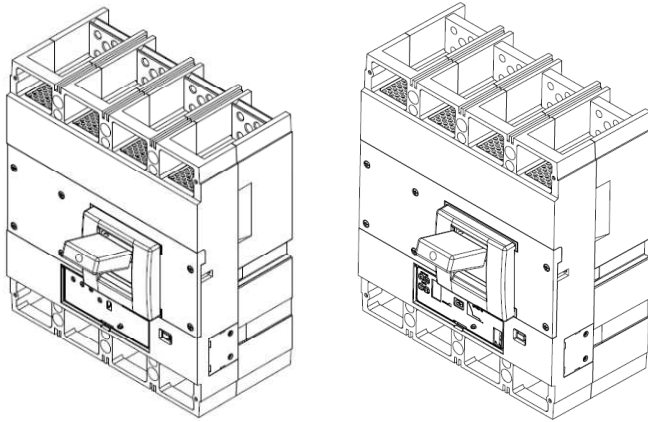


DPX³ 1600

Electronic release



CONTENTS

CONTENTS	PAGES
1. USE	1
2. RANGE	1
3. DIMENSIONS	1
4. OVERVIEW	2
5. ELECTRICAL AND MECHANICAL CHARACTERISTICS	2
6. ELECTRONIC RELEASES	3
7. CONFORMITY	5
8. EQUIPMENTS AND ACCESSORIES	5
9. CURVES	8

1. USE

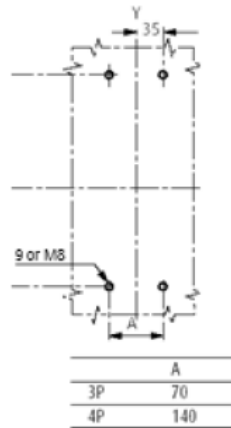
DPX³ "moulded case" circuit breaker offers optimal solutions to answer to protection requirements of tertiary and industrial installations.

2. RANGE

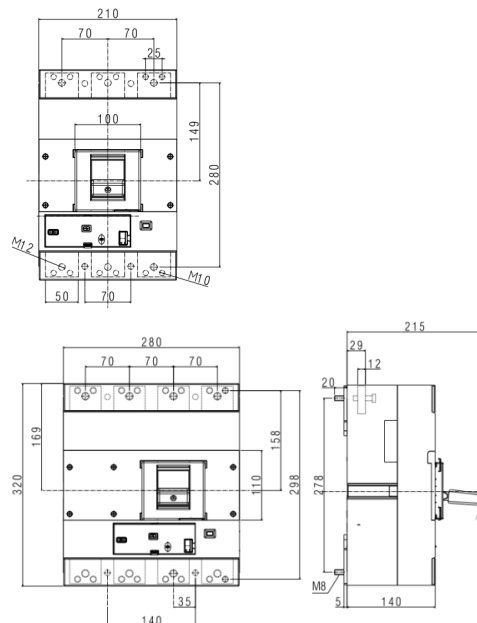
I _n (A)	S1 36kA		S2 36kA		S2 + measure 36kA		Sg 36kA		Sg + measure 36kA	
	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
500	422538	422544	422298	422304	422346	422352	422394	422400	422442	422448
630	422539	422545	422299	422305	422347	422353	422395	422401	422443	422449
800	422540	422546	422300	422306	422348	422354	422396	422402	422444	422450
1000	422541	422547	422301	422307	422349	422355	422397	422403	422445	422451
1250	422542	422548	422302	422308	422350	422356	422398	422404	422446	422452
1600	422543	422549	422303	422309	422351	422357	422399	422405	422447	422453
50kA										
500	422550	422556	422310	422316	422358	422364	422406	422412	422454	422460
630	422551	422557	422311	422317	422359	422365	422407	422413	422455	422461
800	422552	422558	422312	422318	422360	422366	422408	422414	422456	422462
1000	422553	422559	422313	422319	422361	422367	422409	422415	422457	422463
1250	422554	422560	422314	422320	422362	422368	422410	422416	422458	422464
1600	422555	422561	422315	422321	422363	422369	422411	422417	422459	422465
70kA										
500	422562	422568	422322	422328	422370	422376	422418	422424	422466	422472
630	422563	422569	422323	422329	422371	422377	422419	422425	422467	422473
800	422564	422570	422324	422330	422372	422378	422420	422426	422468	422474
1000	422565	422571	422325	422331	422373	422379	422421	422427	422469	422475
1250	422566	422572	422326	422332	422374	422380	422422	422428	422470	422476
1600	422567	422573	422327	422333	422375	422381	422423	422429	422471	422477
100kA										
500	422574	422580	422334	422340	422382	422388	422430	422436	422478	422484
630	422575	422581	422335	422341	422383	422389	422431	422437	422479	422485
800	422576	422582	422336	422342	422384	422390	422432	422438	422480	422486
1000	422577	422583	422337	422343	422385	422391	422433	422439	422481	422487
1250	422578	422584	422338	422344	422386	422392	422434	422440	422482	422488

