

DMX-SP 2500 circuit breakers

(MP2.10 and MP4.10)

DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99



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Full technical sheet LE13032AA

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 4000A. 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 (MP2.10 and MP4.10 electronics) | | | | | | | |
|-----------|--|----------|----------|----------|----------------------|----------|----------|----------|
| | Fixed version | | | | Draw-out version (*) | | | |
| | 42kA | | 50kA | | 42kA | | 50kA | |
| I_n (A) | 3P | 4P | 3P | 4P | 3P | 4P | 3P | 4P |
| 630 | 6 702 00 | 6 702 07 | 6 702 14 | 6 702 21 | 6 702 30 | 6 702 37 | 6 702 44 | 6 702 51 |
| 800 | 6 702 01 | 6 702 08 | 6 702 15 | 6 702 22 | 6 702 31 | 6 702 38 | 6 702 45 | 6 702 52 |
| 1000 | 6 702 02 | 6 702 09 | 6 702 16 | 6 702 23 | 6 702 32 | 6 702 39 | 6 702 46 | 6 702 53 |
| 1250 | 6 702 03 | 6 702 10 | 6 702 17 | 6 702 24 | 6 702 33 | 6 702 40 | 6 702 47 | 6 702 54 |
| 1600 | 6 702 04 | 6 702 11 | 6 702 18 | 6 702 25 | 6 702 34 | 6 702 41 | 6 702 48 | 6 702 55 |
| 2000 | 6 702 05 | 6 702 12 | 6 702 19 | 6 702 26 | 6 702 35 | 6 702 42 | 6 702 49 | 6 702 56 |
| 2500 | 6 702 06 | 6 702 13 | 6 702 20 | 6 702 27 | 6 702 36 | 6 702 43 | 6 702 50 | 6 702 57 |

| | DMX-SP-I 2500 switch disconnectors | | | |
|------|------------------------------------|----------|----------------------|----------|
| | Fixed version | | Draw-out version (*) | |
| | 3P | 4P | 3P | 4P |
| 630 | 6 702 80 | 6 702 85 | 6 702 90 | 6 702 95 |
| 800 | 6 702 81 | 6 702 86 | 6 702 91 | 6 702 96 |
| 1000 | 6 702 82 | 6 702 87 | 6 702 92 | 6 702 97 |
| 1250 | 6 702 83 | 6 702 88 | 6 702 93 | 6 702 98 |
| 1600 | 6 702 84 | 6 702 89 | 6 702 94 | 6 702 99 |
| 2000 | 6 702 28 | 6 702 58 | 6 702 64 | 6 702 74 |
| 2500 | 6 702 29 | 6 702 59 | 6 702 69 | 6 702 79 |

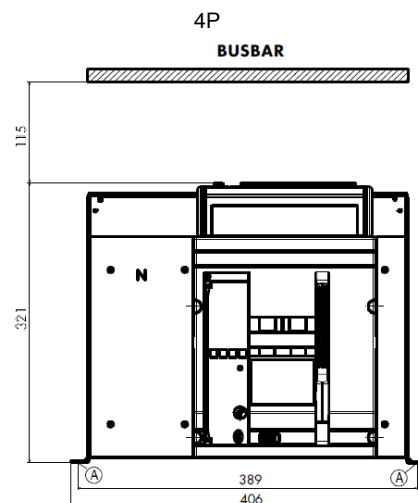
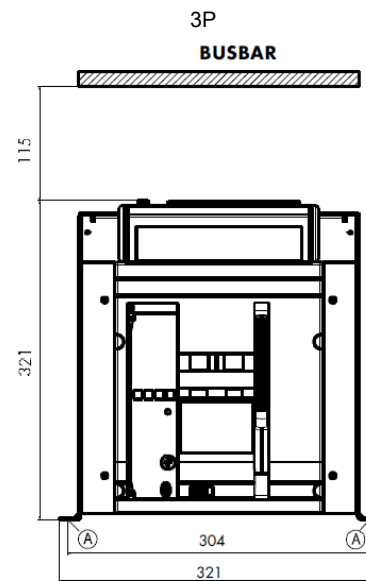
(*) Draw-out references represent only the mobile part.

To get complete device in draw-out version, 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

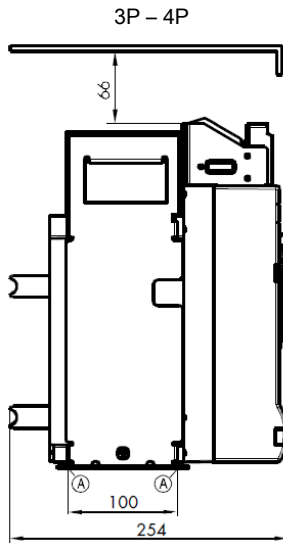
Fixed version, overall dimensions



A = fixing point on plate of enclosure

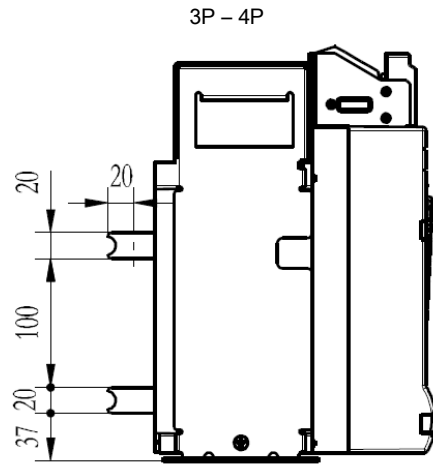
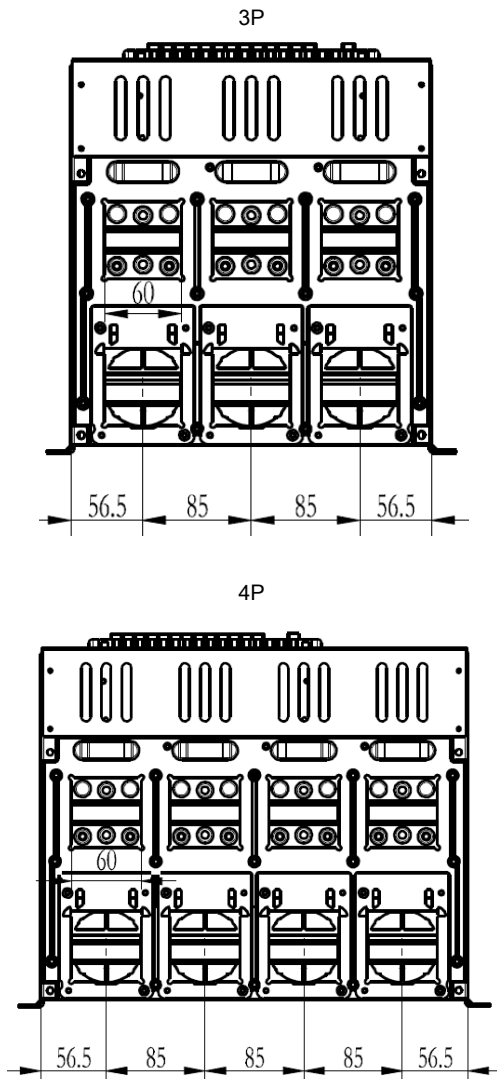
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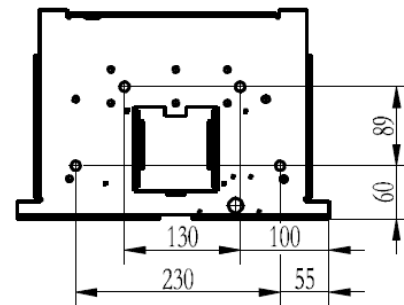
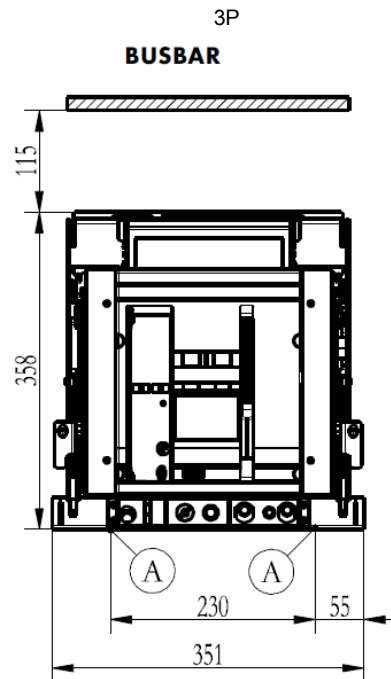


