

Add-on modules DX³ 125A for MCBs DX³ 1,5 modules per pole

Cat. N°(s): 4 105 77, 4 105 84, 4 106 06, 4 106 12,
4 106 24, 4 106 28, 4 106 37, 4 106 44

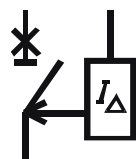


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1. DESCRIPTION - USE

Add-on module, for MCB. DX³ ≤ 80A, 100A, 125A, 1,5 modules per pole width, breaking capacity 10000A/16kA, 25kA or 36kA..
For protection of people against direct and indirect electric shocks and protection of installations against insulation faults.

Symbol:



Technology:

. Electromagnetic residual current operating by sensitive relay

2. RANGE

Number of poles:

. 2 poles, 3 poles et 4 poles.

Width:

. Double pole – 4 modules (4 x 17,8 mm = 71,2 mm).
. Triple and Four pole – 6 modules (6 x 17,8 mm = 106,8 mm).

Rated Current:

. 125 A.

Type:

. AC: sinusoidal AC fault currents.
. A-Hpi: sinusoidal AC fault currents with or without DC component and immunity against unwanted tripping (Hpi type are also A types).

Sensitivities and Tripping time:

. 30 mA instantaneous.
. 300 mA instantaneous.
. Adjustable sensitivity from 300 mA to 1000 mA
with instantaneous or delayed tripping of 60 ms or 150 ms.

Rated Voltage / Frequency:

. 230 / 400 V ~, 50 / 60 Hz standard tolerances.
. 240 / 415 V ~, 50 / 60 Hz standard tolerances.

2. RANGE (continued)

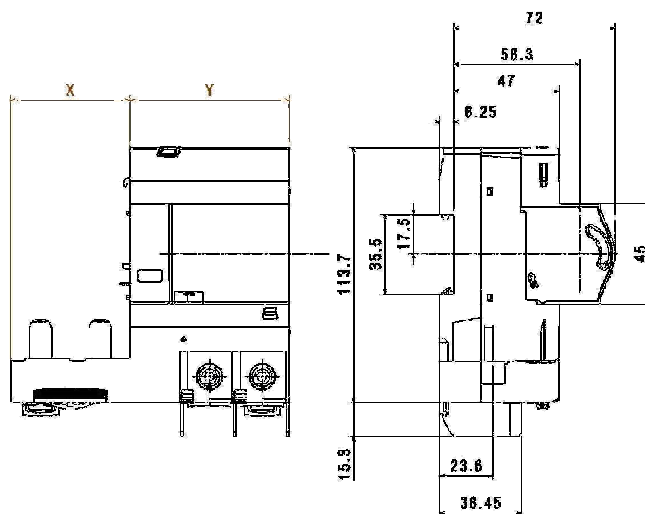
Maximum operating voltage:

. 440 V ~, 50 / 60 Hz with standard tolerances.

Minimum operating voltage:

. 185 V ~, 50 / 60 Hz.

3. OVERALL DIMENSIONS



N° of poles	"X"	"Y"
2P	53,4 mm	71,2 mm
3P	80,1 mm	106,8 mm
4P	106,8 mm	106,8 mm

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4. PREPARATION - CONNECTION

Assembling:

- On the right side of the MCBs DX³ 80 A to 125 A. Joins to the circuit breaker by plastic clamps and tightening of connections in the downstream terminals of the MCB.

Mounting:

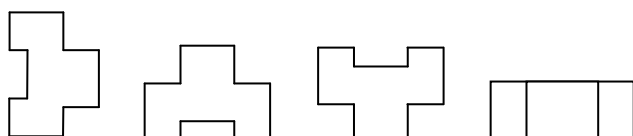
- On symmetrical EN/IEC 60715 rail or DIN 35 rail.

Power supply:

- From the top trough the associated MCB or from the bottom directly on the add-on module.

