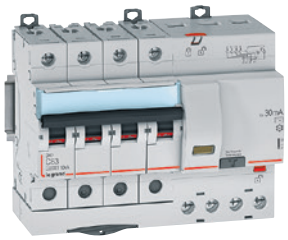
RCBOs DX³ 6000 - 10 kA - residual current circuit breakers from 10 A to 63 A - AC, A and Hpi types (continued)


4 111 92


4 112 41

Technical characteristics **see e-catalogue**

Conform to IEC 61009-1
Breaking capacity:
6000 - IEC 61009-1 - 10 kA / IEC 60947-2 for single pole + neutral, 2 and 4-pole
• AC type ~: detect AC component faults
• A type ⩙: detect AC and DC component faults
• Hpi type (High immunity) ⩙ Hpi: detect AC and DC component faults
Enhanced immunity to unwanted tripping in disturbed environments
Can be equipped with DX³ signalling and remote tripping auxiliaries and motorised controls (p. 64)

Pack	Cat.Nos	4-pole - 400 V~	
		4-module RCBOs are compatible with prong-type and fork type supply busbars 7-module RCBOs are compatible with prong-type supply busbars only	
		AC Type ~ 30 mA	
C curve		Nominal rating In (A)	Number of modules
1	4 111 85	10	4
1	4 111 86	16	4
1	4 111 87	20	4
1	4 111 88	25	4
1	4 111 89	32	4
1	4 111 90	40	7
1	4 111 91	50	7
1	4 111 92	63	7
		AC Type ~ 300 mA	
1	4 112 04	10	4
1	4 112 05	16	4
1	4 112 06	20	4
1	4 112 07	25	4
1	4 112 08	32	4
1	4 112 09	40	7
1	4 112 10	50	7
1	4 112 11	63	7
		A Type ⩙ 30 mA	
1	4 112 33	10	4
1	4 112 34	16	4
1	4 112 35	20	4
1	4 112 36	25	4
1	4 112 37	32	4
		A Type ⩙ 300 mA	
1	4 112 38	10	4
1	4 112 39	16	4
1	4 112 40	20	4
1	4 112 41	25	4
1	4 112 42	32	4
		Hpi Type ⩙ Hpi 30 mA	
1	4 112 44	16	4
1	4 112 45	20	4
1	4 112 46	25	4
1	4 112 47	32	4

For detailed dimensions, **see e-catalogue**

Common auxiliaries & remote control

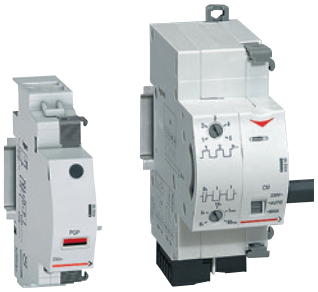
The signalling and remote tripping auxiliaries and the motorised controls are common for DX³ MCBs, RCBOs and RCCBs and TX³ MCBs.
Signalling auxiliaries are available in two versions, adapted to the pin or fork type supply busbars.


1 module motorised controls p. 64

COMPACT SIZE
1 module motorised controls for remote tripping of 1-pole to 4-pole modular devices.

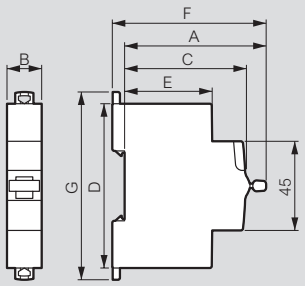

Auxiliaries p. 64

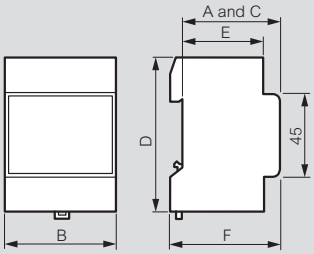
EASY TO INSTALL
Perfect fitting to protection devices
Easy access and visible terminals
Allow insertion of supply busbars


Power overvoltage protection p. 64
Motorised control with automatic resetting p. 64

AVAILABLE FUNCTIONS
- auxiliary or fault signal contact
- current shunt trips
- undervoltage releases
- power overvoltage protection
- motorised controls with or without automatic resetting

Dimensions of din-rail equipment





Product	A	B					C	D	E	F	G
		1P	1P+ N	2P	3P	4P					
RX³ MCBs	71.7	17.7	35.4	35.4	53.1	70.8	61	83	44	77.8	88.9
RX³ RCCBs	71.7			35.6		71.2	61	83	44	77.8	88.9
TX³ MCBs	71.7	17.7	35.4	35.4	53.1	70.8	61	83	44	77.8	88.9
TX³ RCCBs	71.7			35.6		71.2	61	83	44	77.8	88.9
Isolating switches DX³	71.7	17.8		17.8/ 35.4	35.6/ 53.1	35.6/ 70.8	61	83	44	77.8	94.8
Remote trip head isolating switches DX³ up to 63A - 1 mod/pole	71.7			35.4	53.1	70.8	61	83	44	77.9	94.8
Remote trip head isolating switches DX³ 100/125A - 1.5 mod/pole	73				80.1	106.8	61	96	47	79	104.3
DX³ RCCBs	71.7			35.6		71.2	61	83	44	77.8	94.8
1P DX³ RCBOs (up to 45A)	68	17.7					60	115	48	74	126.8
1P+N DX³ RCBOs (up to 40A) & 4P (up to 32A)	71.7		35.6			71.2	61	83	44	77.8	94.8
2P & 4P DX³ RCBOs (40A to 63A)	72			71.2		124.6	61	96	44	78.2	107.8
1P+N DX³ MCBs 1 mod	71.7		17.8				61	83	44	77.8	94.8
DX³ MCBs - 1 mod/pole	71.7	17.7	35.4	35.4	53.1	70.8	61	83	44	77.8	94.8
DX³ MCBs - 1,5 mod/pole	73.1	26.7		53.4	80.1	106.8	61	100	47	79	104.3
DX³ add-on modules up to 63A - 1 mod/pole	72			35.6	53.4	53.4	61	96	44	78.2	107.8
DX³ add-on modules up to 63A - 1.5 mod/pole	72			35.6	53.4	53.4	61	96	47	78.2	116.7
DX³ add-on modules 80 to 125A - 1.5 mod/pole	72			71.2	106.8	106.8	61	114	47	78.2	129
DX³ auxiliaries	71.5	8.8 / 17.7					61	83	44	77.7	84.5
DX³ remote control	74.3	17.7 / 35.4					61	83	44	80.5	98.8
DX³ Stop&Go automatic resetting	74.3	35.4					61	83	44	80.5	113.7
Change-over switches	68	17.7		35.6			60	83	44	74	94
CX³ latching relays	64	17.8		17.8	35.6	35.6	61	84.5	44	70.2	94.8
CX³ contactors up to 25A	66.3/ 61	17.8		17.8	35.6	35.6	61	84.5	44	72.6/ 67.3	94.8
CX³ contactors 40A & 63A	62			35.6	53.4	53.4	60	83	44	68	94
Auxiliaries for CX³ contactors and latching relays	61	9/17.8					61	84.5	44	67	84.5
Push-buttons / control switches	68	17.7					60	83	44	74	94
Indicators	68	17.7					60	83	44	69	94
Bells and buzzers	60	17.7					60	76	44	66	85
Light sensitive switches											
Cat.Nos 0 037 21, 4 126 23	60	35.6					60	85	37.5	66	70
Socket outlets	60	44.5					60	83	44	66	92
Time delay relays	60	17.7					60	83	44	66	94
Remote control dimmers											
Cat.No 0 036 58	60	36					60	83	44	66	94
Cat.No 0 036 60	60	72					60	83	44	66	94
Cat.No 0 036 71	60	108					60	83	44	66	94

Description		A	B	C	D	E	F
Programmable time switches	0 037 05	60	17.8	60	83	44	66
	4 127 80/90/94	60	17.8	60	83	44	66
	4 127 95, 4 128 12/13	60	53	60	83	44	66
	4 126 31/33/41	60	35.6	60	83	44	66
	4 126 54/57	60	35.6	60	83	44	66
	0 047 70	60	90	60	83	44	66
Transformers and power supplies							
	0 042 10/30/31	60	72	60	83	44	66
	4 130 91	60	35.8	60	83.5	44	66
	4 130 92/93/96	60	71.5	60	83.5	44	66
	4 130 98	60	89	60	94	44	66
	0 047 91/92	60	105	60	95	44	66
	4 131 05/06/07/08	60	89	60	95	44	66
	0 047 93	60	70	60	95	44	66
Residual current relay							
	0 260 88	60	35.5	60	89	44	66

87045 LIMOGES Cedex
Telephone number: +33 (0)5 55 06 87 87 – Fax: +33 (0)5 55 06 88 88

DX³ 4-pole RCBO
6000 A/10 kA

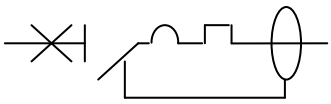
Cat. N°(s) : 4 111 85, 86, 87, 88, 89 / 4 112 04, 05, 06, 07, 4 112 08, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 4 112 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 49, 50, 51, 4 112 52 / 4 113 50, 56, 57, 59, 60, 61, 62, 80, 81

CONTENTS PAGE

1. DESCRIPTION - USE

Residual Current Operated Circuit Breaker (RCBO) with positive contact indication for control, protection against short circuits and overload and isolation of electrical circuits, protecting people from direct and indirect contact and protecting installations from insulation faults.

Symbol:



Technology:
. Limiting device
. Simultaneous control of all poles for closing and opening (trip-free mechanism)

2. RANGE

Polarity:
- 4 protected poles

Width:
. 4 modules (4 x 17.8 mm = 71,2 mm)

Rated currents In:
10 / 13 / 16 / 20/ 25/ 32 A

Magnetic tripping curve:
. C (between 5 and 10 In)
. B (between 3 and 5 In)

Type:
. AC (sinusoidal differential alternating current)
. A (residual current with a DC component)
. HPI (immunised against false tripping). HPI products are also A type.

Sensitivity – Operating time:
. 30 mA - instantaneous
. 300 mA - instantaneous
. 1,000 mA - instantaneous

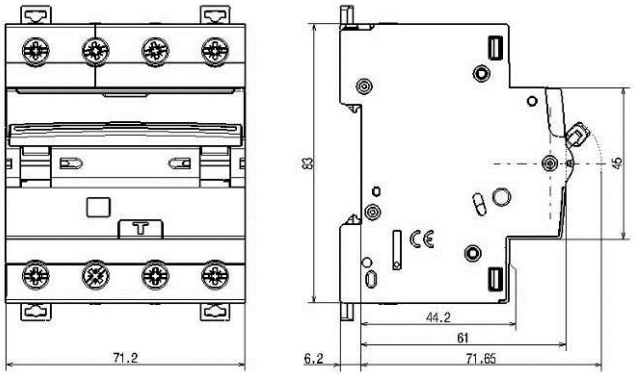
2. RANGE *(continued)*

Rated voltage and frequency:
. 230/400 V~, 50 Hz with standard tolerances
. 240/415 V~, 50 Hz with standard tolerances

Maximum operating voltage:
. 440 V~, 50 Hz with standard tolerances

Breaking capacity:
. Icn = 6000 A in accordance with standard EN/IEC 61009-1
. Icu = 10 kA in accordance with standard EN/IEC 60947-2

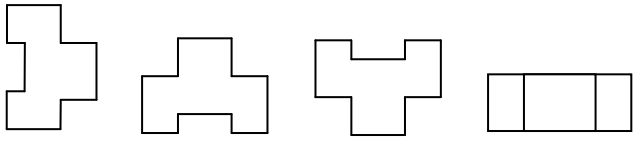
3. OVERALL DIMENSIONS:



