

AFDDs Ex9NLA EL, 6 kA

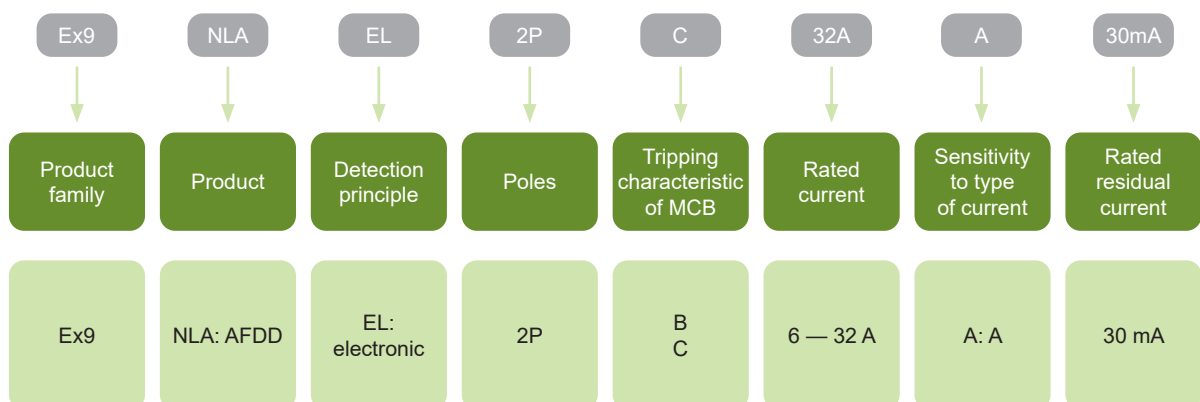


- Arc Fault Detection Circuit-Breaker with Residual Current Operated function
- Rated breaking capacity I_{cn} 6 kA
- 2-pole version
- Rated residual current 30 mA
- Rated currents up to 32 A
- B and C tripping characteristics of installed circuit breaker
- A type of built-in RCD
- 3-module width
- Suitable for applications from -25 to +40°C

Voltage dependent Arc Fault Detection Circuit-Breakers with Residual Current Operated function Ex9NLA EL are suitable for domestic as well as industrial applications. They are based on electronic evaluation principle for more accurate measuring of residual current. It provides overload, short circuit, leakage protection and arc fault detection. This device offers full protection for all types of applications in 3-module width solution.

These devices also do not suffer with magnetization of the tripping unit. Thus, there is no mandatory testing period, but they must be tested regularly. Local law or regulations may apply on utilization and testing period. The recommendation is to test it every 6 months in fair environment and every month in heavy condition.

Type Key

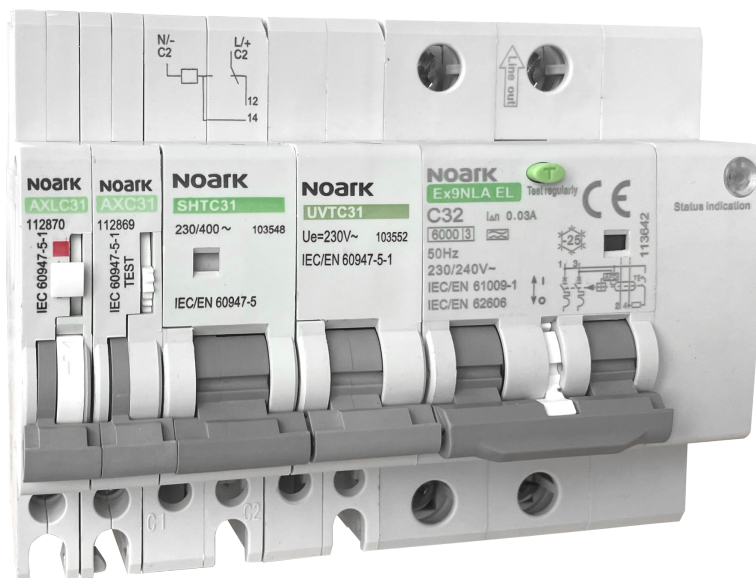


Certification marks



AFDDs Ex9NLA EL, 6 kA

Accessories



Auxiliary or signal contacts
AXC, AXLC
Up to 3 units

Voltage or trip releases
SHTC, UVTC
Up to 2 units

AFDD
Ex9NLA EL
3-module width

Auxiliary contact AXC31

Signal contact AXLC31

Shunt trip release SHTC31

Undervoltage releases UVTC31

All accessories are mounted to the Ex9NLA EL from the left side.

