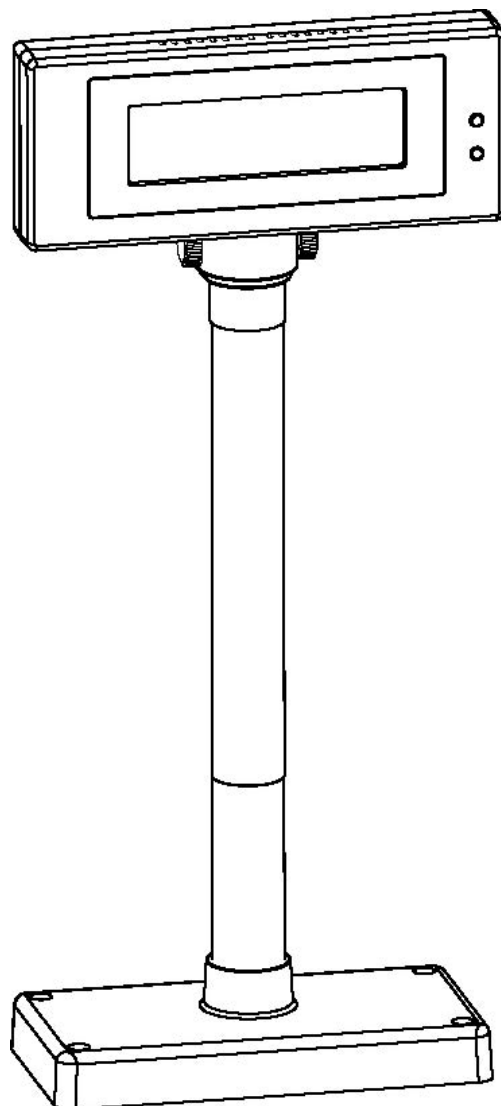


User's Manual

Customer Pole Display

Model: WD-304

Version: 1.12



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1 FEATURES

1. Display 8x16 dot matrix alphanumeric in 30 columns x 4 lines, or 15 columns x 4 lines for multi byte characters.
2. Display 8x16 dot matrix alphanumeric in 30 columns x 3 lines, or 15 columns x 3 lines for multi byte characters under CD-8240 compatible mode.
3. Display 8x32 dot matrix alphanumeric in 30 columns x 2 lines, or 15 columns x 2 lines for multi byte characters.
4. White text over blue background makes it easy to read.
5. Adjustable display panel provides best view angle.
6. Provide 2 poles for best position installation.
7. Both ESC/POS and string mode command are supported.
8. RS232C communication interface with adjustable baud rate.
9. Display configuration is adjustable with buttons on the panel.

