MA-100 Logic Controller Replacement Board

MGO/MGO-GD/MGO-HD & MSWG

INSTRUCTIONS

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE CHANGING THE CONTROLLER OVER TO ANOTHER.

The following instructions apply to all the gate operators built with MA-100 logic controller' model MGO/MGO-GD/MSWG/MGO-HD, 1 phase or 3 phase irrespective of the line voltage. We have tried every effort to minimize the time required to change over these boards.

WARNING

Neglecting to follow these instructions will result in complete damage to the controller. If you are not confident, please consult Manaras for assistance.

STEP BY STEP CHANGEOVER INSTRUCTIONS

1. **Disconnect** all power to gate operator.
2. **Remove** the four bolts holding the MA-100 controller.
3. **Install** the Manaras logic controller. The controller is supplied with a pre-wired transformer and shall be installed in the control box, depending upon the space available.
4. **Remove** the two 14-pole plug connector from the socket. One 14poles connector is numbered 1 to 14 and the second one is numbered as 15 to 28.
5. **Once** the MA-100 controller is removed, replace it with Manaras Controller. Since Manaras controller does not have any socket connector like MA-100, but instead is provided with regular terminal strip numbered accordingly.
6. **Remove** all the wires from the 14poles connector numbered 1 to 14. Remove 10-k ohms resistor and two jumper wires between 1 to 9 and 1 to 10 permanently. Once all the wires are removed, connect back all the wires to the corresponding numbers provided on the terminal strip on Manaras controller. Make sure all the wires are connected to the respective numbers.
7. **Remove** all existing wires on the second 14poles connector, which are numbered as 15 to 28. Once the wires are removed, connect back the wires from terminal # 16, 20, 21, 24 & 25 to respective numbers on the new terminal strip provided on Manaras controller. If any warning Lights were connected on 22 and 23 they should be removed.
8. **Do not** disconnect any external devices like push button station, safety edge, exit loop, safety loop, radio control etc. We tried every aspect not to disturb these, but if you wish to use some of the added features to this new controller refer to the instruction manual provided.
9. **Refer to** the electrical drawing and instruction manual for more details.

MANARAS.

Customer Service and Technical Support

TOLL FREE numbers:

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Program and Program settings

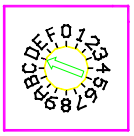
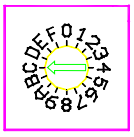
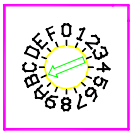
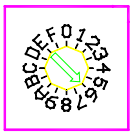
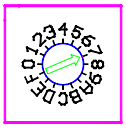
Programming ability and door control at electrical box are provided by Open/Close/Stop buttons and Select Switch located on the ECB.

- **Programs**

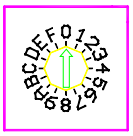
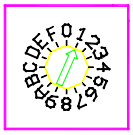
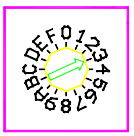
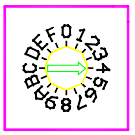
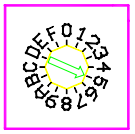
PROGRAMS	FUNCTIONS AND DESCRIPTIONS
RUN TIMER	The Run Timer stops automatically the operator after an adjustable time delay either travelling upwards or downwards. The Run Timer is designed to protect the door and the operator by preventing the motor over running much longer than the normal time.
MID-STOP	Mid-Stop function will, when active, move the door from the down position to a predetermined Mid-stop position when the open button or Open/Close device is activated. Once at Mid-Stop, subsequent Open/close commands will close the door. To move the door to full open position, the open button must be pressed again.
TIMER TO CLOSE	Timer to Close is a function that, when active, will close the door after an adjustable time delay once the door has reached its fully open and mid-stop position. The timer to close function works only in T and TS modes.
TIMER TO CLOSE (from fully open position only)	Option used in conjunction with MID STOP function. When activated, Timer to Close is active from the fully open position only and not from the mid-stop position.
ADVANCE CLOSED TIME	This feature, when programmed, allows adjustment of the safety device disabling point and to determine the final stop point of the door once the "close limit switch" is activated. No "advance close limit switch" is needed with this feature.

- **Program setting**

Door should be in fully closed position while setting of these following programs.

