

DMX³ 1600 circuit breakers

(PU MP2.10 and MP4.10)

DMX³-I 1600 switch disconnectors

Reference(s) : 0 283 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;
 0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
 0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99



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Full technical sheet LE13029AA

1. USE

DMX³ air circuit breakers offer optimal solutions to answer to protection requirements on the origin of the low voltage electrical installation (IEC/EN 60364-1) up to 6300A. Their electric and mechanical robustness, in addition to breaking capacity and chances of accessorizing, are perfectly suited for these requirements.

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

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

2. RANGE

	DMX ³ 1600 circuit breakers (MPx.10 electronics)							
	Fixed version				Draw-out version (*)			
	42kA		50kA		42kA		50kA	
I_n (A)	3P	4P	3P	4P	3P	4P	3P	4P
630	0 283 20	0 283 25	0 283 30	0 283 35	0 283 40	0 283 45	0 283 50	0 283 55
800	0 283 21	0 283 26	0 283 31	0 283 36	0 283 41	0 283 46	0 283 51	0 283 56
1000	0 283 22	0 283 27	0 283 32	0 283 37	0 283 42	0 283 47	0 283 52	0 283 57
1250	0 283 23	0 283 28	0 283 33	0 283 38	0 283 43	0 283 48	0 283 53	0 283 58
1600	0 283 24	0 283 29	0 283 34	0 283 39	0 283 44	0 283 49	0 283 54	0 283 59

	DMX ³ -I 1600 switch disconnectors			
	Fixed version		Draw-out version (*)	
	3P	4P	3P	4P
I_c (A)				
630	0 282 60	0 282 65	0 284 90	0 284 95
800	0 282 61	0 282 66	0 284 91	0 284 96
1000	0 282 62	0 282 67	0 284 92	0 284 97
1250	0 282 63	0 282 68	0 284 93	0 284 98
1600	0 282 64	0 282 69	0 284 94	0 284 99

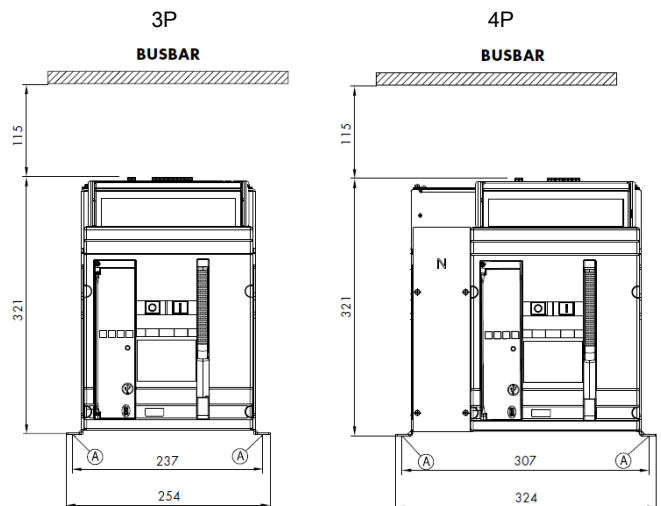
(*) Draw-out references represent only the mobile part.

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

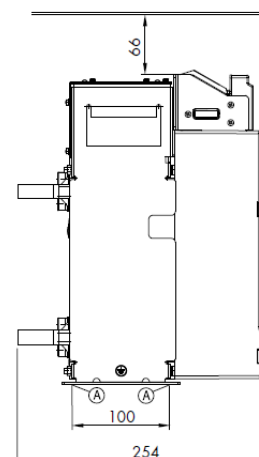
- ref. 0 281 53 (draw-out base for 3P versions)
- ref. 0 281 54 (draw-out base for 4P versions)

