

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. 72

COMPACT SIZE

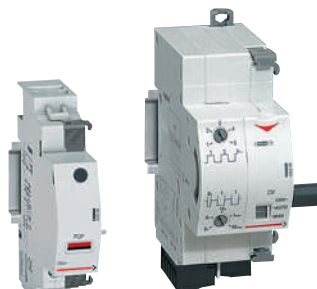
1 module motorised controls for remote tripping of 1-pole to 4-pole modular devices.



Auxiliaries p. 72

EASY TO INSTALL

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

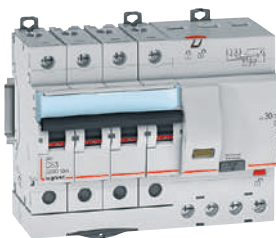


Power overvoltage protection p. 72
Motorised control with automatic resetting p. 72

AVAILABLE FUNCTIONS

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

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



4 111 92



4 112 41



Technical characteristics see e-catalogue

Conform to IEC 61009-1, IEC 62423 (F type)

Voltage independent tripping

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
 - F type (High immunity) : detect AC and pulsating DC residual currents. Enhanced immunity to unwanted tripping in disturbed environments. Detection of high frequency fault currents
- Can be equipped with DX³ signalling and remote tripping auxiliaries and motorised controls (p. 72)

| Pack | Cat.Nos | 4-pole - 400 V \sim | |
|------|----------|---|-------------------|
| | | 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 | |
| | | Nominal rating I _n (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 |
| | | F type (old Hpi type) 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



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

| | | |
|-----------------------------|-------------|---------|
| DX ³ 6000 10 kA | 1P/2P/3P/4P | 3 kA |
| DX ³ 10000 16 kA | 1P/2P/3P/4P | 4 kA |
| DX ³ 25 kA | 1P/2P/3P/4P | 6.25 kA |
| DX ³ 50 kA | 1P/2P/3P/4P | 12.5 kA |

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

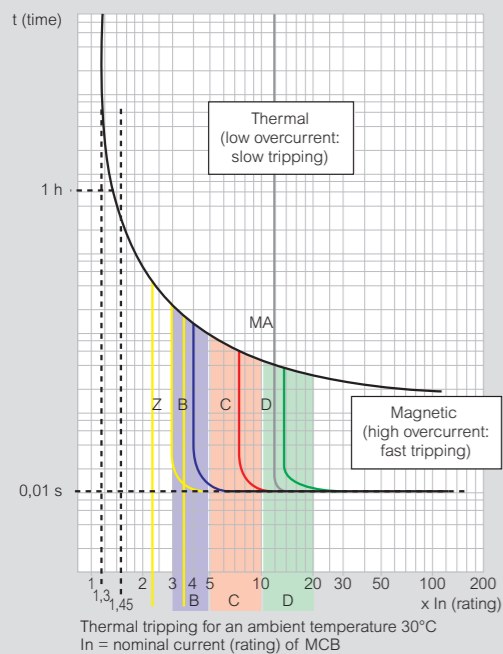
| | 1P/2P/3P/4P 230/400 V~ MCBs | | | |
|------|-----------------------------|-----------------------------|-----------------------|-----------------------|
| | DX ³ 6000 10 kA | DX ³ 10000 16 kA | DX ³ 25 kA | DX ³ 50 kA |
| Icn1 | 10000 A | 16000 A | 25000 A | 50000 A |
| Ui | 500 V | 500 V | 500 V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

Icn1: 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 | |
|---|----------------------------|-----------------------------|-----------------------|-----------------------|
| | DX ³ 6000 10 kA | DX ³ 10000 16 kA | DX ³ 25 kA | DX ³ 50 kA |
| DX ³ 6000 10 kA | 35 | 25 | | |
| DX ³ 10000 16 kA | 70 | 50 | | |
| DX ³ 25 kA | | | 50 | 35 |
| DX ³ 36 kA, DX ³ 50 kA and add-on modules | | | | |
| Auxiliaries | 2.5 | 2.5 | | |

MCB tripping curves



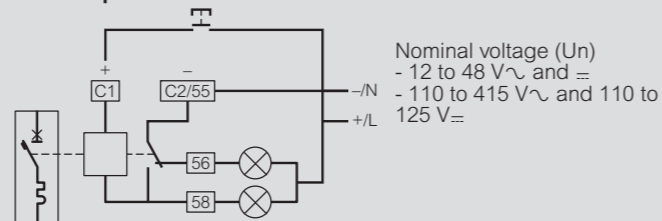
| Curves | Magnetic threshold settings |
|-------------------|---|
| Z ⁽¹⁾ | 2.4 to 3.6 In |
| B | 3 to 5 In |
| C | 5 to 10 In |
| D | 10 to 14 In (10 to 20 acc. to the stds) |
| MA ⁽¹⁾ | 12 to 14 In |

1: On request

Technical characteristics of auxiliaries

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

Shunt trips

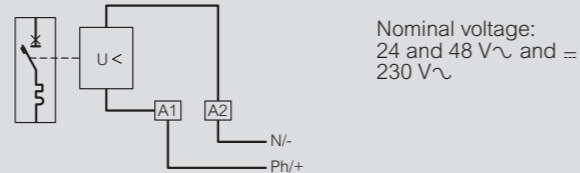


Equipped with a signalling contact which indicates tripping of the shunt trip and automatically breaks the coil.
Min. and max. voltage: 0.7 to 1.1 Un
Tripping time: less than 20 ms
Power consumption: at 1.1 x 48 V = 121 VA
at 1.1 x 415 V = 127 VA
Impedance: 12 to 48 V = 23 Ω
110 to 415 V = 1640 Ω

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

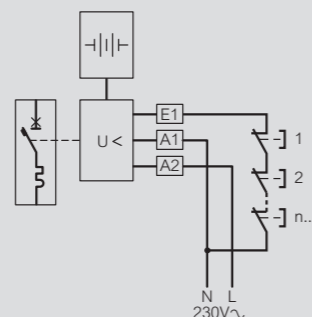
Undervoltage releases

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



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 | - |
| 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 |

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/ | - |
| 3rd auxiliary | 4 062 .. 64/66 | 4 062 .. 50/52/56/58/60/62/64/ 66/76/78/80/82/84/86/87 | 4 062 .. 76/78/80/82/ 84/86/87 |

Performance of add-on modules

AC type (A) - Standard applications

Detection of 50-60 Hz AC residual currents

A type (A) - 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.

Performance of add-on modules (continued)

F type (old Hpi type) M (M) - Special applications

Type F RCCBs are devices which offer additional immunity to unwanted tripping which significantly exceeds the level required by the standard
They are also able to detect AC and DC residual currents (A type)
Detection of high frequency fault currents
Operation between - 25 °C and + 40 °C
They are used in special applications where:
• Loss of information is potentially damaging, e.g. power supply lines for computer equipment (banks, equipment on military bases, flight reservation centres, etc.)
• Loss of operation is potentially damaging (automated machinery, medical equipment, freezer cable, etc.)
They are also used:
• On sites where there is an increased risk of lightning strikes
• On sites where cables are subject to high levels of interference (use of fluorescents, etc.)
• On sites where very long cables are used

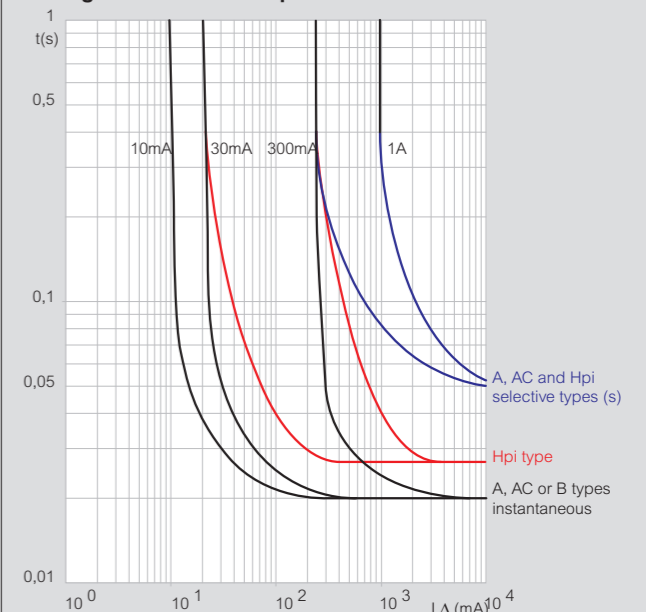
Special case of continuity of service

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 (B) - Specific applications

