RCBO - MDC

Technical data

TYPE				MDC 45		MDC 60		MDC 100		MDC 100 MA
										
Standards				IEC EN 61009-1 IEC EN 61009-2-1		IEC EN 61009-1 IEC EN 61009-2-1 IEC EN 62423 (type F)		IEC EN 61009-1 IEC EN 61009-2-1 IEC EN 62423 (type F)		IEC EN 61009-1 IEC EN 61009-2-1
Rated current (In)			(A)	6-32		6-32		6-32		6-32
Utilization category				A		A		A		A
Rated operational voltage (Ue)			(V AC)	230/400 - 240/415		230/400 - 240/415		230 - 240		110
Insulation voltage (Ui)			(V)	500		500		500		500
Rated frequency			(Hz)	50/60		50/60		50/60		50/60
Rated impulse withstand voltage (Uimp)			(kV)	4		4		4		4
Overvoltage category:				III		III		III		III
Number of poles				1+N,2	3, 4	1+N,2	3, 4	2, 3		2
Energy limiting class (B and C)				3	1	3	1	3		3
Breaking capacity										
Alternating current	IEC/EN 61009-1	Icn	(A)	4500		6000		10000		10000
		Ics	(A)	1 Icn		1 Icn		0.75 Icn		0.75 Icn
	IEC/EN 60947-2	Icu 230/240 V	(kA)	6	-	10	-	15		15
		Icu 400/415 V	(kA)	-	4,5	-	6	-		-
		Ics	(kA)	100% Icu		75% Icu	100% Icu	50% Icu		50% Icu
Rated residual operating current (IΔn)			(mA)							
Type		AC		30		30		30		30
				300		300		300		-
		A		30		30		30		30
				-		-		100		-
				300		300		300		-
		A[IR]		-		30		30		-
		A[S]		-		300		-		-
		F		-		30		30		-
Level of immunity (8/20 µs)			(A)	250		250 (for AC and A types) 3000 (for A[IR], A[S], F types)		250 (for AC and A types) 3000 (for type A[IR], F)		250
Residual making and breaking capacity (IΔm)			(A)	4500		4500		4500		4500
Voltage independent working:				YES		YES		YES		YES
Wiring	cable section (mm²)[1]	rigid		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10
		flexible		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10
Electrical endurance				10000		10000		10000		10000
Mechanical endurance				20000		20000		20000		20000
Max. no. of usable modular accessories				2		2		2		2
Upline/Downline power supply				YES		YES		YES		YES
Status displayed				YES		YES		YES		YES
Mounting position:				any		any		any		any
Rated tightening torque:			(Nm)	2		2		2		2
Screwdriver suggested				PZ2		PZ2		PZ2		PZ2
Degree of protection	terminals			IP20		IP20		IP20		IP20
	front			IP40		IP40		IP40		IP40
Pollution degree:				2		2		2		2
Tropicalization				55°C - RH 95%		55°C - RH 95%		55°C - RH 95%		55°C - RH 95%
Reference temperature			(°C)	30		30		30		30
Operating temperature			(°C)	-25 +60 [2]		-25 +60 [2]		-25 +60 [2]		-25 +60 [2]
Stocking temperature			(°C)	-40 +70		-40 +70		-40 +70		-40 +70
Double connection (cable+fork busbar)				yes (only downstream terminals)		yes (only downstream terminals)		yes (only downstream terminals)		yes (only downstream terminals)
Weight per pole			(g)	120		120		120		120
Curve				C		C	B	C	B	C
Rated currents available (In)			(A)	6		6	6	6	6	6
				10		10	10	10	10	10
				13		13	13	13	13	13
				16		16	16	16	16	16
				20		20	20	20	20	20
				25		25	25	25	25	25
				32		32	32	32	32	32

[1] Minimum cable section is 1mm²

[2] With temperatures greater than 30°C, derating of In rated current is expected

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ADD-ON RCD - BD - BDHP

Technical data

TYPE			BD		BDHP	BDHP ADJUSTABLE
						
Standards			**IEC EN 61009-1 Annex G IEC EN 61009-2-1**		**IEC EN 61009-1 Annex G IEC EN 61009-2-1**	**EN 60947-2 app. B**
Rated current (In)		**(A)**	≤ 25	≤ 63	≤ 125	≤ 125
Rated operational voltage (Ue)		**(V AC)**	230/400		230/400	400
Insulation voltage (Ui)		**(V)**	500		500	500
Rated frequency		**(Hz)**	50/60		50/60	50
Rated impulse withstand voltage (Uimp)		**(kV)**	4		4	4
Overvoltage category:			III		III	III
Number of poles			2,3,4		2,3,4	4
Rated residual operating current (IΔn)		**(mA)**				
Type		**AC**	10 [1]	-	-	-
			30	30	30	-
			300	300	300	-
			500	500	-	-
		A	30	30	30	-
			300	300	300	-
			500	500	-	-
		A[IR]	-	30	-	-
		A[S]	-	300	300	-
			-	1000	1000	-
		A[Adj.]	-	-	-	300 - 500 - 1000 - 3000
Adjustable tripping time (t)		**(ms)**	-		-	0 - 60 - 150
Level of immunity (8/20 µs)		**(A)**	250 (for AC and A types) 3000 (for A[IR] and A[S] types)		250 (for AC and A types) 3000 (for A[S] type)	3000
Residual making and breaking capacity (IΔm)		**(A)**	Icn circuit breaker		Icn circuit breaker	Icn circuit breaker
Voltage independent working:			YES		YES	YES
Wiring	**cable section (mm^2)**	**rigid**	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x70 - ≤ 2x25 - ≤ 2x25+1x10	≤ 1x70 - ≤ 2x25 - ≤ 2x25+1x10
		flexible	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10		≤ 1x50 - ≤ 2x25 - ≤ 3x16	≤ 1x50 - ≤ 2x25 - ≤ 3x16
Upline/Downline power supply			YES		YES	YES
Mounting position:			any		any	any
Rated tightening torque:		**(Nm)**	2		3.5 / 3 (terminal)	3.5 / 3 (terminal)
Screwdriver suggested			PZ2		PZ2	PZ2
Degree of protection	**terminals**		IP20		IP20	IP20
	front		IP40		IP40	IP40
Pollution degree:			2		2	2
Tropicalization			55°C - RH 95%		55°C - RH 95%	55°C - RH 95%
Reference temperature		**(°C)**	30		30	30
Operating temperature		**(°C)**	-25 +40		-25 +40	-25 +40
Stocking temperature		**(°C)**	-40 +70		-40 +70	-40 +70
Weight per pole		**(g)**	100		200	200

