Altech Corp.®

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - ***to ensure that we solve your problem the first time!***

Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.

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Contactors
3 Pole / Frame Size 100AF

UL508
E108780

includes 2 x UA-1-11
Auxiliary switch,
(2NO/2NC)

Additional Auxiliaries and other accessories *see page 11-13*

		100AF		
	Type	**MC-75A***	**MC-85A***	**MC-100A***
	Number of Poles	3	3	3
	NEMA Size	2	3	3
	Standard Auxiliaries	2NO/2NC	2NO/2NC	2NO/2NC
	Coil Voltage / **Frequency**	**Part. No.**	**Part. No.**	**Part. No.**
AC Coil	24V / 50/60 Hz	MC-75A-AC24V	MC-85A-AC24V	MC-100A-AC24V
	120V / 50/60 Hz	MC-75A-AC120V	MC-85A-AC120V	MC-100A-AC120V
	208V / 60 Hz	MC-75A-AC208V	MC-85A-AC208V	MC-100A-AC208V
	230V / 50/60 Hz	MC-75A-AC230V	MC-85A-AC230V	MC-100A-AC230V
	480V / 60 Hz	MC-75A-AC480V	MC-85A-AC480V	MC-100A-AC480V
		Other AC Coil Voltages Available:		
		60 Hz: 277V, 600V		
		50/ 60Hz: 48V, 100V, 110V, 200V, 220V, 240V, 380V, 415V, 440V, 500V, 550V		
DC Coil	12V / —	MC-75A-DC12V	MC-85A-DC12V	MC-100A-DC12V
	24V / —	MC-75A-DC24V	MC-85A-DC24V	MC-100A-DC24V
		Other DC Coil Voltages Available:		
		20V, 48V, 60V, 80V, 100V, 110V, 125V, 200V, 220V, 250V		

HP Rating / UL508		**HP**	**HP**	**HP**
	Continuous current	110A	135A	160A
Single phase	110~120V	5	7.5	10
	220~240V	15	15	20
Three phase	200~208V	25	30	30
	220~240V	30	40	40
	440~480V	50	60	75
	550~600V	60	75	75

Overload Relays
(Class 10A, Differential Typical)

MT-95

Setting Ranges (A)	**Frame Size 100AF**
7-10A	MT-95/3K-10
9-13A	MT-95/3K-13
12-18A	MT-95/3K-18
16-22A	MT-95/3K-22
18-25A	MT-95/3K-25
22-32A	MT-95/3K-32
24-36A	MT-95/3K-36
28-40A	MT-95/3K-40
34-50A	MT-95/3K-50
45-65A	MT-95/3K-65
54-75A	MT-95/3K-75
63-85A	MT-95/3K-85
70-95A	MT-95/3K-95
80-100A	MT-95/3K-100

** Lug terminals available; please add "-L" to part number, e.g. MC-75A-AC24V-**L**.*
Drawings and other technical information can be found on page 14-20.

Contactors

3 Pole /Frame Size 150AF/225AF

UL508
E108780

includes 2 x UA-1-11 Auxiliary switch, (2NO/2NC)

Additional Auxiliaries and other accessories *see page 11-13*

includes 2 x AU-100-11 Auxiliary switch, (2NO/2NC)

Additional Auxiliaries and other accessories *see page 11-13*

		150AF		225AF	
	Type	**MC-130A***	**MC-150A***	**MC-185A**	**MC-225A**
	Number of Poles	3	3	3	3
	NEMA Size	3	4	4	4
	Standard Auxiliaries	2NO/2NC	2NO/2NC	2NO/2NC	2NO/2NC
	Coil Voltage / **Frequency**	**Part. No.**	**Part. No.**	**Part. No.**	**Part. No.**
AC Coil	24V 50/60 Hz	MC-130A-AC24V	MC-150A-AC24V	–	–
	110V 50/60 Hz	See AC/DC Below	See AC/DC Below	–	–
	220V 50/60 Hz	See AC/DC Below	See AC/DC Below	–	–
	300V 50/60 Hz	MC-130A-AC300V	MC-150A-AC300V	–	–
	400V 50/60 Hz	MC-130A-AC400V	MC-150A-AC400V	–	–
	500V 50/60 Hz	MC-130A-AC500V	MC-150A-AC500V	–	–
DC Coil	12V —	MC-130A-DC12V	MC-150A-DC12V	–	–
	24V —	MC-130A-DC24V	MC-150A-DC24V	–	–
	110V —	See AC/DC Below	See AC/DC Below	–	–
	220V —	See AC/DC Below	See AC/DC Below	–	–
AC/DC Common Coil	**Coil Voltage** AC 50/60Hz / DC				
	24-25V 24V	–	–	MC-185A-24V	MC-225A-24V
	48-50V 48V	–	–	MC-185A-48V	MC-225A-48V
	100-240V 100-220V	MC-130A-100/200V	MC-150A-100/200V	MC-185A-100/200V	MC-225A-100/200V
	265-347V –	–	–	MC-185A-300V	MC-225A-300V
	380-450V –	–	–	MC-185A-400V	MC-225A-400V
	440-575V –	–	–	MC-185A-500V	MC-225A-500V

HP Rating / UL508		**HP**	**HP**	**HP**	**HP**
	Continuous current	160A	210A	230A	275A
Single phase	110~120V	10	15	15	15
	220~240V	20	25	30	40
Three phase	200~208V	40	40	60	60
	220~240V	40	50	60	75
	440~480V	75	100	125	150
	550~600V	75	75	125	150

Overload Relays
(Class 10A, Differential Typical)

MT-150

Setting Ranges (A)	**Frame Size 150AF**	**Frame Size 225AF**
34-50A	MT-150/3K-50	-
45-65A	MT-150/3K-65	-
54-75A	MT-150/3K-75	-
63-85A	MT-150/3K-85	-
65-100A	-	MT-225/3K-100
80-105A	MT-150/3K-105	-
85-125A	-	MT-225/3K-125
95-130A	MT-150/3K-130	-
110-150A	MT-150/3K-150	-
100-160A	-	MT-225/3K-160
120-185A	-	MT-225/3K-185
160-240A	-	MT-225/3K-240

* *Screw terminals shown. Lug terminals* (for stranded wire) *available; please add "-L" at the end of the part number, e.g. MC-75A-AC24V-L*
Drawings and other technical information can be found on page 28-32.

Contactors

3 Pole / Frame Size 400AF

UL508
E108780

400AF

Type	MC-265A	MC-330A	MC-400A
Number of Poles	3	3	3
NEMA Size	5	5	5
Standard Auxiliaries	2NO/2NC	2NO/2NC	2NO/2NC

AC/DC Common Coil

Coil Voltage		Part. No.	Part. No.	Part. No.
AC 50/60Hz	DC			
	$			
	$			
	$			

HP Rating / UL508	HP	HP	HP
! " " " !			
#	$	$	$
#	$	$	$
#			
#			
#			
#			

Overload Relays

(Class 10A, Differential Typical)

MT-400

Setting Ranges (A)	Frame Size 400AF

Lug Terminals

Part. No.	Frame Size

Contactor 3 Pole

Contactors

3 Pole / Frame Size 800AF

UL508
E108780

includes 2 x AU-100-11 Auxiliary switch, (2NO/2NC)

Additional Auxiliaries and other accessories see page 11-13

			800AF		
	Type		**MC-500A**	**MC-630A**	**MC-800A**
	Number of Poles		3	3	3
	NEMA Size		6	6	7
	Standard Auxiliaries		2NO/2NC	2NO/2NC	2NO/2NC
	Coil Voltage		**Part. No.**	**Part. No.**	**Part. No.**
AC/DC Common Coil	**AC 50/60Hz**	**DC**			
	100-127V	100-110V	MC-500A-100V	MC-630A-100V	MC-800A-100V
	200-240V	200-220V	MC-500A-200V	MC-630A-200V	MC-800A-200V
	265-347V	–	MC-500A-300V	MC-630A-300V	MC-800A-300V
	380-450V	–	MC-500A-400V	MC-630A-400V	MC-800A-400V
	440-575V	–	MC-500A-500V	MC-630A-500V	MC-800A-500V
Rating / UL508			**HP**	**HP**	**HP**
	Continuous current		580A	660A	900A
Single phase	110~120V		–	–	–
	220~240V		–	–	–
Three phase	200~208V		150	200	200
	220~240V		200	250	300
	440~480V		400	500	600
	550~600V		400	500	600

Overload Relays

(Class 10A, Differential Typical)

MT-800

Setting Ranges (A)	**Frame Size 800AF**
200-330A	MT-800/3K-330
260-400A	MT-800/3K-400
400-630	MT-800/3K-630
520-800A	MT-800/3K-800

Lug Terminals

Part. No.	**Frame Size**
AJ-220	225AF
AJ-400	400AF
AJ-800	800AF

Drawings and other technical information can be found on page 14-20.

Reversing Contactors

Reversing contactor consists of:

- Two AC or DC contactors
- Mechanical Interlock
- Wire Set (up to frame size 100A)

Assembled Reversing Contactors

Type	Type
MC-9B/R	MC-130A/R
MC-12B/R	MC-150A/R
MC-18B/R	MC-185A/R
MC-22B/R	MC-225A/R
MC-32A/R	MC-265A/R
MC-40A/R	MC-330A/R
MC-50A/R	MC-400A/R
MC-65A/R	MC-500A/R
MC-75A/R	MC-630A/R
MC-85A/R	MC-800A/R
MC-100A/R	

To create Part No. add "/R" after frame size,
eg. MC-32A/R-AC120V, MC-32A/R-DC24V, etc.
For available coil voltages see contactor pages 5-10.

