversible).
- Zone 4
  High probability of serious and irreversible physiological effects - cardiac fibrillation, respiratory arrest.
  Actuation range of the RCCB with sensitiveness of 30 mA.

## Operation Curve




## Reference RDW

| Rated residual current (mA) | Rated current $I_n$ (A) | Reference | Number of poles |
|---|---|---|---|
| 30 | 25 | RDW30-25-2 | 2 |
| | 40 | RDW30-40-2 | 2 |
| | 63 | RDW30-63-2 | 2 |
| | 80 | RDW30-80-2 | 2 |
| | 100 | RDW30-100-2 | 2 |
| | 25 | RDW30-25-4 | 4 |
| | 40 | RDW30-40-4 | 4 |
| | 63 | RDW30-63-4 | 4 |
| | 80 | RDW30-80-4 | 4 |
| | 100 | RDW30-100-4 | 4 |
| 300 | 25 | RDW300-25-2 | 2 |
| | 40 | RDW300-40-2 | 2 |
| | 63 | RDW300-63-2 | 2 |
| | 80 | RDW300-80-2 | 2 |
| | 100 | RDW300-100-2 | 2 |
| | 25 | RDW300-25-4 | 4 |
| | 40 | RDW300-40-4 | 4 |
| | 63 | RDW300-63-4 | 4 |
| | 80 | RDW300-80-4 | 4 |
| | 100 | RDW300-100-4 | 4 |

## Technical Data

| | | |
|---|---|---|
| Standard | | IEC 61008 |
| Rated operating voltage - Ue | Two-pole | 230 V ac |
| | Four-pole | 230/400 V ac |
| Rated insulating voltage - Ui | | 500 V ac |
| Rated frequency | | 50/60 Hz |
| Rated residual currents - IΔn | | 30 or 300 mA |
| Rated currents In | | 25 to 100 A |
| Number of poles | | 2 and 4P |
| Type | | AC |
| Resistance against short-circuit | | 6 kA |
| Ambient temperature | | -25 to 40 ºC |
| Electrical lifespan | | 6,000 operations |
| Mechanical lifesan | | 10,000 operations |
| Degree of protection | | IP20 |
| Connection capacity | | 1 to 35 mm² |
| Tightening torque on the terminals | | 2.0 to 4.0 N.m |
| Mounting position | | No restriction |
| Fixation | | DIN Rail 35 mm |
| Weight (kg) | Two-pole | 0.255 |
| | Four-pole | 0.455 |

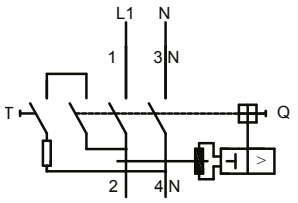
## Accessory

| Padlock | | | |
|---|---|---|---|
| References | Application | Padlock diameter | Units per package |
| MDW-PLW63 | All RDW line | Up to 5 mm | 50 |

