

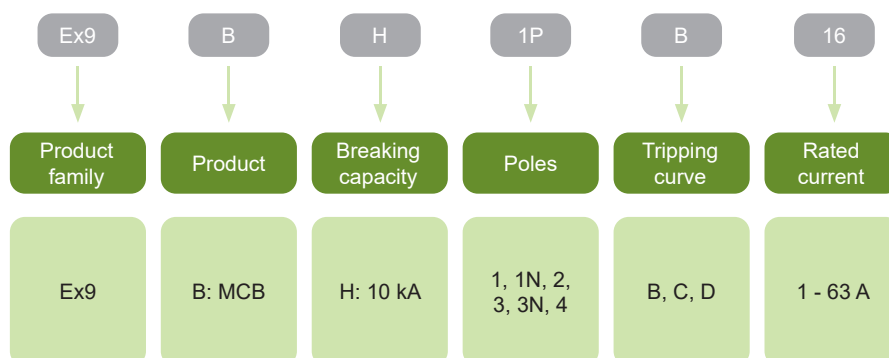
Miniature Circuit Breakers Ex9BH, 10 kA



- Miniature Circuit Breakers according to IEC/EN 60898-1 and IEC/EN 60947-2 (partially)
- Rated short circuit breaking capacity 10 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
- Toggle colour according to rated current

Ex9BH 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



Certification marks



Miniature Circuit Breakers Ex9BH, 10 kA

Accessories



Auxiliary or signal contacts
AX, AL, AXL
Up to 3 units

Voltage or trip releases
SHT, UVT, OVT
Up to 2 units

MCB
Ex9B
1, 1+N, 2, 3, 3+N, 4-pole

RCD add-on block
Ex9LE
1+N, 2, 3, 3+N, 4-pole

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

RCD add-on blocks Ex9LE

RCD add-on blocks are mounted to the MCBs Ex9B from the right, the other accessories from the left and are identical for devices of the line Ex9B, Ex9PN and Ex9IP.

Miniature Circuit Breakers Ex9BH, 10 kA

C-Characteristic, 1-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1	C	100360	Ex9BH 1P C1	1/12/144
2 A	1	C	100361	Ex9BH 1P C2	1/12/144
3 A	1	C	100362	Ex9BH 1P C3	1/12/144
4 A	1	C	100363	Ex9BH 1P C4	1/12/144
6 A	1	C	100364	Ex9BH 1P C6	1/12/144
8 A	1	C	100365	Ex9BH 1P C8	1/12/144
10 A	1	C	100366	Ex9BH 1P C10	1/12/144
13 A	1	C	100367	Ex9BH 1P C13	1/12/144
16 A	1	C	100368	Ex9BH 1P C16	1/12/144
20 A	1	C	100369	Ex9BH 1P C20	1/12/144
25 A	1	C	100370	Ex9BH 1P C25	1/12/144
32 A	1	C	100371	Ex9BH 1P C32	1/12/144
40 A	1	C	100372	Ex9BH 1P C40	1/12/144
50 A	1	C	100373	Ex9BH 1P C50	1/12/144
63 A	1	C	100374	Ex9BH 1P C63	1/12/144

C-Characteristic, 1+N-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1+N	C	100375	Ex9BH 1PN C1	1/6/72
2 A	1+N	C	100376	Ex9BH 1PN C2	1/6/72
3 A	1+N	C	100377	Ex9BH 1PN C3	1/6/72
4 A	1+N	C	100378	Ex9BH 1PN C4	1/6/72
6 A	1+N	C	100379	Ex9BH 1PN C6	1/6/72
8 A	1+N	C	100380	Ex9BH 1PN C8	1/6/72
10 A	1+N	C	100381	Ex9BH 1PN C10	1/6/72
13 A	1+N	C	100382	Ex9BH 1PN C13	1/6/72
16 A	1+N	C	100383	Ex9BH 1PN C16	1/6/72
20 A	1+N	C	100384	Ex9BH 1PN C20	1/6/72
25 A	1+N	C	100385	Ex9BH 1PN C25	1/6/72
32 A	1+N	C	100386	Ex9BH 1PN C32	1/6/72
40 A	1+N	C	100387	Ex9BH 1PN C40	1/6/72
50 A	1+N	C	100388	Ex9BH 1PN C50	1/6/72
63 A	1+N	C	100389	Ex9BH 1PN C63	1/6/72

C-Characteristic, 2-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	2	C	100390	Ex9BH 2P C1	1/6/72
2 A	2	C	100391	Ex9BH 2P C2	1/6/72
3 A	2	C	100392	Ex9BH 2P C3	1/6/72
4 A	2	C	100393	Ex9BH 2P C4	1/6/72
6 A	2	C	100394	Ex9BH 2P C6	1/6/72
8 A	2	C	100395	Ex9BH 2P C8	1/6/72
10 A	2	C	100396	Ex9BH 2P C10	1/6/72
13 A	2	C	100397	Ex9BH 2P C13	1/6/72
16 A	2	C	100398	Ex9BH 2P C16	1/6/72
20 A	2	C	100399	Ex9BH 2P C20	1/6/72
25 A	2	C	100400	Ex9BH 2P C25	1/6/72
32 A	2	C	100401	Ex9BH 2P C32	1/6/72
40 A	2	C	100402	Ex9BH 2P C40	1/6/72
50 A	2	C	100403	Ex9BH 2P C50	1/6/72
63 A	2	C	100404	Ex9BH 2P C63	1/6/72