MC-40A/R

MC-65A/R

MC-100A/R

Individual Components

Mechanical Interlocks

Interlock Part#	Contactor Type	Auxiliary Contacts
UR-02	MC-9B to MC-100A	2 x NC
AR-180	MC-180A to MC-400A	-
AR-600	MC-500A to MC-800A	-

UR-02

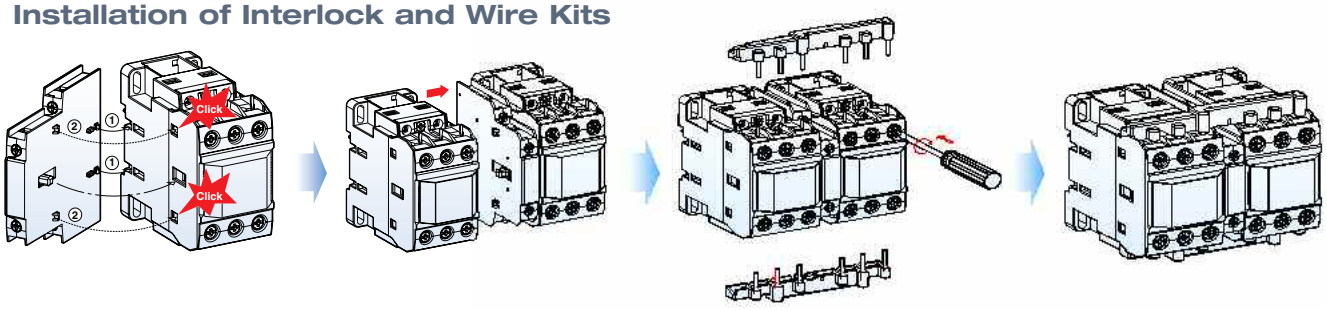
AR-180

Wire Kits

Interlock Part#	Contactor Frame Size
UW-22	MC-9B to MC-22B
UW-32	MC-32A to MC-40A
UW-63	MC-50A, MC-65A
UW-95	MC-75A, MC-100A

UW-XX

Installation of Interlock and Wire Kits

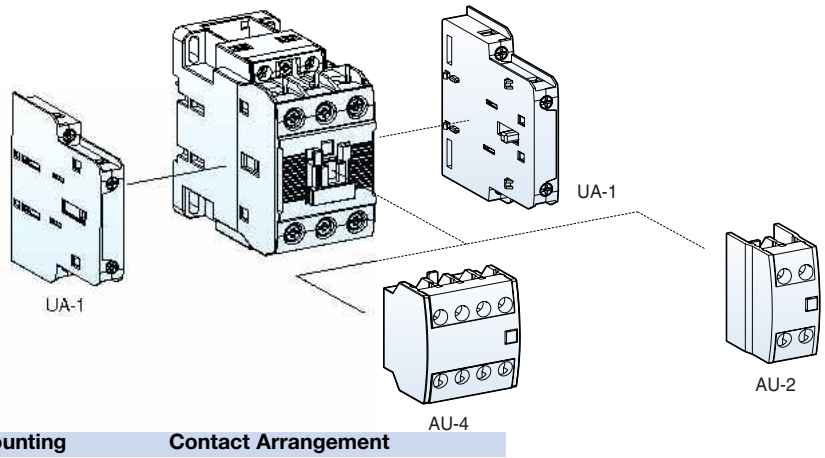


Install the interlock unit on the side of a contactor first. Fit each part as indicated in the figure above.

And then install the other contactor on the other side of the interlock unit as shown.

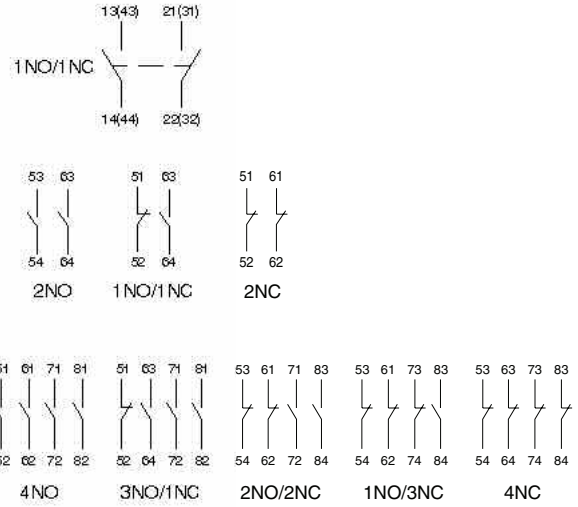
After installing interlock unit wiring kit can be assembled. Wiring kit contains two molded wires - one for line side and the other for load side.

AUXILIARY CONTACTS



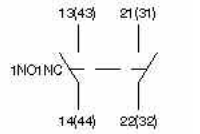
Frame Sizes 22AF - 150AF

Part No.	Poles	Configuration	Mounting	Contact Arrangement
UA-1-11	2	1NO/1NC	Side	
UA-2-20	2	2NO	Front	
UA-2-11	2	1NO/1NC	Front	
UA-2-02	2	2NC	Front	
UA-4-40	4	4NO	Front	
UA-4-31	4	3NO/1NC	Front	
UA-4-22	4	2NO/2NC	Front	
UA-4-13	4	1NO/3NC	Front	
UA-4-04	4	4NC	Front	

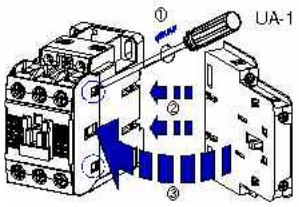


Frame Sizes 225AF - 800AF

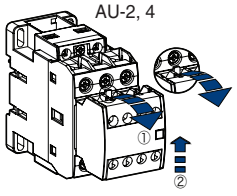
Part No.	Poles	Configuration	Mounting	Contact Arrangement
AU-100-11	2	1NO/ 1NC	Side	



Installation Instructions



To install side mounting unit remove the indicated part in the circle in the fig. first. And then fit each part as shown. To separate push forward and pull.



To install front mounting unit fit it on the upper part of the front of the contactor and push it down. To separate pull the lever of the unit and push the unit upward.

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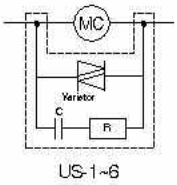
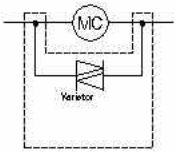
Surge Units (for use with frame sizes 22AF-100AF)

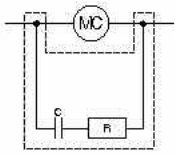
Part No.	Rated Voltage	Internal Ratings		
		Varistor	Resistor	Capacitor
US-1	24-48VAC	120V	100 Ω	0.1μF
US-2	100-125VAC	270V	100 Ω	0.1μF
US-3	200-240VAC	470V	100 Ω	0.1μF
US-4	24-48DC	120V	100 Ω	0.47μF
US-5	100-125VDC	270V	100 Ω	0.47μF
US-6	200-220VDC	470V	100 Ω	0.47μF
US-11	24-48V AC/DC	120V	-	-
US-12	100-125V AC/DC	270V	-	-
US-13	200-240V AC/DC	470V	-	-
US-14	380-440V AC/DC	1000V	-	-
US-22	100-125VAC	-	56 Ω	0.1μF



US-1~6



US-11~14



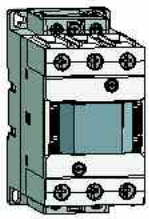
US-22

Terminal Covers

Part No.	Frame Size
AP-220	225AF
AP-400	400AF
AP-600	800AF

Insulation Barriers

Part No.	Frame Size
AI-180	225AF, 400AF
AI-600	800AF



Safety Cover*

Part No.	
AP-9	(Fits all sizes)

Bases for Separate Mounting Overload Relay

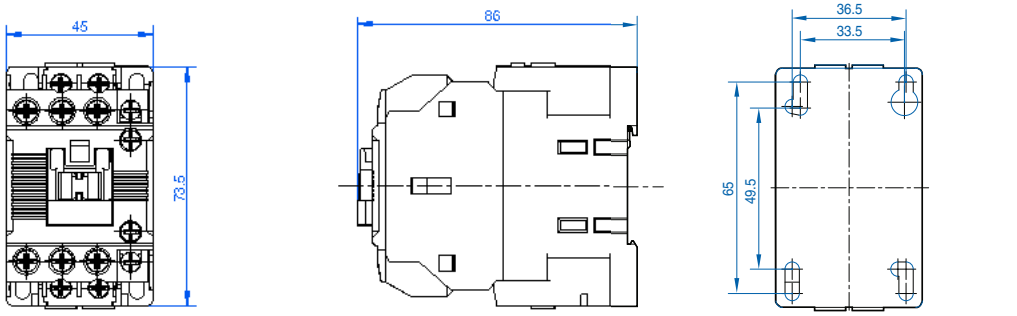
Part No.	Overload Relay
UZ-32	MT-32
UZ-63/S	MT-63
UZ-95/S	MT-95
UZ-150/S	MT-150A

Remote Reset Units for Overload Relay

Part No.	Cable Length (L)
UM-4R	400 mm
UM-5R	500 mm
UM-6R	600 mm

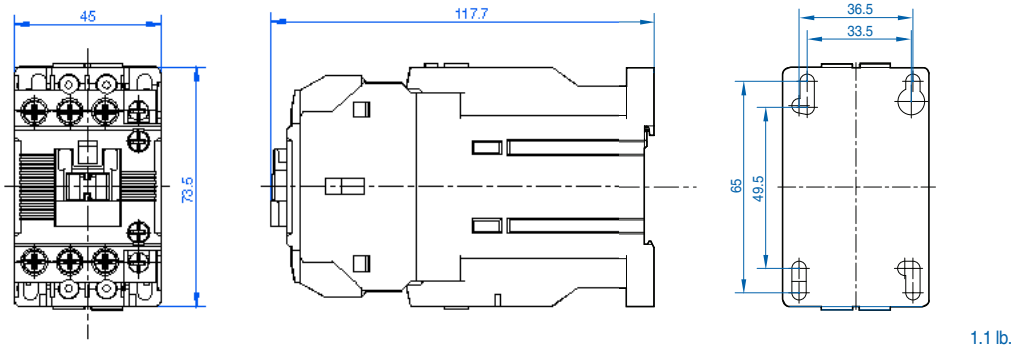
Dimensions
Contactors

MC-9b~22b AC



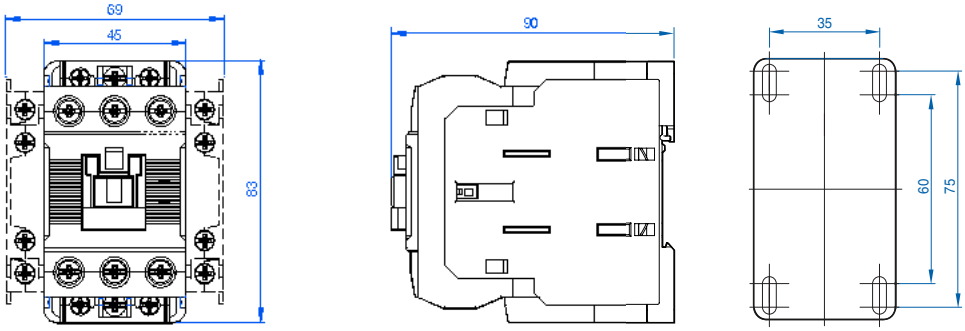
0.66 lb.