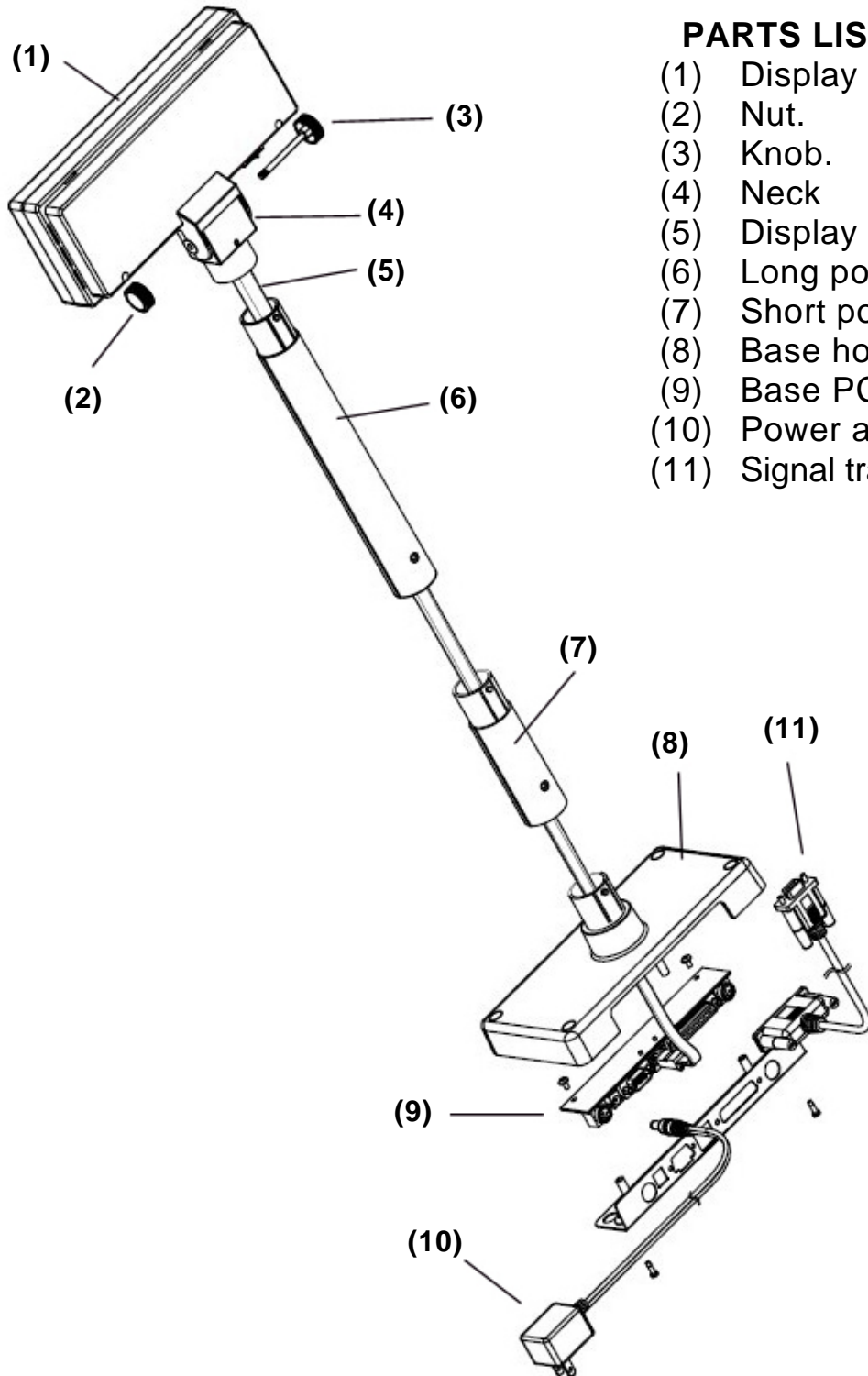
2 GENERAL SPECIFICATIONS

No	Item	Descriptions	
1	Display method	LCD graphic display(blue purple)	
2	Backlight type	LED backlight	
3	Brightness	180 cd/m ²	
4	Display color	White text over blue background	
5	Number of characters	alphanumeric: 30 columns x 4 lines (2 lines with double high characters) multi byte characters: 15 columns x 4 lines (or double high is 2 lines)	
6	Character type	8 x 16 dot matrix and graphic	
7	Character size	4.24 x 8.48mm	
8	Fonts	96 alphanumeric, 11 international, 11 code page, Chinese, Japanese and Thai	
9	Command and driver	ESC/POS and OPOS	
10	MTBF (power on time)	20000 hours	
11	Viewing angle	0 – 45 degree	
12	Rotating angle	270 degree (Max.)	
13	Power supply	Powered by USB, +5VDC and +9 ~ +35VDC are optional	
14	Power consumption	2.5 W	
15	Interface	RS-232C and USB are optional	
16	Panel dimension	224 (W) x 93 (H) x 50(D) mm	
17	Gross weight	1.7 kg	
18	External dimension	Long pole	225(W) x 100(D) x 500(H) mm
		Middle pole	225(W) x 100(D) x 281(H) mm
		Short pole	225(W) x 100(D) x 193(H) mm
19	Temperature	Operating	0 ~ 45°C
		Storage	-10 ~ 50°C
20	Humidity	Operating	10 ~ 90%RH
		Storage	10 ~ 90%RH

