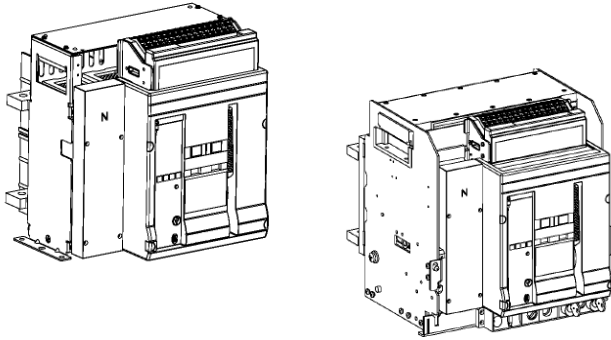


DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92



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Full technical sheet LE08437AB

1. USE

DMX³ air circuit breakers offer optimal solutions to answer to protection requirements on the origin of the low voltage electrical installation (IEC/EN 60364-1) up to 1600A. Their electric and mechanical robustness, in addition to breaking capacity and chances of accessorizing, are perfectly suited for these requirements.

DMX³ offer a series of air switch-disconnector (I series) also, with high performances of insulation, robustness, closing and withstand capability.

Both series are furthermore developed for increase continuity service looking at the plant energy efficiency and in respect of "green aspects" (see item 7-Conformity).

2. RANGE

	DMX ³ 1600 circuit breakers							
	Fixed version				Draw-out version (*)			
	42kA		50kA		42kA		50kA	
I _n (A)	3P	4P	3P	4P	3P	4P	3P	4P
630	0 280 00	0 280 06	0 280 24	0 280 30	0 280 71	0 280 76	0 280 81	0 280 86
800	0 280 01	0 280 07	0 280 25	0 280 31	0 280 72	0 280 77	0 280 82	0 280 87
1000	0 280 02	0 280 08	0 280 26	0 280 32	0 280 73	0 280 78	0 280 83	0 280 88
1250	0 280 03	0 280 09	0 280 27	0 280 33	0 280 74	0 280 79	0 280 84	0 280 89
1600	0 280 04	0 280 10	0 280 28	0 280 34	0 280 75	0 280 80	0 280 85	0 280 90

	DMX ³ -I 1600 switch disconnectors			
	Fixed version		Draw-out version (*)	
	3P	4P	3P	4P
I _n (A)				
1000	0 280 50	0 280 56	0 280 47	0 280 65
1250	0 280 51	0 280 57	0 280 53	0 280 91
1600	0 280 52	0 280 58	0 280 59	0 280 92

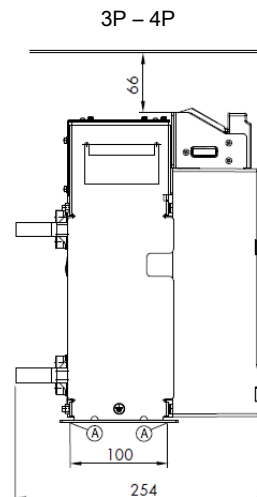
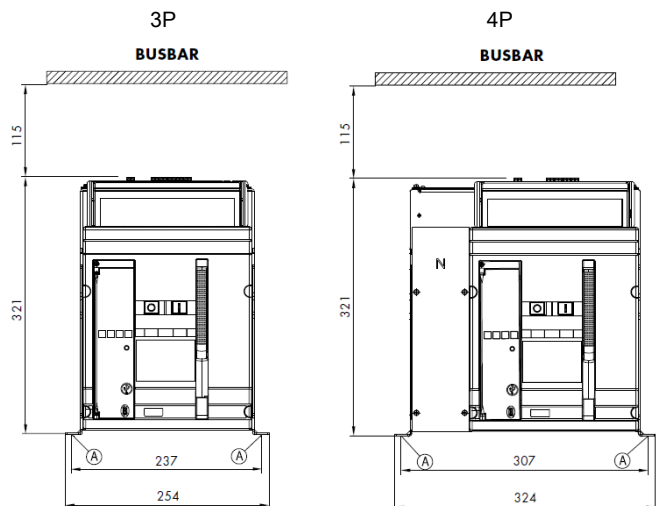
(*) Draw-out references represent only the mobile part.

To get complete draw-out mechanism, it is necessary to combine mobile parts AND fixed base references:

- ref. 0 281 53 (draw-out base for 3P versions)
- ref. 0 281 54 (draw-out base for 4P versions)

3. DIMENSIONS

Fixed version, overall dimensions

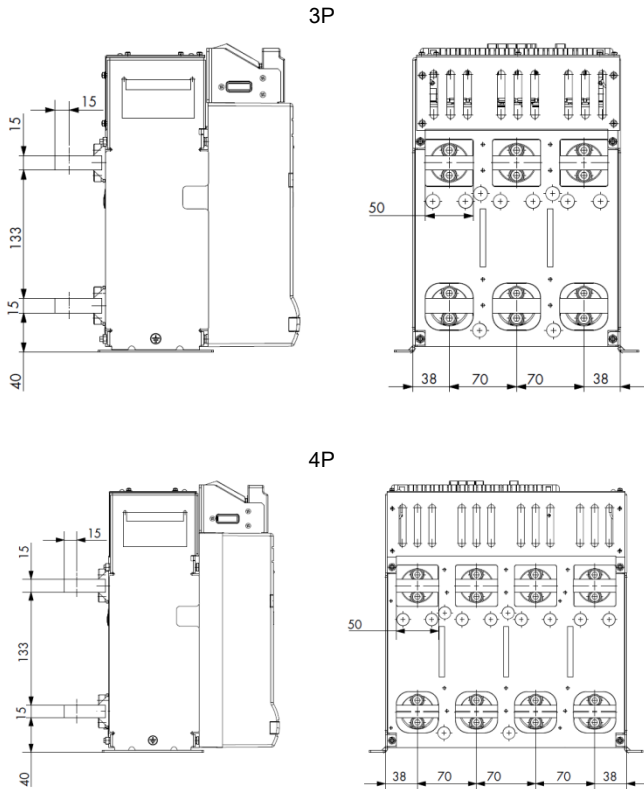


A = fixing point on plate of enclosure

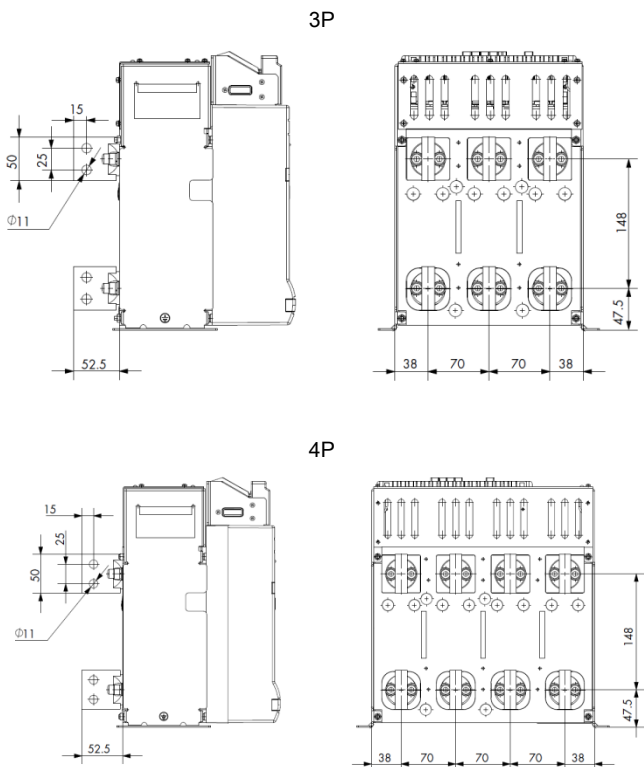
DMX³ 1600 circuit breakers DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 /
24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 /
56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 /
81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

