

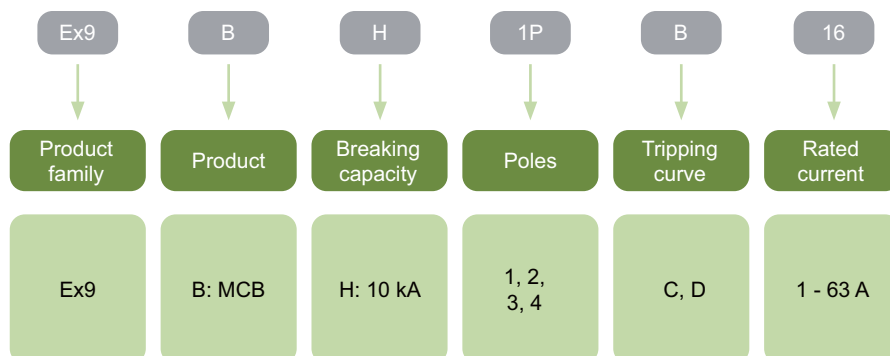
Miniature Circuit Breakers Ex9BH, 10 kA



- Miniature Circuit Breakers according to AS/NZS 60898.1:2004
- Rated short circuit breaking capacity 10 kA
- 1 up to 4-pole versions
- Tripping characteristics 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. It is possible to create diverse 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, 2, 3, 4-pole

Auxiliary contacts AX3111, AX3122

see page 132

Alarm contact AL3111

see page 132

Auxiliary and alarm contact AXL31

see page 132

Shunt trip releases SHT31, SHT3111

see page 132

Undervoltage releases UVT31, UVT3101, UVT3110

see page 133

Overvoltage release OVT31

see page 133

the accessories are mounted to the MCBs from the left and are identical for devices of the line Ex9B.

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, 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, 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

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D-Characteristic, 1-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	1	D	100450	Ex9BH 1P D1	1/12/144
2 A	1	D	100451	Ex9BH 1P D2	1/12/144
3 A	1	D	100452	Ex9BH 1P D3	1/12/144
4 A	1	D	100453	Ex9BH 1P D4	1/12/144
6 A	1	D	100454	Ex9BH 1P D6	1/12/144
8 A	1	D	100455	Ex9BH 1P D8	1/12/144
10 A	1	D	100456	Ex9BH 1P D10	1/12/144
13 A	1	D	100457	Ex9BH 1P D13	1/12/144
16 A	1	D	100458	Ex9BH 1P D16	1/12/144
20 A	1	D	100459	Ex9BH 1P D20	1/12/144
25 A	1	D	100460	Ex9BH 1P D25	1/12/144
32 A	1	D	100461	Ex9BH 1P D32	1/12/144
40 A	1	D	100462	Ex9BH 1P D40	1/12/144
50 A	1	D	100463	Ex9BH 1P D50	1/12/144
63 A	1	D	100464	Ex9BH 1P D63	1/12/144

D-Characteristic, 2-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	2	D	100480	Ex9BH 2P D1	1/6/72
2 A	2	D	100481	Ex9BH 2P D2	1/6/72
3 A	2	D	100482	Ex9BH 2P D3	1/6/72
4 A	2	D	100483	Ex9BH 2P D4	1/6/72
6 A	2	D	100484	Ex9BH 2P D6	1/6/72
8 A	2	D	100485	Ex9BH 2P D8	1/6/72
10 A	2	D	100486	Ex9BH 2P D10	1/6/72
13 A	2	D	100487	Ex9BH 2P D13	1/6/72
16 A	2	D	100488	Ex9BH 2P D16	1/6/72
20 A	2	D	100489	Ex9BH 2P D20	1/6/72
25 A	2	D	100490	Ex9BH 2P D25	1/6/72
32 A	2	D	100491	Ex9BH 2P D32	1/6/72
40 A	2	D	100492	Ex9BH 2P D40	1/6/72
50 A	2	D	100493	Ex9BH 2P D50	1/6/72
63 A	2	D	100494	Ex9BH 2P D63	1/6/72

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D-Characteristic, 3-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	3	D	100495	Ex9BH 3P D1	1/4/48
2 A	3	D	100496	Ex9BH 3P D2	1/4/48
3 A	3	D	100497	Ex9BH 3P D3	1/4/48
4 A	3	D	100498	Ex9BH 3P D4	1/4/48
6 A	3	D	100499	Ex9BH 3P D6	1/4/48
8 A	3	D	100500	Ex9BH 3P D8	1/4/48
10 A	3	D	100501	Ex9BH 3P D10	1/4/48
13 A	3	D	100502	Ex9BH 3P D13	1/4/48
16 A	3	D	100503	Ex9BH 3P D16	1/4/48
20 A	3	D	100504	Ex9BH 3P D20	1/4/48
25 A	3	D	100505	Ex9BH 3P D25	1/4/48
32 A	3	D	100506	Ex9BH 3P D32	1/4/48
40 A	3	D	100507	Ex9BH 3P D40	1/4/48
50 A	3	D	100508	Ex9BH 3P D50	1/4/48
63 A	3	D	100509	Ex9BH 3P D63	1/4/48

