

# **FPM-3060G Series**

**Flat Panel Monitor with  
6" Color TFT/LCD Display**

**User Manual**

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## **This Manual Covers the Following Models**

- FPM-3060G

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## **Product Warranty (1 year)**

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for one year from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

All defective products under normal / standard operation will be serviced by Advantech's global RMA system. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

## **FCC Class B**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user's manual, it may cause harmful interference to radio communications.

Note that even when this equipment is installed and used in accordance with this user's manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If the interference is occurring, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

## **Packing List**

Before installing your equipment, make sure that the following materials have been received:

- FPM-3060G Series flat panel monitor
- Accessory pack, including:
  - AC/DC adapter
  - AC/DC power adapter bracket
  - Video signal cable, 1.8m
  - Fixed panel-mounted bracket x 6 pcs
  - Screw Bags (M4x25 mm screws x 6 pcs)
  - DC in Power Cord bracket x 1 piece
  - RS-232 cable, 1.8m (FPM-3060G-R only) or  
USB cable, 1.8m (FPM-3060G-U only)
  - Driver/manual CD-ROM

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

## **Additional Information and Assistance**

1. Visit the Advantech web site at [www.advantech.com](http://www.advantech.com) where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages

## **Safety Instructions**

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB(A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

### **Wichtige Sicherheishinweise**

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlussteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlusbleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.

13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
- a - Netzkabel oder Netzstecker sind beschädigt.
  - b - Flüssigkeit ist in das Gerät eingedrungen.
  - c - Das Gerät war Feuchtigkeit ausgesetzt.
  - d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
- Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

15. VORSICHT: Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

16. ACHTUNG: Es besteht die Explosionsgefahr, falls die Batterie auf nicht fachmännische Weise gewechselt wird. Verfangen Sie die Batterie nur gleicher oder entsprechender Type, wie vom Hersteller empfohlen. Entsorgen Sie Batterien nach Anweisung des Herstellers.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

Haftungsausschluss: Die Bedienungsanleitungen wurden entsprechend der IEC-704-1 erstellt. Advantech lehnt jegliche Verantwortung für die Richtigkeit der in diesem Zusammenhang getätigten Aussagen ab.

DISCLAIMER: This set of instructions is given according to IEC704-1.

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# Contents

<b>Chapter 1</b>	<b>Introduction .....</b>	<b>2</b>
1.1	Introduction .....	2
1.2	Specifications .....	2
1.3	LCD Specifications .....	3
1.4	Power Adapter Specifications .....	3
1.5	Connectors .....	4
1.6	Dimensions .....	5
	Figure 1.1:FPM-3060G Chassis Dimensions .....	5
<b>Chapter 2</b>	<b>System Setup.....</b>	<b>8</b>
2.1	Mounting FPM-3060G .....	8
2.1.1	Wall Mounting .....	8
	Figure 2.1:Wall Mounting .....	8
2.1.2	Panel Mounting .....	9
	Figure 2.2:Panel Mounting .....	9
2.1.3	Swing-ARM (VESA ARM standard compatible) .....	9
	Figure 2.3:Swing-ARM for the FPM-3060G series .....	9
2.2	Power Adapter .....	10
2.3	Mounted with MBPC-200 or UNO-2000 series .....	10
2.3.1	Mounted with MBPC-200 series product .....	10
2.3.2	Mount with UNO-2000 series .....	10
<b>Appendix A</b>	<b>Display Timing Mode &amp; OSD .....</b>	<b>12</b>
A.1	Supported Input Timing Modes .....	12
	Table A.1:Supported Input Formats .....	12
A.2	Keypad Interface .....	13
A.3	Power Indicator LED Status.....	13
A.4	OSD Function.....	14
<b>Appendix B</b>	<b>Touchscreen .....</b>	<b>16</b>
B.1	Introduction .....	16
B.2	Touchscreen Specifications.....	16
B.3	Installing Driver for Windows 2000/XP .....	17
B.4	Touch Panel Device Driver Settings .....	19



## **Introduction**

This chapter includes:

- Introduction
- Specifications
- LCD Specification
- Power Consumption
- Connectors
- Dimensions

# Chapter 1 Introduction

## 1.1 Introduction

---

Advantech's FPM-3060G Series consists of 6" color TFT LCD flat panel monitors built specifically for industrial applications. With the optional touchscreen, the FPM-3060G Series is an user-friendly system control interface.

In addition to its usual application as an LCD panel monitor, the FPM-3060G Series comes standard with Direct VGA control signal input, making it compatible with industrial PCs and workstations.

