MB Series Mini Contactors

IMO

Technical Datasheet

Key Features

- DIN Rail or PCB mounting
- AC or DC operation
- Bifurcated contacts for long life
- Fingertouch protection
- Designed to EN 60947-4-1

Options & Ordering Codes

MB09 - S - 10 - 24AC

Series

Relay 3A AC15, I_{th} 10A	**MR07**
Contactor 9A AC3	**MB09**
Contactor 12A AC3	**MB12**

Mounting Type

DIN Rail mount screw terminal	**S**
PCB mount	**P**
Faston terminal 1 x 6.3mm or 2 x 2.8mm	**F**
Reversing, DIN Rail Mount*2	**R-S**
Reversing, PCB Mount*3	**R-P**

Coil Voltage

24	24V AC 50/60Hz
110	110-115V AC 50Hz, 120-125V AC 60Hz
230	220-230V AC 50Hz, 240V AC 60Hz
400	380-400V AC 50Hz, 440V AC 60Hz
=24 or 24DC	24V DC
235*1	220-240V AC 50Hz, 240-260V AC 60Hz

Contact Arrangement

MR07		MB09 & MB12	
40	4 NO	**10**	3 NO + 1NO auxiliary
31	3 NO + 1 NC	**01**	3 NO + 1 NC auxiliary
22	2 NO + 2 NC	**0040**	4 NO (not available in R-P)

*1 Voltage available on request. Additional coil votages not shown above are also available on request. Contact IMO.

*2 MB09, MB12 models only.

*3 MB09 models only.

Technical Data according to IEC, VDE and BS

Type		MR07-S	MR07-P	MB09-S MB09-R-S	MB09-P MB09-R-P	MB12-S MB12-R-S	MB12-P
Mounting		DIN	Printed Circuit	DIN	Printed Circuit	DIN	Printed Circuit
Main Contacts	Rated Insluation Volts	690	690	690	690	690	690
Max. Frequency of Operation	AC15 OPS/HR	3000		-		-	
	AC3 OPS/HR	-		600		700	
	Mechanical Life OPS	5 million		5 million		5 million	
	AC1 Amps	16		20	16	20	16
	AC3 Amps 230V	-		11.5		14.5	
	380-400V	-		9		12	
	KW 230V	-		3		4	
	380-400V	-		4		5.5	
Short Circuit Protection							
	Class gl. Highest Fuse Amps	10		20	16	20	
	Highest Fuse Amps (without welding)	10		10	10	10	
Auxiliary Contacts	AC15 Amps 230V	3		3		3	
	Amps 380-415V	2		2		2	
Coil Operation	AC and DC Range	0.85 - 1.1		0.85 - 1.1		0.85 - 1.1	
	AC Inrush VA	25		25		25	
	AC Sealed VA	5		5		5	
	AC Sealed W	1.2		1.2		1.2	
	DC Inrush and Sealed W	2.5		2.5		2.5	
Cable Cross Section	Solid mm²	0.75 - 2.5		0.75 - 2.5		0.75 - 2.5	
Contacts and Coil	Flexible mm²	0.75 - 2.5		0.75 - 2.5		0.75 - 2.5	
	Flexible with Cable End mm²	0.5 - 2.5		0.5 - 2.5		0.5 - 2.5	
	No. of Conductors	2		2		2	
Maximum Temperature	Normal Use °C	-40 to +60		-40 to +60		-40 to +60	
	Storage °C	-50 to +90		-50 to +90		-50 to +90	

NOTE: Refer to IMO for UL and CSA ratings.

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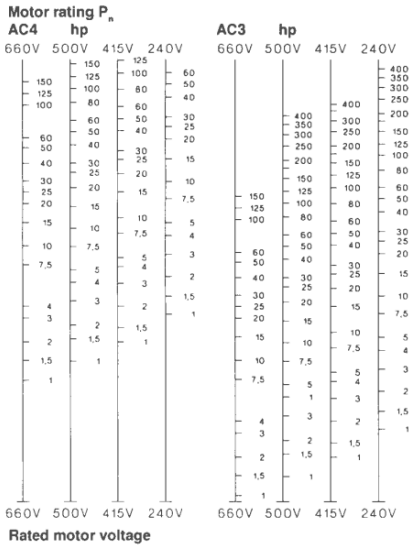
Technical Data according to UL508

