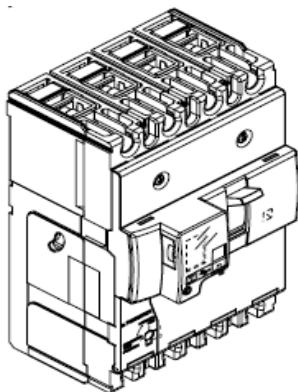


DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197



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1. USE

DPX³ "moulded case" offers optimal solutions to answer protection requirements of tertiary and industrial installations.

2. RANGE

DPX³

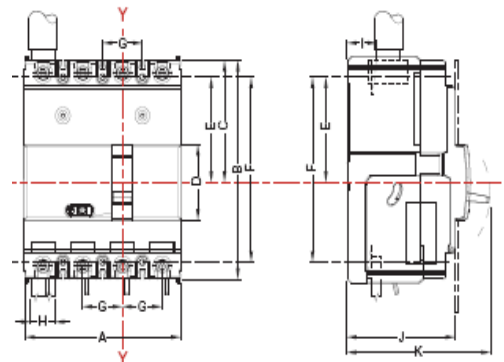
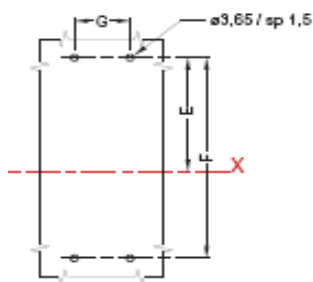
In (A)	16 kA 4P	25 kA 4P	36 kA 4P	50 kA 4P
16	420 030	420 070	420 110	420 150
25	420 031	420 071	420 111	420 151
40	420 032	420 072	420 112	420 152
63	420 033	420 073	420 113	420 153
80	420 034	420 074	420 114	420 154
100	420 035	420 075	420 115	420 155
125	420 036	420 076	420 116	420 156
160	420 037	420 077	420 117	420 157

DPX³-I

	4P
160	420 197

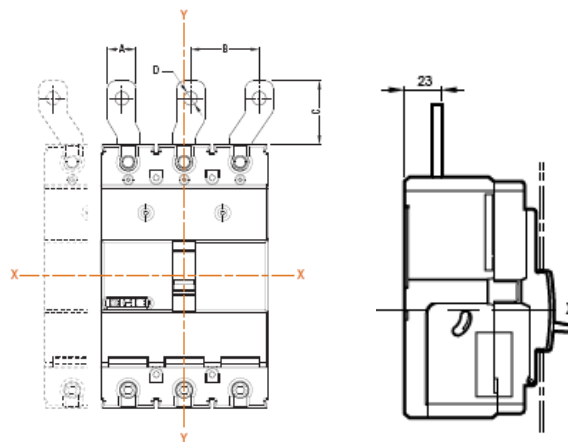
3. DIMENSIONS

3.1 Fixed version



	A	B	C	D	E	F	G	H	I	J	K
160 DIFF	108	160	72,5	45	62,5	140	27	19	18	74	97

3.2 Fixed version, front terminals

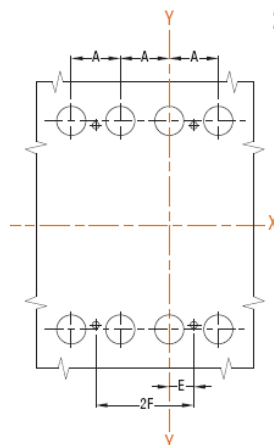
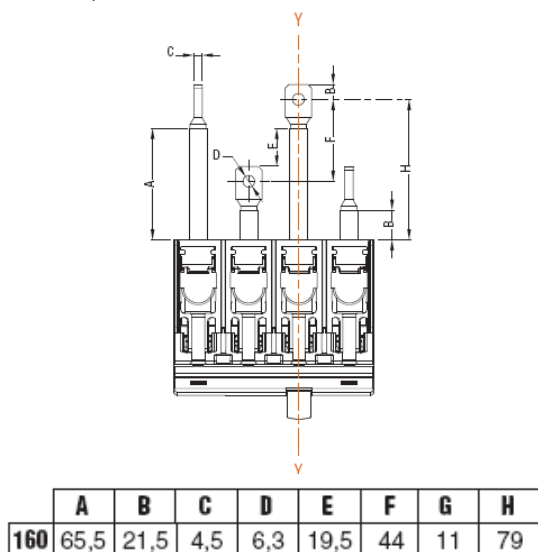


