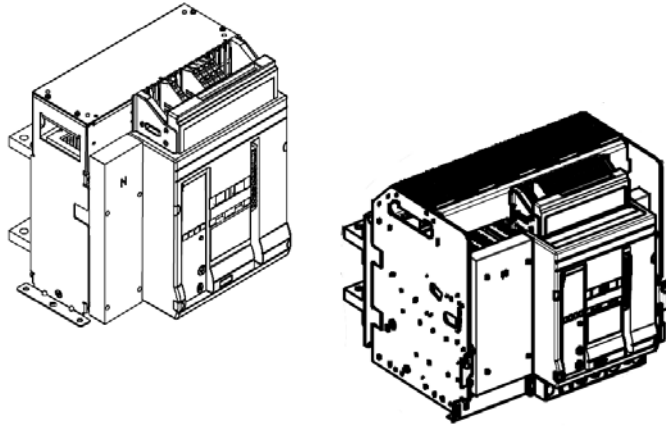


DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83



CONTENTS	PAGES
1. USE	1
2. RANGE	1
3. DIMENSIONS	1
4. OVERVIEW	7
5. ELECTRICAL CONNECTIONS	7
6. ELECTRICAL AND MECHANICAL CHARACTERISTICS	8
7. CONFORMITY	11
8. EQUIPMENTS AND ACCESSORIES	12
9. CURVES	14

Full technical sheet LE09882AA

1. USE

DMX-SP 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 2500A. Their electric and mechanical robustness, in addition to breaking capacity and chances of accessorizing, are perfectly suited for these requirements.

DMX-SP 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-SP 2500 circuit breakers							
	Fixed version				Draw-out version			
	42kA		50kA		42kA		50kA	
I_n (A)	3P	4P	3P	4P	3P	4P	3P	4P
630	6 695 00	6 695 06	6 695 24	6 695 30	6 695 12	6 695 18	6 695 36	6 695 42
800	6 695 01	6 695 07	6 695 25	6 695 31	6 695 13	6 695 19	6 695 37	6 695 43
1000	6 695 02	6 695 08	6 695 26	6 695 32	6 695 14	6 695 20	6 695 38	6 695 44
1250	6 695 03	6 695 09	6 695 27	6 695 33	6 695 15	6 695 21	6 695 39	6 695 45
1600	6 695 04	6 695 10	6 695 28	6 695 34	6 695 16	6 695 22	6 695 40	6 695 46
2000	6 695 05	6 695 11	6 695 29	6 695 35	6 695 17	6 695 23	6 695 41	6 695 47
2500	6 695 72	6 695 73	6 695 76	6 695 77	6 695 74	6 695 75	6 695 78	6 695 79

	DMX-SP-I 2500 switch disconnectors			
	Fixed version		Draw-out version (*)	
	3P	4P	3P	4P
I_n (A)				
630	6 695 48	6 695 54	6 695 60	6 695 66
800	6 695 49	6 695 55	6 695 61	6 695 67
1000	6 695 50	6 695 56	6 695 62	6 695 68
1250	6 695 51	6 695 57	6 695 63	6 695 69
1600	6 695 52	6 695 58	6 695 64	6 695 70
2000	6 695 53	6 695 59	6 695 65	6 695 71
2500	6 695 80	6 695 81	6 695 82	6 695 83

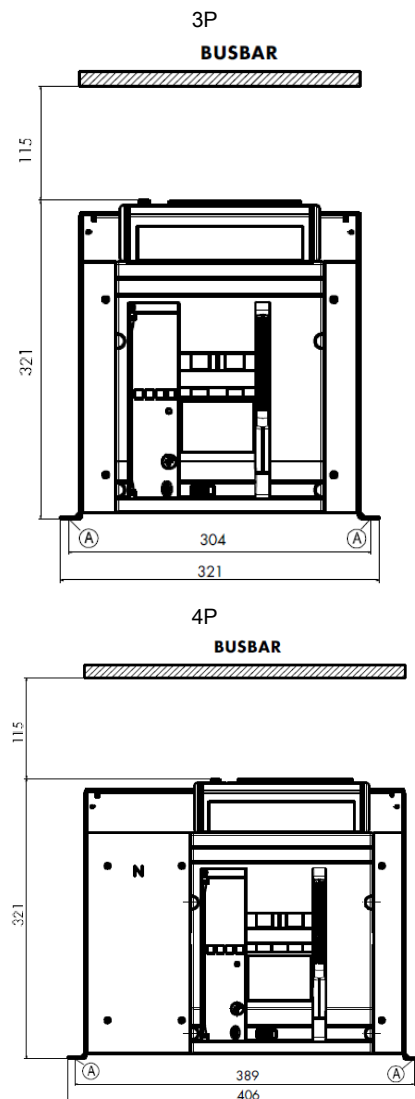
(*) Draw-out references represent only the mobile part.

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

- ref. 6 696 10 (draw-out base for 3P versions)
- ref. 6 696 11 (draw-out base for 4P versions)

3. DIMENSIONS

Fixed version, overall dimensions

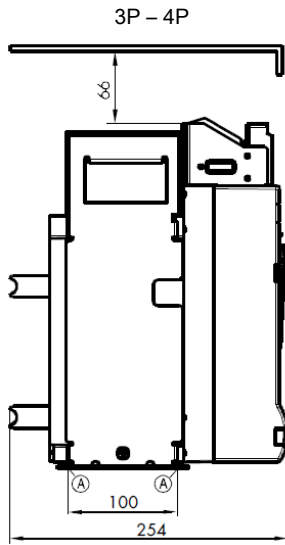


A = fixing point on plate of enclosure

DMX-SP 2500 circuit breakers

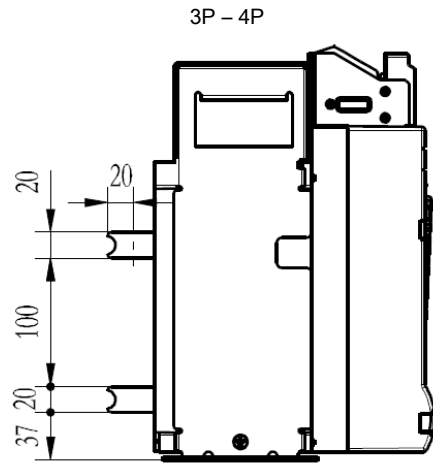
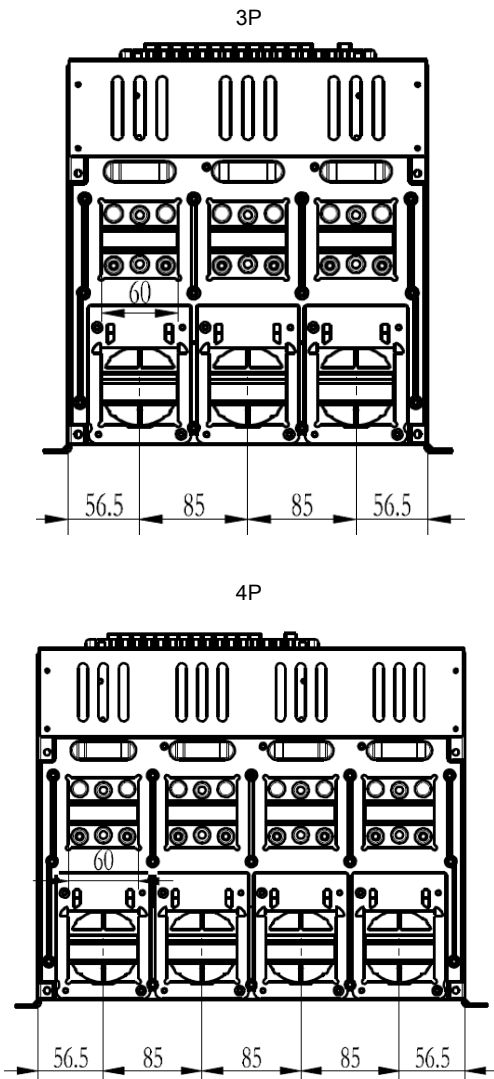
DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

