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.

FLASH CODE	DESCRIPTION OF CODE
Steady Flashing	Ready To Accept
Rapid Flashing	Magazine or Cassette Full (Remove Bills)
LEDs Off	No power to unit, unit in Flash Download Mode or unit in Calibration Mode
1	Bill Jam (Remove Jammed Bill)
2	Disabled By Interface
3	Configuration Coupon Ready Mode
4	Not Used
5	Lockable Removable Cassette (LRC) Removed
6	Tamper Detected (unit will reset after 15 minutes)
7	End of Stacker Switch Blocked (Remove Blockage)
8	Bill Held in Unit (No Credit Given)
9	Needs Cleaning

BEZEL LIGHTS

MARS ELECTRONICS INTERNATIONAL ®
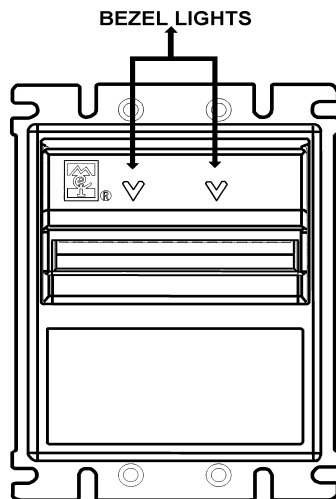
LE3000 SERIES BILL ACCEPTORS

INSTALLATION GUIDE

TABLE OF CONTENTS

CALIBRATION PROCEDURE

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.

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
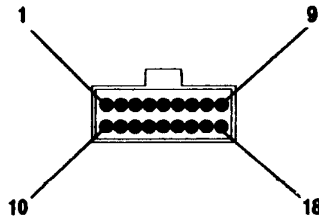
#22 or 24 Gauge wire recommended

Fig. 11. 18-Pin Connector

9-Pin Mating Connector

AMP "MATE-N-LOCK" (9) pin

AMP Part #172161-1   Shell
AMP Part #170364-1   Male Pin
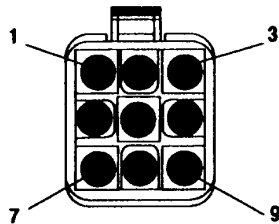
#22 Gauge wire recommended

Fig. 12. 9-Pin Connector

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	**Features**

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

- 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.

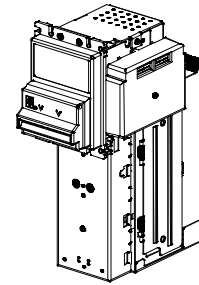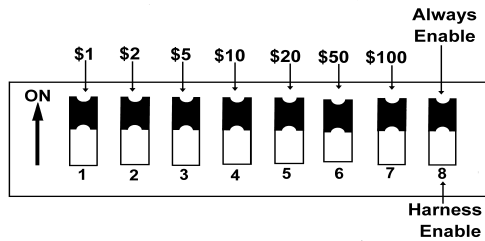- Fast transport of bill.

- Quiet Operation

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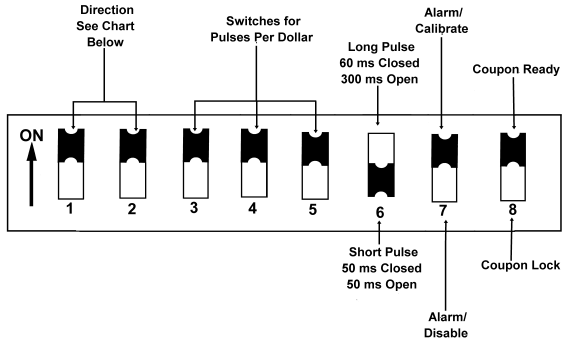 400 bill capacity magazine)

OPTION SWITCHES

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

LE3000

```
          $1   $2   $5  $10  $20  $50 $100        Always
                                                  Enable
      ON
       ↑   ■    ■    ■    ■    ■    ■    ■    ■
           1    2    3    4    5    6    7    8

                                            Harness
                                            Enable
```