4. PREPARATION - CONNECTION

Mounting:
. On symmetrical EN 60.715 rail or DIN 35 rail

Operating positions:
. Vertical horizontal upside down On the side

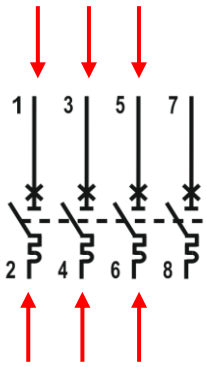


Power supply:
. Either from the top or the bottom

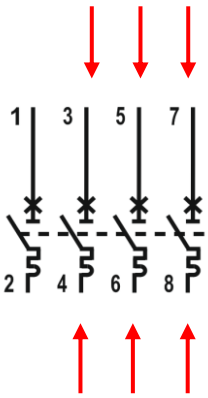
4. PREPARATION - CONNECTION *(continued)*

400V three-phase network wiring without neutral:

connect the 3 phases as indicated by the arrows in below diagram



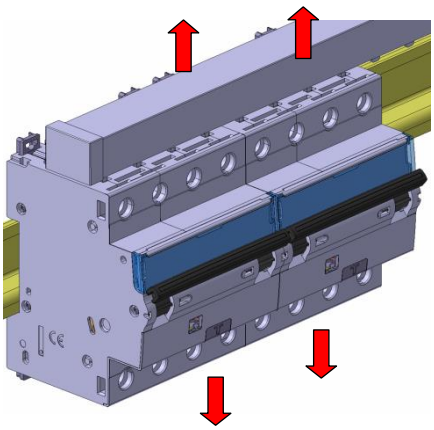
OR



Module maintenance :

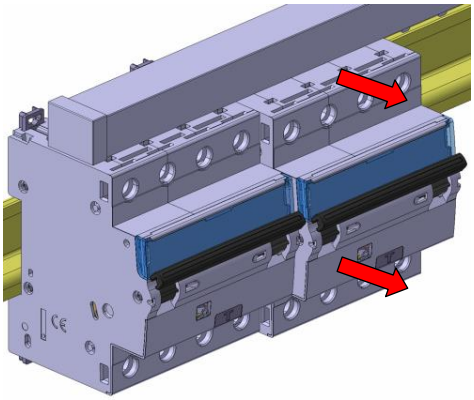
. A RCBO may be replaced in the middle of a row supplied with busbars without disconnecting the other products

Put the clamp in the unlocking position

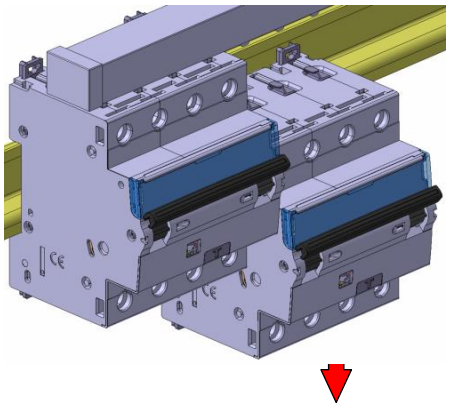


Unscrew the four upper terminals completely

Pull the device forward in order to release it from the rail



Pull the device downward in order to release it completely from the prongs of the busbar



Connection:

. Terminals protected against direct contact IP20, when device wired
. Cage terminals, with release and captive screws
. Terminals fitted with shutters preventing a cable being placed under the terminal, with the terminal partly open or closed
. Alignment and spacing of the terminals permitting connection with the other products via prong and fork-type (biconnect) supply busbars
. Terminal depth: 13 mm upstream and 13 mm downstream
. Screw head: mixed, slotted and Pozidriv no. 2
. Tightening torque:
- Recommended: 2.5 Nm
- Min.: 1.2 Nm
- Max.: 3.5 Nm

4. PREPARATION - CONNECTION *(continued)*

Conductor type:

. Copper cable
. Cable cross-section:

	Without ferrule	With ferrule
Rigid cable	**1 x 0.75 mm² to 35 mm²** **2 x 0.75 mm² to 16 mm²**	-
Flexible cable	**1 x 0.75 mm² to 25 mm²** **2 x 0.75 mm² to 16 mm²**	**1 x 0.75 mm² to 25 mm²**

. Prong supply busbar at the top or the bottom of the product, alone or with a 16 mm² flexible wire (without ferrule) or a connection terminal in the same terminal.
. Fork supply busbar at the bottom of the product

Recommended tools:

. For the screw terminals, screwdriver with 5.5 mm to 6.5 mm blade or Pozidriv no. 2 screwdriver
. For attaching or removing the DIN rail, screwdriver with 5.5 mm to 6.5 mm blade or Pozidriv no. 2 screwdriver

Manual actuation of the RCBO

. Ergonomic 2-position handle:
-"O-OFF": Device open
-"I-ON": Device closed

Contact status display:

. By marking of the handle:
-"O-OFF" in white on a green background = contacts open
-"I-ON" in white on a red background = contacts closed

Trip indication on residual current fault:

. Yellow indicator on the front

Locking:

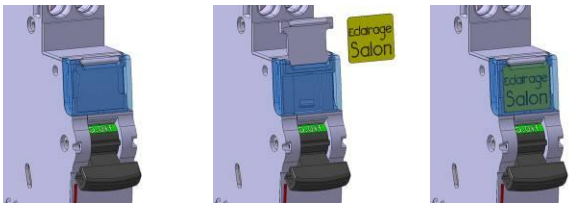
. Padlocks possible in the open or closed positions with padlock support (Cat. No. 4 063 03) and Ø 5 mm padlock (Cat. No. 4 063 13) or Ø6 mm padlock (Cat. No. 227 97)

Sealing:

. Possible in the open or closed positions

Labelling:

. Circuit identification by way of a label inserted in the label holder situated on the front of the product



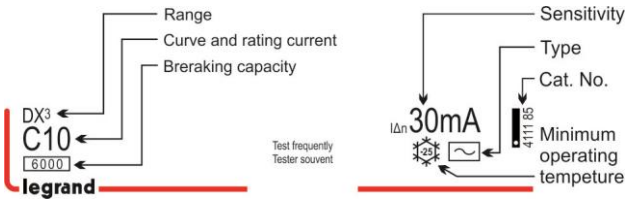
5. GENERAL CHARACTERISTICS

Neutral earthing system:

. IT , TT, TN

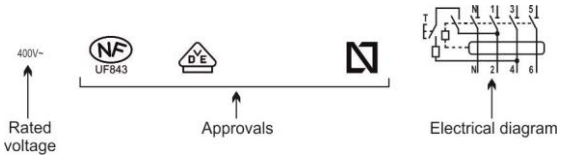
Marking on the front side:

. By permanent ink pad printing



Marking on the upper panel:

. By permanent ink pad printing



Test operating voltages:

IΔn	30 mA	300 mA	1000 mA
min. U	**320 V~**	**220 V~**	**230 V~**
max. U	**440 V~**	**440 V~**	**440 V~**

Breaking capacity:

. With a three-phase network + neutral (with alternating current 50 Hz)

Standard	Voltage between poles	Breaking capacity	
EN 61009-1	230 V	Icn	**6 kA**
	400 V		**6 kA**
EN 60947-2	230 V	Icu	**10 kA**
	400 V		**10 kA**
	230 V	Ics	**50 % Icu**
	400 V		**50 % Icu**

Residual breaking capacity:

. IΔm = 4.5 kA in accordance with EN 61009-1 section 9.12.11.4d (IΔm: short-circuit to earth)

Breaking capacity on one single pole (phase pole):

. In accordance with I $_{IT}$ EN60947-2 – Appendix H (double fault in IT system): 3 kA at 400 V ~ and 6 kA at 230 V~
. In accordance with Icn1 EN60898-1: 10 kA at 230 V~

5. GENERAL CHARACTERISTICS *(continued)*

Isolation distance:
. The distance between the contacts is greater than 5.5 mm with the handle in the open position. The RCBO is suitable for isolation in accordance with standard EN/IEC 61009-1

Insulation voltage:
. Ui = 500 V in accordance with standard EN/IEC 61009-1

Degree of pollution:
. 2 in accordance with standard EN/IEC 61009-1

Dielectric strength:
. 3,500 V

Rated impulse withstand voltage:
. Uimp = 4 kV (wave 1.2/50 µs)

Protection from false tripping:
. 8/20 µs wave resistance: 250 A
. 0.5 µs/100 kHz damped recurring wave resistance: 200 A

Degree or class of protection:
. Terminals protected against direct contact, Class of protection against solid objects and liquids (wired device): IP20 in accordance with standards IEC 529 – EN 60529 and NF 20-010
. Front panel protected against direct contact: IP 40
. Class II in relation to metallic conductive parts
. Class of protection against mechanical impacts IK 02 in accordance with standard EN 62262.

Plastic materials:
. Polyamide and P.B.T.

Enclosure heat and fire resistance:
. Resistance to glow wire tests at 960°C, in accordance with standard IEC/EN 61009-1
. Classification V0, in accordance with standard UL94

Higher heating potential:
. The heat potential of a 30 mA AC type C16 device is estimated at: 4.73 MJ

Closing and opening force via the handle:
. 6 N on opening
. 20 N on closing

Mechanical endurance:
Compliant with standard EN/IEC 61009-1
. Tested with 20,000 operations with no load

Electrical endurance:
Compliant with standard EN/IEC 61009-1
. Tested with 10,000 operations with load (at In x Cos φ 0.9)
. Tested with 2,000 residual current trip operations using the Test button or the fault current

Sinusoidal vibration resistance (in accordance with IEC 60068.2.6):
. Axes: x - y - z
. Frequency: 10 to 55 Hz
. Acceleration: 3g (1g = 9.81 $m.s^{-2}$)

Resistance to tremors:
. In accordance with standard EN/IEC 61009-1

Ambient temperatures:
. Operation: from – 25°C to + 60°C
. Storage: from – 40°C to + 70°C

DC operation:
. Cannot be used with DC

Frequency:
. Operation at at 400 Hz: No
. Operation at 60 Hz: Yes., except sensitivities 30mA, A and AC types, which can be replaced, only for ratings 16A,20A,25A,32A, by HPI types of equivalent ratings and sensitivity.

Packaged volume:

	Volume (dm^3)	Packaging
For all ratings	**0.7**	**Per 1**

Average weight per device:
. 30mA RCBOs= 0,48 kg
. 300mA RCBOs= 0,45 kg
. 1 A RCBOs= 0,45 kg

Derating of RCBOs function of the number of devices placed side by side:
When several RCBOs are installed side by side and operate simultaneously, the heat dissipation of one pole is limited. This results in an increased operating temperature for the RCBOs causing false tripping. Applying the following additional coefficients to the operating currents is recommended.

Number of RCBOs side by side	Coefficient
2 - 3	**0.9**
4 - 5	**0.8**
6 - 9	**0.7**
≥ 10	**0.6**

These values are provided by recommendation IEC 60439-1 and the standards NF C 63421 and EN 60439-1.
In order to avoid having to use these coefficients there must be good ventilation and the devices must be kept apart using the spacing elements Cat. No. 4 063 07 (0.5 module).

Specific use: Appropriate to operate in humid atmosphere and polluted by a chlorined environment (pool-type)

5. GENERAL CHARACTERISTICS *(continued)*

Derating of RCBOs in the event of use with fluorescent tubes:

Electronic or ferromagnetic ballasts provide a high inrush current for a very short time. These currents are liable to cause tripping of the RCBOs .

The maximum number of ballasts per RCBOs stated by the lamp and ballast manufacturers in their catalogues should be taken into account during installation.

