

Isolating switch DX³ ≤ 63 A direct current, 800V

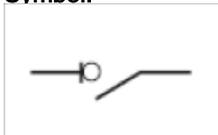
Cat. n°(s) : 4 142 21 / 23 / 24 / 26


CONTENTS
PAGES

1. Description - Use	1
2. Range.....	1
3. Overall dimensions	1
4. Preparation - Connection	1
5. General Characteristics	2
6. Compliances and approvals.....	4
7. Auxiliaries and accessories.....	4

1. DESCRIPTION - USE

. Modular isolating switch (IS) for the control of electrical circuits supplied with direct current. This isolating switch can be used for photovoltaic applications.

Symbol:


2. RANGE

Polarity:

- . 2P in 4 modules.
- . 2 modules per pole (2 x 17,7 mm = 35,4 mm).

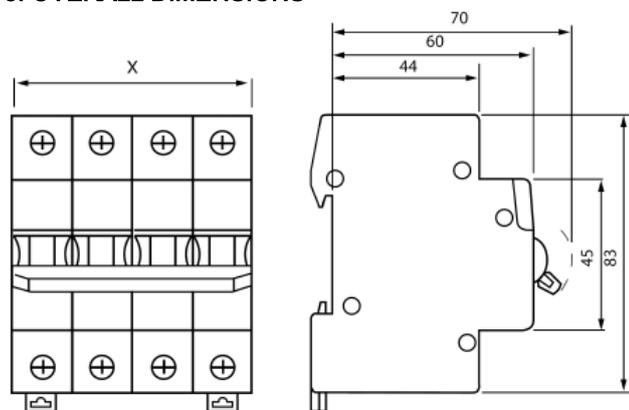
Rated currents In:

- . 16 A / 25 A / 32 A / 63 A.

Rated voltage:

- . 800 V DC (direct current)

3. OVERALL DIMENSIONS



N° of Poles	"X" (mm)
2P	70,8 mm

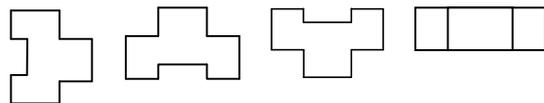
4. PREPARATION - CONNECTION

Mounting:

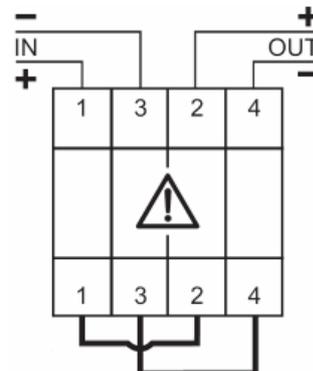
- . On symmetrical EN 60.715 rail or DIN 35 rail

Operating positions:

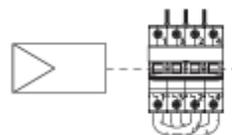
- . Vertical Horizontal Upside down On the side


Power supply:

- . Only from the top like it is shown in the wiring diagram on right side of the device.



Warning : isolating switches 32 A (Cat. No. 4 142 24) and 63 A (Cat. No. 4 142 26) do not accept « reverted currents ». In a photovoltaic installation, they cannot be installed close to the solar panels but only close to the UPS.



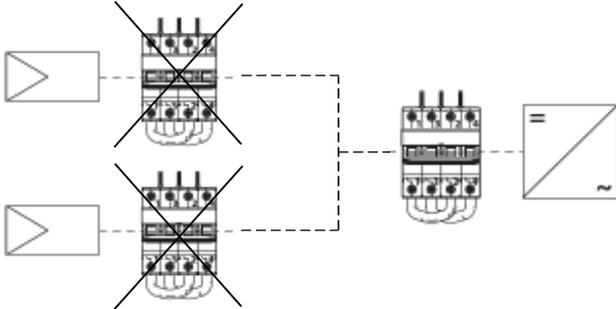
Isolating switch DX³ ≤ 63 A direct current, 800V

Cat. n°(s) : 4 142 21 / 23 / 24 / 26

4. PREPARATION - CONNECTION *(continued)*

Supply and localisation in the installation:

Warning: isolating switches 32 A (Cat. No. 4 142 24) and 63 A (Cat. No. 4 142 26) do not accept « reverted currents ». In a photovoltaic installation, they cannot be installed close to solar panels to control groups of panels but only close to the UPS to control the whole group of panels.



Terminal depth:

- . 14 mm.
- . It is necessary to use the insulating shields between terminals.
- . The shields are delivered with this isolating switch.

