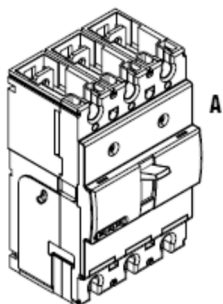


DPX³ 250

Magnetic only

Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725



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1. USE

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

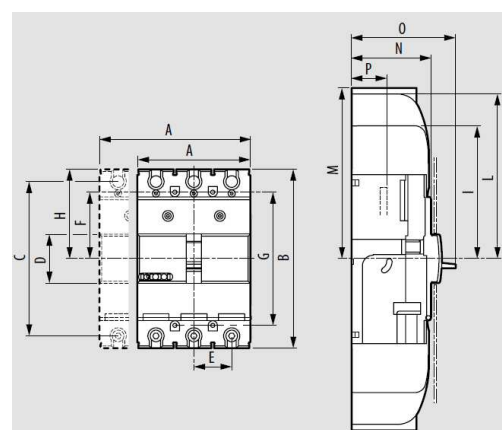
2. RANGE

Circuit breakers

	36 kA	70 kA
I _n (A)	3P	3P
100	4 207 18	4 207 22
160	4 207 19	4 207 23
200	4 207 20	4 207 24
250	4 207 21	4 207 25

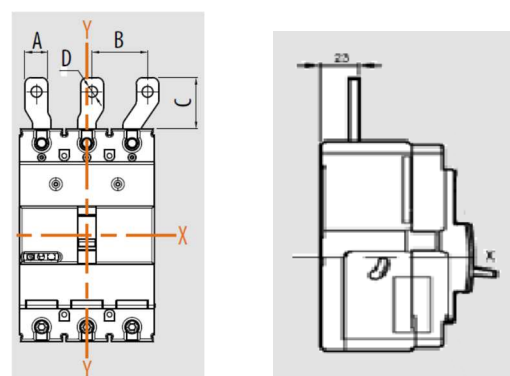
3. DIMENSIONS

Fixed version



	A	B	C	D	E	F	G	H	I	L	N	O	P
3P	105	165	142,5	45	35	61,5	123	82,5	112,5	150	74	100	18

Fixed version, front terminals



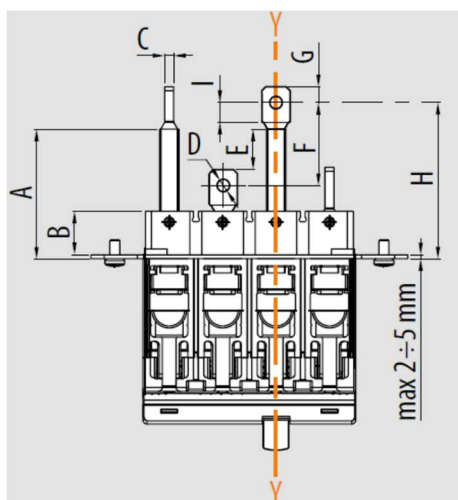
A	B	C	D
33	48,5	54,75	13

DPX³ 250

Magnetic only

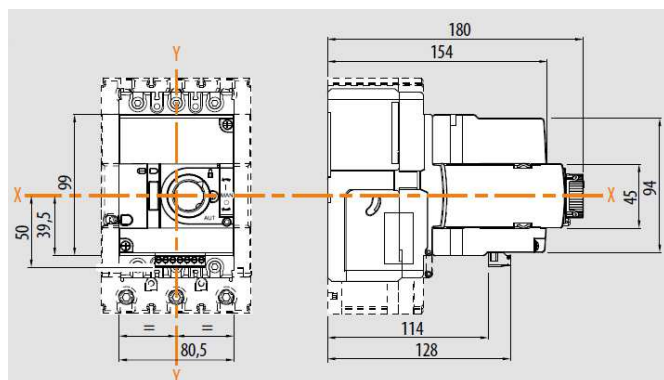
Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725