Impact of height:

	≤2,000 m	3,000 m	4,000 m	5,000 m
Dielectric strength	**3,500 V**	**2,500 V**	**2,000 V**	**1,500 V**
Maximum operating voltage	**400 V**	**400 V**	**400 V**	**400 V**
Derating at 30°C	**none**	**none**	**none**	**none**

Dissipated power for the phase pole in In:

. B and C curve RCBOs, all types and all sensitivities

Rated current	10 A	13 A	16 A	20 A	25 A	32 A
Power (W)	**4.7**	**5.7**	**8.9**	**9.3**	**10.4**	**12.3**

Derating of RCBOs depending on the ambient temperature:

. The nominal characteristics of a RCBO are modified depending on the ambient temperature which prevails in the cabinet or enclosure where the RCBO is located.

. Reference temperature: 30°C in accordance with standard IEC/EN 60947-2.

	Ambient Temperature/In								
In (A)	- 25°C	- 10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C
10	**13**	**12**	**12**	**11**	**11**	10	**10**	**10**	**10**
13	**17**	**16**	**15**	**14**	**14**	13	**13**	**13**	**13**
16	**20**	**19**	**18**	**18**	**18**	16	**16**	**16**	**16**
20	**26**	**24**	**23**	**22**	**21**	20	**20**	**20**	**20**
25	**32**	**30**	**29**	**28**	**26**	25	**25**	**25**	**25**
32	**41**	**38**	**37**	**35**	**34**	32	**32**	**32**	**32**

Association and coordination with upstream fuses:

. Three-phase network (+N) 400/415 V, in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream fuse									
		gG and aM types									
Downstream RCBO		≤20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A	160 A
DX³ 6000 A B and C curves	≤13 A	**100 kA**	**100 kA**	**100 kA**	**100 KA**	**100 KA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	16 A	**-**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	20 A	**-**	**-**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	25 A	**-**	**-**	**-**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	32 A	**-**	**-**	**-**	**-**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**

5. GENERAL CHARACTERISTICS (continued)

Association and coordination with upstream MCBs:

. Three-phase network (+N) 400/415 V, in accordance with standard IEC 60947-2
. TT neutral earthing or TNS system

		Upstream MCB			
		DX³ 10 kA B and C curves DX³ 6000/10 kA B, C and D curves			
Downstream RCBO		≤32 A	40 A	50 A	63 A
DX³ 6000 A B and C curves	≤25 A	**10 kA**	**10 kA**	**10 kA**	**10 kA**
	32 A	-	**10 kA**	**10 kA**	**10 kA**

		Upstream MCB											
		DX³ 10000 16 kA B/C/D curves			DX³ 25 kA B/C/D curves			DX³ 36 kA C curve			DX³ 50 kA B/C/D curves		
Downstream RCBO		≤15 A	32 A	40 to 125 A	≤25 A	32 A	40 to 125 A	≤25 A	32 A	40 to 80 A	≤25 A	32 A	40 to 63 ☐
DX³ 6000 A B and C curves	≤20 A	**16 kA**	**16 kA**	**16 kA**	**25 kA**	**25 kA**	**25 kA**	**36 kA**	**36 kA**	**36 kA**	**50 kA**	**50 kA**	**50 kA**
	25 A	-	**16 kA**	**16 kA**	-	**25 kA**	**25 kA**	-	**36 kA**	**36 kA**	-	**50 kA**	**50 kA**
	32 A	-	-	**16 kA**	-	-	**25 kA**	-	-	**36 kA**	-	-	**50 kA**

Association and coordination with upstream Moulded Case Circuit Breakers (MCCBs):

. Three-phase network (+N) 400/415 V, in accordance with standard IEC 60947-2
.TT neutral earthing or TNS system

		Upstream MCCBs											
		DPX³ 160 16 kA			DPX³ 160 25 kA			DPX³ 160 36 kA			DPX³ 160 50 kA		
Downstream RCBO		16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A
DX³ 6000 A B and C curves	≤13 A	**16 kA**	**16 kA**	**16 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 kA**
	16 A	-	**16 kA**	**16 kA**	-	**25 kA**	**25 kA**	-	**25 kA**	**25 kA**	-	**25 kA**	**25 kA**
	20 A	-	**16 kA**	**16 kA**	-	**25 kA**	**25 kA**	-	**25 kA**	**25 kA**	-	**25 kA**	**25 kA**
	25 A	-	-	**16 kA**	-	-	**25 kA**	-	-	**25 kA**	-	-	**25 kA**
	32 A	-	-	**16 KA**	-	-	**25 kA**	-	-	**25 kA**	-	-	**25 kA**

5. GENERAL CHARACTERISTICS *(continued)*

Association and coordination with upstream Moulded Case Circuit Breakers (MCCBs):

. Three-phase network (+N) 400/415 V, in accordance with standard IEC 60947-2

.TT neutral earthing or TNS system

		Upstream MCCB			
		DPX³ 250 25 kA	DPX³ 250 36 kA	DPX³ 250 50 kA	DPX³ 250 70 kA
Downstream RCBO		25 to 250 A	25 to 250 A	25 to 250 A	25 to 250 A
DX³ 6000 A B and C curves	≤32 A	**25 kA**	**25 kA**	**25 kA**	**25 kA**

		Upstream MCCB				
		DPX 250 36 kA DPX-H 250 70KA		DPX / DPX-H 630	DPX / DPX-H 1250	DPX / DPX-H 1600
Downstream RCBO		25 A	40 to 250 A	250 to 630 A	500 to 1,250 A	630 to 1600 A
DX³ 6000 A B and C curves	≤20 A	**25 kA**	**25 kA**	**25 kA**	**25 kA**	**25 KA**
	25 A	-	**25 kA**	**25 kA**	**20 kA**	**20 kA**
	32 A	-	**25 kA**	**25 kA**	**15 kA**	**15 kA**

		Upstream MCCB	
Downstream RCBO		DPX 250 ER AB	DPX 400 AB
DX³ 6000 A B and C curves	≤32 A	**25 kA**	**25 kA**

Association and coordination with upstream fuses only for sensitivities 300mA and 1000mA :

. Three-phase network (+N) 230/240, in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream fuse									
		gG and aM types									
Downstream RCBO		≤20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A	160 A
DX³ 6000 A B and C curves	≤13 A	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 KA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 KA**
	16 A	-	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	20 A	-	-	**100 kA**	**100 kA**	**100 KA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	25 A	-	-	-	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**
	32 A	-	-	-	-	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**100 kA**	**40 kA**

5. GENERAL CHARACTERISTICS *(continued)*

Association and coordination with upstream MCBs, only for sensitivities 300mA and 1000mA :

. Three-phase network (+N) 230/240 V, in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream MCB			
		DX³ 6000/10 kA B, C and D curves			
Downstream RCBO		≤32A	40A	50A	63A
DX³ 6000 A B and C curves	≤ 25 A	**25 kA**	**25 kA**	**25 kA**	**25 kA**
	32 A	-	**25 kA**	**25 kA**	**25 kA**

		Upstream MCB											
		DX³ 10000 16 kA B/C/D curves			DX³ 25 kA B/C/D curves			DX³ 36 kA C curve			DX³ 50 kA B/C/D curves		
Downstream RCBO		≤25 A	32 A	40 to 120 A	≤25 A	32 A	40 to 125 A	≤25 A	32A	40 to 80 A	≤25 A	32 A	40 to 63 A
DX³ 6000 A B and C curves	≤20 A	**32 kA**	**32 kA**	**25 kA**	**50 kA**	**50 kA**	**25 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**
	25 A	-	**32 kA**	**25 kA**	-	**50 kA**	**25 kA**	-	**50 kA**	**50 kA**	-	**50 KA**	**50 kA**
	32 A	-	-	**25 kA**	-	-	**25 kA**	-	-	**50 kA**	-	-	**50 kA**

Association and coordination with upstream Moulded Case Circuit Breakers (MCCBs), only for sensitivities 300mA and 1000mA :

. Three-phase network (+N) 230/240 V , in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream MCCB											
		DPX³ 160 16 kA			DPX³ 160 25 kA			DPX³ 160 36 kA			DPX³ 160 50 kA		
Downstream RCBO		16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A	16 A	25 A	40 to 160 A
DX³ 6000 A B and C curves	≤13 A	**25 kA**	**25 kA**	**25 kA**	**40 kA**	**40 kA**	**40 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**
	16 A	-	**25 kA**	**25 kA**	-	**40 kA**	**40 kA**	-	**50 kA**	**50 kA**	-	**50 KA**	**50 kA**
	20 A	-	**25 kA**	**25 kA**	-	**40 kA**	**40 kA**	-	**50 kA**	**50 kA**	-	**50 KA**	**50 kA**
	25 A	-	-	**25 kA**	-	-	**40 kA**	-	-	**50 kA**	-	-	**50 kA**
	32 A	-	-	**25 kA**	-	-	**40 kA**	-	-	**50 kA**	-	-	**50 kA**

5. GENERAL CHARACTERISTICS *(continued)*

Association and coordination with upstream Moulded Case Circuit Breakers (MCCBs), only for sensitivities 300mA and 1000mA:

. Three-phase network (+N) 230/240 V, in accordance with standard IEC 60947-2
. TT neutral earthing or TNS system

		Upstream MCCB			
		DPX³ 250 25 kA	DPX³ 250 36 kA	DPX³ 250 50 kA	DPX³ 250 70 kA
Downstream RCBO		≤ 250A	≤ 250A	≤ 250A	≤ 250A
DX³ 6000A B and C curves	≤32A	**40 kA**	**50 kA**	**50 kA**	**50 kA**

		Upstream MCCB				
		DPX / DPX-H 250		DPX / DPX-H 630	DPX / DPX-H 1250	DPX / DPX-H 1600
Downstream RCBO		25 A	40 to 250A	≤ 630A	≤ 1250A	≤ 1,600A
DX³ 6000A B and C curves	≤20 A	**50 kA**	**50 kA**	**50 kA**	**50 kA**	**50 kA**
	25A	-	**50 kA**	**50 kA**	**50 kA**	**50 kA**
	32A	-	**50 kA**	**50 kA**	**50 kA**	**50 kA**

		Upstream MCCB	
Downstream RCBO		DPX 250 ER AB	DPX 400 AB
DX³ 6000A B and C curves	≤32 A	**50 kA**	**50 kA**

Selectivity between two levels of protection

. The downstream MCB must always have a magnetic threshold and a rated current lower than those of the upstream protection.
. Selectivity or Discrimination is said to be total (T) if there is discrimination up to the value of breaking capacity (in accordance with standard EN/IEC 60947-2) of the downstream MCB.