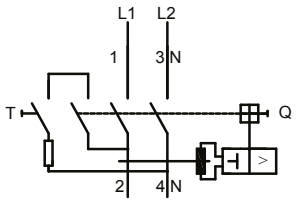
*Example of application*

## Wiring Diagrams

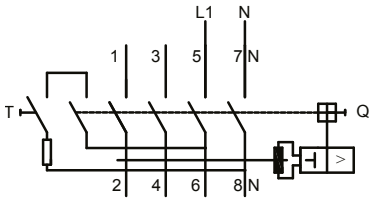
### Phase - Neutral with RDW - Two-Pole



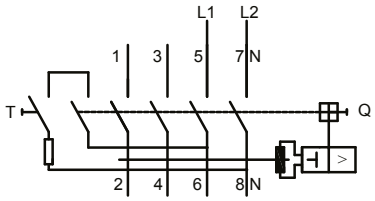

### 2 Phases with RDW - Two-pole



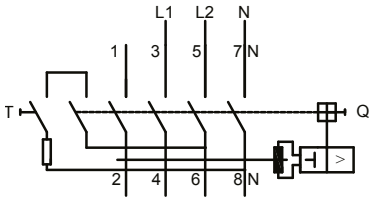

### Phase - Neutral with RDW - Four-pole



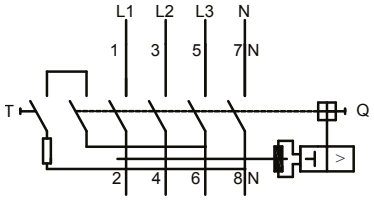

### 2 Phases with RDW - Four-pole



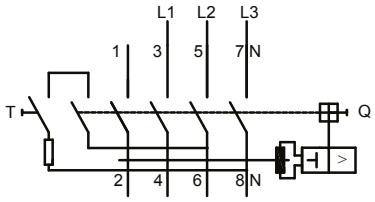

### 2 Phases - Neutral with RDW - Four-pole




### 3 Phases - Neutral with RDW - Four-pole




### 3 Phases with RDW - Four-pole




*Notes: 1) The two-pole RCDs are normally used in phase/neutral or phase/phase systems;*
*2) The four-pole RCDs can be used in any kind of network;*
*3) All the phase conductors, including the neutral, must be connected to the RDW; however, the ground conductor must not be connected. The neutral conductor in the output of the RDW must remain insulated all over the installation and must not be connected to the ground;*
*4) If you use a four-pole RDW as two-pole, the phase must pass through terminals 5-6 and the Neutral through 7-8 for the proper operation of the test button.*

# Surge Suppressors - SPW and SPWC

Available in the single-phase, plug-in version for degree of protection I and II, the SPW is a protection device against voltage surges in the power line. Developed in versions with or without remote signaling contact, the SPW features visual signaling to indicate the moment to replace the protection module, and it is divided into four models, according to the prospective maximum discharge current (wave 8/20 µs): 12, 20, 45 and 60 kA. Removable protection modules are supplied as replacement accessories to all the models.

## Protection Class

The surge protectors Class I are indicated for locals subject to direct and high intensity strokes, typical characteristic of installations and building supplied directly by overhead distribution power lines exposed to lightning discharges.
It is recommended the installation of the surge protector class I in the input point of power line in the building.
For locals where the power grid is subject to indirect lightning discharges, typical case of internal installations of homes and/or buildings supplied by embedded/underground power lines, the surge protectors Class II are recommended.
It is recommended to install them on the switch board panel.

## Reference SPW

| Reference | Protection class | Signaling contact | Maximum discharge current, wave 8/20 µs Imax (kA) | Rated discharge current, wave 8/20 µs In (kA) | Maximum impulse current, wave 10/350 µs limp (kA) | Protection level (kV) | Maximum operating direct voltage Uc (V) |
|---|---|---|---|---|---|---|---|
| SPW275-12 | II | No | 12 | 5 | - | 1.0 | 275 |
| SPW275-20 | II | No | 20 | 10 | - | 1.2 | 275 |
| SPW275-45 | II | No | 45 | 20 | - | 1.5 | 275 |
| SPW275-60/12.5 | II / I | No | 60 | 30 | 12.5 | 1.5 | 275 |
| SPWC275-12 | II | Yes | 12 | 5 | - | 1.0 | 275 |
| SPWC275-20 | II | Yes | 20 | 10 | - | 1.2 | 275 |
| SPWC275-45 | II | Yes | 45 | 20 | - | 1.5 | 275 |
| SPWC275-60/12.5 | II / I | Yes | 60 | 30 | 12.5 | 1.5 | 275 |

## Technical Data

| | | |
|---|---|---|
| Standard | | IEC 61643 |
| Maximum operating direct voltage - Uc | | 275 V ac (+5%) |
| Protection level - Up | SPW275-12 / SPWC275-12 | 1.0 kV |
| | SPW275-20 / SPWC275-20 | 1.2 kV |
| | SPW275-45 / SPWC275-45 | 1.5 kV |
| | SPW275-60/12.5 / SPWC275-60/12.5 | 1.5 kV |
| Rated frequency | | 50/60 Hz |
| Maximum discharge current - Imáx | | According to previous table |
| Rated discharge current - In | | According to previous table |
| Maximum impulse current - limp | | According to previous table |
| Protection class | | According to previous table |
| Signal contact | | According to previous table |
| Signal contact configuration | | NO |
| Number of poles | | 1 |
| Ambient temperature | | -5 to 40 ºC |
| Degree of protection | | IP20 |
| Connection capacity | | 1 to 25 mm² |
| Tightening torque on the terminals | | 2.0 to 3.0 N.m |
| Mounting position | | No restriction |
| Fixation | | DIN Rail 35 mm |
| Weight (kg) | SPW275-12 / SPWC275-12 | 0.105 |
| | SPW275-20 / SPWC275-20 | 0.110 |
| | SPW275-45 / SPWC275-45 | 0.115 |
| | SPW275-60/12.5 / SPWC275-60/12.5 | 0.120 |

