

Motor protective circuit breakers Ex9S80A



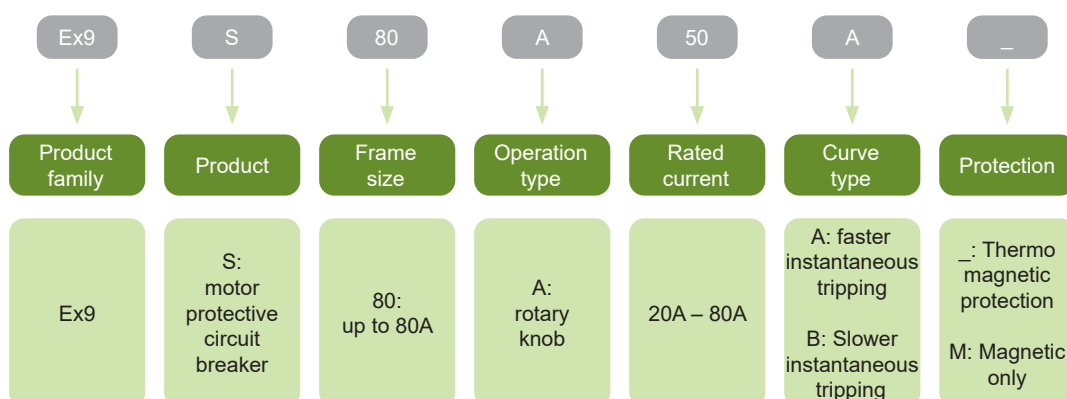
- Manual motor protective circuit breakers
- Meet requirements of IEC/EN 60947-2 and IEC/EN 60947-4-1
- Rated current I_n up to 80 A at 415 V AC-3
- Rated operating voltage U_n up to 690V
- Overload, short-circuit and phase-failure protection
- Ambient temperature compensation
- Wide range of accessories

Manual motor protective circuit breakers Ex9S80A 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

