

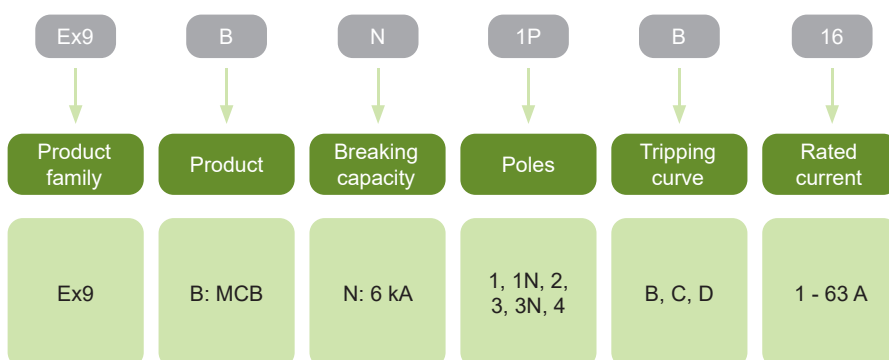
Miniature Circuit Breakers Ex9BN, 6 kA



- Miniature Circuit Breakers according to IEC/EN 60898-1 and IEC/EN 60947-2 (partially)
- Rated short circuit breaking capacity 6 kA
- 1 up to 4-pole versions
- Tripping characteristics B, C, D
- Rated current up to 63 A
- Rated operational voltage 240/415 V AC
- 72 V DC per pole (1P, 2P)
48 V DC per pole (3P, 4P)
- Wide range of accessories

Ex9BN 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 or RCD add-on block. 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.

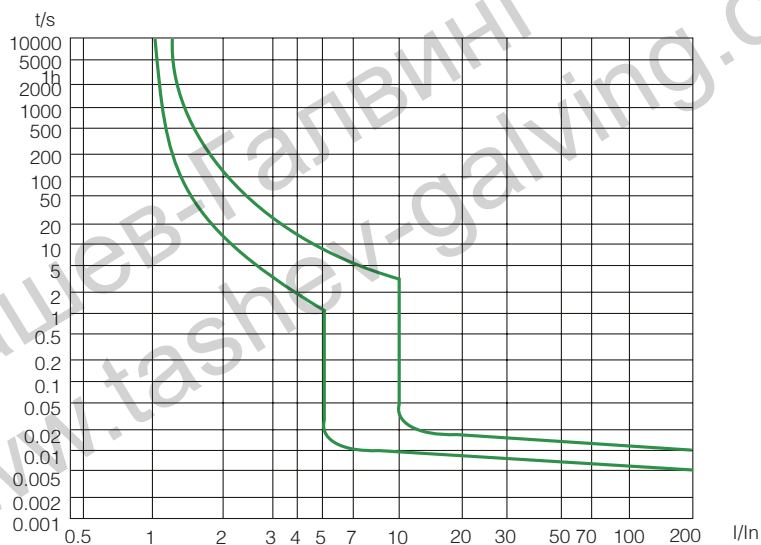
Type Key





Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1	C	100090	Ex9BN 1P C1	1/12/144
2 A	1	C	100091	Ex9BN 1P C2	1/12/144
3 A	1	C	100092	Ex9BN 1P C3	1/12/144
4 A	1	C	100093	Ex9BN 1P C4	1/12/144
6 A	1	C	100094	Ex9BN 1P C6	1/12/144
8 A	1	C	100095	Ex9BN 1P C8	1/12/144
10 A	1	C	100096	Ex9BN 1P C10	1/12/144
13 A	1	C	100097	Ex9BN 1P C13	1/12/144
16 A	1	C	100098	Ex9BN 1P C16	1/12/144
20 A	1	C	100099	Ex9BN 1P C20	1/12/144
25 A	1	C	100100	Ex9BN 1P C25	1/12/144
32 A	1	C	100101	Ex9BN 1P C32	1/12/144
40 A	1	C	100102	Ex9BN 1P C40	1/12/144
50 A	1	C	100103	Ex9BN 1P C50	1/12/144
63 A	1	C	100104	Ex9BN 1P C63	1/12/144

Characteristic C



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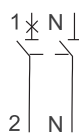
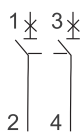
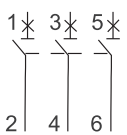
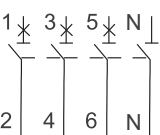
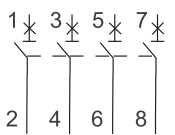
General parameters

Very high limiting of short circuit current		
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±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)		
RCD add-on blocks	Ex9LE	

Electrical parameters

Tested according to	IEC/EN 60898-1, IEC/EN 60947-2 (partially)
Rated op. voltage U_e	240/415 V AC 72 V DC per pole (1P, 2P), 48 V DC per pole (3P, 4P)
Minimum voltage	12 V AC/DC
Rated impulse withstand voltage U_{imp} according IEC 60898-1	6 kV
Rated impulse withstand voltage U_{imp} according IEC 60947-2	6 kV
Rated insulation voltage U_i	690 V AC
Rated frequency	50/60 Hz
Rated breaking capacity I_{cn} according IEC 60898-1	6 kA
Rated breaking capacity I_{cn} according IEC 60947-2	10kA
Rated current	1 — 63 A
Tripping characteristics	B, C, D
Mechanical service life	20 000 operation cycles
Electrical service life	10 000 operation cycles
Selectivity class	3
Utilization category	A
Max. back-up fuse	max. 125 A gG
Line voltage connection	arbitrary above or below

