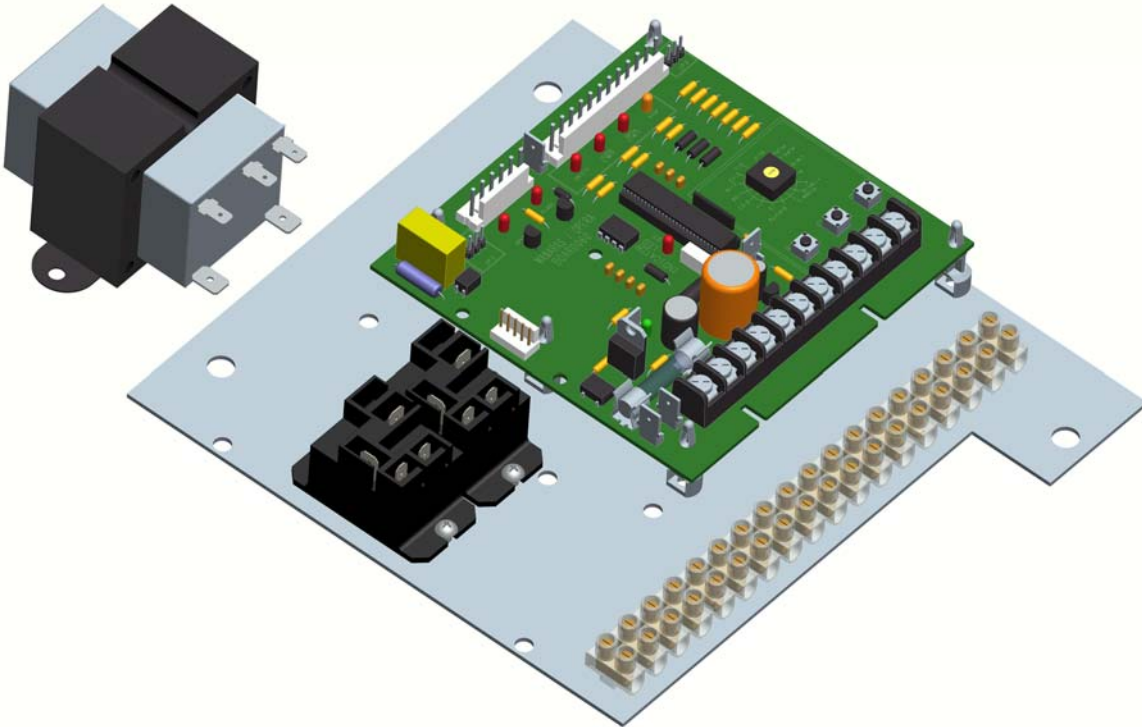


# Replacement and Installation Instructions

## MA-100 Logic Controller Replacement Board



M-85 & MHD-85

**Note:** Read this manual carefully before replacing the existing board and place this installation manual in an accessible place near the operator. For future reference record:

Model # \_\_\_\_\_

Date \_\_\_\_\_

Wiring Diagram # \_\_\_\_\_

Door No. # \_\_\_\_\_



## Important changeover instructions

Please read the following instructions carefully before changing the controller over to another.

### NOTICE

The following instructions apply to all the gate operators built with MA-100 logic controller model: M-85 & MHD-85 – single-phase 115/120V. We have tried every effort to minimize the time required to change over these boards.



