

MC 4-Pole Contactors

with Universal Coil



Key Features

- Rated for both 50Hz & 60Hz
- Wider Voltage Range: 200-240V
- Designed in acc. EN 60947-4-1 & IEC 60335
- Up to 22A AC3
- Up to 32A AC1



Options & Ordering Codes

PLEASE NOTE: The feasibility of a code number does not mean the effective availability of a product.



MC		10N		S		00		22		190RAC	
Series		Standard Contactor		MC							
AC3 Rating		10N									
4kW / 10A		10N		15kW / 32A		32N					
5.5kW / 14A		14N		18.5kW / 40A		40N					
7.5kW / 18A		18N		22kW / 50A		50N					
11kW / 22A		22N		30kW / 62A		62N					
11kW / 24A		24N		37kW / 74A		74N					
Switching Type		Standard		S							
Aux. Contact Configuration		00		No Aux Contacts							
Main Contacts		22		2 Normally Open (NO) + 2 Normally Closed (NC)							
		31		3 Normally Open (NO) + 1 Normally Closed (NC)							
		40		4 Normally Open (NO)							
		04		4 Normally Closed (NC)							
Coil Voltage*		200-240AC									

Technical Data acc. to IEC / EN 60947-4-1

Part Number			MC10N-S	MC14N-S	MC18N-S	MC22N-S	MC24N-S
Main Contact Ratings	AC1 I _e (=I _m) open at 40°C		25A	25A	32A	32A	50A
	AC2, AC3, 380-440V		4kW / 10A	5.5kW / 14A	7.5kW / 18A	11kW / 22A	11kW / 24A
	AC2, AC3, 500-690V		5.5kW	7.5kW	10kW	10kW	15kW
	DC1 / 3 / 5, 24VDC		20A	25A	32A	32A	50A
	Fuse "Typ1" gl. (gG)		63A max.	63A max.	63A max.	63A max.	100A max.
	Rated Insulation Voltage U _i *4		690V~	690V~	690V~	690V~	690V~
	Making Capacity I _{eff} at U _e =690V~		200A	200A	200A	200A	400A
	Breaking Capacity I _{br} 400V~		180A	180A	200A	200A	380A
cosθ= 0.65 500V~		150A	150A	180A	180A	260A (cosθ= 0.35 690V~)	
Max. Ambient Temp	Operation Open		-40 to +60°C (+90°C)*1				
	Operation Enclosed		-40 to +40°C				
	with Thermal Overload Relay Open		-25 to +60°C				
	with Thermal Overload Relay Enclosed		-25 to +40°C				
	Storage		-50 to +90°C				
Frequency of Operations z Ops/hr	Switching Without Load		10,000				7,000
	AC3, I _e		600				
	AC4, I _e		120				
	DC3, I _e		600				
Switching Time at Control Voltage Us ±10%*2, *3	AC Operated	Make Time	8 - 16ms				10 - 25ms
		Release Time	5 - 13ms				8 - 15ms
		Arc Duration	10 - 15ms				
	DC Operated	Make Time	8 - 12ms				10 - 20ms
		Release Time	8 - 13ms				10 - 15ms
		Arc Duration	10 - 15ms				
Mech. Life	AC Operated		10 x 10 ⁶				
	DC Operated with Double Winding Coil		10 x 10 ⁶				
Curr. Heat Loss	Power Loss Per Pole (I _a /AC3 400V)		0.21W	0.35W	0.5W	0.75W	0.7W
	Contact Resistance Per Pole		2.1mΩ	1.8mΩ	1.5mΩ	1.5mΩ	1.2mΩ
Shock Resistance acc. to IEC6008-2-27 - 20ms Sine Wave NO			10g				8g
Shock Resistance acc. to IEC6008-2-27 - 20ms Sine Wave NC			6g				-

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Technical Data cont. acc. to IEC / EN 60947-4-1

