Fomax Fx105 Series

Industrial Panel PCs

User's Guide

Ver. 2.5

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Fomax User's Guide

The Nematron Fomax Industrial Panel PC Users Guide describes the installation and operation of the Nematron Fomax PC models. This document is based on information available at the time of its publication. While every effort has been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software. Nematron makes no warranty and assumes no responsibility for the completeness, accuracy or usefulness of the information found in these pages. Nematron further assumes no liability or responsibility for loss or damage, direct or indirect, arising from the use of this product. No warranties of documentation or product fitness apply.

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Electrical Shock Hazard! Do not operate the unit with its back cover removed. There are hazardous voltages inside. Servicing of the equipment should only be done by qualified and authorized personnel.

Note: This equipment has been tested and found to to comply with the limits for the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION! Changes or modifications not expressly approved by the manufacturer could void the user‘s authority to operate the equipment.

Note: The unit must be mounted in a grounded metal enclosure that provides a clean and dry environment.

Transport and Unpacking

Transport

Despite the robust design of the Fomax Industrial Panel PC, the components are sensitive to strong vibrations and impacts. During transport, your Fomax should therefore be protected from excessive mechanical stress. Therefore, please use the original packaging.

Danger of damage to the Fomax! If the Fomax is transported in cold weather or is exposed to extreme variations in temperature, make sure that moisture (condensation) does not form on or inside the Fomax.

Prior to operation, the Fomax must be al owed to slowly adjust to room temperature. Should condensation occur, a delay time of approximately 12 hours must be al owed before the Fomax is switched on.

Unpacking

Proceed as follows to unpack the Fomax:

1. Remove packaging.
2. Do not discard the original packaging. Keep it for future relocation.
3. Check the delivery for completeness by comparing it with your order.
4. Please keep the associated paperwork.
5. Check the contents for visible shipping damage.
6. If you notice any shipping damage or inconsistencies between the contents and your order, you should notify the supplier.

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Chapter 1 Fomax Product Overview

This chapter gives a complete physical description of your Nematron Fomax 5100, including all specifications and ratings.

1.1 General Information

This manual covers the Nematron 15”、17” & 19” Fomax Industrial Panel PC type 5100、7100 & 9100 series. This model consists of three primary components characterizing the system nature: Display Module, Engine Bay and Media Bay. The Display Module has a standard 15” XGA TFT Display with 1024x768 resolution and 17” &19” SXGA TFT Display with 1280 x1024 resolution. The Engine Bay contains the Motherboard, Power Supply, an innovative drive carrier system and room for one PCI slots.

1.2 User Guide Documentation Revision History

Rev	Date	Notes
Ver 1.0	Nov. 24, 2010	Initial release
Ver 2.0	Jan. 18, 2012	Add Fanless Series
Ver 2.1	May 07, 2015	Chassis Update with LED Display
Ver 2.2	April 16, 2018	Add New external monitor port and Fomax F9100 Serial
Ver 2.3	June 9, 2025	Add mounting clips picture
Ver 2.4	Nov. 19, 2025	Add Panel &VESA mounting diagram
Ver 2.5	Feb. 11, 2026	The Product Series has been renamed Fomax Fx105

Chapter 2 Fomax Structure

The Display is the front part of the complete Fomax unit. It consists of the TFT display, TFT display Inverter, Touch Controller Card and Touch screen.

Fomax 5100 Series

Fomax 7100 Series

Fomax 9100 Series

2.1 Front Part Display

The display chassis consists of two parts: Front part which has the touch screen and the rear part which has the TFT display, Inverter and Touch Controller card. The rear part is normaly assembled on the Engine Bay. See below picture.

Engine Part
Front Part Display

Chapter 3 Fomax Engine Bay

This chapter describes the components and connectors of your Nematron Fomax

Warning! Make sure your unit is powered down and unplugged before removing the cover or working on internal components.

Warning! Make sure your unit is grounded at all times. Also make sure that it is on the same ground as any other equipment connected to its communications ports.

3.1 Component Locations

The picture below illustrates where components are located in the one slots chassis. These components are described in further detail later.

Internal Component Locations (Fomax F1 Series – 1 PCI Slot Model)

3.2 Motherboard

The Nematron Fomax IPC can be configured with a number of Motherboards. At product release both a 1-slot Core™ i and Atom board is available. For future releases and to determine which board is used in your unit, please check the configuration Appendix, and verify your product number with the provided configuration digit.

For details about the Motherboard, please refer to the user‘s manual from the manufacturer included on the drivers and utilities CD/DVD supplied with this Fomax.

3.3 Engine Bay Drive Carrier

This innovative Engine Bay drive carrier design is capable of supporting two devices. Starting at the top it can support a standard 2.5“ Hard Disk Drive (Bay 0). It depends on the configuration which devices are installed.
If you need CD/DVD, you can use the external USB DVD-ROM / DVD-RW drive.