Table 2-1

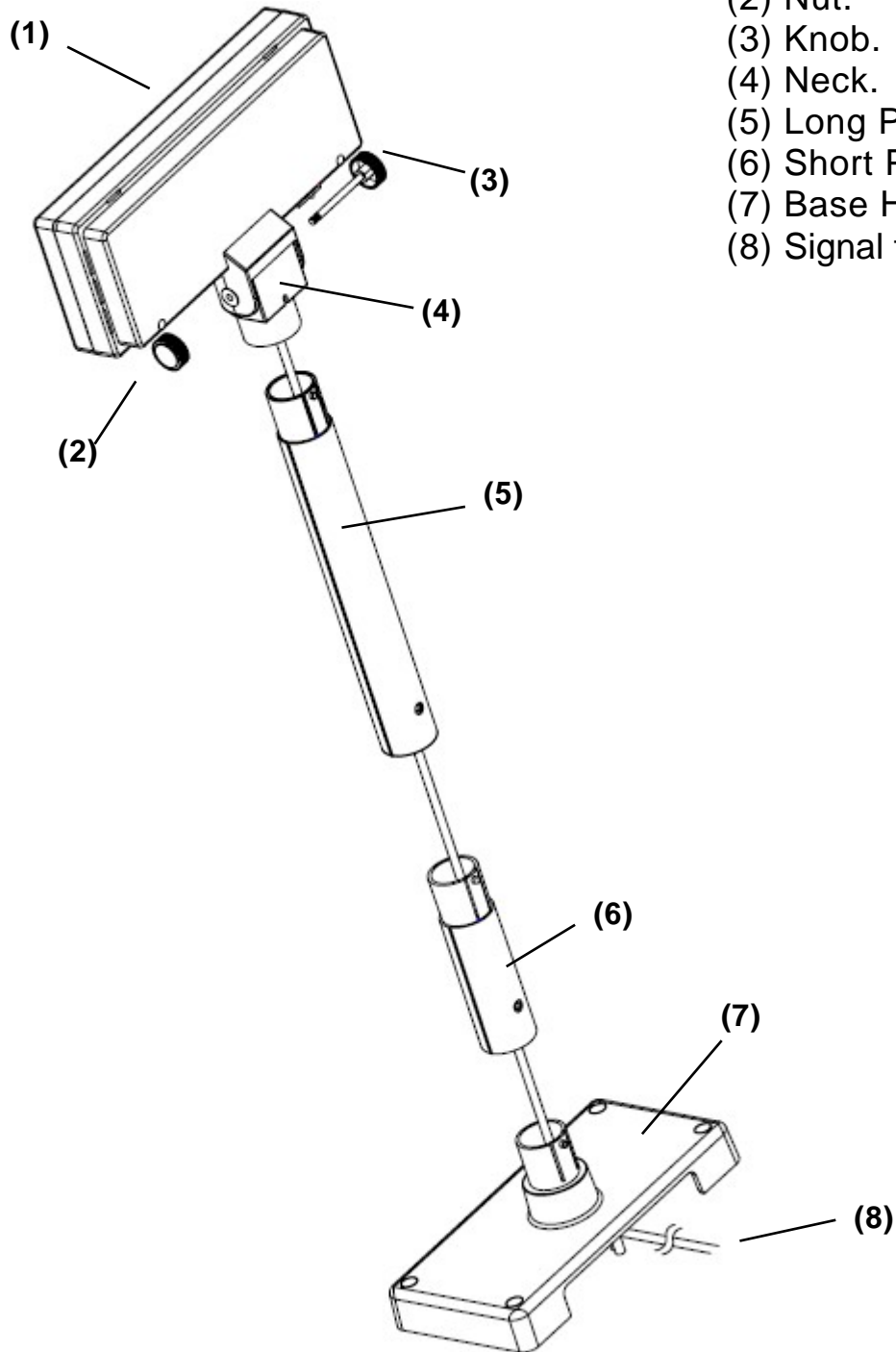
3 UNPACKING

3.1 Parts list (With Base PCB)



- PARTS LIST**
- (1) Display panel
 - (2) Nut.
 - (3) Knob.
 - (4) Neck
 - (5) Display cable
 - (6) Long pole
 - (7) Short pole
 - (8) Base housing
 - (9) Base PCB
 - (10) Power adaptor
 - (11) Signal transmission line

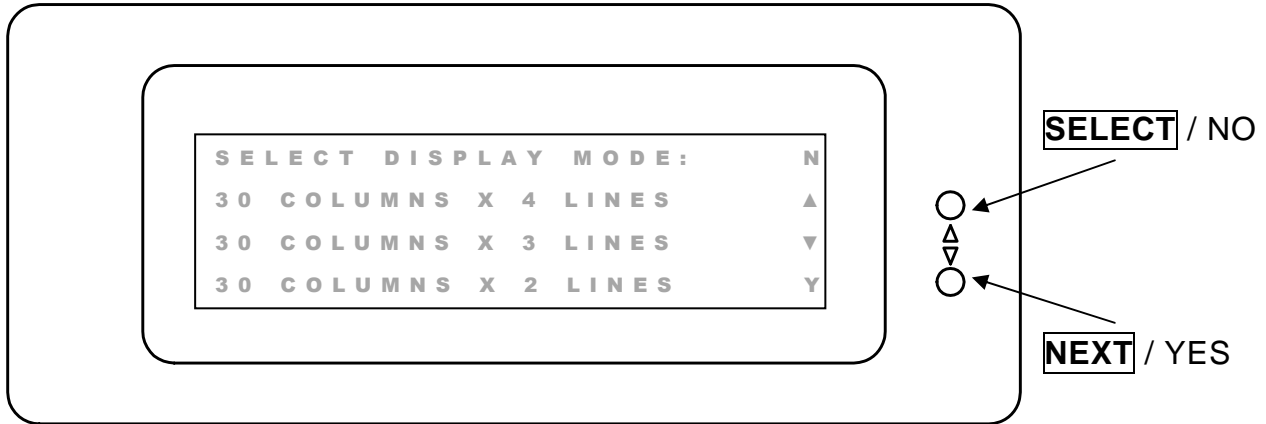
3.2 Parts list (Without Base PCB)



- (1) Display Module.
- (2) Nut.
- (3) Knob.
- (4) Neck.
- (5) Long Pole
- (6) Short Pole
- (7) Base Housing.
- (8) Signal transmission line.

4 CONFIGURATION

4.1 SELECT DISPLAY MODE



Switch the power on with **SELECT** button pressed to enter configuration mode. Press **SELECT** button to change or **NEXT** button to apply the selection. Follow the instructions on screen step by step to complete it.

