MTP-2283 Modular Thermal Printer

User Manual

TELPAR

A Platinum Equity COMPANY

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Dover, New Hampshire 03820

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Warranty

TELPAR — Printer Limited Warranty

For one (1) year after shipment of the printer product to Buyer, Telpar warrants the product against defects in materials and workmanship provided the product has been operated and maintained in accordance with manufacturer's operating and maintenance specifications. This warranty specifically excludes ribbons, paper and other consumable items.

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. TELPAR MAKES NO OTHER WARRANTY AND BUYER SPECIFICALLY WAIVES ANY OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THOSE DESCRIBED HEREIN.

Telpar's liability hereunder is limited to the repair or replacement of defective parts. This liability does not extend to normal wear and tear. Telpar will, solely at its option, remedy all valid warranty claims either by:

(a)   Repairing or replacing the defective unit at Telpar's factory; or

(b)   Repairing or replacing the defective subassembly at Telpar's factory.

If so directed by Telpar, Buyer shall return the defective unit or subassembly, transportation prepaid by Buyer, to Telpar's factory. After repair or replacement has been accomplished, Telpar will return the unit or subassembly, transportation prepaid by Telpar, to Buyer.

As a precondition to any warranty service, prior to return of any units or subassemblies to Telpar by Buyer, Buyer must contact Telpar's Order Administration Services and receive authorization in the form of a Return Material Authorization (RMA) number. Telpar reserves the right to refuse any goods it has not previously authorized for return, or any goods shipped without transportation prepaid.

No warranty shall apply to any damage resulting from or caused by Buyer, if Buyer shall make any changes, modifications, additions or deletions of hardware, software or firmware in the Printer products sold hereunder without Telpar's advance written consent.

Warranty service may be obtained by returning the merchandise, freight prepaid, with a copy of your invoice to:

Telpar
187 Crosby Road

Dover, New Hampshire 03820   U.S.A.

ATTN.: Warranty Service Department.

Telephone: 800-872-4886 or 603-750-7237

Fax: 603-742-9938

Email: info@telpar.com

Upon inspection, Telpar will make necessary repairs or replacement and return the merchandise, shipping prepaid.

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1   General

The MTP-2283 modular thermal printer is designed specifically for the high performance, size and durability requirements of cut and drop (or cut and present with optional Document Presenter) applications. The compact size and high performance characteristics, coupled with its rugged design also make it ideal for the kiosk environment. It prints up to 216 mm (8.5 in) paper width .

1.1   Applications

·   Financial statements
·   Bridal/gift registers
·   Maps and instructions
·   Product information

1.2   Standard Features

·   Direct thermal printing
·   Interfaces : Serial and parallel
·   Auto cutter : Printer with auto cutter is standard
·   All metal construction
·   Adjustable paper low sensor
·   Paper auto load function
·   ESC/POS   [1] The commands conform to ESC/POS, which is a standard in the distribution industry
·   Print speed of up to 50 mm/sec (2 in/sec); 600 dot lines/second)
·   LEDs visible and DIP switches accessible through bottom panel
·   Continuous roll paper with Paper capacity : 200 mm (8 in) diameter roll with 1.5" (38 mm) diameter core
·   Overall size including 200 mm (8 inch) diameter roll of paper :
     MTP-2283:   243.7 mm H x 209.5 mm W x 400 mm D
(9.59 in. H x 11.4 in W x 15.75 in D)

·   International character sets : U.S.A., France, Germany, England, Denmark (2 choices), Sweden, Italy, Spain, Japan, Norway, Latin America, Korea.
·   Barcode embedded symbologies: UPC-A, UPC-E, EAN 13, EAN 8, 3 of 9, ITF,   CODABAR, and Code 128
·   Two resident font sizes
·   Code pages 437, 850, 858, 860, 863, 865, and WPC 1252
·   Bit image mode
·   Reverse video mode
·   Black mark sensing (TOF mode)
·   Clam shell design for easy maintenance

1.3   Options for the MTP-2283 Series

·   Microsoft® Windows® driver [2]
·   Document Presenter (-P option)
·   FLASH memory , 512 Kbytes (F5 option)
·   PAGE memory (RAM) , 1 Mbyte (P1 option)

1.4   Specifications

·   Resolution : 11.8 dots/mm (300 dots/in)
·   Paper thickness : 0.06 mm to 0.10 mm maximum (.0024 in to .0039 in)
·   Operating temperature : 0° C to 50° C (32F to 122F)
·   Storage temperature : -20° C to 60° C (-4° F to 140° F)
·   Operating humidity : 20-85% RH (non-condensing)
·   Weight : Standard configuration without paper 6.8 kg (15 lbs.)
·   Expected life of mechanism: 50 km minimum due to wear
·   Expected life of cutter: 500,000 cuts

1.5   Safety / Agency Information

Information Technology Equipment IEC 950
Product Safety: UL 1950 / EN60950
EMC: CFR47 / Part 15 / EN55022
File Number: 188263
Project: 00NK40431

1.6   Power Supply Requirements

1.6.1   External Power Supply (supplied separately)

Use a listed/certified power supply
Follow local wiring codes for external wiring

1.6.2   Power Supply

The MTP-2283 can use either a 3-pin Hosiden Power Connector or a 4-pin Molex Power Connector.

1.6.3   Voltage : 24 VDC ±5%

No requirement for external 5 VDC power supply, the 5 VDC for logic is supplied from the 24 VDC, by a regulator internal to the printer.
This printer prints using high peak currents at a low duty cycle. Typically, a switching power supply rated at 24 volts 2 amps is all that is needed as long as the power supply does not have too much over-current protection.

Printing rate	Current (A) for Printer Head	
	Avg.	Peak
Typical ASCII Text	1	3
All dots	3	10

Table 1 - Current (A) for Printer Head

Current (A) for Motor
Peak current
Peak = 1.0 A, typical = <0.1 A

Table 2 - Peak Current for Motor

1.6.4   3-Pin Hosiden Connector on Printer for Power Supply Connection

3-pin Hosiden Connector
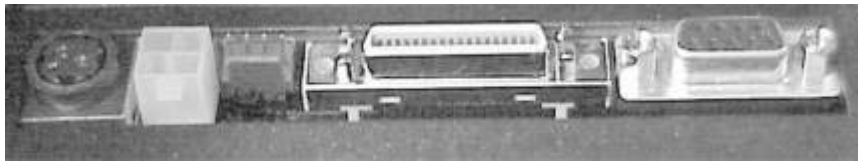
Figure 1 - Photo of 3-Pin Hosiden Connector photo
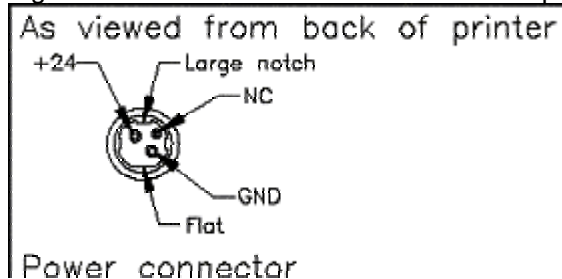
Hosiden TCS7960-23-2010

Mating Connector:
Hosiden # TCP8927-53-1100 or
TCP8927-63-1110
Figure 2 - 3-Pin Hosiden Power Supply Connector with pin-outs

1.6.5   4-Pin Molex Connector on Printer for Power Supply Connection

4-Pin Molex Power Connector
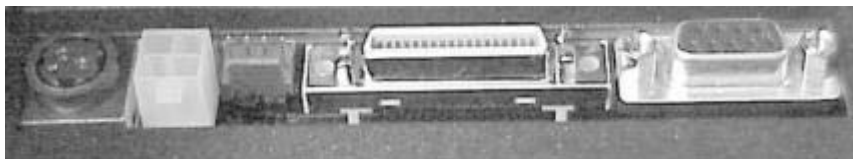
Figure 3 - Molex Power Supply Connector photo
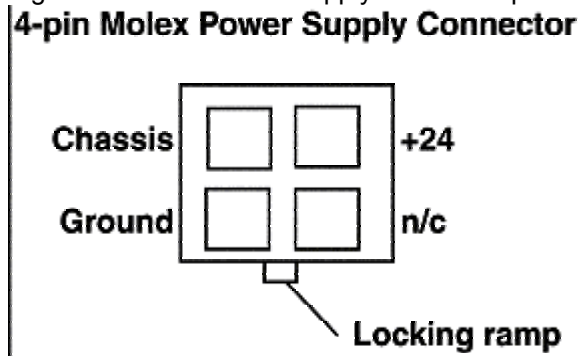
Molex# 39-30-1040 Connector
Mating Connector:
Molex # 39-01-2040 Housing
Molex # 39-00-0039 Crimp Pins
Figure 4 - 4-pin Molex Power Supply Connector with pin-outs

1.7   Telpar Roll Paper for MTP-2283

Thermal sensitive coating is on the "inside" of the roll.
8 inch outside diameter, 216 mm (8.5 inches) wide, approximate length 370 meters (1220 feet) - P/N 751221-0080
(Will produce 1,100 plus 8.5 by 11 sheets/A4)
4.5 inch outside diameter roll (8.5 inches wide, approximate length 104 meters (340 feet) - P/N 751221-0041
Specific to Thermal Printers: Telpar, Inc. does not warranty damages to the thermal print head as a result of
printing with thermal paper not specified or approved by Telpar, Inc.

