



40AF

MC-32a	MC-40a
•	•
3pole	
1000V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
55	60
7.5	11
32	40
15	18.5
32	40
18.5	22
28	32
18.5	22
20	23
22	22
17	17
600	700
260	300
160	160
100	100
70	70
55	55
50	50
55	60
2	2
5	5
7.5	15
10	15
20	30
25	30
1P	2
0.55	
69 × 83 × 90	
0.77	
69 × 83 × 117.1	

2a2b
UA-1
UA-2, UA-4



MT-32/ □
•
690V
690V
6kV
10A, 20
0.1~40A
0.17
45 × 75 × 90



65AF

MC-50a	MC-65a
•	•
•	•
3pole	
1000V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
12 mil. operations	
2 mil. operations	
100	115
15	18.5
55	65
22	30
50	65
30	33
43	60
30	33
28	35
30	30
23	23
1000	1050
550	700
330	380
250	270
150	200
90	120
87	100
100	115
3	5
10	15
20	25
25	30
40	50
50	60
1.05	
79 × 106 × 119	
1.3	
79 × 106 × 146.4	

2a2b
UA-1
UA-2, UA-4



MT-63/ □
•
•
690V
690V
6kV
10A, 20
4~65A
0.31/0.33
55 × 81 × 100



100AF

MC-75a	MC-85a	MC-100a
•	•	•
•	•	•
3pole		
1000V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
12 mil. operations		
2 mil. operations		
125	135	160
22	25	30
75	85	105
37	45	55
75	85	105
37	45	55
64	75	85
37	45	55
42	45	65
37	37	37
28	28	28
1100	1200	1320
750	800	900
400	450	500
300	350	400
220	270	270
140	170	180
114	150	160
125	135	160
5	7.5	10
15	15	20
25	30	30
30	40	40
50	60	75
60	75	75
1.93		
94 × 140 × 135.8		
2.8		
94 × 140 × 172.3		




















2a2b
UA-1
UA-2, UA-4



MT-95/ □
•
•
690V
690V
6kV
10A, 20
7~100A
0.48/0.5
70 × 97 × 110

Connections

Connections

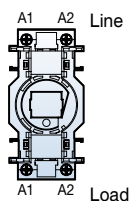
Wire type		Main Terminal Size							Torque			
			(AWG / mm ²)						mm(max)	[lb-in]	[Nm]	[kgf-cm]
MC-6a/9a		M3.5	18~10 / 1~6	18~10 / 1~6	18~10 / 1~6			8.3	10	1.13	12	
MC-12a			16~10 / 1.5~10	16~10 / 1.5~10	16~10 / 1.5~10							
MC-18a			16~8 / 1.5~10	16~8 / 1.5~10	16~8 / 1.5~10							
MC-9b		M4	18~10 / 1~6	18~10 / 1~6	18~10 / 1~6			9.6	20	2.25	23	
MC-12b			18~10 / 1~6	16~10 / 1~6	16~10 / 1~6							
MC-18b			18~10 / 1~6	16~8 / 1.5~10	16~8 / 1.5~10							
MC-22b			18~10 / 1~6	14~8 / 2.5~10	14~8 / 2.5~10							
MC-32a		M5	18~10 / 1~6	12~8 / 2.5~10	12~8 / 2.5~10			12.8	35	4	41	
MC-40a			18~10 / 1~6	8~6 / 10~16	8~6 / 10~16							
MC-50a		M6	-	10~4 / 6~25	10~4 / 6~25			14	35	4	41	
MC-65a			-	8~3 / 10~35	8~3 / 10~35							
MC-75a		M8	-	8~2 / 10~35	8~2 / 10~35			17	45	5.1	52	
MC-85a			-	8~1/0 / 10~50	8~1/0 / 10~50							
MC-100a			-	8~2/0 / 10~70	8~2/0 / 10~70							
MC-130a		M8	-	3~2/0 / 35~70	3~2/0 / 35~70			24.5	80	9.1	93	
MC-150a			-	3~4/0 / 35~95	3~4/0 / 35~95							
MC-6~150a Aux./Coil		M4	20~14 / 0.5~2.5	18~12 / 0.75~2.5	18~12 / 0.75~2.5			7.6	10	1.13	12	
MC-185a		M10	-	1~4/0 / 50~95	1~4/0 / 50~95			25	130	14.7	150	
MC-225a			-	1/0~300 / 50~150	1/0~300 / 50~150							
MC-265a		M12	-	3/0~500 / 95~240	3/0~500 / 95~240			30	200	22.6	230	
MC-330a			-	4/0~500 / 95~240	4/0~500 / 95~240							
MC-400a			-	350~700 / 185~185×2	350~700 / 185~185×2							
MC-500a		M16	-	350~800 / 185~240×2	350~800 / 185~240×2			40	500	56.5	576	
MC-630a			-	600~2000	-							
MC-800a			-	1700~Busbar	-							
MC-185~800a Aux./Coil		M4	16~10 / 1.25~5.5	16~10 / 1.25~5.5	16~10 / 1.25~5.5			7.6	15	1.75	18	
MC-1260a		M12	-	5mm×100mm×2ea	-			-	200	22.6	230	
MC-1400a		M12	-	5mm×100mm×2ea	-			-	200	22.6	230	
MC-1700a			-	5mm×100mm×3ea	-							
MC-2100a			-	5mm×100mm×4ea	-							