5 Display Module Interface

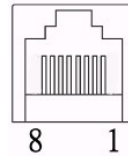
5.1 RS232 Specifications

Data transmission:	Serial
Synchronization:	Asynchronous
Handshaking:	DTR / DSR
Signal level:	MARK = -3 to -15 V (logic "1") SPACE = +3 to +15 V (logic "0")
Baud rates:	4800,9600,19200 or 115200 bps
Parity and bit length	None parity, 8 data bits or Even parity, 7 data bits
Stop bits:	1 or more

Table 5-1

5.1.1 RS232 connector to PCB (CN1)

Type: RJ45/8P/8C

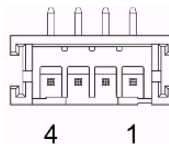


Pin assignment			
No	Signal	Direction	Function description
1,2	Vin	-	Power 5VDC or 9~45 VDC
3,4	GND	-	Signal ground
5	CTS	From Printer to Display	Printer ready signal
6	RTS	From Display to PC/Host	Display/Printer ready signal
7	RXD	From PC/Host to Display	Display/Printing data signal
8	TXD	From Display to Printer	Printer status data signal

Table 5-2

5.2 USB connector to PCB (CN3)

Type: WAFER PH 2.0mm 4P

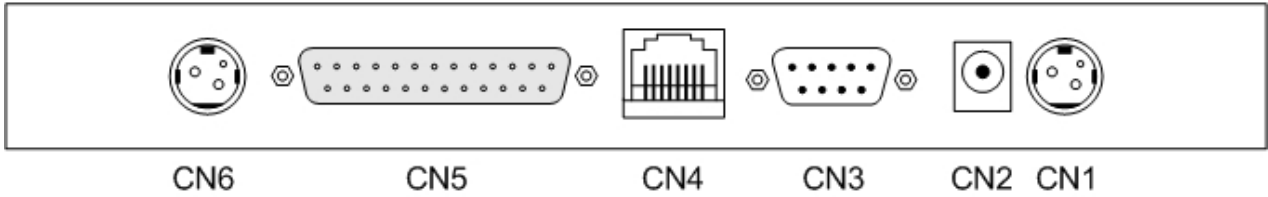


Pin assignment			
No	Signal	Direction	Function description
1	V+	5V From PC/Host	USB power 5 VDC
2	D-		Data signal -
3	D+		Data signal+
4	GND		Signal ground

Table 5-3

6 Base PCB Interface

6.1 RS-232 Interface connector (On the bottom of the base section)



- CN1,CN6: 24VDC power supply pass-through connects
- CN2: Power input connector from adapter
- CN3: RS-232C connect to printer
- CN4: Connect to display panel
- CN5: RS-232C connect to PC/Host

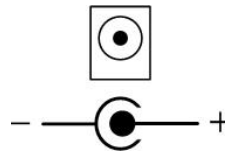
6.2 Power Supply Connectors

The variable power input which are available on base connectors, but only if one connector can be selected for power input, the description as below:

6.2.1 CN2 / Type: DC jack (5.5/2.1)

Pin assignment	
No	Signal
+	Vin1
-	GND

Table 6-1



6.2.2 CN1,CN6 / Type: Miniature jacks quick lock 3 pin

Pin assignment	
No	Signal
1	Vin2
2	GND

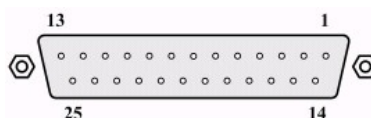
Table 6-2



6.3 CN5 / Type: DB25/F together with signals of RS-232C

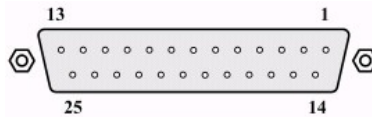
Pin assignment	
No	Signal
16,25	Vin3
7	GND

Table 6-3



6.4 RS232C link to PC/HOST connector (CN5)

Type : DB25/F

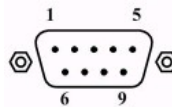


Pin assignment			
No	Signal	Direction	Function description
2	TXD	From printer to PC/Host	Printer status data
3	RXD	From PC/Host to display	Receive data
4,20	DTR	From display to PC/Host	Display/printer ready signal
6	DSR	From PC/Host to printer	PC/Host ready signal
7	GND	-	Signal ground
16,25	Vin3	From PC/Host to display	Power input

Table 6-4

6.5 RS232C link to printer connector (CN3)

Type: DB9/M

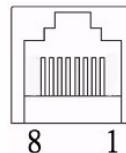


Pin assignment			
No	Signal	Direction	Function description
2	RXD	From printer to PC/Host	Printer status data
3	TXD	From display to printer	Printing data
5	GND	-	Signal ground
4,7	DTR	From PC/Host to printer	PC/Host ready signal
6	DSR	From printer to display	Printer ready signal
9	Vin2	From Hosiden to printer	Power through to printer