[1] Only for 2P versions

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RCCB - IDP

Technical data

TYPE			IDP NA	IDP	IDP 4P (3M)	SD K	IDP 125A
							
Standard			**IEC EN 61008-1 IEC EN 61008-2-1**	**IEC EN 61008-1 IEC EN 61008-2-1 IEC 62955 (type A[EV]) IEC EN 62423 (type F and B)**	**IEC EN 61008-1 IEC EN 61008-2-1**	**IEC EN 61008-1 IEC EN 61008-2-1**	**IEC EN 61008-1 IEC EN 61008-2-1**
Rated current (In)		**(A)**	25-40-63	25-80	25-40	80-100	125
Rated operational voltage (Ue)		**(V a.c.)**	230/400 - 240/415	230/400 - 240/415 110 (for MA versions)	400	400 - 415	400
Insulation voltage (Ui)		**(V)**	500	500	500	400	400
Rated impulse withstand voltage (Uimp)		**kV**	4	4	4	4	4
Overvoltage category			III	III	III	III	III
Rated frequency		**(Hz)**	50	50/60	50/60	50	50
Poles			2 (Up to 40A) 4 (Up to 63A)	2, 4	4	4	4
Number of modules			2 (2P) 4 (4P)	2 (2P) 4 (4P) 4 (2P/4P type A[EV] and B)	3	4	4
Rated residual operating current (IΔn)		**(mA)**					
Type	**AC**		-	10 [1]	-	-	-
			30	30	30	30	30
			-	100	100	-	-
			300	300	300	300	300
			-	500	500	-	-
	A		-	10 [1]	-	-	-
			30	30	30	30	30
			-	100	100	-	-
			300	300	300	300	300
			-	500	500	-	500
	IR - Impulse resistant		-	30	-	30	-
			-	300	-	-	-
	EV - electric vehicles [2]		-	30	-	-	-
	S - Selective		-	300	-	300	300
			-	500	-	-	-
	F		-	30	-	-	-
	B		-	30	-	-	-
			-	300	-	-	-
Level of immunity (8/20μs)		**(A)**	250	250 (Type AC - A) 3000 (type A[IR], A[S], A[EV], F and B)	250	250 (Type AC - A) 3000 (Type A[IR] - A[S])	200 (type AC and A) 3000 (type A[S])
Residual making and breaking capacity (Idm)		**(A)**	10 x In (630A min)	10 x In (630A min)	630	800 (80A) - 1000 (100A)	1250
Making and breaking capacity (Im)		**(A)**	10 x In (630A min)	10 x In (630A min)	630	800 (80A) - 1000 (100A)	1250
Voltage independent working			yes	yes	yes	yes	yes
Wiring	**Cable section (mm²)** [3]	**rigid**	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10	≤35	≤50
		flexible	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10	≤ 1x35 - ≤ 2x16 - ≤ 1x16+2x10	≤ 1x25 - ≤ 1x16+1x10 - ≤ 3x6	≤35	≤50
Electrical endurance			5000	10000	5000	4000	4000
Mechanical endurance			10000	20000	10000	10000	10000
Upstrem / Downstream supply			yes	yes	yes	yes	yes
Mounting position			any	any	any	any	any
Rated tightening torque		**(Nm)**	2	3	2	2	2,5
Screw type			PZ2	PZ2	PZ2	PZ2	PZ2
Pollution degree			2	2	2	2	2
Fire resistance			Glow wire Test IEC 60695-2-11 according with IEC 61008-1				
IP degree (inside the distribution board)			IP40	IP40	IP40	IP40	IP40
Tropicalization			55°C - UR 95%	55°C - UR 95%	55°C - UR 95%	55°C - UR 95%	55°C - UR 95%
Installation altitude		**(m)**	≤ 2000	≤ 2000	≤ 2000	≤ 2000	≤ 2000
Operating temperature (average daily temperature ≤35°C)		**(°C)**	-5 ÷ +40	-25 ÷ +60 [4]	-25 ÷ +40	-25 ÷ +40	-25 ÷ +40
Storage temperature		**(°C)**	-40 ÷ +70	-40 ÷ +70	-40 ÷ +70	-35 ÷ +60	-35 ÷ +60
Double connection (cable + fork busbar)			no (for 2P) yes (only downstream for 4P)	yes (Upstream and downstream)	yes (Upstream and downstream)	yes (Upstream and downstream)	yes (Upstream and downstream)
Signalization of the relay tripping			no	yes	no	no	no
Weight of device		**(g)**	160 (2P), 300 (4P)	175 (2P), 320 (4P) 275 (2P type A[EV] and B) 340 (4P type A[EV] and B)	280	350	350

[1] Up to 25A
[2] Type A[EV] trips in the event of a fault current with smooth residual direct current equal to or above 6mA
[3] Minimum cable section is 1.5mm²
[4] With temperatures greater than 40°C, derating of In rated current is expected

RATED CONDITIONAL RESIDUAL SHORT-CIRCUIT CURRENT IΔc (kA)

Rated current In		25A / 40A (NA)		25A / 40A			63A(NA)	63A	80A		100A	125A
Poles		2P	4P	2P	4P	4P (3M)	2P/4P	2P/4P	2P	4P	4P	4P
Fuse	gG 63A	6	6	10	10	6	6	10*	-	-	-	-
	gG 80A	-		-	-	-	-	10	6	10	-	-
	gG 100	-		-	-	-	-	-	-	-	10	-
	gG 125	-		-	-	-	-	-	-	-	-	10
MCB	MTC 45	4,5					4,5		-		-	-
	MTC 60	6					6		-		-	-
	MTC 100	10					10		-		-	-
	MT 45	4,5					4,5		-		-	-
	MT 60	6					6		-		-	-
	MT 100	10					10		-		-	-
	MT 250	10					10		-		-	-
	MTHP 160	-					10		10		10	10
	MTHP 250	10					10		-		-	-

* Only A[EV], F and B type RCCBs

For technical information contact the Technical Assistance Service or visit gewiss.com

MDC 45 - 60 - 100 compact residual current circuit breakers with overcurrent protection

Technical characteristics

For circuit overcurrent protection and the residual current protection of devices and services, there are the MDC 45, MDC 60 and MDC 100 compact residual current circuit breakers with overcurrent protection.

The MDC compact miniature circuit breakers with residual current release have a thermomagnetic part with the same characteristics as the MTC circuit breakers. The residual current release - assembled in the factory inside the same modular shell - is available in AC, A, A[IR] impulse resistant, A[S] selective and F versions with a rated residual current of 30, 100 and 300 mA.

Some advice about selection and installation

Due to their design, RCCBs are sensitive devices and therefore more exposed to phenomena that can cause an untimely trip (the RCCB trips without a real fault). The untimely trips are usually caused by atmospheric perturbations, such as electric discharges generated by lightening, operations performed on the electric distribution network, disturbances generated by industrial equipments and the presence of electronic filters in the electric circuit (also inside of common household appliances) that create permanent leakage currents towards earth.

The problems caused by an untimely trip of a residual current circuit breaker can range, in a domestic environment, from a limited inconvenience due to having to reset the RCCB, to more considerable economic damage due to the loss of the content of a freezer.

In the industrial and tertiary sectors, where the systems are extended and the service continuity must be more guaranteed, the amount of damage is certainly larger; it is sufficient to think of application areas such as photovoltaics, telecommunications, Electronic Data Processing, public lighting or monitoring systems in order to understand how the continuity of electrical services plays a fundamental role for economic return on investment, productivity and public safety.