3. DIMENSIONS

Implantation



Front terminals, fixed version



DPX³ 1600

Electronic release

Reference(s) : from 422 298 to 422 488 and
from 422 538 to 422 584

5.4 Power losses per pole under I_n

	Power losses (W)					
	I_n (A)					
	500	630	800	1000	1250	1600
Front terminals, fixed version	11.6	18.5	29.8	47.6	74.4	65.3
Rear terminals, fixed version	11.5	18.3	29.4	47.0	73.4	58.9
Front terminals, draw-out version	20.0	31.8	51.2	82.0	128.1	112.6
Rear terminals, draw-out version	15.0	23.8	38.4	60.0	93.4	97.3

Total power losses has calculated as the sum of losses of every accessory installed

5.5 FUNCTIONING IN PARTICULAR CONDITIONS

5.5.1 Temperature

°C	Influence of ambient temperature		
	Up to 50	60	70
I_n (A)	500	475	450
	630	599	567
	800	760	720
	1000	1000	900
	1250	1250	938
	1600	1600	1360

For derating temperature with other configurations, see table A.

5.5.2 Altitude

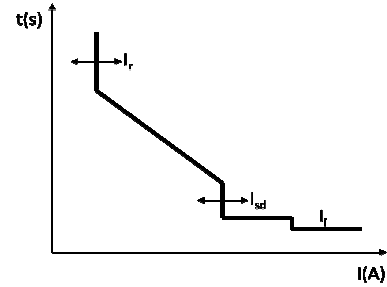
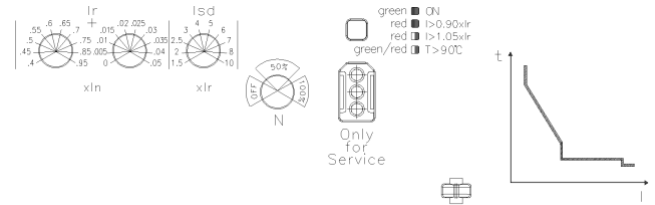
Altitude (m)	2000	3000	4000	5000
U_e (V)	690	590	520	460
I_n (A) ($T_a = 40^\circ\text{C}/50^\circ\text{C}$)	I_n	$0.98 \times I_n$	$0.93 \times I_n$	$0.9 \times I_n$

5.5.3 Use at 400 Hz or in DC

Not possible with electronic release.

6 ELECTRONIC RELEASES

6.1 Version S1 – Adjustment of I_r , I_{sd}



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = 0.4 \div 1 I_n$ (steps 1A)

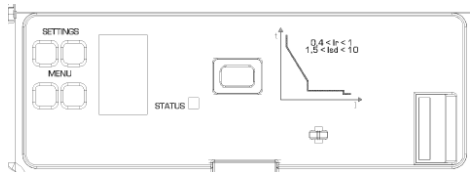
Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- $I_{sd} = 1.5 - 2 - 2.5 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 \times I_r$ (11 steps)

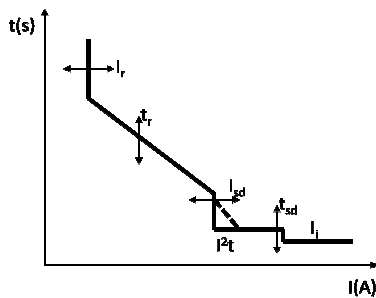
Instantaneous protection with fixed threshold:

- 500A $I_i = 15\text{kA}$,
- 630,800A $I_i = 15\text{kA}$,
- 1000A $I_i = 15\text{kA}$,
- 1250A $I_i = 15\text{kA}$,
- 1600A $I_i = 20\text{kA}$

6.2 Version S2 – Adjustment of I_r , T_r , I_{sd} , T_{sd}



LCD display with adjustment buttons, battery case and USB port.