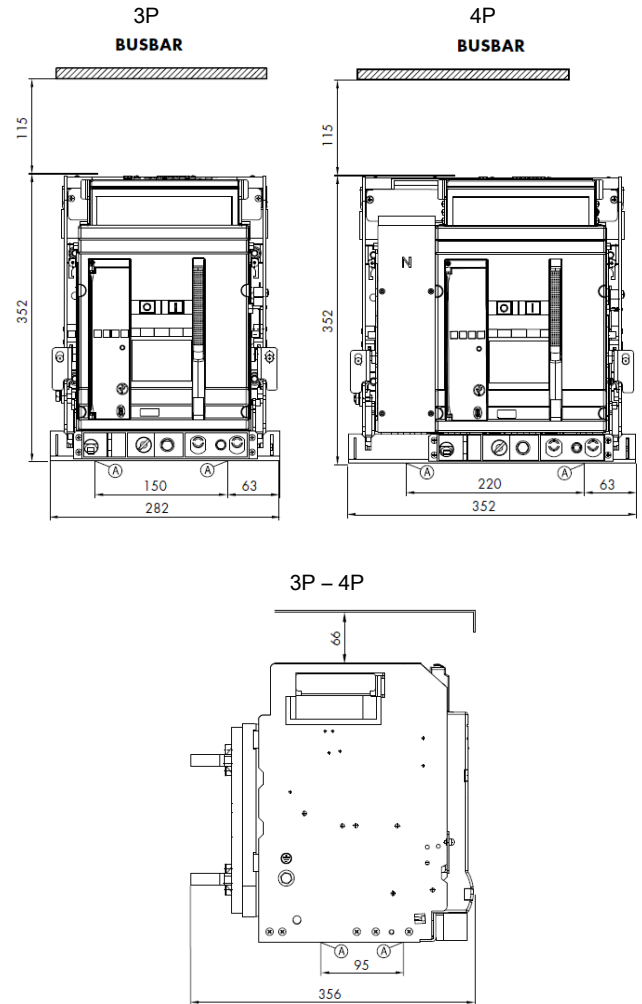
Fixed version, rear terminals – horizontal connections



Fixed version, rear terminals – vertical connections

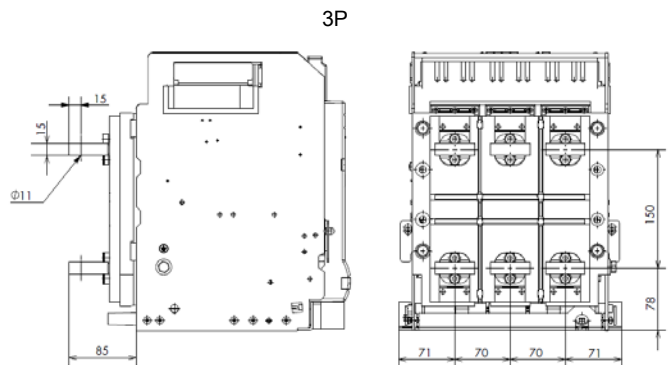


Draw-out version, overall dimensions



A = fixing point on plate of enclosure

Draw-out version, rear terminals – horizontal connections

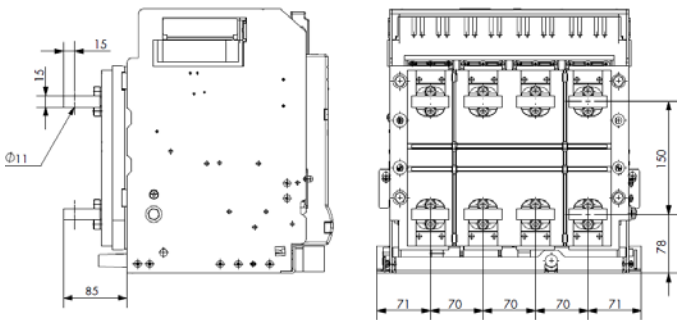


DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

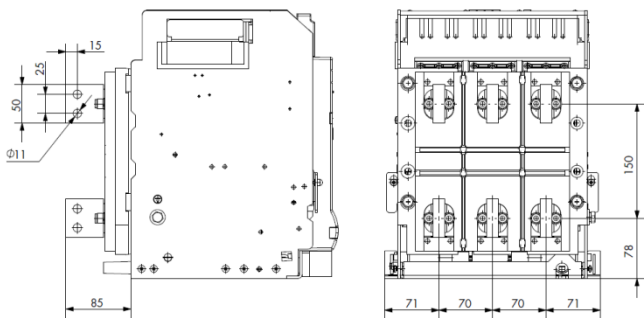
Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

4P

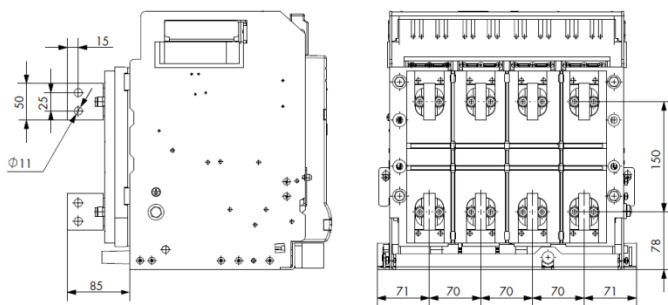


Draw-out version, rear terminals – vertical connections

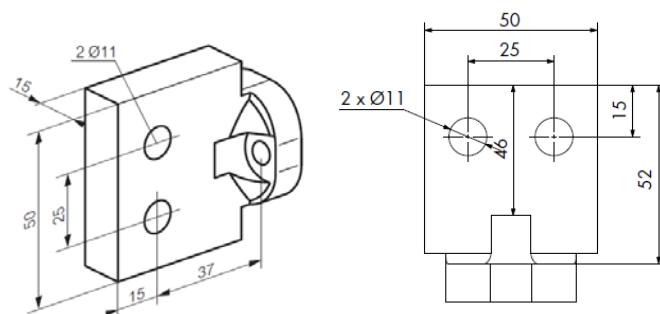
3P



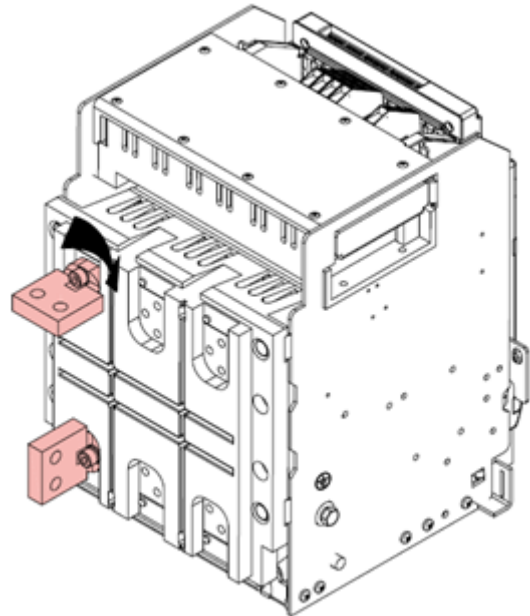
4P



Reversible rear terminals

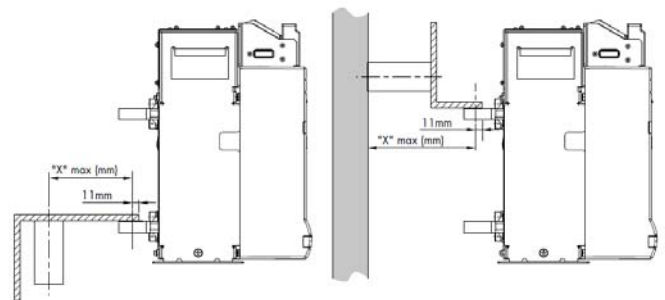


Example of use of orientable terminals:



Terminations support distances – Fixed version

Icc (kA)	≤ 42	≤ 50
"X" max (mm)	350	300



DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

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4. OVERVIEW

4.1 Equipped with

ACBs are equipped with auxiliary contacts (4 NO/NC, expandable up to 6), a CTR trip contact and doorframe; besides:

- Fixed version: equipped with orientable contacts.
- Draw-out version: equipped with orientable contacts and delivered with base equipped with extraction crank.

5. ELECTRICAL CONNECTIONS

Use only as a general guideline to select products. Due to extensive variety of switchgear installation shapes and conditions of use, the solution used must always be verified. If inter-poles air distance is less than 20mm, it's recommended use of phase insulators or insulated bars.