A possible measure that can be taken to prevent the inappropriate tripping of the circuit breakers would be to install GEWISS **reinforced immunity RCCBs**, which are identified with the letters **IR** and characterised by greater resistance against the causes of the untimely trips, in comparison to standard versions.

More specifically, the **IR RCCBs** are able to:

- not trip in the case of atmospheric as well as operational overvoltages because the level of immunity against the impulsive residual current with normalised form 8/20 µs reaches the value of 3000A (for standard versions, the peak values arrives up to 250A);
- not trip in the case of temporary earth leakages that occur when turning on electronic devices equipped with filters present in the power supplies of the most common equipments, such as PCs, decoders, variable speed electronic household appliances (air conditioners, washing machines, etc.), power supplies for lamps and dimmers.

In addition to the characteristics of type IR, **type F** guarantees also protection against indirect contacts due to variable-frequency earth faults which are generated in the presence of a single-phase frequency converter, or inverter, i.e. a device used in domestic and industrial appliances, such as washing machines, vacuum cleaners, dishwashers, ventilation systems, pumps, etc ... to regulate the speed of an electric motor, acting on the voltage and frequency of the power supply. Inverter technology is increasingly widespread in modern equipment because it allows to reduce energy consumption by improving the performance of electric motors.

Unlike the IR type, the **selective RCCB** has a delayed tripping action that cannot be adjusted because it is set according to the Standard CEI EN 61008 and 61009 that supply the table shown hereunder where it is clear the relationship between the fault current and the tripping time. Thanks to the S type RCCB, in case of a leakage fault, it is possible to minimise the parts of the system that are out of service by creating a vertical selectivity between the low sensitivity circuit breaker installed upstream and circuit breakers with higher sensitivity connected downstream (see the above illustration).

Type	In [A]	IΔ [A]	Standard values of break time (s) at a residual current (IΔ)			
			1xIΔ	2xIΔ	5xIΔ	500 A
General	Any value	Any value	0,3	0,15	0,04	0,04
S (Selective)	Any value	> 0,030	0,13-0,5	0,06-0,2	0,05-0,15	0,04-0,15

In detail, the S type provides total or chronometric selectivity between two devices installed in series. Thanks to the intrinsic delay of the S type, the tripping time of the instantaneous residual current circuit breaker located downstream is always less than the delay time of the S type, which guarantees the perfect coordination between the two devices.

MDC temperature performance

In (A)	Temperature					
	10°C	20°C	30°C	40°C	50°C	60°C
6	7.2	6.6	6	5.7	5.3	5
10	11.8	10.8	10	9.6	9.1	8.6
13	14.8	14	13	12.2	11.2	10.3
16	18.2	17.2	16	15.2	14.3	13.4
20	22.8	21.4	20	19.5	18.9	18.4
25	28.5	26.8	25	24	23	22
32	36.5	34.2	32	30.8	29.5	28,2

MDC power loss per pole

In (A)	6		10		13		16		20		25		32	
	Pole	N	Pole	N	Pole	N	Pole	N	Pole	N	Pole	N	Pole	N
R (mΩ)	29.4	2.6	20.6	2.6	14.5	2.6	8.9	2.6	6.8	2.6	4.6	2.6	3.6	2.6
P (W)	1.06	0.09	2.06	0.26	2.45	0.44	2.28	0.67	2.72	1.04	2.88	2	3.67	2.66

BD - BDHP add-on for miniature circuit breaker

Add-on for MT (BD) and MTHP (BDHP) miniature circuit breakers, which can be coupled by the installer once only (in compliance with Standard CEI EN 61009, appendix G). AC, A, A[IR] impulse resistant, A[S] selective and adjustable types are available.

BD and BDHP power loss per pole

Power loss (W)		Rated current of the associated MT/MTHP miniature circuit breaker [A]																
		1	2	3	4	6	10	13	16	20	25	32	40	50	63	80	100	125
BD add-on	2P	0.01	0.04	0.01	0.02	0.04	0.11	0.2	0.29	0.45	0.70	0.45	0.70	1.10	1.75	-	-	-
	3P-4P	0.002	0.008	0.02	0.03	0.07	0.21	0.37	0.53	0.83	1.30	0.65	1.00	1.60	2.50	-	-	-
BDHP add-on		-	-	-	-	-	-	-	-	0.2	0.3	0.5	0.8	1.25	2	1.4	2.2	3.4

IDP residual current circuit breakers

Technical characteristics

Two-pole and four-pole residual current circuit breakers without built-in overcurrent releases - free release monobloc. AC type devices with instantaneous tripping are available (for residual sinusoidal alternating currents only), whereas A type residual current circuit breakers (suitable for residual one-way pulsating currents) are available in instantaneous, impulse-resistant and selective versions. The RCCBs type A[EV] for the protection of electric vehicle charging points, in addition to guaranteeing the characteristics of an A[IR] type, are suitable for protection against smooth residual direct current equal to or above 6 mA. The range also includes RCCBs type F with the same immunity level of IR type (Impulse Resistant) for the protection of variable-frequency earth faults. Moreover RCCBs type B with the same immunity level of IR type are available for the protection of electrical loads which can create earth fault currents with a direct component.

IDP temperature performance

In (A)	Temperature			
	30°C	40°C	50°C	60°C
25	25	25	22,5	20
40	40	40	36	32
63	63	63	56,7	50,4
80	80	80	-	-
100	100	100	-	-
125	125	125	-	-

Power loss per device (W)

		Rated current In (A)					
Poles	No. of modules	25	40	63	80	100	125
Type AC, A, A[IR], A[S] and F							
2	2	2,9	7,8	8,1	12,9	-	-
4	3	2,4	5,9	-	-	-	-
	4	4,4	11,7	12,2	21,6	23,4	36
Type A[EV], B							
2	4	1	2,6	6,2	-	-	-
4	4	1,4	3,8	9,1	-	-	-

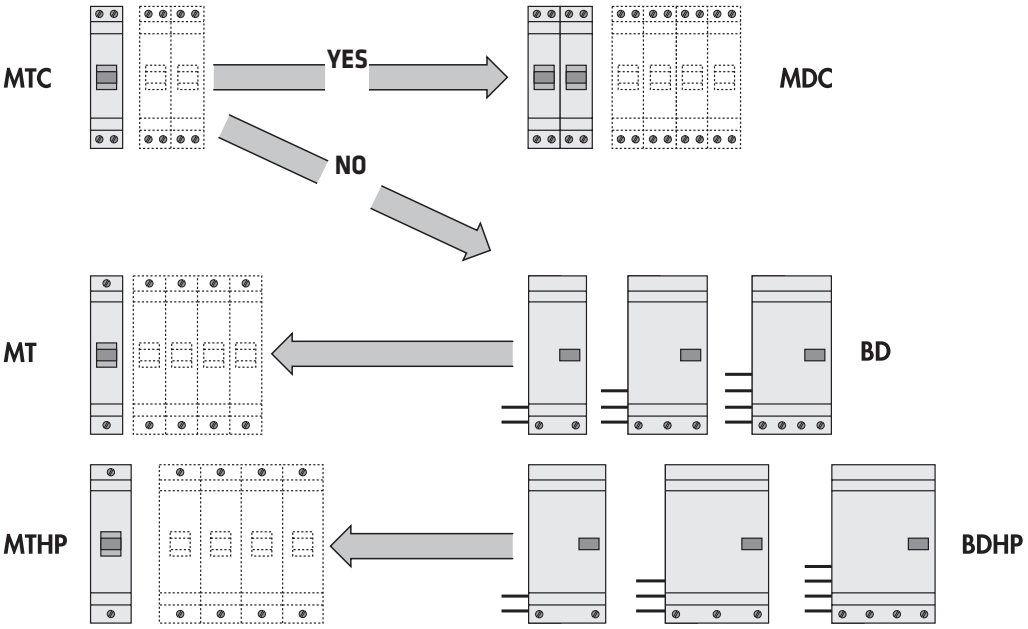
Composition rules for the modular residual current circuit breakers

