

**DX<sup>3</sup> RCBO 6000A**  
**Phase + Neutral, neutral on left**

Cat. N°(s) : 4 110 66, 4 110 67, 4 110 68, 4 110 69

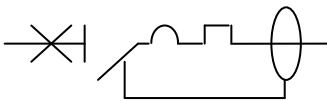


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**1. DESCRIPTION - USE**

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> :**

- . 10 – 13 – 16 – 20 A

**Magnetic tripping curve :**

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

**Type :**

- . A type (sinusoidal differential alternating current with a DC component)

**Sensitivity:**

- . 30 mA

**2. RANGE (continued)**

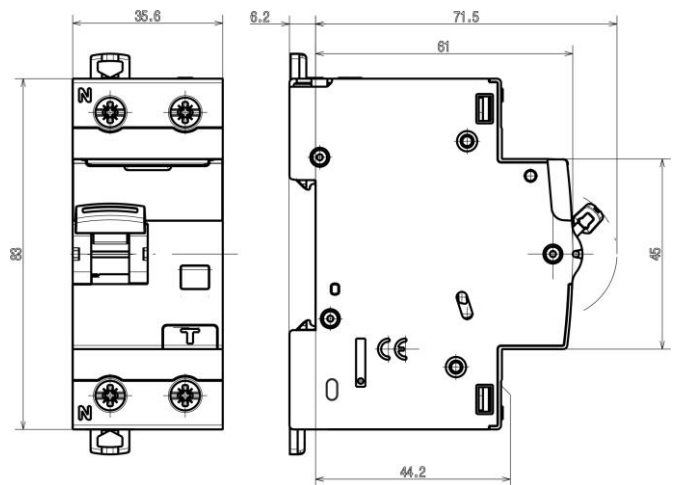
**Rated voltage and frequency :**

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

**Breaking capacity :**

- . I<sub>cn</sub> = 6000 A in accordance with standard EN/IEC 61009-1
- . I<sub>cu</sub> = 10 kA in accordance with standard EN/IEC 60947-2

**3. OVERALL DIMENSIONS**

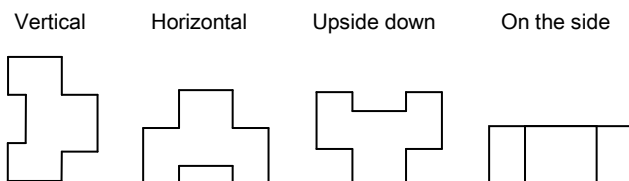


**4. PREPARATION - CONNECTION**

**Mounting :**

- . On symmetrical rail EN 60715 or DIN 35 rail

**Operating positions :**



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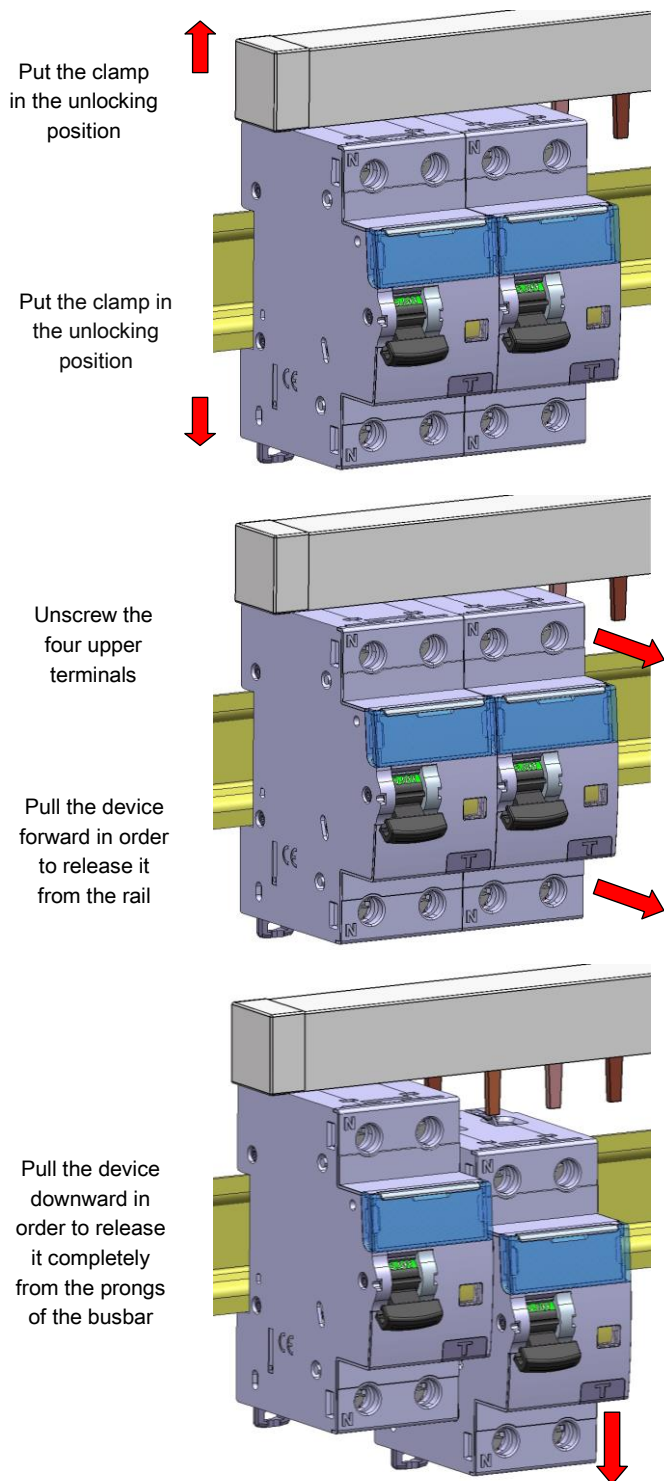
### 4. PREPARATION - CONNECTION (continued)