Minimum cross section of COPPER busbars per pole:

Fixed version

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	2 bars 40 x 5	2 bars 40 x 5
800	2 bars 50 x 5	2 bars 30 x 10
1000	1 bar 60 x 10 / 2 bars 60 x 5	2 bars 30 x 10
1250	1 bar 80 x 10 / 2 bars 40 x 10	2 bars 40 x 10
1600	2 bars 50 x 10	2 bars 50 x 10

Draw-out version

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	2 bars 40 x 5	2 bars 40 x 5
800	2 bars 50 x 5	2 bars 30 x 10
1000	2 bars 60 x 5	2 bars 30 x 10
1250	2 bars 80 x 5	2 bars 40 x 10
1600	2 bars 50 x 10	2 bars 50 x 10

Minimum cross section of ALUMINIUM busbars per pole:

Fixed version

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	2 bars 50 x 8	2 bars 50 x 10
800	2 bars 50 x 10	2 bars 50 x 10
1000	2 bars 60 x 10	4 bars 30 x 10
1250	2 bars 60 x 10	4 bars 50 x 10
1600	4 bars 50 x 10	5 bars 50 x 10

Draw-out version

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	2 bars 50 x 8	2 bars 50 x 10
800	2 bars 50 x 10	2 bars 50 x 10
1000	2 bars 60 x 10	4 bars 30 x 10
1250	2 bars 60 x 10	4 bars 50 x 10
1600	4 bars 50 x 10	5 bars 50 x 10

6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Electrical data refers to IEC/EN 60947-2 standard

		DMX ³ 1600	
		42 kA	50 kA
Frame current (A)		1600	
Number of poles		3P - 4P	
Rated current I _n (A)		630/800/1000/1250/1600	
Release type		electronic	
Rated insulation voltage U _i (V)		1000	
Rated impulse withstand voltage U _{imp} (kV)		12	
Rated operational voltage (50/60Hz) U _e (V)		690	
Category of use		B	
Rated ultimate short-circuit breaking capacity I _{cu} (kA)	220 / 240 V AC	42	50
	380 / 415 V AC	42	50
	440 / 460 V AC	42	50
	480 / 500 V AC	42	50
	600 V AC	42	42
	690 V AC	42	42
Rated service short-circuit breaking capacity I _{cs} (% I _{cu})		100%	
Rated short-circuit making capacity I _{cm} (kA)	220 / 240 V AC	88	105
	380 / 415 V AC	88	105
	440 / 460 V AC	88	105
	480 / 500 V AC	88	105
	600 V AC	88	88
	690 V AC	88	88
Rated short time withstand current I _{sw} (kA) for t = 1s	220 / 240 V AC	42	50
	380 / 415 V AC	42	50
	440 / 460 V AC	42	50
	480 / 500 V AC	42	50
	600 V AC	42	42
	690 V AC	42	42
Rated short time withstand current I _{sw} (kA) for t = 3s	220 / 240 V AC	25	25
	380 / 415 V AC	25	25
	440 / 460 V AC	25	25
	480 / 500 V AC	25	25
	600 V AC	25	25
	690 V AC	25	25
Individual pole short-circuit current I _{st} (kA)	220 / 240 V AC	1.2 times the maximum setting of the definite time delay release tripping current (I _{sd}) ⁽¹⁾	
	380 / 415 V AC		
	440 / 460 V AC		
	480 / 500 V AC		
	600 V AC		
	690 V AC		
Suitable for insulation		Yes	
Neutral protection (% I _n)		0 - 50 - 100	
Endurance (cycles)	mechanical	5000 (w/o maint.); 10000 (with maint.)	
	electrical	3000 (w/o maint.)	
Weight (Kg)	3P - Fixed	20	
	3P - Drawout ⁽²⁾	42	
	4P - Fixed	25	
	4P - Drawout ⁽²⁾	52	
Height (mm)	3P - Fixed	321	
	3P - Drawout	352	
	4P - Fixed	321	
	4P - Drawout	352	
Depth (mm)	3P - Fixed	203	
	3P - Drawout	306	
	4P - Fixed	203	
	4P - Drawout	306	
Width (mm)	3P - Fixed	254	
	3P - Drawout	282	
	4P - Fixed	324	
	4P - Drawout	352	
Temperature	operation	-25°C to +70°C	
	storage	-25°C to +85°C	

⁽¹⁾ For more details, please consult Legrand

⁽²⁾ Weights for draw-out releases are to be intended with base

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

Switch disconnector

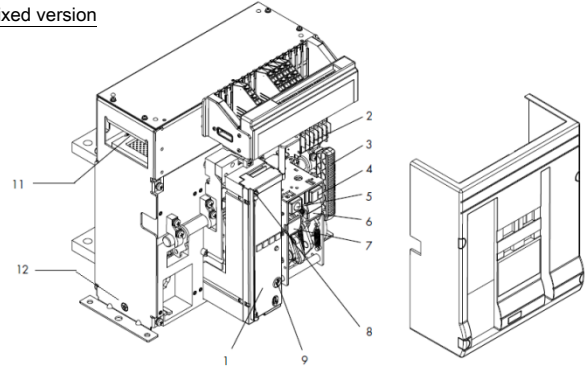
Electrical data refers to IEC/EN 60947-3 standard

		DMX ³ -I 1600
Frame current (A)		1600
Number of poles		3P - 4P
Rated current I _e (A)		1000/1250/1600
Rated insulation voltage U _i (V)		1000
Rated impulse withstand voltage U _{imp} (kV)		12
Rated operational voltage (50/60Hz) U _e (V)		690
Category of use		AC23A
Rated short circuit making capacity I _{cm} (kA)	220 / 240 V AC	105
	380 / 415 V AC	105
	440 / 460 V AC	105
	480 / 500 V AC	105
	600 V AC	88
Rated short time withstand current I _{cw} (kA) for t = 1s	690 V AC	88
	220 / 240 V AC	50
	380 / 415 V AC	50
Rated short time withstand current I _{cw} (kA) for t = 3s	480 / 500 V AC	50
	600 V AC	42
	690 V AC	42
Rated short time withstand current I _{cw} (kA) for t = 3s	220 / 240 V AC	25
	380 / 415 V AC	25
	480 / 500 V AC	25
Suitable for insulation	600 V AC	25
	690 V AC	25
		Yes
Endurance (cycles)	mechanical	5000 (w/o maint.); 10000 (with maint.)
	electrical	3000 (w/o maint.)
Weight (Kg)	3P - Fixed	17
	3P - Drawout ⁽¹⁾	39
	4P - Fixed	22
	4P - Drawout ⁽¹⁾	49
Height (mm)	3P - Fixed	321
	3P - Drawout	352
	4P - Fixed	321
	4P - Drawout	352
Depth (mm)	3P - Fixed	203
	3P - Drawout	306
	4P - Fixed	203
	4P - Drawout	306
Width (mm)	3P - Fixed	254
	3P - Drawout	282
	4P - Fixed	324
	4P - Drawout	352
Temperature	operation	-25°C to +70°C
	storage	-25°C to +85°C

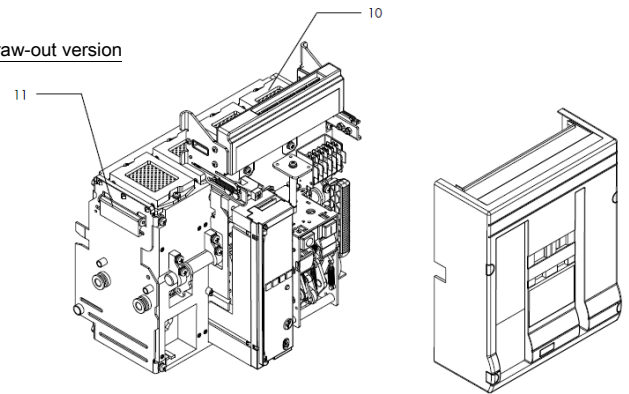
⁽¹⁾ Weights for draw-out releases are to be intended with base

6.1 Main parts constituting the circuit breaker

Fixed version

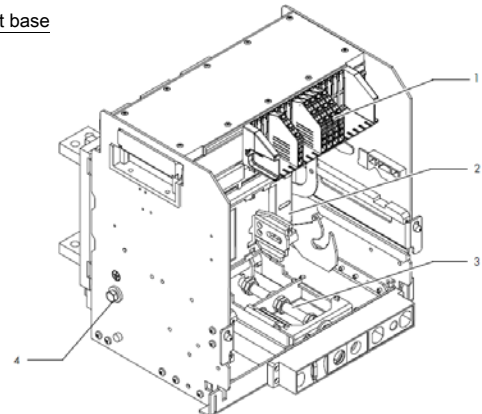


Draw-out version



1. Protection unit
2. Auxiliary contacts
3. Charging handle
4. ON button
5. OFF button
6. Spring status indication
7. ON-OFF indication
8. Reset pin
9. Mini USB cover
10. Dejon cell
11. Lifting handle
12. Ground terminal

Draw-out base



1. Auxiliary terminals block
2. Safety shutter
3. Draw-out mechanism
4. Ground terminal

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

6.2 Adjustment ranges

I _n (A)	Phases			
	I _r		I _{sd}	
	0.4 x I _n	1 x I _n	1.5 x I _r min	10 x I _r max
630	252	630	378	6300
800	320	800	480	8000
1000	400	1000	600	10000
1250	500	1250	750	12500
1600	640	1600	960	16000

* For neutral adjustment, as explained in technical sheet, please consider the values ratios 0%, 50% and 100% on set currents.

6.3 Power losses per pole at I_n / I_e

Power losses for DMX³

Power Losses (W) DMX ³ 1600			
Version		Fixed	Draw-out
Rated current I _n (A)	630	9.9	16.5
	800	15.4	26.4
	1000	25.3	41.8
	1250	38.5	64.9
	1600	63.8	105.6

Note: power loss in the table above are referred and measured as described in the standard IEC 60947-2 (Annex G) for circuit-breakers. Values in the table are referred to a single phase.

