Performance of MCBs and auxiliaries

Breaking capacity in IT neutral earthing system

MCB single pole breaking capacity at 400 V according to IEC 60947-2

DX³ 6000 10 kA	1P/2P/3P/4P	3 kA
DX³ 10000 16 kA	1P/2P/3P/4P	4 kA
DX³ 25 kA	1P/2P/3P/4P	6.25 kA
DX³ 50 kA	1P/2P/3P/4P	12.5 kA

Breaking capacity in the event of short-circuit to earth and insulation voltage

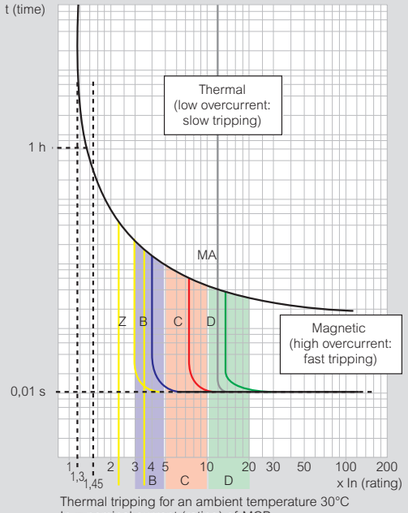
	1P/2P/3P/4P 230/400 V~ MCBs			
	DX³ 6000 10 kA	**DX³ 10000 16 kA**	**DX³ 25 kA**	**DX³ 50 kA**
Icn1	10000 A	16000 A	25000 A	50000 A
Ui	500 V	500 V	500 V	500 V

Icn 1: Breaking capacity on 1 pole for multipole MCBs in the event of short-circuit to earth
Ui: Rated insulation voltage

Terminal connection cross-sections (mm²)

Copper cable	Rigid	Flexible
DX³ 6000 10 kA	35	25
DX³ 10000 16 kA		
DX³ 80 to 125 A	70	50
DX³ 25 kA ≥ **32 A (C curve)** ≥ **16 A (D curve)** ≤ **63 A**	50	35
DX³ 36 kA, DX³ 50 kA and add-on modules		
Auxiliaries	2.5	2.5

MCB tripping curves



Thermal tripping for an ambient temperature 30°C
In = nominal current (rating) of MCB

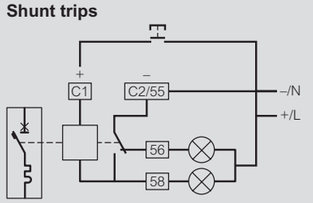
Curves	Magnetic threshold settings	
Z(1)	2.4 to 3.6 In	
B	3 to 5 In	
C	5 to 10 In	
D	10 to 14 In	(10 to 20 acc. to the stds)
MA(1)	12 to 14 In	

1: On request

Technical characteristics of auxiliaries

Max. connection cross-section: 2.5 mm²
Operating temperature: - 25°C to + 70°C

Shunt trips



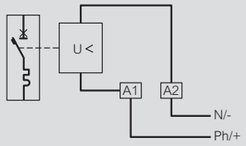
Nominal voltage (Un)
- 12 to 48 V~ and ⎓
- 110 to 415 V~ and 110 to 125 V⎓

Equipped with a signalling contact which indicates tripping of the shunt trip and automatically breaks the coil.
Min. and max. voltage: 0.7 to 1.1 Un
Tripping time: less than 20 ms
Power consumption: at 1.1 x 48 V = 121 VA
at 1.1 x 415 V = 127 VA
Impedance: 12 to 48 V = 23 Ω
110 to 415 V = 1640 Ω

Consumption	Umin.	Umax.
12 to 48 V	522 mA	2610 mA
110 to 415 V	69 mA	259 mA

Undervoltage releases

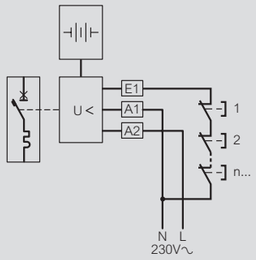
Pull-in voltage ≥ 0.55 Un
Tripping time: 100 to 400 ms ± 10% (adjustable)
Power consumption: 24 V~ and ⎓: 0.1 VA
48 V~ and ⎓: 0.2 VA
230 V~: 1 VA