The OSD (On Screen Display) function allows you to adjust the display and turn the backlight on and off, a function that is highly appreciated among experienced users of industrial flat panel monitors.

The whole chassis is made of stainless steel, and the front panel is of aluminum with NEMA4/IP65 compliance.

Products in the FPM-3060G Series can also be provided in touch screen versions (FPM-3060G-R and FPM-3060G-U). With a 4-wire resistive type touchscreen, this monitor can be immediately transformed into a remote control system.

## 1.2 Specifications

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### General

- **Construction:** Stainless steel chassis
- **Front Panel:** Aluminum, NEMA4/IP65 compliant
- **Control:** OSD (On Screen Display) control pad on front side
- **Mounting:** Panel, MBPC-200 or optional kit for wall, UNO-2000 or VESA Arm
- **Dimensions (W x H x D):** 220 x 150 x 45 mm (8.7" x 5.9" x 1.8")
- **Panel Mount Cut out Dimension (W x H):** 212.7x142.7 mm (8.37"x5.61")
- **Weight:** 1.5 kg (3.3 lb)
- **Vibration (operating):** 5 ~ 17 Hz, double-amplitude displacement; 17 ~ 500 Hz, 1.0 G peak to peak
- **CE, FCC, BSMI, CCC certified**

- **Power Consumption:** 2.2A(max.) @12V +/- 10%

#### **Touchscreen (Optional)**

- **Type:** 4 wire, analog resistive
- **Resolution:** 1024 x 1024
- **Light Transmission:** 75% (Gouge Hardness is greater than 4H per ASTM D3363-92 for HCC01, HCG10 and HCG12)
- **Controller:** RS-232 interface (for FPM-3060G-R version) or USB 1.1 (for FPM-3060G-U version)
- **Power Consumption:**  
FPM-3060G-R: +5 V @ 200 mA  
FPM-3060G-U: +5 V @ 100 mA (USB bus power)
- **OS Support:** Windows 2000 and XP
- **Life Span:** 1,000,000 activations (typical) at a single point with a 5/8" diameter silicone finger with a 350g load at 2 touches per second

### **1.3 LCD Specifications**

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- **Display Type:** VGA TFT- LCD
- **Display Size:** 6"
- **Max. Colors:** 262 k
- **Max. Resolution:** 640x480
- **Viewing Angle:** 120 ° (H), 100 ° (V)
- **Luminance:** 400 cd/m<sup>2</sup>
- **Storage Temperature:** -20 ~ 70 °C (-4 ~ ??? °F)
- **Operating Temperature:** 0 ~ 60 °C (32 ~ ??? °F)
- **Contrast Ratio:** 300 : 1 (typ)
- **Lamp Life Time (MTBF):** 20,000 hrs.

### **1.4 Power Adapter Specifications**

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- **Max Output Power:** 42 Watts
- **AC input voltage:** 100 - 240 V AC
- **Output voltage:** + 12 V @ 3.5 A
- **Safety Standards:** UL/CE/CCC/TUV/CB

## 1.5 Connectors

---

The following connectors are on the bottom of the FPM-3060G Series:

### **VGA Port (DB15)**

This DB-15 connector can be connected to the system via the external 15-pin video signal cable.

### **RS-232 Touchscreen Connector (DB9) (with FPM-3060G-R)**

This connector will only be present if a touchscreen is installed. It must be connected to the RS-232 port of the PC. The touchscreen cable is included with all orders that include the touchscreen option.

### **USB Touchscreen Connector (USB type B) (with FPM-3060G-U)**

This connector will only be present if a touchscreen is installed. It must be connected to the USB port of the PC. The touchscreen cable is included with all orders that include the touchscreen option.