2   Operator Instructions

2.1   Unpacking and Inspection

Carefully unpack and inspect your MTP-2283 for any damage that may have occurred in transit. Should any damage
have occurred, notify Telpar, Inc., save the shipping carton and packing materials , and file a damage claim with the
carrier. Specify the nature and the extent of the damage. Before installing or operating the printer, check the
following:
        Printer mechanism and paper path are clear of all packing materials or other foreign matter.
        Paper is installed. DO NOT OPERATE the printer without paper. Refer to Section 2.2 - Paper Loading for
paper loading instructions.

2.2   Paper Loading

Paper is installed into the MTP-2283 printer from the top. Load the roll of paper by inserting the spindle inside the
roll of paper and placing the spindle ends into the mounting slots (the paper feeds from the bottom of the roll with the
coating on the "inside"). Turn on the power switch and feed the straight edge of the paper into the paper guide. The

paper will automatically load and cut the paper. Be sure that the paper is feeding properly with the thermal side facing up.
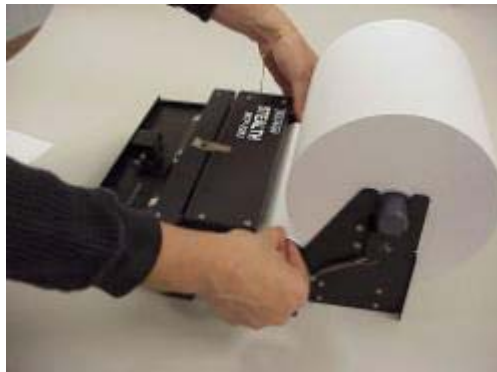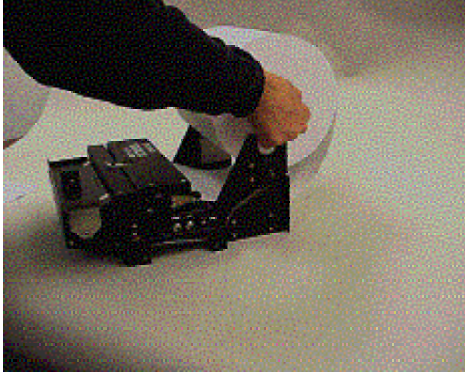
Figure 5 - MTP-2283 Paper Roll loading   Figure 6 - MTP-2283 Paper loading

2.3   Paper Jam

In the event of a paper jam condition, do not force paper into the unit, or try to pry the paper out of the unit, this may damage the thermal print mechanism . Caution should be exercised when working near the cutter mechanism ; the blades are sharp and may cause serious injury. This printer is designed for easy maintenance.
To release or remove paper from under the print head:
  Lightly lift the cutter release latch on the center top of the printer to let the cutter mechanism pivot downward.
  Lightly pull forward on the two printhead release latches, located on the right and left of the print mechanism, to open the printer mechanism clamshell for easy paper removal.
  Once the paper jam is cleared, close the print mechanism clamshell, being sure the two spring latches close properly.
  Lift the cutter assembly to its closed position being sure the spring latch closes properly.
See Figure 8 - MTP-2283

Figure 7 - MTP-2283 Cutter Release Latch

Figure 8 - MTP-2283 Printhead Release Latches

 Figure 9 - MTP-2283 Top view with Cutter and Print Mechanism open

3   Installation

3.1   Self Test Mode (also Burn-in and Hex Dump modes)

The MTP-2283 has a self-test mode that will print and cut a sample document. All electrical and mechanical portions of the printer are exercised and checked by this action, except for the serial interface or parallel interface components.

3.1.1   SelfTest

To place the unit into self-test mode : turn power switch off, press and hold the FEED push button switch and place the POWER switch in the ON position, then release the paper feed switch. See Figure 10 - MTP-2283 Self-Test Printout for an example of the self test printout. The self-test printout also shows pertinent information pertaining to operation of the printer.

3.1.2   Factory Burn-In Test

If the paper feed button is held for 4 seconds after power is turned on, the printer will enter the Factory Burn-In Mode. A hundred shorter sheets (approximately 6") will be printed. If a sheet is removed during the test, the test will stop.

3.1.3   Hex Dump printing mode

If the paper feed button is held for 8-12 seconds after power is turned on, the printer will enter the Hex Dump Mode. All codes received will be printed in HEX format rather than causing normal execution, this may be useful for troubleshooting customer applications.

3.1.4   Continuous Factory Burn-In Test

If the paper feed button is held for 12 seconds after power is turned on, the printer will enter the CONTINUOUS Factory Burn-In Mode that does not stop after 100 sheets are printed.

3.1.5 MTP-2283 Self-Test Printout

Resized and reformatted to fit on this page

Top part of Self-Test

Font_0: 10x30 Dots, Scaled 2x

Font_1: 12x30 Dots, Scaled 2x

Part 4 of Self-Test

Current temperature = 25 deg C

[Print Mechanism]
   MIP-2283
[Firmware Version]
   Beta Release: V1.14E, Oct. 2000
[Factory Jumper Settings]
 Jumpers 1, 2, 3, 7 & 8 are reserved.
   Jumper 4 - Paper Low Attached
   Jumper 5 - Cutter Attached
   Jumper 6 - Delivery Attached
[Input Buffer Size = 8216 Bytes]
[System RAM Size   = 262144 Bytes]
[System Heap Size = 94164 Bytes]
[Optional RAM Size = 1048576 Bytes]
[Print Intensity Adjust - #1]
Lighten Print   Darken Print
DOWN   Normal   UP
:-------|-------|--------|--------:
                ^

[Configuration Settings]
Key: Active   = ■
     Disabled = X

Pos: Switch #1:
      ON OFF

8	■		Parallel (ON), Serial (OFF)
7	X	X	DTR/CTS (ON), XON/XOFF (OFF)
6	X	X	Data Bits - 7 (ON), 8 (OFF)
5	X	X	Parity - (ON) or (OFF)
4	X	X	Type - Odd (ON), Even (OFF)
3	X	X	BAUD Rate Select
2	X	X	BAUD Rate Select
1	X	X	BAUD Rate Select

        [Baud Rate Selection Table]

SW3	SW2	SW1	Baud Rate:
OFF	OFF	OFF	2400
OFF	OFF	ON	4800
OFF	ON	OFF	9600
OFF	ON	ON	14.4K
ON	OFF	OFF	19.2K
ON	OFF	ON	28.8K
ON	ON	OFF	31.2K
ON	ON	ON	38.4K

```
Pos:  Switch #2:
      ON  OFF

8   | X  | X  |  Reserved

7   | X  | X  |  Reserved

6   |    | ■  |  International Character Table

5   |    | ■  |  International Character Table

4   |    | ■  |  International Character Table

3   |    | ■  |  International Character Table

2   | ■  |    |  Purge - Eject (ON), Retract(OFF)

1   |    | ■  |  TOF - (ON) or (OFF)
```

