

DX³ Lexic direct current mcb ≤ 20 A, 800V

Cat (s) : 4 144 24 / 25 / 26 / 27 / 28 / 29



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1. DESCRIPTION - USE

. Thermal-magnetic circuit breaker (MCB) with positive contact indication for control, protection and isolation of electrical supplied with direct current. This modular MCB is suitable for photovoltaic applications

Symbol:



Technology :

. Limiting device

2. RANGE

Polarity:

. 2 poles in 4 modules.

Width :

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

Rated currents I_n :

. 6 / 8 / 10 / 13 / 16 / 20 A.

Magnetic tripping curves:

. C curve (between 5 and 7 I_n).

Thermal threshold:

. Non operating current (I_{nf}): 1,05 I_n.

. Operating current (I_f): 1,3 I_n.

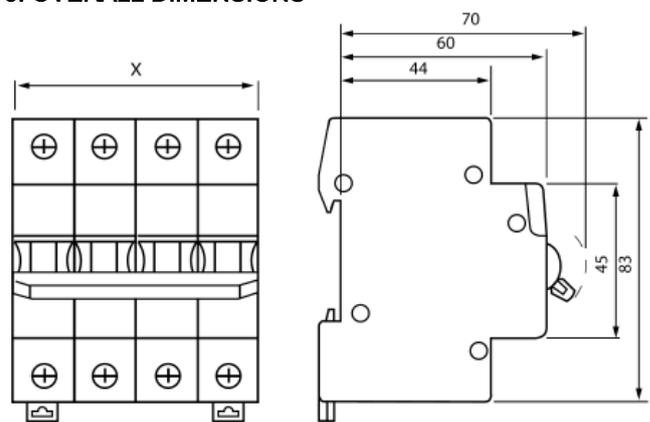
Rated Voltage:

. 800 V d.c. (direct current).

Breaking capacity :

. 4,5 kA according with standard EN/IEC 60947-2.

3. OVERALL DIMENSIONS



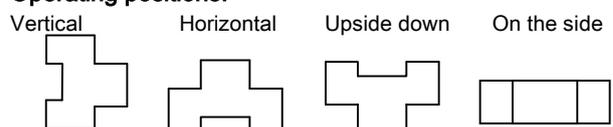
Polarity	"X" (mm)
2P	70,8 mm

4. PREPARATION - CONNECTION

Mounting:

. On symmetrical EN 60.715 rail or DIN 35 rail

Operating positions:



DX³ Lexic direct current mcb

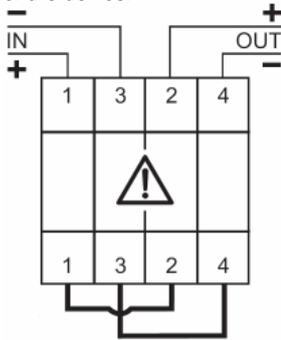
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4. PREPARATION - CONNECTION (continued)

Power supply:

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



Link cable:

. The MCB is delivered with the link cables wired.
 . Semi-rigid copper cable, 16mm²

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 terminals : 5.5 mm flat screwdriver or Pozidriv n°2.
 . For attaching or removing the DIN rail, 5.5 mm flat screwdriver recommended (6 mm max)

Conductor type:

. Copper cables

	Without ferrule	With ferrule
Rigid cables	1 x 1.5 mm ² to 35 mm ² 2 x 1.5 mm ² to 16 mm ²	-
Flexible cables	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 MCB:

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

Display of contact state:

. By handle mark:
 . "O-OFF": white on a green background = contacts opened.
 . "I-ON": white on a red background = 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. 0 044 42) in the open position.

4. PREPARATION - CONNECTION (continued)

Labelling:

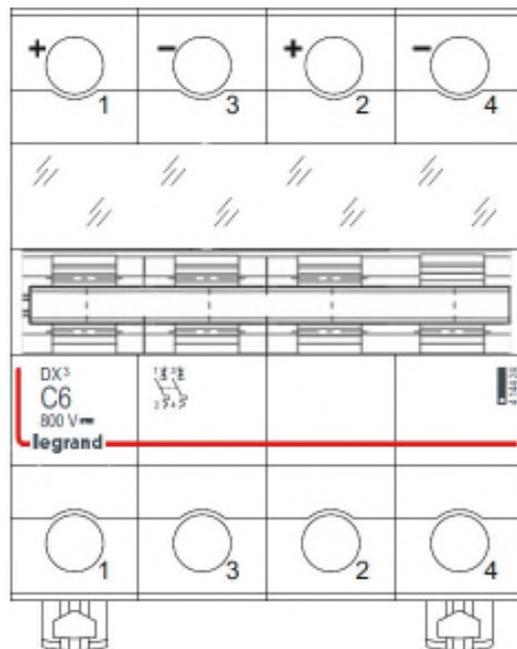
. Circuit identification by way of a label inserted in the label holder situated on the front of the product.



