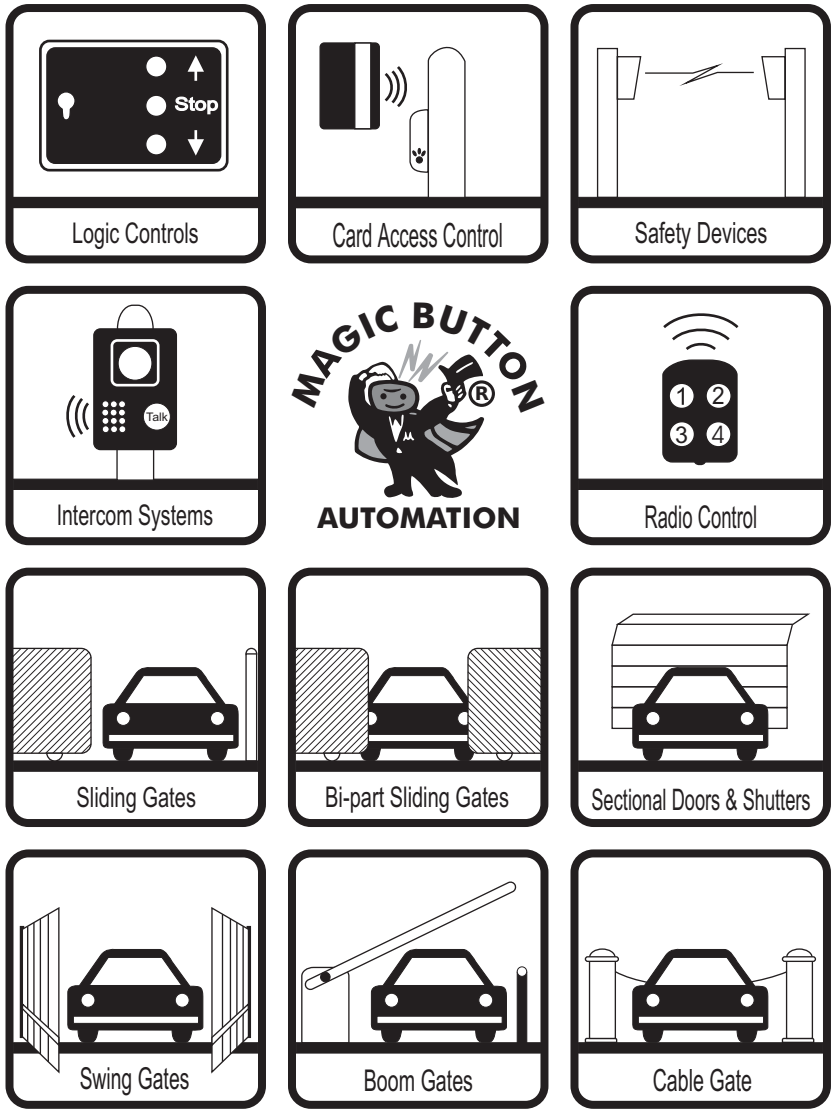
OTHER LIFTMASTER PRODUCTS



DOMESTIC • COMMERCIAL • INDUSTRIAL

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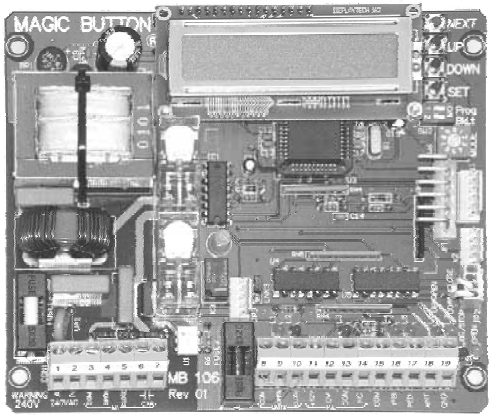
MB106
LOGIC CONTROL



MAGIC BUTTON®
AUTOMATION

LIFTMASTER

Please read these instructions carefully before adjusting the Liftmaster Magic Button MB106 control board's default parameter settings

1.0 MB106 MAIN FEATURES

- LCD display with back-light
- Micro controller design
- Rotary switch mode selection
- End of travel slow down with adjustment
- Motor force control with adjustment
- Suitable for single motor with or without limits
- Options for open, stop, and close input
- Pedestrian access control
- Stop on opening and closing, or reverse on closing
- Output to support relays for lights or invertor control
- Output for indication of board status
- Backup closing timer
- 6 pin receiver compatible
- On board antenna input
- 12V DC power supply protected by 0.5 amp fuse
- Optocoupler protection on all inputs
- LED indicators on all inputs for visual indication on input status
- Resettable and non-resettable counters

Note: The availability of some of this control board's features are dependent upon individual applications and motor drive configuration. Qualify feature suitability before use

2.0 IMPORTANT SAFETY INSTRUCTIONS

Please read these important safety rules. Failure to comply with the following safety rules may result in serious personal injury and or property damage.