	A	B	C	D
160	17,5	35	41	8,5

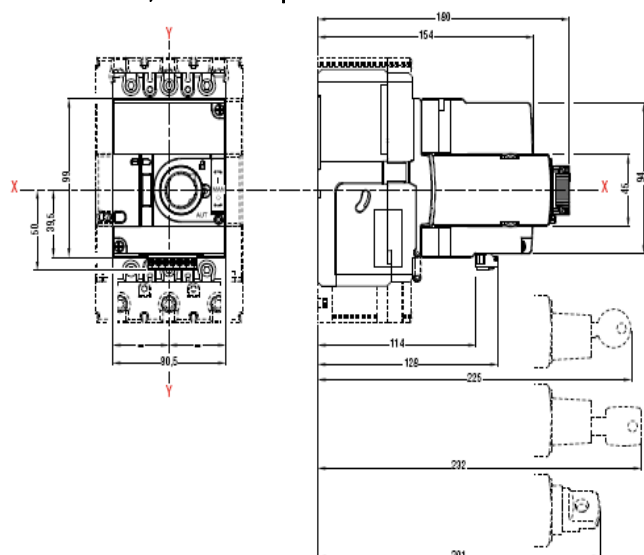
DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

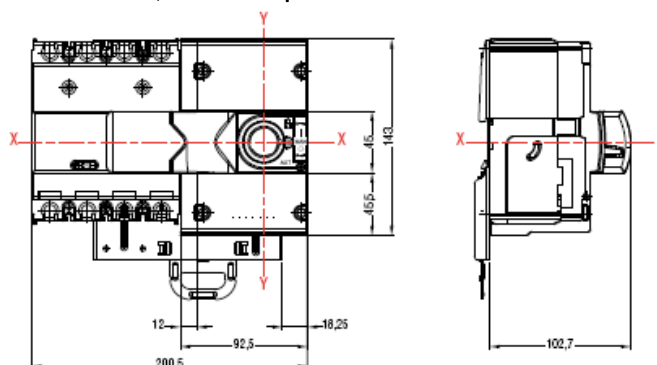
3.3 Fixed version, rear terminals



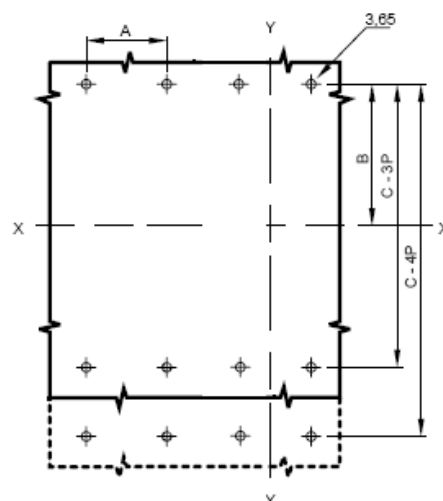
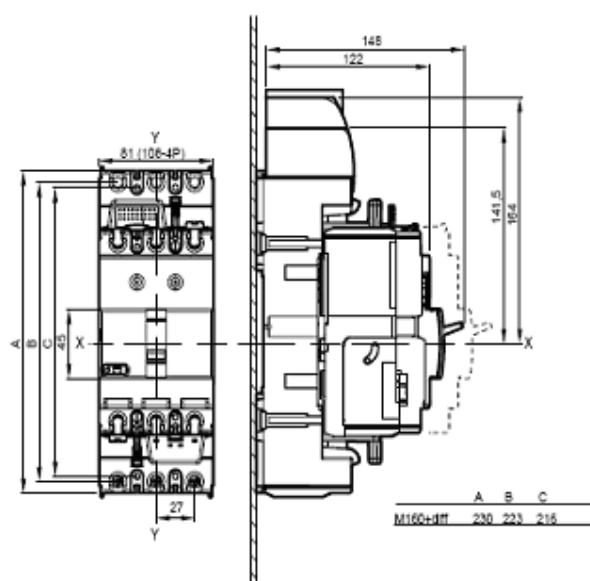
3.4 Fixed version, front motor operator



3.5 Fixed version, side motor operator



3.6 Plug-in version



	A	B	C
DPX ³ 160 + earth leakage	27	100,5	216

DPX³ 160 + earth leakage

DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/ 072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/ 150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

4. ELECTRICAL AND MECHANICAL CHARACTERISTICS

4.1 Breaker technical characteristics

Circuit breaker	DPX ³ 160 + earth leakage
Rated current I _n (A)	16-160
Rated insulation voltage U _i (V)	600
Rated operational voltage U _e (V)	500 V (ac) 500 V (dc)
Rated impulse withstand volt. U _{imp} (kV)	6
Ambient temperature (°C)	40
Endurance electrical / mechanical	8000/10000
Utilization category	A
Releases type	thermal-mag + earth leakage
Nominal frequency (Hz)	50-60
Thermal adjustment	0,8 ÷ 1 I _n
Magnetic threshold (for 16 and 25A I _m = 400A)	10 x I _n

