

Motor protective circuit breakers Ex9S32A



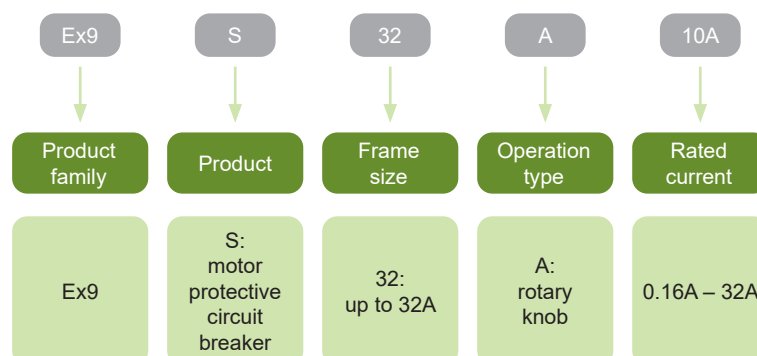
- Manual motor protective circuit breakers
- Meet requirements of IEC/EN 60947-2 and IEC/EN 60947-4-1
- Rated current I_n up to 32 A at 415 V AC-3
- Rated operating voltage U_n up to 690V
- Overload, short-circuit and phase-failure protection
- Ambient temperature compensation
- Single frame size suitable also for distribution boards with 45 mm cutout
- Wide range of accessories

Manual motor protective circuit breakers Ex9S32A provide overload, short-circuit and phase-failure protection for the three-phase asynchronous motors with not frequent starting. They are also suitable for power distribution line protection or can be used simply as an isolator.

The right setting of adjustable overload current allows to optimize motor protection by means of circuit breaker. In case of 3P application, correct setting of I_r provides also protection against overload caused due to a phase lost. Ambient temperature compensation function reduces the impact of ambient temperature. Release testing mechanism enables to test the function of the system and control rotary knob lock mechanism prevents illegal operation.

Motor protective circuit breakers can be combined with wide range of accessories including auxiliary and signal contacts, shunt trip and undervoltage releases. It is possible to create diverse combination of accessories.