2.1 When the MB106 logic control board is used to control gate, door, and barrier gate operating equipment the following factors MUST be taken into account:

A) Appropriate safety devices relevant to the particular application must be incorporated into the installation of all moving structures

B) Safety devices need to be regularly checked for the correct operation

C) The gate or door must be able to be freely moved by hand before motorisation

D) Warning signs must be visibly installed on either side of the structure

E) All programming must be undertaken by qualified technicians

F) Any device used to initiate the logic controller must be kept away from children

G) Wind loading on the operated structures will unavoidably alter operation functions

2.2 Do not activate the MB106 logic control board unless the moving structure is in full and clear view and free of objects such as vehicles and people

2.3 The MB106 logic controller must be connected to properly approved earthed 240V power supply

2.4 The main power supply must be disconnected before making any repairs

2.5 Any additional device(s) utilising the MB106 on board DC power supply must not exceed, under load, the total transformer Amp rating

2.6 Water, dust, and insect presence on the MB106 logic control board must be prevented

2.7 Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger

2.8 Liftmaster declines all liability caused by improper use or use other than that for which the automated system was intended

2.9 Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety

2.10 Liftmaster is not responsible for the failure to observe good technique in the design and construction of the structure to be motorised and or any deformation that may occur during use

2.11 If parameter P6 (Back Up Timer) is used the door/gate, once the run time is complete or the limits reached, will **automatically close** when the set value of back up time has expired. This closing will occur **without warning, an appropriate safety device must be installed**

2.12 If parameter P13 and/or P14 is used, then some type of mechanical/electronic clutch must be fitted as the motor will not stop at the end of travel time but will continue to run until the selected additional time has expired. This may result in excessive force on the fixtures and fittings depending on the torque on the motor when installed

2.13 The effectiveness and compatibility of parameter P12 is dependent of the type of motor to be controlled, qualify the suitability of P12 before use

3.0 INSTALLATION GUIDELINES

All electrical works must be carried out by a qualified electrical contractor in accordance with local authority regulations. Following is a list of installation guidelines:

3.1 Input power supply to the board is 240V 3 wire (Active, Neutral, and Earth).The input supply must have some means of power isolation.

3.2 All wiring conduit and cable gland entries to control box should be via the base only.

3.3 The recommended motor wire size is 1.5mm^2 stranded . For the control circuits the wire size is 0.5mm^2 stranded. High and low voltage cabling should not be run in the same conduit.

3.4 If control board is part of an installation where Variable Speed Drive (invertor) is used and the motor is mounted away from the control board, the cable between the invertor and the motor must be a SCREEN type and the screen wire should be earthed at both ends.
The Photo Electric wires must to be overall screen data wire 0.5mm^2 and the screen needs to be connected at one end to earth.

3.5 All control and limit switch inputs must be DRY switch contacts only. Ensure that all devices being used for gate/door activation have dry contact outputs before connecting to control board. If the device has a voltage output, a relay will be required.