3. DIMENSIONS

Fixed version, overall dimensions



3P – 4P

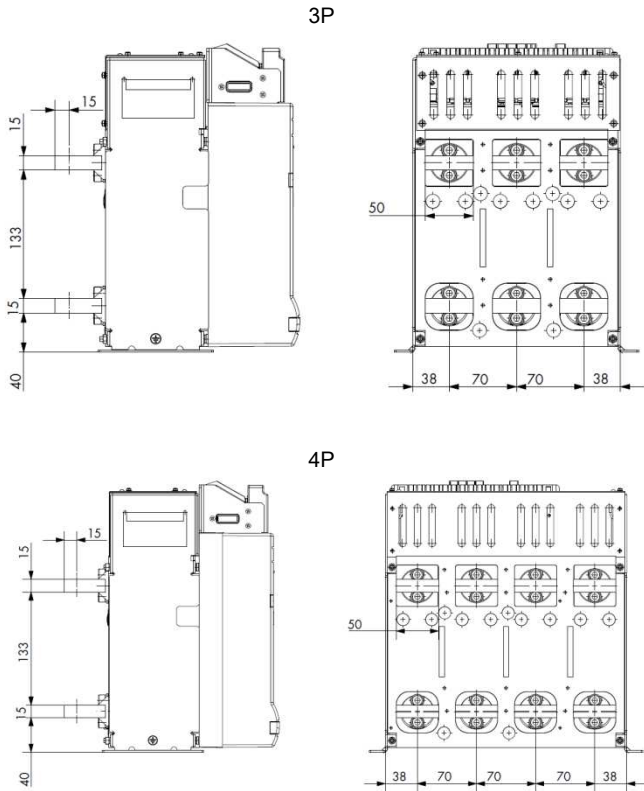


A = fixing point on plate of enclosure

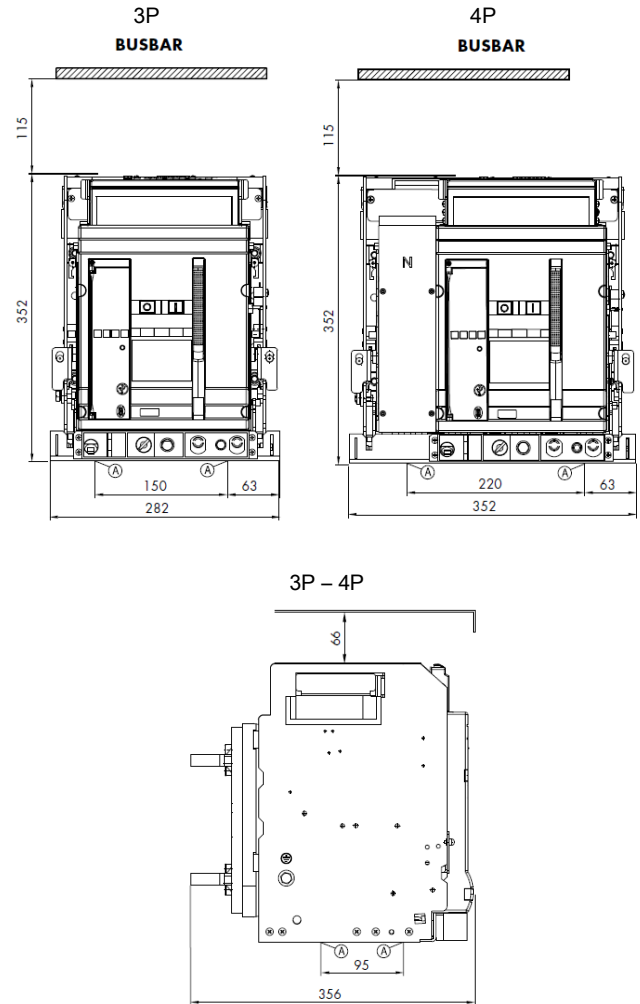
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Fixed version, rear terminals – horizontal connections

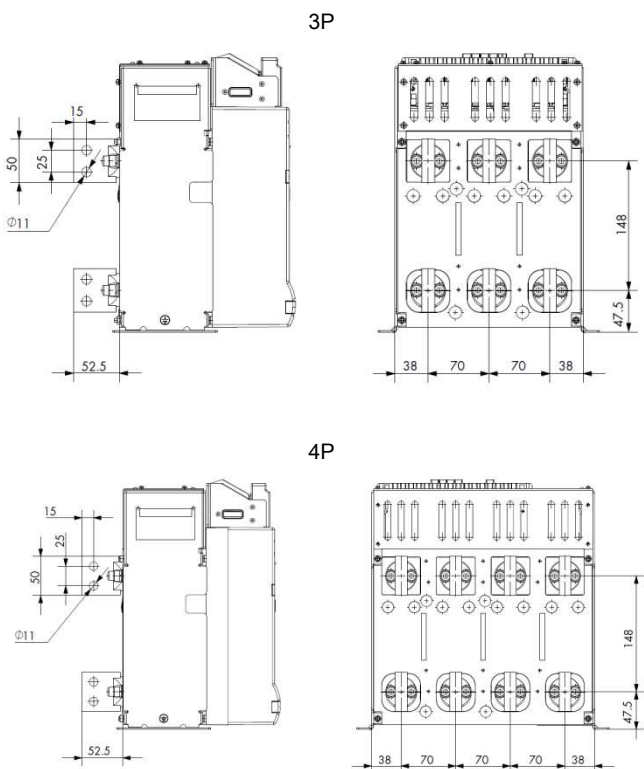


Draw-out version, overall dimensions

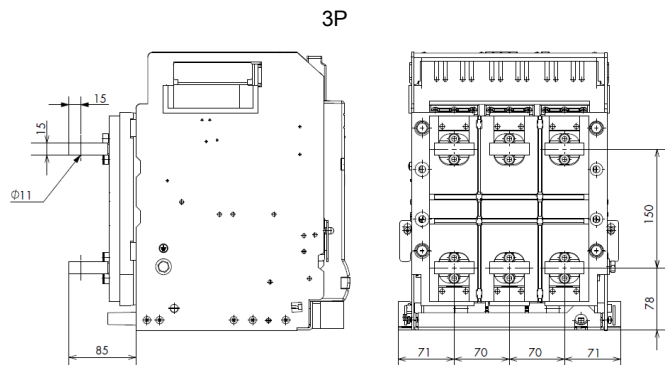


A = fixing point on plate of enclosure

Fixed version, rear terminals – vertical connections



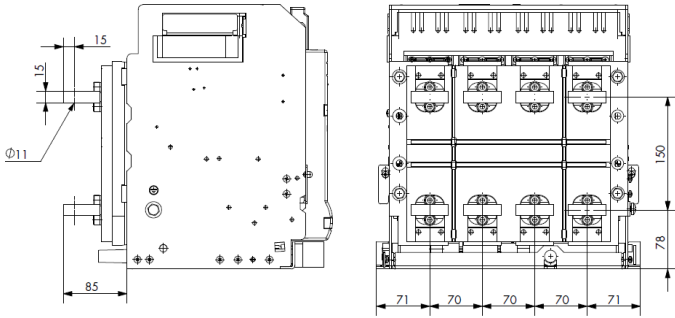
Draw-out version, rear terminals – horizontal connections



DMX³ 1600 circuit breakers (PU MP2.10 and MP4.10) DMX³-I 1600 switch disconnectors

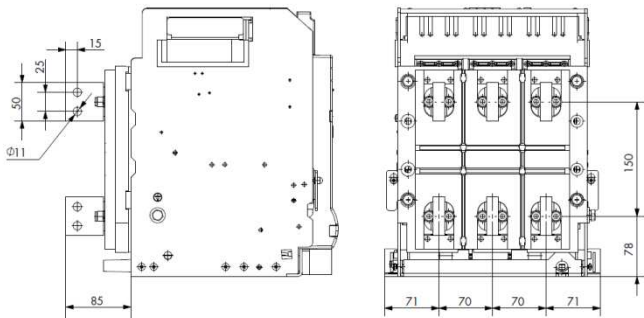
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4P

