

## DX<sup>3</sup> RCCBs - Type B

Cat. N°(s) : 4 118 42, 4 118 43, 4 118 44, 4 118 45,  
4 118 46, 4 118 47, 4 118 48, 4 118 49

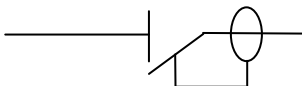


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### 1. DESCRIPTION - USE

RCCBs with positive contact indication for control, protection and isolation of electrical circuits, protecting people from direct and indirect contact and protecting installations from insulation faults.

#### Symbol :



#### Technology :

. Electromagnetic residual current function with current-sensing relay and electronic cards.

### 2. RANGE

#### Polarity:

- . 2 poles
- . 4 poles

#### Width:

- . 4 modules (4 x 17.8 mm)

#### Rated currents In:

- . 40 / 63 A

#### Residual current types:

- . AC (residual sinusoidal currents)
- . A (residual currents with a DC component)
- . B (residual sinusoidal currents up to 100 kHz, pulsating direct residual currents and smooth direct residual currents)

#### Sensitivity:

- . 30/300 mA

#### Nominal voltage and frequency:

- . 2 poles: 230 V~ , 50 Hz with standard tolerances
- . 4 poles: 230/400 V~ , 50 Hz with standard tolerances

### 2. RANGE (continued)

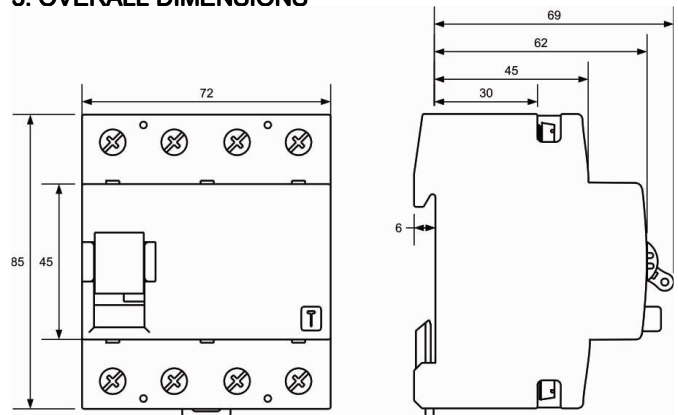
#### Maximum operating voltage:

- . 2 poles: 255 V~
- . 4 poles: 440 V~

#### Minimum operating voltage:

- . For detecting type A/AC residual currents: 0 V
- . For detecting type B residual currents: 50 V ~

### 3. OVERALL DIMENSIONS



### 4. PREPARATION - CONNECTION

#### Mounting:

- . On symmetrical rail EN 60715 or DIN 35 rail

#### Operating positions:

- . Vertical
- . Horizontal
- . Upside down
- . On the side



#### Power supply:

- . Upper terminals

## 4. PREPARATION - CONNECTION *(continued)*

### Connection:

- . Inputs and outputs via screw terminals
- . Neutral on left

### Terminal arrangement:

- . Cage terminals, with release and captive screws
- . Terminals protected against direct contact IP20, wired device
- . Alignment and spacing of the terminals permitting shutters with the other products via supply pin busbars
- . Terminal depth: 12 mm
- . Screw head: mixed head, slotted head and Philips / Pozidriv no. 2
- . Tightening torques: 3 Nm

### Conductor types:

	Top and bottom terminals
Rigid cable	1 x 1.5 to 50 mm <sup>2</sup> or 2 x 1.5 to 16 mm <sup>2</sup>
Flexible cable	1 x 1.5 to 35 mm <sup>2</sup> or 2 x 1.5 to 16 mm <sup>2</sup>

### Required tools:

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

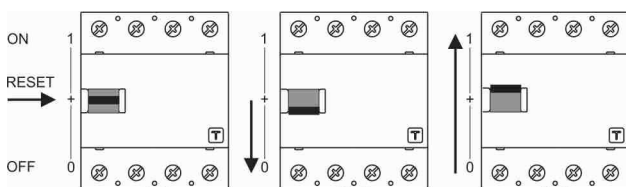
### Contact status display:

- . By marking of the front side:
  - " I-On ": closed contacts
  - " O-Off ": contacts open

### Residual current trip display:

- . The position of the switch lever indicates whether the RCCB has been switched off manually (position O) or as the result of a fault (central position).