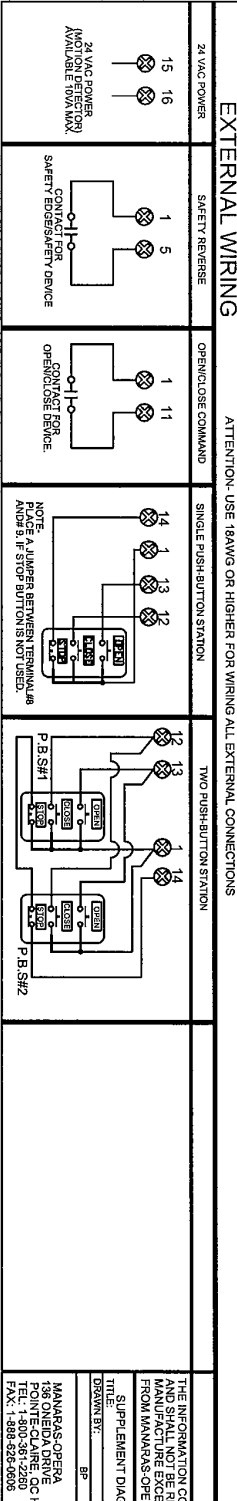
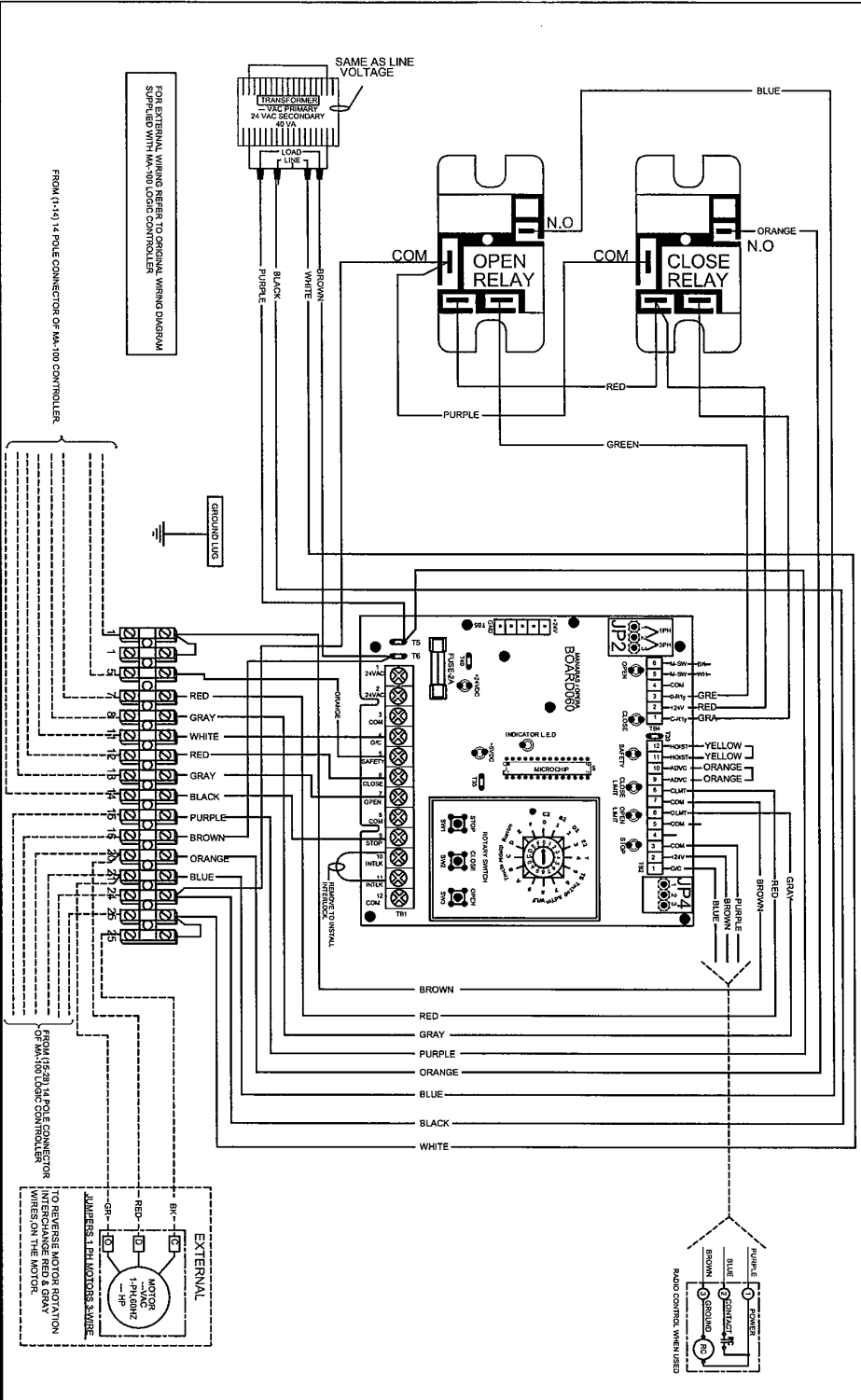
### WARNING