Nominal voltage:
24 and 48 V~ and ⎓
230 V~

Stand-alone releases for N/C push-buttons

Min. and max. operating voltage: 196 to 250 V~
Power consumption: 1.4 VA



Signalling auxiliaries

Umin.: 24 V~/⎓ and Imin.: 5 mA

Compatibility between auxiliaries on 1 module/pole devices

1 module / pole device (auxiliary on the left side)	1st auxiliary	2nd auxiliary	3rd auxiliary
1st auxiliary	4 062 .. 50/52/56/58/60/62/66/76/78/80/82/84/86/87	-	-
2nd auxiliary	4 062 .. 50/52/56/58/60/62	4 062 .. 50/52/56/58/60/62/76/78/80/82/84/86/87	-
	4 062 .. 64/66/	4 062 .. 50/52/56/58/60/62/64/66/76/78/80/82/84/86/87	
3rd auxiliary	4 062 .. 50/52/56/58/60/62	4 062 .. 50/52/56/58/60/62	4 062 .. 76/78/80/82/84/86/87
	4 062 .. 64/66	4 062 .. 50/52/56/58/60/62/64/66	

Compatibility between auxiliaries on 1.5 module/pole devices

1.5 module / pole device (auxiliary on the left side)	1st auxiliary	2nd auxiliary	3rd auxiliary
1st auxiliary	4 062 .. 50/52/56/58/60/62/66/76/78/80/82/84/86/87	-	-
2nd auxiliary	4 062 .. 50/52/56/58/60/62	4 062 .. 50/52/56/58/60/62/	-
	4 062 .. 64/66/	4 062 .. 50/52/56/58/60/62/64/66/76/78/80/82/84/86/87	
3rd auxiliary	4 062 .. 64/66	4 062 .. 64/66	4 062 .. 76/78/80/82/84/86/87

Performance of add-on modules

AC type ~ - Standard applications

Detection of 50-60 Hz AC residual currents

A type ~ - Specific applications: dedicated lines

In addition to the characteristics of AC type add-on modules, A type add-on modules also detect residual currents with DC components. They are used whenever the fault currents are not sinusoidal. They are particularly suitable for the following dedicated line applications:

• On circuits where class 1 equipment may produce fault currents with DC components, such as variable speed drives with frequency inverter, etc.

Hpi type ~ Hpi - Special applications

Hpi add-on modules, with additional immunity to false tripping, which is much higher than the level required by the standard, detect residual currents with AC and DC components (A type), operate between - 25°C and + 40°C, and are used in the following special cases:

- When loss of data would be detrimental, such as computer equipment power supply lines (banks, military instrumentation, airline reservation centres, etc.)

- When loss of operation would be detrimental (automated machines, medical instrumentation, freezer lines, etc.)
• In places where there is a high risk of lightning strikes

- On sites with lines subject to considerable interference (use of fluorescent lights, etc)
- On sites with very long lines

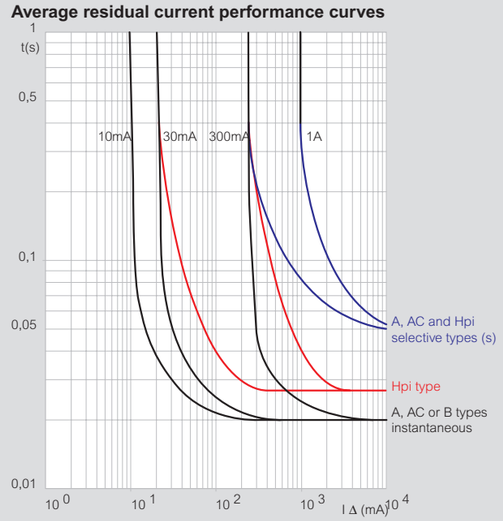
Special case of continuity of service

In certain locations where no staff are present and in which continuity of service is particularly important, false tripping of MCBs is not permitted (isolated telephone/TV or radio substations, pumping stations, etc.)
Combining an Hpi RCBO with a motorised control and a STOP & GO recloser provides optimum continuity of service

B type ⎓

In addition to the characteristics of A type RCDs, B type RCDs also detect smooth DC residual currents
They are used whenever fault currents are not sinusoidal
They are particularly suitable for the following specific applications : speed drives and inverters for supplying motors for pumps, lifts, textile machines, machine tools, photovoltaic installations, call centres, medical equipment, etc.