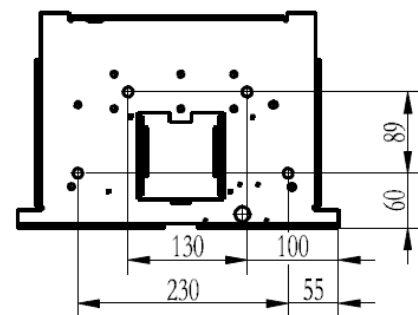
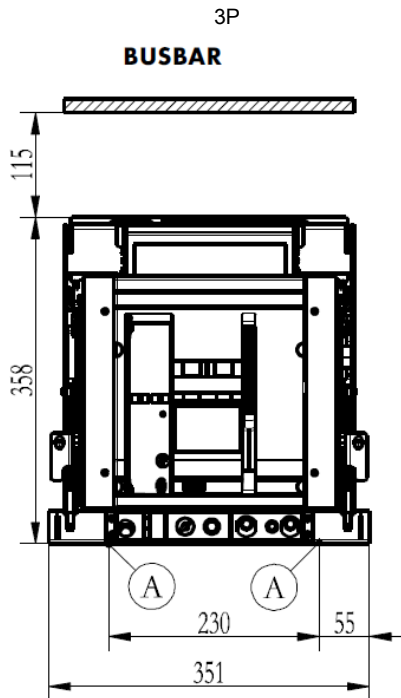


A = fixing point on plate of enclosure

Fixed version, rear terminals – horizontal connections



Draw-out version, overall dimensions

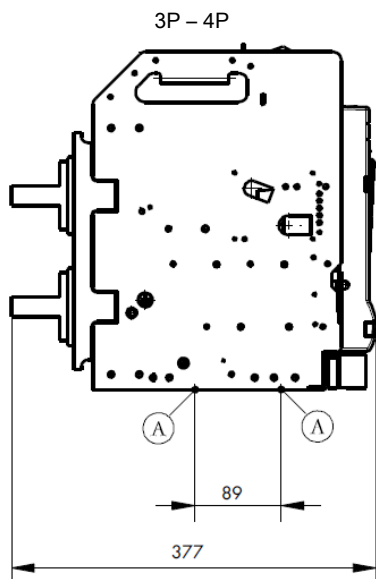
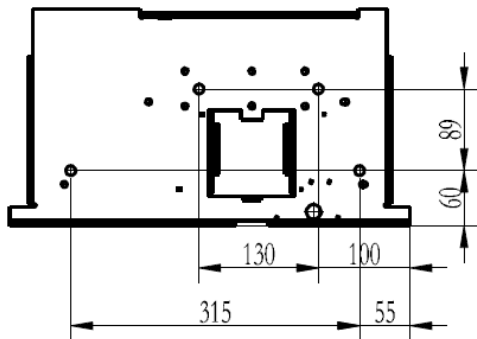
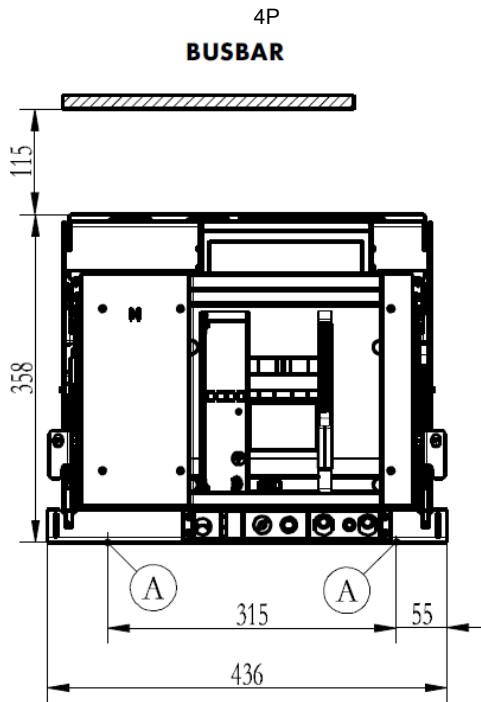


A = fixing point on plate of enclosure

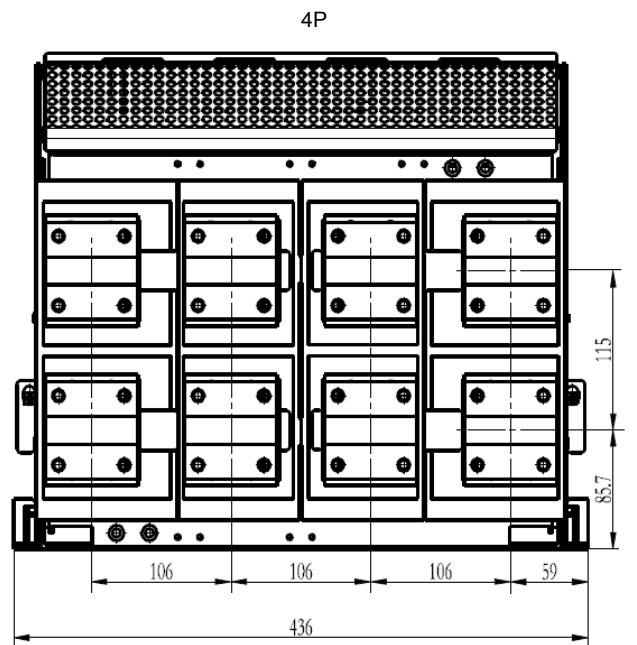
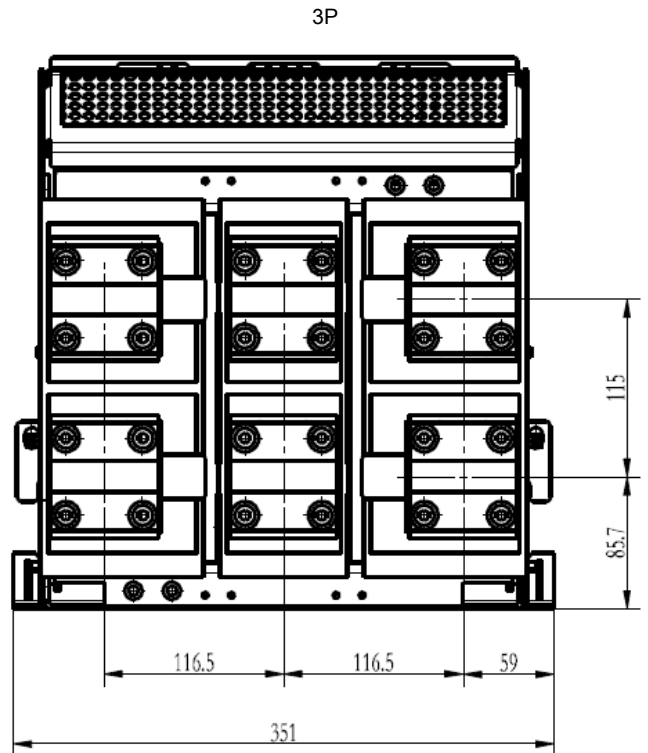
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83



Draw-out version, rear terminals – horizontal connections

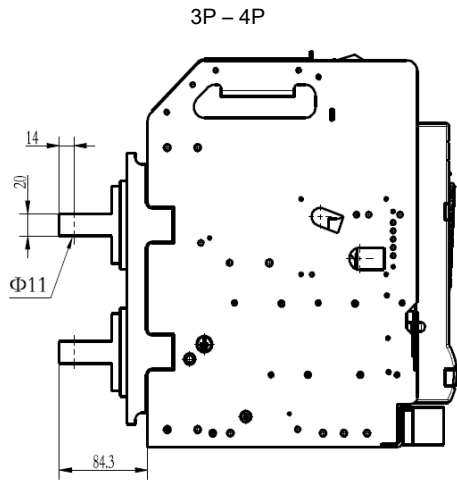


A = fixing point on plate of enclosure

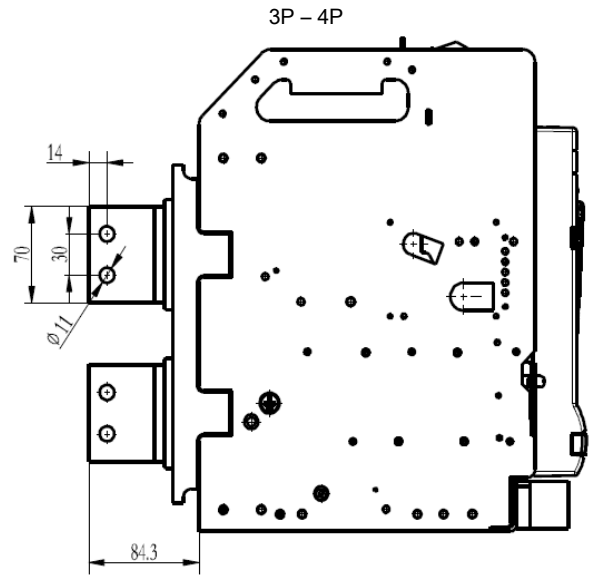
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