Part Number			MC32N-S	MC40N-S	MC50N-S	MC62N-S	MC74N-S
Main Contact Ratings	AC1 I _e (=I _m) open at 40°C		65A	80A	110A	120A	130A
	AC2, AC3, 380-440V		15kW / 32A	18.5kW / 40A	22kW/50A	30kW / 62A	37kW / 74A
	AC2, AC3, 500-690V		18.5kW	18.5kW	30kW	37kW	45kW
	DC1 / 3 / 5, 24VDC		65	80	110	120	130
	Fuse "Typ1" gl. (gG)		100A max.	100A max.	160A max	160A max.	160A max.
	Rated Insulation Voltage U _i *4		690V~	690V~	830V~	830V~	830V~
	Making Capacity I _{eff} at U _e =690V~		500A	500A	700A	900A	900A
	Breaking Capacity I _{eff} 400V~		400A	400A	600A	800A	800A
cosθ = 0.35 690V~		340A	340A	400A	500A	500A	
Max. Ambient Temp	Operation Open		-40 to +60°C (+90°C)*1				
	Operation Enclosed		-40 to +40°C				
	with Thermal Overload Relay Open		-25 to +60°C				
	with Thermal Overload Relay Enclosed		-25 to +40°C				
	Storage		-50 to +90°C				
Frequency of Operations z Ops/hr	Switching Without Load		7,000				
	AC3, I _e		600		400		
	AC4, I _e		120				
	DC3, I _e		600		400		
Switching Time at Control Voltage Us ±10%*,*3	AC Operated	Make Time	10 - 25ms			12 - 28 ms	
		Release Time	8 - 15ms			8 - 15 ms	
		Arc Duration	10 - 15ms			10 - 15 ms	
Mech. Life	AC Operated		10 x 10 ⁶				
	DC Operated with Double Winding Coil		10 x 10 ⁶				
Curr. Heat Loss	Power Loss Per Pole (I _e /AC3 400V)		1.3W	2W	2.2W	3.9W	5.5W
	Contact Resistance Per Pole		1.2mΩ	1.2mΩ	1mΩ	1mΩ	1mΩ
Shock Resistance acc. to IEC6008-2-27 - 20ms Sine Wave NO			8g				
Shock Resistance acc. to IEC6008-2-27 - 20ms Sine Wave NC			-				

*1 With reduced control voltage range 0.9 up to 1.0 x Us and with reduced rated current I_e / AC1 according to I_e / AC3
*2 Total breaking time = release time + arc duration
*3 Values for delay of the release time of the make contact and the make time of the break contact will be increased if magnet coils are protected against voltage peaks with integrated suppressor
*4 Suitable at 690V for earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard industry): U_{imp}=8kV. Data for other conditions upon request

Part Number			MC10N-S-00-XX.. + MCA..	MC14N-S-00-XX.. + MCA..	MC18N-S-00-XX.. + MCA..	MC22N-S-00-XX.. + MCA..	MC24N-S-00-XX.. + MCA..
Aux Contact Ratings MCA10 (NO) MCA01 (NC)	AC1 I _e (=I _m) open at 40°C		10A				
	AC15, 220-240V		3A				
	AC15, 380-415V		2A				
	AC15, 440V		1.6A				
	Fuse "Typ1" gl. (gG)		20A max.				

Part Number			MC32N-S-00-XX.. + MCA..	MC40N-S-00-XX.. + MCA..	MC50N-S-00-XX.. + MCA..	MC62N-S-00-XX.. + MCA..	MC74N-S-00-XX.. + MCA..
Aux Contact Ratings MCA10 (NO) MCA01 (NC)	AC1 I _e (=I _m) open at 40°C		10A				
	AC15, 220-240V		3A				
	AC15, 380-415V		2A				
	AC15, 440V		1.6A				
	Fuse "Typ1" gl. (gG)		20A max.				

NOTE: Maximum number of auxiliaries that can be added to AC operated contactors is 4. Maximum that can be added to DC operated contactors is 3.

Resistance to Climatic Conditions acc. to IEC60068

Open- type devices are climate-resistant in the constant climate according to IEC60068-2-78 (this is a climate with an ambient temperature of 40°C and an atmospheric humidity of 90 to 95%). Enclosed devices are climate-resistant in an alternating climate according to IEC 68-2-30 (this is a moist alternating climate with a 24-hour cycle between climates with an ambient temperature of 25°C, and an atmospheric humidity of 95 to 100% and an ambient temperature of 40°C, and an atmospheric humidity of 90 to 96% in the presence of condensation during rises in temperature). Note: Maximum operating altitude of 2000m above sea level.

