

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers



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## 1. USE

DPX<sup>3</sup> 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.

DPX<sup>3</sup> platform provide easy assembly procedures during the phase of installation and mounting of accessories, suitable for professional use.

DPX<sup>3</sup> S10 is a modern approach for electronic protection units that magnifies all flexibility allowed by technology.

## 2. RANGE

DPX3 630 S10

	DPX <sup>3</sup> 630 S10			
	36kA		50kA	
I <sub>n</sub> (A)	3P	4P	3P	4P
250	422820	422825	422830	422835
320	422821	422826	422831	422836
400	422822	422827	422832	422837
500	422823	422828	422833	422838
630	422824	422829	422834	422839
	70kA		100kA	
	3P	4P	3P	4P
250	422840	422845	422850	422855
320	422841	422846	422851	422856
400	422842	422847	422852	422857
500	422843	422848	422853	422858
630	422844	422849	422854	422859

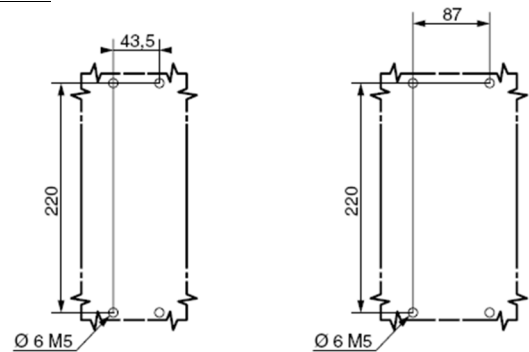
DPX3 630 S10 with measurement function

	DPX <sup>3</sup> 630 S10			
	36kA		50kA	
I <sub>n</sub> (A)	3P	4P	3P	4P
250	422860	422865	422870	422875
320	422861	422866	422871	422876
400	422862	422867	422872	422877
500	422863	422868	422873	422878
630	422864	422869	422874	422879
	70kA		100kA	
	3P	4P	3P	4P
250	422880	422885	422890	422895
320	422881	422886	422891	422896
400	422882	422887	422892	422897
500	422883	422888	422893	422898
630	422884	422889	422894	422899

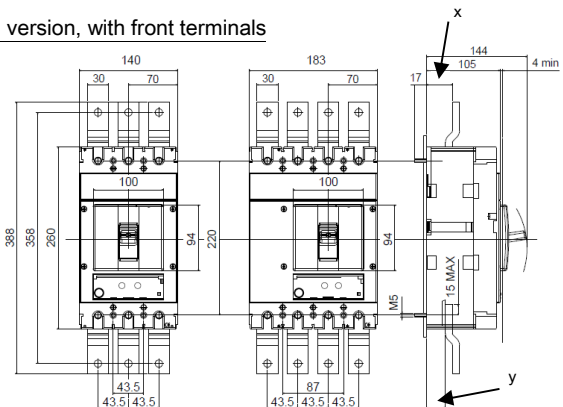
## 3. DIMENSIONS AND WEIGHTS

### 3.1 Dimensions

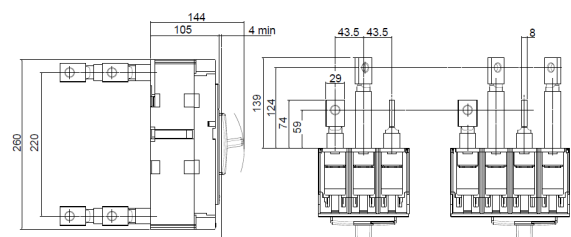
#### Implantation



#### Fixed version, with front terminals



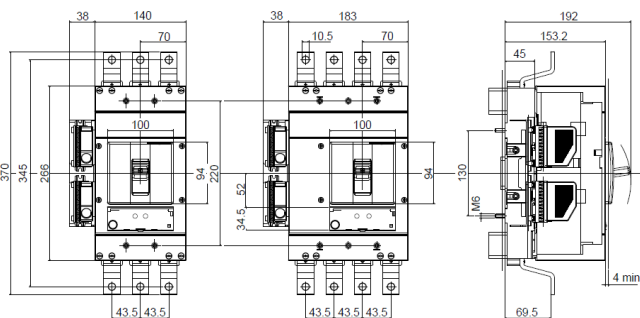
#### Fixed version, with flat rear terminal



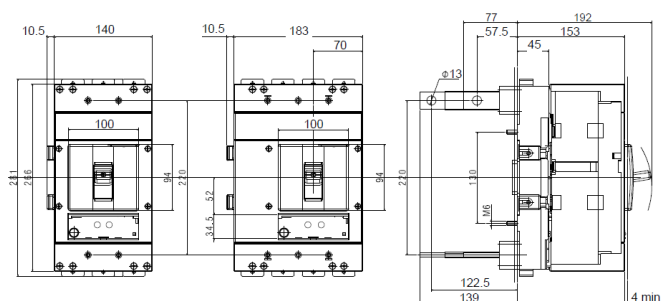
# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

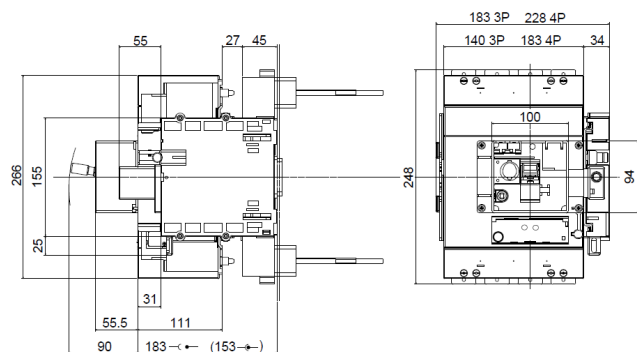
## Plug-in version, with cage terminals



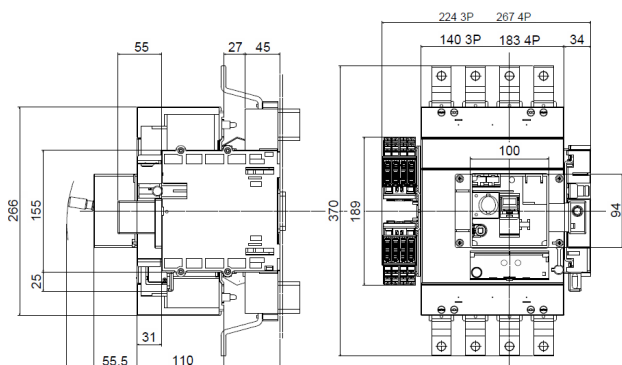
## Plug-in version, without front terminals



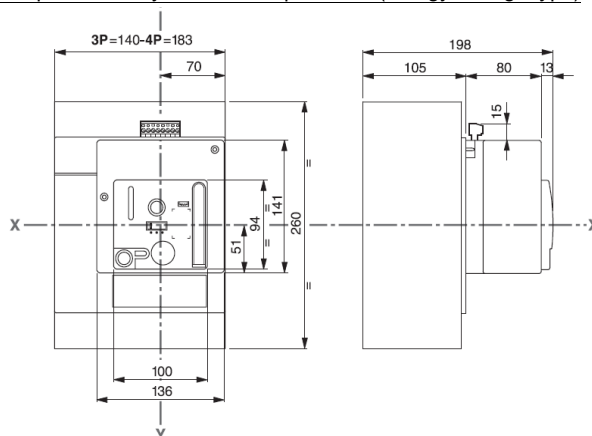
## Draw-out version, flat rear terminals



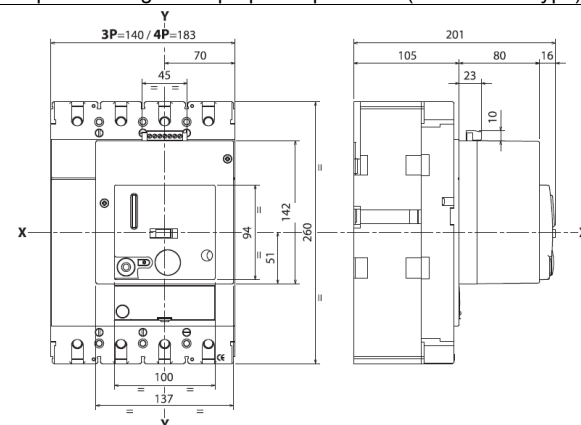
## Draw-out version with sliding auxiliary contacts



## Motor operator for synchronized operations (energy storage type)



## Motor operator for general purpose operations (direct action type)



## 3.2 Weights

Configuration	Weights (Kg)			
	3P		4P	
	$I_n \leq 400A$	$I_n \geq 500A$	$I_n \leq 400A$	$I_n \geq 500A$
Circuit breaker (fixed version)	5.80	6.20	7.30	7.80
Plug-in (with front terminals)*	3.35	3.35	4.29	4.29
Plug-in (with rear terminals)*	3.55	3.55	4.79	4.79
Draw-out *	2.3	2.3	5.5	5.5

\* 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:

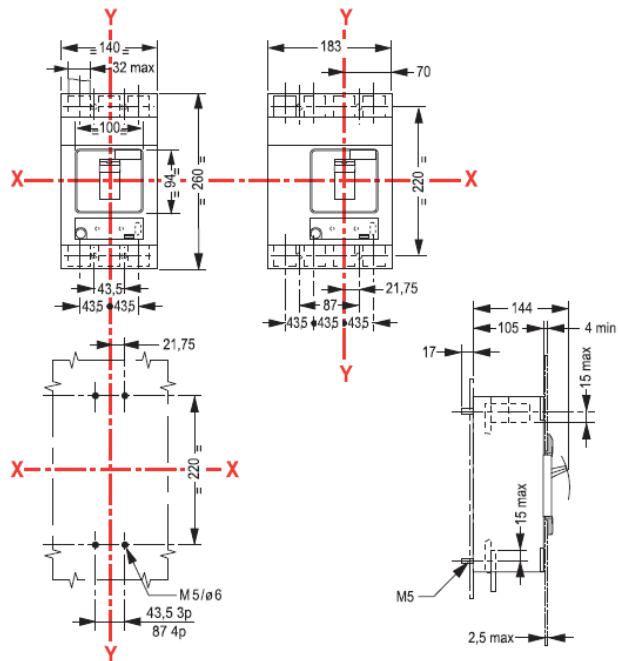
- Vertical
- Horizontal
- Supply inverter type

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

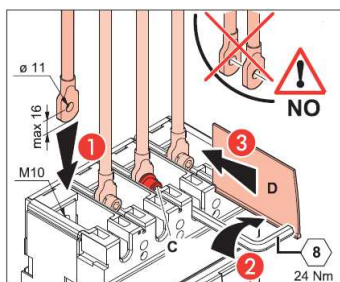
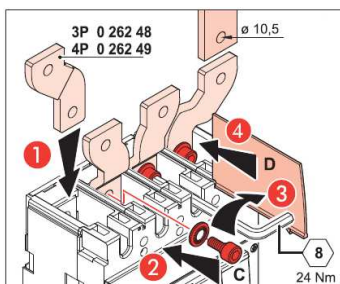
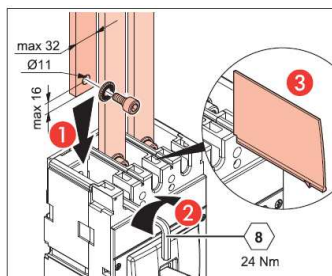
Reference(s) :  
from 4 228 20 to 4 228 99

## 5.2 Mounting

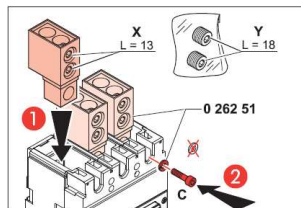
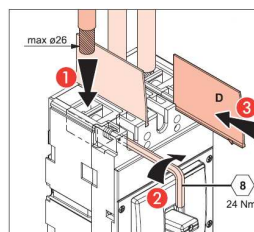
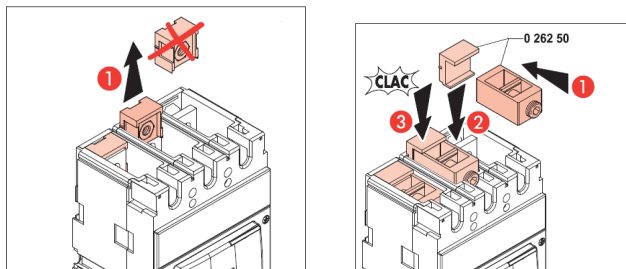
(see instruction sheet for detailed mounting procedures)



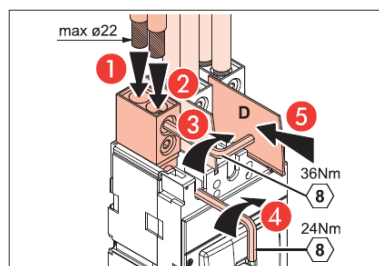
### Busbars/cable lugs:



### Cables:



	X (L=13)	Y (L=18)
Flexible Conductors	120+185 mm <sup>2</sup>	50+95 mm <sup>2</sup>
Rigid Conductors	150+240 mm <sup>2</sup>	70+120 mm <sup>2</sup>



# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit Breaker	DPX <sup>3</sup> 630 S10 F/N/H/L (36kA, 50kA, 70kA, 100kA)
Rated current (A)	250, 320, 400, 500, 630
Poles	3 - 4
Pole pitch (mm)	42
Rated insulation voltage (50/60Hz) U <sub>i</sub> (V)	800
Rated operating voltage (50/60Hz) U <sub>o</sub> (V)	690
Rated impulse withstand current U <sub>imp</sub>	8
Rated frequency (Hz)	50 - 60
Operating temperature (°C)	-25 ÷ 70
Mechanical endurance (cycles)	20000
Mechanical endurance with motor control	10000
Electrical endurance at I <sub>n</sub> (cycles)	4000
Electrical endurance at 0.5 I <sub>n</sub> (cycles)	8000
Utilization category	B (I <sub>n</sub> ≤ 400A); A (I <sub>n</sub> ≥ 500A)
Suitable for isolation	Yes
Type of protection	Electronic (with display)
Thermal type protection	Adjustable (Mem On/Off)
Ability to enable thermal protection	On/Off
Thermal adjustment I <sub>t</sub> [x I <sub>n</sub> ]	0,2+1 (steps 1A)
Thermal adjustment t <sub>r</sub> [s]	0,04+30 (steps 40ms, @6lr)
Thermal time tripping at 2xI <sub>n</sub> (single pole) [s]	0,44s±20% if t <sub>r</sub> = 0,04s@6lr
Magnetic type protection	Adjustable
Ability to enable magnetic protection	On/Off
Magnetic adjustment I <sub>sd</sub> [x I <sub>t</sub> ]	1,5+10 (steps 1A)
Time adjustment t <sub>sd</sub> (t=k o I <sup>2</sup> t=k) [s]	40+480 (steps 40ms)
Minimum release single pole	1 I <sub>sd</sub>
Istantaneous electronic adjustment I <sub>i</sub>	2+15 (steps 1A) & I <sub>sf</sub> =5kA
Neutral protection for 4P (%I <sub>th</sub> of phase pole)	OFF-50-100-150-200
Earth leakage trip type	A - External module / internal
Ability to enable earth leakage trip	On/Off
Earth leakage trip IΔn / I <sub>g</sub> [A / x I <sub>n</sub> ]	0,03 - 0,3 - 1 - 3 / 0,2 ÷ 1 (steps 0,1I <sub>n</sub> )
Earth leakage trip Δt / t <sub>g</sub> (t=k o I <sup>2</sup> t=k) [s]	0 - 0,3 - 1 - 3 / 0,08 ÷ 1 (steps 40ms)
Dimensions (W x H x D) (mm)	140 x 260 x 105 (3P) 183 x 260 x 105 (4P)
Maximum weight for fixed version (kg)	6,20 (3P) 7,80 (4P)

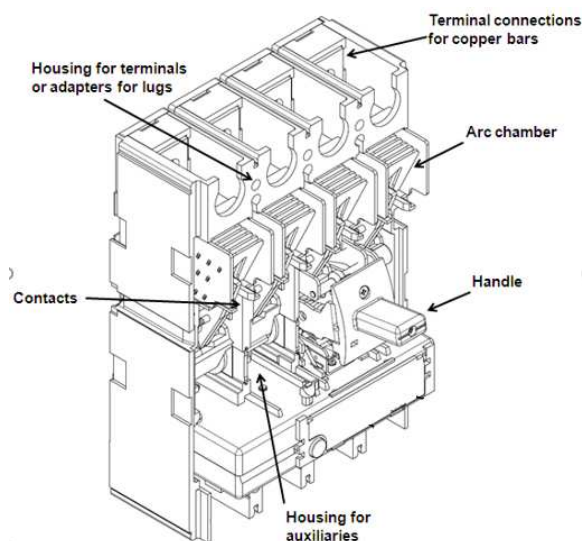
The maximum admissible (absolute) temperature is 125°C  
(for detail, see IEC 60947-1 and 60947-2)

DPX<sup>3</sup> 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 Main parts constituting the circuit breaker



## 6.2 Breaking capacity (kA)

		Breaking capacity (kA) & I <sub>cs</sub>			
		3P-4P			
U <sub>e</sub> /I <sub>cu</sub> (I <sub>cu</sub> letter)		36kA (F)	50kA (N)	70kA (H)	100kA (L)
		IEC 60947-2	220/240 V AC	70	100
	380/415 V AC	36	50	70	100
	440/460 V AC	30	40	60	70
	480/500 V AC	25	30	40	50
	480/550 V AC	20	22	25	28
	600 V AC	20	22	25	28
	690V AC	14	18	20	22
	I <sub>cs</sub> (% I <sub>cu</sub> )	100	100	100	70
		Rated making capacity under short circuit I <sub>cm</sub>			
	I <sub>cm</sub> (kA) at 415V	76,5	105	154	220
NEMA AB-1	220/240 V AC	70	100	105	150
	480/500 V AC	25	30	40	50
	690 V AC	14	18	20	22

## 6.3 Rated current (I<sub>n</sub>) at 40°C / 50°C

I <sub>n</sub> (A)	Phases limit trip current			
	thermal (I <sub>t</sub> )		magnetic (I <sub>i</sub> )	
	0.2 x I <sub>n</sub>	1 x I <sub>n</sub>	1.5 x I <sub>t</sub>	10 x I <sub>t</sub>
250	50	250	375	2500
320	64	320	480	3200
400	80	400	600	4000
500	100	500	750	5000
630	126	630	945	6300

\* 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 <sub>n</sub> ≤ 400A	I <sub>n</sub> ≥ 500A
Opening operation (N)	80	130
Closing operation (N)	180	210
Restore operation (N)	145	200

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 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 <sub>cc</sub> (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.

