

Push- buttons and Control switches

Cat N°(s): FN51NAP, FN51NCP, FN51NAI, FN51NACI, FN51NAV12, FN51NCR12, FN51NAV110, FN51NCR110, FN51NACP, FN51NAPV12, FN51NCPR12, FN51NAPV110, FN51NCPR110



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1. DESCRIPTION - USE

Push-buttons and Control switches to control an electrical circuit.
Control switches with connectable Led indicator.

2. RANGE

Functions, symbols, cat n°

Single function push-buttons:

1 NO 20AX - 250 Va.c.		FN51NAP
1 NC 20AX - 250 Va.c.		FN51NCP

Single function control switches :

2 NO 20AX - 250 Va.c.		FN52NAI
1 NO + NC 20AX - 250 Va.c.		FN51NACI

Dual functions push-buttons with indicator :

1 NO 20AX - 250 Va.c. + Green LED indicator 12/48 Va.c. / d.c.		FN51NAPV12
1 NC 20AX - 250 Va.c. + Red LED indicator 12/48 Va.c. / d.c.		FN51NCPR12
1 NO 20AX - 250 Va.c. + Green LED indicator 110/400 Va.c.		FN51NAPV110
1 NC 20AX - 250 Va.c. + Red LED indicator 110/400 Va.c.		FN51NCPR110

2. RANGE (continued)

Dual functions control switches with indicator:

1 NO 20AX - 250 Va.c. + Green LED indicator 12/48 Va.c. / d.c.		FN51NAV12
1 NC 20AX - 250 Va.c. + Red LED indicator 12/48 V Va.c. / d.c.		FN51NCR12
1 NO 20AX - 250 Va.c. + Green LED indicator 110/400 Va.c.		FN51NAV110
1 NC 20AX - 250 Va.c. + Red LED indicator 110/400 Va.c.		FN51NCR110

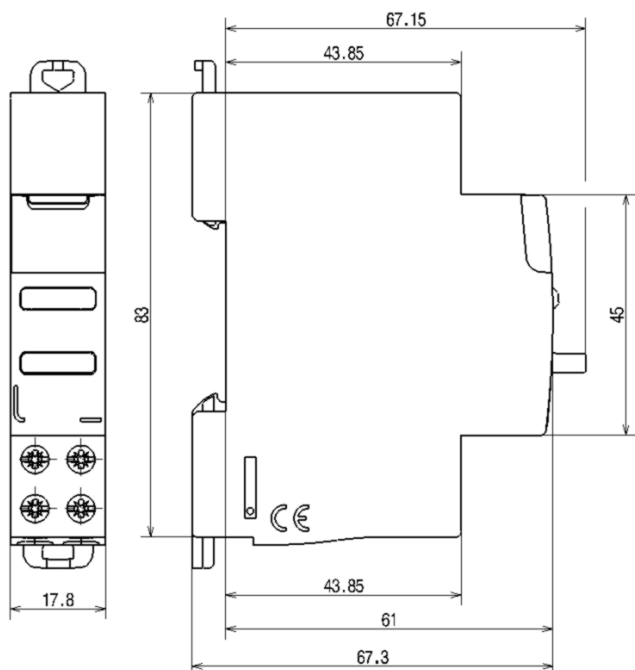
Dual functions push-buttons :

1 NO (Green) 20AX - 250 Va.c.		FN51NACP
1 NC (Red) 20AX - 250 Va.c.		

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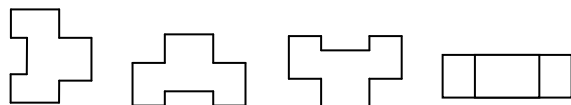
3. OVERAL DIMENSIONS



4. PREPARATION - CONNECTION

Operating positions:

. Vertical Horizontal Upside down On the side



Mounting:

On symmetrical EN 60.715 rail or DIN 35 rail.

Power supply:

By the lower side.

Recommended tools:

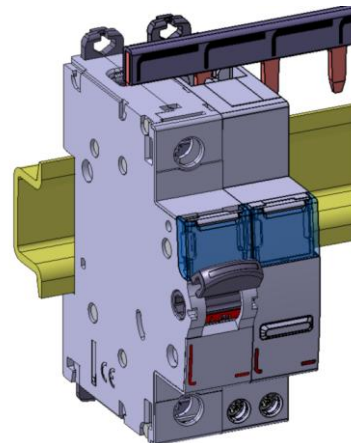
. For the terminals screw: Screwdriver isolated or not with 4 mm blade or Pozidriv no. 1 screwdriver.