Discrimination with upstream fuses, only for sensitivities 300mA and 1000mA:

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream fuse gG type							
Downstream RCBO		32A	40A	50A	63A	80A	100A	125A	160A
DX³ 6000A B and C curves	10 A	-	**1600**	**2200**	**3200**	**3000**	**T**	**T**	**T**
	13A	-	**1400**	**1800**	**2600**	**3000**	**5600**	**T**	**T**
	16A	-	**1400**	**1800**	**2600**	**3000**	**5600**	**T**	**T**
	20A	-	**1200**	**1500**	**2200**	**2500**	**4600**	**T**	**T**
	25A	-	-	**1300**	**2000**	**2200**	**4100**	**5500**	**T**
	32A	-	-	**1200**	**1700**	**1900**	**3500**	**4500**	**T**

5. GENERAL CHARACTERISTICS *(continued)*

Discrimination with upstream fuses, only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream fuse aM type								
Downstream RCBO		25A	32A	40A	50A	63A	80A	100A	125A	160A
DX³ 6000A B and C curves	10A	-	1100	1700	2500	5000	T	T	T	T
	13A	-	1000	1400	2100	4000	T	T	T	T
	16A	-	1000	1400	2100	4000	T	T	T	T
	20A	-	-	1300	1800	3400	5100	T	T	T
	25A	-	-	1100	1600	3000	4500	T	T	T
	32A	-	-	-	1300	2400	3800	5000	T	T

Discrimination with upstream MCBs , only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream MCB											
		DX³ 4500/6 kA - DX³ 6000/10 kA - DX³ 10000/16 kA B curve											
Downstream RCBO		10A	13A	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A
DX³ 6000A B and C curves	10A	-	-	-	80	100	128	160	200	252	3000	5000*	T*
	13A	-	-	-	-	100	128	160	200	252	2500	4000	6000*
	16A	-	-	-	-	-	128	160	200	252	2000	3600	5500*
	20A	-	-	-	-	-	-	160	200	252	1600	3000	4000
	25A	-	-	-	-	-	-	-	200	252	1300	2400	3300
	32A	-	-	-	-	-	-	-	-	252	1000	1800	2700

		Upstream MCB											
		DX³ 3000 - DX³ 4500/6 kA - DX³ 6000/10 kA - DX³ 10000/16 kA C curve											
Downstream RCBO		10A	13A	16A	20 A	25A	32A	40A	50A	63A	80A	100A	125A
DX³ 6000A B and C curves	10A	-	98	120	150	187	240	300	375	472	3000	5000*	T*
	13A	-	-	120	150	187	240	300	375	472	2500	4000*	6000*
	16A	-	-	-	150	187	240	300	375	472	2000	3600*	5500*
	20A	-	-	-	-	187	240	300	375	472	1600	3000	4000*
	25A	-	-	-	-	-	240	300	375	472	1300	2400	3300*
	32A	-	-	-	-	-	-	300	375	472	1000	1800	2700

. T = Total discrimination

. *: If the discrimination value stated in the table is greater than the breaking capacity of the upstream circuit breaker then the breaking capacity of the upstream device must be taken as the discrimination value (the discrimination value may not exceed the breaking capacity of the upstream device).

5. GENERAL CHARACTERISTICS *(continued)*

Discrimination with upstream modular MCBs , only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream MCB											
		DX³ 4500/6 kA - DX³ 6000/10 kA - DX³ 10000/16 kA D curve											
Downstream RCBO		10A	13A	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A
DX³ 6000A B/C curves	10A	-	-	192	240	300	384	480	600	756	3000	5000	T
	13A	-	-	-	240	300	384	480	600	756	2500	4000	6000
	16A	-	-	-	240	300	384	480	600	756	2000	3600	5500
	20A	-	-	-	-	300	384	480	600	756	1600	3000	4000
	25A	-	-	-	-	-	384	480	600	756	1300	2400	3300
	32A	-	-	-	-	-	-	480	600	756	1100	1450	2700

		Upstream MCB										
		DX³ 25 kA B curve										
Downstream RCBO		10A	16A	20A	25A	32A	40A	50A	63A	80 A	100A	12 A
DX³ 6000A B and C curves	10A	-	-	80	100	500	700	1000	1800	3000	5000	T
	13A	-	-	-	100	400	600	1200	1500	2500	4000	T
	16A	-	-	-	-	300	500	700	1300	2000	3600	5500
	20A	-	-	-	-	-	400	500	1000	1600	3000	4000
	25A	-	-	-	-	-	-	500	800	1300	2400	3300
	32A	-	-	-	-	-	-	500	600	1000	1800	2700

		Upstream MCB										
		DX³ 25 kA C curve										
Downstream RCBO		10A	16A	20A	25A	32A	40A	50A	63A	80A	100 A	125 A
DX³ 6000A B and C curves	10A	-	120	150	187	500	700	1000	1800	3000	5000	T
	13A	-	120	150	187	400	600	1200	1500	2500	4000	T
	16A	-	-	150	187	300	500	700	1300	2000	3600	5500
	20A	-	-	-	187	300	400	500	1000	1600	3000	4000
	25 A	-	-	-	-	240	400	500	800	1300	2400	3300
	32A	-	-	-	-	-	300	500	600	1000	1800	2700

T = Total discrimination

5. GENERAL CHARACTERISTICS *(continued)*

Discrimination with upstream MCBs, only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream MCB										
		DX³ 25 kA D curve										
Downstream RCBO		10A	16A	20A	25A	32A	40A	50A	63A	80A	10 A	125 A
DX³ 6000A B and C curves	10A	-	192	240	300	500	700	1000	1800	3000	5000	T
	13A	-	-	240	300	400	600	1200	1500	2500	4000	T
	16A	-	-	240	300	384	500	700	1300	2000	3600	5500
	20A	-	-	-	300	384	480	600	1000	1600	3000	4000
	25A	-	-	-	-	384	480	600	800	1300	2400	3300
	32A	-	-	-	-	-	480	600	756	1100	1450	2700

		Upstream MCB								
		DX³ 36 kA/DX³ 50 kA C curve								
Downstream RCBO		10A	16A	20A	25A	32A	40A	50A	63A	80A
DX³ 6000A B and C curves	10A	-	120	150	210	500	700	1000	1800	3000
	13A	-	120	150	200	400	600	1200	1500	2500
	16A	-	-	150	187	300	500	700	1300	2000
	20A	-	-	-	187	300	400	500	1000	1600
	25A	-	-	-	-	240	400	500	800	1300
	32A	-	-	-	-	-	300	500	600	1000

		Upstream MCB														
		DX³ 50 kA B curve							DX³ 50 kA D curve							
Downstream RCBO		≤16A	2 A	25A	32A	40A	50A	63A	10A	16A	20A	25A	32A	40A	50A	63A
DX³ 6000A B and C curves	10A	-	150	210	500	700	1000	1800	-	192	240	300	500	700	1000	1800
	13A	-	-	200	400	600	1200	1500	-	-	240	300	400	600	1200	1500
	16A	-	-	-	300	500	70□	1000	-	-	240	300	384	500	700	1300
	20A	-	-	-	-	400	500	1000	-	-	-	300	384	480	600	1000
	25A	-	-	-	-	-	500	800	-	-	-	-	384	480	600	800
	32A	-	-	-	-	-	500	600	-	-	-	-	-	480	600	756

T = Total discrimination

Discrimination is said to be total if there is discrimination up to the value of the breaking capacity (in accordance with EN 60947-2) of the

5. GENERAL CHARACTERISTICS *(continued)*

Discrimination with upstream Moulded Case Circuit Breakers (MCCBs) , only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream MCCB							
		DPX³ 160 16 kA to 50 kA							
Downstream RCBO		16A	25A	40A	63A	80A	100A	125A	160A
DX³ 6000A B and C curves	10A	5	T	T	T	T	T	T	T
	13A	-	T	T	T	T	T	T	T
	16A	-	T	T	T	T	T	T	T
	20A	-	5	5	5	5	6	T	T
	25A	-	-	4.5	4.5	4.5	4.5	T	T
	32A	-	-	-	3	4	4	T	T

		Upstream MCCB		
		DPX³ 250		
Downstream RCBO		40A	100A	160 to 250A
DX³ 6000A B and C curves	10A	T	T	T
	13A	T	T	T
	16A	T	T	T
	20A	5	T	T
	25A	4	T	T
	32A	-	5	T

		Upstream MCCB				
		DPX 250 / DPX-H 250 Thermal-magnetic				
Downstream RCBO		25A	40A	63A	100A	160 to 250A
DX³ 6000A B and C curves	10A	5	5	5	T	T
	13A	4	4	4	T	T
	16A	4	4	4	T	T
	20A	-	4	4	T	T
	25A	-	3	3	T	T
	32A	-	-	2	5	T

T = Total discrimination

5. GENERAL CHARACTERISTICS *(continued)*

Discrimination with upstream Moulded Case Circuit Breakers (MCCBs) , only for sensitivities 300mA and 1000mA :

. Discrimination limit with a voltage of 230 V ~ (Values in A)

		Upstream MCCB				
		DPX 250 / DPX-H 250 Electronic				DPX / DPX-H 630 / 1250 / 1600 DMX³ 2500 / 4000
Downstream RCBO		40A	100A	160A	250A	160 to 4000A
DX³ 6000A B and C curves	10A	**T**	**T**	**T**	**T**	**T**
	13A	**T**	**T**	**T**	**T**	**T**
	16A	**T**	**T**	**T**	**T**	**T**
	20A	**5**	**T**	**T**	**T**	**T**
	25A	**4**	**T**	**T**	**T**	**T**
	32A	**-**	**5**	**T**	**T**	**T**

		Upstream MCCB		
		DPX 250 ER AB		DPX 400 AB
Downstream RCBO		90A	130 to 240A	320 and 400A
DX³ 6000A B and C curves	10A	**T**	**T**	**T**
	13A	**T**	**T**	**T**
	16A	**T**	**T**	**T**
	20A	**T**	**T**	**T**
	25A	**T**	**T**	**T**
	32A	**5**	**T**	**T**

T = Total discrimination

6. COMPLIANCE AND APPROVALS

In accordance with standards:

. EN/IEC 61009-1 (NF C 61440)

Usage in special conditions:

. Category C compliant (testing temperature range range from -25°C to +70°C, resistant to salt spray) in accordance with the classification defined in Appendix Q of standard IEC/EN 60947-1

Respect for the environment – Compliance with European Union Directives:

. Compliance with Directive 2002/95/EC of 27/01/03 known as "RoHS" which provides for a restriction on the use of dangerous substances such as lead, mercury, cadmium, hexavalent chromium and polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) brominated flame retardants from 1st July 2006

. Compliance with the Directive 91/338/EEC of 18/06/91 and decree 94-647 of 27/07/04

Plastic materials:

. Halogen free plastic materials

. Labelling of parts compliant with ISO 11469 and ISO 1043.

Packaging:

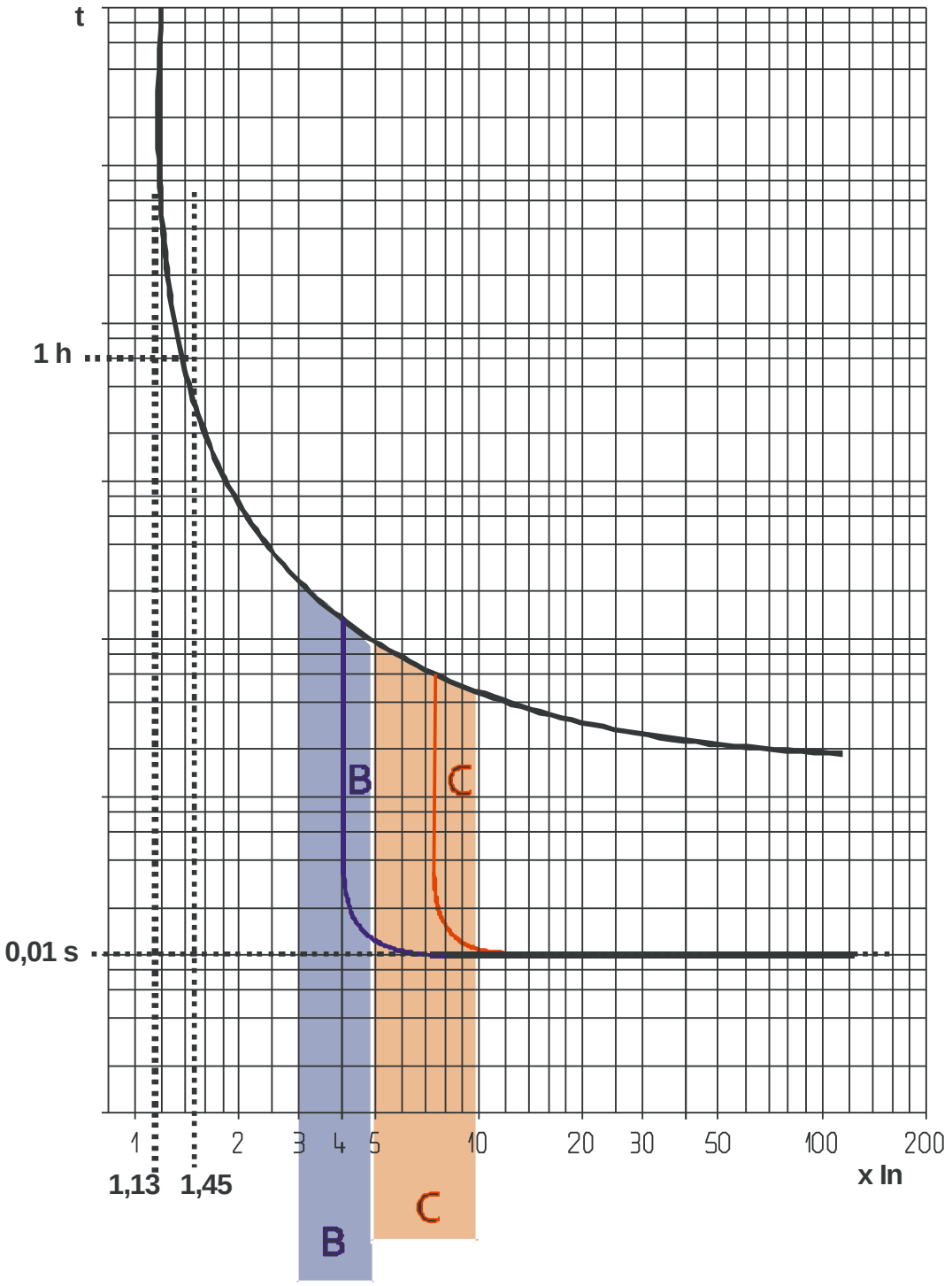
. Design and manufacture of packaging compliant with decree 98-638 of 20/07/98 and Directive 94/62/EC

