

RCBOs **Ex9NL-N** 3P+N, 6 kA



- Residual Current circuit Breakers with Overload protection according to IEC / EN 61009-1
- Rated breaking capacity I_{cn} 6 kA
- 3+N-pole version
- Rated residual current 30, 300 mA
- Rated currents up to 40 A
- B and C tripping characteristics of installed circuit breaker
- AC and A type of RCBO
- 4-module width
- Suitable for applications from -25 to +70°C

Ex9NL residual current circuit breakers are suitable for domestic as well as industrial applications. They are based on combination of residual current device with magnetic principle and circuit breaker with thermal overload release and magnetic short circuit current release. It brings the advantage of voltage independent function of the residual current device. Adequate voltage is only necessary when testing the RCBO with the T test button. Magnetic RCBOs should be tested regularly, local law or regulations may apply. It is recommended to test every 6 months in fair environment and every month in heavy conditions.

Type Key

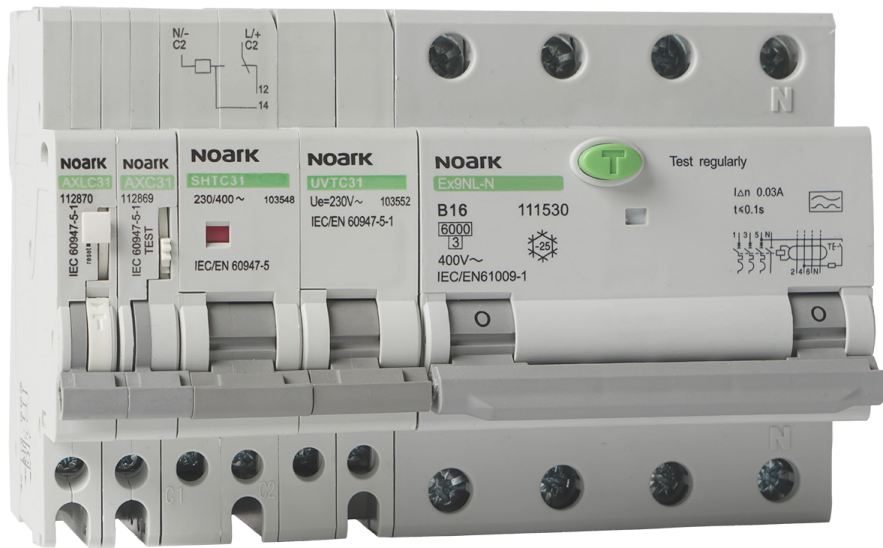
Ex9	NL	-N	3PN	C	40A	A	30mA
↓	↓	↓	↓	↓	↓	↓	↓
Product family	Product	Rated breaking capacity	Poles	Tripping characteristic of MCB	Rated current	Sensitivity to type of current	Rated residual current
Ex9	NL: RCBO	-N: 6 kA	3P+N	B C	6 — 40 A	—: AC A: A	30 mA 300 mA

Certification marks



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Accessories



Auxiliary or signal contacts
AXC, AXLC
Up to 3 units

Voltage or trip releases
SHTC, UVTC
Up to 2 units

RCBO
Ex9NL-N
4-module width

Auxiliary contact AXC31

Signal contact AXLC31

Shunt trip release SHTC31

Undervoltage releases UVTC31

All accessories are mounted to the Ex9NL-N from the left side.

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AC type, characteristic B

- AC type of residual current circuit breaker sensitive to residual AC 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 part during a fault, respectively



