

**Unique Micro Design  
Advanced Thinking Products**

**Model 125-I/ID  
Intelligent Cash Drawer  
User Manual**

Document Reference : DOC-M125-I/ID UM

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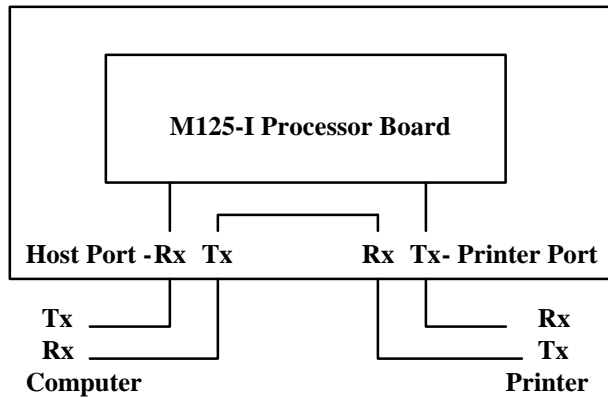
Revision History

Date	Issue	Comments
31/10/93	1	First Issue

## Model M125-I Intelligent Cash Drawer

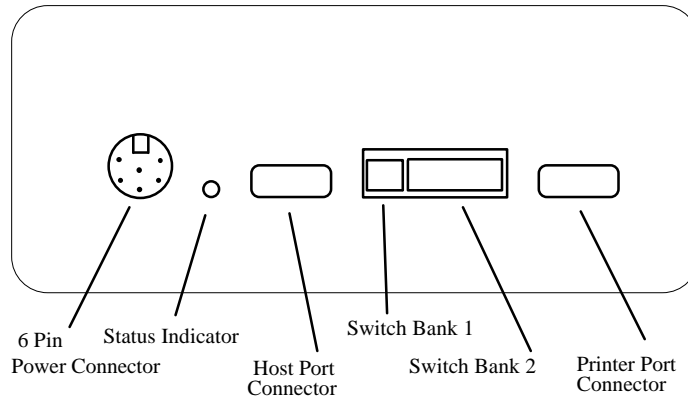
The M125-I Intelligent Cash Drawer communicates with a host computer or terminal via an RS-232 asynchronous serial port. It contains a microprocessor which checks the received characters for command sequences that will trigger the opening of the drawer.

The M125-I may optionally be connected to a printer. In this case any non command sequence characters are passed onto the printer. In this way both a cash drawer and printer can be accommodated on a single serial port.



M125-I Block Diagram

## Back Panel



M125-I Back Panel

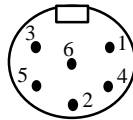
## Power Connector

The M125-I is powered by a supplied 12 Volt 400mA plug pack which connects to the 6 pin DIN connector.

Note that pins 3 and 5 of the DIN plug need to be joined.

Pin No.	I/O	Description
1	-	Ground
2	-	No Connection
3	In	+ 5V DC Regulated in
4	In	+ 12V DC Unregulated in
5	Out	+ 5V DC Regulated Out
6	-	No Connection

M125-I Power Connector Pinouts



Front view of Power Socket

## Status Indicator

The Status Indicator indicates a number of conditions which are detailed below:

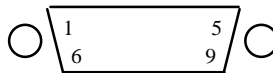
- a) On power up the indicator will flash a number of times and then remains on. If the indicator does not flash or light up on applying power then the unit is either not receiving power or is faulty.
- b) On receiving a command to open the drawer , the indicator will momentarily turn off and then on again. **Two to three Seconds is required between each drawer opening.**
- c) In test mode, the status indicator will flash a varying number of times dependent on the mode.

## Serial Interface

Both the host and printer ports use the same interface pin assignments. These RS232 serial ports use +/- 9 volt levels. Pin 7 provides +5 Volts power. Communications parameters are set at 9600 baud, 8 data bits with no parity and one stop bit.

Pin No.	I/O	Description
1	-	no connection
2	In	RxD
3	Out	TxD
4	Out	DTR
5	-	Signal Ground
6	-	no connection
7	Out	+5V
8	In	CTS
9	-	no connection

M125-I Serial Interface Host and Printer Ports



Front view of DB9 plug

## Switch Definitions

There are two banks of externally accessible switches on the Model M125-I. **Bank One** is the set of four switches and **Bank Two** the set of eight. They are located in between the two serial port connectors.

