

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

DPX³ 1600

Thermal magnetic and trip-free switches

DPX³-I 1600



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1. USE

DPX³ platform, for premium segment, is able to cover extended ranges in terms of breaking capacities and rated currents, make protection suitable for different levels of power involved in installations.

DPX³ platform provide easy assembly procedures during the phase of installation and mounting of accessories, suitable for professional use.

2. RANGE

Circuit breaker

DPX3 1600 TM						
I _n (A)	36 kA			50 kA		
	3P	4P	3P + N/2	3P	4P	3P + N/2
500	422250	422255	-	422262	422267	-
630	422251	422256	-	422263	422268	-
800	422252	422257	-	422264	422269	-
1000	422253	422258	422260	422265	422270	422272
1250	422254	422259	422261	422266	422271	422273
I _n (A)	70 kA			100 kA		
	3P	4P	3P + N/2	3P	4P	3P + N/2
500	422274	422279	-	422286	422291	-
630	422275	422280	-	422287	422292	-
800	422276	422281	-	422288	422293	-
1000	422277	422282	422284	422289	422294	422296
1250	422278	422283	422285	422290	422295	422297

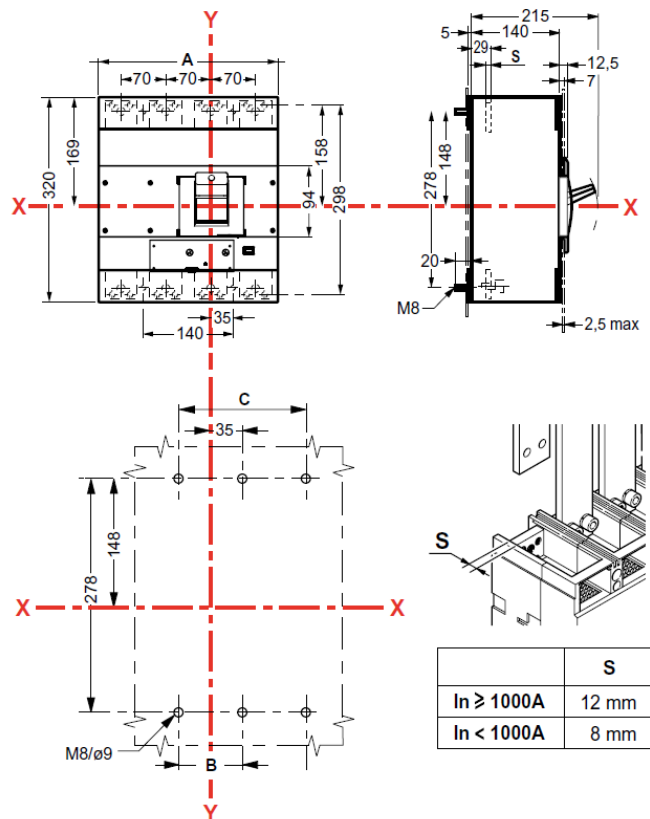
Switch disconnectors

DPX ³ -I 1600		
I _n (A)	3P	4P
500	-	-
630	422490	422494
800	422491	422495
1000	-	-
1250	422492	422496
1600	422493	422497

3. DIMENSIONS AND WEIGHTS

3.1 Dimensions

Implantation



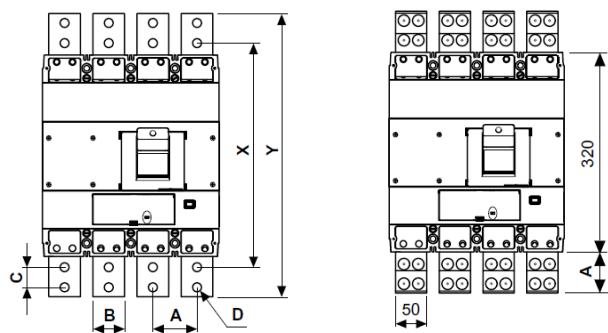
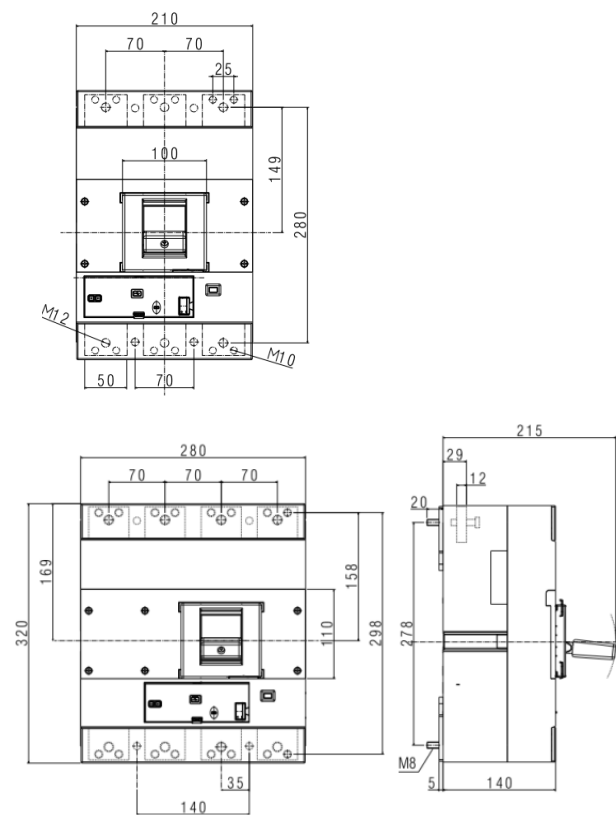
DPX³ 1600

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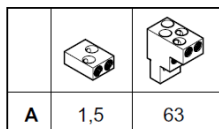
DPX³-I 1600

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

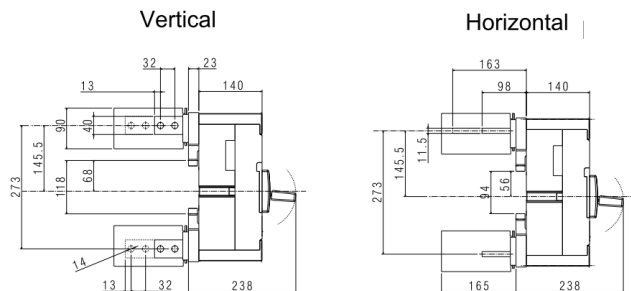
Front terminals, fixed version



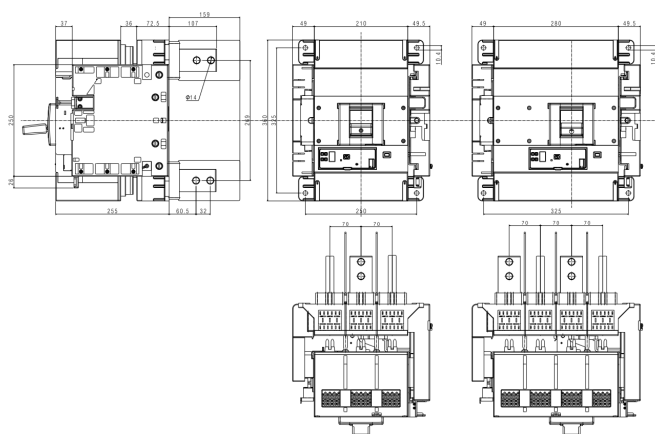
	A	B	C	D	X	Y
	70	50	32	14	358	452
	125	100	25	14,5	544	624