Fixed version, rear terminals

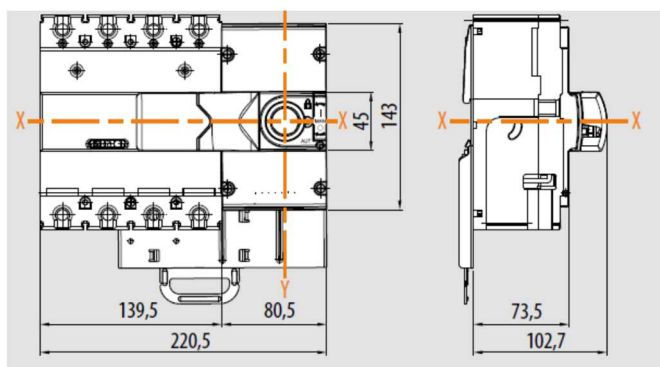


A	B	C	D	E	F	G	H	I
66,5	22	6	8,4	15,5	44	15	79	10

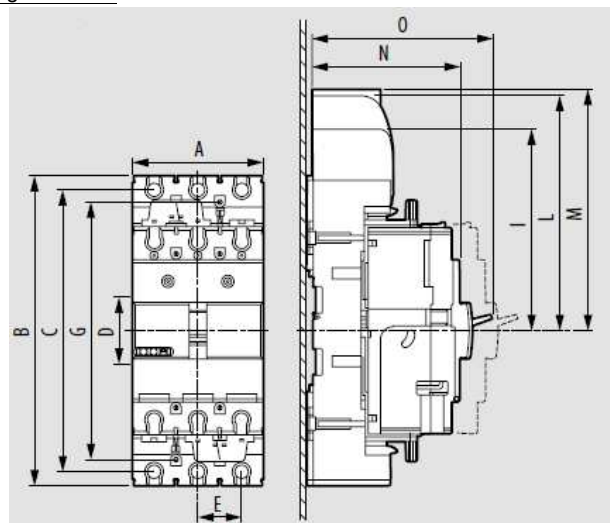
Fixed version, front motor operator



Fixed version, side motor operator



Plug-in version



	A	B	C	D	E	F	G	H	I	L	M	N	O
3P	105	248	225,5	45	35	103	206	150	180	217,5	-	122	148

4. OVERVIEW

4.1 Supplied

Supplied with

- fixing screws
- connection plates for bars and cable lugs
- insulating shields (phase barrier)

4.2 Mounting possibilities

On plate:

- Vertical
- Horizontal
- Supply inverter type

On DIN rail:

- Vertical
- Supply inverter type

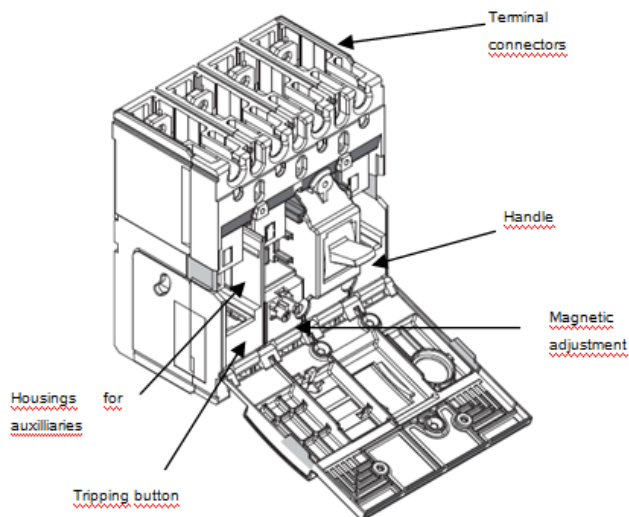
DPX³ 250

Magnetic only

Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725

5. ELECTRICAL AND MECHANICAL CHARACTERISTICS

5.1 Main parts constituting the circuit breaker



Circuit Breaker	DPX ³ 250 (F/H) (36kA, 70kA)
Rated current (A)	100, 160, 200, 250
Poles	3 - 4
Rated insulation voltage U_i (V)	800
Rated operating voltage (50/60Hz) U_e (V)	690
Rated impulse withstand current U_{imp} (kV)	8
Rated frequency (Hz)	50 - 60
Reference ambient temperature (°C)	40 - 50
Operating temperature (°C)	-25 ÷ 70
Mechanical endurance (cycles)	20000
Mechanical endurance with motor control (cycles)	20000
Electrical endurance at I_n (cycles)	8000
Electrical endurance at 0.5 I_n (cycles)	10000
Utilization category	A
Suitable for isolation	Yes
Type of protection	Magnetic
Magnetic adjustment	5 - 10 x I_n
Magnetic threshold ($I_n = 100A$)	800÷1600
Magnetic threshold ($I_n = 160A$)	1000÷2000
Magnetic threshold ($I_n = 200A$)	1250÷2500
Magnetic threshold ($I_n = 250A$)	1250÷2500
Dimensions (W x H x D) (mm) 3P	105 x 165 x 100
Weight (kg)	2.0 (3P)