Power losses for DMX³-I

Power Losses (W) DMX ³ -I 1600			
Version		Fixed	Draw-out
Rated current I _e (A)	1000	25.3	41.8
	1250	38.5	64.9
	1600	63.8	105.6

Note: power loss in the table above are referred and measured as described in the standard IEC 60947-1 for switches. Values in the table are referred to a single phase.

6.4 Deratings

6.4.1 Temperature

Rated current and his adjustment has to be considered relating to a rise or fall of ambient temperature and to a different version or installation conditions. The table below indicates the maximum long-time (LT) protection setting depending on the ambient temperature.

Temperature deratings for DMX³ fixed version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 1600	630	1	630	1	630	1	630	1	630	1
	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	950	0.95
	1250	1	1250	1	1250	1	1250	1	1225	0.98
	1600	1	1600	1	1536	0.96	1440	0.9	1376	0.86

Temperature deratings for DMX³-I fixed version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ -I 1600	1000	1	1000	1	1000	1	1000	1	950	0.95
	1250	1	1250	1	1250	1	1250	1	1225	0.98
	1600	1	1600	1	1536	0.96	1440	0.9	1376	0.86

Temperature deratings for DMX³ draw-out version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 1600	630	1	630	1	630	1	630	1	630	1
	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	950	0.95
	1250	1	1250	1	1250	1	1225	0.98	1175	0.94
	1600	1	1600	1	1440	0.9	1376	0.86	1280	0.8

Temperature deratings for DMX³-I draw-out version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ -I 1600	1000	1	1000	1	1000	1	1000	1	950	0.95
	1250	1	1250	1	1250	1	1225	0.98	1175	0.94
	1600	1	1600	1	1440	0.9	1376	0.86	1280	0.8

6.4.2 Specific conditions use

Climatic conditions

according to IEC/EN 60947-1 Annex Q, Cat. F subject to temperature, humidity, vibration, shock and salt mist.

Electromagnetic disturbances (EMC)

for DMX³ 1600 according to IEC/EN 60947-2 Annex F.

6.4.3 Altitude

Altitude derating for DMX³ and DMX³-I

Altitude (m)	< 2000	3000	4000	5000
Rated current I _n (A)	I _n	0.93 x I _n	0.88 x I _n	0.82 x I _n
Rated voltage U _e (V)	690	600	500	440
Rated insulation voltage U _i (V)	1000	900	750	600

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

6.5 Electronic protection unit

All DMX³ 1600 can be equipped by an MP2 or MP4 electronic protection unit which main characteristics are:

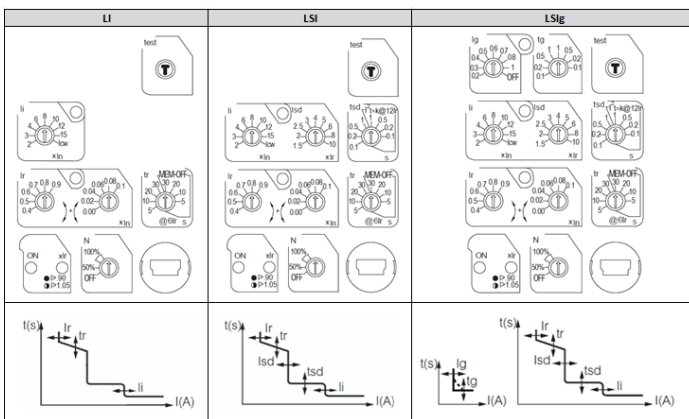
- Adjustments accomplished by selector switches
- Long delay (I_r) threshold based on true RMS value of the current
- Integrated LCD screen display electrical values, settings and logs (only for MP4 release)

All protection units have onboard a mini USB type "B" socket for maintenance purposes.

6.5.1 Protection unit types

Protection unit are available in MP2 and MP4 type as following

Type	Function	Data		Reference
		visualization	adjustment	
MP2	LSI	on knob	knob	0 281 67
	LSIg	on knob	knob	0 281 68
MP4	LI	on LCD screen	knob	0 281 64
	LSI	on LCD screen	knob	0 281 65
	LSIg	on LCD screen	knob	0 281 66



Protective functions

- I_r : against overloads with long inverse time delay trip
- t_r : long inverse time delay trip
- I_{sd} : against short-circuits
- t_{sd} : independent time delay ($t=k$)
: inverse short time delay ($I^2t=k$)
- I_l : against short-circuits with adjustable threshold
- I_{sf} : against short-circuit with fixed threshold (factory imposed)
- I_g : against earth fault
- t_g : independent time delay ($t=k$) or inverse short time delay ($I^2t=k$)

6.5.2 Trip threshold (and maximum setting range)

	LI	LSI	LSIg	Maximum possible range of setting
I_r	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$	1 st selector $0.4 \div 0.9 \times I_n$ (step 0.1) 2 nd selector $0.00 \div 0.1 \times I_n$ (step 0.02)
t_r	$5 \div 30s$	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM ON (5-10-20-30s)
	$5 \div 30s$	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM OFF (5-10-20-30s)
I_{sd}	$10 \times I_r$	$1.5 \div 10 \times I_r$	$1.5 \div 10 \times I_r$	$1.5-2-2.5-3-4-5-6-8-10 \times I_r$
t_{sd}	1s	$0.1 \div 1s$	$0.1 \div 1s$	$t = k$ (0.1-0.2-0.5-1s) $I^2t = k$ (0.3-0.2-0.1-0.01s)
I_l	$2 \div 15 \times I_n$	$2 \div 15 \times I_n$	$2 \div 15 \times I_n$	2-3-4-6-8-10-12-15 $\times I_n$
	I_{cw}	I_{cw}	I_{cw}	-
I_{sf}	I_{cw}/U_e	I_{cw}/U_e	I_{cw}/U_e	override instantaneous fixed threshold
I_g	N/A	N/A	$0.2 \div 1 \times I_n$	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1
t_g	N/A	N/A	$0.1 \div 1s$	$t = k$ (0.1-0.2-0.5-1s) $I^2t = k$ (0.1-0.2-0.5-1s)

6.6 Common accessories for protection units

- External auxiliary power supply ref. 0 281 72
suitable to power up to 4 protection units

Input supply	230 V AC @50-60Hz
Input power supply (W / VA)	≥ 9.6
Operating temperature (°C)	$-10 \div +55$

- Communication option ref. 0 281 70
- External neutral for DMX³ 1600 ref. 0 281 71
- Programmable output option ref. 0 281 99

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

7. CONFORMITY

DMX³ range of product concerning circuit-breakers and switch-disconnectors exceed compliance with the IEC/EN standard 60947-2 and 60947-3 respectively. Certification available by IECEE CB-scheme or LOVAG Compliance scheme.

Marks as CCC (China), EAC (Eurasian Federation) or different local certification are available.

DMX³ are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

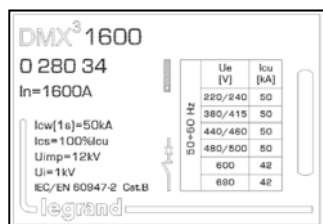
DMX³ respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

7.1 MARKING

Product is provided with labelling in full conformity to the referred standard and directives requirements by laser or sticker labels as:

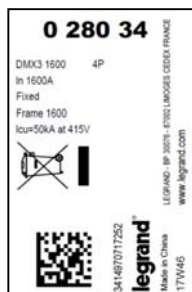
Product laser label on front

- Manufacturer responsible
- Denomination, type product, code
- Standard conformity
- Standard characteristics declared
- coloured identification of I_{cu} at 415V



Product sticker label on side

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements
- bar code identification product
- Manufacturing Country



Mark sticker label on side

- Product code
- Mark/Licence (if any)
- Country deviation, if any



Packaging sticker label

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements
- bar code identification product



8. EQUIPMENTS AND ACCESSORIES

8.1 Control auxiliaries

- shunt trip: device trips when coil is energised

24 V AC and DC	ref. 0 281 31
48 V AC and DC	ref. 0 281 32
110 ÷ 130 V AC and DC	ref. 0 281 33
220 ÷ 250 V AC and DC	ref. 0 281 34
415 ÷ 440 V AC	ref. 0 281 35

Rated operating voltage (U _c)	AC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V; 415V ÷ 440V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U _c)	70 ÷ 110
Pick-up consumption (W / VA)	400 / 400
Pick-up time (ms)	300
Hold consumption (W / VA)	50 / 50
Minimum opening time (ms)	50
Insulation voltage (kV)	2.5