In order to obtain a residual current circuit breaker from a miniature circuit breaker, it is necessary to observe these rules:

1 - there is no residual current device that can be associated with the MTC circuit breakers. There is the MDC compact monobloc residual current circuit breaker with overcurrent protection.

2 - the BD add-on residual current device can only be associated with the MT circuit breakers.

3 - the BDHP add-on residual current device can only be associated with the MTHP circuit breakers.



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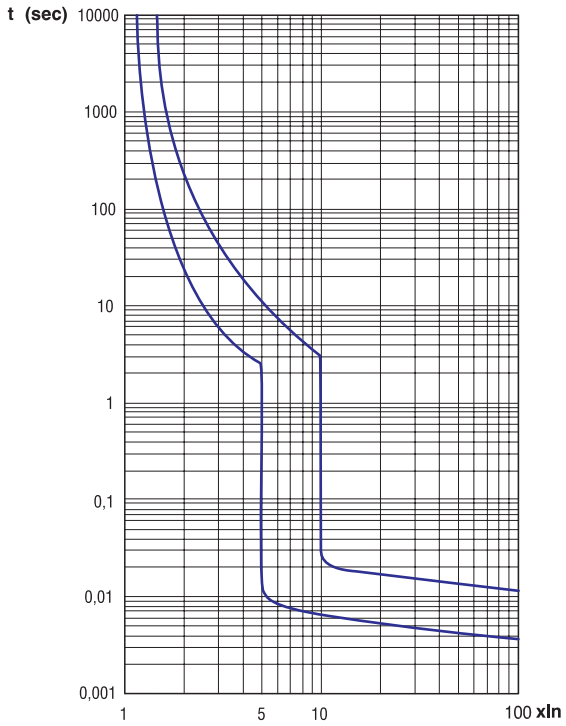
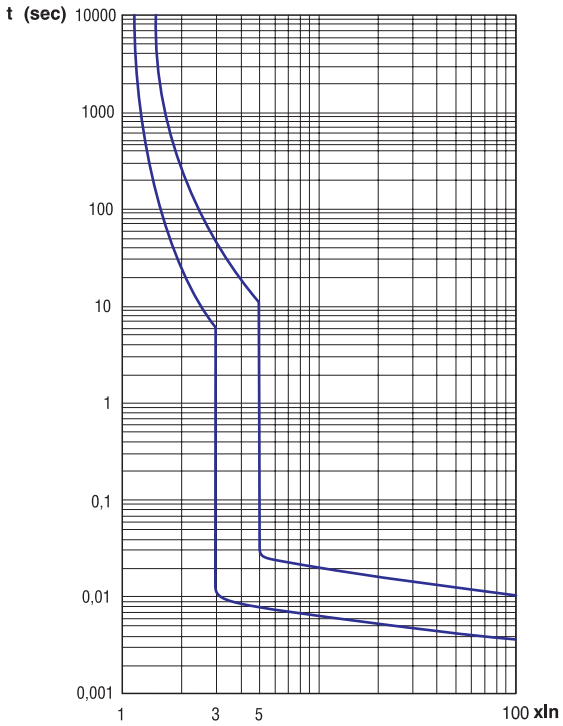
Tripping characteristics