#### 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.



### 4. PREPARATION - 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 connection with the other products in the range via prong and fork type (biconnect) supply busbars.
- . Terminal depth: 13 mm at the top and 13 mm at the bottom
- . Screw head: mixed, slotted and Pozidriv no. 2
- . Tightening torques:
  - Recommended : 2,5 Nm
  - Min : 1,2Nm
  - Max : 3,5 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 mm <sup>2</sup> to 50 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup> to 16 mm <sup>2</sup>	-
Flexible cable	1 x 0.75 mm <sup>2</sup> to 35 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup> to 16 mm <sup>2</sup>	1 x 0.75 mm <sup>2</sup> to 25 mm <sup>2</sup>

- . Prong busbar, alone or with a 10 mm<sup>2</sup> flexible wire (without ferrule) or a connection terminal in the same terminal.

#### Recommended tool s:

- . For the terminals, screwdriver with 5.5 mm blade or Pozidriv no. 2 screwdriver
- . For attaching or removing the DIN rail, screwdriver with 5.5 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 :

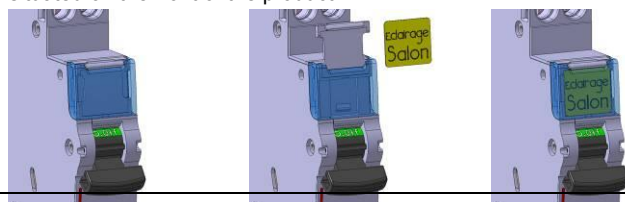
- . Yellow indicator on the front

#### Locking :

- . Padlocks possible in the open 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.



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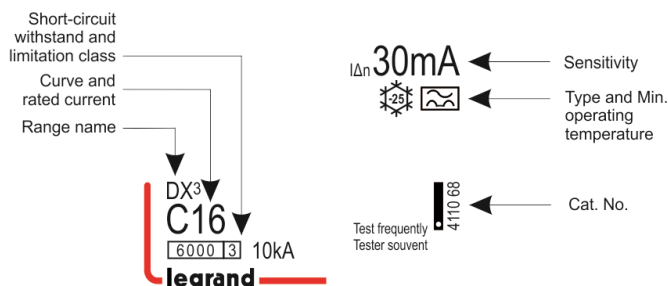
### 5. GENERAL CHARACTERISTICS

#### Neutral earthing system :

. IT, TT, TN

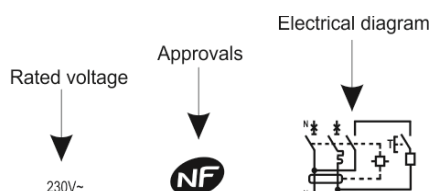
#### Marking on the front side :

. By permanent ink pad printing



#### Marking on the upper panel:

. By permanent ink pad printing



. 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

#### Minimum operating voltage (circuit test) :

$I_{\Delta n}$	30 mA
U mini	180 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	$I_{cs}$	230 V	6 kA
	$I_{cn}$		6 kA
EN/IEC 60947-2	$I_{cu}$	230 V	10 kA
	$I_{cs}$		50 % $I_{cu}$

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

. In accordance with  $I_{IT}$  EN60947-2 – Appendix H (double fault in IT system): 1.5 kA at 400 V~ and 3 kA at 230 V~

. In accordance with  $I_{cn1}$  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)  $I_{\Delta m} = 3$  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 :

.  $U_i = 250$  V in accordance with standard EN/IEC 61009-1

#### Degree of pollution :

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

#### Dielectric strength :

. 2000 V

#### Rated impulse withstand voltage :

.  $U_{imp} = 4$  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 A/Hpi type

