

# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers

# DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :

from 4 230 45 to 4 230 57;

from 4 231 05 to 4 231 17;

4 231 83;



## CONTENTS

## PAGES

|  |    |
|--|----|
| 1. USE                                       | 1  |
| 2. RANGE                                     | 1  |
| 3. DIMENSIONS AND WEIGHTS                    | 1  |
| 4. OVERVIEW                                  | 4  |
| 5. ELECTRICAL CONNECTIONS                    | 4  |
| 6. ELECTRICAL AND MECHANICAL CHARACTERISTICS | 6  |
| 7. CONFORMITY                                | 8  |
| 8. EQUIPMENTS AND ACCESSORIES                | 9  |
| 9. CURVES                                    | 12 |

## 1. USE

DPX<sup>3</sup> HP platform has been developed to give a new solution of protection devices for a more precise approach in power installations in order to offer the correct answer for different project needs.

DPX<sup>3</sup> HP platform provide a complete project approach in premium market segment, offering a range completely suitable for high power application with high performance breakers in compact dimensions and at a competitive costs.

## 2. RANGE

### Circuit breakers

| I <sub>n</sub> (A) | DPX <sup>3</sup> 250 HP + earth leakage |        |
|--------------------|---|--------|
|                    | 36 kA                                   | 50 kA  |
|                    | 4P                                      |        |
| 16                 | 423045                                  | 423105 |
| 20                 | 423046                                  | 423106 |
| 25                 | 423047                                  | 423107 |
| 32                 | 423048                                  | 423108 |
| 40                 | 423049                                  | 423109 |
| 50                 | 423050                                  | 423110 |
| 63                 | 423051                                  | 423111 |
| 80                 | 423052                                  | 423112 |
| 100                | 423053                                  | 423113 |
| 125                | 423054                                  | 423114 |
| 160                | 423055                                  | 423115 |
| 200                | 423056                                  | 423116 |
| 250                | 423057                                  | 423117 |

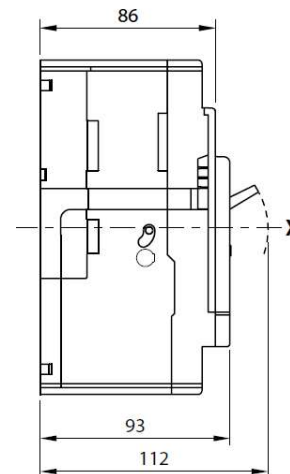
### Switch disconnectors

| DPX <sup>3</sup> -I 250 HP + earth leakage |        |
|--|--------|
| I <sub>n</sub> (A)                         | 4P     |
| 250  | 423183 |

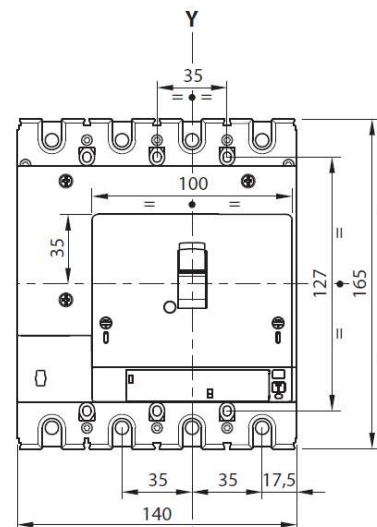
## 3. DIMENSIONS AND WEIGHTS

### 3.1 Dimensions

#### Lateral view



#### Frontal view

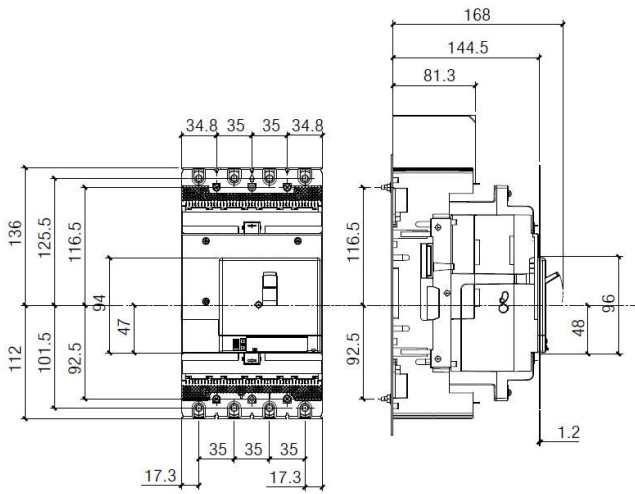


# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers

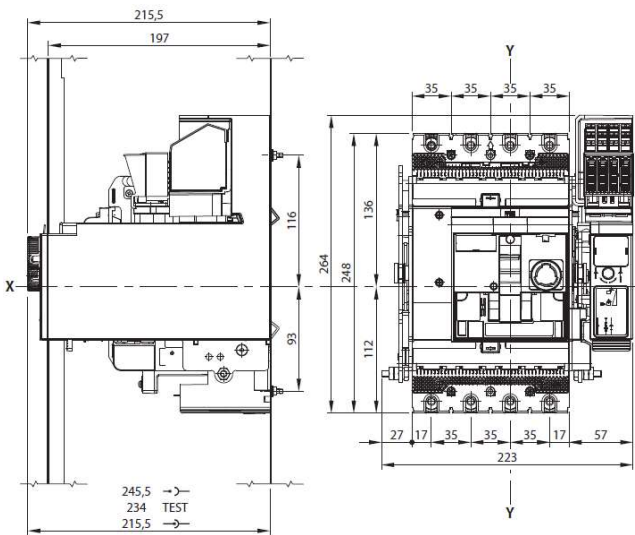
## DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

### Plug-in version

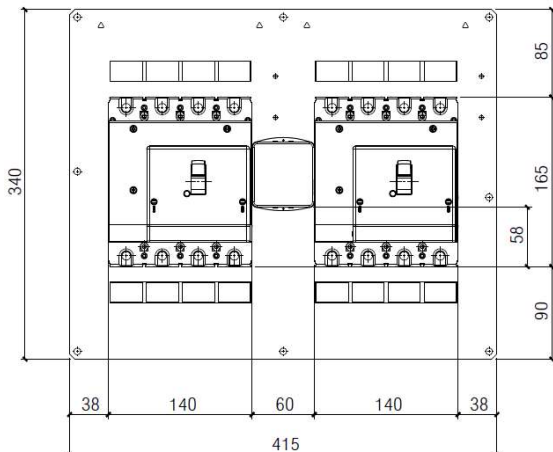


### Draw-out version

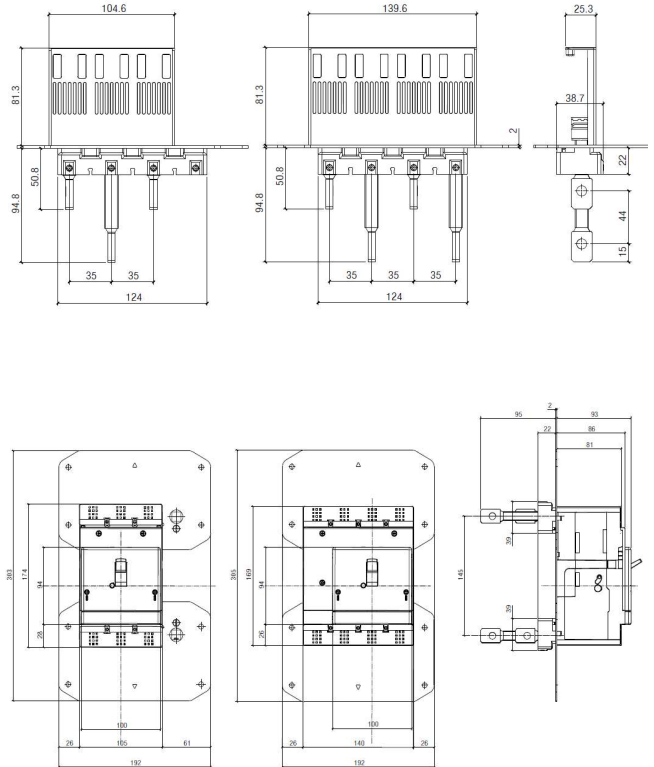


### Interlock

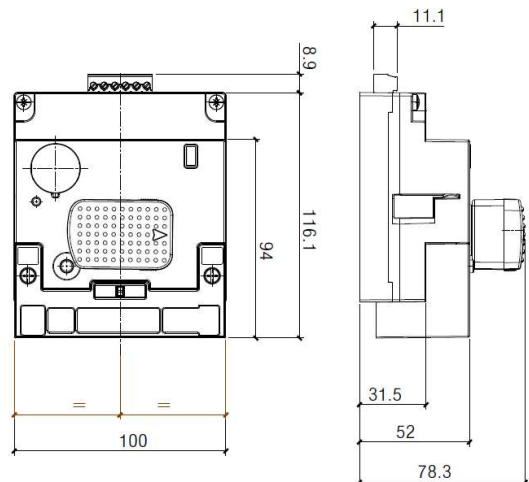
(for rear plate interlock dimension, see relative instruction sheet)