. For attaching or removing the DIN rail : screwdriver with 5.5 mm blade or Pozidriv no. 2 screwdriver.

4. PREPARATION - CONNECTION (continued)

Position in a row :

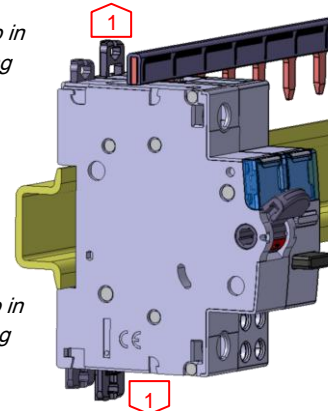
. The product profile and the position of the terminals at the downstream allow the insertion of the prong-busbar by the upstream. In this way the position of the Push-button or Control switch in a row can be freely chosen.



Module maintenance :

. A Push-button or Control switch may be replaced in the middle of a row supplied with prong-busbar without disconnecting the other devices.

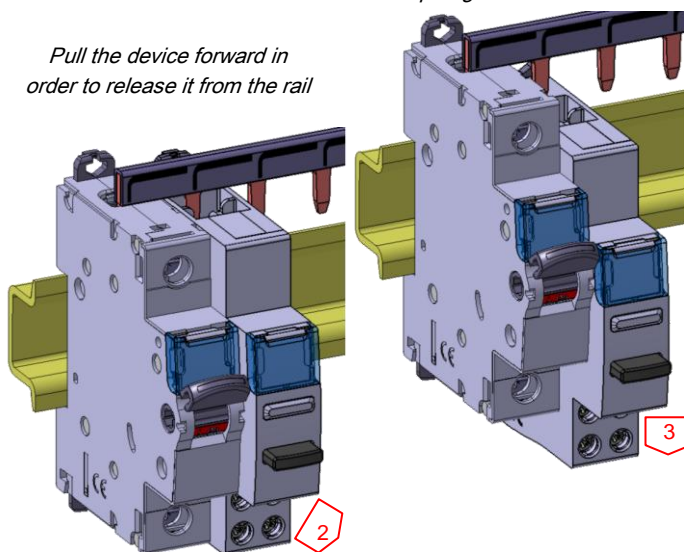
Put the clamp in the unlocking position



Put the clamp in the unlocking position

Pull the device downward in order to release it completely from the prongs of the busbar

Pull the device forward in order to release it from the rail



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4. PREPARATION - CONNECTION (continued)

Connection:

- . Screw terminals:
 - Type of terminal: caged
 - Terminal depth: 10 mm
 - Capacity (h x w): 4.7 x 4.7 mm

Connectable section:

- . Copper cables.

	Without ferrule	With ferrule
Rigid cable	1 x 0,75 ÷ 4 mm ² 2 x 0,75 ÷ 2,5 mm ²	-
Flexible cable	1 x 0,75 ÷ 4 mm ² 2 x 0,75 ÷ 2,5 mm ²	1 x 0,75 ÷ 4 mm ² 2 x 0,75 ÷ 2,5 mm ²

Screw head:

- . mixed M3.5 , slotted 4mm and Pozidriv n°1

Tightening torque:

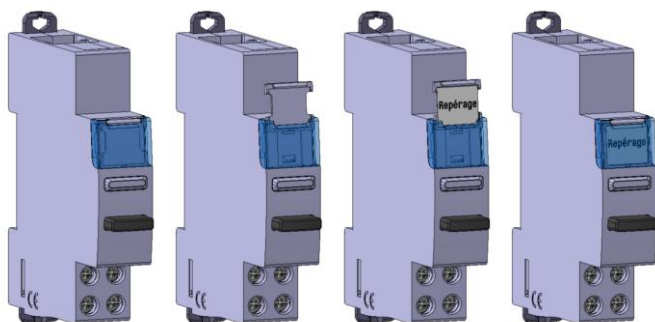
- . Min.: 0,8 Nm
- . Max. : 1,8 Nm
- . Recommended: 1,4 Nm.