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

200 A for AC type and A/Hpi 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  $I_n \times \cos \phi$  0.9)

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

## Phase + Neutral, neutral on left

## 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

## Storage temperature :

- . from - 40°C to +70°C

## DC operation :

- . No

## Frequency:

- . Operation at 400Hz: No
- . Operation at 60Hz: Yes

## 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)

## Influence de l'altitude :

	≤2000 m	3000 m	4000 m	5000 m
Tenue diélectrique	2000 V	1750 V	1500 V	1250 V
Tension maxi de service	230 V	230 V	230 V	230 V
Déclassement à 30°C	aucun	aucun	aucun	aucun

## Product weight :

Catalogue Number	Description	Weight (kg)
4 110 66	C10 A type 30mA	0,24
4 110 67	C13 A type 30mA	0,24
4 110 68	C16 A type 30mA	0,24
4 110 69	C20 A type 30mA	0,24

## Phase + Neutral, neutral on left

5. GENERAL CHARACTERISTICS *(continued)*

## Dissipated power (W) :

. C curve RCBOs in In/Un

RATED CURRENT	10 A	13A	16 A	20 A
Power (W) Phase pole	1.1 W	1.8 W	2.8 W	4.3 W
Power (W) Neutral pole	0.7 W	1.1 W	1.7 W	2.6 W

## 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
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

## Specific use:

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

## 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 EN/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> 6000 A C curve	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

## Phase + Neutral, neutral on left

5. GENERAL CHARACTERISTICS *(continued)*

## Association and coordination with upstream MCBs :

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCB				
		Ph+N ( mod ) DX <sup>3</sup> 10000 / 16 kA C curve	DX <sup>3</sup> 6000 / 10 kA B, C and D curves			
Downstream RCBO Ph+N		≤20 A	≤32 A	40 A	50 A	63 A
DX <sup>3</sup> 6000 A C curve	10 A	16 kA	25 kA	25 kA	25 kA	25 kA
	13 A	16 kA	25 kA	25 kA	25 kA	25 kA
	16 A	16 kA	25 kA	25 kA	25 kA	25 kA
	20 A	-	25 kA	25 kA	25 kA	25 kA

		Upstream MCB							
		DX <sup>3</sup> 10000 / 16 kA B, 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> 6000 A C curve	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

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

## Association and coordination with upstream MCBs :

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCB							
		DX <sup>3</sup> 25 kA B, 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> 6000 A C curve	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

		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> 6000 A C curve	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

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

## Association and coordination with upstream MCBs :

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCB									
		DX <sup>3</sup> 50 kA B and 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> 6000 A C curve	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

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

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/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> 6000 A C curve	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



## Phase + Neutral, neutral on left

5. GENERAL CHARACTERISTICS *(continued)*

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

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/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> 6000 A C curve	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

		Upstream MCCB						
		DPX <sup>3</sup> 250 ER ≤ 50 kA			DPX <sup>3</sup> 250 ER AB 36 kA			
Downstream RCBO Ph+N		100 A	160 A	250 A	90 A	130 A	170 A	240 A
DX <sup>3</sup> 6000 A C curve	10 A	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
	16 A	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

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

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

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/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> 6000 A C curve	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

		Upstream MCCB	
		DPX <sup>3</sup> 400 AB 36 kA	
Downstream RCBO Ph+N		320 A	400 A
DX <sup>3</sup> 6000 A C curve	10 A	25 kA	25 kA
	13 A	25 kA	25 kA
	16 A	25 kA	25 kA
	20 A	25 kA	25 kA

		Upstream MCCB								
		DPX 630 36 kA at 100 kA thermal-magnetic				DPX 630 36 kA at 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> 6000 A C curve	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

## Phase + Neutral, neutral on left

5. GENERAL CHARACTERISTICS *(continued)*

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

- . Three-phase network (+N) 230/400 V or 240/415 V in accordance with standard EN/IEC 60947-2
- . TT neutral earthing or TNS system

		Upstream MCCB	
		DPX <sup>3</sup> 1600 36 kA at 100 kA	
Downstream RCBO Ph+N		630 A to 1600 A	
DX <sup>3</sup> 6000 A C curve	10 A	25 kA	
	13 A	25 kA	
	16 A	25 kA	
	20 A	25 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 EN/IEC 60947-2) of the downstream RCBO.

## Discrimination with upstream fuses :

- . Discrimination limit with a voltage of 230 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> 6000 A C curve	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

- . T = Total discrimination

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

#### Discrimination with upstream fuses :

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

		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> 6000 A C curve	10 A	-	1100	1700	2500	5000	7,800	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

#### Discrimination with upstream modular MCBs :

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

		Upstream MCB											
		DX <sup>3</sup> 4500 / 6 kA - DX <sup>3</sup> 6000 / 10 kA - DX <sup>3</sup> 10000 / 16 kA B 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> 6000 A C curve	10 A	-	-	-	80	100	128	160	200	252	3000	5000	T
	13 A	-	-	-	-	100	128	160	200	252	2500	4000	T
	16 A	-	-	-	-	-	128	160	200	252	2000	3600	5500
	20 A	-	-	-	-	-	-	160	200	252	1600	3000	4000

. T = Total discrimination

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

## Discrimination with upstream modular MCBs :

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

		Upstream MCB											
		DX <sup>3</sup> 3000 - DX <sup>3</sup> 4500 / 4,5 kA - DX <sup>3</sup> 4500 / 6 kA - DX <sup>3</sup> 6000 / 10 kA - DX <sup>3</sup> 10000 / 16 kA 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> 6000 A C curve	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*

		Upstream MCB											
		DX <sup>3</sup> 4500 / 6 kA - DX <sup>3</sup> 6000A - DX <sup>3</sup> 6000 / 10 kA - DX <sup>3</sup> 10000 / 16 kA 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> 6000 A C curve	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

. 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).

