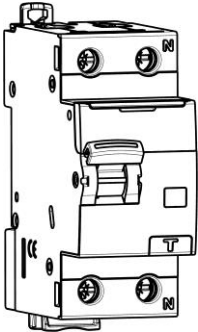


# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

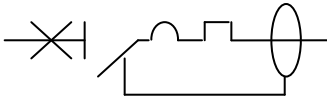


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### 1. DESCRIPTION - USE

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

#### Symbol:



#### Technology:

- . Limiting device
- . The Neutral contact closes before and opens after the Phase contact
- . The phase pole provides protection and isolation for the phase circuit
- . The neutral pole provides isolation for the neutral circuit

### 2. RANGE

#### Polarity:

- . 2 poles including 1 protected pole and 1 neutral pole

#### Width:

- . 2 modules (2 x 17.8 mm)

#### Rated current I<sub>n</sub>:

- . 6 – 10 – 13 – 16 – 20 – 25 – 32 – 40 A

#### Magnetic tripping curve:

- . C curve (between 5 I<sub>n</sub> and 10 I<sub>n</sub>)
- . B curve (between 3 I<sub>n</sub> and 5 I<sub>n</sub>)

#### Type:

- . AC (sinusoidal differential alternating current)
  - . A (residual currents with a DC component)
  - . G (immunity against false tripping)
- G products are also A type (sinusoidal differential alternating current with or without a DC component)

#### Sensitivity:

- . 30 mA in AC & G type

### 2. RANGE (continued)

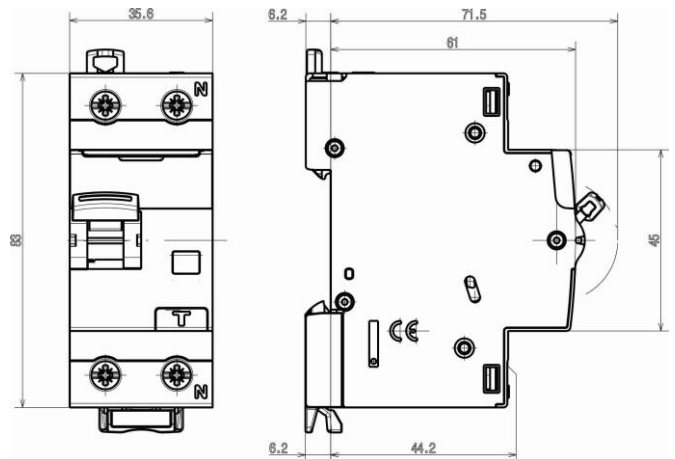
#### Rated voltage and frequency:

- . 230 V ~, 50 Hz with standard tolerances
- . 240 V ~, 50 Hz with standard tolerances

#### Breaking capacity:

- . I<sub>cn</sub> = 10000 A in accordance with standard EN/IEC 61009-1
- . I<sub>cu</sub> = 16 kA in accordance with standard IEC 60947-2

### 3. OVERALL DIMENSIONS



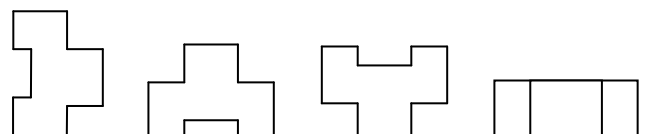
### 4. PREPARATION - CONNECTION

#### Mounting:

- . On symmetrical rail EN 60715 or DIN 35 rail

#### Operating positions:

Vertical      horizontal      upside down      Flat



# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

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4 113 14

### 4. POSITIONING - CONNECTION (continued)

#### Trip indication on residual current fault:

- . Yellow indicator on the front

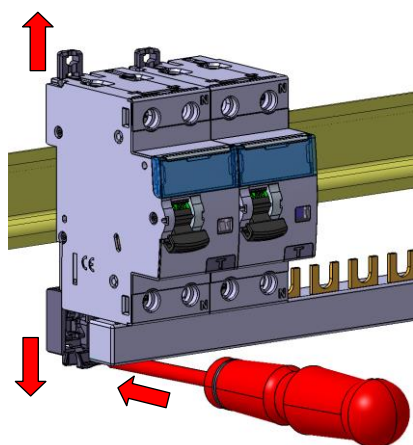
#### Power supply:

- . Either from the top or the bottom

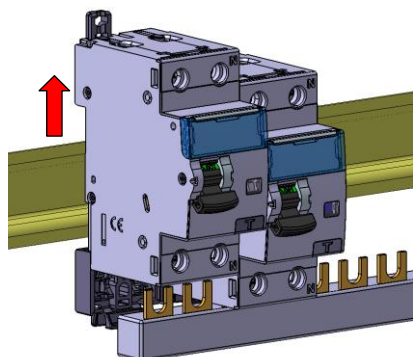
#### Module maintenance:

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

Unscrew the terminals completely

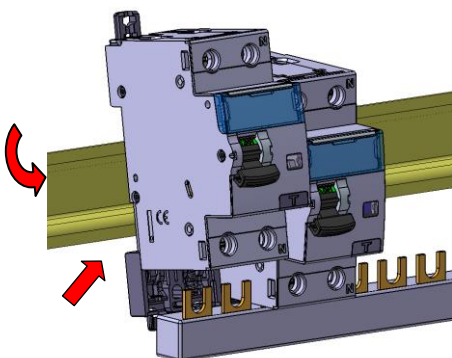


Put the clamp in the unlocking position with a screwdriver



Pull the device upward

Pull the device downward in order to release it completely from the prongs of the busbar. Then pull the device forward



### 4. POSITIONING - CONNECTION (continued)

#### Connection:

- . Terminals protected against direct finger contact IP20 when wired device
- . 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 shutters with the other products via fork supply busbars
- . Terminal depth: 14 mm
- . Terminal capacity: 60 mm<sup>2</sup>
- . Screw head: mixed head, slotted head and Philips / Pozidriv no. 2
- . Tightening torques:
  - Minimum / Maximum: 1.2 Nm / 3.5 Nm
  - Recommended: 2.5 Nm

#### Conductor type:

- . Copper cable at the top and bottom of the product
- . Cable cross-section

	Without ferrule	With ferrule
Rigid cable	1 x 0.75 to 50 mm <sup>2</sup> 2 x 0.75 to 16 mm <sup>2</sup>	-
Flexible cable	1 x 0.75 to 35 mm <sup>2</sup> 2 x 0.75 to 16 mm <sup>2</sup>	1 x 0.75 mm <sup>2</sup> to 25 mm <sup>2</sup>

