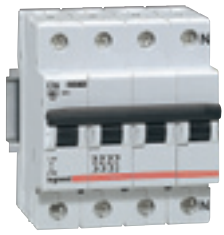


**MCBs and RCDs LR™ 6000**

thermal magnetic MCBs from 6 A to 63 A - B and C curves  
residual current devices from 25 A to 63 A - AC and A types



6048 96



6048 50



6021 93



6021 53

**Dimensions (p. 183)**

- MCBs: Conform to IEC 60898-1
- Breaking capacity: **6000** - IEC 60898-1 - 230/400 V~ / 6 kA - IEC 60947-2 - 230/400 V~
- 10000** - IEC 60898-1 - 127/220 V~ / 10 kA - IEC 60947-2 - 127/220 V~
- Do not accept auxiliaries, and add-on modules
- RCDs: Conform to IEC 61008-1

Pack	Cat.Nos		MCBs	
			<b>Single pole - 230/400 V~</b>	
	B curve	C curve	In	Number of modules
10	6049 02	6048 02	6 A	1
10	6049 03	6048 03	10 A	1
10	6049 04	6048 04	13 A	1
10	6049 05	6048 05	16 A	1
10	6049 06	6048 06	20 A	1
10	6049 07	6048 07	25 A	1
10	6049 08	6048 08	32 A	1
10	6049 09	6048 09	40 A	1
10	6049 10	6048 10	50 A	1
10	6049 11	6048 11	63 A	1
			<b>Single pole + neutral - 230 V~</b>	
	C curve	In	Number of modules	
5	6048 90 <sup>(1)</sup>	6 A	2	
5	6048 91 <sup>(1)</sup>	10 A	2	
5	6048 92 <sup>(1)</sup>	13 A	2	
5	6048 93 <sup>(1)</sup>	16 A	2	
5	6047 90 <sup>(1)</sup>	20 A	2	
5	6047 91 <sup>(1)</sup>	25 A	2	
5	6047 92 <sup>(1)</sup>	32 A	2	
	B curve	C curve	In	Number of modules
5	6049 17	6048 17	6 A	2
5	6049 18	6048 18	10 A	2
5	6049 19	6048 19	13 A	2
5	6049 20	6048 20	16 A	2
5	6049 21	6048 21	20 A	2
5	6049 22	6048 22	25 A	2
5	6049 23	6048 23	32 A	2
5	6049 24	6048 24	40 A	2
5	6049 25	6048 25	50 A	2
5	6049 26	6048 26	63 A	2
	B curve	C curve	In	Number of modules
1	6049 32	6048 32	6 A	3
1	6049 33	6048 33	10 A	3
1		6048 34	13 A	3
1	6049 35	6048 35	16 A	3
1	6049 36	6048 36	20 A	3
1	6049 37	6048 37	25 A	3
1	6049 38	6048 38	32 A	3
1	6049 39	6048 39	40 A	3
1	6049 40	6048 40	50 A	3
1	6049 41	6048 41	63 A	3
	C curve	In	Number of modules	
1	6047 96 <sup>(1)</sup>	6 A	4	
1	6048 94 <sup>(1)</sup>	10 A	4	
1	6048 95 <sup>(1)</sup>	13 A	4	
1	6048 96 <sup>(1)</sup>	16 A	4	
1	6048 97 <sup>(1)</sup>	20 A	4	
1	6048 98 <sup>(1)</sup>	25 A	4	
1	6048 99 <sup>(1)</sup>	32 A	4	
1	6047 97 <sup>(1)</sup>	40 A	4	
1	6047 98 <sup>(1)</sup>	50 A	4	
1	6047 99 <sup>(1)</sup>	63 A	4	

Pack	Cat.Nos	MCBs (continued)	
	C curve	In	Number of modules
1	6048 47	6 A	4
1	6048 48	10 A	4
1	6048 50	16 A	4
1	6048 51	20 A	4
1	6048 52	25 A	4
1	6048 53	32 A	4
1	6048 54	40 A	4
1	6048 55	50 A	4
1	6048 56	63 A	4

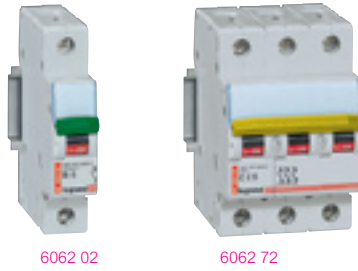
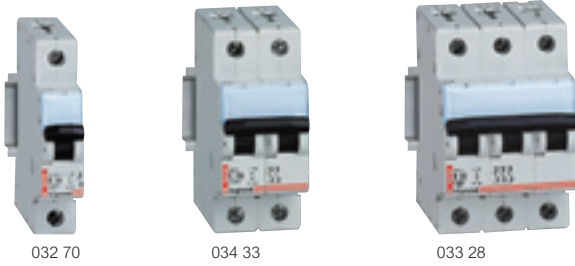
		RCDs	
AC type	A type	Nominal rating (A)	Number of modules
1	6021 36	25	2
1	6021 37	40	2
1	6021 38	63	2
		<b>2-pole - 230 V~ - 100 mA</b>	
1	6021 39	25	2
1	6021 40	40	2
		<b>2-pole - 230 V~ - 300 mA</b>	
1	6021 42	25	2
1	6021 43	40	2
1	6021 44	63	2
		<b>4-pole - 400 V~ - 30 mA</b>	
1	6021 46 <sup>(1)</sup>	25	4
1	6021 47 <sup>(1)</sup>	40	4
1		63	4
		<b>4-pole - 400 V~ - 100 mA</b>	
1	6021 49 <sup>(1)</sup>	25	4
1	6021 50 <sup>(1)</sup>	40	4
		<b>4-pole - 400 V~ - 300 mA</b>	
1	6021 52 <sup>(1)</sup>	25	4
1	6021 53 <sup>(1)</sup>	40	4

(1) Neutral on right-hand side

**MCBs DX-E 6000 - 6 kA**  
thermal magnetic MCBs from 6 A to 63 A  
B and C curves

**MCBs DX 10kA**  
thermal magnetic MCBs from 6 A to 63 A  
B and C curves

**NEW**



Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Breaking capacity  
6000 - IEC 60898-1 - 400 V~  
6 kA - IEC 60947-2 - 400 V~  
Do not accept add-on modules

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Breaking capacity  
10 kA - IEC 60947-2 - 400 V~

Pack	Cat.Nos		Single pole - 230/400 V~	
	B curve	C curve	Nominal rating (A)	Number of modules
10	032 66	033 82	6	1
10	032 68	033 84	10	1
10	032 69	033 85	13	1
10	032 70	033 86	16	1
10	032 71	033 87	20	1
10	032 72	033 88	25	1
10	032 73	033 89	32	1
10	032 74	033 90	40	1
10	032 75	033 91	50	1
10	032 76	033 92	63	1

Pack	Cat.Nos		Nominal rating (A)	Number of modules	Handle colour
	B curve	C curve			
10	6062 02	6062 46	6	1	Green
10	6062 03	6062 47	10	1	Red
10	6062 04	6062 48	16	1	Grey
10	6062 05	6062 49	20	1	Blue
1	6062 06	6062 50	25	1	Yellow
1	6062 07	6062 51	32	1	Violet
1	6062 08	6062 52	40	1	Black
1	6062 09	6062 53	50	1	White
1	6062 10	6062 54	63	1	Copper

	Cat.Nos		Nominal rating (A)	Number of modules
	B curve	C curve		
5	033 08	034 29	6	2
5	033 10	034 31	10	2
5	033 11	034 32	13	2
5	033 12	034 33	16	2
5	033 13	034 34	20	2
5	033 14	034 35	25	2
5	033 15	034 36	32	2
5	033 16	034 37	40	2
5	033 17	034 38	50	2
5	033 18	034 39	63	2

	Cat.Nos		Nominal rating (A)	Number of modules	Handle colour
	B curve	C curve			
1	6062 24	6062 68	6	3	Green
1	6062 25	6062 69	10	3	Red
1	6062 26	6062 70	16	3	Grey
1	6062 27	6062 71	20	3	Blue
1	6062 28	6062 72	25	3	Yellow
1	6062 29	6062 73	32	3	Violet
1	6062 30	6062 74	40	3	Black
1	6062 31	6062 75	50	3	White
1	6062 32	6062 76	63	3	Copper

	Cat.Nos		Nominal rating (A)	Number of modules
	B curve	C curve		
1	033 22	034 47	6	3
1	033 24	034 49	10	3
1	033 25	034 50	13	3
1	033 26	034 51	16	3
1	033 27	034 52	20	3
1	033 28	034 53	25	3
1	033 29	034 54	32	3
1	033 30	034 55	40	3
1	033 31	034 56	50	3
1	033 32	034 57	63	3

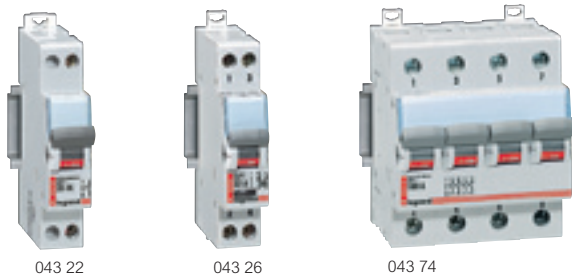
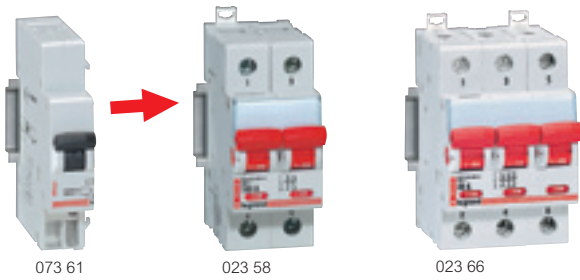
**Auxiliaries and accessories for MCBs** (p. 154)