### Rear terminals

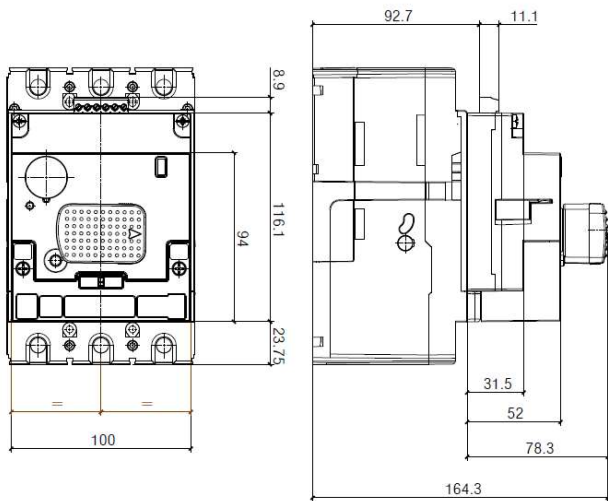
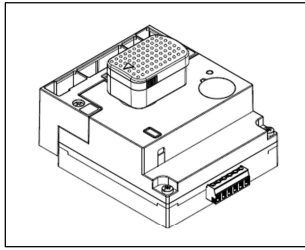
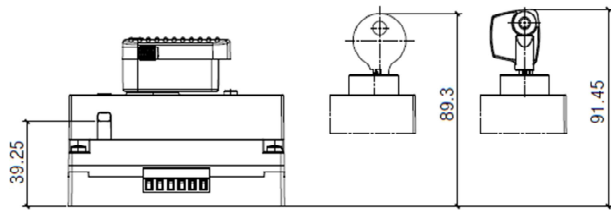


### Direct rotary handle

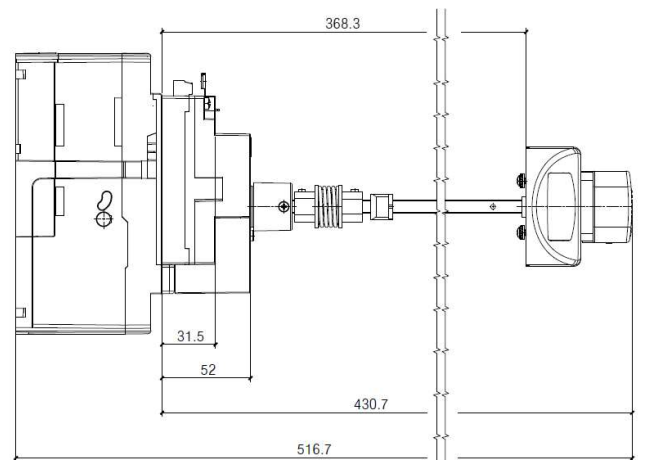
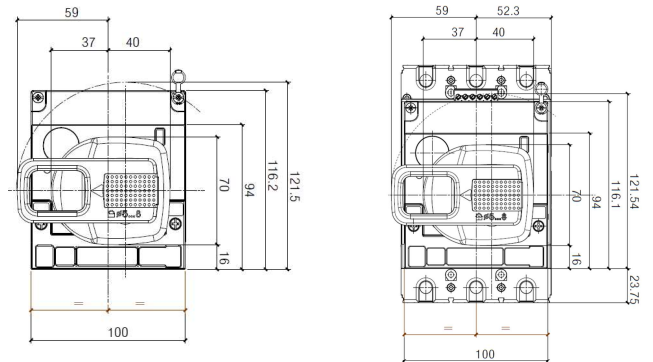
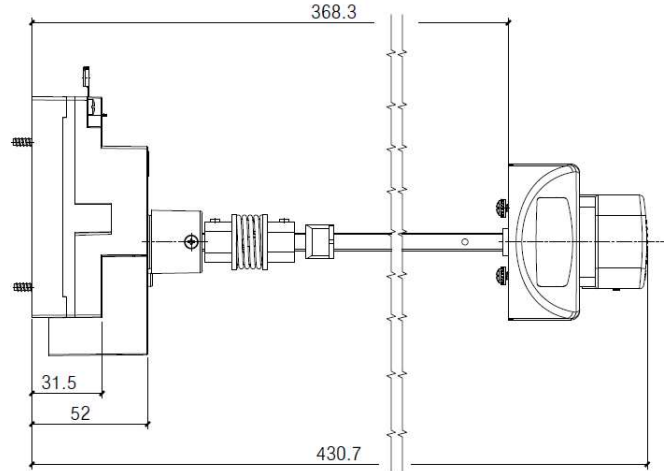


**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
**DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage**

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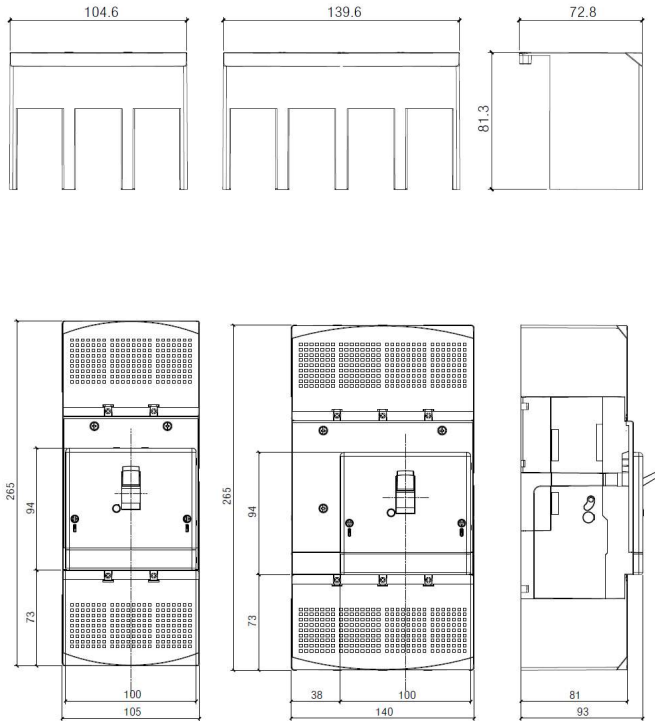
Vari-depth rotary handle



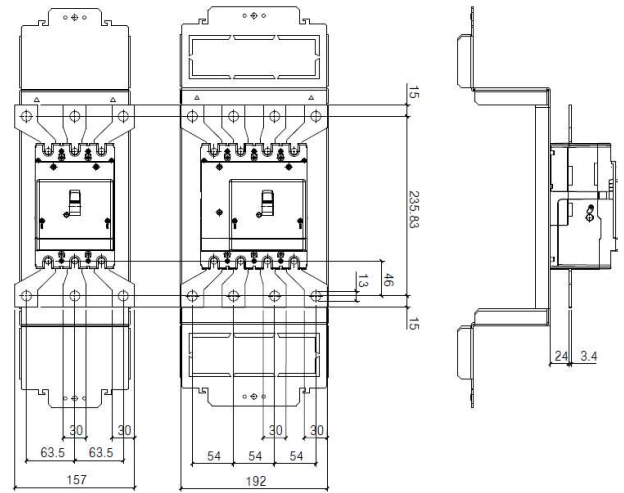
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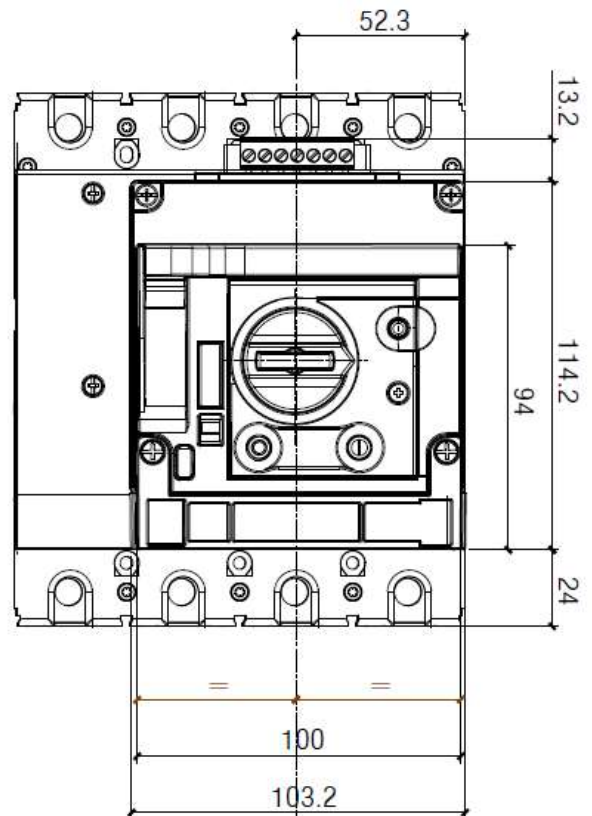
Sealable terminal shields



