

Circuit breaker 3000 A up to 63A (1 module per pole)

Cat. N°(s): 419507 to 419565



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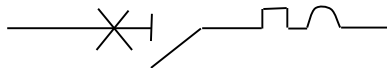
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1. DESCRIPTION - USE

Thermo-magnetic circuit breaker with positive contact indication for control, protection and isolation of electrical circuits.

Symbol :



Technology :

. Limiting device

2. RANGE

Polarity:

. 1P / 2P / 3P

Width:

. 1 module per pole. Each pole is 17,8 mm

Rated currents , In:

. 10 / 16 / 20 / 25 / 32 / 40 / 50 / 63 A B Curve 1P~2P

. 10 / 16 / 20 / 25 / 32 / 40 / 50 / 63 A C Curve 1P~3P

Magnetic tripping curves :

. Curve B (between 3 and 5 In)

. Curve C (between 5 and 10 In)

Thermal threshold according to IEC/EN 60898-1:

. Non operating current (In): 1,13 In.

. Operating current (If): 1,45 In.

Rated voltage / frequency : 127/220 V~

. 1P:127/220 V ~

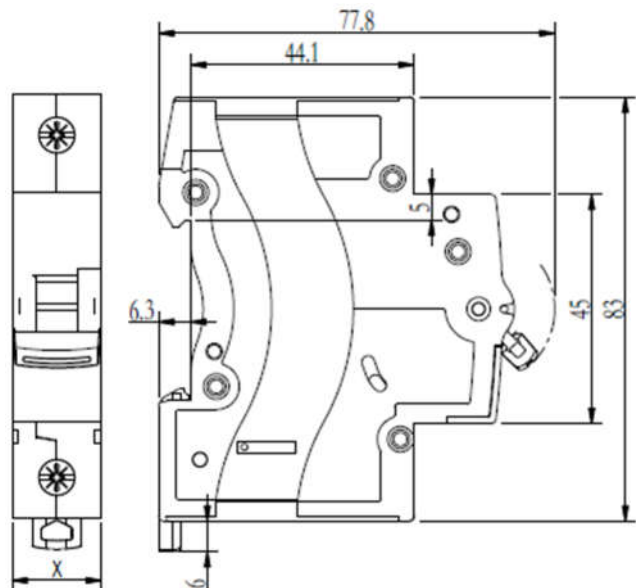
. 2P、 3P:220/380 V ~

. 50 / 60 Hz with standard tolerances

Breaking capacity:

. 3000A in accordance with standard EN/IEC 60898-1

3. OVERALL DIMENSIONS



	X
1 P	17.8 mm
2 P	35.6 mm
3 P	53.4 mm

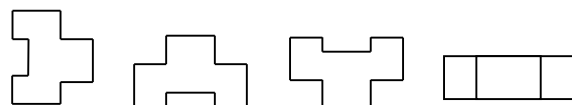
4. PREPARATION - CONNECTION

Fixing :

. On symmetrical rail EN 60.715 or DIN 35

Operating position :

. Vertical horizontal upside down on the side



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4. PREPARATION - CONNECTION *(continued)*

Power supply:

- . From the top or the bottom.

Connection :

- . Location of the terminals allows supply by pin busbar both sides

Terminal depth :

- . 14 mm

Stripping length recommended:

- . 11 mm

Screw head:

- . Mixed, slotted and Pozidriv 2.

Tightening torque:

- . Recommended: 2.5 Nm.
- . Mini : 2 Nm. Maxi : 3 Nm.

Tools required:

- . For the terminals: Pozidriv n°2 or flat screwdriver 5,5 mm (6 mm maximum).
- . For fixing: flat screwdriver 5,5 mm (6 mm maximum).

Connectable section:

	Copper cables	
	Without ferrule	With ferrule
Rigid cable	1 x 1.5 mm ² to 25 mm ² 2 x 1.5 mm ² to 10 mm ²	-
Flexible cable	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

Sealing :

- . Possible in ON (closed) and OFF (open) position

Manual actuation :

- . By ergonomic 2 position (I – O) handle

Display of contacts state :

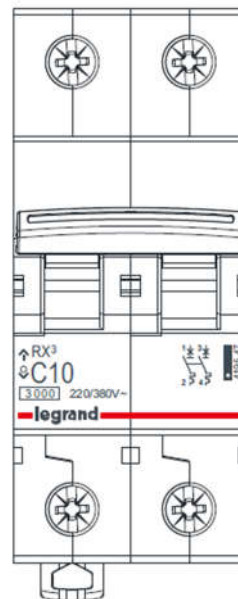
By handle position and printing on the front face

- O-Off = contacts open
- I-On = contacts closed

5. GENERAL CHARACTERISTICS

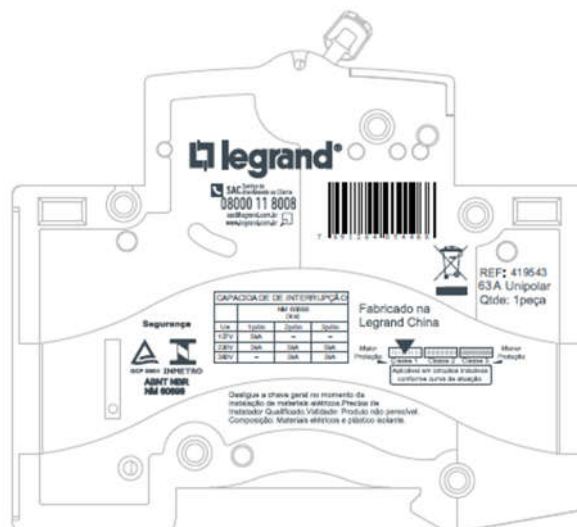
Front face marking :

- . By permanent pad printing
- Legrand marking / Red straight line
- “I – ON” & “O – Off” with 2 arrows
- Cat. n°, range name, curve, rated current, voltage ,breaking capacity. ...