Screw head:

- . Mixed, slotted and Pozidriv n° 2.

Recommended tightening torque:

- . 3 Nm.

Recommended tools:

- . For the terminals: screwdriver Pozidriv n°2.
- . For attaching or removing the DIN rail: screwdriver slotted 5.5 mm (6 mm maximum).

Conductor type:

	Copper cable	
	Without ferrule	With ferrule
Rigid wire	1 x 1,5 mm ² to 35 mm ² 2 x 1,5 mm ² to 16 mm ²	-
Flexible wire	1 x 1,5 mm ² to 25 mm ² 2 x 1,5 mm ² to 10 mm ²	1 x 1,5 mm ² to 25 mm ²

Manual actuation of the IS:

- . Ergonomic 2-position handle
- "O-OFF": Device open
- "I-ON": Device closed

Display of contacts status :

- . By the position of the handle and printings
- "O-OFF": = contacts open
- "I-ON": = contacts closed

Sealing:

- . Possible in the open or closed positions

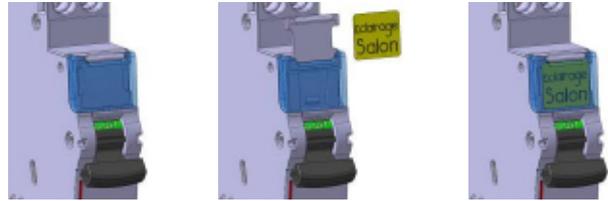
Locking:

- . With padlock (Cat. No. 0 044 43 or 0 227 97), whit support for padlock (Cat. No. 4 063 03) in the open position.

4. PREPARATION - CONNECTION *(continued)*

Labelling:

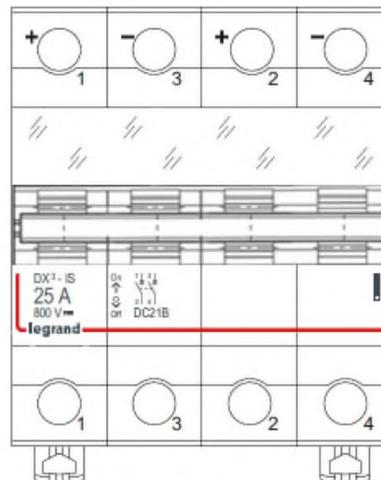
- . Circuit identification by way of a label inserted in the label holder situated on the front of the product.



5. GENERAL CHARACTERISTICS

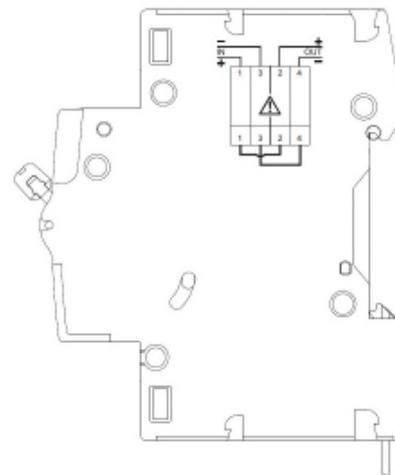
Marking on the front side:

- . By permanent ink pad printing - category of use DC21B.
 - relevant standard n° IEC 60947-3.
 - rated current in amps (A).
 - rated voltage in volts (V).
 - cat. n° and logo 
 - grand name Legrand.
 - I and O with a double arrow.
 - electrical diagram.



Marking on the Left side:

- . By laser:
 - wiring diagram



Isolating switch $I_n \leq 63$ A direct current, 800V

Cat. n°(s) : 4 142 21 / 23 / 24 / 26

5. GENERAL CHARACTERISTICS(continued)

Minimum operating voltage:

. 12 V DC per pole.

Shocks withstand rated voltage:

. $U_{imp} = 8$ kV.

Isolation voltage:

. $U_i = 1000$ V.

Isolation distance:

. The distance between contacts is more than 5,8mm when the handle is in open position « O-Off »
. DX DC circuit breaker are suitable for the isolation in accordance with EN/IEC 60947-3

Category of use:

. DC21B.

Rated short-time withstand current:

. $I_{cw} = 12 \times I_n$ minimum.

Rated short-circuit making capacity:

. $I_{cm} = 1500$ A.

Short-circuits withstand:

. $I_{cc} = 5000$ A.

Effort to operate the handle:

. 0,5 Nm per device when closing the contacts.
. 0,3 Nm par device when opening the contacts.