**Supply busbars** (p. 249)

	Cat.Nos		Nominal rating (A)	Number of modules
	B curve	C curve		
1	033 68	034 89	6	4
1	033 70	034 91	10	4
1	033 71	034 92	13	4
1	033 72	034 93	16	4
1	033 73	034 94	20	4
1	033 74	034 95	25	4
1	033 75	034 96	32	4
1	033 76	034 97	40	4
1	033 77	034 98	50	4
1	033 78	034 99	63	4

**remote trip isolating switches DX™ - IS**  
from 16 A to 125 A

**isolating switches DX™ - IS**  
from 16 A to 125 A



Dimensions (p. 183)  
Technical characteristics (p. 156-158)

AC 22 A according to IEC 60947 - 3  
Double break contacts

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

AC 22 A according to IEC 60947 - 3  
Double break contacts

Pack	Cat.Nos	Remote trip head isolating switches	
		Red handle (main device) Visible contact indication Remote tripping with associated control auxiliary Compatible with the following auxiliaries: - Control auxil. Cat.No 073 60/61/65/66/68/69 (p. 154) - Signalling auxil. Cat.No 073 50/54 (p. 154) Visual indication of the actual status of the contacts: - Closed position or fault (red indicator - I) - Open position (green indicator) on handle In case of fault when opening, the red position indicator indicates the faulty pole and the handle is in the central position	
		<b>2P - 400 V~</b>	
		Nominal rating (A)	Number of modules
2	023 56	40	2
2	023 57	63	2
2	023 58	100	2
2	023 59	125	2
		<b>3P - 400 V~</b>	
1	023 66	40	3
1	023 67	63	3
1	023 68	100	3
1	023 69	125	3
		<b>4P - 400 V~</b>	
1	023 76	40	4
1	023 77	63	4
1	023 78	100	4
1	023 79	125	4

Pack	Cat.Nos	Isolating switches	
		Can be equipped with 1 signalling auxiliary Cat.Nos 073 50 or 073 54 (p. 154)	
		<b>1P - 250 V~</b>	
		Nominal rating (A)	Number of modules
10	043 01	16	1
10	043 02	20	1
10	043 05	32	1
10	043 07	40	1
10	043 10	63	1
10	043 14	100	1
		<b>1P with indicator - 250 V~</b> Supplied with lamp	
10	043 03	20	1
		<b>2P - 400 V~</b>	
10	043 21	16	1
10	043 22	20	1
10	043 25	32	1
5	043 27	40	2
5	043 30	63	2
5	043 34	100	2
5	043 38	125	2
		<b>2P with indicator - 250 V~</b> Supplied with lamp	
10	043 23	20	1
10	043 26	32	1
		<b>3P - 400 V~</b>	
5	043 42	20	2
5	043 45	32	2
3	043 47	40	3
3	043 50	63	3
3	043 54	100	3
3	043 58	125	3
		<b>4P - 400 V~</b>	
5	043 62	20	2
5	043 65	32	2
2	043 67	40	4
2	043 70	63	4
2	043 74	100	4
2	043 78	125	4



For three-phase version, please consult us

## RCDs - DX™

residual current devices from 16 A to 100 A - AC, A and Hpi types



6027 10



090 53



090 74



091 47

*Dimensions (p. 183)*  
*Technical characteristics (p. 158)*

- AC type: detect AC component faults
  - A type: detect AC and DC component faults
  - Hpi type (High immunity): detect AC and DC component faults
- Enhanced immunity to unwanted tripping in disturbed environments  
Conform to IEC 61008 - 1

Pack	Cat.Nos	2-pole - 230 V~	
		<b>AC type</b>	<b>10 mA</b>
1	089 06	Nominal rating (A) 16	Number of modules 2
		<b>AC type</b>	<b>30 mA</b>
1	089 09	25	2
1	089 10	40	2
1	089 11	63	2
1	089 12	80	2
1	6027 10	100	2
		<b>AC type</b>	<b>100 mA</b>
1	089 15	25	2
1	089 16	40	2
1	089 17	63	2
1	089 18	80	2
		<b>AC type</b>	<b>300 mA</b>
1	089 27	25	2
1	089 28	40	2
1	089 29	63	2
1	089 30	80	2
1	6027 12	100	2
		<b>A type</b>	<b>10 mA</b>
1	090 53	16	2
		<b>A type</b>	<b>30 mA</b>
1	090 56	25	2
1	090 57	40	2
1	090 58	63	2
1	090 59	80	2
		<b>A type</b>	<b>300 mA</b>
1	090 74	25	2
1	090 75	40	2
1	090 76	63	2
1	090 77	80	2
		<b>Hpi type</b>	<b>30 mA</b>
1	088 22	25	2
1	088 23	40	2
1	088 24	63	2

Pack	Cat.Nos	4-pole - 400 V~ - Neutral on right-hand side	
		<b>AC type</b>	<b>30 mA</b>
1	089 93	Nominal rating (A) 25	Number of modules 4
1	089 94	40	4
1	089 95	63	4
1	089 96	80	4
		<b>AC type</b>	<b>100 mA</b>
1	089 99	25	4
1	090 00	40	4
1	090 01	63	4
1	090 02	80	4
		<b>AC type</b>	<b>300 mA</b>
1	090 11	25	4
1	090 12	40	4
1	090 13	63	4
1	090 14	80	4
		<b>AC type</b>	<b>300 mA selective</b>
1	090 18	40	4
1	090 19	63	4
		<b>AC type</b>	<b>500 mA</b>
1	090 23	25	4
1	090 24	40	4
1	090 25	63	4
1	090 26	80	4
		<b>A type</b>	<b>30 mA</b>
1	091 40	25	4
1	091 41	40	4
1	091 42	63	4
1	091 43	80	4
1	091 44	100	4
		<b>A type</b>	<b>100 mA</b>
1	091 46	25	4
1	091 47	40	4
1	091 48	63	4
1	091 49	80	4
1	091 50	100	4
		<b>A type</b>	<b>300 mA</b>
1	091 58	25	4
1	091 59	40	4
1	091 60	63	4
1	091 61	80	4
1	091 62	100	4

**Auxiliaries and accessories** (p. 154)

**RCDs - DX™**

residual current devices from 25 A to 100 A - AC, A and Hpi types (continued)



086 95

*Dimensions (p. 183)*  
*Technical characteristics (p. 158)*

- AC type: detect AC component faults
  - A type: detect AC and DC component faults
  - Hpi type (High immunity): detect AC and DC component faults
- Enhanced immunity to unwanted tripping in disturbed environments  
Conform to IEC 61008 - 1

Pack	Cat.Nos	<b>4-pole - 400 V~ - Neutral on right-hand side (continued)</b>	
		<b>A type</b>	<b>300 mA selective</b>
		Nominal rating (A)	Number of modules
1	091 65	40	4
1	091 66	63	4
		<b>A type</b>	<b>500 mA</b>
1	091 71	40	4
1	091 72	63	4
1	091 74	100	4
		<b>Hpi type</b>	<b>30 mA</b>
1	6021 08	25	4
1	6021 09	40	4
1	6021 10	63	4

Pack	Cat.Nos	<b>4-pole - 400 V~ - Neutral on left-hand side</b>	
		<b>AC type</b>	<b>30 mA</b>
		Nominal rating (A)	Number of modules
1	086 93	25	4
1	086 94	40	4
1	086 95	63	4
		<b>A type</b>	<b>30 mA</b>
1	090 98	25	4
1	090 99	40	4
1	091 00	63	4

**DX™- IS isolating switches and DX™-RCDs**  
technical characteristics

■ **DX - IS isolating switches**

**Electrical characteristics**

Thermal rating (Ith)	16 - 32 A	40 - 63 A	100 - 125 A
Connection	flexible	1.5 to 16 mm <sup>2</sup>	1.5 to 25 mm <sup>2</sup>
	rigid		1.5 to 35 mm <sup>2</sup>
Insulation voltage (Hi)	250 - 400 V~	250 - 400 V~	250 - 400 V~
Impulse withstand voltage (Uimp)	4 kV	4 kV	4 kV
Category of use <sup>(1)</sup>	AC 22 A	AC 22 A	AC 22 A
	AC 23 A	AC 23 A	AC 23 A
Short time withstand current (Icw)	750 A	1700 A	2500 A
Short-circuit making capacity (Icm)	1500 A	3000 A	3700 A
No. of electrical operations	> 30000	> 30000	> 30000
Protection index	IP 2X wired	IP 2X wired	IP 2X (> 25 mm <sup>2</sup> )

(1) test conditions according to IEC 60947-3  
AC 22 A: combined motor/resistor breaking  
AC 23 A: inductive motor breaking at In/2

■ **DX - RCDs (residual circuit devices)**

**Connection cross-section**

RCDs	Cable (mm <sup>2</sup> )	
	rigid	flexible
Connection at top and bottom	50	35

■ **AC type** - Standard applications

AC type RCDs detect AC residual currents  
In the majority of cases (standard applications), they are used for AC current detection at 50/60 Hz

■ **A type** - Specific applications: dedicated lines

In addition to the characteristics of AC type RCDs, A type RCDs also detect DC residual currents  
They are used whenever fault currents are not sinusoidal  
They are particularly suitable for the following specific applications (hobs, washing machines...) or materials may produce DC fault currents, speed drives with frequency inverters, etc.