A = fixing point on plate of enclosure

Fixed version, rear terminals – horizontal connections



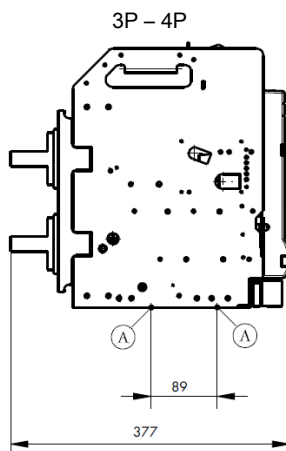
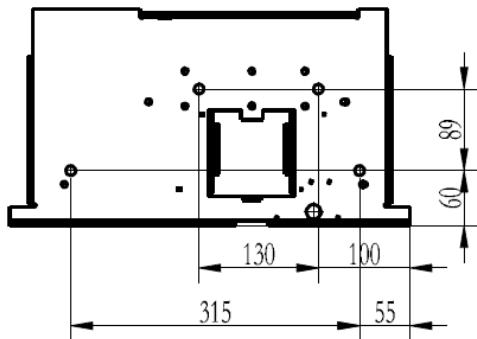
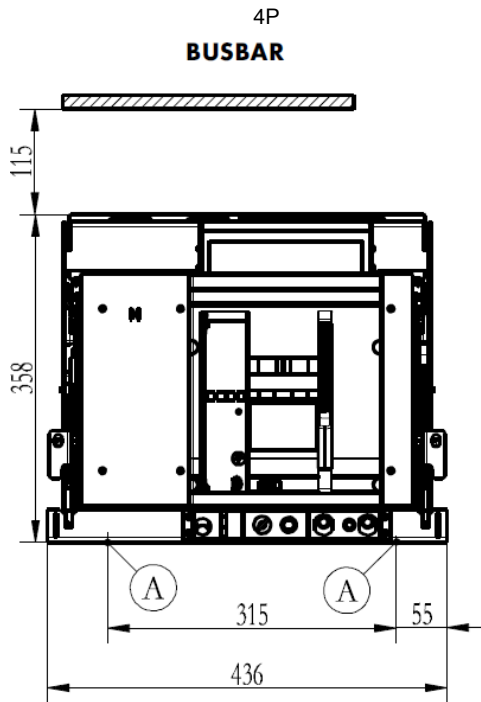
Draw-out version, overall dimensions (base + mobile part + terminals)



A = fixing point on plate of enclosure

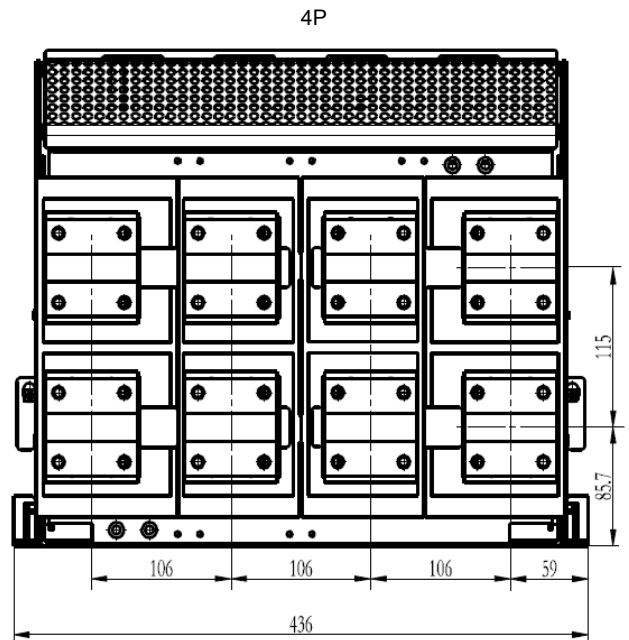
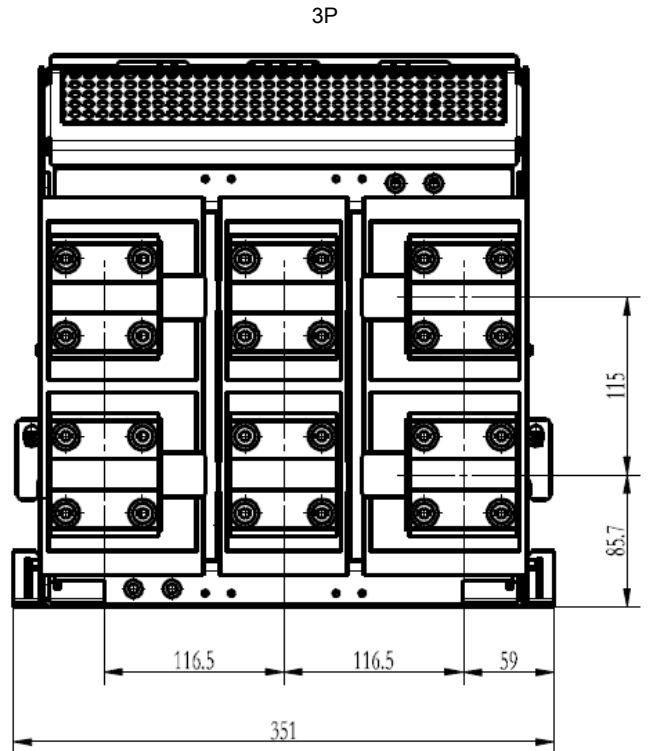
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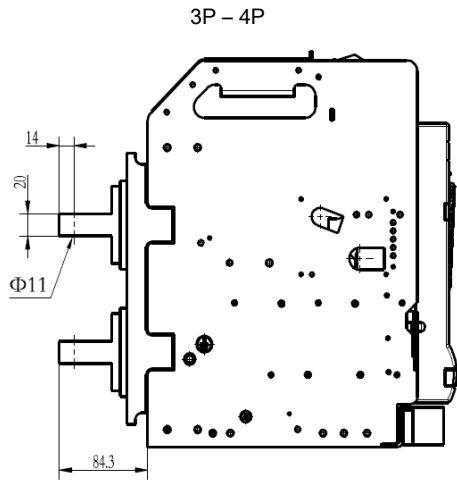
A = fixing point on plate of enclosure
(In the picture it is shown with terminals that have to be ordered separately)