Spreaders



Motor operator



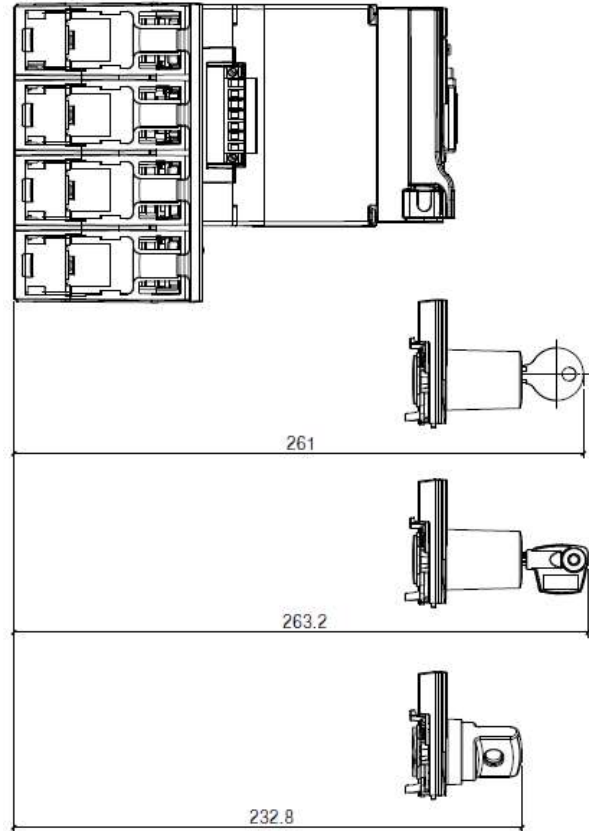
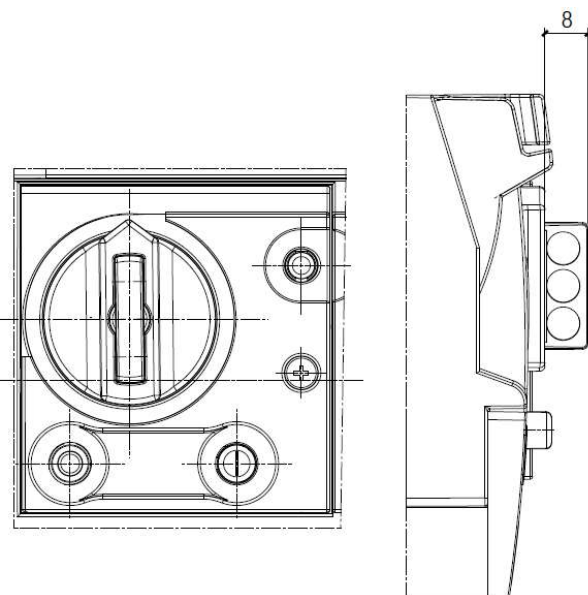
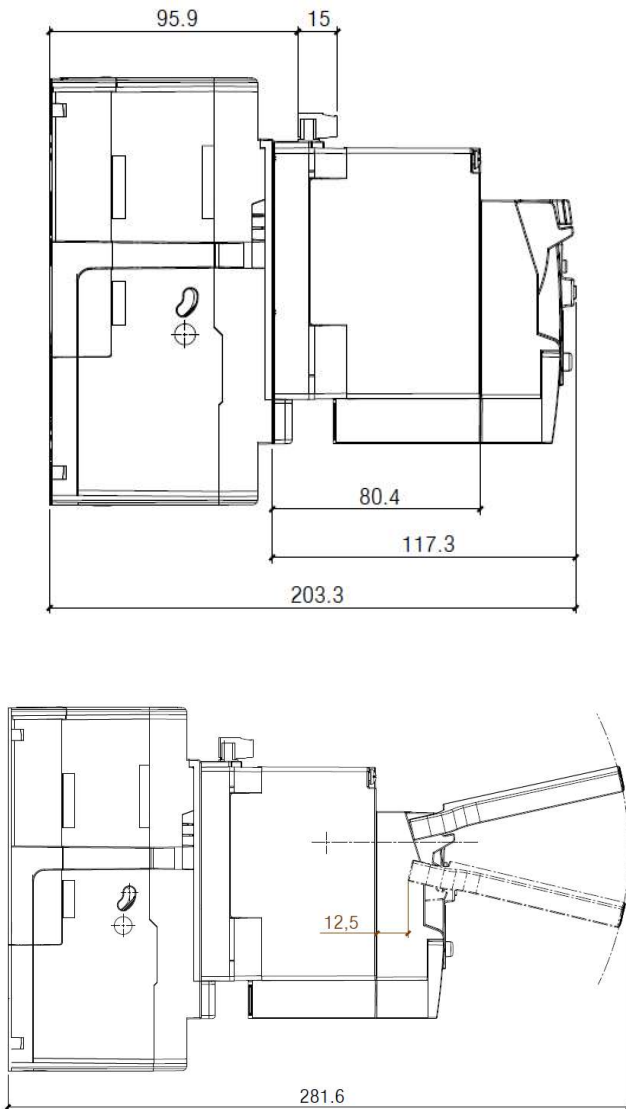
**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
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4 231 83;



### 3.2 Weights

| Configuration                                  | Weights (Kg) |
|--|--------------|
|  | 4P           |
| Circuit breaker/switch disconnector            | 2.6          |
| Plug-in*                                       | 3.5          |
| Draw-out**                                     | 2.5          |
| Interlock*                                     | 0.35         |
| Rear interlock (for plug-in/draw-out version)* | 5            |
| Motor operator*                                | 1            |
| * to add to device weight                      |              |
| * to add to device and plug-in weights         |              |

## 4. OVERVIEW

### 4.1 Supplied with:

- 4 fixing screws
- 8 screws for connections
- 3 phase insulators

## 5. ELECTRICAL CONNECTIONS

### 5.1 Mounting possibilities

On plate:

- Vertical
- Horizontal
- Supply invertor type

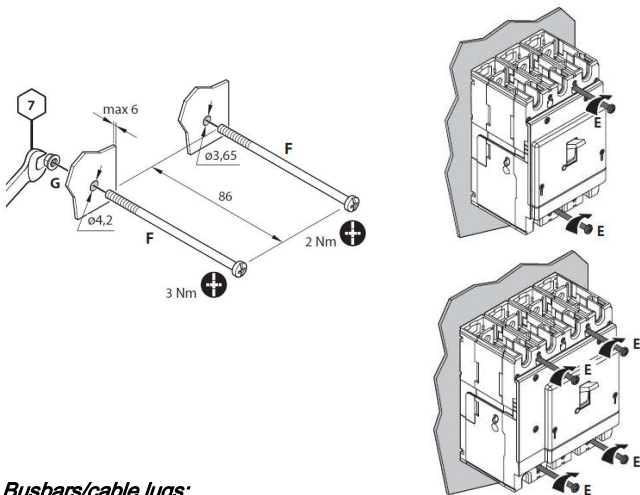
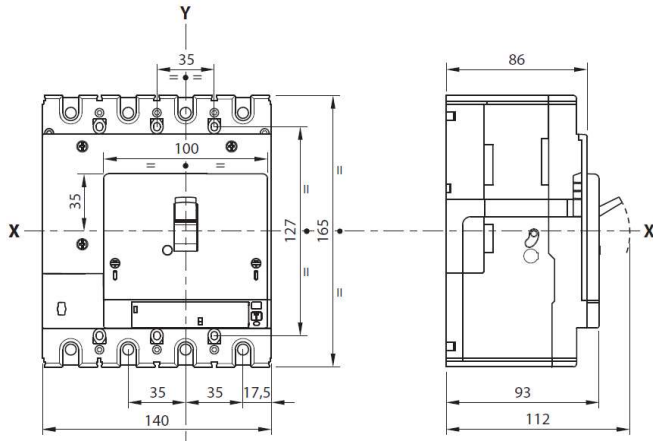


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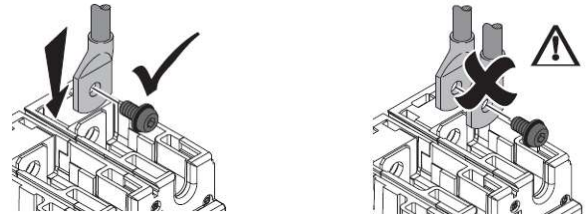
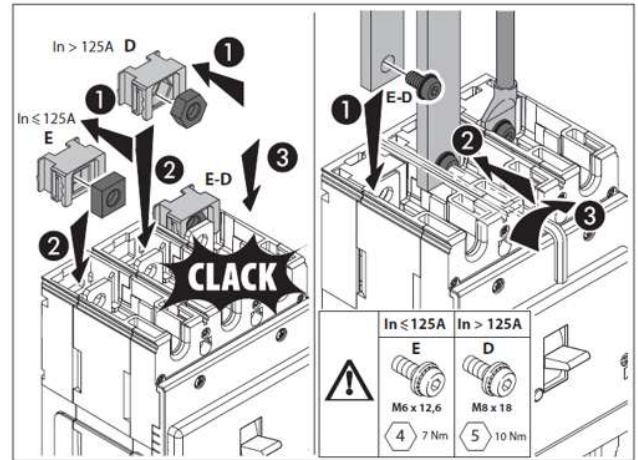
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## 5.2 Mounting

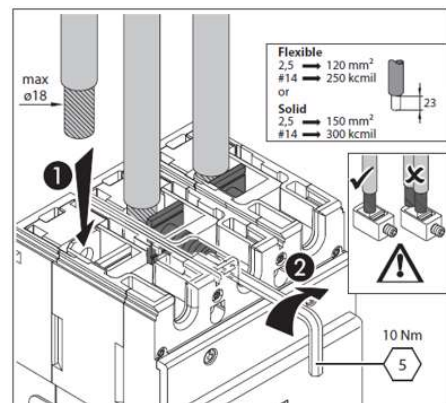
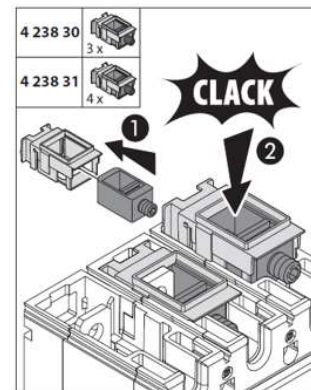
(see instruction sheet for detailed mounting procedures)