■ **Hpi type** - Special applications

Type Hpi RCDs 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)  
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 (see p. 164)
- On sites where cables are subject to high levels of interference (use of fluorescents, etc.)
- On sites where very long cables are used

# MCBs DX™ 6000 - 10 kA

thermal magnetic MCBs from 0.5 A to 63 A  
B and C curves



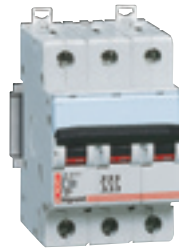
063 72



062 02



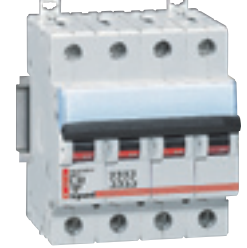
064 68



064 91



063 38



065 66

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Breaking capacity  
6000 - IEC 60898-1 - 400 V~ (230 V~ for single pole + neutral)  
10 kA - IEC 60947-2 - 400 V~ (230 V~ for single pole + neutral)

Pack	Cat.Nos		Single pole - 230/400 V~		
	B curve	C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA) 230 V~
1	061 52	063 68	1	1	10
1	061 53	063 69	2	1	10
1	061 54	063 70	3	1	10
1	061 55	063 71	4	1	10
1	061 56	063 72	6	1	10
10	061 58	063 74	10	1	10
10	061 60	063 76	16	1	10
1	061 61	063 77	20	1	10
1	061 62	063 78	25	1	10
10 1	061 63	063 79	32	1	10
1	061 64	063 80	40	1	10
1	061 65	063 81	50	1	10
1	061 66	063 82	63	1	10

Pack	Cat.Nos		3-pole - 400 V~				
	B curve	C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA)		
1		064 80	1	3	400 V~	230 V~	
1	062 78	064 81	2	3	10	25	
1	062 79	064 82	3	3	10	25	
1	062 80	064 83	4	3	10	25	
1	062 81	064 84	6	3	10	25	
1	062 83	064 86	10	3	10	25	
1	062 85	064 88	16	3	10	25	
1	062 86	064 89	20	3	10	25	
1	062 87	064 90	25	3	10	25	
1	062 88	064 91	32	3	10	25	
1	062 89	064 92	40	3	10	25	
1	062 90	064 93	50	3	10	25	
1	062 91	064 94	63	3	10	25	

Pack	Cat.Nos		Single pole + neutral - 230 V~ Neutral on right-hand side		
	B curve	C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA) 230 V~
1		064 01	0.5	1	10
1		064 03	1	1	10
1	061 95	064 04	2	1	10
1	061 96	064 05	3	1	10
1	061 97	064 06	4	1	10
1	061 98	064 07	6	1	10
10	062 00	064 09	10	1	10
10	062 02	064 12	16	1	10
1	062 03	064 13	20	1	10
1	062 04	064 14	25	1	10
1	062 05	064 15	32	1	10
1	062 06	064 16	40	1	10

Pack	Cat.Nos		3-pole + neutral - 400 V~ Neutral on right-hand side				
	B curve	C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA)		
1	063 31	065 39	6	4	400 V~	230 V~	
1	063 34	065 41	10	4	10	25	
1	063 36	065 43	16	4	10	25	
1	063 37	065 44	20	4	10	25	
1	063 38	065 45	25	4	10	25	
1	063 39	065 46	32	4	10	25	
1	063 40	065 47	40	4	10	25	
1	063 41	065 48	50	4	10	25	
1	063 42	065 49	63	4	10	25	

Pack	Cat.Nos		2-pole - 230/400 V~			
	B curve	C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA)	
1	062 57	064 60	1	2	400 V~	230 V~
1	062 58	064 61	2	2	10	25
1	062 59	064 62	3	2	10	25
1	062 60	064 63	4	2	10	25
1	062 61	064 64	6	2	10	25
5	062 63	064 66	10	2	10	25
5	062 65	064 68	16	2	10	25
1	062 66	064 69	20	2	10	25
1	062 67	064 70	25	2	10	25
1	062 68	064 71	32	2	10	25
1	062 69	064 72	40	2	10	25
1	062 70	064 73	50	2	10	25
1	062 71	064 74	63	2	10	25

Pack	Cat.Nos		4-pole - 400 V~			
		C curve	Nominal rating (A)	Number of modules	Breaking capacity IEC 60947-2 (kA)	
1		065 55	1	4	400 V~	230 V~
1		065 56	2	4	10	25
1		065 57	3	4	10	25
1		065 58	4	4	10	25
1		065 59	6	4	10	25
1		065 61	10	4	10	25
1		065 63	16	4	10	25
1		065 64	20	4	10	25
1		065 65	25	4	10	25
1		065 66	32	4	10	25
1		065 67	40	4	10	25
1		065 68	50	4	10	25
1		065 69	63	4	10	25

**Auxiliaries and accessories** (p. 154)

**Add-on modules** (p. 152)

**Supply busbars** (p. 249)

**RCBO DX™ 6000 - 10 kA and DX™ 10000**

residual current breaking overload from 3 A to 63 A - C curve, AC and A types



6064 00



6064 15



078 86



079 19



079 80



Dimensions (p. 183)

Technical characteristics (p. 156-158)

Breaking capacity:

**10000** - IEC 61009-1 - for single pole

**6000** - IEC 61009-1 - 6 kA / IEC 60947-2 for single pole + neutral

**6000** - IEC 61009-1 - 10 kA / IEC 60947-2 for 2 and 4 pole

• AC type: detect AC component faults

• A type: detect AC and DC component faults

Pack	Cat.Nos		Single pole - 230 V~	
	Black neutral leads	Blue neutral leads	<b>AC type</b> <b>30 mA</b>	
			Nominal rating (A)	Number of modules
1	6064 00	6064 10	10	1
1	6064 01	6064 11	16	1
1	6064 02	6064 12	20	1
1	6064 03	6064 13	25	1
1	6064 04	6064 14	32	1
1	6064 05	6064 15	45	1

Pack	Cat.Nos	Single pole + neutral - 230 V~	
		Neutral on right-hand side	
		<b>AC type</b> <b>10 mA</b>	
		Nominal rating (A)	Number of modules
1	078 79	16	2
		<b>AC type</b> <b>30 mA</b>	
		Nominal rating (A)	Number of modules
1	078 81	3	2
1	078 83	6	2
1	078 84	10	2
1	078 86	16	2
1	078 87	20	2
1	078 88	25	2
1	078 89	32	2
1	078 90	40	2
		<b>AC type</b> <b>300 mA</b>	
		Nominal rating (A)	Number of modules
1	078 94	6	2
1	078 95	10	2
1	078 97	16	2
1	078 98	20	2
1	078 99	25	2
1	079 00	32	2
1	079 01	40	2
		<b>A type</b> <b>10 mA</b>	
		Nominal rating (A)	Number of modules
1	085 75	16	2
		<b>A type</b> <b>30 mA</b>	
		Nominal rating (A)	Number of modules
1	085 79	6	2
1	085 85	10	2
1	085 87	16	2
1	085 88	20	2
1	085 89	25	2
1	085 90	32	2
1	085 91	40	2

Pack	Cat.Nos	2-pole - 230/400 V~	
		<b>AC type</b> <b>10 mA</b>	
		Nominal rating (A)	Number of modules
1	077 45	10	4
1	077 46	16	4
1	077 47	20	4

Pack	Cat.Nos	2-pole - 230/400 V~ (continued)	
		<b>AC type</b> <b>30 mA</b>	
		Nominal rating (A)	Number of modules
1	079 11	10	4
1	079 19	16	4
1	079 20	20	4
1	079 21	25	4
1	079 22	32	4
1	079 29	40	4
1	079 30	50	4
1	079 31	63	4
		<b>AC type</b> <b>300 mA</b>	
		Nominal rating (A)	Number of modules
1	079 44	10	4
1	079 46	16	4
1	079 47	20	4
1	079 48	25	4
1	079 49	32	4
1	079 50	40	4
1	079 51	50	4
1	079 52	63	4

Pack	Cat.Nos	4-pole - 400 V~	
		<b>AC type</b> <b>30 mA</b>	
		Nominal rating (A)	Number of modules
1	079 62	10	4
1	079 64	16	4
1	079 65	20	4
1	079 66	25	4
1	079 67	32	4
1	080 13	40	7
1	080 14	50	7
1	080 15	63	7
		<b>AC type</b> <b>300 mA</b>	
		Nominal rating (A)	Number of modules
1	079 75	10	4
1	079 77	16	4
1	079 78	20	4
1	079 79	25	4
1	079 80	32	4
1	080 31	40	7
1	080 32	50	7
1	080 33	63	7
		<b>A type</b> <b>30 mA</b>	
		Nominal rating (A)	Number of modules
1	080 75	10	4
1	080 76	16	4
1	080 77	20	4
1	080 78	25	4
1	080 79	32	4
		<b>A type</b> <b>300 mA</b>	
		Nominal rating (A)	Number of modules
1	080 84	10	4
1	080 85	16	4
1	080 86	20	4
1	080 87	25	4
1	080 88	32	4

Red catalogue numbers : New products

# MCBs DX-H 10000 - 25 kA

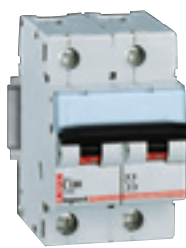
thermal magnetic, high breaking capacity MCBs from 2 A to 125 A  
C curve



068 60



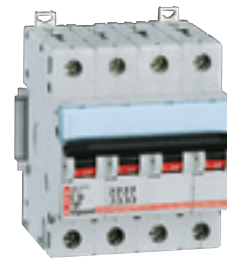
068 20



064 76



069 43



070 00

**Dimensions** (p. 183)  
**Technical characteristics** (p. 156-158)

Breaking capacity  
10000 IEC 60898-1 - 400 V~  
25 kA to 12.5 kA - IEC 60947-2 - 400 V~