Neglecting to follow these instructions will result in complete damage to the controller. If you are not confident, please consult Manaras-Opera 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-Opera 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. Fix the transformer. Locate a free space in the control box and secure the transformer supplied with the new controller.
5. Remove the two 14-pole plug connector from the socket. One 14-poles connector is numbered 1 to 14 and the second one is numbered as 15 to 28.
6. Once the MA-100 controller is removed, replace it with Manaras-Opera Controller. Since the new controller does not have any socket connector like MA-100, but instead is provided with regular terminal strip numbered accordingly.
7. Remove all the wires from the 14-poles 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-Opera controller. Make sure all the wires are connected to the respective numbers.
8. Remove all existing wires on the second 14-poles 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-Opera controller. If any warning Lights were connected on 22 and 23 they should be removed.
9. 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.
10. Refer to the electrical drawing and instruction manual for more details

**SUPPLEMENT DIAGRAM TO REPLACE MA-100 (MODEL-M-85/MHD-85)**



**ROTARY SWITCH SETTINGS**

WIRING TYPES	PROGRAM SETTINGS
0	6
C2	MID-STOP
WIRING	TIMER TO
1	CLOSE
B2	ADV. CLOSE
WIRING	TIME
2	8
D1	WARNING
WIRING	LIGHT
3	TIMER
E2	B
WIRING	TIMER TO
4	CLOSE
T	4
WIRING	TS
5	5
WIRING	TS
ON BOARD JUMPER SETTINGS	
JP2	JP4
1 2 3	1 2 3
2 3	2 3

**WARNING LIGHT/RECEIVER MODULE**

TS6 CONNECTION FOR WARNING LIGHT AND RECEIVER MODULE (CONSULT FACTORY)

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

THE INFORMATION CONTAINED HEREIN IS PROPRIETARY TO MANARAS OPERA AND SHOULD BE KEPT CONFIDENTIAL OR DISCLOSED DIRECTLY TO MANARAS OPERA FROM MANARAS OPERA.

SUPPLEMENT DIAGRAM TO REPLACE MA-100 CONTROLLER(MODEL M-85/MHD-85)

DATE: 17 SEP 2008

REV: DATE: 17 SEP 2008

DRAWN BY: BP

MANARAS OPERA  
136 ROUTE 200  
POINTE-CLAIRE, QC H9R 1A8  
TEL: 1-800-361-2280  
FAX: 1-580-926-9006

## Program and Program settings


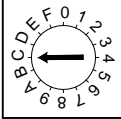
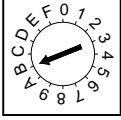
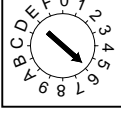
Programming ability and door control at electrical box are provided by Open/Close/Stop buttons and Select Switch located on the ECB.

- **Programs**

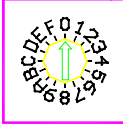
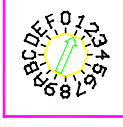
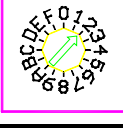
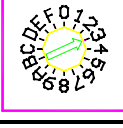
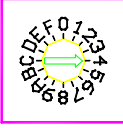
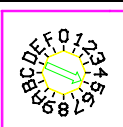
PROGRAMS	FUNCTIONS AND DESCRIPTIONS
<b>RUN TIMER</b>	The Run Timer stops automatically the operator after an adjustable time delay either travelling upwards or downwards. The Run Timer is designed to protect the door and the operator by preventing the motor over running much longer than the normal time.
<b>MID-STOP</b>	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.
<b>TIMER TO CLOSE</b>	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.
<b>TIMER TO CLOSE (from fully open position only)</b>	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.
<b>ADVANCE CLOSED TIME</b>	“Advance close limit switch” is not needed with this feature. Advance close time will disable the reversing device once the close limit switch is activated and will stop the door after 200 milliseconds before it reaches the fully closed position. <i>Note: Door distance traveled within these 200 milliseconds may vary depending on the door speed.</i>