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

## Discrimination with upstream modular MCBs :

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

		Upstream MCB										
		DX <sup>3</sup> 25 kA Courbe B										
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> 6000 A C curve	10 A	-	-	80	100	500	700	1000	1800	3000	5000	T
	13 A	-	-	-	100	400	600	1200	1500	2500	4000	6000
	16 A	-	-	-	-	300	500	700	1300	2000	3600	5500
	20 A	-	-	-	-	-	400	500	1000	1600	3000	4000

		Upstream MCB										
		DX <sup>3</sup> 25 kA Courbe C										
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> 6000 A C curve	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

. T = Total discrimination

## Phase + Neutral, neutral on left

## 5. GENERAL CHARACTERISTICS (continued)

## Discrimination with upstream modular MCBs :

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

		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> 6000 A C curve	10 A	-	192	240	300	500	700	1000	1800	3000	5000	T
	13 A	-	-	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

		Upstream MCB							
		DX <sup>3</sup> 50 kA B 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> 6000 A C curve	10 A	-	-	150	210	500	700	1000	1800
	13 A	-	-	-	200	400	600	1200	1500
	16 A	-	-	-	-	300	500	700	1300
	20 A	-	-	-	-	-	400	500	1000

. T = Total discrimination

# DX<sup>3</sup> RCBO 6000A

## Phase + Neutral, neutral on left

Cat. N°(s) : 4 110 66, 4 110 67, 4 110 68, 4 110 69

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

#### Discrimination with upstream modular MCBs :

. Discrimination limit with a voltage of 230 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> 6000 A C curve	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

		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> 6000 A C curve	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

#### Discrimination with upstream MCCBs :

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

Downstream RCBO Ph+N	Upstream MCCB	
	DX <sup>3</sup> 6000 A C curve ≤ 40A	DPX <sup>3</sup> all models all ratings
	T	T

. T = Total discrimination



**6. COMPLIANCE AND APPROVALS****In accordance with standard :**

. EN/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/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 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