Pack	Cat.Nos	Single pole - 230/400 V~		
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 230 V/400 V~
1	068 53	2	1	25
1	068 54	3	1	25
1	068 56	6	1	25
1	068 58	10	1	25
1	068 59	13	1	25
1	068 60	16	1	25
1	068 61	20	1	25
1	068 62	25	1	20
1	068 63	32	1	15
1	068 64	40	1	12.5
1	068 65	50	1	12.5
1	068 66	63	1	12.5
1	063 83	80	1.5	12.5
1	063 84	100	1.5	12.5
1	063 85	125	1.5	12.5

Pack	Cat.Nos	3-pole - 400 V~			
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	069 33	2	3	25	50
1	069 34	3	3	25	50
1	069 36	6	3	25	50
1	069 38	10	3	25	50
1	069 39	13	3	25	50
1	069 40	16	3	25	50
1	069 41	20	3	25	50
1	069 42	25	3	20	50
1	069 43	32	3	15	50
1	069 44	40	3	15	50
1	069 45	50	3	12.5	25
1	069 46	63	3	12.5	25
1	064 95	80	4.5	12.5	16
1	064 96	100	4.5	12.5	16
1	064 97	125	4.5	12.5	16

Pack	Cat.Nos	Single pole + neutral - 230 V~		
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 230 V~
1	068 96	6	2	25
1	068 98	10	2	25
1	068 99	13	2	25
1	069 00	16	2	25
1	069 01	20	2	25
1	069 02	25	2	20
1	069 03	32	2	15
1	069 04	40	2	15
1	069 05	50	2	12.5
1	069 06	63	2	12.5

Pack	Cat.Nos	3-pole + neutral - 400 V~			
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	069 76	6	4	25	50
1	069 78	10	4	25	50
1	069 79	13	4	25	50
1	069 80	16	4	25	50
1	069 81	20	4	25	50
1	069 82	25	4	20	50
1	069 83	32	4	15	50
1	069 84	40	4	15	50
1	069 85	50	4	12.5	25
1	069 86	63	4	12.5	25

Pack	Cat.Nos	2-pole - 230/400 V~			
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	069 13	2	2	30	50
1	069 14	3	2	30	50
1	069 16	6	2	30	50
1	069 18	10	2	30	50
1	069 19	13	2	30	50
1	069 20	16	2	30	50
1	069 21	20	2	30	50
1	069 22	25	2	25	50
1	069 23	32	2	20	50
1	069 24	40	2	20	50
1	069 25	50	2	15	25
1	069 26	63	2	15	25
1	064 75	80	3	16	25
1	064 76	100	3	16	25
1	064 77	125	3	16	25

Pack	Cat.Nos	4-pole - 400 V~			
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	069 93	2	4	25	50
1	069 94	3	4	25	50
1	069 96	6	4	25	50
1	069 98	10	4	25	50
1	069 99	13	4	25	50
1	070 00	16	4	25	50
1	070 01	20	4	25	50
1	070 02	25	4	20	50
1	070 03	32	4	15	50
1	070 04	40	4	15	50
1	070 05	50	4	12.5	25
1	070 06	63	4	12.5	25
1	065 70	80	6	12.5	16
1	065 71	100	6	12.5	16
1	065 72	125	6	12.5	16

**Auxiliaries and accessories** (p. 154)

**Add-on modules** (p. 152)

**Supply busbars** (p. 249)



**B and Z curve, please consult us**

# MCBs DX™ 6000 -15 kA

thermal magnetic MCBs from 1 A to 125 A  
D curve



065 89



066 36



066 62



066 71

**Dimensions** (p. 183)  
**Technical characteristics** (p. 156-158)

Breaking capacity  
**6000** - IEC 60898-1 up to 63 A - 400 V~  
**10000** - IEC 60898-1 80 A to 125 A  
 15 kA - IEC 60947-2 up to 32 A - 400 V~  
 10 kA - IEC 60947-2 40 A to 125 A - 400 V~  
 Magnetic adjusted between 10 and 14 In

Pack	Cat.Nos	Single pole - 230/400 V~		
	D curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 230 - 400 V~
1	065 75	1	1	15
1	065 76	2	1	15
1	065 77	3	1	15
1	065 79	6	1	15
1	065 81	10	1	15
1	065 83	16	1	15
1	065 84	20	1	15
1	065 85	25	1	15
1	065 86	32	1	15
1	065 87	40	1	10
1	065 88	50	1	10
1	065 89	63	1	10

Pack	Cat.Nos	2-pole - 400 V~			
	D curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	066 25	1	2	15	25
1	066 26	2	2	15	25
1	066 27	3	2	15	25
1	066 29	6	2	15	25
1	066 31	10	2	15	25
1	066 33	16	2	15	25
1	066 34	20	2	15	25
1	066 35	25	2	15	25
1	066 36	32	2	15	25
1	066 37	40	2	10	20
1	066 38	50	2	10	20
1	066 39	63	2	10	20
1	066 40	80	3	10	16
1	066 41	100	3	10	16
1	066 42	125	3	10	16

Pack	Cat.Nos	3-pole - 400 V~			
	D curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	066 45	1	3	15	25
1	066 46	2	3	15	25
1	066 47	3	3	15	25
1	066 49	6	3	15	25
1	066 51	10	3	15	25
1	066 53	16	3	15	25
1	066 54	20	3	15	25
1	066 55	25	3	15	25
1	066 56	32	3	15	25
1	066 57	40	3	10	20
1	066 58	50	3	10	20
1	066 59	63	3	10	20
1	066 60	80	4.5	10	16
1	066 61	100	4.5	10	16
1	066 62	125	4.5	10	16

Pack	Cat.Nos	4-pole - 400 V~			
	D curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2 400 V~ 230 V~	
1	066 65	1	4	15	25
1	066 66	2	4	15	25
1	066 67	3	4	15	25
1	066 68	4	4	15	25
1	066 69	6	4	15	25
1	066 71	10	4	15	25
1	066 73	16	4	15	25
1	066 74	20	4	15	25
1	066 75	25	4	15	25
1	066 76	32	4	15	25
1	066 77	40	4	10	20
1	066 78	50	4	10	20
1	066 79	63	4	10	20
1	066 80	80	6	10	16
1	066 81	100	6	10	16
1	066 82	125	6	10	16

**Auxiliaries and accessories** (p. 154)

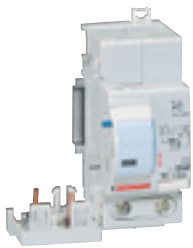
**Add-on modules** (p. 152)

**Supply busbars** (p. 249)

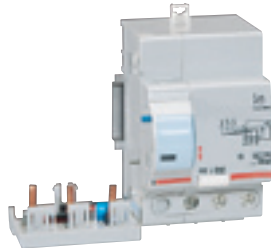


**For DX-MA magnetic tripping only version, please consult us**

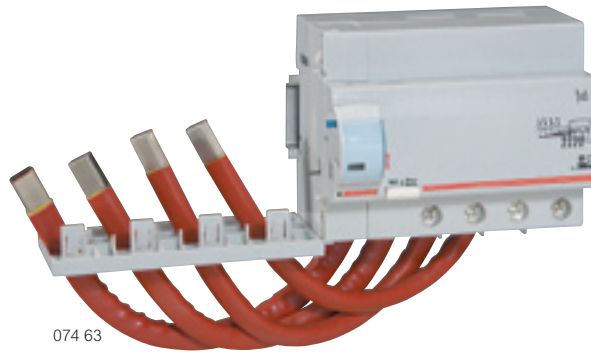
**add-on modules DX™**  
for DX, DX-H, MCBs up to 125 A



074 01



075 68



074 63

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Conform to EN 61009-1. Mounted on the right-hand side of the MCBs

- AC type: detects AC component faults
- A type: detects AC and DC component faults
- Hpi type: detects AC and DC component faults A type, enhanced immunity to unwanted tripping in disturbed environments

Pack	Cat.Nos	2-pole 230/400 V~	
		<b>AC type</b> <b>30 mA</b>	
		Maximum rating (A)	Number of modules
1	074 01	32	2
1	074 02	63	2
1	074 03	80 to 125	4
		<b>AC type</b> <b>300 mA</b>	
1	074 07	32	2
1	074 08	63	2
1	074 09	80 to 125	4
		<b>AC type</b> <b>300 mA selective</b>	
1	074 11	63	2
		<b>AC type</b> <b>1 A selective</b>	
1	074 23	63	2
		<b>A type</b> <b>30 mA</b>	
1	074 83	32	2
1	074 84	63	2
1	074 85	80 to 125	4
		<b>A type</b> <b>300 mA</b>	
1	074 89	32	2
1	074 90	63	2
1	074 91	80 to 125	4
		<b>A type</b> <b>300 mA selective</b>	
1	074 93	63	2
		<b>Hpi type</b> <b>30 mA</b>	
1	075 64	63	2

		<b>3-pole 400 V~</b>	
		<b>AC type</b> <b>30 mA</b>	
		Maximum rating (A)	Number of modules
1	074 28	32	3
1	074 29	63	3
		<b>AC type</b> <b>300 mA</b>	
1	074 34	32	3
1	074 35	63	3
1	074 36	80 to 125	6
		<b>AC type</b> <b>300 mA selective</b>	
1	074 38	63	3
		<b>A type</b> <b>30 mA</b>	
1	075 11	63	3
		<b>A type</b> <b>300 mA</b>	
1	075 17	63	3
1	075 18	80 to 125	6
		<b>A type</b> <b>300 mA selective</b>	
1	075 20	63	3
		<b>Hpi type</b> <b>30 mA</b>	
1	075 68	63	3
1	075 69	80 to 125	6