- **Program setting**

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

PROGRAM SETTING			
PROGRAMS	ACTIVATE	DEACTIVATE	SELECT SWITCH
<b>RUN TIMER</b>	<ul style="list-style-type: none"> <li>• Check if close limit switch is activated.</li> <li>• Set select switch on D.</li> <li>• Press “Open” button to add 10 sec to the total time needed to open the door.</li> <li>• Set the select switch on run mode (0, 1, 2, 3, 4 or 5).</li> </ul>	<ul style="list-style-type: none"> <li>• Set select switch on D.</li> <li>• Press “Stop” button.</li> <li>• Set the select switch on run mode (0, 1, 2, 3, 4 or 5).</li> </ul>	
<b>MID-STOP</b>	<ul style="list-style-type: none"> <li>• Check if the close limit is activated.</li> <li>• Set select switch on “C”.</li> <li>• Press “Open” button then press “Stop” button on desired Mid-Stop position.</li> <li>• Set the select switch back on run mode (0, 1, 4 or 5).</li> </ul>	<ul style="list-style-type: none"> <li>• Set select switch on “C”.</li> <li>• Press “Stop”, “Close” and “Open” buttons consecutively.</li> <li>• Set the select switch back on run mode (0, 1, 4 or 5).</li> </ul>	
<b>TIMER TO CLOSE</b>	<ul style="list-style-type: none"> <li>• Set select switch on “B”.</li> <li>• Press “Open” button to add 15 sec or “Close” button to add 1 sec each time (max. 4 minutes &amp; 15 seconds).</li> <li>• Set the select switch on T or TS mode.</li> </ul>	<ul style="list-style-type: none"> <li>• Set select switch on “B”.</li> <li>• Press “Stop” button the timer to close is reset to 0 sec but still activated.</li> <li>• To defeat the timer to close completely set the switch on desired position (0, 1, 2 or 3).</li> </ul>	
<b>TIMER TO CLOSE (from fully open position only)</b>	<ul style="list-style-type: none"> <li>• Set select switch on “6”.</li> <li>• First press the “Close” button and then the “Stop”.</li> <li>• Set the select switch on T or TS mode.</li> </ul>	<ul style="list-style-type: none"> <li>• Set select switch on “6”.</li> <li>• Press “Close” button.</li> <li>• Set the select switch on T or TS mode.</li> </ul> <p>*Now the Timer to Close works from fully open and Mid-Stop positions.</p>	
<b>Controlling Timer to Close from floor level (using wall buttons)</b>			
While door is in closed position, by pressing “Stop” 3 times and “Close” 3 times consecutively on the push button station, the timer to close is deactivated ( <i>timer to close is suspended</i> ).		Timer to close is re-activated ( <i>timer to close is back to normal function</i> ) simply when door is closed either from fully open or from mid-stop positions.	

## MODE SETTING

Wiring Type	Wiring Type & Functions	Select Switch
C2 (factory preset)	<b>Set select switch on 0</b> 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	<b>Set the select switch on 1.</b> 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	<b>Set the select switch on 2.</b> Constant pressure to Open and constant pressure to Close. Activation of safety devices will stop the door during closing.	
E2	<b>Set the select switch on 3</b> 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	<b>Set the select switch on 4.</b> 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	<b>Set the select switch on 5.</b> 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 be 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).**

**NOTES**

**NOTES**



# Commercial Door OPERAtor



Manaras-Opera is extending their well-known OPERA brand name across its entire line of Commercial Door OPERATORS. Over the years, the OPERA brand name has become synonymous with innovation and reliability. The high quality products you have come to expect from us will now be backed by the OPERA brand name.

**When you think  
Commercial Door OPERATORS,  
just think OPERA.**

Call us for more information  
**1-800-361-2260**

[www.manaras.com](http://www.manaras.com)