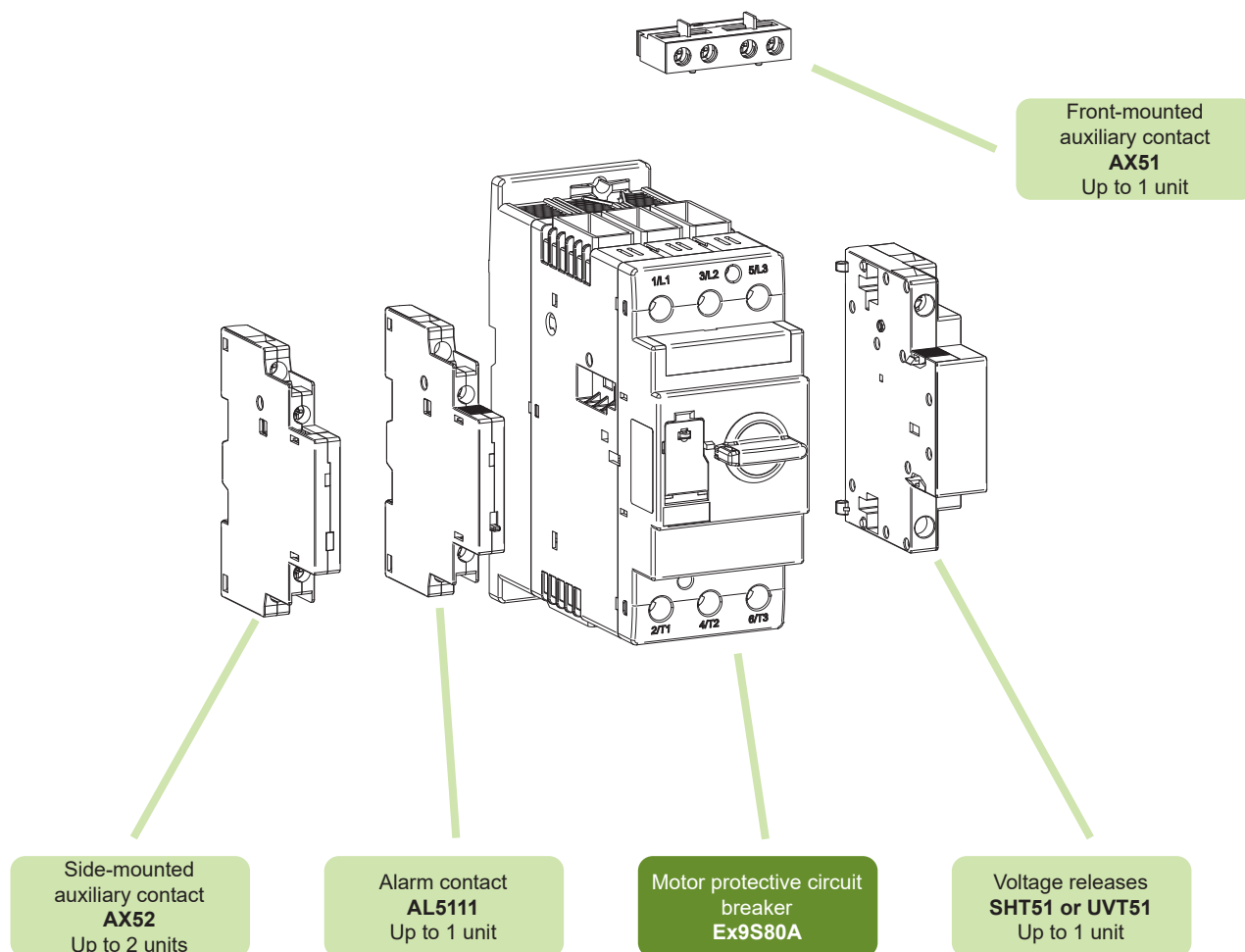


Certification marks



Motor protective circuit breakers Ex9S80A

Accessories



Auxiliary contacts AX51

Auxiliary contacts AX52

Alarm contact AL5111

Shunt trip release SHT51

Undervoltage release UVT51

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Thermomagnetic motor protective circuit breakers, 3-pole

- Adjustable overload protection I_r
- Fixed instantaneous short-circuit current protection I_i
- A and B types of instantaneous short-circuit current protection level
- Temperature compensation function to reduce the impact of ambient temperature
- Control rotary knob lock mechanism



Rated current I_n	Tripping current setting range I_r	Short-circuit current I_i	Article No.	Type	Packing
20 A	14 – 20 A	310 A	113826	Ex9S80A 20A	1/30
20 A	14 – 20 A	400 A	113828	Ex9S80A 20B	1/30
25 A	18 – 25 A	375 A	113830	Ex9S80A 25A	1/30
25 A	18 – 25 A	500 A	113832	Ex9S80A 25B	1/30
32 A	23 – 32 A	445 A	113834	Ex9S80A 32A	1/30
32 A	23 – 32 A	680 A	113836	Ex9S80A 32B	1/30
40 A	30 – 40 A	560 A	113838	Ex9S80A 40A	1/30
40 A	30 – 40 A	800 A	113840	Ex9S80A 40B	1/30
50 A	38 – 50 A	700 A	113842	Ex9S80A 50A	1/30
50 A	38 – 50 A	960 A	113844	Ex9S80A 50B	1/30
63 A	48 – 63 A	950 A	113846	Ex9S80A 63A	1/30
63 A	48 – 63 A	1150 A	113848	Ex9S80A 63B	1/30
72 A	60 – 72 A	1000 A	113850	Ex9S80A 72A	1/30
72 A	60 – 72 A	1150 A	113852	Ex9S80A 72B	1/30
80 A	70 – 80 A	1150 A	113854	Ex9S80A 80A	1/30

Magnetic motor protective circuit breakers, 3-pole

- Fixed instantaneous short-circuit current protection I_i
- A and B types of instantaneous short-circuit current protection level
- Control rotary knob lock mechanism



Rated current I_n	Short-circuit current I_i	Article No.	Type	Packing
20 A	310 A	113827	Ex9S80A 20AM	1/30
20 A	400 A	113829	Ex9S80A 20BM	1/30
25 A	375 A	113831	Ex9S80A 25AM	1/30
25 A	500 A	113833	Ex9S80A 25BM	1/30
32 A	445 A	113835	Ex9S80A 32AM	1/30
32 A	680 A	113837	Ex9S80A 32BM	1/30
40 A	560 A	113839	Ex9S80A 40AM	1/30
40 A	800 A	113841	Ex9S80A 40BM	1/30
50 A	700 A	113843	Ex9S80A 50AM	1/30
50 A	960 A	113845	Ex9S80A 50BM	1/30
63 A	950 A	113847	Ex9S80A 63AM	1/30
63 A	1150 A	113849	Ex9S80A 63BM	1/30
72 A	1000 A	113851	Ex9S80A 72AM	1/30
72 A	1150 A	113853	Ex9S80A 72BM	1/30
80 A	1150 A	113855	Ex9S80A 80AM	1/30