Average residual current performance curves



Residual current breaking capacity of DX³ add-on modules

IΔm according to EN 61009-1
AC, A and Hpi add-on modules

DX³ add-on modules used with an MCB		IΔm
DX³ (1 mod./pole)	**25 kA ≤ 25 A (B, C, Z curves)** **25 kA ≤ 10 A (D, MA curves)**	6000 A
DX³ (1.5 mod./pole)	**10000 16 kA (80 to 125 A)** **25 kA ≥ 32 A (B, C, Z curves)** **25 kA ≥ 12.5 A (D, MA curves)** **36 kA** **50 kA**	30000 A

Selectivity tables

MCBs/MCBs (in A)

Upstream MCB		RX³ 6000 / DXE 6000 - 6 kA / TX³ 6000 / TX³ 10000 DX³ 6000 - 10 kA / DX³ 10000 - 16 kA											DX³ 6000 - 10 kA					DX³ 25 kA / DX³ 50 kA								DX³ 25 kA / DX³ 50 kA						
		B curve				C curve							D curve					C curve								D curve						
Downstream MCB	In (A)	32	40	50	63	32	40	50	63	80	100	125	32	40	50	63		32	40	50	63	80	100	125	32	40	50	63	80	100	125
DXE 6000 - 6 kA B & C curves	6	128	160	200	252	240	300	375	472	1300	1600	2000	384	480	600	756		240	300	375	472	1300	1600	2000	384	480	600	756	2000	2400	3000
	10	128	160	200	252	240	300	375	472	1150	1450	1800	384	480	600	756		240	300	375	472	1150	1450	1800	384	480	600	756	1750	2150	2700
	13	128	160	200	252	240	300	375	472	1000	1300	1600	384	480	600	756		240	300	375	472	1000	1300	1600	384	480	600	756	1500	2000	2400
	16	128	160	200	252	240	300	375	472	950	1200	1500	384	480	600	756		240	300	375	472	950	1200	1500	384	480	600	756	1400	1800	2200
	20		160	200	252	240	300	375	472	900	1100	1400	384	480	600	756		240	300	375	472	900	1100	1400	384	480	600	756	1350	1650	2100
	25			200	252	240	300	375	472	850	1000	1300	384	480	600	756		240	300	375	472	850	1000	1300	384	480	600	756	1300	1500	2000
	32				252		300	375	472	750	950	1200		480	600	756			300	375	472	750	950	1200		480	600	756	1100	1450	1800
	40							375	472	700	850	1100			600	756				375	472	700	850	1100			600	756	1000	1250	1650
	50								472	650	800	1000				756					472	650	800	1000				756	950	1200	1500
	63									650	800	1000										650	800	1000					950	1200	1500
RX³ 4500 RX³ 6000 B & C curves	6	128	160	200	252	240	300	375	472	1300	1600	2000	384	480	600	756		240	300	375	472	1300	1600	2000	384	480	600	756	2000	2400	3000
	10	128	160	200	252	240	300	375	472	1150	1450	1800	384	480	600	756		240	300	375	472	1150	1450	1800	384	480	600	756	1750	2150	2700
	13	128	160	200	252	240	300	375	472	1000	1300	1600	384	480	600	756		240	300	375	472	1000	1300	1600	384	480	600	756	1500	2000	2400
	16	128	160	200	252	240	300	375	472	950	1200	1500	384	480	600	756		240	300	375	472	950	1200	1500	384	480	600	756	1400	1800	2200
	20		160	200	252	240	300	375	472	900	1100	1400	384	480	600	756		240	300	375	472	900	1100	1400	384	480	600	756	1350	1650	2100
	25			200	252	240	300	375	472	850	1000	1300	384	480	600	756		240	300	375	472	850	1000	1300	384	480	600	756	1300	1500	2000
	32				252		300	375	472	750	950	1200		480	600	756			300	375	472	750	950	1200		480	600	756	1100	1450	1800
	40							375	472	700	850	1100			600	756				375	472	700	850	1100			600	756	1000	1250	1650
	50								472	650	800	1000				756					472	650	800	1000				756	950	1200	1500
	63									650	800	1000										650	800	1000					950	1200	1500