Type Key

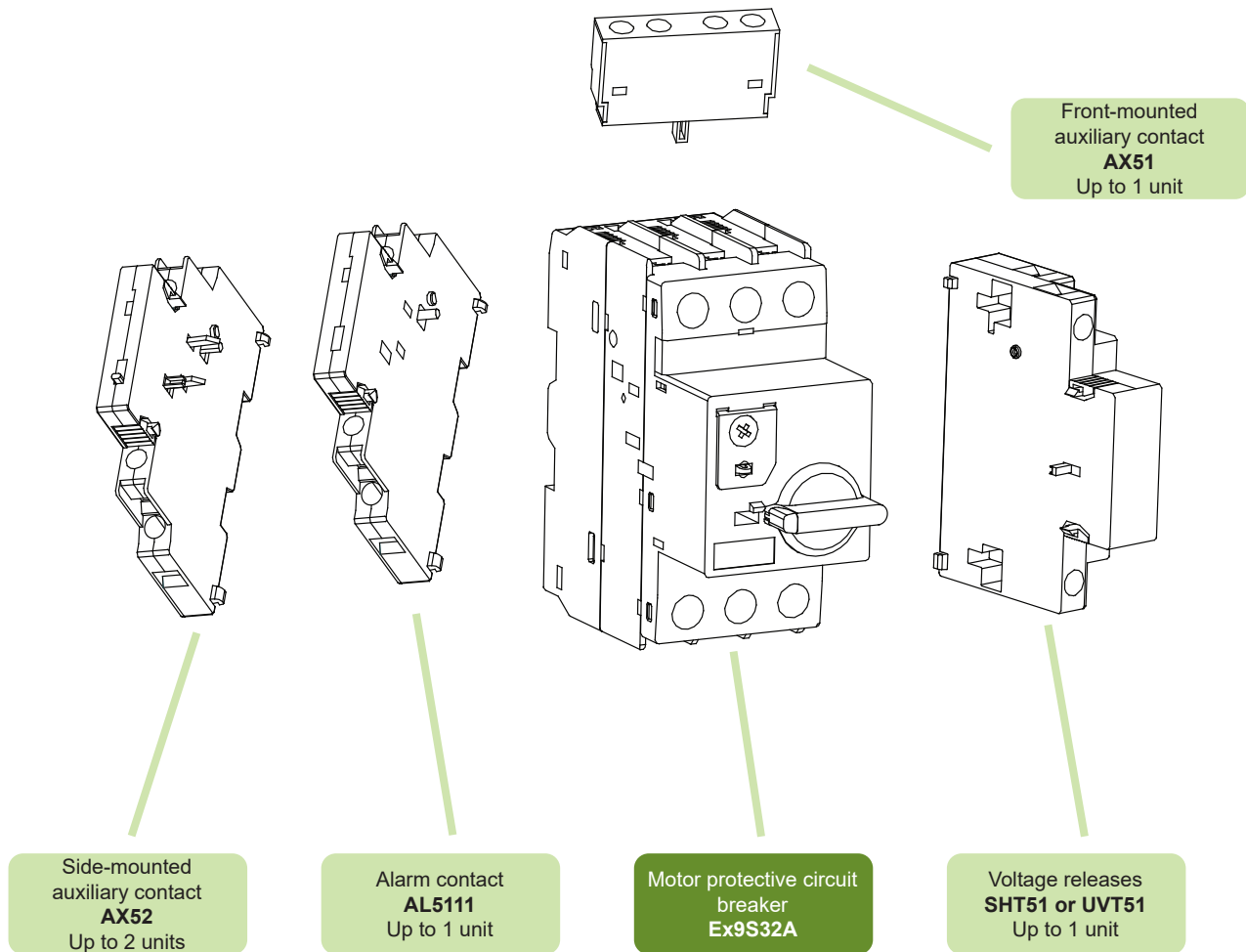


Certification marks



Motor protective circuit breakers Ex9S32A

Accessories



Auxiliary contacts AX51

Auxiliary contacts AX52

Alarm contact AL5111

Shunt trip release SHT51

Undervoltage release UVT51

Terminal adapters CC5

Adapter holder DRA51

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Motor protective circuit breakers, 3-pole

- Adjustable overload protection I_r
- Fixed instantaneous short-circuit current protection I_i (ca. $11 - 14 \times I_e$)
- Temperature compensation function to reduce the impact of ambient temperature
- Control rotary knob lock mechanism



Rated current I_e	Tripping current setting range I_r	Short-circuit current I_i	Article No.	Type	Packing
0.16 A	0.10 – 0.16 A	2.1 A	108096	Ex9S32A 0.16A	1/30
0.25 A	0.16 – 0.25 A	3.2 A	108097	Ex9S32A 0.25A	1/30
0.40 A	0.25 – 0.40 A	4.8 A	108098	Ex9S32A 0.4A	1/30
0.63 A	0.40 – 0.63 A	7.2 A	108099	Ex9S32A 0.63A	1/30
1.0 A	0.63 – 1.00 A	11 A	108100	Ex9S32A 1A	1/30
1.6 A	1.0 – 1.6 A	20 A	108101	Ex9S32A 1.6A	1/30
2.5 A	1.6 – 2.5 A	30 A	108102	Ex9S32A 2.5A	1/30
4.0 A	2.5 – 4.0 A	50 A	108103	Ex9S32A 4A	1/30
6.3 A	4.0 – 6.3 A	72.5 A	108104	Ex9S32A 6.3A	1/30
10 A	6.0 – 10 A	130 A	108105	Ex9S32A 10A	1/30
14 A	9.0 – 14 A	175 A	108106	Ex9S32A 14A	1/30
18 A	13 – 18 A	230 A	108107	Ex9S32A 18A	1/30
23 A	17 – 23 A	280 A	108108	Ex9S32A 23A	1/30
25 A	20 – 25 A	280 A	108109	Ex9S32A 25A	1/30
32 A	24 – 32 A	416 A	108110	Ex9S32A 32A	1/30

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General parameters

For protection of various motor applications

Provide overload, short-circuit and phase-failure protection

Can replace the circuit breaker and thermal relay to reduce costs and space

Temperature compensation function to reduce the impact of ambient temperature

Accessories

Front-mounted auxiliary contacts	AX51 11, AX51 20	108143, 108144
Side-mounted auxiliary contacts	AX52 11, AX52 20, AX52 02	108145, 108146, 108147
Alarm contact	AL5111	108154
Undervoltage releases	UVT51I, UVT51J, UVT51K	108148, 108149, 108150
Shunt trip releases	SHT51F, SHT51G, SHT51H	108151, 108152, 108153
Max. number of installed accessories are 2 pcs of contact or signal units (2 pcs of AX52 or 1 pc of AX52 + 1 pc of AL5111) or 1 pc of front-mounted contact unit (AX51) and 1 pc of voltage release (SHT51, UVT51)		

