

SELEC

MA SERIES
Operating Instructions

SPECIFICATIONS

AC MODEL (CT INPUT)									
Product Name	MA12	MA202	MA302	MA501	MA201	MA2301			
Description	1 Ø Digital Ammeter				3 Ø Digital ammeter				
Display	4 digit 7 segment LED display			4 digit LCD with analog style bargraph indication					
Display range	0 to 4960A			0 to 6200A					
Input range	50mA to 5A AC								
Input Frequency	50 / 60Hz								
Max continuous Input range	6.2A								
Over range indication	"Or" for input > 6.2A								
CT primary setting	5 to 4000 (programmable in steps)		5 to 5000 (programmable in steps)						
CT secondary setting	5A fixed								
Resolution	0.001, 0.01, 0.1, 1A (depending upon CT primary setting)								
Electrical connection	1 Ø - 2 wire			3 Ø - 4 wire					
Supply Voltage	240V AC (± 20%), 50 / 60Hz ; 110V AC (± 20%), 60Hz								
Power consumption	5VA max.		12VA max.						
Weight	170gm	180gm	180gm	113gm	138gm	163gm			
CE and UL Certification	YES	YES	CE ONLY	YES	YES	YES			

DC MODEL (SHUNT / DIRECT INPUT)							AC MODEL (AUTO RANGING TYPE)	
Product Name	MA12-50mV-DC	MA12-DC-2mA	MA12-DC-20mA	MA12-DC-200mA	MA12-DC-2A	MA12-AC-2 /20mA	MA12-AC-200 /2000mA	
Description	1 Ø Digital Ammeter							
Display	4 Digit 7 Segment LED Display	3 ½ digit 7 Segment LED Display						
Display range	0 to 4960A	-1.999mA to +1.999mA	-19.99mA to +19.99mA	-199.9mA to +199.9mA	-1999mA to +1999mA	0 to 1.999 / 19.99mA	0-199.9 / 1999mA	
Input range	MA12-50mV DC : 0 to 50mV MA12-75mV DC : 0 to 75mV MA12-100mV DC : 0 to 100mV	0 to ±2mA	0 to ±20mA	0 to ±200mA	0 to ±2000mA	0 to 2/20mA	0 to 200/2000mA	
Input Frequency	—						50 / 60Hz	
Measurement range	0 to 6.2A	0 to ±1.999mA	0 to ±19.99mA	0 to ±199.9mA	0 to ±1999mA	0 to 19.99mA	0 to 1999mA	
Max continuous Input range	6.2A	±1.999mA	±19.99mA	±199.9mA	±1999mA	1.999 / 19.99mA	199.9 / 1999mA	

DC MODEL (SHUNT / DIRECT INPUT)						AC MODEL (AUTO RANGING TYPE)			
Product Name	MA12-50mV-DC	MA12-75mV-DC	MA12-100mV-DC	MA12-DC-2mA	MA12-DC-20mA	MA12-DC-200mA	MA12-DC-2A	MA12-AC-2 /20mA	MA12-AC-200 /2000mA
Over range Indication	"Or" for input > 6.2A	"Or" for input > ±1.999mA	"Or" for input > ±19.99mA	"Or" for input > ±199.9mA	"Or" for input > ±1999mA	"Or" for input > 19.99mA	"Or" for input > 199.9mA	"Or" for input > 1999mA	"Or" for input > 1999mA
Shunt setting	5 to 4000								
Resolution	0.001, 0.01, 0.1, 1A (depending upon shunt setting)								
Electrical connection								1 Ø - 2 wire	
Power consumption								5VA max.	
Supply Voltage								240V AC (± 10%), 50 / 60Hz ; 110V AC (± 10%), 60Hz	
Input type	Shunt							Direct	
Weight	170gm							170gm	
CE and UL Certification	YES							YES	

WIRING GUIDELINES

WARNING

- To prevent the risk of electric shock, power supply to the equipment must be kept OFF while doing the wiring arrangement.
- Wiring shall be done strictly according to the terminal layout. Confirm that all connections are correct.
- Use lugged terminals.
- To reduce electromagnetic interference use of wires with adequate ratings and twists of the same in equal size shall be made with shortest connections.
- Layout of connecting cables shall be away from any internal EMI source.
- Cable used for connection to power source, must have a cross section of 0.5mm² to 2.5mm² (20 to 14AWG; 75°C(min)). These wires shall have current carrying capacity of 6A.
- Copper cable should be used (Stranded or Single core cable)
- Before attempting work on device, ensure absence of voltages using appropriate voltage detection device.