Operating position:

- Vertical Horizontal Upside down On the side



Screw terminals:

- Terminals protected against accidental contact (IP20).
- Cage terminals, with release and captive screw
- Terminal depth: 19 mm.
- Stripping length : 17 mm
- Screw head: Allen screw 4 mm.
- Recommended tightening torque: 5,5 Nm.
- The screw terminals are separated by built-in shields.

Connectable section:

- In the power terminals in the lower part of the product.
- Copper cable.

	Without ferrule	With ferrule
Rigid cable	6 to 70 mm²	-
Flexible cable	6 to 50 mm²	6 to 50 mm²

- In the automatic terminals in the lower part of the product.
- Copper cable.

	Without ferrule	With ferrule
Rigid cable	0,75 to 2,5 mm²	-
Flexible cable	0,75 to 2,5 mm²	0,75 to 1,5 mm²

Recommended tools:

- For the terminals: Allen wrench 4 mm.
- For fixing on the DIN rail: flat screwdriver 5.5 mm (from 4 to 6 mm).

Manual actuation of the add-on module:

- By the 2-positions ergonomic handle of the associated MCB.
 - I / ON : Closed circuit.
 - O / OFF : Open circuit.

Contacts status display:

- By marking of the associated MCB. handle:
 - "O-Off" white on a green background = contacts opened.
 - "I-On" white on a red background = contacts closed.

4. PREPARATION – CONNECTION *(continued)*

Display of differential-fault:

- Yellow mechanical signaller into the window on front-side marking zone.

Labelling:

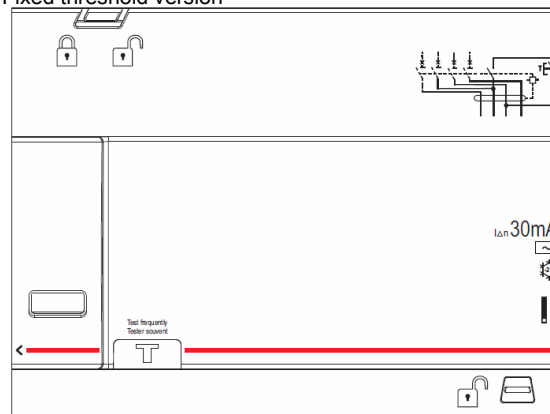
- Circuit identification by insertion of a label in the label holder of the associated MCB.

5. GENERAL CHARACTERISTICS

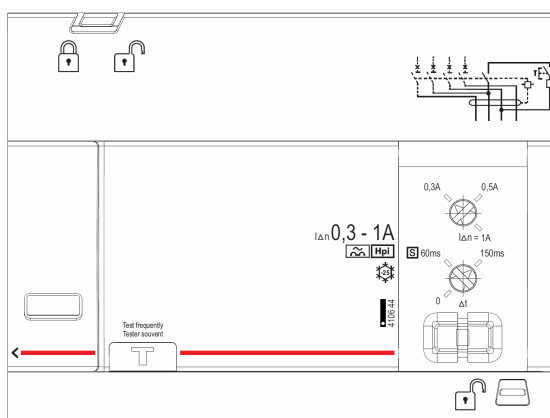
Marking on front side marking:

- By permanent ink pad printing

Fixed threshold version



Adjustable threshold version



"Test" key operating voltages:

U min	170 V ~
U max	440 V ~

This voltage range gives the possibility to use double-pole differential blocks in 230 V or 400 V, and triple / four pole differential blocks in three phase network with or without neutral 230 V and 400 V. For the wiring of a four-pole differential block in a three phase network without neutral, make sure to properly wired three consecutive poles to supply the test key.

Neutral system:

- . IT – TT – TN.

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5. GENERAL CHARACTERISTICS *(continued)*

Residual breaking capacity I Δ m:

- . In accordance with standard EN 61009-1 § 9.12.11.4d (I Δ m: short-circuit to ground)
- I Δ m = 60% of I_{cu} of the associated MCB.

Insulation rated voltage:

- . U_i = 500 V according to IEC/EN 61009-1

Pollution degree:

- . 3.