Electrical parameters

Tested according to	IEC/EN 60947-4-1 IEC/EN 60947-2
Rated operating voltage U_e	400/690 V AC
Rated frequency f	50/60 Hz
Rated insulation voltage U_i	690 V
Rated impulse withstand voltage U_{imp}	6 kV
Rated current I_e	0.16 – 32 A
Fixed rated inst. short-circuit current I_i	see table below for exact values
Conventional free air thermal current I_{th}	$I_{th} = I_e$
Rated ultimate short-circuit breaking capacity I_{cu} (IEC/EN 60947-2)	
I_e 0.1 – 14 A at 400 V AC	100 kA
I_e 18 – 32 A at 400 V AC	50 kA
I_e 0.16 – 2.5 A at 690 V AC	100 kA
I_e 4 – 32 A at 690 V AC	6 kA
Rated service short-circuit breaking capacity I_{cs} (IEC/EN 60947-2)	
I_e 0.16 – 14 A at 400 V AC	100 kA
I_e 18 – 32 A at 400 V AC	30 kA
I_e 0.16 – 2.5 A at 690 V AC	100 kA
I_e 4 – 32 A at 690 V AC	4 kA
Required contactor type	
I_e 0.1 – 10 A	Ex9CS06/09 or Ex9C12 frame size
I_e 14 – 32 A	Ex9C18/25/32/38 frame size
Maximum operating frequency	30 operating cycles per hour
Electrical service life	100 000 operating cycles (at 400 V AC-3)

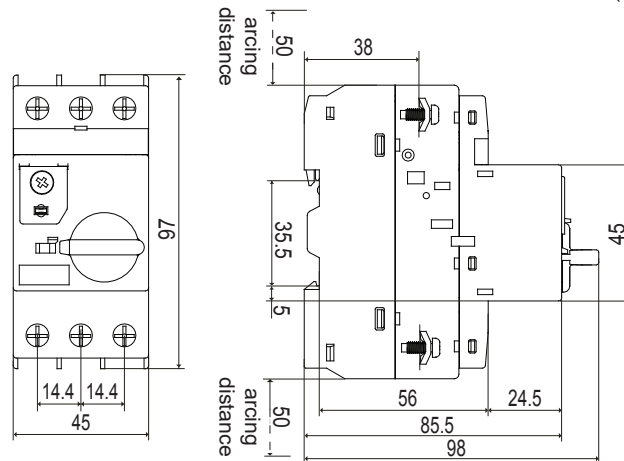
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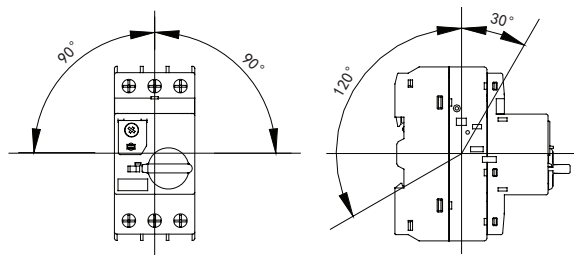
Mechanical parameters

Device width	45 mm
Device height	97 mm
Device depth	98 mm
Frame size	45 mm
Mounting	easy fastening onto 35 mm device rail (DIN)
Safety arcing distance	50 mm
Degree of protection	IP20
Mechanical service life	100 000 operating cycles
Terminals	lift
Terminal capacity	1 – 10 mm ²
Fastening torque of terminals	2.5 Nm
Ambient temperature	-5 – +40 °C
Altitude	≤ 2 000 m
Relative humidity	≤ 90 %
Resistance to climatic conditions	class 2, according to EN60068-2-3 and EN60068-2-30
Resistance to mechanical shock	30 gn (shock duration 11 ms)
Resistance to vibrations	5 gn (5 – 150 Hz)
Pollution degree	3
Installation class	III
Weight	0.33 kg

Dimensions



Mounting positions



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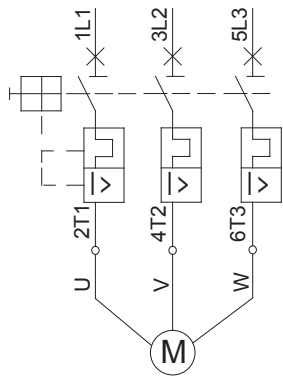
Rated instantaneous short-circuit current I_i

I_n [A]	0.16 A	0.25 A	0.4 A	0.63 A	1 A	1.6 A	2.5 A	4 A	6.3 A	10 A	14 A	18 A	23 A	25 A	32 A
I_i [A]	2.1	3.2	4.8	7.2	11	20	30	50	72.5	130	175	230	280	280	416