Draw-out version, rear terminals – horizontal connections

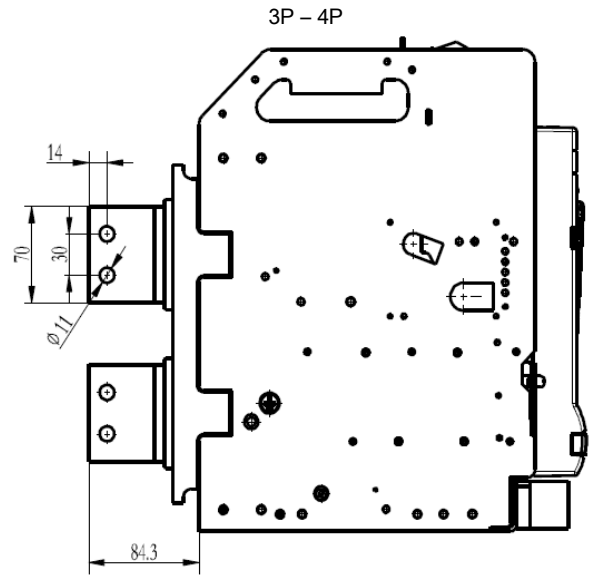


DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

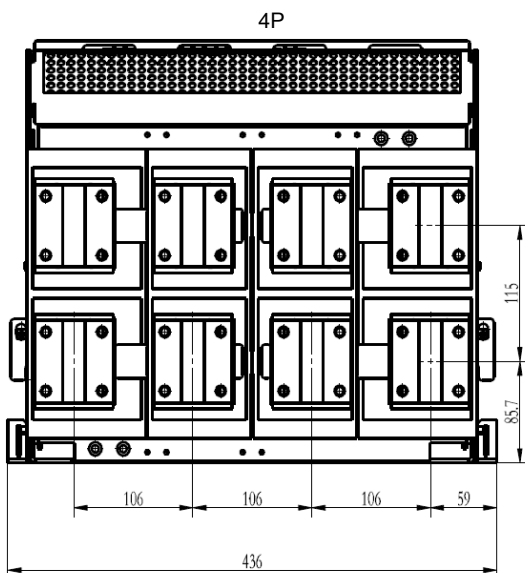
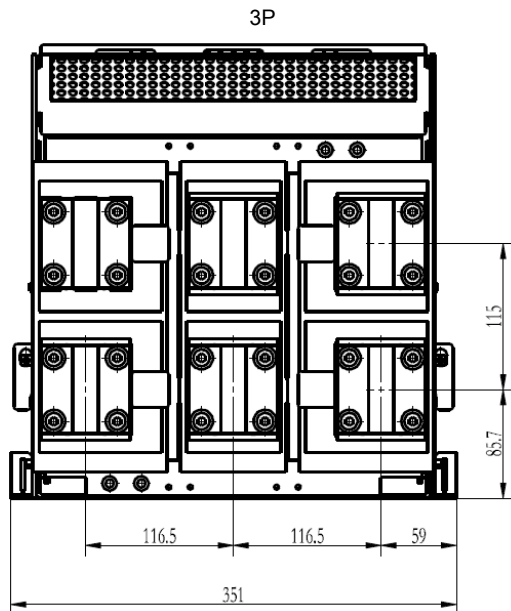
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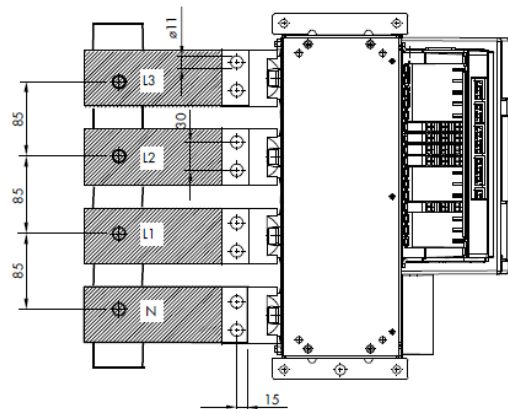
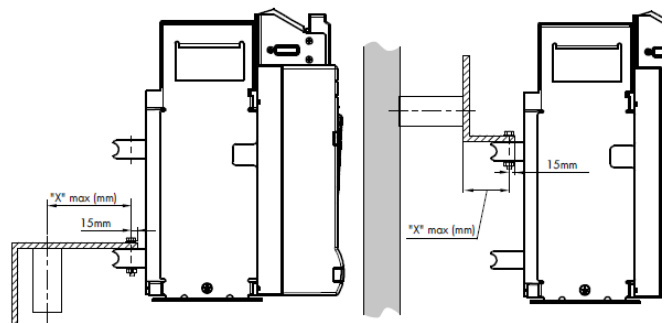
Draw-out version, rear terminals – vertical connections



Terminations support distances – Fixed version



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

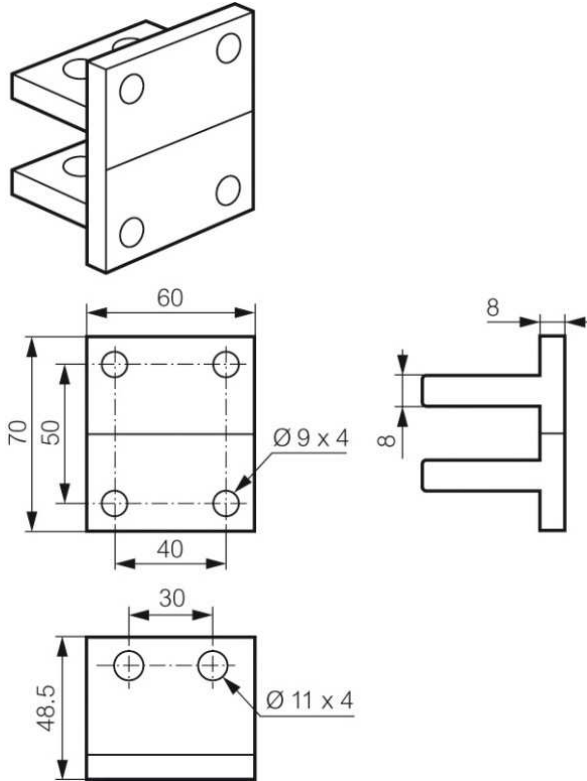


DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

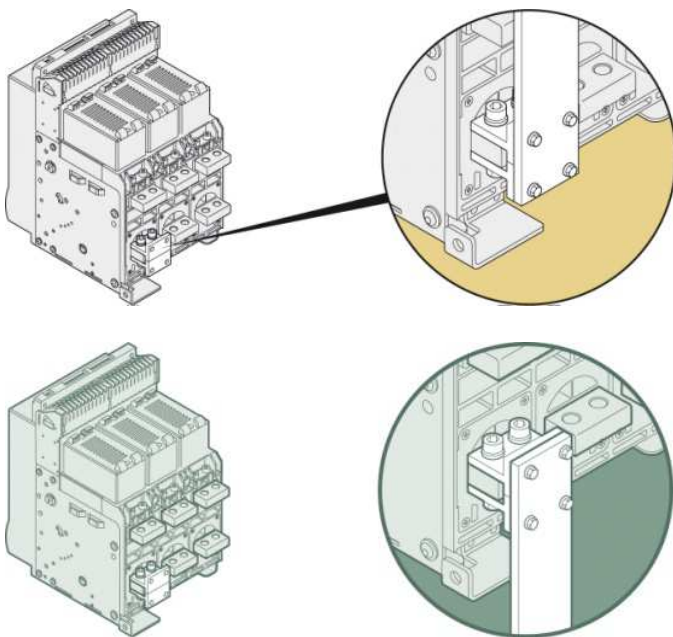
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86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

Rear terminals for fixed version – Flat connection

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 84 | 0 288 85 |

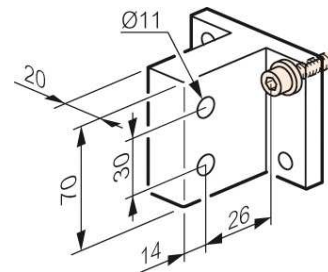
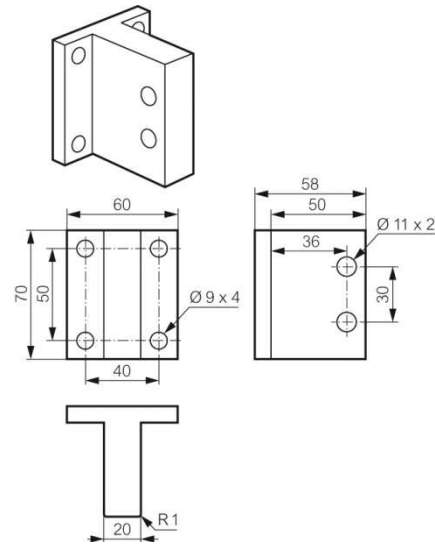