## 6.5 Power losses per pole under I<sub>n</sub>

	Power losses per pole (W)									
	I <sub>n</sub> (A)									
	250		320		400		500		630	
	Phase	Neutral	Phase	Neutral	Phase	Neutral	Phase	Neutral	Phase	Neutral
Cage terminals	7.5	7.5	12.3	12.3	19.2	19.2	22.1	22.1	35.0	35.0
Lugs	7.5	7.5	12.3	12.3	19.2	19.2	22.1	22.1	35.0	35.0
External lugs	8.2	8.2	13.5	13.5	21.1	21.1	25.1	25.1	39.8	39.8
Spreaders	9.0	9.0	14.7	14.7	22.9	22.9	26.7	26.7	42.3	42.3
Rear terminals	8.7	8.7	14.2	14.2	22.3	22.3	26.9	26.9	42.7	42.7
Plugin version	15.0	15.0	24.7	24.7	38.5	38.5	52.3	52.3	83.0	83.0
Circuit breaker + RCD	10.6	10.6	17.4	17.4	27.2	27.2	34.6	34.6	54.9	54.9

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 <sub>n</sub> (A)	Temperature Ta (°C)		
	up to 50	60	70
250	250	250	250
320	320	320	320
400	400	360	340
500	500	500	500
630	630	567	536

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 DPX<sup>3</sup> 630 circuit breakers, according to IEC/EN 60947-2 Annex F

#### Pollution degree

for DPX<sup>3</sup> 630 circuit breakers, degree 3, according to IEC/EN 60947-2

### 6.6.3 Altitude

Altitude derating for DPX<sup>3</sup> and DPX<sup>3</sup>-I

Altitude (m)	2000	3000	4000	5000
U <sub>e</sub> (V)	690	590	520	460
I <sub>n</sub> (A) (T <sub>a</sub> = 40°C/50°C)	1 x I <sub>n</sub>	0.98 x I <sub>n</sub>	0.93 x I <sub>n</sub>	0.9 x I <sub>n</sub>

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

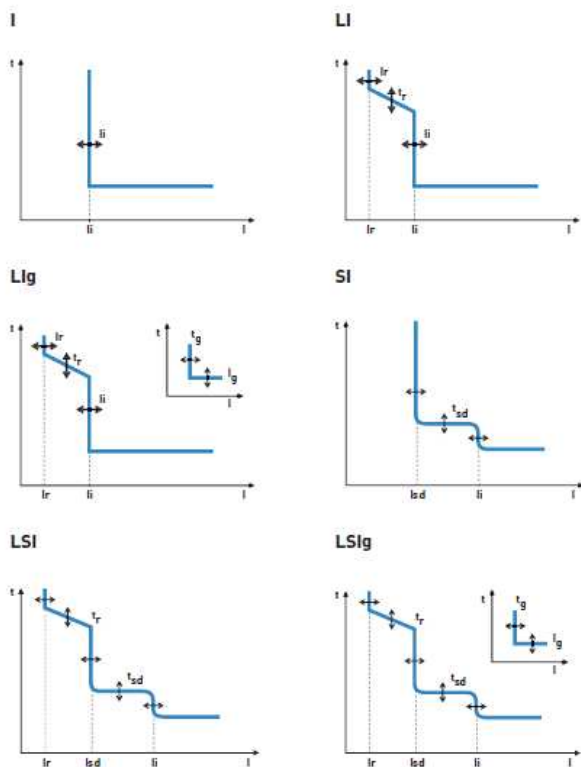
## 7. ELECTRONIC PROTECTION S10

Electronic DPX<sup>3</sup> circuit breakers equipped with S10 protection units are fully configurable. They can be used to adapt settings as closely as possible to the requirements of your installation, either by enabling/disabling the different protection devices (tripping time delays and currents), or by altering the different trip thresholds.

The tripping curve is therefore fully customised to suit the real-life conditions of each project.

Thanks to the internal battery, the protection unit can be set even if the circuit breaker is de-energised. Tests and troubleshooting can be done directly via the circuit breaker LCD screens.

A single circuit breaker can operate according to different tripping curves depending on the settings, as explained in the following images:



- $I_r$  Long time protection against overloads
- $t_r$  Long time protection delay
- $I_{sd}$  Short time protection against short circuits
- $t_{sd}$  Short time protection delay
- $I_i$  Instantaneous protection against high-intensity short-circuits
- $I_g$  Earth fault current
- $t_g$  Earth fault current protection delay
- IN Neutral protection

See relative instruction sheet for details

## Settings on DPX<sup>3</sup> 250 HP, DPX<sup>3</sup> 630 and DPX<sup>3</sup> 1600 S10 electronic protection

There are 2 options for configuring setting: locally on the circuit breaker or on a PC, smartphone or tablet:

Settings	DPX <sup>3</sup> 250 HP, DPX <sup>3</sup> 630 and DPX <sup>3</sup> 1600 with S10 electronic protection	
	Locally on the device	By software or app
$I_r$	0.2 to $1 \times I_n$ , in steps of 1 A	0.2 to $1 \times I_n$ - OFF, in steps of 1 A
$t_d$	DPX <sup>3</sup> 250 HP: 3 - 5 - 10 - 15 s DPX <sup>3</sup> 630 and 1600: 3 to 30 s (7 steps)	DPX <sup>3</sup> 250 HP: 3 to 15 s, in steps of 40 ms DPX <sup>3</sup> 630 and 1600: 3 to 30 s in steps of 40 ms
$I_{sd}$	$1.5$ to $3 \times I_r$ , in steps of $0.5 \times I_r$ $3$ to $10 \times I_r$ , in steps of $I_r$	$1.5 \times I_r$ to $10 \times I_n$ - OFF, in steps of 1 A
$t_{sd} (t=k, I2t=k)$	40 to 480 ms (7 steps)	40 to 480 ms, in steps of 40 ms
$I_i (t=k)$	-	2 to $15 \times I_n$ - OFF, in steps of 1 A
$I_g$	0.2 to $1 \times I_n$ , in steps of $0.1 \times I_n$	0.2 to $1 \times I_n$ - OFF, in steps of $0.1 \times I_n$
$t_g (t=k, I2t=k)$	80 to 480 ms and 1 s (6 steps)	80 ms to 1 s, in steps of 40 ms

There are several ways to configure the various settings: directly on the protection units (using the +/- and >/< buttons on the front face), on a PC with Power Control Station software installed, or on a tablet or smartphone via the EnerUp+ Project app.

Power Control Station software for PC and the EnerUp+ Project app for smartphone/tablet can be used to exchange data with the DPX<sup>3</sup> S10 protection unit.

The software and app can be used to:

- monitor the status of the circuit breaker
- display information (firmware and device versions, alarms, measurements, parameters, fault log, settings)
- configure the different protection devices [1]
- update the protection unit firmware [2]
- generate reports based on the data stored and read by the protection unit [1]
- run diagnostic tests
- upload data linked to your profile and installation to the Cloud (with the EnerUp + Project app only)

[1] With the Power Control Station software only

[2] For Legrand technical support via the Power Control Station software only

Together with above protections, activated in case of electric faults, the trip unit also integrates self-protection for:

- Over temperature : in case the internal temperature of protection unit exceed 95°C;
- Auto diagnostics: in case embedded watchdog circuit detects internal malfunctions, which could compromise the correct working of microcontroller.



# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

With electronic DPX<sup>3</sup> 250 HP, 630 and 1600 S10 with integrated measurement, it is very easy to monitor the parameters and consumption of the different circuits in the installation.

Electronic DPX<sup>3</sup> circuit breakers equipped with S10 protection units with integrated measurement can be used to display the current, voltage, active and reactive power, frequency and power factor values, as well as the energy consumption.

Alarms can be programmed on some parameters, including minimum and maximum voltage, phase unbalance, and minimum and maximum frequency.

The measured values are displayed directly on the LCD screen on the front of the equipment.

The measurement data can also be displayed on a PC equipped with Power Control Station software or remotely on a smartphone or tablet via the EnerUp+ Project app.

In the electronic unit protection, an energy metering central unit is integrated.