Character Set Selected = USA

```
    [ International Character Table ]
    SW6: SW5: SW4: SW3:
    OFF  OFF  OFF  OFF = USA
    OFF  OFF  OFF  ON  = France
    OFF  OFF  ON   OFF = Germany
    OFF  OFF  ON   ON  = England
    OFF  ON   OFF  OFF = Denmark
    OFF  ON   OFF  ON  = Sweden
    OFF  ON   ON   OFF = Italy
    OFF  ON   ON   ON  = Spain
    ON   OFF  OFF  OFF = Japan
    ON   OFF  OFF  ON  = Norway
    ON   OFF  ON   OFF = Denmark 2
    ON   OFF  ON   ON  = Spain 2
    ON   ON   OFF  OFF = Latin America
    ON   ON   OFF  ON  = Korea
    ON   ON   ON   OFF = Reserved
    ON   ON   ON   ON  = Reserved
```

```
[ LED Error Indicators ]
NOTE: DS1 = Power On.
No Errors = Both DS2 and DS3 are Off.
Paper Out: Repeating pattern of;
    DS2 = On,  -, On,  -, On,  -, On,  -, Pause.
    DS3 = On,  -, Off, -, Off, -, Off, -, Pause.
Head Up:   Repeating pattern of;
    DS2 = On,  -, On,  -, On,  -, On,  -, Pause.
    DS3 = Off, -, On,  -, Off, -, Off, -, Pause.
Cutter Fault: Repeating patterns of;
    DS2 = On,  -, On,  -, On,  -, On,  -, Pause.
    DS3 = Off, -, Off, -, On,  -, Off, -, Pause.
Delivery Jam: Repeating pattern of;
    DS2 = On,  -, On,  -, On,  -, On,  -, Pause.
    DS3 = On,  -, Off, -, On,  -, Off, -, Pause.

Abort Printing: Repeating pattern of;
    DS2 = On,  -, On,  -, On,  -, On,  -, Pause.
    DS3 = Off, -, On,  -, On,  -, Off, -, Pause.
```

ITF without check character:

0123456789

ITF with check character:

00123456789 5

Code39 without the check character:

CODE 39

Code39 with the check character:

CODE 39#

Code128:

01234567%p. 8909

UPC-A:

0 12345 67890 5

UPC-E:

0 123643 2

Size of "Self Test" = 5199 Bytes.

Part 2
Part 3
Part 5 (Bottom) of Self Test

Figure 10 - MTP-2283 Self-Test Printout

4   Interface Specifications

4.1   General

The MTP-2283 may be configured to be a Serial RS-232 interface or an IEEE-1284 Parallel interface by DIP switch settings .

4.1.1   Setting of DIP Switches

4.1.1.1   DSW1 – DIP Switch

DIP Switch 1 (DSW1) Settings						
Item	Bit No	Setup status			Setup state	Factory
		Bit 1	Bit 2	Bit 3	Baud Rate	settings
Serial-interface-communication baud rate setting	1,2,3	OFF	OFF	OFF	2400	19200
		ON	OFF	OFF	4800	
		OFF	ON	OFF	9600	
		ON	ON	OFF	14.4K	
		OFF	OFF	ON	19.2K	
		ON	OFF	ON	28.8K	
		OFF	ON	ON	31.2K	
		ON	ON	ON	38.4K	
Parity selection	4		OFF		Even	Even
			ON		Odd	
Parity use	5		OFF		No parity	No parity
			ON		Parity	
Number of data bits	6		OFF		8	8
			ON		7	
Serial handshake	7		OFF		XON/XOF	DTR
			ON		DTR	
Interface	8		OFF		Serial	Parallel
			ON		Parallel	

Selection
Table 3 - DIP Switch 1 (DSW1) Settings
Paper Low
Connectors
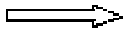
DSW2 –Dip Switch
1

DSW2 –Dip Switch
2
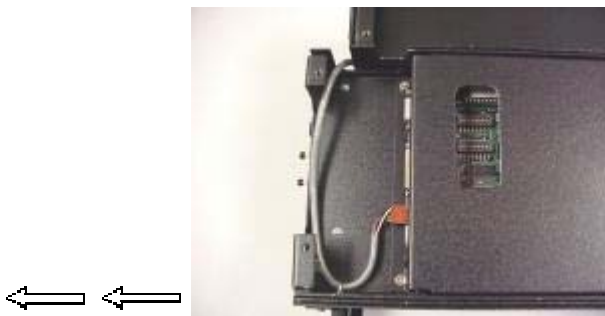
Figure 11 **-** MTP-2283 Dip Switches on bottom of printer

4.1.1.2 DSW2 – DIP Switch 2

DIP Switch 2 (DSW2) Settings							Factory settings
Item	Bit No	Setup Status				Setup State	Factory settings
Top of Form sensor	1	OFF				Disabled	Disabled
		ON				Enabled	
Purge setting	2	OFF				Retract	Retract
		ON				Eject	
	3, 4, 5, 6	3	4	5	6	Intl Char / Code Page	USA / CP437
		OFF	OFF	OFF	OFF	USA / CP437	
		ON	OFF	OFF	OFF	France / CP858	
		OFF	ON	OFF	OFF	Germany / CP858	
		ON	ON	OFF	OFF	England / CP858	
		OFF	OFF	ON	OFF	Denmark / CP858	
		ON	OFF	ON	OFF	Sweden / CP858	
		OFF	ON	ON	OFF	Italy / CP858	
		ON	ON	ON	OFF	Spain / CP858	
		OFF	OFF	OFF	ON	Japan / CP850	
		ON	OFF	OFF	ON	Norway / CP865	
		OFF	ON	OFF	ON	Denmark2 / CP858	
		ON	ON	OFF	ON	Spain2 / CP858	
		OFF	OFF	ON	ON	Latin America / CP437	
		ON	OFF	ON	ON	Korea / CP850	
		OFF	ON	ON	ON	Reserved	
		ON	ON	ON	ON	Reserved	
Reserved	7						
Reserved	8						

Table 4 - DIP Switch 2 (DSW2) Settings

4.1.1.3 JP9 - Configuration Straps

JP9 – Configuration Straps			
Strap#	**Name**		
1	Erase FLASH	ON	Erase optional FLASH memory when power is turned on.
		OFF	No affect on FLASH.
2		ON	
		OFF	
3		ON	
		OFF	
4	Paper Low	ON	Paper Low sensor is installed.
		OFF	Paper Low sensor is not installed.
5	Cutter	ON	Cutter is installed.
		OFF	Cutter is not installed.
6	Document Presenter	ON	Presenter is installed.
		OFF	Presenter is not installed.
7		ON	
		OFF	
8		ON	
		OFF	

Table 5 – Configuration Strap Settings

4.1.1.4 Other Strap Options

Location	Name	Position	Description
Other Strap Options			
J13	Boot function	BF	Boot up to FLASH
		BR	Boot up to ROM
JP1	EPROM size	Unmarked	<1Mx8 EPROM installed
JP2	EPROM size	Unmarked	< 256Kx8 EPROM installed
		256K	=> 256x8K EPROM installed
		1M	1Mx8 EPROM installed
JP3	EPROM siza	Unmarked	< 512Kx8 EPROM installed
		512K	=> 512x8K EPROM installed
JP4	EPROM size	32	32Kx8 EPROM installed
JP5	System RAM size	32-128	32Kx8 RAM installed
		512	512Kx8 RAM installed
		128	=> 128Kx8 EPROM installed
JP6	LED3	ON	Connect drive signal to LED2 and J10 pin 4
		OFF	LED3 and J10 pin 4 have no drive signal
JP7	Buzzer	ON	Connect drive signal to BUZZER and J10 pin 2
		OFF	BUZZER and J10 pin 2 have no drive signal
JP8	Connect LED2 and BUZZER		Install ONLY if either JP6 or JP7 (but not both) are installed.
JP9	Configuration		See previous section
JP10	Optional FLASH	Unmarked	Install if JP9 is set to BF
		OF	Install if JP9 is set to BR
JP11	FLASH option	BBL	Boot Block of optional FLASH is locked
		Unmarked	CAUTION – Boot block can be overwritten
JP12	FLASH option	WP	Optional FLASH is Write Protected
		Unmarked	Optional FLASH can be overwritten
JP15	Test points		Factory use only
JP14	FLASH size	A20	4Mbit (256Kx16) optional FLASH is installed
		Unmarked	8Mbit (512Kx16) optional FLASH is installed
JP16	Serial port		Factory use only