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = 0.4 \div 1 I_n$ (steps 1A)
- $T_r = 3 - 30s$ (3 - 5 - 10 - 15 - 20 - 25 - 30) (7 steps)

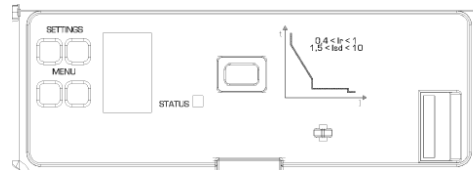
Short delay protection against short-circuits with an adjustable I_{sd} threshold:

- $I_{sd} = 1.5 - 2 - 2.5 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 \times I_r$ (11 steps)
- $T_{sd} = 0 - 100 - 200 - 300 - 400 - 500$ ms ($I = K$)
- $T_{sd} = 0 - 100 - 200 - 300 - 400 - 500$ ms ($I^2t = K$)

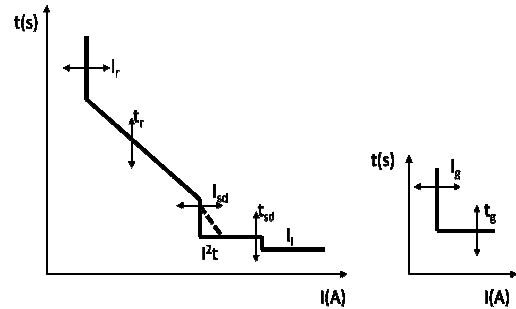
Instantaneous protection with fixed threshold:

- 500A $I_i = 15kA$,
- 630,800A $I_i = 15kA$,
- 1000A $I_i = 15kA$,
- 1250A $I_i = 15kA$,
- 1600A $I_i = 20kA$

6.3 Version Sg - Adjustment of I_r , T_r , I_{sd} , T_{sd} , I_g , T_g



LCD display with adjustment buttons, battery case and USB port.



Long delay protection against overloads with an adjustable threshold bases on the RMS value of the current:

- $I_r = 0.4 \div 1 I_n$ (steps 1A)
- $T_r = 3 - 30s$ (3 - 5 - 10 - 15 - 20 - 25 - 30) (7 steps)

Short delay protection against short-circuits with an adjustable I_{sd} threshold :

- $I_{sd} = 1.5 - 2 - 2.5 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 \times I_r$ (11 steps)
- $T_{sd} = 0 - 100 - 200 - 300 - 400 - 500$ ms ($I = K$)
- $T_{sd} = 0 - 100 - 200 - 300 - 400 - 500$ ms ($I^2t = K$)

Instantaneous protection with fixed threshold:

- 500A $I_i = 15kA$,
- 630,800A $I_i = 15kA$,
- 1000A $I_i = 15kA$,
- 1250A $I_i = 15kA$,
- 1600A $I_i = 20kA$

Measure of ground fault:

- $I_g : 0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1 \times I_n$ (9 steps) and OFF
- $T_g : 0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 1$ s

DPX³ 1600

Electronic release

Reference(s) : from 422 298 to 422 488 and
from 422 538 to 422 584

7. CONFORMITY

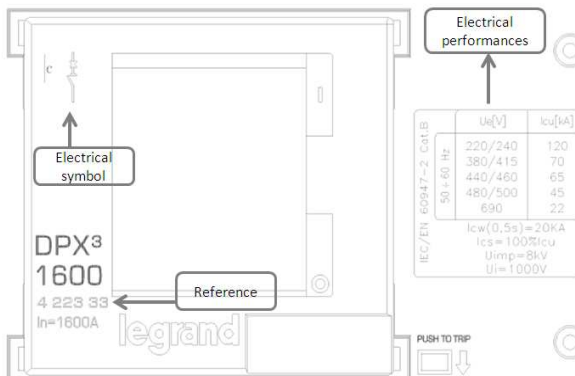
DPX³ range of product concerning circuit-breakers are in full compliance with the EN/IEC standard 60947-2.

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

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

DPX³ are full in compliance with the Shipping Register of Lloyds, RINA, Bureau Veritas, Germanische Lloyds, Norske Veritas and ABS.