Dielectric strength:

- . 2500 V.

Pulse rated voltage:

- . U_{imp} = 6 kV (wave 1.5 / 50 μ s).

Operation at 400Hz:

- . The value of the threshold varies with frequency.
- . See curve on page 5.

Protection against unwanted tripping:

- . AC type, "fixed" add-on module
 - held to the wave 8 / 20 μ s : 3000 A.
 - damped recurrent wave 0,5 μ s / 100 kHz : 200 A.
- . Hpi type, "fixed" add-on module
 - held to the wave 8 / 20 μ s : 3000 A.
 - damped recurrent wave 0,5 μ s / 100 kHz : 200 A.
- . Hpi type, "adjustable" add-on module
 - held to the wave 8 / 20 μ s : 5000 A.
 - damped recurrent wave 0,5 μ s / 100 kHz : 200 A.

Protection class:

- . Protection index of terminals against solid and liquid bodies (wired device):
 - 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 (accordance with standards IEC 529, EN 60529 et NF C 20-010).
- . Class II compared to conductive parts.
- . Protection index against mechanical shocks:
 - IK 02 (accordance with standards EN 50102 et NF C 20-015).

Mechanical and electrical endurance (associated to MCB):

- . 20000 operations without load.
- . 10000 operations with load.
- . 750 differential tripping operations by the Test key.
- . 750 differential tripping operations for fault current.

Power dissipated and impedance per device at I_n:

I _n	Double pole		Triple / Four pole	
	Z(m Ω)	P(W)	Z(m Ω)	P(W)
80 A	0,22	1,4	0,24	1,6
100 A	0,22	2,2	0,24	2,4
125 A	0,22	3,5	0,24	3,8

Please note that to get the total power dissipated by the Add-on module these powers are to be added to those of the associated

5. GENERAL CHARACTERISTICS *(continued)*

Enclosure material:

- . Parts of polyester.
- . Characteristics of this material: self extinguishing, heat and fire resistant in accordance with standard 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).

Volume and quantity when packed:

- . Double pole 2,4 dm³ per device.
- . Triple / Four pole 3,7 dm³ per device.

Average weight per device:

- . Double pole 0,44 kg.
- . Triple pole 0,65 kg.
- . Four pole 0,71 kg.

Ambient operating temperature:

- . Min. = -25°C. Max. = +70°C

Derating according ambient temperature:

- . Reference temperature: 40 °C in accordance with standard IEC/EN 60947-2.
- . No derating of the differential block depending on the ambient temperature between - 25 ° C and +40 ° C.
- . Derating between + 40 °C to + 70 °C :

Temperature	40 °C	50 °C	60 °C	70 °C
% of I _n	100 %	95 %	90 %	85 %

Ambient storage temperature:

- . Min. = -40°C. Max. = +70°C

Resistance to sinusoidal vibrations:

- . According to 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).

Influence of the altitude :

	2000 m	3000 m	4000 m	5000 m
Dielectric strength	3000 V	2500 V	2000 V	1500 V
Max operating voltage	400 V	400 V	400 V	400 V
Derating at 30°C	none	none	none	none

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6. COMPLIANCE AND APPROVALS

In accordance with standards:

- . NF / EN / IEC 61009-1.
- . EN / IEC 60947-2.

Environment respect – Compliance with CEE directives:

- . Compliance with Directive 2002/95/EC of 27.1.2003 called "RoHS" provides the banishment of hazardous substances such as lead, mercury, cadmium, hexavalent chromium, brominated flame retardants polybrominated biphenyls (PBB) and polybrominated diphenylethers (PBDE) from 1 July 2006
- . Compliance with Directives 91/338/CEE of 18/06/91 and decree 94-647 of 27/07/04.
- . Compliance with Directives 73/23/CEE and 93/68/CEE (DBT).
- . Compliance with Directives 83/336/CEE, 92/31/CEE and 93/68/CEE (CEM).