Table 6-5

6.6 RS232C link to display panel (CN4)

Type: RJ45/8P/8C

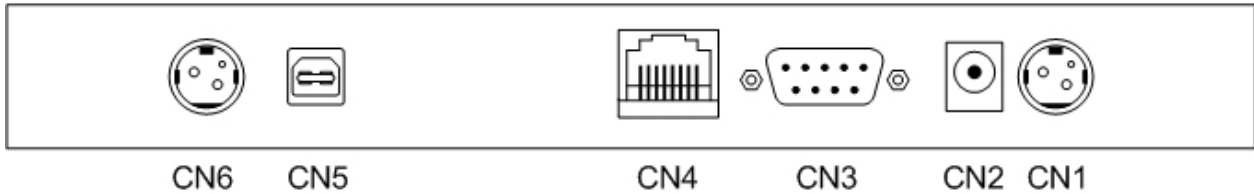


Pin assignment			
No	Signal	Direction	Function description
1,2	Vin	-	Power 5VDC or 9~45 VDC
3,4	GND	-	Signal ground
5	DSR	From Printer to Display	Printer ready signal
6	DTR	From Display to PC/Host	Display/Printer ready signal
7	RXD	From PC/Host to Display	Display/Printing data signal
8	TXD	From Display to Printer	Printer status data signal

Table 6-6

7 USB BASE INTERFACE

7.1 USB Interface connector (On the bottom of the base section)



- CN1,CN6: 24VDC power supply pass-through connects
- CN2: Power input connector from adapter
- CN3: RS-232C connect to printer
- CN4: Connect to display panel
- CN5: USB input

7.2 Power Supply Connectors

There are variable power inputs which are available on base connector, but only one connector can be selected for power input function, the description as below:

7.2.1 CN1,CN6 / Type: Miniature jacks quick lock 3 pin

Pin assignment	
No	Signal
1	Vin2
2	GND



Table 7-1

7.2.2 CN2 / Type: DC jack (5.5/2.1)

Pin assignment	
No	Signal
+	Vin1
-	GND

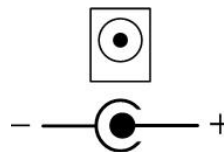
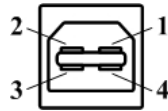


Table 7-2

7.3 USB input port link to PC/HOST USB connector (CN5)

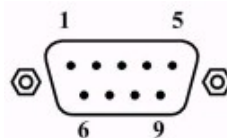


Type: USB

Pin assignment			
No	Signal	Direction	Function description
1	V+	5V From PC/Host	USB power 5 VDC
2	D-		Data signal -
3	D+		Data signal+
4	GND	-	Signal ground

Table 7-3

7.4 RS232C link to printer connector (CN3)

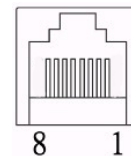


Type: DB9/M

Pin assignment			
No	Signal	Direction	Function description
2	RXD	From printer to PC/Host	Printer status data
3	TXD	From display to printer	Printing data
5	GND	-	Signal ground
4,7	DTR	From PC/Host to printer	PC/Host ready signal
6	DSR	From printer to display	Printer ready signal
9	Vin2	From Hosiden to printer	Power through to printer

Table 7-4

7.5 RS232C link to display panel (CN4)



Type: RJ45/8P/8C

Pin assignment			
No	Signal	Direction	Function description
1,2	Vin	-	Power 5VDC or 9~45 VDC
3,4	GND	-	Signal ground
5	DSR	From Printer to Display	Printer ready signal
6	DTR	From Display to PC/Host	Display/Printer ready signal
7	RXD	From PC/Host to Display	Display/Printing data signal
8	TXD	From Display to Printer	Printer status data signal

Table 7-5

8 COMMAND LIST

8.1 Esc/pos COMMAND SET

Command	Code (hex)	Description
ESC DC1	1B 11	Overwrite mode.
ESC DC2	1B 12	Vertical scroll mode.
ESC DC3	1B 13	Horizontal scroll mode.
US MD1	1F 01	Overwrite mode.
US MD2	1F 02	Vertical scroll mode.
US MD3	1F 03	Horizontal scroll mode.
HT	09	Cursor right.
BS	08	Cursor left.
US LF	1F 0A	Cursor up.
LF	0A	Cursor down.
ESC [C	1B 5B 43	Cursor right.
ESC [D	1B 5B 44	Cursor left.
ESC [A	1B 5B 41	Cursor up.
ESC [B	1B 5B 42	Cursor down.
HOM	0B	Cursor to the top-left
US CR	1F 0D	Cursor end.
CR	0D	Cursor home
US B	1F 42	Cursor to the bottom-right
ESC [H	1B 5B 48	Cursor to the top-left
ESC [R	1B 5B 52	Cursor end.
ESC [L	1B 5B 4C	Cursor home.
ESC [K	1B 5B 4B	Cursor to the bottom-right.
US \$ x y	1F 24 x y $1 \leq x \leq 1E, 1 \leq y \leq 4$	Cursor to specified position.
ESC I x y	1B 6C x y $1 \leq x \leq 1E, 1 \leq y \leq 4$	Cursor to specified position.
CLR	0C	Clear screen.
ESC @	1B 40	Initialize.
ESC _ n	1B 5F n n=0, 1	Cursor hide/Show.
US r n	1F 72 n n=0, 1	Reverse color off/on.
ESC = n	1B 3D n	Select peripheral device, n=1, to printer n=2, to display n=3, to both
US T h m	1F 54 h m $0 \leq h \leq 17$ $0 \leq m \leq 3b$	Set time.
US U	1F 55	Show current time.
ESC G d1~d1920	1B 47 d1~d1920	Block bit image.