4.0 WIRING MOTOR AND ACCESSORIES TO THE CONTROL BOARD

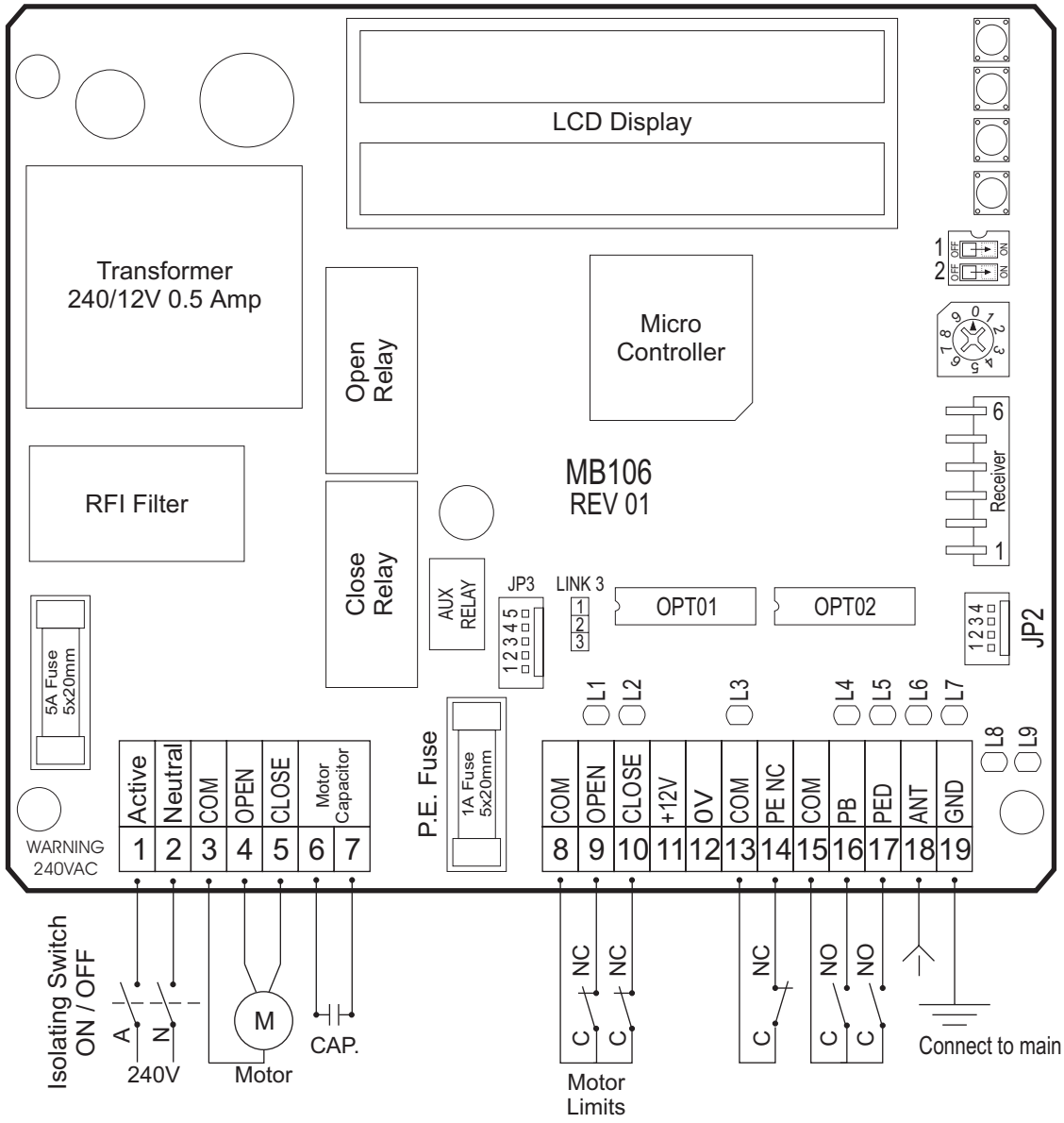
1. Connect the motor to motor terminal on the control board, then manually move gate/door to the mid position and engage the motor.

2. Turn power on to control board and activate motor (using push button or programmed remote etc). Motor should move towards open position. If the gate/door moves towards closed position, switch power OFF and reverse open/close motor wires (and open/close limit wires where used). Turn power ON and re-test for correct motor operating direction.

3. Once correct motor direction is established, the board parameters can be modified to suit the installation, and the mode selected.

5.0 STATUS INDICATORS L1 - L9

L1 - Motor open limit input status: normally ON, OFF when open limit activated
L2 - Motor close limit input status: normally ON, OFF when close limit activated
L3 - Safety input Indicator: indicates if safety input obstructed, MUST be OFF for board operation
L4, L5 - ON indicators for inputs PB or PED
L6, L7, L9 - If JP2 used, ON indicators for OPEN, CLOSE and STOP
L8 - Board status indicator: indicator OFF when the board is idle and the motor is in the CLOSED position. Once PB or PED input made, then indicator remains ON until the cycle CLOSE-OPEN-CLOSE is complete either by limit/s or when the close travel time setting is expired
L8 - If JP2 input used for DEAD MAN manual control then indicator permanently ON



← NEXT: Move to the next parameter

← UP: Increase the parameter value

← DOWN: Decrease the parameter value

← SET: Save the parameter value

← Program Switch: Enables programming

← Back-light Switch: Activates LED display back-light

← Mode Selection:
1. Pulse open / pulse close
2. Pulse open / auto. close
3. Pulse open / P.E. close
4. Counting mode

Note on **Fuses**: before changing the fuse(s), identify the cause of the fault, rectify, and then check board functionality including slow down speeds.