Pack	Cat.Nos	4-pole 400 V~	
		<b>AC type</b> <b>30 mA</b>	
		Maximum rating (A)	Number of modules
1	074 55	32	3
1	074 56	63	3
1	074 57	80 to 125	6
		<b>AC type</b> <b>300 mA</b>	
1	074 61	32	3
1	074 62	63	3
1	074 63	80 to 125	6
		<b>AC type</b> <b>300 mA selective</b>	
1	074 65	63	3
1	074 66	80 to 125	6
		<b>AC type</b> <b>1 A selective</b>	
1	074 77	63	3
1	074 78	80 to 125	6
		<b>A type</b> <b>30 mA</b>	
1	075 37	32	3
1	075 38	63	3
1	075 39	80 à 125	6
		<b>A type</b> <b>300 mA</b>	
1	075 43	32	3
1	075 44	63	3
1	075 45	80 à 125	6
		<b>A type</b> <b>300 mA selective</b>	
1	075 47	63	3
		<b>Hpi type</b> <b>300 mA selective</b>	
1	075 74	63	3

**MCBs DX-L 50 kA**

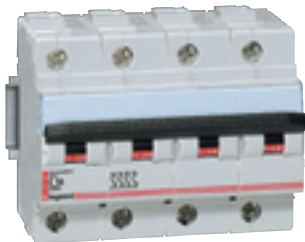
thermal magnetic high breaking capacity MCBs from 10 A to 63 A

**add-on modules DX-L**

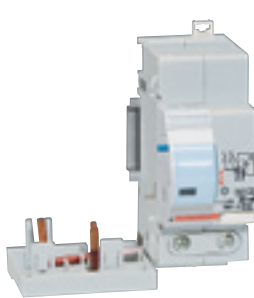
for DX-L 50 kA MCBs



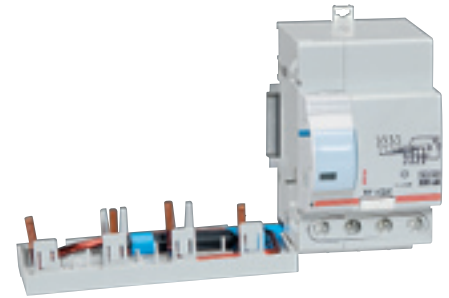
071 14



071 44



075 76



075 85

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Dimensions (p. 183)  
Technical characteristics (p. 156-158)

Breaking capacity  
50 kA - IEC 60947-2

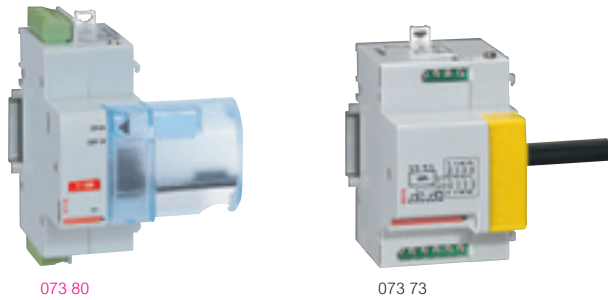
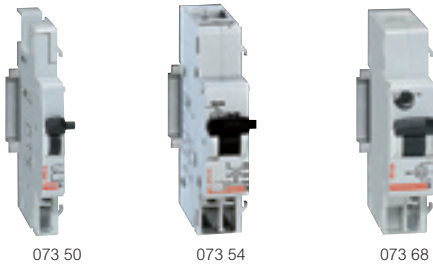
Pack	Cat.Nos	MCBs			
<b>2-pole - 400 V~</b>					
	C curve	Nominal rating (A)	Number of modules	Breaking capacity (kA) IEC 60947-2	
				400 V~	230 V~
1	071 12	10	3	50	70
1	071 14	16	3	50	70
1	071 15	20	3	50	70
1	071 16	25	3	50	70
1	071 17	32	3	50	70
1	071 18	40	3	50	70
1	071 19	50	3	50	70
1	071 20	63	3	50	70
<b>3-pole - 400 V~</b>					
1	071 27	10	4.5	50	70
1	071 29	16	4.5	50	70
1	071 30	20	4.5	50	70
1	071 31	25	4.5	50	70
1	071 32	32	4.5	50	70
1	071 33	40	4.5	50	70
1	071 34	50	4.5	50	70
1	071 35	63	4.5	50	70
<b>4-pole - 400 V~</b>					
1	071 42	10	6	50	70
1	071 44	16	6	50	70
1	071 45	20	6	50	70
1	071 46	25	6	50	70
1	071 47	32	6	50	70
1	071 48	40	6	50	70
1	071 49	50	6	50	70
1	071 50	63	6	50	70

**Auxiliaries and accessories** (p. 154)

Pack	Cat.Nos	Add on modules Hpi type (High immunity)	
Conform to standard IEC 61009-1 Mounted on the right-hand side of the MCBs DX-L Enhanced immunity to unwanted tripping in disturbed environments Hpi type : detects AC and DC component faults A type, enhanced immunity to unwanted tripping in disturbed environments			
<b>2-pole - 230/400 V~</b>			
	Sensitivity		Number of modules
1	075 76	30 mA	2
1	075 77	300 mA	2
1	075 78	300 mA selective	2
1	075 79	1 A selective	2
<b>3-pole - 400 V~</b>			
1	075 80	30 mA	3
1	075 81	300 mA	3
1	075 82	300 mA selective	3
1	075 83	1 A selective	3
<b>4-pole - 400 V~</b>			
1	075 84	30 mA	3
1	075 85	300 mA	3
1	075 86	300 mA selective	3
1	075 87	1 A selective	3

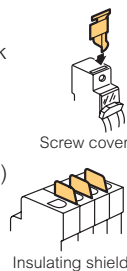
**auxiliaries and accessories DX™**  
for MCBs, RCDs, RCBOs and isolating switches

**remote control DX™**  
for MCBs, RCDs and RCBOs



Pack	Cat.Nos	Auxiliaries	Number of modules
		Clip on the left-hand side of the MCB Possible configurations for 1 MCB: - 1 auxiliary control device + 1 signalling auxiliary 0.5 modules or - 2 signalling auxiliaries 1 module, Allow insertion of the supply busbar Auxiliaries common to: - DX, DX-H, DX-L and RCDs	
1	073 50	<b>Signalling auxiliaries</b> Auxiliary changeover switch 6 A - 250 V~ Signals the state of the contacts for MCBs and modular isolating switches Can be used with DX-IS (p. 145)	0.5
1	073 51	Fault signalling changeover switch 6 A - 250 V~	0.5
1	073 54	Auxiliary changeover switch 6 A - 250 V~ + fault signalling switch Can be modified to 2 auxiliary changeover switches	1
		<b>Shunt releases</b> For remote tripping of MCBs, RCDs, RCBOs and remote trip head isolating switches (red handle)	
1	073 60	12 to 48 V~/=	1
1	073 61	110 to 415 V~ 110 to 125 V=	1
		<b>Undervoltage release</b> Time delay adjustable from 0 to 300 ms	
1	073 68	230 V~	1

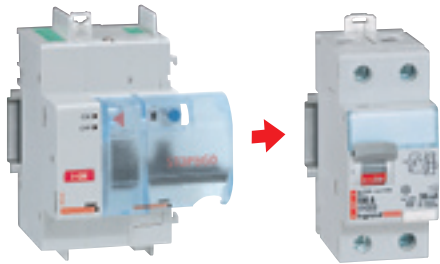
Pack	Cat.Nos	Accessories
2	044 42	Support for Ø5 mm and Ø6 mm padlock
1/3	044 43	Padlock Ø5 mm
1	227 97	Padlock Ø6 mm
2	044 44	Sealable screw cover (4 separate poles)
1	044 47	Insulating shield



Pack	Cat.Nos	Motor-driven control modules	Number of modules
		Clip on the left-hand side of the MCBs Can be used to remotely open and close the associated device	
		<b>For 1-pole and 2-pole devices</b> To be used in combination with the shunt release Cat.No 073 61 For remote control of: - 2-pole RCD's, - single pole+neutral and 2-pole RCBOs, - 2-pole and 1 module single pole+neutral MCBs Equipped with one auxiliary signalling contact Control voltage 230 V~   Number of modules 2	
1	073 80		
		<b>For 2-pole, 3-pole and 4-pole devices</b> For remote control of: - MCBs equipped with add-on modules and RCBO's 2P, 3P and 4P up to 63 A Equipped with: auxiliary changeover switch and fault signalling switch 2 A - 230 V~ Control voltage 230 V~   Number of modules 3	
1	073 73 <sup>(1)</sup>		
		<b>Automatic resetting module</b> Gives automatically an order of resetting To be connected to motor-driven control modules Cat.No 073 73 For use in installations which are not monitored or staffed (transmission relays, pump stations etc.) in order to meet service/operational continuity requirements Control voltage 230 V~   Number of modules 2	
1	073 83		

(1) Controlled by a volt-free contact or push button (not illuminated)  
Not compatible with 1.5 module per pole MCBs (DX-H 80 to 125, DX-L), MCBs single pole (DX), 2 modules phase / neutral RCBOs (DX), single pole RCBOs and RCDs (RCCBs)

## STOP&GO automatic resetting for DX™



073 81

6027 10 (p. 146)

Pack	Cat.Nos	STOP&GO automatic resetting	
1	073 81	<p>Clip on the left-hand side of devices Gives automatically an order of resetting of the associated device, following an unwanted tripping, caused by a temporary anomaly (such as lightning strikes) Verifies automatically the state of the installation, before resetting Visual and audible alarm signal in case of permanent fault detection (short-circuit or residual current) Compatible with the following devices: - RCDs: 2P - 2 modules - RCBOs: 2P - 2 modules - RCBOs: 2P - 4 modules - MCBs: 2P ≤ 63 A - 2 modules</p> <p><b>Standard</b> Control voltage: 230 V~</p>	Number of modules 3
1	073 82	<p><b>Autotest</b> Periodical test of the associated RCD Control voltage: 230 V~</p>	3

