User's Manual

PNP-64

Panel Printer

PNP-64

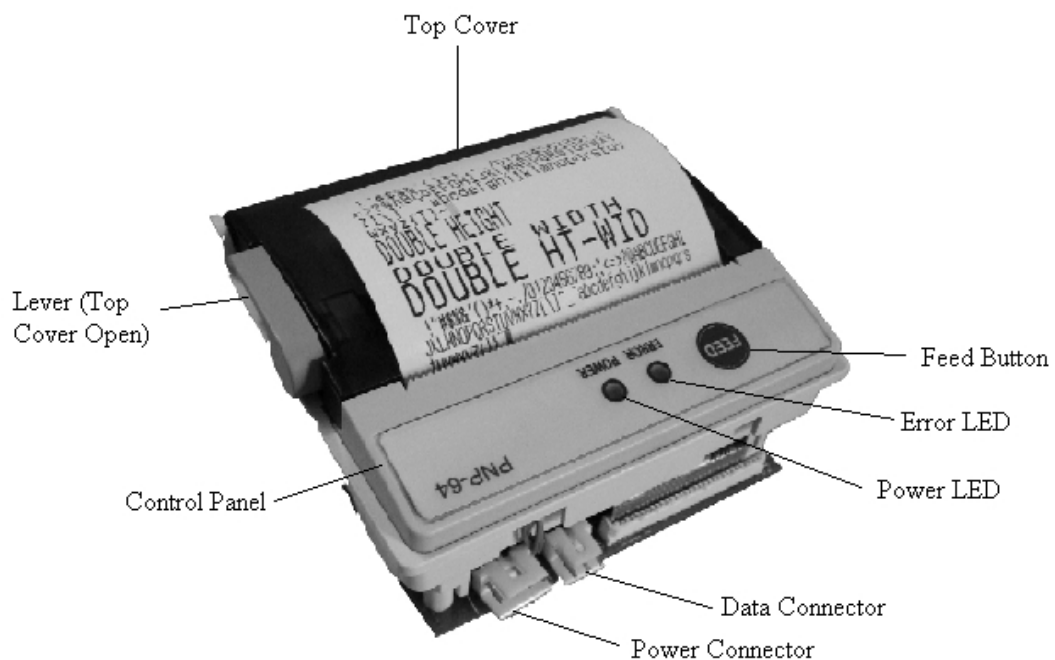**INTRODUCTION**

The PNP-64 is a 'Plug & Play' type 2 Inch Thermal Panel Printer Module which enables the OEM users to avoid hassles like mounting mechanism, paper roll, developing control board etc. It has following features.

- Compact size
- Silent printing
- Easy paper loading
- Easy Panel Mounting
- High resolution (203 dpi)
- Low noise

FRONT VIEW

SPECIFICATIONS

1.	Printing Method	:	Direct Thermal Printing.
2.	Print Width	:	48 mm
3.	Print Speed	:	50mm per second
4.	Resolutions	:	203 DPI (8 dots/mm)
5.	Paper Loading	:	Easy 'Clam Shell' type
6.	Characters per line	:	29 (default) or 42
7.	Character set	:	96 Characters ASCII (As shown below) :

! " £ $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7

8 9 : ; < = > ? @ A B C D E F G H I J K L M N O

P Q R S T U V W X Y Z [\ ] ^ _ ` a b c d e f h i j k

l m n o p q r s t u v w x y z ° # ~

|			
8.	Fonts	:	Normal, Double Width, Double Height & Quadruple Size
9.	Sensors	:	'No Paper' sensor
10.	Paper Type	:	Direct Thermal Paper
11.	Paper Roll	:	Width 58mm. Outer Diameter 40mm
12.	Reliability	:	MCBF 50 km
13.	Interface	:	RS-232C
14.	Data Buffer	:	768 Characters
15.	Power	:	Logic 5VDC @ 250mA Mechanism 8.2 VDC @ 1.5A (Peak 3A)
16.	Cutter	:	Manual
17.	Dimensions	:	External 80(W) x 76(L) x 43(H) mm Panel Cut-out 76.2 x 72mm