### **DC 12V Power In**

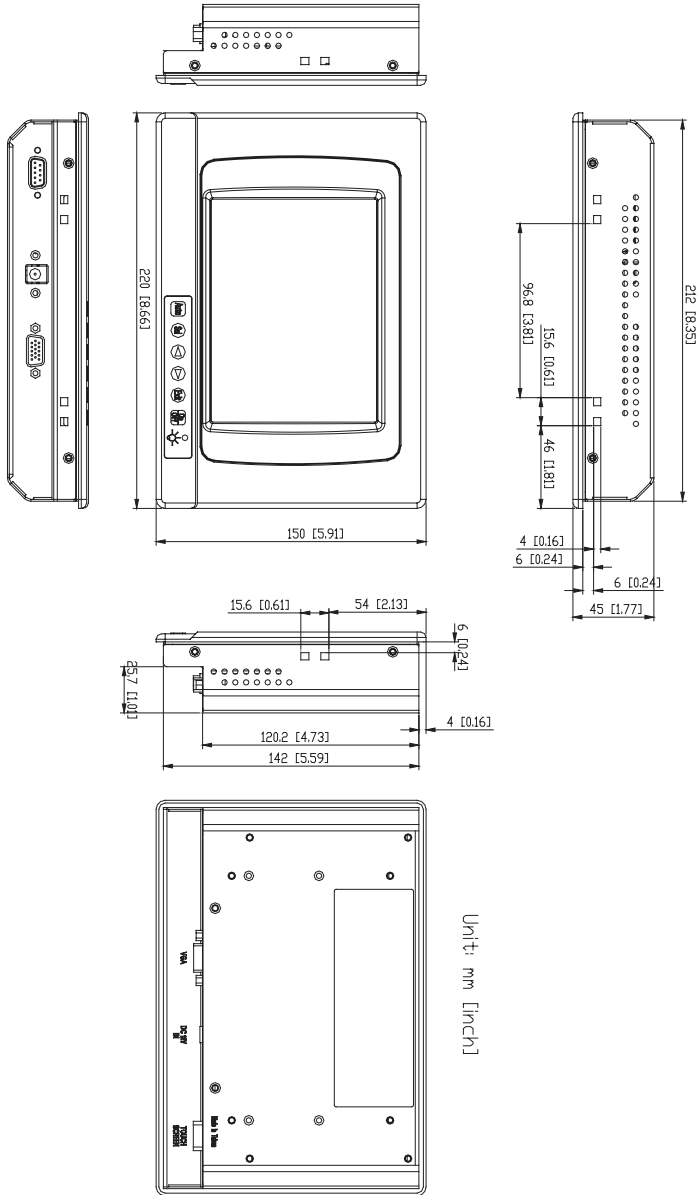
This connector connects to the DC 12V Switching Power Supply.

### ***Warning:***

Before you connect a VGA cable between FPM-3060G and a PC, please note the following issues.

1. If you have installed a operating system in the PC, make sure the vertical frequency is within the acceptable range. (Refer to Appendix B)
2. If you have not installed a operating system, you have to adjust the vertical frequency to fall within the range.

# 1.6 Dimensions



Cut-out dimension: 212.7x142.7 mm( 8.37"x5.61" )

**Figure 1.1: FPM-3060G Chassis Dimensions**





## **System Setup**

- Mounting the Monitor
- Wall / Panel / VESA Arm Mounting
- Mounting with MBPC-200 or UNO-2000 series

# Chapter 2 System Setup

## 2.1 Mounting FPM-3060G

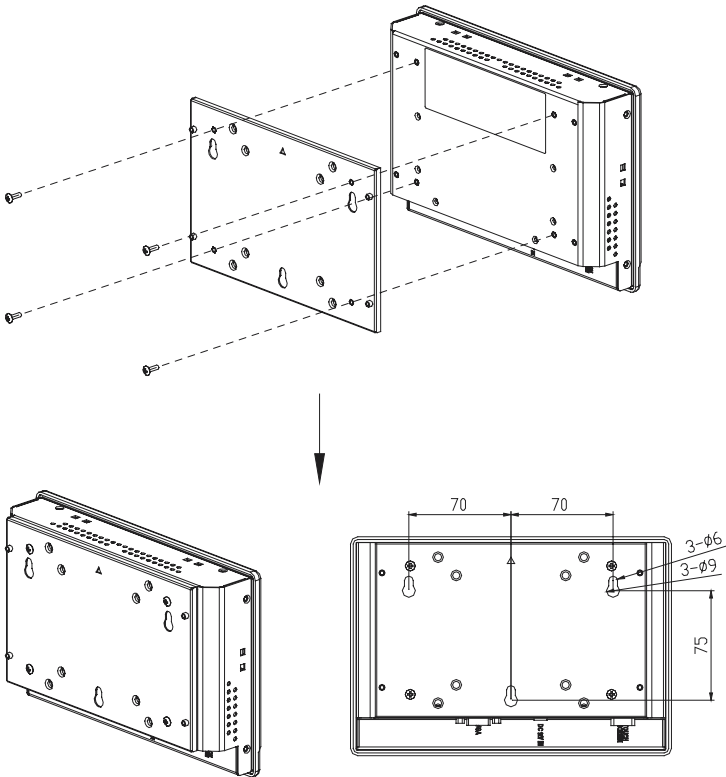
The FPM-3060G Series can be flexibly mounted. The versatility of the FPM-3060G mounts enable it to be mounted almost anywhere.