AFDDs Ex9NLA EL, 6 kA

A type, characteristic B

- Protection against the effect of arc faults
- A type of residual current circuit breaker sensitive on residual AC and pulsating DC current
- B characteristic of installed circuit breaker
- Without time delay
- Suitable for protection of people in case of direct and indirect contact with live parts and exposed conductive parts during a fault, respectively
- Indicator light on the front of the device for easy status overview



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
6 A	30 mA	B	113629	Ex9NLA EL 2P B6 A 30mA	1/4/48
10 A	30 mA	B	113630	Ex9NLA EL 2P B10 A 30mA	1/4/48
13 A	30 mA	B	113631	Ex9NLA EL 2P B13 A 30mA	1/4/48
16 A	30 mA	B	113632	Ex9NLA EL 2P B16 A 30mA	1/4/48
20 A	30 mA	B	113633	Ex9NLA EL 2P B20 A 30mA	1/4/48
25 A	30 mA	B	113634	Ex9NLA EL 2P B25 A 30mA	1/4/48
32 A	30 mA	B	113635	Ex9NLA EL 2P B32 A 30mA	1/4/48

A type, characteristic C

- Protection against the effect of arc faults
- A type of residual current circuit breaker sensitive on residual AC and pulsating DC current
- C characteristic of installed circuit breaker
- Without time delay
- Suitable for protection of people in case of direct and indirect contact with live parts and exposed conductive parts during a fault, respectively
- Indicator light on the front of the device for easy status overview



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
6 A	30 mA	C	113636	Ex9NLA EL 2P C6 A 30mA	1/4/48
10 A	30 mA	C	113637	Ex9NLA EL 2P C10 A 30mA	1/4/48
13 A	30 mA	C	113638	Ex9NLA EL 2P C13 A 30mA	1/4/48
16 A	30 mA	C	113639	Ex9NLA EL 2P C16 A 30mA	1/4/48
20 A	30 mA	C	113640	Ex9NLA EL 2P C20 A 30mA	1/4/48
25 A	30 mA	C	113641	Ex9NLA EL 2P C25 A 30mA	1/4/48
32 A	30 mA	C	113642	Ex9NLA EL 2P C32 A 30mA	1/4/48

Technical Data Ex9NLA EL

Arc Fault Detection Circuit-Breaker with Residual Current Operated function Ex9NLA EL, 6 kA

General parameters

Combination of MCB and RCCB in one case with arc fault protection
Tripping characteristics of installed circuit breaker B and C
A type of residual current device
2-pole version
Suitable for household as well as industrial applications
Recommend is to test device every 6 months in fair environment and every month in heavy condition
Voltage dependent device
Fault indication light

Electrical parameters

Tested according to	IEC/EN 61009-1, IEC/EN 62606
Rated operating voltage U_e	230/240 V AC
Min. voltage for RCD function	50V AC
Voltage range of the test button T	195.5 — 253 V AC
Rated frequency f	50 Hz
Rated breaking capacity I_{cn}	6 kA
Rated residual making and breaking capacity $I_{\Delta m}$	3 kA
Rated current I_n	6 — 32 A
Rated residual current $I_{\Delta n}$	30 mA
Sensitivity to residual current	A type - residual AC and pulsating DC current
Breaking time under $I_{\Delta n}$	≤ 0.1
Time characteristic of RCD	undelayed type
Tripping characteristics of MCB	B, C
Rated impulse withstand voltage U_{imp}	4 kV
Rated insulation voltage U_i	500 V
Mechanical service life	10 000 operation cycles
Electrical service life	4 000 operation cycles
Selectivity class	3
Line voltage connection	Bottom electrical feeding

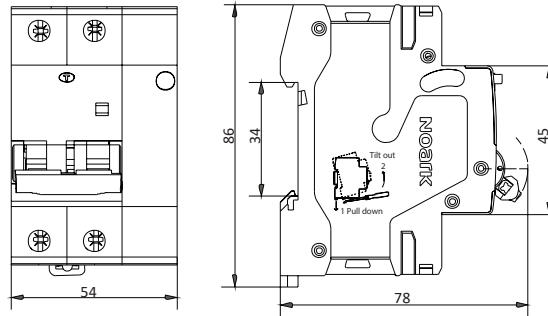
Mechanical parameters

Device width	54 mm
Device height	86 mm
Frame size	45 mm
Mounting	easy fastening onto 35 mm device rail (DIN)
Degree of protection	IP20
Terminals	combined lift + open mouthed
Terminal capacity	1 — 10 mm ²
Fastening torque of terminals	2 Nm
Busbar thickness	0.8 — 2 mm
Ambient temperature	-25 — +40 °C
Altitude	≤ 2000 m
Relative humidity	≤ 95 %
Resistance to humidity and heat	class 2
Pollution degree	2
Installation class	II and III
Weight	0.25 kg