Mounting examples:

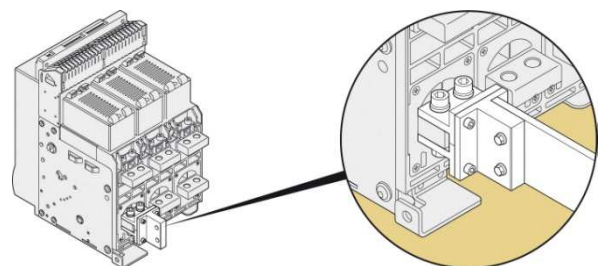


Rear terminals for fixed version – Vertical connection

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 82 | 0 288 83 |



Mounting example:

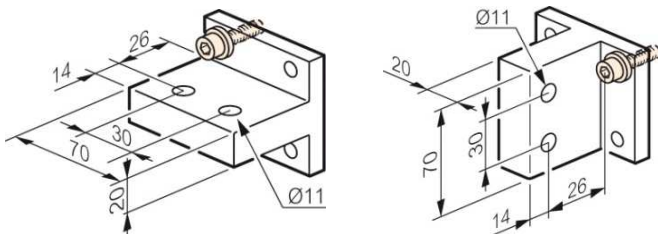


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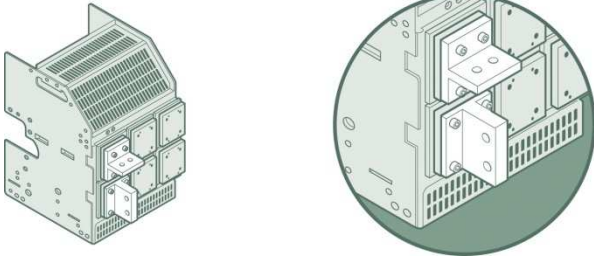
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86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

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

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 96 | 0 288 97 |

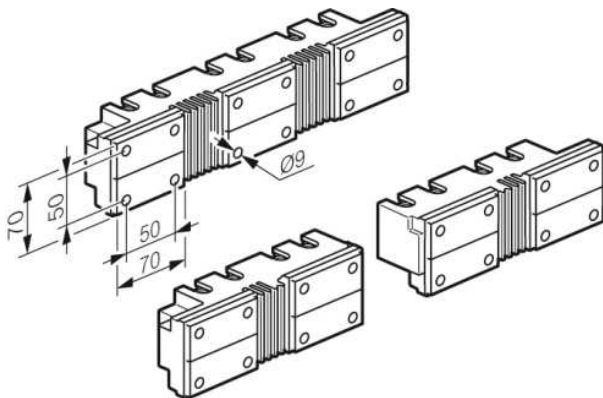


Mounting example:



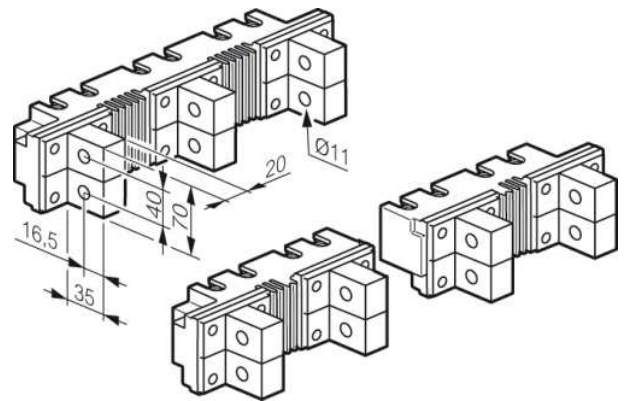
Spreaders for fixed version – Flat connection

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 86 | 0 288 87 |



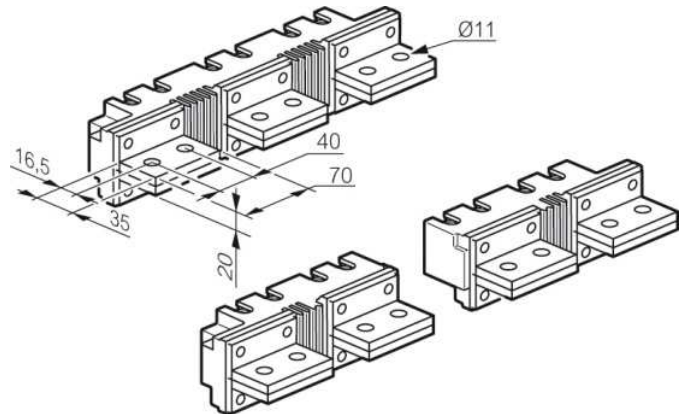
Spreaders for fixed version – Vertical connection

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 88 | 0 288 89 |



Spreaders for fixed version – Horizontal connection

| References | |
|------------|----------|
| 3P | 4P |
| 0 288 90 | 0 288 91 |



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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 horizontal fixed terminals
- Draw-out version (only mobile part): to complete with the base, to get the complete draw-out version.
- Base for draw-out version: equipped with flat terminals, for connection with bars.

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 |

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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 | | |
| Utilization Category | 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_{cw} (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_{cs} (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 | | |
| | mechanical | 5000 (w/o maint.); 10000 (with maint.) | |
| Endurance (cycles) | electrical | 3000 (w/o maint.) | |
| | 3P - Fixed | 22 | |
| Weight (Kg) | 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 devices 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_n (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 |
| Utilization Category | | 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_{cw} (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_{cs} (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 |

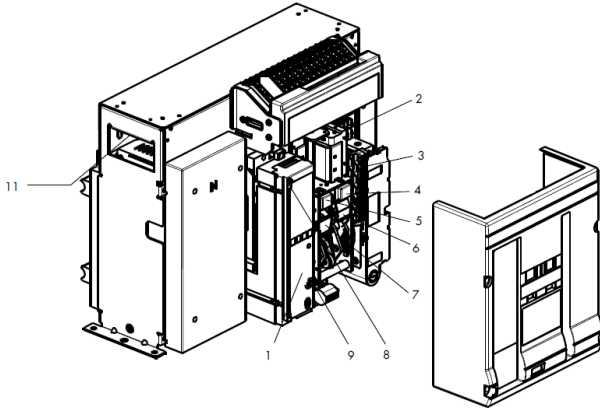
⁽¹⁾Weights for draw-out devices are to be intended with base

DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

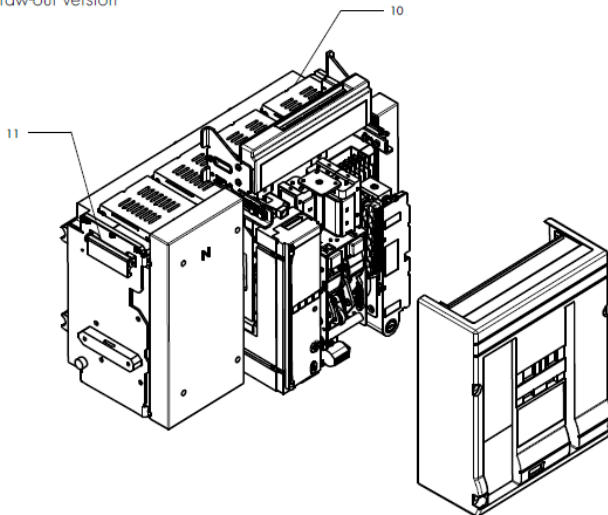
Reference(s) : 6 702 00 / 01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16 / 17 / 18 / 19 / 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29 / 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39 / 40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49 / 50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