5. GENERAL CHARACTERISTICS

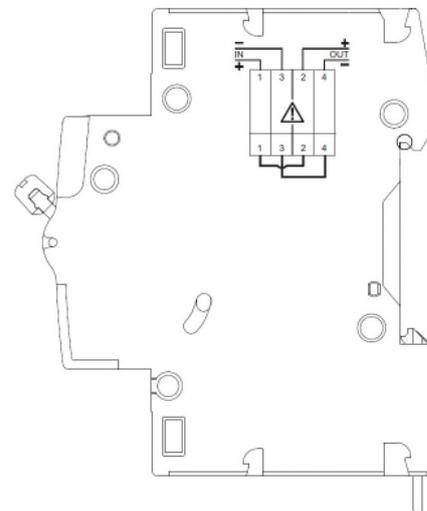
Marking on the front side:

. By permanent ink pad printing



Marking on the left side:

. By laser: wiring diagram



5. GENERAL CHARACTERISTICS (continued):

Breaking capacity on one single pole (phase pole):

. 4,5 kA according with standard EN/IEC 60947-2.

Minimum operating voltage :

. 12 V DC per pole

Rated impulse withstand voltage:

. Uimp = 8 kV

Isolation voltage:

. Ui = 1000 V

Isolation distance:

. The distance between the contacts is greater than 5,8mm with the handle in the open position.
 . The DX DC circuit breaker is suitable for isolation in accordance with standard EN/IEC 60947-2

Load to close and to open of a pole through the handle:

. 0,5 Nm per pole to close.
 . 0,3 Nm per pole to open.

Mechanical endurance :

. 20000 operations without load
 . 1500 operations with In Direct Current

Enclosure material:

. Polyester.
 . Characteristics of this material: self extinguishing, heat and fire resistant in accordance with standard EN/IEC 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).

Average weight per pole :

. 0.584 kg per pole

Packaged volume:

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

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).

5. GENERAL CHARACTERISTICS (continued):

Pollution degree :

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

Dielectric strength:

. 2000 V

Dissipated power :

. Per pole, under In, in Watts
 . C curve mcb

In	6 A	8 A	10 A	13 A	16 A	20 A
2P	1,1	1,1	1,1	1,3	1,6	1,7

. Impedance per pole (Ω) = $\frac{P \text{ dissipated}}{I_n^2}$

Derating of MCB in terms of ambient temperature :

. MCB is set to operate under In at 40°C ambient temperature in accordance with standard EN/IEC 60947-2

These rated characteristics may change depending on the ambient temperature inside the enclosure where it is installed

In (A)	Ambient temperature / In				
	- 25°C	- 10°C	0°C	10°C	20°C
6	8.2	7.5	7.0	6.6	6.4
10	14.0	12.5	11.5	11.1	10.7
13	18.2	16.3	15.0	14.3	13.9
16	21.9	20.0	18.7	18.0	17.3
20	27.7	25.0	23.2	22.4	21.6

In (A)	Ambient temperature / In				
	30°C	40°C	50°C	60°C	70°C
6	6.2	6.0	5.8	5.6	5.4
10	10.3	10.0	9.7	9.3	9.0
13	13.4	13.0	12.6	12.1	11.7
16	16.6	16.0	15.4	14.7	14.1
20	20.8	20.0	19.2	18.4	17.6

6. COMPLIANCE AND APPROVALS**In accordance with standards:**

- . EN/IEC 60947-2.
- . European directives : 73/23/CEE + 93/68/CEE.
- . These isolating switches can be used in the conditions of use defined by EN/IEC 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. N° 4 063 04)
- . Insulation shield (Cat. No. 4 063 05)

List of auxiliaries :Signalling auxiliaries :

- . Auxiliary changeover switch (Cat. No. 4 062 58) (0,5 module)
- . Fault signalling changeover switch (Cat. No. 4 062 60) (0,5 module)
- . Auxiliary changeover switch – can be modified to fault signalling changeover switch (Cat. No. 4 062 62) (0,5 module)
- . Auxiliary changeover switch + fault signalling changeover switch – can be modified to 2 auxiliary changeover switches (Cat. No. 4 062 66) (1 module)

Control auxiliaries :

- . Shunt trip (Cat. No. 4 062 76 / 4 062 78) (1 module)
- . Under voltage release (Cat. No. 4 062 80 / 4 062 82) (1 module)
- . Autonomous shunt trip (Cat. No. 4 062 87) (1.5 modules)
- . Auxiliaries are clipped on the left hand side of the MCB

Auxiliaries and MCBs combinations allowed :

- . Auxiliaries clip on the left-hand of the MCB
- . Maximum number of auxiliaries : 3
- . Maximum number of control auxiliaries : 1
- . Maximum number of signalling auxiliaries ½ module : 1
- . Maximum number of signalling auxiliaries 1 module : 2
- . Control auxiliary must be positioned on the left-hand side of the signalling auxiliary, in the case of auxiliaries of this two families used with the same MCB

Installation software:

- . XL PRO³