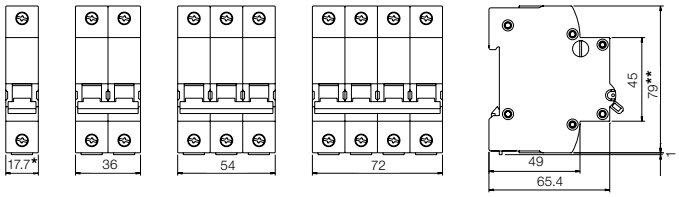
## Accessories

### Removable Protection Module

| Reference | Application | Protection class | Signaling contact | Maximum discharge current, wave 8/20 µs Imax (kA) | Rated discharge current, wave 8/20 µs In (kA) | Maximum operating direct voltage 10/350 µs Iimp (kA) | Protection level (kV) | Maximum operating direct voltage Uc (V) |
|---|---|---|---|---|---|---|---|---|
| SPW-M275-12 | SPW275-12 | II | No | 12 | 5 | - | 1.0 | 275 |
| SPW-M275-20 | SPW275-20 | II | No | 20 | 10 | - | 1.2 | 275 |
| SPW-M275-45 | SPW275-45 | II | No | 45 | 20 | - | 1.5 | 275 |
| SPW-M275-60/12.5 | SPW275-60/12.5 | II / I | No | 60 | 30 | 12.5 | 1.5 | 275 |
| SPWC-M275-12 | SPWC275-12 | II | Yes | 12 | 5 | - | 1.0 | 275 |
| SPWC-M275-20 | SPWC275-20 | II | Yes | 20 | 10 | - | 1.2 | 275 |
| SPWC-M275-45 | SPWC275-45 | II | Yes | 45 | 20 | - | 1.5 | 275 |
| SPWC-M275-60/12.5 | SPWC275-60/12.5 | II / I | Yes | 60 | 30 | 12.5 | 1.5 | 275 |

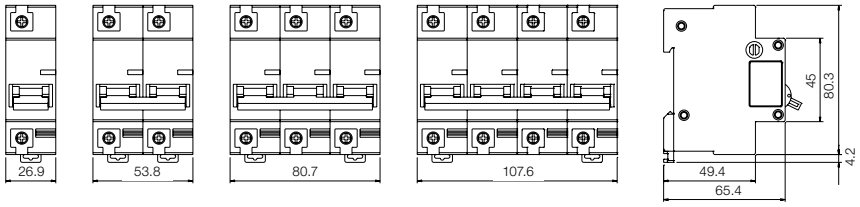
# Dimensions (mm)

## Line MDW (2 A...63 A) MDWH (6 A...63 A) SIW (40 A, 63 A)

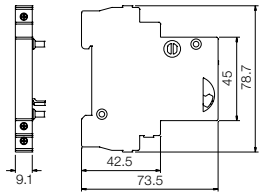



**MDWH = 18 mm*
***MDWH = 86 mm*

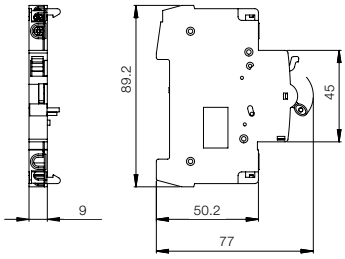
## Line MDW (70 A...125 A) SIW (80 A, 100 A)