- undervoltage release: device trips when coil is de-energised

24 V AC and DC	ref. 0 281 36
48 V AC and DC	ref. 0 281 37
110 ÷ 130 V AC and DC	ref. 0 281 38
220 ÷ 250 V AC and DC	ref. 0 281 39
415 ÷ 440 V AC	ref. 0 281 40

Rated operating voltage (U _c)	AC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V; 415V ÷ 440V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U _c)	85 ÷ 110
Pick-up consumption (W / VA)	400 / 400
Pick-up time (ms)	300
Hold consumption (W / VA)	50 / 50
Minimum opening time (ms)	60
Insulation voltage (kV)	2.5

- Modules for delayed tripping (to be used with undervoltage releases)

110 V AC and DC	ref. 0 288 62
230 V AC and DC	ref. 0 288 63

Rated operating voltage (U _c)	AC: 110V / 230V DC: 110V / 230V
Voltage range (%U _c)	85 ÷ 110
Pick-up consumption (W / VA)	16.5 (@110V) / 34.5 (@230V)
Time delay (s)	1 ⁽¹⁾
Hold consumption (W / VA)	5 (@110V) / 10 (@230V)
Opening threshold	0.3 ÷ 0.75 U _c
Closing threshold	0.85 U _c
Operating temperature (°C)	-10 ÷ +55

⁽¹⁾ It is possible to connect up to 3 modules in series in order to get 3s of delay

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

• Motor operators

To motorize a DMX³, it is possible to connect to the motor operators a release coil (undervoltage or trip on energising) and a closing coil

24 V AC and DC	ref. 0 281 20
48 V AC and DC	ref. 0 281 21
110 ÷ 130 V AC and DC	ref. 0 281 22
220 ÷ 250 V AC and DC	ref. 0 281 23
415 ÷ 440 V AC	ref. 0 281 24

Rated operating voltage (U_c)	AC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V; 415V ÷ 440V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U_c)	85 ÷ 110
Maximum Power consumption (W / VA)	240 / 240
Maximum peak current for 80ms	(2 ÷ 3) x I _n
Charging time (s)	5
Operating frequency (cycles / min)	2

• Closing coils

To enable remote closing of the circuit breaker if the closing spring is charged

24 V AC and DC	ref. 0 281 26
48 V AC and DC	ref. 0 281 27
110 ÷ 130 V AC and DC	ref. 0 281 28
220 ÷ 250 V AC and DC	ref. 0 281 29
415 ÷ 440 V AC	ref. 0 281 30

Rated operating voltage (U_c)	AC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V; 415V ÷ 440V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U_c)	85 ÷ 110
Pick-up consumption (W / VA)	400 / 400
Pick-up time (ms)	300
Hold consumption (W / VA)	50 / 50
Minimum opening time (ms)	50
Isolation voltage (kV)	2.5

8.2 Signalling auxiliaries

• Signalling contact for draw-out version

Inserted / test / draw-out signalling contact

1 changeover contact per position (up to 2 contacts with double accessory if the lock button ref. 0 281 87 is not mounted)

ref. 0 281 73

Rated operating voltage (U_c)	DC	250V 0.3A
	AC	250V 16A

• Contact "ready to close" with charged springs

ref. 0 281 74

Rated operating voltage (U_c)	DC	250V 0.5A
	AC	250V 3A

• Module with 6 auxiliary contacts

ref. 0 281 75

Rated operating voltage (U_c)	DC	250V 0.3A
	AC	250V 16A

8.3 Locking

- Key locking in "open" position (max 1 for circuit breaker)
 - 1 lock + 1 Ronis type flat key random (ABA90GEL6149) ref. 0 281 78
 - 1 lock + 1 Ronis type flat key fixed (cod.EL43525) (ABA90GEL6149) ref. 0 281 79
 - 1 lock + 1 Ronis type flat key fixed (cod.EL43363) (ABA90GEL6149) ref. 0 281 80
 - 1 lock + 1 Profalux type star key random (HBA90GPS6149) ref. 0 281 81
- Key locking in draw-out position (max 2 for circuit breaker)
 - Mounting of the lock on the base
 - Lock and key Profalux type star key random (HBA90GPS6149) ref. 0 281 82
 - Lock and key Ronis type flat key random (ABA90GEL6149) ref. 0 281 83

• Door locking

- Prevents opening of the door with the circuit breaker closed
 - Left-hand and right-hand side mounting ref. 0 281 84
- Padlock
 - Padlock for buttons ref. 0 281 77

8.4 Accessories

- Mechanical counter: to count number of operation cycles of device ref. 0 281 88
- Inserted/test/drawout lock button ref. 0 281 87

8.5 Fixing devices for DMX³ and DMX³-I 1600

Specific instruction sheets are provide to integrate DMX³ and DMX³-I 1600 into XL³ enclosures ranges (fixing plates, metal faceplates for circuit breakers and cable sleeves, etc...).

8.6 Equipment for interlocking

The mechanical interlock is set up using cables and can interlock 2 devices, which may be different type in a vertical or horizontal configuration. The interlock unit is mounted on the right-hand side of the device. Interlock cables to be ordered separately.

- Interlock for DMX³ 1600 ref. 0 281 90

DMX³ 1600 circuit breakers

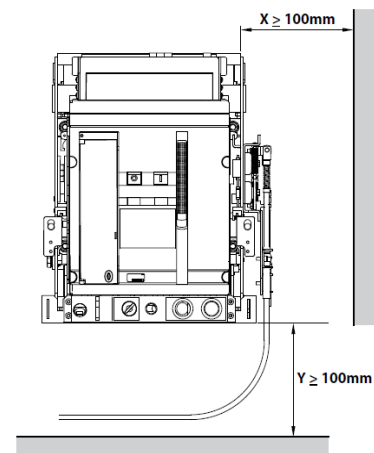
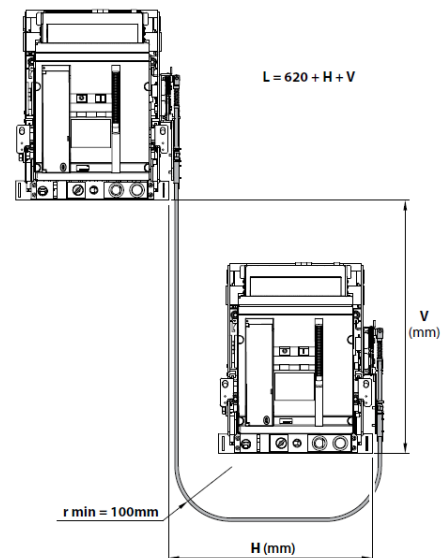
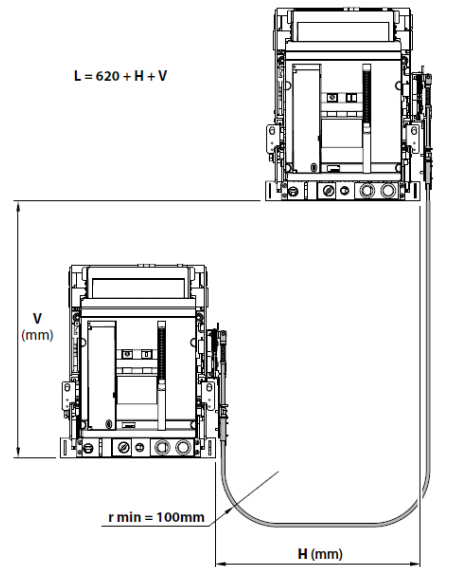
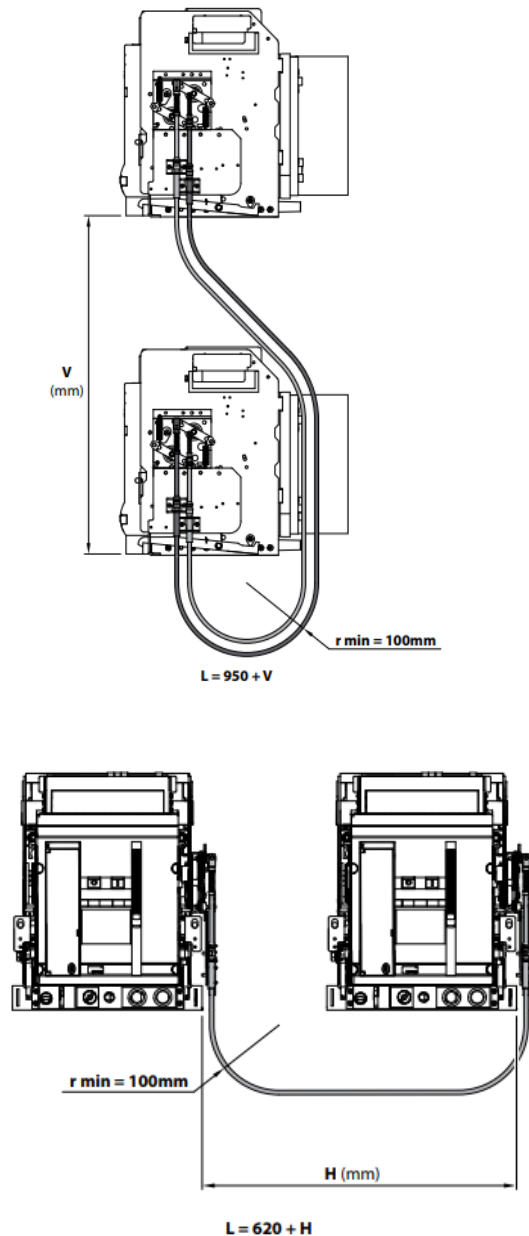
DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