Busbars/cable lugs:



Cables:



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### 6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

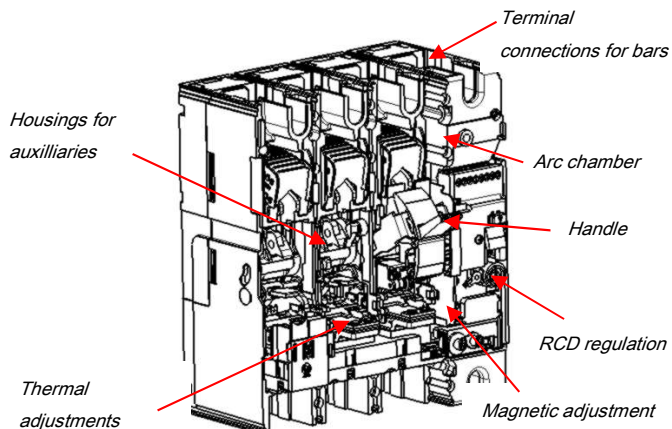
#### Circuit breaker

| Circuit Breaker   | DPX <sup>3</sup> 250 HP + RCD F/N (36kA, 50kA)   |
|---|--|
| Rated current (A)   | 16-20-25-32-40-50-63-80-100-125-160-200-250  |
| Poles   | 4  |
| Pole pitch (mm)   | 35   |
| Rated insulation voltage (50/60Hz) U <sub>i</sub> (V)     | 500  |
| Rated operating voltage (50/60Hz) U <sub>e</sub> (V)      | 500  |
| Rated impulse withstand current U <sub>imp</sub> (kV)     | 6  |
| Rated frequency (Hz)                                      | 50 - 60  |
| Reference ambient temperature (°C)                        | 40 - 50  |
| Operating temperature (°C)                                | -25 + 70   |
| Mechanical endurance (cycles)                             | 12000  |
| Mechanical endurance with motor control (cycles)          | 12000  |
| Electrical endurance at I <sub>n</sub> (cycles)           | 6000   |
| Electrical endurance at 0.5 I <sub>n</sub> (cycles)       | 6000   |
| Utilization category                                      | A  |
| Suitable for isolation                                    | Yes  |
| Type of protection  | Thermal-magnetic   |
| Thermal adjustment I <sub>t</sub>                         | 0.8 - 0.9 - 1 x I <sub>n</sub>   |
| Magnetic adjustment I <sub>m</sub> (A)                    | 400 A up to I <sub>n</sub> =40A (not adjustable);<br>6.5-10-13 x I <sub>n</sub> for I <sub>n</sub> =50A;<br>5-7.5-10 x I <sub>n</sub> up to =250A; |
| Neutral protection for 4P (%I <sub>n</sub> of phase pole) | 100  |
| Earth leakage type  | A - Integrated   |
| Adjustable sensitivity (A)                                | 0.03- 0.3 - 1 - 3  |
| Adjustable tripping (s)                                   | 0 - 0.3 - 1 - 3 (with 0.03 possible only 0s)   |
| Dimensions (W x H x D) (mm)                               | 140 x 165 x 86 (4P)  |

#### Switch disconnectors

| Switch   | DPX <sup>3</sup> -I 250 HP    |
|--|-------------------------------|
| Uninterrupted nominal current I <sub>n</sub> (A)         | 250                           |
| Short-time resistive current I <sub>rs</sub> (kA) for 1s | 3                             |
| Rated short-circuit making capacity I <sub>sm</sub> (kA) | 4.3                           |
| Rated insulation voltage U <sub>i</sub> (V AC)           | 500                           |
| Maximum rated operating voltage U <sub>e</sub> (V AC)    | 500 (@ AC22A) - 415 (@ AC23A) |
| Rated impulse withstand voltage U <sub>imp</sub> (kV)    | 8                             |
| Utilisation category                                     | AC22A (I <sub>n</sub> =250A)  |
| Suitable for isolation                                   | Yes                           |
| Nominal frequency (Hz)                                   | 50-60                         |
| Operating temperature (°C)                               | -25 + 70                      |
| Mechanical endurance (cycles)                            | 12000                         |
| Mechanical endurance with motor control (cycles)         | 12000                         |
| Electrical endurance at I <sub>n</sub> (cycles)          | 6000                          |
| Electrical endurance at 0.5 I <sub>n</sub> (cycles)      | 6000                          |
| Dimensions (W x H x D) (mm)                              | 140 x 165 x 86 (4P)           |

### 6.1 Main parts constituting the circuit breaker



### 6.2 Breaking capacity (kA)

|   |  | Breaking capacity (kA) & I <sub>cs</sub> |          |
|---|--|--|----------|
|   |  | 4P                                       |          |
| IEC 60947-2   | U <sub>e</sub> /I <sub>cu</sub> (I <sub>cu</sub> letter) | 36kA (F)                                 | 50kA (N) |
|   | 220/240 V AC   | 70                                       | 90       |
|   | 380/415 V AC   | 36                                       | 50       |
|   | 440/460 V AC   | 25                                       | 30       |
|   | 480/500 V AC   | 16                                       | 18       |
|   | I <sub>cs</sub> (% I <sub>cu</sub> )                     | 100                                      | 100      |
| Rated making capacity under short circuit I <sub>cm</sub> |  |  |          |
|   | I <sub>cm</sub> (kA) at 415V                             | 76.5                                     | 105      |
| NEMA AB-1   | 220/240 V AC   | 70                                       | 90       |
|   | 480/500 V AC   | 16                                       | 18       |

### 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>m</sub> ) |      |
|                    | 0.8 x I <sub>n</sub>      | 1 x I <sub>n</sub> | min                        | max  |
| 16                 | 13                        | 16                 | 400                        | 400  |
| 20                 | 16                        | 20                 | 400                        | 400  |
| 25                 | 20                        | 25                 | 400                        | 400  |
| 32                 | 26                        | 32                 | 400                        | 400  |
| 40                 | 32                        | 40                 | 400                        | 400  |
| 50                 | 40                        | 50                 | 325                        | 650  |
| 63                 | 51                        | 63                 | 315                        | 630  |
| 80                 | 64                        | 80                 | 400                        | 800  |
| 100                | 80                        | 100                | 500                        | 1000 |
| 125                | 100                       | 125                | 625                        | 1250 |
| 160                | 128                       | 160                | 800                        | 1600 |
| 200                | 160                       | 200                | 1000                       | 2000 |
| 250                | 200                       | 250                | 1250                       | 2500 |

### 6.3 Load operations

|                   |      |
|-------------------|------|
| Force on handle   | N    |
| Opening operation | 63,5 |
| Closing operation | 66   |
| Restore operation | 86,5 |

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### 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                   |

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>

Circuit breaker

| I <sub>n</sub> (A) | Power losses per pole (W) |      |      |      |      |      |       |      |      |       |       |       |       |
|--------------------|---------------------------|------|------|------|------|------|-------|------|------|-------|-------|-------|-------|
|                    | 16                        | 20   | 25   | 32   | 40   | 50   | 63    | 80   | 100  | 125   | 160   | 200   | 250   |
| Cage terminals     | 3.29                      | 4.91 | 5.87 | 5.49 | 8.44 | 6.33 | 10.39 | 7.94 | 8.55 | 14.00 | 12.98 | 16.38 | 23.33 |
| Lugs               | 3.01                      | 4.49 | 7.01 | 5.02 | 7.71 | 5.78 | 9.49  | 7.25 | 7.81 | 12.79 | 11.86 | 14.96 | 21.31 |
| Spreaders          | 2.53                      | 3.78 | 4.52 | 4.22 | 6.49 | 4.87 | 7.99  | 6.11 | 6.58 | 10.77 | 9.98  | 12.6  | 17.95 |
| Rear terminals     | 3.1                       | 4.63 | 5.54 | 5.17 | 7.95 | 5.97 | 9.79  | 7.48 | 8.06 | 13.19 | 12.23 | 15.43 | 21.99 |

Note: power losses 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.

Switch disconnectors

|                | Power losses per pole (W) |       |
|----------------|---------------------------|-------|
|                | I <sub>n</sub> (A)        | 250   |
| Cage terminals |                           | 14.84 |
| Lugs           |                           | 13.55 |
| Spreaders      |                           | 11.41 |
| Rear terminals |                           | 13.98 |

Note: power losses in the table above are referred and measured as described in the standard IEC 60947-3 for switches. Values in the table are referred to a single phase.