Plastic materials :

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

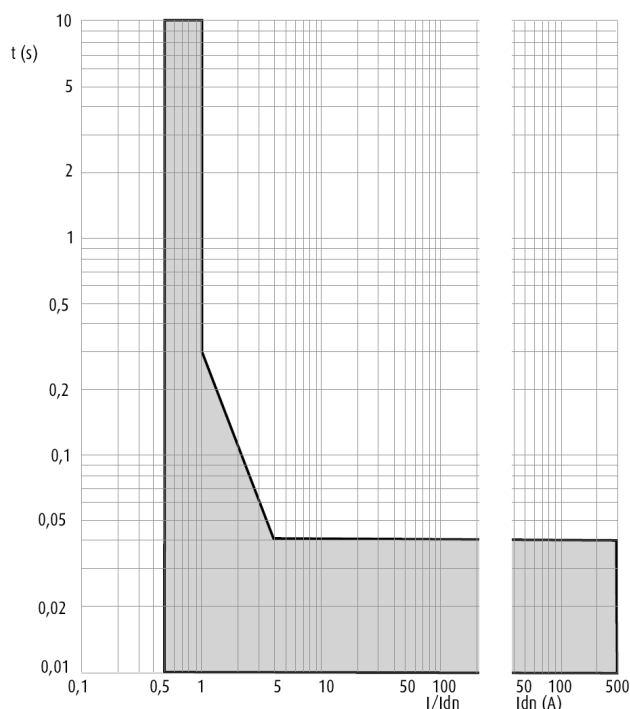
Packaging:

- . Design and manufacture of packaging in accordance with decree 98-638 of 20.07.1998 and Directive 94/62/EC.

7. CHARACTERISTIC CURVES

Residual current operating characteristic

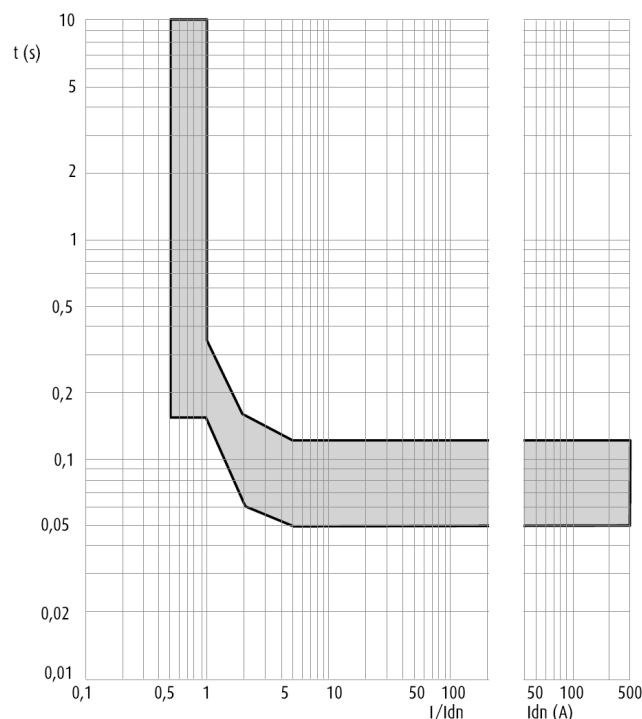
- . Average tripping time depending on the intensity of the fault current.
- . Sensitivities 30 mA, 300 mA, 500mA et 1000 mA instantaneous (AC and Hpi types)