4.2 Switches technical characteristics

Switches	DPX ³ -I 160
Rated current I _n (A)	160
Rated insulation voltage U _i (V)	800
Rated operational voltage U _e (V)	690 V (ac) 500 V (dc)
Rated impulse withstand voltage U _{imp} (kV)	8
Ambient temperature (°C)	40
Endurance electrical / mechanical	8000/25000
Nominal frequency (Hz)	50-60
Rated short-time withstand current I _{cw} (1 s) (kA)	1,7
Rated short-circuit making capacity I _{cm} (kA)	2,4
AC 22, AC 23, DC 22, DC 23 (A)	160

4.3 Breaking capacity (kA)

Breaking capacity I _{cu} and I _{cs} in AC (kA)					
	U _e	16 kA	25 kA	36 kA	50 kA
I _{cu} (kA)	220/240V	25	36	50	65
	380/415V	16	25	36	50
	440V	10	18	25	30
	460V	10	18	25	30
	480/500V	8	10	12	15
I _{cs} (%I _{cu})	-	100	100	100	100
Rated short-circuit making capacity I _{cm} (kA)					
	U _e	16 kA	25 kA	36 kA	50 kA
I _{cm} (kA)	415 V	32	52.5	75.6	105

4.4 Derating temperature Ta (°C)

Influence of ambient temperature Ta(°C)												
In (A)	-25	-20	-10	-5	0	10	20	30	40	50	60	70
16	22	21	20	20	20	19	18	16	16	15	14	13
25	34	33	32	31	31	30	28	25	25	24	22	21
40	54	53	51	50	49	48	45	41	40	38	36	34
63	85	83	81	79	78	76	71	65	63	60	58	55
80	108	106	102	100	99	96	90	85	80	76	72	67
100	135	132	128	126	123	120	112	102	100	97	94	90
125	169	165	160	157	154	150	140	127	125	118	112	105
160	216	211	205	201	197	192	179	168	160	154	145	139

4.5 Breaker power loss (W)

4.5.1 Breaker power loss (W)

Power loss DPX ³ 160 + earth leakage (W)								
In (A) ---->	16	25	40	63	80	100	125	160
Cage terminals	2,8	5	5,1	6,7	7	11	12,5	15,4
Lugs	2,8	5	5,1	6,7	7	11	12,5	15,4
External terminals	2,8	5	5,1	6,7	7	11	12,5	15,4
Spreaders	2,8	5	5,1	6,7	7	11	12,5	15,4
Rear terminals	2,8	5	5,1	6,7	7	11	12,5	15,4
Plugin version	2,9	5,1	5,4	7,5	8,3	13	15,6	20,5

4.5.2 Switches power loss (W)

Power loss DPX ³ -I 160 (W)	
In (A) ---->	160
Cage terminals	9,2
Lugs	9,2
External terminals	9,2
Spreaders	9,2
Rear terminals	9,2
Plugin version	14,3

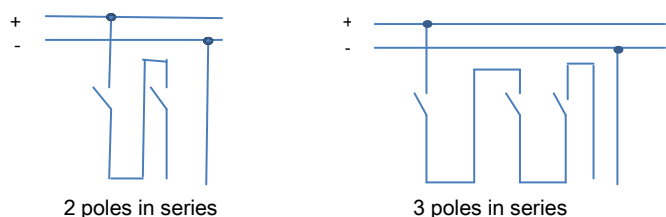
DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

4.6 Short-circuit breaking capacity in D.C. current

Short-circuit breaking capacity in D.C. current				
Breaking capacity I _{cu} (kA)				
	2 p. in ser.	2 p. in ser.	3 p. in ser.	3 p. in ser.
	110-125V	250V	400V	500V
160 16kA	32	16	16	10
160 25kA	50	25	25	20
160 36kA	60	30	30	25
160 50kA	80	40	40	35

* Earth leakage protection not available



4.7 Protection in DC

Protection in D.C. current		
	thermal	magnetic
160 16 kA	like AC	1,5 I _m AC
160 25 kA	like AC	1,5 I _m AC
160 36 kA	like AC	1,5 I _m AC
160 50 kA	like AC	1,5 I _m AC

4.8 Altitude

Altitude (m)				
	Altitude (m)	≤2000	3000	4000
DPX ³ 160	Rated current (A)	1 x I _n	0,96 x I _n	0,93 x I _n
	Rated voltage (V)	500	500	400