Side view, flat rear terminals



Draw-out version, rear terminals



3.2 Weights

Configuration	Weights (Kg)			
	3P		4P	
	I _n ≤1250A	I _n = 1600A	I _n ≤1250A	I _n = 1600A
Circuit breaker (fixed version)	16	17	20	21.5
Draw-out base (with front terminals)*	18	18	22	22
Draw-out base (with rear terminals)*	21.7	21.7	26.2	26.2
Draw-out debro-lift mechanism *	9.9	9.9	11.2	11.2

* to add to fixed version

4. OVERVIEW

4.1 Supplied with:

- fixing screws (4 for 3P and 4P)
- screws for connections (6 for 3P and 8 for 4P)
- phase insulators (2 for 3P and 3 for 4P)

5. ELECTRICAL CONNECTIONS

5.1 Mounting possibilities

On plate:

- Vertical
- Horizontal
- Supply inverter type

DPX³ 1600

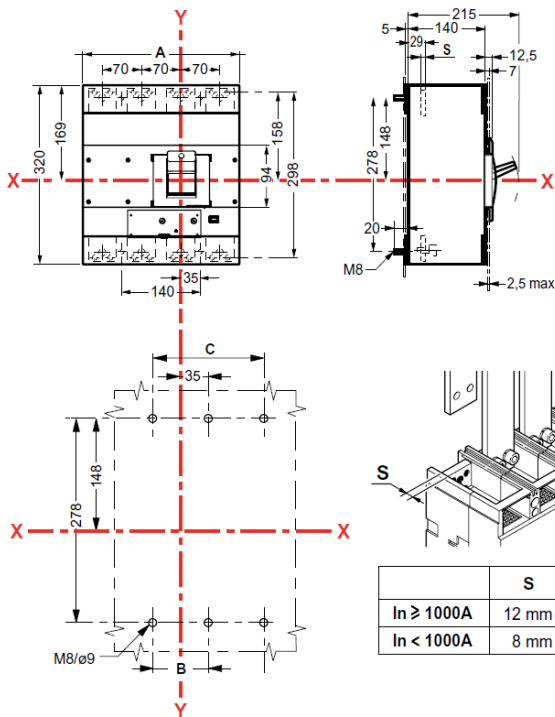
Thermal magnetic and trip-free switches

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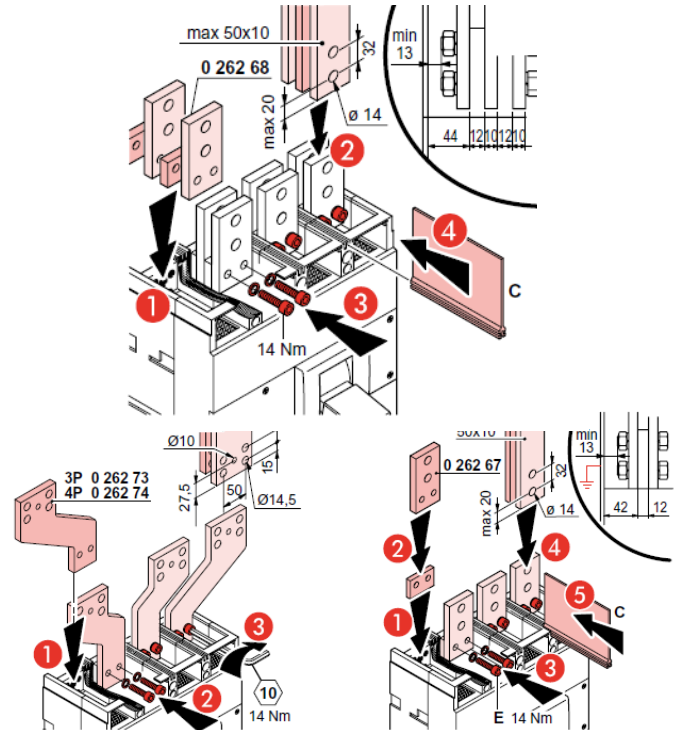
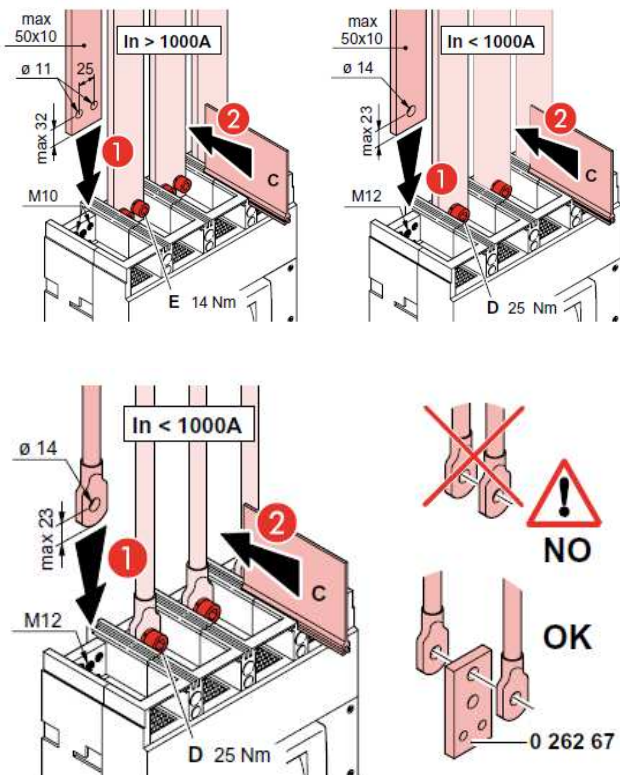
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5.2 Mounting

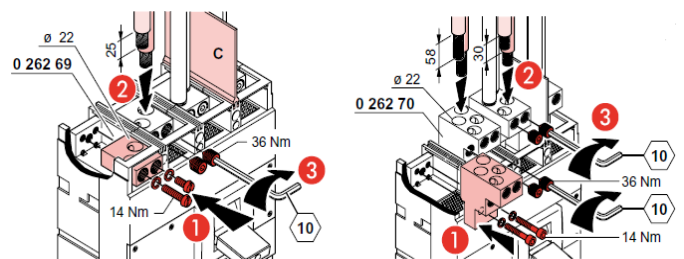
(see instruction sheet for detailed mounting procedures)