7.1 MARKING



" Tropical climate " :

- execution II (all climates) according to guide UTE C63100

8. EQUIPMENTS AND ACCESSORIES

8.1 Releases

- shunt releases (Power consumption= 300 VA) with voltage
 - 24 V AC and DC ref. 4 222 39
 - 48 V AC and DC ref. 4 222 40
 - 110 V AC and DC ref. 4 222 41
 - 230 V AC and DC ref. 4 222 42
 - 400 V AC and DC ref. 4 222 43

- undervoltage releases (Power consumption = 5 VA) with voltage
 - 24 V DC ref. 4 222 44
 - 24 V AC ref. 4 222 45
 - 48 V DC ref. 4 222 46
 - 110 V AC ref. 4 222 47
 - 230 V AC ref. 4 222 48
 - 400 V AC ref. 4 222 49

- time-lag undervoltage releases (800 ms)

- Time-lag modules with voltage
- 24 V AC and DC ref. 0 261 92
 - 230 V AC ref. 0 261 90
 - 400 V AC ref. 0 261 91
 - Universal Release ref. 4 226 23

8.2 Auxiliary contact

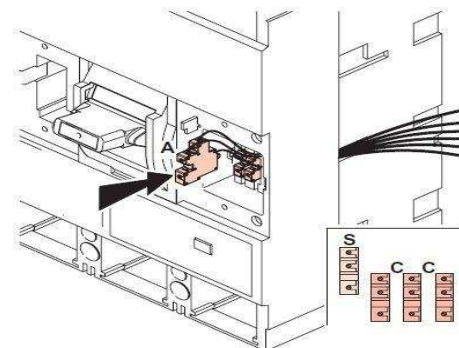
Changeover switch 3A – 250 V AC ref. 4 210 11

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

- Auxiliary contact (standard) **C**
- Fault signal **S**

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

3 auxiliary contact + 1 fault signal (max) + 1 release



DPX³ 1600

Electronic release

Reference(s) : from 422 298 to 422 488 and
from 422 538 to 422 584

8.3 Rotary handles

Direct on DPX³
 • Standard (black) ref. 0 262 61

Vari-depth handle IP55
 • Standard (black) ref. 0 262 83
 • For emergency use (red / yellow)
 Adapting on standard handle ref. 0 262 84

Locking accessories

- Profalux type (cod.HBA90GPS6149) for vari-depth handle ref. 0 262 93
- Ronis type (cod.ABA90GEL6149) for vari-depth handle ref. 0 262 94

8.4 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 ref. 0 261 24
 • Voltage 48 V AC and DC ref. 0 261 25
 • Voltage 110 V AC ref. 0 261 26
 • Voltage 220 V AC for rating up to 1250A (I_n ≤ 1250A) ref. 0 261 23
 • Voltage 230 V AC. for rating of 1600A (I_n=1600A) ref. 0 261 27

Locking accessories

- Ronis type (cod.ABA90GEL6149) ref. 0 261 59
- Profalux type (cod.HBA90GPS6149) ref. 0 261 58

8.5 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

8.6 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

8.7 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 supplied not with "Débro-lift" assembled a rigid slide and handle for drawing-out

- 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

Suitable for turning a fixed circuit-breaker into the moving part of a withdrawable 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
 Ronis type (cod.ABA90GEL6149) ref 0 265 76
 Profalux type (cod.HBA90GPS6149) ref 0 263 48
- Two keys (one key supplied) for motorized DPX³ or with rotary handle
 Ronis type (cod.ABA90GEL6149) ref 0 265 80
 Profalux type (cod.HBA90GPS6149) ref 0 265 79

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 auxil. contacts (12 pin) for D/O version ref.4 222 30

8.8 Supply

- Auxiliary supply (input 24 V AC/DC) ref. 4 210 83

8.9 RS485 ModBus communication interface

- To connect electronic DPX³ to an RS485 ModBus communication network ref. 4 210 75

8.10 Web server

- For remote viewing of values collected on electricity meters and multi-function measuring units
Up to 32 metering points ref. 0 261 78
Up to 255 metering points ref. 0 261 79