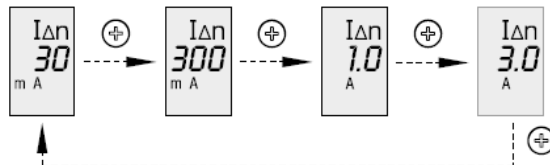
4.9 Loads operation

Loads operation	
Rated current (A)	I _n =160
Opening (N)	45
Closing (N)	78
Reset (N)	75

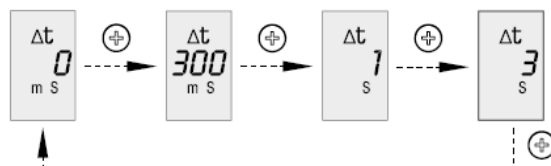
5. NAVIGATION

Setup mode

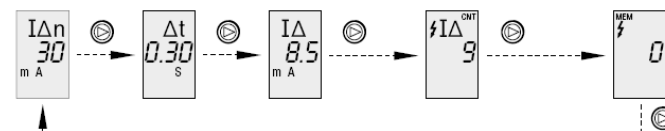
Setting I_{Δn}:



Setting t:



ATTENTION: after 5" of permanence on display of the new protection value I_{Δn} or time Δt, it is automatically set.

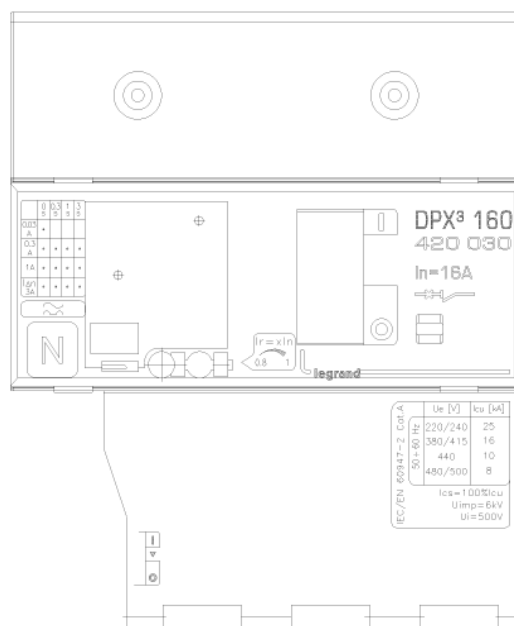


I_{Δn} value Δt value IΔ measured History of interventions
set set value present for differential intervention

6.CONFORMITY

IEC 60947-2
(for switches IEC 60947-3)
EN 60947-2
(for switches EN 60947-3)

7. MARKING



DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

8. EQUIPMENTS AND ACCESSORIES

8.1 Releases

• Shunt releases with voltage:

12 Vac/dc	ref. 421 012
24 Vac/dc	ref. 421 013
48 Vac/dc	ref. 421 014
110-130 Vac	ref. 421 015
200-277 Vac	ref. 421 016
380-480 Vac	ref. 421 017

• undervoltage releases with voltage:

12 Vac/dc	ref. 421 018
24 Vac/dc	ref. 421 019
48 Vac/dc	ref. 421 020
110 Vac	ref. 421 021
200-240 Vac	ref. 421 022
277 Vac	ref. 421 023
380-415 Vac	ref. 421 024
440-480 Vac	ref. 421 025

• auxiliary contact:

set of connectors for aux contacts	ref. 421 044
aux contacts and fault signal	ref. 421 011
aux contacts (1NC and 1 NO) for all rotary handles	ref. 421 010
inserted device signal	ref. 421 048

8.2 Rotary handles :

Direct:

• DPX ³ direct rotary handle ele/RCD	ref. 421 001
• DPX ³ emergency direct rotary handle ele/RCD	ref. 421 003

Vari-depht:

• DPX ³ vari depth rotary handle	ref. 421 004
• DPX ³ emergency vari depth rotary handle	ref. 421 005

Locking accessories

• locking acc. for direct rotary handle - ronis	ref. 421 006
• locking acc. for direct rotary handle - profalux	ref. 421 007
• locking acc. for vari depth rotary handle - ronis	ref. 421 008
• locking acc. for vari depth rotary handle – profalux	ref. 421 009

8.3 Mechanical accessories :

Insulated shields

• Set of 3	ref. 421 070
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Sealable terminal shields

• sealable terminal shield for rear terminals 160 4P	ref. 421 051
• sealable terminal shield for front spreaders 160 4P	ref. 421 055

Padlocks

• DPX ³ padlock accessory for handle (off)	ref. 421 049
---	--------------

Interlock:

• DPX ³ interlock mounting plate	ref. 421 058
• DPX ³ interlock for plug-in / draw-out version	ref. 421 059