5.2 Breaking capacity (kA)

		Breaking capacity (kA) & I_{cs}	
		3P-4P	3P-4P
IEC 60947-2	U_e/I_{cu}	F	H
	220/240 V AC	60	100
	380/415 V AC	36	70
	440/460 V AC	30	60
	480/500 V AC	25	40
	600 V AC	20	25
	690V AC	16	20
	$I_{cs}(\% I_{cu})$	100	100
	Rated making capacity under short circuit I_{cm}		
	I_{cm} (kA) at 415V	75.6	154
NEMA AB-1	220/240 V AC	60	100
	480/500 V AC	25	40
	690V AC	16	20

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

I_n (A)	Assigned current trip
	magnetic
100	1600
160	2000
200	2500
250	2500

5.4 Power losses per pole under I_n

Circuit breaker

	Power losses per pole (W)			
	I_n (A)			
	100	160	200	250
Lugs	1.9	6.6	6.6	16.2

Values in the table are referred to single phase and they are misured with cold breaker (with hot breaker, increase of 10% must be considered)

5.5 Load operations

Loads operation	
Rated current (A)	$I_n = 250A$
Opening (N)	45
Closing (N)	78
Reset (N)	75

DPX³ 250

Magnetic only

Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725

5.6 Functioning in particular conditions

5.6.1 Temperature

I _n (A)	Temperature T _a (°C)											
	-25	-20	-10	-5	0	10	20	30	40	50	60	70
100	135	132	128	126	123	120	112	102	100	100	90	84
160	216	211	205	201	197	192	179	163	160	160	143	134
200	270	264	256	251	246	240	224	203	200	200	179	168
250	338	330	320	314	308	300	280	254	250	250	224	210

5.6.2 Altitude

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

5.6.3 Use in DC

See table B.

6. CONFORMITY

DPX³ range of product concerning circuit-breakers and switch-disconnectors are in full compliance with the EN/IEC standard 60947-2 and 60947-3 respectively.

The certificate are issued by LOVAG and/or by IECEE CB-scheme certification scheme.

All the product range are CE, CCC, EAC, ANCE marked.

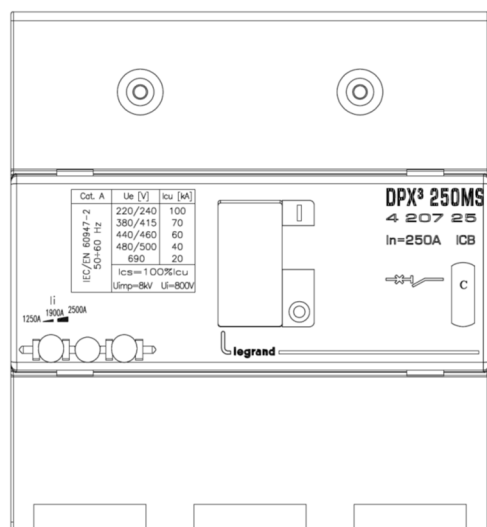
DMX³ are full in compliance with the Shipping Register of Lloyds, RINA, Bureau Veritas, Germanische Lloyds, Norske Veritas and ABS.

"Tropical climate" :

- execution II (all climates) according to IEC 60947-1 Annex Q, Cat. F.

6.1 Marking

Circuit breaker :



7. EQUIPMENTS AND ACCESSORIES

7.1 Releases

- Shunt releases

12 V ac/dc	ref. 4 210 12
24 V ac/dc	ref. 4 210 13
48 V ac/dc	ref. 4 210 14
110-130 V ac	ref. 4 210 15
200-277 V ac	ref. 4 210 16
380-480 V ac	ref. 4 210 17

Maximum power = 400 VA / W

- Undervoltage releases

12 V ac/dc	ref. 4 210 18
24 V ac/dc	ref. 4 210 19
48 V ac/dc	ref. 4 210 20
110-130 V ac/dc	ref. 4 210 21
200-240 V ac	ref. 4 210 22
277 V ac	ref. 4 210 23
380-415 V ac	ref. 4 210 24
440-480 V ac	ref. 4 210 25

Maximum power = 4 VA

Circuit breaker opening time < 50 ms

- Time-lag undervoltage releases (800ms)

Time-lag modules with voltage:	
230 V ac	ref. 0 261 90
400 V ac	ref. 0 261 91

Release:

To be equipped with a time-lag module	ref. 4 210 98
---------------------------------------	---------------

7.2 Auxiliary contact

set of connectors for aux contacts	ref. 4 210 44
aux contacts (1NC and 1 NO) for all rotary handles	ref. 4 210 10
signalling contact plugged-in version	ref. 4 210 48
Changeover switch 3A – 250 VAC	ref. 4 210 11

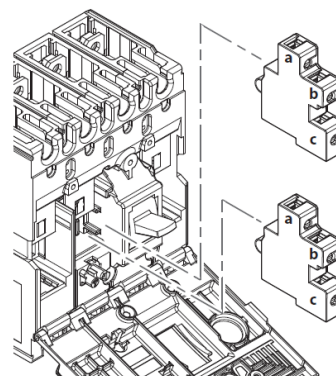
To show the state of the contacts or opening of the DPX³ on a fault:

Auxiliary contact (standard) OC
Fault signal CTR

Auxiliary contact		
Nominal 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 250 → 1 auxiliary contact + 1 fault signal



DPX³ 250

Magnetic only

Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725

7.3 Rotary handles

Direct

- DPX³ direct rotary handle ref. 4 210 00
- DPX³ emergency direct rotary handle ref. 4 210 02

Vari-depth handle IP55

- DPX³ vari depth rotary handle ref. 4 210 04
- DPX³ emergency vari depth rotary handle ref. 4 210 05

Locking accessories

- Ronis type flat key random for direct rotary handle ref. 4 210 06
- Profalux type star key random for direct rotary handle ref. 4 210 07
- Ronis type flat key random for vari-depth handle ref. 4 210 08
- Profalux type star key random for vari-depth handle ref. 4 210 09
- Ronis type flat key (cod. EL43525) for direct rotary handle ref. 4 228 00
- Ronis type flat key (cod. EL43363) for direct rotary handle ref. 4 228 01
- Ronis type flat key (cod. EL43525) for vari-depth handle ref. 4 228 02
- Ronis type flat key (cod. EL43363) for vari-depth handle ref. 4 228 03

7.4 Mechanical accessories

Insulated shields (phase barriers)

- Set of 36 ref. 4 210 70

Sealable terminal shields

- sealable terminal shield for rear terminals 3P ref. 4 210 52
- sealable terminal shield for rear terminals 4P ref. 4 210 53
- sealable terminal shield for front spreaders 3P ref. 4 210 56
- sealable terminal shield for front spreaders 4P ref. 4 210 57

Padlocks

- DPX³ padlock accessory for handle ("open" position) ref. 4 210 49

Interlock

- DPX³ interlock for fixed version ref. 4 210 58
- DPX³ interlock for plug-in / draw-out version ref. 4 210 59

7.5 Connection accessories

Cage terminals

- terminals for Cu/Al cables kit (3P) - flex 1x120mm², rigid 1x150mm², lugs 28.5 x 8 x 8.5mm ref. 4 210 30

- terminals for Cu/Al cables kit (4P) - flex 1x120mm², rigid 1x150mm², lugs 28.5 x 8 x 8.5mm ref. 4 210 31

- screw terminals for bar connections (3P) ref. 4 210 79

- screw terminals for bar connections (4P) ref. 4 210 80

Front spreaders

- DPX³ front spreaders for 3P DPX³ 250 (set of 3) ref. 4 210 34
- DPX³ front spreaders for 4P DPX³ 250 (set of 4) ref. 4 210 35

Rear terminals

- DPX³ flat rear terminals for 3P DPX³ 250 (set of 3) ref. 4 210 38
- DPX³ flat rear terminals for 4P DPX³ 250 (set of 4) ref. 4 210 39

7.6 Plug-in version

Bases

- front/rear terminals plug-in base 3P DPX³ 250 ref. 4 210 42
- front/rear terminals plug-in base 4P (with or without earth leakage module) ref. 4 210 43

Locking accessories

- Ronis type flat key (cod. ABA90GEL6149) for plug-in base ref. 4 210 45
- Profalux type star key (cod. HBA90GPS6149) for plug-in base ref. 4 210 46
- padlock accessory for plug-in base ref. 4 210 47

7.7 Motor operator

- side motor operator 24-230 Vac/dc ref. 4 210 60
- front motor operator 24-230 Vac/dc ref. 4 210 61

