Flash Diagnostic Codes

The LE3000 Bill Acceptor has two LEDs that are located on the bezel **(Coin Resistant Style Bezel units only)**. The bezel lights aid in determining the status of the bill acceptor. Below is a chart that lists all the flash codes of the LE3000 Bill Acceptor and a description of each code.

<table>
<thead>
<tr>
<th>FLASH CODE</th>
<th>DESCRIPTION OF CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady Flashing</td>
<td>Ready To Accept</td>
</tr>
<tr>
<td>Rapid Flashing</td>
<td>Magazine or Cassette Full (Remove Bills)</td>
</tr>
<tr>
<td>LEDs Off</td>
<td>No power to unit, unit in Flash Download Mode or unit in Calibration Mode</td>
</tr>
<tr>
<td>1</td>
<td>Bill Jam (Remove Jammed Bill)</td>
</tr>
<tr>
<td>2</td>
<td>Disabled By Interface</td>
</tr>
<tr>
<td>3</td>
<td>Configuration Coupon Ready Mode</td>
</tr>
<tr>
<td>4</td>
<td>Not Used</td>
</tr>
<tr>
<td>5</td>
<td>Lockable Removable Cassette (LRC) Removed</td>
</tr>
<tr>
<td>6</td>
<td>Tamper Detected (unit will reset after 15 minutes)</td>
</tr>
<tr>
<td>7</td>
<td>End of Stacker Switch Blocked (Remove Blockage)</td>
</tr>
<tr>
<td>8</td>
<td>Bill Held in Unit (No Credit Given)</td>
</tr>
<tr>
<td>9</td>
<td>Needs Cleaning</td>
</tr>
</tbody>
</table>
The LE3000 Series Bill Acceptor may be calibrated using the Mars Electronics Calibration Kit P/N 111636021. Refer to the Calibration Procedure, Mars Electronics P/N 119083001 contained in the kit for specific instructions.

Calibration is required after the Bill Acceptor has been disassembled for service or cleaning.
CONNECTOR INFORMATION

18-Pin Mating Connector
AMP "MODU" (18) pin MT Receptacle
AMP Part #102398-7 IDC Connector Housing
AMP Part #102536-7 Back Cover
AMP Part #102681-4 Latching Front Cover
#22 or 24 Gauge wire recommended

9-Pin Mating Connector
AMP "MATE-N-LOCK" (9) pin
AMP Part #172161-1 Shell
AMP Part #170364-1 Male Pin
#22 Gauge wire recommended

GENERAL INFORMATION

The Mars Electronics LE3000 Series Bill Acceptors are designed for use in gaming and lottery applications. The LE3000 Bill Acceptors are switch selectable for $1, $2, $5, $10, $20, $50 and $100 bill acceptance. The LE3000 Series Bill Acceptor can be used with 200, 400, 600 and 1000 bill capacity magazine. A Lockable Removable Cassette (LRC) model is also available, this model uses a 600 or 1200 bill cassette. They may be configured as an up or down stacker or as a stackerless unit. Note: the LRC model is only available in a downstacker configuration.

Power Requirements

- 65 Watts at
- 24 VAC, 60 HZ or
- 115 VAC, 60 HZ

Features

- Excellent security against fraudulent bills.
- Operator may designate number of pulses per dollar.
- Flash Diagnostic Code LEDs (Coin Resistant Bezel units only)!
- Optional pulse meter is available. (Mars Electronics P/N 91-16-279-4)
- Pulse and serial interfaces are available.
- Optic components are sealed against contaminants.
- Fast transport of bill.
- Quiet Operation

Figure 1. LE3000 Bill Acceptor (Downstacker Configuration 400 bill capacity magazine)
OPTION SWITCHES

The LE3000 has two banks of switches. Reference Figure 2 below for descriptions of switch settings for LE3000.

LE3000

SWITCH BANK 1

LE3000

SWITCH BANK 2

Figure 2. LE3000 Option Switches

<table>
<thead>
<tr>
<th>Bill Direction</th>
<th>1 WAY</th>
<th>2 WAY</th>
<th>4 WAY</th>
<th>Default (Four Way)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWITCH 1</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>SWITCH 2</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
</tbody>
</table>

CONNECTOR INFORMATION

Pulse Interface

NOTE: Bold type indicates those connections required for Pulse Interface to operate. (Harness Control Mode only)

Pinout of LE3000 18-pin Connector (Figure 11.)