4.2   Control Codes and Control Sequences

4.2.1   General Usage Print Commands

General Usage Print Commands			
Name	Command ASCII	Command hex	Description
Tab	HT	09	Move the print position to the next horizontal tab position. See ESC D. If a TAB is received and there are no more tab positions set on the current line, the TAB command is ignored. If the TAB will exceed the right margin, an auto-print is performed and the print position is set to the start of the next line.
Line feed	LF	0A	Data on the current line is printed, paper is fed one line based on the current line spacing, and the print position is set to the left margin. If the current line spacing is set to less than the current font height then paper is fed to print the current font height (see ESC 2, ESC 3 +n, and ESC C +n).
Form Feed	FF	0C	Feed paper to end of page as defined by the default page length of 11 inches or as modified by the US C command. If TOF mode is enabled (DIP switch 2 position 1 or ESC c 1 +n)) then paper is fed until the next BLACK MARK is detected. To advance to the BLACK MARK if TOF mode is not enabled use the GS FF command.
DLE	DLE	10	Data Link Escape Sequence Header.
Enable Auto Status Back	DLE A +n1 +n2	10 41 +n1 +n2	+n1 and +n2 define a mask to enable the transmission of the STATUS bytes when a user defined event occurs. See 4.2.2.1 . Default = 00 00 (ASB disabled).
Buffered STATUS request	DLE B	10 42	The STATUS bytes are transmitted when this command is processed out of the receive buffer. See Section 4.2.2.1 - STATUS commands .
Real time STATUS request	DLE R	10 52	The STATUS bytes are transmitted when the printer receives this command. See Section 4.2.2.1 - STATUS commands .

User selected data string	DLE U +n1 +n2	10 55 +n1 +n1	When DLE U +n1 +n2 is processed out of the receive buffer, the printer will transmit DLE U +n1 +n2 back to the host.
ESC	ESC	1B	ESCAPE Sequence Header.
GS	GS	1D	GROUP SEPARATOR Sequence Header.
US	US	1F	UNIT SEPARATOR Sequence Header.

Name	Command ASCII	Command hex	Description
Reverse Video ON	ESC RS	1B 1E	Printing is reversed to white characters on black background. Reverse video requires more power to print and is less readable. (Same as GS B 01)
Reverse video OFF	ESC US	1B 1F	Printing is set to default mode of black print on white background. (See GS B 00).
Set Print mode	ESC ! +n	1B 21 +n	Set Print mode = font A or B, Double high, Double wide. See Section 4.2.2.2 - Set Print Mode
Select Bit Image mode	ESC \ +m +n1 +n2 +d1 dn	1B 2A +m +n1 +n2 (data)	Select Bit Image mode. +m = ?. n2*256 + n1 = Number of DOT LINES of data to follow. (data) = the amount of data required to complete the sequence. Telpar does not fully support this command. Please refer to US * command which follows.
Underline	ESC - +n	1B 2D +n	Bit 0 of n = 0 turns underlining OFF. Bit 0 of n = 1 turns underlining ON. Default is OFF
Set 1/6" line spacing	ESC 2	1B 32	Set 1/6 inch line spacing
Set Line feed pitch	ESC 3 +n	1B 33 +n	Set line spacing to n dot lines. If the n specified is less than the height to print text using the currently selected character set then printing will cause enough paper feeds to print the entire line but a print command with no data in the buffer will cause paper to feed by this amount. Default is 1/8 inch
Printer reset	ESC @	1B 40	Initialize. See Section 4.2.2.3 - Printer Reset
Set page length	ESC C +n	1B 43 +n	Set page length to n character lines using the current font. Overwrites the page length defined by US C.
Set Horizontal	ESC D	1B 44	Set from 1 to 32 tab positions

Name	Command ASCII	Command hex	Description
Tab positions	+d1 dn NUL	(data) 00	in the current character size. Data values range from 1 to 255 in ascending order. The NUL character (00hex) terminates this command if less than 32 tab settings are being set. If a data value is less than the previous data value, this command is terminated. ESC D NUL clears all tab positions. Default is every 8 columns. Print after a tab starts in the column following the tab setting specified.
Forward paper feed for n dot lines	ESC J +n	1B 4A +n	Feed paper n dot lines. If there is data in the buffer, it is printed and paper is fed the difference of the +n and the amount needed to print the data. Range = 0 to 255dec
Select International character set	ESC R +n	1B 52 +n	Select international character set. Range = 0 through 15dec. See Figure 22 - International Character Sets for characters affected for each character set
Select justification for bar code	ESC a +n	1B 61 +n	n=00hex, left justify. n=01hex, center justify. n=02hex, right justify. GS L, GS W, and ESC \ will also affect the bar code justification.
Name	**Command** **ASCII**	**Command** **hex**	**Description**
Select paper type	ESC c 1 +n	1B 63 31 +n	Bit 0 = 0, Normal paper. Bit 0 = 1, TOF (Black Mark sensor) enabled. Default is based on DIP switch 2 position 1
Paper sensor to output PE signal	ESC c 3 +n	1B 63 33 +n	Command is not implemented; all four bytes will be ignored
Paper sensor to stop printing	ESC c 4 +n	1B 63 34 +n	Command is not implemented; all four bytes will be ignored
Select CODE PAGE	ESC t +n	1B 74 +n	n = 0, code page 437 (standard USA) n = 2, Code page 850 (Multilingual) n = 3, Code page 860 (Portuguese) n = 4, Code page 863 (Canadian-French)

Name	Command ASCII	Command hex	Description
			n = 5, Code page 865 (Nordic) n=10 hex, WPC1252 n=13 hex, Code page 858 (Multilingual with Euro characters)
Feed to Top of Form	GS FF	1D 0C	If TOF mode is disabled (DIP switch 2 position 1 or ESC c 1 +n) then paper is fed until the trailing edge of the Black Mark sensor is detected, the current page length is reached, or the printer runs out of paper.
Select character size	GS !	1D 21 +n	Bits 7,6,5,4 for width, Bits 3,2,1,0 for height. Can select 1,2,4, or 8 times normal size. 0hex = 1X size, 1 hex = 2X size, 2 hex = 4X size, and 3 hex = 8X size
Reverse video	GS B +n	1D 42 +n	Bit 0 of n = 1 causes Reverse Video to be printed (same as ESC RS). Bit 0 of n = 0 turns Reverse Video off (same as ESC US)
HRI position	GS H +n	1D 48 +n	Select HRI printing position for bar codes: n = 00hex, no HRI printed. n = any value other than 00hex, HRI printed below the bar code
Set left margin	GS L +nH +nL	1D 4C +nH +nL	Sets the left margin to nH*256 + nL dot positions from the left side of the print head. Default = 0 (leftmost dot). The value being set must be equal to or less than the right margin minus 80 dots. If the margin is set to any invalid value this command is ignore. Range = 0 to Right Margin - 80
Paper cut	GS V +*n* +*m*	1D 56 +*n* +*m*	If n = 0 (either 00hex or 30hex) a full cut is performed and the +m byte is not needed. If n is a capital A (41hex) then paper is fed for m dot lines and then a full cut is performed.
Name	**Command** **ASCII**	**Command** **hex**	**Description**
Set Right Margin	GS W + *nH* + *nL*	10 57 + nH + nL	Set the right margin to nH*256 + nL dot positions from the left

			side of the print head. Default = maximum dot count for the printer mechanism minus 1. The value being set must be equal to or greater than the left margin plus 80 dots. If the margin is set to any invalid value this command is ignore. Range = Left Margin +80 to rightmost dot
HRI font	GS f	1D 66 +n	NOT IMPLEMENTED. The controller selects a font and size to best fit under the bar code being printed.
Set Bar code height	GS h +n	1D 68 +n	Set the bar code height in dots. Default = 64 Range - 1 to 255 dec
Bar code printing	GS k +m +n +d1 dn	1D 6B +m +n (DATA)	Selects the bar code type and prints See Section 4.2.2.6 – Print Bar Code Command
Set Bar code magnification	GS w +n	1D 77 +n	Set the width of the bars used to print bar codes. The width of a narrow bar is set to n. Range = 1 to 8 dec. Default =3. A setting of n=1 prints a bar code so small it is possibly not readable.
Bit image command	US * +nH +nL +data	1F 2A +nH +nL +data	256*nH +nL defines how many bytes of bit image data will follow. See Section 4.2.2.5 - Bit Image (BI) Graphics Mode
Set Page Length	US C +nH +nL	1F 43 +nH +nL	Sets the page length to 256*nH +nL dot lines. Default is 11 inches. Overwrites the page length set by ESC C
Eject/retract ticket	US E	1F 45 +n	Bit 0 of n = 0 sets the mode to RETRACT an untaken ticket out the front of the printer. Bit 0 of n = 1 sets the mode to EJECT an untaken ticket back into the printer. See DIP SWITCH 2 position 2 for the default
Set timeout to use before an untaken ticket is purged	US K	1F 4B +n	If a document is cut and presented (but not removed) and another document is sent to the printer, the first document will not be purged (either Ejected or Retracted) until +n seconds after the first document is presented. Default is 5 second
Global IEEE-1284 STATUS	US S +n	1F 53 +n	Low order nibble of +n = 0 disables all STATUS transmissions in IEEE-1284