**Switch Block One** (OFF = up, ON = down)

1-1	OFF	Printer Attached	
	ON	Printer not Attached	
1-2	1-3	1-4	
OFF	OFF	OFF	UMD Standard <DLE> command mode
OFF	OFF	ON	Open command is OPEN CODE given by Switch Block Two
OFF	ON	OFF	Open command is ASCII Escape control character plus OPEN CODE given by Switch Block Two
OFF	ON	ON	Trigger Mode Switch Block Two determines parameters
ON	OFF	OFF	Test Mode 1 , With printer attached, output version, open draw continually
ON	OFF	ON	Test Mode 2 , Test Switches
ON	ON	OFF	Test Mode 3 , Loop Back Test
ON	ON	ON	Reserved

Switch Block 1 , Switch Definitions

**Switch Block Two** (OFF = up = 0, ON = down = 1)  
 For **OPEN CODE**

Switch	Binary Value
2-1	Bit 0
2-2	Bit 1
2-3	Bit 2
2-4	Bit 3
2-5	Bit 4
2-6	Bit 5
2-7	Bit 6
2-8	Bit 7

Switch Block Two, Open Code, Switch Definitions

**Switch Block Two** (OFF = up, ON = down)  
 For **Trigger Mode**

2-1	OFF	Pulse Mode, Parameters given by 2-2 to 2-4
	ON	ANY Character opens Drawer NOTE Character is also output to printer port if attached
2-2	OFF	Pulse Mode, Trigger Edge Triggered on NEGATIVE edge
	ON	Pulse Mode, Trigger Edge Triggered on POSITIVE edge
2-3	2-4	Pulse Mode DURATION
OFF	OFF	Immediately
OFF	ON	Trigger Pulse 100 uS long
ON	OFF	Trigger Pulse 1mS long
ON	ON	Trigger Pulse 10 mS long

Switch Block Two, Trigger Mode, Switch Definitions

## **Setting Up The M125-I Cash Drawer**

The M125-I provides a number of operating modes which are selected via the switches. Note that the M125-I only interrogates the switches on power up, so if the settings are changed, then power must be removed and reapplied for the new settings to take affect.

### **Printer Attached?**

Switch 1-1 must be correctly set up to indicate whether a printer is attached. When the switch indicates that a printer is attached (ie off), all non-command characters are passed onto the printer. If a printer is not attached to the drawer and the switch incorrectly indicates that one is, the host computer will "hang" when it tries to output, as it will be receiving a busy signal back from the M125-I.

### **Command to Open Cash Drawer?**

Switches 1-2 to 1-4 determine how the cash drawer is to be triggered. The recommended mode is the UMD standard <DLE> command mode as this ensures compatibility with other UMD products as well as providing extra commands. Refer to Appendix A for the UMD standard <DLE> commands.

There are two open code modes which allows one to select the character that triggers the opening of the drawer.

The first mode is a single character mode where the opening character is determined by switch block two.

The second mode is a two character mode where the first character is the ASCII ESCAPE character ( hex 1B, decimal 27 ) followed by the character determined by switch block two.



**For example**, to open the drawer using the " Control G " control code ( hex 07, decimal 07, binary 0000 0111 ). When a printer is attached, the following switch settings would be used:

1-1	1-2	1-3	1-4
OFF	OFF	OFF	ON

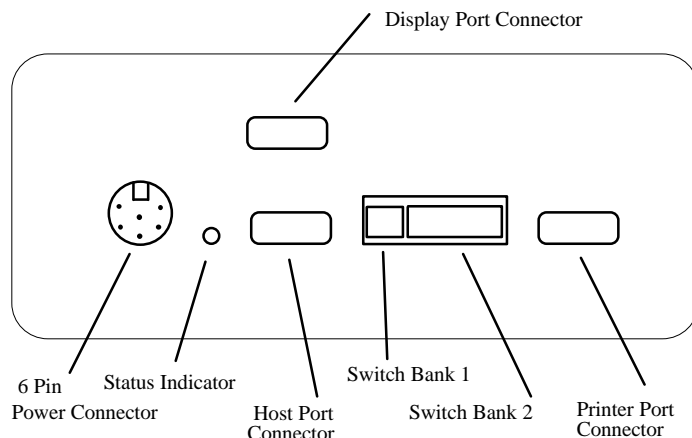
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8
ON	ON	ON	OFF	OFF	OFF	OFF	OFF

There is also one other opening mode available. This is the Trigger Mode, where switch block two determines the trigger mode parameters. In this mode the cash drawer can either be triggered on receipt of any character, or when a pulse ( ie not necessarily a character ) of specified parameters is received.

## Model125-ID Intelligent Cash Drawer With Display Interface

The M125-ID Intelligent / Display Cash Drawer adds the capability to control a customer display. It has similar features to that of the M125-I except that it can only accept UMD standard <DLE> commands. The following section only highlight the differences in the M125-ID as compared to the M125-I.

### Back Panel



M125-ID Back Panel

The display interface uses TTL voltage levels and is designed to interface to UMD Model 231-SM and Model 232-SM via an adapter cable CA213.

The default output for the M125-ID is to the display connector. If a display is not connected then to direct data to the printer port the UMD standard <DLE> command , <DLE> “1” is required to be issued.