SWITCH BANK 1

LE3000

```
   Direction          Switches for       Alarm/
   See Chart         Pulses Per Dollar    Calibrate
    Below                               
                                  Long Pulse          Coupon Ready
                                  60 ms Closed
                                  300 ms Open
   ON
    ↑    ■    ■    ■    ■    ■    □    ■    ■
         1    2    3    4    5    6    7    8

                              Short Pulse      Coupon Lock
                              50 ms Closed
                              50 ms Open
                                    Alarm/
                                    Disable
```

SWITCH BANK 2

Figure 2. LE3000 Option Switches

Bill Direction	1 WAY	2 WAY	4 WAY	Default (Four Way)
SWITCH 1	ON	OFF	ON	OFF
SWITCH 2	OFF	ON	ON	OFF

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

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

	115VAC Model	24VAC Model
Pin 1	Reserved	Reserved
Pin 2	Reserved	Reserved
Pin 3	Reserved	Reserved
Pin 4	**115VAC HOT (Power)**	Reserved
Pin 5	Reserved	**24VAC HOT (Power)**
Pin 6	**115VAC Neutral (Power)**	**24VAC Neutral (Power)**
Pin 7	**Credit Relay, Normally Open**	**Credit Relay, Normally Open**
Pin 8	**Credit Relay, Common**	**Credit Relay, Common**
Pin 9	Reserved	Reserved

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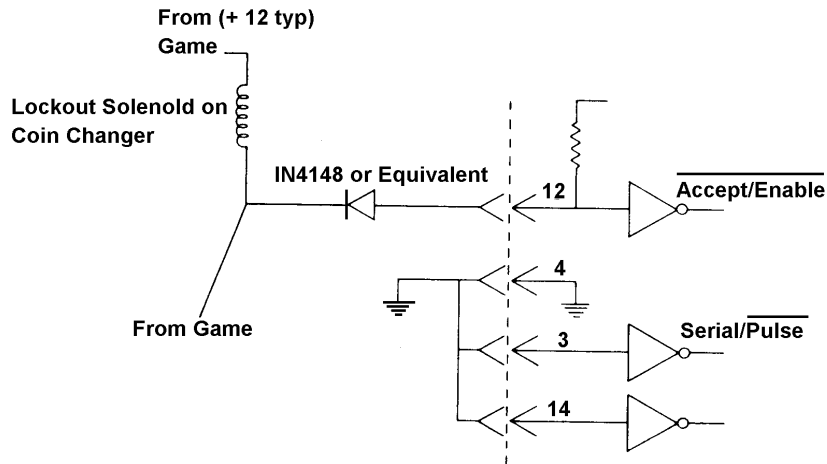
NOTE: Logic ground and power ground must NOT be connected.

Figure 10. Lockout Diagram

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.

SWITCH BANK 2

INTERFACE	SWITCH #3	SWITCH #4	SWITCH #5
1 Pulse Per Dollar	OFF	OFF	OFF
2 Pulses Per Dollar	ON	OFF	OFF
3 Pulses Per Dollar	OFF	ON	OFF
4 Pulses Per Dollar	ON	ON	OFF
6 Pulses Per Dollar	OFF	OFF	ON
8 Pulses Per Dollar	ON	OFF	ON
*1 Pulse Per Dollar	OFF	ON	ON
*4 Pulses Per Dollar	ON	ON	ON

