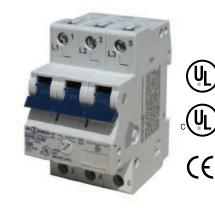
## Altech UL508

## MA- Series Three Phase Adjustable Trip Miniature Circuit Breakers/ Manual Motor Controllers

The MA was designed to handle the high inrush loads of 3 phase transformers, power supplies, motors, etc. The MA protects wiring and equipment from damage caused by the three major classes of over-current, yet greatly reduces the number of nuisance trips in high starting and inrush current circuits.

An IEC device with excellent ratings under a UL listing at 480Y/277V (including group ratings) and at 500V under international standards, the Altech/ABL Sursum MA provides short and long term cost effective circuit protection for USA and/or export applications. The short term advantages include: (1) adjustable thermal trip allows finalization of initial designs before procurement of the load equipment is complete; (2) snap-on mounting for readily available, internationally standardized DIN Rail saves panel layout design time as well as installation and change labor; (3) large cage-clamp terminals with screws suitable to power screwdrivers, simplifies and speeds wiring; (4) convenient switched disconnect during factory testing and/or initial start-up saves time and aggravation. The key long term advantage is customer satisfaction and proven over-current protection of wiring and equipment (and the lack of rework/repair costs).



UL508 listed E137938

CAN/CSA-C22.2 No.14 certified

## **Type Designation**

MA	16	U	Μ
(a)	(b)	(c)	(d)

- (a) = MA Manual Motor Controller
- (b) = Rated Current
- (c) = U US Housing
  - = R US Housing + Ring Tongue
- (d) = M Part No. Designation

Voltage Rating	480Y/277VAC			
AIC (Interrupt Capacity)	0.16A-2.5A: 42kA; 4.0A-16A: 14kA; 20A-40A: 10kA			
Standard Short Circuit Withstand Rating 0.16A-2.5A: 42kA; 4.0A-16A: 14kA (UL/CSA Ratings)				
Group Short Circuit Ratings (UL/CSA Ratings)	see above			
Typical Life	6000 on/off operations with 2xRC			
Calibration Temperature	25°C, +0°, -5° (77°F, +0° -9°)			
Standard Pack and Weight	1/450g (1.0 lb.)			
Terminal Size Acceptability	Top/Bottom: 18-3 AWG			

	Rated	FLA Dial Adjustment	GROUP SHORT CIRCUIT RATING AT 480VAC <sup>a</sup>									
Cat. No.	Current	Markings	(and BCP size)	110-120V HP (HEA)	200V HP (HEA)	208V HP (HEA		)-240V (HEA)		)-480V (HEA)		
MA016UM	0.16A	0.1/ 0.12/0.14/0.16										
MA025UM	0.25A	0.16/0.19/0.22/0.25										
MA040UM	0.40A	0.25/0.30/0.35/0.40		42kARMSThrough MA2.5U, ampere rated for motor circuits having a full- load-amperage (FLA) not exceeding the MA's general purpose rated current (RC, equals maximum dial setting) and a locked rotor current not exceeding 6 times the MA's RC.								
MA063UM	0.63A	0.40/0.48/0.56/0.63	,									
MA1.0UM	1.0A	0.63/0.75/0.87/1.0										
MA1.6UM	1.6A	1.0/1.2/1.4/1.6	or RK5)									
MA2.5UM	2.5A	1.6/1.9/2.2/2.5										
MA4.0UM	4.0A	2.5/3.0/3.5/4.0	14kArms	1/2 (4.0)	3/4 (3.2)	3/4 (3.1	l) 1	(3.6)	2	(3.42)		
MA6.3UM	6.3A	4.0/4.8/5.6/6.3	symmetrical (max. 350A MCCB	3/4 (5.6)	11/2 (6.0)	11/2 (5.	7) 11/2	(5.2)	3	(4.8)		
MA10UM	10A	6.3/7.5/8.7/10		1 (7.2)	2 (7.8)	2 (7.	5) 3	(9.6)	5	(7.6)		
MA16UM	16A	10/12/14/16	or RK5)	2 (13.6)	3 (11.0)	3 (10.	6) 5	(15.2)	10	(14.0)		
MA20UM	20A	16/17/18.5/20	10kArms	3 (19.2)	5 (17.5)	5 (16.	7) 5	(15.2)	10	(14.0)		
MA25UM	25A	20/21.5/23/25	symmetrical (max. 350A MCCB	3 (19.2)	5 (17.5)	71/2 (24.	2) 71/2	(22.0)	15	(21.0)		
MA32UM	32A	25/27/30/32		5 (30.4)	71/2 (25.0)	71/2 (24.	2) 10	(28.0)	20	(27.0)		
MA40UM	40A	32/34/37/40	or RK5)	5 (30.4)	10 (32.0)	10 (31.	0) 10	(28.0)	25	(34.0)		

Note: **HEA - Horsepower Equivalent Amperes**, the nominal amperage assigned to standard motor horsepower ratings in design guide tables such as NFPA-70 Tables 430-248, 430-249, 430-250; UL1077 Table 16.2; CSA - C22.2 No. 235-M89 Tables 44 and 45; CSA-C22.2 No. 14-M91 Table 19, etc. Multiply HEA values (in parenthesis) by 1.1 if power factor is 90%, and by 1.2 if power factor is 80%.

<sup>a</sup> The standard-circuit short-circuit rating is 14kA for all types. Group ratings can be used in a standard circuit (e.g., MA1.0U at 42kA), but a higher standard rating cannot be used in a group circuit (e.g., MA40U at 14kA only in standard circuit.)