Wiring diagrams

					
1P	1P+N	2P	3P	3P+N	4P

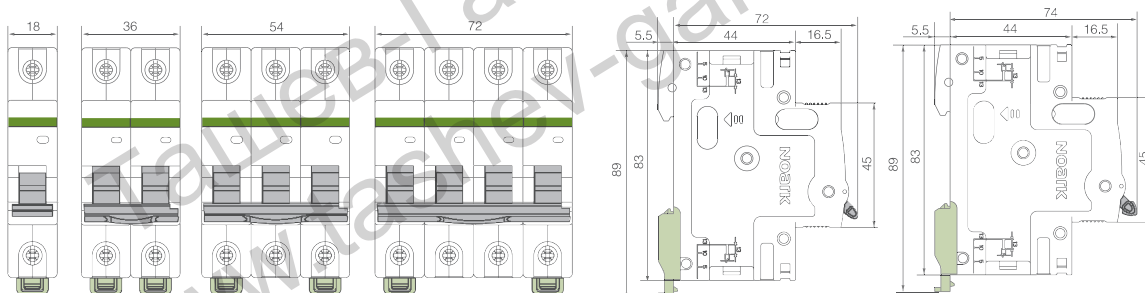
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Mechanical parameters

Device width	18 mm (per pole)
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	combined lift + open mouthed
Terminal capacity	1 — 35 mm ²
Fastening torque of terminals	2 — 3.5 Nm
Busbar thickness	0.8 — 2 mm
Ambient temperature	-30 — +70 °C
Altitude	≤ 2000 m
Relative humidity	≤ 95 %
Resistance to humidity and heat	class 2
Pollution degree	3
Installation class	III
Weight	0.12 kg (per pole)

Dimensions



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Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I _n (T) [A]														
	1 A	2 A	3 A	4 A	6 A	8 A	10 A	13 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A
-30	1.3	2.5	3.8	5.1	7.6	10.2	13.6	16.8	20.5	25.3	31.1	40.5	51.0	64.0	82.0
-25	1.2	2.4	3.7	4.9	7.4	9.9	13.4	16.5	20.0	25.0	30.5	39.8	50.0	63.0	80.7
-20	1.2	2.4	3.6	4.8	7.3	9.7	13.1	16.3	19.8	24.5	30.0	39.2	49.2	62.0	79.2
-15	1.2	2.4	3.5	4.8	7.2	9.5	12.8	15.9	19.4	24.0	29.5	38.5	48.4	60.8	77.8
-10	1.2	2.3	3.5	4.7	7.1	9.3	12.5	15.7	19.0	23.7	29.0	37.9	47.5	59.8	76.3
-5	1.2	2.3	3.4	4.7	7.0	9.2	12.3	15.4	18.7	23.2	28.5	37.2	46.7	58.6	74.7
0	1.1	2.2	3.4	4.5	6.8	9.0	12.0	15.0	18.4	22.8	28.0	36.5	45.8	57.4	73.2
5	1.1	2.2	3.3	4.4	6.6	8.9	11.7	14.7	18.0	22.4	27.5	35.8	45.0	56.3	71.6
10	1.1	2.1	3.3	4.3	6.5	8.7	11.4	14.3	17.6	21.9	27.0	35.0	44.0	55.0	70.0
15	1.1	2.1	3.2	4.3	6.4	8.5	11.0	14.0	17.2	21.5	26.5	34.3	43.0	53.8	68.3
20	1.0	2.1	3.2	4.2	6.3	8.3	10.7	13.7	16.8	21.0	26.0	33.6	42.0	52.6	66.6
25	1.0	2.0	3.0	4.1	6.2	8.2	10.4	13.4	16.4	20.5	25.5	32.8	41.0	51.3	64.8
30	1	2	3	4	6	8	10	13	16	20	25	32	40	50	63
35	0.99	2.00	3.00	3.9	5.9	7.9	9.9	12.8	16.0	20.0	25.0	32.0	39.0	49.0	62.0
40	0.97	1.90	2.90	3.9	5.8	7.8	9.7	12.5	15.0	19.0	24.0	31.0	39.0	48.0	61.0
45	0.95	1.90	2.80	3.8	5.7	7.7	9.5	12.2	15.0	19.0	24.0	30.0	38.0	47.0	60.0
50	0.93	1.90	2.80	3.7	5.6	7.6	9.3	12.0	15.0	19.0	23.0	30.0	37.0	46.0	58.0
55	0.91	1.80	2.80	3.6	5.5	7.5	9.0	11.7	14.0	18.0	23.0	29.0	36.0	44.0	57.0
60	0.91	1.80	2.70	3.5	5.4	7.2	8.8	11.5	14.0	18.0	22.0	28.0	35.0	42.0	55.0
65	0.91	1.80	2.70	3.5	5.3	7.1	8.6	11.2	13.0	17.0	21.0	28.0	34.0	40.0	52.0
70	0.91	1.80	2.70	3.5	5.3	6.9	8.6	11.0	13.0	17.0	21.0	27.0	33.0	38.0	50.0

Power loss per pole

I _n [A]	1 A	2 A	3 A	4 A	6 A	8 A	10 A	13 A	16 A	20 A	25 A	32 A	40 A	50 A	63 A
P [W]	1.8	2.1	1.9	2.0	2.5	1.2	1.8	3.1	2.3	2.4	3.5	3.8	4.7	4.7	6.2