

MC 4-Pole Contactors



Key Features

- From 10A up to 74A AC3
- From 25A up to 130A AC1
- DIN Rail Mounting
- International Approvals
- Data according to IEC 947 / EN 60947



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 24AC

Series
Standard Contactor: **MC**

AC3 Rating

AC3 Rating	10N	15kW / 32A	32N	18.5kW / 40A	40N	22kW / 50A	50N	30kW / 62A	62N	37kW / 74A	74N
4kW / 10A	10N										
5.5kW / 14A	14N										
7.5kW / 18A	18N										
11kW / 22A	22N										
11kW / 24A	24N										

Switching Type
Standard: **S**

Aux. Contact Configuration
00: No Aux Contacts

Main Contacts

Code	Description
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*

24AC	24DC
110AC	48DC
230AC	110DC
400AC	

* Other coil voltages available. Please contact IMO for more info.

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 _{th}) 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 _{eff} 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 U _s ±10% z, *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 _e /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		-	

MC 4-Pole Contactors



Technical Datasheet

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 _{mf} at U _e =690V~	500A	500A	700A	900A	900A
	Breaking Capacity I _{bf} 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%*2,*3	AC Operated	Make Time	10 - 25ms			12 - 28 ms
		Release Time	8 - 15ms			8 - 15 ms
		Arc Duration	10 - 15ms			10 - 15 ms
	DC Operated	Make Time	10 - 20ms			12 - 23 ms
		Release Time	10 - 15ms			10 - 18 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 ⁵				
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.

MC 4-Pole Contactors



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)				-	-	-	-	-

MC 4-Pole Contactors



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

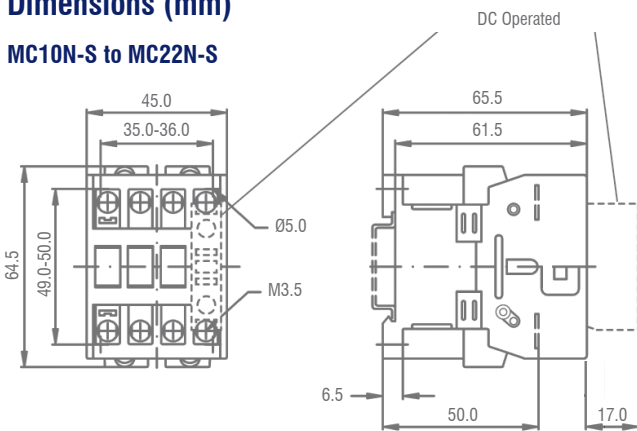
	MC10N-S to MC22N-S		MC24N-S to MC40N-S		MC50N-S to MC74N-S	
	AC Operated	DC Operated	AC Operated	DC Operated	AC Operated	DC Operated
Operation Range	0.85 - 1.1	0.8 - 1.1	0.85 - 1.1	0.8 - 1.1	0.85 - 1.1	0.8 - 1.1
Inrush	33 - 45VA	75W	90 - 115VA	140W	140 - 165VA	200W
Sealed	7 - 10VA	2W	9 - 13VA	2W	13 -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

Weights

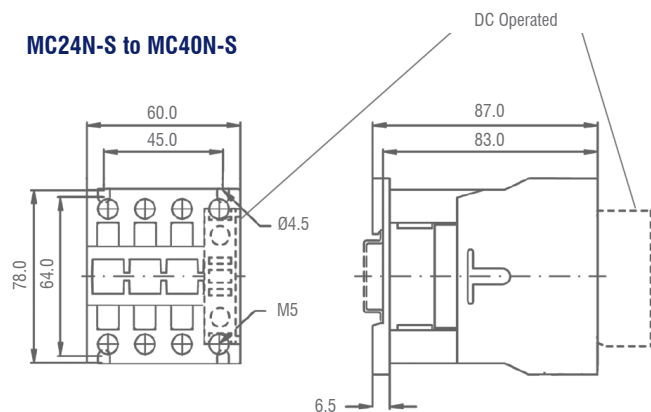
	MC10N-S to MC22N-S		MC24N-S to MC40N-S		MC50N-S to MC74N-S	
	AC Operated	DC Operated	AC Operated	DC Operated	AC Operated	DC Operated
Single Unit	0.23kg	0.25kg	0.65kg	0.67kg	1.10kg	1.12kg

Dimensions (mm)

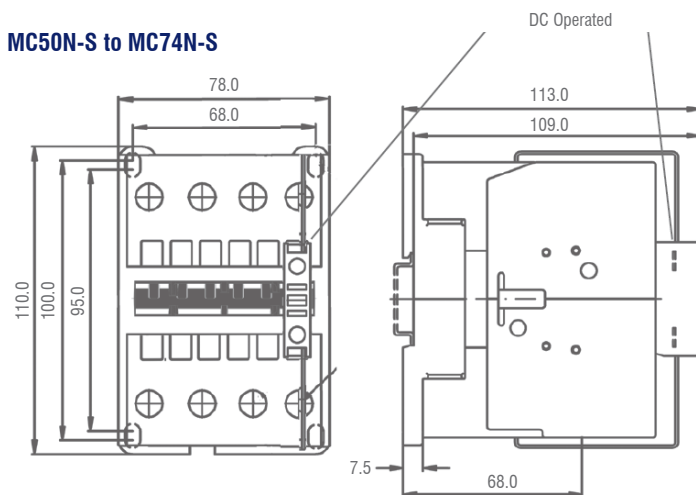
MC10N-S to MC22N-S



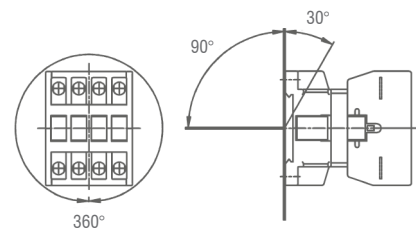
MC24N-S to MC40N-S



MC50N-S to MC74N-S



Mounting Position



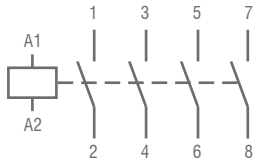
MC 4-Pole Contactors



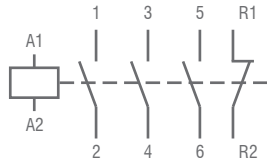
Technical Datasheet

Wiring Diagrams AC Operated

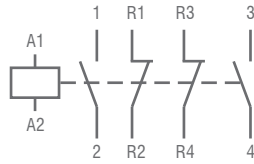
S-00-40 (4 NO)



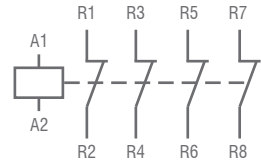
S-00-31 (3 NO, 1 NC)



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

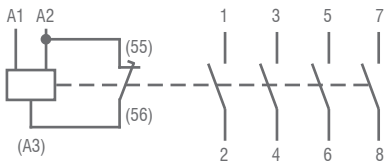


S-00-04 (4 NC)

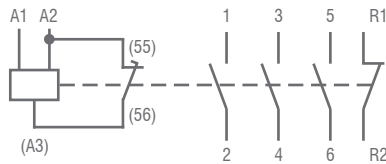


DC Operated

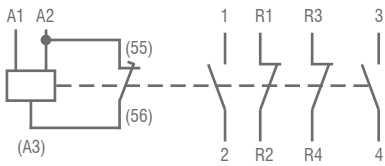
S-00-40 (4 NO)



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



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



S-00-04 (4 NC)