The possible parameters that can be measured are listed in the following table:

Measured	UNIT	DESCRIPTION
$I_1$	A	L1 realtime measured value
$I_2$	A	L2 realtime measured value
$I_3$	A	L3 realtime measured value
$I_N$ (4P)	A	N realtime measured value
$I_G$	A	G realtime measured value
$U_{12} U_{23} U_{31}$ (3P)	V	Phase to Phase Voltage
$V_{12} V_{23} V_{31}$ (4P)	V	Voltage
Freq.	Hz	Frequency
$P_{Tot}$	kW	Active Power
$Q_{Tot}$	kvar	Reactive Power
PF		Power Factor
$E_p \downarrow$	kWh	Consumed active energy
$E_p \uparrow$	kWh	Returned active energy
$E_q \downarrow$	kvar h	Consumed reactive energy
$E_q \uparrow$	Kvar h	Returned reactive energy
$THDU_{12}/THDU_{23}/THDU_{31}$ (3P)	%	Chained Voltage THD
$THDV_{1N}/THDV_{2N}/THDV_{3N}$ (4P)	%	Voltage THD
$THDI_1/THDI_2/THDI_3/THDI_N$	%	Current THD
MEM	A - °C	Cause of the last intervention and its value

Function performance class according to IEC 61557-12

Function symbol	Performance class	Measurement range					Other complementary characteristics				
		DPX <sup>3</sup> 630A					$I_{max}$ PMD				
$I_n$		250A	320A	400A	500A	630A	250A	320A	400A	500A	630A
P	2	0.3kW	0.3kW	0.3kW	0.3kW	0.3kW	300A	380A	480A	600A	750A
		360kW	460kW	580kW	720kW	900kW	$I_b=250A, U_n=400V, f_n=50Hz$				
$Q_v$	2	0.6kvar	0.6kvar	0.6kvar	0.6kvar	0.6kvar	300A	380A	480A	600A	750A
		360kvar	460kvar	580kvar	720kvar	900kvar	$I_b=250A, U_n=400V, f_n=50Hz$				
$E_s$	2	0...999 GW/h					300A	380A	480A	600A	750A
							$I_b=250A, U_n=400V, f_n=50Hz$				
$E_{rV}$	2	0...999 GW/h					300A	380A	480A	600A	750A
							$I_b=250A, U_n=400V, f_n=50Hz$				
f	0.02	50...60 Hz					-				
I	2	12.5A	12.5A	12.5A	12.5A	12.5A	300A	380A	480A	600A	750A
		300A	380A	480A	600A	750A	$I_b=250A, U_n=400V, f_n=50Hz$				
$I_N$	2	12.5A	12.5A	12.5A	12.5A	12.5A	300A	380A	480A	600A	750A
		300A	380A	480A	600A	750A	$I_b=250A, U_n=400V, f_n=50Hz$				
$U(3P), V(4P)$	0.05	88...690V					-				
$P_{FA}$	0.05	-					300A	380A	480A	600A	750A
							$I_b=250A, U_n=400V, f_n=50Hz$				
$THDU(3P), THDV(4P)$	5	110...690V					-				
THD <sub>i</sub>	5	250A	250A	250A	250A	250A					
		250A	320A	400A	500A	630A					

## General remarks on protection unit

The protection units S10 are normally supplied by the internal current transformers (CTs).

When the current flowing through the circuit breaker is greater than 12% of the maximum power (20% of  $I_n$  for single phase load), the internal current supply ensures all operation of the protection unit, included LED status, display indications and diagnostic functions (e.g. trip test).

Display backlight and integrated measure (if available) are instead guaranteed starting from 20% of the maximum power (35% of  $I_n$  for single phase load), in absence of any other supply. In any case the external power supply is strongly recommended for the correct working of measurement, as well as RS485 communication.

To ensure the same performance when the load is less than 12% of the maximum power (20% of  $I_n$  for single phase load) to grant complete functions, one of the following optional power supplies can be used:

- external Auxiliary power supplier or, alternatively, Modbus/EMS communication interface.
- power supply temporarily connected to frontal USB socket, connected to a 5V DC power bank, Dongle BLE or PC.

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 8. CONFORMITY

DPX<sup>3</sup> range of product concerning circuit-breakers exceed compliance with the IEC/EN standard 60947-2.

Certification available by IECEE CB-scheme or LOVAG Compliance scheme.

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

DMX<sup>3</sup> are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

DMX<sup>3</sup> respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

*For specific information, please contact Legrand support.*

### 8.1 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:

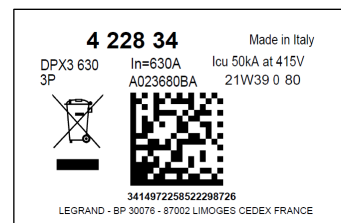
#### Product laser label on front

- Manufacturer responsible
- Denomination, type product, code
- Standard conformity
- Standard characteristics declared
- coloured identification of I<sub>cu</sub> at 415V



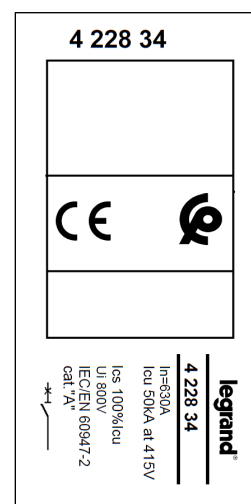
#### Product sticker label on side

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



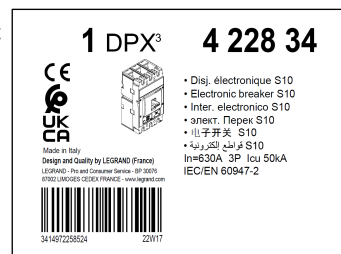
#### Mark sticker label on side

- 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





# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 9. EQUIPMENTS AND ACCESSORIES

### 9.1 Earth leakage modules

Earth leakage characteristics for DPX <sup>3</sup> 630		
	Standard	with Led
Type	A - S	A - S
Uninterrupted nominal current I <sub>n</sub> (A)	up to 630	up to 630
Rated isolated voltage U <sub>i</sub> (V AC)	500	500
Rated operating voltage U <sub>e</sub> (V AC) (50-60Hz)	500	500
Operating voltage (V AC) (50-60Hz)	230 ÷ 500	110 ÷ 500
Nominal frequency (Hz)	50 - 60	50 - 60
Operating temperature (°C)	-25 ÷ 70	-25 ÷ 70
Trip	electronic	electronic
Earth leakage time adjustments (s)	0 - 0.3 - 1 - 3	0 - 0.3 - 1 - 3
Earth leakage breaking capacity I <sub>dm</sub> (% I <sub>cu</sub> )	60	60
Earth leakage protection adjustments I <sub>Δn</sub> (A)	0.03 ÷ 3	0.03 ÷ 3
Side-by-side mounting	no	no
Underneath mounting	yes	yes
50% Earth fault detection contact I <sub>Δn</sub>	no	yes
Clip on rail DIN 35	no	no
Dimensions (W x H x D) (mm) for 4P	183 x 152 x 105	183 x 152 x 106

(Power losses, see par. 5.4)

Standard

I <sub>n</sub> ≤ 400A	3P	ref. 0 260 60
	4P	ref. 0 260 61
I <sub>n</sub> = 500A-630A	3P	ref. 0 260 64
	4P	ref. 0 260 65

LED version

I <sub>n</sub> ≤ 400A	4P	ref. 0 260 63
I <sub>n</sub> = 500A-630A	4P	ref. 0 260 67

### 9.2 Releases (for DPX<sup>3</sup> 630 / DPX<sup>3</sup> 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 <sub>c</sub> )	Both ac and dc: 24V/48V/110÷130V/220÷250V/380÷440V
Voltage range (%U <sub>c</sub> )	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 <sub>c</sub> )	ac: 24V/110÷125V/220÷240V/380÷415V dc: 24V/48V
Voltage range (%U <sub>c</sub> )	85 ÷ 110
Minimum opening time (ms)	50
Power consumption (W/VA)	1.6 / 5

• time-lag undervoltage releases (800 ms)	
<i>Time-lag modules with voltage:</i>	
230 V ac	ref. 0 261 90
400 V ac	ref. 0 261 91

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

### 9.3 Auxiliary contacts (for DPX<sup>3</sup> 630 / DPX<sup>3</sup> 1600)

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

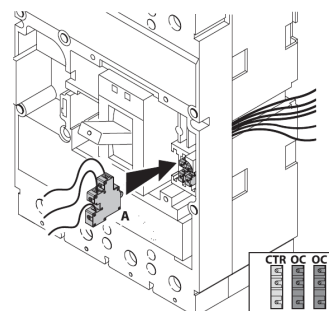
To show the state of the contacts or opening of the DPX<sup>3</sup>/DPX<sup>3</sup> -I on a fault:

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

Auxiliary contact electrical characteristics		
Rated voltage (V <sub>n</sub> )	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:

DPX<sup>3</sup> 630 → 2 auxiliary contacts + 1 fault signal + 1 release



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

### 9.4 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

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 9.5 Rotary handles

*Direct on DPX<sup>3</sup> (with auxiliary option)*

- Standard (black) *ref. 0 262 41*
- For emergency use (red / yellow) adapting on standard handle *ref. 4 222 38*

*Vari-depth handle IP55 (with auxiliary option)*

- Standard (black) *ref. 0 262 81*
- For emergency use (red / yellow) adapting on standard handle *ref. 0 262 82*