3.4 Power Input and Switch

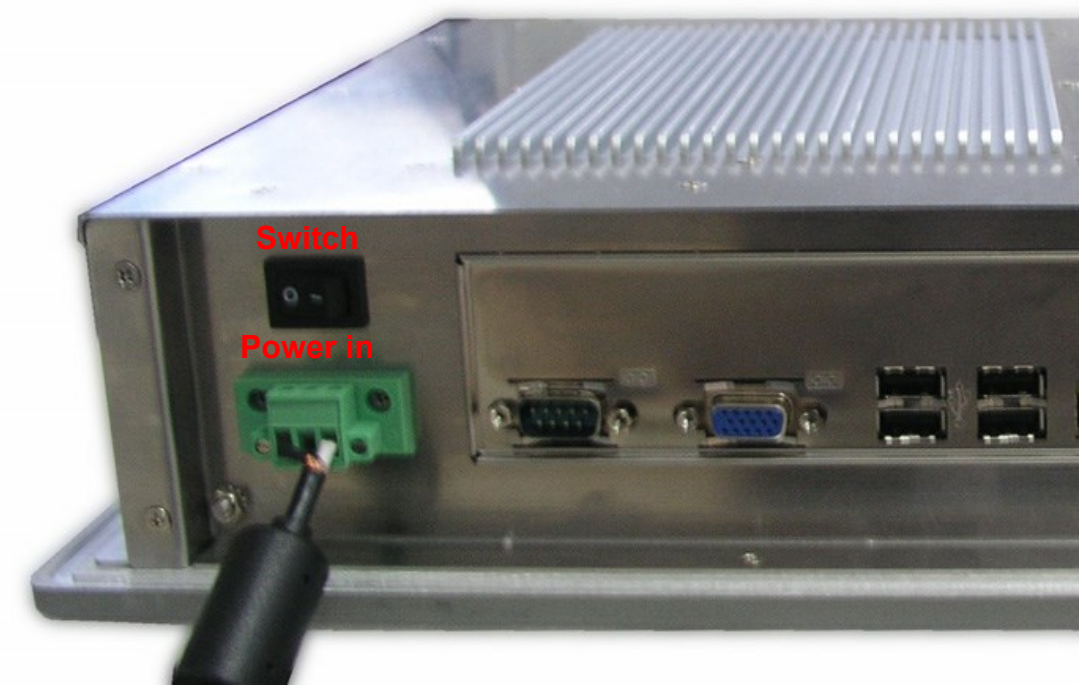
The Nematron Fomax industrial PC uses an Auto-ranging 88-264VAC Power Supply. The input socket is located on the left side panel of the chassis. The AC power cord provides the necessary earth grounding for safety but also an additional earth point (Chassis Ground) can be used.

The main Power Supply on/off switch is located a side from the input socket.

The I/O switch have discrete ON and OFF positions. To power on the unit, briefly press the switch into the ON position and then release. The functionality of this switch can be changed and set in the BIOS.

Check pictures on the next page. For complete information on powering up, see section 5.5 below.

The Nematron Fomax industrial Fanless PC uses an 12VDC Power Supply. The input socket is located on the left side panel of the chassis. We would supply an adapter with auto-ranging 100-240VAC, you can uses the adapter or 12VDC power input directly.


Switch
Power in

Chapter 4 Fomax Communications and I/O Ports

The unit chassis provides external access to PS/2 keyboard and mouse connectors, serial ports, VGA port, DVI-D port, HDMI port, USB ports, LAN port and audio line in, line out and microphone ports. All of the I/O and communications ports are located on the right side panel of the chassis, as shown in below picture.

This section provides general descriptions of each of these ports. For complete technical information, please refer to the Motherboard user's manual included on the Drivers & Utilities CD that was packed with the unit.

4.1 PS/2 Mouse and PS/2 Keyboard Ports

Connect a PS/2 mouse to the green 6-pin mini DIN connector. Connect a PS/2 keyboard to the purple 6-pin mini DIN connector. If you want to connect a standard AT size (large DIN) connector, you must use an adapter.

4.2 Universal Serial Bus (USB) Ports

You can connect four USB devices or USB hubs to the USB ports located on the I/O plate.

The USB ports provide a hardware interface for low-speed peripherals such

as the keyboard, mouse, joystick, scanner, printer and telephony devices. All USB ports support both USB1.0 and USB2.0 signaling. USB Port 0 and 1 are supplied on the combined ETHER1, USB0, and USB1 connector.

The Motherboard itself has a total of four USB ports of which two are brought to the outside I/O plate, two are still internally available on-board. Fomax's with a Touch Screen are using one USB port. This leaves one spare internally, which will be used for the Floppy Disk when installed.

4.3 Ethernet Ports

The Fomax with CPU's supports one or two Ethernet ports. Ethernet connector 1 is mounted together with USB Ports 0 and 1. Ethernet ports 2 is mounted together with USB Ports 2 and 3, it connected to the onboard PCI bus.

4.4 VGA Port

Connect an external monitor to the blue 15-pin VGA port.

4.5 DVI-D Port

Connect an external monitor to the DVI-D port.

4.6 HDMI Port

Connect an external monitor to the HDMI port.

4.7 COM (Serial) Ports

Connect a serial device such as a mouse or modem to the 9-pin serial ports. You can set the serial port IRQs in BIOS. For more information, refer to the motherboard documentation included on the Drivers & Utilities CD.

4.8 Audio Line-Out Port

You can connect various audio devices to this audio jack. Connect headphones or powered speakers to the lime-colored lineout connector.

4.9 Audio Line-In Port

You can connect a tape player or another audio source to the light blue Line-in connector to record audio on your computer or to play audio through your computer‘s sound chip and speakers.

4.10 Audio Mic-In Port

You can connect dynamic mono or stereo microphone to the Mic-in connector.

Chapter 5 Fomax Installation and Setup

Remove your unit from the packaging and set it up according to the instructions in this chapter.

5.1 Unit Dimensions, Cutout, Weight and Power Consumption.

See for detailed information Appendix A.