6.1 Main parts constituting the circuit breaker

Fixed version

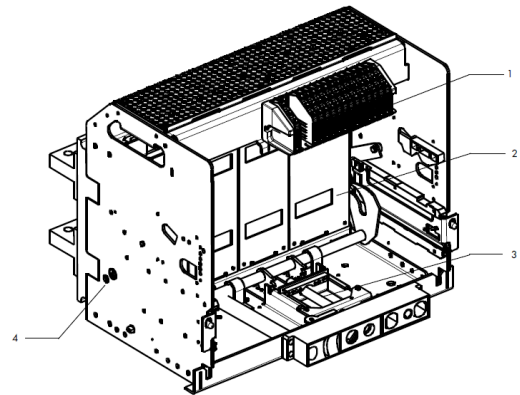


Draw-out version



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



(In the picture it is shown with terminals that have to be ordered separately)

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) | $0.2 \times I_n$ | $1 \times I_n$ | $1.5 \times I_r \text{ min}$ | $10 \times I_r \text{ max}$ |
| 630 | 126 | 630 | 378 | 6300 |
| 800 | 160 | 800 | 480 | 8000 |
| 1000 | 200 | 1000 | 600 | 10000 |
| 1250 | 250 | 1250 | 750 | 12500 |
| 1600 | 320 | 1600 | 960 | 16000 |
| 2000 | 400 | 2000 | 1200 | 20000 |
| 2500 | 500 | 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

| Power Losses (W) | | | |
|--|------|-------|----------|
| Version | | Fixed | Draw-out |
| Rated current I_n (A) and I_e (A) | 630 | 6.38 | 9.13 |
| | 800 | 10.23 | 14.74 |
| | 1000 | 15.95 | 23.1 |
| | 1250 | 24.97 | 36.08 |
| | 1600 | 40.81 | 59.18 |
| | 2000 | 63.8 | 92.4 |
| | 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 (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

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 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 |

6.5 Electronic protection unit

All DMX-SP 2500 can be equipped by an MP2.10 or MP4.10 electronic protection unit which main characteristics are:

- Integrated LED matrix screen to show electrical values and settings (MP2.10) or Integrated LCD screen for displaying electrical values, settings and log (MP4.10)
- Adjustment via rotating encoder
- Adjustment of I_r, t_r, I_{sd}, t_{sd}, I_i, I_g and t_g
- Possibility to enable/disable protections
- Measure and display instantaneous, maximum and average values of different electrical values and protection conditions, fault signaling and log (for versions with measure)
- Equipped with batteries for powering in case of mains fault or when the breaker is open or not connected (MP4.10)

All protection units have onboard a mini USB type "B" socket for maintenance purposes or PCS software connection to PC

6.5.1 Protection unit types

Protection unit are available in MP2.10 and MP4.10 type as following

| Type | Features | | Reference |
|--------|------------|--------------|--------------|
| | display | with measure | |
| MP2.10 | LED matrix | NO | 0 283 00 |
| | | YES | 0 283 01 (*) |
| MP4.10 | LCD screen | NO | 0 283 02 |
| | | YES | 0 283 03 (*) |

(*) For the correct working of metering function, it's necessary to connect a CX³ EMS power supply module ref. 4 149 45

Protective functions

I_r : Long time delay protection against overloads

From 0.2 to 1 x I_n with steps of 1A

Protection: ON/OFF

t_r : Long delay protection operation time

From 40ms to 30 s (@6Ir) with steps of 40ms

Thermal memory: ON/OFF

I_{sd} : Short time delay protection against short-circuits

From 1.5 to 10 x I_r with steps of 1A

Protection: ON/OFF

t_{sd} : Short time delay protection operation time

From 40ms to 1 s with steps of 40ms

(both t=k, independent time delay, and I²t=k, inverse short time delay)

I_i : Instantaneous protection against very high short-circuits

From 2 to 15 x I_n or I_{cw} with steps of 1A

Protection: ON/OFF

I_g : Earth fault current

From 0.2 to 1 x I_n with steps of 1A

DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

Protection: ON/OFF

t_d : Time delay on earth fault tripping

From 80ms to 1s with steps of 40ms
(both $t=k$, independent time delay, and $I^2t=k$, inverse short time delay)

IN : Neutral protection

OFF - 50% - 100% - 200%

6.5.2 Configuration

Protection units MP2.10 and MP4.10 are fully configurable and can be configured in complete freedom.

They can be used to adapt settings as closely as possible to the requirements of the specific installation, either by enabling/disabling the different protection devices (currents and tripping times), or by altering the different trip thresholds.

The tripping curve is thus fully customised to suit the real-life conditions of each project.

Protection units with integrated measurement function can also be used to display voltages, active and reactive powers, frequency, power factor, and also energy, in addition to monitoring currents.

Alarms can be programmed on a number of these parameters: max. voltage, min. voltage, voltage unbalance, max. and min. frequency, etc.

6.6 Common accessories for protection units

- Bluetooth communication key ref. 0 283 10
USB key for Bluetooth communication with DMX-SP protection unit, needed to monitor and manage (test and report) the DMX-SP protection units through EnerUp + Project App USB connection port on front of protection unit.

- Power supply module ref. 4 149 45
500 mA 12V DC stabilized power supply module for CX³ energy management system – 1 DIN module.

To use for correct use of protection units with measure function (ref. 0 283 01 and 0 283 03)

- Communication interface ref. 4 149 40
RS485 / CX3 energy management system conversion
Consumption: 0.344 W - 28.7 mA (12 V DC) – 1 DIN module

- External neutral for DMX-SP 2500 ref. 6 696 20
Optional accessories, to be ordered when ordering electronic protection unit and DMX-SP air circuit breakers for factory assembly

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.

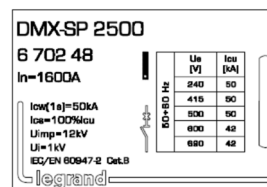
DMX-SP respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

7.1 MARKING

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

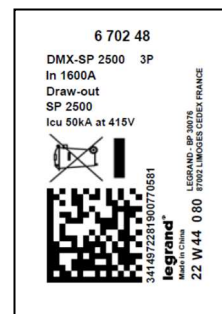
Product laser label on front

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



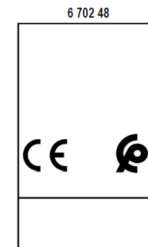
Product sticker label on side

- 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 (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

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 (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

8.3 Locking

Universal key locks

To be used in combination with key locking support ref. 0 281 91

- Key barrel and flat key with random mapping ref. 4 238 80
- Key barrel and flat key with fixed mapping EL43525 ref. 4 238 81
- Key barrel and flat key with fixed mapping EL 43363 ref. 4 238 82
- Key barrel and star key with random mapping ref. 4 238 83

- Key locking support in "open" or "draw-out" position ref. 0 281 91
To be equipped with universal keylocks ref. 4 238 80/81/82/83

- Door locking

Prevents opening of the door with the circuit breaker closed

Left-hand and right-hand side mounting ref. 0 281 84

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
- Rating mis-insertion device ref. 0 281 89

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 (all DMX-SP 2500) 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

8.7 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

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

Aluminium rear terminals:

- for 3P ref. 6 696 18
- for 4P ref. 6 696 19

Maximum rating 1600A

On fixed version, they must be fixed onto refs. 0 288 86 / 87

On draw-out version, they must be fixed directly onto plate rear terminal of the circuit breaker