Note: +12V power supply is 200mA

MB106 CONTROL BOARD

FOR 3-WIRE 240V 5A MOTORS

LIFTMASTER ELECTRONICS PTY LTD
Phone: (02) 9699 9654 Fax: (02) 9699 8443

MB106 - 0506 - REV.01

6.0 MB106 MODE SELECTIONS

A '0' to '9' rotary switch is used to select the operating mode. See below for list of modes:

MODE 1 DOMESTIC POSITION 1

Gate/door opens on impulse, and closes off a 2nd impulse. While opening a pulse will stop the gate/door from fully opening. The next pulse will close the gate/door.
When used, if Photo Electrics are interrupted while closing or a pulse is applied, the gate/door will re-open and a second pulse is required for the gate/door to re-close.

MODE 2 AUTO CLOSE POSITION 2

Photo Electrics are mandatory for this mode. Gate/door opens on impulse and closes automatically after preset time (P2). While closing, if the PE is interrupted or a pulse is applied, the gate/door will re-open fully and re-close after the preset time (P2) expires and PE's are cleared.

MODE 3 PHOTO ELECTRIC CLOSE POSITION 3

Gate/door opens on impulse, and closes only after the PE is broken and cleared. While closing, if the PE is interrupted, the gate/door will re-open fully and close after preset time (P2).

MODE 4 COUNTING MODE POSITION 4

The number of pulses on the Push Button are counted, and gate/door will only close when the Photo Electrics are activated the same number of times as the pulses on the Push Button.
Note: If 2 photo electrics are used this mode is not possible.

7.0 HOW TO MODIFY THE PARAMETERS

Please note that the board parameters can only be modified while the board is inactive (LED 8 is off) and the door/gate is in the closed position. Factory supplied board is preset to default settings and must be site adjusted.

1. Turn switch No.1 (program switch) ON. To turn the display back-light on, turn switch No.2 ON
2. Display will show the first parameter, P1
3. To change the parameter value press UP or DOWN buttons
4. To save the value, press the SET button
5. To modify the next parameter, press NEXT
6. To exit programming, turn switch No.1 OFF

The following is a list of parameter values that can be modified. 'P' = parameter, 'M' = motor, 'Def' = default, 'Now' = saved parameter value.

DISPLAY ON LCD	COMMENT	RANGE	MY SETTINGS
P1 = M1 Travel Time Def: 5 Now: 5.0s	Set motor travel time	0 – 99 secs	
P2 = Auto Cls Delay Def: 1 Now: 1.0s	Set hold open time delay before closing	0 – 99 secs	
P3 = M1 Force Adj Def: 50% Now: 50%	Adjust motor force	30 - 100%	
P4 = M1 Slow Down Def: 0 Now: 0.0s	Motor slow down prior to stopping	0 – 10 secs	
P5 = M1 Soft Start Def: 0 Now: 0.0s	Motor soft start	0 – 5 secs	
P6 = Back Up Timer Def: 0 Now: 0.0s	Mode 3 only. Close door/gate if back out occurs & close PE/loop not triggered. WARNING: must use safety devices	0 – 65 secs	
P7 = PE Stop On Open Def: No Now: No	Motor stops when PE/Loop triggered if motor opening. Next motor direction mode dependent	No – Yes	
P8 = PE Reverse Def: Yes Now: Yes	Motor reverses when PE/Loop triggered if motor closing. Next motor direction mode dependent. If set to No motor stops when PE/Loop triggered. Next motor direction mode dependent	No – Yes	
P9 = PED Travel Def: 5 Now: 5.0s	Set pedestrian mode travel time	0 – 99 secs	
P10 = PED Auto Close Def: No Now: No	Set pedestrian mode to automatic close	NO - YES. Refer Parameter 3	
P11 = Pwr Fail Close Def: No Now: No	Set to YES gate/door will close automatically after power failure restored. Set to No gate/door will require a pulse to activate	No – Yes	
P12 = Slow Speed Def: Med Now: Med	Parameter P3 dependent. Slow = 60 %, torque, Med = 70 % torque, Fast = 80 % torque. Adjust to suit site conditions and motor	Slow, Med, Fast	