MC-9b~22b DC



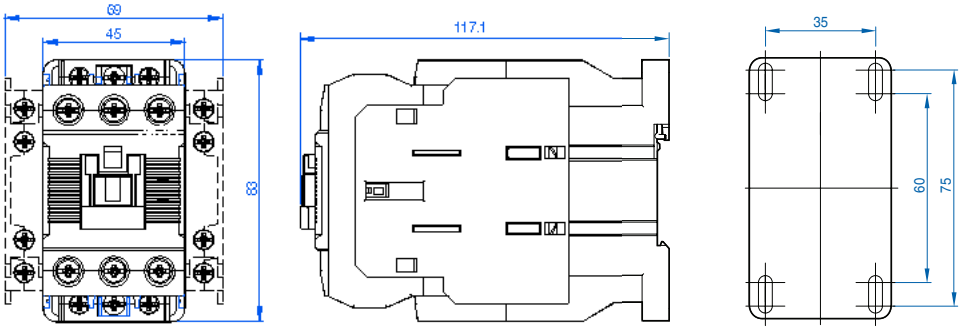
1.1 lb.

MC-32a~40a AC



1.1 lb.

MC-32a~40a DC

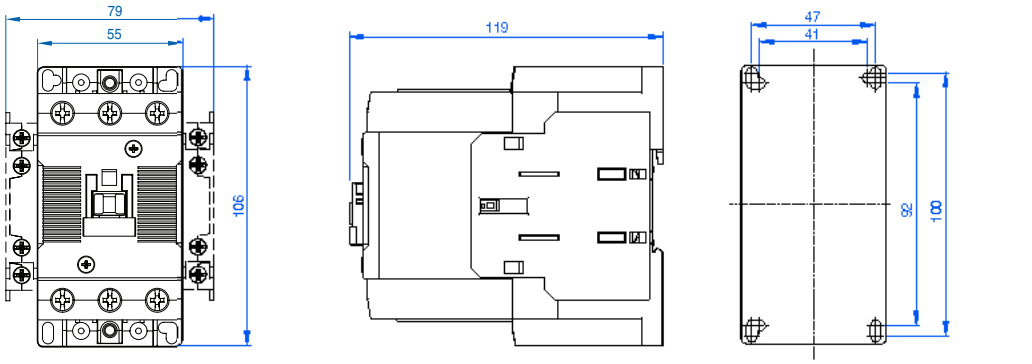


1.76 lb.

Dimensions in mm (to convert to inches multiply by 0.03937).

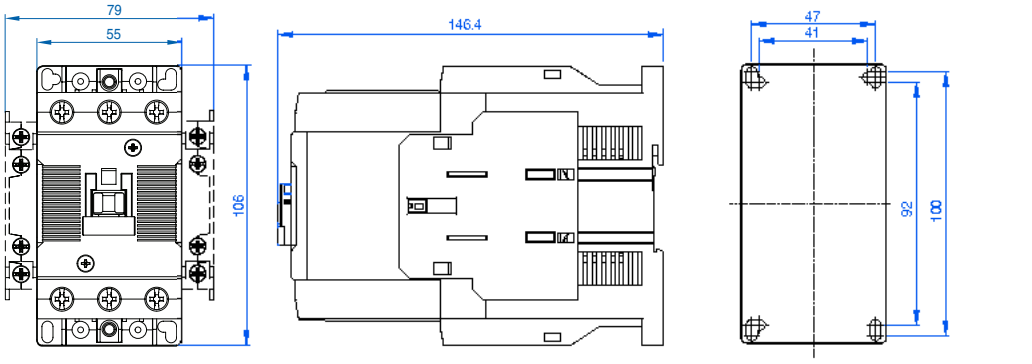
Dimensions
Contactors

MC-50a~65a AC



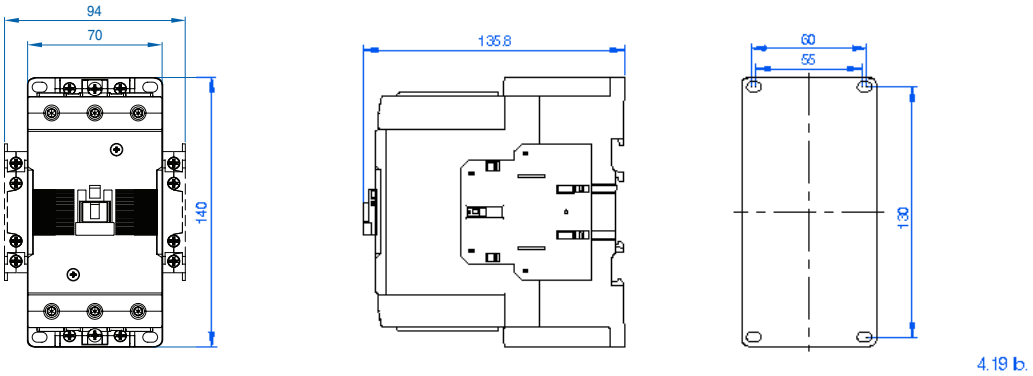
2.2 lb.

MC-50a~65a DC



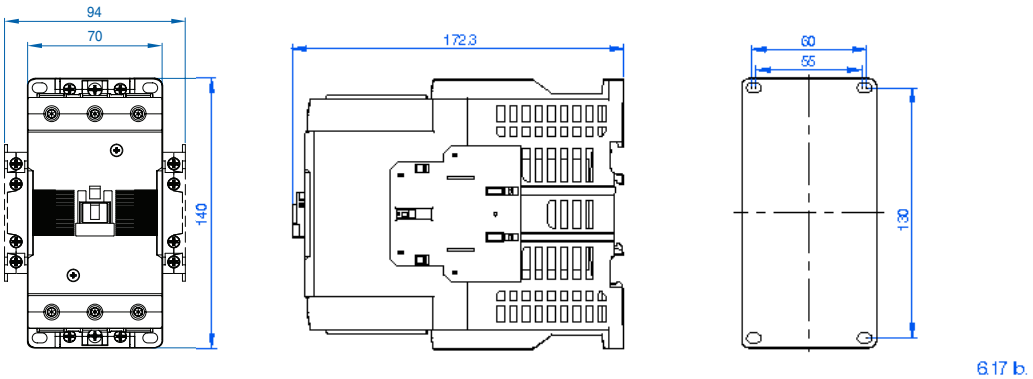
2.87 lb.

MC-75a~100a AC



4.19 lb.

MC-75a~100a DC

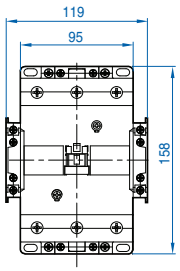


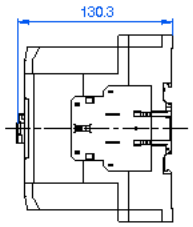
6.17 lb.

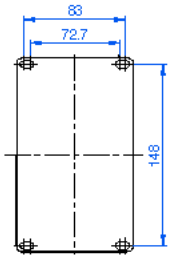
Dimensions in mm (to convert to inches multiply by 0.03937).

Dimensions
Contactors

MC-130a
MC-150a

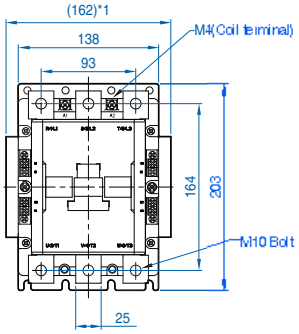


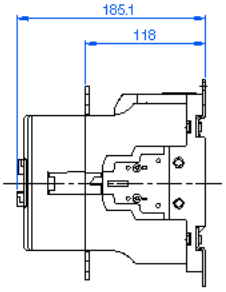


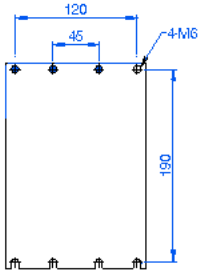


5.29 lb.

MC-185a
MC-225a

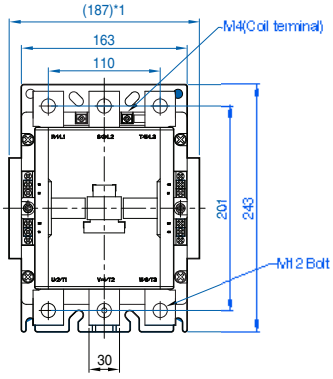


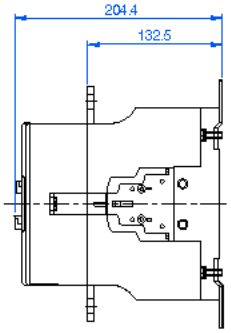


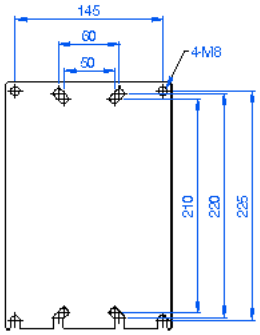


11.9 lb.