8.7 Cable interlock

- 1000 mm ref. 0 289 17
- 1500 mm ref. 0 289 18
- 2600 mm ref. 0 289 20
- 3000 mm ref. 0 289 21
- 3600 mm ref. 0 289 22
- 4000 mm ref. 0 289 23
- 4600 mm ref. 0 289 24
- 5600 mm ref. 0 289 25

Choice of interlock cable and distances to keep



DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 /
24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 /
56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 /
81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

8.8 Front terminals

- 3P fixed version ref. 0 281 55
- 4P fixed version ref. 0 281 56
- 3P draw-out version ref. 0 281 57
- 4P draw-out version ref. 0 281 58

8.9 Rear terminals

Not mounted by default on the mechanism itself

- 3P fixed version ref. 0 280 35
- 4P fixed version ref. 0 280 41
- 3P draw-out version ref. 0 281 47
- 4P draw-out version ref. 0 281 48

8.10 Base for draw-out version

Equipment for conversion of a fixed device into draw-out device.

- 3P ref. 0 281 53
- 4P ref. 0 281 54

8.11 Spreaders for fixed and draw-out versions

To be fixed onto orientable rear terminals (horizontal position) of the circuit breaker.

- 3P ref. 0 281 59
- 4P ref. 0 281 60

8.10 Insulating shields

- 3P fixed version ref. 0 281 49
- 4P fixed version ref. 0 281 50
- 3P draw-out version ref. 0 281 51
- 4P draw-out version ref. 0 281 52

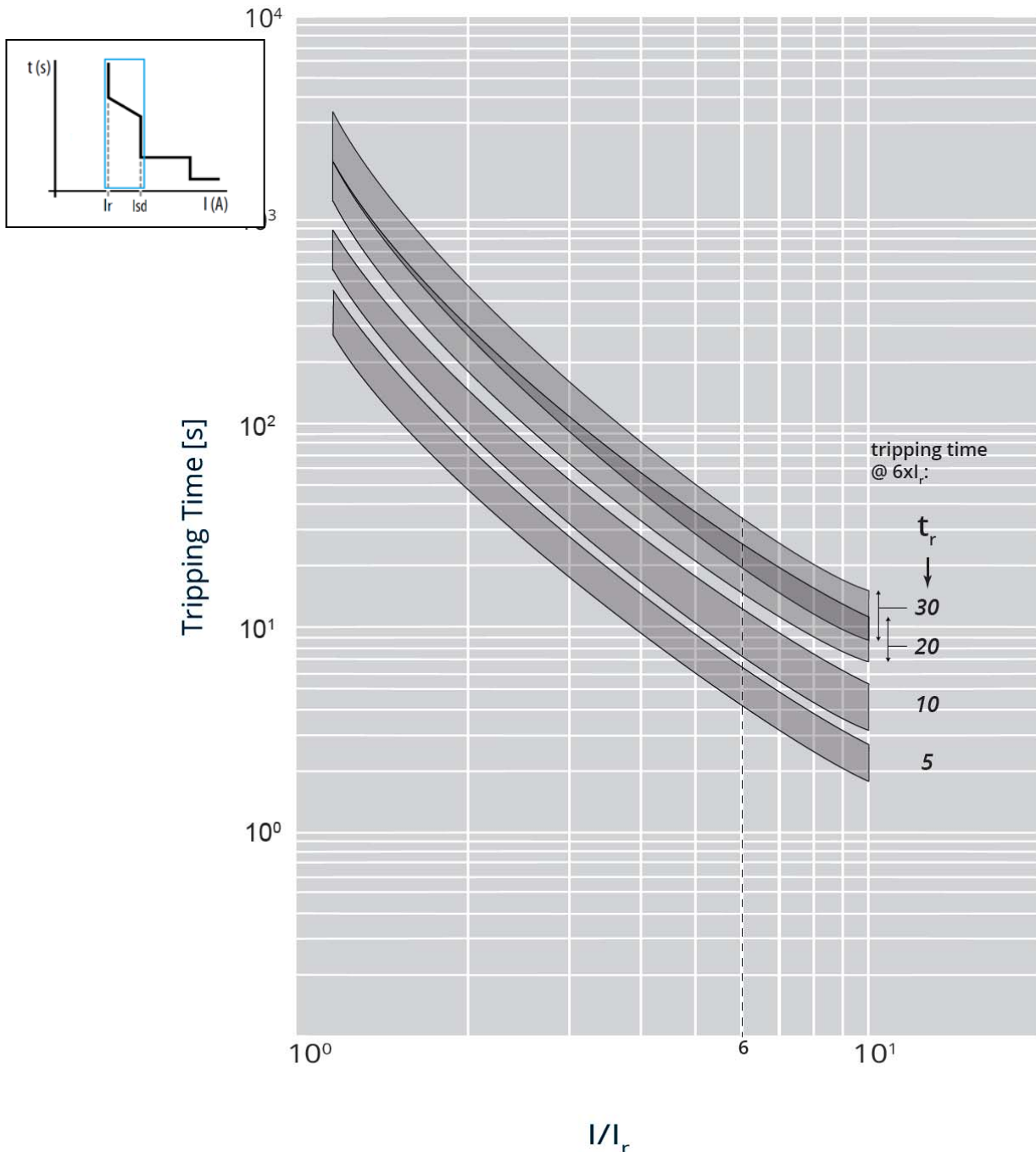
DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