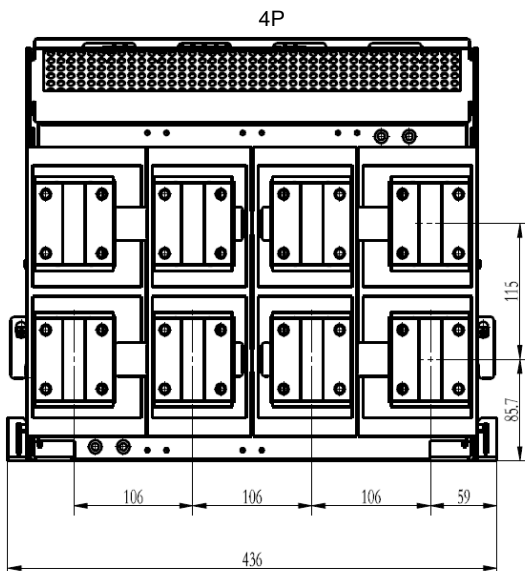
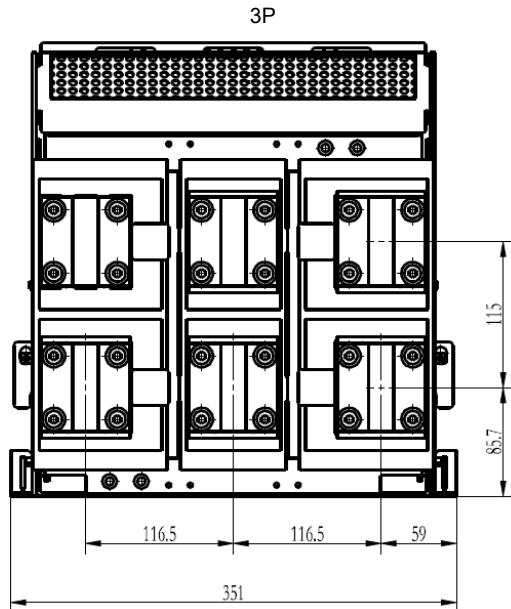
Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83



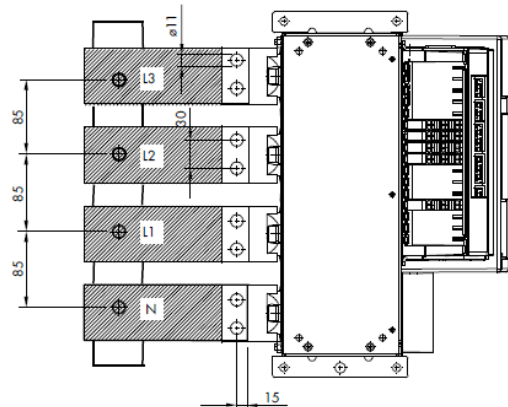
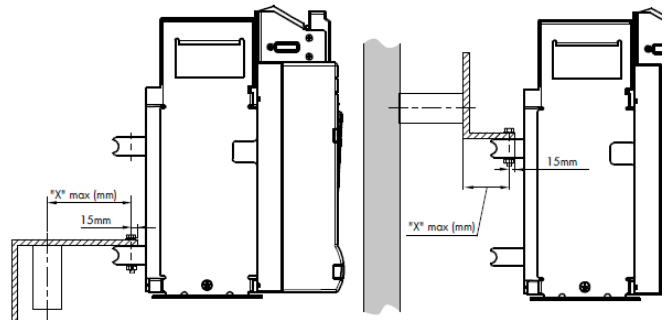
Draw-out version, rear terminals – vertical connections



Terminations support distances – Fixed version



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



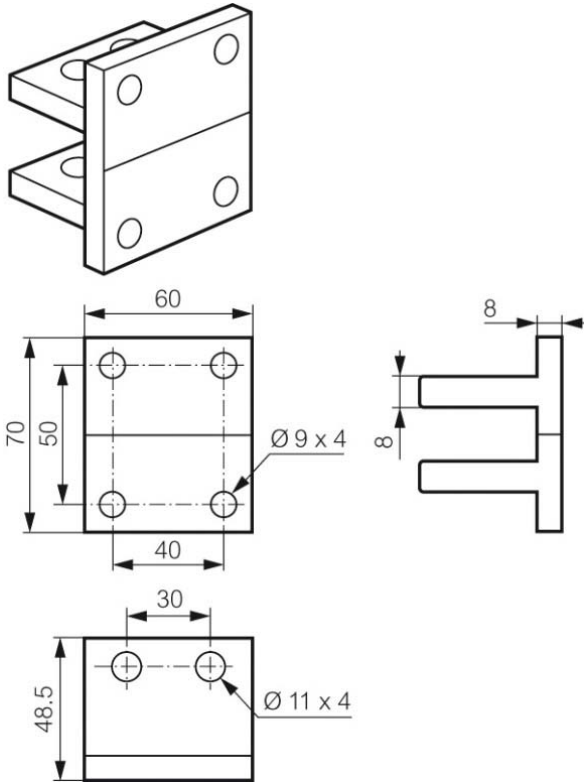
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

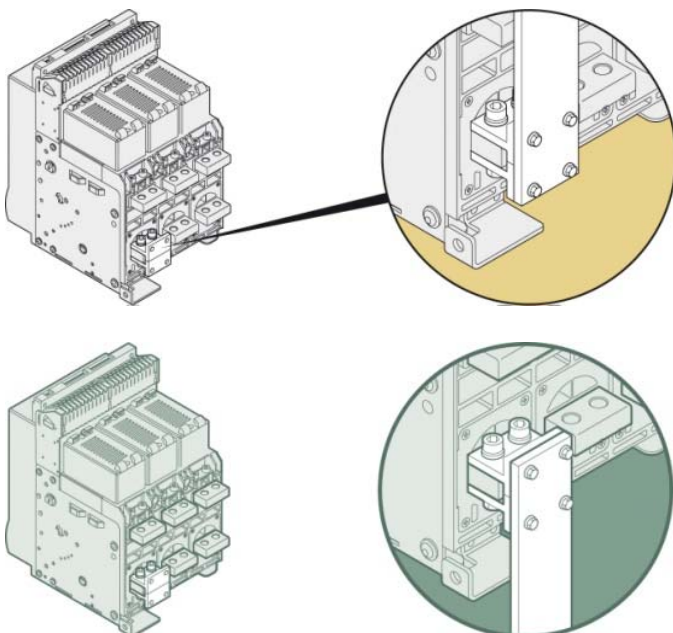
Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

Rear terminals for fixed version – Flat connection

References	
3P	4P
0 288 84	0 288 85

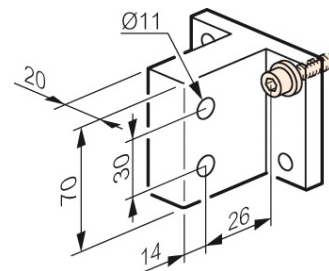
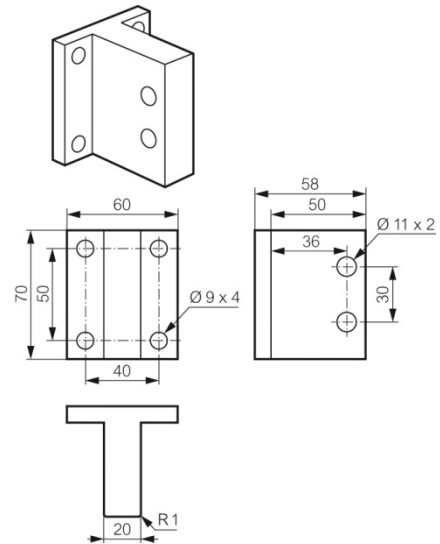


