User's Manual

VFD-700/660/460 Series

VFD Customer Display
with ESC/POS commands

VFD-700 VFD-660 VFD-460

Contents

VFD Customer Display

Model VFD-700/660/460 Series

1. Information

A. Standard Package:

1. Display Unit	1 PC
2. User's Manual	1 PC
3. RS-232 Setting software CD disk	1 PC
4. Power Kit	1 PC

To retrieve power 12 VDC from switching power supply inside computer

B. Optional Accessories:

1. VFD-700/660

Switch-Mode Power Supply:

Input: 100V AC~240V AC, 50Hz~60Hz
Output: DC 9V~12V, 1.33A

Power adapter:

Input: 110V AC, 60Hz
Output: DC 9V~12V regulated, 1A

Power adapter:

Input: 230V AC, 50Hz
Output: DC 9V~12V regulated, 1A

Option Pole for VFD-660:

DSP-B05: Aluminum pole with 120mm length
DSP-B07: Aluminum pole with 380mm length
Note: DSP-B06: Aluminum pole with 260mm length is the standard package.

2. VFD-460

Switch-Mode Power Supply:

Input: 100V AC~240V AC, 50Hz~60Hz
Output: DC 9V, 1.33A

Power adapter:

Input: 110V AC, 60Hz
Output: DC 9V regulated, 1A

Power adapter:

Input: 230V AC, 60Hz
Output: DC 9V regulated, 1A

Option Pole/Base:

DSP-B01: Long pole with small round base
DSP-B02: Metal base (should be used with DSP-B01)
DSP-B03: Short pole with square base
DSP-B04: Side wall mounting bracket (should be used with DSP-B01)

Option Doubled-side Display:

VFD-488: Doubled-side VFD Display
VFD-455: Front VFD with Back LCD Display

VFD-460: Long pole with quare base is the standard package.

Note: Version for using 5V or 24V DC power is upon customer's request.

2. Intallation

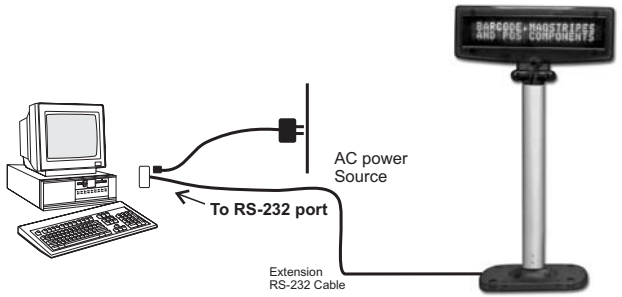
A. RS-232 Connection:

Step 1: Turn off computer system power.

Step 2: Connect the Display Cable to the RS-232 Port of the computer.

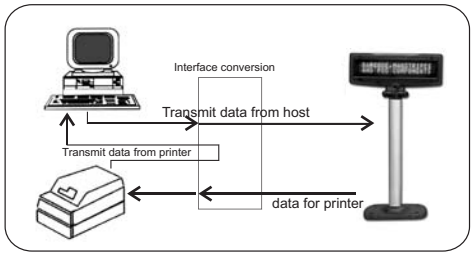
Step 3: Proper set the connection between the bundled Power kit and the Switch power supply inside the computer or connecting the DC power source by the appropriate DC power Adapter.

Step 4: Turn on the computer, the Display will be "ON" and ready for receiving data.



B. Pass-through Connection:

1. Power off the computer, printer and display.
2. Please refer to the interface section of the manual for detailed information of the cable, and make proper connection to appropriate ports of the devices.
3. Power on the computer, printer and display.
4. The devices are ready for working.

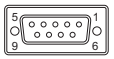


Note: All the data transmitted from Host will be processed by peripheral device selection command, then transmit the data to the proper devices, either the printer or the display.

3. Interface

A. RS-232 Cable-end:

DSUB-9 Pin Female Connector	
1	N.C.
2	TXD
3	RXD
4	DSR
5	GND
6	DTR
7	N.C.
8	N.C.
9	N.C.



B. DC Power Jack:

GND —— 9~12VDC/500~1330 mA

C. Pass-through Cable Pinouts:

CBL-VFD-PASS 1

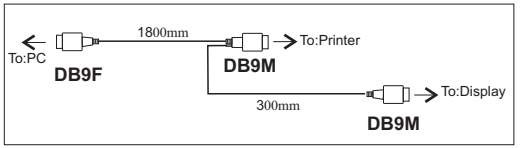
For the printer with ESC commands

To: Host	To: Printer	To: Display
DB9F	DB9M	DB9M
2 (RXD)	2 (TXD)	
3 (TXD)	3 (RXD)	3(RXD)
4 (DTR)	4 (DSR)	
5 (GND)	5 (GND)	5 (GND)
6 (DSR)	6 (DTR)	
7 (RTS)	7 (CTS)	
8 (CTS)	8 (RTS)	

CBL-VFD-PASS 2

For the printer without ESC commands

To: Host	To: Printer	To: Display
DB9F	DB9M	DB9M
2 (RXD)	2 (TXD)	
	3(RXD)	2(TXD)
3 (TXD)		3(RXD)
4 (DTR)	4 (DSR)	
5 (GND)	5 (GND)	5 (GND)
6 (DSR)		6 (DTR)
7 (RTS)	7 (CTS)	
8 (CTS)	8 (CTS)	
	6 (DTR)	4 (DSR)