MC-265a
MC-330a
MC-400a

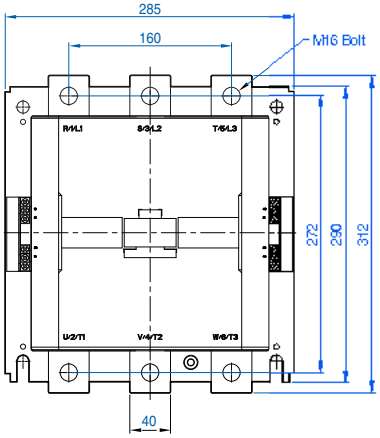


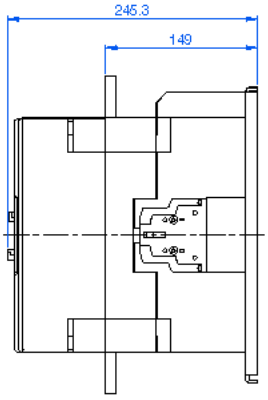


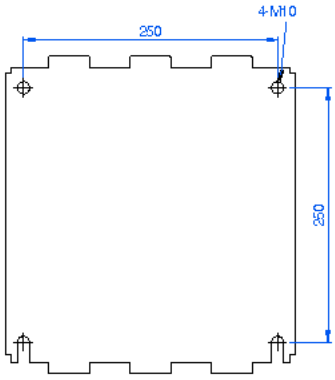


20.28 lb.

MC-500a
MC-630a
MC-800a





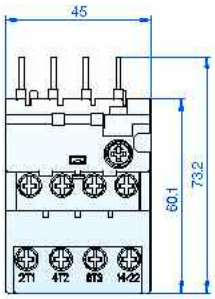


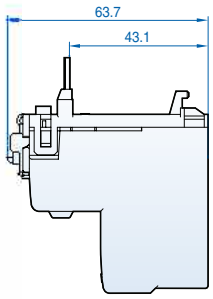
49.38 lb.

Dimensions in mm (to convert to inches multiply by 0.03937).

Dimensions
Overload Relays

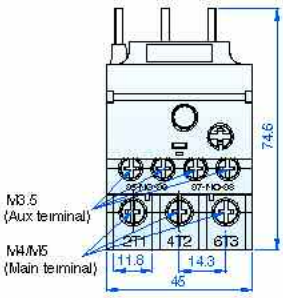
MT-12

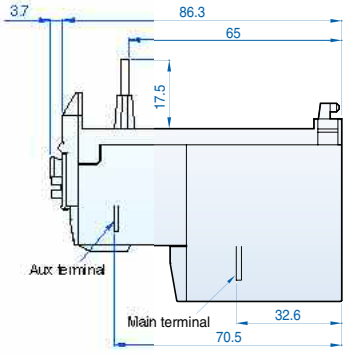




0.22 lb.

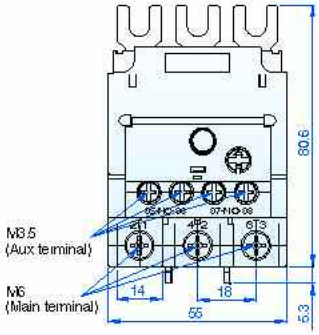
MT-32

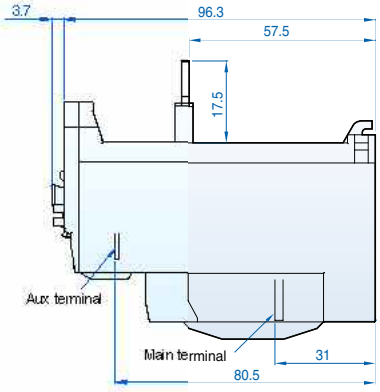




0.37 lb.

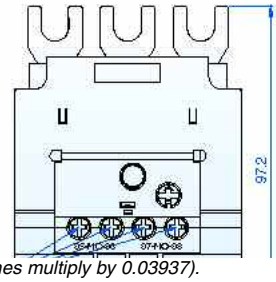
MT-63

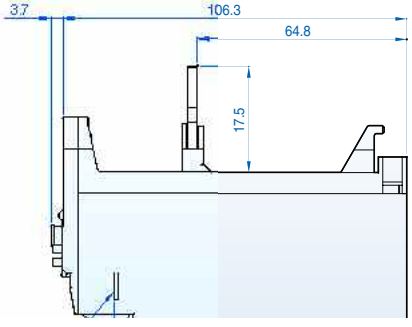




0.67 lb.

MT-95

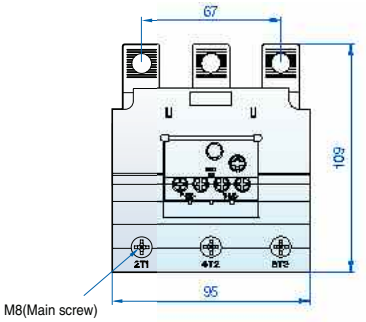


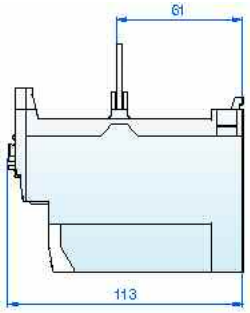


Dimensions in mm (to convert to inches multiply by 0.03937).

Dimensions
Overload Relays

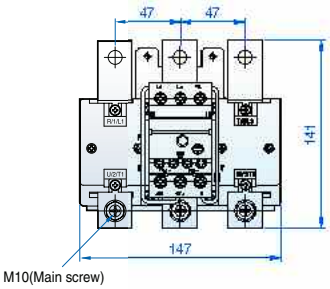
MT-150

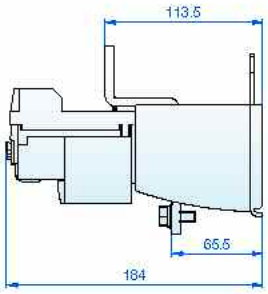




1.54 lb.

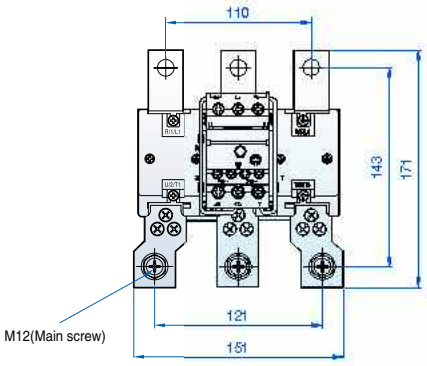
MT-225

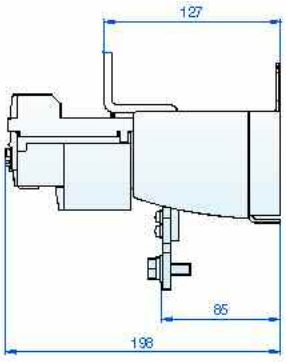




5.51 lb.

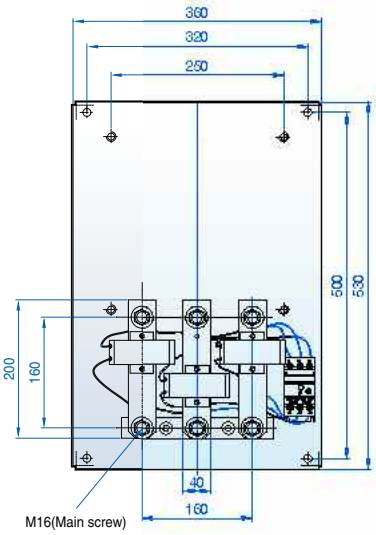
MT-400

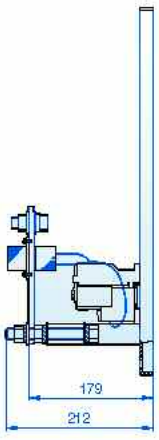




5.73 lb.

MT-800





25.35 lb.

Dimensions in mm (to convert to inches multiply by 0.03937).