8.11 Software

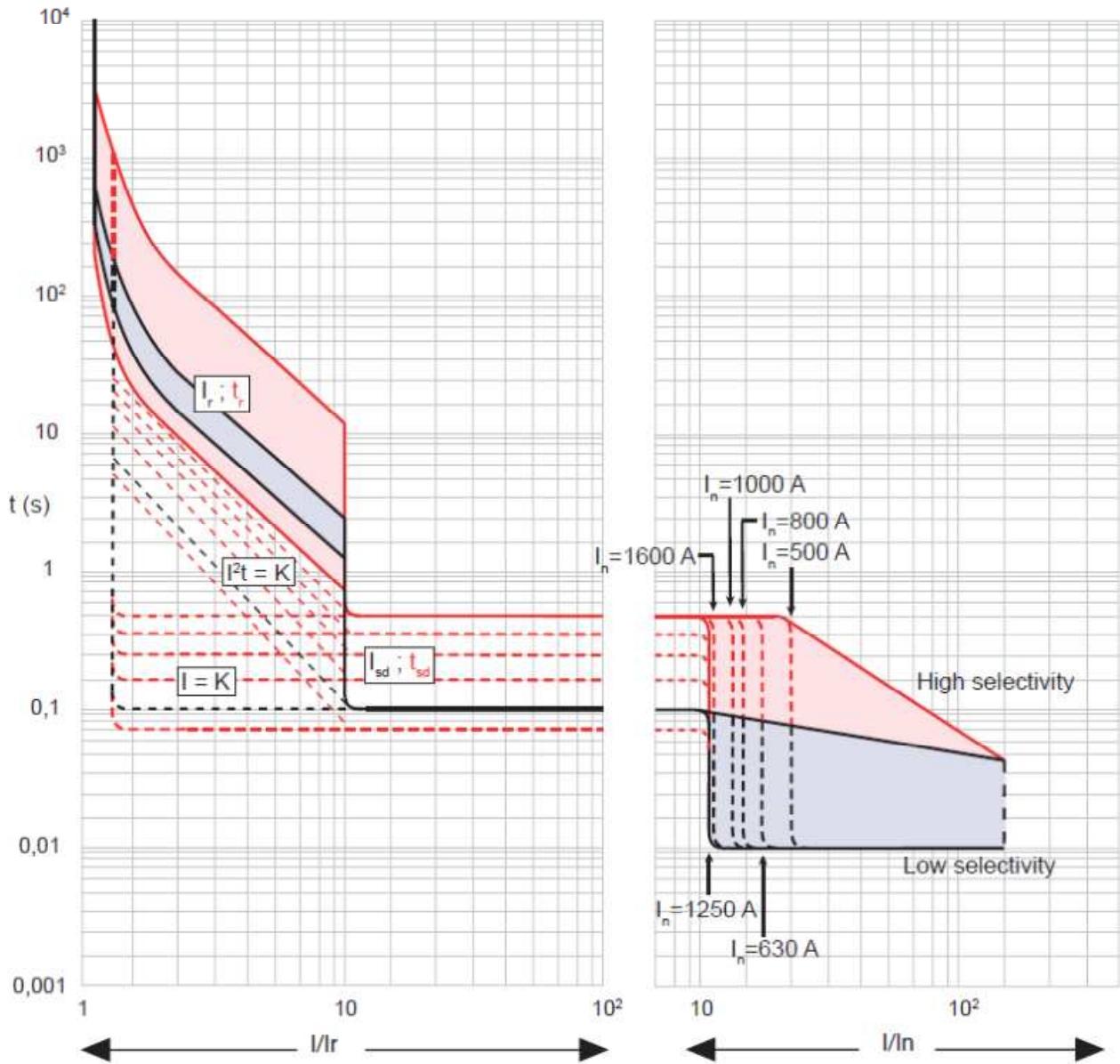
- To display values collected on electricity meters and multi-function measuring units on a PC connected to the network
Up to 32 metering points ref. 0 261 88
Up to 255 metering points ref. 0 261 89

8.12 Touch screen

- To show data collected by DX³, DPX³, DMX³, EMDX³. It can manage up to 8 devices ref. 0 261 56