Locking accessories for front motor operator

- Ronis type flat key (cod. ABA90GEL6149) for front motor operator ref. 4 210 62
- Profalux type flat key (cod. HBA90GPS6149) for front motor operator ref. 4 210 63
- padlock selector for front motor operator ref. 4 210 64

Locking accessories for side motor operator

- Ronis type flat key (cod. ABA90GEL6149) for side motor operator ref. 4 210 65
- Profalux type flat key (cod. HBA90GPS6149) for side motor operator ref. 4 210 66
- padlock selector for side motor operator ref. 4 210 67

7.8 Mounting on rail fixing plate

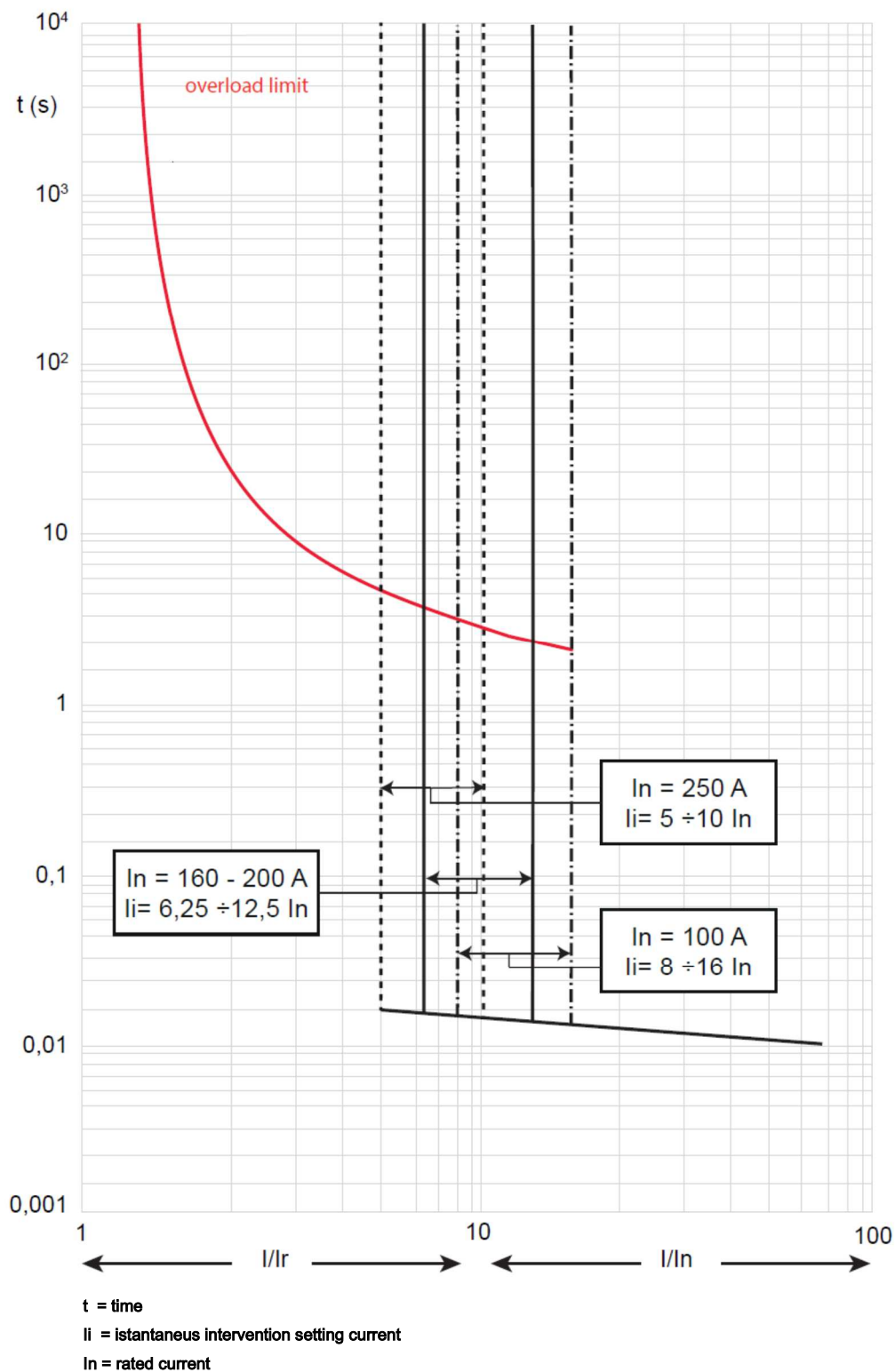
- DPX³ 250 3P/4P without earth leakage module ref. 4 210 72
- DPX³ 160 3P/4P with side mounting motor operator ref. 4 210 69