### 6.6 DERATINGS

according to IEC/EN 60947-1

#### 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) | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70  |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 16                 | 18  | 17  | 17  | 16  | 16  | 16  | 15  | 14  |
| 20                 | 22  | 22  | 21  | 20  | 20  | 20  | 19  | 17  |
| 25                 | 28  | 27  | 26  | 26  | 25  | 25  | 23  | 21  |
| 32                 | 35  | 35  | 35  | 33  | 32  | 32  | 30  | 27  |
| 40                 | 44  | 43  | 42  | 41  | 40  | 40  | 37  | 34  |
| 50                 | 55  | 54  | 53  | 51  | 50  | 50  | 47  | 43  |
| 63                 | 69  | 68  | 67  | 64  | 63  | 63  | 59  | 54  |
| 80                 | 88  | 86  | 86  | 82  | 80  | 80  | 74  | 68  |
| 100                | 110 | 108 | 105 | 102 | 100 | 100 | 93  | 85  |
| 125                | 138 | 135 | 131 | 128 | 125 | 125 | 116 | 106 |
| 160                | 176 | 173 | 168 | 163 | 160 | 160 | 149 | 136 |
| 200                | 258 | 244 | 230 | 215 | 200 | 200 | 180 | 170 |
| 250                | 322 | 305 | 287 | 269 | 250 | 250 | 225 | 213 |

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.

Pollution degree

for DPX<sup>3</sup> 250 HP 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 with RCD

| Altitude (m)                                    | 2000               | 3000                  | 4000                  | 5000                 |
|---|--------------------|-----------------------|-----------------------|----------------------|
| U <sub>e</sub> (V)                              | 500                | 430                   | 380                   | 330                  |
| 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> |



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### 7. CONFORMITY

DPX<sup>3</sup> HP range of product concerning circuit-breakers and switch-disconnectors exceed compliance with the IEC/EN standard 60947-2 and 60947-3 respectively. Certification available by IECEE CB-scheme or LOVAG Compliance scheme.

DPX<sup>3</sup> HP respect the European Directives REACH, RoHS, RAEE.

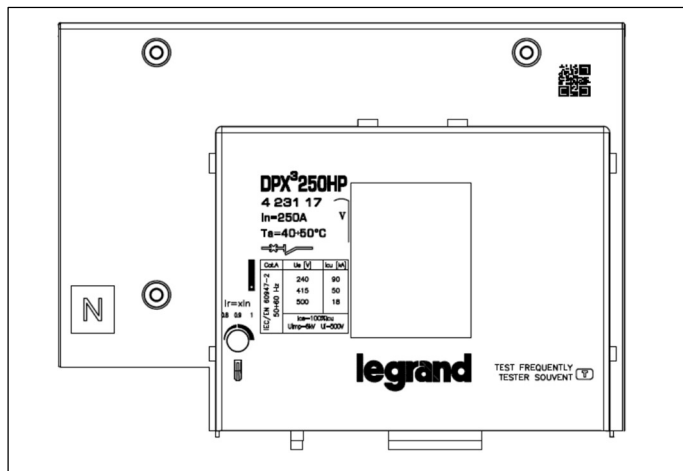
*For specific information, please contact Legrand support.*

### 7.1 Marking

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



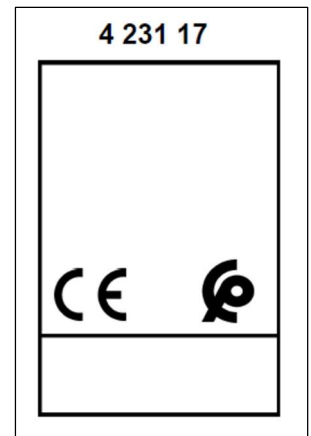
#### Product sticker label on side

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



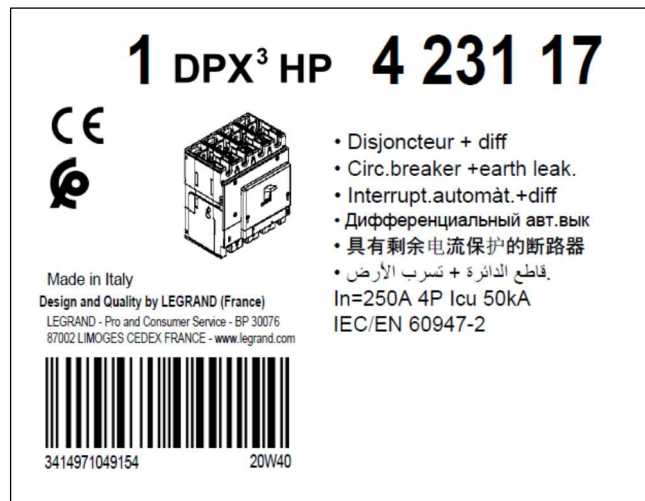
#### Mark sticker label on side

- Product code
- Mark/Licence (if any)
- Country deviation, if any



#### Packaging sticker label

- Manufacturer responsible
- Denomination and type product
- Mark/Licence (if any)
- Directive requirements
- Bar code identification product



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### 8. EQUIPMENTS AND ACCESSORIES

#### 8.1 Releases (for DPX<sup>3</sup> 125/250 HP and DPX<sup>3</sup> 160/250)

- shunt releases with voltage:
  - 12 Vac and dc *ref. 4 210 12*
  - 24 Vac and dc *ref. 4 210 13*
  - 48 Vac and dc *ref. 4 210 14*
  - 110÷130 Vac *ref. 4 210 15*
  - 220÷277 Vac *ref. 4 210 16*
  - 380÷480 Vac *ref. 4 210 17*

Maximum power = 400 VA / W

- undervoltage releases with voltage:
  - 12 Vac and dc *ref. 4 210 18*
  - 24 Vac and dc *ref. 4 210 19*
  - 48 Vac and dc *ref. 4 210 20*
  - 110÷130 Vac and dc *ref. 4 210 21*
  - 220÷240 Vac *ref. 4 210 22*
  - 277 Vac *ref. 4 210 23*
  - 380÷415 Vac *ref. 4 210 24*
  - 440÷480 Vac *ref. 4 210 25*

Maximum power = 4 VA  
 Circuit breaker opening time < 50 ms

UVR releases can be used on DPX<sup>3</sup> 125/250 HP starting from batch 19W15

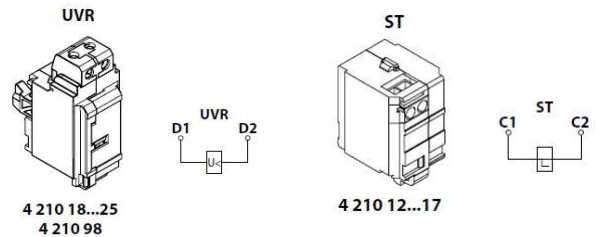
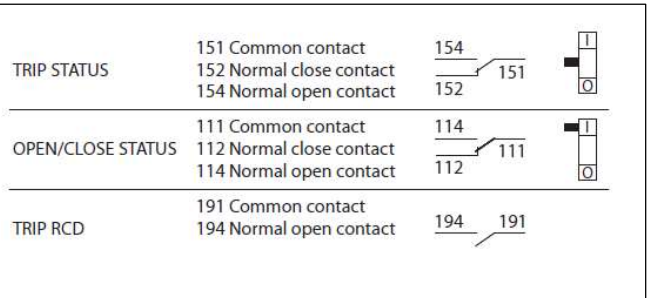
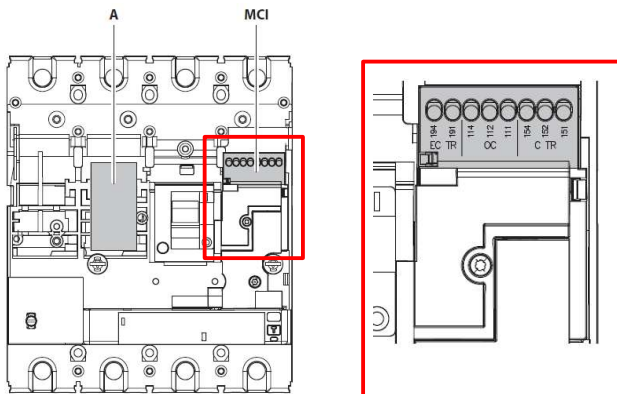
- time-lag undervoltage releases (800 ms)  
*Time-lag modules with voltage:*
  - 230 V ac *ref. 0 261 90*
  - 400 V ac *ref. 0 261 91*

Release *ref. 4 210 98*  
 (to be equipped with a time-lag module 0 261 90/91)

#### 8.2 Auxiliary contacts

For version of DPX<sup>3</sup> 250 HP thermal magnetic, with earth leakage module, auxiliary contacts are integrated inside module M.C.I (see instruction sheet for details).