#### Required tools:

- . For the terminals:
  - 5.5 mm / 6.5 mm blade screwdriver recommended
  - Pozidriv n°2 / Philips N°2 screwdriver recommended
- . For the latching:
  - 5.5 mm blade screwdriver recommended / 6 mm maximum
  - Pozidriv n°2 / Philips N°2 screwdriver recommended

#### Manual actuation of the RCBO:

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

#### Contact status display:

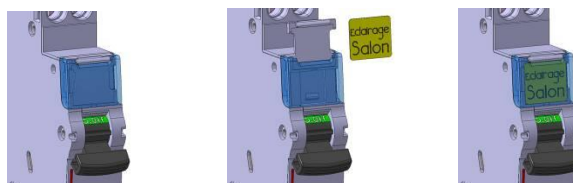
- . By marking of the handle
  - "O-OFF" in white on a green background = contacts open
  - "I-ON" in white on a red background = contacts closed

#### Locking:

- . Padlocks possible in the open and closed positions with padlock support (Cat. No. 4 063 03) and Ø 5 mm padlock (Cat. No. 4 063 13) or Ø 6 mm padlock (Cat. No. 0 227 97)
- . Sealing possible in the open and closed positions

#### Labelling:

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



# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
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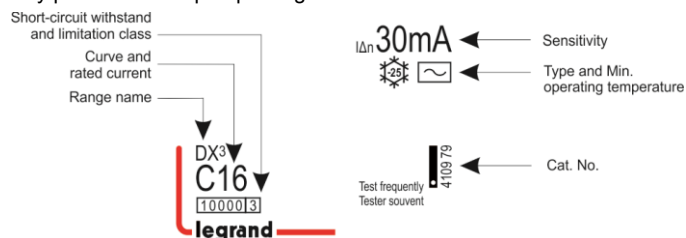
### 5. GENERAL CHARACTERISTICS

#### Neutral earthing system:

. IT, TT, TN

#### Marking on the front side:

. By permanent ink pad printing



#### Marking upper side:

. By permanent ink pad printing



. The terminals upstream and downstream of the neutral pole are marked with an "N" moulded close to the screw heads.

#### Maximum operating voltage:

. U = 250 V

#### Test operating voltages:

I $\Delta$ n	30 mA
min. U	180 V~
max. U	264 V~

#### Breaking capacity:

. With a single-phase network (with alternating current 50 Hz)

Standard	Breaking capacity	Voltage between poles	Breaking capacity
EN/IEC 61009-1	Ics	230 V	10 kA
	Icn		10 kA
EN/IEC 60947-2	Icu	230 V	10 kA
	Ics		10 kA

#### Breaking capacity on one single pole (phase pole):

. In accordance with I $\pi$  IEC 60947-2 – Appendix H (double fault in IT system): 3 kA at 400 V~ and 3 kA at 230 V~

. In accordance with Icn1 EN60898-1: 4.5 kA at 230 V

### 5. GENERAL CHARACTERISTICS (continued)

#### Residual breaking capacity:

. In accordance with standard EN/IEC 61009-1 section 9.12.11.4d (I $\Delta$ m: short-circuit to earth) I $\Delta$ m = 4.5 kA

#### 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:

. U<sub>i</sub> = 250 V in accordance with standard EN/IEC 61009-1

#### Degree of pollution:

. 2 in accordance with standard EN/IEC 61009-1.

#### Dielectric strength:

. 2,000 V

#### Rated impulse withstand voltage

. U<sub>imp</sub> = 4 kV (wave 1.2/50  $\mu$ s)

#### Protection from false tripping:

. 8/20  $\mu$ s wave resistance:

. 250 A for AC type

. 3000 A for G type

. 0.5  $\mu$ s/100 kHz damped recurring wave resistance:

. 200 A for AC type and G type

#### 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 side protected against direct contact: IP40

. Class II in relation to metallic conductive parts

. Class of protection against mechanical impacts IK02 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 EN/IEC 61009-1

. Classification V2, in accordance with standard UL94

#### Higher heating potential:

. The heat potential is assessed at: 2.1MJ

#### Closing and opening force via the handle:

. 4 N on opening

. 10 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 I<sub>n</sub> x Cos  $\phi$  0.9)

. Tested with 2,000 residual current trip operations using the Test button or the fault current

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
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4 113 14

### 5. GENERAL CHARACTERISTICS (continued)

#### Sinusoidal vibration resistance (in accordance with IEC 68.2.6):

- . Axes: x – y – z
- . Frequency: 10 to 55 Hz
- . Acceleration: 3g (1g = 9.81 m.s<sup>-2</sup>)

#### Resistance to tremors:

- . In accordance with standard NF EN 61009-1

#### Ambient temperature:

- . Operation:
  - . For the AC type from - 25°C to + 70°C
  - . For the Hpi type from - 25°C to + 60°C
- . Storage: from - 40°C to +70°C

#### DC operation:

- . No

#### Frequency:

- . Operation at 400Hz: No
- . Operation at 60Hz: Yes, except A types with sensitivity 30mA, which can be replaced by HPI types of equivalent ratings and sensitivity.

#### Packaged volume and quantity:

	Volume (dm <sup>3</sup> )	Packaging
For all ratings	0.4	Per 1

#### 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 RCBOs which may cause false tripping. Applying the following 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).

#### 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 RCBO stated by the lamp and ballast manufacturers in their catalogues should be taken into account during installation.

### 5. GENERAL CHARACTERISTICS (continued)

#### Impact of height:

	≤ 2000 m	3,000 m	4,000 m	5,000 m
Dielectric strength	2,000 V	1,750 V	1,500 V	1,250 V
Maximum operating voltage	230 V	230 V	230 V	230 V
Derating at 30°C	none	none	none	none