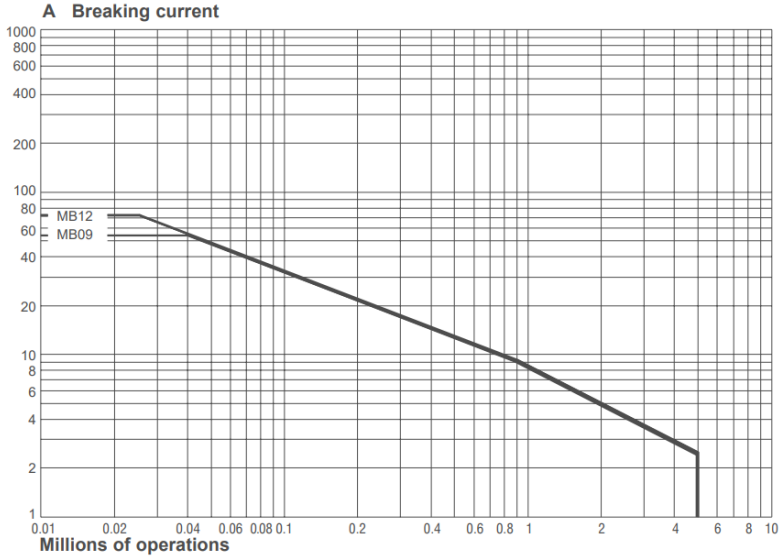
Type				MR07	MB09-S MB09-R-S	MB09-F	MB09-P	MB12 MB12-R-S	HK	MBA
Main Contact Ratings	Rated Operational Current "General Use"		A	10	15	15	20	20	10	
Motor 3-Phase at 60Hz	Rated Operational Power	110-120V	hp	-	1.5			2	-	
		200-208V	hp	-	3			3	-	
		220-240V	hp	-	3			3	-	
		440-480V	hp	-	5			7.5	-	
		550-600V	hp	-	7.5			10	-	
Motor 1-Phase at 60Hz	Rated Operational Power	110-120V	hp	-	0.5			0.75	-	
		200-208V	hp	-	1			1.5	-	
		220-240V	hp	-	1.5			2	-	
Fuse / Short Circuit Current			A/kA	-	30 / 5			30 / 5	-	
Rated Voltage			V AC	600	600		600*	600	600	
Auxiliary Contacts	Heavy Pilot Duty		AC	A600						
	Standard Pilot Duty		DC	Q600						

*Pollution Degree Ui	CTI - PWB	Ui
2	≥100	600V
3	≥400	480V
3	100 - 400	240V

Connecting Screws		M3.5
Screwdriver	Pozidrive	Pz2
Tightening Torque	Nm	0.8 - 1.4

Contact Life MB09/MB12





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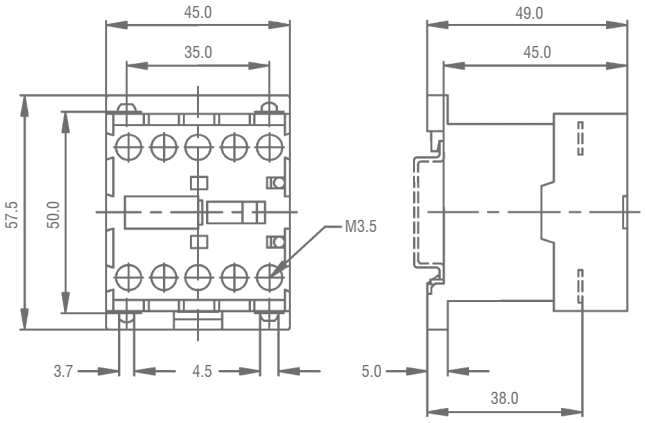
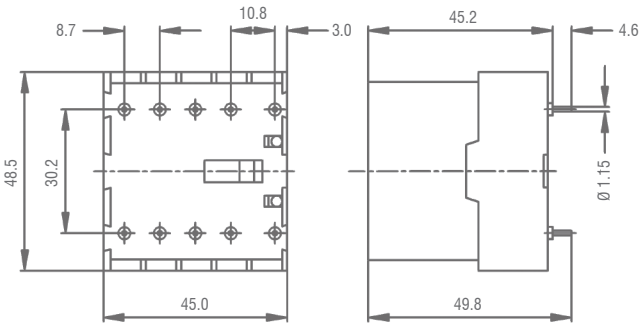
Dimensions (mm)

