

ED-MONITOR-156C

User Manual

by EDA Technology Co., Ltd

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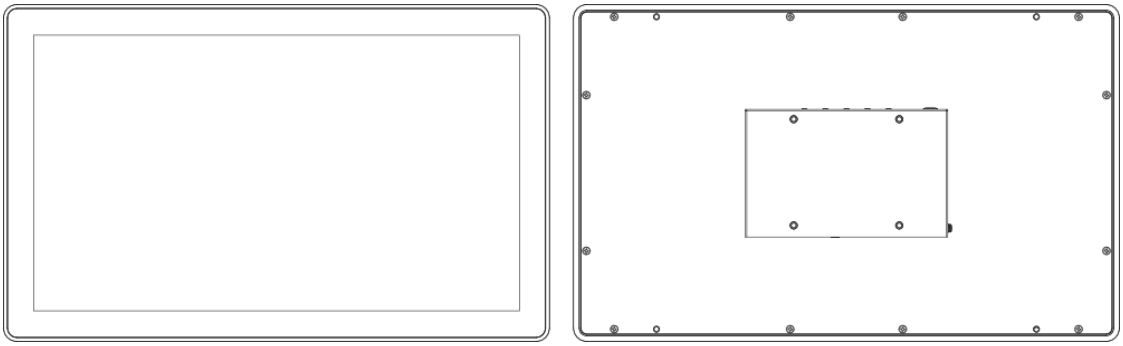
1 Hardware Manual

This chapter introduces the product overview, packing list, appearance, buttons, indicators, and interfaces.

1.1 Overview

The ED-MONITOR-156C is a 15.6-inch industrial touch monitor featuring a screen resolution of 1920x1080, a high brightness of 450 cd/m², and a multi-touch capacitive touch screen. It includes one standard HDMI interface, one Type-C USB port, one DC Jack power interface, and one 3.5mm audio jack, making it compatible with various general-purpose PC hosts. The backlight and volume can be adjusted via buttons and software, and it is primarily used in industrial control applications.

- The HDMI interface allows direct connection to the HDMI output of a PC host.
- The Type-C USB port transmits touch screen signals.
- The 3.5mm audio jack supports headphone connectivity.
- The DC Jack power interface supports 12V~24V DC input.



1.2 Packing List

- 1 x ED-MONITOR-156C Monitor
- 1 x Mounting Kit (including 4 x buckles, 4xM4*10 screws and 4xM4*16 screws)

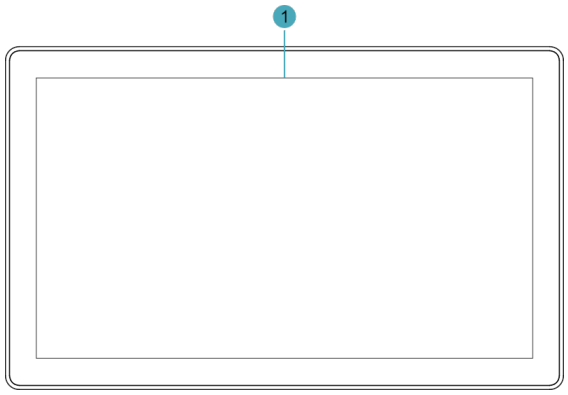
1.3 Appearance

This section introduces the functions and definitions of the interfaces on each panel.

1.3.1 Front Panel

Introducing the types and definitions of the interfaces on the front panel.

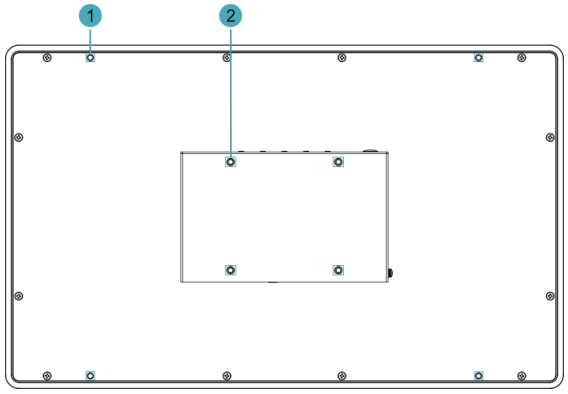
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NO.	Description
1	1 × LCD screen, 15.6-inch touch screen with a resolution of 1920x1080, multi-touch capacitive touch screen.

1.3.2 Rear Panel

Introducing the types and definitions of the interfaces on the rear panel.