Name	Command ASCII	Command hex	Description
Enable /Disable			parallel mode. Low order nibble of +n + 1 thru F enables STATUS transmission. Default is disabled. See Section 4.2.2.1 - STATUS commands
Start of Document for WINDOWS	US b	1F 62	Begin document, used only by Telpar's Windows drivers. See Section 4.2.2.4 - Telpar's Windows Commands.
End of Document for WINDOWS	US e	1F 65	End document, used only by Telpar's Windows drivers. See Section 4.2.2.4 - Telpar's Windows Commands.
Set horizontal Print Position	US x +nH +nL	1F 78 +nH +nL	The horizontal print position is set to (256*nH + nL) * 8 dots from the left margin. See Section 4.2.2.5 - Bit Image (BI) Graphics Mode

Name	Command ASCII	Command hex	Description
Set Relative Vertical move	US y +nH +nL	1F 79 +nH +nL	Causes paper to feed 256*nH + nL dot lines. See Section 4.2.2.5 - Bit Image (BI) Graphics Mode Commands
Set Horizontal Print Position ABSOLUTE	US A	1F 41	Sets the x-move function (see US x +nH +nL) to be a move relative to the left margin. See US R
Set Horizontal Print Position RELATIVE	US R	1F 52	Sets the x-move function (see US x +nH +nL) to be a move relative to the current position. Default setting. See US A

4.2.2 Descriptions of Commands

4.2.2.1 STATUS commands

All transmission of status in IEEE-1284 mode is disabled at power on. Status transmission must be enabled by the US S +n command before any STATUS transmission will occur in I-EEE-1284 mode.

In case of an ERROR as defined in the table below, the printer transmits DLE E and the 2 status bytes. The response to a STATUS REQUEST is to transmit DLE (10 hex) followed by a SOURCE byte that distinguishes what type of status is being transmitted followed by the two status bytes as defined in the table below.

The SOURCE byte is defined as:

A = Auto Status Back . Is disabled by default but is enabled when the printer receives the DLE A +n1 +n2 command. +n1 and +n2 define a mask using the same byte/bit structure as in the table below. A "1" in a bit position enables the automatic transmission of DLE A and the 2 status bytes when an enabled condition occurs. The bit positions marked as errors in the table will always cause the automatic transmission of DLE E and the 2 status bytes so these positions will usually be "0" in the user defined mask.

B = Buffered status . DLE B and the 2 status bytes are transmitted when the DLE B command is processed out of the input buffer.

R = Real Time Status . If enabled by US R +n command, DLE R and the 2 status bytes are transmitted immediately when the DLE R command is received by the printer.

U = not a true STATUS request. When DLE U +n1 +n2 is processed out of the receive buffer, the printer transmits DLE U +n1 +n2 back to the host. The user can send DLE U +n1 +n2 anywhere within a document if he needs to know that the printer has processed the document up to that point.

First Status byte transmitted (and MASK for DLE A command)		
Bit	**Type**	**Function/condition**
7	Status	Spare
6	Status	Spare
5	Status	Receive buffer is full
4	ERROR	Cutter Error
3	Status	Printer Busy
2	Status	Receipt Taken
1	Status	Receipt Dropped
0	ERROR	Delivery Jam
Second Status byte transmitted (and MASK for DLE A command)		
Bit	**Type**	**Function/condition**
7	Status	Spare
6	Status	Print head over temperature
5	Status	Spare Sensor
4	Status	Paper Low
3	Status	Cutter Home
2	Status	Paper at Delivery
1	ERROR	Paper Out
0	ERROR	Head Up

Table 6 - Printer's response to a STATUS REQUEST command

4.2.2.2 Set Print Mode

ESC ! +*n*   **[1B 21 +***n***]**

+*n* is defined as:

Bit 7--- Not used.

Bit 6 --- Not used.

Bit 5 --- 0 = Double high print OFF, 1 = Double high print ON.

Bit 4 --- 0 = Double wide print OFF, 1 = Double wide print ON.
    Bit 3 --- Not used.
Bit 2 --- Not used.
    Bit 1 --- Font size.
Bit 0 --- Font size.

Bit 1	Bit 0	Font size (WxH)
0	0	FontB (18 x 38)
0	1	FontA (30 x 50)

Both double wide and double high can be selected for either character size. When a printed line contains characters with different heights, the characters are arranged so that the base line of all characters line up. Default = 01 hex (FontA, 30 x 50 matrix)

4.2.2.3   Printer Reset

ESC @ [1B 40]
Initializes the printer.
Any data received before the ESC @ but not yet printed is cleared. The character size is set to the default font. International character set is set by the DIP switch setting. Left and Right Margins are set to the defaults. Reverse video is turned off. Underline printing is turned off. Bar code height is set to 64. Bar code magnification is set to 3.

4.2.2.4   Telpar's Windows Commands.

Due to restrictions of the Windows operating system and to allow the use of device fonts for print speed enhancement, the Begin Document (US b) and End Document (US e) commands were created for use by the Telpar Windows driver. These two commands should not be sent to the printer by any other application program since unexpected results will occur.
Language Monitor Info. - Not available at publication date

4.2.2.5   Bit Image (BI) Graphics Mode Commands

BI   US * +nH +nL +data   1F 2A +nH +nL +data
256*nH +nL defines how many bytes of bit image data will follow. The data is received sequentially with the first byte representing the first 8 dot positions at the top left side of the bit image with bit 7 being to the left and bit 0 being to the right as printed.

XMOVE   US x +nH +nL   1F 78 +nH +nL
The horizontal print position is set to (256*nH + nL) * 8 dots from the left margin.
If there is a lot of white space on the current dot line, the XMOVE command can cause the print location pointer to be moved resulting in less data required to define a dot line of bit image data to be printed. Anytime there is more than 4 bytes of white space (32 dots) the XMOVE command will result in less data being sent to the printer. Another BI command can follow the XMOVE command until a YMOVE signifies the end of the current dot line.

YMOVE US y +nH +nL   1F 79 +nH +nL
Causes paper to feed 256*nH + nL dot lines. This is also the BI line terminator and print command.

4.2.2.6   Print Bar Code Command

GS k +*m* +*n* +d1   dn   **[1D 6B +*m* +*n* (DATA)]**
+*m* selects the bar code type. +*n* defines the number of data bytes which follow.
        If more data is sent than can fit on the printer being used, the bar code is not printed.

+m	Bar code	+n	Valid data	comment
41	UPC-A	11	0-9	Checksum generated & printed
42	UPC-E	7	0-9	Checksum generated & printed
43	EAN13	12	0-9	Checksum generated & printed
44	EAN8	7	0-9	Checksum generated & printed
45	Code39	variable	0-9 A-Z sp $%*-./	
46	ITF	variable.	0-9	If an odd number of data bytes is sent, a leading zero will be added.
47	CODABAR	variable.	0-9 - $: / . +ABCD	
49	CODE128	variable.	See Section 4.2.2.7 - Bar Code 128 definitions	
74	CODE 39	variable.	0-9 A-Z sp $%*-./	Checksum generated & printed
75	ITF	variable.	0-9	Checksum generated & printed. If the data sent and the checksum causes an odd number of digits, a leading zero will be printed.

4.2.2.7 Bar Code 128 definitions

Code128 Character set: 103 data chars, three different start characters, and a unique stop character.
CodeA consists of the ASCII characters 00hex thru 5Fhex, FNC1 thru FNC4, Shift, CodeB, and CodeC.
CodeB consists of the ASCII characters 00hex thru 7Fhex, FNC1 thru FNC4, Shift, CodeA, and CodeC.
CodeC consists of 2 digit numeral characters 00dec thru 99dec, FNC1, CodeA, and CodeB.
The 103 different bar code patterns have different meanings depending on whether CodeA, CodeB, or CodeC was specified when the data was received. The data string must start with {A or {B or {C to specify CodeA, CodeB, or CodeC. A checksum is calculated and printed by the printer.