Termo-magnetic release

MDC 45 - 60 - 100 Characteristic C

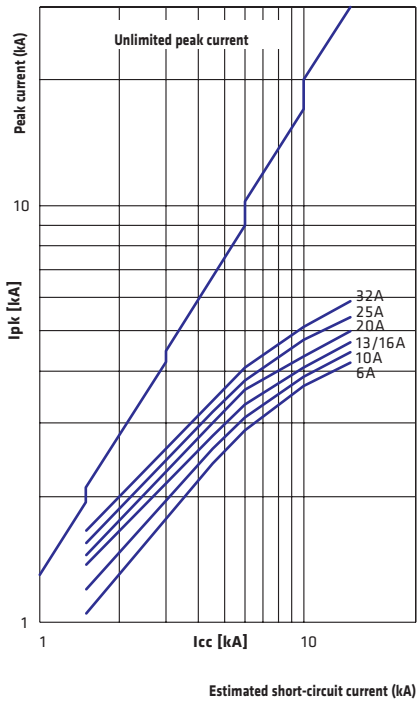


MDC 60 - 100 Characteristic B

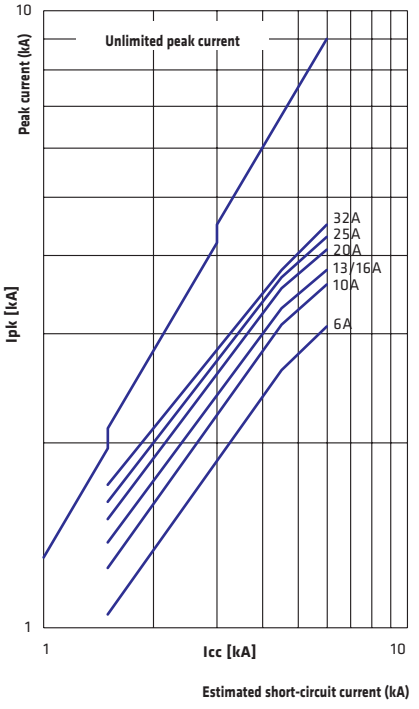


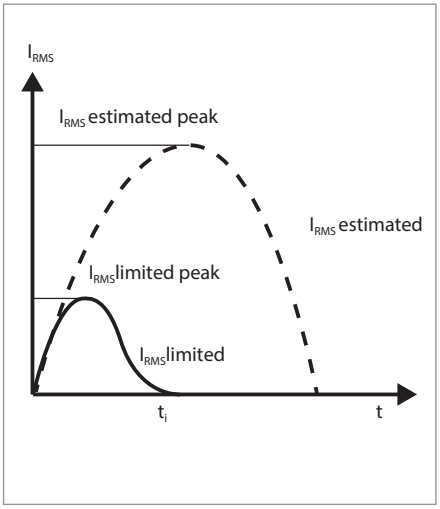
Peak current limitation characteristics

MDC - 1P+N, 2P - 230V version



MDC - 3P, 4P - 400V version

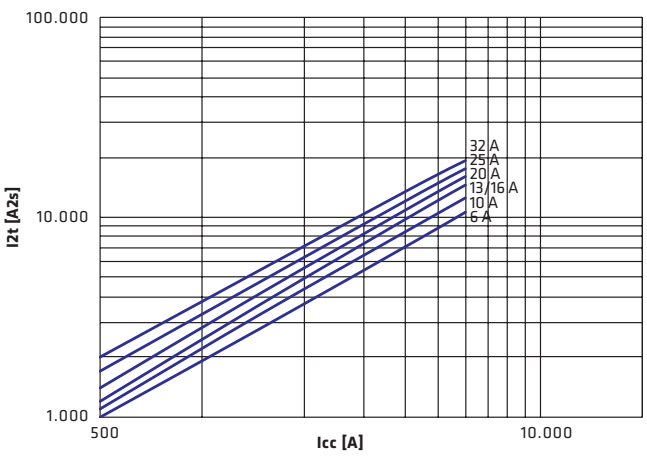




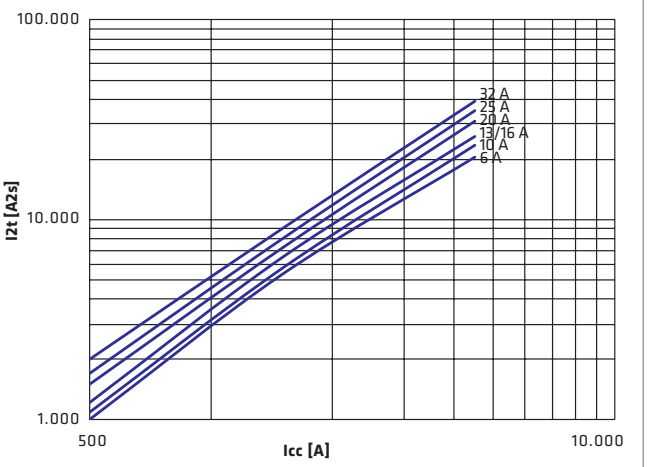
The following curves give the values of the peak current in relation to the estimated short-circuit current expressed in kA. Every curve refers to each rated current value of circuit breaker.

Specific let-through energy characteristics

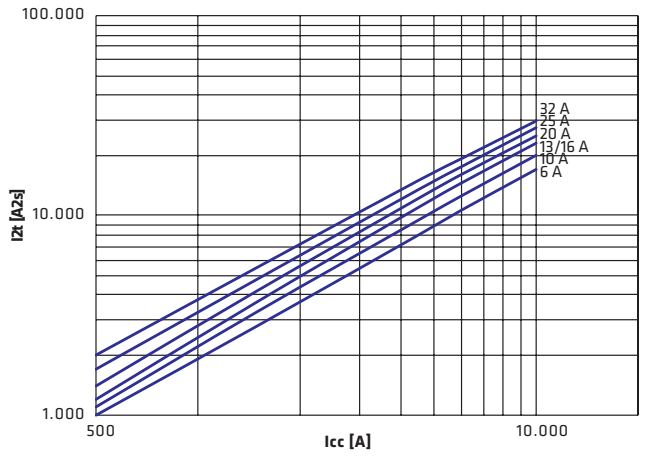
MDC 45 - 1P+N, 2P - 230V versions



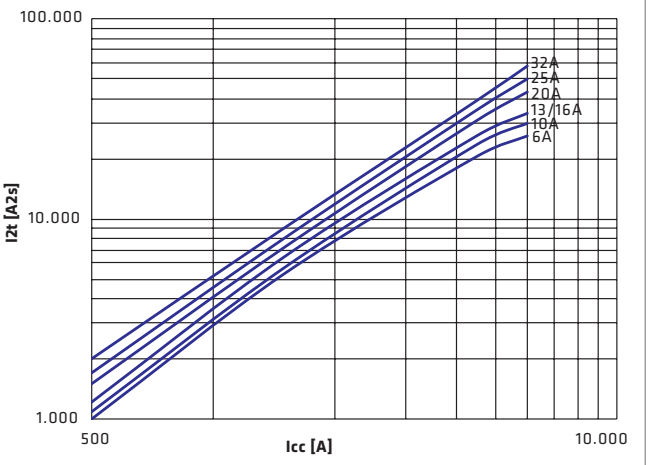
MDC 45 - 3P, 4P - 230/400V versions



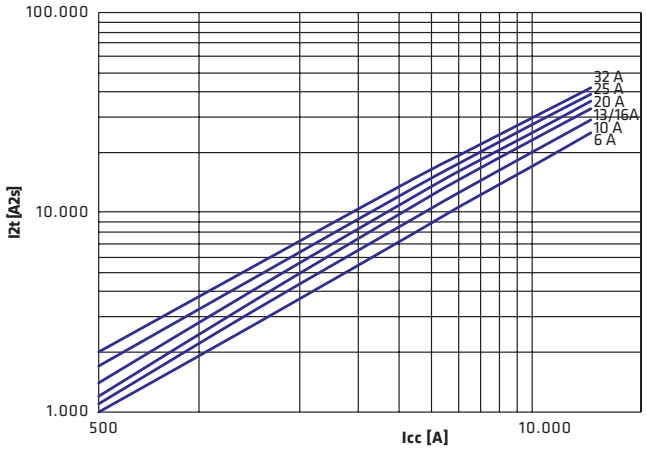
MDC 60 - 1P+N, 2P - 230V versions

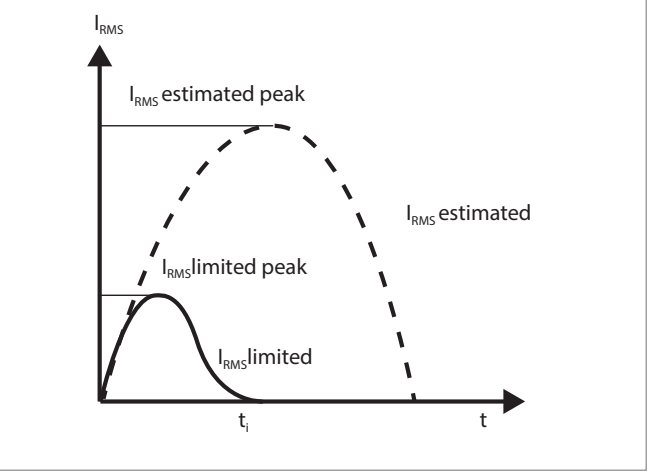


MDC 60 - 3P, 4P - 230/400V versions



MDC 100 - 1P+N, 2P - 230V versions





The curves above give the values of the specific let-through energy in relation to the short-circuit current expressed in A. Every curve refers to each rated current value of circuit breaker.