Manual actuation of the device :

- . Ergonomic button with 1 or 2 positions in accordance with the cat. N°

Labelling :

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



5. GENERAL CHARACTERISTICS

Marking;

- . By permanent ink pad printing



*Rated current with X : devices able to switch fluorescent lamps

Operating voltage :

- 1 pole without indicator light:
 - . Ue: 250 Va.c.
- 1 pole with indicator light :
 - . Ue switch button: 250 Va.c.
 - . Ue indicator in accordance with cat.N°:
 - 12/48 V Va.c./d.c
 - 110/400 Va.c.

5. GENERAL CHARACTERISTICS (continued)

Rated frequency :

- . 50/60 Hz with standard tolerances.

Insulation voltage :

- . Ui = 500 V

Rated impulse withstand voltage :

- . Uimp = 4 kV

Utilization category :

- . AC12 : mixed load according to IEC 60947-5.1

Degree of pollution:

- . 2 in accordance with standard EN/IEC 60898-1

Indicator light :

Technology : non replaceable LED lamps

Power dissipated per Led :

U (V)	Led: 12/48 V		U (V)	Led: 110/400 V	
	P (W)			P (W)	
	AC	DC		AC	DC
12	0.006	0.008	110	0.04	0.06
24	0.03	0.04	230	0.17	0.24
48	0.12	0.17	400	0.52	0.72

Life time 100 000 hours without maintenance.

Color of the translucent plastic window: red, green, yellow, blue, white (in accordance with the cat. N°)

The ergonomic design of the translucent plastic window allows an homogeneous projection of the light.

Dissipated power for control switches devices :

Type	1 NC	1 NO	2 NO
Power (W)	0.8	0.6	1.4

Protection class:

- . Terminal protection when the product was connected : IP2X according to IEC 529 – EN 60529 et NF C 20-010.
- . Index Protection against solid and liquid body (wired device) IP40 according to IEC 529 – EN 60529 et NF C 20-010.
- . Protection against shocks: IK04 according to EN 62262.
- . Class II, front panel with faceplate.

Plastic materials :

- . Polyamide, PC

Enclosure heat and fire resistance:

- . Resistance to glow wire tests at 960°C / 30 s, according to standard CEI 60695-2-10 & 60695-2-11.

Mechanical endurance :

- . 150 000 operations without electrical load.

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5. GENERAL CHARACTERISTICS (continued)

Electrical endurance :

- . In accordance with standard IEC/EN 60669-1
- . 30 000 operations with normal electrical load.
- . 30 000 operations with fluorescent electrical lamp according to IEC 60947-5-1.
- . 30 000 operations with load AC12 (following IEC 60947-5.1).

Vibrations and tremors resistance :

- . Compliant with appendix Q category F of standard IEC/EN 60947-1

Ambient temperatures :

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

Short-circuit behaviour in coordination with upstream protection:

- . Tests performed according to the protocol of IEC/EN 60669-2-4 : The device remains fully functional and meets the switch tests after suffering two short circuits established in coordination with the DPCC (*Device for Protection against short circuits*) of the following table.
 - The first short circuit has been set at an angle of 45 °.
 - The second has been provided by the switching of the Control switch on the short-circuit.

Upstream protection:	Characteristics
Range	BTDIN MCB
Breaking capacity	4500/6 KA
Rated current	20 A
Operating voltage	250 Va.c.

Volume when packed:

	Packaging	Volume (dm ³)
1 module	by 10	1,6

Average unit weight:

Cat N°	Weight (g)
FN51NAP, FN51NCP	50,2
FN51NAI, FN51NACI	58,7
FN51NAV12, FN51NCR12, FN51NAV110, FN51NCR110	
FN51NACP	61,7
FN51NAPV12, FN51NCPR12, FN51NAPV110, FN51NCPR110	58.4

6. COMPLIANCES AND APPROVALS

Compliance with standard:

- . IEC/EN 60669-1

Use in particular conditions :

- . Compliant to category F according to classification defined in appendix Q of standard IEC/EN 60947-1.

Environment respect – Compliance with CEE directives:

- . Compliance with Directive 2002/95/EC of 27/01/03 known as "RoHS" which provides for a restriction on the use of dangerous substances such as lead, mercury, cadmium, hexavalent chromium and polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) brominated flame retardants from 1st July 2006
- . Compliance with the Directive 91/338/EEC of 18/06/91 and decree 94-647 of 27/07/04.
- . Compliant with regulation REACH

Plastic materials :

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

Packaging :

- . Design and manufacture of packaging compliant to decree 98-638 of the 20/07/98 and also to directive 94/62/CE.

Environmental profile :

- . PEP document available

Approvals obtained :

- . See list of approvals available