Busbars/cable lugs:



Cables:



Flexible Conductors		2x95mm ² 4x95mm ²	MIN	2x185mm ² 4x185mm ²	MAX
Rigid Conductors		2x120mm ² 4x120mm ²	MIN	2x240mm ² 4x240mm ²	MAX

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6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Circuit Breaker	DPX ³ 1600 ELE F/N/H/L (36kA, 50kA, 70kA, 100kA)
Rated current (A)	500, 630, 800, 1000, 1250
Poles	3 - 4
Pole pitch (mm)	70
Rated insulation voltage (50/60Hz) U _i (V)	1000
Rated operating voltage (50/60Hz) U _e (V)	690
Rated impulse withstand current U _{imp}	8
Rated frequency (Hz)	50 - 60
Operating temperature (°C)	-25 ÷ 70
Mechanical endurance (cycles)	10000
Mechanical endurance with motor control	5000
Electrical endurance at I _n (cycles)	4000
Electrical endurance at 0.5 I _n (cycles)	8000
Utilization category	A
Suitable for isolation	Yes
Type of protection	Thermal -magnetic
Thermal type protection	Adjustable
Thermal adjustment I _r [x I _n]	0,8 ÷ 0,9 ÷ 1
Thermal adjustment t _r [s]	-
Thermal time tripping at 2xI _n (single pole) [s]	<=600
Magnetic type protection	Adjustable
Magnetic adjustment I _{ed} [x I _n]	5 ÷ 10
Time adjustment t _{sd} (t=k o Pt=k) [s]	-
Minimum release single pole	1.2 li
Instantaneous electronic adjustment I _i	-
Neutral protection for 4P (% I _{th} of phase pole)	100
Dimensions (W x H x D) (mm)	280 (4P) x 320x 140

Switch disconnecter

Switch disconnecter	DPX ³ -I 1600
Rated current I _n (A)	630 - 800 - 1250 - 1600
Rated closing capacity on short-circuit I _{cm} (kA)	17 (up to 800A) - 24 (up to 1000A) - 40 (up to 1600A)
Utilization category	AC23A
Short-time resistive current I _{cs} (kA) for 1s	10 (up to 800A) - 12 (up to 1000A) - 20 (up to 1600A)
Isolated voltage U _i (V AC)	1000
Maximum rated operating voltage (50/60Hz) U _e (V)	690
Rated impulse withstand voltage U _{imp} (kV)	8
Rated frequency (Hz)	50 - 60
Operating temperature (°C)	-25 ÷ 70
Suitable for isolation	Yes
Mechanical endurance (cycles)	10000
Mechanical endurance with motor control (cycles)	5000
Electrical endurance (cycles)	4000
Electrical endurance at 0.5 I _n (cycles)	8000
Dimensions (W x H x D) (mm)	280(4P) x 320 x 140

The maximum admissible (absolute) temperature is 125°C (for detail, see IEC 60947-1 and 60947-2)

DPX³ product line has the possibility to supply both in "direct" and "reverse" feed.

If "direct", the word "LINE" needs to be marked on supply terminals (normally the top ones), as well as "LOAD" has to be written on the output terminals to be connected to the load (normally the bottom ones).

If "reverse", any indications about LINE / LOAD are NOT expected on the product.

6.1 Breaking capacity (kA)

		Breaking capacity (kA) & I _{cs}			
		3P-4P			
U _e /I _{cs} (I _{cs} letter)	36kA (F)	50kA (N)	70kA (H)	100kA (L)	
380/415 V AC	36	50	70	100	
440/460 V AC	30	45	65	80	
480/500 V AC	25	35	45	55	
480/550 V AC	20	24	28	30	
600 V AC	20	24	28	30	
690V AC	14	20	22	25	
I _{cs} (% I _{cs})	100	100	100	70	
Rated making capacity under short circuit I _{cm}					
I _{cm} (kA) at 415V	76.5	105	154	220	
220/240 V AC	70	100	105	150	
480/500 V AC	25	35	45	55	
690 V AC	14	20	22	25	

6.3 Rated current (I_n) at 40°C / 50°C

I _n (A)	Phases limit trip current			
	thermal (I _r)	magnetic (I _i)		
	0.8 x I _n	1 x I _n	5 x I _r	10 x I _r
500	400	500	2500	5000
630	504	630	3150	6300
800	640	800	4000	8000
1000	800	1000	5000	10000
1250	1000	1250	6250	12500

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

6.3 Load operations

Force on handle	I _n ≤ 400A	I _n ≥ 500A
Opening operation (N)	80	130
Closing operation (N)	180	210
Restore operation (N)	145	200

6.4 Electrodynamic forces

The table below shows an indication of suggested distances to keep between the breaker and the first fixing point of the conductor and bars in order to reduce the effects of the electrodynamic stresses that may be created during a short circuit. In the realization of anchorage system it is recommend the use of isolators suitable for the type of conductor used and the operating voltage.

I _{cc} (kA)	Maximum Distance (mm)
36	350
50	300
70	250
100	200

According to conductor type and bar system (except Legrand bar kits), the choice of the distance to keep is to be calibrated by the installer.

Also installer must take into account the weight of the conductors so that this does not affect the electrical junction between the conductor itself and the connection point.

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6.5 Power losses per pole under I_n

Circuit breakers

	Power losses per pole (W)				
	I _n (A)				
	500	630	800	1000	1250
Front terminals - Fixed version	30.7	47.7	46.2	53.7	99.4
Rear terminals - Fixed version	30.0	46.4	44.8	53.0	96.9
Front terminals - D-O version	52.3	81.0	78.1	92.0	170.3
Rear terminals - D-O version	38.5	59.9	57.6	68.0	125.0

Switch disconnectors

	Power losses per pole (W)			
	I _n (A)			
	630	800	1250	1600
Front terminals - Fixed version	50.8	29.8	74.4	65.3
Rear terminals - Fixed version	49.6	29.4	73.4	58.9
Front terminals - D-O version	86.5	51.2	128.1	112.6
Rear terminals - D-O version	63.9	38.4	93.8	97.3

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.

6.6 DERATINGS

6.6.1 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.

I _n (A)	Temperature T _a (°C)						
	10	20	30	40	50	60	70
500	605	570	535	500	500	430	395
630	743	705	668	630	630	555	518
800	944	896	848	800	800	704	656
1000	1180	1120	1060	1000	1000	880	820
1250	1475	1400	1325	1250	1250	1100	1025

For derating temperature with other configurations, see table A.