#### Product weight:

Catalogue Number	Description	Weight (kg)
4 109 71	B10 AC type 30mA	0,18
4 109 72	B16 AC type 30mA	0,18
4 109 73	B20 AC type 30mA	0,17
4 109 74	B25 AC type 30mA	0,17
4 109 75	B32 AC type 30mA	0,17
4 109 76	B40 AC type 30mA	0,17
4 109 78	C10 AC type 30mA	0,17
4 109 79	C16 AC type 30mA	0,17
4 109 80	C20 AC type 30mA	0,19
4 109 81	C25 AC type 30mA	0,18
4 109 82	C32 AC type 30mA	0,18
4 109 83	C40 AC type 30mA	0,18
4 112 85	B6 A type 30mA	0,17
4 112 86	B10 A type 30mA	0,17
4 112 87	B13 A type 30mA	0,17
4 112 88	B16 A type 30mA	0,17
4 112 89	B20 A type 30mA	0,17
4 112 90	B25 A type 30mA	0,19
4 112 91	B32 A type 30mA	0,18
4 112 92	B40 A type 30mA	0,18
4 112 93	C6 A type 30mA	0,18
4 112 94	C10 A type 30mA	0,18
4 112 95	C13 A type 30mA	0,18
4 112 96	C16 A type 30mA	0,17
4 112 97	C20 A type 30mA	0,17
4 112 98	C25 A type 30mA	0,17
4 112 99	C32 A type 30mA	0,17
4 113 00	C40 A type 30mA	0,17
4 113 10	C10 AG type 30mA	0,18
4 113 11	C13 AG type 30mA	0,18
4 113 12	C16 AG type 30mA	0,18
4 113 13	C20 AG type 30mA	0,18
4 113 14	C25 AG type 30mA	0,18

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
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4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Dissipated power (W):

. C curve RCBOs in In/Un

RATED CURRENT	6 A	10 A	13 A	16 A	20 A	25 A	32 A	40 A
Power (W) Phase pole	2.5	2.1	2.9	3.3	4.3	4.3	5.3	7
Power (W) Neutral pole	0.3	0.8	1.3	1.9	2.6	3.8	3.4	5.4

#### Derating of RCBOs depending on the ambient temperature:

. The nominal characteristics of a circuit breaker 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 EN/IEC 61009-1.

In (A)	- 25 °C	- 10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C
6	7.5	7.2	6.9	6.6	6.3	6	5.7	5.4	5.1	4.8
10	12.5	12	11.5	11	10.5	10	9.5	9	8.5	8
13	16.25	15.6	14.95	14.3	13.65	13	12.35	11.7	11.05	10.4
16	20	19.2	18.4	17.6	16.8	16	15.2	14.4	13.6	12.8
20	25	24	23	22	21	20	19	18	17	16
25	31	30	28.7	27.5	26.2	25	23.7	22.5	21.2	20
32	40	38	36.8	35.2	33.6	32	30.4	28.8	27.2	25.6
40	50	48	46	44	42	40	38	36	34	32

#### Specific use:

. Appropriate to operate in humid atmosphere and polluted by a chlorinated environment (pool-type)

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

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4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Association and coordination of an RCBO with a protective device located upstream

This association allows a device's breaking capacity to be increased by combining it with another protective device placed upstream.

This combination makes it possible to use a downstream device with a breaking capacity which is lower than the maximum prospective short-circuit current at its installation point.

#### Association and coordination with upstream fuses:

. Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream fuse									
		gG and aM types									
Downstream RCBO Ph+N		≤20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A	160 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	10 A	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	13 A	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	16 A	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	20 A	-	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	-	-	50 kA	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	16 kA
	32 A	-	-	-	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	16 kA
	40 A	-	-	-	-	50 kA	25 kA	25 kA	25 kA	25 kA	16 kA

#### Association and coordination with upstream MCBs:

. Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2

. TT neutral earthing or TNS system

		Upstream MCB							
		DX <sup>3</sup> 10000 / 16kA C and D curves							
Downstream RCBO Ph+N		≤ 25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	32 kA	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	10 A	32 kA	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	13 A	32 kA	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	16 A	32 kA	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	20 A	32 kA	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	-	32 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	32 A	-	-	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	40 A	-	-	-	25 kA	25 kA	25 kA	25 kA	25 kA

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

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4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Association and coordination with upstream MCBs:

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCB							
		DX <sup>3</sup> 25 kA C and D curves							
Downstream RCBO Ph+N		≤ 25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	10 A	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	13 A	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	16 A	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	20 A	50 kA	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	-	50 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	32 A	-	-	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	40 A	-	-	-	25 kA	25 kA	25 kA	25 kA	25 kA

		Upstream MCB					
		DX <sup>3</sup> 36 kA C curve					
Downstream RCBO Ph+N		≤ 25 A	32 A	40 A	50 A	63 A	80 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	10 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	13 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	16 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	20 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	25 A	-	50 kA	50 kA	50 kA	50 kA	50 kA
	32 A	-	-	50 kA	50 kA	50 kA	50 kA
	40 A	-	-	-	50 kA	50 kA	50 kA

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Association and coordination with upstream MCBs:

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCB									
		DX <sup>3</sup> 50 kA C curves					DX <sup>3</sup> 50 kA D curve				
Downstream RCBO Ph+N		≤ 25 A	32 A	40 A	50 A	63 A	≤ 25 A	32 A	40 A	50 A	63 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	10 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	13 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	16 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	20 A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
	25 A	-	50 kA	50 kA	50 kA	50 kA	-	50 kA	50 kA	50 kA	50 kA
	32 A	-	-	50 kA	50 kA	50 kA	-	-	-	-	50 kA
	40 A	-	-	-	50 kA	50 kA	-	-	-	-	-

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

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCCB							
		DPX <sup>3</sup> 160 16 kA							
Downstream RCBO Ph+N		16 A	25 A	40 A	63 A	80 A	100 A	125 A	160 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	10 A	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	13 A	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	16 A	-	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	20 A	-	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	25 A	-	-	22 kA	22 kA	22 kA	22 kA	22 kA	22 kA
	32 A	-	-	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA
	40 A	-	-	-	16 kA	16 kA	16 kA	16 kA	16 kA

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. CARACTERISTIQUES GENERALES (suite)

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

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCCB							
		DPX <sup>3</sup> 160 25 kA / 36 kA & 50 kA							
Downstream RCBO Ph+N		16 A	25 A	40 A	63 A	80 A	100 A	125 A	160 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	10 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	13 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	16 A	-	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	20 A	-	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	25 A	-	-	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	32 A	-	-	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA
	40 A	-	-	-	16 kA	16 kA	16 kA	16 kA	16 kA

		Upstream MCCB		
		DPX 250 ER ≤ 50 kA		
Downstream RCBO Ph+N		100 A	160 A	250 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	30 kA	30 kA	30 kA
	10 A	30 kA	30 kA	30 kA
	13 A	25 kA	25 kA	25 kA
	16 A	25 kA	25 kA	25 kA
	20 A	25 kA	25 kA	25 kA
	25 A	20 kA	20 kA	20 kA
	32 A	10 kA	10 kA	10 kA
	40 A	10 kA	10 kA	10 kA

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. CARACTERISTIQUES GENERALES (suite)