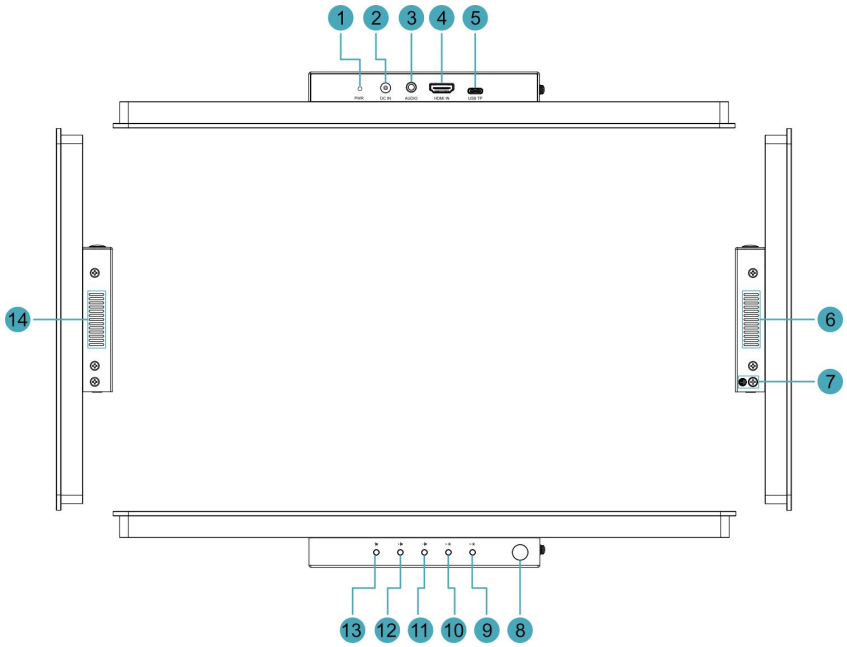


NO.	Description
1	4 x installation holes of snap, which are used to fix the snaps to the device for installation.
2	4 x VESA mounting holes, reserved for VESA bracket installation.

1.3.3 Side Panel

Introducing the types and definitions of the interfaces on the side panel.

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NO.	Description
1	1 x red power indicator, using to view the device's power-on and power-off status.
2	1 x DC input, DC Jack connector (5.5x2.5mm), which supports 12V~24V DC input.
3	1 x 3.5mm stereo audio output jack, supports headphone connectivity.
4	1 x HDMI input, Type-A connector, which connects to the HDMI output of a PC host.
5	1 x USB touch screen port, Type-C USB connector, which connects to the USB port of a PC host to transmit touch screen signals.
6	Heat dissipation holes, which help improve cooling performance.
7	1 x Ground Terminal, connects to the earth ground of the external power supply.
8	1 x Rubber plug (pre-drilled 7mm diameter circular cable routing hole), designed to accommodate additional cable management needs.
9	1 x "Brightness –" button, press the button to decrease the backlight brightness of the LCD screen.
10	1 x "Brightness +" button, press the button to increase the backlight brightness of the LCD screen.
11	1 x "Volume -" button, press the button to decrease the output volume.
12	1 x "Volume +" button, press the button to increase the output volume.
13	1 x "Mute" button, press the button to mute the output audio.
14	Heat dissipation holes, which help improve cooling performance.

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1.4 Button

ED-MONITOR-156C device includes two backlight brightness adjustment buttons and three volume adjustment buttons. The buttons are black in color and marked with screen-printed labels ☀+, ☀−, 🔊+, 🔊− and 🔇 on the housing.

Button	Description
☀+	Press the button to increase the backlight brightness of the LCD screen.
☀−	Press the button to decrease the backlight brightness of the LCD screen.
🔊+	Press the button to increase the output volume.
🔊−	Press the button to decrease the output volume.
🔇	Press the button to mute the output audio.

1.5 Indicator

ED-MONITOR-156C device includes a red power indicator, marked with the screen-printed label " PWR" on the housing.

Indicator	Status	Description
PWR	On	The device has been powered on.
	Blink	Power supply of the device is abnormal, please stop the power supply immediately.
	Off	The device is not powered on.

1.6 Interface

Introducing the definitions and functions of each interface in the ED-MONITOR-156C.

1.6.1 Power Interface

The ED-MONITOR-156C device includes 1 power input port with a DC Jack connector (5.5x2.5mm), labeled "DC IN" on the housing. It supports 12V~24V DC input.

> TIP
>
> A 12V 4A power adapter is recommended.