- Pin 1 Credit Pulse
- Pin 2 Interrupt
- Pin 3 Serial/Pulse Select
- Pin 4 Ground
- Pin 5 Data Output
- Pin 6 $1 External Enable
- Pin 7 $2 External Enable
- Pin 8 $5 External Enable
- Pin 9 $10 External Enable
- Pin 10 Out-of-Service
- Pin 11 Debug Data Output
- Pin 12 Accept Enable
- Pin 13 Out-of-Service LED Power Source (200 ohm to 5VDC)
- Pin 14 Send
- Pin 15 Reserved
- Pin 16 Debug Data Input
- Pin 17 Reserved
- Pin 18 $20 External Enable

Pinout of LE3000 9-pin Connector (Figure 12.)

<table>
<thead>
<tr>
<th>115VAC Model</th>
<th>24VAC Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1 Reserved</td>
<td>Reserved</td>
</tr>
<tr>
<td>Pin 2 Reserved</td>
<td>Reserved</td>
</tr>
<tr>
<td>Pin 3 Reserved</td>
<td>Reserved</td>
</tr>
<tr>
<td>Pin 4 115VAC HOT (Power)</td>
<td>Reserved</td>
</tr>
<tr>
<td>Pin 5 Reserved</td>
<td>24VAC HOT (Power)</td>
</tr>
<tr>
<td>Pin 6 115VAC Neutral (Power)</td>
<td>24VAC Neutral (Power)</td>
</tr>
<tr>
<td>Pin 7 Credit Relay, Normally Open</td>
<td>Credit Relay, Normally Open</td>
</tr>
<tr>
<td>Pin 8 Credit Relay, Common</td>
<td>Credit Relay, Common</td>
</tr>
<tr>
<td>Pin 9 Reserved</td>
<td>Reserved</td>
</tr>
</tbody>
</table>
**LOCKOUT (INHIBITING ACCEPTANCE)**

Lockout is achieved by controlling the voltage on Pin 12 of the 18-pin connector. To enable lockout, tie the system logic ground to Pin 4 of the 18-pin connector by way of the wire nut. Connect the machine lockout signal to Pin 12. When Pin 12 is low, the Bill Acceptor will accept bills. If Pin 12 is high, or open, acceptance is inhibited.

The source of voltage to Pin 12 can exceed +5 volts DC. The Bill Acceptor draws current from the source as limited by the 1k pullup to 5v and the internal breakdown diode of the integrated circuit (IC). To prevent damage to the IC, a series diode (IN4148 or equivalent) must be connected (Figure 10.) with its anode to Pin 12. This prevents current from flowing into the Bill Acceptor. The input IC is a CMOS/TTL compatible device.

The source of voltage to Pin 12 can exceed +5 volts DC. The Bill Acceptor draws current from the source as limited by the 1k pullup to 5v and the internal breakdown diode of the integrated circuit (IC). To prevent damage to the IC, a series diode (IN4148 or equivalent) must be connected (Figure 10.) with its anode to Pin 12. This prevents current from flowing into the Bill Acceptor. The input IC is a CMOS/TTL compatible device.

**NOTE:** Logic ground and power ground must NOT be connected.

![Figure 10. Lockout Diagram](image)

**OPTION SWITCHES**

The number of pulses per dollar value is determined by the combined settings of switches 3, 4 and 5 in SWITCH BANK 2. A $1 bill produces the set number of pulses. A $5 bill produces five times that number of pulses, etc. Table 1. details the pulses per dollar settings.

<table>
<thead>
<tr>
<th>INTERFACE</th>
<th>SWITCH #3</th>
<th>SWITCH #4</th>
<th>SWITCH #5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pulse Per Dollar</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>2 Pulses Per Dollar</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>3 Pulses Per Dollar</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>4 Pulses Per Dollar</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>6 Pulses Per Dollar</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>8 Pulses Per Dollar</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>*1 Pulse Per Dollar</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>*4 Pulses Per Dollar</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

* A BILL THAT IS ACCEPTED FOR WHICH NO CREDIT IS GIVEN WILL NOT BE STACKED NOR WILL IT BE RETURNED. IT WILL BE HELD IN THE FRAME OF THE ELEVATOR ASSEMBLY UNTIL POWER TO THE BILL ACCEPTOR IS RESET.

Table 1. Pulses Per Dollar Settings
SET THE OPTION SWITCHES

- Locate the option switches on the side of the bill acceptor (see figure 3).
- Set the switches with a small screw driver or equivalent device.

DO NOT USE A GRAPHITE PENCIL POINT.

LOCKOUT (INHIBITING ACCEPTANCE)

Certain games do not allow for accumulation of credits for continued plays. Lockout is an optional inhibit procedure that prevents insertion of bills while a game is in play. The following lockout instructions refer to an 18 pin connector (P/N 01-12-140) the use of which is optional.

To enable the lockout option, cut the wire to Pin 12 on the 18 pin connector, if it has not previously been cut.