6.6.2 Specific condition 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 DPX³ 1600 circuit breakers, according to IEC/EN 60947-2 Annex F

Pollution degree

for DPX³ 1600 circuit breakers, degree 3, according to IEC/EN 60947-2

6.6.3 Altitude

Altitude derating for DPX³ and DPX³-I

Altitude (m)	2000	3000	4000	5000
U _e (V)	690	590	520	460
I _n (A) (T _a = 40°C/50°C)	1 x I _n	0.98 x I _n	0.93 x I _n	0.9 x I _n

6.6.4 Use in DC

See table B.

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7. CONFORMITY

DPX³ range of product concerning circuit-breakers exceed compliance with the EN/IEC 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.

DPX³ are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

DPX³ respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

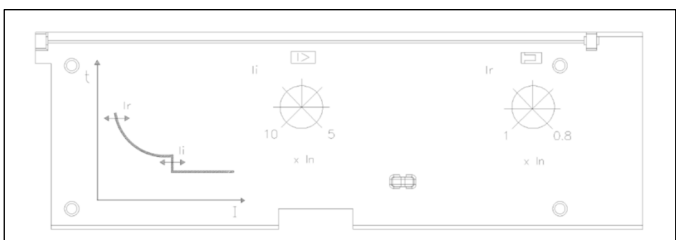
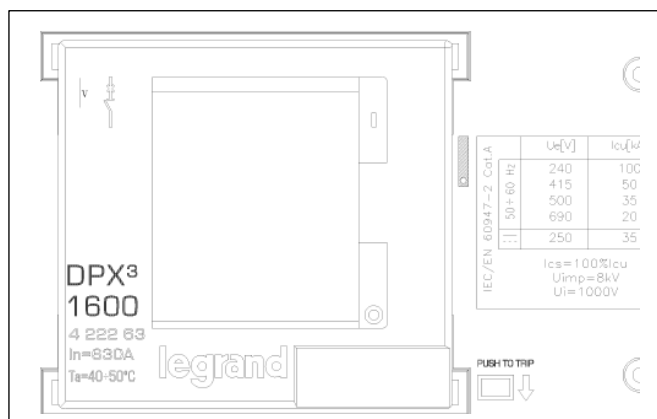
For specific information, please contact Legrand support.

7.1 Marking

Product (both circuit breakers and switch disconnectors) are provided with labelling in full conformity to the referred standard and directives requirements by laser or sticker labels as:

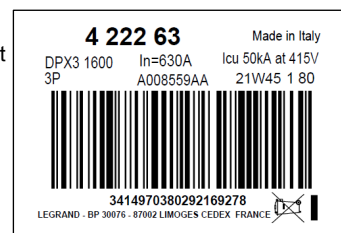
Product laser label on front

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



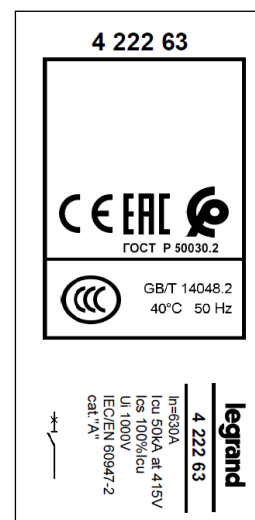
Product sticker label on side

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



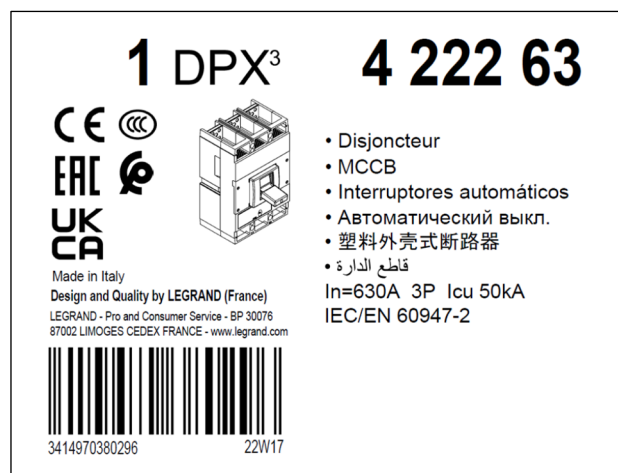
Mark sticker label on side

- 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



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8. EQUIPMENTS AND ACCESSORIES

8.1 Releases (for DPX³ 630 / DPX³ 1600)

- shunt releases with voltage:

24 Vac and dc	ref. 4 222 39
48 Vac and dc	ref. 4 222 40
110÷130 Vac and dc	ref. 4 222 41
220÷250 Vac and dc	ref. 4 222 42
380÷440 Vac and dc	ref. 4 222 43

Shunt releases electrical characteristics	
Rated voltage (U _c)	Both ac and dc: 24V/48V/110÷130V/220÷250V/380÷440V
Voltage range (%U _c)	70 ÷ 110
Intervention time (ms)	≤ 50
Power consumption (W/VA)	300
Minimum opening time (ms)	50 ms
Insulation voltage (kV)	2,5

- undervoltage releases with voltage:

24 V dc	ref. 4 222 44
24 V ac	ref. 4 222 45
48 V dc	ref. 4 222 46
110 - 125 V ac	ref. 4 222 47
220 - 240 V ac	ref. 4 222 48
380 - 415 V ac	ref. 4 222 49

Undervoltage releases electrical characteristics	
Rated voltage (U _c)	ac: 24V/110÷125V/220÷240V/380÷415V dc: 24V/48V
Voltage range (%U _c)	85 ÷ 110
Minimum opening time (ms)	50
Power consumption (W/VA)	1,6 / 5

- time-lag undervoltage releases (800 ms)

Time-lag modules with voltage:

230 V ac	ref. 0 261 90
400 V ac	ref. 0 261 91

Universal Release ref. 4 226 23
(to be equipped with a time-lag module 0 261 90/91)

8.2 Auxiliary contacts (for DPX³ 630 / DPX³ 1600)

Changeover switch 3A – 250 VAC ref. 4 210 11

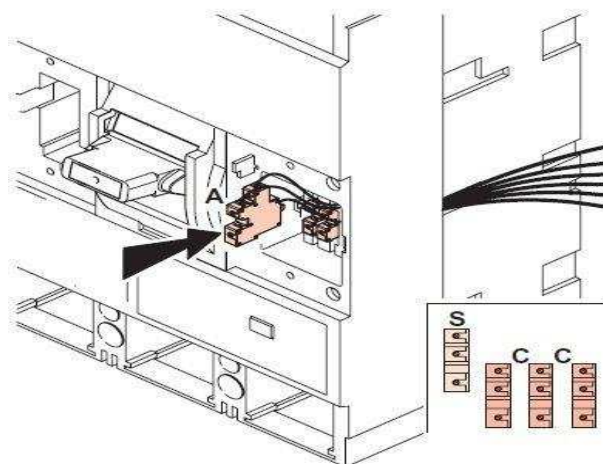
To show the state of the contacts or opening of the DPX³/DPX³-I on a fault:

- Auxiliary contact (standard) **OC**
- Fault signal **CTR**

Auxiliary contact electrical characteristics		
Rated voltage (V _n)	V (ac or dc)	24 to 250
Intensity (A)	24 V dc	5
	48 V dc	1.7
	110 V dc	0.5
	230 V dc	0.25
	110 V ac	4
	230/250 V ac	3

Configurations:

DPX³ 1600 → 3 auxiliary contacts + 1 fault signal + 1 release



To get more information on auxiliary mounting procedures, please refer to product instruction sheet.