9. CURVES

9.1 TRIPPING CURVE (COLD START)

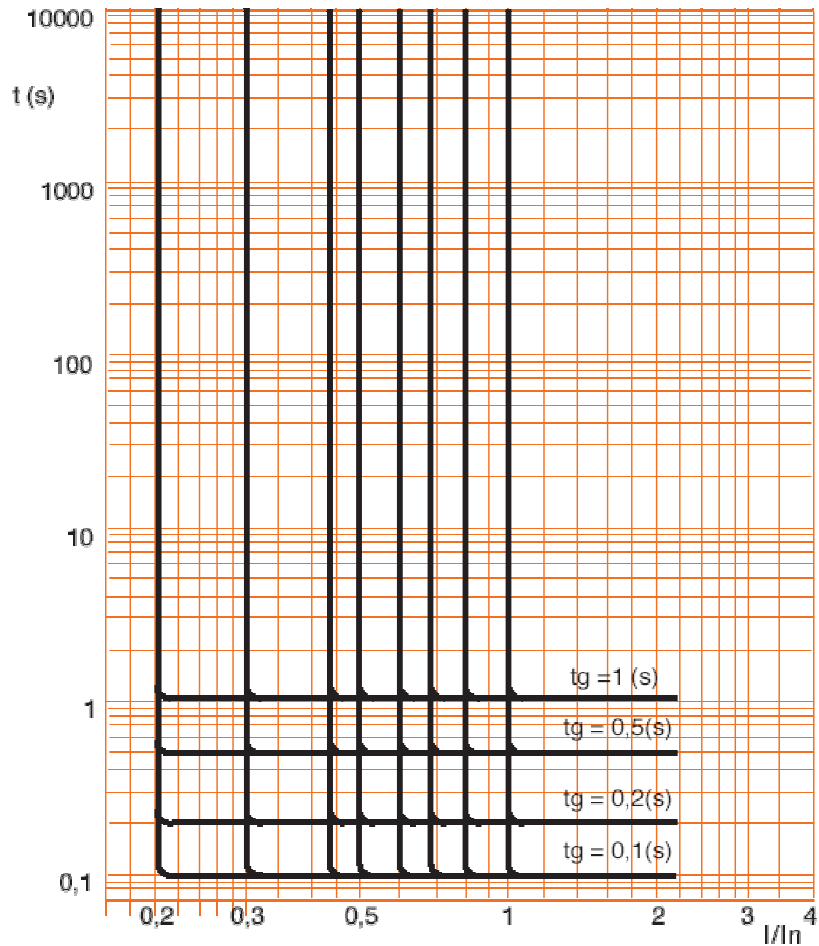


$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 1600\text{A}$ 3-4 P $U_o = 415\text{Vac}$

Value	Description
t	time
I	current
I_n	rated current
I_r	long time setting current
t_r	long time delay
I_{sd}	short time setting current
t_{sd}	short time delay
$I^2t = K$	Constant pass-through energy setting
$I = K$	Constant tripping time setting
Black area	For S1, S2 and Sg versions
Red area	Only for S2 and Sg versions