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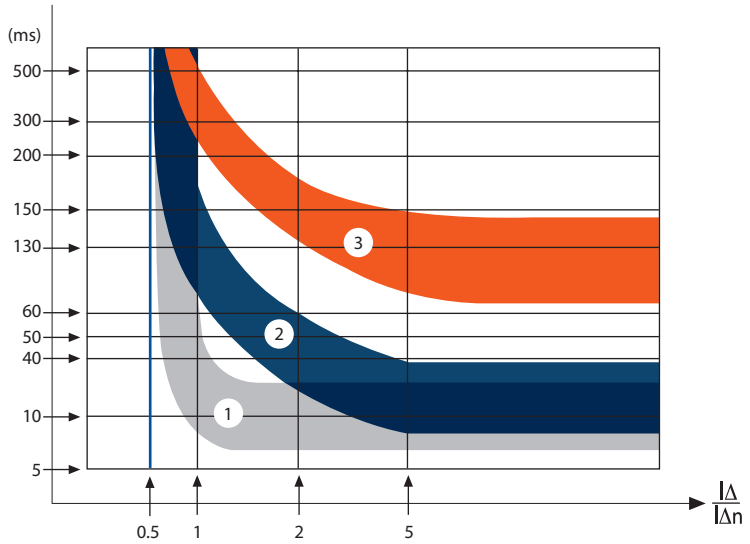
Residual current circuit breaker tripping characteristics

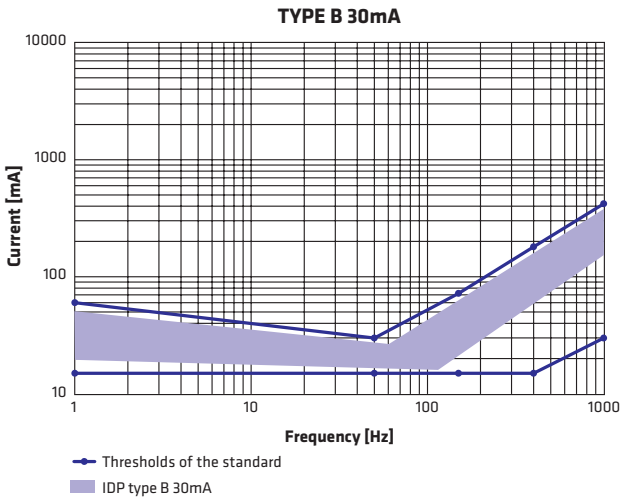
RCD TYPE	AC	A	F	B	Level of immunity (8/20μs)
RESIDUAL FAULT CURRENT TYPE	• Sinusoidal alternating	• Sinusoidal alternating • Pulsanting	• Sinusoidal alternating • Pulsanting • Variable frequency	• Alternating sinusoidal • Pulsanting • Variable frequency • Smooth DC	
1. INSTANTANEOUS First level of residual current protection against direct and indirect contacts	✓	✓			250A
2. REINFORCED IMMUNITY Prevention of untimely interventions due to: • overvoltages due to indirect lightning strikes (8/20 μs impulse current waveform up to 3000A) • overvoltages due to maneuvres on electrical network • overvoltages due to earth fault on three-phase system • permanent harmonics due electronic devices (immunity to currents with frequency higher than 50Hz) • starting current (immunity to the ring wave waveform)		✓	✓	✓	3000A
3. SELECTIVE Second level of residual-current protection for total or chronometric selectivity with downstream RCDs		✓			3000A
4. EV Suitable for protection against smooth residual direct current equal to or above 6 mA.		✓			3000A

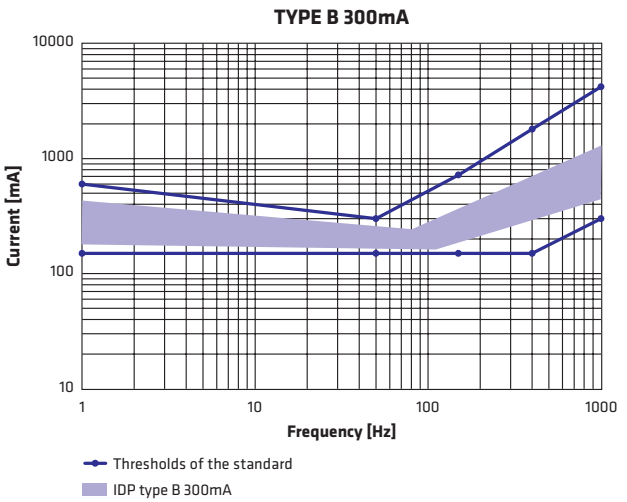
MDC - BD - BDHP - IDP



1. Istantaneous type = AC, A
2. Reinforced immunity type = A[IR], A[EV], F, B
3. Selective type = A[S]

IDP TYPE B – TRIPPING CURVE AS A FUNCTION OF FREQUENCY





RESIDUAL CURRENT PROTECTION FOR ELECTRIC VEHICLE CHARGING POINTS

RCD protection for charging points

Each charging point with a type 2 socket must be protected individually with RCD with Idn not exceeding 30mA and chosen from the following types:

- Type B, or
- Type A [EV], or
- Type A, A[IR] or F, each in conjunction with a residual direct current detection device (RDC-DD) compliant with **CEI IEC TS 62955** (additional DC leakage protection device which operates where a smooth residual direct current equal to or above 6 mA is detected)

Residual protection upstream of the charging points

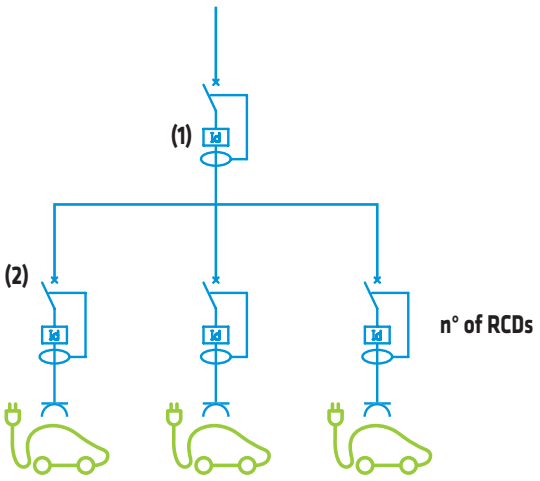
In the power supply systems of charging points for electric vehicles there may be leakage currents towards earth with a smooth residual direct current. If these currents are of a sufficiently high value, they can blind or nullify the presence of the residual current circuit breakers installed upstream of the charging point (a risk that can occur if the cumulative earth leakage currents exceeds the 6mA foreseen by the IEC/EN 61008-1 Standard).

A blinded RCD does not guarantee correct automatic tripping in the event of a fault and consequently does not guarantee the safety of the system.