PROGRAM SETTING			
PROGRAMS	**ACTIVATE**	**DISACTIVATE**	**SELECT SWITCH**
RUN TIMER	• Check if close limit switch is activated. • Set select switch on D. • Press "Open" button to add 10 sec to the total time needed to open the door. Set the select switch on (0,1 or 2)	• Set select switch on D. • Press "Stop" button.	
MID-STOP	• Check the close limit is activated. • Set select switch on "C" • Press "Open" button then press "Stop" button on desired Mid-Stop position.	• Set select switch on "C" • Press "Close" button.	
TIMER TO CLOSE	• Set select switch on "B" • Press "Open" button to add 15 sec or "Close" button to add 1 sec each time (max. 4 minutes & 30 seconds) • Set the select switch on T(4) or TS(5) mode	• Set select switch on "B" • Press "Stop" button the timer to close is reset to 0 sec but still activated. • To defeat the timer to close completely set the switch on desired position (0, 1, 2 or 3)	
TIMER TO CLOSE (from fully open position only)	• Set select switch on "6" • First press the "Close" button and then the "Stop"	• Set select switch on "6" • Press "Close" button. *Now the Timer to Close works from fully open and Mid-Stop position.	
ADVANCE CLOSED TIME	• Set the select switch on "7" • Press "Open" to add 50 milliseconds up to 500 milliseconds max. • Press "Close" to deduct 50 milliseconds each time till it reaches 0/sec.	• By pressing "Stop" the default time will be set to 100 milliseconds. * LED "INDICAT" comes ON only when time is increased or reduced. LED OFF when open or close button is pressed indicates "Advance Close Time" is reached Maxi or Mini. (pressing "Stop" LED ON = 100 milliseconds)	
	The ''close limit switch'' should be readjusted when the ''advance closed time'' is programmed or deactivated		

MODE SETTING

Wiring Type	Wiring Type & Functions	Select Switch
C2 (factory preset)	**Set select switch on 0** Momentary contact to open and stop, constant pressure to close with 3 buttons station. Activation of safety devices will reverse the door during closing. Auxiliary devices function as an Open control and to reverse door during closing.	
B2	**Set the select switch on 1**. Momentary contact to Open/Close and Stop with 3 buttons station. Activation of safety devices will reverse the door during closing. Auxiliary devices function as Open/Close control and reverse the door during closing.	
D1	**Set the select switch on 2**. Constant pressure to Open and constant pressure to Close. Activation of safety devices will stop the door during closing.	
E2	**Set the select switch on 3** Momentary contact to open and constant pressure to Close. Release of Close button activates the door upwards. Activation of safety devices will reverse door motion to fully open position.	
T	**Set the select switch on 4**. Momentary contact to Open / Close and Stop. Timer to Close if programmed, safety devices reverse upon but will disable Timer to Close. Timer to close will also be disabled if there is a power outage, a chain hoist is engaged or the stop is pressed before elapsed time. The timer resumes its normal operation, once the close cycle is completed.	
TS	**Set the select switch on 5**. Momentary contact to Open / Close and Stop. Timer to Close if programmed, safety devices reverse upon activation and will refresh Timer to Close. Timer to close also gets refreshed, if there is a power outage, a chain hoist is engaged or a stop button is pressed before elapsed time.	

IMPORTANT NOTES:

- **STOP JUMPER**
  - While testing the operator or adjusting the cams using the O/C/S buttons available on the Electronic Control Board, a jumper should be placed between the #8 & #9. Once the tests or adjustments completed the jumper should removed before connecting the wall 3-push buttons station. Failure to remove the stop jumper, **the STOP BUTTON WILL NOT RESPOND**.