8.3 Universal keylocks

These keylocks must be used for all the accessories that can be locked:

- rotary handle
- motor operator
- plug-in mechanism
- draw-out mechanism

For each of these, a specific accessory (indicated in the specific section of this datasheet) must be added in order to get the complete locking kits for the specific application.

- 1 lock + 1 flat key with random mapping ref. 4 238 80
- 1 lock + 1 flat key with fixed mapping (EL43525) ref. 4 238 81
- 1 lock + 1 flat key with fixed mapping (EL43363) ref. 4 238 82
- 1 lock + 1 star key with random mapping ref. 4 238 83

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8.4 Rotary handles

Direct on DPX³ (with auxiliary option)

- Standard (black) ref. 0 262 61

Vari-depth handle IP55 (with auxiliary option)

- Standard (black) ref. 0 262 83
- For emergency use (red / yellow) adapting on standard handle ref. 0 262 84

Locking accessories (for vary-depth handle with auxiliary option)

- Key lock accessory for vari-depth rotary handle ref. 4 228 07

Ref. 4 238 07 must be used with universal keylocks to get the complete locking kit for rotary handle

8.5 Motor-driven handles

Factory assembled

Front operated

- Voltage 230 V AC ref. 0 261 54

Customer assembled

Front operated

- Voltage 24 V AC and DC ($I_n \leq 1250A$) ref. 0 261 24
- Voltage 48 V AC and DC ($I_n \leq 1250A$) ref. 0 261 25
- Voltage 110 V AC and DC ($I_n \leq 1250A$) ref. 0 261 26
- Voltage 220 V AC and DC ($I_n \leq 1250A$) ref. 0 261 23
- Voltage 24 V AC and DC ($I_n = 1600A$) ref. 0 261 19
- Voltage 48 V AC and DC ($I_n = 1600A$) ref. 0 261 28
- Voltage 110 V AC and DC ($I_n = 1600A$) ref. 0 261 29
- Voltage 220 V AC and DC ($I_n = 1600A$) ref. 0 261 27

Locking accessories

- Key lock accessory for motor operator ref. 4 228 06

Ref. 4 228 06 must be used with universal keylocks to get the complete locking kit for motor operator

8.6 Mechanical accessories

Phase insulators

- Set of 3 ref. 0 262 66

Sealable terminal shields

- Set of 2 3P ref. 0 262 64
- Set of 2 4P ref. 0 262 65

Padlock

- Accessories to lock in open position ref. 0 262 60

Terminal covers to guarantee IP20

- Set of 2 3P ref. 4 225 90
- Set of 2 4P ref. 4 225 91
- External neutral ref. 4 225 92

8.7 Connection accessories

Cage terminals

- Set of 4 terminals for cables 2x240mm² max (rigid) or 2x185mm² max (flexible) (Cu/Al) ref. 0 262 69
- Set of 4 terminals for cables 4x240mm² max (rigid) or 4x185mm² max (flexible) (Cu/Al) ref. 0 262 70

Extended front terminals

- Short terminals for 500 - 1250A (2 bars max. per pole) ref. 0 262 67
- Long terminals for 1600A (3 bars max. per pole) ref. 0 262 68

Spreaders

- Set of 3 (incoming or outgoing 3P) ref. 0 262 73
- Set of 4 (incoming or outgoing 4P) ref. 0 262 74

Rear terminals

(use to connect fixed version with front terminals into fixed version with rear terminal)

- Set of swivel terminals, incoming or outgoing
 - 3P ref. 0 263 80
 - 4P ref. 0 263 82
- Set of flat rear terminals, incoming or outgoing
 - 3P ref. 0 263 81
 - 4P ref. 0 263 83

Cage terminal use specifications

DPX ³ 1600							
Type of cage terminal	Cable standard suggested cross section (mm ²)*			Dimensions limits of cable for cage terminals			
	In (A)	Cu	Al	MIN cross section (mm ²)		MAX cross section (mm ²)	
				Flexible	Rigid	Flexible	Rigid
Standard	500	2x150	2x240	95	70	185	240
	630	2x185	\				
	800	2x240	\				
	1000	\	\				
	1250	\	\				
High capacity	500	2x150	2x240	95	70	185	240
	630	2x185	3x240				
	800	2x240	3x240				
	1000	4x150	4x240				
	1250	4x185	\				
	1600	4x240	\				

* The suggested cross section are in compliance with standard IEC60947-1 (ed.6 2020/04) and IEC60947-2 (ed.5.1 2019/07)

DPX³ 1600

Thermal magnetic and trip-free switches

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Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/
262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/
278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/
294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

8.8 Draw-out version

(A DPX³ draw-out version is a plug-in DPX³ fitted with a "Débro-lift" mechanism which can be used to withdraw the DPX³ while keeping it on its base)

Draw-out base

Base for DPX³ 1600 equipped with "Débro-lift" mechanism

- Front terminals
 - 3P ref. 4 225 86
 - 4P ref. 4 225 87
- Rear terminals
 - 3P ref. 4 225 88
 - 4P ref. 4 225 89

"Débro-lift" mechanism

To be fitted on a DPX³ 1600 fixed version in order to obtain the movable part of a drawout circuit breaker

- Mobile part for draw-out version
 - 3P ref. 4 225 93
 - 4P ref. 4 225 94

Key lock for "Débro-lift" mechanism

- One key for DPX³ only
(enable locking in draw - out position)
- Key lock accessory for draw-out
(frontal masks for motor operator or rotary handle) ref. 4 228 09
- Key lock accessory for draw-out ref. 4 228 10

Ref. 4 228 09 and 4 228 10 must be used with universal keylocks to get the complete locking kit for draw-out version

Accessories for "Débro-lift" mechanism

- Isolated handle for drawing-out ref 0 265 75
 - Signal contact (plugged-in / drawn-out) ref 0 265 74
 - Set of connectors (8 contacts) ref 0 263 99
 - Set of connectors (6 contacts) ref 0 263 19
 - Support plate for draw-out version ref 4 225 95
- Automatic auxiliary contacts (12 pin) D/O version ref.4 222 30

