

Motor protective circuit breakers

Motor protective circuit breakers MSP

ETICON



MSP0

Description

The MSP0, MSP1 motor starter protectors are compact motor starter protectors for currents up to 52 A which operate according to the current limiting principle. The devices are used for switching and protecting motors or other loads. They are fitted with instantaneous overcurrent releases and inverse-time delayed overload relay. Motor starter protectors and contactors can be combined to form fuseless starter combinations. The MSP0, MSP1 motor starter protectors are suitable for use in any climate.

Motor Starter Protectors

- for motor protection
- MSP0: 0,4...25 A
- MSP1 : 22...52 A

The characteristic curves of these motor starter protectors are specially laid-out for the overload and short-circuit protection of motors. The inverse-time delayed releases ("a releases") are adjustable for setting the rated current of the motors to be protected. The instantaneous short-circuit releases ("n releases") are fixed-set to 12 times the value so as to assure faultless starting of the motors.



MSP1

Motor protective circuit breaker MSP

Type	Code No.	Rated current [A]	Thermal overload release [A]	Instantaneous overcurrent release [A]	Motor power [kW]	Weight [g]	Packaging [pcs]
MSP0-0,6	004646618	0,6	0,4...0,6	7,2	0,12/0,18	290	1
MSP0-1,0	004646619	1	0,6...1,0	12	0,25	290	1
MSP0-1,6	004646620	1,6	1,0...1,6	19	0,37/0,55	290	1
MSP0-2,4	004646621	2,4	1,6...2,4	29	0,75	290	1
MSP0-4,0	004646622	4	2,4...4,0	48	1,1/1,5	290	1
MSP0-6,0	004646623	6	4,0...6,0	72	2,2	290	1
MSP0-10	004646624	10	6,0...10	120	3/4	290	1
MSP0-16	004646625	16	10...16	190	7,5	290	1
MSP0-20	004646626	20	14...20	240	7,5	290	1
MSP0-25	004646627	25	18...25	300	11	290	1
MSP1-32	004646628	32	22...32	380	15	760	1
MSP1-40	004646629	40	28...40	480	18,5	760	1
MSP1-52	004646630	52	36...52	600	22	760	1

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Technical data		according to IEC 60947-1; IEC 60947-2; IEC 60947-4-1								
Type		MSP0				MSP1				
General data										
Number of poles		3				3				
Max. rated current I_n										
• motor protection		A	25				52			
Permissible ambient temperature										
• at full rated current		°C	-20 ... +55							
• in storage		°C	-50 ... +80							
Rated operational voltage U_e		V	690							
Rated frequency		Hz	50/60							
Rated insulation voltage U_i		V	750							
Rated impulse withstand voltage U_{imp}		kV	6							
Utilization category										
• to IEC 60947-2 (motor starter protectors)		A								
• to IEC 60947-4-1 (motor starters)		AC-3								
Mechanical endurance										
• up to 25 A		Operating cycles	100000				100000			
• 25 A upwards			--				30000			
Number of operating cycles/h (on load)		1/h	25				25			
Degree of protection with open terminals/with conductors connected		IP00/IP20								
Temperatures compensation to IEC 60947-4-1		✓								
Phase failure sensitivity to IEC 60947-4-1		✓								
Power loss P_v per breaker										
I_n	A	0,6	4	6	25	2,4	6	25	63	
P_v	W	5	6	7	9	8	7	14	23	

Auxiliary contacts									
Utilization category		AC-15							
Rated operational voltage U_e		ACV	230	400	500				
Rated operational current I_e		A	3	1.5	1				
Utilization category		DC-13							
Rated operational voltage U_e DC L/R200 ms		DCV	24	60	220				
Rated operational current I_e		A	2.3	0.7	0.3				

Type		MSP0				MSP1				
Cross-section for main conductors										
Solid or stranded		mm ²	2 x (1 ... 6)				1 x 1.5 ... 2 x 16 or 1 x 25 + 1 x 10			
Finely stranded with end sleeve		mm ²	2 x (1 ... 4)				1 x 1.5 ... 2 x 10 or 1 x 16 + 1 x 10			
Cross-sections for auxiliary and control connecting leads										
Solid or stranded		mm ²	1 x 0.5 ... 2 x 2.5				--			
Finely stranded with end sleeve		mm ²	1 x 0.5 ... 2 x 1.5				--			

Rated short-circuit breaking capacity

The table shows the rated ultimate short-circuit breaking capacity

I_{cu} and the rated service short-circuit breaking capacity I_{cs} for the MSP motor starter protectors with respect to rated current I_n and rated operational voltage U_e .

Infeed is permitted at top or bottom without reduction of rated data. In the short-circuit proof areas, I_{cu} is at least 100 kA. A backup fuse is therefore not necessary.

In the other areas, when the short-circuit current at the installation point exceeds the rated short-circuit breaking capacity given in the table for the motor starter protectors, the motor starter protector must be protected by a backup fuse. See the following table for the maximum rated current for the backup fuse. With a backup fuse according to the table, the maximum short-circuit current is permitted to equal the rated breaking capacity of the backup fuse.