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

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCCB							
		DPX <sup>3</sup> 250 ≤ 70 kA thermal-magnetic				DPX <sup>3</sup> 250 ≤ 70 kA electronic			
Downstream RCBO Ph+N		100 A	160 A	200 A	250 A	40 A	100 A	160 A	250 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	10 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	13 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	16 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	20 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	25 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	32 A	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA
	40 A	16 kA	16 kA	16 kA	16 kA	-	16 kA	16 kA	16 kA

		Upstream MCCB									
		DPX 250 36 kA / DPX -H 250 70 kA / DPX -L 250 100 kA thermal-magnetic						DPX 250 36 kA / DPX -H 250 70 kA / DPX -L 250 100 kA electronic			
Downstream RCBO Ph+N		25 A	40 A	63 A	100 A	160 A	250 A	40 A	100 A	160 A	250 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	10 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	13 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	16 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	20 A	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA	30 kA
	25 A	-	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	32 A	-	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA	16 kA
	40 A	-	-	16 kA	16 kA	16 kA	16 kA	-	16 kA	16 kA	16 kA

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. CARACTERISTIQUES GENERALES (suite)

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

- . Three-phase network (+N) 240/415 V in accordance with standard IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCCB								
		DPX 630 36 kA / DPX -H 630 70 kA / DPX -L 630 100 kA thermal-magnetic					DPX 630 36 kA / DPX -H 630 70 kA / DPX -L 630 100 kA electronic			
Downstream RCBO Ph+N		250 A	320 A	400 A	500 A	630 A	160 A	250 A	400 A	630 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	10 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	13 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	16 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	20 A	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
	25 A	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
	32 A	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
	40 A	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA

		Upstream MCCB	
		DPX 1250 50 kA / DPX -H 1250 70 kA / DPX -L 1250 100 kA	DPX 1600 36 kA / DPX -H 1600 70 kA electronic
Downstream RCBO Ph+N		500 A à 1250 A	630 A à 1600 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	25 kA	25 kA
	10 A	25 kA	25 kA
	13 A	25 kA	25 kA
	16 A	25 kA	25 kA
	20 A	25 kA	25 kA
	25 A	20 kA	20 kA
	32 A	10 kA	10 kA
	40 A	10 kA	10 kA

#### Selectivity between two levels of protection

- . The downstream RCBO 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 standard with IEC 60947-2) of the downstream RCBO.

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. CARACTERISTIQUES GENERALES (suite)

#### Discrimination with upstream fuses:

. Discrimination limit with a voltage of 240 V ~ (Values in A)

		Upstream fuse cartridge							
		gG cartridge							
Downstream RCBO Ph+N		32 A	40 A	50 A	63 A	80 A	100 A	125 A	160 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	1300	1900	2500	4000	4600	T	T	T
	10 A	-	1600	2200	3200	3600	7000	T	T
	13 A	-	1400	1800	2600	3000	5600	8000	T
	16 A	-	1400	1800	2600	3000	5600	8000	T
	20 A	-	1200	1500	2200	2500	4600	6300	10000
	25 A	-	-	1300	2000	2200	4100	5500	9000
	32 A	-	-	1200	1700	1900	3500	4500	8000
	40 A	-	-	-	-	1700	3000	4000	6000

		Upstream fuse cartridge								
		aM cartridge								
Downstream RCBO Ph+N		25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A	160 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	1000	1600	2100	3200	6200	T	T	T	T
	10 A	-	1100	1700	2500	5000	7800	T	T	T
	13 A	-	1000	1400	2100	4000	6000	9000	T	T
	16 A	-	1000	1400	2100	4000	6000	9000	T	T
	20 A	-	-	1300	1800	3400	5100	7000	T	T
	25 A	-	-	1100	1600	3000	4500	6000	9300	T
	32 A	-	-	-	1300	2400	3800	5000	7700	9000
	40 A	-	-	-	-	2100	3100	4200	6400	7000

. T = Total discrimination

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Discrimination with upstream modular MCBs:

Discrimination limit with a voltage of 240 V ~ (Values in A)

		Upstream MCB											
		DX <sup>3</sup> 10000 A C curve											
Downstream RCBO Ph+N		10 A	13 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	75	98	120	150	187	240	300	375	472	4000*	T*	T*
	10 A	-	98	120	150	187	240	300	375	472	3000	5000*	T*
	13 A	-	-	120	150	187	240	300	375	472	2500	4000*	6000*
	16 A	-	-	-	150	187	240	300	375	472	2000	3600*	5500*
	20 A	-	-	-	-	187	240	300	375	472	1600	3000	4000*
	25 A	-	-	-	-	-	240	300	375	472	1300	2400	3300*
	32 A	-	-	-	-	-	-	300	375	472	1000	1800	2700
	40 A	-	-	-	-	-	-	-	375	472	800	1600	2400

		Upstream MCB											
		DX <sup>3</sup> 10000 A D curve											
Downstream RCBO Ph+N		10 A	13 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	120	156	192	240	300	384	480	600	756	4000	T	T
	10 A	-	-	192	240	300	384	480	600	756	3000	5000	T
	13 A	-	-	-	240	300	384	480	600	756	2500	4000	6000
	16 A	-	-	-	240	300	384	480	600	756	2000	3600	5500
	20 A	-	-	-	-	300	384	480	600	756	1600	3000	4000
	25 A	-	-	-	-	-	384	480	600	756	1300	2400	3300
	32 A	-	-	-	-	-	-	480	600	756	1100	1450	2700
	40 A	-	-	-	-	-	-	-	600	756	1000	1250	2400

. T = Total discrimination

. \*: If the discrimination value stated in the table is greater than the breaking capacity of the upstream RCBO 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).