## Display Interface

Pin No.	I/O	Description
1	-	no connection
2	-	no connection
3	Out	Clock
4	-	no connection
5	Out	Data
6	-	no connection
7	-	Ground
8	-	no connection
9	Out	+5V

M125-ID Display Interface Socket



DB9 Socket Front View

## Switch Definitions

**Switch Block One** (OFF = up, ON = down)

1-1	OFF	Printer Attached	
	ON	Printer not Attached	
1-2	1-3	1-4	
OFF	xxx	xxx	UMD Standard <DLE> command mode
ON	xxx	xxx	Test Mode 1 (DO NOT USE)

**Switch Block Two** (OFF = up, ON = down)

2-1	OFF	Reserved
	ON	Attach. Display is M231/232-SM Used with Cable CA213

## Appendix A

### UMD Standard <DLE> Commands

In UMD Standard <DLE> command mode, the serial input to the M125-I/ID is filtered by the internal microcomputer which checks the data stream for "two character Escape Command Sequences". The escape character used is the ASCII DLE ( Data Link Escape ) control character ( hex 10, decimal 16 )

For example, to open the cash drawer, this two character sequence would be sent :

```

ASCII :    DLE 9
Hex   :    10 39
Dec   :    16 57
    
```

The following table outlines the various commands accepted. Some of these commands have been included for compatibility with other Unique Micro Design peripherals.

FunctionCode			Action
ASCII	Hex	Dec	
0	30	48	Select for output the default device: * With Printer Attached-Printer Port * With printer not Attached NULL Device ( M125-I ) Display ( M125-ID )
1	31	49	Select for output the Printer Port
4	34	52	Select for output the Display ( M125-ID )
5	35	53	" " "
6	36	54	" " "
9	39	57	Open Cash Drawer
V	56	86	Return Firmware Version
Y	59	89	Select for output the NULL device

UMD Standard <DLE> Commands

## Appendix B

### Connecting to an RS232 Serial Port

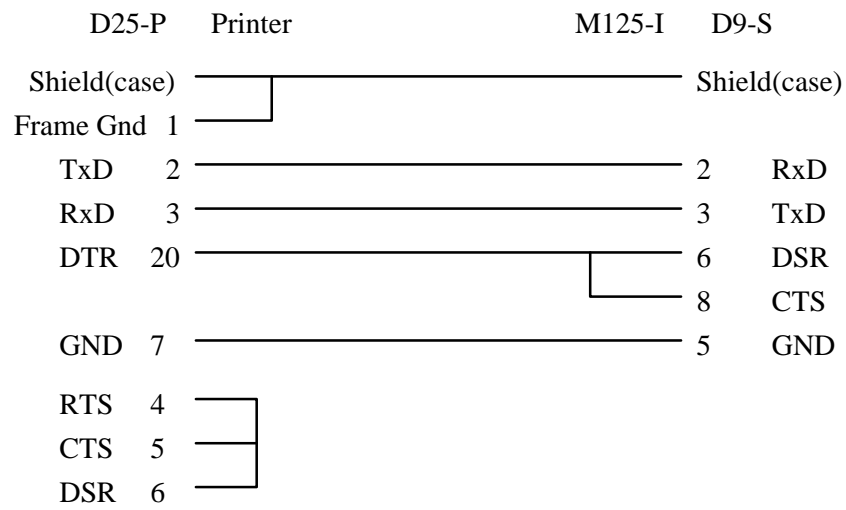


M125-I Cable CA201



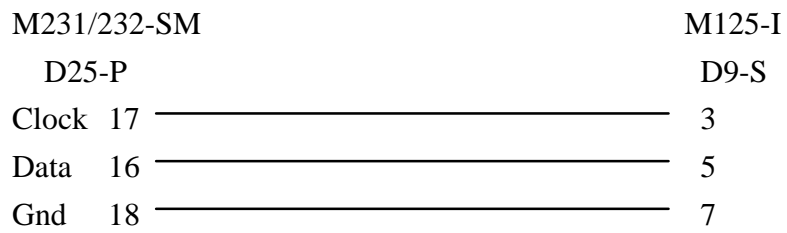
M125-I Cable CA211

**Printer to Serial D9 Cable**



Cable CA210 Serial D9 to Printer

**UMD Customer Display M231/232-SM to M125-ID**



Cable CA213 M125-ID-M231/2

## Appendix C

### Specifications

Physical	Dimensions	460(w) x 460(d) x 120(h) mm
	Weight	13Kg (approx)
	Colour	Grey
	Compartments	6 Coins 5 Notes (all fully adjustable)
	Manual Opening	Via Keylock
Interface	Serial Input Connector	Male D9 plug
	Serial Output Connector	Male D9 plug
	Input/Output Signal	RS232 Level
	Baud Rate	9600 Baud (fixed)
	Data Bits	8 Data Bits
	Start/Parity	1 Start no Parity
	Display Connector	Female D9 socket (M125-ID)
Model Details	M125-I	UMD Intelligent Cash Drawer
	M125-ID	with Display port option (not inc. Display)
Cable Details	CA201-2	Serial D25 cable to M125-I
	CA211-2	Serial D9 cable to M125-I
	CA231-2	Serial D25 Terminal AUX port to M125-I
	CA210-2	Serial D9 cable to Printer
Display Options	M231-SM	UMD Customer Display 1 x 20
	M232-SM	UMD Customer Display 2 x 40
	CA213-2	Cable M125-ID to M231/232