5.2 Installation Instructions

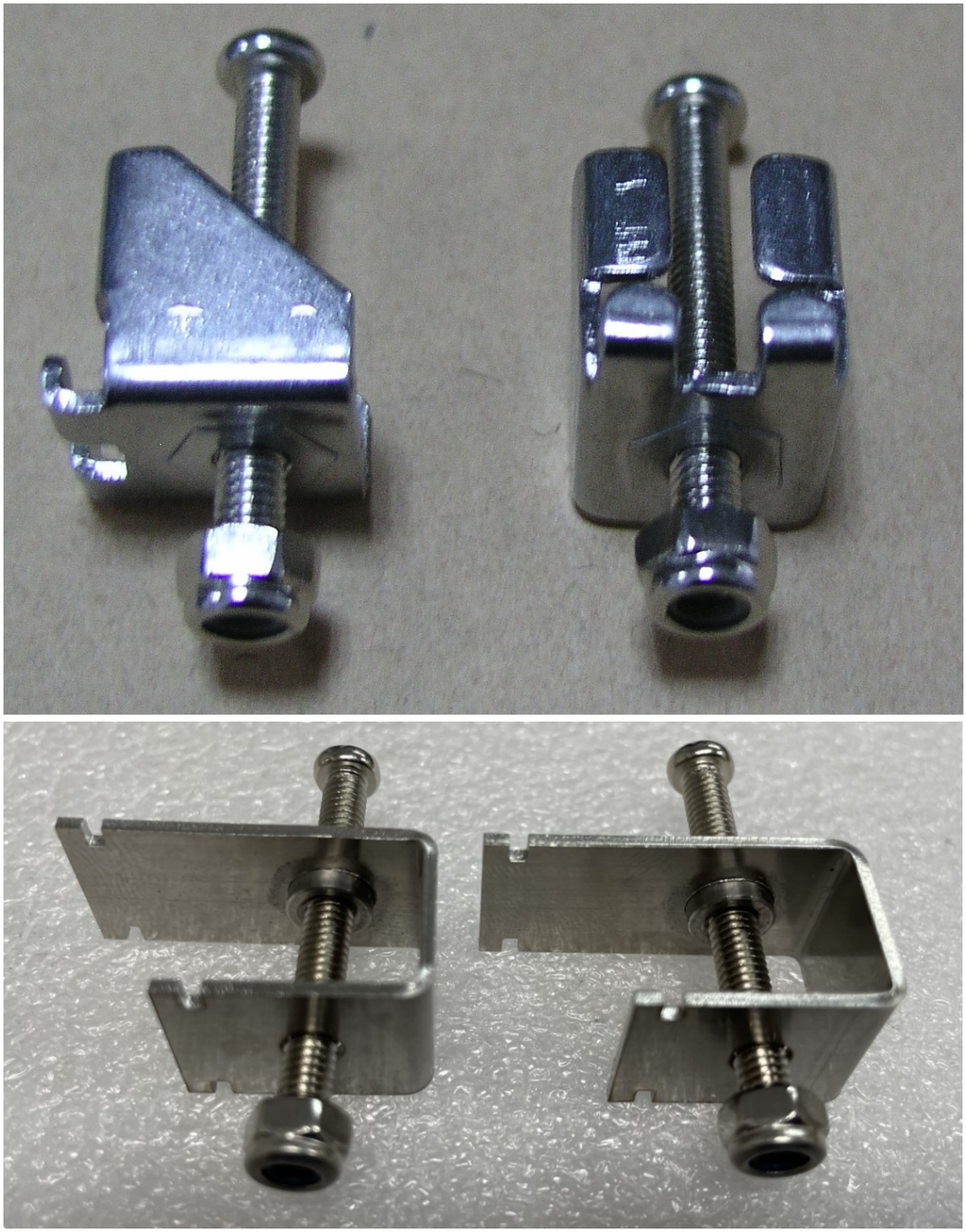
The Nematron Fomax industrial Panel PC is designed to be mounted in a paneled enclosure, however, it can also be used on a shelf or table. To mount the Fomax in a panel, use the mounting clips supplied with the unit.

5.3 Panel Mounting

To mount the unit in a panel:

1. Prepare a cutout of the appropriate size, as specified in Appendix A.
2. Position the front of the Fomax in the cutout.
3. From the rear of the front, insert the mounting clips into the slots on the top, bottom, and sides of the unit. The appropriate number of mounting clips and the required Al en wrench to tighten them are provided for each model.