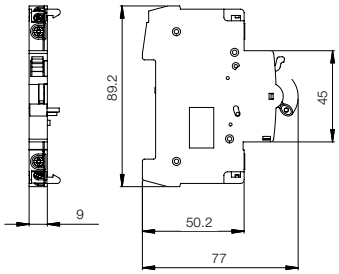

## MDW-BC1/BC2



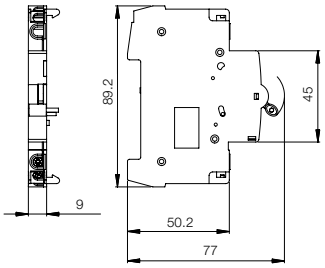

## MDWH - AL1



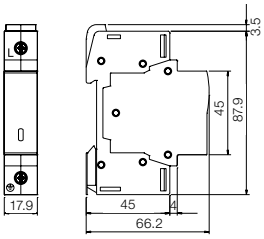

## MDWH - AX1



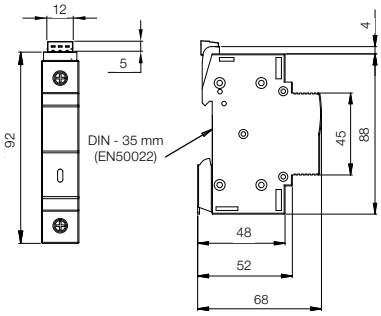

## MDWH - BC1



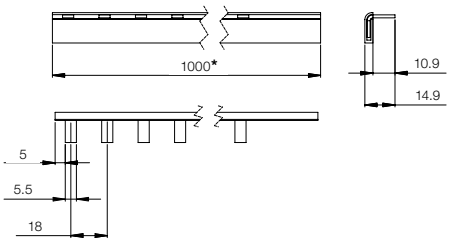

## Line SPW



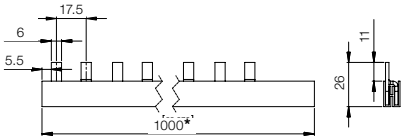

## Line SPWC



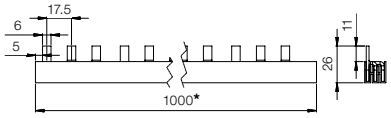

## BR1




## BR2

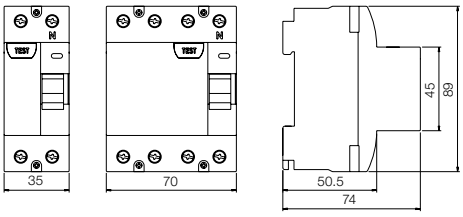



## BR3

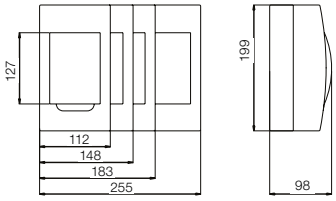
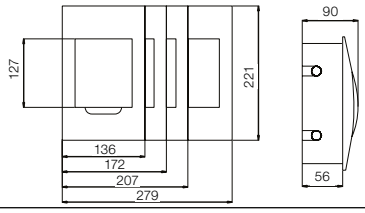
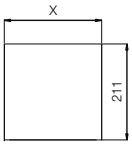
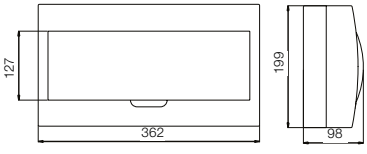
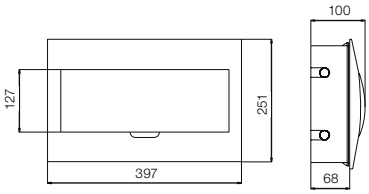
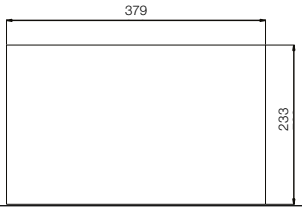
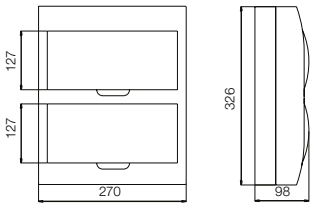
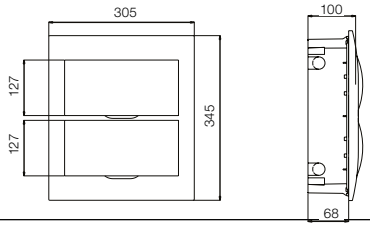
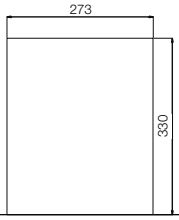
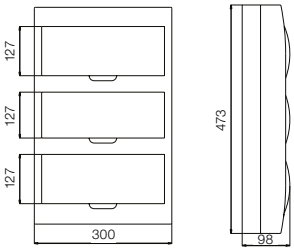
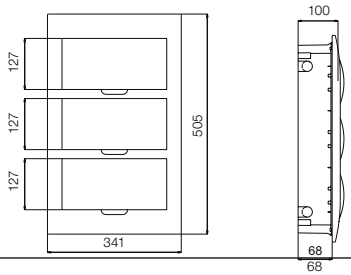
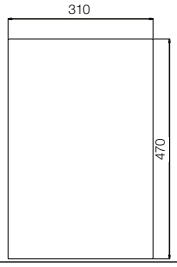



**Also supplied in the 12-pole version*

## Line RDW (2P, 4P)

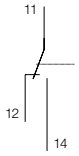



## Line QDW

| Max. number of MCBs | Wall-mounted | Flush | Wall recess for mounting |
|---|---|---|---|
| 4, 6, 8, 12 |   |   |   MCBs / X: 4 – 125; 6 – 160; 8 – 198; 12 – 270 |
| 18 |   |   |   |
| 24 |   |   |   |
| 36 |   |   |   |

# Wiring Diagrams

### MDW-BC

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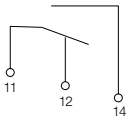
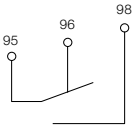
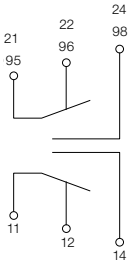



### SPWC

### MDWH AL-1




### MDWH AX-1



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