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Discrimination with upstream modular MCBs:

. Discrimination limit with a voltage of 240 V ~ (Values in A)

		Upstream MCB										
		DX <sup>3</sup> 25 kA C curve										
Downstream RCBO Ph+N		10 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	75	120	150	187	700	1200	1500	3000	4000	T	T
	10 A	-	120	150	187	500	700	1000	1800	3000	5000	T
	13 A	-	120	150	187	400	600	1200	1500	2500	4000	6000
	16 A	-	-	150	187	300	500	700	1300	2000	3600	5500
	20 A	-	-	-	187	300	400	500	1000	1600	3000	4000
	25 A	-	-	-	-	240	400	500	800	1300	2400	3300
	32 A	-	-	-	-	-	300	500	600	1000	1800	2700
	40 A	-	-	-	-	-	-	400	600	800	1600	2400

		Upstream MCB										
		DX <sup>3</sup> 25 kA D curve										
Downstream RCBO Ph+N		10 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	80 A	100 A	125 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	120	192	240	500	700	1200	1500	3000	4000	T	T
	10 A	-	192	240	300	500	700	1000	1800	3000	5000	T
	13 A	-	192	240	300	400	600	1200	1500	2500	4000	6000
	16 A	-	-	240	300	384	500	700	1300	2000	3600	5500
	20 A	-	-	-	300	384	480	600	1000	1600	3000	4000
	25 A	-	-	-	-	384	480	600	800	1300	2400	3300
	32 A	-	-	-	-	-	480	600	756	1100	1450	2700
	40 A	-	-	-	-	-	-	600	756	1000	1250	2400

. T = Total discrimination

# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 5. GENERAL CHARACTERISTICS (continued)

#### Discrimination with upstream modular MCBs:

. Discrimination limit with a voltage of 240 V ~ (Values in A)

		Upstream MCB								
		DX <sup>3</sup> 50 kA C curve								
Downstream RCBO Ph+N		10 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	80 A
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	75	120	170	500	700	1200	1500	3000	4000
	10 A	-	120	150	210	500	700	1000	1800	3000
	13 A	-	120	150	200	400	600	1200	1500	2500
	16 A	-	-	150	187	300	500	700	1300	2000
	20 A	-	-	-	187	300	400	500	1000	1600
	25 A	-	-	-	-	240	400	500	800	1300
	32 A	-	-	-	-	-	300	500	600	1000
	40 A	-	-	-	-	-	-	400	600	800

		Upstream MCB								
		DX <sup>3</sup> 50 kA D curve								
Downstream RCBO Ph+N		10 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A	
DX <sup>3</sup> 10000 A B & C curve	≤ 6 A	120	192	240	500	700	1200	1500	3000	
	10 A	-	192	240	300	500	700	1000	1800	
	13 A	-	192	240	300	400	600	1200	1500	
	16 A	-	-	240	300	384	500	700	1300	
	20 A	-	-	-	300	384	480	600	1000	
	25 A	-	-	-	-	384	480	600	800	
	32 A	-	-	-	-	-	480	600	756	
	40 A	-	-	-	-	-	-	600	756	

#### Discrimination with upstream MCCBs:

. Discrimination limit with a voltage of 240 V ~ (Values in A)

Downstream RCBO Ph+N	Upstream MCCB	
DX <sup>3</sup> 10000 A B & C curve ≤ 40A	DPX and DPX <sup>3</sup> all models all ratings	DMX <sup>3</sup> all models all ratings
	T	T

. T = Total discrimination

**DX<sup>3</sup> RCBO 10000 A**

**Phase + Neutral, neutral right side**

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

## 6. COMPLIANCE AND APPROVALS

### In accordance with standard:

- . BIS/IEC 61009-1

### Usage in special conditions:

- . Category C compliant (testing temperature range from -25°C to +70°C, resistant to salt spray) in accordance with the classification defined in Appendix Q of standard IEC 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 1<sup>st</sup> July 2006
- . Compliance with the Directive 91/338/EEC of 18/06/91 and decree 94-647 of 27/07/04

### Plastic materials:

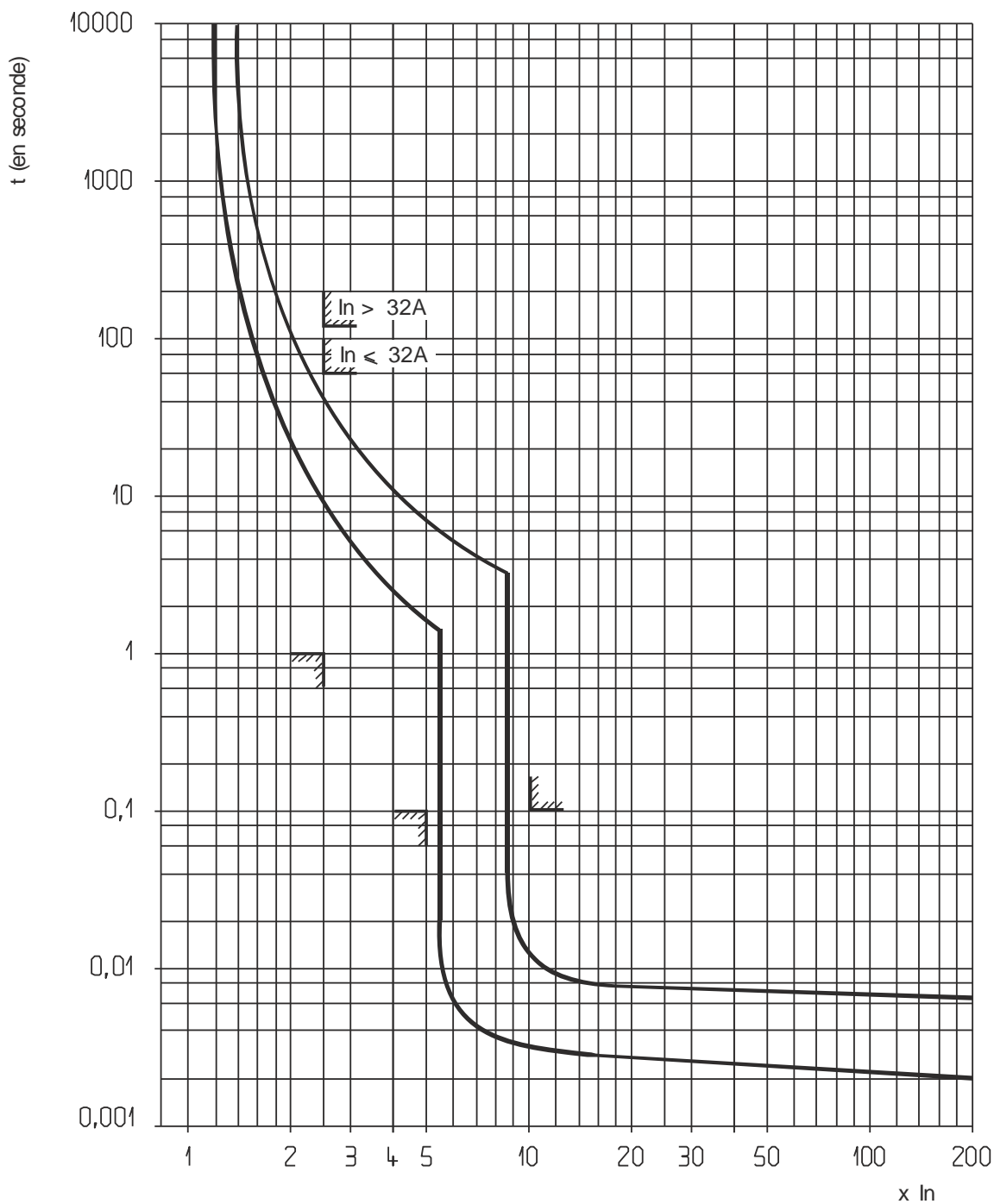
- . Halogen free plastic materials.
- . Labelling of parts compliant with ISO 11469 and ISO 1043.