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IMO

Technical Datasheet

Technical Data acc. to UL508

Part Number				MC10N	MC14N	MC18N	MC22N	MC24N	
Main Contact Ratings	Rated Operational Current "General Use"	NO		25A	25A	30A	30A	50A	
		NC		25A	25A	30A	30A	40A	
Motor DOL 3-Phase at 60Hz	Rated Operational Power	110-120V	hp	1.5	2	2	3	5	
		200V	hp	3	3	5	5	7.5	
		220-240V	hp	3	3	7.5	7.5	10	
		277V	hp	3	5	7.5	7.5	7.5	
		380-415V	hp	5	5	10	10	10	
		440-480V	hp	5	7.5	10	15	15	
		550-600V	hp	7.5	10	15	20	20	
Motor DOL 1-Phase at 60Hz	Rated Operational Power AC Motors at 60Hz (1ph)	110-120V	hp	0.5	0.75	1	1.5	1.5	
		200V	hp	1	1.5	2	3	3	
		220-240V	hp	1.5	2	3	3	5	
		277V	hp	2	3	3	5	5	
		380-415V	hp	3	3	5	5	5	
		440-480V	hp	3	5	5	7.5	7.5	
		550-600V	hp	3	5	7.5	10	10	
Motor DOL 3-phase acc. to ASME A17.5	Rated Operational Current		600V	A	-	-	-	15	
	Rated Operational Power 3-phase Motors for Elevators (500,000 Operations)	110-120V	hp	-	-	-	-	2	
		200V	hp	-	-	-	-	3	
		220-240V	hp	-	-	-	-	5	
		440-480V	hp	-	-	-	-	10	
		550-600V	hp	-	-	-	-	10	
	Rated Current 2 Series Contacts		600V	A	-	-	-	20.5	22
	Fuse Class RK5 / Short-circuit current			A/kA	50/5	50/5	70/5	90/5	90/5
	Fuse Class T / Short-circuit current			A/kA	45/100	50/100	70/100	90/100	110/100
	Rated voltage			V	600	600	600	600	600
Auxiliary Contacts (cULus)				A600	A600	A600	A600	-	

Part Number				MC32N	MC40N	MC50N	MC62N	MC74N	
Main Contact Ratings	Rated Operational Current "General Use"	NO		65A	80A	110A	120A	130A	
		NC		50A	65A	-	-	-	
Motor DOL 3-Phase at 60Hz	Rated Operational Power	110-120V	hp	5	7.5	10	10	10	
		200V	hp	10	10	15	20	25	
		220-240V	hp	10	15	20	25	30	
		277V	hp	10	15	20	25	30	
		380-415V	hp	15	20	25	30	40	
		440-480V	hp	20	25	30	40	50	
		550-600V	hp	25	30	40	50	50	
Motor DOL 1-Phase at 60Hz	Rated Operational Power AC Motors at 60Hz (1ph)	110-120V	hp	2	3	3	5	7.5	
		200V	hp	5	7.5	7.5	10	15	
		220-240V	hp	5	7.5	10	15	15	
		277V	hp	7.5	10	10	15	15	
		380-415V	hp	7.5	10	15	20	20	
		440-480V	hp	10	15	20	25	25	
		550-600V	hp	15	20	25	30	30	
Motor DOL 3-phase acc. to ASME A17.5	Rated Operational Current		600V	A	22	-	27	37	-
	Rated Operational Power 3-phase Motors for Elevators (500,000 Operations)	110-120V	hp	3	-	3	5	-	
		200V	hp	5	-	7.5	10	-	
		220-240V	hp	7.5	-	7.5	10	-	
		440-480V	hp	15	-	20	25	-	
		550-600V	hp	20	-	25	30	-	
	Rated Current 2 Series Contacts		600V	A	27	34	44	52	66
	Fuse Class RK5 / Short-circuit current			A/kA	125/5	175/5	200/5	250/5	300/5
	Fuse Class T / Short-circuit current			A/kA	150/100	150/100	175/100	175/100	175/100
Rated voltage			V	600	600	600	600	600	
Auxiliary Contacts (cULus)				-	-	-	-	-	

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Technical Datasheet

Cable Cross Sections

	MC10N-S to MC22N-S		MC24N-S to MC40N-S		MC50N-S to MC74N-S	
	Contacts	Coils	Contacts	Coils	Contacts	Coils
Solid Strand (mm ²)	0.75 - 6.0	0.75 - 2.5	1.25 - 25.0	0.75 - 2.5	4.0 - 50.0	0.75 - 2.5
Flexible Strand (mm ²)	1.0 - 4.0	0.5 - 2.5	2.5 - 16.0	0.5 - 2.5	10.0 - 35.0	0.5 - 2.5
Solid Strand (AWG)	18 - 10	14 - 12	16 - 10	14 - 12	12 - 10	14 - 12
Flexible Strand (AWG)	18 - 10	18 - 12	14 - 4	18 - 12	10 - 0	18 - 12
Cables per Clamp	1	2	1	2	1	2
Terminal Screws	M3.5	M3.5	M5	M5	M6	M6
Screwdriver	Pozidrive Pz2	Pozidrive Pz2	Pozidrive Pz2	Pozidrive Pz2	Pozidrive Pz3	Pozidrive Pz2
Tightening Torque (Nm)	0.8 - 1.4	0.8 - 1.4	2.5 - 3.0	0.8 - 1.4	3.5 - 4.5	0.8 - 1.4
Tightening Torque (lb.inch)	7 - 12	7 - 12	22 - 26	7 - 12	31 - 40	7 - 12