7.9 Spare parts

- Fixing screws (set of 4) for plate installation ref. 4 210 81
- Battery kit (batteries + extractor) for 1 breaker ref. 4 210 82
- Fixing screws (set of 12) for DIN installation ref. 4 210 84
- Mini USB cap (for 20 device) - light grey colour ref. 4 210 89
- Plug-in base kit (for 1 breaker 3P or 4P) ref. 4 210 91
- Compact terminal shields 4P (set of 2) ref. 4 210 97
- Generic seals kit (for 4x seal kit) ref. 4 210 95

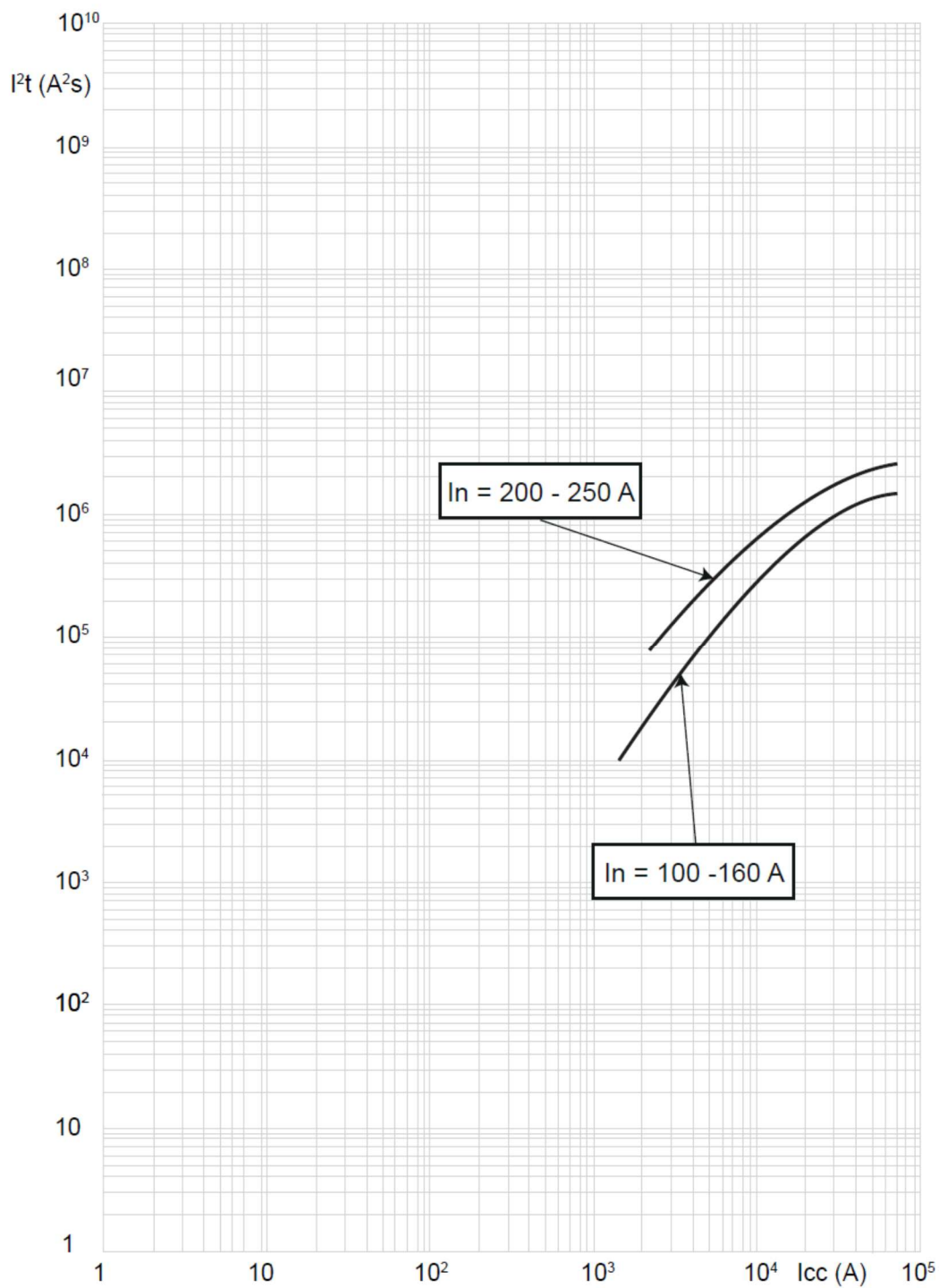
8. CURVES

8.1 Thermal magnetic tripping curve



$I_{cu} = 36-70 \text{ kA}$ $I_{max} = 250 \text{ A}$ 3-4 P $U_a = 415 \text{ Vac}$