- Connect the wire half from the connector to the machine lockout signal (Figure 9.)
- Connect the remaining half to machine logic ground.
- Leave Pin 3 connected to Pin 4 at wire nut.
- Leave Pin 4 connected to wire nut.
- Leave Pin 14 connected to Pin 4 at wire nut.

Note: To enable the lockout option on the LE3000, option switch 8 of Switch Bank 1 should be OFF.

Figure 3. Setting The Option Switches

Figure 9. Lockout
CHECK OPERATION

- Checkout Procedure
  
  Apply power and test operation:

  Insert several bills of each accepted denomination. Bills should be accepted and the correct credit should be produced. (Remember that a $5 bill produces 5 times the pulses than a $1 bill.)

  Bills should be accepted in one, two or four directions as selected on Switch Bank 2, Switch 1 and 2. Refer to Page 4 for Option Switch descriptions.

Pulse Interface Only

Some machines can not accept the number of pulses produced by any bill over $5 Dollars. Test by inserting a bill of each acceptable denomination and observe that the correct number of credits are displayed. If not, set Switch Bank 1, Switches 4 thru 7 OFF to reject these bills. Refer to Page 4 for Option Switch descriptions.

Some machines can accept pulses at a faster rate than others. If the unit is missing pulses, the pulse setting may be too fast for that particular machine. Set Switch Bank 2, Switch 6 ON to send a slower pulse that is 60 ms On and 300 ms Off. Refer to Page 4 for Option Switch descriptions.

- Removing Bills

  To remove bills from the magazine, open the side door and remove bills.

MOUNT THE BILL ACCEPTOR

Note 1: On some machines, a Mars Electronics mounting kit P/N 91-16-159 or P/N 111632001 may be used for installation.

Note 2: When mounting a stackerless bill acceptor ensue that the back of the unit has at least 8 inches of clearance space.

- CONNECT HARNESSSES

  Connect the 9 pin connector of the power harness to the 9 pin connector of the Bill Acceptor (Figure 4.)

  Figure 4. Connecting 9 Pin Harness

  If the interface harness has an 18 pin connector, connect it to the 18 pin connector socket on the control board (Figure 5.)

- MOUNT BILL ACCEPTOR

  With the AC power off, mount the Bill Acceptor. Allow room for the height and depth of the stacker/magazine assembly. (Figures 6. and 7.)

- INSTALL HARNESS

  With one end of the harness connected to the Bill Acceptor, route the harness through the machine and make the necessary connections. Dress all harness wires to avoid interference with machine operation. Figure 5. Interface Connection
Figure 6. Dimensions, Side and Front View (LRC Version)
COUPON CONFIGURATION

1. **Make copies of the coupon with a standard copier.** Copies of the coupon are usable if cut to match the size of the attached coupon.

2. Fill out the coupon using a #2 pencil to fill in the blocks for desired options. For correct operation, all 8 lines must be completed. Fill in only one block per line.  **Do not mark the back of the coupon.**

3. Complete lines 1 thru 7 to enable desired bill denominations. Fill in one block for each denomination. High Accept enables maximum bill acceptance. High security may be desired for locations where a higher level of discrimination is desired. Off will reject bills of the selected denomination.

4. Complete line 8 to enable desired bill direction. Enable 1 or 2 way face up, or 4 way acceptance (which allows acceptance in all directions).

TO ENABLE THE COUPON CONFIGURATION MODE

1. Turn DIP switches #1 thru 7 (switch bank 1) to the **OFF** position.

2. To enter the coupon mode turn DIP switch # 8 (switch bank 2) to the **ON** position. The bill acceptor will give a flash code of 3, when this occurs insert the coupon into the bill acceptor. After using the coupon return DIP switch #8 to its original position.

INSERT COUPON AND VERIFY SETTINGS WERE ACCEPTED

**ACCEPTED:**  If the coupon is accepted, it will be hold in escrow mode for about 3 seconds then returned.

**REJECTED:**  If the coupon is rejected, it will be immediately returned. If rejected, review instructions or try new coupon.

Figure 7. Dimensions, Side and Front View (Standard Version)
Magazine Installation

*Magazine \ Cassette assemblies are sold separately.*

Set the magazine on the Bill Acceptor in a 10° inclined position and pivot the magazine to the upright position (See Figure 8). The slots on each side of the magazine should fit into the matching two receiving bars.

![Figure 8 Magazine Installation](image)

1. It is recommended to use a *Support Bracket (kit # 111638145)* for the stacker housing when using any magazine or cassette larger than 600 bills. This part can be purchased from Mars Electronics International, contact *customer service* for more information.

2. The cassette must be mounted perpendicular to the ground. Mars Electronics offers a unique 600 bill cassette that is especially suited for slant mounting applications.