Mounting examples:

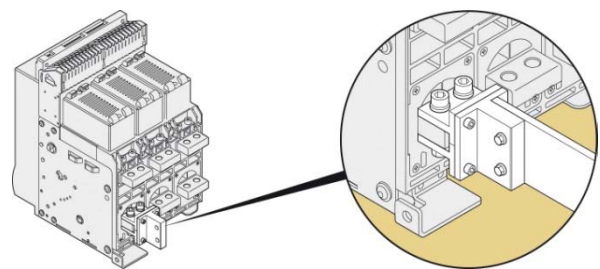


Rear terminals for fixed version – Vertical connection

References	
3P	4P
0 288 82	0 288 83



Mounting example:



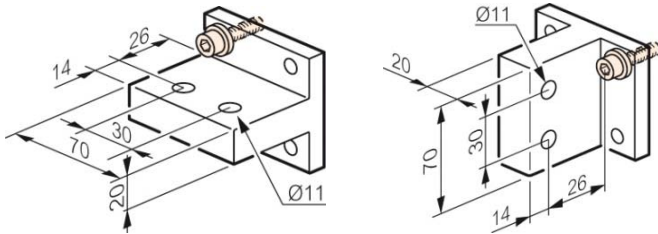
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

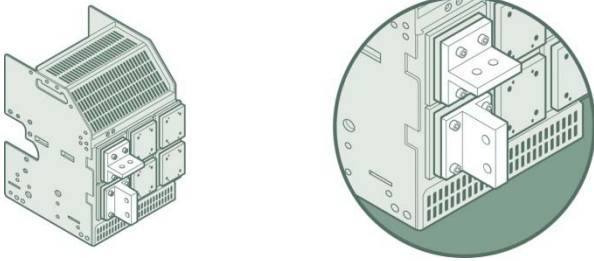
Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

Rear terminals for Draw-out version – Flat/vertical connection

References	
3P	4P
0 288 96	0 288 97

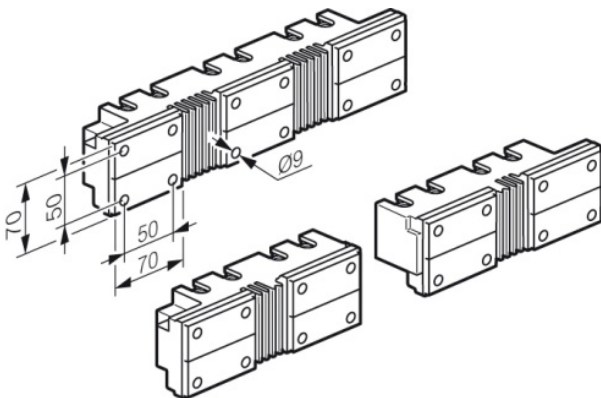


Mounting example:



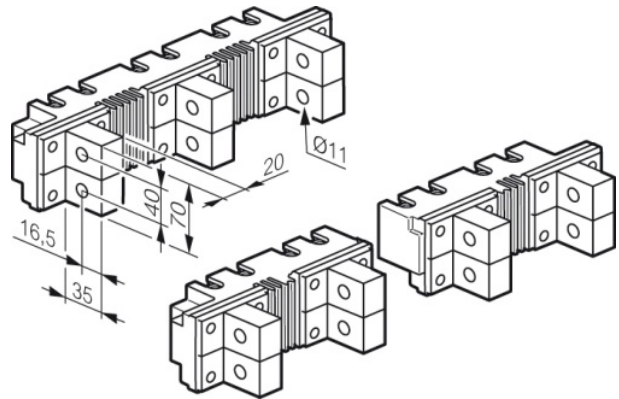
Spreaders for fixed version – Flat connection

References	
3P	4P
0 288 86	0 288 87



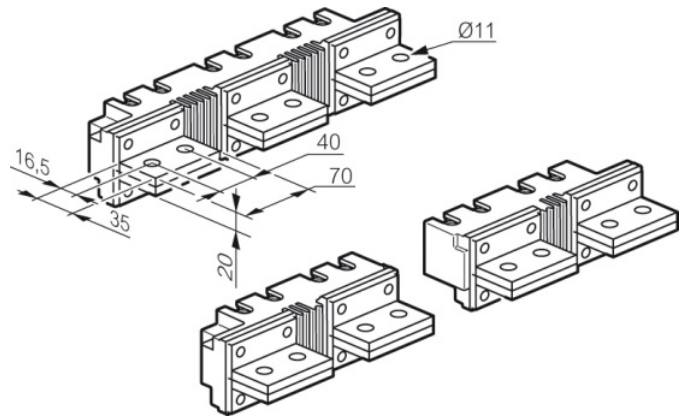
Spreaders for fixed version – Vertical connection

References	
3P	4P
0 288 88	0 288 89



Spreaders for fixed version – Horizontal connection

References	
3P	4P
0 288 90	0 288 91



DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

4. OVERVIEW

4.1 Equipped with

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

- Fixed version: equipped with rear terminals for horizontal connections with bars.
- Draw-out version: equipped with flat rear terminals for connections with bars and delivered with base equipped with extraction crank and phase insulators.

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

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 50 x 5
1000	1 bar 60 x 10 / 2 bars 60 x 5	1 bar 60 x 10 / 2 bars 60 x 5
1250	1 bar 80 x 10 / 2 bars 80 x 5	1 bar 80 x 10 / 2 bars 80 x 5
1600	2 bars 50 x 10	2 bars 50 x 10
2000	3 bars 50 x 10	3 bars 50 x 10
2500	3 bars 80 x 10	4 bars 80 x 10 / 5 bars 60 x 10

Draw-out version

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 50 x 5
1000	2 bars 60 x 5	2 bars 60 x 5
1250	2 bars 80 x 5	2 bars 80 x 5
1600	2 bars 50 x 10	2 bars 50 x 10
2000	3 bars 50 x 10	3 bars 50 x 10
2500	3 bars 80 x 10	4 bars 80 x 10

Minimum cross section of ALUMINIUM busbars per pole:

Fixed version

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	2 bars 60 x 10
1250	2 bars 60 x 10	4 bars 50 x 10
1600	4 bars 50 x 10	4 bars 60 x 10
2000	4 bars 60 x 10	4 bars 80 x 10
2500	4 bars 100 x 10	5 bars 100 x 10

Draw-out version

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	2 bars 60 x 10
1250	2 bars 60 x 10	4 bars 50 x 10
1600	4 bars 50 x 10	4 bars 60 x 10
2000	4 bars 60 x 10	4 bars 80 x 10
2500	4 bars 100 x 10	5 bars 100 x 10

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Electrical data refers to IEC/EN 60947-2 standard

	DMX-SP 2500		
	42 kA	50 kA	
Frame current (A)	2500		
Number of poles	3P - 4P		
Rated current I _n (A)	630/800/1000/1250/1600/2000/2500		
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
Rated short-circuit breaking capacity on IT system I _{IT} (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	22	
	3P - Drawout ⁽²⁾	44	
	4P - Fixed	27	
	4P - Drawout ⁽²⁾	54	
Height (mm)	3P - Fixed	321	
	3P - Drawout	357	
	4P - Fixed	321	
	4P - Drawout	357	
Depth (mm)	3P - Fixed	217	
	3P - Drawout	378	
	4P - Fixed	217	
	4P - Drawout	378	
Width (mm)	3P - Fixed	321	
	3P - Drawout	351	
	4P - Fixed	406	
	4P - Drawout	436	
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