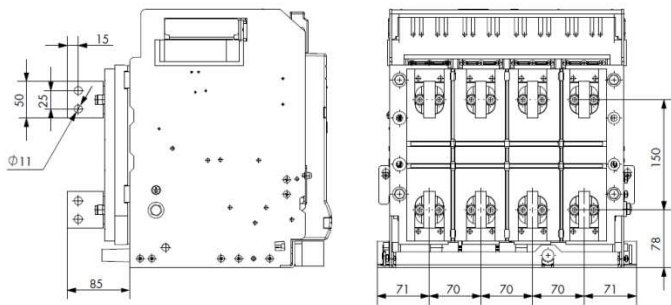


Draw-out version, rear terminals – vertical connections

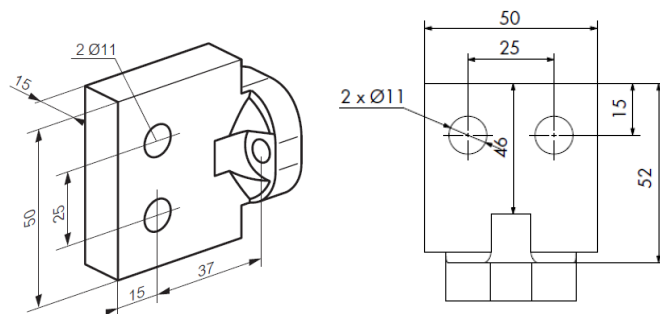
3P



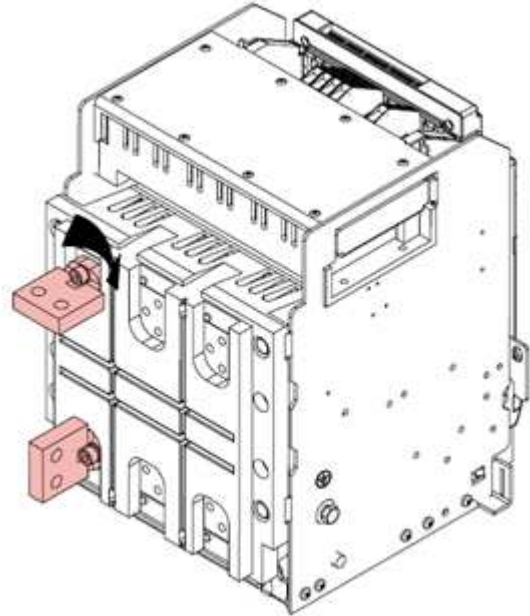
4P



Reversible rear terminals

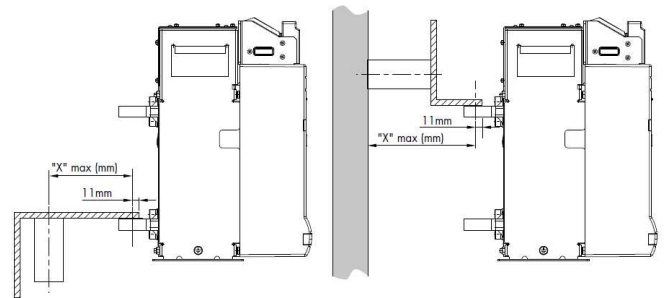


Example of use of orientable terminals:



Terminations support distances – Fixed version

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



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4. OVERVIEW

4.1 Equipped with

ACBs are equipped with auxiliary contacts (1 NO/NC, expandable up to 6), a CTR trip contact and doorframe; besides:

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

5. ELECTRICAL CONNECTIONS

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

Minimum cross section of COPPER busbars per pole:

Fixed version

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

Draw-out version

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

Minimum cross section of ALUMINIUM busbars per pole:

Fixed version

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

Draw-out version

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

6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Electrical data refers to IEC/EN 60947-2 standard

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

⁽¹⁾ For more details, please consult Legrand

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

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Switch disconnector

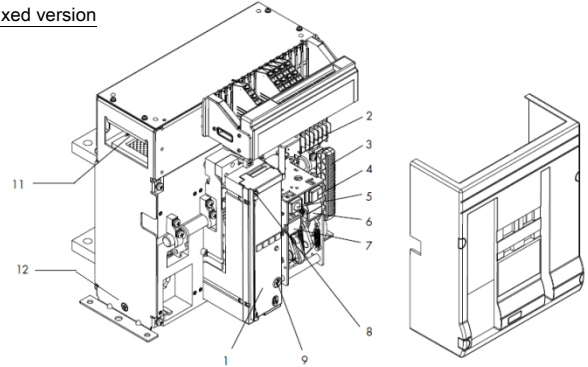
Electrical data refers to IEC/EN 60947-3 standard

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

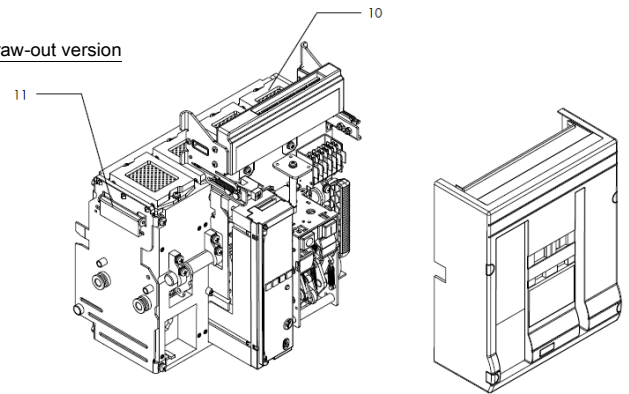
⁽¹⁾ Weights for draw-out releases are to be intended with base

6.1 Main parts constituting the circuit breaker

Fixed version

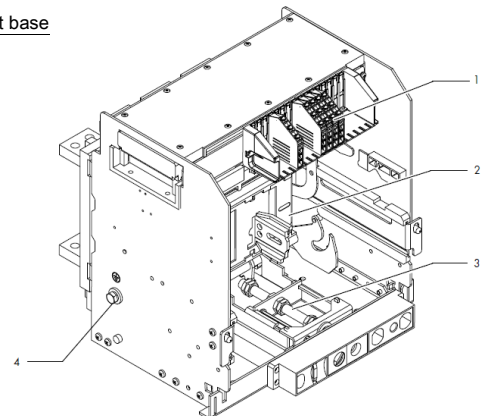


Draw-out version



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

Draw-out base



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

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6.2 Adjustment ranges

I _n (A)	Phases			
	I _r		I _{sd}	
	0.2 x I _n	1 x I _n	1.5 x I _r min	10 x I _r 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

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

6.3 Power losses per pole at I_n / I_e

Power losses for DMX³

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

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

Power losses for DMX³-I

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

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

6.4 Deratings

6.4.1 Temperature

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

Temperature deratings for DMX³ fixed version

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

Temperature deratings for DMX³-I fixed version

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

Temperature deratings for DMX³ draw-out version

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

Temperature deratings for DMX³-I draw-out version

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

6.4.2 Specific conditions use

Climatic conditions

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

Electromagnetic disturbances (EMC)

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

6.4.3 Altitude

Altitude derating for DMX³ and DMX³-I

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

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6.5 Electronic protection unit

All DMX³ 1600 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 (@6 I_r) 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 $I^2t=k$, 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

Protection: ON/OFF

t_g : 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 DMX³ protection unit, needed to monitor and manage (test and report) the DMX³ 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 DMX³ 1600 ref. 0 281 25
Optional accessories, to be ordered when ordering electronic protection unit and DMX³ air circuit breakers for factory assembly