Specifications

COIL CHARACTERISTIC AND DATA - MC SERIES

Type MC-9B~150A AC Coils

Frame Type	Rated Voltage	Inrush Current (A) AC50HZ	Inrush Current (A) AC60HZ	Holding Current (A) AC50HZ	Holding Current (A) AC60HZ	Closing Time (ms)	Opening Time (ms)	Inrush (VA)	Holding (VA)	Consumption(W) AC50HZ	Consumption(W) AC60HZ	Pick-up Voltage AC50HZ	Pick-up Voltage AC60HZ	Drop-out Voltage AC50HZ	Drop-out Voltage AC60HZ
MC-9B~22B (50/60Hz)	24	2.975	2.915	0.430	0.330	12~22ms	4~19ms	90	11	2.1	1.5	16.0	18.5	11.00	11.0
	110	0.657	0.636	0.095	0.074	12~22ms	4~19ms	90	11	2.1	1.5	72.0	75.0	49.00	58.0
	220	0.340	0.320	0.040	0.028	12~22ms	4~19ms	90	11	2.1	1.5	140.0	142.0	100.00	105.0
	240	0.286	0.264	0.038	0.027	12~22ms	4~19ms	90	11	2.1	1.5	145.0	155.0	110.00	125.0
MC-9B~22B (60Hz)	208	-	0.340	-	0.042	12~22ms	4~19ms	90	11	-	1.5	-	133.0	-	100.0
	480	-	0.106	-	0.018	12~22ms	4~19ms	90	11	-	1.5	-	350.0	-	255.0
MC-32A, 40A (50/60Hz)	24	2.935	2.842	0.460	0.360	12~22ms	4~19ms	115	11	2.7	2.2	16.0	18.5	11.00	11.0
	110	0.652	0.631	0.100	0.077	12~22ms	4~19ms	115	11	2.7	2.2	75.0	75.0	48.00	57.0
	220	0.335	0.316	0.050	0.040	12~22ms	4~19ms	115	11	2.7	2.2	150.0	142.0	100.00	105.0
	240	0.289	0.264	0.046	0.035	12~22ms	4~19ms	115	11	2.7	2.2	145.0	155.0	110.00	125.0
MC-32A, 40A (60Hz)	208	-	0.340	-	0.044	12~22ms	4~19ms	115	11	-	2.2	-	133.0	-	100.0
	480	-	0.108	-	0.020	12~22ms	4~19ms	115	11	-	2.2	-	350.0	-	255.0
MC-50A,60A (50/60Hz)	24	4.597	4.411	0.524	0.401	12~22ms	4~19ms	160	11	2.8	2.4	16.0	18.5	9.00	12.0
	110	1.025	0.994	0.114	0.085	12~22ms	4~19ms	160	11	2.8	2.4	69.0	77.0	53.00	59.0
	220	0.608	0.592	0.058	0.046	12~22ms	4~19ms	160	11	2.8	2.4	150.0	155.0	100.00	105.0
	240	0.474	0.425	0.053	0.039	12~22ms	4~19ms	160	11	2.8	2.4	145.0	165.0	115.00	125.0
MC-50A, 60A (60Hz)	208	-	0.600	-	0.048	12~22ms	4~19ms	160	11	-	2.4	-	85.0	-	100.0
	480	-	0.198	-	0.020	12~22ms	4~19ms	160	11	-	2.4	-	315.0	-	230.0
MC-75A~100A (50/60Hz)	24	7.956	7.765	0.768	0.645	15~30ms	10~30ms	190	16	5.4	4.7	16.0	17.5	11.50	14.0
	110	1.782	1.710	0.176	0.145	15~30ms	10~30ms	190	16	5.4	4.7	66.0	75.0	51.00	60.0
	220	1.018	0.980	0.078	0.062	15~30ms	10~30ms	190	16	5.4	4.7	150.0	160.0	100.00	105.0
	240	0.870	0.820	0.082	0.066	15~30ms	10~30ms	190	16	5.4	4.7	133.0	170.0	105.00	115.0
MC-75A~100A (60Hz)	208	-	1.013	-	0.065	15~30ms	10~30ms	190	16	-	4.7	-	135.0	-	100.0
	480	-	0.460	-	0.035	15~30ms	10~30ms	190	16	-	4.7	-	330.0	-	265.0
MC-130A, 150A (50/60Hz)	24	8.800	9.190	0.350	0.410	20~40ms	60~70ms	220	25	2.7	3.6	18.0	17.5	14.00	13.0
	48	3.950	4.240	0.168	0.198	20~40ms	60~70ms	220	25	2.7	3.6	34.0	37.1	25.00	23.0
	110	1.500	1.580	0.205	0.231	20~40ms	60~70ms	220	25	2.7	3.6	84.0	80.0	60.00	55.0
	220	0.720	0.760	0.085	0.099	20~40ms	60~70ms	220	25	2.7	3.6	165.0	160.0	105.00	100.0
	300	0.690	0.710	0.050	0.059	20~40ms	60~70ms	220	25	2.7	3.6	210.0	200.0	165.00	160.0
	400	0.490	0.500	0.040	0.046	20~40ms	60~70ms	220	25	2.7	3.6	280.0	270.0	240.00	200.0
	500	0.310	0.320	0.027	0.032	20~40ms	60~70ms	220	25	2.7	3.6	360.0	340.0	290.00	270.0

Type MC-9B~150A DC Coils

Frame Type	Rated Voltage	Inrush Current(A)	Holding Current (A)	Pick-up Voltage	Drop-out Voltage	Closing time (ms)	Opening time (ms)
MC-6A~22B	12	0.790	0.790	7.5	3.0	35~50ms	4~19ms
	24	0.380	0.380	16.0	5.5		
MC-32A, 40A	12	0.702	0.702	8.5	3.4	50~65ms	4~19ms
	24	0.350	0.350	16.3	6.3		
MC-50A, 65A	12	0.790	0.790	8.7	2.6	50~65ms	4~19ms
	24	0.380	0.380	17.5	5.0		
MC-75A~100A	12	0.790	1.450	8.1	2.5	100~120ms	10~25ms
	24	0.380	0.740	17.5	4.4		
MC-130A, 150A	24	6.700	0.240	17.5	4.5	70~80ms	60~70ms
	48	3.300	0.155	33.0	11.0		
	110	2.000	0.068	75.0	25.0		
	220	0.950	0.040	150.0	50.0		

Type MC-185A~800A AC/DC Common Coils

Frame Type	Rated Voltage	Voltage	Inrush Current (A) AC50HZ	Inrush Current (A) AC60HZ	Inrush Current (A) DC	Holding Current (mA) AC50HZ	Holding Current (mA) AC60HZ	Holding Current (mA) DC	Closing Time (ms) AC50HZ	Closing Time (ms) AC60HZ	Closing Time (ms) DC	Opening Time (ms) AC50HZ	Opening Time (ms) AC60HZ	Opening Time (ms) DC	Coli Consumption(W) AC50HZ	Coli Consumption(W) AC60HZ	Coli Consumption(W) DC
MC-185A,225A	24V	24	9.53	9.6	7	307	319	143	41	40	38.1	65.3	35	39.9	3.6	3.6	3.5
	48V	48	3.836	3.774	2.71	70	72	39	51.7	45.7	43.8	38.6	40.7	46.8	2.2	2.3	1.9
	100~240V	110	2.108	2.092	1.532	57	57	36	53.38	52.2	53.3	66.1	64.4	67.8	4.1	4.1	4.3
	100~240V	220	1.256	1.22	1.34	42	43	22	43.5	41.7	41	67.2	67.6	68.8	6.3	6.2	5.8
MC-265A~400A	100~240V	110	4.3	4.33	4.2	443	434	439	47.8	50.3	48.7	57	56	55.8	5.8	5.7	6.3
	100~240V	220	4.1	4	4.4	329	310	278	42	41	39	57.6	58.3	56.5	6.2	6	6.2
MC-500A~800A	100V	110	11.2	10.7	18.2	91	91	46	55.2	56	50.5	41	40	41	5.3	5.3	6
	200V	220	5.2	4.9	6.1	68	67	34	56.3	55.7	55.3	38	35.5	37.2	8.3	8.5	8.6

Altech Corp.®

IEC Ratings (AC-1, AC-3) MC - Series

	Type IEC60947-4 Ratings	MC-9B		MC-12B		MC-18B		MC-22B		MC-32A		MC-40A		MC-50A	
		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1		-	25	-	25	-	32	-	40	-	50	-	60	-	70
AC-3	200/240V	2.5	11	3.5	13	4.5	18	5.5	22	7.5	32	11	40	15	55
	380/440V	4	9	5.5	12	7.5	18	11	22	15	32	18.5	40	22	50
	500/550V	4	7	7.5	12	7.5	13	15	20	18.5	28	22	32	30	43
	690V	4	6	7.5	9	7.5	9	15	18	18.5	20	22	23	30	28

	Type IEC60947-4 Ratings	MC-65A		MC-75A		MC-85A		MC-100A		MC-130A		MC-150A		MC-185A	
		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1		-	100	-	110	-	135	-	160	-	160	-	210	-	230
AC-3	200/240V	18.5	65	22	75	25	85	30	105	37	130	45	150	55	185
	380/440V	30	65	37	75	45	85	55	105	60	130	75	150	90	185
	500/550V	33	60	37	64	45	75	55	85	60	90	70	100	110	180
	690V	33	35	37	42	45	45	45	65	55	60	55	60	110	120

	Type IEC60947-4 Ratings	MC-225A		MC-265A		MC-330A		MC-400A		MC-500A		MC-630A		MC-800A	
		kW	A	kW	A	kW	A	kW	A	kW	A	kW	A	kW	A
AC-1		-	275	-	300	-	350	-	450	-	580	-	660	-	900
AC-3	200/240V	75	225	80	265	90	330	125	400	147	500	190	630	220	800
	380/440V	132	225	147	265	160	330	200	400	265	500	330	630	440	800
	500/550V	132	200	147	225	160	280	225	350	265	400	330	500	500	720
	690V	140	150	160	185	200	225	250	300	300	380	400	420	500	630

Mini Contactors

UL508
E108780

Mini Contactors

Type			6A	9A	12A
Number of Poles			3 NO main Contacts, 1 Auxiliary Contact		
Terminal Type			Screw Clamp	Screw Clamp	Screw Clamp
NEMA Size			00	00	00
Standard Auxiliary*			1NO	1NO	1NO
	Coil Voltage	**Frequency**	**Part. No.**	**Part. No.**	**Part. No.**
AC Coil	24V	50/60 Hz	GMC-6M-10-AC24V	GMC-9M-10-AC24V	GMC-12M-10-AC24V
	120V	50/60 Hz	GMC-6M-10-AC120V	GMC-9M-10-AC120V	GMC-12M-10-AC120V
	208V	60 Hz	GMC-6M-10-AC208V	GMC-9M-10-AC208V	GMC-12M-10-AC208V
	230V	50/60 Hz	GMC-6M-10-AC230V	GMC-9M-10-AC230V	GMC-12M-10-AC230V
Other AC Coil Voltages Available **50/ 60Hz:** 42V, 48V, 110V, 220V, 277V, 400V, 480V, 600V	**Coil Characteristics and Data**				
	Pick-up Voltage Limit		80-110%		
	Drop-out Voltage Limit		30-40%		
	Coil Consumption (W)		2		
	Inrush [VA]		32		
	Holding [VA]		6		
	Closing Time [ms]		10…20		
	Opening Time [ms]		35…45		
DC Coil	12V	–	GMD-6M-10-DC12V	GMD-9M-10-DC12V	GMD-12M-10-DC12V
	24V	–	GMD-6M-10-DC24V	GMD-9M-10-DC24V	GMD-12M-10-DC24V
	Coil Characteristics and Data				
Other DC Coil Voltages Available 48V, 60V, 120V, 125V, 220V, 240V, 250V	Pick-up Voltage Limit		80-110%		
	Drop-out Voltage Limit		10-30%		
	Coil Consumption (W)		3		
	Inrush [W]		3		
	Holding [W]		3		
	Closing Time [ms]		40-50		
	Opening Time [ms]		35-45		
HP Rating / UL508			**HP**	**HP**	**HP**
	Continuous current		20A	20A	20A
Single phase	110~120V		0.5	0.5	1
	220~240V		1	1.5	2
Three phase	240V		1.5	3	3
	480V		3	5	7.5
	600		3	5	10