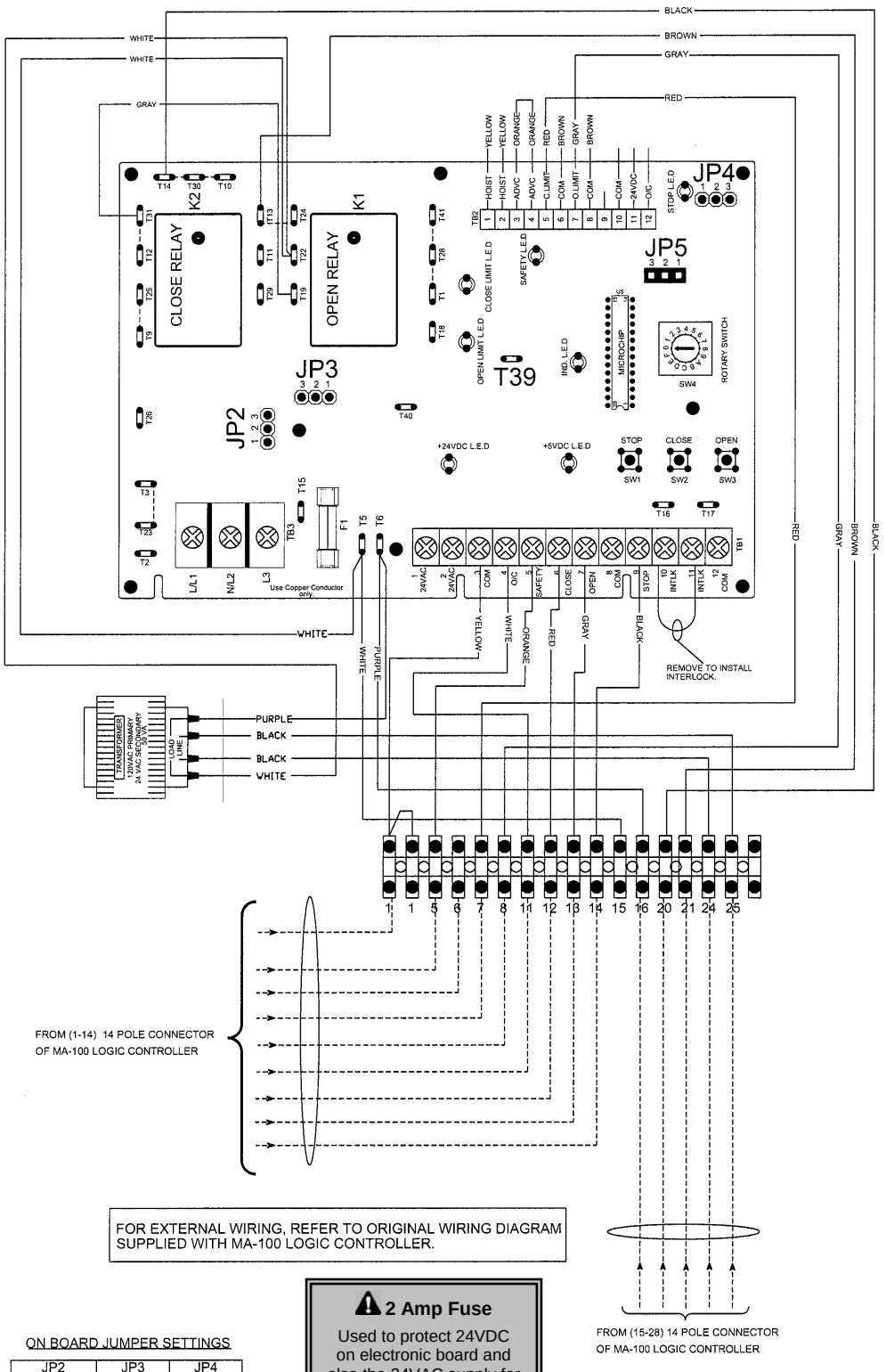
  - A stop jumper should be installed between #8 & #9 when using a Key switch, a single button Radio control or a 2-buttons station (Open/Close). **IN THESE CONDITIONS NO STOP COMMAND IS AVAILABLE TO STOP THE DOOR DURING THE TRAVELLING.**

WARNING

MOTORIZED DOORS CAN CAUSE SEVERE INJURY OR DEATH. MANARAS STRONGLY RECOMMENDS THE USE OF ENTRAPMENT PROTECTION SYSTEMS, ESPECIALLY IN THE CASES OF MOMENTARY CONTACT TO CLOSE (B2 WIRING) AND TIMER TO CLOSE (T & TS).

DRAWING- MECB-BOARD042
ELECTRONIC LOGIC BOARD

SUPPLEMENT DIAGRAM TO REPLACE MA-100 - MODEL : MGO/MGO-GD/MGO-HD/MSWG



FOR EXTERNAL WIRING, REFER TO ORIGINAL WIRING DIAGRAM SUPPLIED WITH MA-100 LOGIC CONTROLLER.

⚠ 2 Amp Fuse

Used to protect 24VDC on electronic board and also the 24VAC supply for auxiliary control devices

ON BOARD JUMPER SETTINGS

JP2 (1 2 3)	JP3 (1 2 3)	JP4 (1 2 3)
2,3	2,3	2,3

ROTARY SWITCH SETTINGS- SW4

WIRING TYPES

C2 WIRING

B2 WIRING

D1 WIRING

E2 WIRING

T WIRING

TS WIRING

PROGRAM SETTINGS

MID-STOP TIMER TO CLOSE

ADV. CLOSE TIME

WARNING LIGHT TIMER (OPTION)

TIMER TO CLOSE

MID-STOP

RUN TIMER

INSTALL JUMPER,

JP2(2,3)
JP3(2,3)
JP4(2,3)

NOTE:-
FOR ROTARY SWITCH SETTINGS AND PROGRAMMING PROCEDURES, REFER TO INSTRUCTION MANUAL.

⚠ MOTORISED DOORS CAN CAUSE SERIOUS INJURIES OR DEATH. MANARAS STRONGLY RECOMMENDS THE USE OF ENTRAPMENT PROTECTION SYSTEMS, ESPECIALLY IN THE CASE OF MOMENTARY CONTACT TO CLOSE AS IN B2 WIRING OR TIMER TO CLOSE.

TITLE: SUPPLEMENT DIAGRAM TO REPLACE MA-100 CONTROLLER

DRAWN BY:	DATE:	CAD FILE:	REV	DATE:
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