8.9 Plate for transfer switches (factory assembled)

(A transfer switch plate is composed of one plate with interlock for 2 devices)

- Plate for breaker or trip-free switch fixed version ref. 0 264 10
- Plate for breaker or trip-free switch plug-in and draw-out version ref. 0 264 05

DPX³ 1600

Thermal magnetic and trip-free switches

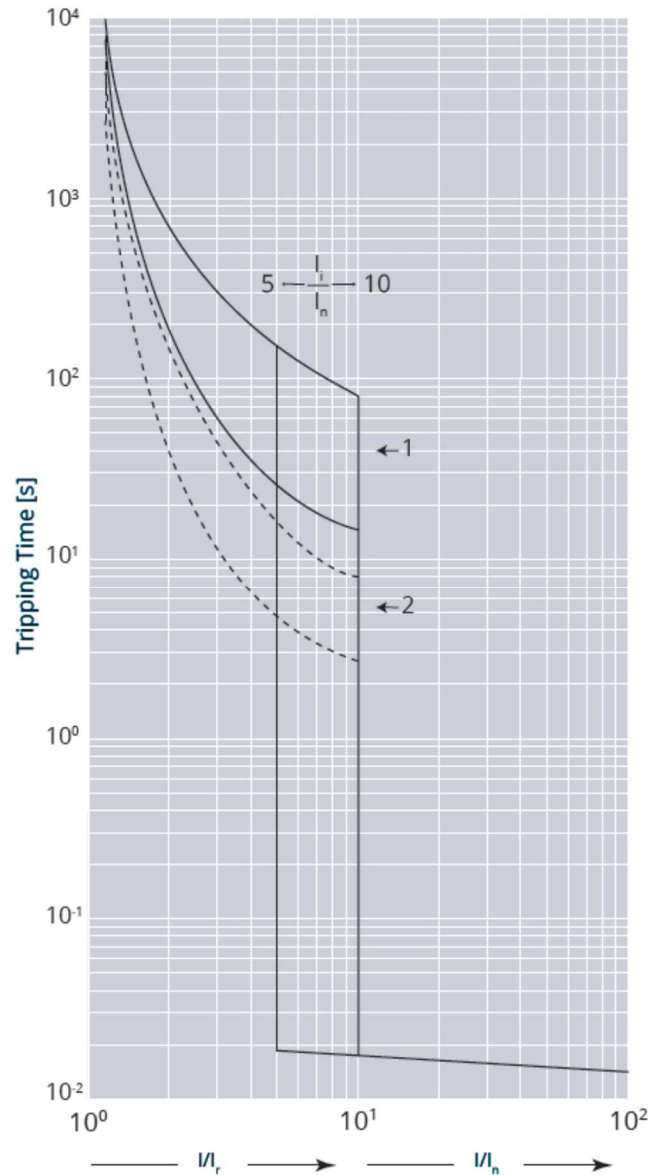
DPX³-I 1600

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/
262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/
278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/
294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

9. CURVES

9.1 Tripping curve

Update: 02/07/2018



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 1600A$ 3-4 P $U_0 = 415Vac$ (IEC/EN 60947-2)

Value	Description
t	time
I	current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
tsd	short time delay
li	instantaneous release
I_{cu}	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping time setting
—————	long time trip curve
-----	short time trip curve
Current tolerance	10% up to I_{sd} ; 20% up to I_l

DPX³ 1600

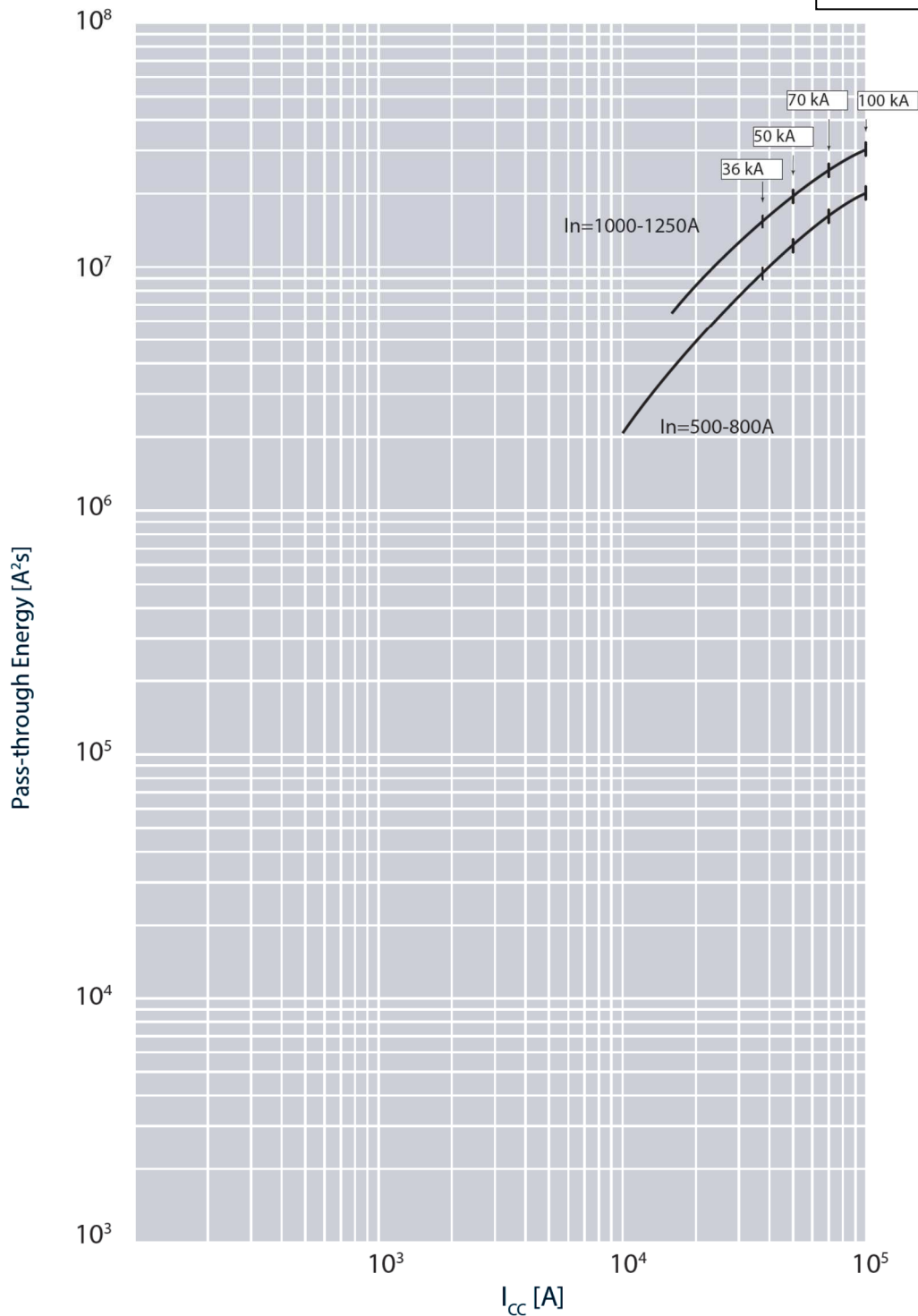
Thermal magnetic and trip-free switches

DPX³-I 1600

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

9.2 Pass-through specific energy characteristic curve

Update: 03/07/2018



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 1600A$ 3-4 P $U_o = 415Vac$ (IEC/EN 60947-2)