TX³ 6000 TX³ 10000 B & C curves	≤ 6	128	160	200	252	240	300	375	472	1300	1600	2000	384	480	600	756		240	300	375	472	1300	1600	2000	384	480	600	756	2000	2400	3000
	10	128	160	200	252	240	300	375	472	1150	1450	1800	384	480	600	756		240	300	375	472	1150	1450	1800	384	480	600	756	1750	2150	2700
	13	128	160	200	252	240	300	375	472	1000	1300	1600	384	480	600	756		240	300	375	472	1000	1300	1600	384	480	600	756	1500	2000	2400
	16	128	160	200	252	240	300	375	472	950	1200	1500	384	480	600	756		240	300	375	472	950	1200	1500	384	480	600	756	1400	1800	2200
	20		160	200	252	240	300	375	472	900	1100	1400	384	480	600	756		240	300	375	472	900	1100	1400	384	480	600	756	1350	1650	2100
	25			200	252	240	300	375	472	850	1000	1300	384	480	600	756		240	300	375	472	850	1000	1300	384	480	600	756	1300	1500	2000
	32				252		300	375	472	750	950	1200		480	600	756			300	375	472	750	950	1200		480	600	756	1100	1450	1800
	40							375	472	700	850	1100			600	756				375	472	700	850	1100			600	756	1000	1250	1650
	50								472	650	800	1000				756					472	650	800	1000				756	950	1200	1500
	63									650	800	1000										650	800	1000					950	1200	1500
DX³ 6000 - 10 kA B, C & D curves	≤ 6	128	160	200	252	240	300	375	472	4000	T	T	384	480	600	756		700	1200	1500	3000	4000	T	T	700	1200	1500	3000	4000	T	T
	10	128	160	200	252	240	300	375	472	3000	5000	T	384	480	600	756		500	700	1000	1800	3000	5000	T	500	700	1000	1800	3000	5000	T
	13	128	160	200	252	240	300	375	472	2500	4000	6000	384	480	600	756		400	600	1200	1500	2500	4000	6000	400	600	1200	1500	2500	4000	6000
	16	128	160	200	252	240	300	375	472	2000	3600	5500	384	480	600	756		300	500	700	1300	2000	3600	5500	384	500	700	1300	2000	3600	5500
	20		160	200	252	240	300	375	472	1600	3000	4000	384	480	600	756		300	400	500	1000	1600	3000	4000	384	480	600	1000	1600	3000	4000
	25			200	252	240	300	375	472	1300	2400	3300	384	480	600	756		240	400	500	800	1300	2400	3300	384	480	600	800	1300	2400	3300
	32				252		300	375	472	1000	1800	2700		480	600	756			300	500	600	1000	1800	2700		480	600	756	1100	1450	2700
	40							375	472	800	1600	2400			600	756				400	600	800	1600	2400			600	756	1000	1250	2400
	50								472	800	900	1700				756					500	800	900	1700				756	950	1200	1700
	63									650	900	1200										650	900	1200					950	1200	1500
DX³ 10000 - 16 kA B & C curves	≤ 6	128	160	200	252	240	300	375	472	4000	T	T	384	480	600	756		700	1200	1500	3000	4000	T	T	700	1200	1500	3000	4000	T	T
	10	128	160	200	252	240	300	375	472	3000	5000	T	384	480	600	756		500	700	1000	1800	3000	5000	T	500	700	1000	1800	3000	5000	T
	16	128	160	200	252	240	300	375	472	2000	3600	5500	384	480	600	756		300	500	700	1300	2000	3600	5500	384	500	700	1300	2000	3600	5500
	20		160	200	252	240	300	375	472	1600	3000	4000	384	480	600	756		300	400	500	1000	1600	3000	4000	384	480	600	1000	1600	3000	4000
	25			200	252	240	300	375	472	1300	2400	3300	384	480	600	756		240	400	500	800	1300	2400	3300	384	480	600	800	1300	2400	3300
	32				252		300	375	472	1000	1800	2700	384	480	600	756			300	500	600	1000	1800	2700		480	600	756	1100	1450	2700
	40							375	472	800	1600	2400		480	600	756				400	600	800	1600	2400			600	756	1000	1250	2400