9. CURVES

9.1.1 TRIPPING CURVE FOR DMX³ 1600 protection units: L – T protection detail



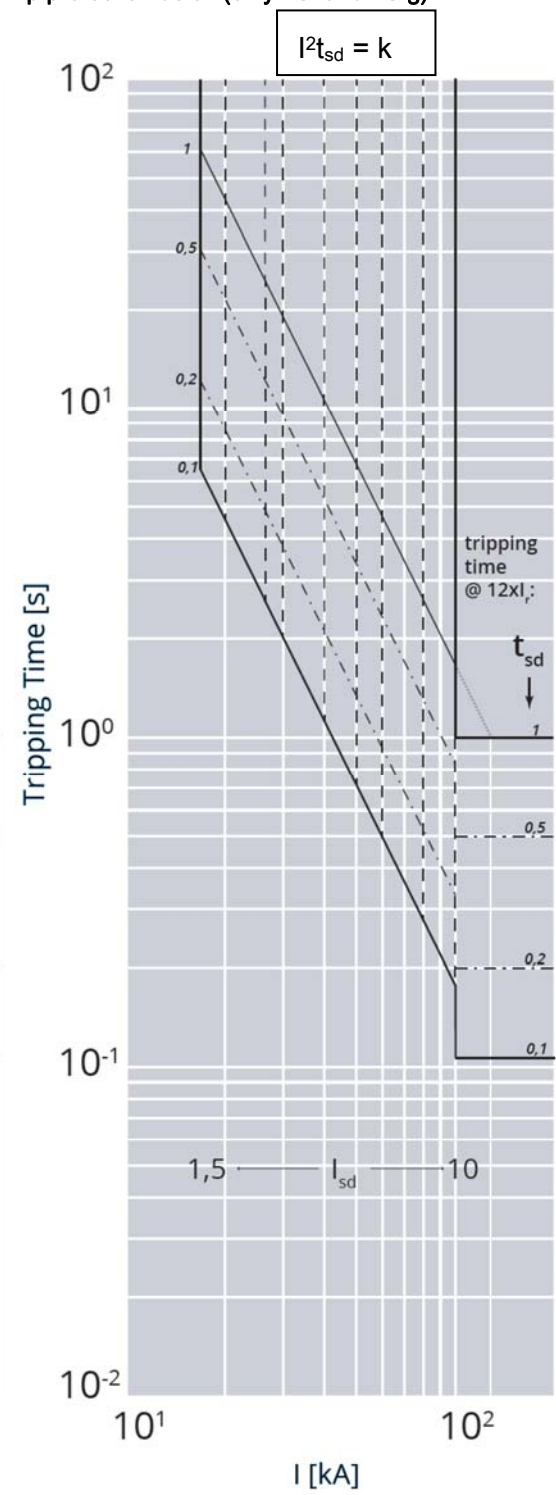
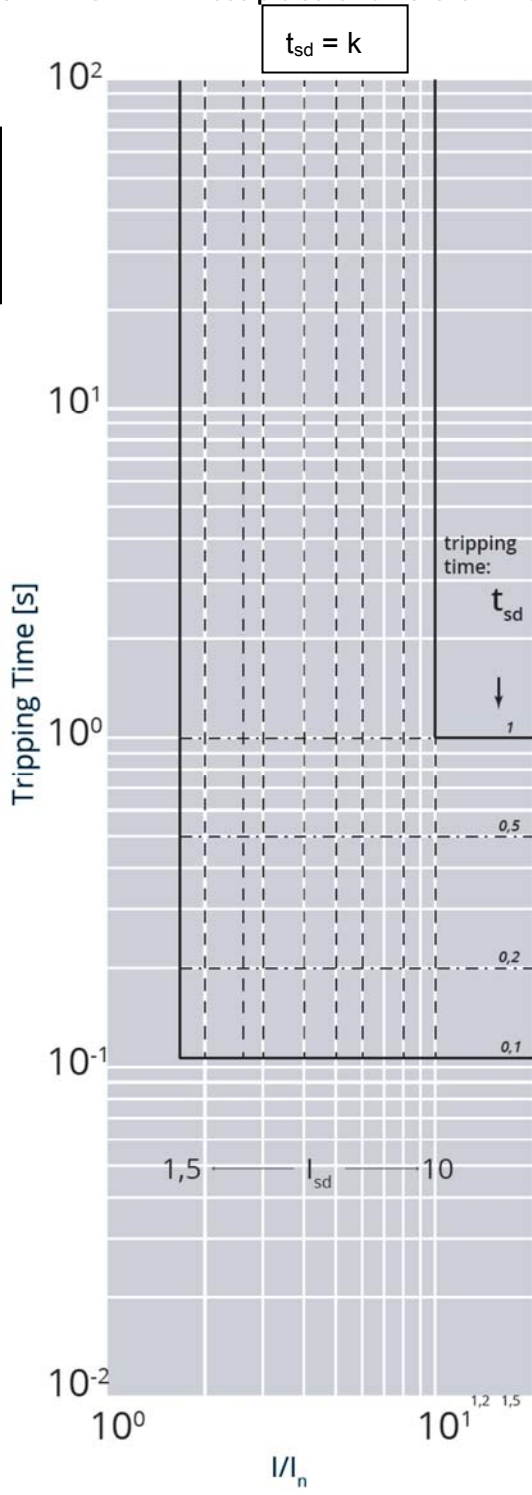
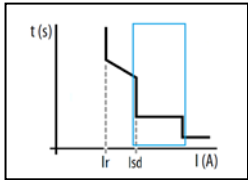
Value	Description
I	current
I_r	long time setting current
t_r	long time delay

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

9.1.2 TRIPPING CURVE FOR DMX³ 1600 protection units: short time trip protection detail (only LSI and LSIG)



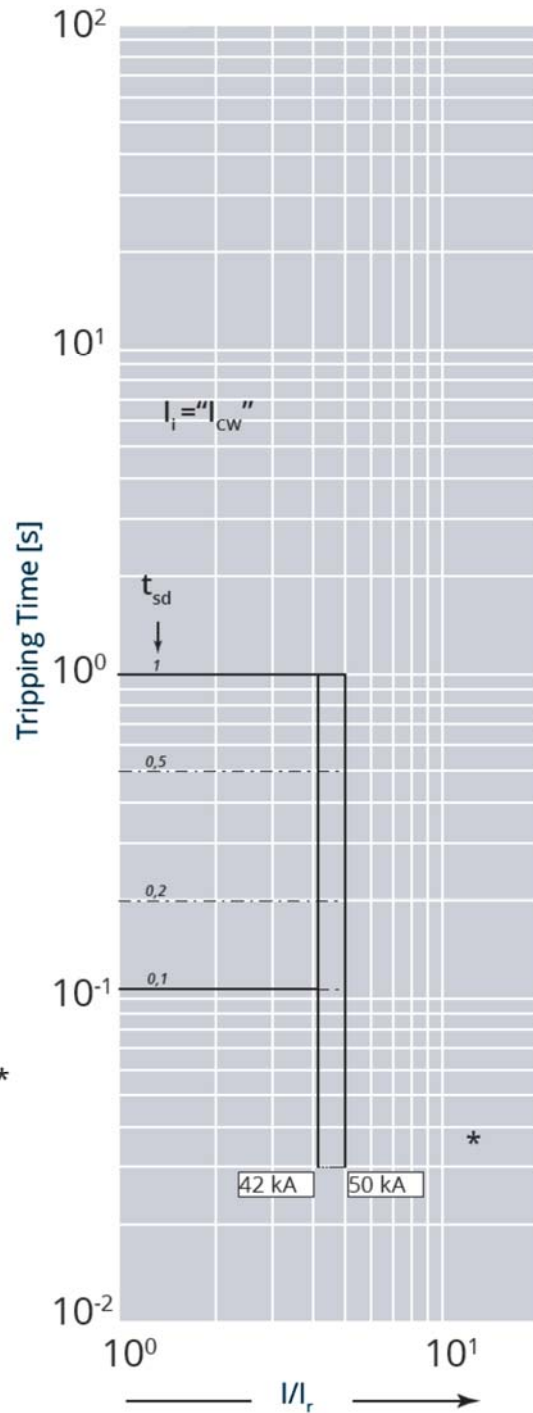
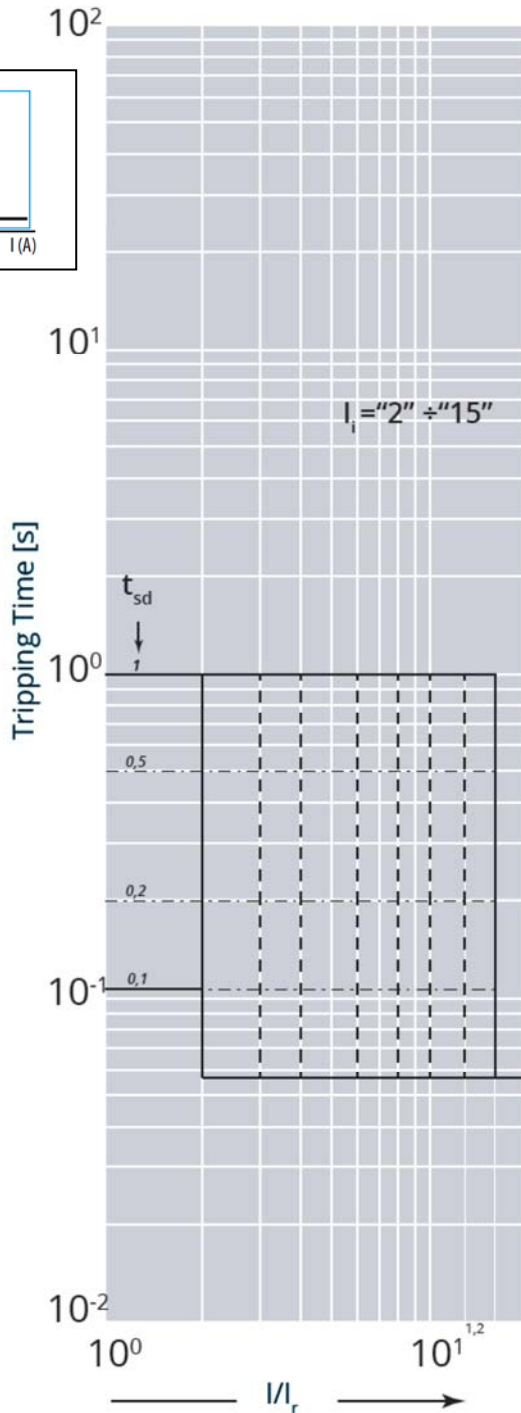
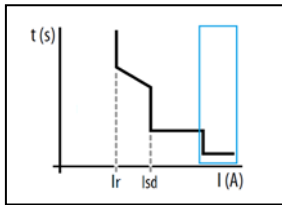
Value	Description
I	current
I _{sd}	short time setting current
t _{sd}	short time delay

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

9.1.3 TRIPPING CURVE FOR DMX³ 1600 protection units: instantaneous trip protection detail



* Fixed Instantaneous override – I_{sf}

Value	Description
I	current
I_n	rated current
t_{sd}	short time delay
I_i	Instantaneous release
I_{cw}	Rated short time withstand current