bracket opening unit



mounting clips

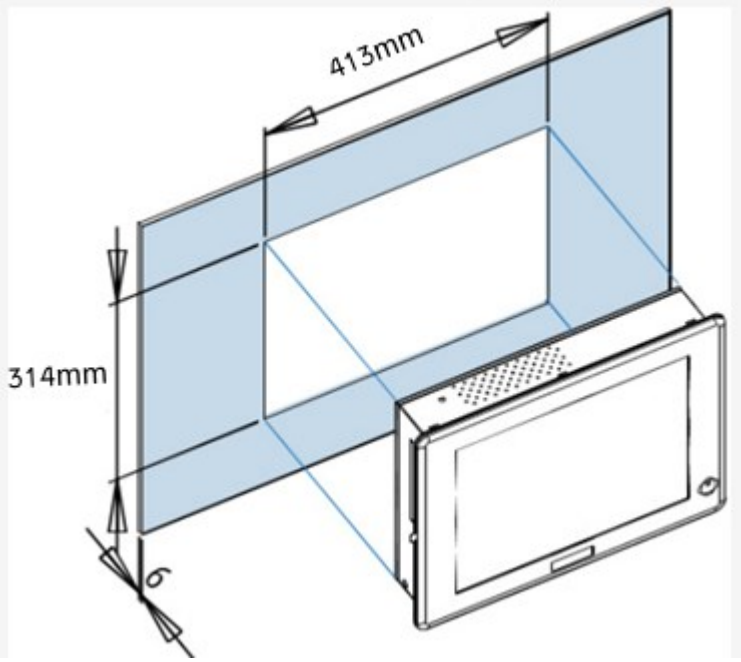
Panel Mount Seal

Installing in a Panel Using Mounting Clips

4. Using the Allen wrench supplied, tighten the mounting clip screws in a crisscross pattern (top left, bottom right, bottom left, top right, etc.), each a little at a time until five to seven inch-pounds (0.56 - 0.79 Nm) of torque is reached on each screw. Do not completely tighten any one screw at one time. The result could be an inadequate seal or deformation of the front bezel.
5. Reinstall the engine bay onto the front module and fasten the captive thumbscrews, which hold the engine bay to the front panel.

Panel Installation Diagram

The panel PC can be installed through the panel and is equipped with brackets and screws.

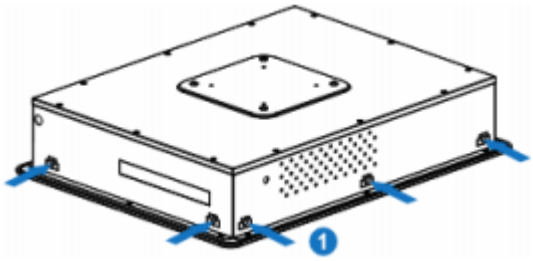


Panel installation cutting holes and maximum panel thickness

The following is a presentation on how to install the panel:

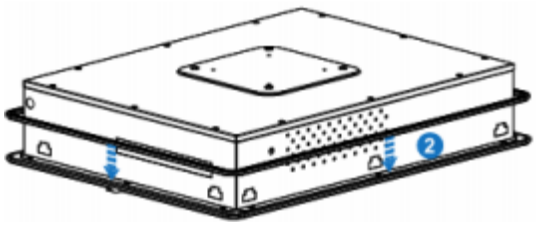
Step 1

By firmly inserting a flat-head screwdriver and bending it back and forth, remove the pre-cut bracket opening cover until it falls off the chassis.



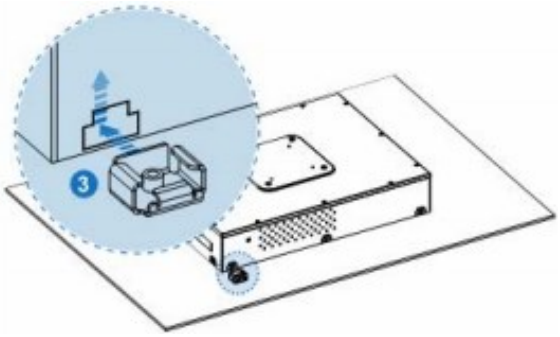
Step 2

Install the panel installation seal on the inner edge of the panel computer.

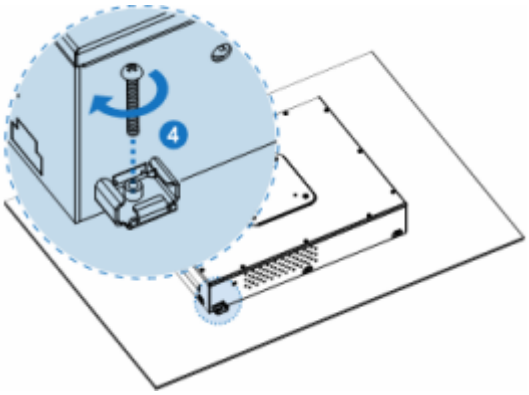


Step 3

Insert the panel mounting bracket into the bracket opening as shown in the figure.



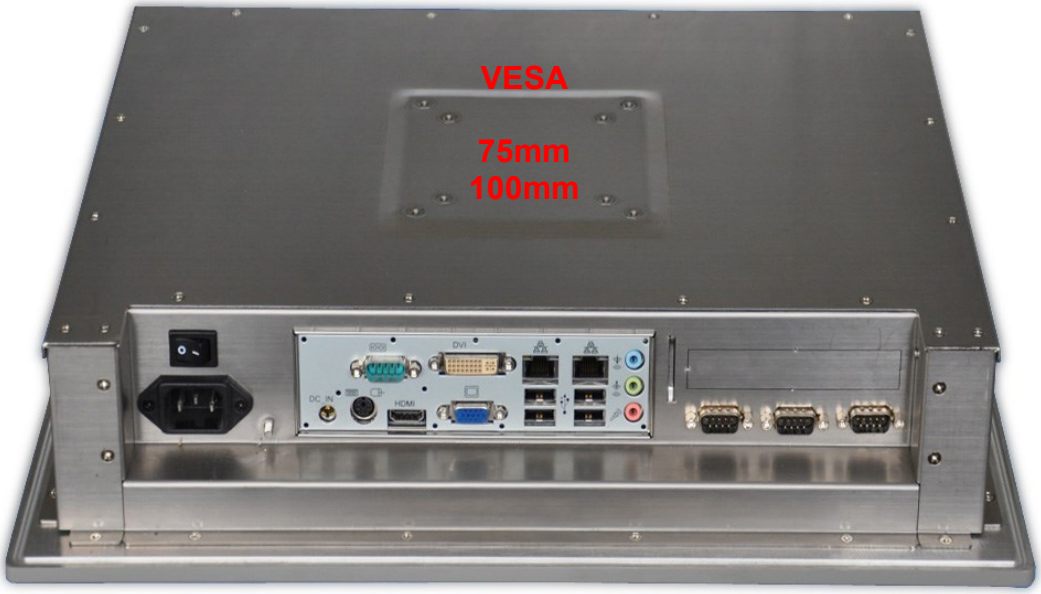
Step 4
Fix the chassis to the panel by tightening the screws tightly against it.