In order to cancel the central positioning the switch needs first to be moved to position 'O', only then can the RCCB be switched on Again.



### Labelling:

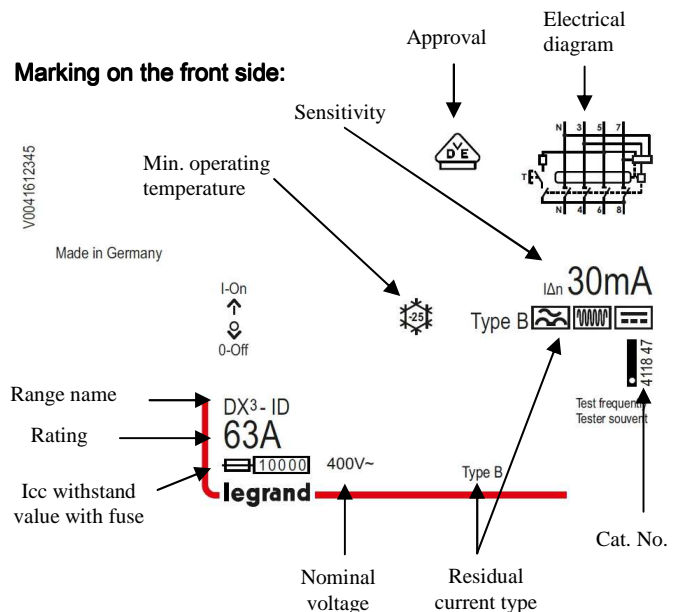
- . Circuit identification by way of a label inserted in the label holder situated on the front of the product

## 5. GENERAL CHARACTERISTICS

### Neutral earthing system:

- . IT, TT and TN

### Marking on the front side:



### Test operating voltage:

- . 2 poles: from 100 V to 250 V~
- . 4 poles: from 185 V to 440 V~

### Rated conditional short-circuit current:

- . Inc = 10 kA, in accordance with EN/IEC 61008-1

### Rated conditional short-circuit residual current:

- . IΔc = 10 kA, in accordance with EN/IEC 61008-1

### Rated residual breaking capacity:

- . For In = 40 A ; IΔm = 500 A, in accordance with EN/IEC 61008-1
- . For In = 63 A ; IΔm = 630 A, in accordance with EN/IEC 61008-1

### Rated breaking and making capacity:

- . For In = 40 A ; Im = 500 A, in accordance with EN/IEC 61008-1
- . For In = 63 A ; Im = 630 A, in accordance with EN/IEC 61008-1

### Protection against overloads:

- . The RCCB must be protected against overloads (either upstream or downstream) by a circuit breaker or a fuse which has a maximum of the same nominal current as the residual current switch

## 5. CARACTERISTIQUES GENERALES (suite)

## Protection against short-circuits:

The RCCB must be protected upstream against short circuits using a circuit breaker or a fuse. Its resistance to short circuits when associated with a Legrand circuit breaker or fuse is compliant with the values stated in the tables below :

- Association with a fuse :

Downstream RCCB	Upstream fuse			
	gG or aM type fuse			
In	≤ 50 A	63 A	80 A	≥ 100 A
40/63 A	<b>100 kA</b>	<b>50 kA</b>	<b>15 kA</b>	<b>10A</b>

- Association with a circuit breaker :

		Upstream circuit breaker			
		DX <sup>3</sup> 4500 / 6 kA P+N 1 mod	DX <sup>3</sup> 4500 / 6 kA 3P / 4P 3 mod	DX <sup>3</sup> 6000 / 10 kA P+N 1 mod	DX <sup>3</sup> 6000 / 10 kA
Downstream RCCB	Curves	C	C	B & C	B, C & D
	In	≤ 40 A	≤ 32 A	≤ 40 A	≤ 63 A
2P - 230 V~	40/60A	<b>6 kA</b>	<b>10 kA</b>	<b>10 kA</b>	<b>16 kA</b>
4P - 400V~			<b>6 kA</b>		<b>10 kA</b>

		Upstream circuit breaker				
		DX <sup>3</sup> 10000 / 16 kA P+N 1 mod	DX <sup>3</sup> 10000 / 16 kA	DX <sup>3</sup> 25 kA	DX <sup>3</sup> 36 kA	DX <sup>3</sup> 50 kA
Downstream RCCB	Curves	C	B, C & D	B, C & D	C	B, C & D
	In	≤ 20 A	≤ 125 A	≤ 125 A	≤ 80 A	≤ 63 A
2P - 230 V~	40/63A	<b>16 kA</b>	<b>25 kA</b>	<b>36 kA</b>	<b>50 kA</b>	<b>70 kA</b>
4P - 400V~			<b>16 kA</b>	<b>25 kA</b>	<b>36 kA</b>	<b>50 kA</b>