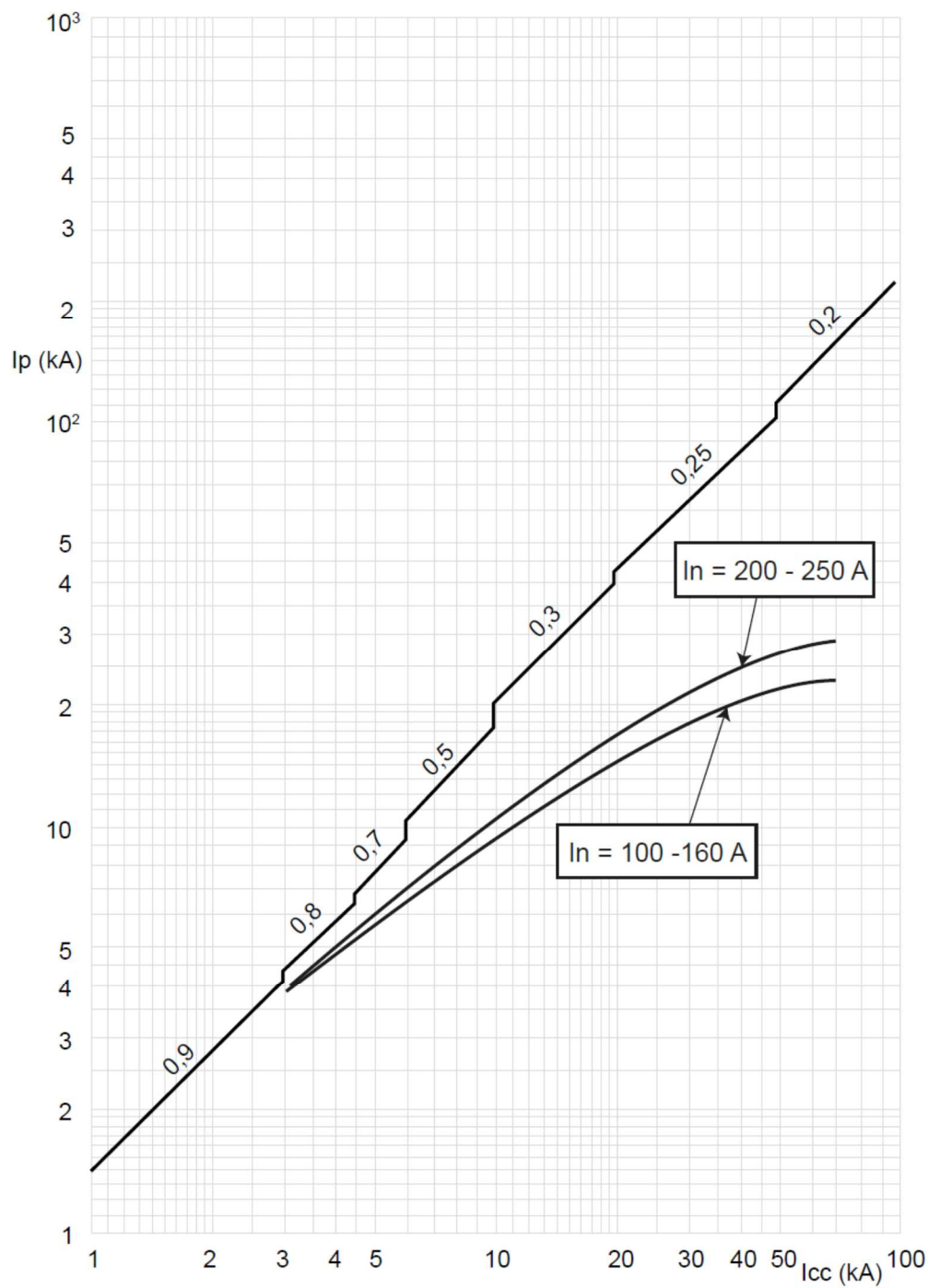
8.2 Pass-through specific energy characteristic curve