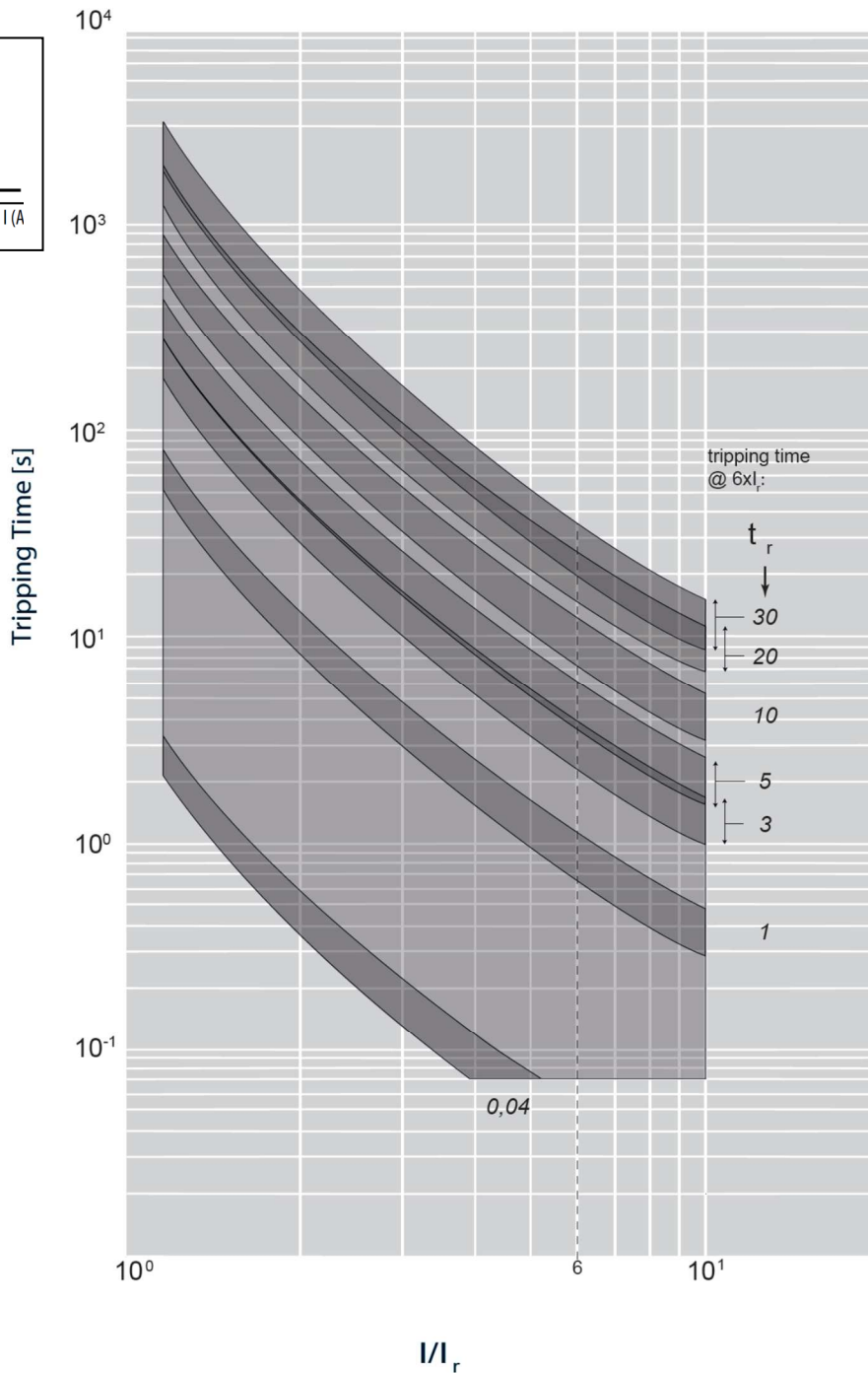
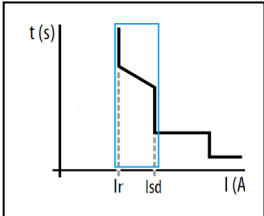
DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9. CURVES

9.1 TRIPPING CURVE FOR DMX-SP 2500 MPx.10 protection units: L – T protection detail

Updated: 14/10/2022



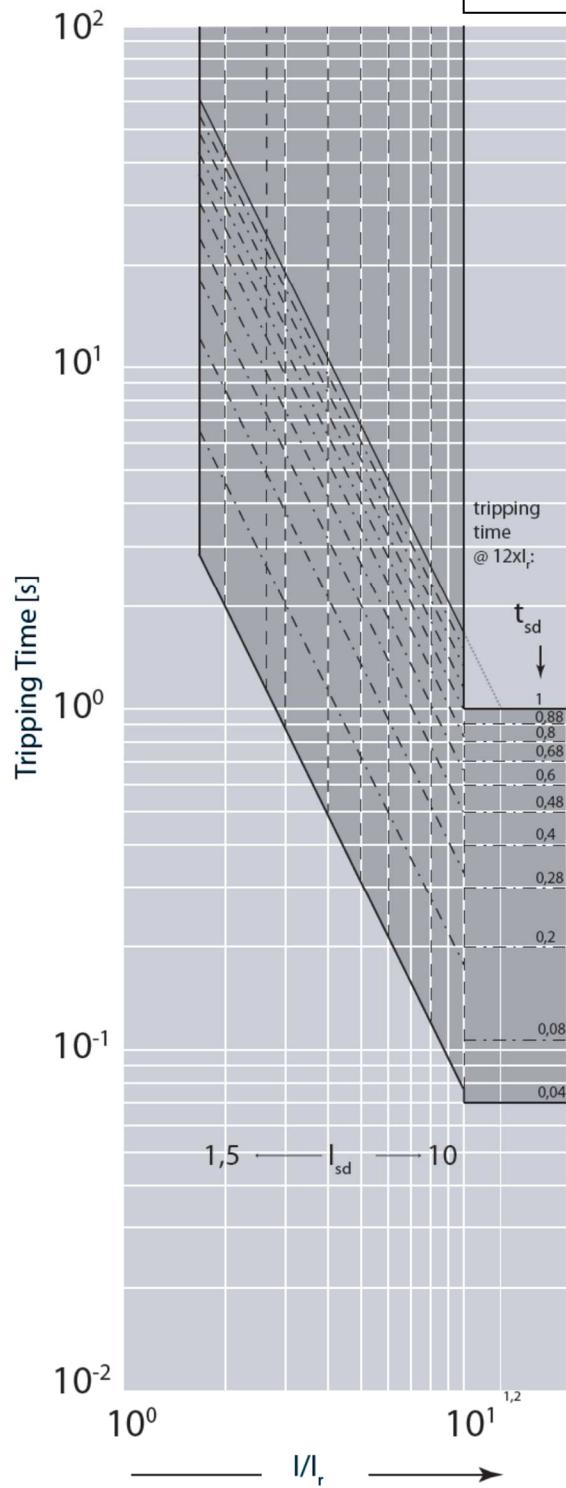
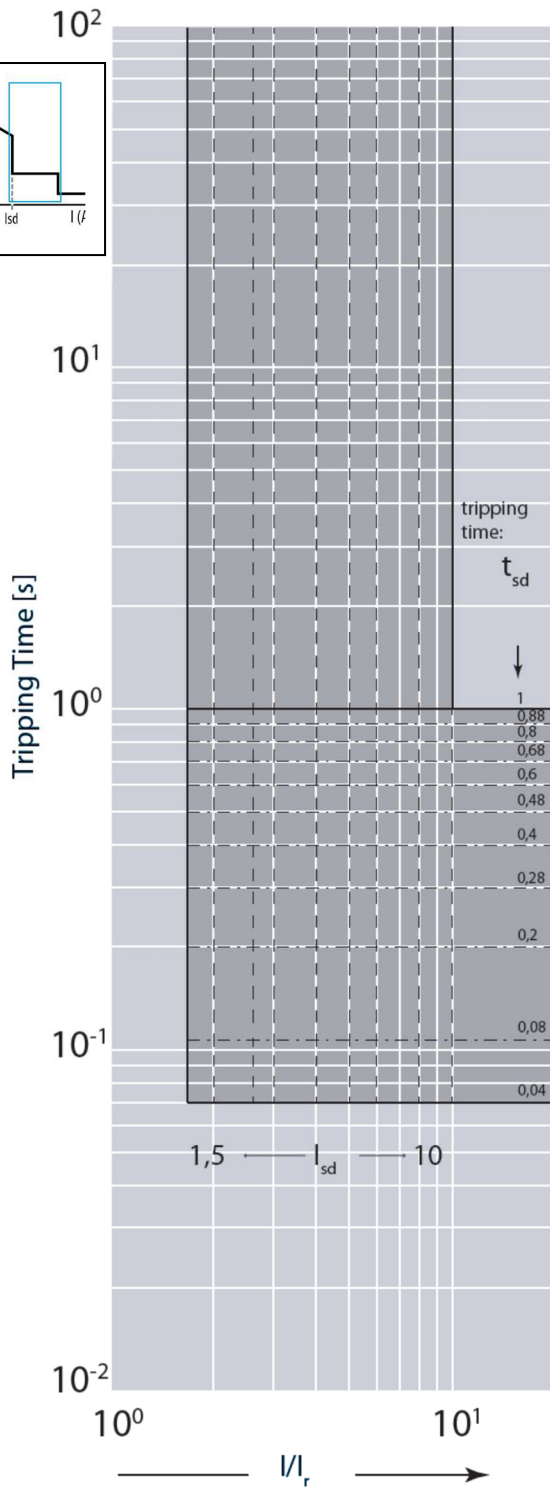
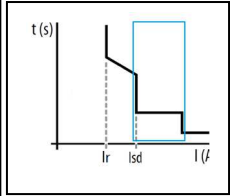
| Value | Description |
|-------|---------------------------|
| I | current |
| I_r | long time setting current |
| t_r | long time delay |

DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.2 TRIPPING CURVE FOR DMX-SP 2500 MPx.10 protection units: short time trip protection detail

Updated: 17/11/2022



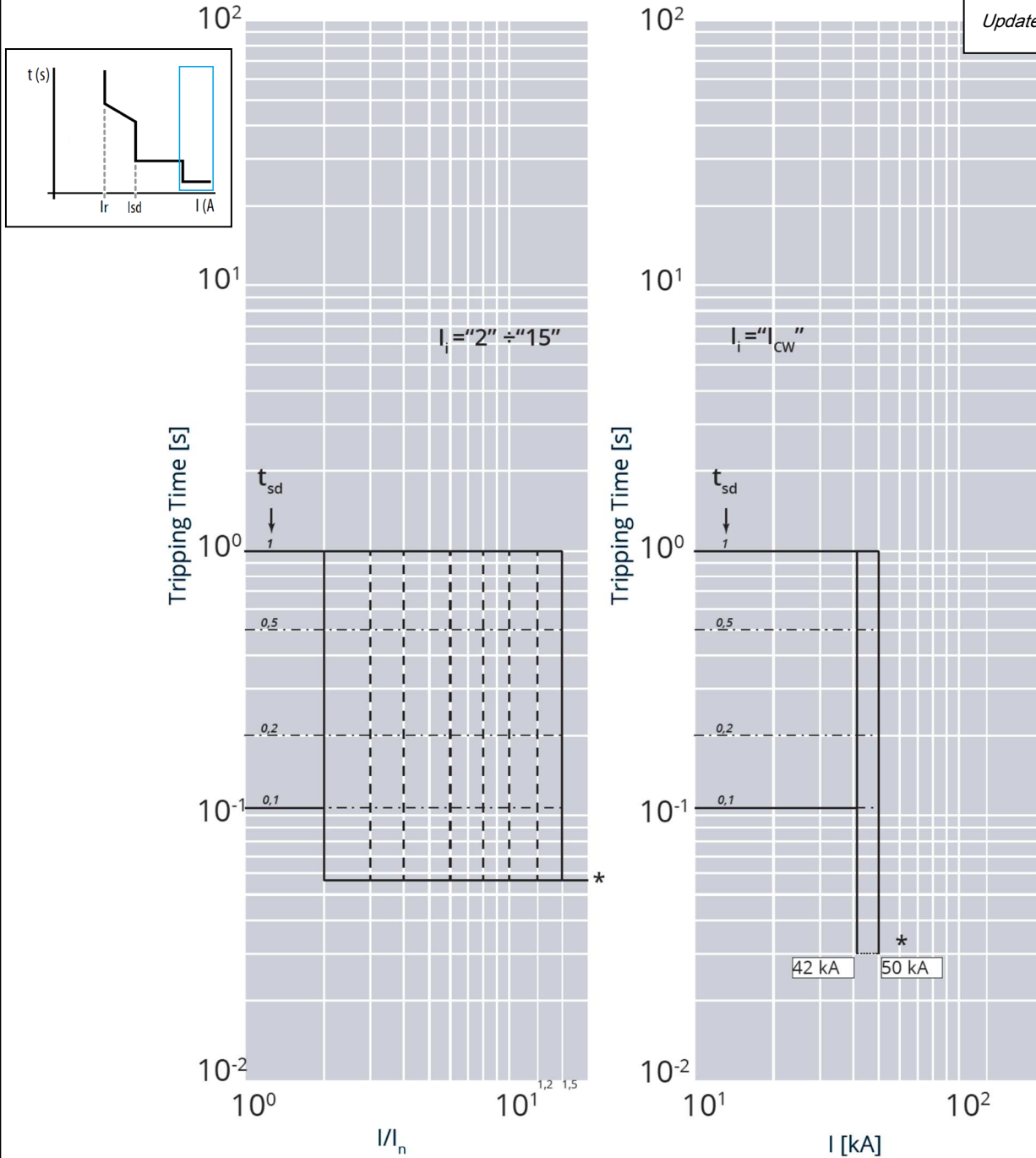
| Value | Description |
|----------|----------------------------|
| I | current |
| I_{sd} | short time setting current |
| t_{sd} | short time delay |

DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.3 TRIPPING CURVE FOR DMX-SP 2500 MPx.10 protection units: instantaneous trip protection detail