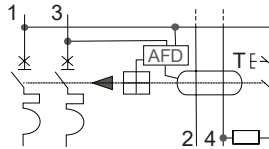
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Dimension

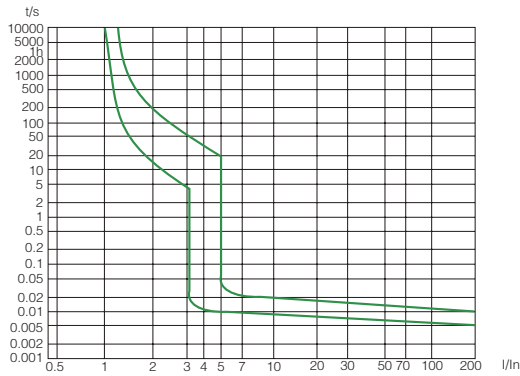


Wiring diagram

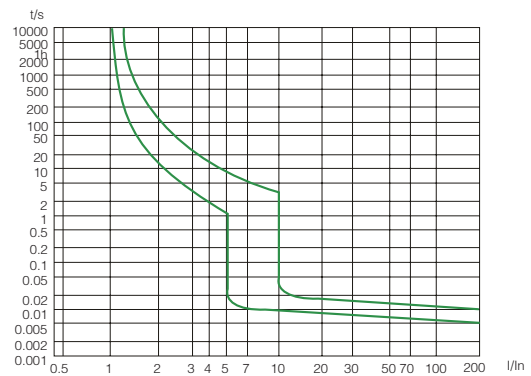


Tripping characteristics of MCB

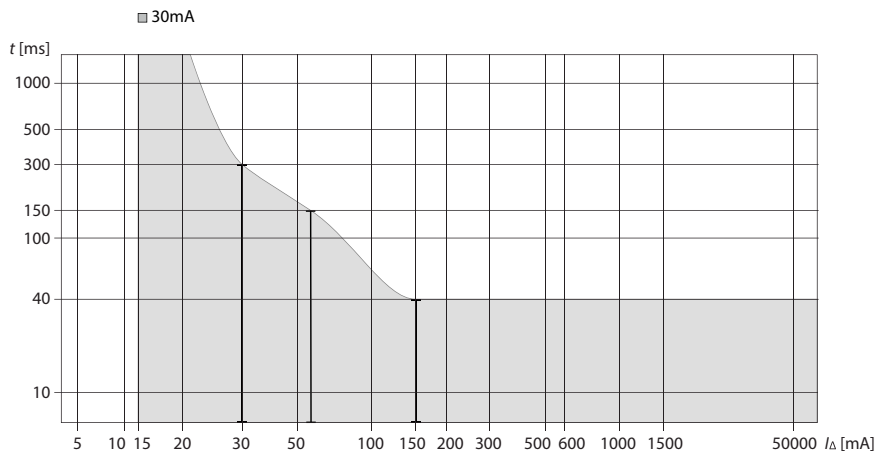
Characteristic B



Characteristic C



Tripping characteristics of RCD



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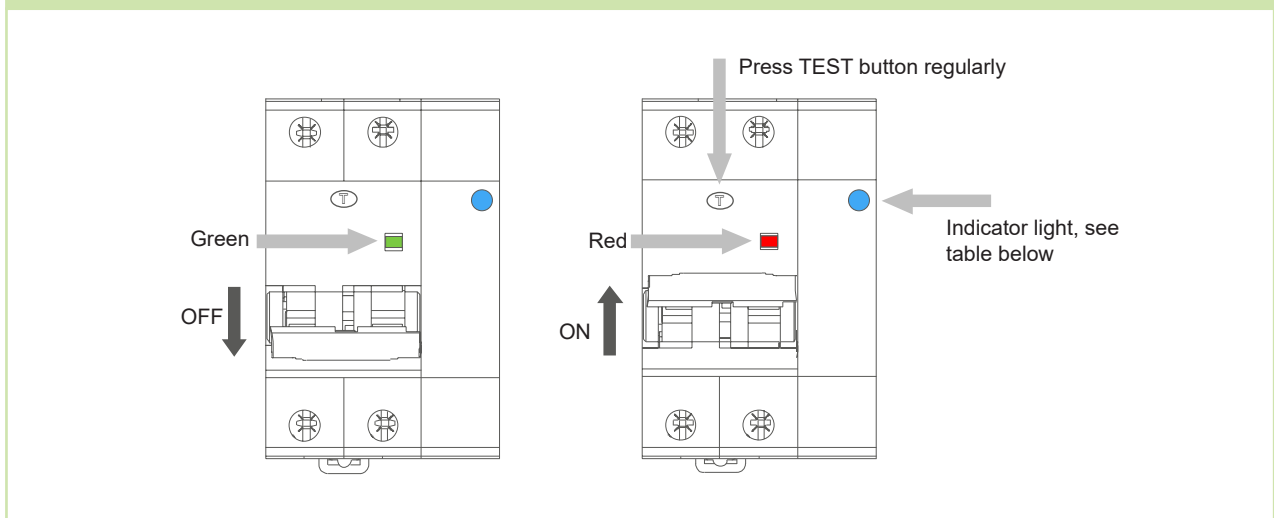
Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I _n (T) [A]						
	6 A	10 A	13 A	16 A	20 A	25 A	32 A
-25	7.6	12.7	16.5	20.3	25.4	31.8	40.6
-20	7.5	12.5	16.3	20	25	31.3	40
-10	7.2	12	15.6	19.2	24	30	38.4
0	6.9	11.5	15	18.4	23	28.8	36.8
10	6.6	11	14.3	17.6	22	27.5	35.2
20	6.3	10.5	13.7	16.8	21	26.3	33.6
30	6	10	13	16	20	25	32
40	5.7	9.5	12.4	15.2	19	23.8	30.4
50	5.4	9	11.7	14.4	18	22.5	28.8
60	5.1	8.5	11.1	13.6	17	21.3	27.2
70	4.8	8	10.4	12.8	16	20	25.6