8.4 Connection's accessories :

Cage terminals

• High capacity terminals for al or cu cables kit (4) - flex 1x120mm ² , rigid 1x150mm ² , bar/cable lug 18mm	ref. 421 027
• rack screw and nut for cable lug (4)	ref. 421 029

Front spreaders

• DPX ³ front spreaders for 4P DPX ³ 160 (4)	ref. 421 033
--	--------------

Rear terminals

• DPX ³ flat rear terminals for 4P DPX ³ 160 (4)	ref. 421 037
--	--------------

8.5 Plug-in version

Bases

• front/rear terminals plug-in base 4P DPX ³ 160	ref. 421 041
---	--------------

Locking accessories

• locking accessory for plug-in base – ronis	ref. 421 045
• locking accessory for plug-in base – profalux	ref. 421 046
• padlock accessory for plug-in base	ref. 421 047

8.6 Motor operator

• side motor operator 24-230 Vac - 24-230 Vdc	ref. 421 060
• front motor operator 24-230 Vac - 24-230 Vdc	ref. 421 061

Locking accessories for front motor operator:

• locking acc. for front motor operator - ronis	ref. 421 062
• locking acc. for front motor operator – profalux	ref. 421 063
• padlock selector for front motor operator	ref. 421 064

Locking accessories for side motor operator:

• locking acc. for side motor operator - ronis	ref. 421 065
• locking acc. for side motor operator – profalux	ref. 421 066
• padlock selector for side motor operator	ref. 421 067

Din plate:

DPX ³ din plate for motor operator DPX ³ 160	ref. 421 068
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8.7 Mounting on rail fixing plate

DPX ³ din rail fixing plate DPX ³ 160 4P+Earth Leakage	ref. 421 073
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8.8 Supply

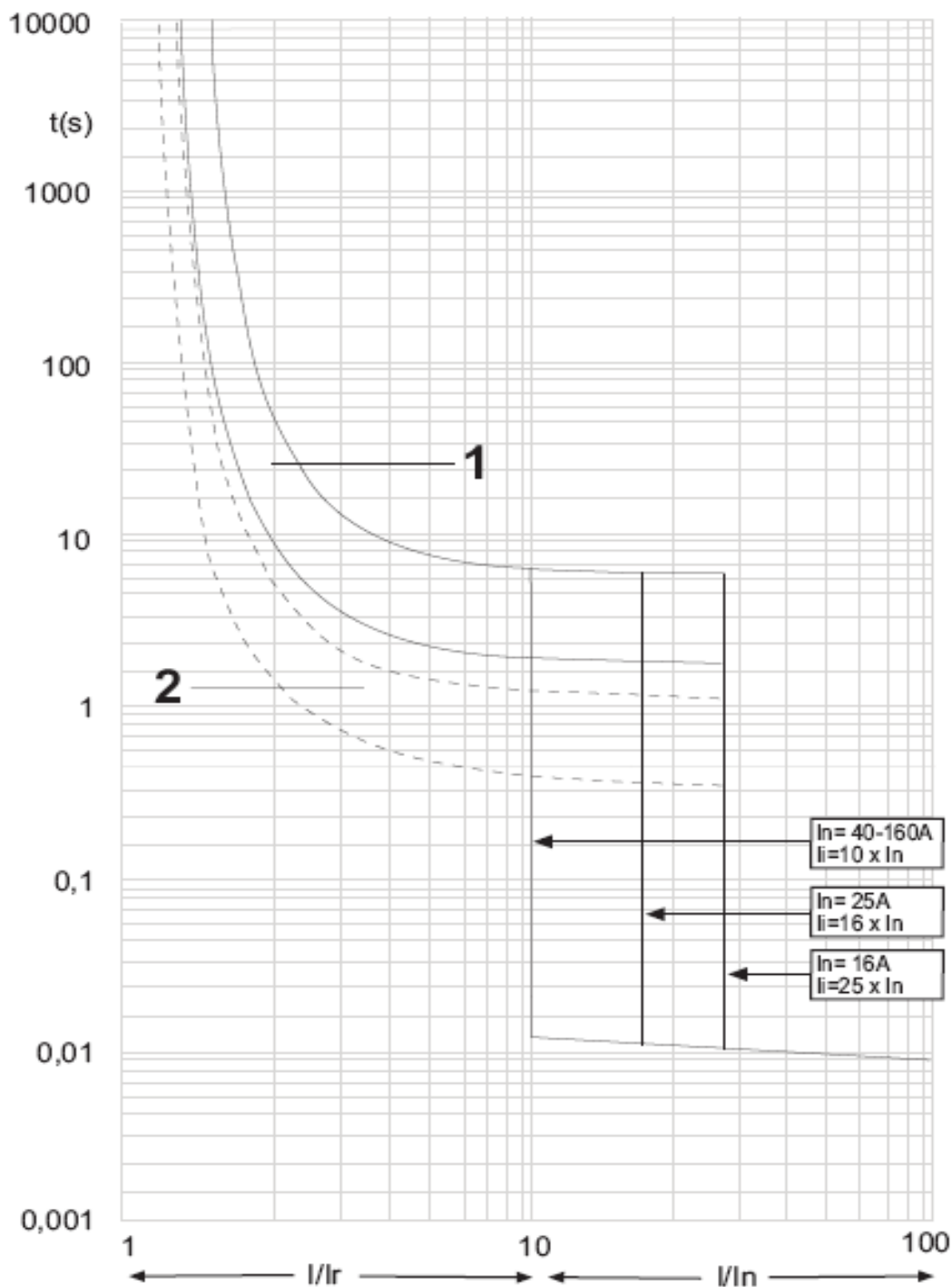
Lithium battery CR1616 3V x 2	ref. 421 082
-------------------------------	--------------

DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

9. CURVES

9.1 TRIPPING CURVE



t = time

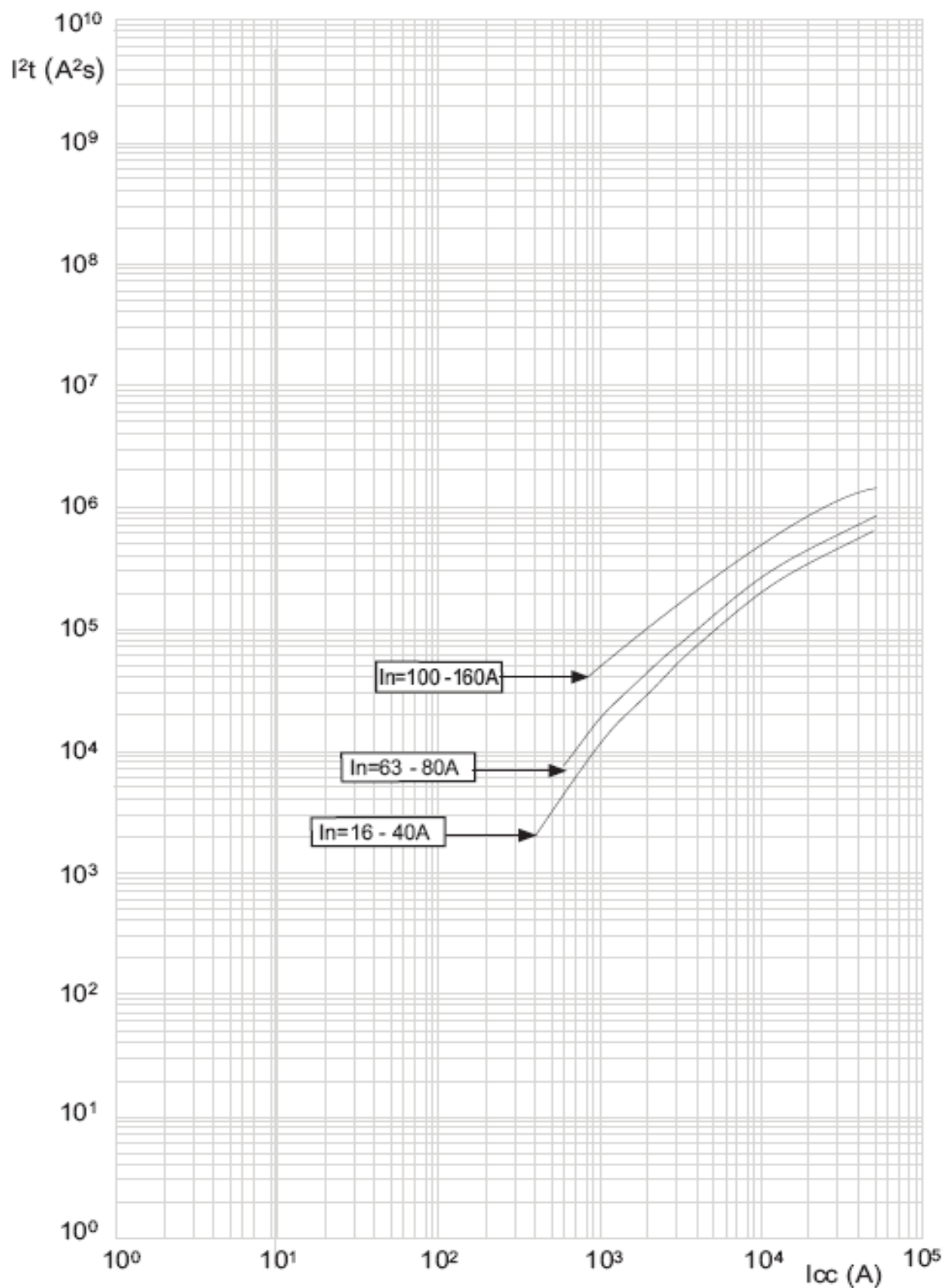
I = rated current □

I_r = setting current

curve number 1 = characteristic with cold start

curve number 2 = characteristic with hot start