### Packaging:

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

**7. CURVES**

Thermal-magnetic tripping range typical of C curve RCBOs:



Standard limits

Thermal tripping at ambient temperature = 30°C

$I_n$  = RCBO rated current

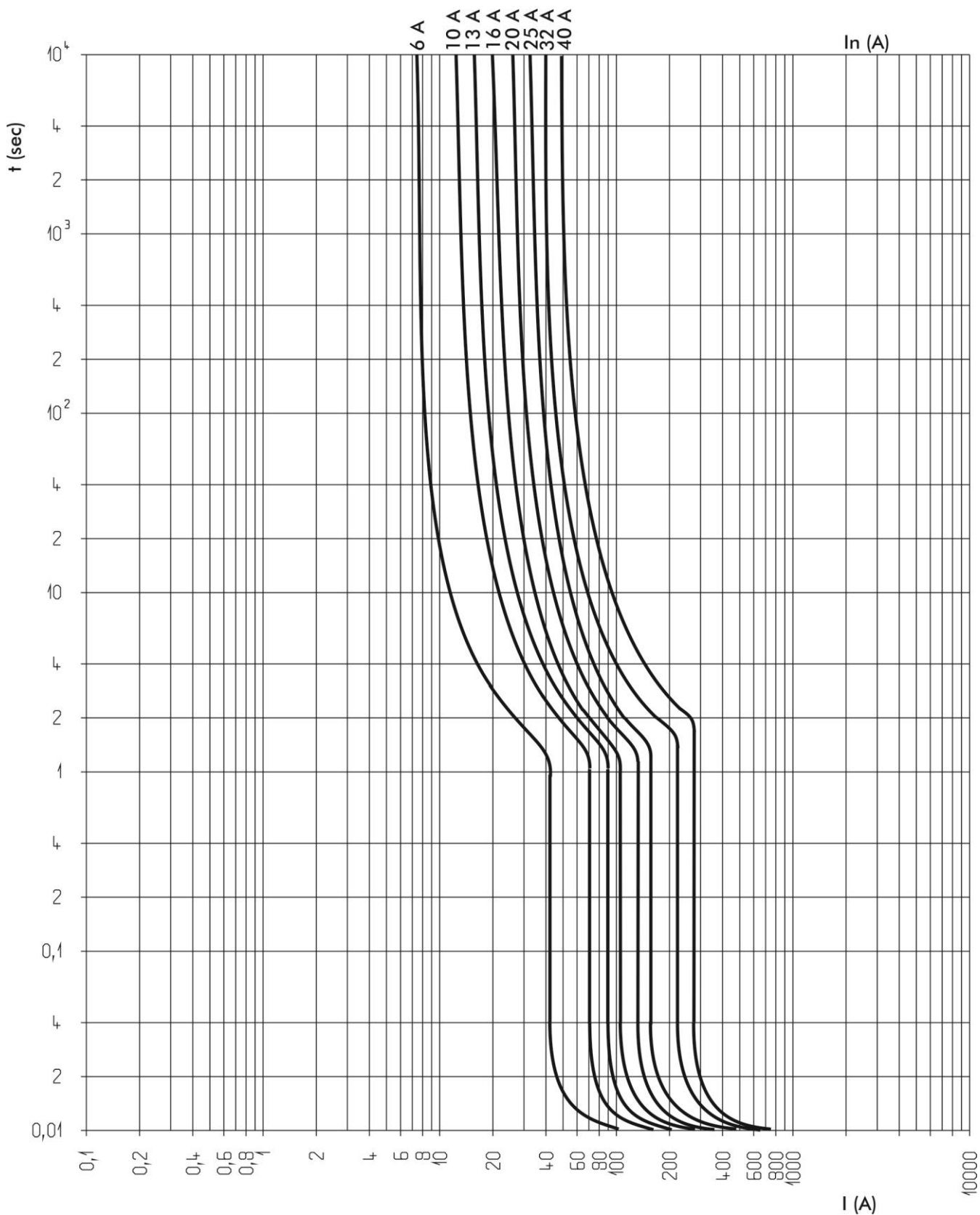
# DX<sup>3</sup> RCBO 10000 A

Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

## 7. CURVES (continued)

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



# DX<sup>3</sup> RCBO 10000 A

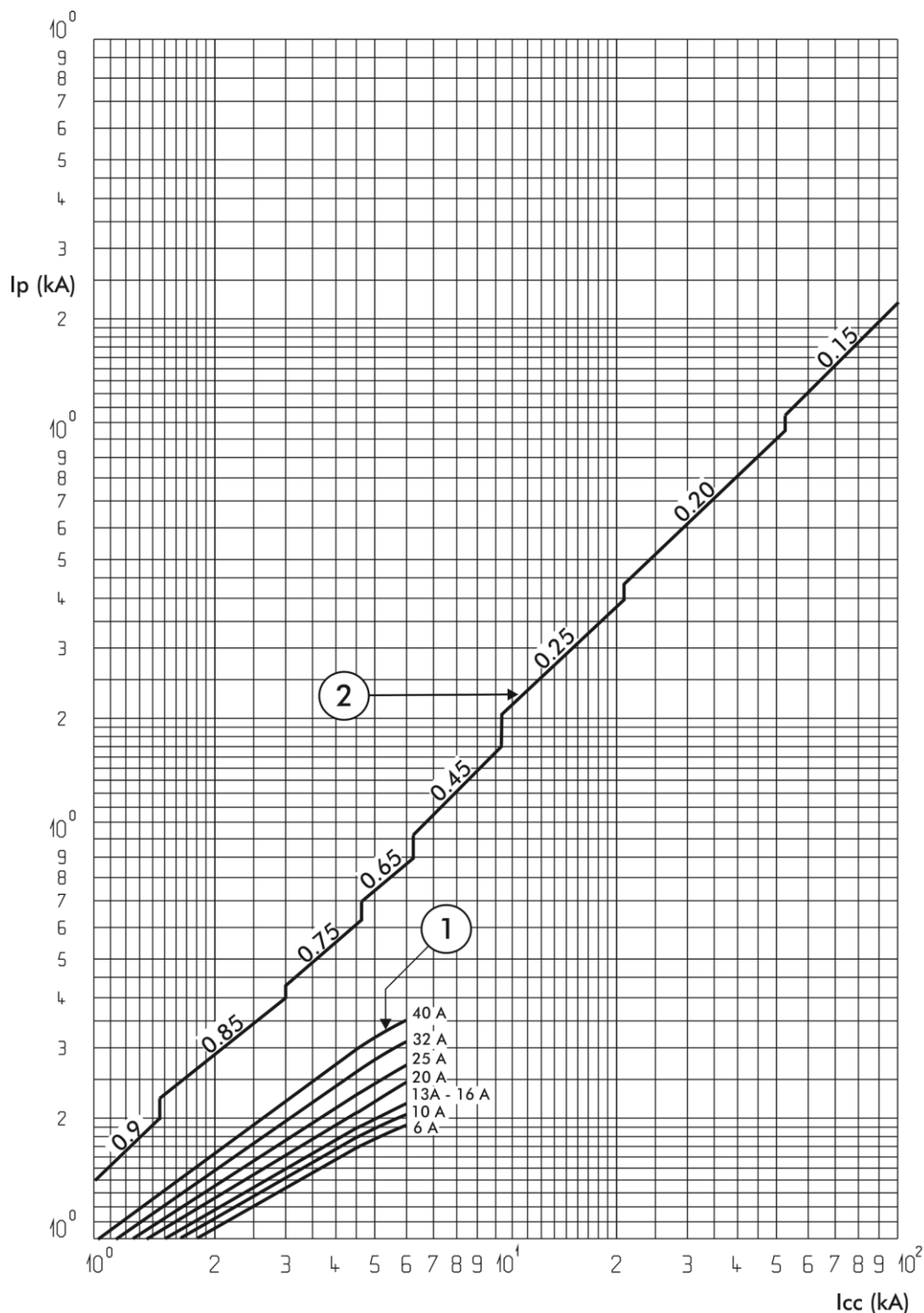
## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 7. CURVES (continued)

#### Current limiting curves:

. C curve RCBOs from 6 A to 40 A



$I_{cc}$  = Prospective short-circuit symmetrical current (rms value in kA)

$I_p$  = Maximum peak value (in kA)

1 = Short-circuit rms currents (max. peak)

2 = Unlimited peak currents (max.), corresponding to power factors shown above (0.15 to 0.9)

NB: For 2A and 3A rating, the limited values are less than 1kA

# DX<sup>3</sup> RCBO 10000 A

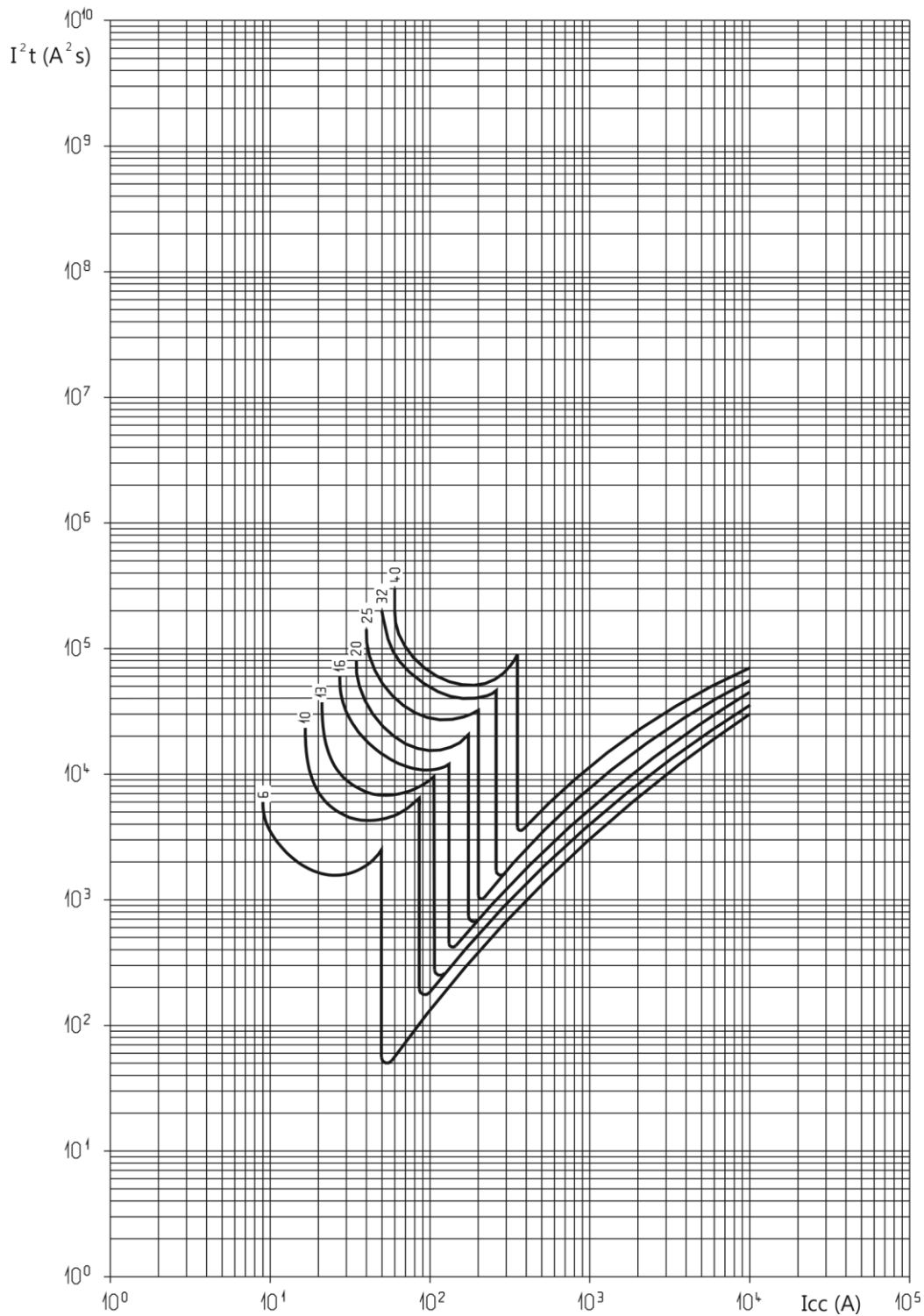
Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