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
10 A	30 mA	B	111496	Ex9NL-N 3P+N B10 30mA	1/45
13 A	30 mA	B	111497	Ex9NL-N 3P+N B13 30mA	1/45
16 A	30 mA	B	111498	Ex9NL-N 3P+N B16 30mA	1/45
20 A	30 mA	B	111499	Ex9NL-N 3P+N B20 30mA	1/45
25 A	30 mA	B	111500	Ex9NL-N 3P+N B25 30mA	1/45
32 A	30 mA	B	111501	Ex9NL-N 3P+N B32 30mA	1/45
40 A	30 mA	B	111502	Ex9NL-N 3P+N B40 30mA	1/45
10 A	300 mA	B	111504	Ex9NL-N 3P+N B10 300mA	1/45
13 A	300 mA	B	111505	Ex9NL-N 3P+N B13 300mA	1/45
16 A	300 mA	B	111506	Ex9NL-N 3P+N B16 300mA	1/45
20 A	300 mA	B	111507	Ex9NL-N 3P+N B20 300mA	1/45
25 A	300 mA	B	111508	Ex9NL-N 3P+N B25 300mA	1/45
32 A	300 mA	B	111509	Ex9NL-N 3P+N B32 300mA	1/45
40 A	300 mA	B	111510	Ex9NL-N 3P+N B40 300mA	1/45

AC type, characteristic C

- AC type of residual current circuit breaker sensitive to residual AC 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 part during a fault, respectively



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
6 A	30 mA	C	111511	Ex9NL-N 3P+N C6 30mA	1/45
10 A	30 mA	C	111512	Ex9NL-N 3P+N C10 30mA	1/45
13 A	30 mA	C	111513	Ex9NL-N 3P+N C13 30mA	1/45
16 A	30 mA	C	111514	Ex9NL-N 3P+N C16 30mA	1/45
20 A	30 mA	C	111515	Ex9NL-N 3P+N C20 30mA	1/45
25 A	30 mA	C	111516	Ex9NL-N 3P+N C25 30mA	1/45
32 A	30 mA	C	111517	Ex9NL-N 3P+N C32 30mA	1/45
40 A	30 mA	C	111518	Ex9NL-N 3P+N C40 30mA	1/45
6 A	300 mA	C	111519	Ex9NL-N 3P+N C6 300mA	1/45
10 A	300 mA	C	111520	Ex9NL-N 3P+N C10 300mA	1/45
13 A	300 mA	C	111521	Ex9NL-N 3P+N C13 300mA	1/45
16 A	300 mA	C	111522	Ex9NL-N 3P+N C16 300mA	1/45
20 A	300 mA	C	111523	Ex9NL-N 3P+N C20 300mA	1/45
25 A	300 mA	C	111524	Ex9NL-N 3P+N C25 300mA	1/45
32 A	300 mA	C	111525	Ex9NL-N 3P+N C32 300mA	1/45
40 A	300 mA	C	111526	Ex9NL-N 3P+N C40 300mA	1/45

RCBOs **Ex9NL-N** 3P+N, 6 kA

A type, characteristic B

- A type of residual current circuit breaker sensitive to 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 part during a fault, respectively



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
10 A	30 mA	B	111528	Ex9NL-N 3P+N B10 A 30mA	1/45
13 A	30 mA	B	111529	Ex9NL-N 3P+N B13 A 30mA	1/45
16 A	30 mA	B	111530	Ex9NL-N 3P+N B16 A 30mA	1/45
20 A	30 mA	B	111531	Ex9NL-N 3P+N B20 A 30mA	1/45
25 A	30 mA	B	111532	Ex9NL-N 3P+N B25 A 30mA	1/45
32 A	30 mA	B	111533	Ex9NL-N 3P+N B32 A 30mA	1/45
40 A	30 mA	B	111534	Ex9NL-N 3P+N B40 A 30mA	1/45
10 A	300 mA	B	111536	Ex9NL-N 3P+N B10 A 300mA	1/45
13 A	300 mA	B	111537	Ex9NL-N 3P+N B13 A 300mA	1/45
16 A	300 mA	B	111538	Ex9NL-N 3P+N B16 A 300mA	1/45
20 A	300 mA	B	111539	Ex9NL-N 3P+N B20 A 300mA	1/45
25 A	300 mA	B	111540	Ex9NL-N 3P+N B25 A 300mA	1/45
32 A	300 mA	B	111541	Ex9NL-N 3P+N B32 A 300mA	1/45
40 A	300 mA	B	111542	Ex9NL-N 3P+N B40 A 300mA	1/45