9.2 Energy curve

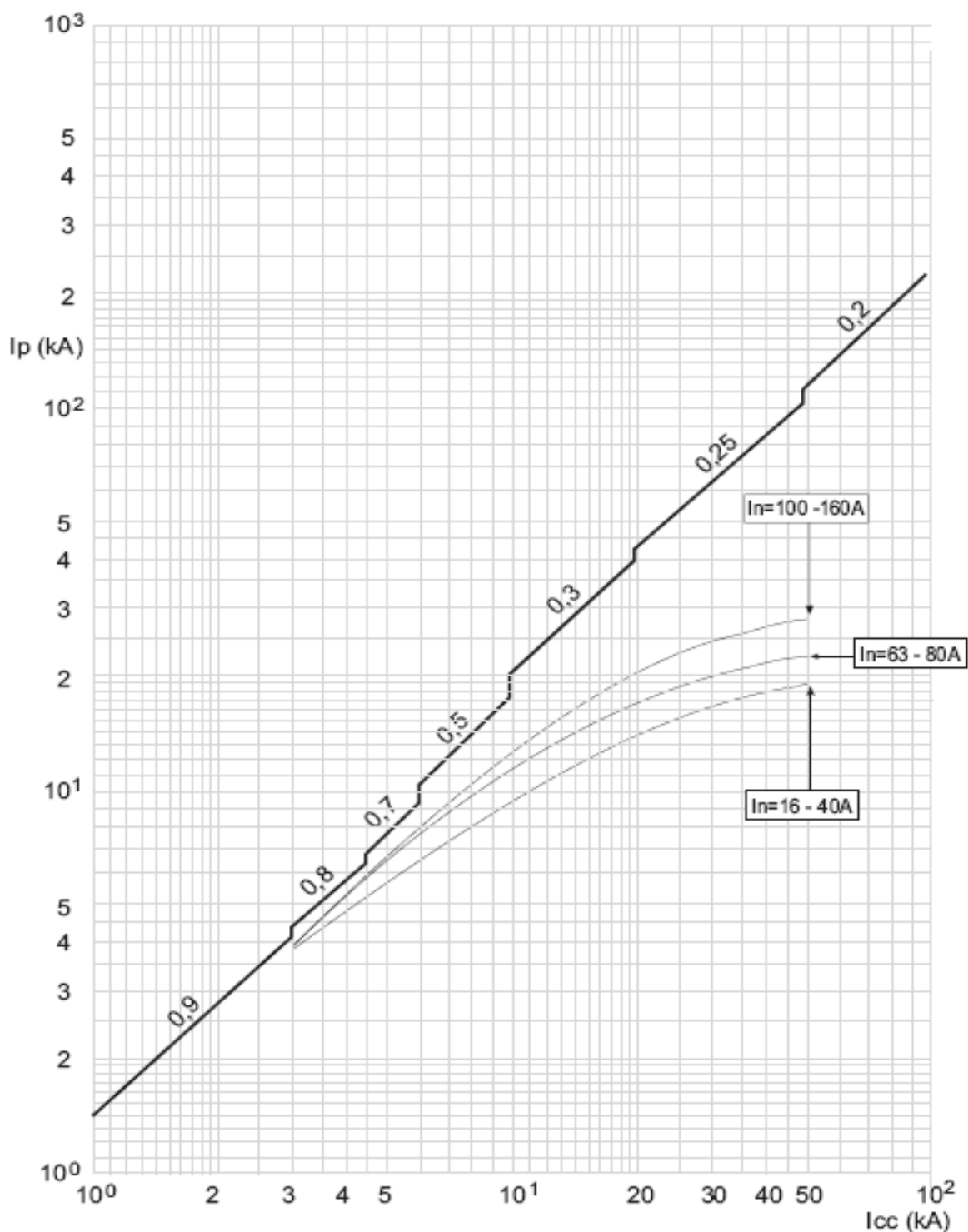


I_{cc} = estimated short circuit symmetrical current (RMS value)
 I^2t (A^2s) = pass-through specific energy

DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
150/ 151/ 152/ 153/ 154/ 155/ 156/ 157/ 197