*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*

*Locking accessories (for direct handle)*

- Key barrel and flat key *ref. 0 262 25*

*Direct on DPX<sup>3</sup> (no auxiliary option and door defeat function)*

- Standard (black) *ref. 4 201 62*
- For emergency use (red / yellow) adapting on standard handle *ref. 4 201 65*

*Vari-depth handle IP55 (no auxiliary option and door defeat function)*

- Standard (black) *ref. 4 201 63*
- For emergency use (red / yellow) adapting on standard handle *ref. 4 201 76*

## 9.6 Motor operators (front operated)

*For general purpose operations (direct action type):*

- 230 V ac *ref. 4 226 30*

*For synchronized operations (energy storage type):*

- 24 V ac and dc *ref. 0 261 40*
- 48 V ac and dc *ref. 0 261 41*
- 230 V ac *ref. 0 261 42*

	LG-4 226 30	LG-0 261 40-41-44	
Type	Direct drive	Energy storage	
Rated operating voltage (U <sub>J</sub> - AC)	230V AC 50-60 Hz	24 - 48 - 230	
Rated operating voltage (U <sub>J</sub> - DC)	230V AC 50-60 Hz	24 - 48 - 230	
Voltage range (%U <sub>c</sub> )	85±110		85±110
	Opening	Closing	Closing
Pick-up consumption (W / VA)	240	200	300
Hold consumption (W / A)	80	120	300
Operating time / complete electric operation (ms)	450	550	2000
Operating time / main contacts change position (ms)	270	550	n/a
Mechanical endurance (O-C cycles) @I <sub>n</sub> = 630A	10000		n/a
Electrical endurance (O-C cycles) @I <sub>n</sub> = 630A	4000		4000
Cycles / minutes	up to 8 automatic open/close operations in a row		10
			4

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*

## 9.7 Mechanical accessories

- Padlock (for locking in "OPEN" position) *ref. 0 262 40*
- Insulated shields (phase insulators) *ref. 0 262 30*
- Sealable terminal shields:
  - Set of 2 (for 3P) *ref. 0 262 44*
  - Set of 3 (for 4P) *ref. 0 262 45*
- Terminal covers to guarantee IP20:
  - Set of 2 (for 3P) *ref. 0 262 34*
  - Set of 3 (for 4P) *ref. 0 262 35*

## 9.8 Connection accessories

**Cage terminals**

- Set of 4 terminals for cables 300 mm<sup>2</sup> max (rigid) or 240 mm<sup>2</sup> max (flexible) Cu/Al *ref. 0 262 50*
- Set of 4 high-capacity terminals for cables 2x240 mm<sup>2</sup> max (rigid) or 2x185 mm<sup>2</sup> max (flexible) Cu/Al *ref. 0 262 51*

**Extended front terminals**

- Set of 4 *ref. 0 262 47*

**Spreaders (incoming or outgoing):**

- Set of 2 (for 3P) *ref. 0 262 48*
- Set of 3 (for 4P) *ref. 0 262 49*

**Rear terminals (incoming or outgoing):**

(used to convert the fixed version with front terminals into the fixed version with rear terminals)

- for 3P *ref. 0 263 52*
- for 4P *ref. 0 263 53*

**Adaptor for lug**

(for connecting bare cables with lugs)

- Set of 4 adaptors + insulated shields *ref. 0 262 46*

## Cage terminal use specifications

DPX <sup>3</sup> 630							
Type of cage terminal	Cable standard suggested cross section (mm <sup>2</sup> )*			Dimensions limits of cable for cage terminals			
	In (A)	Cu	Al	MIN cross section (mm <sup>2</sup> )		MAX cross section (mm <sup>2</sup> )	
				Flexible	Rigid	Flexible	Rigid
Standard	250	120	185	6	4	240	300
	320	185	\				
	400	240	\				
	500	\	\				
	630	\	\				
High capacity	250	120	185	70	35	185	240
	320	185	2x120				
	400	240	2x150				
	500	2x150	2x240				
	630	2x185	\				

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

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 9.9 Plug-in version

(A plug-in is a DPX<sup>3</sup> fitted with special terminals and mounted on a plug-in base)

### Special terminals for plug-in / draw-out base (for incoming and outgoing terminals)

- Set of 6 terminals (3P) *ref. 4 222 20*
- Set of 8 terminals (4P) *ref. 4 222 21*

### Bases

(accept DPX<sup>3</sup>/DPX<sup>3</sup>-I fitted with special terminals)

- Front terminal mounting base for 3P *ref. 4 222 22*
- Front terminal mounting base for 4P *ref. 4 222 23*
- Flat rear terminal mounting base for 3P *ref. 4 222 24*
- Flat rear terminal mounting base for 4P *ref. 4 222 25*

### Bases for breakers with mounted earth leakage module

- Front terminal mounting base for 4P *ref. 4 222 26*
- Flat rear terminal mounting base for 4P *ref. 4 222 27*

### Accessories

- Set of 2 extractor handle *ref. 4 222 28*
- Set of connectors (24-pin) *ref. 4 222 29*

## 9.10 Draw-out version

(A DPX<sup>3</sup> draw-out version is a plug-in DPX<sup>3</sup> fitted with a "Debro-lift" mechanism which can be used to withdraw the DPX<sup>3</sup> while keeping it on its base)

### "Debro-lift" mechanism

(supplied with a rigid slide and handle for drawing-out)

- For base only (3P) *ref. 4 222 31*
- For base only (4P) *ref. 4 222 32*
- For base with earth leakage module (4P) *ref. 4 222 33*

### Keylock for "Debro-lift" mechanism

- One key for DPX<sup>3</sup> only  
(enable locking in draw - out position)

- Key lock accessory for draw-out  
(frontal masks for motor operator or rotary handle) *ref. 4 228 08*
- Key lock accessory for draw-out *ref. 4 228 10*

*Ref. 4 228 08 and 4 228 10 must be used with universal keylocks to get the complete locking kit for draw-out version*

### Accessories for "Debro-lift" mechanism

- Signalling contact (plugged-in / draw-out) *ref. 0 265 74*
- Handle for drawing - out *ref. 0 265 75*

### Auxiliary contacts

- Automatic auxiliary contacts for draw-out version (up to 2 contacts by DPX<sup>3</sup>) *ref. 4 222 30*

### 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 09*
- Plate for breaker or trip-free switch plug-in and draw-out version *ref. 0 264 04*

## 9.11 Specific accessories for electronic version

### Auxiliary power supply

- For supplying electronic units *ref. 4 210 83*

Is used to supply DPX<sup>3</sup> electronic circuit breakers S2/Sg with / without earth leakage module and with / without energy metering central unit. It is mandatory in case of electronic breakers with integrated measure and not interconnected in a supervision system (MODBUS network not requested) to correctly manage the measure functions

Technical characteristics:

- Input voltage: 24V ad/dc (+/- 10%)
- Enclosure: 2 DIN modules
- Output: up to 250mA (to supply many circuit breakers according to the following table):

4 210 83	DPX <sup>3</sup> 250 / 250HP / 630 / 1600	[mA]
I <sub>out</sub> MAX = 250 mA	Electronic/Electronic + RCD (S2/Sg)	50
	Electronic/Electronic + RCD with power metering (S2/Sg)	62.5
	Electronic/Electronic + RCD (S10)	70
	Electronic/Electronic + RCD with power metering (S10)	83

*According to single absorptions, it can be possible to connect more than one breaker*

### MODBUS communication

- RS485 MODBUS communication interface *ref. 4 210 75*

Is used for sharing on MODBUS network all information managed by DPX<sup>3</sup> electronic circuit breakers S2/Sg with / without earth leakage module and with / without energy metering central unit.

Technical characteristics:

- USB local PC connection
- Input voltage: 24V ad/dc (+/- 10%)
- Enclosure: 1 DIN modules
- MODBUS address configuration / transmission mode / transmission speed by physic configurators
- Output relay (220V - 0,2A): to signal tripped position

Consumption: 90mA

*It is possible to connect only one breaker to the interface.*

*In case of use of MODBUS interface 4 210 75, the external power supply module 4 210 83 is not necessary because the external power is already provided by the MODBUS module*

### Web server

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

### Software

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

### Touch screen

- To show data collected by DX<sup>3</sup>, DPX<sup>3</sup>, DMX<sup>3</sup>, EMDX<sup>3</sup>. It can manage up to 8 devices *ref. 0 261 56*