### 2.1.1 Wall Mounting

Please refer to figure 2.1 and follow the steps below to install FPM-3060G on a wall. The wall mounting kit is optional.

(P/N: FPM-3060VESA-MT)

1. Screw the mounting kit with FPM-3060G.
2. Screw three screws on the wall with the dimensions used in Figure 2.1.
3. Hook FPM-3060G on the screws

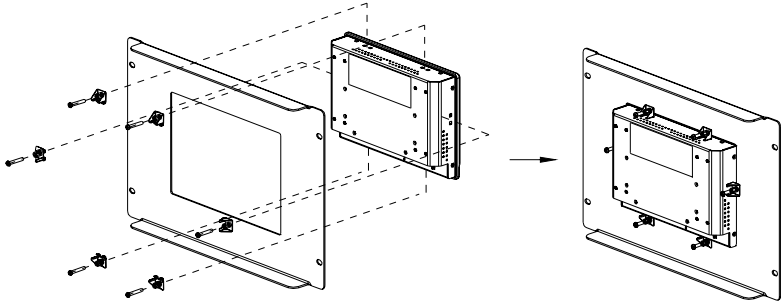


**Figure 2.1: Wall Mounting**

## 2.1.2 Panel Mounting

Refer to figure 2.2 and follow the instructions below to install in a panel.

1. Place six panel-mounting brackets on FPM-3060G (2 on the top, 2 on the bottom, 1 on the left, and 1 on the right).
2. Fasten the six panel-mounting brackets with screws.
3. Mount FPM-3060G on the panel by the screws on the six panel-mounted brackets. Please note that the panel thickness must be below 6 mm.



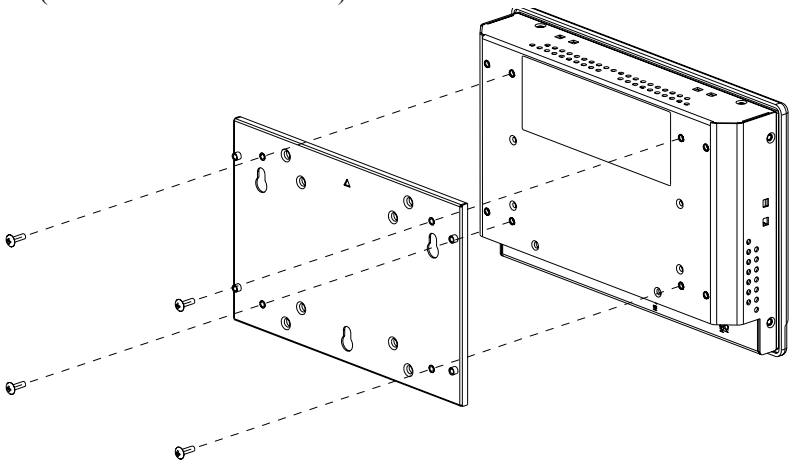
*Figure 2.2: Panel Mounting*

## 2.1.3 Swing-ARM (VESA ARM standard compatible)

FPM-3060G has been designed with support for the VESA arm standard.

Refer to figure 2.5. Attach the mounting brackets on the rear side, then attach the FPM-3060G onto the VESA ARM mount. The dimensions of the mount hole is M5, and the mounting bracket is optional.

(P/N: FPM-3060VESA-MT)

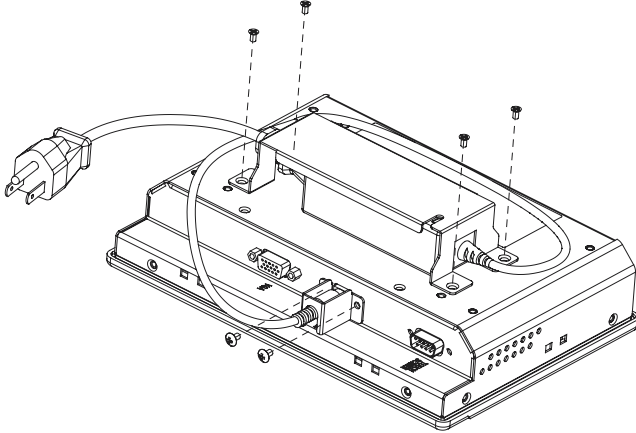


*Figure 2.3: Swing-ARM for the FPM-3060G series*

## 2.2 Power Adapter

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The power adapter bracket is attached to the rear of FPM-3060G. Attach/detach the power bracket at the rear side of the monitor by screwing/unscrewing the four screws.