DMX³ 1600 circuit breakers (PU MP2.10 and MP4.10) DMX³-I 1600 switch disconnectors

Reference(s) : 0 283 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;
0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

7. CONFORMITY

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

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

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

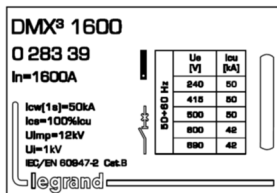
DMX³ respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

7.1 MARKING

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

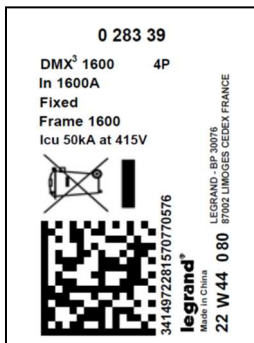
Product laser label on front

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



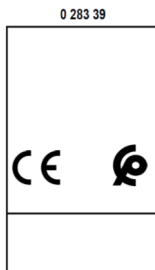
Product sticker label on side

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



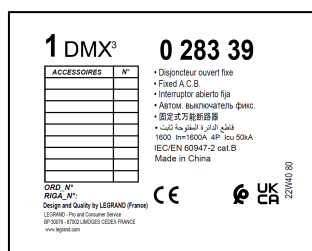
Mark sticker label on side

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



Packaging sticker label

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



8. EQUIPMENTS AND ACCESSORIES

8.1 Control auxiliaries

- shunt trip: device trips when coil is energised

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

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

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

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

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

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

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

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

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

DMX³ 1600 circuit breakers (PU MP2.10 and MP4.10) DMX³-I 1600 switch disconnectors

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40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49;
50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59;
0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

• Motor operators

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

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

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

• Closing coils

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

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

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

8.2 Signalling auxiliaries

• Signalling contact for draw-out version

Inserted / test / draw-out signalling contact

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

ref. 0 281 73

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

• Contact "ready to close" with charged springs ref. 0 281 74

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

• Module with 6 auxiliary contacts ref. 0 281 75

• Module with 4 auxiliary contacts ref. 0 281 76

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

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

• 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. 0 281 87

• Rating mis-insertion device ref. 0 281 89

Prevents the insertion of a draw-out circuit breaker in an incompatible base

8.5 Fixing devices for DMX³ and DMX³-I 1600

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

8.6 Equipment for interlocking

The mechanical interlock is set up using cables and can interlock 2

devices, which may be different type in a vertical or horizontal

configuration. The interlock unit is mounted on the right-hand side

of the device. Interlock cables to be ordered separately.

• Interlock for DMX³ 1600 ref. 0 281 90

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

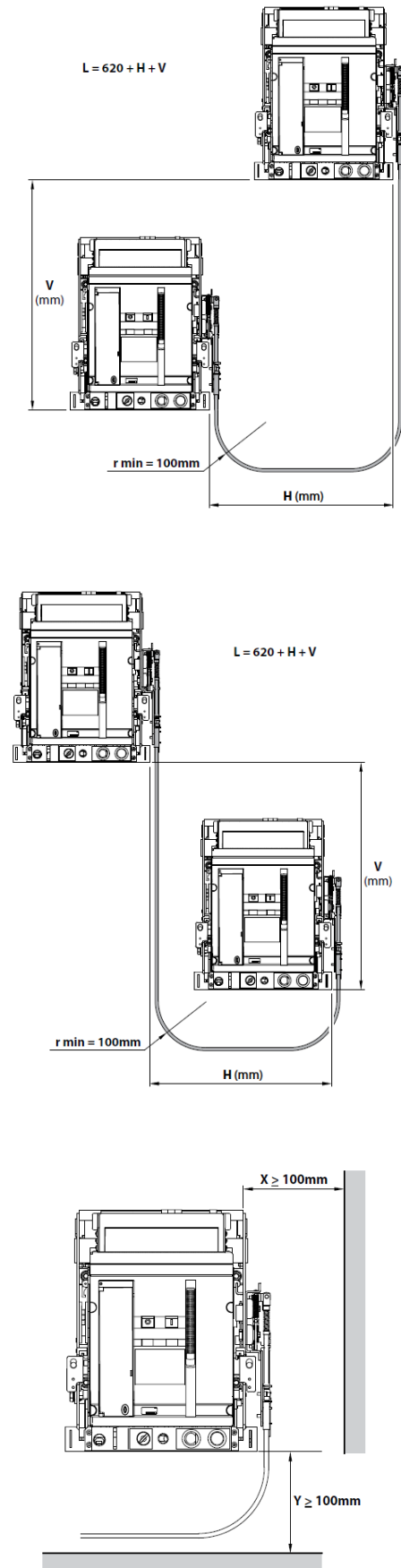
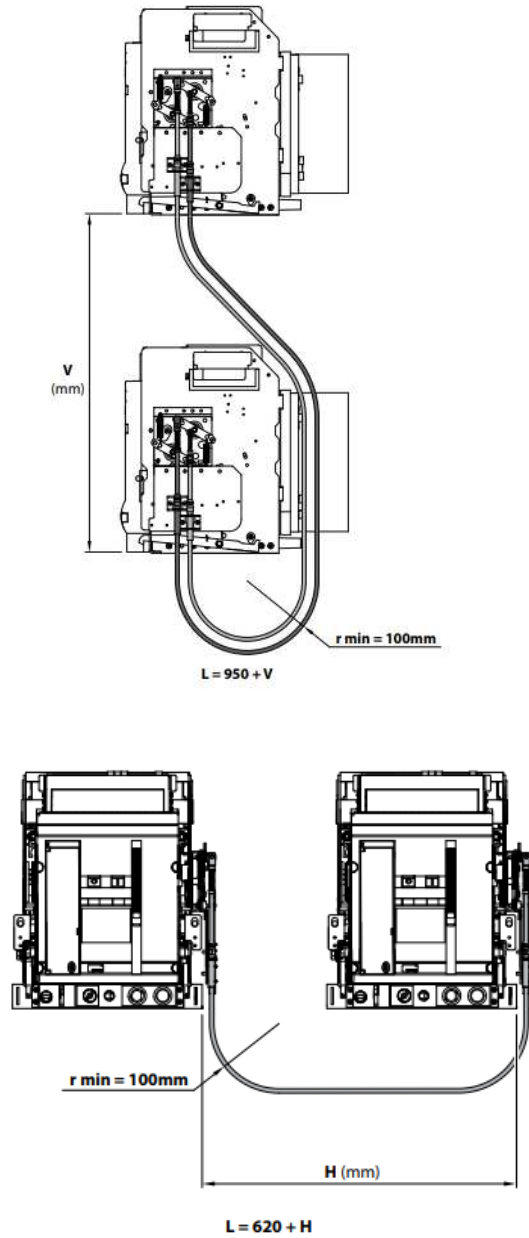
• 4600 mm ref. 0 289 24