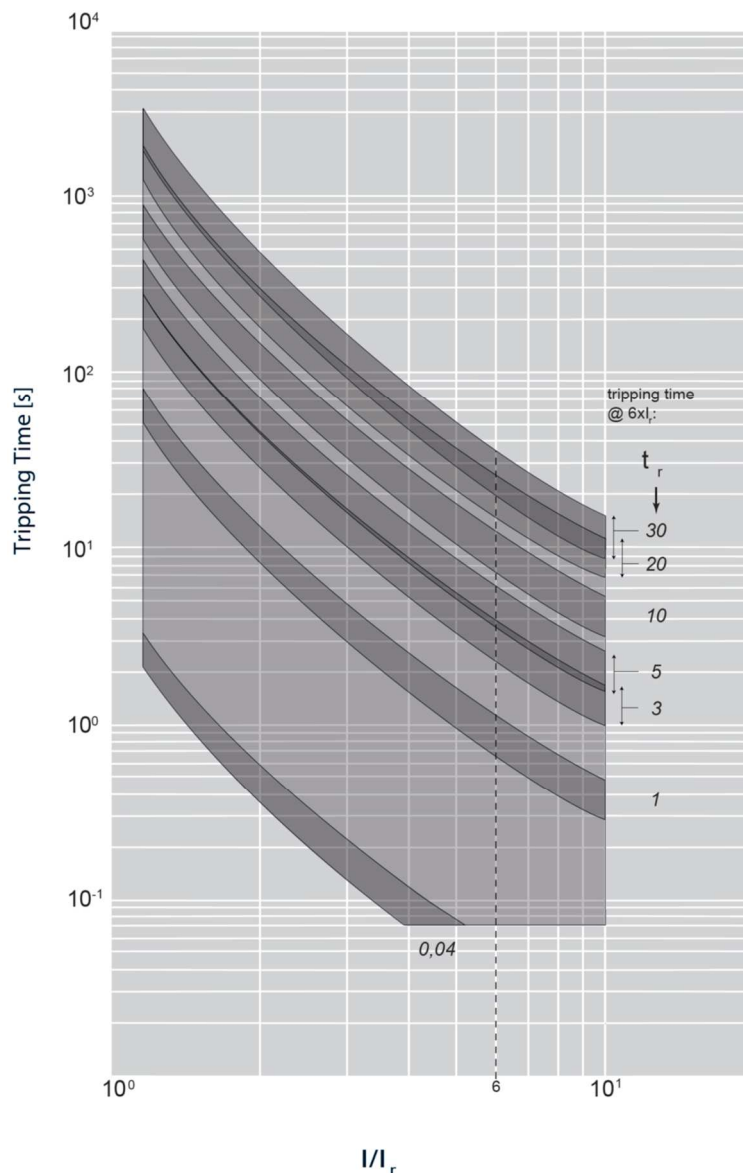
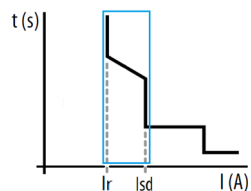
# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 10. CURVES

### 10.1.1 Tripping curve [ 1/3 ]

Update: 16/11/2022



$I_{cu} = 36-50-70-100 \text{ kA}$   $I_{max} = 630\text{A}$  3-4 P  $U_0 = 415\text{Vac}$  (IEC/EN 60947-2)

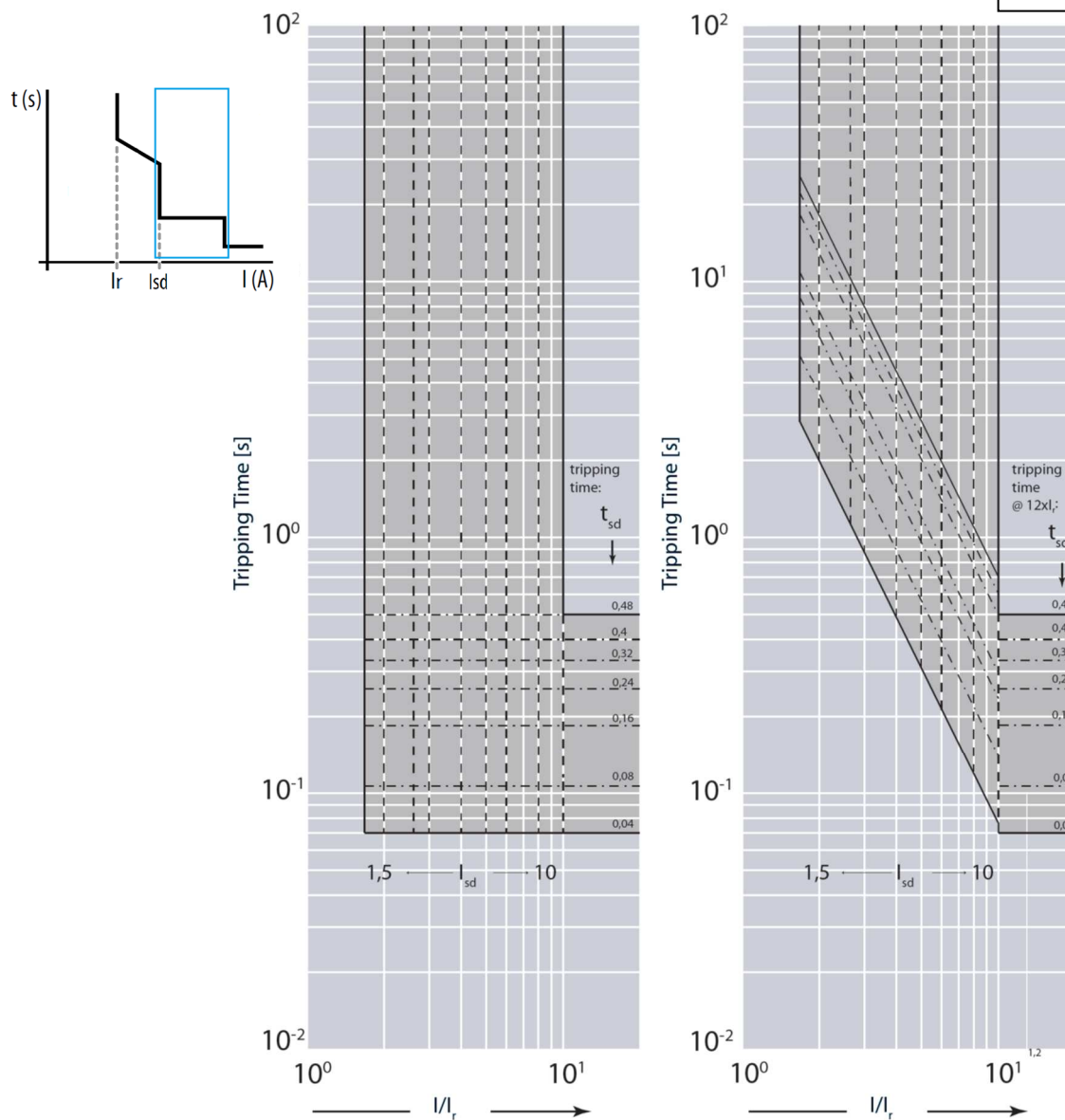
Value	Description
t	time
I	current
$I_r$	long time setting current
$t_r$	long time delay
$I_{sd}$	short time setting current
$t_{sd}$	short time delay
$I_i$	instantaneous release
$I_{cu}$	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping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

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

Update: 17/11/2022

## 10.1.2 Tripping curve [ 2/3 ]



$I_{cu} = 36-50-70-100 \text{ kA}$   $I_{max} = 630A \text{ 3-4 P}$   $U_0 = 415Vac$  (IEC/EN 60947-2)