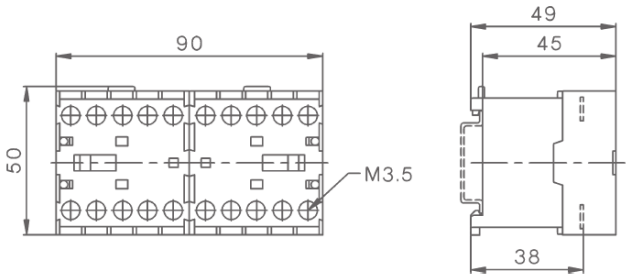
DIN Mount Screw Terminal



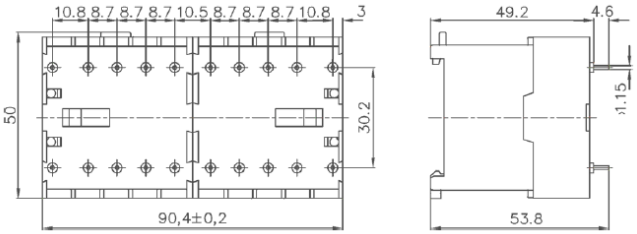
PCB Mount



Reversing DIN Mount Screw Terminal



Reversing PCB Mount



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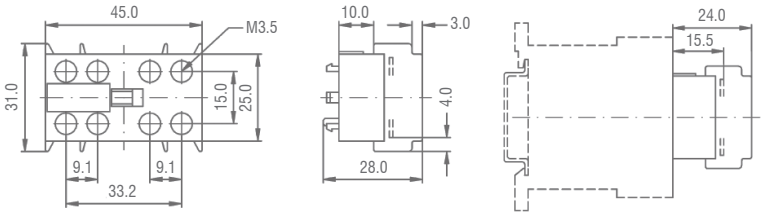
Auxiliary Contacts

Part	Contacts	For Use With	Fitting Directions
HK11	1NO + 1NC	MR07	Top Fitting
HK22	2NO + 2NC	MR07	Top Fitting
MBA-11	1NO + 1NC	MB09 / MB12	Top Fitting
MBA-22	2NO + 2NC	MB09 / MB12	Top Fitting
MBA-11V	1NO + 1NC	MB09-R-S-01	Left Side Fitting
MBA-11X	1NO + 1NC	MB09-R-S-01	Right Side Fitting

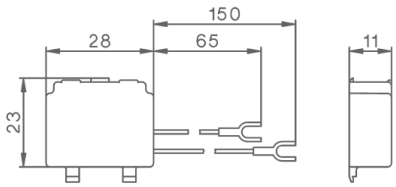
Auxiliary Contact Ratings

AC1 (I_{th})	10A	690V AC
AC15	3A	230V AC
	2A	400V AC



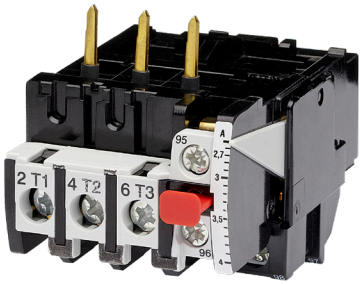
Coil Suppressors

Part	Votlage Range	Capacitance / Resistance
RC-MB-24	12-48V AC/DC	1600nF / 22Ω
RC-MB-110	48-127V AC/DC	680nF / 270Ω
RC-MB-230	110-250V AC/DC	220nF / 2200Ω

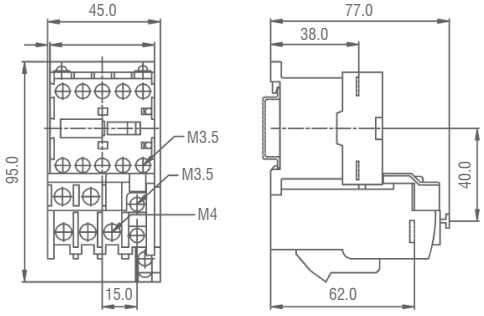


Overloads

- Manual Reset
- Single Phase or Three Phase Protection
- Trip & Alarm Contacts
- Ambient Tempterature Compensation -25 to +40°C



Part	Current Range
U12/16E0.18K1	0.12 - 0.18
U12/16E0.27K1	0.18 - 0.27
U12/16E0.4K1	0.27 - 0.4
U12/16E0.6K1	0.4 - 0.6
U12/16E0.9K1	0.6 - 0.9
U12/16E1.2K1	0.8 - 1.2
U12/16E1.8K1	1.2 - 1.8
U12/16E2.7K1	1.8 - 2.7
U12/16E4K1	2.7 - 4.0
U12/16E6K1	4.0 - 6.0
U12/16E9K1	6.0 - 9.0
U12/16E11K1	8.0 - 11.0
U12/16E14K1	10.0 - 14.0



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