INSTALLATION GUIDELINES

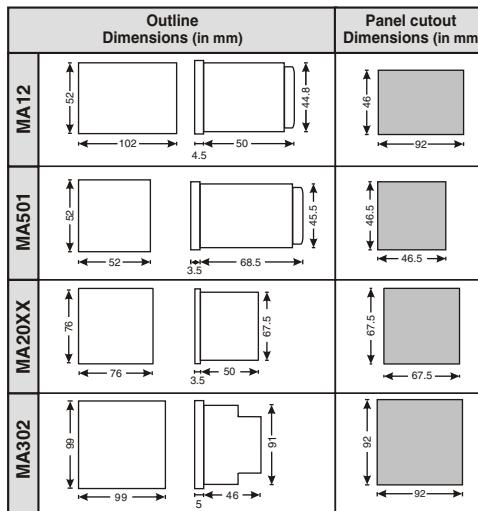
CAUTION :

- This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
- Conductors must not come in contact with the internal circuitry of the equipment or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
- Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
- Before disconnecting the secondary of the external current transformer from the equipment, make sure that the current transformer is short circuited to avoid risk of electrical shock and injury.
- The equipment shall not be installed in environmental conditions other than those mentioned in this manual.
- The equipment does not have a built-in-type fuse. Installation of external fuse of rating 275V AC / 0.5Amp for electrical circuitry / battery is highly recommended.

MECHANICAL INSTALLATION

For installing the meter

1. Prepare the panel cutout with proper dimensions as shown below.



2. Push the meter into the panel cutout. Secure the meter in its place by pushing the clamp on the rear side. The clamps must be secured in diagonally opposite slots.

3. For proper sealing, tighten the screws evenly with required torque.

Terminal screw tightening torque :

0.68 N-m to 0.79 N-m (6.018 In-Lb to 6.992 In-Lb)

Screw clamp tightening torque : 0.1N-m (0.885 Lb-inch)

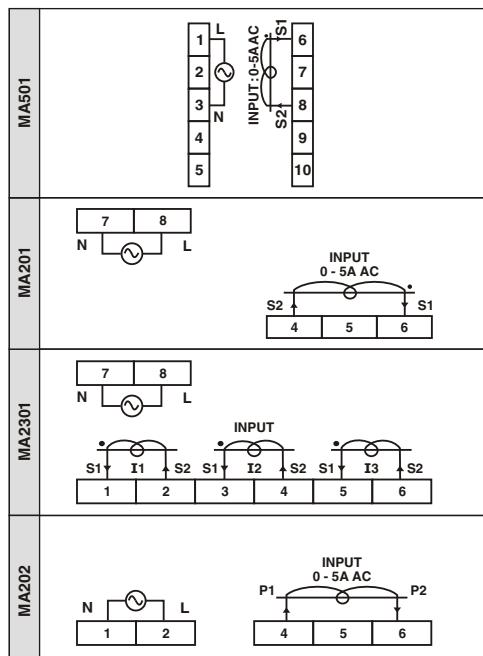
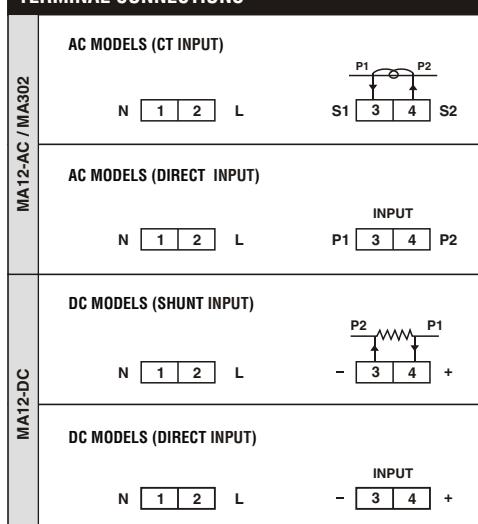
MAINTENANCE

1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.