P13 = ExtraOpnTime Def: 2 Now: 2.0s	Add additional open time to P1 to compensate for wind loading or mechanical loading	0 –10 secs	
P14 = ExtraClsTime Def: 2 Now: 2.0s	Add additional close time to P1 to compensate for wind loading or mechanical loading	0 –10 secs	
P15 = Total Cycles #Cycles = 0000000	Non resettable cycle counter	Cycle = one complete open to close	
P16 = Resettable Cycl #Cycles = 0000000	Resettable cycle counter		
P17 = Reset Cycles Def: No Now: No	Reset parameter P15		
P18 = Auto Set Up Def: No Now: No	Automatically set the travel time for motor one: **1.** Establish correct motor direction; **2.** Disengage motor from gearbox and move gate/door to fully closed position; **3.** Engage motor; **4a.** Motor with limits: Select Yes - gate/door automatically travels to open limit and parameter P1 now reflects this travel time; **4b.** Motor without limits: Program hand transmitter button 1 to motor. Select Yes – gate/door automatically travels to open stop. Stop travel time as required by PB and parameter P1 now reflects this travel time.		
P19 = Reset Default Def: No Now: No	Reset all parameters P1 to P19 to the default values (excluding P15)		
P20 = Software Rev Revision 1.0	Software version		

8.0 JP3 OUTPUT OPTIONS

Please note all JP3 options require a plug and harness

OPTION 1

Link 3
1 + 2

In option 1, JP3 output is compatible with all previous Liftmaster IK series boards. JP3 can be used to start a timer (for example - on garden lights) or a relay kit could be plugged into it and used to control warning lights.

1	NO AUX open relay	Pin1 output is ON during opening cycle
2	NO AUX close relay	Pin2 output is ON during closing cycle
3	+12V	Pin3 is +12V can be used to supply accessory max, 100mA
4	Common AUX relay	Pin4 is **0V** output
5	Board status output	Pin5 is the board status output, ON when the board is active

* Option 1 is the default setting on the MB106

OPTION 2

Link 3
2 + 3

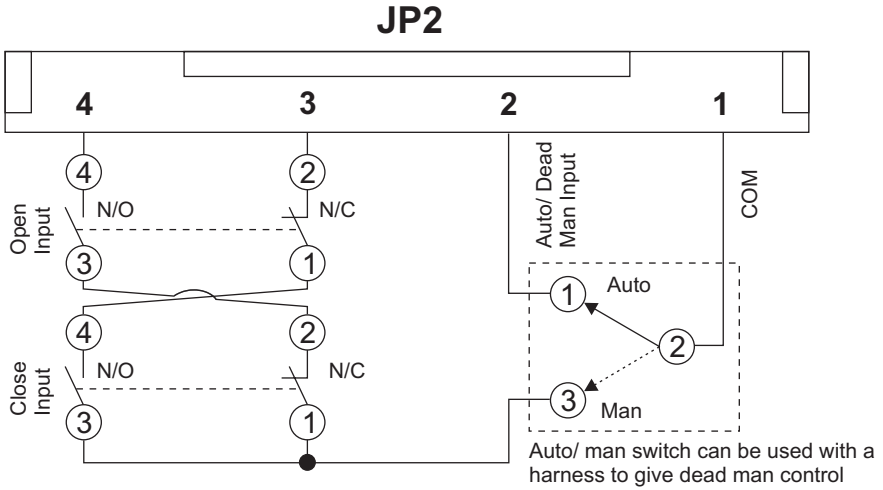
In option 2 JP3 output can be used to control Variable Speed Drive (invertor). The output is a DRY contact and it can be used to send an open and close signal to any invertor.

1	NO AUX open relay	Pin1 output is ON during opening cycle
2	NO AUX close relay	Pin2 output is ON during closing cycle
3	+12V	Pin3 is +12V can be used to supply accessory max, 100mA
4	Common AUX relay	Pin4 is **DRY** output
5	Board status output	Pin5 is the board status output, ON when the board is active

* Option 2 is used to configure JP3 output Pin1, Pin2, and Pin3 to dry contact output

9.0 JP2 INPUT OPTION 1

The JP2 input option is used to change the mode of operation from automatic control to **Dead Man** push button control.
A plug and harness is required for dead man input control (optional extra). The board is supplied with a link on JP2 for automatic control.



Auto/ man switch can be used with a harness to give dead man control

10.0 JP2 INPUT OPTION 2

JP2 can be used as an open/close/stop input. Rotate rotary switch to position 9. A plug and harness is required.