PNP-64

PRINTER MOUNTNG METHOD

1)   User side dimension guide

SECTION A-A'
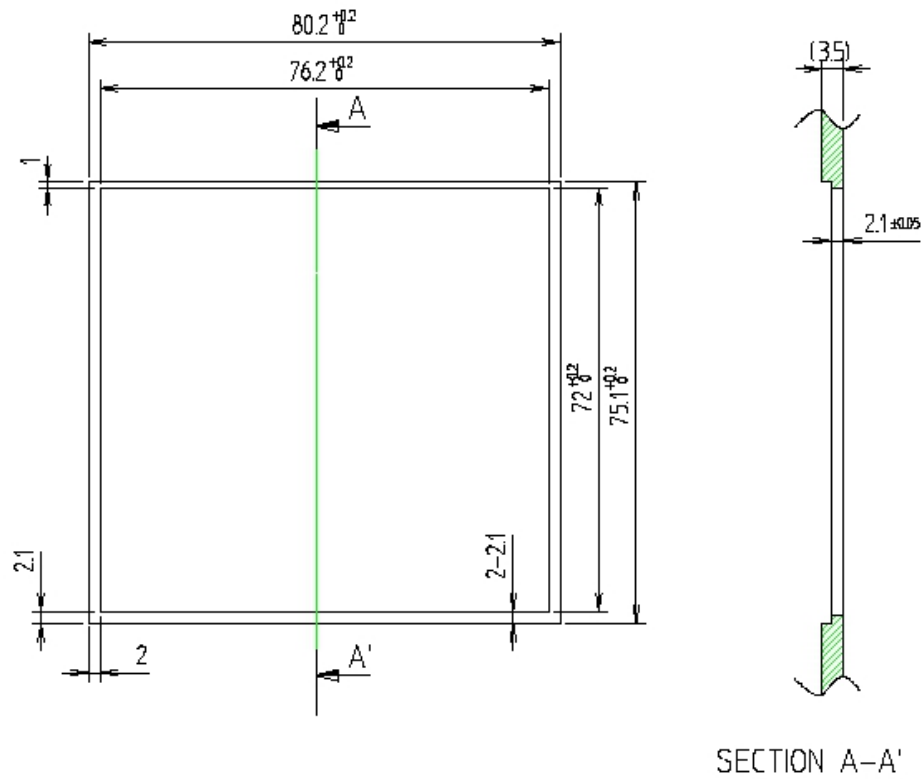
2)   Mounting flow chart
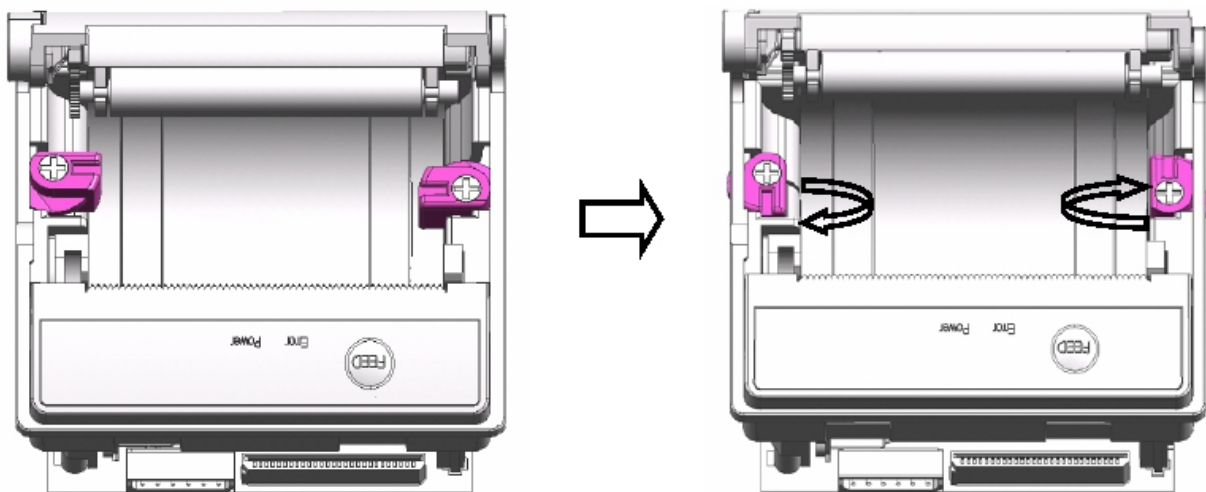
OPERATING CONTROL PANEL

Feed Button :

1)   Press the feed button to advance the paper.
2)   Feed button can also be used for printing 'Self Test' as follows.
   Hold down the feed button & turn on the printer with Top Cover closed.

Indicator Lights

1)   Power
       The 'Power' LED is on when the printer power is on.
2)   Error
       The error LED blinks is on when paper is out.

INSTALLING THE PAPER ROLL

Note : The printer must be turned off before installing the paper roll.

1)   Open the printer cover by pulling the lever.