**Voltage surge protectors** (p. 160)

## STOP&GO automatic resetting for DX™

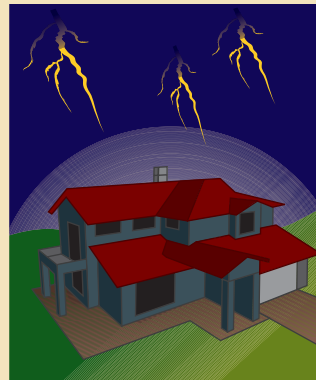
Temporarily electrical disturbances and other external events can cause unwanted tripping of different devices protecting electrical installation

STOP&GO verifies automatically the state of the installation, before resetting and launches a visual and audible alarm signal in case of permanent fault detection (short-circuit or residual current)

After verifying the state of the installation, STOP&GO automatic resets the associated protection device in order to immediatly re-establish power supply and avoid unwanted consequences

STOP&GO does not protect the installation against lightning strikes  
For an efficient protection against lightning, use voltage surge protectors (p. 160)

The Autotest version is specially suitable for installations equipped with residual current protection devices (RCD's and RCBOs)  
STOP&GO periodically does an automatic test of the functioning of residual current protection devices. The manual test is no longer needed



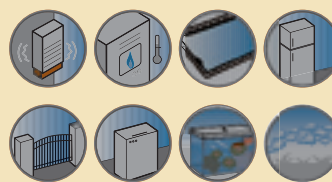
Installation without STOP&GO



Installation with STOP&GO

Mains fault due to temporarily electrical disturbances  
Electrical devices are not powered anymore

STOP&GO automatic resets the associated protection device in order to immediatly re-establish power supply



# performance of MCBs and auxiliaries

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

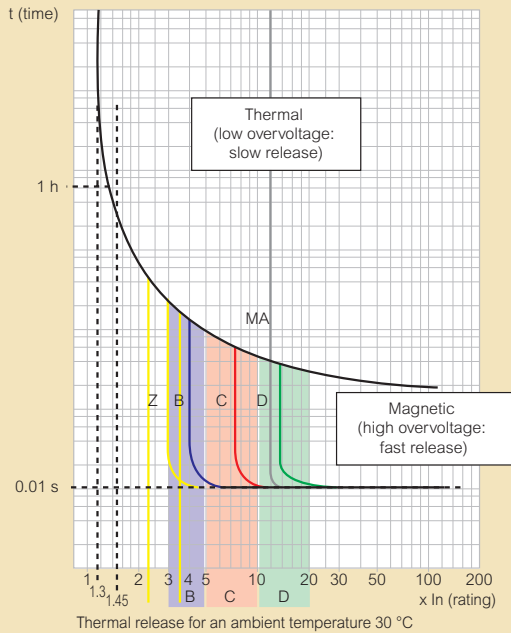
	DX Single pole + Neutral	DX B and C curves D curve < 63 A	DX-H B and C curves DX D curve 80 to 125 A	DX-L C curve
<b>Icn 1</b>	4500 A	6 kA	10 kA	25 kA
<b>Ui</b>	250 V	500 V	500 V	500 V

Icn 1: Breaking capacity on 1 pole for multi-pole MCBs in the event of a short-circuit to earth  
Ui: rated insulation voltage

## ■ Connection cross-section for screw terminals (in mm<sup>2</sup>)

	Copper cable	
	rigid	flexible
• DX single pole + neutral with or without add-on modules	16	10
• DX, add-on modules ≤ 63 A DX-L add-on modules	32	25
• DX-H, add-on modules 80, 100, 125 A, DX-L	70	50
• Auxiliaries	2.5	2.5

## ■ Release curves of MCBs



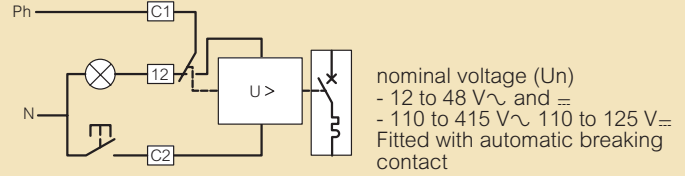
Curves	Magnetic threshold setting
Z <sup>(1)</sup>	2,4 to 3,6 I <sub>n</sub>
B	3 to 5 I <sub>n</sub>
C	5 to 10 I <sub>n</sub>
D	10 to 14 I <sub>n</sub> (10 to 20 depending on standard)
MA <sup>(1)</sup>	12 to 14 I <sub>n</sub>

(1) Please consult us

## ■ Technical characteristics of DX auxiliaries

- Max. connection cross-section: 2.5 mm<sup>2</sup>
- Operating temperature: - 5 to + 50 °C

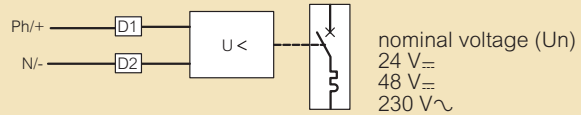
### Current shunt releases



Min. and max. voltage: from 0.7 to 1.1 Un  
Tripping time: < 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  
110 to 415 V = 1640 Ω

Consumption	U min.	U max.
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: from 100 to 400 ms ± 10% (adjustable)  
Power consumption: 24 V<sub>=</sub> 0.1 VA  
48 V<sub>=</sub> 0.2 VA  
230 V<sub>~</sub> 1 VA

**Protection of DC circuits**

Lexic DX and DX-H 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**

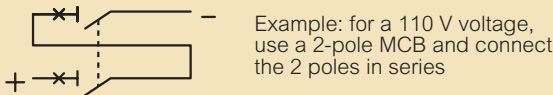
Max. magnetic tripping threshold: multiplied by 1.4  
 Example: For a C curve MCB for which the AC tripping threshold is between 5 and 10  $I_n$ , the DC tripping threshold will be between 7 and 14  $I_n$

**2 - Protection against overloads**

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

**3 - Operating voltage**

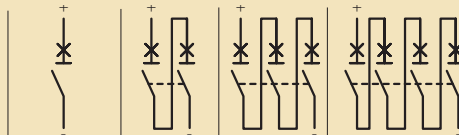
Max. operating voltage: 80 V per pole (60 V for single-pole + N MCBs)  
 For voltages higher than this value, several poles must be wired in series



**4 - Breaking capacity**

4000 A for a single pole MCB at max. voltage (80 V $\approx$  per pole)

At other voltages, the breaking capacities are as follows:



DX	voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	$\leq 48$ V	6 kA	6 kA		
	110 V		6 kA	6 kA	
	230 V				10 kA
Ics <sup>(1)</sup>	$\leq 48$ V	100 %	100 %		
	110 V		100 %	100 %	
	230 V				100 %

DX-H	voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	$\leq 48$ V	10 kA	10 kA		
	110 V		10 kA	10 kA	
	230 V				15 kA
Ics <sup>(1)</sup>	$\leq 48$ V	100 %	100 %		
	110 V		100 %	100 %	
	230 V				100 %

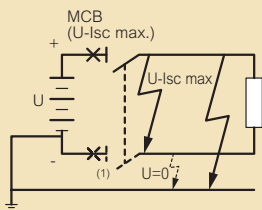
(1) As a % of Icu

**5 - 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

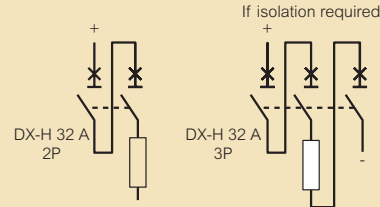
**Supply with one polarity earthed:**

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



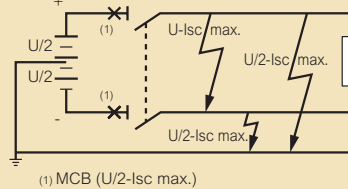
Example: circuit earthed via the negative polarity /  $U = 110$  V $\approx$  /  $I_{sc} = 10$  kA /  $I_n = 32$  A  
 Protect the positive polarity using an MCB capable of breaking 10 kA at 110 V (DX-H 2P 32 A with 2 poles on the positive polarity)  
 For isolation, use a DX-H 3P 32 A with 2 poles on the positive polarity and one pole on the negative polarity

DX-H LEXIC	voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	$\leq 48$ V	10 kA	10 kA		
	110 V		10 kA	10 kA	
	230 V				15 kA



**Network earthed via a middle point:**

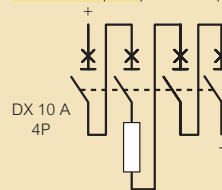
Place on each polarity the number of poles necessary for max.  $I_{sc}$  breaking at half voltage



(1) MCB ( $U/2-I_{sc}$  max.)

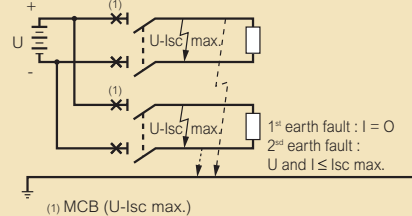
Example: circuit earthed via a middle point /  $U = 230$  V $\approx$  /  $I_{sc} = 6$  kA /  $I_n = 10$  A  
 Protect each polarity using an MCB capable of breaking 6 kA at half voltage, i.e. 115 V (DX 4P 10 A with 2 poles on each polarity)

DX LEXIC	voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	$\leq 48$ V	6 kA	6 kA		
	110 V		6 kA	6 kA	
	230 V				10 kA



**Isolated earth supply:**

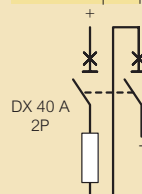
Distribute the poles necessary for breaking over the 2 polarities to provide protection in the event of a double earth fault (particularly if there are a number of circuits in parallel)



(1) MCB ( $U-I_{sc}$  max.)

