

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
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				
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
Single phase	Continuous current	20A	20A	20A
	110~120V	0.5	0.5	1
Three phase	220~240V	1	1.5	2
	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.



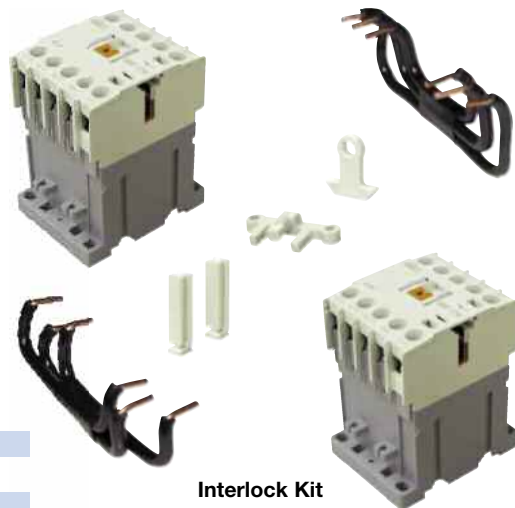
Mini Contactors

Accessories

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

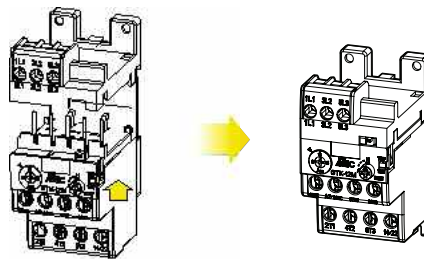
Part No.	Poles	Configuration	Mounting
AU-1M-10	1	1NO	Side
AU-1M-01	1	1NC	Side
AU-2M-20	2	2NO	Front
AU-2M-02	2	2NC	Front
AU-2M-11	2	1NO/1NC	Front
AU-4M-40	4	4NO	Front
AU-4M-31	4	3NO/1NC	Front
AU-4M-22	4	2NO/2NC	Front
AU-4M-13	4	1NO/3NC	Front
AU-4M-04	4	4NC	Front

Surge Units

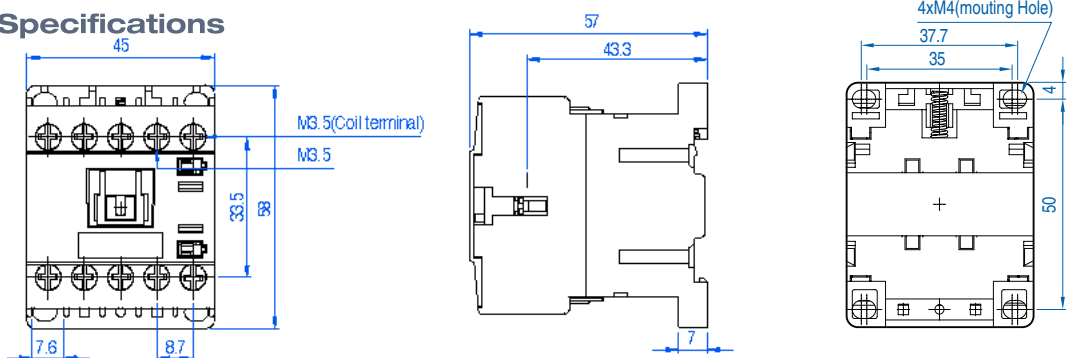
Part No.	Rated Voltage	Internal Element	Contactor Type
AS-12M/1	24-48VAC	Varistor	GMC-6M-12M
AS-12M/2	60-127VAC	Varistor	GMC-6M-12M
AS-12M/3	200-240VAC	Varistor	GMC-6M-12M
AS-12M/4	12-24VDC	Varistor	GMD-6M-12M
AS-12M/5	30-72VDC	Varistor	GMD-6M-12M
AS-12M/6	100-127VDC	Varistor	GMD-6M-12M
AS-12M/7	200-250VDC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

Manual Motor Starters

MMS Series

Altech Corp.[®]



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 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

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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.

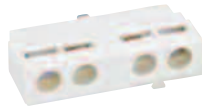
Accessories

Manual Motor Starter
- MMS Series



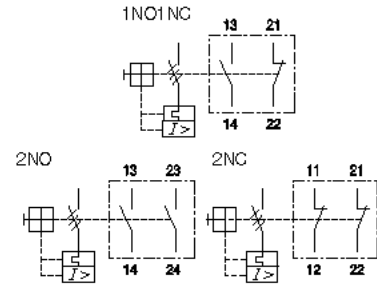
Altech Corp.®

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



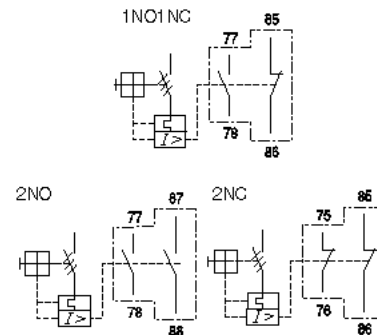
Connection Diagrams FX

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

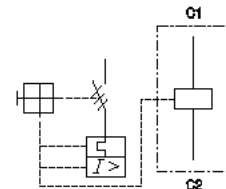
RS...



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

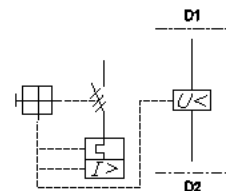
RU...



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

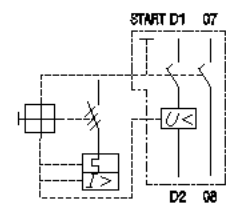
RUX...