Repeat the above operation for the rest.

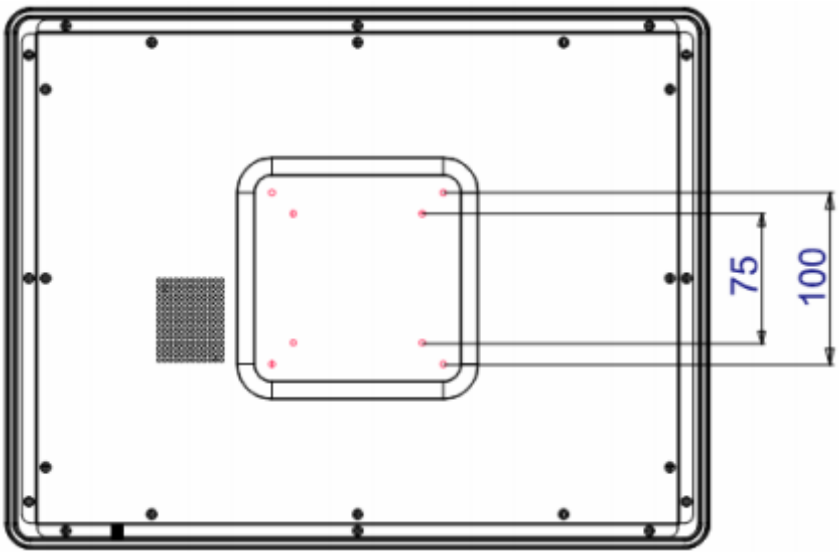
5.4 VESA Mounting

The product comes with VESA FDMI 75/100 standard mounting holes as shown below. Use 4 screws with the appropriate length for your mounting bracket.



Mounting hole locations

VESA Mounting

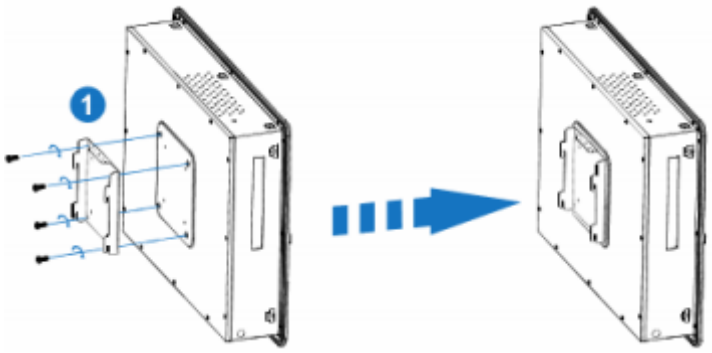


Installation hole position

Wall-mounted installation Diagram (with VESA)

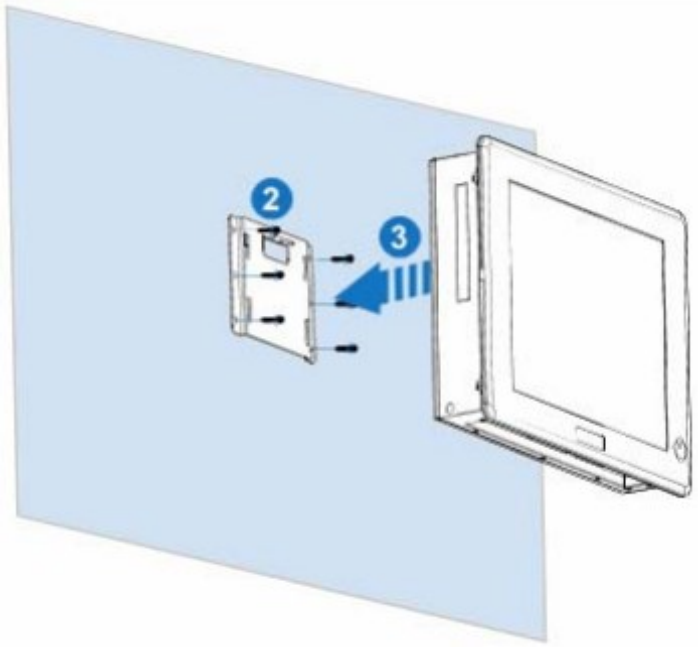
The following is a schematic diagram on how to use our wall-mounted diagram.

Step 1
Use four screws to secure the VESA kit to the panel computer.

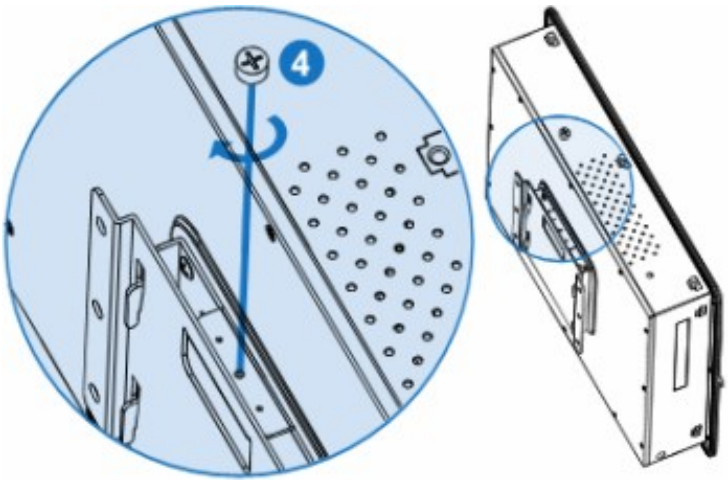


Step 2
Use six screws to install the wall mounting kit in the correct position on the wall.