**Approvals obtained :**

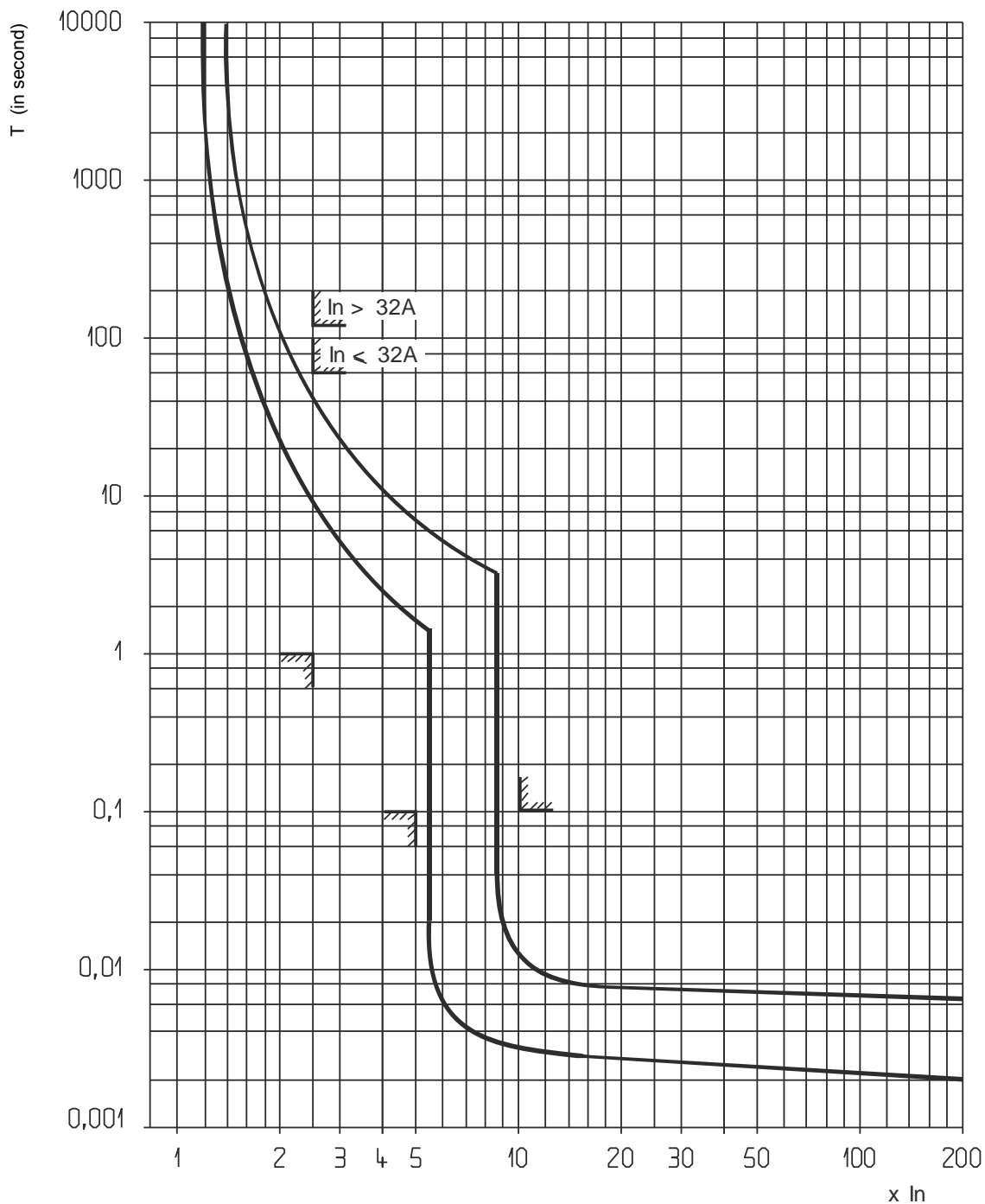
. France: NF

**Phase + Neutral, neutral on left**

**7. CURVES**

Thermal-magnetic tripping range typical of C curve RCBOs :