		Upstream circuit breaker			
		DPX <sup>3</sup> 160 / DPX <sup>3</sup> 160 + residual current			
		16 kA	25 kA	36 kA	50 kA
Downstream RCCB	In	≤ 160 A	≤ 160 A	≤ 160 A	≤ 160 A
2P - 230 V~	40/63A	<b>25 kA</b>	<b>36 kA</b>	<b>36 kA</b>	<b>36 kA</b>
4P - 400V~		<b>16 kA</b>	<b>25 kA</b>	<b>25 kA</b>	<b>25 kA</b>

## 5. GENERAL CHARACTERISTICS (continued)

## Protection against short circuits (continued):

. Association with circuit breakers: case of a double fault, in IT system – Resistance to the I<sub>cc</sub> of a single pole

Downstream RCCB	Circuit breaker upstream		
	DNX <sup>3</sup> P+N 1 mod	DX <sup>3</sup> P+N 1 mod	DX <sup>3</sup> 3P / 4P 3 mod
	4500 A / 4,5 kA	4500 A / 6 kA	
At 400 V	<b>1,5 kA</b>	<b>1,5 kA</b>	<b>3 kA</b>

Downstream RCCB	Circuit breaker upstream		
	DX <sup>3</sup> P+N 1 mod	DX <sup>3</sup> 3P / 4P 3 mod	DX <sup>3</sup> 1P / 2P / 3P / 4P
	6000 A / 10 kA		
At 400 V	<b>3 kA</b>	<b>3 kA</b>	<b>3 kA</b>

Downstream RCCB	Circuit breaker upstream		
	DX <sup>3</sup> P+N 1 mod	DX <sup>3</sup> 1P / 2P / 3P / 4P	DX <sup>3</sup> 1P / 2P / 3P / 4P
	10000 A / 16 kA		25 kA
At 400 V	<b>3 kA</b>	<b>4 kA</b>	<b>6,25 kA</b>

**5. GENERAL CHARACTERISTICS** *(continued)***Power dissipated by the device:**

- . In = 40 A : 2,9 W
- . In = 63 A : 7.2 W

**Average unit weight per catalogue number:**

- . approximately 0.5 kg

**Packaged volume:**

Packaging	Volume (dm <sup>3</sup> )
<b>Per 1</b>	<b>0.7</b>

**Isolation distance:**

- . distance between the contacts (handle in open position) : 4 mm

**Rated insulation voltage:**

- . Ui = 500 V

**Insulation resistance:**

- . 2 MΩ

**Degree of pollution:**

- . 2

**Dielectric strength:**

- . 2000 V – 45/65 Hz

**Impulse withstand voltage:**

- . Uimp = 4 kV

**Protection from false tripping:**

- . 0.5 μs/100 kHz damped recurring wave = 200 A
- . 8/20 μs wave:
  - B type = 5000 A

**Protection classes:**

- . Terminals protected against direct contact:
  - IP20 (wired device)
- . Front side protected against direct contact:
  - IP40
- . Class II in relation to metallic conductive parts
- . Protection against impacts:
  - IK04

**Enclosure heat and fire resistance:**

- . Resistance to incandescent wire tests at 960°C, in accordance with standard IEC/EN 61008-1
- . Classification V2, in accordance with standard UL94

**Mechanical endurance:**

- . Conforms to standard NF EN 61008-1
- Greater than 5000 switching cycles

**Electrical endurance:**

- . Conforms to standard NF EN 61008-1
- Greater than 2000 switching cycles

**5. GENERAL CHARACTERISTICS** *(continued)***Operating ambient temperature:**

- . - 25°C / + 40°C

**Storage temperature:**

- . -40°C / + 70°C

**DC operation:**

- . Do not use in DC networks

**Operation at 400 Hz:**

- . Do not use at 400 Hz

**Resistance to sinusoidal vibrations:** (in accordance with IEC 68.2.6)

- . Axes: x / y / z
- . Frequency: less than 80 Hz
- . Acceleration: greater than 5 g (1 g = 9.81 m.s<sup>-2</sup>)