9.3 Restricted current curve



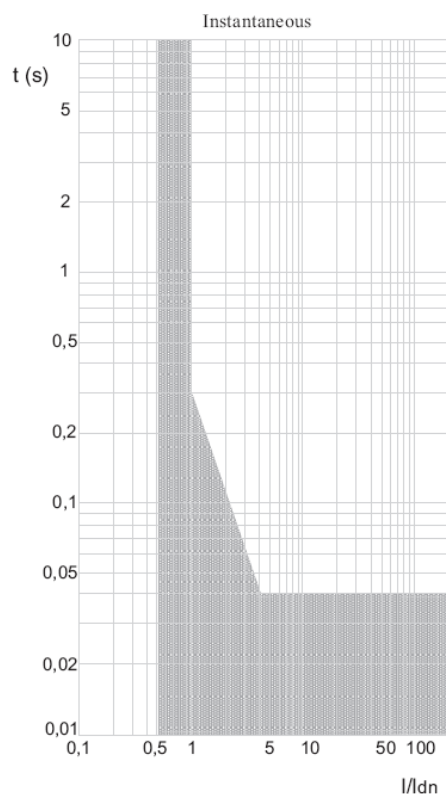
I_{cc} = estimated short circuit symmetrical current (RMS value)

I_p = maximum short circuit peak current

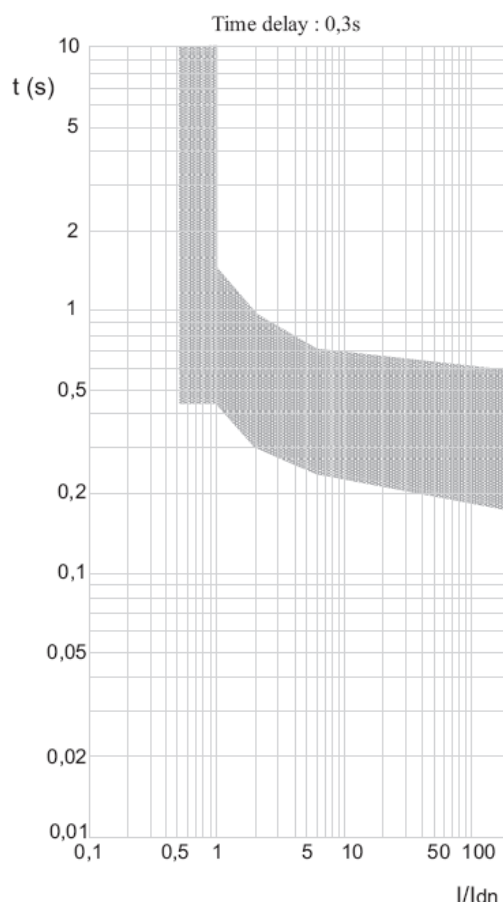
— maximum prospective short circuit peak current
corresponding at the power factor

— maximum real peak short circuit current

9.4 Earth leakage curve, instantaneous



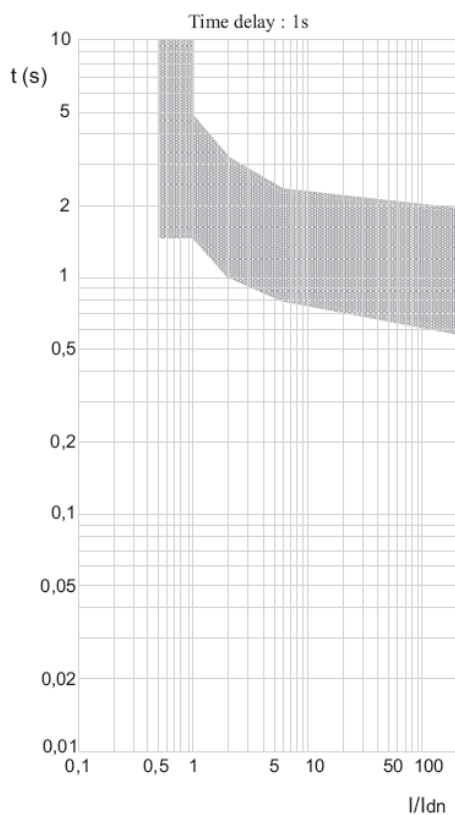
9.4 Earth leakage curve, time delay = 0.3 s



DPX³ 160 + earth leakage DPX³-I 160 + earth leakage

Reference(s) : 420 030/ 031/ 032/033/ 034/ 035/ 036/ 037/ 070/ 071/
072/ 073/ 074/ 075/ 076/ 077/ 110/ 111/ 112/ 113/ 114/ 115/ 116/ 117/
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9.4 Earth leakage curve, time delay = 1 s



9.4 Earth leakage curve, time delay = 3 s