## 2.3 Mounted with MBPC-200 or UNO-2000 series

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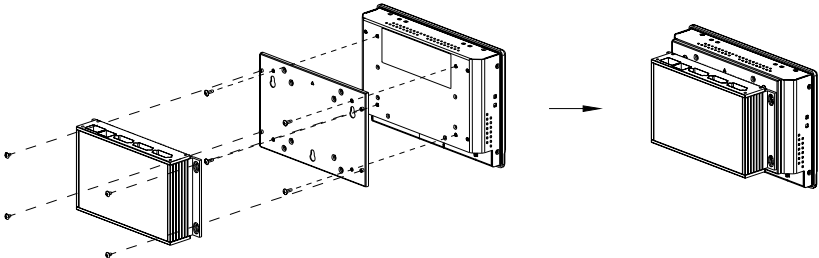
FPM-3060G can easily be combined with products in the MBPC-200 or UNO-2000 series.

### 2.3.1 Mounted with MBPC-200 series product

FPM-3060G can be directly mounted with MBPC-200 series products with four M3 screws (not included).

### 2.3.2 Mount with UNO-2000 series

FPM-3060G can be easily mounted with UNO-2000 products by the optional kit FPM-3060VESA-MT.



APPENDIX  
**A**

**Display Timing Mode  
and OSD**

# Appendix A Display Timing Mode & OSD

## A.1 Supported Input Timing Modes

---

The different frequencies below are already programmed in this module, and the synchronous signal inputs are automatically recognized.

**Table A.1: Supported Input Formats**

	Vertical Frequencies			
Resolution	60 Hz	70 Hz	72 Hz	75 Hz
640 x 480	Yes	Yes	Yes	Yes


Note 1: Even if the preset timing is entered, some adjustment of functions such as Horizontal period, CLK-delay and display position, are required. The adjusted values are memorized in every preset number.

Note 2: This module recognizes the synchronous signals with near preset timing of the frequency of the HS and Vsync, even in the case that the signals other than the preset timing that were entered.

Note 3: Because adjustments may not fit, such as differing magnifying ratios or, in the case that you use it except for the display timing that was preset.

## A.2 Keypad Interface

---

AUTO	Press this button to execute auto-adjustment process.
SEL	Press to show the OSD screen or select an item to change its setting.
	Press to move between items or increase/decrease item setting.
EXIT	Press to close the selected item or the whole OSD screen.
ON/OFF	Press the ON/OFF button to turn FPM-3060G's backlight on and off. When power is off, the power indicator will be blinking.

## A.3 Power Indicator LED Status

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The keypad interface provides a driver for a dual color LED to indicate status.

- (1) Green: COMMON board detects a input signal and sends output signal to LCD panel.
- (2) Orange: No signal detected, or out of range.
- (3) Green and blinking: Backlight is off.
- (3) No color: Power off

## A.4 OSD Function

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Each selected value is stored into LCD memory after SEL signal input or time out. The stored values are not affected if the power is turned off. But the selected value is not available in case a selected mode is changed before time out or power is turned off before time out.

The default definition of input keys is shown as following:

<b>Main Menu</b>	<b>Sub Menu</b>	<b>Functionality</b>
Brightness		Adjust brightness of the display
Contrast	Contrast	Adjust contrast of RGB channel simultaneously
	Sub Contrast RGB	Adjust color of selected RGB channel
Position	H.Size	Adjust phase of ADC sample clock
	Clock Phase	Adjust number of clocks per line
	H.Position	Move input image capture window left or right
	V.Position	Move the input image capture window up or down
Information	Information	System input mode information and maximum range supported by screen
All Reset	All Reset	Reset menu parameters to factory default setting



# APPENDIX **B**

## **Touchscreen**

This appendix contains information on the touchscreen, and its installation.

# Appendix B Touchscreen

## B.1 Introduction

---

FPM-3060G Series' optional touchscreen uses advanced Fujitsu 4-wire resistive technology. The touchscreen is specially designed for tough industrial environments, and has been approved to FCC Class B standards.