**Resistance to tremors :**

- . Conforms to standard NF EN 61008-1
- . Coherent with IEC 62423

**6. COMPLIANCE AND APPROVALS****Reference product standards:**

- . EN 61008-1/IEC 61008-1

**Electromagnetic compatibility:**

- . IEC 61543

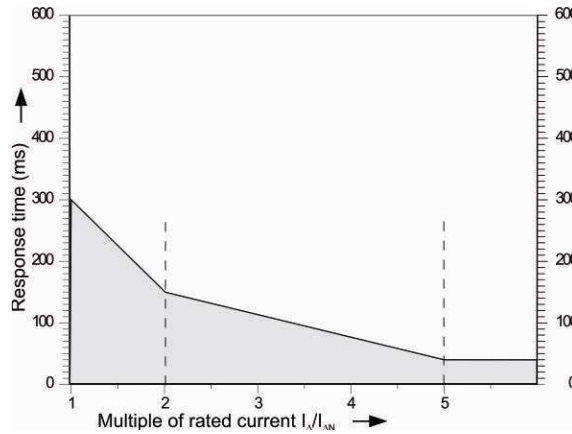
**Approvals obtained:**

- . VDE

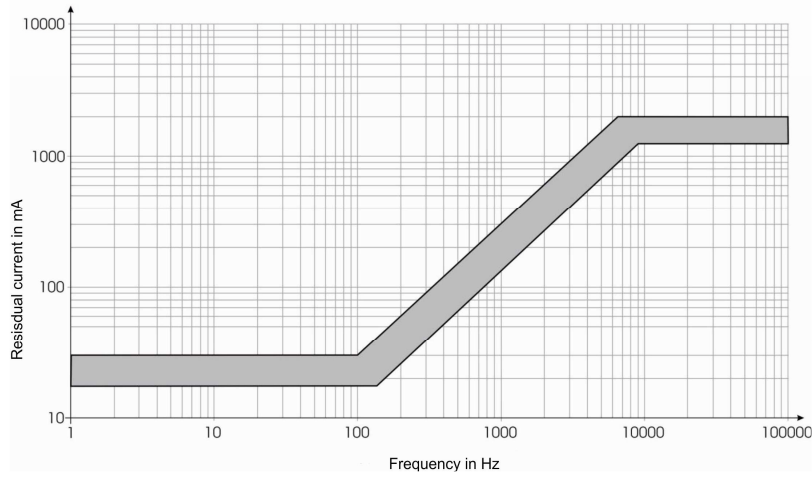
**Environment:**

- . 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

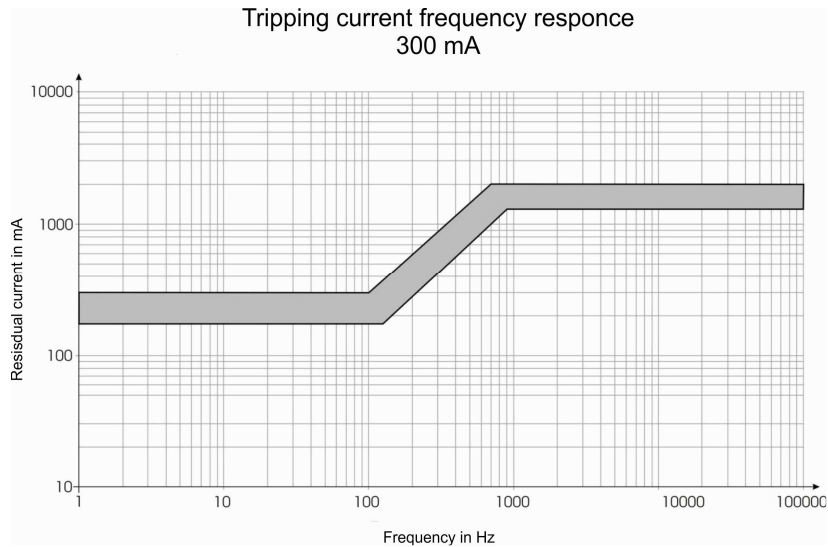
**7. CURVES**



Tripping current frequency response  
30 mA



Tripping current frequency response  
300 mA



## 8. ACCESSORIES

### Sealing:

. Possible in the open or closed positions

## 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 your installation's safety level has been reduced

. The presence of residual current protection does not remove the need to observe all the precautions associated with using electrical energy