	50								472	800	900	1700			600	756					500	800	900	1700				756	950	1200	1700
	63									650	900	1200				756						650	900	1200					950	1200	1500
	80										600	750											600	750						1200	1500
	100											750												750							1500
	125																														
DX³ 10000 - 16 kA D curve	80																													1200	1500
	100																														1500
	125																														
DX³ 25 kA C curve	≤ 6					240	300	375	472	4000	T	T	384	480	600	756		700	1200	1500	3000	4000	T	T	700	1200	1500	3000	4000	T	T
	10					240	300	375	472	3000	5000	T	384	480	600	756		500	700	1000	1800	3000	5000	T	500	700	1000	1800	3000	5000	T
	16					240	300	375	472	2000	3600	5500	384	480	600	756		300	500	700	1300	2000	3600	5500	384	500	700	1300	2000	3600	5500
	20					240	300	375	472	1600	3000	4000	384	480	600	756		300	400	500	1000	1600	3000	4000	384	480	600	1000	1600	3000	4000
	25					240	300	375	472	1300	2400	3300	384	480	600	756		240	400	500	800	1300	2400	3300	384	480	600	800	1300	2400	3300
	32						300	375	472	1000	1800	2700		480	600	756			300	500	600	1000	1800	2700		480	600	756	1100	1450	2700
	40							375	472	800	1600	2400			600	756				400	600	800	1600	2400			600	756	1000	1250	2400
	50								472	800	900	1700				756					500	800	900	1700				756	950	1200	1700
	63									650	900	1200										650	900	1200					950	1200	1500
	80										600	750											600	750						1200	1500
	100											750												750							1500
	125																														
DX³ 25 kA D curve	≤ 6																	700	1200	1500	3000	4000	T	T	700	1200	1500	3000	4000	T	T
	10																	500	700	1000	1800	3000	5000	T	500	700	1000	1800	3000	5000	T
	16																	300	500	700	1300	2000	3600	5500	384	500	700	1300	2000	3600	5500
	20																		400	500	1000	1600	3000	4000	384	480	600	1000	1600	3000	4000
	25																			500	800	1300	2400	3300	384	480	600	800	1300	2400	3300
	32																				600	1000	1800	2700		480	600	756	1100	1450	2700
	40																					800	1600	2400			600	756	1000	1250	2400
	50																						900	1700				756	950	1200	1700
	63																							1200					950	1200	1500
	80																													1200	1500
	100																														1500
	125																														
DX³ 50 kA C curve	10																	500	700	1000	1800				500	700	1000	1800			
	16																	300	500	700	1300				384	500	700	1300			
	20																	300	400	500	1000				384	480	600	1000			
	25																	240	400	500	800				384	480	600	800			
	32																		300	500	600					480	600	756			
	40																			400	600						600	756			
	50																				500							756			
	63																														
DX³ 50 kA D curve	10																	500	700	1000	1800				500	700	1000	1800			
	16																	300	500	700	1300				384	500	700	1300			
	20																		400	500	1000				384	480	600	1000			
	25																			500	800				384	480	600	800			
	32																				600					480	600	756			
	40																										600	756			
	50																											756			
	63																														