* 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.
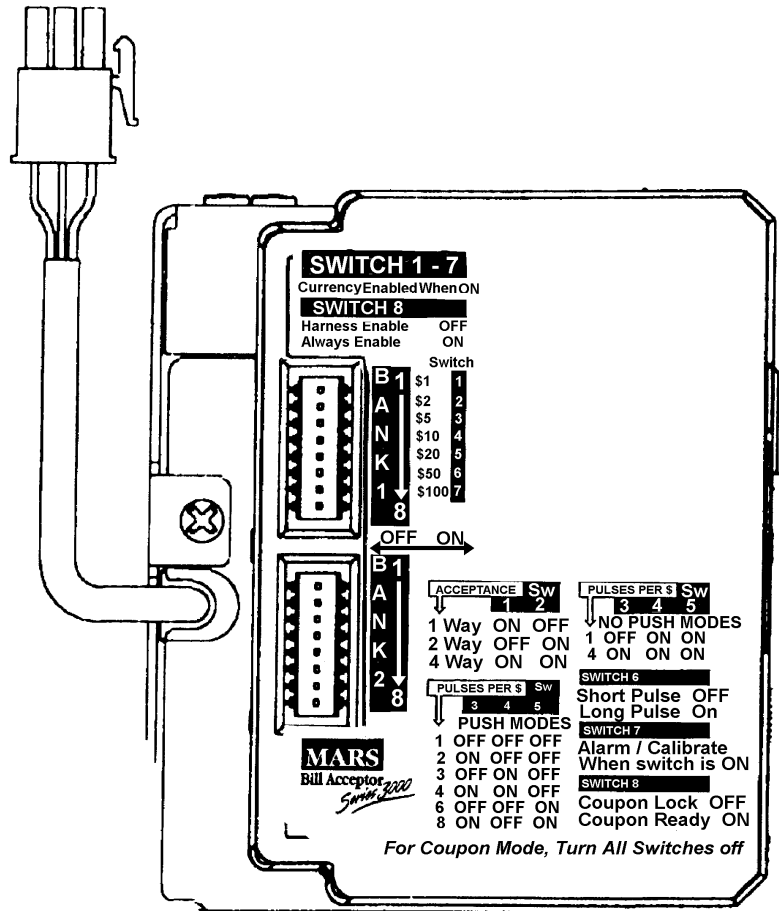 **DO <u>NOT</u> USE A GRAPHITE PENCIL POINT.**

Figure 3. Setting The Option Switches

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, **<u>cut</u>** 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.

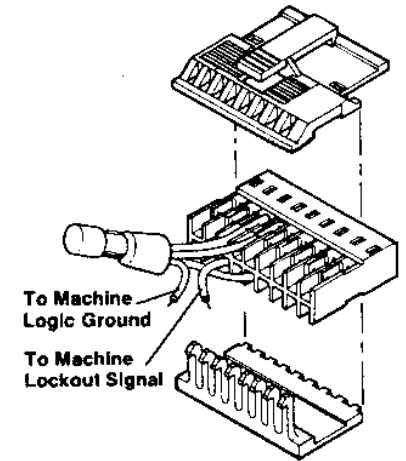- Leave Pin 14 connected to Pin 4 at wire nut.

Figure 9. Lockout

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

- **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.

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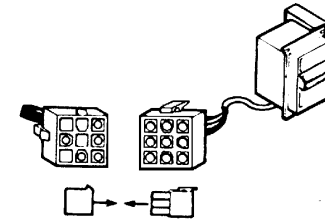

Figure 4. Connecting 9 Pin Harness

    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.
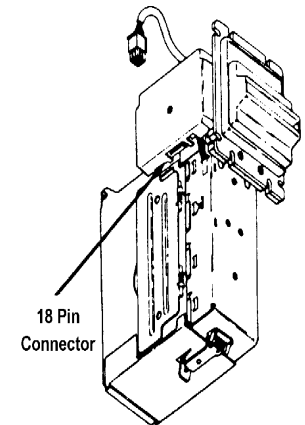

18 Pin Connector

Figure 5. Interface Connection

"USE COPIES ONLY"
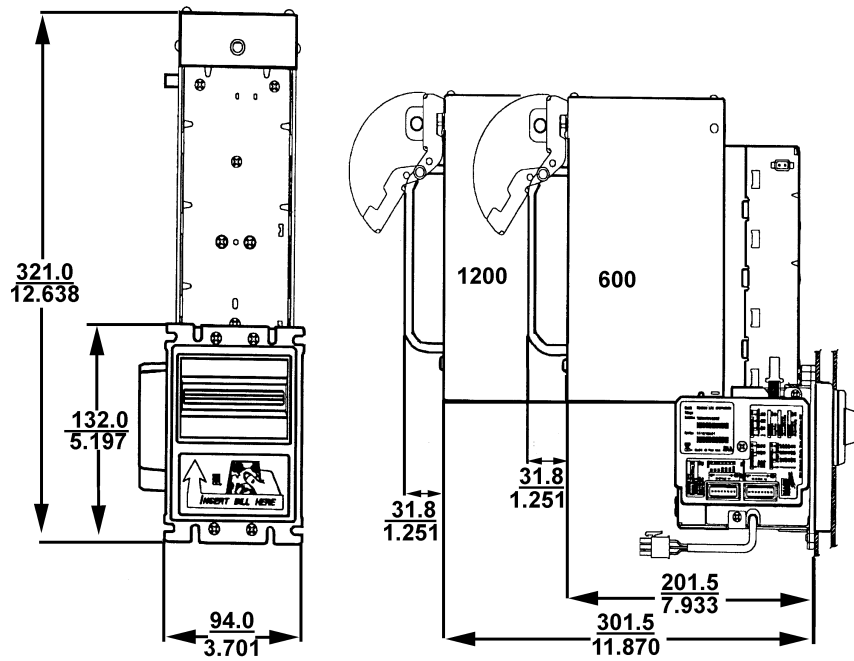
Figure 6. Dimensions, Side and Front View (LRC Version)

