

# MB Series Mini Contactors



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 <sub>m</sub> 10A	<b>MR07</b>
Contactors 9A AC3	<b>MB09</b>
Contactors 12A AC3	<b>MB12</b>

### Mounting Type

DIN Rail mount screw terminal	<b>S</b>
PCB mount	<b>P</b>
Faston terminal 1 x 6.3mm or 2 x 2.8mm	<b>F</b>

### Coil Voltage

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

### Contact Arrangement MR07

<b>40</b>	4 NO
<b>31</b>	3 NO + 1 NC
<b>22</b>	2 NO + 2 NC

### MB09 & MB12

<b>10</b>	3 NO + 1 NO auxiliary
<b>01</b>	3 NO + 1 NC auxiliary
<b>0040</b>	4 NO*2

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

\*2 MB09 models only.

## Technical Data according to IEC, VDE and BS

Type		MR07-S	MR07-P	MB09-S	MB09-P	MB12-S	MB12-P
Mounting		DIN	Printed Circuit	DIN	Printed Circuit	DIN	Printed Circuit
Main Contacts	Rated Insulation 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 mm <sup>2</sup>	0.75 - 2.5		0.75 - 2.5		0.75 - 2.5	
	Flexible mm <sup>2</sup>	0.75 - 2.5		0.75 - 2.5		0.75 - 2.5	
	Flexible with Cable End mm <sup>2</sup>	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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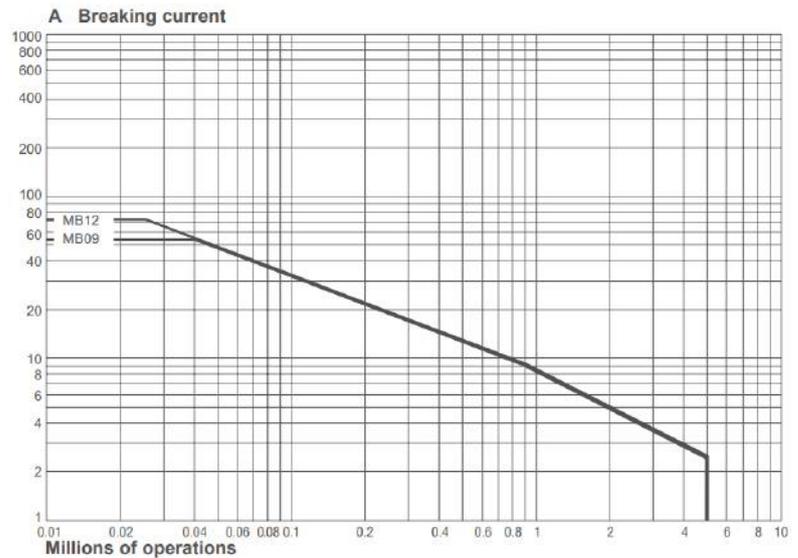
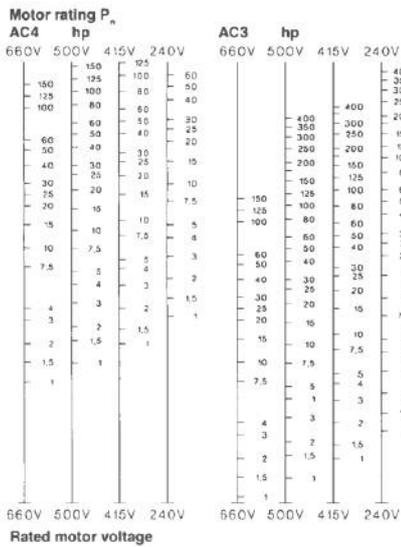
## Technical Data according to UL508

## Technical Datasheet

Type			MR07	MB09-S	MB09-F	MB09-P	MB12	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

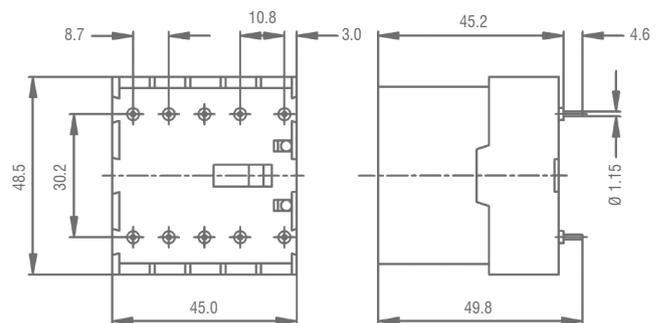
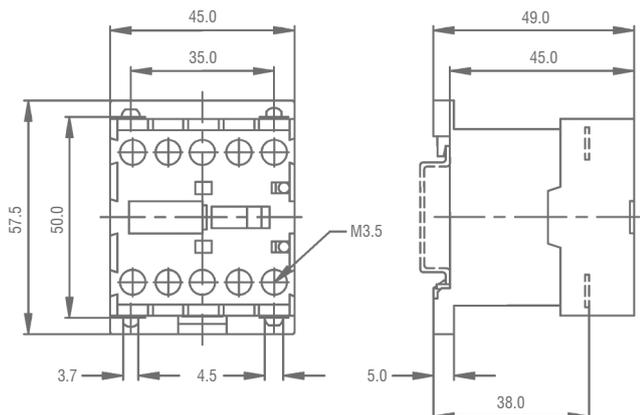
## Contact Life MB09/MB12



## Dimensions (mm)

### DIN Mount Screw Terminal

### PCB Mount



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Technical Datasheet

## Auxiliary Contacts

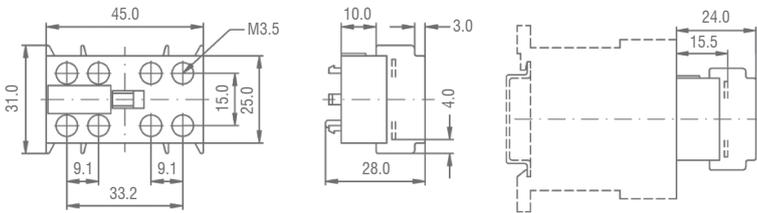
Part	Contacts	For Use With	Fitting Directions
HK11	1NO + 1NC	MR07	Top Fitting
HK22	2NO + 2NC	MR07	Top Fitting
MBA-11	1NO + 1NC	MB09 / MB12	Top Fitting
MBA-22	2NO + 2NC	MB09 / MB12	Top Fitting
MBA-11V	1NO + 1NC	MB09-R-S-01	Left Side Fitting
MBA-11X	1NO + 1NC	MB09-R-S-01	Right Side Fitting



## Auxiliary Contact Ratings

AC1 (I <sub>th</sub> )	10A	690V AC
AC15	3A	230V AC
	2A	400V AC

## Dimensions (mm)



## Overloads

- Manual Reset
- Single Phase or Three Phase Protection
- Trip & Alarm Contacts
- Ambient Temperature 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