Step 3
Connect the panel PC to the wall-mounted kit that has been properly fixed to the wall.



Step 4
Use a screwdriver to secure the wall-mounted kit and the panel PC.



5.5 Power Connections and Power Up

To connect and power up the unit:

1. Check product label for correct unit voltage.

2. Verify that the power to the unit is turned of.
3. Plug the AC power cord into the unit‘s power input socket and then into an outlet. The AC power cord provides the necessary earth grounding for safety but also an additional earth point (Chassis Ground) can be used.
4. The unit is now ready to power up. Switch ON the power switch and press the momentary power on switch next to the drive bay.
5. The Fomax unit should now start up the power up sequence.

5.6 Touch screen

Your Fomax unit may be configured with a resistive touch screen of which the necessary drivers and configuration software is pre-installed on the system. The drivers can also be found on the Drivers & Utilities CD that was delivered with the unit. More information on the Touch screen installation and calibration can be found in the Touch screen user guide.

5.7 Removing the Rear Cover

1. Place the system front-side-down on a soft material to prevent marking or scratching of the front panel. Remove the screws securing the rear panel of the chassis as shown.
2. Remove the rear cover. Note the locations of the internal components of the system.

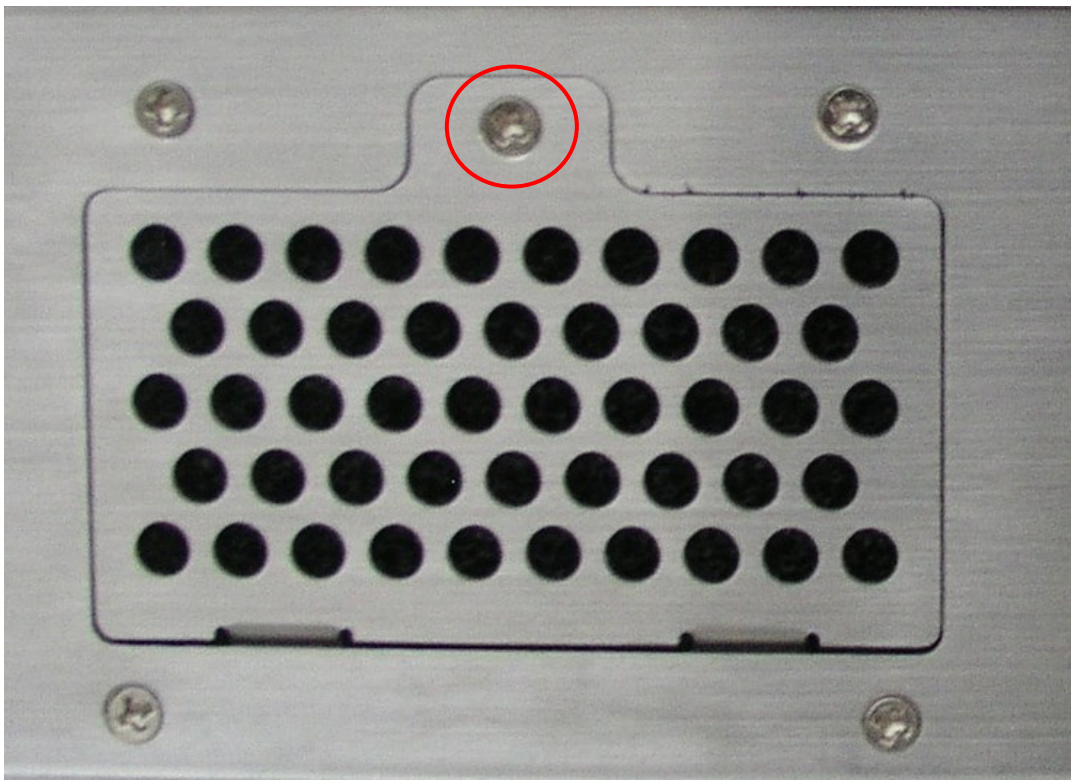
To remove the rear cover:

5.8 Bios Setup

For details about the BIOS settings, please refer to the motherboard user's manual included on the drivers and utilities CD supplied with your Fomax.