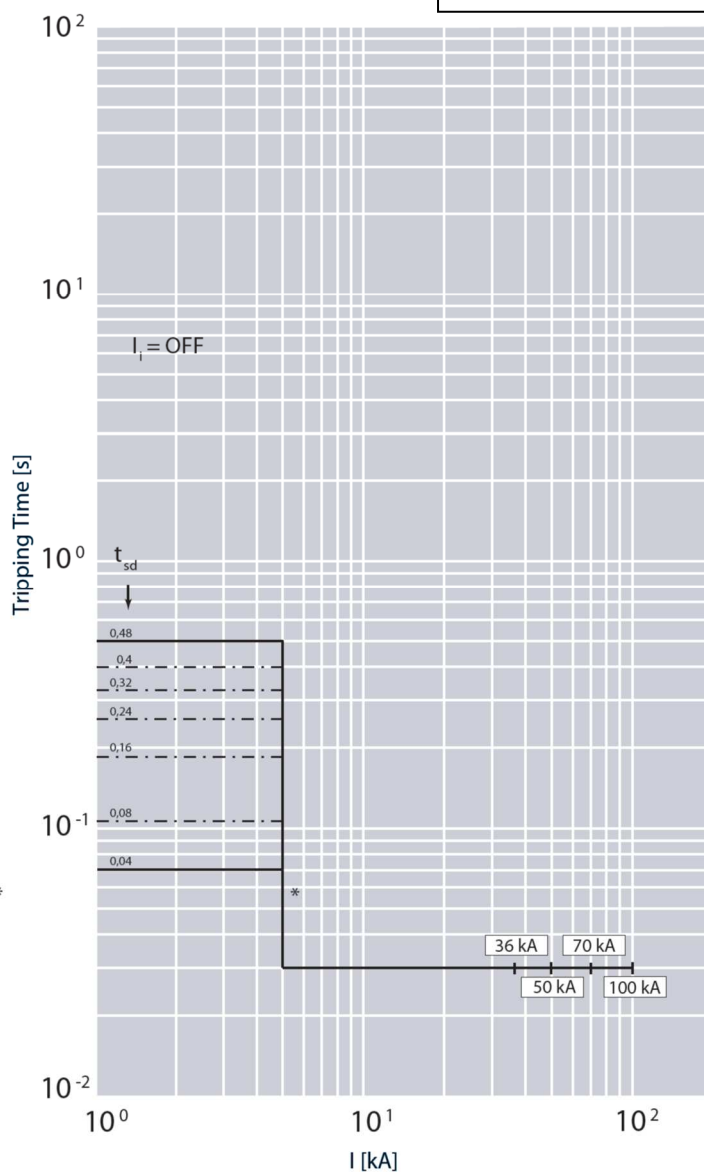
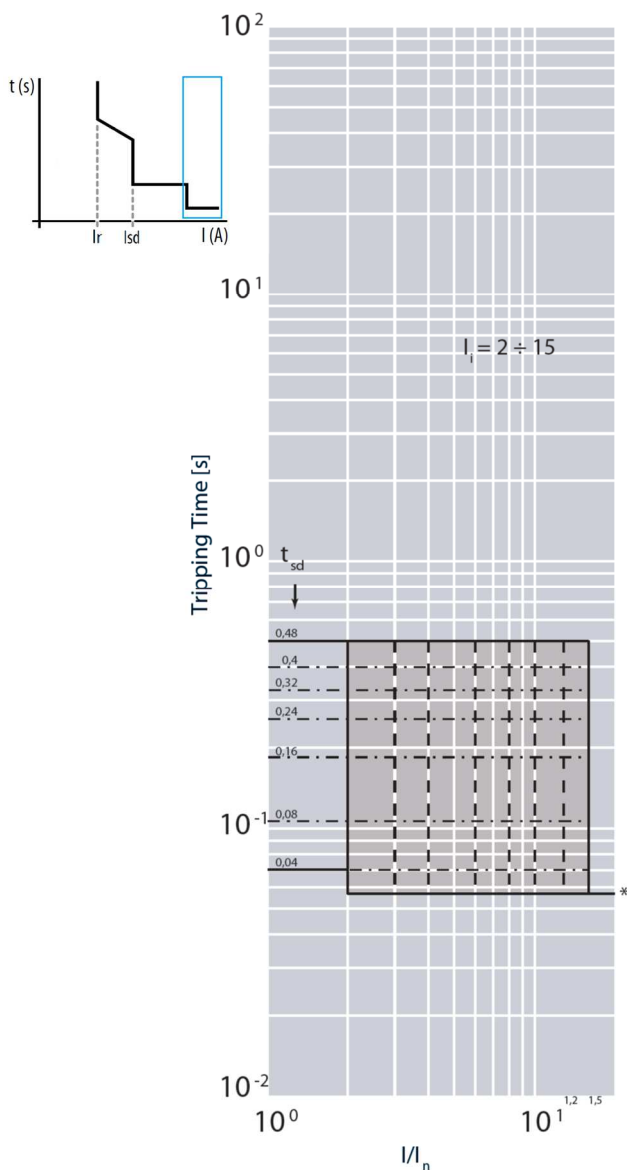
Value	Description
t	time
I	current
$I_r$	long time setting current
$t_r$	long time delay
$I_{sd}$	short time setting current
$t_{sd}$	short time delay
$I_i$	instantaneous release
$I_{cu}$	rated ultimate short-circuit breaking capacity
$I^2t = K$	constant pass-through energy setting
$t = K$	constant tripping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

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

Update: 17/11/2022

## 10.1.3 Tripping curve [ 3/3 ]



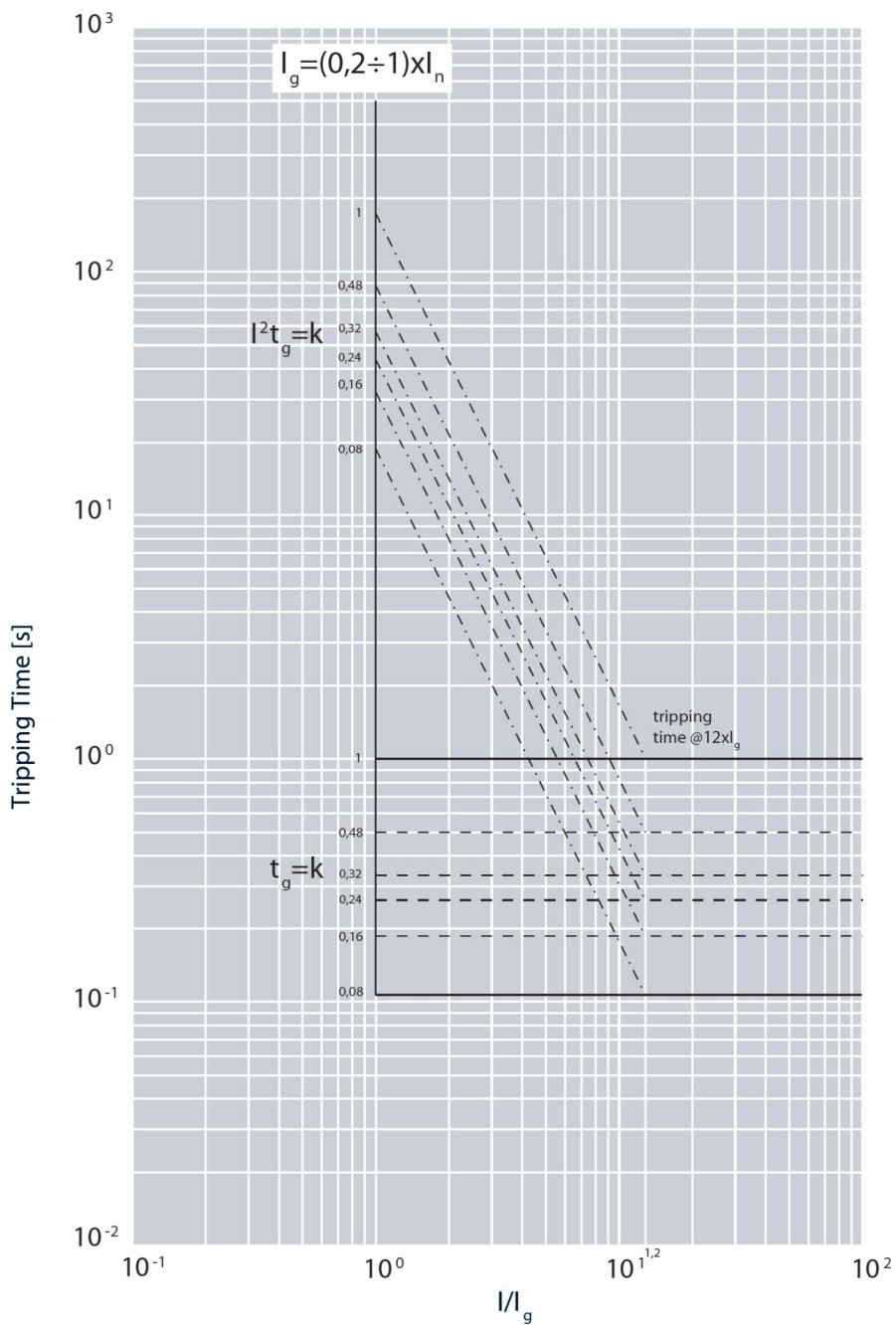
$I_{cu} = 36-50-70-100 \text{ kA}$   $I_{max} = 630A$  3-4 P  $U_o = 415Vac$  (IEC/EN 60947-2)

Fixed Instantaneous override  $I_{sr} = 5kA$

Value	Description
t	time
I	current
$I_r$	long time setting current
$t_r$	long time delay
$I_{sd}$	short time setting current
$t_{sd}$	short time delay
$I_i$	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 $I_i$