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

| DX ³ add-on modules used with an MCB | IΔm |
|--|---------|
| DX ³ (1 mod./pole) 25 kA ≤ 25 A (B, C, Z curves) 25 kA ≤ 10 A (D, MA curves) | 6000 A |
| DX ³ (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 | | RX ² 6000 | | | | | | | | | | | | RX ² 4500 / RX ² 6000 | | | | DX ² 6000 - 10 kA | | | | DX ² 25 kA / DX ² 50 kA | | | | DX ² 25 kA / DX ² 50 kA | | | | |
|---|--------|--|-----|-----|-----|--|-----|-----|------|--|------|------|-----|---|-----|-----|-----|---|------|------|------|---|------|-----|------|---|------|------|------|------|
| Downstream MCB | In (A) | TX ² 6000 / TX ² 10000 | | | | TX ² 6000 / TX ² 10000 | | | | | | | | D curve | | | | C curve | | | | D curve | | | | | | | | |
| | | DX ² 6000 - 10 kA / DX ² 10000 - 16 kA | | | | DX ² 6000 - 10 kA / DX ² 10000 - 16 kA | | | | DX ² 6000 - 10 kA / DX ² 10000 - 16 kA | | | | DX ² 25 kA / DX ² 50 kA | | | | DX ² 25 kA / DX ² 50 kA | | | | | | | | | | | | |
| | | B curve | | | | C curve | | | | | | | | D curve | | | | D curve | | | | | | | | | | | | |
| | | 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 |
| RX ² 4500 RX ² 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 | 128 | 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 | 128 | 160 | 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 | 128 | 160 | 200 | 252 | 240 | 300 | 375 | 472 | 800 | 950 | 1200 | 384 | 480 | 600 | 756 | 240 | 300 | 375 | 472 | 800 | 950 | 1200 | 384 | 480 | 600 | 756 | 1100 | 1450 | 1800 |
| TX ² 6000 TX ² 10000 B & C curves | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ≤ 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 |
| DX ² 6000 - 10 kA B, C & D curves | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ≤ 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 |
| DX ² 10000 - 16 kA B & C curves | 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 | | | | | | | | | 1600 | 3000 | 4000 | 384 | 480 | 600 | 756 | 300 | 400 | 500 | 1000 | 1600 | 3000 | 4000 | 384 | 480 | 600 | 1000 | 1600 | 3000 | 4000 |
| | 25 | | | | | | | | | 1300 | 2400 | 3300 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 800 | 1300 | 2400 | 3300 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 |
| | 32 | | | | | | | | | 1000 | 1800 | 2700 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 1000 | 1800 | 2700 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 |
| | 40 | | | | | | | | | 800 | 1600 | 2400 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 |
| | 50 | | | | | | | | | 800 | 900 | 1700 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 |
| DX ² 10000 - 16 kA D curve | 63 | | | | | | | | 650 | 900 | 1200 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 80 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 100 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 125 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | ≤ 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 |
| DX ² 25 kA C curve | 20 | | | | | | | | 1600 | 3000 | 4000 | 384 | 480 | 600 | 756 | 300 | 400 | 500 | 1000 | 1600 | 3000 | 4000 | 384 | 480 | 600 | 1000 | 1600 | 3000 | 4000 | |
| | 25 | | | | | | | | 1300 | 2400 | 3300 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 800 | 1300 | 2400 | 3300 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 32 | | | | | | | | 1000 | 1800 | 2700 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 1000 | 1800 | 2700 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 40 | | | | | | | | 800 | 1600 | 2400 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 50 | | | | | | | | 800 | 900 | 1700 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 63 | | | | | | | | 650 | 900 | 1200 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 80 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| DX ² 25 kA D curve | 100 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 125 | | | | | | | | 600 | 750 | 750 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | ≤ 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 | | | | | | | | | 1600 | 3000 | 4000 | 384 | 480 | 600 | 756 | 300 | 400 | 500 | 1000 | 1600 | 3000 | 4000 | 384 | 480 | 600 | 1000 | 1600 | 3000 | 4000 |
| | 25 | | | | | | | | | 1300 | 2400 | 3300 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 800 | 1300 | 2400 | 3300 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 |
| DX ² 50 kA C curve | 32 | | | | | | | | 1000 | 1800 | 2700 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 1000 | 1800 | 2700 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 40 | | | | | | | | 800 | 1600 | 2400 | 384 | 480 | 600 | 756 | 240 | 400 | 500 | 600 | 800 | 1600 | 2400 | 384 | 480 | 600 | 800 | 1300 | 2400 | 3300 | |
| | 50 | | | | | | | | 800 | | | | | | | | | | | | | | | | | | | | | |

Back up between MCCBs and MCBs (in kA)

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

| MCBs/MCCBs upstream | | DX ³ 10000 16 kA B, C and D curves | DX ³ 25 kA C and D curves | DX ³ 50 kA C and D curves | DPX ³ 160 | | | | DPX ³ 250 | | | | DPX 250 | DPX-H 250 | DPX 630 | DPX-H 630 DPX-L 630 - 100 kA | DPX 1250 and 1600 + DPX-H 1250 and 1600 | |
|--|--------------|--|---|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------------------|--|-------|
| MCBs downstream | | 10 to 125 A | 10 to 125 A | 10 to 63 A | 16 kA 16 to 160 A | 25 kA 16 to 160 A | 36 kA 16 to 160 A | 50 kA 16 to 160 A | 25 kA 40 to 250 A | 36 kA 40 to 250 A | 50 kA 40 to 250 A | 70 kA 40 to 250 A | 36 kA 40 to 250 A | 70 kA 40 to 250 A | 36 kA 250 to 630 A | 70 kA 250 to 630 A | 50 kA and 70 kA 630 to 1600 A | |
| DX ³ 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 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 | 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 | 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 | 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 | 25 kA | 25 kA | 16 kA | 16 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 | 25 kA | 20 kA | 16 kA | 16 kA | 12,5 kA | |
| DX ³ 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 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 | 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 | 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 | |
| DX ³ 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 | 36 kA | 30 kA | 30 kA | |
| DX ³ 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 | |
| DX ³ 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 | | DX ³ 10000 16 kA B, C and D curves | | DX ³ 25 kA C and D curves | | DX ³ 50 kA C curves | | DX ³ 50 kA D curves | | DPX ³ 160 | | | | DPX ³ 250 | | | | DPX 250 | DPX-H 250 | DPX 630 | DPX-H 630 DPX-L 630 - 100 kA | DPX 1250 and 1600 + DPX-H 1250 and 1600 | | |
|--|-------------|--|-------------|---|-------------|-----------------------------------|------------|-----------------------------------|------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------------------|--|--------|-------|
| MCBs downstream | | ≤ 32 A | 40 to 125 A | ≤ 32 A | 40 to 125 A | ≤ 32 A | 40 to 63 A | ≤ 32 A | 40 to 63 A | 16 kA 16 to 160 A | 25 kA 16 to 160 A | 36 kA 16 to 160 A | 50 kA 16 to 160 A | 25 kA 40 to 250 A | 36 kA 40 to 250 A | 50 kA 40 to 250 A | 70 kA 40 to 250 A | 36 kA 40 to 250 A | 70 kA 40 to 250 A | 36 kA 250 to 630 A | 70 kA 250 to 630 A | 50 kA + 70 kA 630 to 1600 A | | |
| DX ³ 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 | 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 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 | 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 | 50 kA | 50 kA | 30 kA | 30 kA | 25 kA |
| DX ³ 10000 - 16 kA 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 | 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 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 | 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 | 50 kA | 32 kA | 32 kA | 32 kA | |
| DX ³ 25 kA 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 | 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 | 55 kA | 60 kA | 50 kA |
| DX ³ 25 kA 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 | 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 | 55 kA | 60 kA | 50 kA |
| DX ³ 50 kA C and D curves | 10 to 63 A | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 120 kA | - | 120 kA | - | 120 kA | 120 kA | |

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

Protection of DC circuits

Protection of DC circuits

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

1 - Protection against short-circuits

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

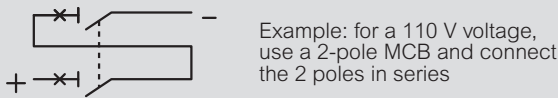
2 - Protection against overloads

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

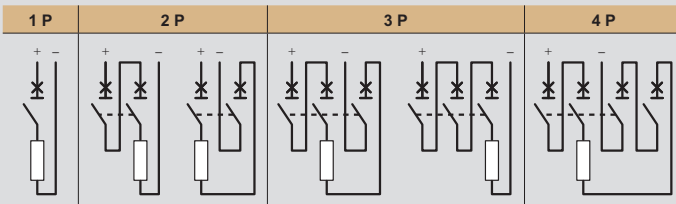
3 - Operating voltage

Min. operating voltage: 12 V_{DC}
 Max. operating voltage: 60 V_{DC} 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 |



4 - Wiring modes



5 - Breaking capacity

| According to IEC 60947.2 | | DC Voltage (V) | 1P | 2P | 3P | 4P |
|--|--------------------|----------------|--------|--------|--------|--------|
| DX ³ 4500 / 6 kA B and C curves $I_n \leq 63$ 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 |
| | Ics ⁽¹⁾ | 12 to 60 | 100% | 100% | 100% | 100% |
| | | 110 | | 100% | 100% | 100% |
| | | 150 | | | 100% | 100% |
| DX ³ 6000 / 10 kA B and C curves $I_n \leq 63$ 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 |
| | Ics ⁽¹⁾ | 12 to 60 | 100% | 100% | 100% | 100% |
| | | 110 | | 100% | 100% | 100% |
| | | 150 | | | 100% | 100% |
| DX ³ 10000 / 16 kA B and C curves $I_n \leq 63$ 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 |
| | Ics ⁽¹⁾ | 12 to 60 | 100% | 100% | 100% | 100% |
| | | 110 | | 100% | 100% | 100% |
| | | 150 | | | 100% | 100% |
| DX ³ 25 kA B and C curves $I_n \leq 25$ 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 |
| | Ics ⁽¹⁾ | 12 to 60 | 100% | 100% | 100% | 100% |
| | | 110 | | 100% | 100% | 100% |
| | | 150 | | | 100% | 100% |
| | 180 | | | | 100% | |