## 7. CURVES (continued)

Thermal stress limiting curves:

. C curve RCBOs (240V/50Hz)



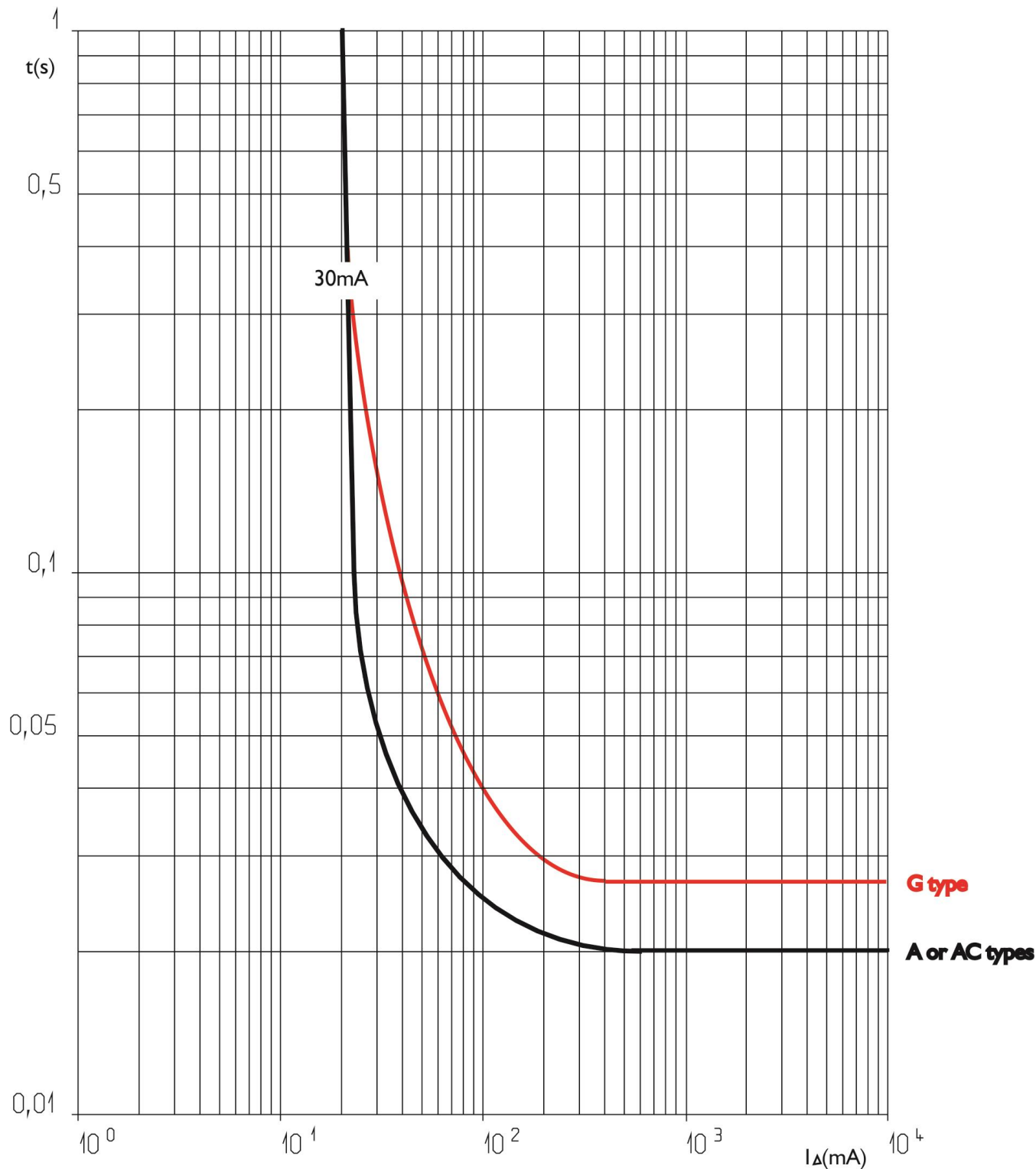
$I_{cc}$  = Prospective short-circuit symmetrical current (rms value in A)

$I^2t$  = Limited thermal stress (in  $A^2 s$ )

**7. CURVES** *(continued)*

**Tripping current curves:**

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



# DX<sup>3</sup> RCBO 10000 A

## Phase + Neutral, neutral right side

Cat. N°(s) : 4 109 71 to 4 109 76, 4 109 78 to 4 109 83,  
4 112 85 to 4 113 00, 4 113 02 to 4 113 06, 4 113 10 to  
4 113 14

### 8. AUXILIARIES AND ACCESSORIES

#### Wiring accessories:

- . Supply busbar: Fork busbar see LEGRAND catalogue
- . Sealable screw cover (Cat. No. 4 063 04)

#### Signalling auxiliaries:

- . Auxiliary contact (0.5 module, Cat. No. 4 062 50)
- . Fault signalling contact (0.5 module, Cat. No. 4 062 52)
- . Auxiliary contact that can be changed into fault signalling contact (0.5 module, Cat. No. 4 062 56)
- . Auxiliary contact + fault signalling contact that can be changed into 2 auxiliary contacts (1 module, Cat. No. 4 062 64)

#### Control auxiliaries :

- . Shunt trip (1 module, Cat. No. 4 062 76 / 78) and undervoltage release (Cat. No. 4 062 80 / 82)
- . Power Overvoltage Protection (1 module, Cat. No. 4 062 86)

#### Motor-driven control modules :

- . Motor-driven control module (1 module, Cat. No. 4 062 90 / 91)
- . Motor-driven control module with integrated automatic reset (2 modules, Cat. Nos. 4 062 93, 4 062 95)

#### STOP&GO automatic resetting modules:

- . STOP&GO automatic resetting module (2 modules, Cat. No. 4 062 88)
- . STOP&GO automatic resetting module with auto-test (2 modules, Cat. Nos. 4 062 89)

#### 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 86) = 1
- . The control auxiliary trip (Cat. Nos. 4 062 76 to 4 062 86) must mandatorily be placed to the left of the signalling auxiliaries (Cat. Nos. 4 062 50 to 4 062 64) 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. 0 227 97) and padlock support (Cat. No. 4 063 03)

#### Installation software:

- . XL PRO<sup>3</sup>

### 9. SAFETY:

For your safety your electrical installation is equipped with residual current protection which 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  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.