Example: isolated earth circuit /  $U = 48$  V $\approx$  /  $I_{sc} = 4,5$  kA /  $I_n = 40$  A  
 Protect the installation with an MCB capable of breaking 4.5 kA at 48 V and protect each polarity (DX MCB 2P 40 A with one pole on each polarity)

DX LEXIC	voltage	single-pole	2P	3P	4P
Acc. to IEC 60947.2	$\leq 48$ V	6 kA	6 kA		
	110 V		6 kA	6 kA	
	230 V				10 kA

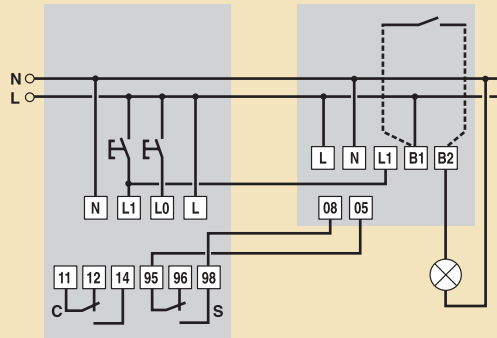


## performance of MCBs and auxiliaries (continued)

### ■ Specific case of continuity of service

In certain locations, where there are no personnel, in which particular care is required to ensure continuity of service, false tripping of MCBs is not permissible (isolated telephone/TV/radio relay stations, pumping stations, etc.)

The combination of an Hpi type RCBO with motor-driven control and a recloser provides optimum continuity of service (p. 155)

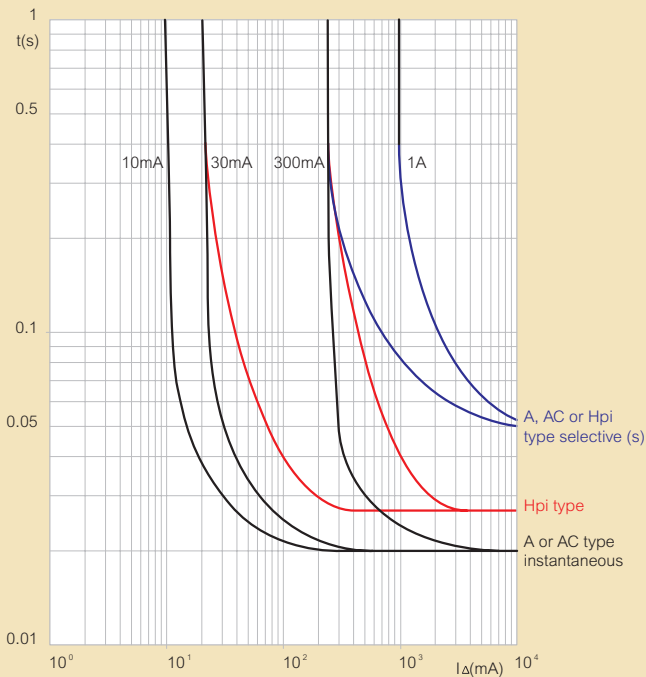


Motor-driven control  
Cat.No 073 73

Automatic reclosing control  
device Cat.No 073 83

### ■ RCD tripping curves

- Average RCD operating curves



### ■ 2P and 4P RCDs: withstand to short-circuits

**Caution:** it is advisable to provide overload protection for the RCD

Downstream RCD	Upstream cartridge fuse gG				Upstream MCB						
	≤ 40 A	63 A	80 A	100 A	DX (B/C) 1P+N 2,3,4P	DX-H (B/C) ≤ 63 A 80 < 125 A	DX-L	DPX 125			
2P/ 4P	16 A	100 kA	50 kA	15 kA	10 kA	6 kA	10 kA	20 kA <sup>(1)</sup>	12.5 kA	50 kA	25 kA
	25 A	100 kA	50 kA	15 kA	10 kA	6 kA	10 kA	20 kA <sup>(1)</sup>	12.5 kA	50 kA	25 kA
	40 A	100 kA	50 kA	15 kA	10 kA	6 kA	10 kA	15 kA <sup>(1)</sup>	12.5 kA	50 kA	25 kA
	63 A	100 kA	50 kA	15 kA	10 kA		10 kA	12.5 kA <sup>(1)</sup>	12.5 kA	50 kA	25 kA
	80 A	100 kA	50 kA	15 kA	10 kA			12.5 kA <sup>(1)</sup>	12.5 kA		25 kA
100 A	100 kA	50 kA	15 kA	10 kA			12.5 kA <sup>(1)</sup>	12.5 kA		25 kA	

(1) Same nominal rating for both, MCB and RCD

### ■ DX RCBOs residual current breaking capacity

I<sub>Δm</sub> according to EN 61009-1

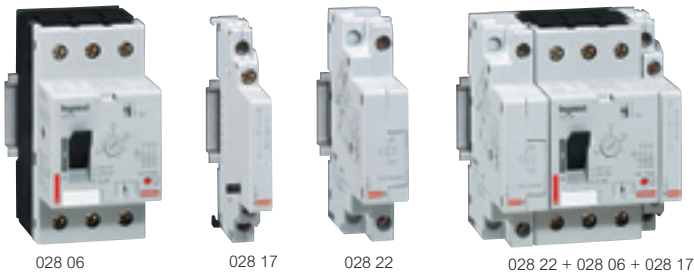
Add-on modules	
- DX <b>6000</b> , DX-H, D curve	6000 A
- DX-L	30000 A
RCBOs	
- P + N	3000 A
- 2P (4 modules)	6000 A
- 4P 10 to 32 A (4 modules)	4500 A
- 4P 40 to 63 A (7 modules)	6000 A



For more information on the basic rules of protection, come and be trained at Innoval [www.legrandelectric.com](http://www.legrandelectric.com)

## MPCBs

motor protection circuit breakers from 0.16 A to 32 A



Dimensions (p. 183)

Conform to EN/IEC 60947-1, EN/IEC 60947-2, EN/IEC 60947-4-1

Pack	Cat.Nos	Triple pole MCBs		
		Depth: 82.5 mm		
		Enable control and protection of motors up to 15 kW (400 V)		
		Nominal rating (A)	Thermal adjustment range (A)	Numbers of modules
1	028 00	0.16	0.1 - 0.16	2.5
1	028 01	0.25	0.16 - 0.25	2.5
1	028 02	0.4	0.25 - 0.4	2.5
1	028 03	0.63	0.4 - 0.63	2.5
1	028 04	1	0.63 - 1	2.5
1	028 05	1.6	1 - 1.6	2.5
1	028 06	2.5	1.6 - 2.5	2.5
1	028 07	4	2.5 - 4	2.5
1	028 08	6.5	4 - 6.5	2.5
1	028 09	10	6.3 - 10	2.5
1	028 10	14	9 - 14	2.5
1	028 11	18	13 - 18	2.5
1	028 12	23	17 - 23	2.5
1	028 13	25	20 - 25	2.5
1	028 14	32	24 - 32	2.5

### Auxiliaries

#### Failure contact

	Contact	Capacity	Numbers of modules	
1	028 16	N/C + N/O	6 A/690 V	0.5

#### Signal contacts

1	028 17	N/C + N/O	6 A/690 V	0.5
1	028 18	2 N/C	6 A/690 V	0.5

#### Undervoltage trips

	Coil voltage	Consumption trip/hold	Numbers of modules	
1	028 22	230 V~	12/3.5 VA	1
1	028 23	400 V~	12/3.5 VA	1

#### Shunt trips

1	028 25	230 V~	3.5 VA	1
1	028 26	400 V~	3.5 VA	1

### Accessories

#### IP 65 box

1	028 29 <sup>(1)</sup>	For motor MCB with auxiliary contact (Cat.Nos 028 16/17/18) and/or a trip (Cat.Nos 028 22/ 23/25/26) With knock out entries for PG 16 cable glands 4 modules
---	-----------------------	--

#### Emergency stop button

1	028 30	Fits on IP 65 box for replacement of etancheity membrane Ensures IP 65 protection
---	--------	--

#### Pilot lights

Fixing in front of box Cat.No 028 29

	Voltage	Color	
1	028 31	230 V~	Colourless
1	028 32	400 V~	Colourless

#### Padlock

1	028 34	Padlock in "off" position 3 padlocks max Ø4.5
---	--------	--

(1) Use cable gland Cat.No 980 24 with locking nut Cat.No 980 34

## MPCBs

motor protection circuit breakers from 0.16 A to 32 A

The motor MCB has a signalling system for magnetic tripping that prevents all dangerous shutdown following a short-circuit previously isolated by the device

Takes 3 auxiliaries mounted simultaneously by clipping on

- on the left: 1 undervoltage / shunt trip
- on the right: 1 fault signal + 1 signalling contact

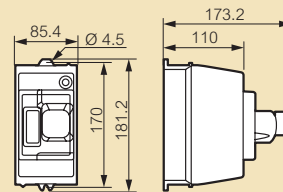
### Electrical characteristics

Rated insulating voltage  $U_i$ : 690 V  
 Impulse withstand voltage: 6 kV  
 Rated frequency: 50/60 Hz  
 Dissipated power per phase: 0.57-1.46 W  
 Magnetic tripping: 12 max.  
 Mechanical lifespan: 100000 cycles  
 Electrical lifespan: 32 A (AC3): 100000 cycles  
 Operating temperature: -20°C to +70°C  
 Use class: A  
 Protection index: IP 20  
 Connection cable cross-section (1 or 2 conductors):  
 flexible wire 1-6 mm<sup>2</sup> or AWG 16-10