Overload Relays
(Class 10A, Differential Typical)

Setting Ranges (A)	Frame Size 22AF
0.1-0.16A	GTK-12M-0.16
0.16-0.25A	GTK-12M-0.25
0.25-0.4A	GTK-12M-0.4
0.4-0.63A	GTK-12M-0.63
0.63-1A	GTK-12M-1
1-1.6A	GTK-12M-1.6
1.6-2.5A	GTK-12M-2.5
2.4-4A	GTK-12M-4
4-6A	GTK-12M-6
5-8A	GTK-12M-8
6-9A	GTK-12M-9
7-10A	GTK-12M-10
9-13A	GTK-12M-13
12-16A	GTK-12M-16

** For built-in NC Auxiliary Switch change part number to -01; e.g. GMC-6M-01-AC24V.*

Reversing Mini Contactor

Separate parts for assembling Reversing Contactors

For Pre-assembled Reversing Mini Contactors please consult Altech.

Interlock Kit

Interlock Kit

Part No.	Mini Contactor Type
AR-12M	6A - 12A

Auxiliary Contacts

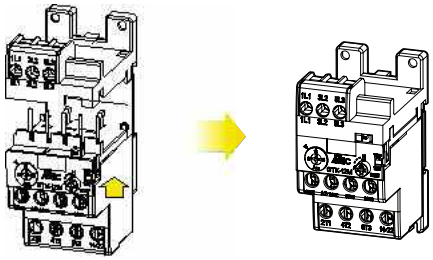
Part No.	Poles	Configuration	Mounting
AU-1M-10	1	1NO	Side
AU-1M-01	1	1NC	Side
AU-2M-20	2	2NO	Front
AU-2M-02	2	2NC	Front
AU-2M-11	2	1NO/1NC	Front
AU-4M-40	4	4NO	Front
AU-4M-31	4	3NO/1NC	Front
AU-4M-22	4	2NO/2NC	Front
AU-4M-13	4	1NO/3NC	Front
AU-4M-04	4	4NC	Front

Surge Units

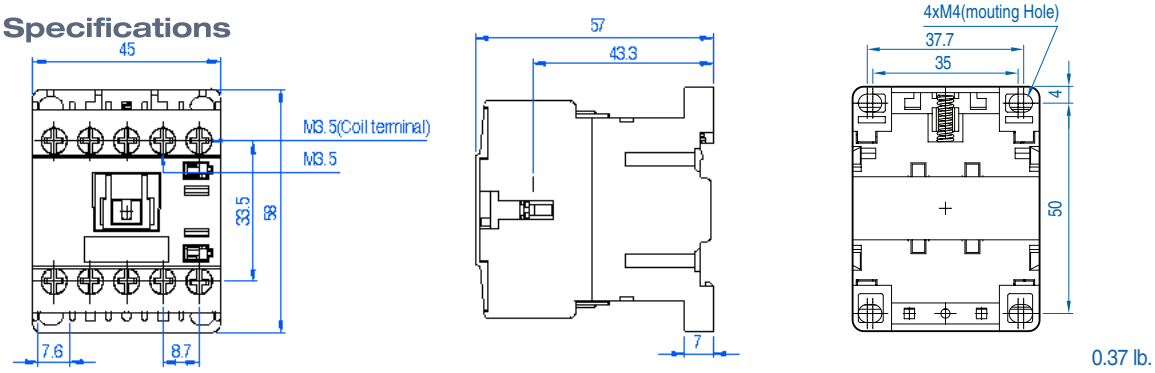
Part No.	Rated Voltage	Internal Element	Contactor Type
AS-12M/1	24-48VAC	Varistor	GMC-6M-12M
AS-12M/2	60-127VAC	Varistor	GMC-6M-12M
AS-12M/3	200-240VAC	Varistor	GMC-6M-12M
AS-12M/4	12-24VDC	Varistor	GMD-6M-12M
AS-12M/5	30-72VDC	Varistor	GMD-6M-12M
AS-12M/6	100-127VDC	Varistor	GMD-6M-12M
AS-12M/7	200-250VDC	Varistor	GMD-6M-12M

Base for Separate Mounting Overload Relay

Part No.
AZ-12MH



Specifications



0.37 lb.

Dimensions in mm (to convert to inches multiply by 0.03937).

Altech Corp.®

UL508 Type E
E252942

Standards and Certifications

- UL508 (Manual Motor Controller)
- UL508 (Type E self-protected Manual Motor Controller)
- CSA C22.2 No.14
- IEC 60947-2 & IEC 60947-4-2

Features

- DIN Rail and Screw Mounting
- Lockable Handle in OFF position
- Finger safe terminals
- Class 10 thermal Overload protection
- Trip test feature
- Phase failure protection
- Adjustable thermal release
- Type F combination Manual Motor roller Controller (with MC-Series Contactor)
- Wide range of common accessories:
  - Auxiliary contacts
  - Alarm Switch
  - Undervoltage/ Shunt Trip
  - Rotary Handle
  - Busbar
  - MC-Series Mounting Adapter

General Specifications

Maximum Voltage	600V AC
Short Circuit Current Rating (SCCR)	up to 65kA@480VAC
Rated Frequency	50/60Hz
Max Operating Frequency	25 operations/hour
Operating Temperature	-20°C (-4°F) to +60°C (140°F)
Storage Temperature	-50°C (-58°F) to +80°C (176°F)
Degree of protection	IP20
Resistance to Shock	25g
Resistance to Vibration	5 - 150Hz

Terminal Size Acceptability and Torque

Wire Type	Conductors	MMS-32H	MMS-63H	MMS-100H
Solid	1	18-8 AWG	18-2AWG	12-2/0 AWG
	2	18-10AWG	18-4AWG	12-1/0 AWG
Stranded	1	18-10AWG	18-2AWG	12-2/0 AWG
	2	18-10AWG	18-4AWG	12-1/0 AWG
Flexible	1	18-10AWG	18-4AWG	12-2/0 AWG
	2	18-10AWG	18-6AWG	12-1/0 AWG
Torque		7-22 lb-in.	26-39 lb-in.	35-53 lb-in.

Manual Motor Starters

MMS Series

UL508 Type E
E252942

MMS-32H

MMS-63H

MMS-100H

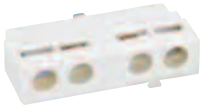
	Part No.	Rated Operational Current	Thermal Release Adjustment Range	Magnetic Release Operating Current	Horsepower Rating						Interrupting Capacity [kA]		
					Single Phase		Three Phase						
					115V	230V	200V	230V	460V	575V	240V	480V	600V
MMS-32H	MMS-32H-0.16A	0.16A	0.1….0.16A	2.1A	-	-	-	-	-	-	100	65	25
	MMS-32H-0.25A	0.25A	0.16….0.25A	3.3A	-	-	-	-	-	-	100	65	25
	MMS-32H-0.4A	0.4A	0.25….0.4A	5.2A	-	-	-	-	-	-	100	65	25
	MMS-32H-0.63A	0.63A	0.4….0.63A	8.2A	-	-	-	-	-	-	100	65	25
	MMS-32H-1.0A	1.0A	0.63….1.0A	13A	-	-	-	-	-	1/2	100	65	25
	MMS-32H-1.6A	1.6A	1.0….1.6A	20.8A	-	1/10	-	-	3/4	3/4	100	65	25
	MMS-32H-2.5A	2.5A	1.6….2.5A	32.5A	-	1/6	1/2	1/2	1	1 1/2	100	65	25
	MMS-32H-4.0A	4.0A	2.5….4.0A	52A	1/8	1/3	3/4	3/4	2	3	100	65	25
	MMS-32H-6A	6A	4….6A	78A	1/4	1/2	1	1 1/2	3	5	100	65	25
	MMS-32H-8A	8A	5….8A	104A	1/3	1	2	2	5	5	100	65	25
	MMS-32H-10A	10A	6….10A	130A	1/2	1 1/2	2	3	5	7 1/2	100	65	25
	MMS-32H-13A	13A	9….13A	169A	1/2	2	3	3	7 1/2	10	100	65	25
	MMS-32H-17A	17A	11….17A	221A	1	3	3	5	10	15	100	30	10
	MMS-32H-22A	22A	14….22A	286A	1 1/2	3	5	7 1/2	15	20	100	30	10
	MMS-32H-26A	26A	18….26A	338A	2	3	7 1/2	7 1/2	15	20	100	30	10
	MMS-32H-32A	32A	22….32A	416A	2	5	7 1/2	10	20	30	100	30	10
	MMS-32H-40A	40A	28….40A	520A	3	7 1/2	10	15	30	40	100	30	10
MMS-63H	MMS-63H-10A	10A	6….10A	130A	1/2	1 1/2	2	3	5	7 1/2	100	65	25
	MMS-63H-13A	13A	9….13A	169A	1/2	2	3	3	7 1/2	10	100	65	25
	MMS-63H-17A	17A	11….17A	221A	1	3	3	5	10	15	100	50	10
	MMS-63H-22A	22A	14….22A	286A	1 1/2	3	5	7 1/2	15	20	100	50	10
	MMS-63H-26A	26A	18….26A	338A	2	3	7 1/2	7 1/2	15	20	100	50	10
	MMS-63H-32A	32A	22….32A	416A	2	5	7 1/2	10	20	30	100	50	10
	MMS-63H-40A	40A	28….40A	520A	3	7 1/2	10	10	30	30	100	50	10
	MMS-63H-50A	50A	34….50A	650A	3	10	15	15	30	40	100	50	10
	MMS-63H-63A	63A	45….63A	819A	5	10	20	20	40	60	100	50	10
	MMS-63H-65A	65A	47….65A	845A	5	15	20	25	50	60	100	50	10
MMS-100H	MMS-100H-17A	17A	11….17A	221A	1	3	3	5	10	15	100	65	25
	MMS-100H-22A	22A	14….22A	286A	1 1/2	3	5	7 1/2	15	20	100	65	25
	MMS-100H-26A	26A	18….26A	338A	2	3	7 1/2	7 1/2	15	20	100	65	25
	MMS-100H-32A	32A	22….32A	416A	2	5	7 1/2	10	20	30	100	65	20
	MMS-100H-40A	40A	28….40A	520A	3	7 1/2	10	10	30	30	100	65	20
	MMS-100H-50A	50A	34….50A	650A	3	10	15	15	30	40	100	65	20
	MMS-100H-63A	63A	45….63A	819A	5	10	20	20	40	60	100	50	10
	MMS-100H-75A	75A	55….75A	975A	5	15	20	25	50	60	100	50	10
	MMS-100H-90A	90A	70….90A	1170A	7 1/2	20	25	30	60	75	100	50	10
	MMS-100H-100A	100A	80….100A	1300A	10	20	30	30	75	100	100	50	10

