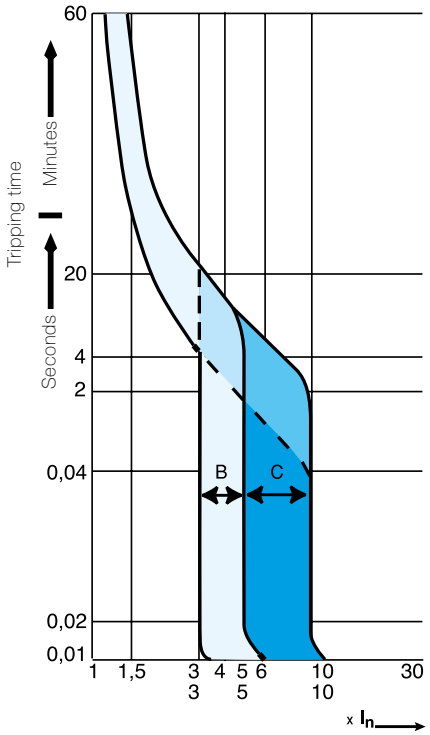
Miniature Circuit-Breakers - MDW and MDWH

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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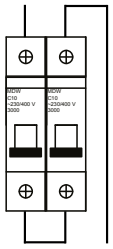
Technical Data MDW

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 °C
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)

1 - Single-pole connection



2 -Two-pole connection in series

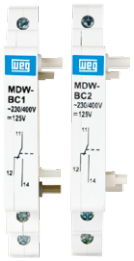
Notes: 1- single-pole connection; 2- two-pole connection in series.

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

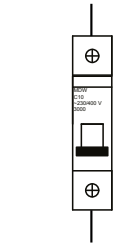
Reference	Current	Curve	IEC 60898 230/400 V ac Icn (kA)	IEC 60947-2 230/400 V ac Icu (kA)
MDWH-C6-3	6 A	C	10	10
MDWH-C10-3	10 A	C	10	10
MDWH-C16-3	16 A	C	10	10
MDWH-C20-3	20 A	C	10	10
MDWH-C25-3	25 A	C	10	10
MDWH-C32-3	32 A	C	10	10
MDWH-C40-3	40 A	C	10	10
MDWH-C50-3	50 A	C	10	10
MDWH-C63-3	63 A	C	10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

Four-Pole Miniature Circuit-Breakers

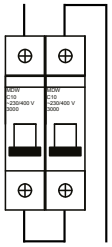
Reference	Current	Curve	IEC 60898 230/400 V ac Icn (kA)	IEC 60947-2 230/400 V ac Icu (kA)
MDWH-C6-4	6 A	C	10	10
MDWH-C10-4	10 A	C	10	10
MDWH-C16-4	16 A	C	10	10
MDWH-C20-4	20 A	C	10	10
MDWH-C25-4	25 A	C	10	10
MDWH-C32-4	32 A	C	10	10
MDWH-C40-4	40 A	C	10	10
MDWH-C50-4	50 A	C	10	10
MDWH-C63-4	63 A	C	10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



1 - Single-pole connection



2 - Two-pole connection in series

Notas: 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

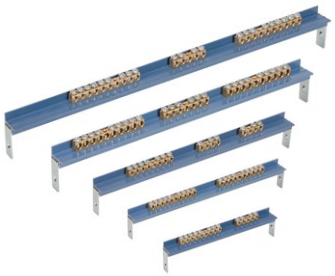
Flush Distribution Boards

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	

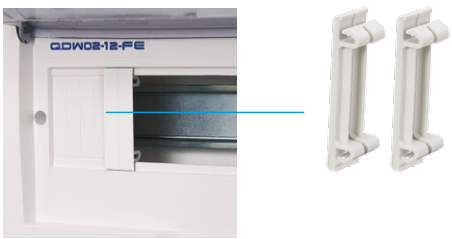
Neutral and Ground Bar Kit for Distribution Boards



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



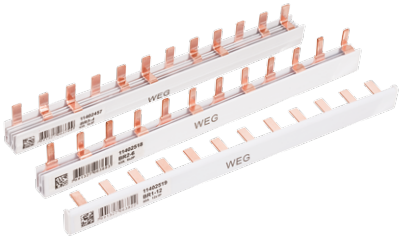
Note: 1) Maximum number of poles considering MCBs MDW and MDWH up to 63 A or switch-disconnectors SIW up to 63 A .

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

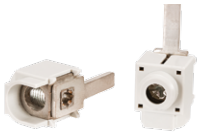
Reference	Material	Application	Units per package
IS1	Plastic	Side of single-pole bar	50
IS2		Side of two-pole bar	
IS3		Side of three-pole bar	
IPB		Bar pin	10

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)