Control coil characteristics (3pole)



Frame size	18AF	22AF	40AF	65AF	100AF	150AF(A)
Type	MC-6a MC-9a MC-12a MC-18a MR-4, 6, 8	MC-9b MC-12b MC-18b MC-22b	MC-32a MC-40a	MC-50a MC-65a MD-30a	MC-75a MC-85a MC-100a MD-60a MD-100a	MC-130a MC-150a
AC coil						
Control voltage [Uc]						48, 100-240
50Hz [V]	24, 32, 36, 42, 48, 80, 100, 110, 120, 220, 230, 240, 380, 400, 415, 440, 500, 550V					110-120, 220-240,
60Hz [V]	24, 48, 110, 120, 200, 208, 220, 230, 240, 277, 380, 440, 480, 600V					300, 380-440, 500V
Voltage limit [Uc]	85 - 110%					
Coil consumption at 20°C						
AC 220V Inrush [VA]	70	70	90	110	240	110
60Hz Holding [VA]	9	9	9	13	17	18
Heat dissipation [W]	2.3	2.3	2.7	2.8	5.4	2.7
Operating time						
Closing [ms]	15 ... 30	15 ... 30	15 ... 30	15 ... 30	15 ... 30	20 ... 40
Opening [ms]	4 ... 19	4 ... 19	4 ... 19	4 ... 19	10 ... 30	50 ... 70
DC coil						
Control voltage [Uc]	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V					24, 48, 70-110, 100-220, 110, 220V
Voltage limit [Uc]	85-110%					
Coil consumption at 20°C						
DC 110V Inrush [W]	6	6	9	9	18	213
Holding [W]	6	6	9	9	18	7.5
Time constant (L/R) [ms]	28	28	28	65	75	
Operating time						
Closing [ms]	40 ... 60	40 ... 60	50 ... 65	50 ... 65	100 ... 120	70 ... 80
Opening [ms]	4 ... 19	4 ... 19	4 ... 19	4 ... 19	10 ... 25	60 ... 70

Note) Either semi-electronic coil(A) or electronic coil(B) can be chosen for MC-130a and MC-150a



Note) A1(A2) in line side is internally connected to A1(A2) in load side.

Contactors (65AF)

Description

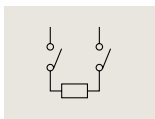
- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- Both screw and Box terminal (lug) type are available
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available rating
- 2NO2NC Auxiliary contact built-in is possible as standard
- Degree of protection: IP20

Rating

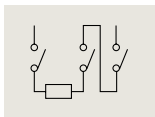


MC-65a

Contactor type			MC-50a		MC-65a		
			kW	A	kW	A	
AC duty	AC3	200/240V	15	55	18.5	65	
		380/440V	22	50	30	65	
		500/550V	30	43	33	60	
		690V	30	28	33	35	
		1000V	30	23	30	23	
	AC4	200/240V	7.5	35	11	50	
		380/440V	15	32	22	47	
	AC1		-	100	-	115	
	DC1 duty (L/R=1ms)	2-pole	24V	-	50	-	50
in series			48V	-	40	-	40
110V			-	35	-	35	
3-pole		24V	-	50	-	65	
		in series	48V	-	50	-	65
		110V	-	50	-	65	
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	45	-	45	
		in series	48V	-	25	-	25
		110V	-	15	-	15	
	3-pole	24V	-	50	-	50	
		in series	48V	-	35	-	35
		110V	-	30	-	30	
Directly mountable Overload relay			MT-63				
Conductor size (solid, stranded)	AWG		10~4		8~3		
	(the max. number of conducts: 2)	mm ²	6~25		10~35		
Conductor type			65/75°C Cu-wire only				



2pole for DC contact



3pole for DC contact



Coil voltage

AC	50Hz	24, 32, 36, 42, 48, 80, 100, 110, 120, 220, 230, 240, 380, 400, 415, 440, 500, 550V
	60Hz	24, 48, 110, 120, 200, 208, 220, 230, 240, 277, 380, 440, 480, 600V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508
- CCC