Drawings and other technical information can be found on page 24-25.

UL508 Type E
E252942

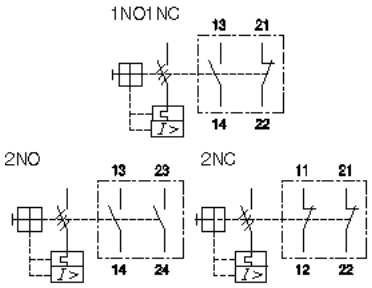
Altech Corp.®

FX...



Auxiliary Contacts

Part No.	Poles	Configuration	Mounting
FX-20	2	2NO	Front
FX-11	2	1NO/1NC	Front
FX-02	2	2NC	Front
LX-20	2	2NO	Side
LX-11	2	1NO/1NC	Side
LX-02	2	2NC	Side

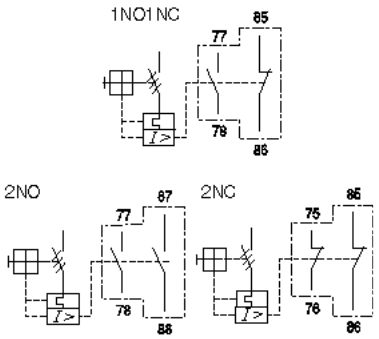


Connection Diagrams FX

LAM...

Alarm Contacts

Part No.	Poles	Configuration	Mounting
LA-20	Any Trip	2NO	Side
LA-11	Any Trip	1NO/1NC	Side
LA-02	Any Trip	2NC	Side
LAM-20	Magnetic Trip	2NO	Side
LAM-11	Magnetic Trip	1NO/1NC	Side
LAM-02	Magnetic Trip	2NC	Side



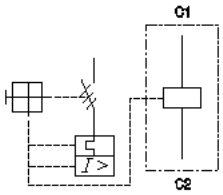
Connection Diagrams LAM

RS...

Shunt Trips*

Part No.	Control Voltage	
	50 Hz	60Hz
RS-28V	24VAC	28VAC
RS-120V	110VAC	120VAC
RS-220V	200VAC	200-220VAC
RS-260V	220-230VAC	240-260VAC
RS-277V	240VAC	277VAC
RS-440V	380-400VAC	440-460VAC
RS-480V	415-440VAC	460-480VAC

*cannot be used with RU or RUX



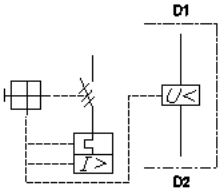
Connection Diagrams RS

RU...

Undervoltage Trips**

Part No.	Control Voltage	
	50 Hz	60Hz
RU-28V	24VAC	28VAC
RU-120V	110VAC	120VAC
RU-220V	200VAC	200-220VAC
RU-260V	220-230VAC	240-260VAC
RU-277V	240VAC	277VAC
RU-440V	380-400VAC	440-460VAC
RU-480V	415-440VAC	460-480VAC

**cannot be used with RS or RUX



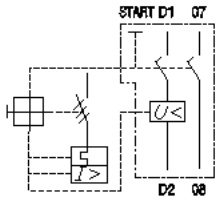
Connection Diagrams RU

RUX...

Undervoltage Trips with Switches***
includes 2NO Auxiliary Contacts

Part No.	Control Voltage	
	50 Hz	60Hz
RUX-28V	24VAC	28VAC
RUX-120V	110VAC	120VAC
RUX-220V	200VAC	200-220VAC
RUX-260V	220-230VAC	240-260VAC
RUX-277V	240VAC	277VAC
RUX-440V	380-400VAC	440-460VAC
RUX-480V	415-440VAC	460-480VAC

***cannot be used with RS or RU



Connection Diagrams RUX

Accessories

Manual Motor Starter - MMS Series

UL508 Type E
E252942

Extended Handles

- Lockable in ON/ OFF position
- IP65 protection

Part No.	MMS-Type	Shaft Length
MEH-32-115	MMS-32H	115mm (4.53in.)
MEH-32-315	MMS-32H	315mm (12.4in.)
MEH-63-115	MMS-63H	115mm (4.53in.)
MEH-63-315	MMS-63H	315mm (12.4in.)
MEH-100-115	MMS-100H	115mm (4.53in.)
MEH-100-315	MMS-100H	315mm (12.4in.)

Busbars

Part No.	MMS Type	No, MMS	Rated Current
PB-322	MMS-32H	2	63A
PB-323	MMS-32H	3	63A
PB-632	MMS-63H	2	108A
PB-633	MMS-63H	3	108A

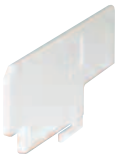
Insulation Cap

Part No.	Busbar Type
PBPC-32	PB-32x
PBPC-63	PB-63x

Insulated Enclosure

- IP65 protection

Part No.	MMS Type
EPH-32	MKMS-32H



Dial Cover

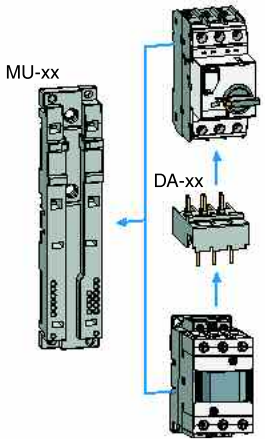
to protect set value from unintended operation (for all types)

Part No.
DIAL COVER

Insulation Barrier

to increase creepage and clearance distance (for MMS-100H only)

Part No.
IB100



Direct Adapters and Mounting Units

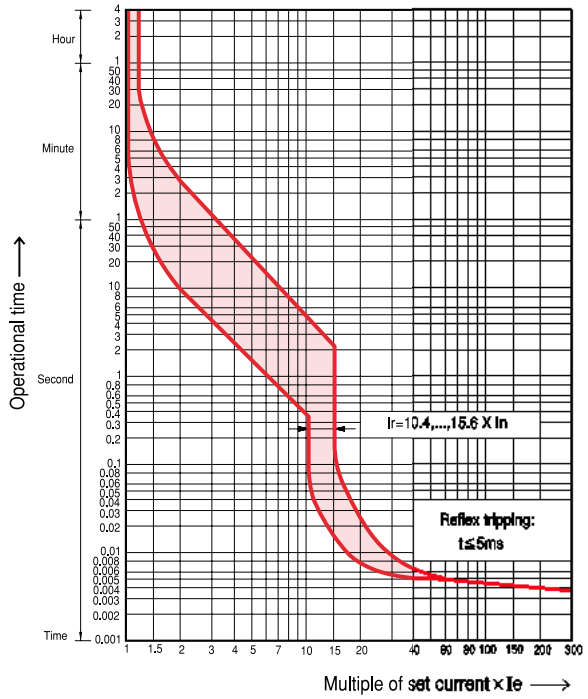
- Connect MMS directly with Metasol or Mini Contactor
- Type F combination Motor Controllers consisting of Type E MMS device with MC Series contactor

Part No.	MMS Type	Combined Contactor Type	Mounting Unit
DA-16HA	MMS-32H	Mini Contactor GMC-6M…12M AC	MU-45
DA-16HD	MMS-32H	Mini Contactor GMC-6M…12M AC	MU-45
DA-22HA	MMS-32H	MC-9B…22B AC	MU-45
DA-22HD	MMS-32H	MC-9B…22B DC	MU-45
DA-32HA	MMS-32H	MC-32A…40A AC	MU-45
DA-32HD	MMS-32H	MC-32A…40A DC	MU-45
DA-63A	MMS-63H	MC-50A…65A AC	MU-55
DA-63D	MMS-63H	MC-50A…65A DC	MU-55
DA-95A	MMS-100H	MC-75A…100A AC	MU-70
DA-95D	MMS-100H	MC-75A…100A DC	MU-70