• 5600 mm ref. 0 289 25

**DMX³ 1600 circuit breakers
(PU MP2.10 and MP4.10)
DMX³-I 1600 switch disconnectors**

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Choice of interlock cable and distances to keep



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50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59;
0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

8.8 Front terminals

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

8.9 Rear terminals

Not mounted by default on the mechanism itself

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

8.10 Base for draw-out version

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

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

8.11 Spreaders for fixed and draw-out versions

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

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

8.10 Insulating shields

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

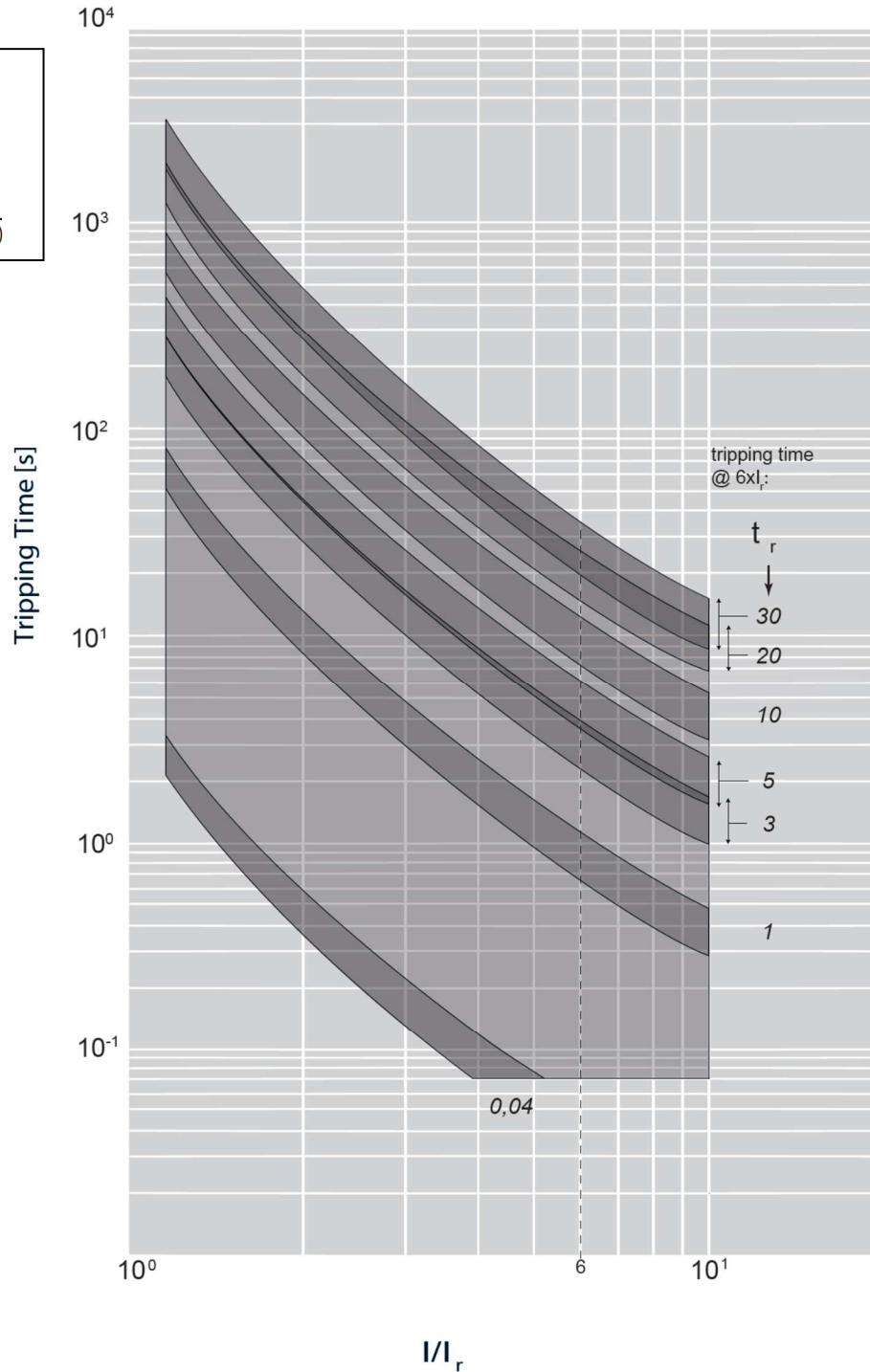
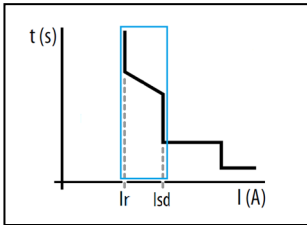
**DMX³ 1600 circuit breakers
(PU MP2.10 and MP4.10)
DMX³-I 1600 switch disconnectors**

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0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9. CURVES