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C-Characteristic, 3-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	3	C	100405	Ex9BH 3P C1	1/4/48
2 A	3	C	100406	Ex9BH 3P C2	1/4/48
3 A	3	C	100407	Ex9BH 3P C3	1/4/48
4 A	3	C	100408	Ex9BH 3P C4	1/4/48
6 A	3	C	100409	Ex9BH 3P C6	1/4/48
8 A	3	C	100410	Ex9BH 3P C8	1/4/48
10 A	3	C	100411	Ex9BH 3P C10	1/4/48
13 A	3	C	100412	Ex9BH 3P C13	1/4/48
16 A	3	C	100413	Ex9BH 3P C16	1/4/48
20 A	3	C	100414	Ex9BH 3P C20	1/4/48
25 A	3	C	100415	Ex9BH 3P C25	1/4/48
32 A	3	C	100416	Ex9BH 3P C32	1/4/48
40 A	3	C	100417	Ex9BH 3P C40	1/4/48
50 A	3	C	100418	Ex9BH 3P C50	1/4/48
63 A	3	C	100419	Ex9BH 3P C63	1/4/48

C-Characteristic, 3+N-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	3+N	C	100420	Ex9BH 3PN C1	1/3/36
2 A	3+N	C	100421	Ex9BH 3PN C2	1/3/36
3 A	3+N	C	100422	Ex9BH 3PN C3	1/3/36
4 A	3+N	C	100423	Ex9BH 3PN C4	1/3/36
6 A	3+N	C	100424	Ex9BH 3PN C6	1/3/36
8 A	3+N	C	100425	Ex9BH 3PN C8	1/3/36
10 A	3+N	C	100426	Ex9BH 3PN C10	1/3/36
13 A	3+N	C	100427	Ex9BH 3PN C13	1/3/36
16 A	3+N	C	100428	Ex9BH 3PN C16	1/3/36
20 A	3+N	C	100429	Ex9BH 3PN C20	1/3/36
25 A	3+N	C	100430	Ex9BH 3PN C25	1/3/36
32 A	3+N	C	100431	Ex9BH 3PN C32	1/3/36
40 A	3+N	C	100432	Ex9BH 3PN C40	1/3/36
50 A	3+N	C	100433	Ex9BH 3PN C50	1/3/36
63 A	3+N	C	100434	Ex9BH 3PN C63	1/3/36

C-Characteristic, 4-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	4	C	100435	Ex9BH 4P C1	1/3/36
2 A	4	C	100436	Ex9BH 4P C2	1/3/36
3 A	4	C	100437	Ex9BH 4P C3	1/3/36
4 A	4	C	100438	Ex9BH 4P C4	1/3/36
6 A	4	C	100439	Ex9BH 4P C6	1/3/36
8 A	4	C	100440	Ex9BH 4P C8	1/3/36
10 A	4	C	100441	Ex9BH 4P C10	1/3/36
13 A	4	C	100442	Ex9BH 4P C13	1/3/36
16 A	4	C	100443	Ex9BH 4P C16	1/3/36
20 A	4	C	100444	Ex9BH 4P C20	1/3/36
25 A	4	C	100445	Ex9BH 4P C25	1/3/36
32 A	4	C	100446	Ex9BH 4P C32	1/3/36
40 A	4	C	100447	Ex9BH 4P C40	1/3/36
50 A	4	C	100448	Ex9BH 4P C50	1/3/36
63 A	4	C	100449	Ex9BH 4P C63	1/3/36

Technical Data Ex9BH

Miniature Circuit Breakers, 10 kA

General parameters

Very high limiting of short circuit current

Suitable for household as well as industrial applications

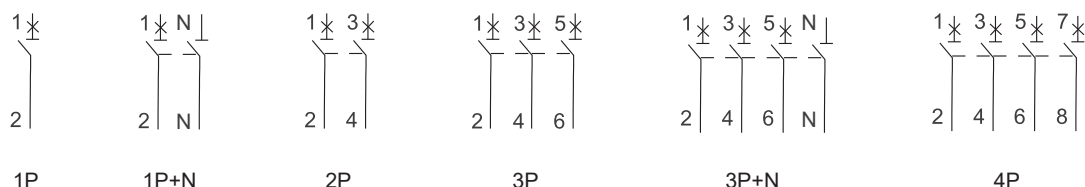
Accessories

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	10 kA
Rated breaking capacity I_{cn} according IEC 60947-2	15 kA (1 — 32 A) 10kA (40 — 63 A)
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