2)   Insert the paper roll as shown below

Correct   Wrong

O   X
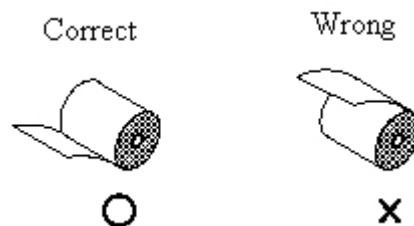
3)   Pull out the paper until it comes out from the top of the printer. Then close the
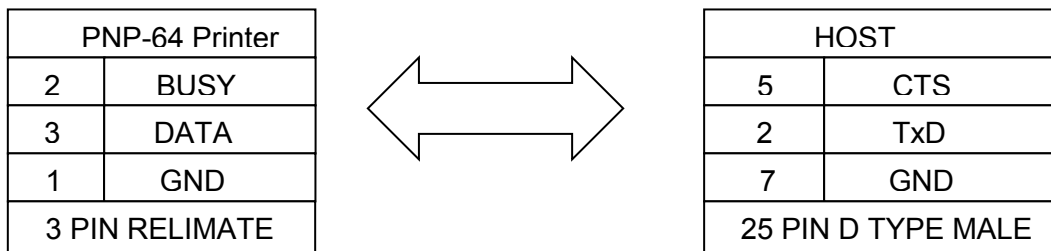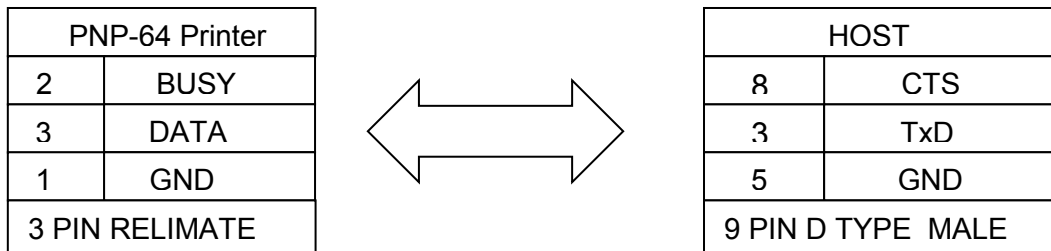   Top Cover

IMPORTANT

The power supply should be designed to provide an **instantaneous** peak current of 3 Amps.

The 8.5 Volts power supply to the print head should not be applied in the absence of the 5 Volts Logic power supply.

PNP-64

SERIAL INTERFACE

1. **Baud Rates** : 9600 Factory set. Any other on special request.

2. **Data Length** : 8 Bits. (Factory set)

3. **Data Buffer** : 768 Characters.

4. **Parity setting :** Absent (Factory set)

5. **Handshaking Signals :** The card gives out a BUSY signal. When the card is ready to accept a data byte, the BUSY line is at about +9 volts. When it is unable to accept any data, this line goes to about -9 volts.

6. **Data Voltage :** RS-232 Levels.

7. **Serial Interface Connection**

PNP-64 Printer	
2	BUSY
3	DATA
1	GND
3 PIN RELIMATE	

HOST	
8	CTS
3	TxD
5	GND
9 PIN D TYPE MALE	

PNP-64 Printer	
2	BUSY
3	DATA
1	GND
3 PIN RELIMATE	

HOST	
5	CTS
2	TxD
7	GND
25 PIN D TYPE MALE	

Note: 1)   Short Together DCD, DTR and DSR on your host connector.

2)   Transmit data to the Printer after turning on the power and initializing the printer.

3)   In 9 PIN D TYPE MALE Connector, DCD, DTR, DSR have following pin Numbers:
   i. DCD (1)
   ii.DTR (4)
   iii.DSR (6)

4)   In 25 PIN D TYPE MALE Connector,   DCD, DTR and DSR Pin Number as follows :
   i. DCD (8)
   ii. DTR (20)
   iii.DSR (6)

(SELECT PRINT MODE) COMMAND

The format of this command is :

Esc   !   n

1BH   21H   n
Depending on logic levels of the bits in 'n' various print formats can be selected.

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	
0	0-upright	0- Single width	0- Single height	0	0	0	0	- 29 Cols
0	1-inverse	1- Double width	1- Double height	0	0	0	1	- 42 Cols

GRAPHIC MODE

It is selected by following command

Esc   X   4   x   y   d1 d2   …….. d (k-1) dk

1BH   58H   34H   x   y   d1 d2   …….. d (k-1) dk

ESC X   4   X   Y   d1 d2 ……. d(x * y)   Defines a user-defined bit image using
x * 8 dots in horizontal direction and y dots in vertical direction .

Range
-Horizontal directions dots = (x * 8)dots.
Where x ranges from 1 to 48.
-Vertical direction = y dots.

Explanation:
The graphic pattern to be printed is divided into columns, each column of 8 bits. In this command x is number of 8 bits columns. The maximum value of x is 48D. y is total number of rows.

LINE FEED

Sending 0AH or 0DH will cause the contents of the data buffer (if there are any) to be printed followed by a line feed. If there is no data in the buffer, then a simple line feed will occur.

In graphic mode these will NOT cause line feed. They will be interpreted as data bytes.

PNP-64

COMMAND SETTING

Factory Set : 1 Start bit, 8 Data bit, 1 Stop bit, No Parity, Baud Rate 9,600 bps.
Any other on request.

CONNECTORS

6 PIN RELIMATE (MALE) FOR POWER & DATA.

1) Power GND (Black) 2) +5VDC (Brown) 3) +8.5VDC (Red)
4) DATA (Orange) 5) BUSY (Yellow) 6) GND (Green)