A type, characteristic C

- A type of residual current circuit breaker sensitive to 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 part during a fault, respectively



Rated current	Rated residual current	MCB tripping char.	Article No.	Type	Packing
6 A	30 mA	C	111543	Ex9NL-N 3P+N C6 A 30mA	1/45
10 A	30 mA	C	111544	Ex9NL-N 3P+N C10 A 30mA	1/45
13 A	30 mA	C	111545	Ex9NL-N 3P+N C13 A 30mA	1/45
16 A	30 mA	C	111546	Ex9NL-N 3P+N C16 A 30mA	1/45
20 A	30 mA	C	111547	Ex9NL-N 3P+N C20 A 30mA	1/45
25 A	30 mA	C	111548	Ex9NL-N 3P+N C25 A 30mA	1/45
32 A	30 mA	C	111549	Ex9NL-N 3P+N C32 A 30mA	1/45
40 A	30 mA	C	111550	Ex9NL-N 3P+N C40 A 30mA	1/45
6 A	300 mA	C	111551	Ex9NL-N 3P+N C6 A 300mA	1/45
10 A	300 mA	C	111552	Ex9NL-N 3P+N C10 A 300mA	1/45
13 A	300 mA	C	111553	Ex9NL-N 3P+N C13 A 300mA	1/45
16 A	300 mA	C	111554	Ex9NL-N 3P+N C16 A 300mA	1/45
20 A	300 mA	C	111555	Ex9NL-N 3P+N C20 A 300mA	1/45
25 A	300 mA	C	111556	Ex9NL-N 3P+N C25 A 300mA	1/45
32 A	300 mA	C	111557	Ex9NL-N 3P+N C32 A 300mA	1/45
40 A	300 mA	C	111558	Ex9NL-N 3P+N C40 A 300mA	1/45

Technical Data **Ex9NL-N 3P+N**

Residual Current Breakers with Overload protection **Ex9NL-N 3P+N, 6 kA**

General parameters

Combination of MCB and RCCB in one case - saves 50 % space in comparison to combination of stand-alone MCB and RCCB
Tripping characteristics of installed circuit breaker B and C
AC and A type of residual current device
3+N-pole version
Suitable for household as well as industrial applications
Permanent magnet principle of residual current device - Voltage independent tripping function
Recommend is to test device every 6 months in fair enviroment and every month in heavy condition.
Signaling of contacts status

Electrical parameters

Tested according to	IEC/EN 61009-1
Rated op. voltage U_e	400 V AC
Min. voltage for RCD function	voltage independent
Voltage range of the test button T	340 — 440 V AC
Rated frequency	50/60 Hz
Rated breaking capacity I_{cn}	6 kA
Rated current	6 — 40 A
Rated residual current	30, 300 mA
Sensitivity to residual current	AC type - AC residual current A type - residual AC and pulsating DC current
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
Surge current proof	250 A
Mechanical service life	10 000 operation cycles
Electrical service life	2 000 operation cycles
Selectivity class	3
Back-up fuse/breaker	max. 125 A gG
Line voltage connection	arbitrary above or below

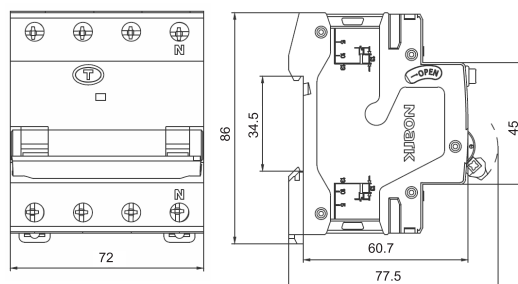
Mechanical parameters

Device width	72 mm
Device height	82 mm including rail clip
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 — 16 mm ²
Fastening torque of terminals	2 N m
Busbar thickness	0.8 — 1.5 mm
Ambient temperature	-25 — +70 °C
Altitude	≤ 2000 m
Relative humidity	≤ 95 %
Resistance to humidity and heat	class 2
Pollution degree	2
Installation class	III
Weight	0.432 kg