Updated: 17/11/2022



* 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 |

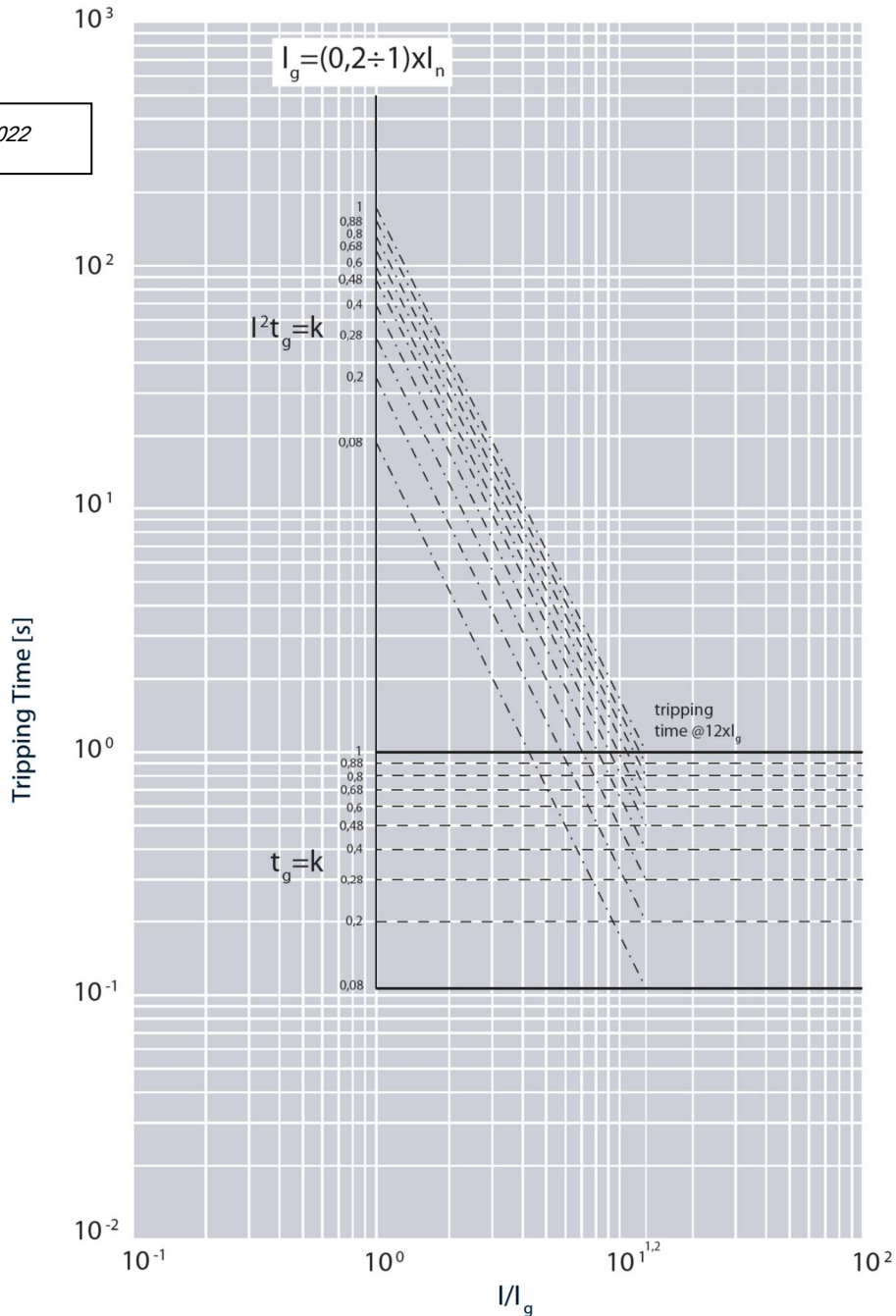
| I_{cu} | Values for I_{sf} |
|----------|---------------------|
| 42 kA | 42 kA |
| 50kA | 50kA |

DMX-SP 2500 circuit breakers (MP2.10 and MP4.10) DMX-SP-I 2500 switch disconnectors

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 /
86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.4 Ground fault curve for DMX-SP 2500 MPx.10 protection units

Update: 17/11/2022



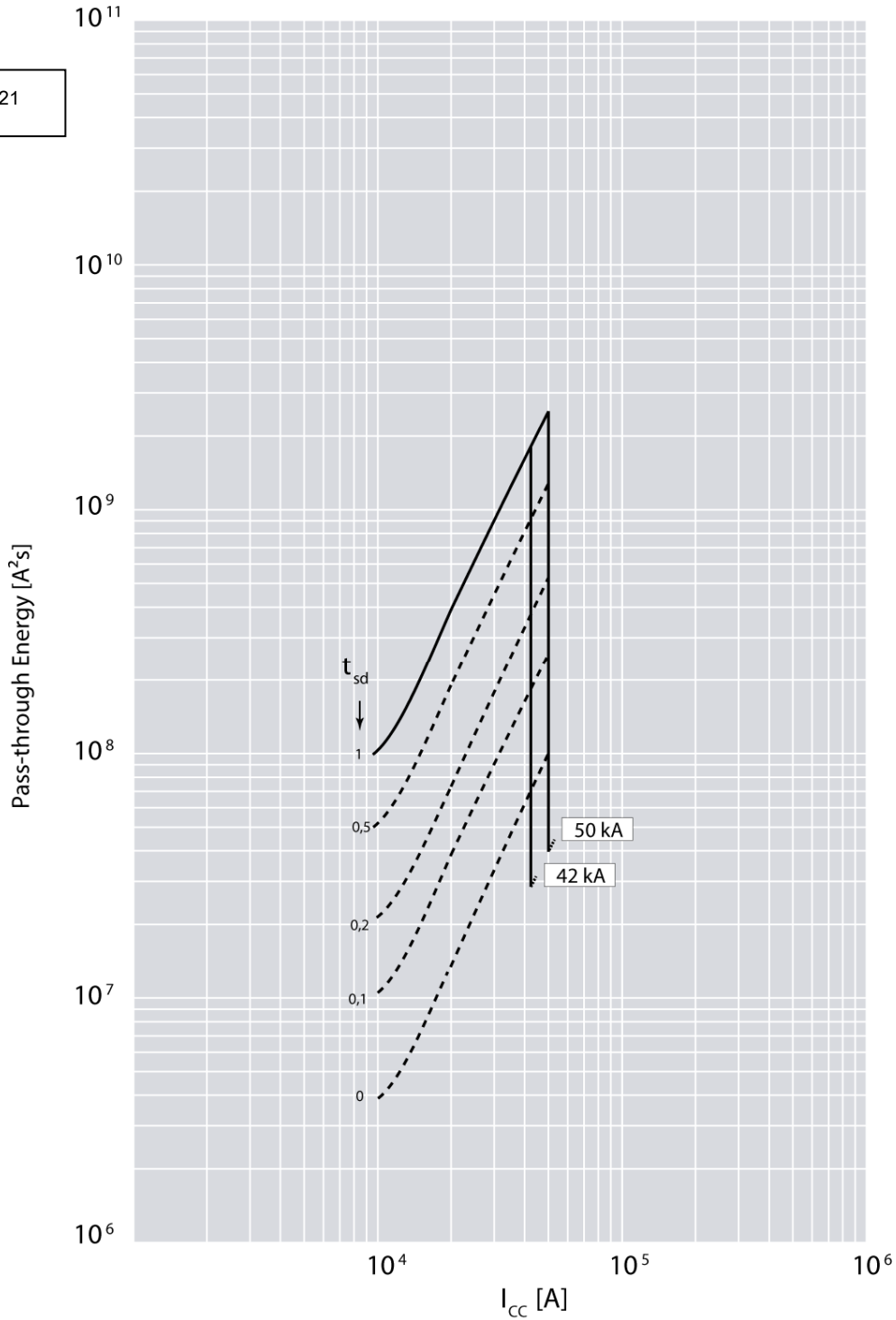
| Value | Description |
|------------------|--------------------------------------|
| I | current |
| I_n | rated current |
| I_g | Ground fault current |
| t_{sd} | short time delay |
| $t_{sd} = k$ | Constant tripping time setting |
| $I^2 t_{sd} = k$ | Constant pass-through energy setting |

**DMX-SP 2500 circuit breakers
(MP2.10 and MP4.10)
DMX-SP-I 2500 switch disconnectors**

Reference(s) : 6 702 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 / 64 / 69 / 74 / 79 / 80 / 81 / 82 / 83 / 84 / 85 / 86 / 87 / 88 / 89 / 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

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

Updated: 17/07/2021



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