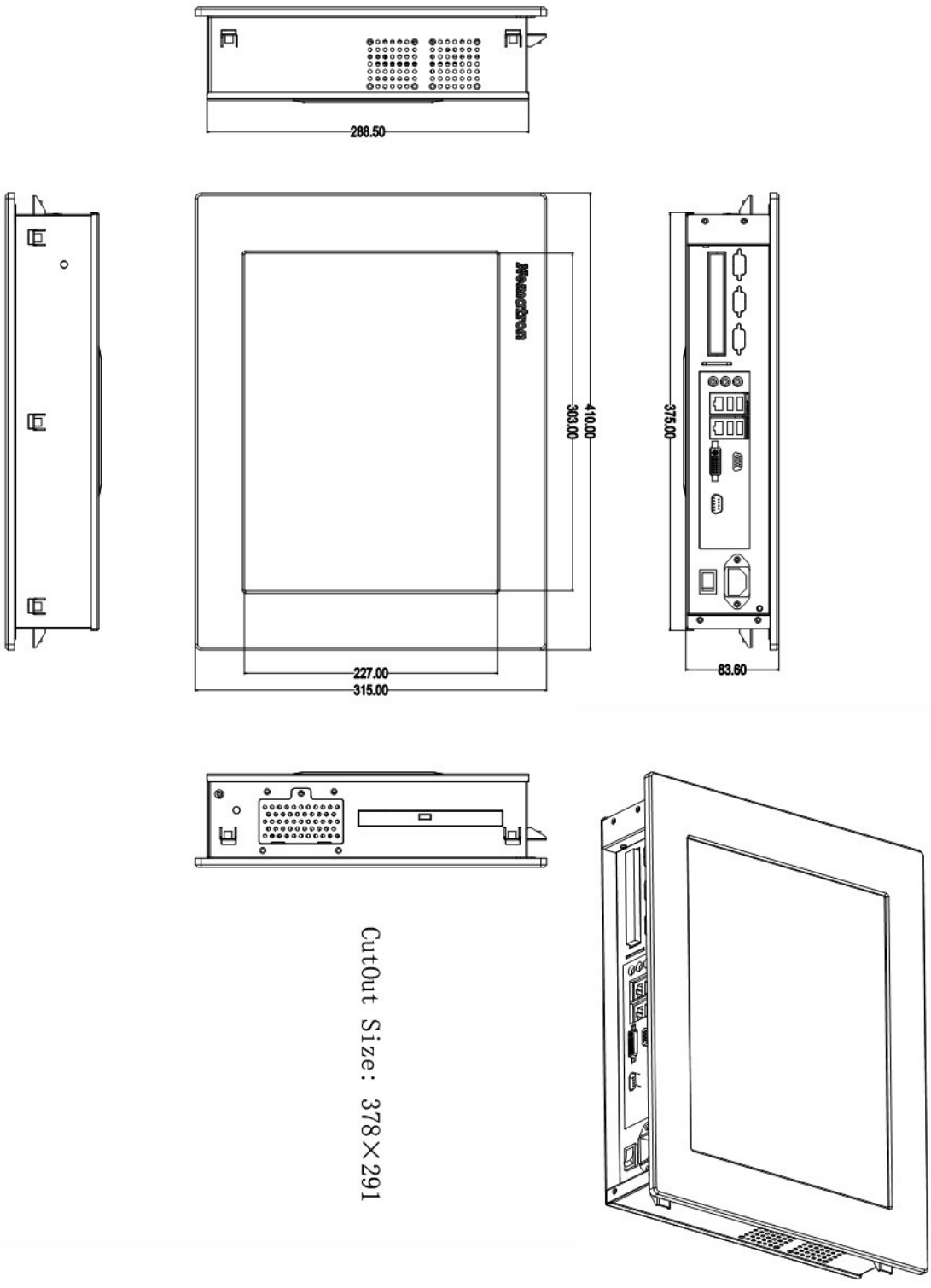
5.9 Filter Screen

You can change filter screen under the conditions of operating. Can loose the screw of the following picture without opening chassis, remove the cover-board, take out the filter screen, changed and cleaned it.