Approvals obtained:

. France: NF

7. CURVES

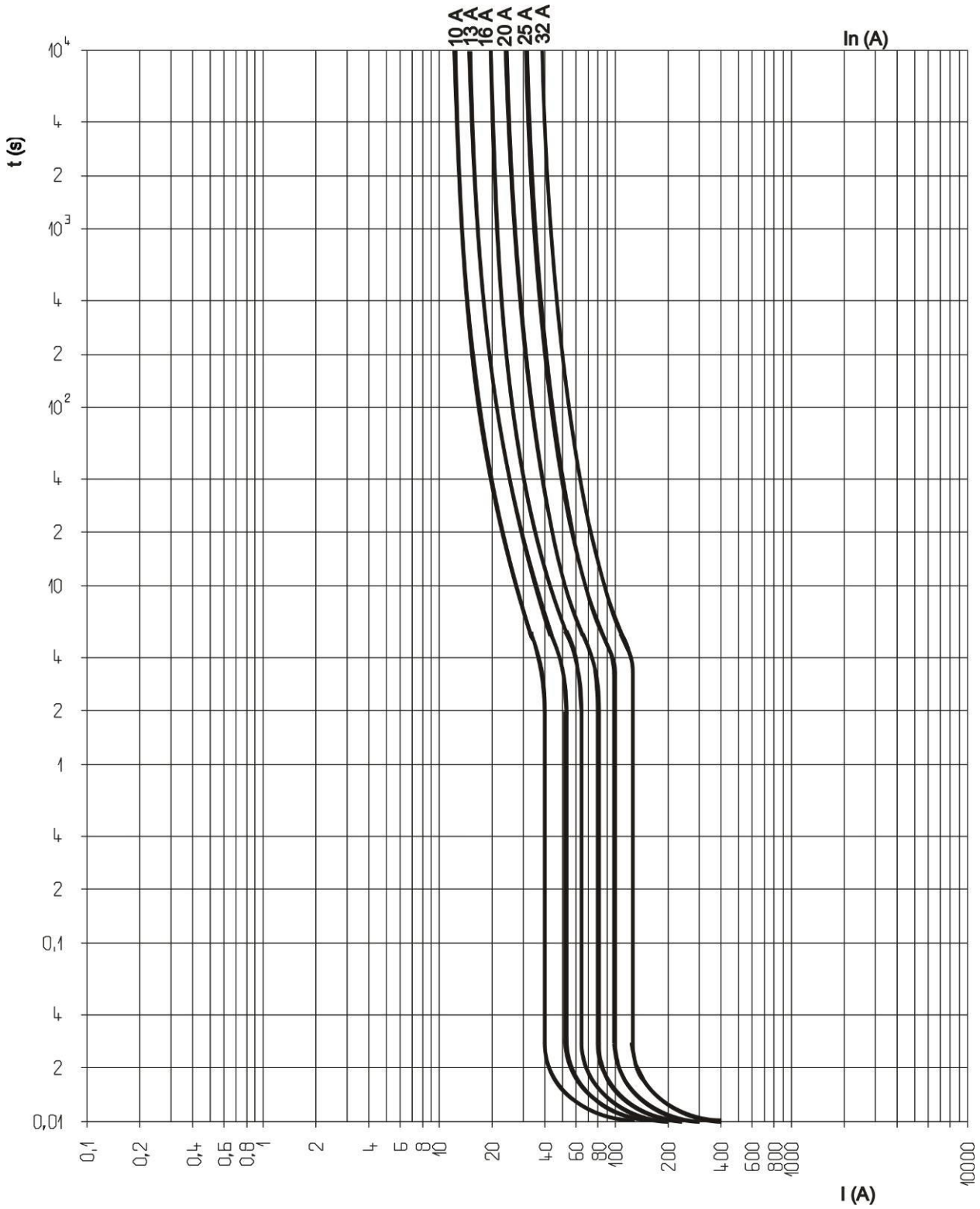
Thermal-magnetic tripping curve range typical of B and C curve RCBOs:



Thermal tripping at ambient temperature = 30°C
In = RCBO rated current

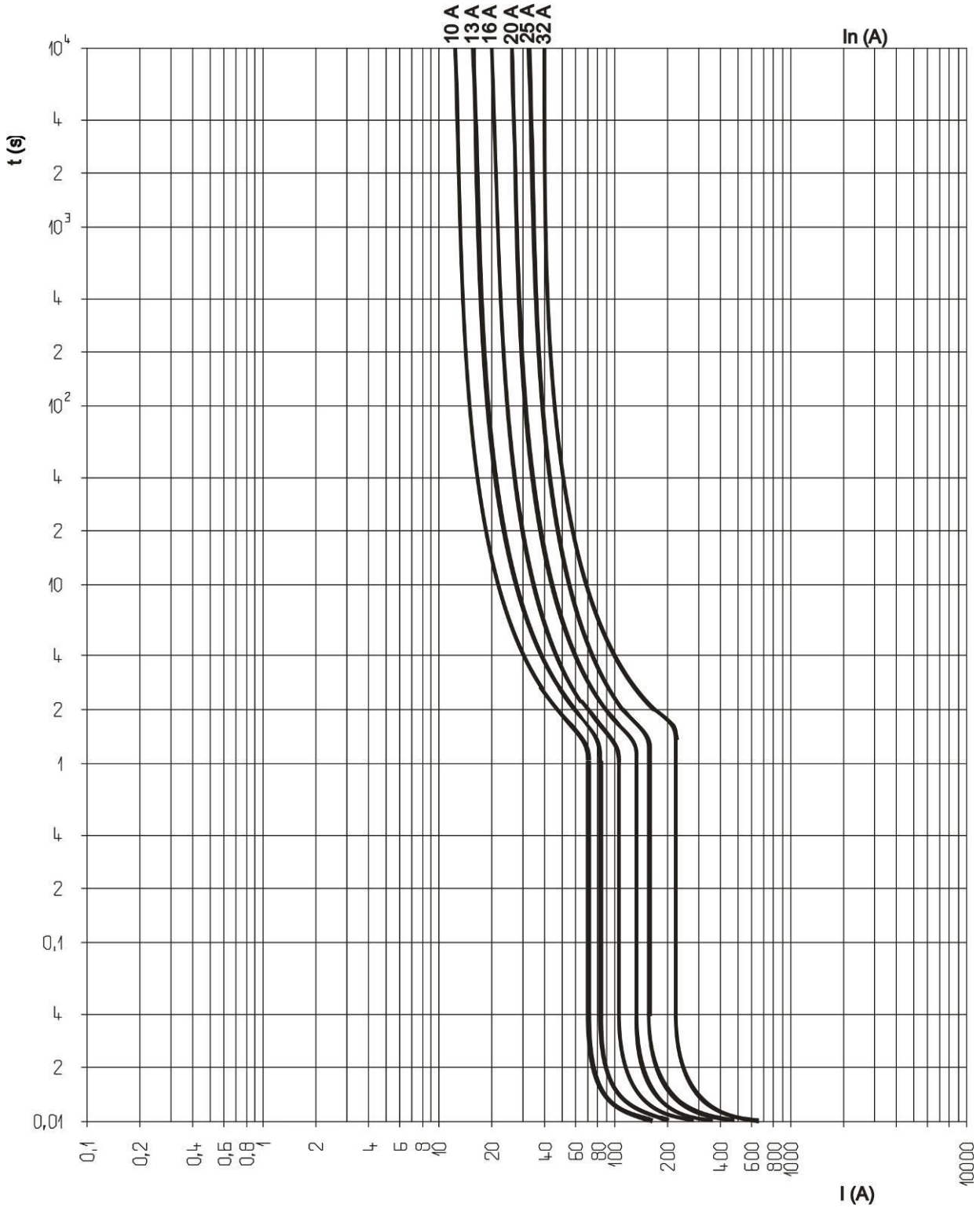
7. CURVES *(continued)*

Average thermal-magnetic tripping curves range typical of B curve RCBOs:



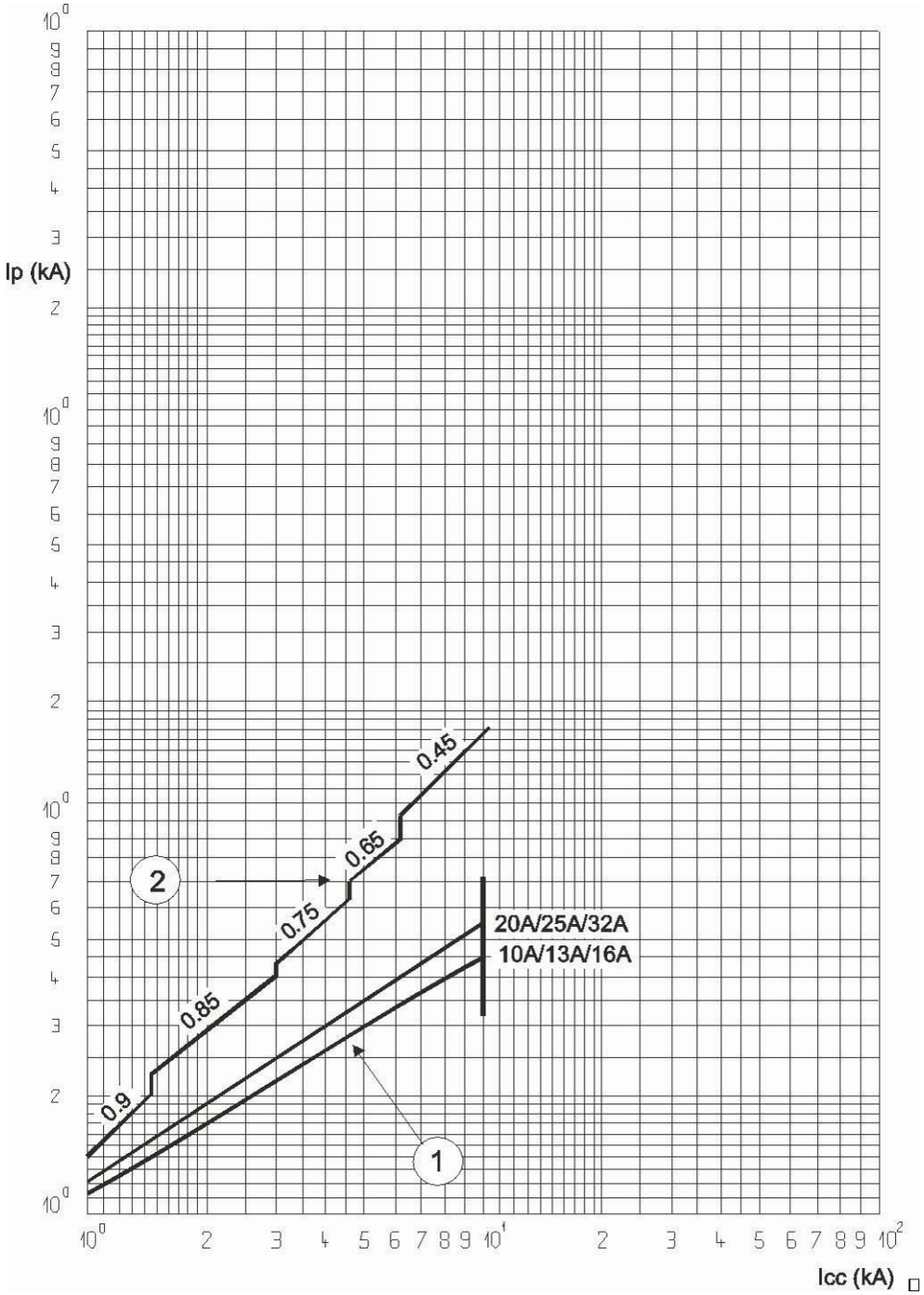
7. CURVES *(continued)*

Average thermal-magnetic tripping curves range typical of C curve circuit RCBOs:



7. CURVES *(continued)*

Current limiting curves:

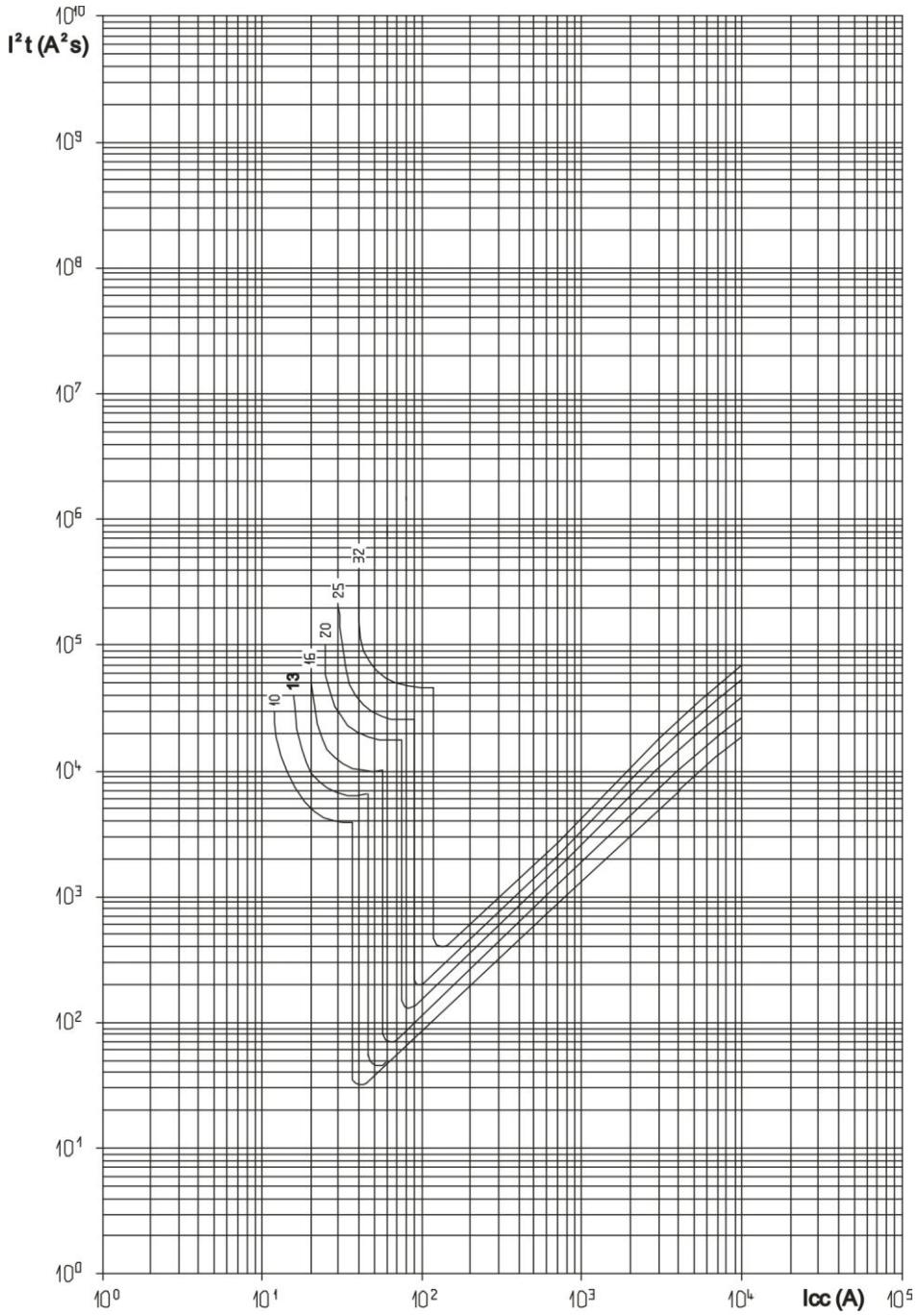


Icc = Prospective short-circuit symmetrical current (rms value in kA)
Ip = Maximum peak value (kA)
① = Short-circuit rms currents (max. peak)
② = Unlimited peak currents (max), corresponding to power factors shown above (0.15 to 0.9)

7. CURVES *(continued)*

Thermal stress limiting curves:

. B curve 4-pole RCBO

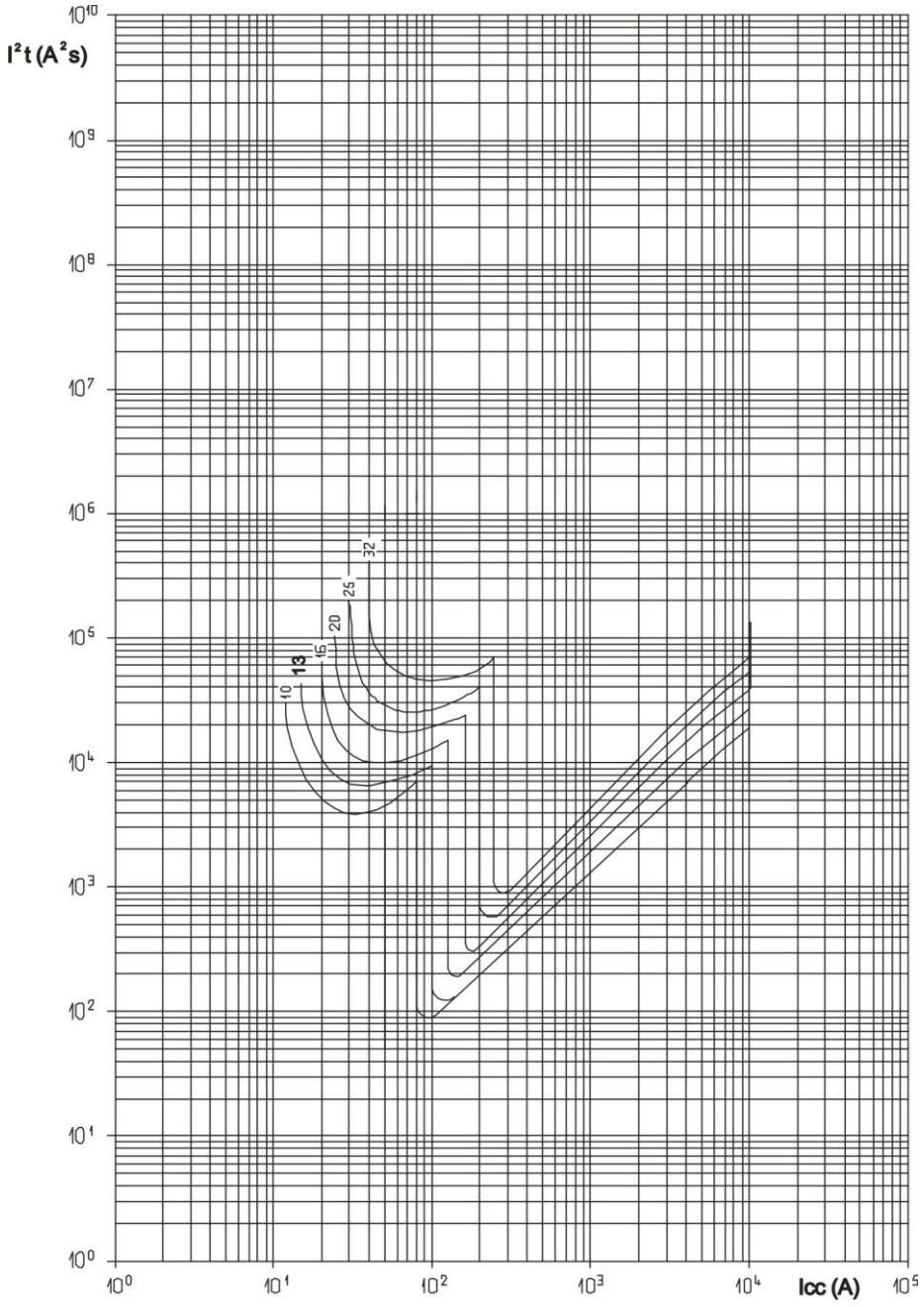


Icc = Prospective short-circuit symmetrical current (rms value in kA)
I²t = Limited thermal stress (in A²s)

7. CURVES *(continued)*

Thermal stress limiting curves:

. C curve 4-pole RCBO



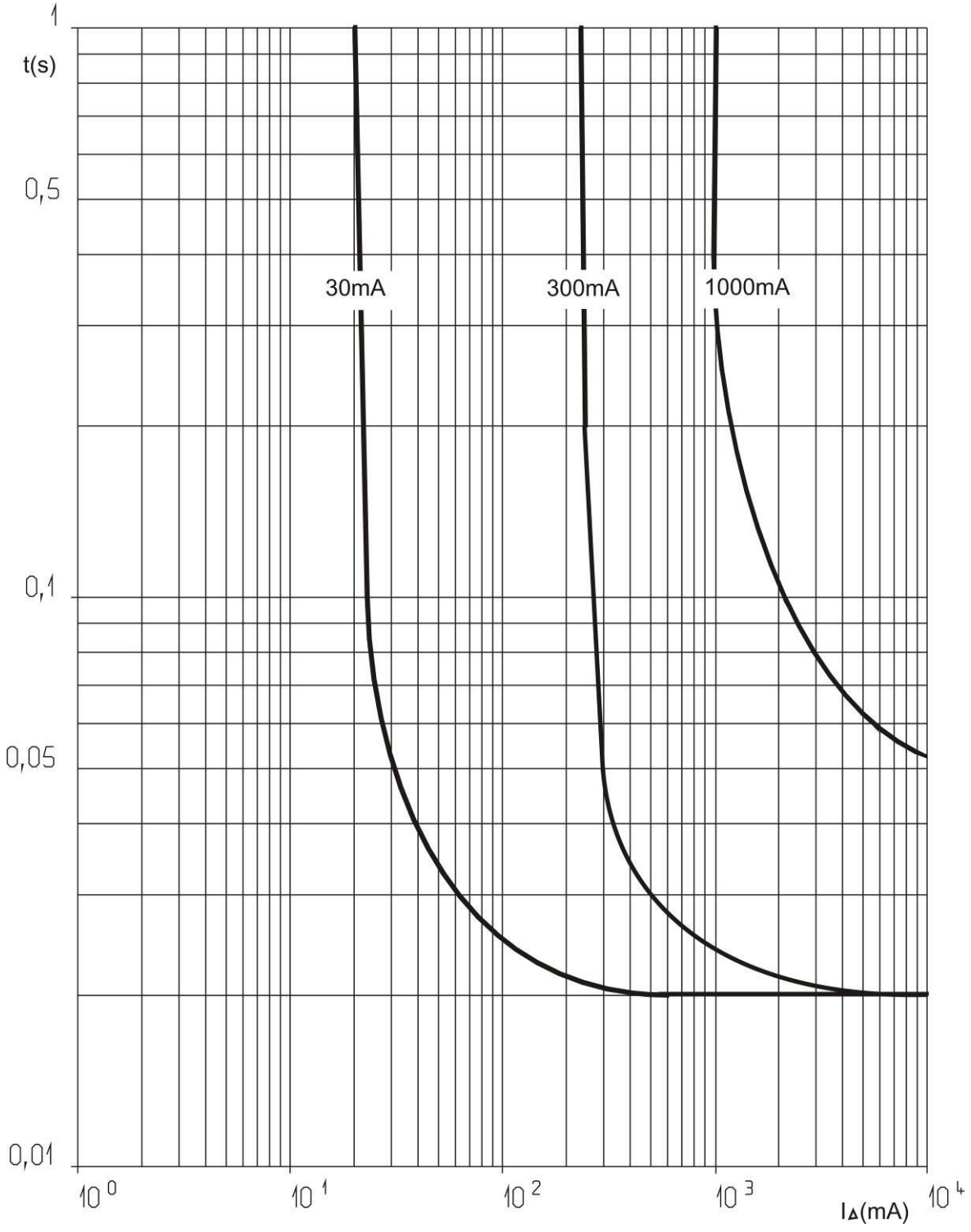
Icc = Prospective short-circuit symmetrical current (rms value in kA)
I²t = Limited thermal stress (in A²s)

7. CURVES *(continued)*

Tripping current curves:

. Tripping time curve depending on the value of the fault current:

AC TYPE

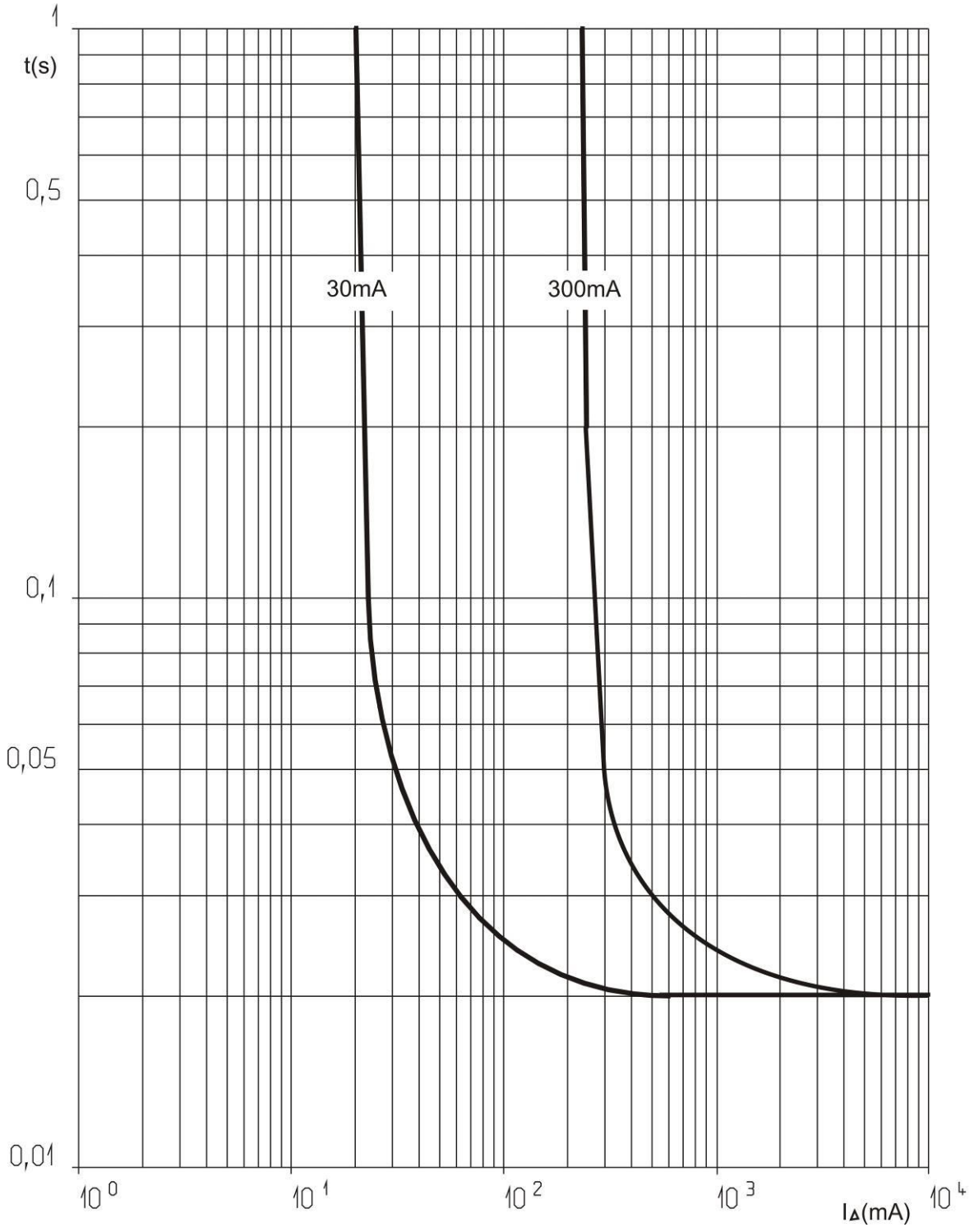


7. CURVES *(continued)*

Tripping current curves:

. Tripping time curve depending on the value of the fault current:

A TYPE

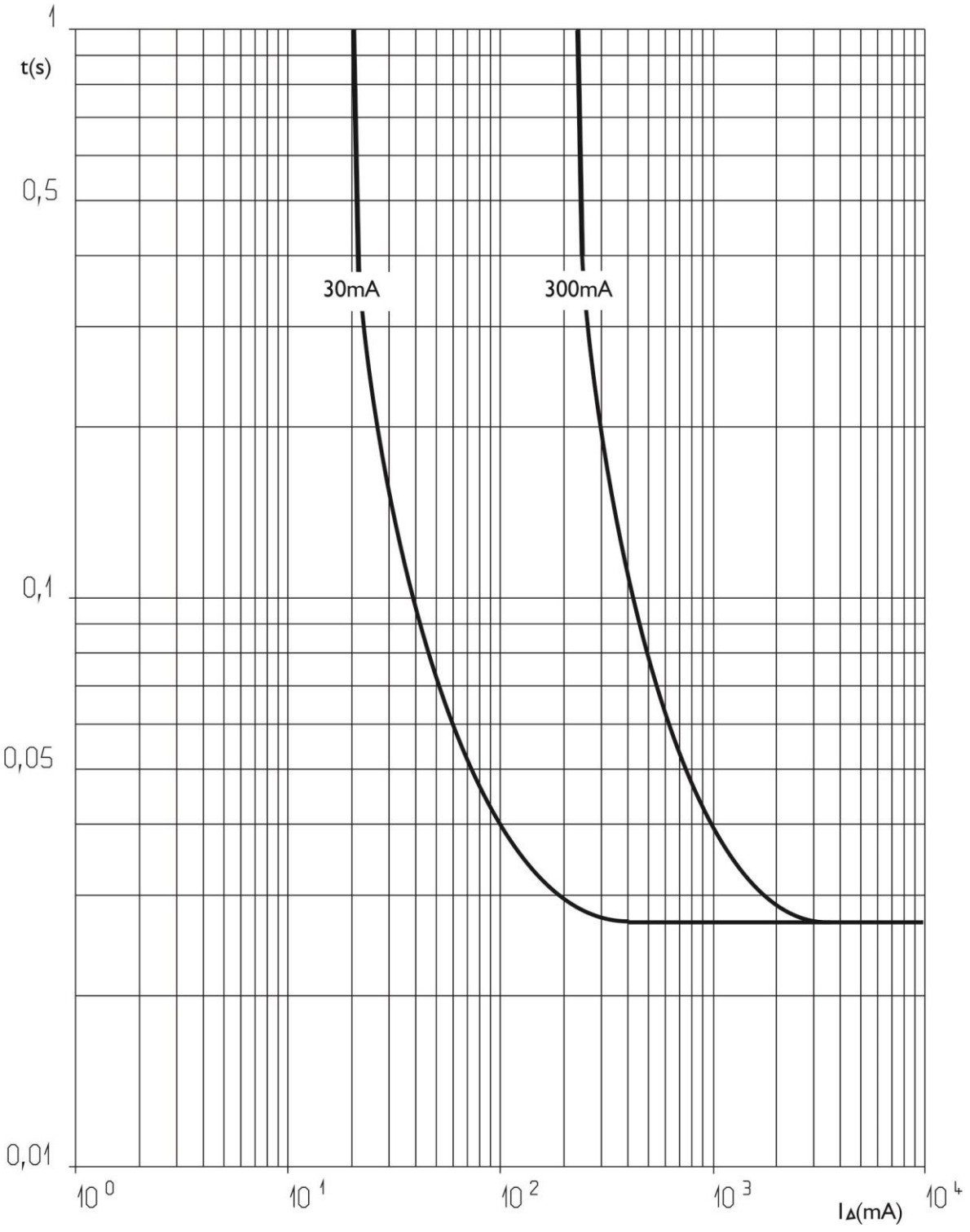


7. CURVES *(continued)*

Tripping current curves:

. Tripping time curve depending on the value of the fault current:

HPI TYPE



8. AUXILIARIES AND ACCESSORIES

Wiring accessories:

. Supply busbar:
-HX³ 4-pole universal supply busbar (Cat. No. 4 049 44, 9 45)
. Connection Terminals for aluminium cable with max. 50 mm² cross-section (Cat. No. 4 063 10)
. Sealable screw cover (Cat. No. 4 063 04)

Signalling auxiliaries:

. Auxiliary contact (0.5 module, Cat. No. 4 062 58)
. Fault signalling contact (0.5 module, Cat. No. 4 062 60)
. Auxiliary contact that can be changed into fault signalling contact (0.5 module, Cat. No. 4 062 62)
. Auxiliary contact + fault signalling contact that can be changed into 2 auxiliary contacts (1 module, Cat. No. 4 062 66)

Control auxiliaries:

. Shunt trip (1 module, Cat. No. 4 062 76, 2 78)
. Undervoltage release (1 module, Cat. No. 4 062 80, 82)
. Stand-alone release for N/C push-button
(1.5 module, Cat. No. 4 062 87)

Motor driven control modules:.