Coil

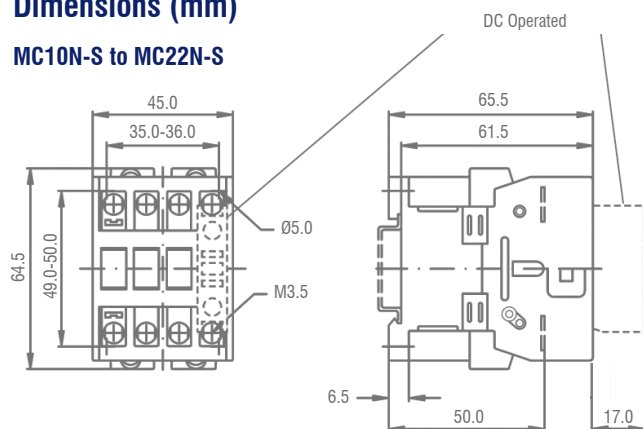
	MC10N-S to MC22N-S		MC24N-S to MC40N-S		MC50N-S to MC74N-S	
	AC Operated	DC Operated	AC Operated	DC Operated	AC Operated	DC Operated
Operation Range	0.85 - 1.1	0.8 - 1.1	0.85 - 1.1	0.8 - 1.1	0.85 - 1.1	0.8 - 1.1
Inrush	33 - 45VA	75W	90 - 115VA	140W	140 - 165VA	200W
Sealed	7 - 10VA	2W	9 - 13VA	2W	13 - 18VA	6W

Weights

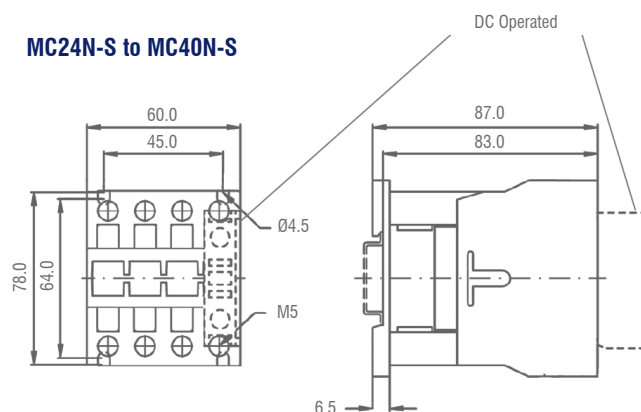
	MC10N-S to MC22N-S		MC24N-S to MC40N-S		MC50N-S to MC74N-S	
	AC Operated	DC Operated	AC Operated	DC Operated	AC Operated	DC Operated
Single Unit	0.23kg	0.25kg	0.65kg	0.67kg	1.10kg	1.12kg

Dimensions (mm)

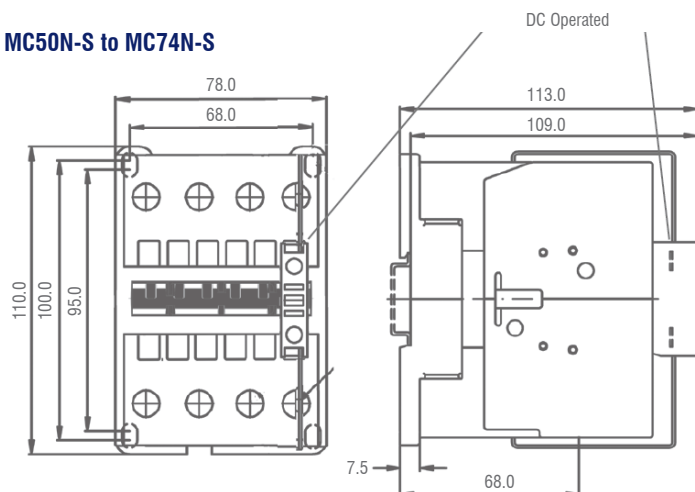
MC10N-S to MC22N-S



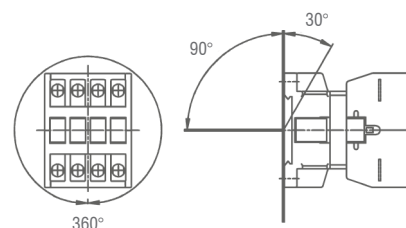
MC24N-S to MC40N-S



MC50N-S to MC74N-S



Mounting Position



MC 4-Pole Contactors

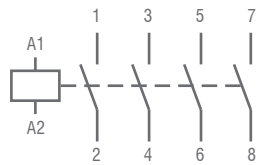
with Universal Coil



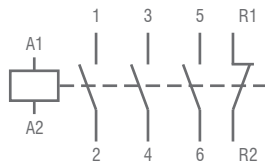
Wiring Diagrams

AC Operated

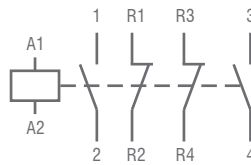
S-00-40 (4 NO)



S-00-31 (3 NO, 1 NC)



S-00-22 (2 NO, 2 NC)



S-00-04 (4 NC)