Switch disconnector

Electrical data refers to IEC/EN 60947-3 standard

		DMX-SP-I 2500
Frame current (A)		2500
Number of poles		3P - 4P
Rated current I _e (A)		630/800/1000/1250/1600/2000/2500
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
	480 / 550 V AC	88
	600 V AC	88
Rated short time withstand current I _{sw} (kA) for t = 1s	220 / 240 V AC	50
	380 / 415 V AC	50
	480 / 500 V AC	50
	480 / 550 V AC	42
	600 V AC	42
	690 V AC	42
Rated short time withstand current I _{sw} (kA) for t = 3s	220 / 240 V AC	25
	380 / 415 V AC	25
	480 / 500 V AC	25
	480 / 550 V AC	25
	600 V AC	25
	690 V AC	25
Suitable for insulation		Yes
Endurance (cycles)	mechanical	5000 (w/o maint.); 10000 (with maint.)
	electrical	3000 (w/o maint.)
Weight (Kg)	3P - Fixed	20
	3P - Drawout ⁽¹⁾	42
	4P - Fixed	24
	4P - Drawout ⁽¹⁾	51
Height (mm)	3P - Fixed	321
	3P - Drawout	357
	4P - Fixed	321
	4P - Drawout	357
Depth (mm)	3P - Fixed	217
	3P - Drawout	378
	4P - Fixed	217
	4P - Drawout	378
Width (mm)	3P - Fixed	321
	3P - Drawout	351
	4P - Fixed	406
	4P - Drawout	436
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

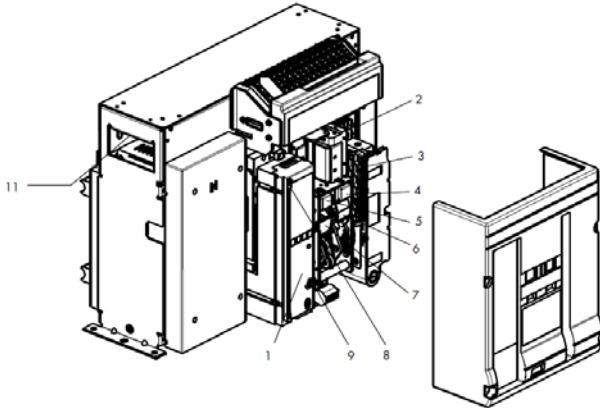
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

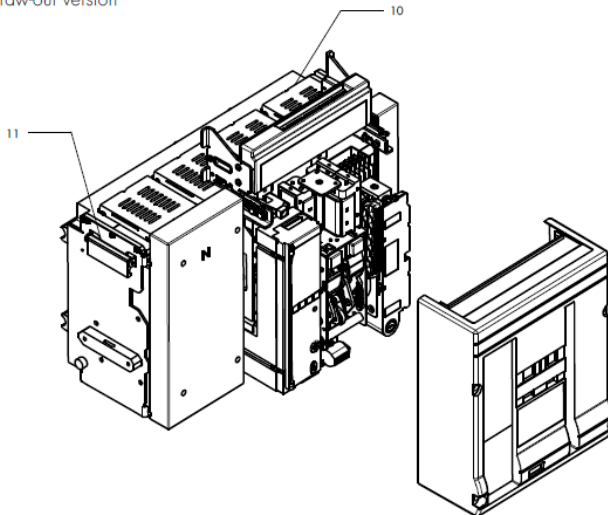
Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

6.1 Main parts constituting the circuit breaker

Fixed version

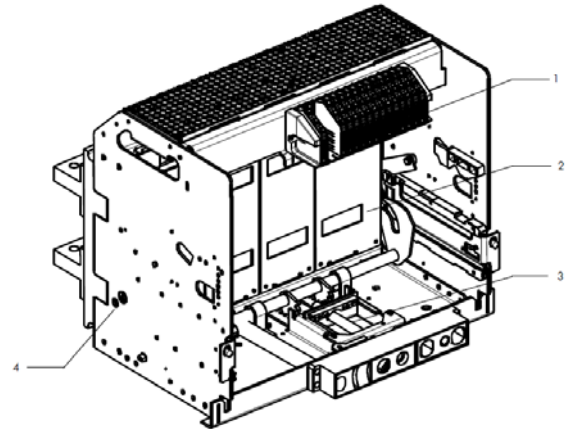


Draw-out version



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

Base
Draw-out version



1. Aux terminal block
2. Safety shutter
3. Draw-out mechanism
4. Ground connection

6.2 Adjustment ranges

	Phases			
	I_r		I_{sd}	
I_n (A)	$0.4 \times I_n$	$1 \times I_n$	$1.5 \times I_r$ min	$10 \times I_r$ 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
2000	800	2000	1200	20000
2500	1000	2500	1500	25000

* 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 DMX-SP and DMX-SP-I

Version	Power Losses (W)	
	Fixed	Draw-out
Rated current I_n (A) and I_e (A)	630	6.38
	800	10.23
	1000	15.95
	1250	24.97
	1600	40.81
	2000	63.8
2500	99.66	144.43

Note: power loss in the table above are referred and measured as described in the standards IEC 60947-2 (Annex G) for circuit-breakers and IEC 60947-1 for switches. Values in the table are referred to a single phase.

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

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 DMX-SP 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-SP 2500 Fixed version	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	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1552	0.97
	2000	1	2000	1	1940	0.97	1840	0.92	1860	0.88
	2500	1	2000	1	2350	0.94	2250	0.9	2150	0.86

Temperature deratings for DMX-SP 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-SP 2500 Draw-out version	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	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1552	0.97	1488	0.93
	2000	1	1920	0.96	1840	0.92	1860	0.88	1660	0.83
	2500	1	2400	0.96	2250	0.9	2100	0.84	1950	0.78

Temperature deratings for DMX-SP-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-SP-I 2500 Fixed version	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	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1552	0.97
	2000	1	2000	1	1940	0.97	1840	0.92	1860	0.88
	2500	1	2000	1	2350	0.94	2250	0.9	2150	0.86

Temperature deratings for DMX-SP-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-SP-I 2500 Draw-out version	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	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1552	0.97	1488	0.93
	2000	1	1920	0.96	1840	0.92	1860	0.88	1660	0.83
	2500	1	2400	0.96	2250	0.9	2100	0.84	1950	0.78

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 DMX-SP 2500 according to IEC/EN 60947-2 Annex F.

6.4.3 Altitude

Altitude derating for DMX-SP and DMX-SP-I

Altitude (m)	< 2000	3000	4000	5000
Rated current (A)	I_n	$0.93 \times I_n$	$0.88 \times I_n$	$0.82 \times I_n$
Rated voltage U_e (V)	690	600	500	440
Rated insulation voltage U_i (V)	1000	900	750	600

6.5 Electronic protection unit

All DMX-SP 2500 can be equipped by an MP4 or MP2 electronic protection unit which main characteristics are:

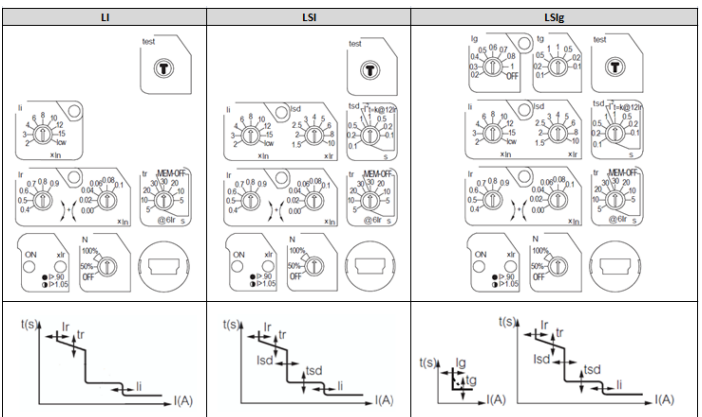
- Adjustments accomplished by selector switches
- Long delay (I_r) threshold based on true RMS value of the current
- Integrated LCD screen display electrical values, settings and logs (only for MP4 release)

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 ($t=k$)
- t_{sd} : inverse short time delay ($I^2t=k$)
- I_i : 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 ($I^2t=k$)

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

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÷30s	5÷30s	5÷30s	at $6 \times I_r$, MEM ON (5-10-20-30s)
	5÷30s	5÷30s	5÷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÷1s	0.1÷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÷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 ÷ +55

- Communication option ref. 0 281 70
- External neutral for DMX-SP 2500 ref. 6 669 05
- Programmable output option ref. 0 281 99

7. CONFORMITY

DMX-SP 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.