4. Specifications

A. Tube Display:

Customer display	Vacuum Fluorescent Display
Display pattern	5 x 7 dot matrix
Brightness	700 cd/m^2
Character type	96 alphanumeric & 13 kinds of international character set and user definable character set.
Character size	6.4mm(W) x 9.2mm(H)
Character number	20 x 2(40 characters)
Character font	5 x 7 dots matrix, comma and decimal point

B. Environment:

Operating temp.	0°C to 40°C (32°F to 104°F)
Storage temp.	-10°C to 50°C (14°F to 122°F)
Relative humidity	0% to 90% RH

C. Driver Interface:

Drive interface	RS-23C
Drive command	ESC commands

D. Overall Dimensions:

1. VFD-660

Dimension(panel)	76mm(H) x 207mm(L) x 34mm(D)
Dimension(pole)	Aluminum poles: 120mm(option), 260mm, 380mm(option)
Dimension(base)	20mm(H) x 150 mm(L) x 80mm(D)
Viewing angle	Max. 30 degree
Weight	0.8 Kg (2 lb)

2. VFD-460

Dimension(panel)	110mm(H) x 220mm(L) x 45mm(D)
Dimension(pole)	Telescopic pole from 270 to 440mm
Dimension(base)	12mm height with 80mm OD
Viewing angle	Max. 45 degree
Weight	0.8 kg (2 lb)

3. VFD-700 Details can be requested.

E. Electricity:

Power source	DC 9V~12V (option 5V, 24V)
Power consumption	CPU 8032, speed 29.4912MHz ROM 64K Flash ROM RAM 32K SRAM
Connector	8 pins phone jack, D-SUB 9, or 25 pins connector (for RS-232)

5. RS-232 Setting (VFD-700 by DIP switch)

Before running the bundled RS-232 setting software, please note following default values:

Com port: 1
Baud rate: 9600
Parity: none
Data bit: 8

1. Insert the bundled CD disk into the CD-ROM drive
2. Run "your CD-ROM\Configuration_ Utilities\Customer Display Series\VFD Series\VFD660_460\setup.exe"
3. Follow the installation hints until the installation process is fully completed.
4. Go "start menu" > "programs" > "VFD Setting"> "VFD-660_460" to begin the customer display configuration.

When configuration is successfully done:
A "OK" message box will be shown on the monitor. Click it or press "enter" at the keyboard, then, the Display's content will be cleared.

When configuration isn't successfully done:
A "device timeout" message box will be shown on the monitor. Please do the configuration again or consult with your supplier for further assistance.

6. ESC/POS Commands List

Command	Code description (decimal)	Function description
BS	8	move cursor left
HT	9	move cursor right
LF	10	move cursor down
US LF	31 10	move cursor up
HOM	11	move cursor to home position
CR	13	move cursor to left-most position
US CR	31 13	move cursor to right-most position
US B	31 66	move cursor to bottom position
US $	31 36 n m 1≤n≤20 m=1 or 2	move cursor to specified position
CLR	12	clear display screen
CAN	24	clear cursor line
ESC =	27 61 n 0≤n≤255	select peripheral device
ESC @	27 64	initialize display
ESC %	27 37 n 1≤n≤3	select/cancel user-defined character set
ESC &	27 3 8 s b m s= 1 32≤n≤m≤126 0≤ a≤5 0≤p1..≤psx a_255	define user-defined character set
ESC ?	27 63 n 32≤n≤126	cancel user-defined characters
ESC R	27 82 n 0≤n≤13	select an international character set
ESC t	27 116 n 0≤n≤5, 16,17, 18,19, 254, 255	select character code table
ESC W	27 87 n m(x1 y x2 t2) 1≤ n≤4 M=0, 1, 48, 49 1≤x≤1≤x2 20	select/cancel window range

Command	Code description (decimal)	Function description
US MD1	31 1	specify overwrite mode
US MD2	31 2	specify vertical scroll mode
US MD3	31 3	specify horizontal scroll mode
US C	31 67 n n=0, 1, 48, 49	select/cancel cursor display
US E	31 69 n 0≤n≤255	select/cancel display screen blinking
US T	31 84 h m 1≤h≤23 1≤m≤59	set and display time counter
US U	31 85	display time counter
US X	31 88 n 1≤n≤4	brightness adjustment
US r	31 114 n n=0, 1, 48, 49	select/cancel reverse characters
US v	31 118 n n=0, 1, 48, 49	status confirmation by DRT signal
US @	31 64	execute self-test
US :	31 58	start/end macro definition
US ^	31 94 n m 0≤n≤255 0≤m≤255	execute and quit macro
US.n	31 46 n 32≤n≤255	select/cancel cursor display
US,n	31 42 n 32≤n≤255	n= a displayable character code display the code with a dot
US:n	31 59 n 32≤n≤255	n= a displayable character code display the code with a semicolon
US#nm	31 35 n 1≤n≤20 1≤m≤2	turn the annunciator (▼) ON/OFF