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2
The magnetic threshold and the nominal rating of the downstream MCB must always be inferior to the ones of the upstream MCB

Back up between MCCBs and MCBs (in kA)

In 3 phases networks + N 400/415 V according to IEC 60947-2

MCBs/MCCBs upstream / MCBs downstream		DX³ 10000 16 kA B, C and D curves	DX³ 25 kA C and D curves	DX³ 50 kA C and D curves	DPX³ 160					DPX³ 250				DPX 250	DPX-H 250	DPX 630	DPX-H 630 DPX-L 630 -100 kA	DPX 1250 and 1600 + DPX-H 1250 and 1600
					16 kA	25 kA	36 kA	50 kA		25 kA	36 kA	50 kA	70 kA	36 kA	70 kA	36 kA	70 kA	50 kA and 70 kA
		10 to 125 A	10 to 125 A	10 to 63 A	16 to 160 A	16 to 160 A	16 to 160 A	16 to 160 A		40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	250 to 630 A	250 to 630 A	630 to 1600 A
DX³ 6000 - 10 kA B, C and D curves	≤ 20 A	16 kA	25 kA	50 kA	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	16 kA	25 kA	50 kA	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	20 kA
	32 A	16 kA	25 kA	50 kA	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	15 kA
	40 A	16 kA	25 kA	50 kA	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	20 kA	15 kA
	50 A	16 kA	25 kA	50 kA	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	16 kA	16 kA	12,5 kA
	63 A	16 kA	25 kA	-	16 kA	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	16 kA	16 kA	12,5 kA
DX³ 10000 - 16 kA B, C and D curves (D curve from 80 to 125 A)	≤ 20 A	-	25 kA	50 kA	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	-	25 kA	50 kA	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	20 kA
	32 A	-	25 kA	50 kA	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	16 kA
	40 A	-	25 kA	50 kA	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	20 kA	16 kA
	50 A	-	25 kA	50 kA	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	20 kA	16 kA
	63 A	-	25 kA	-	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	20 kA	20 kA	16 kA
	80 et 100 A	-	-	-	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	20 kA	20 kA	20 kA	16 kA
	125 A	-	-	-	-	25 kA	25 kA	25 kA		25 kA	25 kA	25 kA	25 kA	25 kA	16 kA	16 kA	16 kA	16 kA
DX³ 25 kA C curve	≤ 25 A	-	-	50 kA	-	-	36 kA	36 kA			36 kA	36 kA	25 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	32 to 50 A	-	-	50 kA	-	-	36 kA	36 kA			36 kA	36 kA	25 kA	36 kA	36 kA	36 kA	36 kA	36 kA
	63 to 80 A	-	-	-	-	-	36 kA	36 kA			36 kA	36 kA	36 kA	36 kA	36 kA	36 kA	36 kA	36 kA
	100 et 125 A	-	-	-	-	-	36 kA	36 kA			36 kA	36 kA	36 kA	36 kA	36 kA	30 kA	30 kA	30 kA
DX³ 25 kA D curve	≤ 10 A	-	-	50 kA	-	-	36 kA	36 kA			36 kA	36 kA	36 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	16 to 63 A	-	-	50 kA	-	-	36 kA	36 kA			36 kA	36 kA	36 kA	36 kA	36 kA	36 kA	36 kA	36 kA
DX³ 50 kA C and D curves	10 to 63 A	-	-	-	-	-	-	-			-	-	70 kA	-	70 kA	-	70 kA	70 kA