DMX-SP are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

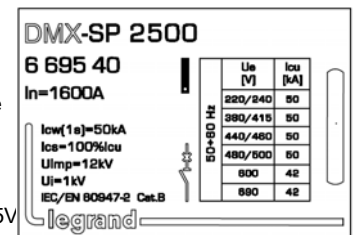
DMX-SP respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

7.1 MARKING

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

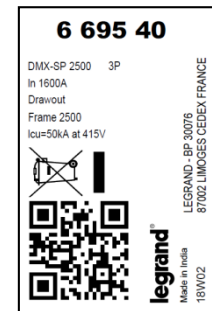
Product laser label on front

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



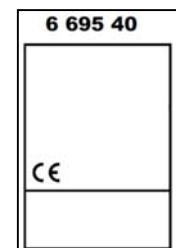
Product sticker label on side

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



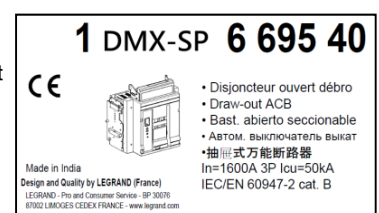
Mark sticker label on side

- 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



DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

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

- Motor operators

To motorize a DMX-SP, 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

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

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 Other accessories

- Mechanical counter: to count number of operation cycles of device ref. 0 281 88
- Inserted/test/drawout lock button ref. 6 696 08
- External neutral ref. 6 696 05
- Power Supply 230V AC input ref. 0 281 72
- Rating mis-insertion device ref. 0 281 89
- Programmable output option ref. 0 281 99
- Communication option for protection units ref. 0 281 70

8.5 Fixing devices for DMX-SP 2500 and DMX-SP-I 2500

Specific instruction sheets are provide to integrate DMX-SP and DMX-SP-I 2500 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 or 3 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 DMX-SP 2500 ref. 0 281 90

8.8 Insulating shields

- Phase insulators for fixed version
- 3P ref. 6 696 00
 - 4P ref. 6 696 01
- Phase insulators for draw-out version
- 3P ref. 6 696 02
 - 4P ref. 6 696 03

8.9 Draw-out bases

- Bases for draw-out version
- 3P ref. 6 696 10
 - 4P ref. 6 696 11

8.10 Spreaders for DMX-SP 2500 fixed version

To be fixed onto horizontal rear terminals of the circuit breaker

- For flat connections with bars, 3P ref. 0 288 86
- For flat connections with bars, 4P ref. 0 288 87
- For vertical connections with bars, 3P ref. 0 288 88
- For vertical connections with bars, 4P ref. 0 288 89
- For horizontal connections with bars, 3P ref. 0 288 90
- For horizontal connections with bars, 4P ref. 0 288 91

8.11 Rear terminals

- For fixed version
- For flat connections with bars, 3P ref. 0 288 84
For flat connections with bars, 4P ref. 0 288 85
For vertical connections with bars, 3P ref. 0 288 82
For vertical connections with bars, 4P ref. 0 288 83

Note 1: ref.s 0 288 84/85 to be fixed onto horizontal rear terminals of the circuit breaker

Note 2: ref.s 0 288 82/83 to are used to transform a flat connection into a vertical one. To be fixed onto ref. 0 288 84/85 according to the number of poles.

- For draw-out version
- For vertical or horizontal connections with bars, 3P ref. 0 288 96
For vertical or horizontal connections with bars, 4P ref. 0 288 97

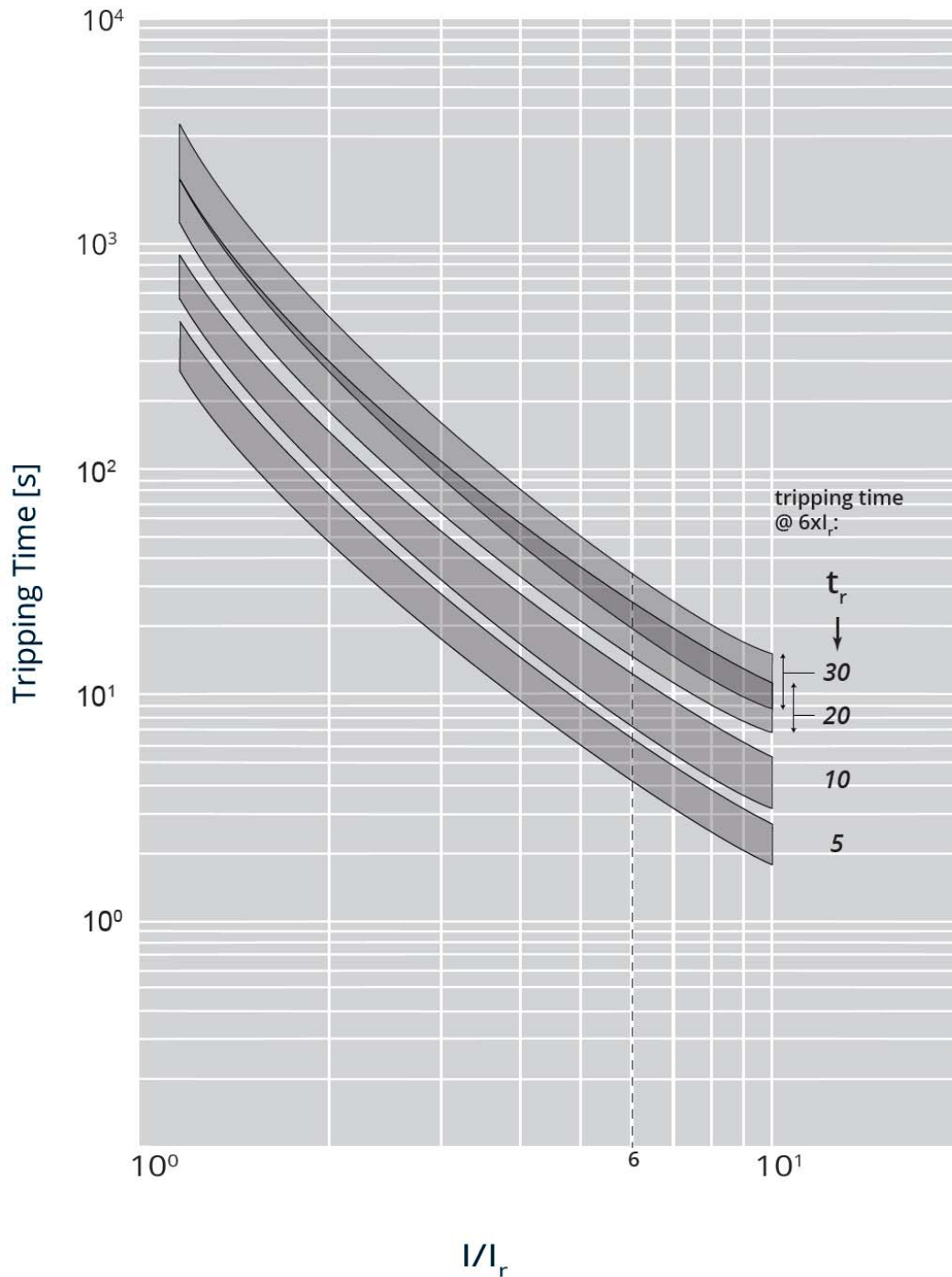
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