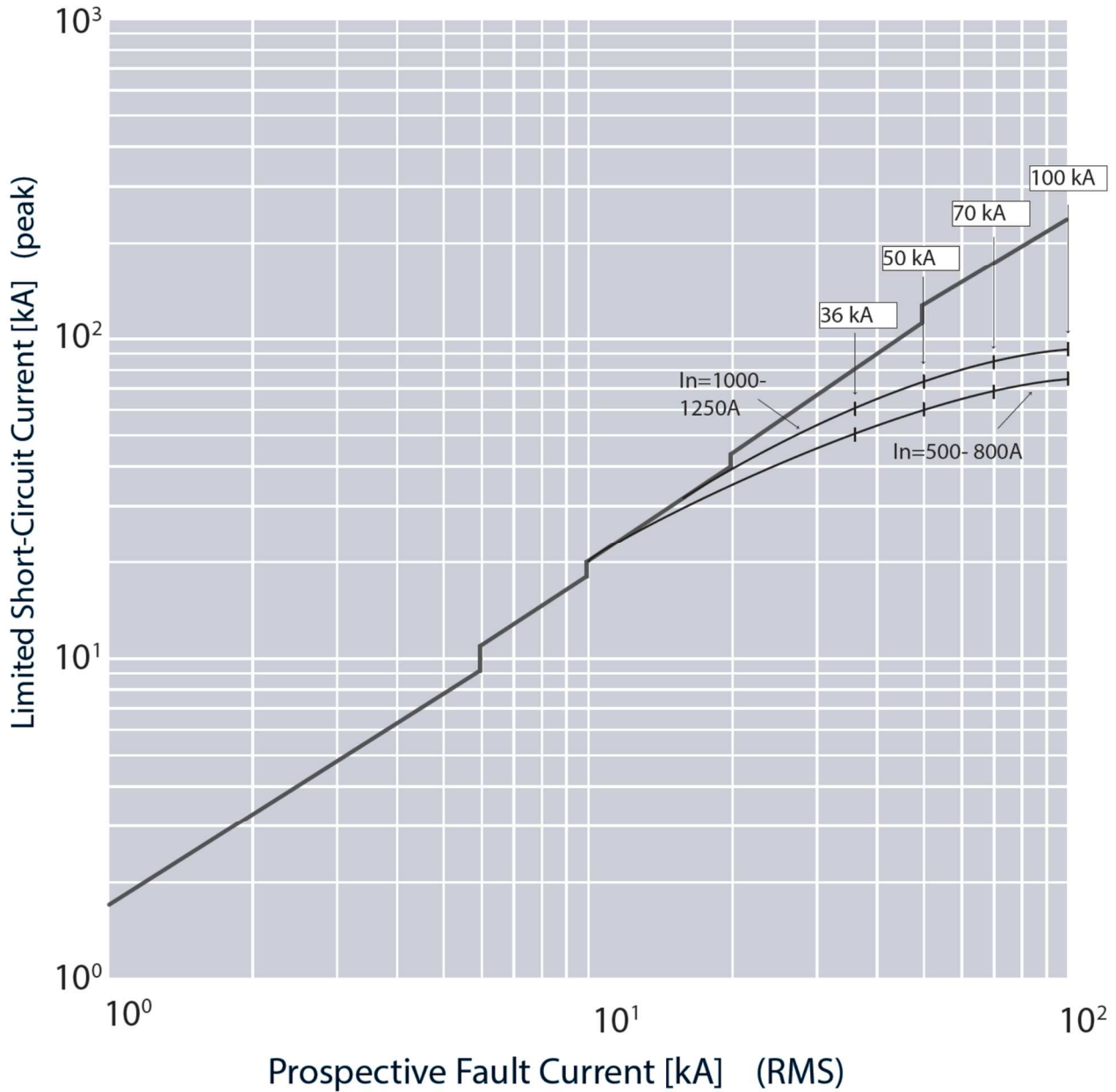
Value	Description
I_{cc}	short circuit current
I^2t (A ² s)	pass-through specific energy

DPX³ 1600
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DPX³-I 1600

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

9.3 Cut-off peak current characteristic curve (kA)

Update: 02/07/2018



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 1600\text{A}$ 3-4 P $U_e = 415\text{Vac}$ (IEC/EN 60947-2)

Value	Description
I_{cc}	estimated short circuit symmetrical current (RMS value)
I_p	maximum short circuit peak current
	maximum prospective short circuit peak current corresponding at the power factor
	maximum real peak short circuit current

DPX³ 1600

Thermal magnetic and trip-free switches

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Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