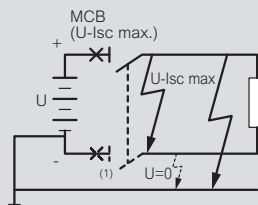
1: As a % of Icu

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

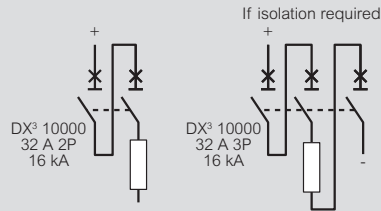


Example: circuit earthed via the negative polarity / $U = 110$ V_{DC} / $I_{sc} = 10$ kA / $I_n = 32$ A

Protect the positive polarity using an MCB capable of breaking 10 kA at 110 V (DX³ 10000 2P 32 A with 2 poles on the positive polarity)

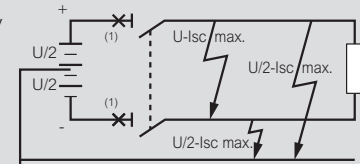
For isolation, use a DX³ 10000 3P 32 A with 2 poles on the positive polarity and one pole on the negative polarity

| DX ³ 10000 / 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:

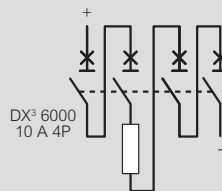
Place on each polarity the number of poles necessary for max. I_{sc} breaking at half voltage



Example:

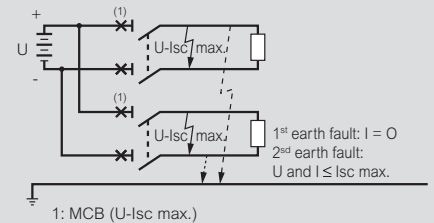
Circuit earthed via a middle point / $U = 220$ V_{DC} / $I_{sc} = 6$ kA / $I_n = 10$ A
 Protect each polarity using an MCB capable of breaking 6 kA at half voltage, i.e. 110 V (DX³ 6000 4P 10 A with 2 poles on each polarity)

| DX ³ 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 |



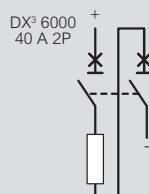
• Isolated earth supply:

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)



Example: isolated earth circuit / $U = 48$ V_{DC} / $I_{sc} = 6$ kA / $I_n = 40$ 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)

| DX ³ 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 |



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



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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)
- . F (immunised against false tripping). F 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

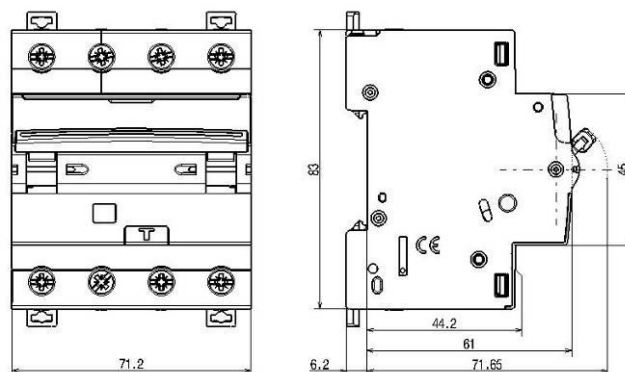
Maximum operating voltage:

- . 440 V~, 50 Hz with standard tolerances

Breaking capacity:

- . I_{cn} = 6000 A in accordance with standard EN/IEC 61009-1
- . I_{cu} = 10 kA in accordance with standard EN/IEC 60947-2

3. OVERALL DIMENSIONS:



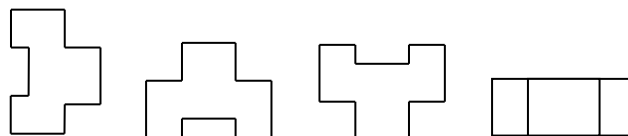
4. PREPARATION - CONNECTION

Mounting:

- . On symmetrical EN 60.715 rail or DIN 35 rail

Operating positions:

- . Vertical horizontal upside down On the side



Power supply:

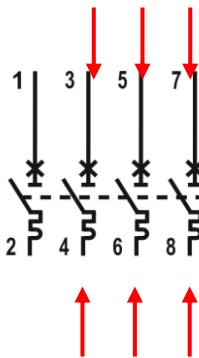
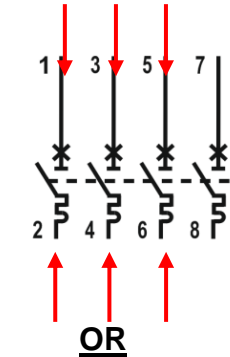
- . Either from the top or the bottom

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

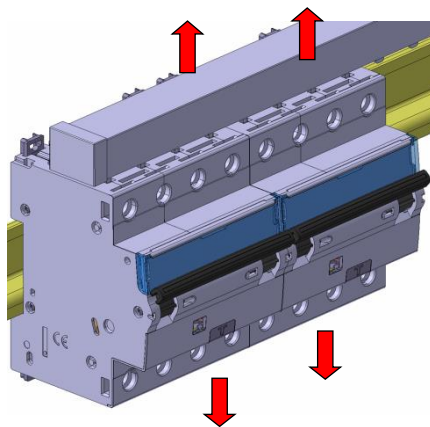
4. PREPARATION - CONNECTION *(continued)*

400V three-phase network wiring without neutral:
connect the 3 phases as indicated by the arrows in below diagram



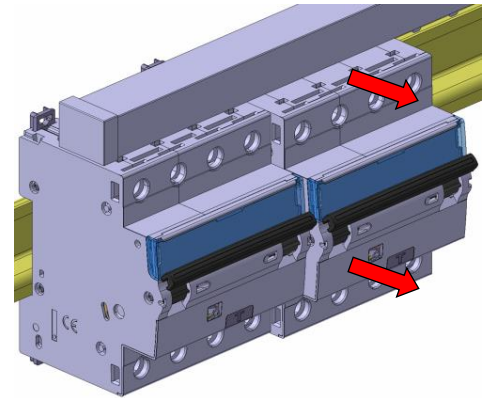
Module maintenance :

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



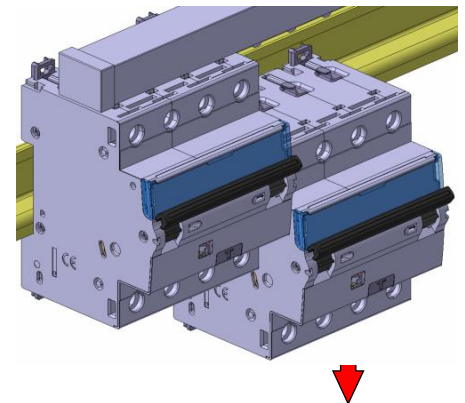
Put the clamp in the unlocking position

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

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

4. PREPARATION - CONNECTION (continued)

Conductor type:

- Copper cable
- Cable cross-section:

| | Without ferrule | With ferrule |
|----------------|--|--|
| Rigid cable | 1 x 0.75 mm ² to 35 mm ² 2 x 0.75 mm ² to 16 mm ² | - |
| Flexible cable | 1 x 0.75 mm ² to 25 mm ² 2 x 0.75 mm ² to 16 mm ² | 1 x 0.75 mm ² to 25 mm ² |

- 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:

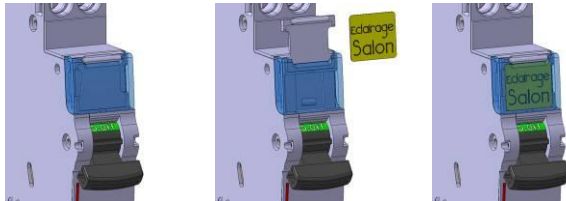
- Padlocks possible in the open or closed positions with padlock support (Cat. No. 4 063 03) and Ø 5 mm padlock (Cat. No. 4 063 13) or Ø6 mm padlock (Cat. No. 227 97)

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

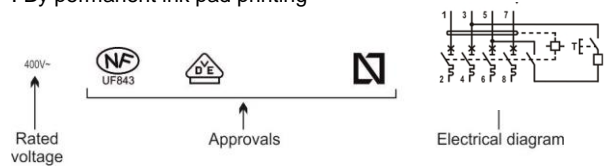
Marking on the front side:

- By permanent ink pad printing



Marking on the upper panel:

- By permanent ink pad printing



Test operating voltages:

| I _{Δn} | 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 | I _{cn} | 6 kA |
| | 400 V | | 6 kA |
| EN 60947-2 | 230 V | I _{cu} | 10 kA |
| | 400 V | | 10 kA |
| | 230 V | I _{cs} | 50 % I _{cu} |
| | 400 V | | 50 % I _{cu} |

Residual breaking capacity:

- I_{Δm} = 4.5 kA in accordance with EN 61009-1 section 9.12.11.4d (I_{Δm}: 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 I_{cn1} 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:

. $U_i = 500$ 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:

. $U_{imp} = 4$ kV (wave 1.2/50 μ s)

Protection from false tripping:

. 8/20 μ s wave resistance: 250 A
. 0.5 μ s/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 $I_n \times \cos(\phi 0.9)$)
. 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 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 F 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 chlorinated 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 (per device):

. 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.

| In (A) | Ambient Temperature/In | | | | | | | | |
|--------|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | - 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

| Downstream RCBO | | Upstream fuse | | | | | | | | | |
|--|-------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| | | gG and aM types | | | | | | | | | |
| | | ≤20 A | 25 A | 32 A | 40 A | 50 A | 63 A | 80 A | 100 A | 125 A | 160 A |
| DX ³ 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 | | | |
|--|-------|--|-------|-------|-------|
| | | DX ³ 10 kA B and C curves DX ³ 6000/10 kA B, C and D curves | | | |
| Downstream RCBO | | ≤32 A | 40 A | 50 A | 63 A |
| DX ³ 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 | | | | | | | | | | | |
|--|-------|---|-------|-------------|---------------------------------------|-------|-------------|----------------------------------|-------|------------|---------------------------------------|-------|----------|
| | | DX ³ 10000 16 kA B/C/D curves | | | DX ³ 25 kA B/C/D curves | | | DX ³ 36 kA C curve | | | DX ³ 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 |
| DX ³ 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 | | | | | | | | | | | |
|--|-------|-------------------------------|-------|-------------|-------------------------------|-------|-------------|-------------------------------|-------|-------------|-------------------------------|-------|-------------|
| | | DPX ³ 160 16 kA | | | DPX ³ 160 25 kA | | | DPX ³ 160 36 kA | | | DPX ³ 160 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 |
| DX ³ 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 | | | |
|--|-------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | | DPX ³ 250 25 kA | DPX ³ 250 36 kA | DPX ³ 250 50 kA | DPX ³ 250 70 kA |
| Downstream RCBO | | 25 to 250 A | 25 to 250 A | 25 to 250 A | 25 to 250 A |
| DX ³ 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 |
| DX ³ 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 | |
|--|-------|---------------|--------------|
| | | DPX 250 ER AB | DPX 400 AB |
| Downstream RCBO | | | |
| DX ³ 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 |
| DX ³ 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 | | | |
|--|--------|---|--------------|--------------|--------------|
| | | DX ³ 6000/10 kA B, C and D curves | | | |
| Downstream RCBO | | ≤32A | 40A | 50A | 63A |
| DX ³ 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 | | | | | | | | | | | |
|--|-------|---|--------------|--------------|---------------------------------------|--------------|--------------|----------------------------------|--------------|--------------|---------------------------------------|--------------|--------------|
| | | DX ³ 10000 16 kA B/C/D curves | | | DX ³ 25 kA B/C/D curves | | | DX ³ 36 kA C curve | | | DX ³ 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 |
| DX ³ 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 | | | | | | | | | | | |
|--|-------|-------------------------------|--------------|--------------|-------------------------------|--------------|--------------|-------------------------------|--------------|--------------|-------------------------------|--------------|--------------|
| | | DPX ³ 160 16 kA | | | DPX ³ 160 25 kA | | | DPX ³ 160 36 kA | | | DPX ³ 160 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 |
| DX ³ 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 | | | |
|---|------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | DPX ³ 250 25 kA | DPX ³ 250 36 kA | DPX ³ 250 50 kA | DPX ³ 250 70 kA |
| Downstream RCBO | | ≤ 250A | ≤ 250A | ≤ 250A | ≤ 250A |
| DX ³ 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 |
| DX ³ 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 | |
|---|-------|---------------|--------------|
| | | DPX 250 ER AB | DPX 400 AB |
| Downstream RCBO | | | |
| DX ³ 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 | | | | | | | |
|---|------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| | | 32A | 40A | 50A | 63A | 80A | 100A | 125A | 160A |
| DX ³ 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 |

T = Total discrimination

- . The downstream RCBO must always have a magnetic threshold and rated current lower than those of the upstream circuit breaker.

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)

| Downstream RCBO | | Upstream fuse aM type | | | | | | | | |
|---|-----|-----------------------|------|------|------|------|------|------|------|------|
| | | 25A | 32A | 40A | 50A | 63A | 80A | 100A | 125A | 160A |
| DX ³ 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)

| Downstream RCBO | | Upstream MCB | | | | | | | | | | | |
|---|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| | | DX ³ 4500/6 kA - DX ³ 6000/10 kA - DX ³ 10000/16 kA B curve | | | | | | | | | | | |
| Downstream RCBO | | 10A | 13A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80A | 100A | 125A |
| DX ³ 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 |

| Downstream RCBO | | Upstream MCB | | | | | | | | | | | |
|---|-----|--|-----|-----|------|-----|-----|-----|-----|-----|------|-------|-------|
| | | DX ³ 3000 - DX ³ 4500/6 kA - DX ³ 6000/10 kA - DX ³ 10000/16 kA C curve | | | | | | | | | | | |
| Downstream RCBO | | 10A | 13A | 16A | 20 A | 25A | 32A | 40A | 50A | 63A | 80A | 100A | 125A |
| DX ³ 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 | | | | | | | | | | | |
|-------------------------------------|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| | | DX ³ 4500/6 kA - DX ³ 6000/10 kA - DX ³ 10000/16 kA D curve | | | | | | | | | | | |
| Downstream RCBO | | 10A | 13A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80A | 100A | 125A |
| DX ³ 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 | | | | | | | | | | | |
|---|-----|----------------------------------|-----|-----|-----|-----|-----|------|------|------|------|------|--|
| | | DX ³ 25 kA B curve | | | | | | | | | | | |
| Downstream RCBO | | 10A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80 A | 100A | 12 A | |
| DX ³ 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 | | | | | | | | | | | |
|---|------|----------------------------------|-----|-----|-----|-----|-----|------|------|------|-------|-------|--|
| | | DX ³ 25 kA C curve | | | | | | | | | | | |
| Downstream RCBO | | 10A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80A | 100 A | 125 A | |
| DX ³ 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 | | | | | | | | | | |
|---|-----|----------------------------------|-----|-----|-----|-----|-----|------|------|------|------|-------|
| | | DX ³ 25 kA D curve | | | | | | | | | | |
| Downstream RCBO | | 10A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80A | 10 A | 125 A |
| DX ³ 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 | | | | | | | | | |
|---|-----|--|-----|-----|-----|-----|-----|------|------|------|--|
| | | DX ³ 36 kA/DX ³ 50 kA C curve | | | | | | | | | |
| Downstream RCBO | | 10A | 16A | 20A | 25A | 32A | 40A | 50A | 63A | 80A | |
| DX ³ 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 | | | | | | | | | | | | | | |
|---|-----|----------------------------------|-----|-----|-----|-----|------|------|----------------------------------|-----|-----|-----|-----|-----|------|------|
| | | DX ³ 50 kA B curve | | | | | | | DX ³ 50 kA D curve | | | | | | | |
| Downstream RCBO | | ≤16A | 2 A | 25A | 32A | 40A | 50A | 63A | 10A | 16A | 20A | 25A | 32A | 40A | 50A | 63A |
| DX ³ 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 downstream RCBO.

The downstream RCBO must always have a magnetic threshold and rated current lower than those of the upstream circuit breaker.