9.1 TRIPPING CURVE FOR DMX³ 1600 MPx.10 protection units: L – T protection detail

Updated: 14/10/2022



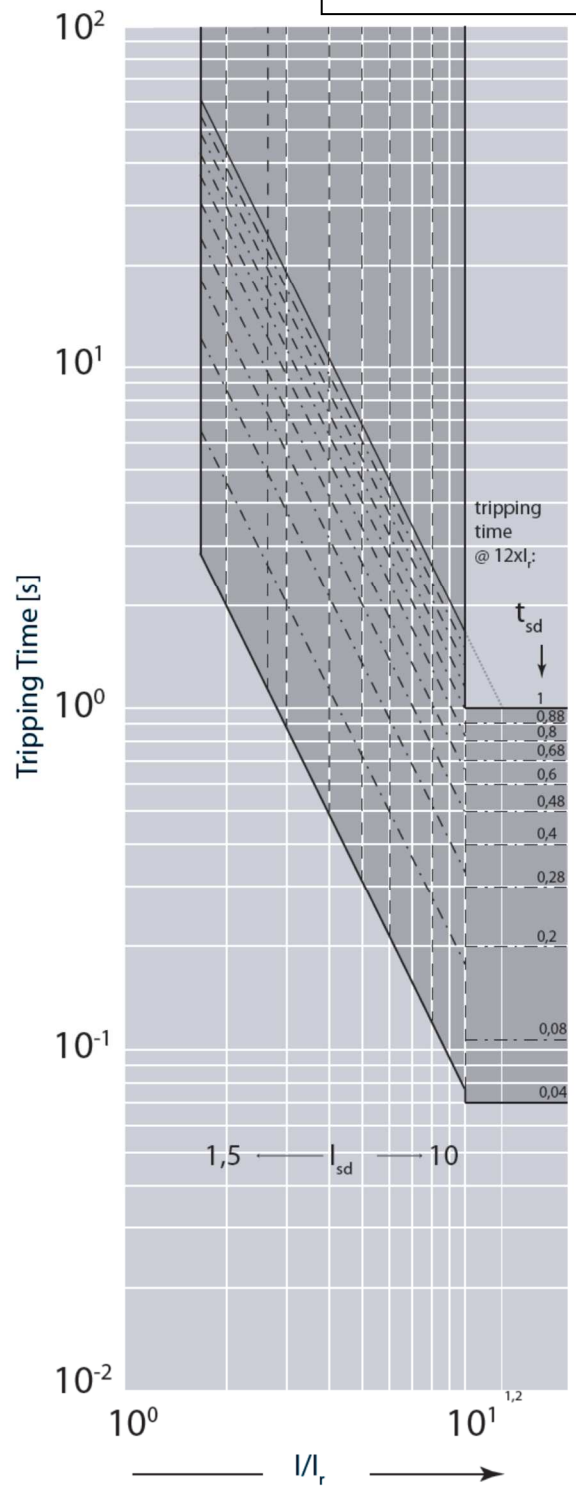
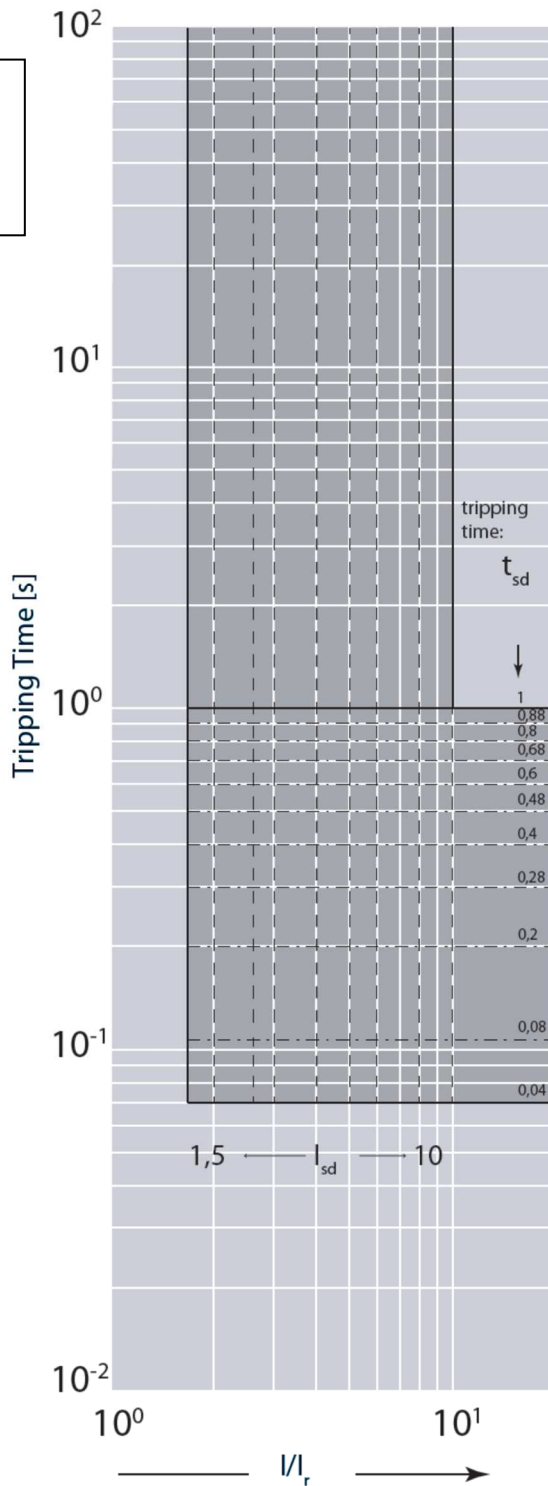
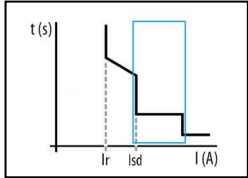
Value	Description
I	current
I _r	long time setting current
t _r	long time delay

DMX³ 1600 circuit breakers
(PU MP2.10 and MP4.10)
DMX³-I 1600 switch disconnectors

Reference(s) : 0 283 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;
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 0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
 0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.2 TRIPPING CURVE FOR DMX³ 1600 MPx.10 protection units: short time trip protection detail