Motor-driven control module (1 module, Cat. No. 4 062 91)
. Motor-driven control module with integrated automatic reset
(2 modules, Cat. Nos. 4 062 93, 95)

Possible combinations of auxiliaries and RCBOs:

. The auxiliaries are installed to the left of the RCBOs
. Maximum number of auxiliaries = 3
. Maximum number of 1 module signalling auxiliaries = 2
. Maximum number of control auxiliaries
(Cat. Nos. 4 062 76 to 4 062 87) = 1
. The control auxiliary trip (Cat. Nos. 4 062 76 to 4 062 87) must mandatorily be placed to the left of the signalling auxiliaries (Cat. Nos. 4 062 58 to 4 062 66) where the auxiliaries from these 2 families are connected to the same RCBO

Sealing:

. Possible in the open or closed positions

Locking options:

. Via padlock 5 mm in diameter (Cat. No. 4 063 13) or padlock 6 mm in diameter (Cat. No. 227 97) and padlock support (Cat. No. 4 063 03)

Installation software:

. XL PRO³

9. SAFETY

. For your safety your electrical installation is equipped with residual current protection and this must be tested periodically. In the absence of any national regulations on the time period required for this, Legrand recommends that this test be carried out every month: press the "T" test button, the device should trip. Please call an electrician immediately if this does not happen as the safety level of your installation has been reduced
. The presence of residual current protection does not remove the need to observe all the precautions associated with using electrical energy.

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

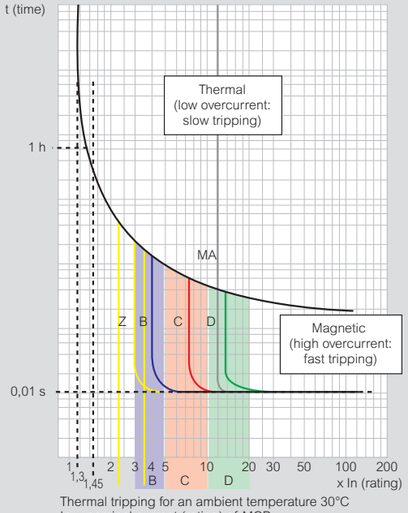
	1P/2P/3P/4P 230/400 V~ MCBs			
	DX³ 6000 10 kA	**DX³ 10000 16 kA**	**DX³ 25 kA**	**DX³ 50 kA**
Icn1	10000 A	16000 A	25000 A	50000 A
Ui	500 V	500 V	500 V	500 V

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

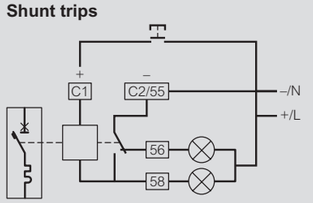
Curves	Magnetic threshold settings	
Z(1)	2.4 to 3.6 In	
B	3 to 5 In	
C	5 to 10 In	
D	10 to 14 In	(10 to 20 acc. to the stds)
MA(1)	12 to 14 In	

1: On request

Technical characteristics of auxiliaries

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

Shunt trips



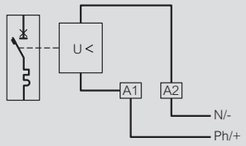
Nominal voltage (Un)
- 12 to 48 V~ and ⎓
- 110 to 415 V~ and 110 to 125 V⎓

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

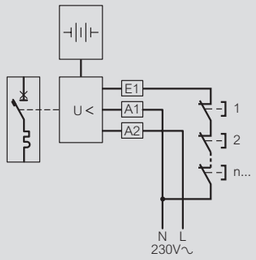
Pull-in voltage ≥ 0.55 Un
Tripping time: 100 to 400 ms ± 10% (adjustable)
Power consumption: 24 V~ and ⎓: 0.1 VA
48 V~ and ⎓: 0.2 VA
230 V~: 1 VA



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

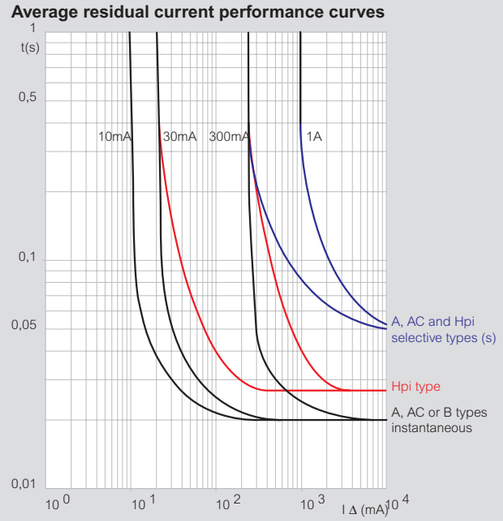
Special case of continuity of service

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

Downstream MCB		RX³ 6000 / TX³ 6000 / TX³ 10000 / DX³ 6000 - 10 kA / DX³ 10000 - 16 kA — B curve				RX³ 4500 / RX³ 6000 / TX³ 6000 / TX³ 10000 / DX³ 6000 - 10 kA / DX³ 10000 - 16 kA — C curve							DX³ 6000 - 10 kA — D curve					DX³ 25 kA / DX³ 50 kA — C curve							DX³ 25 kA / DX³ 50 kA — D curve						
	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
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	< 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	-	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	-	-	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	-	-	-	252	-	300	375	472	1600	3000	4000	384	480	600	756	-	400	500	1000	1600	3000	4000	384	480	600	1000	1600	3000	4000
	25	-	-	-	-	-	-	375	472	1300	2400	3300	384	480	600	756	-	-	500	800	1300	2400	3300	384	480	600	800	1300	2400	3300
	32	-	-	-	-	-	-	-	472	1000	1800	2700	-	480	600	756	-	-	-	600	1000	1800	2700	-	480	600	756	1100	1450	2700
	40	-	-	-	-	-	-	-	-	800	1600	2400	-	-	600	756	-	-	-	-	800	1600	2400	-	-	600	756	1000	1250	2400
	50	-	-	-	-	-	-	-	-	-	900	1700	-	-	-	756	-	-	-	-	-	900	1700	-	-	-	756	950	1200	1700
	63	-	-	-	-	-	-	-	-	-	-	1200	-	-	-	-	-	-	-	-	-	-	1200	-	-	-	-	950	1200	1500
	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

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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	≤ 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	≤ 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

Protection of DC circuits

DX³ 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

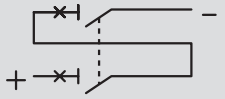
2 - Protection against overloads

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

3 - Operating voltage

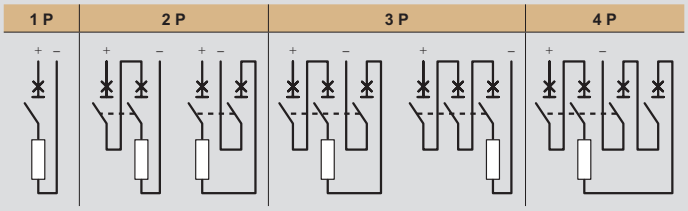
Min. operating voltage: 12 V⎓
Max. operating voltage: 60 V⎓ for single-pole MCBs
For voltages higher than this value, several poles must be wired in series as follows

Number of poles	1 P	2 P	3 P	4 P
Max. operating voltage (V)	60	110	150	180



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

4 - Wiring modes



5 - Breaking capacity

According to IEC 60947.2		DC Voltage (V)	1P	2P	3P	4P
DX³ 4500 / 6 kA B and C curves In ≤ 63 A	Icu	12 to 60	4.5 kA	4.5 kA	4.5 kA	4.5 kA
		110		4.5 kA	4.5 kA	4.5 kA
		150			4.5 kA	4.5 kA
		180				4.5 kA
	Ics(1)	12 to 60	100%	100%	100%	100%
		110		100%	100%	100%
		150			100%	100%
		180				100%
DX³ 6000 / 10 kA B and C curves In ≤ 63 A	Icu	12 to 60	6 kA	6 kA	6 kA	6 kA
		110		6 kA	6 kA	6 kA
		150			6 kA	6 kA
		180				6 kA
	Ics(1)	12 to 60	100%	100%	100%	100%
		110		100%	100%	100%
		150			100%	100%
		180				100%
DX³ 10000 / 16 kA B and C curves In ≤ 63 A	Icu	12 to 60	10 kA	10 kA	10 kA	10 kA
		110		10 kA	10 kA	10 kA
		150			10 kA	10 kA
		180				10 kA
	Ics(1)	12 to 60	100%	100%	100%	100%
		110		100%	100%	100%
		150			100%	100%
		180				100%
DX³ 25 kA B and C curves In ≤ 25 A	Icu	12 to 60	16 kA	16 kA	16 kA	16 kA
		110		16 kA	16 kA	16 kA
		150			16 kA	16 kA
		180				16 kA
	Ics(1)	12 to 60	100%	100%	100%	100%
		110		100%	100%	100%
		150			100%	100%
		180				100%

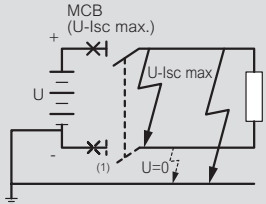
1 : As a % of Icu

6 - 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:

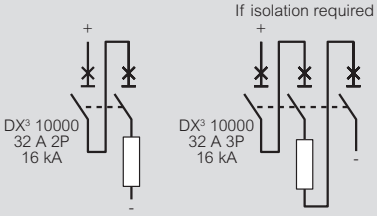
Place all the poles necessary for breaking on the other polarity If isolation is required, an additional pole must be added on the earthed polarity



1: Only if isolation required

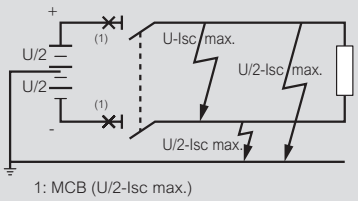
Example: circuit earthed via the negative polarity / U = 110 V⎓ / Isc = 10 kA / In = 32 A
Protect the positive polarity using an MCB capable of breaking 10 kA at 110 V (DX³ 10000 2P 32 A with 2 poles on the positive polarity)
For isolation, use a DX³ 10000 3P 32 A with 2 poles on the positive polarity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

DX³ 10000 / 16 kA		DC Voltage (V)	1P	2P	3P	4P
Acc. To IEC 60947.2	Icu	12 to 60	10 kA	10 kA	10 kA	10 kA
		110		10 kA	10 kA	10 kA
		150			10 kA	10 kA
		180				10 kA



• Network earthed via a middle point:

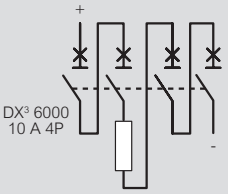
Place on each polarity the number of poles necessary for max. Isc breaking at half voltage



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

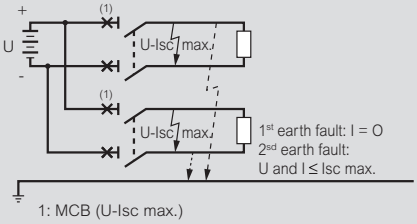
Example:
Circuit earthed via a middle point / U = 220 V⎓ / Isc = 6 kA / In = 10 A
Protect each polarity using an MCB capable of breaking 6 kA at half voltage, i.e. 110 V (DX³ 6000 4P 10 A with 2 poles on each polarity)

DX³ 6000 / 10 kA		DC Voltage (V)	1P	2P	3P	4P
Acc. To IEC 60947.2	Icu	12 to 60	6 kA	6 kA	6 kA	6 kA
		110		6 kA	6 kA	6 kA
		150			6 kA	6 kA
		180				6 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 = 6 kA / In = 40 A
Protect the installation with an MCB capable of breaking 6 kA at 48 V and protect each polarity (DX³ 6000 MCB 2P 40 A with one pole on each polarity)

DX³ 6000 / 10 kA		DC Voltage (V)	1P	2P	3P	4P
Acc. To IEC 60947.2	Icu	12 to 60	6 kA	6 kA	6 kA	6 kA
		110		6 kA	6 kA	6 kA
		150			6 kA	6 kA
		180				6 kA