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 ³ 160 16 kA to 50 kA | | | | | | | |
| Downstream RCBO | | 16A | 25A | 40A | 63A | 80A | 100A | 125A | 160A |
| DX ³ 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 | | |
|---|-----|----------------------|------|-------------|
| | | DPX ³ 250 | | |
| Downstream RCBO | | 40A | 100A | 160 to 250A |
| DX ³ 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 |
| DX ³ 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 DMX ³ 2500 / 4000 |
| Downstream RCBO | | 40A | 100A | 160A | 250A | 160 to 4000A |
| DX ³ 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 |
| DX ³ 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)
- . EN/IEC 62423 (F type)

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 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:

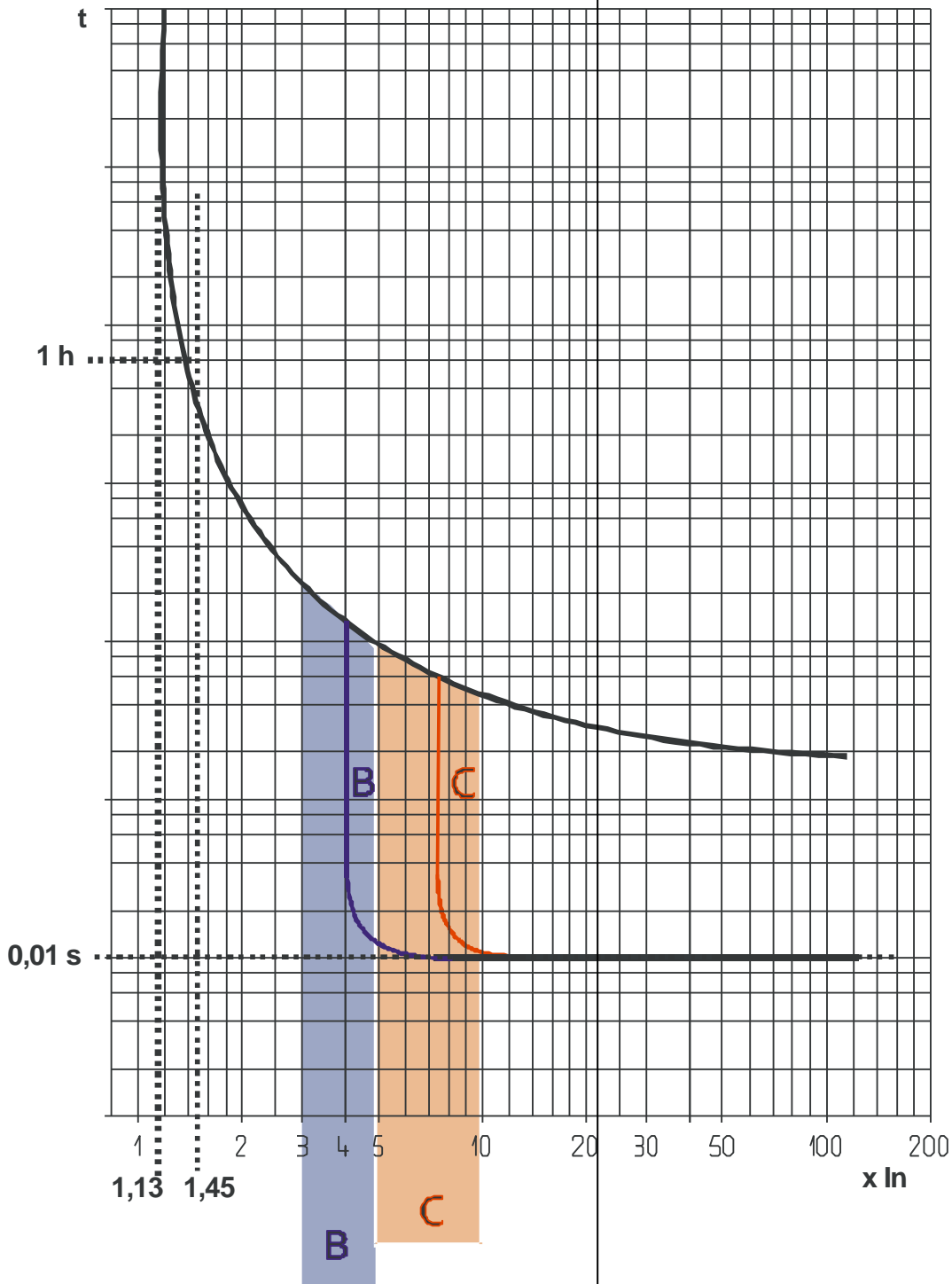
- . Design and manufacture of packaging compliant with decree 98-638 of 20/07/98 and Directive 94/62/EC

Approvals obtained:

- . France: NF

7. CURVES

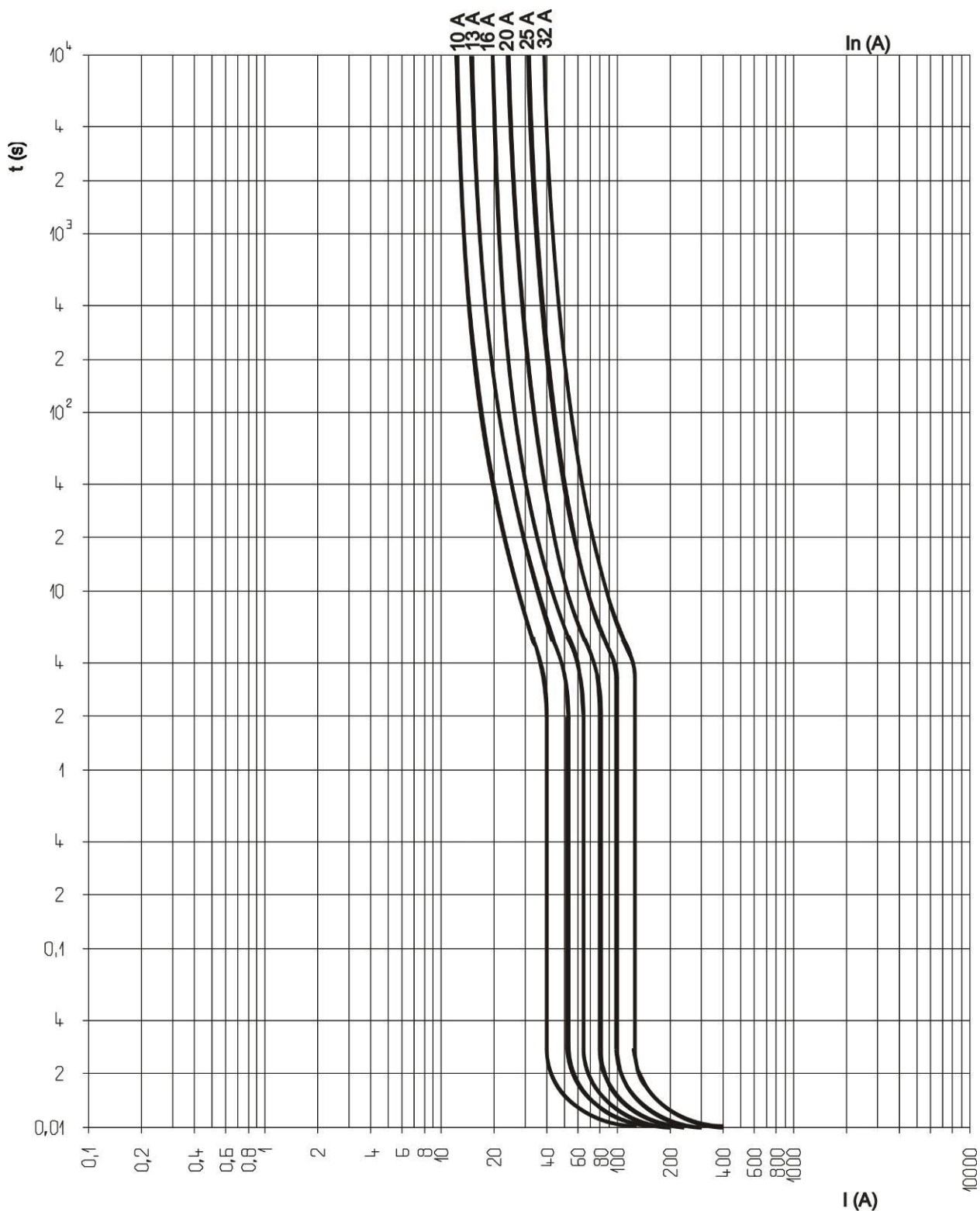
Thermal-magnetic tripping curve range typical of B and C curve RCBOs:



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

7. CURVES (continued)

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



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Created on: 27/05/11

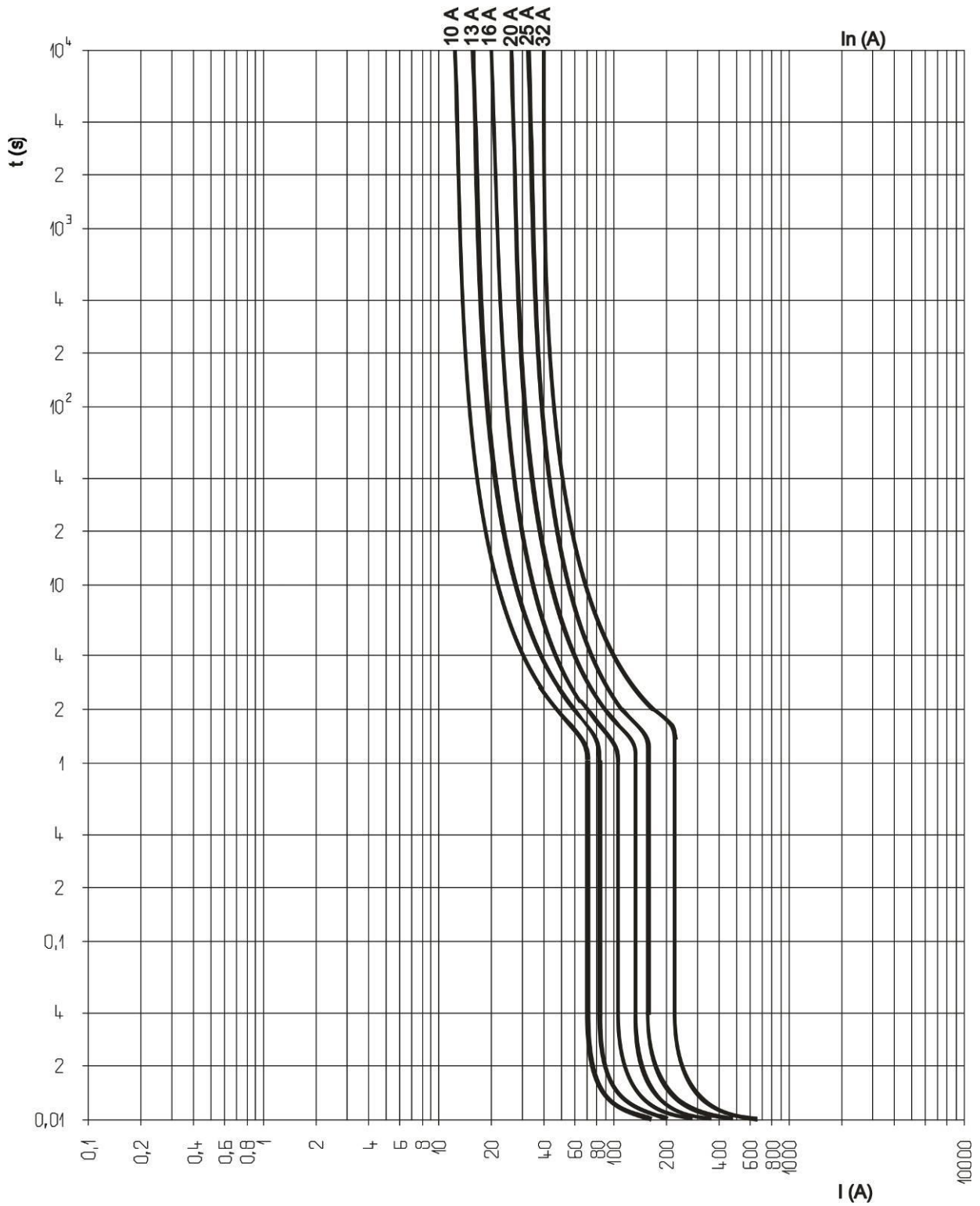


DX³ 4-pole RCBO
6000 A/10 kA

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

7. CURVES (continued)

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



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Created on: 27/05/11

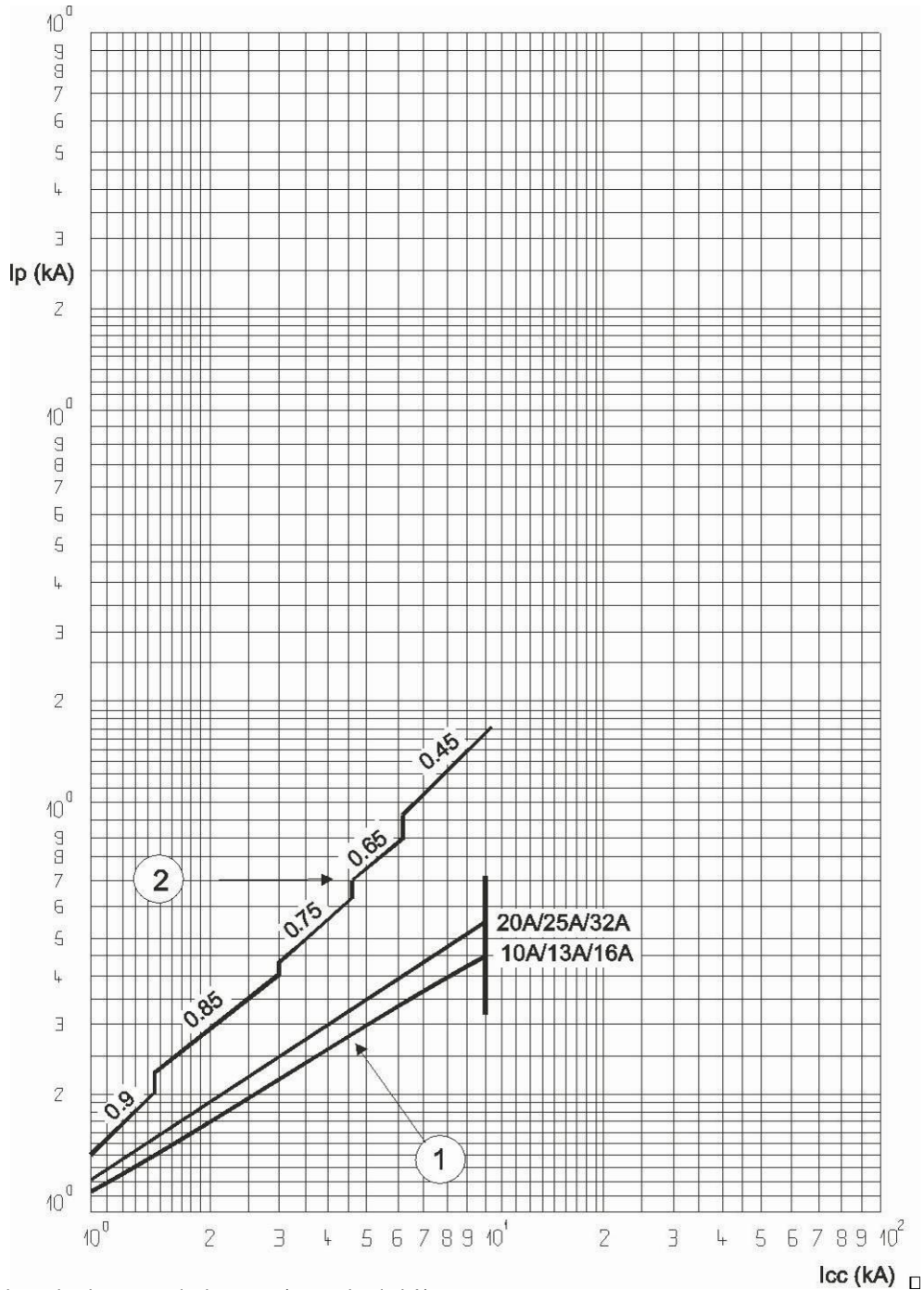


DX³ 4-pole RCBO
6000 A/10 kA

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

7. CURVES (continued)

Current limiting curves:

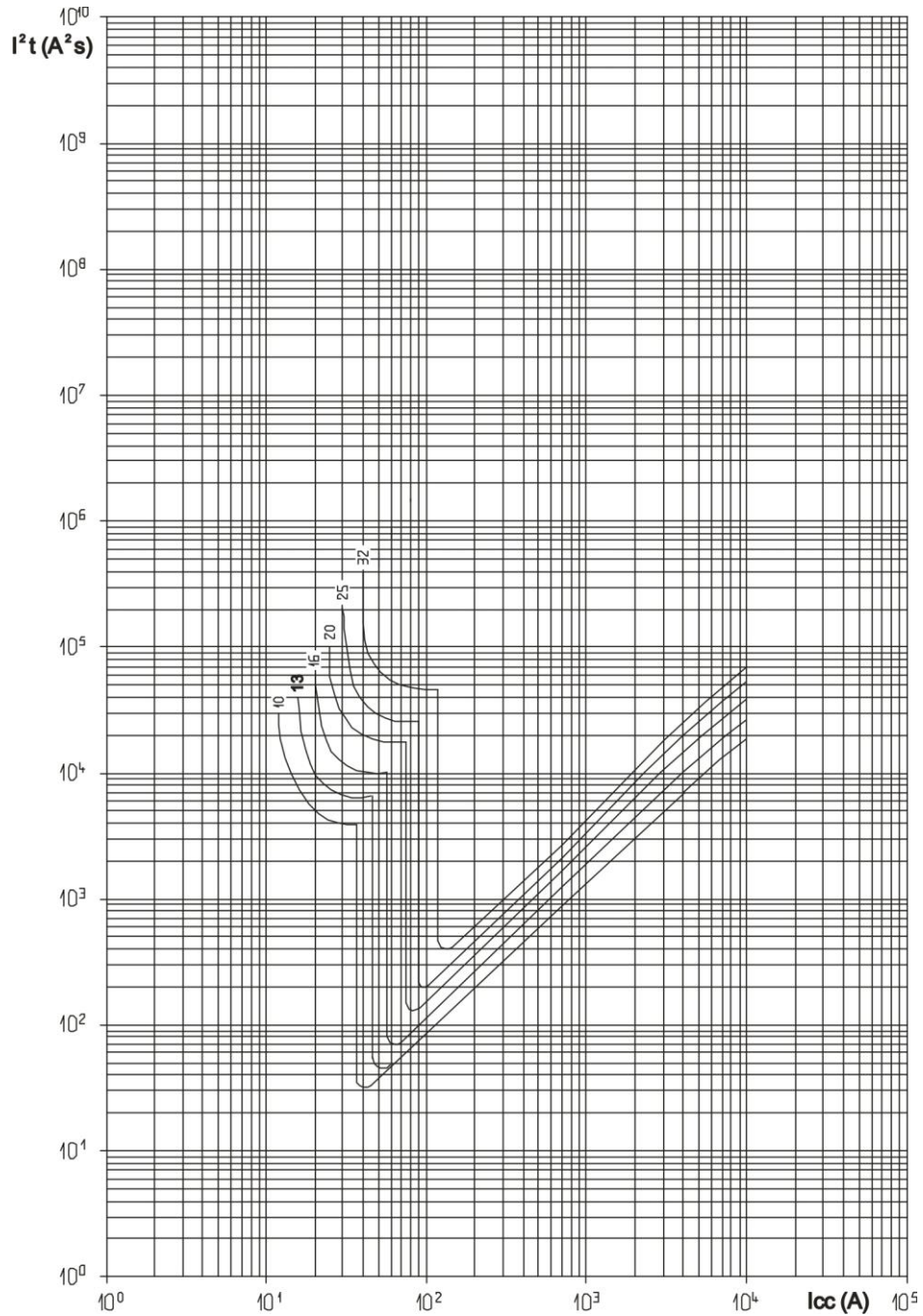


- Icc = Prospective short-circuit symmetrical current (rms value in kA)
- Ip = Maximum peak value (kA)
- ① = Short-circuit rms currents (max. peak)
- ② = Unlimited peak currents (max), corresponding to power factors shown above (0.15 to 0.9)