Esc/pos EXTENDED COMMANDS

GS q A	1D 71 41 [datax30] 0D	Show text on line 1.
GS q B	1D 71 42 [datax30] 0D	Show text on line 2.
GS q C	1D 71 43 [datax30] 0D	Show text on line 3.
GS q D	1D 71 44 [datax30] 0D	Show text on line 4.
GS q E	1D 71 45 [datax30] 0D	Show double height text on line 1-2.
GS q F	1D 71 46 [datax30] 0D	Show double height text on line 3-4.
GS r A	1D 72 41 [datax45] 0D	Marquee on line 1.
GS r B	1D 72 42 [datax45] 0D	Marquee on line 2.
GS r C	1D 72 43 [datax45] 0D	Marquee on line 3.
GS r D	1D 72 44 [datax45] 0D	Marquee on line 4.
GS r E	1D 72 45 [datax45] 0D	Show double height text on line 1-2.
GS r F	1D 72 46 [datax45] 0D	Show double height text on line 3-4.
GS f n	1D 66 n	Set text blinking n:bit 0: line 1 blink bit 1: line 2 blink bit 2: line 3 blink bit 3: line 4 blink bit 4 ~7: undefined
ESC s	1B 73	Save as user defined power on screen.

※User defined power on screen must be enabled first (section 4.1).

Table 8-1

8.2 WD-304 STANDARD COMMAND SET

Command	Code (hex)	Description
ESC q A	1B 71 41 [datax30] 0D	Show text on line 1.
ESC q B	1B 71 42 [datax30] 0D	Show text on line 2.
ESC q C	1B 71 43 [datax30] 0D	Show text on line 3.
ESC q D	1B 71 44 [datax30] 0D	Show text on line 4.
ESC q E	1B 71 45 [datax30] 0D	Show double height text on line 1-2.
ESC q F	1B 71 46 [datax30] 0D	Show double height text on line 3-4.
ESC q G	1B 71 47 [datax45] 0D	Marquee on line 1.
ESC q H	1B 71 48 [datax45] 0D	Marquee on line 2.
ESC q I	1B 71 49 [datax45] 0D	Marquee on line 3.
ESC q J	1B 71 4A [datax45] 0D	Marquee on line 4.
ESC q K	1B 71 4B [datax30] 0D	Show double height marquee on line 1-2.
ESC q L	1B 71 4C [datax30] 0D	Show double height marquee on line 3-4.
ESC q t	1B 71 74 hh “:” mm 0D	Show current time on line 4.
ESC q T	1B 71 54 hh “:” mm 0D	Show current time in double height on line 3-4.
SO	0E	Set double width.
FF	0C	Clear screen.
ESC s	1B 73	Save as user defined power on screen.

※User defined power on screen must be enabled first (section 4.1).

Table 8-2

8.3 CD-8240 COMPATIBLE COMMAND SET

Command	Code (hex)	Description
ESC Q A	1B 51 41 [datax15] 0D	Show text on line 1.
ESC Q B	1B 51 42 [datax15] 0D	Show text on line 2.
ESC Q C	1B 51 43 [datax15] 0D	Show text on line 3.
ESC u A	1B 75 41 [datax15] 0D	Show text on line 1.
ESC u B	1B 75 42 [datax15] 0D	Show text on line 2.
ESC u C	1B 75 43 [datax15] 0D	Show text on line 3.
ESC u D	1B 75 44 [datax40] 0D	Marquee on line 1.
ESC u J	1B 75 4A [datax40] 0D	Marquee on line 2.
ESC u K	1B 75 4B [datax40] 0D	Marquee on line 3.
ESC u E	1B 75 45 hh ":" mm 0D	Show current time.
ESC u l	1B 75 49 [datax45] 0D	Show 45 characters continuously.
FF	0C	Clear screen.

※For CD-8240 compatible mode (30 columns x 3 lines) only.