9.1 TRIPPING CURVE (NEXT)

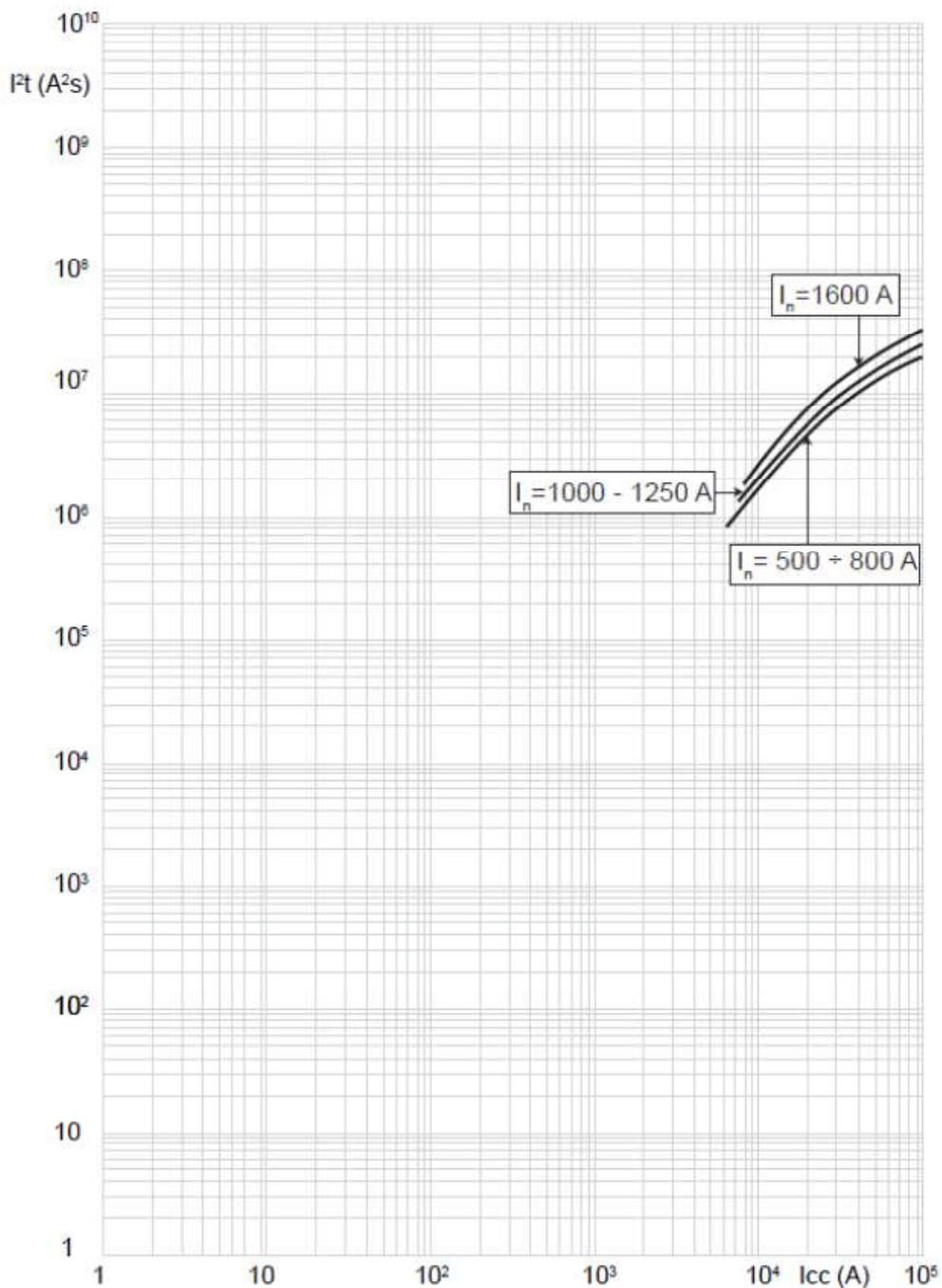
Only Sg version



$I_{max} = 1600A$ 3-4 P $U_e = 415Vac$

Value	Description
t	time
I	current
I_n	rated current
t_g	Ground fault time delay

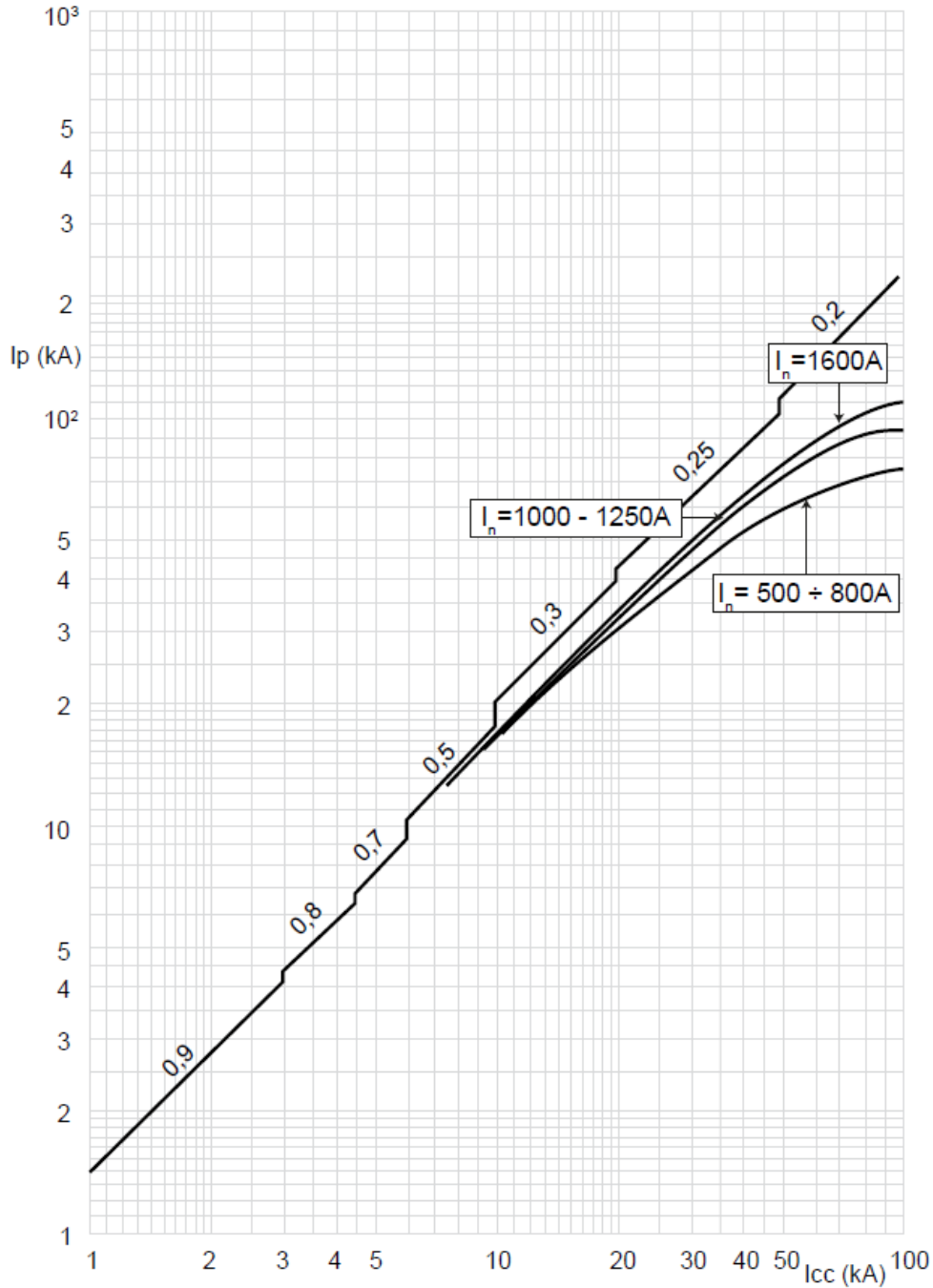
9.2 RESTRICTED CURVE IN THERMAL CONSTRAINT



$I_{cu} = 36-50-70-100$ kA $I_{max} = 1600$ A 3-4 P $U_e = 415$ Vac

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

9.3 RESTRICTED CURRENT CURVE



$I_{cu} = 36-50-70-100 \text{ kA}$ $I_{max} = 1600A$ 3-4 P $U_e = 415Vac$

Value	Description
I_{cc}	short circuit current
I_p	peak current

DPX³ 1600

Electronic release

Reference(s) : from 422 298 to 422 488 and
from 422 538 to 422 584

A) Derating Temperature and configurations

	Ambient temperature									
	30 °C		40 °C		50 °C		60 °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
Fixed version										
Spreaders, flexible cable	1600	1	1600	1	1600	1	1360	0.85	1200	0.75