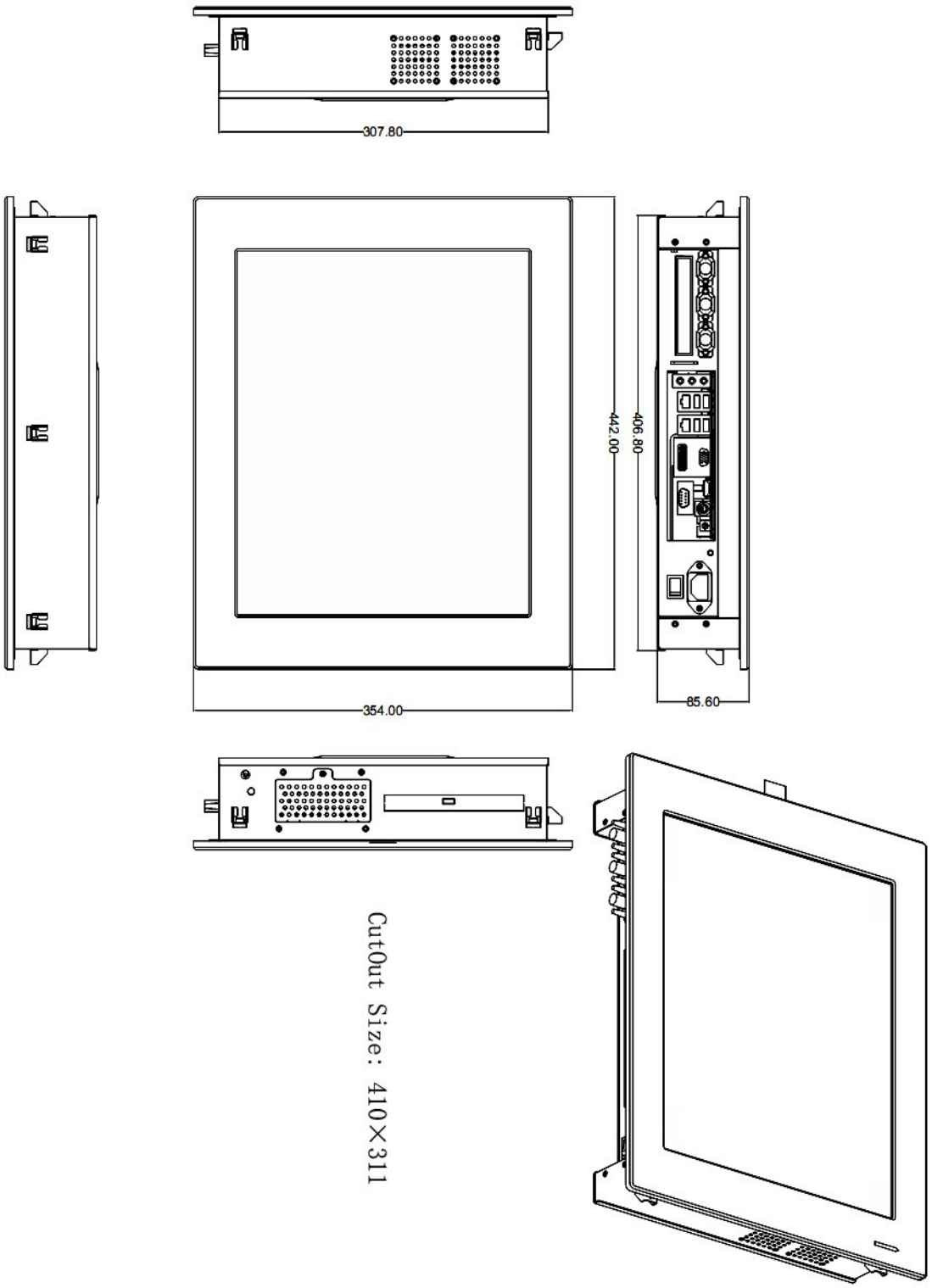


Appendix A Dimensions

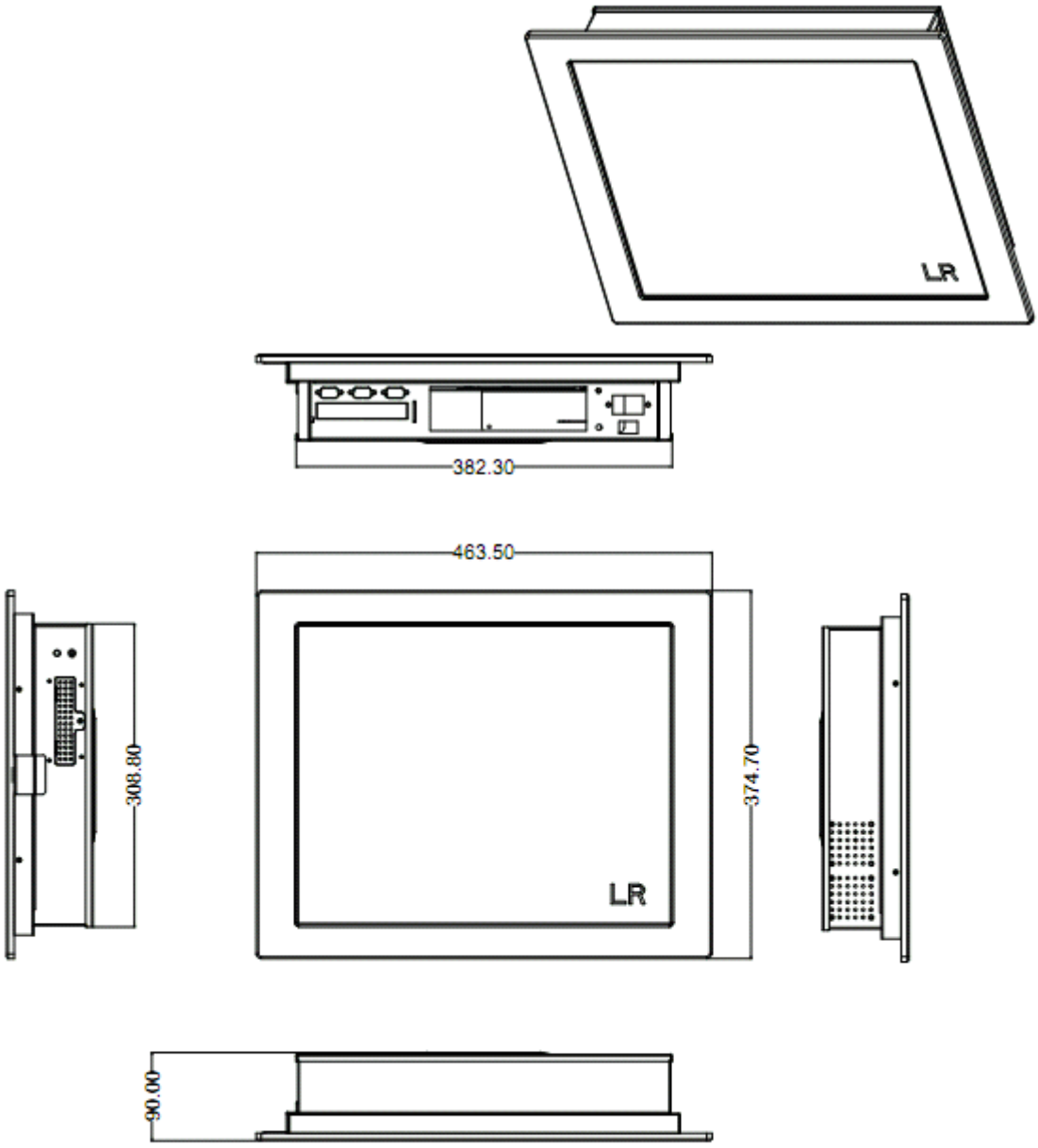
Dimensions Fomax 5100 Series (Unit: mm)



Dimensions Fomax 7100 Series (Unit: mm)



Dimensions Fomax 9100 Series (Unit: mm)



CutOut Size:311X385