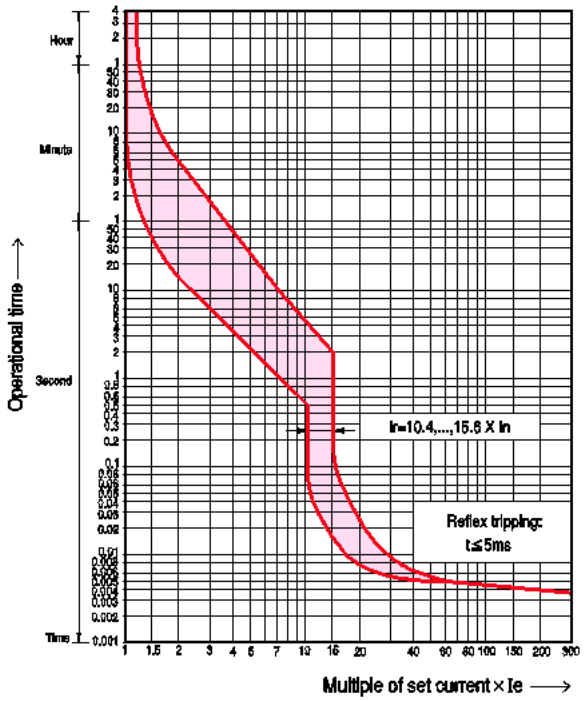
Altech Corp.®

Trip Curves

MMS-32H

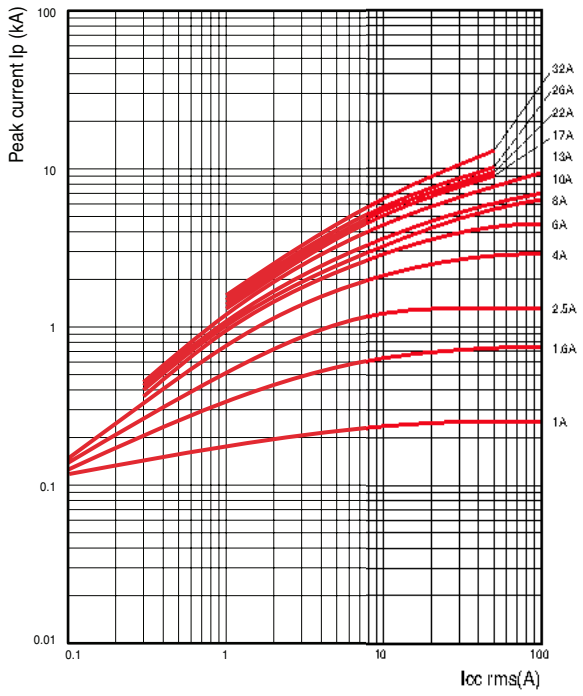


MMS-63H, MMS-100H

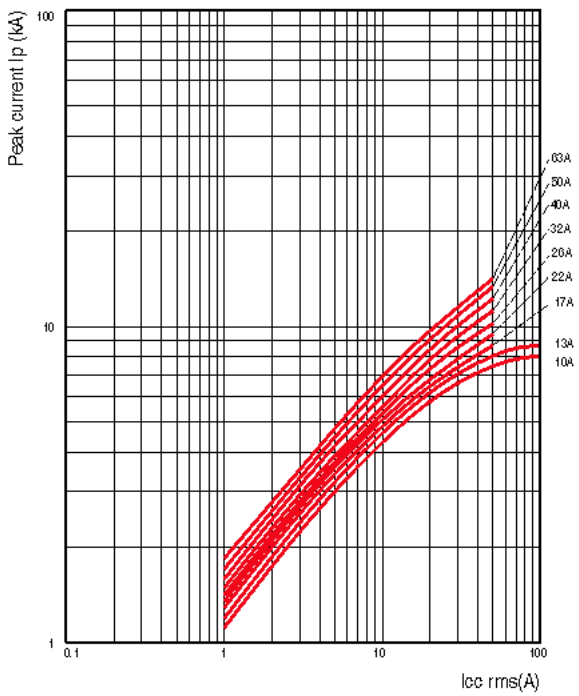


Thermal Short Circuit Limit

MMS-32H



MMS-63H

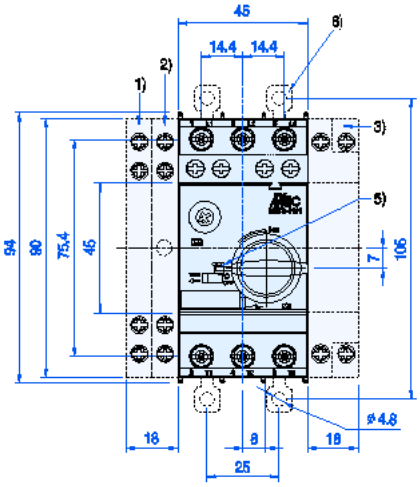


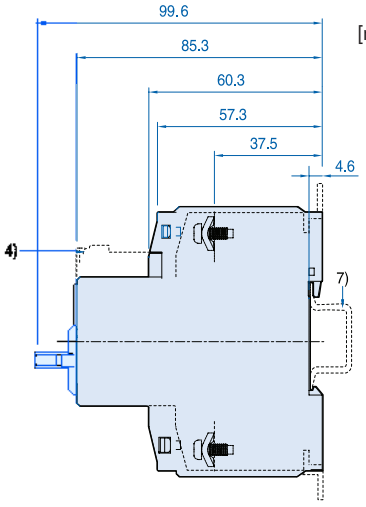
Specifications

MMS Series

[mm]

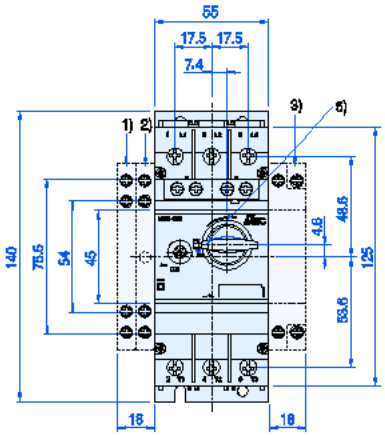
1) Side auxiliary switch
2) Side magnetic trip alarm switch
3) Side shunt release or Side undervoltage release
4) Front auxiliary switch
5) Handle lock in OFF position(Ø 5mm)
6) Push-in Lugs for screw mounting
7) 35mm standard mounting rail acc. to EN 50 022

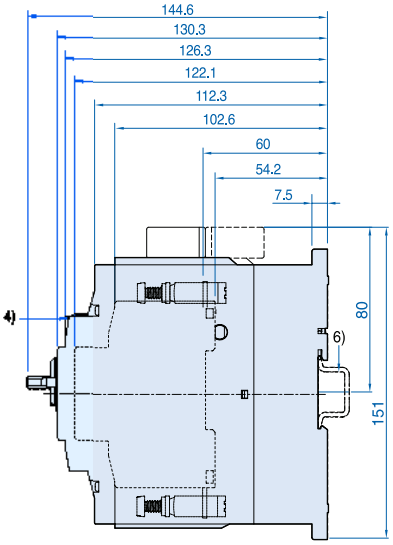




0.79 lb.

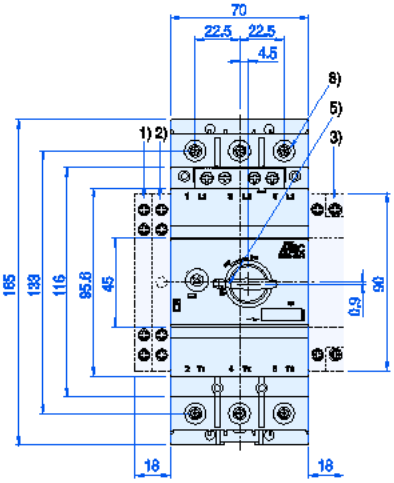
1) Side auxiliary switch
2) Side magnetic trip alarm switch
3) Side shunt release or Side undervoltage release
4) Front auxiliary switch
5) Handle lock in OFF position(Ø 5mm)
6) 35mm standard mounting rail acc. to EN 50 022

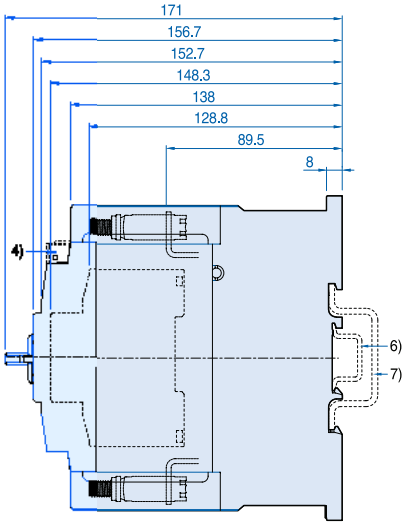




2.2 lb.

1) Side auxiliary switch
2) Side magnetic trip alarm switch
3) Side shunt release or Side undervoltage release
4) Front auxiliary switch
5) Handle lock in OFF position(Ø 5mm)
6) 35mm standard mounting rail acc. to EN 50 022
7) 75mm standard mounting rail acc. to EN 50 023
8) 4mm hexagon socket screw





4.85 lb.

Dimensions in mm (to convert to inches multiply by 0.03937).

TITLE - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

SHIPMENT AND DELIVERY - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

PRICE - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

PAYMENT - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than $100.00 will be billed at $100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

LIMITED WARRANTY - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

No representation of other affirmation of facts, including but not limited to statements regarding capacity, suitability for use or performance of the equipment, shall be or be deemed to be a warranty or representation by ALTECH for any purpose, nor give rise to any liability or obligation of ALTECH whatsoever.

Customer's sole and exclusive remedy in the event of breach of warranty, as set forth herein, is expressly limited to (1) the correction of the defect by adjustment, repair, modification, or replacement, or (2) issuance of a credit or refund of the purchase price for the defective equipment at ALTECH's election and sole expense.

EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY EXTENDS ONLY TO THE CUSTOMER FROM ALTECH OR ITS AUTHORIZED DISTRIBUTOR.

LIMITATION OF LIABILITY - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either party more than two (2) years after the cause of action has accrued.

PATENT INDEMNITY - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

SELLER'S REMEDIES - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder, ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

GOVERNING LAW - This agreement will be governed by the Laws of the State of New Jersey.

GENERAL - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

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