D-Characteristic, 4-pole



Rated current	Poles	Char.	Article No.	Type	Packing
1 A	4	D	100525	Ex9BH 4P D1	1/3/36
2 A	4	D	100526	Ex9BH 4P D2	1/3/36
3 A	4	D	100527	Ex9BH 4P D3	1/3/36
4 A	4	D	100528	Ex9BH 4P D4	1/3/36
6 A	4	D	100529	Ex9BH 4P D6	1/3/36
8 A	4	D	100530	Ex9BH 4P D8	1/3/36
10 A	4	D	100531	Ex9BH 4P D10	1/3/36
13 A	4	D	100532	Ex9BH 4P D13	1/3/36
16 A	4	D	100533	Ex9BH 4P D16	1/3/36
20 A	4	D	100534	Ex9BH 4P D20	1/3/36
25 A	4	D	100535	Ex9BH 4P D25	1/3/36
32 A	4	D	100536	Ex9BH 4P D32	1/3/36
40 A	4	D	100537	Ex9BH 4P D40	1/3/36
50 A	4	D	100538	Ex9BH 4P D50	1/3/36
63 A	4	D	100539	Ex9BH 4P D63	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

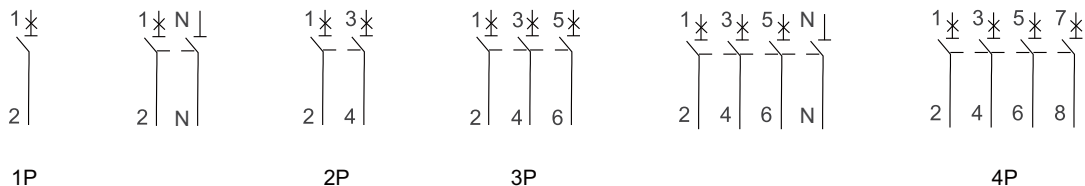
Auxiliary contacts	AX3111, AX3122	
Alarm contact	AL3111	
Auxiliary and alarm contact	AXL31	
Shunt trip releases	SHT31, SHT3111	
Undervoltage releases	UVT31, UVT3101, UVT3110	
Oversvoltage release	OVT31 280V AC±5%	

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	AS/NZS 60898.1:2004
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

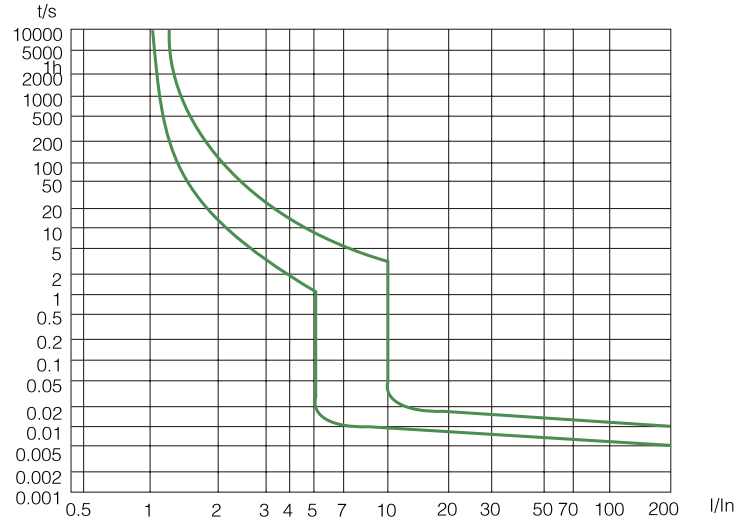


Technical Data Ex9BH

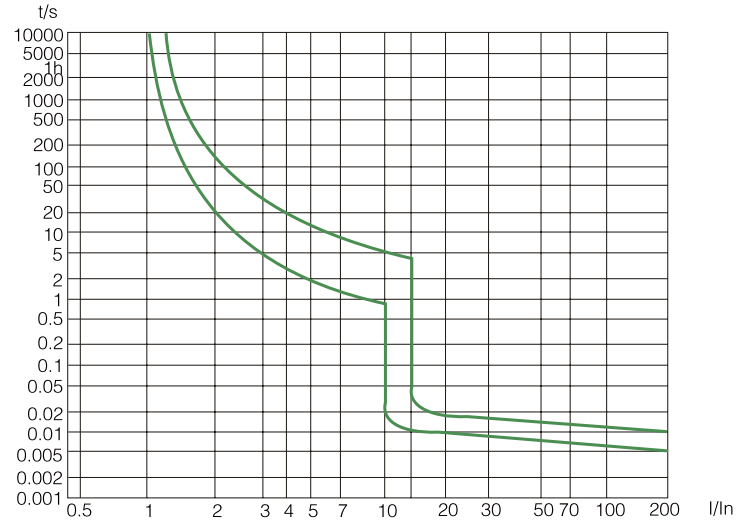
Miniature Circuit Breakers, 10 kA

Tripping characteristics

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

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