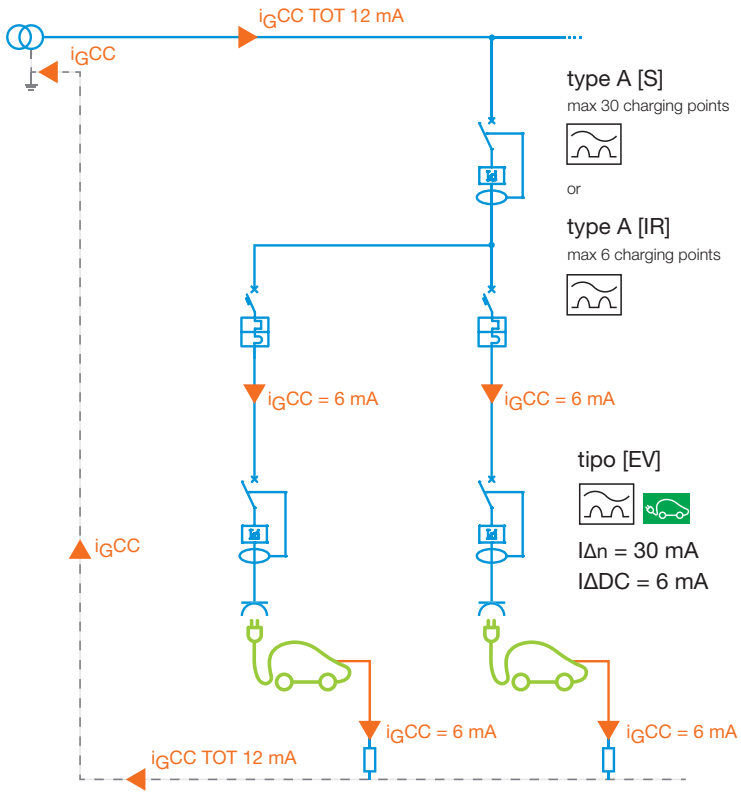
To avoid the blinding phenomenon, the RCD protection to be installed upstream of the charging points must:

- be Type B, or
- respect the following coordination table between Gewiss RCDs. Based on the type of RCD protection installed upstream, the table shows the maximum number of residual current devices that can be connected downstream.

		Updtream RCD (1)																				
		MDC				IDP 25-63A				IDP	BD				BDHP				MSXD	RELAY + CT				
		AC	A	A[IR]/F	A[S]	AC	A	A[IR]/F	A[S]	B[IR]	AC	A	A[IR]	A[S]	AC	A	A[S]	A[reg]	A [reg]	0,03A	0,1A	0,3A	0,5A	1A
Max number of downstream RCDs (2)	IDP/ Autotest type B[IR]	-	-	-	3	-	-	-	3	no limit	-	-	-	3	-	-	2	2	3	-	-	2	4	8
	type A[EV] type A + RDC-DD (IEC 62955)	-	1	6	30	-	1	6	30	no limit	-	1	6	30	-	1	25	25	30	2	8	25	40	80



Example of RCD coordination for an electric vehicle charging system:



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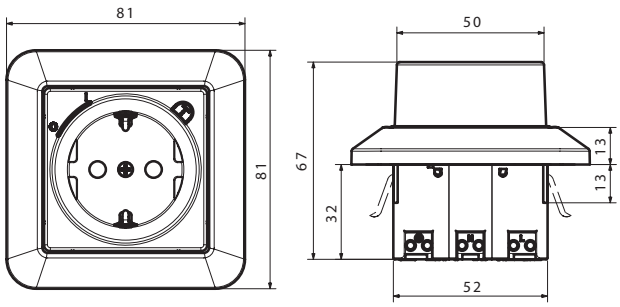
LOCAL RCCB

Technical data

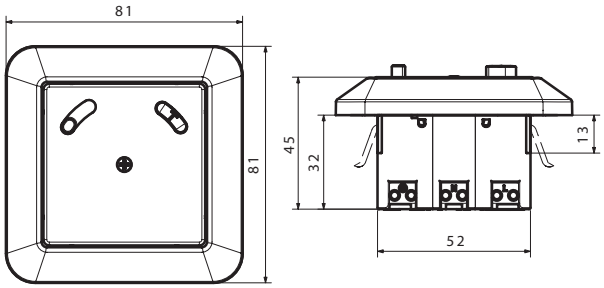
TYPE			SAFETY SOCKET WITH RCCB		SAFETY SOCKET WITH RCCB (WATER PROTECTED)		RCCB SAFETY UNIT	
								
Standard			**IEC EN 61008-1 IEC EN 61008-2-1 IEC 60884-1**		**IEC EN 61008-1 IEC EN 61008-2-1 IEC 60884-1**		**IEC EN 61008-1 IEC EN 61008-2-1**	
Degree of protection			IP21		IP44		IP41	
Type of installation			flush-mounting or surface-mounting (when installed inside the box GW95527 or GW95527N)					
Codes (white colour)			**GW95521**	**GW95522**	**GW95523**	**GW95524**	**GW95525**	**GW95526**
Codes (black colour)			**GW95521N**	**GW95522N**	**GW95523N**	**GW95524N**	**GW95525N**	**GW95526N**
Rated residual operating current (IΔn)		**(mA)**	10	30	10	30	10	30
Rated current (In)		**(A)**	16					
Rated operational voltage (Ue)		**(V a.c.)**	230 - 240					
Rated impulse withstand voltage (Uimp)		**(kV)**	4					
Overvoltage category			III					
Rated frequency		**(Hz)**	50					
Poles			1P+N					
RCCB type			A					
Level of immunity (8/20μs)		**(A)**	250					
Residual making and breaking capacity (Idm)		**(A)**	500					
Making and breaking capacity (Im)		**(A)**	500					
Rated conditional residual short-circuit current (IΔc)		**(A)**	3000 (fuse gG 20A)					
Voltage independent working			yes					
Wiring	**cable section (mm^2)**	**rigid**	min 1.5 - max 2.5					
		flexible	min 1.5 - max 2.5					
Electrical endurance			2000					
Mechanical endurance			4000					
Type of terminal			Screwless					
Pollution degree			2					
Tropicalization			55°C - RH 95%					
Operating temperature		**(°C)**	-25 ÷ + 40					
Storage temperature		**(°C)**	-40 ÷ + 70					
Weight		**(g)**	155		165		145	