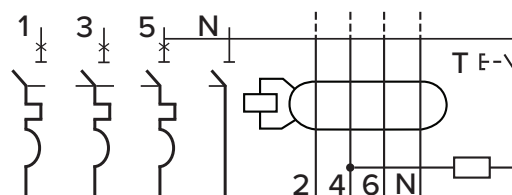
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Dimensions

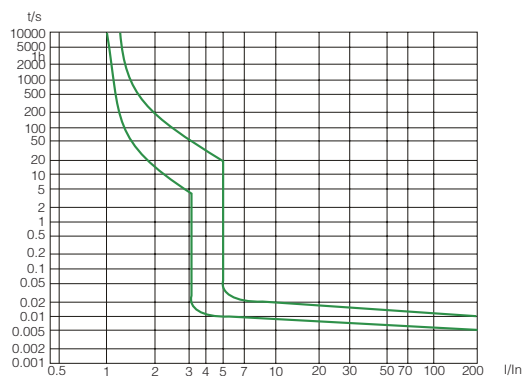


Wiring diagram

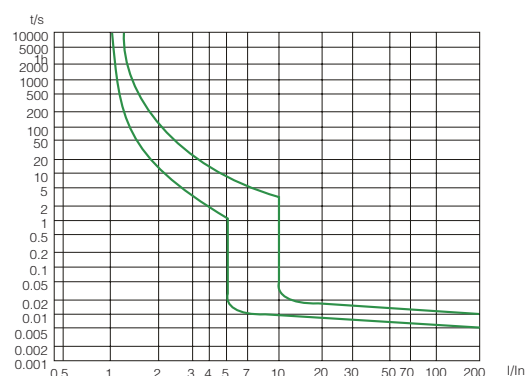


Tripping characteristics of MCB

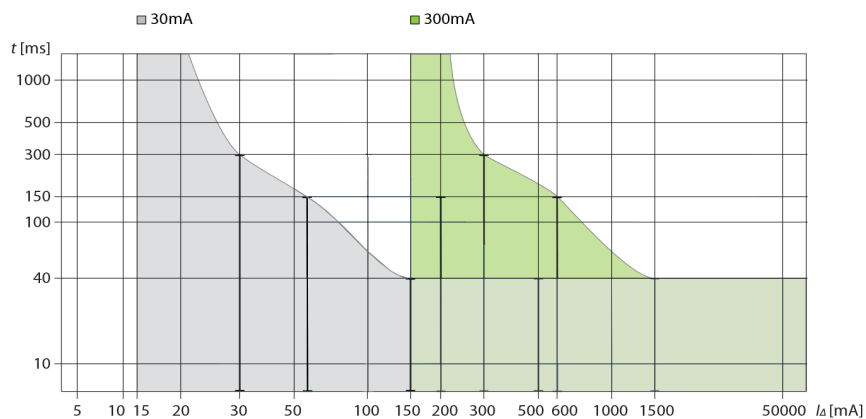
Characteristic B



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	40 A
-10	7.2	12	15.6	19.2	24	30	38.4	48
0	6.9	11.5	14.95	18.4	23	28.75	36.8	46
10	6.6	11	14.3	17.6	22	27.5	35.2	44
20	6.3	10.5	13.65	16.8	21	26.25	33.6	42
30	6	10	13	16	20	25	32	40
40	5.7	9.5	12.35	15.2	19	23.75	30.4	38
50	5.4	9	11.7	14.4	18	22.5	28.8	36
60	5.1	8.5	11.05	13.6	17	21.25	27.2	34

Power loss

I _n [A]	6 A	10 A	13 A	16 A	20 A	25 A	32 A	40 A
P [W]	2.8	5.3	5.3	8.4	6.9	10.7	14.6	17.8