$I_{cu} = 25-36-50-70 \text{ kA}$ $I_{max} = 250A$ 3-4 P $U_e = 415Vac$

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

8.3 Cut-off peak current characteristic curve (kA)



$I_{cu} = 25-36-50-70 \text{ kA}$ $I_{max} = 250\text{A}$ 3-4 P $U_e = 415\text{Vac}$

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 250

Magnetic only

Reference(s) : 420 718 / 719 / 720 / 721 / 722 / 723 / 724 / 725

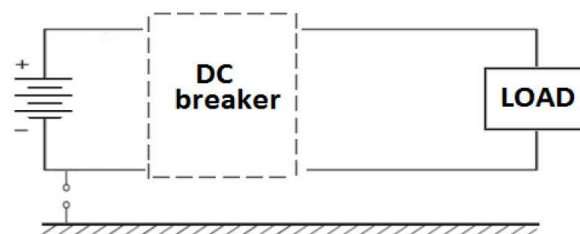
A) Derating Temperature and configurations

		Ambient temperature									
		30 °C		40 °C		50 °C		60 °C		70 °C	
Fixed version		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
DPX ³ 250 fixed - vertical installation	Cage terminals, flexible cable	263	1,05	250	1	250	1	225	0,9	213	0,85
	Cage terminals, flexible cable + sealable terminal shields	0	0	0	0	0	0	0	0	0	0
	Cage terminals, rigid cable	0	0	0	0	0	0	0	0	0	0
	Lugs, flexible cable	250	1	250	1	250	1	238	0,95	225	0,9
	Lugs, rigid cable	0	0	0	0	0	0	0	0	0	0
	Spreaders, flexible cables	250	1	250	1	250	1	238	0,95	225	0,9
	Spreaders, rigid cable	0	0	0	0	0	0	0	0	0	0
	Rear flat staggered terminals, flexible cableelds	0	0	0	0	0	0	0	0	0	0
	Rear flat staggered terminals, rigid cable	0	0	0	0	0	0	0	0	0	0
	Lugs, flexible cable + sealable terminal shields	250	1	250	1	250	1	238	0,95	225	0,9
	Rear flat staggered term., flex. cable + sealable term. shields	250	1	250	1	250	1	238	0,95	225	0,9
DPX ³ 250 fixed - horizontal installation	Cage terminals, flexible cable	0	0	0	0	0	0	0	0	0	0
	Cage terminals, flexible cable + sealable terminal shields	0	0	0	0	0	0	0	0	0	0
	Cage terminals, rigid cable	0	0	0	0	0	0	0	0	0	0
	Lugs, flexible cable	250	1	250	1	250	1	238	0,95	225	0,9
	Lugs, rigid cable	0	0	0	0	0	0	0	0	0	0
	Spreaders, flexible cables	250	1	250	1	250	1	238	0,95	225	0,9
	Spreaders, rigid cable	0	0	0	0	0	0	0	0	0	0
	Rear flat staggered terminals, flexible cableelds	0	0	0	0	0	0	0	0	0	0
	Rear flat staggered terminals, rigid cable	0	0	0	0	0	0	0	0	0	0
	Lugs, flexible cable + sealable terminal shields	250	1	250	1	250	1	238	0,95	225	0,9
	Rear flat staggered term., flex. cable + sealable term. shields	250	1	250	1	250	1	238	0,95	225	0,9

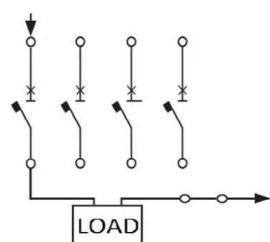
B) Breaking capacity in DC (kA)

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
36	100 ÷ 250	35	36	35	10		36	10	10
70	100 ÷ 250	35	50	35	10		50	10	10

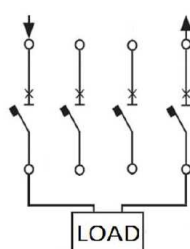
These values are applied to DC networks insulated from the ground (*this diagram applies to both 3P and 4P circuit breakers*):



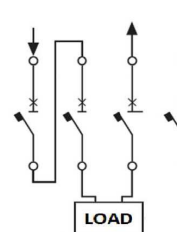
* Connection modality of the DC breaker:



1 pole



2 poles in series



3 poles in series