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

Manual Motor Starters

Accessories

Manual Motor Starter
- MMS Series



UL508 Type E
E252942

Manual Motor Starters



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

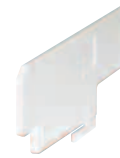


Dial Cover

Dial Cover

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

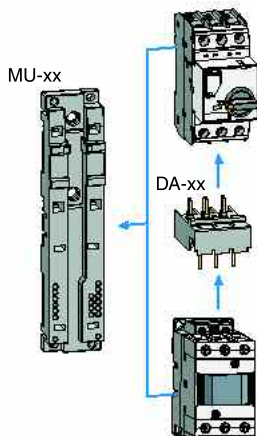
Part No.
DIAL COVER



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

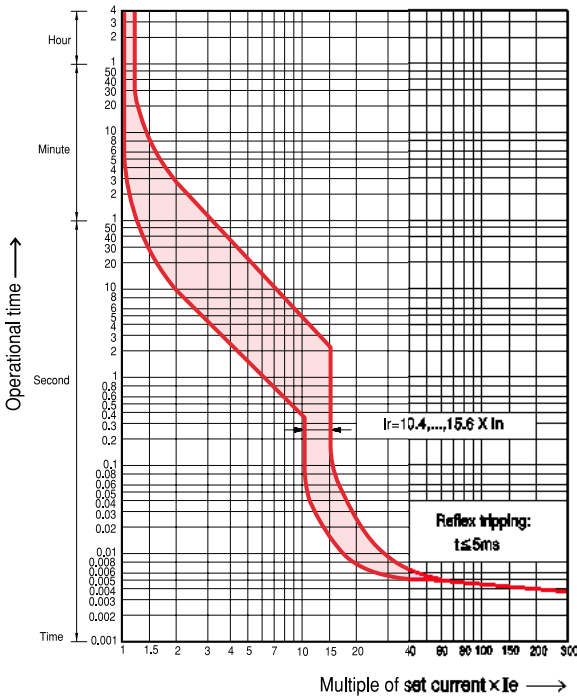
Part No.	MMS Type	Combined Contactor Type	Mounting Unit
DA-16HA	MMS-32H	Mini Contactor GMC-6M...12M AC	MU-45
DA-16HD	MMS-32H	Mini Contactor GMC-6M...12M AC	MU-45
DA-22HA	MMS-32H	MC-9B...22B AC	MU-45
DA-22HD	MMS-32H	MC-9B...22B DC	MU-45
DA-32HA	MMS-32H	MC-32A...40A AC	MU-45
DA-32HD	MMS-32H	MC-32A...40A 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

Specifications

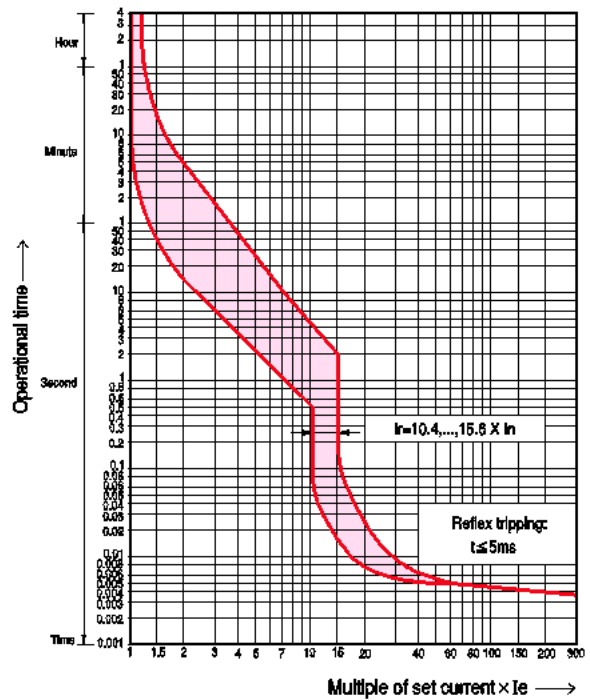
MMS Series

Trip Curves

MMS-32H

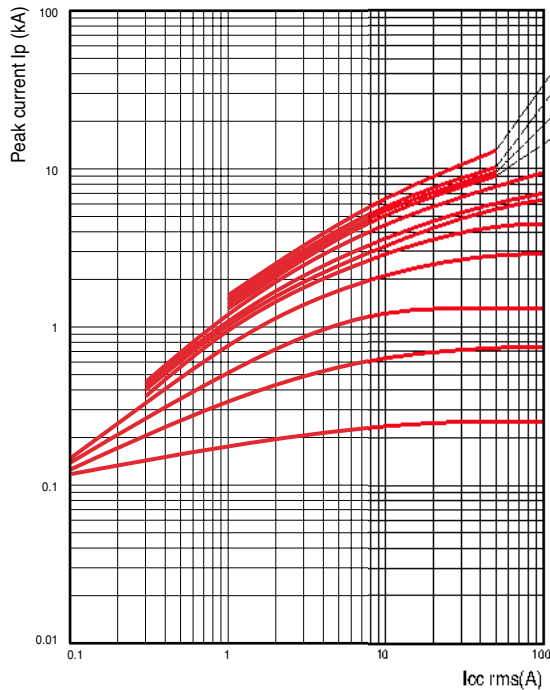


MMS-63H, MMS-100H



Thermal Short Circuit Limit

MMS-32H



MMS-63H