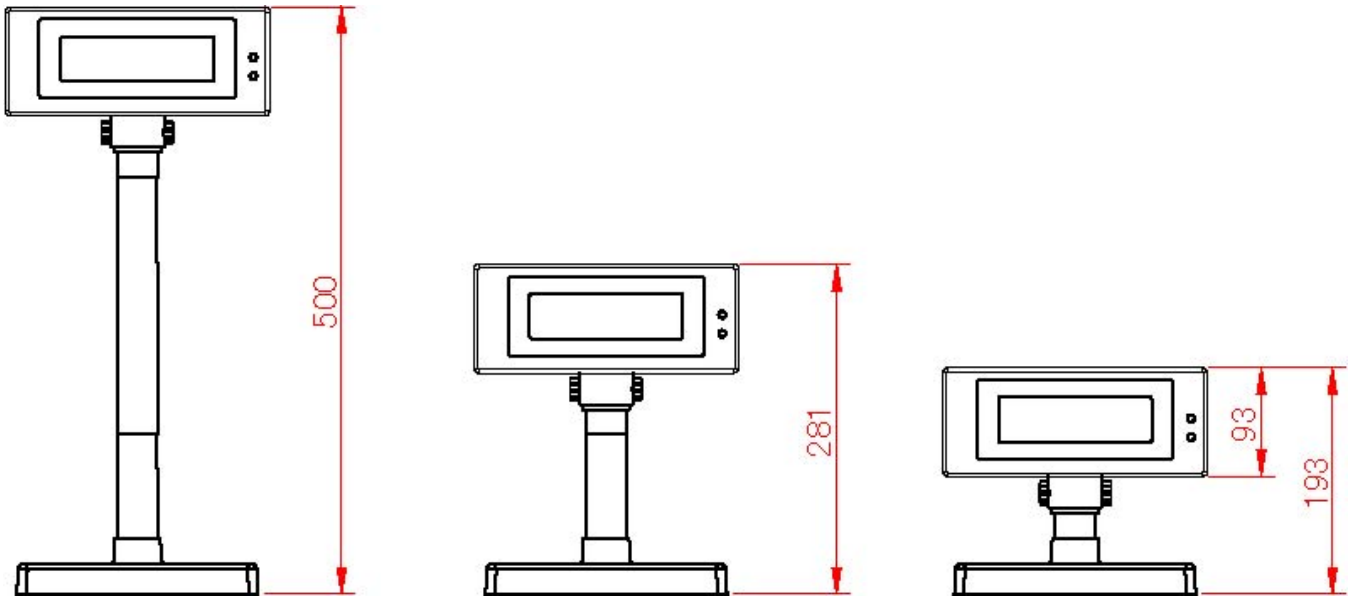
Table 8-3

9 CHARACTER CODE TABLE

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0	NUL	DLE	SP	0	@	P	`	p	Multilingual or Multi Byte Characters							
1			!	1	A	Q	A	q								
2			"	2	B	R	B	r								
3			#	3	C	S	c	s								
4	EOT		\$	4	D	T	d	t								
5	ENQ		%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			'	7	G	W	g	w								
8			(	8	H	X	h	x							
9	HT		)	9	I	Y	i	y						
A	LF		...	:	J	Z	j	z								
B		ESC	+	;	K	[	k	{							
C			,	<	L	\	l	|								
D	CR	GS	-	=	M	]	m	}							
E			.	>	N	^	n	~								
F		US	/	?	O	_	o	SP								