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Motor protective circuit breakers Ex9S80A

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 (TM)

Temperature compensation function to reduce the impact of ambient temperature (TM)

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	20 – 80 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 20 – 32 A at 400 V AC I_e 40 – 80 A at 400 V AC I_e 20 – 80 A at 690 V AC	100 kA 50 kA 8 kA
Rated service short-circuit breaking capacity I_{cs} (IEC/EN 60947-2) I_e 20 – 32 A at 400 V AC I_e 40 – 80 A at 400 V AC I_e 20 – 80 A at 690 V AC	100 kA 50 kA 8 kA
Required contactor type	Ex9C65/100 frame size
Maximum operating frequency	30 operating cycles per hour
Electrical service life at 415 V AC-3	50 000 operating cycles ($I_e \leq 63$ A) 30 000 operating cycles ($I_e \geq 72$ A)

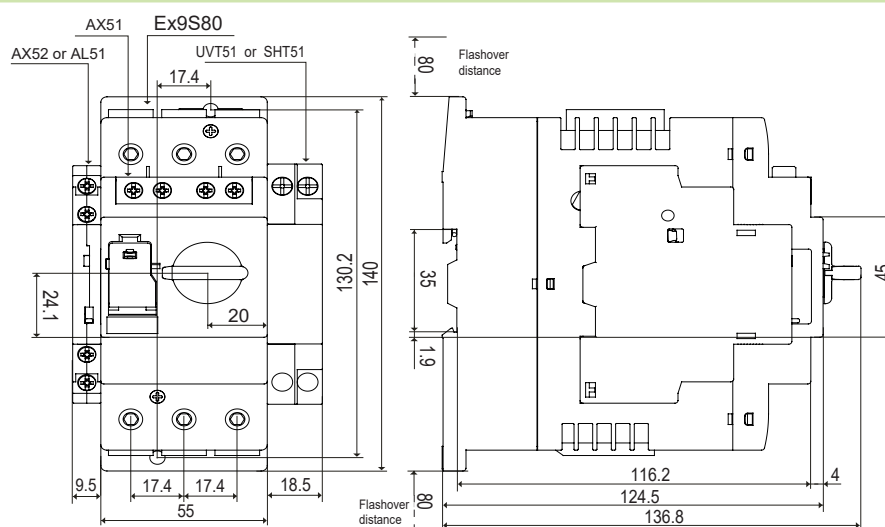
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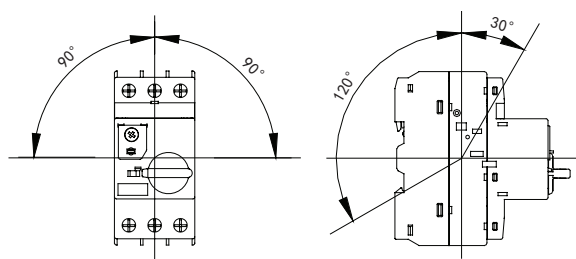
Mechanical parameters

Device width	55 mm
Device height	140 mm
Device depth	137 mm
Mounting	Mounting panel / easy fastening onto 35 mm device rail (DIN)
Safety arcing distance	80 mm
Degree of protection	IP20 (excluding the main terminals)
Mechanical service life	50 000 operating cycles ($I_e \leq 72$ A) 30 000 operating cycles ($I_e = 80$ A)
Terminals	lift
Terminal capacity	2.5 – 35 mm ²
Fastening torque of terminals	6 Nm
Ambient temperature	-20 – +60 °C
Altitude	≤ 2 000 m
Relative humidity	≤ 90 %
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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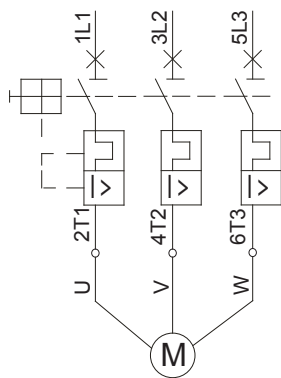
Rated instantaneous short-circuit current I_i