Value used to calculate checksum	CodeA	CodeB	CodeC	Value used to calculate check sum	CodeA	CodeB	CodeC
0	(sp)	(sp)	00	54	V	V	54
1	!	!	01	55	W	W	55
2	"	"	02	56	X	X	56
3	#	#	03	57	Y	Y	57
4	$	$	04	58	Z	Z	58
5	%	%	05	59	[	[	59
6	&	&	6	60	\	\	60
7	'	'	07	61	]	]	61
8	(	(	08	62	^	^	62
9	)	)	09	63	_	_	63
10	*	*	10	64	00hex	`	64
11	+	+	11	65	01hex	a	65
12	,	,	12	66	02hex	b	66
13	-	-	13	67	03hex	c	67
14	.	.	14	68	04hex	d	68
15	/	/	15	69	05hex	e	69
16	0	0	16	70	06hex	f	70
17	1	1	17	71	07hrx	g	71
18	2	2	18	72	08hex	h	72
19	3	3	19	73	09hex	i	73
20	4	4	20	74	0Ahex	j	74
21	5	5	21	75	0Bhex	k	75
22	6	6	22	76	0Chex	l	76
23	7	7	23	77	0Dhex	m	77
24	8	8	24	78	0Ehex	n	78
25	9	9	25	79	0Fhex	o	79
26	:	:	26	80	10hex	p	80
27	;	;	27	81	11hex	q	81
28	<	<	28	82	12hex	r	82
29	=	=	29	83	13hex	s	83
30	>	>	30	84	14hex	t	84
31	?	?	31	85	15hex	u	85
32	@	@	32	86	16hex	v	86
33	A	A	33	87	17hex	w	87
34	B	B	34	88	18hex	x	88
35	C	C	35	89	19hex	y	89
36	D	D	36	90	1Ahex	z	90
37	E	E	37	91	1Bhex	{	91
38	F	F	38	92	1Chex	|	92
39	G	G	39	93	1Dhex	}	93
40	H	H	40	94	1Ehex	~	94

41	I	I	41	95	1Fhex	DEL	95
42	J	J	42	96	FNC3	FNC3	96
43	K	K	43	97	FNC2	FNC2	97
44	L	L	44	98	SHIFT	SHIFT	98
45	M	M	45	99	CodeC	CodeC	99
46	N	N	46	100	CodeB	FNC4	CodeB
47	O	O	47	101	FNC4	CodeA	CodeA
48	P	P	48	102	FNC1	FNC1	FNC1
49	Q	Q	49				
50	R	R	50				
51	S	S	51				
52	T	T	52				
53	U	U	53				

Code128 Start Characters

Value used to calculate checksum	Data sent	represents
103	{A	Start character CodeA
104	{B	Start character CodeB
105	{C	Start character CodeC

Code128 Stop Character

106		Stop character

Code128, other two character data sequences: Note: Since { is used as a sequence header to specify special characters, {{ must be sent as data to actually print { in the bar code.

Data sent	represents		Data sent	represents
{1	FNC1		{S	Shift
{2	FNC2		{{	{
{3	FNC3			
{4	FNC4			

4.3   Serial (RS-232C) Interface

4.3.1   Location of Serial (RS-232C Connector

Serial (RS-232C) Connector

DE9S 9-pin
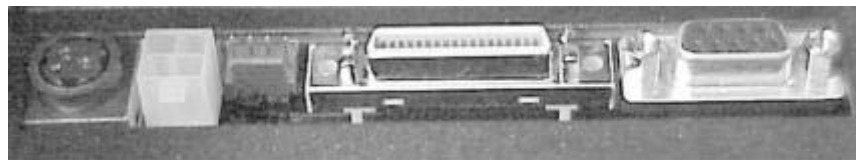
Figure 12 - Picture of MTP-2283 Serial (RS-232C) Connector

4.3.2   Serial (RS-232C) Interface Specification

Serial (RS-232C) Interface Specification	
Item	**Specification**
Data receive speed	Baud rate selected by DIP switch
Synchronizing method	Asynchronous, Full duplex
Handshake	DTR/DSR signal or XON/XOFF (selected by DIP switch)
Input output level	RS-232C
Signal level	Space (logic=0) +3 V +12 V Mark (logic=1) -3 V -12 V

Table 7 - Serial (RS-232C) Interface Specification
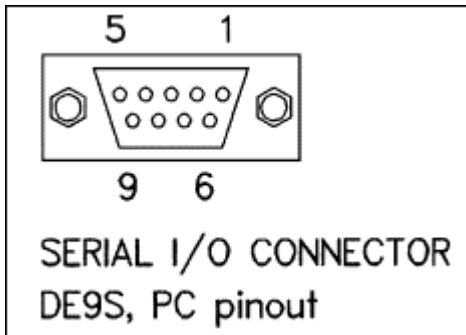
4.3.3 Serial I/O Connector

Figure 13 - Serial I/O Connector pin outs

Serial (RS-232C) Interface Pin Assignments			
Pin	Name	Direction	Function
2	RD	I	RS232 received data.
3	XD	O	RS232 transmitted data.
4	DTR	O	Hardware handshake line.
5	GND	-	Logic ground.
6	DSR	I	High ("space") = OK for the printer to transmit data when requested. The state of DSR is IGNORED for XON/XOF handshaking if selected.

Table 8 - Serial (RS-232C) Interface Pin Assignments

4.3.4 Flow Control

The MTP-2283 series employs a 6 K byte data buffer to allow the host computer to rapidly transfer data. Under some circumstances it may be possible to completely fill the buffer . When the buffer is within 50 bytes of being full, the MTP-2283 signals the host computer to pause until a line of data is printed, or until the buffer is under the 50-byte limit. The flow control information is sent to the host using hardware or software protocols as determined by the DIP Switch setting.

The hardware protocol uses the DTR line of the serial interface. This pin is asserted or negated as necessary to turn off and on the flow of data. The software protocol uses the XON and XOFF ASCII characters (^Q and ^S) which are sent back to the host to start and stop the data stream. Some host systems may not support one or both of these protocols.

4.4   Centronics Parallel Interface (IEEE-1284)

4.4.1   Parallel I/O Connector, IEEE-1284 Type C

Centronics Parallel
Interface (IEEE-1284 -
36-pin type C.
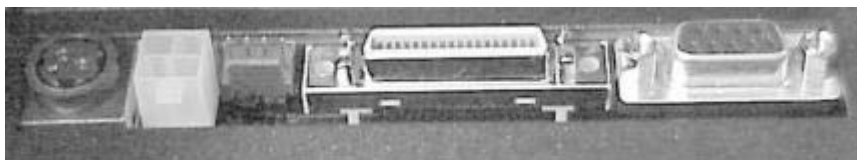
Figure 14 - Picture of Centronics Parallel Interface (IEEE-1284)

J2 Pin#	Name	Cent. Name	Direction	Function in Centronics Mode (SPP)
Parallel Interface Pin Assignments
1	PeripheralAck	BUSY	O	High level when printer cannot accept data.
2	Xflag	SLCT	O	High level when printer is on.
3	PeripheralClk	/ACK	O	Active low pulse when data is accepted
4	-PeripheralReq	/ERR	O	Low level when an error occurs.
5	-AckRev	PE	O	High level when printer is out of paper
6	IO0	DO	I/O	ASCII data bit 0 (LSB)
7	IO1	D1	I/O	ASCII data bit 1
8	IO2	D2	I/O	ASCII data bit 2
9	IO3	D3	I/O	ASCII data bit 3
10	IO4	D4	I/O	ASCII data bit 4
11	IO5	D5	I/O	ASCII data bit 5
12	IO6	D6	I/O	ASCII data bit 6
13	IO7	D7	I/O	ASCII data bit 7
14	-RevReq	/INIT	I	Low level = system reset.
15	HostClk	/STB	I	Active Low Pulse to send data tp printer
16	1284Active	/SLCTIN	I	Low level enables printer.
17	HostAck	AFXT	I	
18	HostLogicHigh		I	Host Logic High
19-35		GND	-	Logic ground.
36	PeriphLogicHigh		O	Peripheral Logic High.
Shell	CGND	CGND	-	Chassis ground

Table 9 - Parallel Interface Pin Assignments - IEEE-1284 Nomenclature

4.4.2   Alternate Parallel I/O Connector, IEEE-1284 Type A or B

Connector J4 is a 26-position (2x13) straight pin header with pinout like a DB25S for connection directly to a PC parallel port. J4 is located directly behind J2, which is an IEEE-1284 type C I/O connector. A custom mass-terminated cable assembly can connect from J4 to a DB25S (IEEE-1284 type A).