Spreaders, rigid cable	1600	1	1600	1	1600	1	1360	0.85	1200	0.75
Spreaders, bars 2x50x10 Cu	1600	1	1600	1	1600	1	1520	0.95	1360	0.85
Rear flat terminals, bars 4x50x5 Cu, horizontal	1600	1	1600	1	1600	1	1600	1	1440	0.9
Rear flat staggered terminals, bars 4x50x5 Cu, horizontal	1600	1	1600	1	1600	1	1600	1	1440	0.9
Draw-out version										
Spreaders, flexible cable	1600	1	1600	1	1600	1	1280	0.8	1120	0.7
Spreaders, rigid cable	1600	1	1600	1	1600	1	1280	0.8	1120	0.7
Spreaders, bars 2x50x10 Cu	1440	0.9	1440	0.9	1440	0.9	1120	0.7	960	0.6
Rear flat terminals, bars 2x100x5 Cu, vertical	1440	0.9	1440	0.9	1440	0.9	1120	0.7	960	0.6
Rear flat staggered terminals, bars 2x100x5 Cu, vertical	1440	0.9	1440	0.9	1440	0.9	1120	0.7	960	0.6
Rear flat terminals, bars 4x50x5 Cu, horizontal	1600	1	1600	1	1600	1	1440	0.9	1120	0.7
Rear flat staggered terminals, bars 4x50x5 Cu, horizontal	1600	1	1600	1	1600	1	1440	0.9	1120	0.7