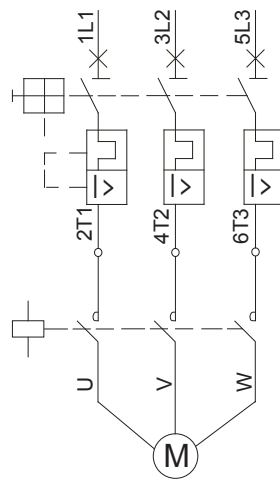
Rated power of three-phase motor

I_n [A]	AC-3, 50/60 Hz [kW]				
	230 V	400 V	440 V	500 V	690 V
0.16 A	-	-	-	0.06	0.06
0.25 A	-	0.06	0.06	0.09	0.12
0.4 A	0.06	0.09	0.09	0.12	0.18
0.63 A	0.09	0.18	0.18	0.18	0.25
1 A	0.18	0.25	0.25	0.37	0.55
1.6 A	0.25	0.55	0.55	0.75	1.1
2.5 A	0.37	0.75	0.75	1.1	1.5
4 A	0.75	1.5	1.5	2.2	3.0
6.3 A	1.5	2.2	2.2	3.0	4.0
10 A	2.2	4.0	4.0	5.5	7.5
14 A	3.0	5.5	5.5	7.5	11
18 A	4.0	7.5	7.5	11	15
23 A	5.5	11	11	15	18.5
25 A	5.5	11	11	15	22
32 A	7.5	15	15	18.5	30

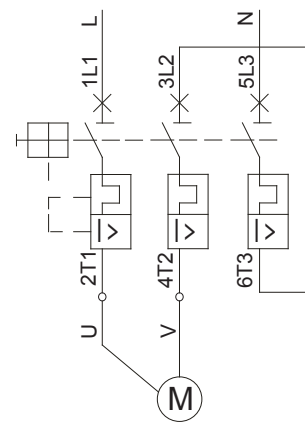
Connection diagrams



3-phase motor protection



3-phase motor protection with contactor

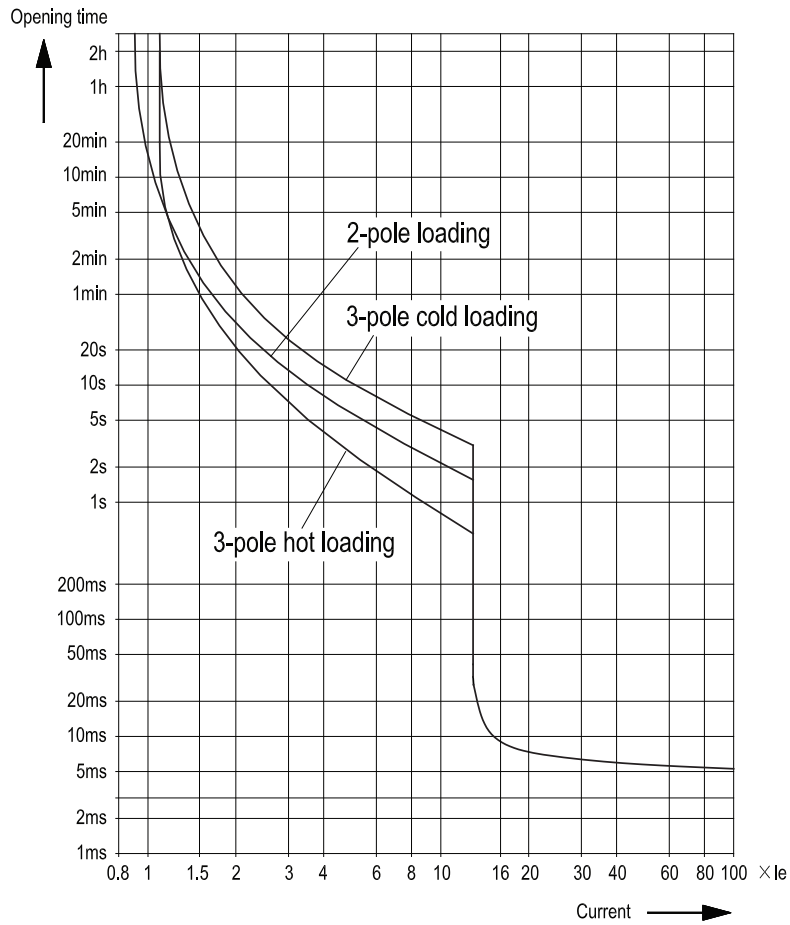


1-phase or DC motor protection

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Tripping characteristics



Power loss

I_0 [A]	0.16 A	0.25 A	0.4 A	0.63 A	1 A	1.6 A	2.5 A	4 A	6.3 A	10 A	14 A	18 A	23 A	25 A	32 A
P [W]	5.2	5.5	6.5	6.2	6.4	6.5	5.1	5.8	6.3	7.2	8.5	9.3	12.6	12.6	19.2