Here a connection scheme to get auxiliary functionality:



|     |   |
|-----|---|
|     | A |
| UVR | ✓ |
| ST  | ✓ |

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

#### 8.3 Universal keylocks

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

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

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

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

# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers

## DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

### 8.3 Rotary handles

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

- Standard (black) ref. 4 238 00
- For emergency use (red / yellow) ref. 4 238 01

Vari-depth handle IP55 (with auxiliary option)

- Standard (black) ref. 4 238 02
- For emergency use (red / yellow) ref. 4 238 03

Locking accessories (for rotary handle with auxiliary option)

- Key lock accessory for direct rotary handle ref. 4 238 04
- Key lock accessory for vari-depth rotary handle ref. 4 238 05  
*(ref. 4 238 05 is compatible with DPX<sup>3</sup> 125 HP also)*

Ref. 4 238 04 and 4 238 05 must be used with universal keylocks to get the complete locking kit for rotary handle

### 8.4 Motor operators

For synchronized operations (energy storage type):

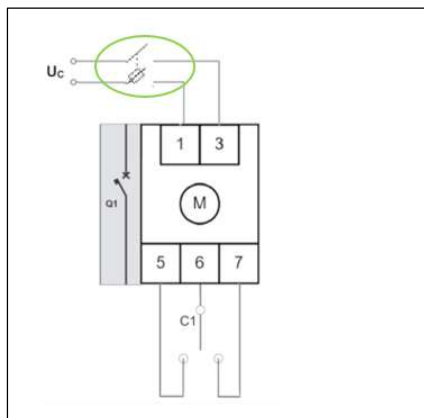
- 24 Vac and dc ref. 4 238 40
- 48 Vac and dc ref. 4 238 41
- 110 Vac ref. 4 238 42
- 230 Vac ref. 4 238 43

Technical parameters:

| Voltage   | Property                   | AC      |         | DC      |         |
|-----------|----------------------------|---------|---------|---------|---------|
|           |                            | Opening | Closing | Opening | Closing |
| 24V ac/dc | Maximum inrush power (VA)  | 75      | 430     | 55      | 320     |
|           | Rated power (VA)           | 45      | -       | 20      | -       |
|           | Absorption time (s)        | 2.8     | 0.01    | 3.3     | 0.01    |
|           | Operating current time (s) | 1.1     | 0.03    | 1.2     | 0.03    |
| 48V ac/dc | Maximum inrush power (VA)  | 85      | 1000    | 70      | 690     |
|           | Rated power (VA)           | 65      | -       | 15      | -       |
|           | Absorption time (s)        | 3.3     | 0.006   | 3.8     | 0.006   |
|           | Operating current time (s) | 1.1     | 0.02    | 1.3     | 0.02    |
| 110V ac   | Maximum inrush power (VA)  | 95      | 600     | -       | -       |
|           | Rated power (VA)           | 60      | -       | -       | -       |
|           | Absorption time (s)        | 3       | 0.02    | -       | -       |
|           | Operating current time (s) | 1.0     | 0.03    | -       | -       |
| 230V ac   | Maximum inrush power (VA)  | 125     | 460     | -       | -       |
|           | Rated power (VA)           | 70      | -       | -       | -       |
|           | Absorption time (s)        | 2.5     | 0.08    | -       | -       |
|           | Operating current time (s) | 0.9     | 0.03    | -       | -       |

It is necessary to foresee a protection device (e.g. fuse) along the motor operator power line. The correct size of the fuse depends on the motor version and on the number of users.

Here a schematic example:



Locking accessory (for motor operator)

- Padlock (for motor operator locking) ref. 4 238 46
- Key lock accessory for motor operator ref. 4 238 45

Ref. 4 238 45 must be used with universal keylocks to get the complete locking kit for motor operator

### 8.6 Mechanical accessories

- Padlock (for locking in "OPEN" position) ref. 4 210 49  
*(ref. 4 210 49 is compatible with DPX<sup>3</sup> 125 HP and DPX<sup>3</sup> 160/250)*

- Sealable terminal shields:
  - Set of 3 (for 4P) ref. 4 238 24

- Insulated shields:
  - Set of 3 (for 4P) ref. 4 238 35

*(ref. 4 238 34/35 are compatible with DPX<sup>3</sup> 125 HP also)*

### 8.7 Connection accessories

Cage terminals

- Set of 4 terminals for cables 150 mm<sup>2</sup> max (rigid) ref. 4 238 31  
 or 120 mm<sup>2</sup> max (flexible) Cu/Al

Spreaders (incoming or outgoing):

- Set of 4 (for 4P) ref. 6 250 18

Rear terminals (incoming or outgoing):

- Set of 4 (for 4P) ref. 4 238 22

# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers

## DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :

from 4 230 45 to 4 230 57;

from 4 231 05 to 4 231 17;

4 231 83;

### 8.8 Plug-in version

(A plug-in is a DPX<sup>3</sup> 250 HP fitted with special terminals and mounted on a plug-in base)

#### Bases

(for plug-in and draw-out versions for DPX<sup>3</sup> 250 HP and DPX<sup>3</sup>-I 250 HP)

- Plug-in/draw-out base for 3P *ref. 4 238 50*
- Plug-in/draw-out base for 4P *ref. 4 238 51*
- Plug-in/draw-out mobile part kit for 3P *ref. 4 238 52*
- Plug-in/draw-out mobile part kit for 4P *ref. 4 238 53*

#### Plug-in accessories

*Locking accessory (for plug-in)*

- Key lock accessory for plug-in *ref. 4 238 63*

*Ref. 4 238 63 must be used with universal keylocks to get the complete locking kit for plug-in version*

### 8.9 Draw-out version

(A DPX<sup>3</sup> 250 HP draw-out version is a plug-in DPX<sup>3</sup> 250 HP fitted with a "Debro-lift" mechanism which can be used to withdraw the breaker while keeping it on its base)

#### "Debro-lift" mechanism

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

- transformation kit for 4P *ref. 4 238 61*

#### Frontal masks for draw-out version

(to provide in addition to debro-lift mechanism according to accessory mounted)

- Frontal module, with frontal mask (3P and 4P) *ref. 4 238 55*  
(if neither motor operator nor rotary handle are mounted)
- Frontal mask for motor operator (3P and 4P) *ref. 4 238 56*
- Frontal mask for rotary handle (3P and 4P) *ref. 4 238 57*

#### Locking accessory (for draw-out)

- Padlock for draw-out position *ref. 4 238 64*
- Key lock accessory for draw-out *ref. 4 238 62*

*Ref. 4 238 62 must be used with universal keylocks to get the complete locking kit for draw-out version*

#### Auxiliary contacts

- Automatic auxiliary contacts for draw-out version *ref. 4 222 30*
- 6 contact connector (under sliding contacts) *ref. 0 098 19*

(Ref. 0 098 19 can be used with both plug-in and draw-out version)

### 8.10 Interlock mechanism

(for interlocking 2 DPX<sup>3</sup> 125 HP or 2 DPX<sup>3</sup> 250 HP breakers)

No frame mixing in interlock mechanism

- Interlock mechanism – standard version *ref. 4 238 27*  
(for fixed version DPX<sup>3</sup> 125 HP and DPX<sup>3</sup> 250 HP)
- Interlock mechanism – for electronic module *ref. 4 238 28*  
(for fixed version DPX<sup>3</sup> 125 HP and DPX<sup>3</sup> 250 HP)
- Interlock plate for DPX<sup>3</sup> 250 HP *ref. 4 238 26*
- Rear interlock mechanism *ref. 4 238 29*  
(for DPX<sup>3</sup> 250 HP plug-in and/or draw-out version)  
If used ref. 0 098 19, maximum 1 set

# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers

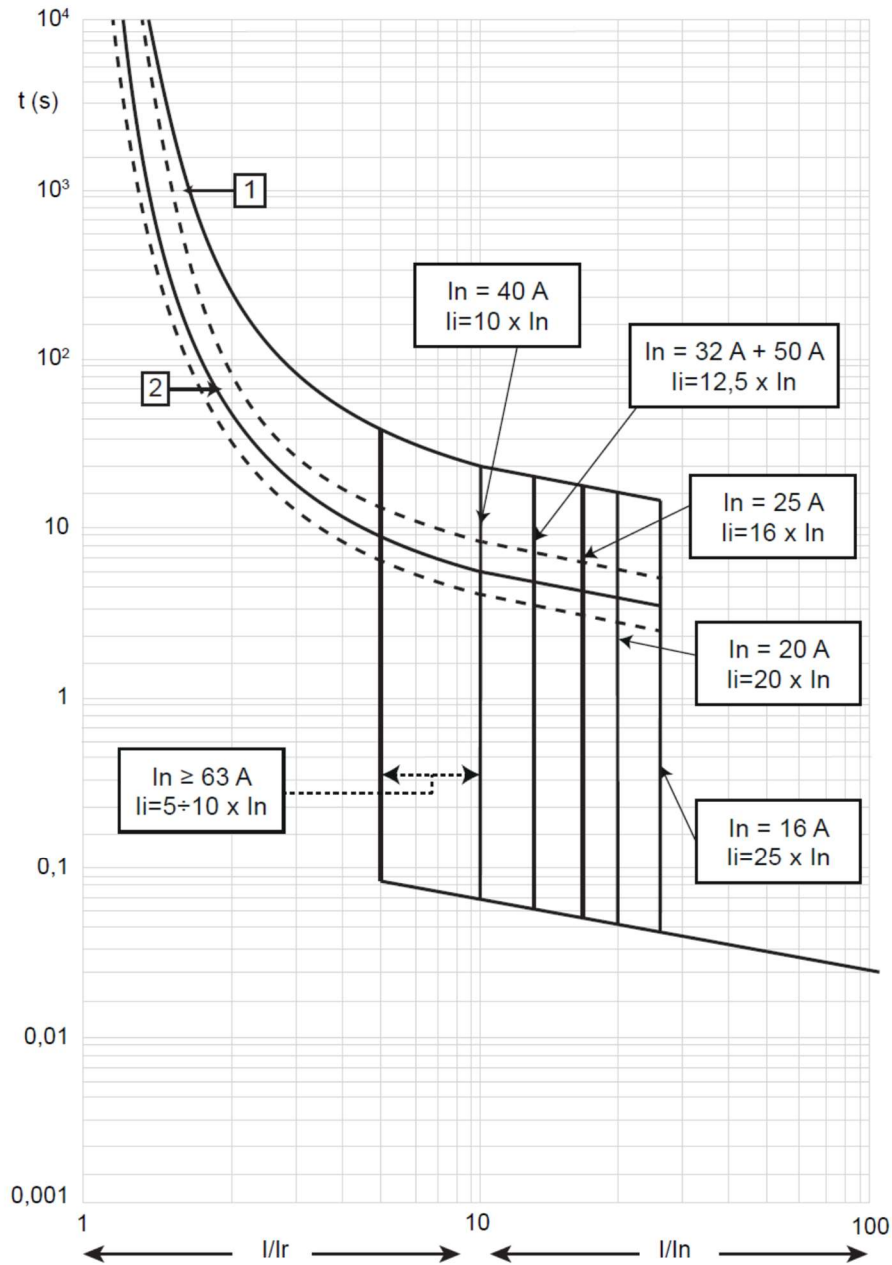
## DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