Updated: 17/11/2022



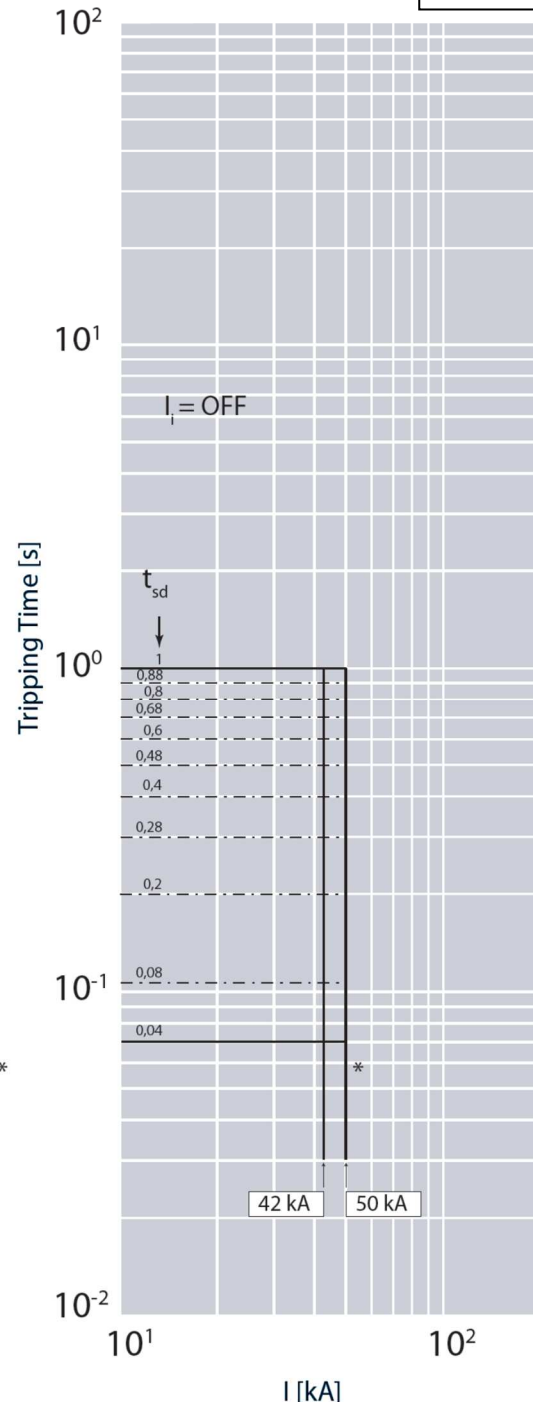
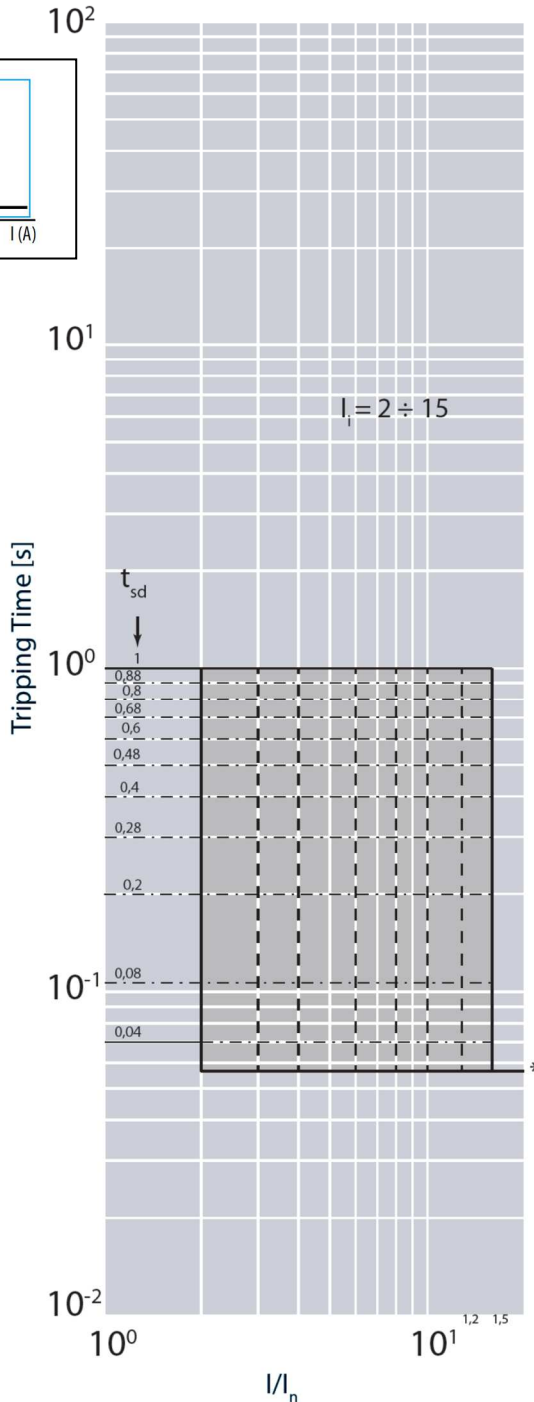
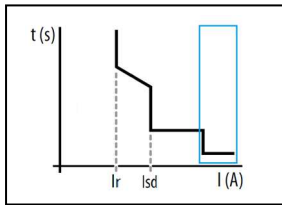
Value	Description
I	current
I_{sd}	short time setting current
t_{sd}	short time delay

DMX³ 1600 circuit breakers (PU MP2.10 and MP4.10) DMX³-I 1600 switch disconnectors

Reference(s) : 0 283 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29;
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40 / 41 / 42 / 43 / 44 / 45 / 46 / 47 / 48 / 49;
50 / 51 / 52 / 53 / 54 / 55 / 56 / 57 / 58 / 59;
0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.3 TRIPPING CURVE FOR DMX³ 1600 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

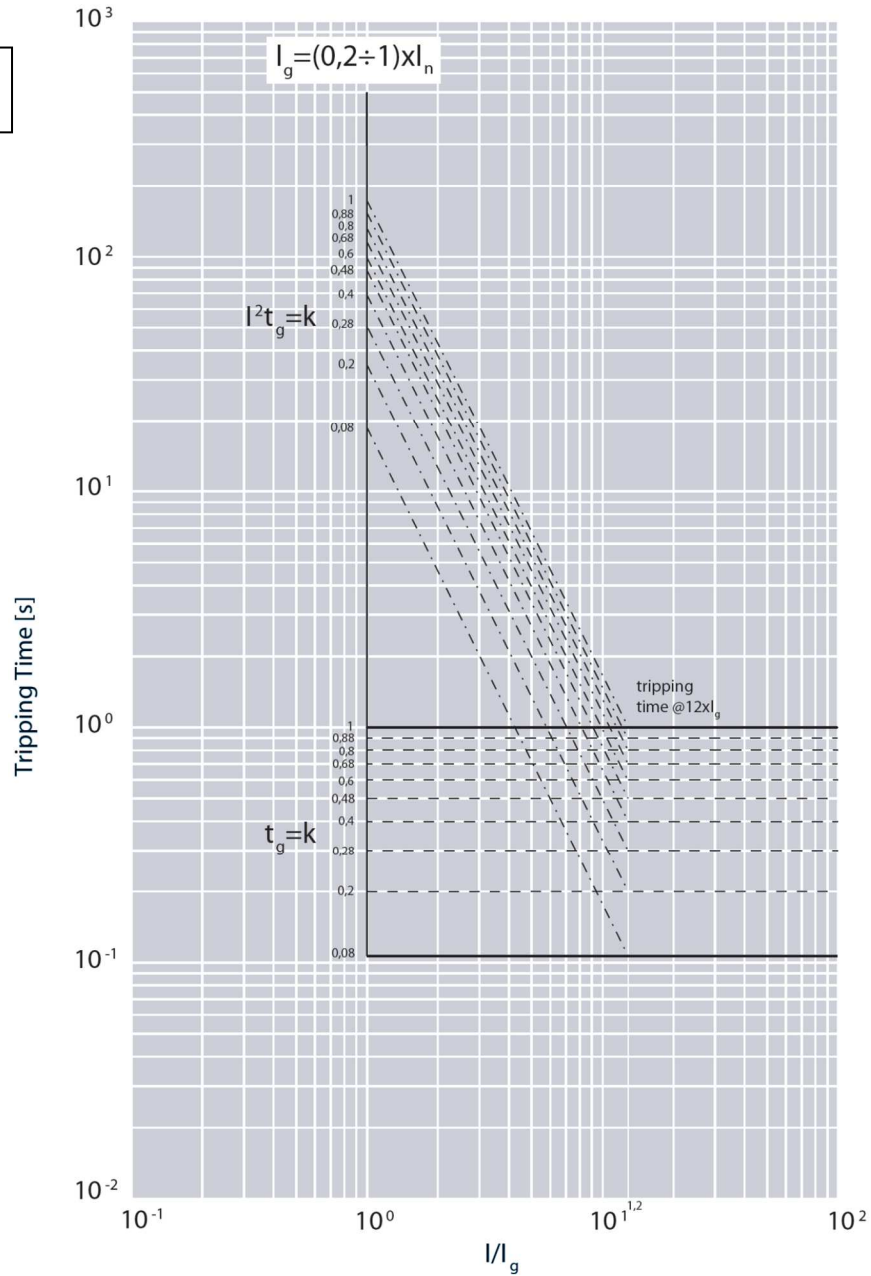
I_{cu}	Values for I_{sf}
42 kA	42 kA
50kA	50kA

