

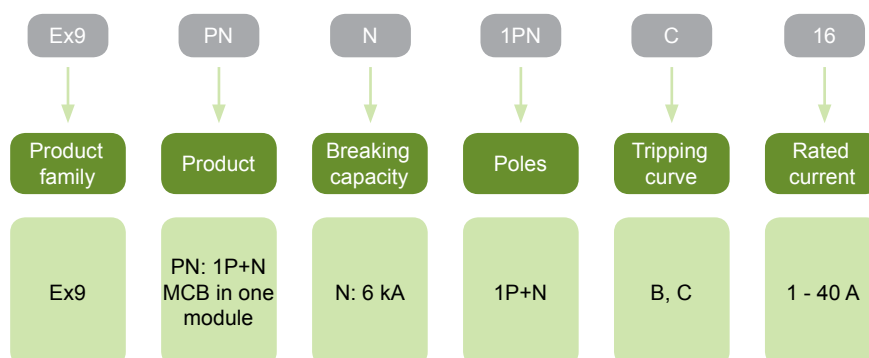
Miniature Circuit Breakers Ex9PN-N



- Miniature Circuit Breakers according to IEC / EN 60898-1
- 1+N pole MCB in one module design
- Rated short circuit breaking capacity I_{cn} 6 kA
- Tripping characteristics B, C
- Rated current up to 40 A
- Rated operational voltage 230/400 V AC, 48 V DC (per pole)
- Wide range of accessories

Ex9PN-N miniature circuit breakers are suitable for domestic as well as industrial applications. They can be combined with wide range of accessories including auxiliary and signal contacts, shunt trip release, undervoltage and overvoltage release. It is possible to create diversified combination of accessories. These combinations are only limited by total number, not by the type of accessories - all components fit together. It can be used up to three units of auxiliary or alarm contacts plus up to two units for release units.

Type Key



Certification marks



Miniature Circuit Breakers Ex9PN-N

Accessories



Auxiliary contacts AX3111, AX3122

Alarm contact AL3111

Auxiliary and alarm contact AXL31

Shunt trip releases SHT31, SHT3111

Undervoltage releases UVT31, UVT3101, UVT3110

Overvoltage release OVT31

All accessories are mounted from the left side and are identical for devices of the line Ex9B and Ex9PN.

Miniature Circuit Breakers Ex9PN-N

B-Characteristic, 6 kA



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1+N	B	101600	Ex9PN-N 1PN B1	1/12/144
2 A	1+N	B	101601	Ex9PN-N 1PN B2	1/12/144
3 A	1+N	B	101602	Ex9PN-N 1PN B3	1/12/144
4 A	1+N	B	101603	Ex9PN-N 1PN B4	1/12/144
6 A	1+N	B	101604	Ex9PN-N 1PN B6	1/12/144
10 A	1+N	B	101605	Ex9PN-N 1PN B10	1/12/144
13 A	1+N	B	102354	Ex9PN-N 1PN B13	1/12/144
16 A	1+N	B	101606	Ex9PN-N 1PN B16	1/12/144
20 A	1+N	B	101607	Ex9PN-N 1PN B20	1/12/144
25 A	1+N	B	101608	Ex9PN-N 1PN B25	1/12/144
32 A	1+N	B	101609	Ex9PN-N 1PN B32	1/12/144
40 A	1+N	B	101610	Ex9PN-N 1PN B40	1/12/144

C-Characteristic, 6 kA



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1+N	C	101611	Ex9PN-N 1PN C1	1/12/144
2 A	1+N	C	101612	Ex9PN-N 1PN C2	1/12/144
3 A	1+N	C	101613	Ex9PN-N 1PN C3	1/12/144
4 A	1+N	C	101614	Ex9PN-N 1PN C4	1/12/144
6 A	1+N	C	101615	Ex9PN-N 1PN C6	1/12/144
10 A	1+N	C	101616	Ex9PN-N 1PN C10	1/12/144
13 A	1+N	C	102355	Ex9PN-N 1PN C13	1/12/144
16 A	1+N	C	101617	Ex9PN-N 1PN C16	1/12/144
20 A	1+N	C	101618	Ex9PN-N 1PN C20	1/12/144
25 A	1+N	C	101619	Ex9PN-N 1PN C25	1/12/144
32 A	1+N	C	101620	Ex9PN-N 1PN C32	1/12/144
40 A	1+N	C	101621	Ex9PN-N 1PN C40	1/12/144

Technical Data Ex9PN-N

Miniature Circuit Breakers Ex9PN-N

General parameters

Very high limiting of short circuit current

1P+N pole circuit breaker in one module

Suitable for household as well as industrial applications

Accessories

Auxiliary contacts	AX3111, AX3122	100540, 100542
Alarm contact	AL3111	100541
Auxiliary and alarm contact	AXL31	100543
Shunt trip releases	SHT31, SHT3111	100544-100546, 100547-100549
Undervoltage releases	UVT31, UVT3101, UVT3110	100550-100551, 100552-100553, 100554-100555
Overvoltage release	OVT31 280V AC $\pm$ 5%	100556
Max. number of installed accessories is 3 pcs of one contact units (AX3111, AL3111) or 2 pcs of two contact units (AX3122, AXL31) and 2 pcs of releases (SHT31, UVT31, OVT31)		