### 9. CURVES

#### 9.1 Thermal magnetic tripping curve

Update: 11/06/2019



$I_{cu} = 36-50 \text{ kA}$   $I_{max} = 250 \text{ A}$  4 P  $U_o = 415 \text{ Vac}$  (IEC/EN 60947-2)

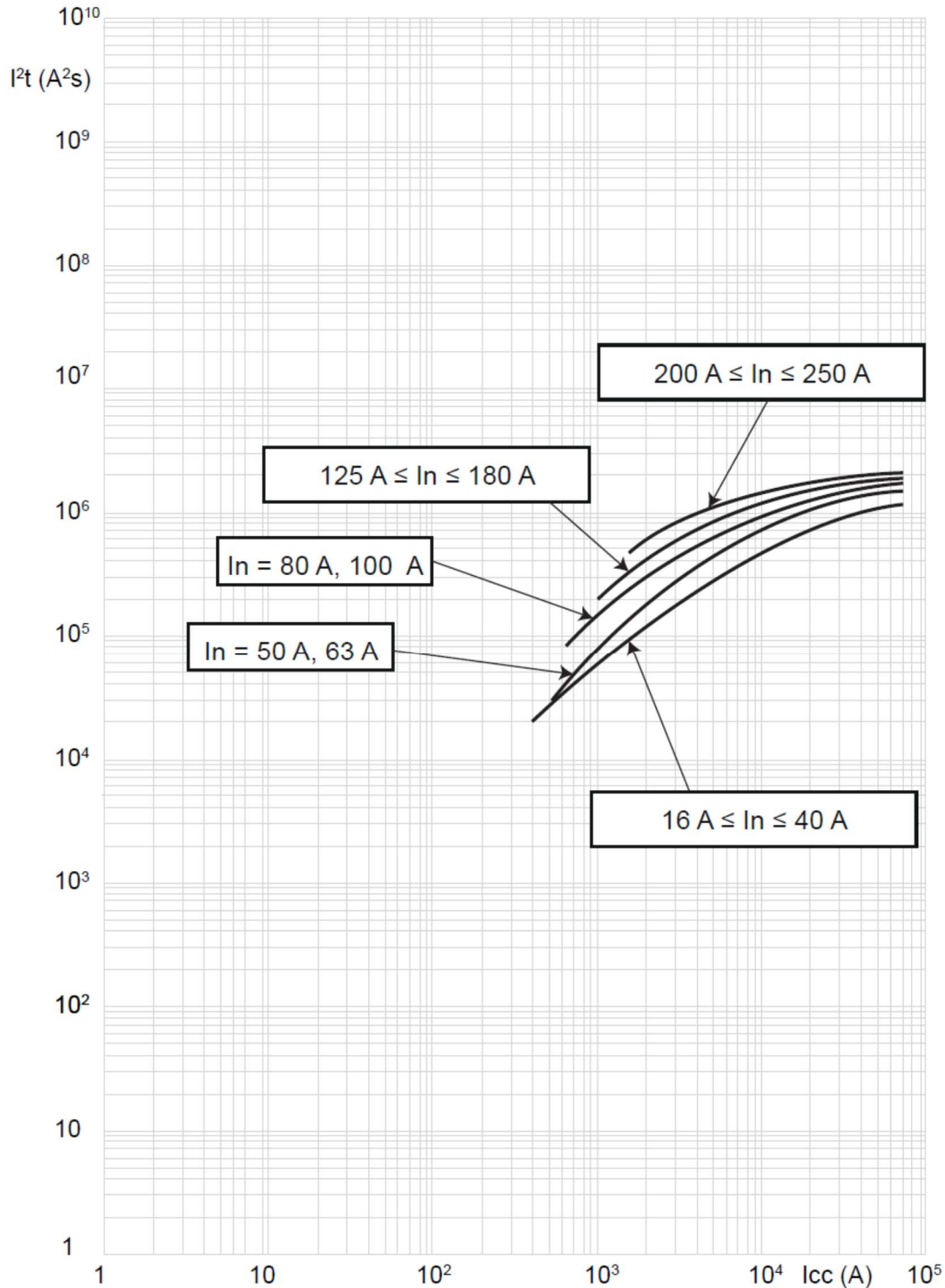
| Value   | Description                    |
|---------|--------------------------------|
| t       | time                           |
| I       | current                        |
| $I_n$   | rated current                  |
| $I_r$   | long time setting current      |
| curve 1 | characteristic with cold start |
| curve 2 | characteristic with hot start  |

**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
**DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage**

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

9.2 Pass-through specific energy characteristic curve

Update: 11/06/2019



$I_{cu} = 36-50 \text{ kA}$   $I_{max} = 250\text{A}$  4 P  $U_o = 415\text{Vac}$  (IEC/EN 60947-2)