40AF		65AF		100AF		
MS-32a	MS-40a	MS-50a	MS-65a	MS-75a	MS-85a	MS-100a
3		3		3		
690V		690V		690V		
IP20		IP20		IP20		
55	60	100	115	125	135	160
32	40	55	65	75	85	105
32	40	50	65	75	85	105
32	40	50	65	75	85	105
32	40	50	65	75	85	105
28	32	43	60	64	75	85
20	23	28	35	42	45	65
17	17	23	23	28	28	28
7.5	11	15	18.5	22	25	30
15	18.5	22	30	37	45	55
15	18.5	22	30	37	45	55
15	18.5	22	30	37	45	55
18.5	22	30	33	37	45	55
18.5	22	30	33	37	45	55
22	22	30	30	37	37	37
320	400	500	650	750	850	1050
256	320	400	520	600	650	840
2	2	2	2	2	2	2
1800	1800	1800	1800	1800	1800	1800

MC-32a	MC-40a	MC-50a	MC-65a	MC-75a	MC-85a	MC-100a
-	-	-	-	-	-	-
MT-32/3K		MT-63/3K		MT-95/3K		
MT-32/3H		MT-63/3H		MT-95/3H		
MT-32/2H		MT-63/2H		MT-95/2H		
MT-32/3D		MT-63/3D		MT-95/3D		
0.1~40A		4~65A		7~100A		

Enclosed motor starters, Steel enclosure

Description



- Full voltage type
- MW-□a/MW-□b: Steel enclosure without buttons
- MW-□aB/MW-□bB: Steel enclosure ON/OFF buttons
- Contactors: 3 pole with AC coil
- Overload relay With differential or non-differential type
- Screw mountable
- Degree of protection: IP40

Ratings

Type	AC3 Ratings					Devices combined	
	220 ~ 240V	380 ~ 440V	500 ~ 550V	690V	1000V	Contactor relay	Overload
MW-6a(B)	2.2kW 9A	3kW 7A	3kW 6A	3kW 4A	-	MC-6a	MT-12 (0.1~18A)
MW-9a(B)	2.5kW 11A	4kW 9A	4kW 7A	4kW 5A	-	MC-9a	
MW-12a(B)	3.5kW 13A	5.5kW 12A	7.5kW 12A	7.5kW 9A	-	MC-12a	
MW-18a(B)	4.5kW 18A	7.5kW 18A	7.5kW 13A	7.5kW 9A	-	MC-18a	
MW-9b(B)	2.5kW 11A	4kW 9A	4kW 7A	4kW 6A	-	MC-9b	MT-32 (0.1~22A)
MW-12b(B)	3.5kW 13A	5.5kW 12A	7.5kW 12A	7.5kW 9A	-	MC-12b	
MW-18b(B)	4.5kW 18A	7.5kW 18A	7.5kW 13A	7.5kW 9A	-	MC-18b	
MW-22b(B)	5.5kW 22A	11kW 22A	15kW 20A	15kW 18A	-	MC-22b	
MW-32a(B)	7.5kW 32A	15kW 32A	18.5kW 28A	18.5kW 20A	22kW 17A	MC-32a	MT-32 (0.1~40A)
MW-40a(B)	11kW 40A	18.5kW 40A	22kW 32A	22kW 23A	22kW 17A	MC-40a	MT-63 (4~65A)
MW-50a(B)	15kW 55A	22kW 50A	30kW 43A	30kW 28A	30kW 23A	MC-50a	
MW-65a(B)	18.5kW 65A	30kW 65A	33kW 60A	33kW 35A	33kW 26A	MC-65a	MT-95 (7~100A)
MW-75a(B)	22kW 75A	37kW 75A	37kW 64A	37kW 42A	37kW 28A	MC-75a	
MW-85a(B)	25kW 85A	45kW 85A	45kW 75A	45kW 45A	45kW 33A	MC-85a	
MW-100a(B)	30kW 105A	55kW 105A	55kW 85A	55kW 65A	45kW 33A	MC-100a	



Internal device

Overload relay setting range, Amp.

MT-12		MT-32		MT-63		MT-95	
0.1 - 0.16	5 - 8	0.1 - 0.16	5 - 8	4 - 6	28 - 40	7 - 10	54 - 75
0.16 - 0.25	6 - 9	0.16 - 0.25	6 - 9	5 - 8	34 - 50	9 - 13	63 - 85
0.25 - 0.4	7 - 10	0.25 - 0.4	7 - 10	6 - 9	45 - 65	12 - 18	70 - 95
0.4 - 0.63	9 - 13	0.4 - 0.63	9 - 13	7 - 10		16 - 22	80 - 100
0.63 - 1	12 - 18	0.63 - 1	12 - 18	9 - 13		18 - 25	
1 - 1.6		1 - 1.6	16 - 22	12 - 18		24 - 36	
1.6 - 2.5		1.6 - 2.5	18 - 25	16 - 22		28 - 40	
2.5 - 4		2.5 - 4	22 - 32	18 - 25		34 - 50	
4 - 6		4 - 6	28 - 40	24 - 36		45 - 65	



Coil voltage

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 100, 110, 120, 200, 208, 220, 230, 240, 277, 380, 480, 600V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508