7. CHARACTERISTIC CURVES (continued)

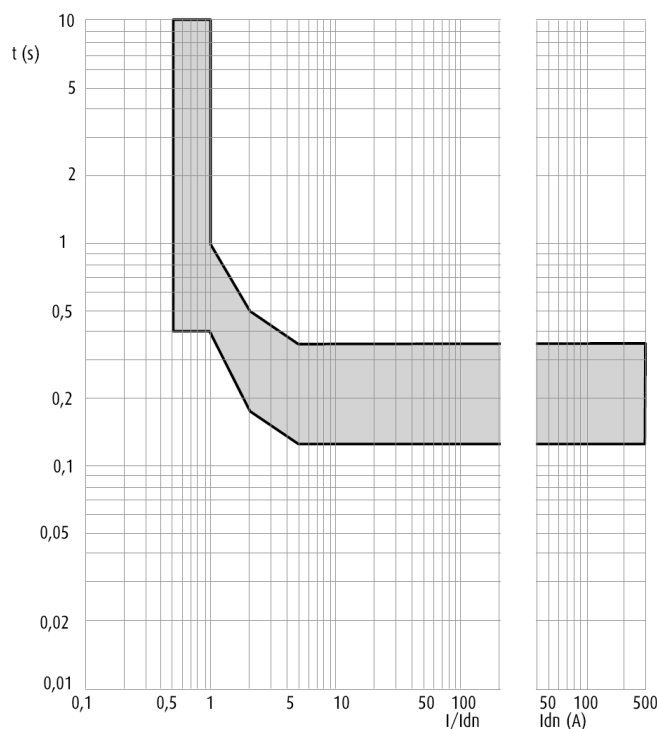
Residual current operating characteristic

- . Sensitivities 30 mA, 300 mA, 500mA et 1000 mA Hpi type with a time delay of 60 ms (selective).



Residual current operating characteristic

- . Sensitivities 30 mA, 300 mA, 500mA et 1000 mA Hpi type with a time delay of 150 ms.



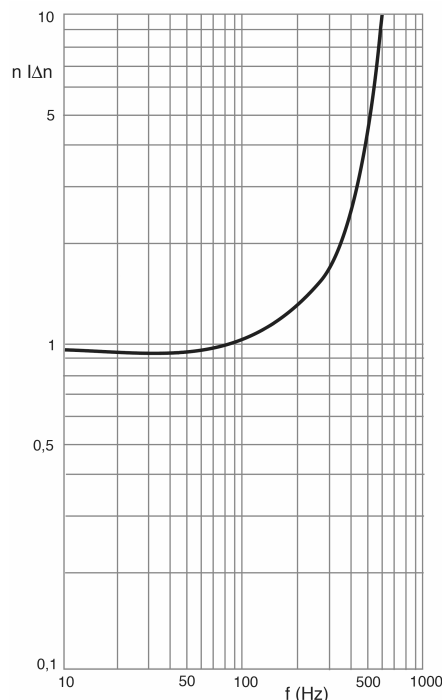
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7. CHARACTERISTIC CURVES *(continued)*

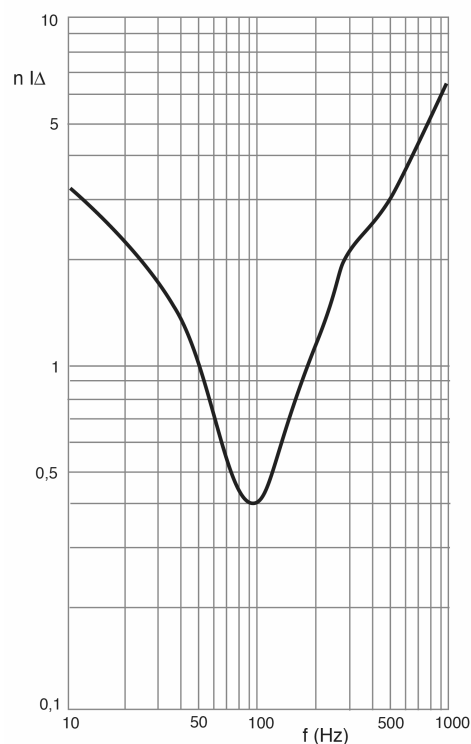
Curves of variation of tripping threshold according to the frequency

. Sensitivities 30 mA et 300 mA type AC



Curves of variation of tripping threshold according to the frequency

. Sensitivities 30 mA, 300 mA, 500mA and 1000mA type Hpi



8. AUXILIARIES AND ACCESSORIES

Installation software:

. XL PRO³.