Side face marking :

- Legrand brand
- " DISJUNTOR TERMOMAGNÉTICO"
- Certification logo
- Standard's name
- Sentence "Desligue a chave..."
- "Capacidade de interrupcao" table
- "Classe" table



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5. GENERAL CHARACTERISTICS *(continued)*

Short-circuit breaking capacity:

- Alternate current 50/60Hz, single-phase or three-phase network, in accordance with standard: EN/IEC 60898-1

	Voltage	1P	2P	3P
I _{cn}	127V~	5kA	-	-
	220V ~	3kA	5kA	5kA
	380 V ~	-	3kA	3kA
I _{cs}	127V~	100%I_{cn}		
	220V ~	100%I_{cn}	100%I_{cn}	100%I_{cn}
	380 V ~	-	100%I_{cn}	100%I_{cn}

Pulse rated voltage:

- U_{imp} = 4 kV

Insulation rated voltage:

- U_i = 500 V

Electric strength:

- 2500 V

Mechanical endurance :

- 10 000 operations without load
- 4 000 operations with load (I_n x Cos φ 0.9)

Plastic material :

- Polyester

Characteristics of the plastic material :

- Resistance to glow wire during 30 s according to IEC 60 898-1 :
 - Handle : 650°C
 - Other components : 960°C

Volume when packaging :

	Volume (dm ³)	Packaging
Single pole	1.86	Per 12
Double pole	1.86	Per 6
Triple pole	1.86	Per 4

5. GENERAL CHARACTERISTICS *(continued)*

Ambient temperatures:

- Operation: from - 25°C to + 60°C
- Storage: from - 40°C to + 60°C

Degree or class of protection:

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

Sinusoidal vibration resistance in accordance with

IEC 60068.2.6:

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

Power dissipated per pole (W) :

I _n	10 A	16 A	20 A	25 A
1P÷3P	1.8	2.2	2.4	3
I _n	32 A	40 A	50 A	63 A
1P÷3P	3.2	4	4.5	5.5

- Impedance per pole (Ω) = P dissipated /I_n²

Operating ambient temperature :

- Minimum = -25°C Maximum = +60°C (see derating table)

Stock ambient temperature :

- Minimum = -25°C Maximum = +60°C

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5. GENERAL CHARACTERISTICS *(continued)*

Derating of circuit-breakers according to ambient temperature :

. The nominal characteristics of a circuit breaker are modified according to the ambient temperature inside the cabinet or the enclosure where the circuit breaker is located.

. Reference temperature: 30°C in accordance with EN/IEC 60898-1

In	Ambient temperature / In (in A)									
	- 25 °C	- 10 °C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
10 A	12.5	11.5	11.1	10.7	10.3	10	9.7	9.3	9	8.7
16 A	20	18.7	18	17.3	16.6	16	15.4	14.7	14.1	13.5
20 A	25	23.2	22.4	21.6	20.8	20	19.2	18.4	17.6	16.8
25 A	31.5	29.5	28.3	27.2	26	25	24	22.7	21.7	20.7
32 A	41	37.8	36.5	34.9	33.3	32	30.7	29.1	27.8	26.5
40 A	51	48	46	44	42	40	38	36	34	32
50 A	64	60	57.5	55	52.5	50	47.5	45	42.5	40
63 A	80.6	75.6	72.5	69.9	66.1	63	59.8	56.1	52.9	50.4

Derating of MCB for use with fluorescent lights:

. Ferromagnetic and electronic ballasts have a high inrush current for a short time. These currents can cause the tripping of circuit breakers.

At the time of the installation, it should take into account the maximum number of ballasts per circuit breaker that the manufacturers of lamps and ballasts indicate in their catalogues.

Derating of MCBs function of the number of devices side by side:

. When several MCBs are juxtaposed and operate simultaneously, the thermal evacuation of the poles is limited. This results in an increase in operating temperature of the circuit breakers which can cause unwanted tripping. It is recommended to apply the following coefficients to the rated currents.

Number of circuit breakers side by side	Coefficient
2 - 3	0.9
4 - 5	0.8
6 - 9	0.7
≥10	0.6

. These values are given by the recommendation of IEC 60439-1, NF C 63421 and EN 60439-1 standards.

. To avoid using these coefficients, it is necessary to allow a good ventilation and to separate the devices with 0.5 module spacing elements (cat. N°4 063 07).

Influence of the altitude:

	≤2000 m	3000 m	4000 m
Dielectric holding	3000 V	2500 V	2000 V
Max operational Voltage	400 V	400 V	400 V
Derating at 30°C	none	none	none

6. CONFORMITIES AND APPROVALS

Classification according to Annex Q (standard IEC/EN 60947-1) :

- . Category C with a range test temperature -25 °C / +70 °C
- . Salt fog atmosphere according IEC 60068-2-52

Environment respect – Compliance with CEE directives:

- . Compliance with Directive 2002/95/EC of 27/01/03 called "RoHS" which provides for the banning of hazardous substances such as lead, mercury, cadmium, hexavalent chromium, brominated flame retardants polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) from 1st July 2006
- . Compliance with Directive 91/338/CEE of 18/06/91 and Decree 94-647 of 27/07/04

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