## B.2 Touchscreen Specifications

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### Electrical

- **Operating voltage:** 5 V (typical)
- **Linearity:** <1.5% full scale linearity error in either direction.
- **Insulation Resistance:** >20 M $\Omega$  @ 25 V DC

### Durability

- **Test conditions:** 3 H hardness (JIS K-5400)
- **Point activation:**  
1 Million activations on a single point with a 5/8" diameter silicone finger with a 200g load at 5 Hz

### Optical

- **Visible light transmission:** 82.5% typical (JIS K-7105)

### Environmental Specifications

- **Operating Temperature Range:** -5° C ~ +60° C, 2 weeks at 50° C / 90% RH.
- **Storage Temperature High:** +70° C, 240 hours at ambient humidity.
- **Storage Temperature Low:** -30° C, continuous at ambient humidity.
- **Operating Humidity Range:** 20~90% RH
- **Storage Humidity Range:** 10~90% PH

## B.3 Installing Driver for Windows 2000/XP

---

The touchscreen has drivers for Windows 2000 and Windows XP. You should read the instructions in this chapter carefully before you attempt installation.

*Note 1: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which then appear on your screen.*

*Note 2: Install the HMI CD Driver into the system CD-ROM (D:\ means CD-ROM)*

Before installing the Windows 2000/XP driver software, you must have the Windows 2000/XP system installed and running on your computer.

If you have an older version of the Fujitsu Windows 2000/XP driver or any touch screen driver provided by other companies installed in your system, please remove it first. Follow the steps below to install the Fujitsu Windows 2000/XP driver.

FPM-3060G-R

Insert the Driver CD-ROM. Go to:

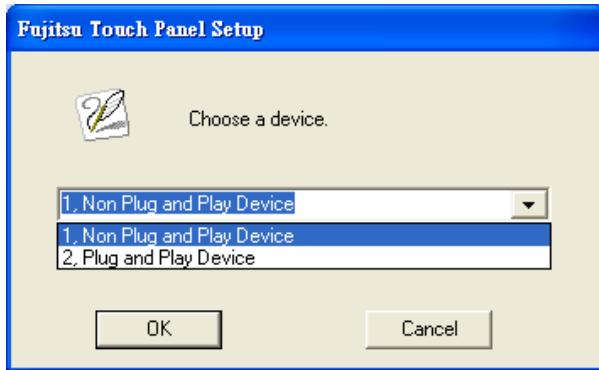
\TouchScreen-DRV\Fujitsu\_RS-232\Windows Driver\. Click **setup.exe**.

FPM-3060G-U

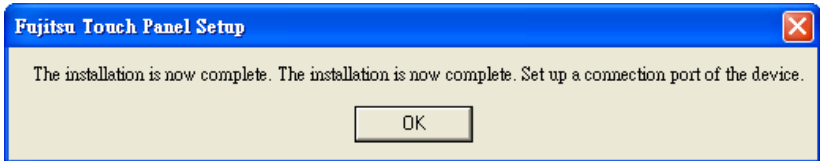
Insert the Driver CD-ROM. Go to:

\TouchScreen-DRV\Fujitsu\_USB\Windows Driver\. Click **TPsetup.exe**.

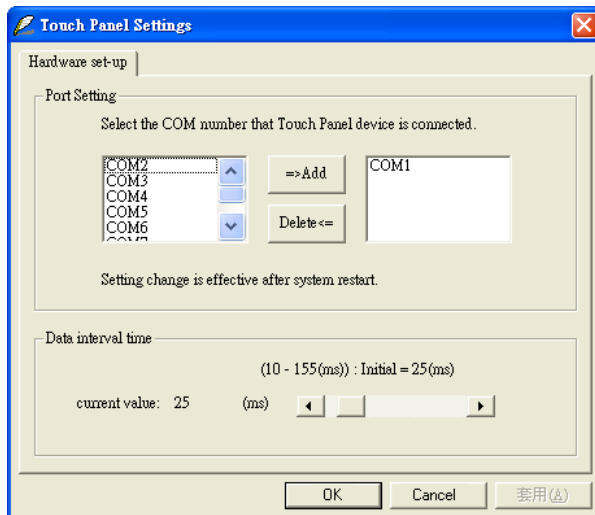
3. For FPM-3060G-R, please choose **1. Non Plug and Play Device**. Then Click "OK".



4. The driver installation will complete.



5. Select the COM port on the PC that the touch screen is connected to. Then click **Ok**.



## **B.4 Touch Panel Device Driver Settings**

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For further details on touch driver settings, calibration and setup of rotation coordinates, please see the Fujitsu driver manual file on the CD-ROM.

File name: Fujitsu-TP-Driver.pdf