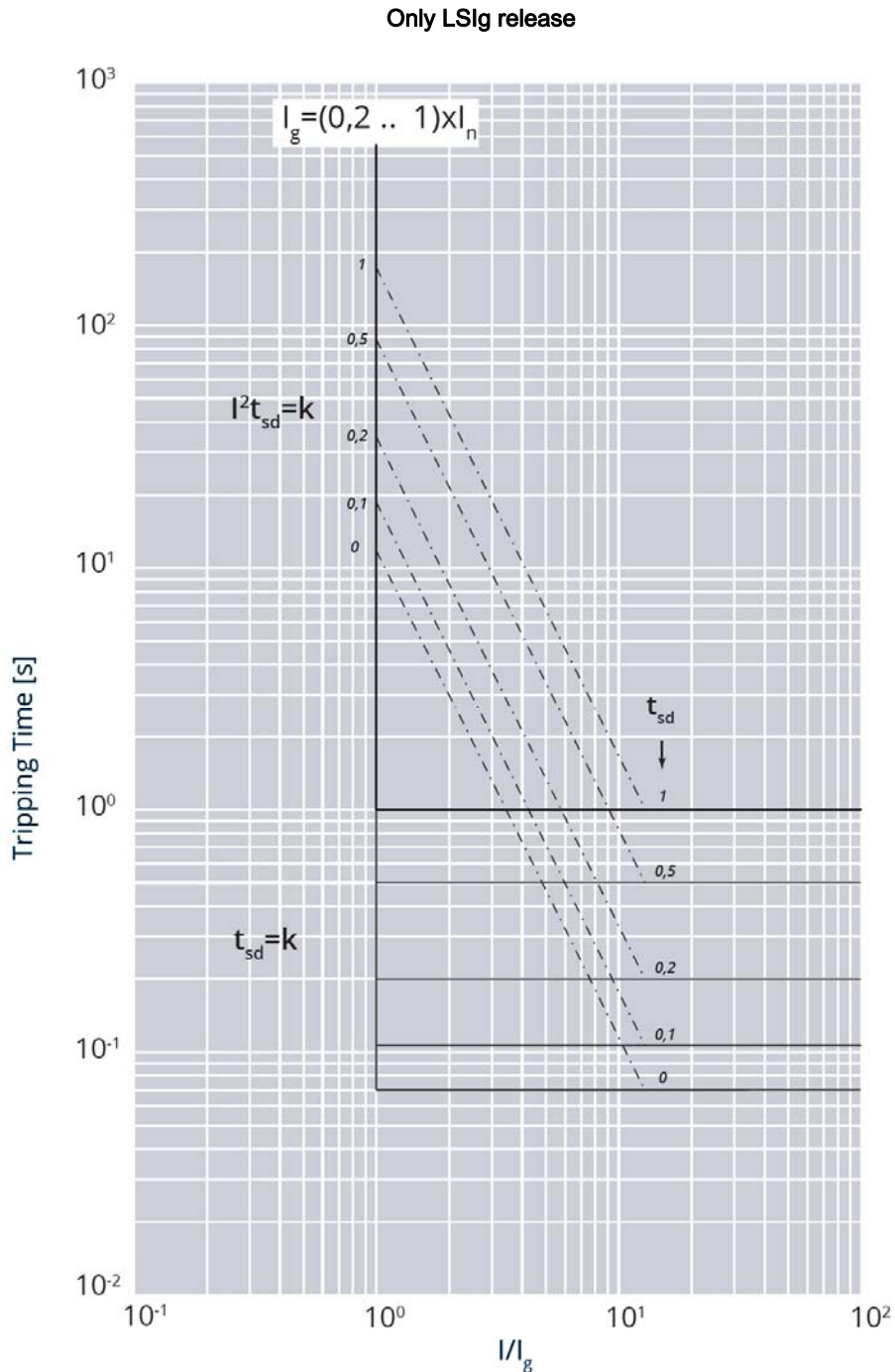
I_{cu}	Values for I_{sf}
42 kA	42 kA
50kA	50kA

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

9.1.4 Ground fault curve



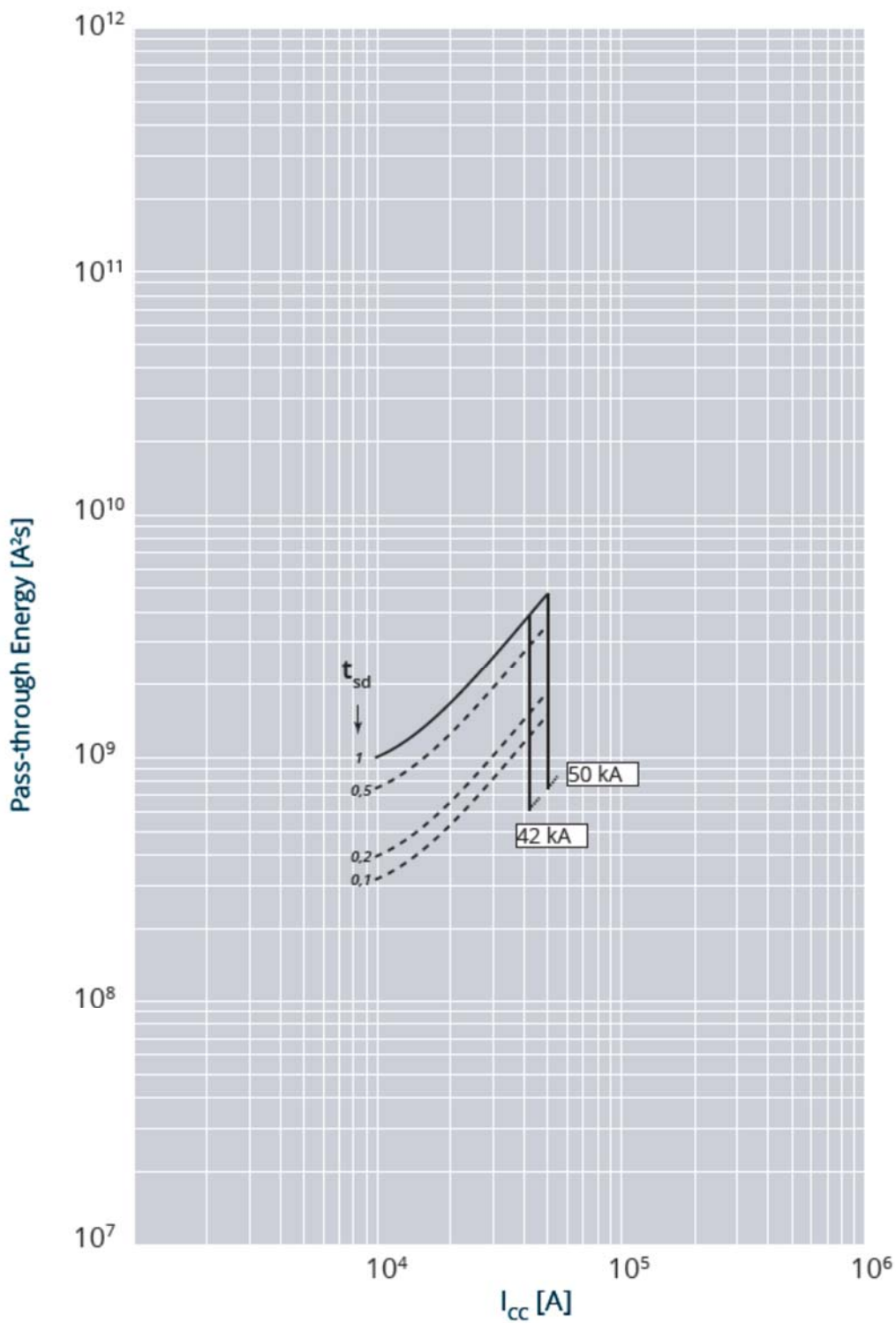
Value	Description
I	current
I _n	rated current
I _g	Ground fault current
t _{sd}	short time delay
t _{sd} = k	Constant tripping time setting
I ² t _{sd} = k	Constant pass-through energy setting

DMX³ 1600 circuit breakers

DMX³-I 1600 switch disconnectors

Reference(s) : 0 280 00 / 01 / 02 / 03 / 04 / 06 / 07 / 08 / 09 / 10 / 24 / 25 / 26 / 27 / 28 / 30 / 31 / 32 / 33 / 34 / 47 / 50 / 51 / 52 / 53 / 56 / 57 / 58 / 59 / 65 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92

9.2 PASS-THROUGH SPECIFIC ENERGY CURVE (at 415V)



Value	Description
t_{sd}	short time delay
I_{cc}	short circuit current
I^2t	pass-through specific energy