Connector J3 is a 36-position (2x18) straight pin header with pinout like a Centronics connector for connection directly to a PC printer cable. J4 is located directly behind J2, which is an IEEE-1284 type C I/O connector. A custom mass-terminated cable assembly can connect from J3 to a Centronics type connector to connect to a PC printer cable (IEEE-1284 type B).

J2, J3, and J4 are connected in parallel so only one of the three can be used.

Alternate Parallel Interface Pin Assignments				
J4 Pin#	J3 Pin#	Name	Direction	Function
1	1	/STB	I	Active Low Pulse to send data tp printer
2	2	DO	I	ASCII data bit 0 (LSB)
3	3	D1	I	ASCII data bit 1
4	4	D2	I	ASCII data bit 2
5	5	D3	I	ASCII data bit 3
6	6	D4	I	ASCII data bit 4
7	7	D5	I	ASCII data bit 5
8	8	D6	I	ASCII data bit 6
9	9	D7	I	ASCII data bit 7
10	10	/ACK	O	Active low pulse when data is accepted
11	11	BUSY	O	High level when printer cannot accept data.
12	12	PE	O	High level when printer is out of paper
13	13	SLCT	O	High level when printer is on.
14	14	AFXT	I	Not used.
15	32	/ERR	O	Low level when an error occurs.
16	31	/INIT	I	Low level = system reset.
17	36	/SLCTIN	I	Low level enables printer.
	18	PLHi	O	Peripheral Logic High.
18 thru 25	16, 19 thru 30		-	Logic ground.
	17	CGND	-	Chassis ground
Shell	Shell	CGND		Chassis ground
	15, 33, 34, 35	n/c	-	No connection

Table 10 - Alternate Parallel Interface Pin Assignments

5   Specifications

5.1   Detailed Specifications

Specifications	MTP-2283
Printing method	Thermal-sensitive line dot method
Dot Structure	2400 dots/line
Dot pitch (horizontal)	0.00333 inch (300 dot/inch)-Dot density
Dot pitch (vertical)	0.00333 inch (300 dot/inch)-Line feed pitch
Effective printing area	8 inches
Paper width	8.5 inches

Paper thickness		0.0024 to 0.0039 inches
Cutting type		Full cut only
Number of columns (default)		80 columns/line (30 x 50 dot font)
Maximum printing speed		600 dot line/s (50 mm/s)
Character composition, dimensions (W x H),		30 x 50 dots, 2.54 x 4.23 mm, 80 columns
Number of characters per line		18 x 38 dots, 1.52 x 3.22 mm, 133 columns
Interface		IEEE-1284 Parallel and RS-232C Serial
Power Supply	For head	See Table 1 - Current (A) for Printer Head
	For motor	DC 24V± 5%
	For cutter	DC 24V± 5%, 1.0 A max.
Expected Life	Mechanism	Pulse durability: 1×10^8 pulse/dot Wear resistance: 50 km
	Cutter	5×10^5 cuts
Environmental condition	Operating temperature	0 to +50°C
	Operating humidity	20 to 85% RH (No condensation)
	Storage temperature	-20 to +60°C
	Storage humidity	5 to 95% RH (No condensation)
Detection	Head temperature	By thermistor (applied energy control, abnormal temperature detection)
	Paper out/Mark detect	By reflective photo assembly
Paper		Thermal Sensitive paper

Table 11 - General Specifications

5.2   Error Detection Function

Certain ERROR modes are reported when they occur by a sequence of blinks of LEDs DS2 and DS3 located on the controller board. The ERROR BLINK patterns are listed below and are also printed during a self test.
DS2 blinks ON four times indicated in the table below as T1, T2, T3, and T4. Following each sequence of blinks there is a pause before starting the next sequence. The ON times of DS2 is the time base used for encoding the error reporting by DS3.
DS3 blinks ON during some of the four times that DS2 blinks ON. The pattern of ON times of DS3 listed in the table below indicates the ERROR being reported.

ERROR	T1	T2	T3	T4
Paper Out	ON	OFF	OFF	OFF
Head Up	OFF	ON	OFF	OFF
Cutter Fault	OFF	OFF	ON	OFF
Delivery Jam	ON	OFF	ON	OFF

Table 12 - Error Detection Functions

5.3   Character Sets - Print Samples

Figure 16 - Code Page 437 Print sample

Figure 22 - International Character Sets

At power on, the International Character set is determined by the settings of DIP switch 2. See Section 4.1.1.2 - DSW2 – DIP Switch 2 . The International character set can then be changed under software control by using the ESC R command.