9. CURVES

9.1.1 TRIPPING CURVE FOR DMX-SP 2500 protection units: L – T protection detail



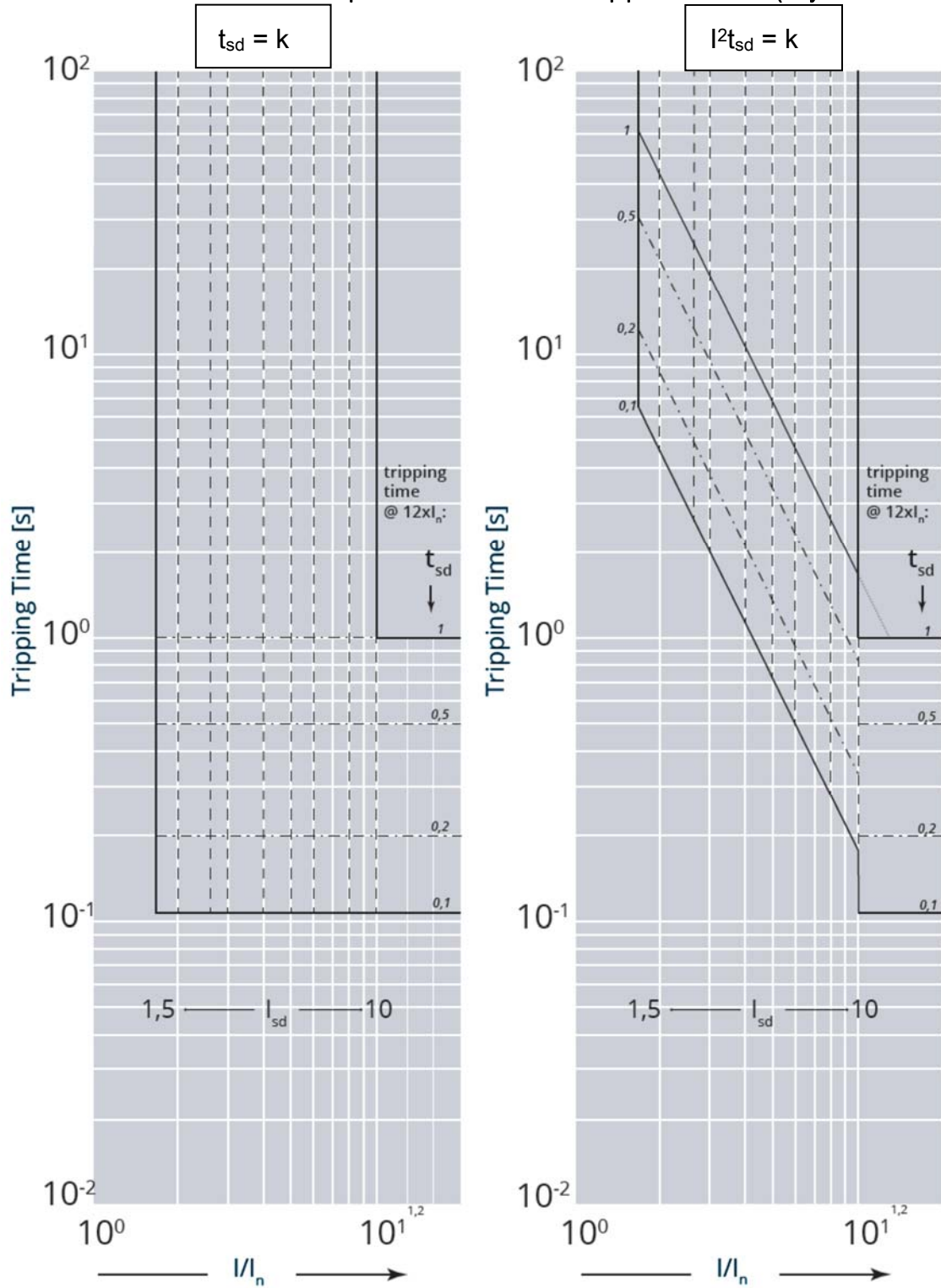
Value	Description
I	current
I_r	long time setting current
t_r	long time delay

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

9.1.2 TRIPPING CURVE FOR DMX-SP 2500 protection units: short time trip protection detail (only for LSI and LSIG)



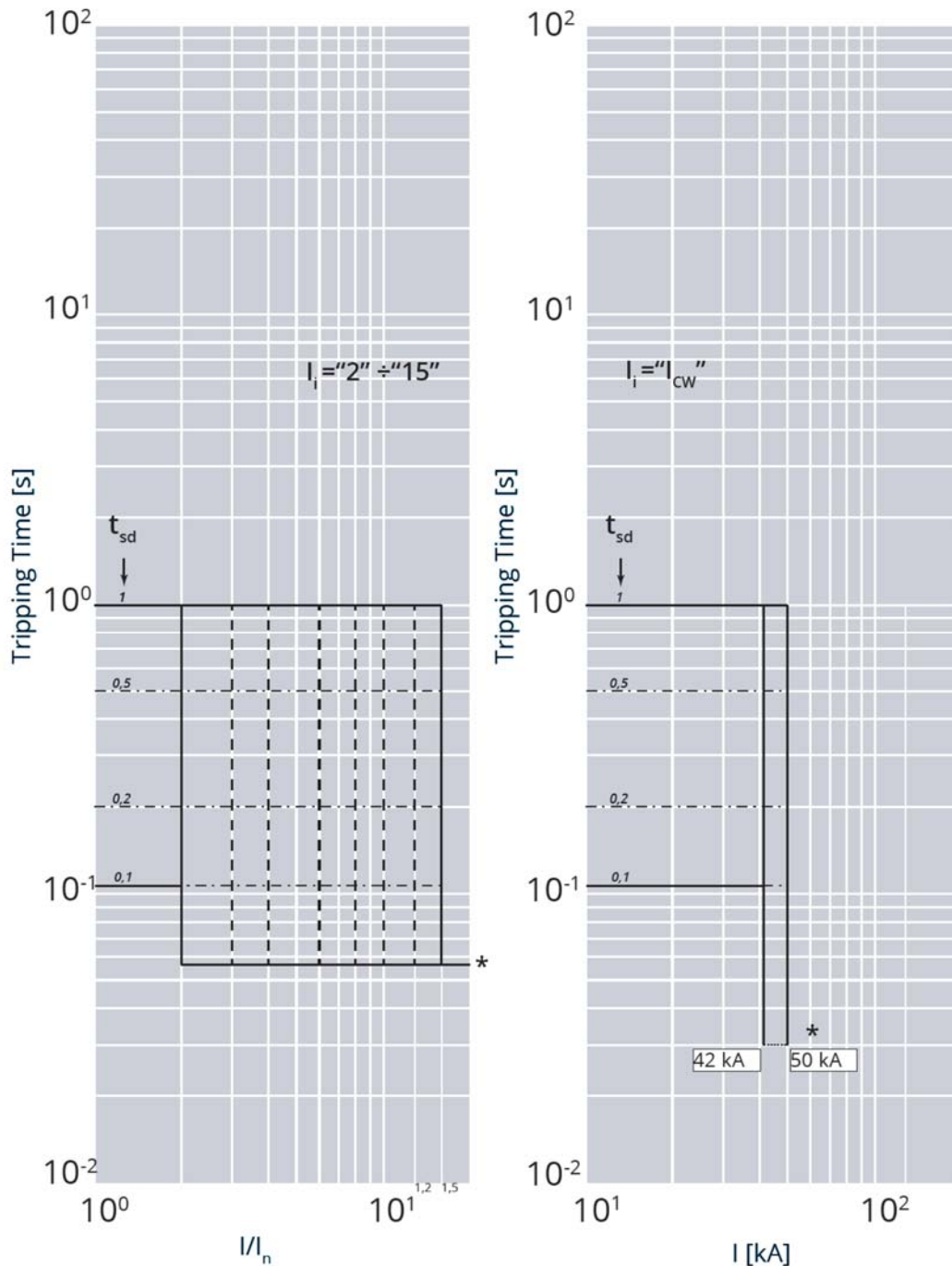
Value	Description
I	current
I_{sd}	short time setting current
t_{sd}	short time delay

DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

9.1.2 TRIPPING CURVE FOR DMX-SP 2500 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

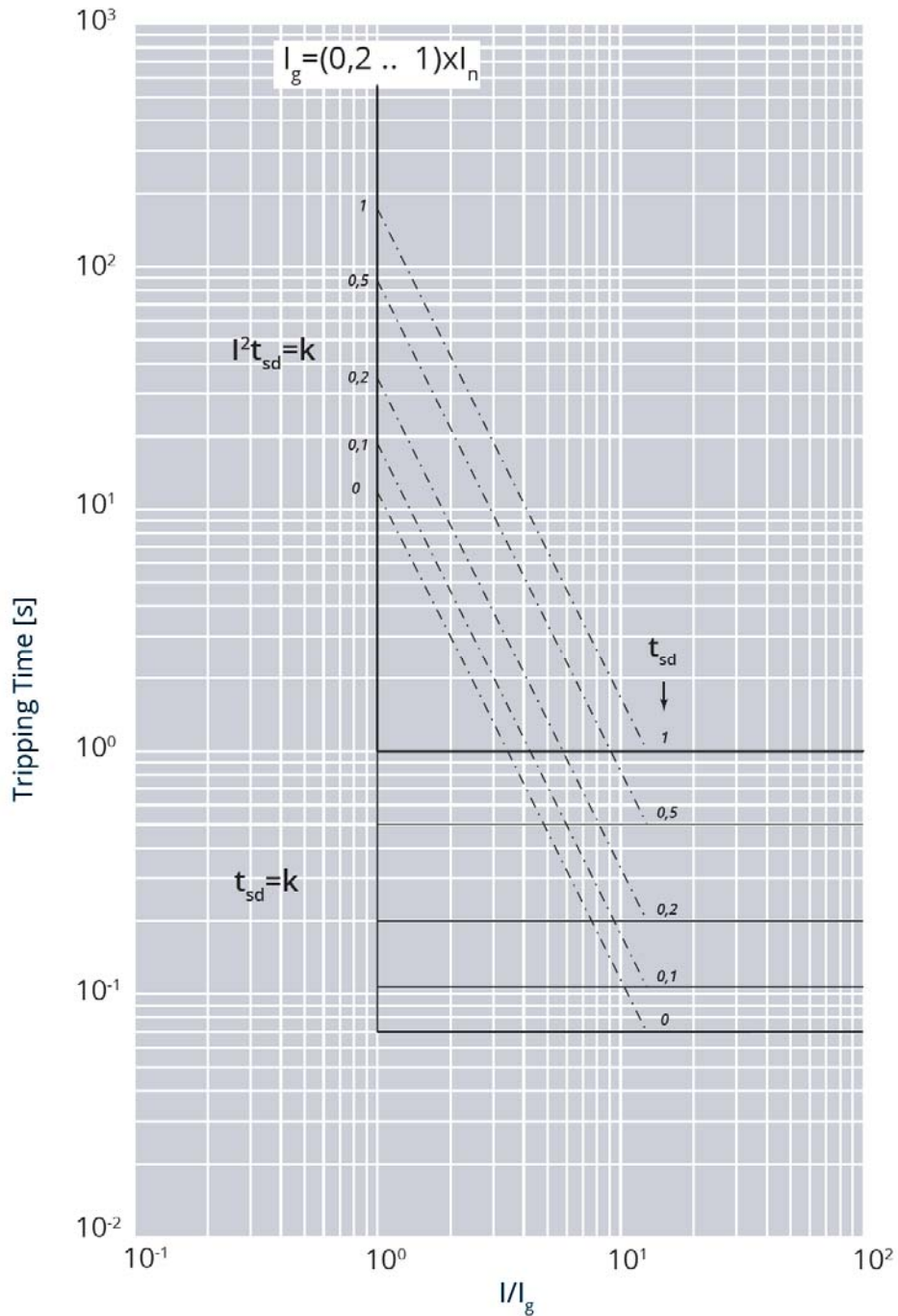
DMX-SP 2500 circuit breakers

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 / 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

9.1.3 Ground fault curve

Only LSIg release

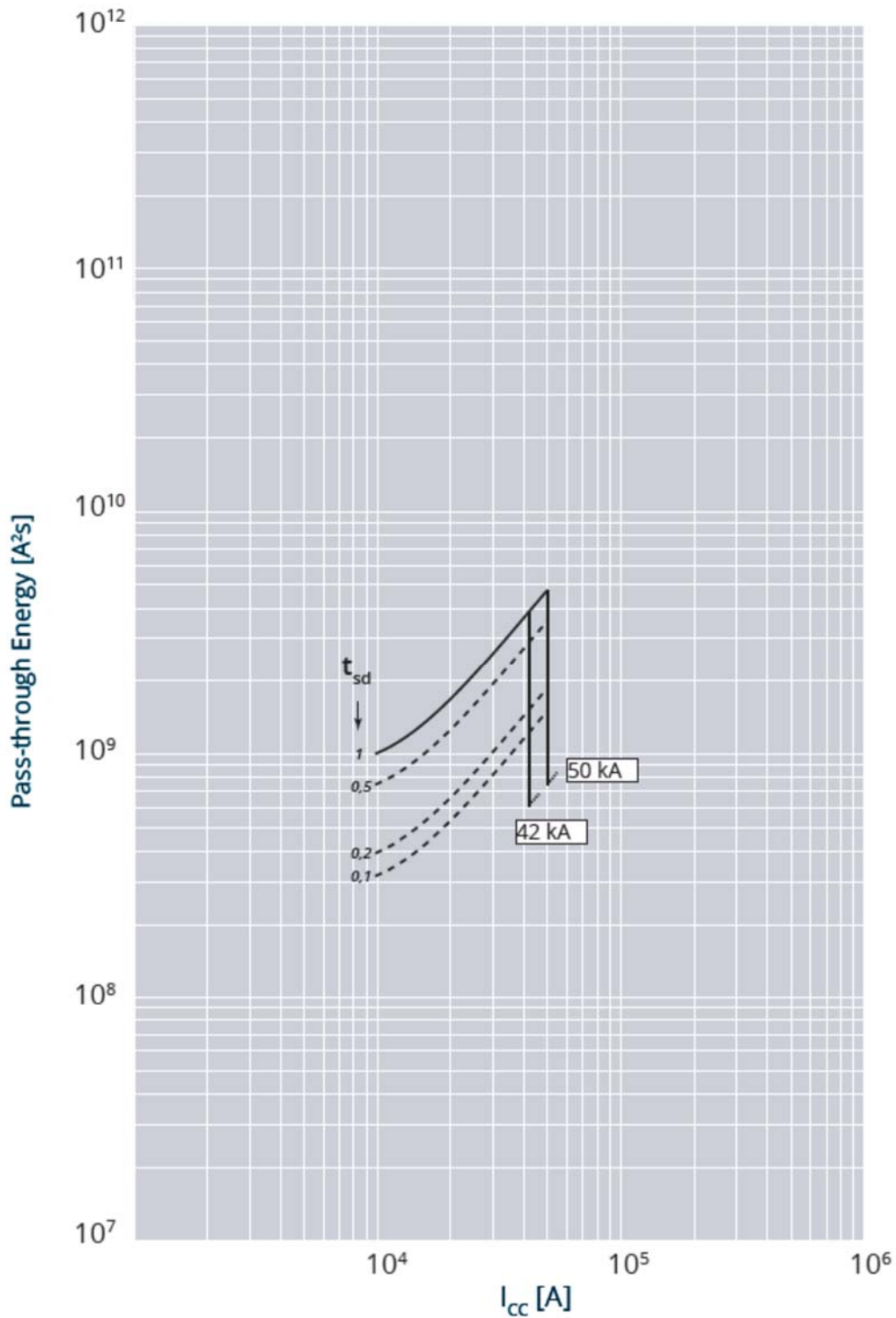


Value	Description
I	current
I_n	rated current
I_g	Ground fault current
t_{sd}	short time delay
$t_{sd} = k$	Constant tripping time setting
$I^2 t_{sd} = k$	Constant pass-through energy setting

DMX-SP 2500 circuit breakers
DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 695 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 /
 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 /
 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 /
 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 /
 55 / 56 / 57 / 58 / 59 / 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69 /
 70 / 71 / 72 / 73 / 74 / 75 / 76 / 77 / 78 / 79 / 80 / 81 / 82 / 83

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



Value	Description
t _{sd}	short time delay