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.
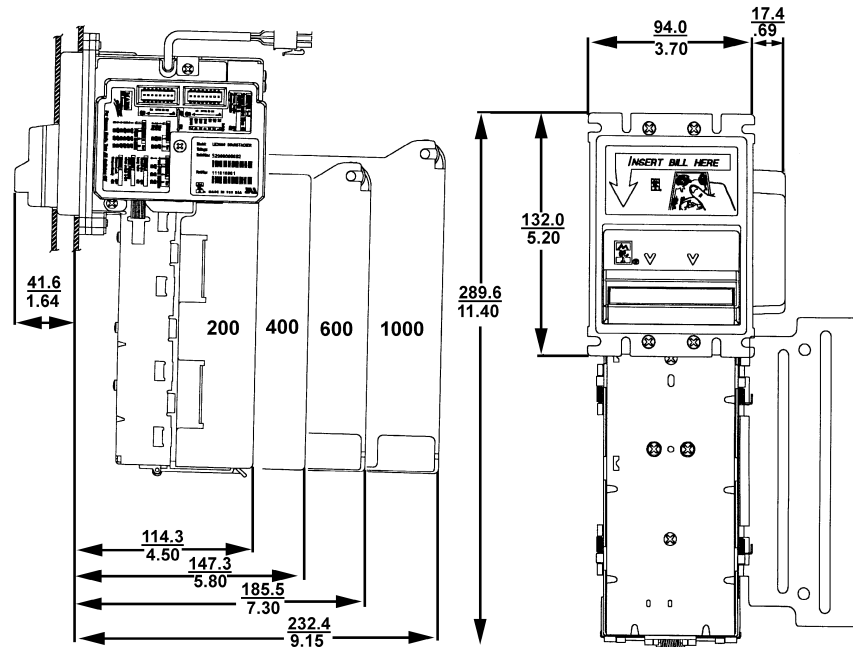

Figure 7.   Dimensions, Side and Front View (Standard Version)

Magazine Installation

Magazine \ Cassette assemblies are sold separately.

Set the magazine on the Bill Acceptor in a 10º 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.
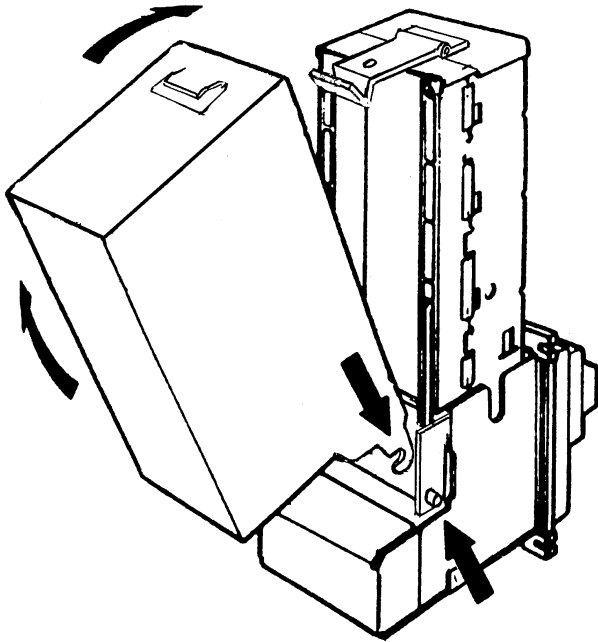
Figure 8 Magazine Installation

1. It is recommended to use a *Support Bracket (kit # 111638145)* for the stacker
   housing when using any magazine or cassette larger then 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.