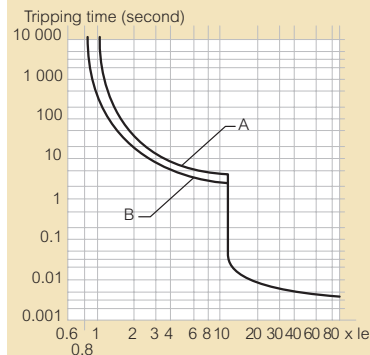
### Breaking capacity

Cat. Nos	Rating (A)	Short circuit rated breaking capacity (kA)							
		230 V		400 V		500 V		690 V	
		Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics
028 00	0.16	100	100	100	100	100	100	100	100
028 01	0.25	100	100	100	100	100	100	100	100
028 02	0.4	100	100	100	100	100	100	100	100
028 03	0.63	100	100	100	100	100	100	100	100
028 04	1	100	100	100	100	100	100	100	100
028 05	1.6	100	100	100	100	100	100	100	100
028 06	2.5	100	100	100	100	100	100	8	8
028 07	4	100	100	100	100	100	100	8	8
028 08	6.5	100	100	100	100	100	100	8	8
028 09	10	100	100	100	100	42	21	8	8
028 10	14	100	100	25	12.5	10	5	2	2
028 11	18	100	100	25	12.5	4	2	2	2
028 12	23	100	100	25	12.5	4	2	2	2
028 13	25	100	100	25	12.5	4	2	2	2
028 14	32	100	100	25	12.5	4	2	2	2

### IP 65 box 028 29 equipped with stop button 028 30

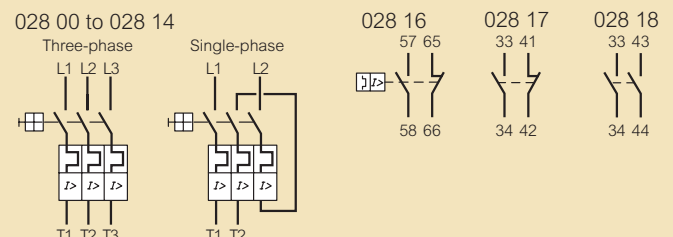


### Thermal-magnetic tripping curve

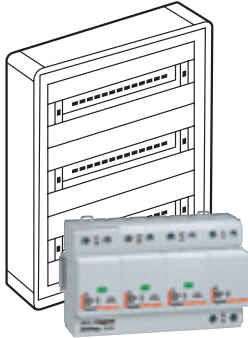
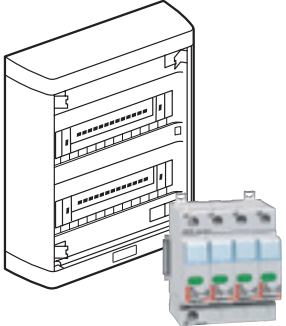






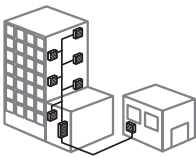

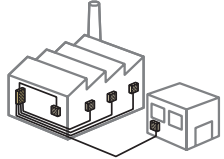




Approximate cold tripping time. To obtain the hot tripping time, multiply the graph value by 0.75  
 A = Balanced operation over 3 phases  
 B = Operation over 2 phases (phase absence)


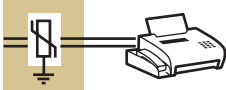
### Electrical diagrams



**select your V.S.P. and its associated protection**

STEP 1 Define the type of building		STEP 2 Define the risk level and the network type		STEP 3 + 4 Optimize protection against lightning effects (V.S.P cascading) and Protect the installation against short-circuits and overloads		
				LEVEL 1 MAIN BOARD		LEVEL 2 DISTRIBUTION BOARD
						
RESIDENTIAL BUILDINGS AND SMALL OFFICES	RISK LEVEL	NETWORK TYPE	V.S.P + ASSOCIATED PROTECTION <i>I<sub>cc</sub> ≤ 6 kA</i>		V.S.P + ASSOCIATED PROTECTION <i>I<sub>cc</sub> ≤ 6 kA</i>	
 INDIVIDUAL HOUSES	Very high 	1P+N	2 x 039 10 + 064 72	+	039 41 + 064 69	
		3P	3 x 039 10 + 064 92		3 x 039 40 + 064 89	
		3P+N	4 x 039 10 + 065 67		039 43 + 065 64	
AND  BLOCKS OF FLATS	High 	1P+N	039 31 + 064 69	+	039 41 + 064 69	
		3P	039 32 + 064 89		3 x 039 40 + 064 89	
		3P+N	039 33 + 065 64		039 43 + 065 64	
AND  SMALL OFFICES	Medium 	1P+N	039 41 + 064 69	+	039 41 + 064 69	
		3P	3 x 039 40 + 064 89		3 x 039 40 + 064 89	
		3P+N	039 43 + 065 64		039 43 + 065 64	
OFFICES AND INDUSTRIAL BUILDINGS	RISK LEVEL	NETWORK TYPE	V.S.P + ASSOCIATED PROTECTION <i>I<sub>cc</sub> ≤ 50 kA</i>		V.S.P + ASSOCIATED PROTECTION <i>I<sub>cc</sub> ≤ 25 kA</i>	
 OFFICE BUILDINGS	Very high 	1P+N	-	+	039 31 + 069 21	
		3P	030 22 + 3 x 173 65 (T1) (IT earthing system: 3 x 030 00 + 3 x 173 65 (T1))		039 32 + 069 41	
		3P+N	030 23 + 3 x 173 65 (T1) (IT+N earthing system: 4 x 030 00 + 4 x 173 65 (T1))		039 33 + 070 01	
AND  INDUSTRIAL BUILDINGS	High 	1P+N	-	+	039 31 + 069 21	
		3P	039 22 + 071 33		039 32 + 069 41	
		3P+N	039 23 + 071 48		039 33 + 070 01	
	Medium 	1P+N	-	+	039 31 + 069 21	
		3P	039 22 + 071 33		039 32 + 069 41	
		3P+N	039 23 + 071 48		039 33 + 070 01	

## select your V.S.P. and its associated protection

			<b>COMMUNICATION LINES</b>
		<b>LEVEL 3 PROXIMITY</b>	
			
		<b>PROXIMITY V.S.P.;</b>	<b>INSIDE COMMUNICATION DISTRIBUTION BOX</b>
		<b>+</b>	Protection of all the lines entering the building is strongly recommended (including communication lines: telephone, data, etc.)
		Celiane Cat.No 671 93 (p. 542) or Mosaic Cat.No 775 40 (p. 806) or Multioutlet extensions Cat.Nos 6946 40/42/44/51/56 (p. 762)	
		<b>PROXIMITY V.S.P.;</b>	<b>INSIDE COMMUNICATION DISTRIBUTION BOX</b>
		<b>+</b>	Protection of all the lines entering the building is strongly recommended (including communication lines: telephone, data, etc.)
		Celiane Cat.No 671 93 (p. 542) or Mosaic Cat.No 775 40 (p. 806) or Multioutlet extensions Cat.Nos 6946 40/42/44/51/56 (p. 762)	

For a complete protection all incoming lines (entering into the buildings) should be protected with V.S.Ps.

### ■ Define the risk level (STEP 2)

Irrespective of the requirements in the standards, the use of a voltage surge protector is strongly recommended in most cases (continuity of service, cost of equipment, etc.). Voltage surge protectors can be chosen for any type of installation based on the risk levels, which are defined as follows:

Risk level:



- Very high risk: installation equipped with external lightning conductors (L.P.S.), with a metal structure higher than surrounding buildings (or any object that can act as a lightning conductor), an installation that is isolated and located at a high point, or an installation that has been subject to previous lightning strikes

**IEC 60364: V.S.P. compulsory at the origin of the installation (main board) with L.P.S. (lightning protection system)**



- High risk: installation with overhead power supply, in a mountainous area, isolated, at the end of a line, near a body of water, trees, etc.

**IEC 60364: V.S.P. compulsory with overhead lines in AQ2 areas (see p. 163)**



- Medium risk: other types of installation (installations in urban areas, in low, flat areas and low and medium height mountainous areas, underground power supplies, etc.)

### ■ Optimize protection (STEP 3)

Protection of an installation against transient overvoltages can only generally be guaranteed with several levels of voltage surge protectors used together in cascade (see also p. 164). In addition to the energy aspect explained below, 2 or 3 levels of voltage surge protectors are in fact usually necessary in order to limit overvoltages connected with the fact that lightning is a high frequency phenomenon.

In order to limit overvoltages as much as possible, a voltage surge protector must always be installed as close as possible to the equipment to be protected. However, proximity protection (Level 3) on its own can only protect the equipment connected to it downstream, and above all, it cannot adequately limit the energy. To do this, a voltage surge protector is necessary at the head of the installation (Level 1) to shunt the majority of the energy to earth.

Likewise, a voltage surge protector on its own at the head of the installation (Level 1) cannot protect the whole installation and the equipment connected to it, due to the fact that it allows residual energy to pass and that lightning is a high frequency phenomenon (see p. 164). For these reasons, depending on the scale of the installation and the types of risk (exposure and sensitivity of equipment, criticality of continuity of service), circuit protection (Level 2) is necessary in addition to protection of the head of the installation

### ■ Protect the installation against short-circuit and overloads (STEP 3)

The supply circuit of the VSP must always be protected against short-circuits and overloads by its associated protection device in accordance with discrimination rules.

Select the associated MCB (DX, DX-H or DX-L) with the short-circuit rating adapted to your installation requirements

V.S.P. Cat.Nos	039 10/20/21/22/23			039 30/31/32/33/40/41/43		
Icc	2P	3P	4P	2P	3P	4P
≤ 10 kA	064 72	064 92	065 67	064 69	064 89	065 64
≤ 15 kA	069 24	069 44	070 04	069 21	069 41	070 01
≤ 25 kA	071 18	071 33	071 48	069 21	069 41	070 01
≤ 50 kA	071 18	071 33	071 48	Not allowed	Not allowed	Not allowed