A) Derating Temperature and configurations

		Ambient temperature											
		30 °C		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	I_{max} (A)	I_r / I_n
Fixed version - 500A	Cage terminals, flexible cable	500	1	500	1	500	1	500	1	500	1	500	1
	Cage terminals, flexible cable + sealable terminal shields	500	1	500	1	500	1	500	1	500	1	500	1
	Lugs, rigid cable	500	1	500	1	500	1	500	1	500	1	500	1
	Spreaders, flexible cable	500	1	500	1	500	1	500	1	500	1	500	1
	Spreaders, bars 2x50x10 Cu	500	1	500	1	500	1	500	1	500	1	500	1
	Rear flat terminals, bars 2x80x5 Cu, vertical	500	1	500	1	500	1	500	1	500	1	500	1
	Rear flat staggered terminals, bars 2x80x5 Cu, vertical	500	1	500	1	500	1	500	1	500	1	500	1
Fixed version - 800A	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	I_{max} (A)	I_r / I_n	
	Cage terminals, flexible cable	800	1	800	1	800	1	800	1	800	1	800	1
	Cage terminals, flexible cable + sealable terminal shields	800	1	800	1	800	1	800	1	800	1	800	1
	Lugs, rigid cable	800	1	800	1	800	1	800	1	800	1	800	1
	Spreaders, flexible cable	800	1	800	1	800	1	800	1	800	1	800	1
	Spreaders, bars 2x50x10 Cu	800	1	800	1	800	1	800	1	800	1	800	1
	Rear flat terminals, bars 2x80x5 Cu, vertical	800	1	800	1	800	1	800	1	800	1	800	1
Rear flat staggered terminals, bars 2x80x5 Cu, vertical	800	1	800	1	800	1	800	1	800	1	800	1	
Fixed version - 1000A	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	I_{max} (A)	I_r / I_n	
	Cage terminals, flexible cable	1000	1	1000	1	1000	1	1000	1	950	0.95	900	0.9
	Cage terminals, flexible cable + sealable terminal shields	1000	1	1000	1	1000	1	1000	1	950	0.95	900	0.9
	Lugs, rigid cable	1000	1	1000	1	1000	1	1000	1	950	0.95	900	0.9
	Spreaders, flexible cable	1000	1	1000	1	1000	1	1000	1	1000	1	900	0.9
	Spreaders, bars 2x50x10 Cu	1000	1	1000	1	1000	1	1000	1	1000	1	900	0.9
	Rear flat terminals, bars 2x80x5 Cu, vertical	1000	1	1000	1	1000	1	1000	1	1000	1	900	0.9
Rear flat staggered terminals, bars 2x80x5 Cu, vertical	1000	1	1000	1	1000	1	1000	1	1000	1	900	0.9	
Fixed version - 1250A	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	I_{max} (A)	I_r / I_n	
	Cage terminals, flexible cable	1250	1	1250	1	1250	1	1087.5	0.87	975	0.78	937.5	0.75
	Cage terminals, flexible cable + sealable terminal shields	1250	1	1250	1	1250	1	1087.5	0.87	975	0.78	937.5	0.75
	Lugs, rigid cable	1250	1	1250	1	1250	1	1087.5	0.87	975	0.78	937.5	0.75
	Spreaders, flexible cable	1250	1	1250	1	1250	1	1125	0.9	1000	0.8	937.5	0.75
	Spreaders, bars 2x50x10 Cu	1250	1	1250	1	1250	1	1125	0.9	1000	0.8	937.5	0.75
	Rear flat terminals, bars 2x80x5 Cu, vertical	1250	1	1250	1	1250	1	1125	0.9	1000	0.8	937.5	0.75
Rear flat staggered terminals, bars 2x80x5 Cu, vertical	1250	1	1250	1	1250	1	1125	0.9	1000	0.8	937.5	0.75	

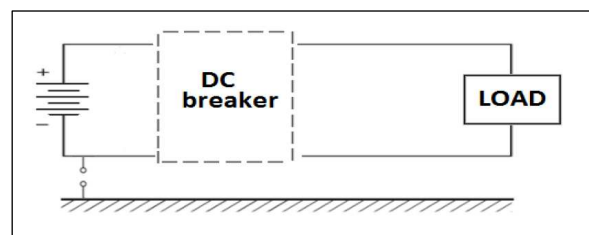
For further technical information, please contact Legrand technical support.

B) Use in DC

B.1 Circuit breakers: breaking capacity in DC (kA) (values estimates only)

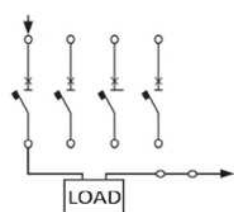
Applied to DC networks insulated from the ground
(this diagram applies to both 3P and 4P circuit breakers):

I_{cu} (kA)	I_n (A)	1 pole *				2 poles in series *			3 poles in series *		
		60 V	60 V	110 V	250 V	110 V	250 V	500 V	110 V	250 V	500 V
36	500 ÷ 1250	35	35	35	35	35	35	35	35	35	35
50	500 ÷ 1250	50	50	50	50	50	50	50	50	50	35
70	500 ÷ 1250	70	70	70	70	70	70	70	70	70	70
100	500 ÷ 1250	100	100	100	70	100	70	70	100	70	70

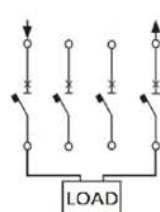


DC breaking capacity in the table respect the standards.
The positive tolerance is between 0% to 5% of voltage status.

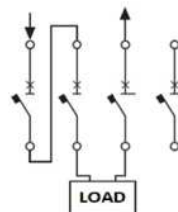
* Connection modality for DC breaker (polarity can be inverted):



1 pole



2 poles in series



3 poles in series

DPX³ 1600

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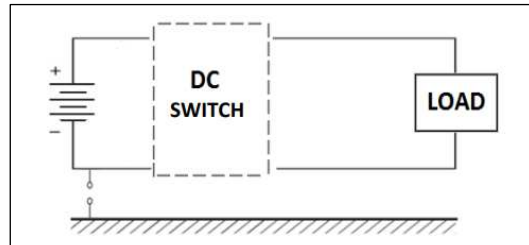
DPX³-I 1600

Reference(s) : 422 250 /251/ 252/ 253/ 254/ 255 /256/ 257/ 258/ 259/ 260/ 261/ 262/263/ 264/ 265/ 266/ 267/268/ 269/ 270/ 271/ 272/ 273/274/ 275/ 276/ 277/ 278/279/ 280/ 281/ 282/ 283/ 284/ 285/286/ 287/ 288/ 289/ 290/ 291/ 292/ 293/ 294/ 295/ 296/ 297 & 422 490/ 491/ 492/ 493/ 494/ 495/ 496/ 497

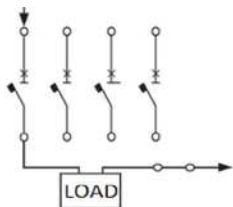
B.2 Switch disconnectors: category of use

	1 pole *	2 poles in series *		3 poles in series *	4 poles in series *
I _n (A)	60 V	110 V	250	500 V	750 V
800	DC23	DC23	DC23	DC23	DC23
1250	DC23	DC23	DC23	DC23	DC23
1600	DC23	DC23	DC23	DC23	DC23

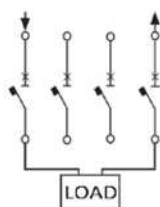
Applied to DC networks insulated from the ground



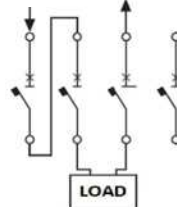
* Connection modality for DC switch disconnectors (polarity can be inverted):



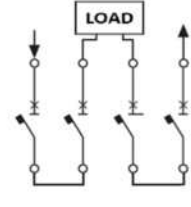
1 pole



2 poles in series



3 poles in series



4 poles in series

Data indicated in this document refers exclusively to test conditions according to product standards, unless otherwise indicated in the documentation.

For the different conditions of use of the product, inside electrical equipment or in any case inserted in the installation context, refer to the regulatory requirements of the equipment, local regulations and design specifications of the system