2. Clean the equipment with a clean dry or damp cloth.

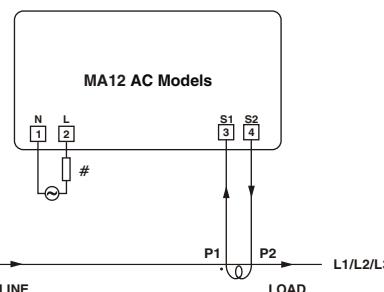
Do not use any cleaning agent other than water.

TERMINAL CONNECTIONS

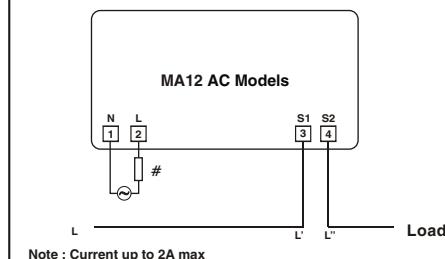


WIRING DIAGRAM

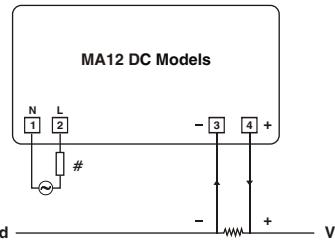
Case for MA12 AC Models (CT Input) / Case for MA302



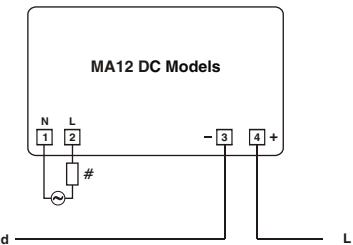
Case for MA12 AC Models (Direct Input)



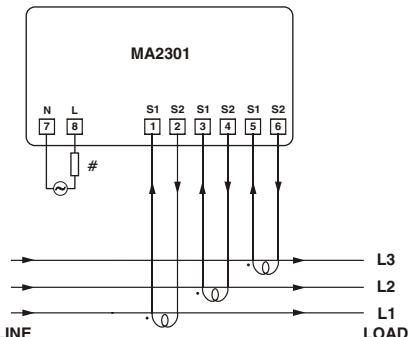
Case for MA12 DC Models (Shunt Input)



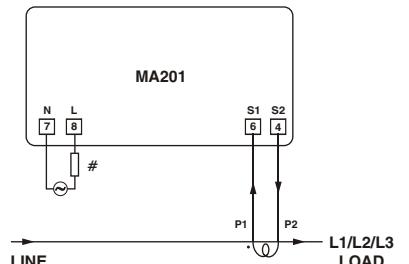
Case for MA12 DC Models (Direct Input)



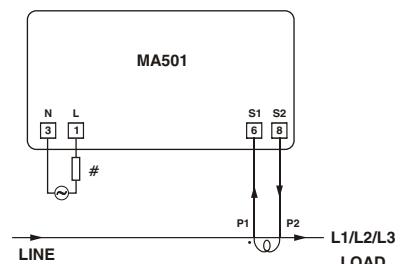
Case for MA2301



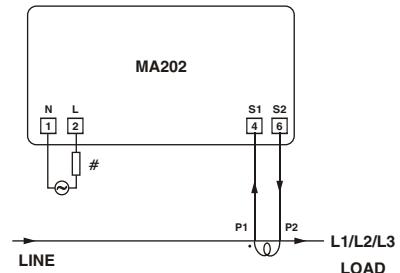
Case for MA201



Case for MA501



Case for MA202



All fuse types : 0.5A class CC UL type ; 0.5A fast acting 600V

NOTE :

To enter into configuration mode : Press (●) switch for 5sec. after which,

- 1) For CT type models : "ctr" will be displayed initially. CT settings can be done in steps with every press of the tact key at rear side of the product.
- 2) For shunt type models : "prg" will be displayed initially. Shunt settings can be done in steps with every press of the tact key at rear side of the product.

CT / Shunt settings : 5, 10, 15, 20, 25, 30, 40, 50, 60, 75, 80, 100, 125, 150, 175, 200, 250, 300, 400, 500, 600, 630, 750, 800, 1000, 1200, 1500, 1600, 2000, 2250, 2500, 3000, 3200, 4000, 5000
(Note : The settings highlighted above are available only in MA201 / MA2301 / MA501)

To exit from configuration mode : switch OFF the unit and then switch ON or the unit will Auto Exit after 100sec. if no key is pressed.

Page scrolling can be done through different phase current pages with every press of the selector switch in MA2301.

(Specifications subject to change as development is a continuous process)

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