. C curve RCBOs



Standard limits

Thermal tripping at ambient temperature = 30°C

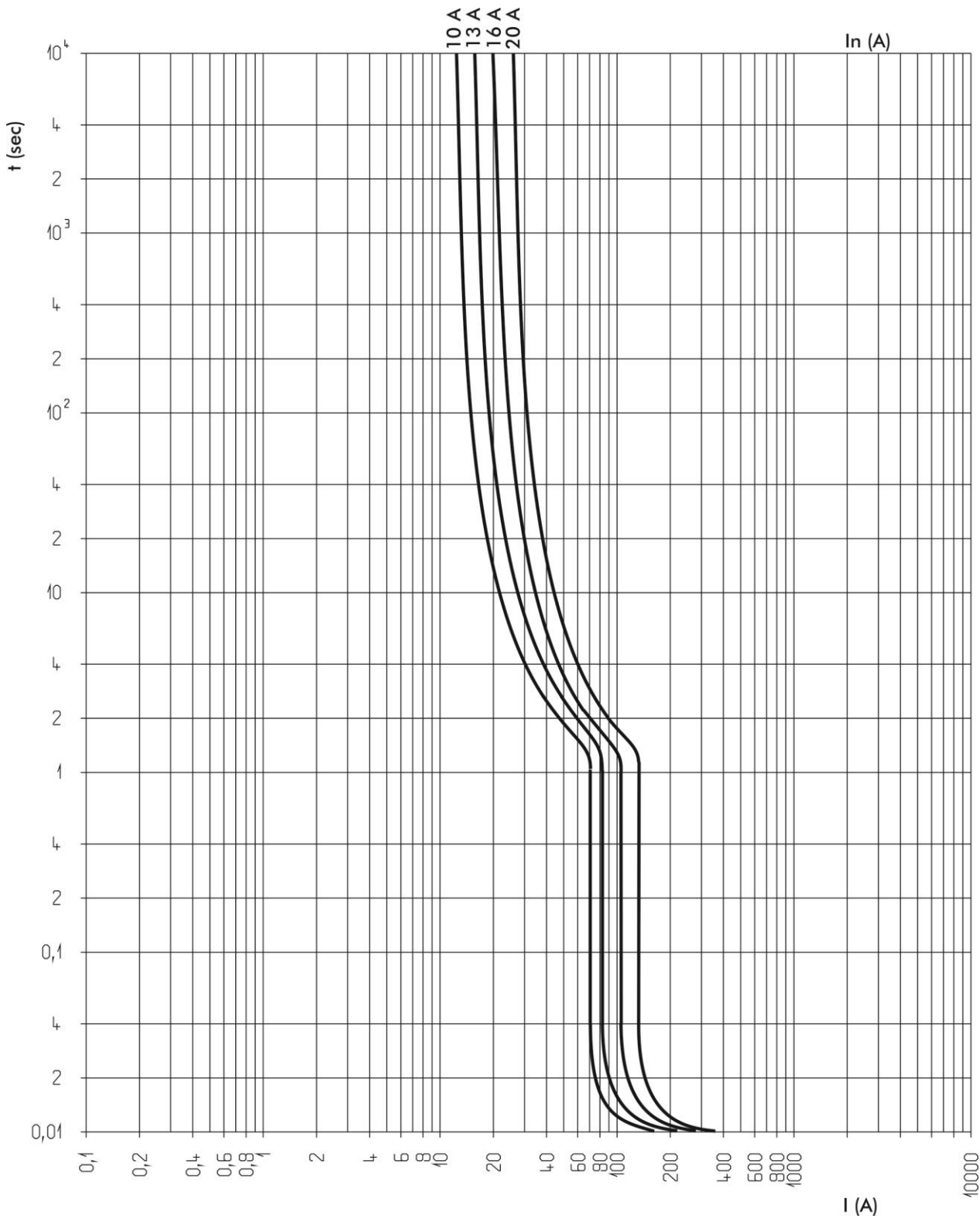
$I_n$  = RCBO rated current

**Phase + Neutral, neutral on left**

**7. CURVES (continued)**

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

. C curve RCBOs from 10 A to 20 A

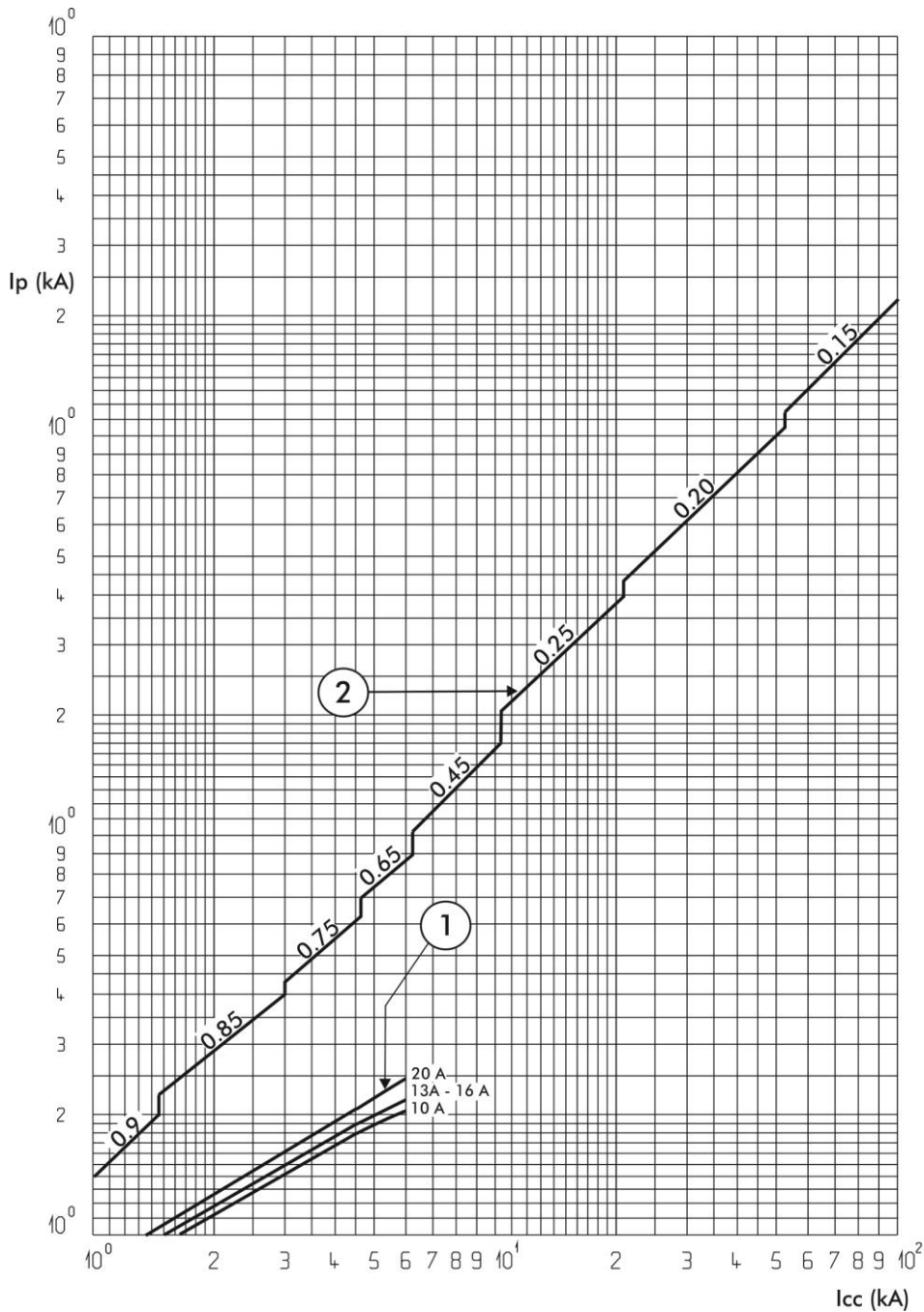


**Phase + Neutral, neutral on left**

**7. CURVES (continued)**

**Current limiting curves :**

. C curve RCBOs from 10 A to 20 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)