7. CURVES (continued)

Thermal stress limiting curves:

. B curve 4-pole RCBO



I_{cc} = Prospective short-circuit symmetrical current (rms value in kA)
 I²t = Limited thermal stress (in A²s)

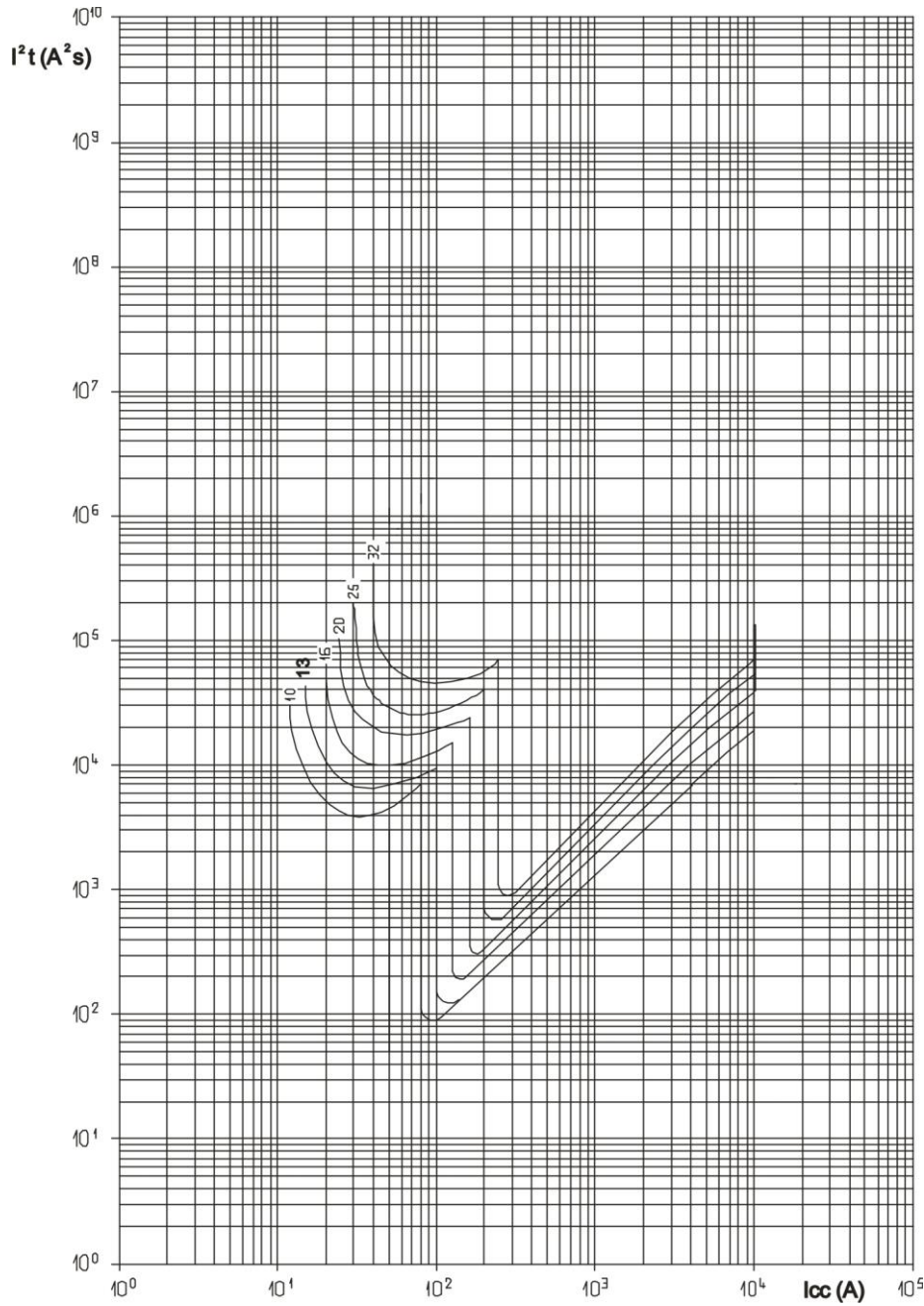
DX³ 4-pole RCBO
6000 A/10 kA

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

7. CURVES (continued)

Thermal stress limiting curves:

. C curve 4-pole RCBO



I_{cc} = Prospective short-circuit symmetrical current (rms value in kA)
 I²t = Limited thermal stress (in A²s)

DX³ 4-pole RCBO
6000 A/10 kA

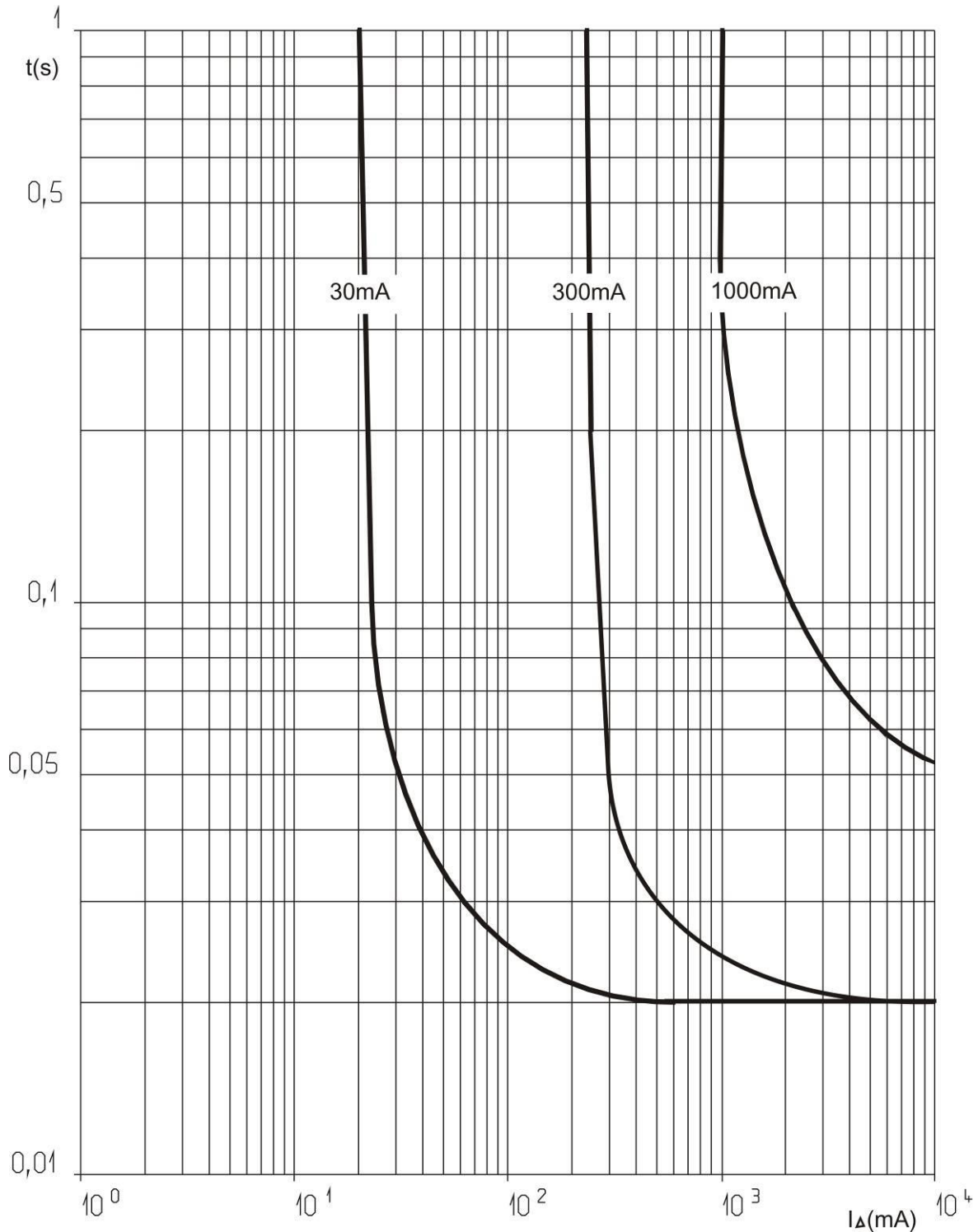
Cat. N°(s) : 4 111 85, 86, 87, 88, 89 / 4 112 04, 05, 06, 07,
 4 112 08, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
 4 112 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 49, 50, 51,
 4 112 52 / 4 113 50, 56, 57, 59, 60, 61, 62, 80, 81