Electrical parameters

Tested according to	IEC/EN 60898-1
Rated op. voltage U_e	230 V AC
	48 V DC (per pole)
Minimum voltage	12 V AC/DC
Rated frequency	50/60 Hz
Rated breaking capacity I_{cn}	6 kA
Rated current	1 — 40 A
Tripping characteristics	B, C
Rated impulse withstand voltage U_{imp}	4 kV
Rated insulation voltage U_i	400 V AC
Mechanical service life	20 000 operation cycles
Electrical service life	10 000 operation cycles
Selectivity class	3
Max. back-up fuse	max. 125 A gG
Line voltage connection	arbitrary above or below

Mechanical parameters

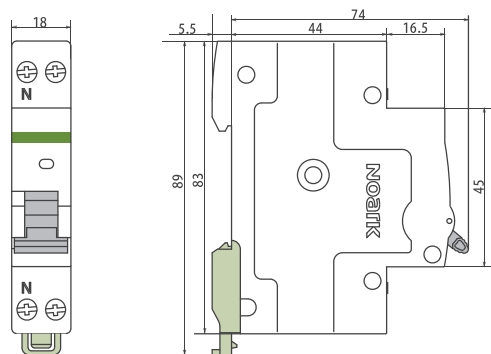
Device width	18 mm
Device height	83 mm (89 mm including rail clip)
Frame size	45 mm
Mounting	easy fastening onto 35 mm device rail (DIN)
Degree of protection	IP20
Terminals	lift
Terminal capacity	1 — 16 mm ²
Ambient temperature	-30 — +70 °C
Altitude	≤ 2000 m
Relative humidity	≤ 95 %
Resistance to humidity and heat	class 2
Pollution degree	2
Installation class	III
Weight	0.12 kg

Ordering data p.

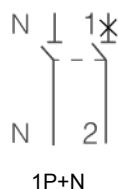
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Miniature Circuit Breakers Ex9PN-N

Dimensions

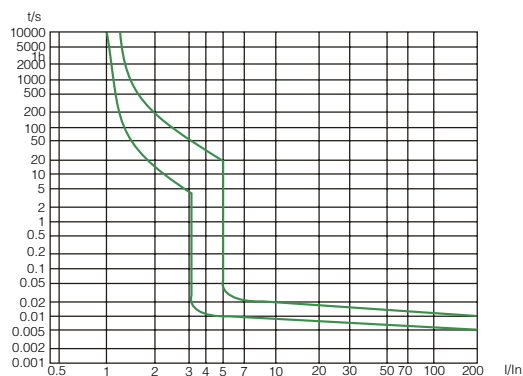


Wiring diagram

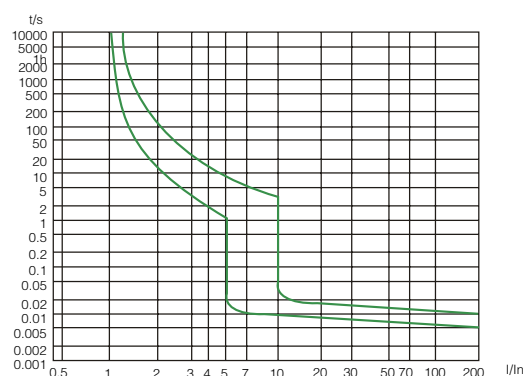


Tripping characteristics

Characteristic B



Characteristic C



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Miniature Circuit Breakers Ex9PN-N

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	$I_n(T)$ [A]										
	1 A	2 A	3 A	4 A	6 A	10 A	16 A	20 A	25 A	32 A	40 A
-20	1.35	2.6	4.1	5.3	8	13.5	20	24.5	29.8	39.5	50.5
-15	1.28	2.53	4.05	5.15	7.8	13.3	19.8	24.3	29.7	39.3	50.4
-10	1.25	2.4	3.95	5.08	7.6	13	19.5	24	29.5	39	50.2
-5	1.2	2.33	3.9	4.98	7.3	12.7	19.2	23.8	29.3	38.8	50
0	1.18	2.3	3.8	4.8	7.2	12.5	19.1	23.7	29.2	38.6	48.8
5	1.15	2.28	3.6	4.72	7	12.3	18.8	23.5	29	38.4	48.6
10	1.1	2.23	3.45	4.65	6.8	12.1	18.6	23.3	28.8	38.2	48.4
15	1.08	2.18	3.35	4.52	6.6	12	18.5	23.1	28.6	38	48.1
20	1.05	2.09	3.22	4.31	6.4	11.8	18.3	22.8	28.4	37.8	47.8
25	1.05	2.03	3.08	4.22	6.2	11.5	18	22.6	28.2	37.5	47
30	1	2	3	4	6	10	16	20	25	32	40
35	0.99	1.98	2.98	3.95	6	9.9	15.7	19.7	24.6	31.5	39.2
40	0.97	1.95	2.95	3.91	5.9	9.8	15.4	19.3	24.3	31.1	38.8
45	0.95	1.91	2.91	3.85	5.83	9.8	15.1	18.8	24	30.8	38.3
50	0.91	1.88	2.88	3.8	5.72	9.6	14.9	18.5	23.8	30.1	38
55	0.89	1.85	2.82	3.74	5.65	9.5	14.7	18.2	23.5	29.5	36.5
60	0.86	1.81	2.77	3.71	5.5	9	14.5	17.8	23	28.5	35
65	0.84	1.77	2.73	3.65	5.4	8.6	14	17.5	22	27.5	34
70	0.81	1.71	2.65	3.52	5.2	8	13.8	17.3	21.5	27	32.5