10.2 Ground Fault curve

Update: 16/11/2022

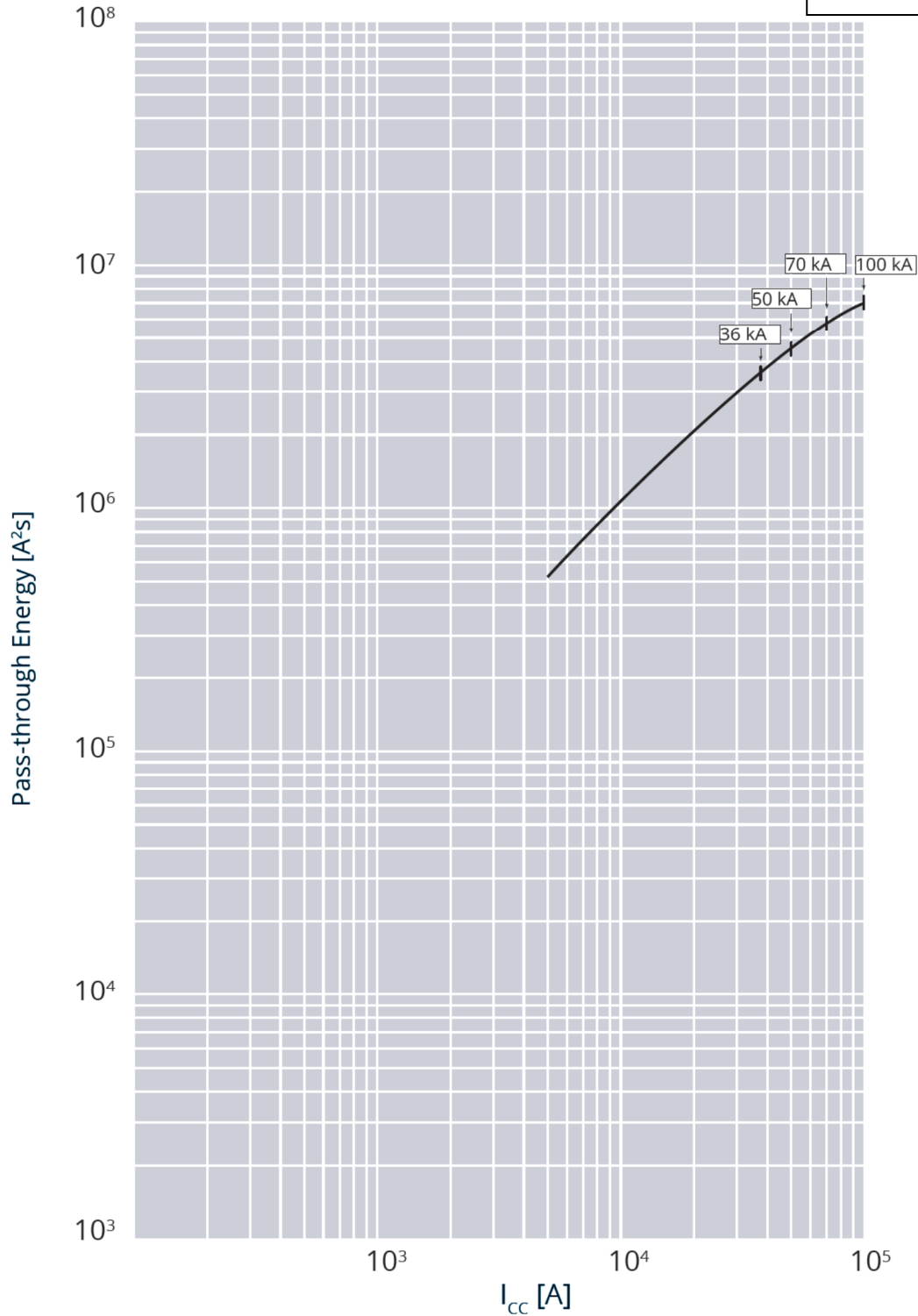


$I_{cu} = 36-50-70-100$  kA  $I_{max} = 630$ A 3-4 P  $U_e = 415$ Vac (IEC/EN 60947-2)



10.3 Pass-through specific energy characteristic curve

Update: 03/07/2018

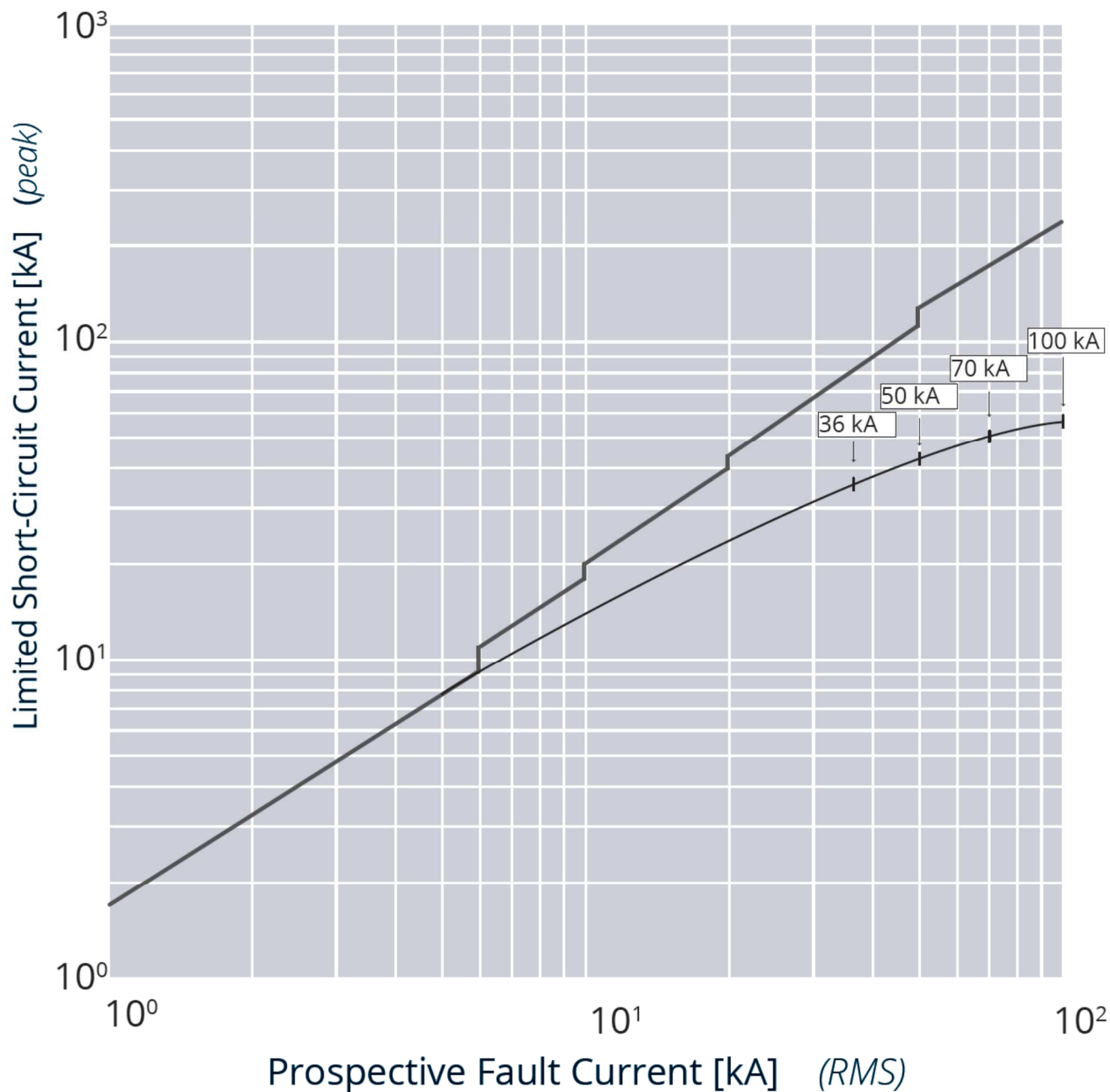


$I_{cu} = 36-50-70-100 \text{ kA}$   $I_{max} = 630A$  3-4 P  $U_o = 415Vac$  (IEC/EN 60947-2)

Value	Description
$I_{cc}$	short circuit current
$I^2t$ (A²s)	pass-through specific energy

10.4 Cut-off peak current characteristic curve (kA)

Update: 02/07/2018



$I_{cu} = 36-50-70-100 \text{ kA}$   $I_{max} = 630 \text{ A}$  3-4 P  $U_o = 415 \text{ Vac}$  (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

# DPX<sup>3</sup> 630 S10 electronic (display version) circuit breakers

Reference(s) :  
from 4 228 20 to 4 228 99

## 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 <sup>3</sup> 630 fixed	Cage terminals, flexible cable	630	1	630	1	630	1	599	0.95	567	0.9
	Lugs, flexible cable	630	1	630	1	630	1	567	0.9	536	0.85
	Lugs, rigid cable	630	1	630	1	630	1	599	0.95	567	0.9
	Spreaders, flexible cable	630	1	630	1	630	1	536	0.85	504	0.8
	Rear flat staggered terminals, flexible cable	630	1	630	1	630	1	567	0.9	536	0.85
	Rear flat staggered terminals, flexible cable + RCD	630	1	630	1	536	0.85	504	0.9	473	0.75
DPX <sup>3</sup> 630 fixed + RCD	Cage terminals, flexible cable + RCD	599	0.95	599	0.95	536	0.85	504	0.8	473	0.75
	Lugs, flexible cable + RCD	630	1	599	0.95	536	0.85	504	0.8	473	0.75
	Lugs, rigid cable + RCD	630	1	599	0.95	536	0.85	504	0.8	473	0.75
	Staggered spreaders, flexible cable + RCD	630	1	630	1	536	0.85	504	0.8	473	0.75
	Rear flat staggered terminals, flexible cable + RCD	630	1	630	1	536	0.85	504	0.8	473	0.75
	Rear flat staggered terminals, flexible cable + RCD	630	1	630	1	536	0.85	504	0.8	473	0.75
Draw-out 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 <sup>3</sup> 630 draw-out	Cage terminals, flexible cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Cage terminals, rigid cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, flexible cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, rigid cable	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, Cu bars, vertical	599	0.95	567	0.9	536	0.85	504	0.8	441	0.7
	Rear flat terminals, Cu bars, vertical + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
DPX <sup>3</sup> 630 draw-out + RCD	Cage terminals, flexible cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Cage terminals, rigid cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, flexible cable + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, rigid cable	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, rigid cable	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5
	Rear flat terminals, Cu bars, vertical + RCD	504	0.8	441	0.7	410	0.65	378	0.6	347	0.5

For further technical information, please contact Legrand technical support.

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.