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

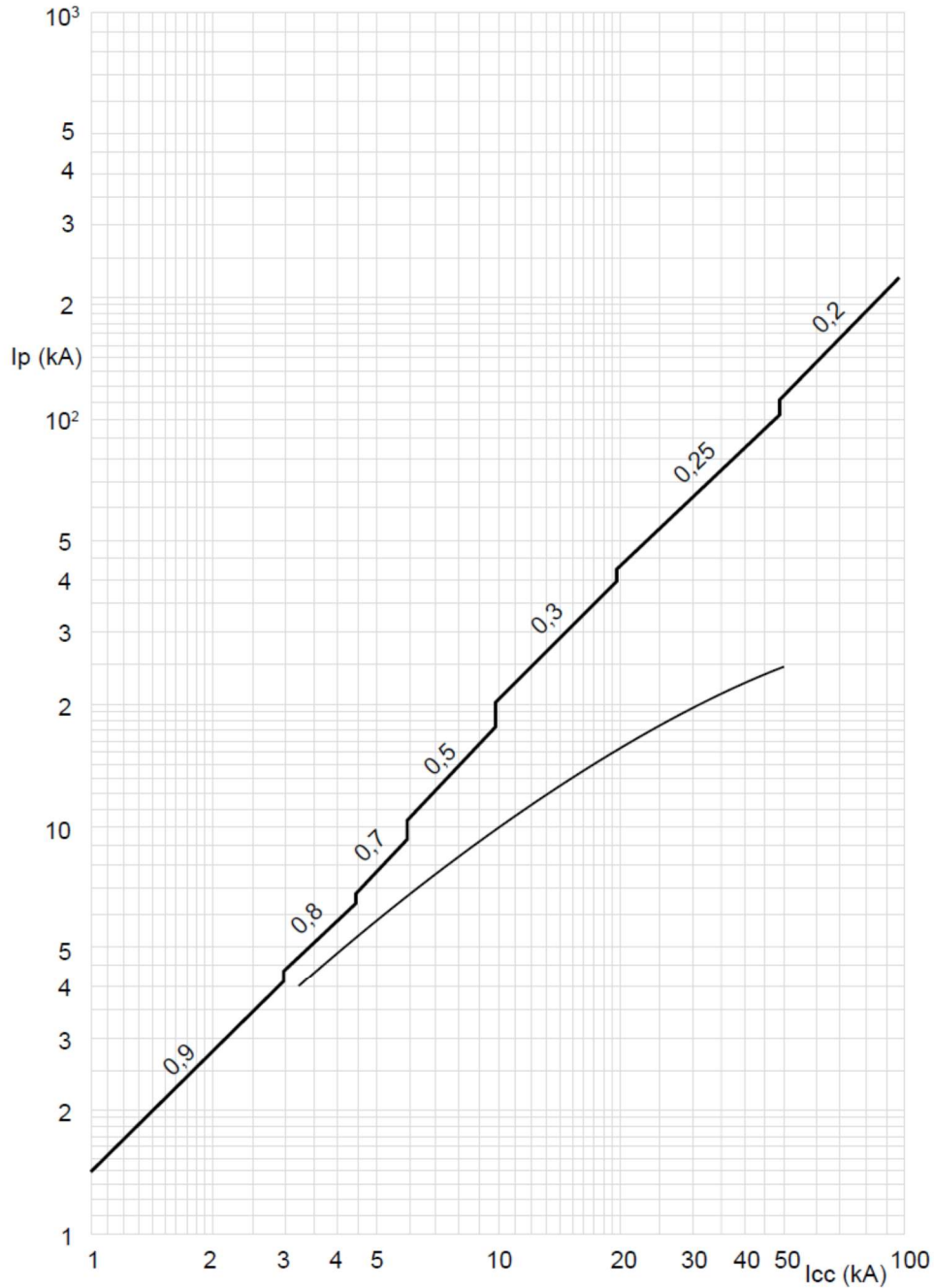


**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
**DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage**

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

9.3 Cut-off peak current characteristic curve (kA)

Update: 30/08/2019



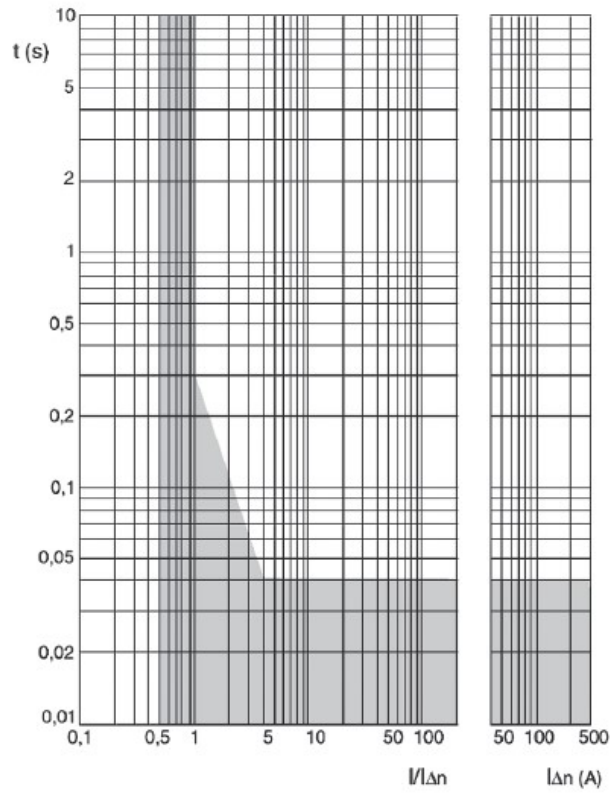
$I_{cu} = 36-50 \text{ kA}$   $I_{max} = 250A$  4 P  $U_o = 415Vac$  (IEC/EN 60947-2)

| 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  |

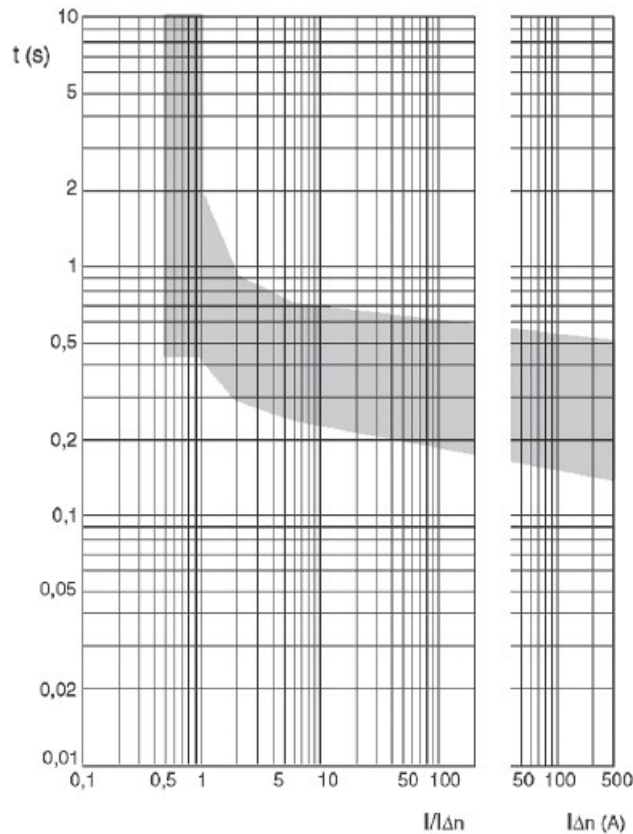
**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
**DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage**

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

9.4.1 Earth leakage curves, instantaneous



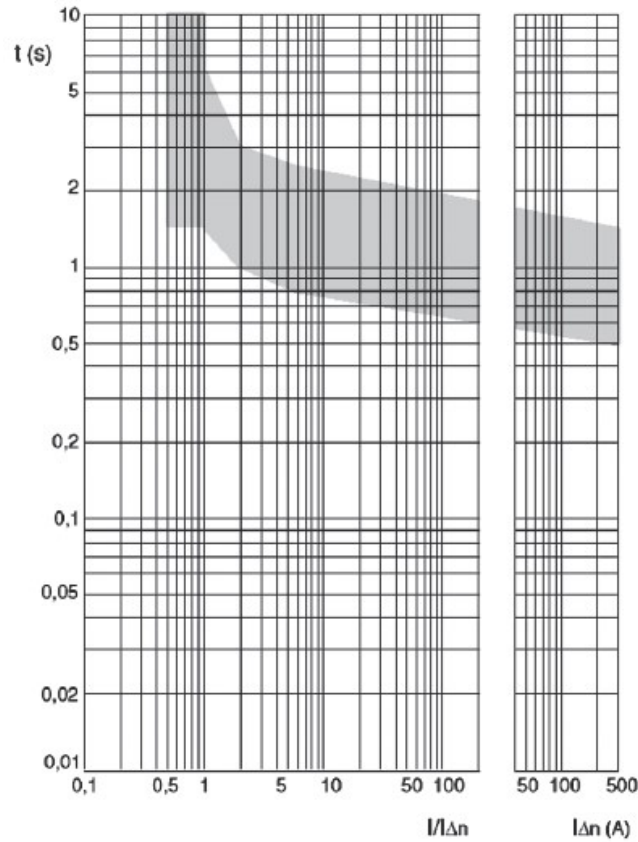
9.4.2 Earth leakage curves, time delay = 0.3 s



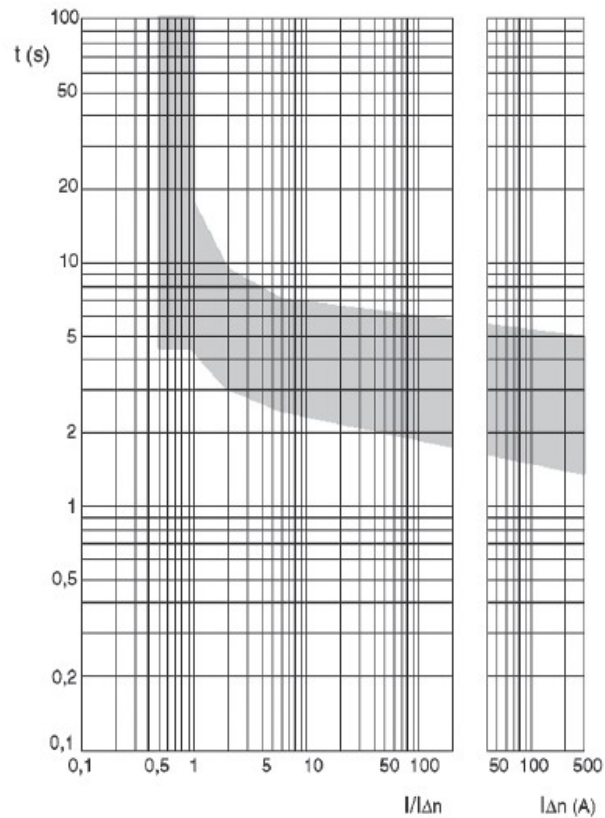
# DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage

Reference(s) :  
from 4 230 45 to 4 230 57;  
from 4 231 05 to 4 231 17;  
4 231 83;

## 9.4.3 Earth leakage curves, time delay = 1 s



## 9.4.4 Earth leakage curves, time delay = 3 s



**DPX<sup>3</sup> 250 HP thermal magnetic with earth leakage circuit breakers**  
**DPX<sup>3</sup>-I 250 HP switch disconnectors with earth leakage**

Reference(s) :  
 from 4 230 45 to 4 230 57;  
 from 4 231 05 to 4 231 17;  
 4 231 83;

**A) Derating Temperature and configurations**

|                                | Ambient temperature        |                                      |                            |                                      |                            |                                      |                            |                                      |                            |                                      |
|--------------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|
|                                | 30 °C                      |                                      | 40 °C                      |                                      | 50 °C                      |                                      | 60 °C                      |                                      | 70 °C                      |                                      |
| <b>Fixed version</b>           | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> |
| Cage terminals, flexible cable | 250                        | 1                                    | 250                        | 1                                    | 250                        | 1                                    | 255                        | 0.90                                 | 213                        | 0.85                                 |
| Lugs, flexible cable           | 250                        | 1                                    | 250                        | 1                                    | 250                        | 1                                    | 238                        | 0.95                                 | 255                        | 0.90                                 |
| Spreaders, flexible cable      | 250                        | 1                                    | 250                        | 1                                    | 250                        | 1                                    | 238                        | 0.95                                 | 255                        | 0.90                                 |
| <b>Draw-out version</b>        | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> | <b>I<sub>max</sub> (A)</b> | <b>I<sub>r</sub> / I<sub>n</sub></b> |
| Cage terminals, flexible cable | 250                        | 1                                    | 255                        | 0.90                                 | 255                        | 0.90                                 | 213                        | 0.85                                 | 188                        | 0.75                                 |

*For further technical information, please contact Legrand technical support.*