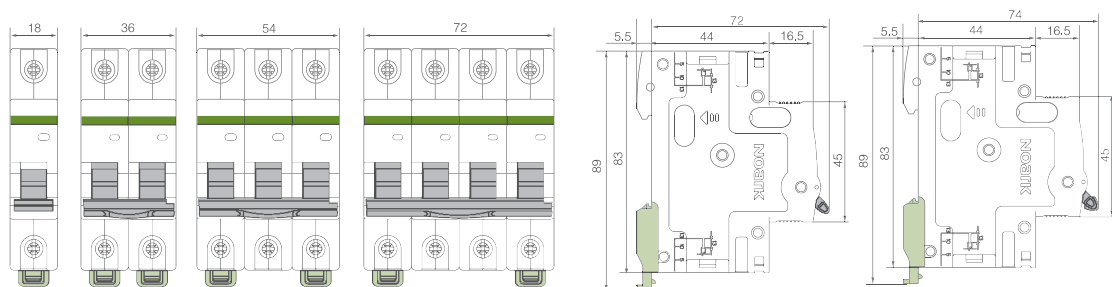
Technical Data Ex9BH

Miniature Circuit Breakers, 10 kA

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

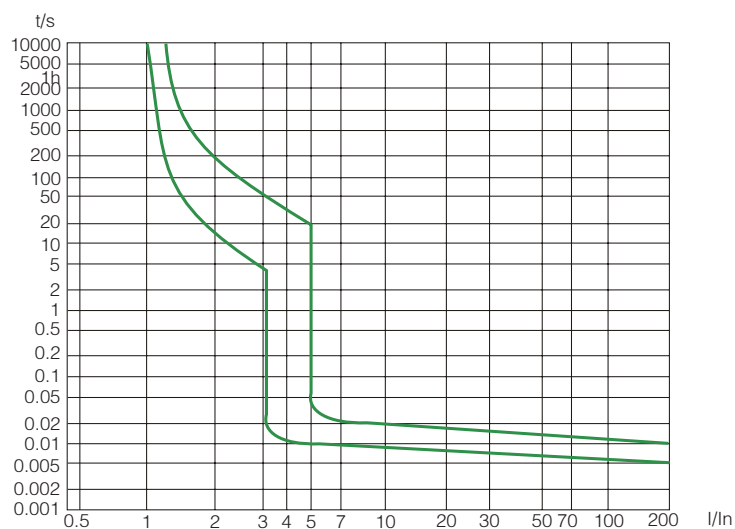


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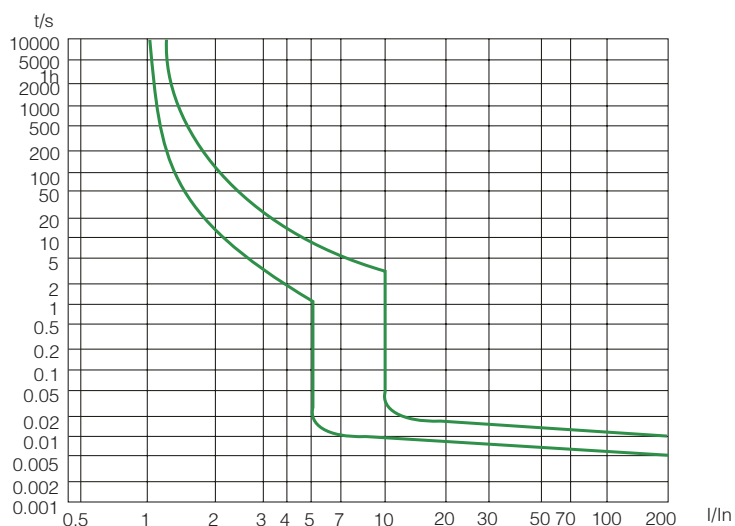
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Tripping characteristics

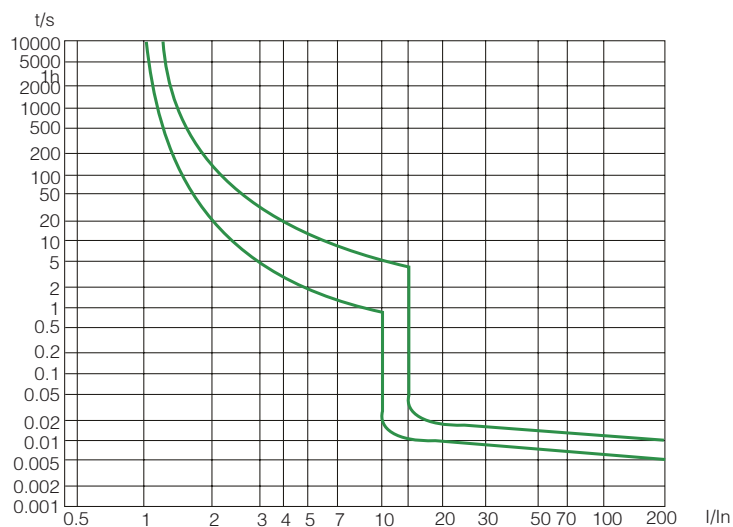
Characteristic B



Characteristic C



Characteristic D



Technical Data Ex9BH

Miniature Circuit Breakers, 10 kA

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

Toggle colours meaning

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
Colour															