Power loss

I _n [A]	6 A	10 A	13 A	16 A	20 A	25 A	32 A
P [W]	1.8	3.9	4.5	5.3	5.5	6	7.8

Status indication



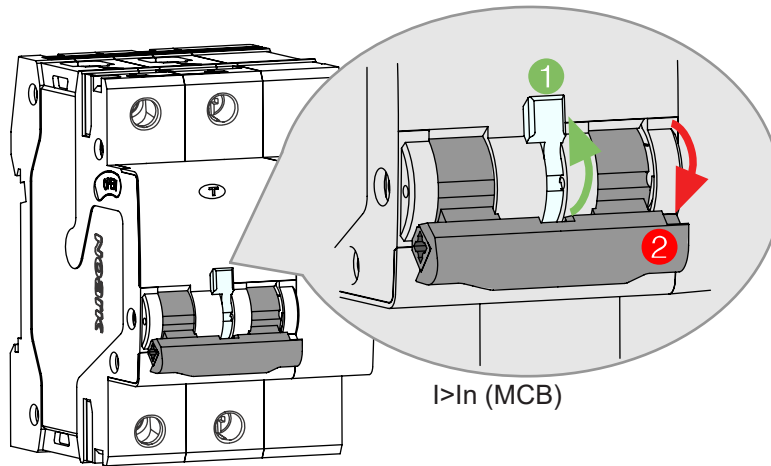
AFDD status	Indicator light color	Instruction
"ON" position	Blue always bright	In normal service
	Blue flashing 5 times/s	Abnormal by self-test
	Blue flashing 1 times/s	Overvoltage (280V)
"ON" after tripping	Red flashing 10s	Residual current fault
	Red and blue flashing alternately 10s	Series or parallel arc fault

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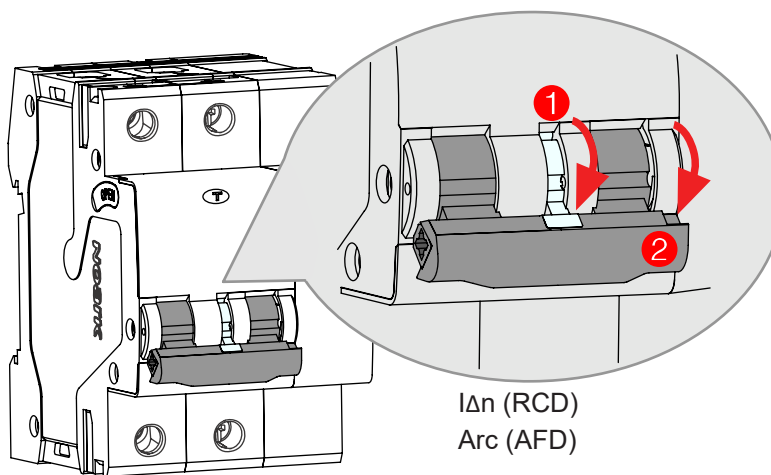
Breaker fault detection by toggle position

1. Overload or short-circuit detected



- 1 Toggle in the „ON“ position
- 2 Toggle in the „OFF“ position

2. Residual current or Arc fault detected



- 1 Toggle in the „OFF“ position
- 2 Toggle in the „OFF“ position