Endurance:

. 20000 operations without load.
. 2000 operations at I_n and I_n .

Enclosure material:

. Polyester.
. Characteristics of this material: self extinguishing, heat and fire resistant according to EN 60898-1, glow-wire test at 960°C for external parts made of insulating material necessary to retain in position current-carrying parts and parts of protective circuit (650°C for all other external parts made of insulating material).

Weight of the isolating switch:

. 0,581 kg.

Volume and packaging:

	Volume (dm ³)
Double pole	1,2 dm ³

Ambient temperatures:

. Operation: from - 25°C to + 70°C
. Storage: from - 40°C to + 70°C

Degree or class of protection:

. Protection index of terminals against solid and liquid bodies: IP 20 (in according with standards IEC 529, EN 60529 and NF C 20-010).
. Protection index of the box against solid and liquid bodies: IP 40 (in according with standards IEC 529, EN 60529 and NF C 20-010).
. Protection index against mechanical shocks: IK 02 (in according with standards EN 50102 et NF C 20-015).

5. GENERAL CHARACTERISTICS(continued)

Sinusoidal vibration resistance in accordance with IEC 60068.2.6:

. Axis : x, y, z.
. Frequency range: 5÷100 Hz ; duration 90 min.
. Displacement (5÷13,2 Hz) : 1mm
. Acceleration (13,2÷100 Hz) : 0,7g ($g=9,81$ m/s²).

Pollution degree :

. 3 in accordance with EN/IEC 60898-1.

Dielectric strength:

. 2000 V

Dissipated power (W):

. For the 2P isolating switch

I_n	16 A	25 A	32 A	63 A
2P	1,5	2,4	3,1	5,5

. Impedance of the isolating switch (Ω) = $\frac{P \text{ dissipée}}{I_n^2}$

Derating of the isolating switch in terms of ambient temperature :

. Reference temperature : 40 °C in accordance with EN/IEC 60947-3 standard.
. Rated characteristics of the isolator switch may be modified depending on the ambient temperature inside the enclosure where it is installed.

I_n (A)	Ambient temperature in °C				
	Current in Amps				
	- 25°C	- 10°C	0°C	10°C	20°C
16	21,9	20,0	18,7	18,0	17,3
25	34,5	31,5	29,5	28,3	27,2
32	45,8	41,0	37,8	36,5	34,9
63	88,1	80,6	75,6	72,5	69,9

I_n (A)	Ambient temperature in °C				
	Current in Amps				
	30°C	40°C	50°C	60°C	70°C
16	16,6	16,0	15,4	14,7	14,1
25	26,0	25,0	24,0	22,7	21,7
32	33,3	32,0	30,7	29,1	27,8
63	66,1	63,0	59,8	56,1	52,9

6. COMPLIANCE AND APPROVALS

In accordance with standards:

- . EN/IEC 60947-2
- . EN/IEC 60947-3.
- . European directives : 73/23/CEE + 93/68/CEE.
- . These isolating switches can be used in the conditions of use defined by IEC/EN 60947 standard.
- . The isolating switch performances may be modified in case of particular climatic conditions.

Plastic materials :

- . Halogens-free plastic materials.
- . Marking of parts according to ISO 11469 and ISO 1043.

Packaging:

- . Design and manufacture of packaging in accordance with Decree 98-638 of 07.20.98 and Directive 94/62/EC

7. AUXILIARIES AND ACCESSORIES

Wiring accessories:

- . Sealable screw cover (Cat. No. 4 063 04).
- . Insulation shields (Cat. No. 4 063 05).

Signalling auxiliaries:

- . Auxiliary changeover switch ($\frac{1}{2}$ module – Cat. No. 4 062 58).
- . Fault signalling changeover switch ($\frac{1}{2}$ module – Cat. No. 4 062 60).
- . Auxiliary changeover switch which can be modified into fault signalling changeover switch ($\frac{1}{2}$ module – Cat. No. 4 062 62).
- . Auxiliary changeover switch + fault signalling changeover switch which can be modified into two auxiliary changeover switches (1 module – Cat. No. 4 062 66).

Control auxiliaries:

- . It is imperative not to associate control auxiliaries with the isolating switch .

Auxiliaries and isolating switches combinations allowed :

- . Auxiliaries must be fitted on the left side of the isolating switch.
- . Maximum of 2 auxiliaries per isolating switch whose only one half-module wide auxiliary.

Installation software :

- . XL PRO³