5.4   MTP-2283 Dimensional Drawings
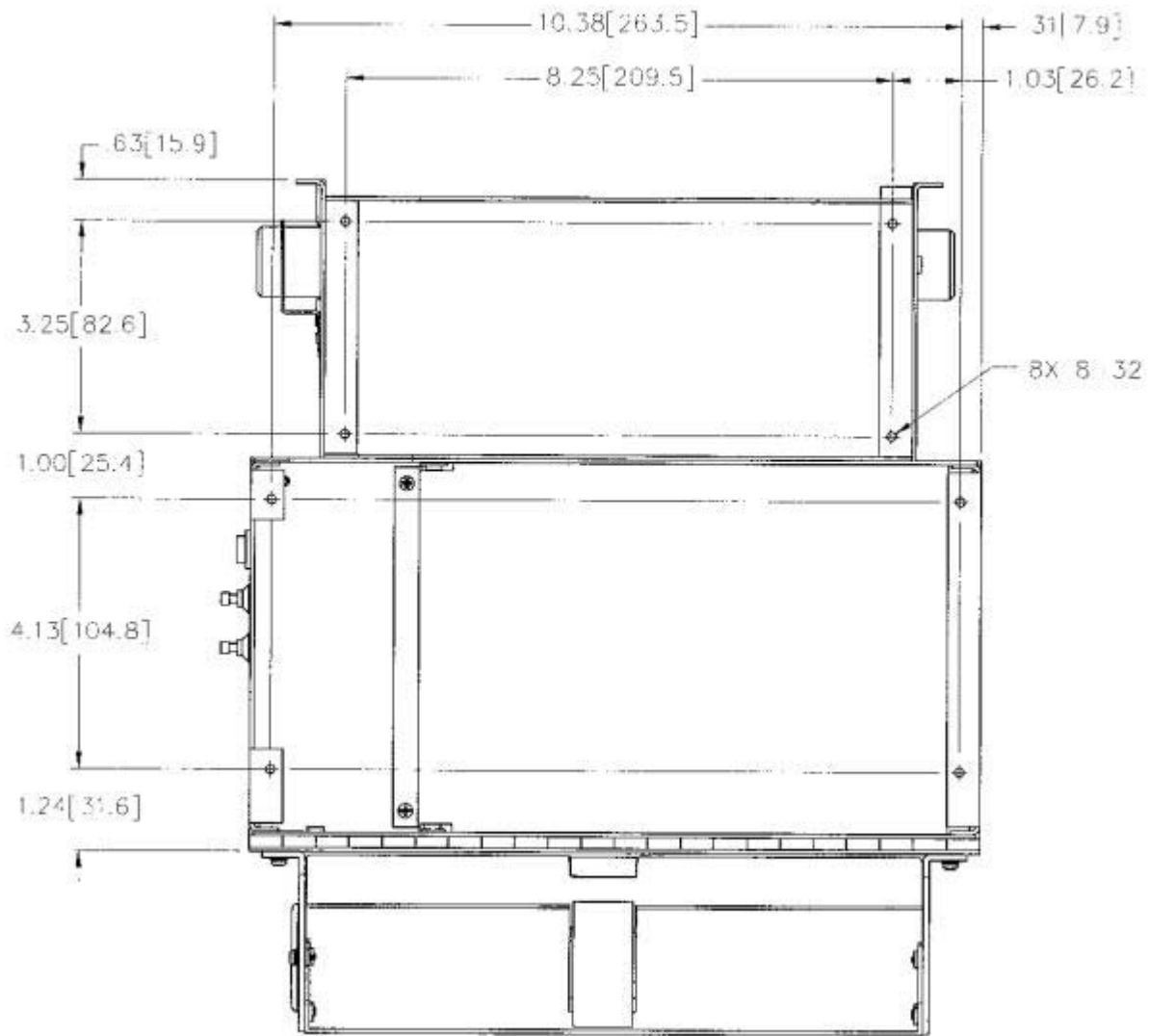
Figure 23 - MTP-2283 Drawing – Bottom View
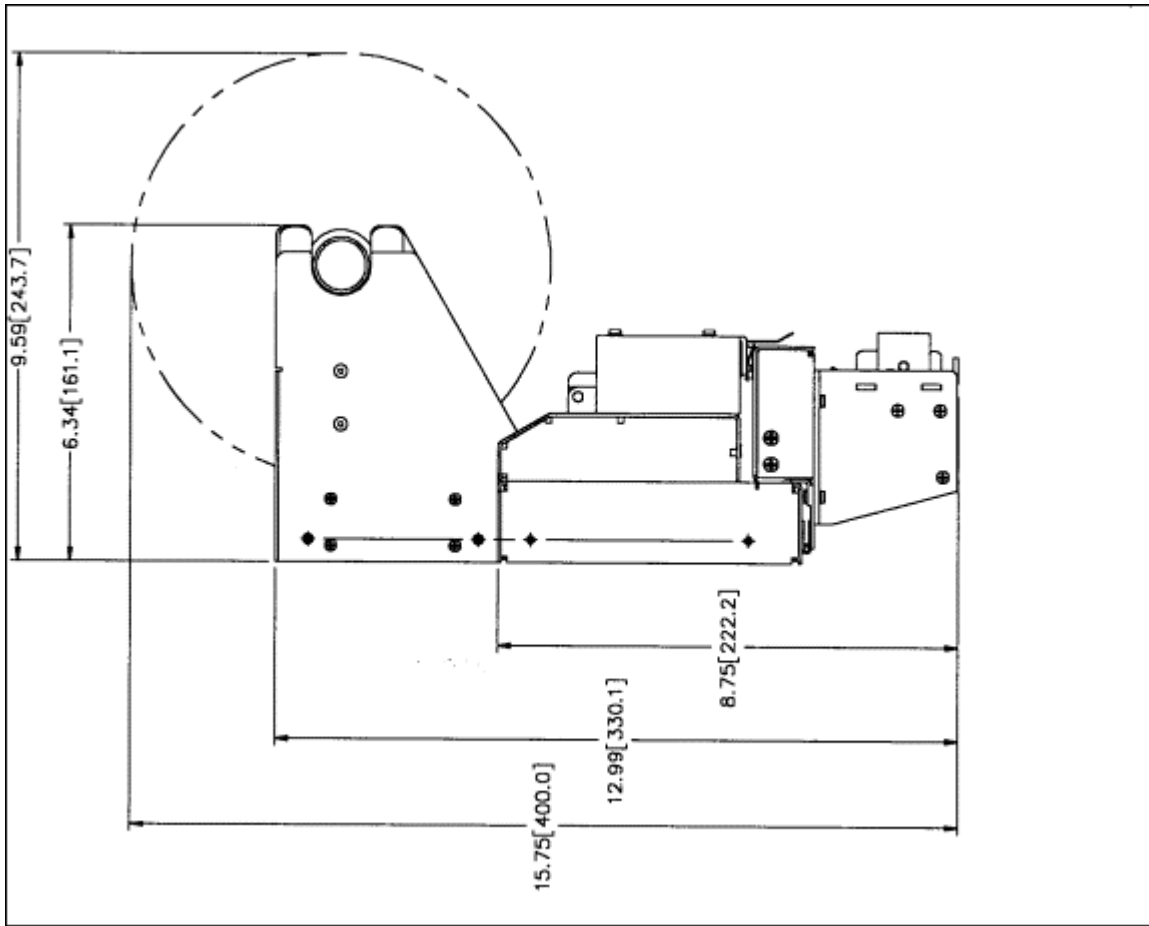
Figure 24 - MTP-2283 Drawing Side View – 1
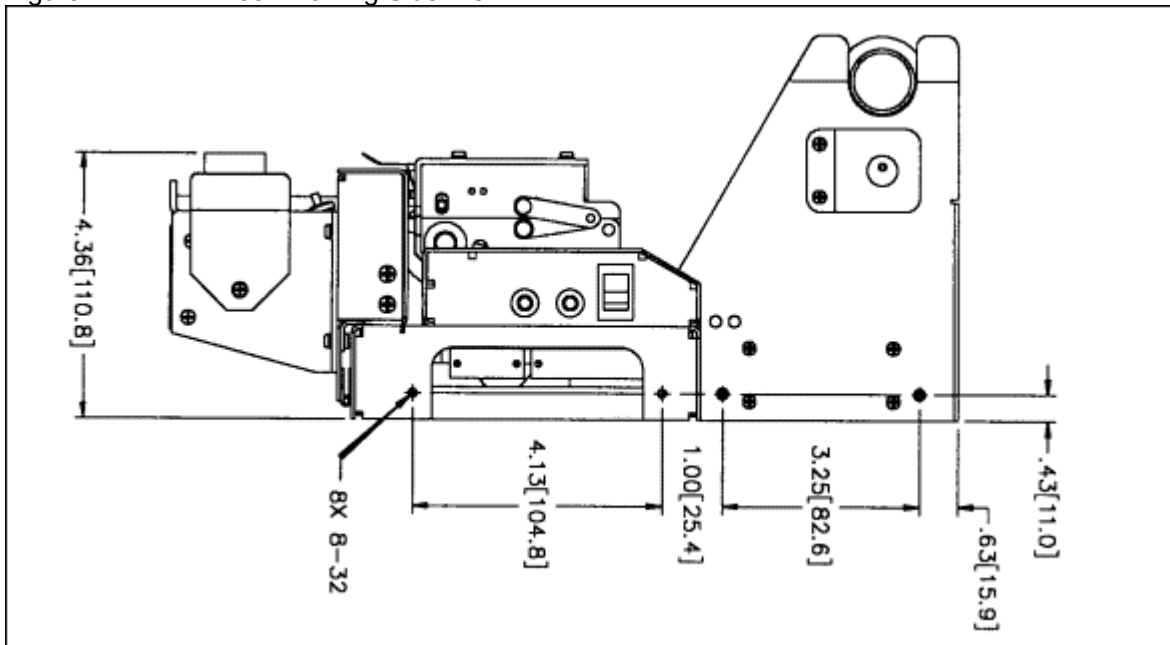
Figure 25 - MTP-2283 Drawing Side View – 2

5.5   CE Declaration of Conformity

TELPAR

19111 North Dallas Parkway, Suite 100
Dallas, TX 75257 USA

EC Declaration of Conformity
<div align="center">according to
EC EMC Directive (89/336/EEC, 92/31/EEC, 93/68/EEC),
and
EC Low Voltage Directive (73/23/EEC, 93/68/EEC)</div>

We, TELPAR, declare that the following described equipment in our delivered version complies with the appropriate basic safety and health requirements of the EC EMC Directive (89/336/EEC, 92/31/EEC, 93/68/EEC) and EC Low Voltage Directive (73/23/EEC, 93/68/EEC) based on its design and type, as brought into circulation by us. In case of alteration of the machine, not agreed upon by us, this declaration will lose its validity.

Description of the Electrical Equipment: Thermal Printer

Model Number(s):   MTP-2222   MTP-2232   MTP-2232SL
MTP-2242   MTP-2242V   MTP-2283

Applicable EC Directives   EC EMC Directive (89/336/EEC, 92/31/EEC, 93/68/EEC)
& Harmonized Standards: EN 55022   EN61000-4-2
                                     EN 61000-4-3   EN 61000-4-4
                                     EN 61000-4-5   EN 61000-4-6
                                     EN 61000-4-8   EN 61000-4-11
                              EC Low Voltage Directive (73/23/EEC, 93/68/EEC)
                                     EN 60950

Year in which CE Marking was affixed: 2000
Authorized Signature/Date: Eddie Lee / Dec. 18, 2000
Title of Signatory: Director, Engineering

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TELPAR

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Part Number: 090710-0010

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