I_i [A]	20 A	25 A	32 A	40 A	50 A	63 A	72 A	80 A
A curve type: I_i [A]	310	375	445	560	700	950	1000	1150
B curve type: I_i [A]	400	500	680	800	960	1150	1150	-

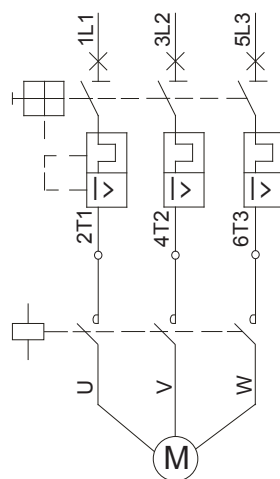
Rated power of three-phase motor

I_n [A]	AC-3, 50/60 Hz [kW]			
	230 / 240 V	400 / 415 V	500 V	690 V
20 A	4	7.5	11	15
25 A	5.5	11	15	22
32 A	7.5	15	18.5	30
40 A	11	18.5	22	37
50 A	11	22	30	45
63 A	15	30	37	55
72 A	18.5	37	45	65
80 A	22	45	50	70

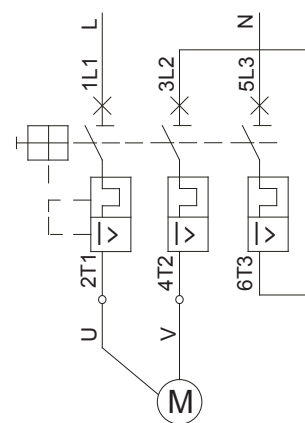
Connection diagrams



3-phase motor protection



3-phase motor protection
with contactor

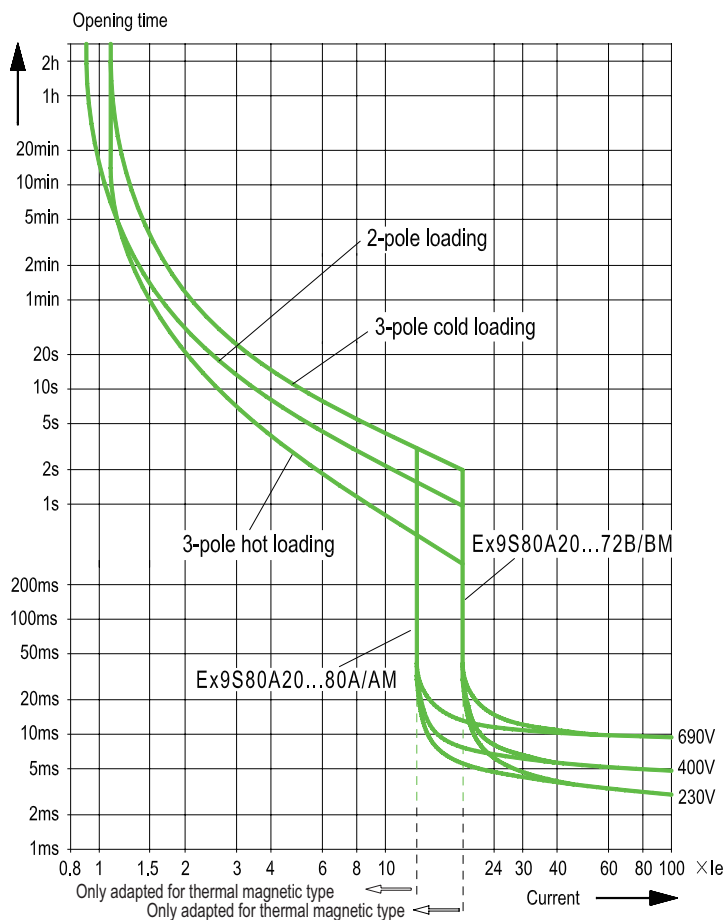


1-phase motor protection

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Tripping characteristics



Power loss

I_e [A]	20 A	25 A	32 A	40 A	50 A	63 A	72 A	80 A
P [VA]	4.3	4.3	4.3	12	12	12	12	12