In 3 phases networks + N 230/240 V according to IEC 60947-2

MCBs/MCCBs upstream / MCBs downstream		DX³ 10000 16 kA B, C and D curves		DX³ 25 kA C and D curves		DX³ 50 kA C curves		DX³ 50 kA D curves		DPX³ 160				DPX³ 250				DPX 250	DPX-H 250	DPX 630	DPX-H 630 DPX-L 630 - 100 kA	DPX 1250 and 1600 + DPX-H 1250 and 1600
										16 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	70 kA	36 kA	70 kA	36 kA	70 kA	50 kA + 70 kA
		≤ 32 A	40 to 125 A	≤ 32 A	40 to 125 A	≤ 32 A	40 to 63 A	≤ 32 A	40 to 63 A	16 to 160 A	16 to 160 A	16 to 160 A	16 to 160 A	40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	40 to 250 A	250 to 630 A	250 to 630 A	630 to 1600 A
DX³ 6000 - 10 kA B, C and D curves	≤ 20 A	32 kA	25 kA	50 kA	25 kA	50 kA	50 kA	50 kA	50 kA	28 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	25 to 40 A	-	25 kA	-	25 kA	-	50 kA	-	50 kA	28 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	50 A	-	25 kA	-	25 kA	-	-	-	-	28 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	30 kA	30 kA	25 kA
	63 A	-	25 kA	-	25 kA	-	-	-	-	28 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	30 kA	30 kA	25 kA
DX³ 10000 - 16kA B, C and D curves (D curve from 80 to 125 A)	≤ 20 A	-	-	50 kA	32 kA	70 kA	70 kA	70 kA	70 kA	35 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	25 to 40 A	-	-	-	32 kA	-	70 kA	-	70 kA	35 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	50 et 63 A	-	-	-	32 kA	-	-	-	-	35 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	36 kA	36 kA	36 kA
	80 to 125 A	-	-	-	-	-	-	-	-	35 kA	40 kA	50 kA	50 kA	40 kA	50 kA	50 kA	50 kA	50 kA	50 kA	32 kA	32 kA	32 kA
DX³ 25kA C and D curves	≤ 25 A	-	-	-	-	70 kA	70 kA	70 kA	70 kA	-	-	-	55 kA	-	-	60 kA	60 kA	55 kA	60 kA	55 kA	60 kA	50 kA
	32 to 125 A	-	-	-	-	-	70 kA	-	70 kA	-	-	-	65 kA	-	-	60 kA	60 kA	55 kA	60 kA	55 kA	60 kA	50 kA
DX³ 25kA D curves	≤ 10 A	-	-	-	-	70 kA	70 kA	70 kA	70 kA	-	-	-	55 kA	-	-	60 kA	60 kA	55 kA	60 kA	55 kA	60 kA	50 kA
	16 to 63 A	-	-	-	-	70 kA	70 kA	70 kA	70 kA	-	-	-	65 kA	-	-	60 kA	60 kA	55 kA	60 kA	55 kA	60 kA	50 kA
DX³ 50kA C and D curves	10 to 63 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120 kA	-	120 kA	-	120 kA	120 kA

TT or TN neutral earthing systems:
For a 230/400 V supply in order to determine the breaking capacity of a 2 P MCB used as L + N (230 V) downstream a 2 P or 4 P circuit breaker use values indicated in the table for 230/240 V

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Protection of DC circuits

DX³ 6000 and DX³ 10000 MCBs (1P/2P/3P/4P - In ≤ 63 A) designed for use in 230/400 V~ supplies, can also be used in DC circuits
In this case, the following deratings and precautions must be taken into account

1 - Protection against short-circuits

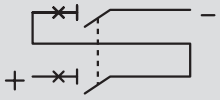
Max. magnetic tripping threshold: multiplied by 1.4
Example: For a C curve MCB for which the AC tripping threshold is between 5 and 10 In, the DC tripping threshold will be between 7 and 14 In

2 - Protection against overloads

The time/current thermal tripping curve is the same as for AC

3 - Operating voltage

Max. operating voltage: 80 V per pole (60 V for single-pole + N MCBs)
For voltages higher than this value, several poles must be wired in series

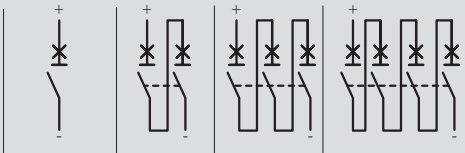


Example: for a 110 V voltage, use a 2-pole MCB and connect the 2 poles in series

4 - Breaking capacity

4000 A for a single pole MCB at max. voltage (80 V⎓ per pole)

For other voltages, the breaking capacities are as follows:



DX³ 6000		voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	Icu	≤ 48 V	6 kA	6 kA		
		110 V		6 kA	6 kA	
		230 V				10 kA
	Ics(1)	≤ 48 V	100 %	100 %		
		110 V		100 %	100 %	
		230 V				100 %

DX³ 10000		voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	Icu	≤ 48 V	10 kA	10 kA		
		110 V		10 kA	10 kA	
		230 V				16 kA
	Ics(1)	≤ 48 V	100 %	100 %		
		110 V		100 %	100 %	
		230 V				100 %

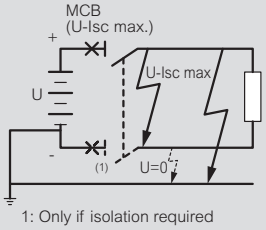
1: As a % of Icu

5 - Distribution of breaking poles

To choose the MCB and determine the pole distribution necessary for breaking on each of the polarities, it is necessary to know how the installation is earthed

• Supply with one polarity earthed:

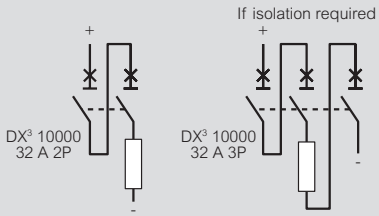
Place all the poles necessary for breaking on the other polarity If isolation is required, an additional pole must be added on the earthed polarity



1: Only if isolation required

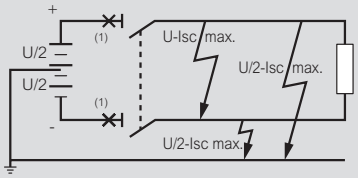
Example: circuit earthed via the negative polarity / U = 110 V⎓ / Isc = 10 kA / In = 32 A
Protect the positive polarity using an MCB capable of breaking 10 kA at 110 V (DX³ 10000 2P 32 A with 2 poles on the positive polarity)
For isolation, use a DX³ 10000 3P 32 A with 2 poles on the positive polarity and one pole on the negative polarity

DX³ 10000		voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	Icu	≤ 48 V	10 kA	10 kA		
		110 V		10 kA	10 kA	
		230 V				15 kA



• Network earthed via a middle point:

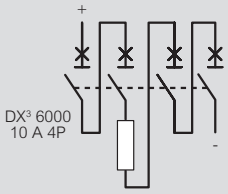
Place on each polarity the number of poles necessary for max. Isc breaking at half voltage



1: MCB (U/2-Isc max.)

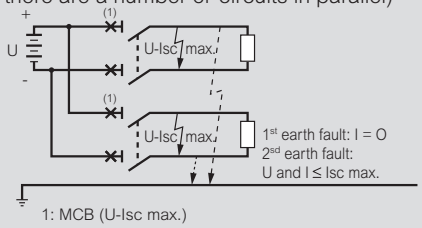
Example: circuit earthed via a middle point / U = 230 V⎓ / Isxc = 6 kA / In = 10 A
Protect each polarity using an MCB capable of breaking 6 kA at half voltage, i.e. 115 V (DX³ 6000 4P 10 A with 2 poles on each polarity)

DX³ 6000		voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	Icu	≤ 48 V	6 kA	6 kA		
		110 V		6 kA	6 kA	
		230 V				10 kA



• Isolated earth supply:

Distribute the poles necessary for breaking over the 2 polarities to provide protection in the event of a double earth fault (particularly if there are a number of circuits in parallel)



1: MCB (U-Isc max.)

Example: isolated earth circuit / U = 48 V⎓ / Isc = 4,5 kA / In = 40 A
Protect the installation with an MCB capable of breaking 4.5 kA at 48 V and protect each polarity (DX³ 6000 MCB 2P 40 A with one pole on each polarity)

DX³ 6000		voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	Icu	≤ 48 V	6 kA	6 kA		
		110 V		6 kA	6 kA	
		230 V				10 kA