

Selectivity tables

MCBs/MCBs (in A)

Upstream MCB																																					
Downstream MCB	In (A)	RX³ [6000] / DXE [6000] - 6 kA / TX³ [6000] / TX³ [10000]					RX³ [4500] / RX³ [6000] / DXE [6000] - 6 kA / TX³ [6000] / TX³ [10000]							DX³ [6000] - 10 kA D curve				DX³ 25 kA / DX³ 50 kA							DX³ 25 kA / DX³ 50 kA												
		DX³ [6000] - 10 kA / DX³ [10000] - 16 kA B curve					DX³ [6000] - 10 kA / DX³ [10000] - 16 kA C curve											C curve							D curve												
		32	40	50	63		32	40	50	63	80	100	125	32	40	50	63	80	100	125	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	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	T
	13	128	160	200	252	240	300	375	472	2500	4000	6000	384	480	600	756							400	600	1200	1500	2500	4000	6000	384	480	600	756	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	756	1300	2000	3600	5500
	25			200	252	240	300	375	472	1300	2400	3300	384	480	600	756							240	400	500	800	1300	2400	3300	384	480	600	756	1300	2400	3300	
	32				252		300	375	472	1000	1800	2700		480	600	756								300	400	500	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			600	756										400	600	800	1600	2400			600	756	950	1200	1700
	63									650	900	1200				756											500	800	1200				756	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		

Back up between MCCBs and MCBs (in kA)

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

MCBs/MCCBs upstream		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
MCBs downstream		10 to 125 A	10 to 125 A	10 to 63 A	16 kA 16 to 160 A	25 kA 16 to 160 A	36 kA 16 to 160 A	50 kA 16 to 160 A		25 kA 40 to 250 A	36 kA 40 to 250 A	50 kA 40 to 250 A	70 kA 40 to 250 A	36 kA 40 to 250 A	70 kA 40 to 250 A	36 kA 250 to 630 A	70 kA 250 to 630 A	50 kA and 70 kA 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
DX³ ^[10000] - 16 kA B, C and D curves (D curve from 80 to 125 A)	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
	≤ 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
DX³ 25 kA C curve	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
	≤ 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
DX³ 25 kA D curve	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 50 kA C and D curves	≤ 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
		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		DX³ ^[10000] 16 kA B, C and D curves		DX² 25 kA C and D curves		DX³ 50 kA C curves		DX³ 50 kA D curves			DPX² 160				DPX² 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
MCBs downstream		≤ 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 kA 16 to 160 A	25 kA 16 to 160 A	36 kA 16 to 160 A	50 kA 16 to 160 A	25 kA 40 to 250 A	36 kA 40 to 250 A	50 kA 40 to 250 A	70 kA 40 to 250 A	36 kA 40 to 250 A	70 kA 40 to 250 A	36 kA 250 to 630 A	70 kA 250 to 630 A	50 kA + 70 kA 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
DX² 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

Protection of DC circuits

Protection of DC circuits

DX³ 6000 and DX³ 10000 MCBs (1P/2P/3P/4P - $I_n \leq 63$ 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

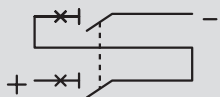
Example: For a C curve MCB for which the AC tripping threshold is between 5 and 10 I_n , the DC tripping threshold will be between 7 and 14 I_n .

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.

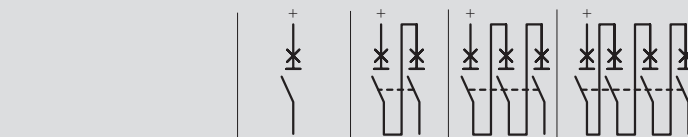


Example: for a 110 V voltage, use a 2-pole MCB and connect the 2 poles in series.

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:



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

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

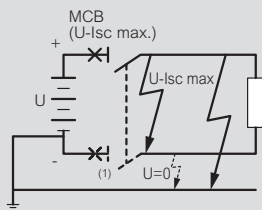
1: As a % of Icu

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.

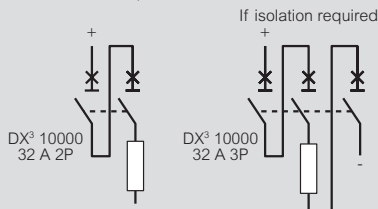


1: Only if isolation required

Example: circuit earthed via the negative polarity / $U = 110$ V~ / $I_{sc} = 10$ kA / $I_n = 32$ A

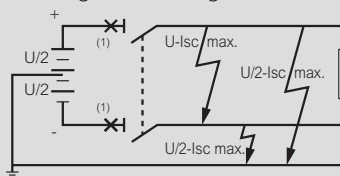
Protect the positive polarity using an MCB capable of breaking 10 kA at 110 V (DX³ 10000 2P 32 A with 2 poles on the positive polarity). For isolation, use a DX³ 10000 3P 32 A with 2 poles on the positive polarity and one pole on the negative polarity.

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



• Network earthed via a middle point:

Place on each polarity the number of poles necessary for max. I_{sc} breaking at half voltage.

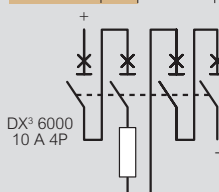


1: MCB ($U/2-I_{sc}$ max.)

Example: circuit earthed via a middle point / $U = 230$ V~ / $I_{sc} = 6$ kA / $I_n = 10$ A

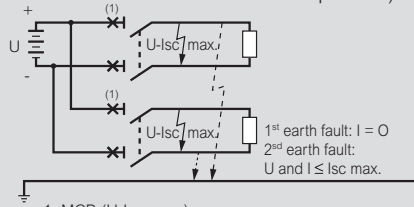
Protect each polarity using an MCB capable of breaking 6 kA at half voltage, i.e. 115 V (DX³ 6000 4P 10 A with 2 poles on each polarity).

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



• 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 ($U-I_{sc}$ max.)

Example: isolated earth circuit / $U = 48$ V~ / $I_{sc} = 4,5$ kA / $I_n = 40$ 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).

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