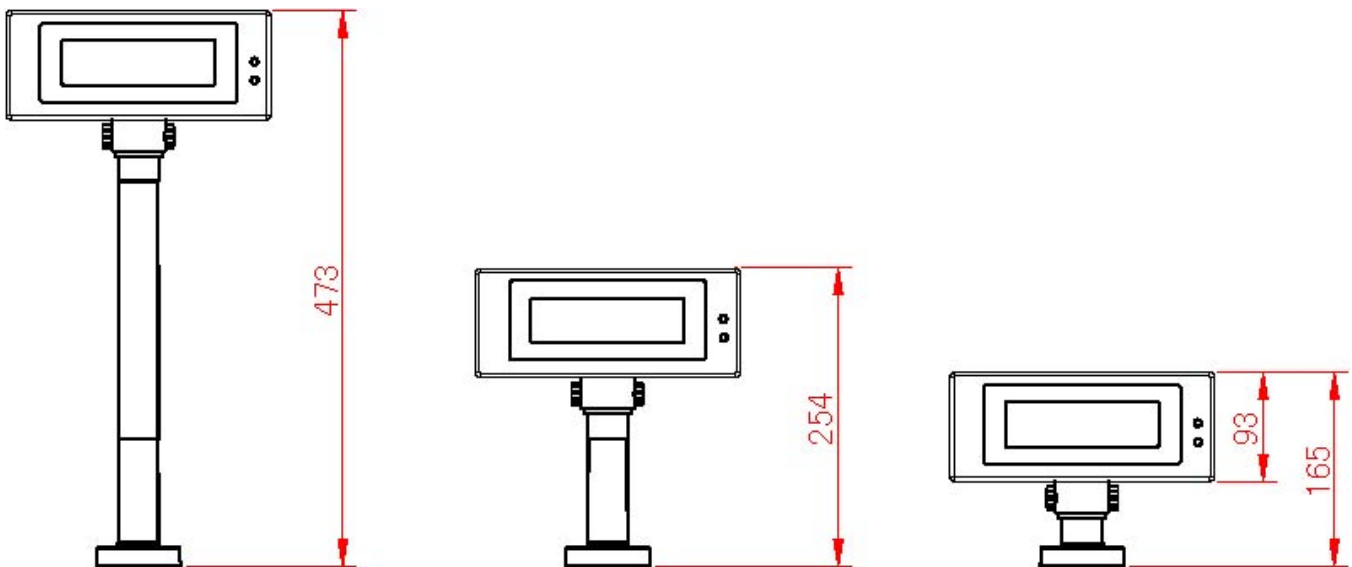
Table 9-1

APPENDIX A: Display with Rectangle Base Dimension



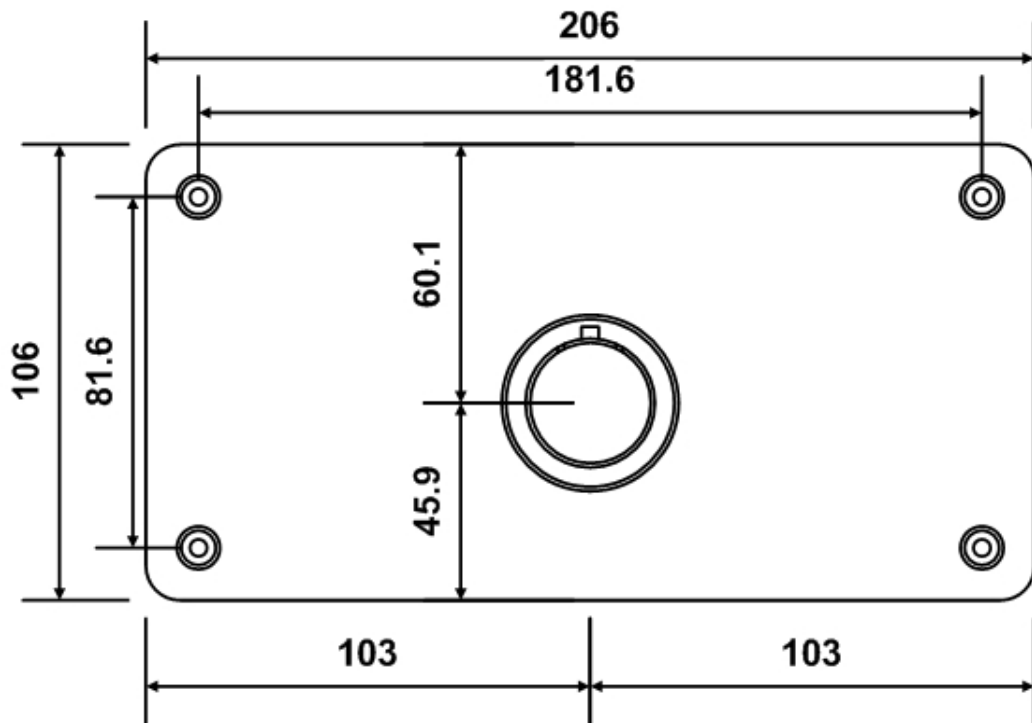
Unit: mm

APPENDIX B: Display with Round Base Dimension



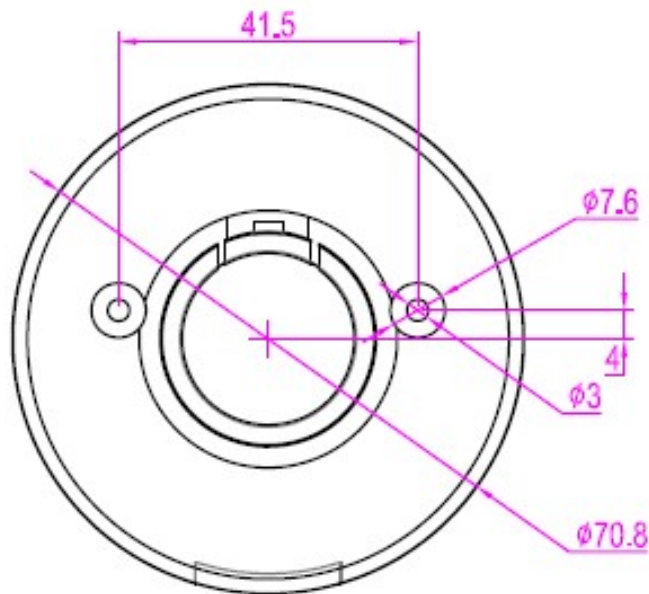
Unit: mm

APPENDIX C: Rectangle Base Dimension



Unit: mm

APPENDIX D: Round Base Dimension



Unit: mm

APPENDIX E: Tube Dimension