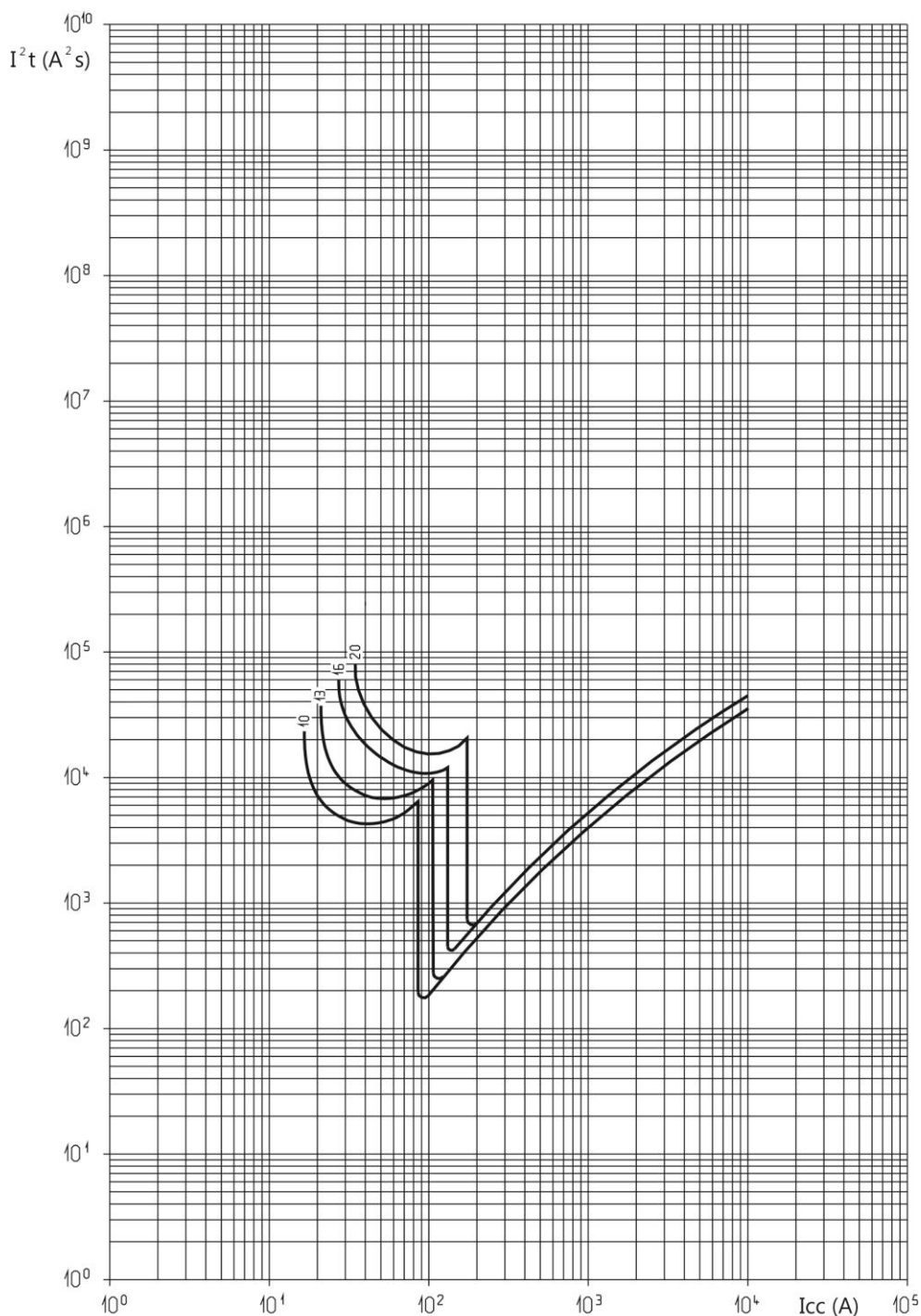
2 = Unlimited peak currents (max.), corresponding to power factors shown above (0.15 to 0.9)

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

7. CURVES (continued)

Thermal stress limiting curves :

. C curve RCBOs from 10 A to 20 A (230V/50Hz)



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

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

NB:

-The 3A rating limits to values less than 6,000  $A^2s$

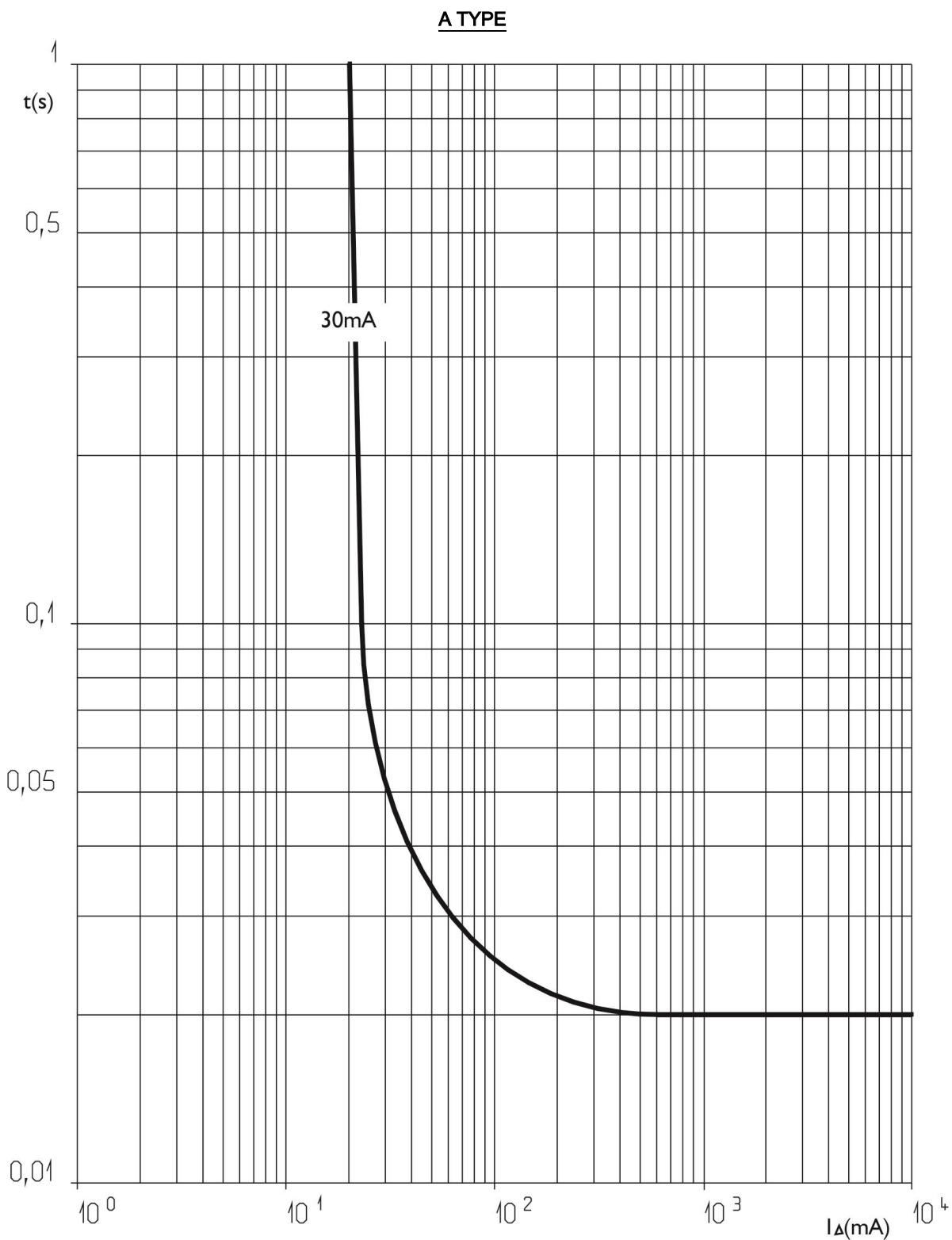
-The 2A rating limits to values less than 3,000  $A^2s$

**Phase + Neutral, neutral on left**

**7. CURVES (continued)**

**Tripping current curves :**

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



**Phase + Neutral, neutral on left****8. AUXILIARIES AND ACCESSORIES****Wiring accessories :**

- . Supply busbar:
  - Prong type
- Supply busbar (Cat. No. 4 049 40, 41, ...)
- Fork type supply busbar (Cat. No. 4 049 14, ...)
- . Connection terminals (Cat. No. 4 049 05)
- . Sealable screw cover (Cat. No. 4 063 04)

**Signalling auxiliaries :**

- . Auxiliary contact (0.5 module, Cat. No. 4 062 50, 4 062 58)
- . Fault signalling contact (0.5 module, Cat. No. 4 062 52, 4 062 60)
- . Auxiliary contact that can be changed into fault signalling contact (0.5 module, Cat. No. 4 062 56, 4 062 62)
- . Auxiliary contact + fault signalling contact that can be changed into 2 auxiliary contacts (1 module, Cat. No. 4 062 64, 4 062 66)

**Control auxiliaries :**

- . Shunt trip (1 module, Cat. No. 4 062 76 / 78)
- . Autonomous shunt trip 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)
- . Power Overvoltage Protection "pop" (1 module, Cat. No. 4 062 86)

**Motor-driven control modules :**

- . Motor-driven control module (1 module, Cat. No. 4 062 90, 4 062 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 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 RCB
- . Front external rotary handles (Cat. Nos. 4 063 19, 4 063 20)

**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 "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.