Dimension tables

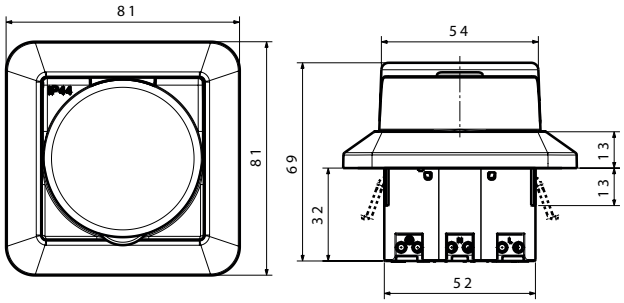
SAFETY SOCKET WITH RCCB IP21



RCCB SAFETY UNIT IP41

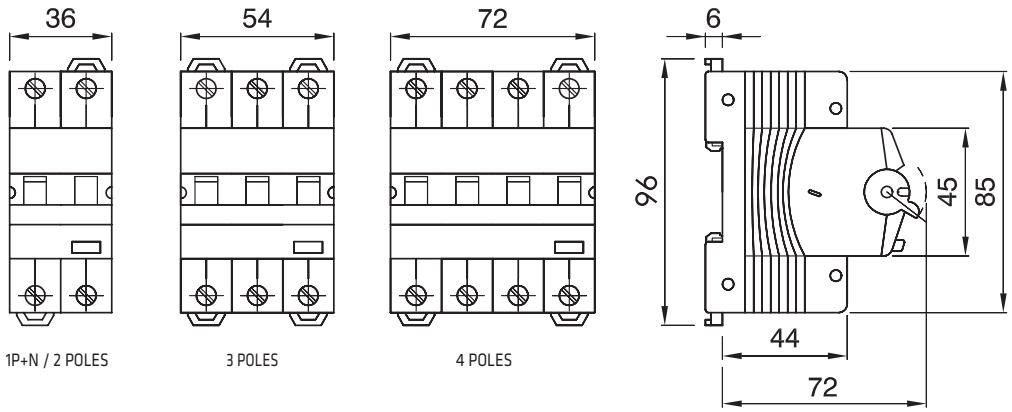


SAFETY SOCKET WITH RCCB IP44

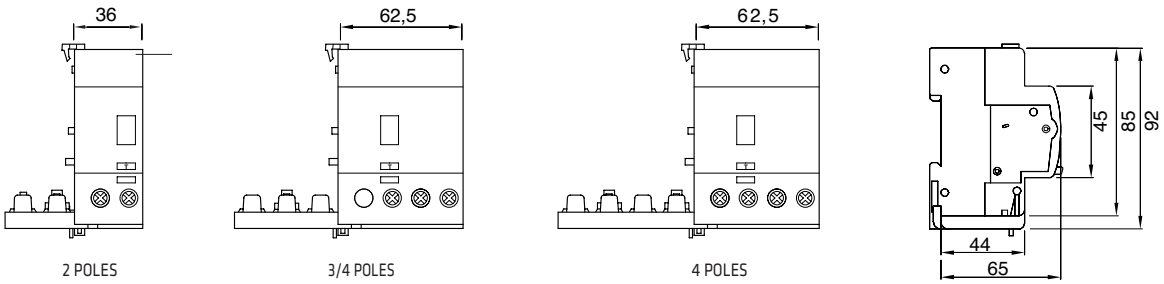


Dimension tables

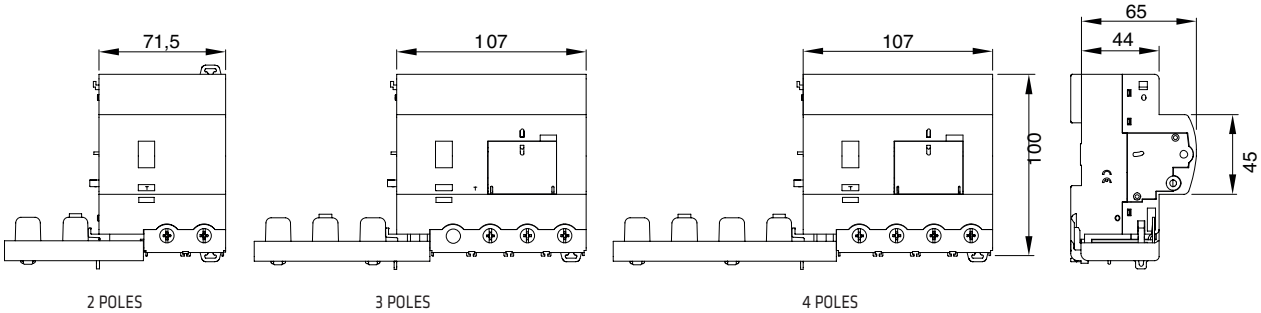
MDC 45 - MDC 60 - MDC 100 RESIDUAL CURRENT CIRCUIT BREAKERS WITH OVERCURRENT PROTECTION



BD - ADD-ON RESIDUAL CURRENT DEVICES



BDHP - ADD-ON RESIDUAL CURRENT DEVICES



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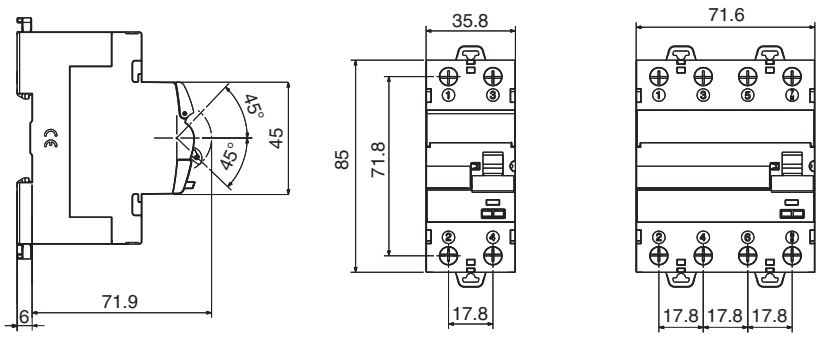
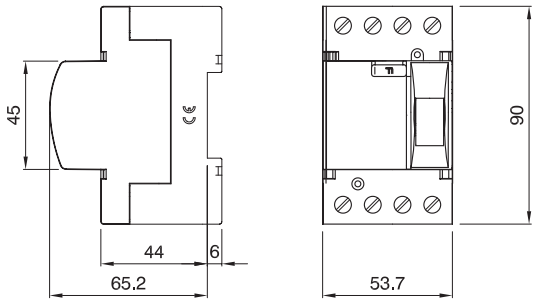
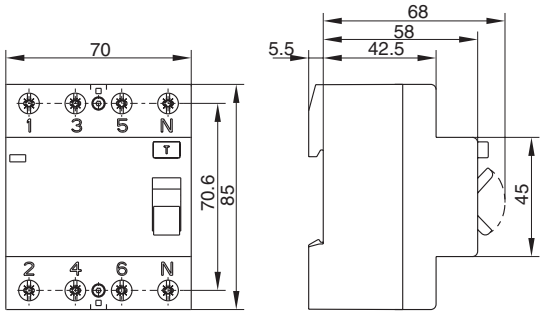
IDP - 2P AND 4P (4M) RESIDUAL CURRENT CIRCUIT BREAKERS



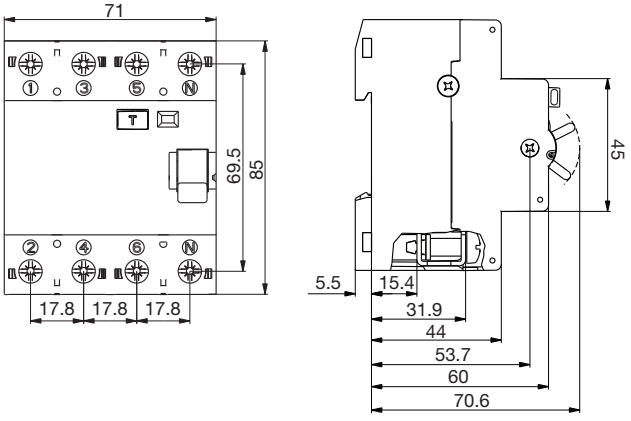
IDP - 4P (3M) RESIDUAL CURRENT CIRCUIT BREAKERS



SD K - 4P 80A AND 100A RESIDUAL CURRENT CIRCUIT BREAKERS



IDP - 125A RESIDUAL CURRENT CIRCUIT BREAKERS



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