7. CURVES (continued)

Tripping current curves:

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

AC TYPE



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DX³ 4-pole RCBO
6000 A/10 kA

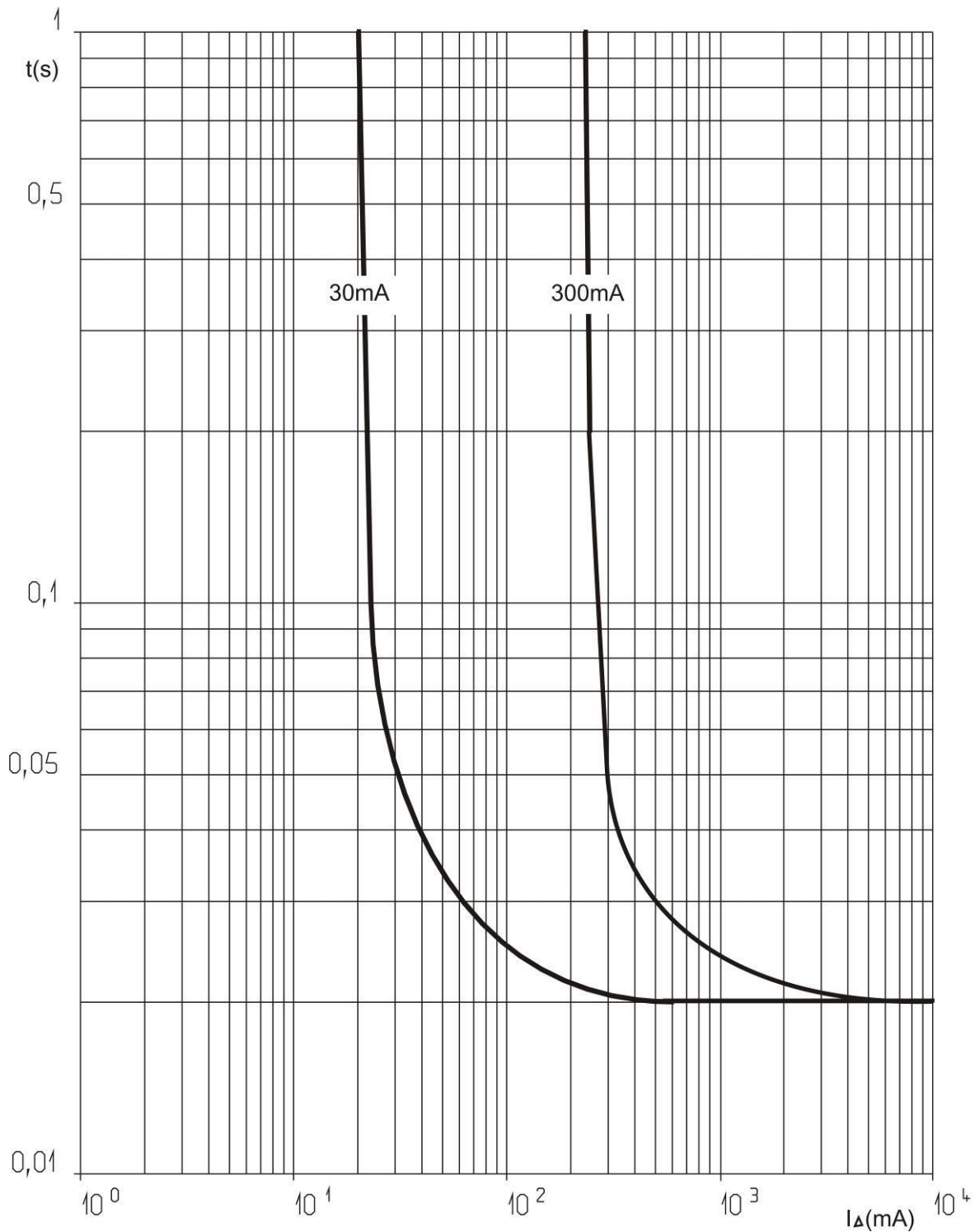
Cat. N°(s) : 4 111 85, 86, 87, 88, 89 / 4 112 04, 05, 06, 07,
4 112 08, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
4 112 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 49, 50, 51,
4 112 52 / 4 113 50, 56, 57, 59, 60, 61, 62, 80, 81

7. CURVES (continued)

Tripping current curves:

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

A TYPE



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Created on: 27/05/11



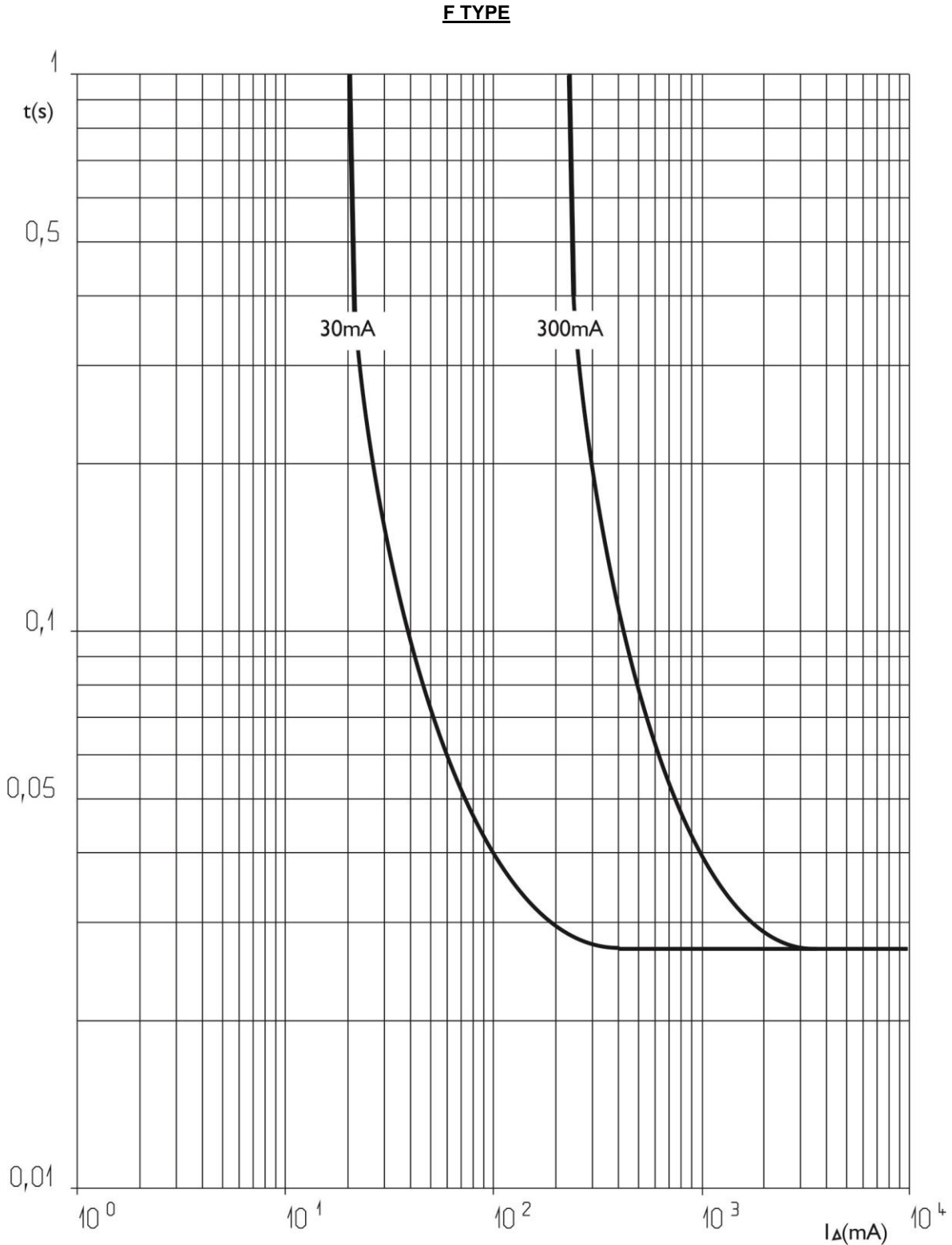
DX³ 4-pole RCBO
6000 A/10 kA

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

7. CURVES (continued)

Tripping current curves:

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



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Created on: 27/05/11

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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

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.