DMX³ 1600 circuit breakers
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DMX³-I 1600 switch disconnectors

Reference(s) : 0 283 20 / 21 / 22 / 23 / 24 / 25 / 26 / 27 / 28 / 29;
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 0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
 0 284 90 / 91 / 92 / 93 / 94 / 95 / 96 / 97 / 98 / 99

9.4 Ground fault curve for DMX³ 1600 MPx.10 protection units

Update: 17/11/2022



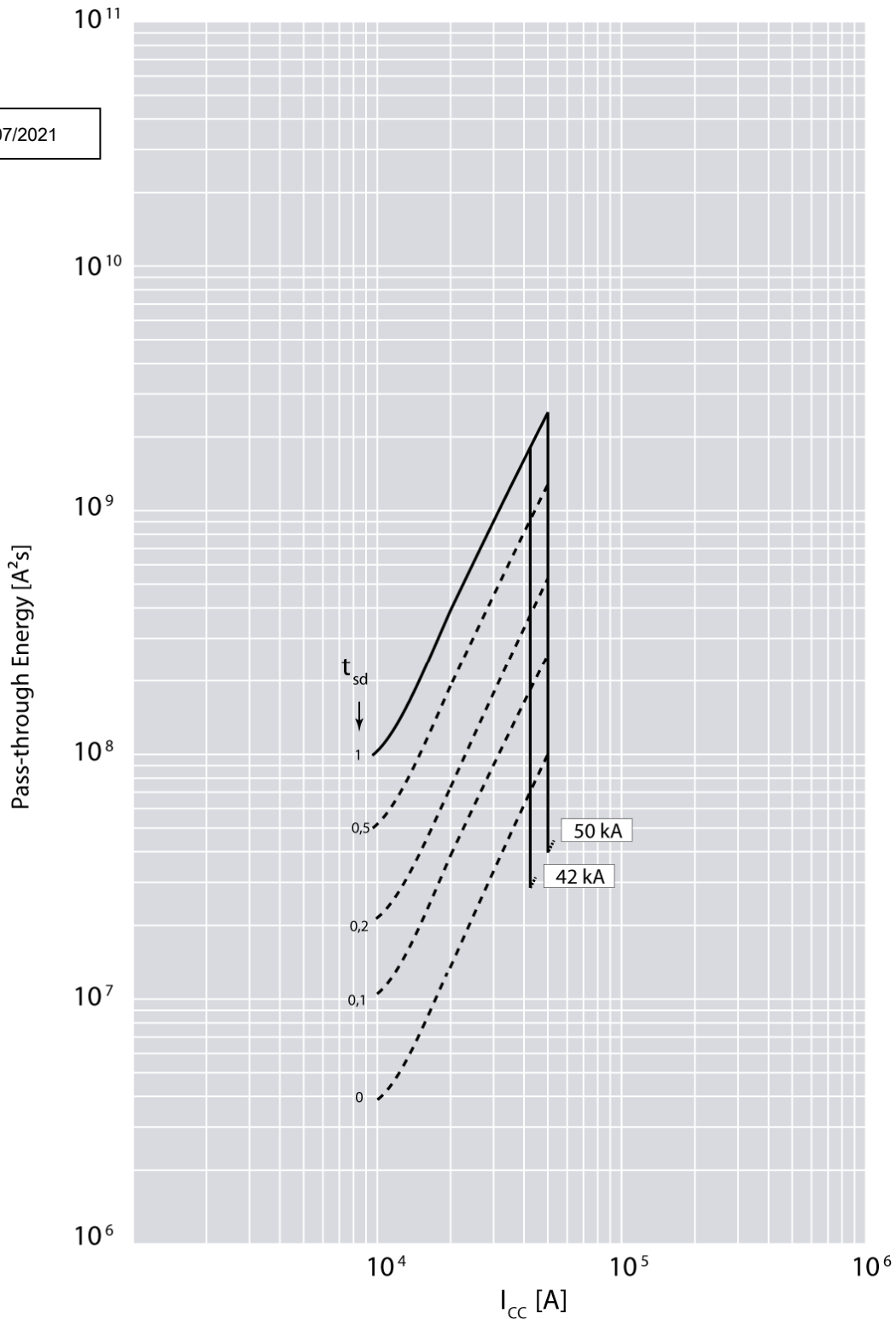
Value	Description
I	current
I _n	rated current
I _g	Ground fault current
t _{sd}	short time delay
t _{sd} = k	Constant tripping time setting
I ² t _{sd} = k	Constant pass-through energy setting

DMX³ 1600 circuit breakers
(PU MP2.10 and MP4.10)
DMX³-I 1600 switch disconnectors

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 30 / 31 / 32 / 33 / 34 / 35 / 36 / 37 / 38 / 39;
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 0 282 60 / 61 / 62 / 63 / 64 / 65 / 66 / 67 / 68 / 69;
 0 284 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