WARNING

- When using the device, do not hot-plug or unplug the DC Jack connector during operation. To power off or restart the device, always control it by plugging or unplugging the AC power supply at the adapter end.
- Recommended power-up sequence:
  1. Plug the DC connector of the power adapter into the device's DC Jack receptacle.
  2. Plug the 100–240V AC connector into an AC power outlet.
- Recommended power-down sequence (reverse of power-up):
  1. Unplug the 100–240V AC connector from the AC power outlet.
  2. Unplug the DC connector from the device's DC Jack receptacle.

1.6.2 HDMI Interface

ED-MONITOR-156C device includes 1 HDMI input interface with a Type-A connector, labeled "HDMI IN" on the housing, used to connect to the HDMI output of a PC host.

1.6.3 Type-C USB Interface

ED-MONITOR-156C device includes 1 Type-C USB interface, labeled "USB TP" on the housing. This interface connects to the USB port of a PC host to transmit touch screen signals.

1.6.4 Audio Interface

ED-MONITOR-156C device includes 1 audio interface (3.5mm 4-pole headphone jack), labeled "AUDIO" on the housing, supporting stereo audio output.

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2 Installing the device

ED-MONITOR-156C device supports front embedded installation. The standard packaging includes the embedded installation Mounting kit (ED-ACCHMI-Front).

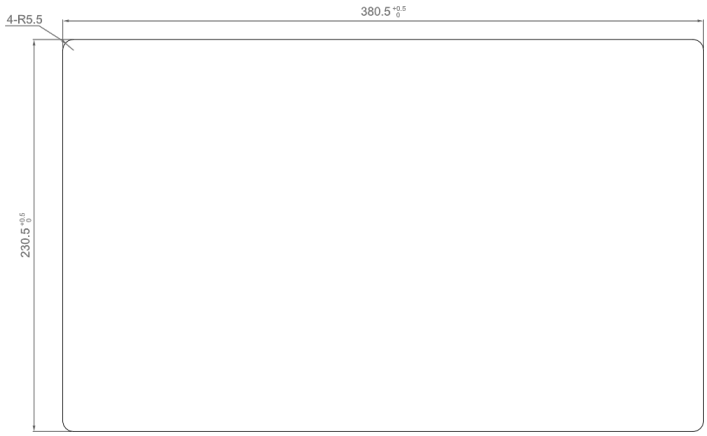
Preparation:

- The ED-ACCHMI-Front Mounting kit has been acquired (includes 4 × M4*10 screws, 4 × M4*16 screws, and 4 snaps).
- A cross screwdriver has been prepared.

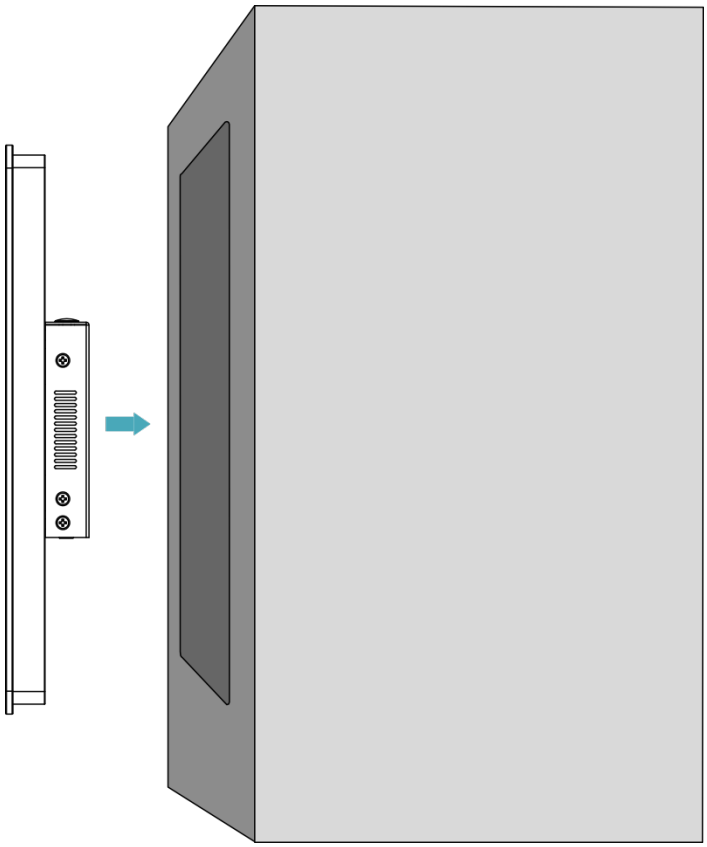
Steps:

1. Determine the cutout dimensions on the cabinet based on the ED-MONITOR-156C's size, as shown in the figure below.

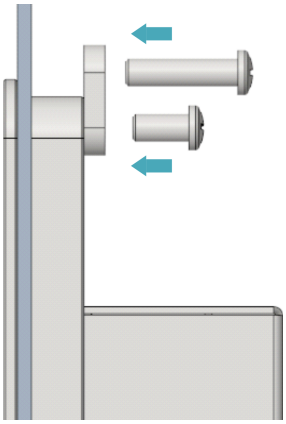
Unit: mm



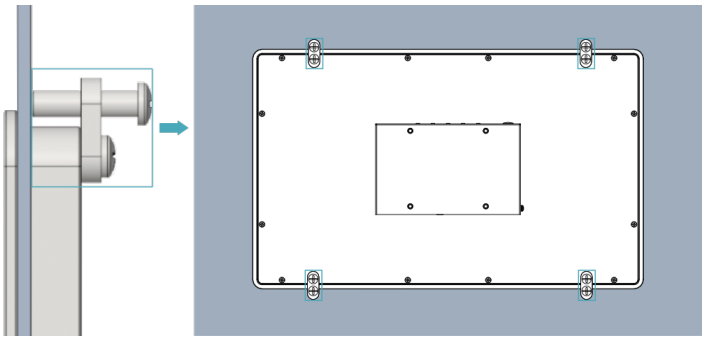
2. Drill holes on the cabinet according to the aperture size defined in Step 1.
3. Embed the ED-MONITOR-156C into the cabinet from the exterior side.



4. Align the screw holes (non-threaded) of the snaps with the snap mounting holes on the device side.



5. Secure the snaps to the device.
   - Use 4 × M4*10 screws to fasten the snaps to the device by threading them through the non-threaded holes and tightening them clockwise.
   - Then, use 4 × M4*16 screws to secure the snaps to the cabinet: Insert them through the threaded holes of the snaps, press against the interior side of the cabinet, and thread them clockwise until fully tightened.



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3 Using the device

ED-MONITOR-156C requires a PC host for operation and does not require driver installation. Connect it to the HDMI output of a PC host first, then power on the device to enable normal display. It supports backlight and volume adjustment via dedicated buttons and software.

3.1 Connecting Cables

This section describes how to connect cables.

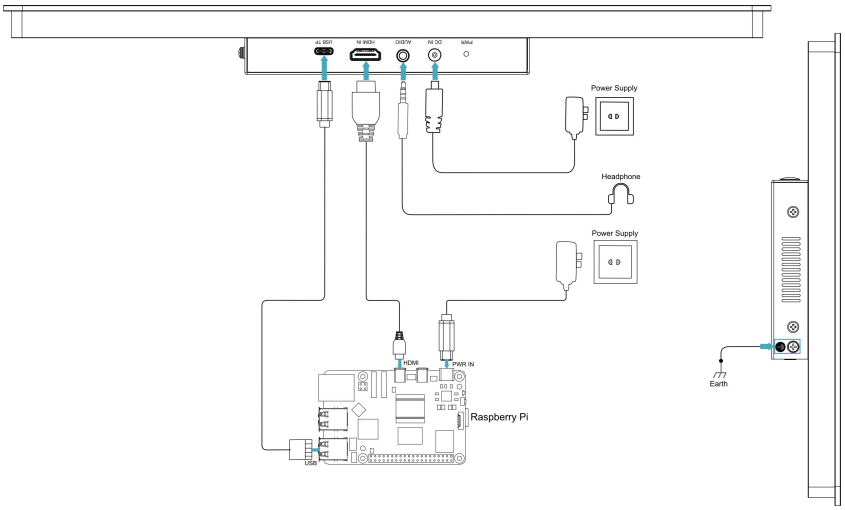
Preparation:

- A functional power adapter has been acquired.
- A functional PC host has been acquired.
- Functional HDMI and USB cables (Type-A to Type-C USB cable) have been acquired.

Schematic diagram of connecting cables:

Please refer to 1.6 Interface to obtain the pin definitions and wiring methods of each interface.

> TIP
>
> The HDMI IN interface of the ED-MONITOR-156C is compatible with various PC hosts. The figure below illustrates cable connection using a Raspberry Pi as an example.



3.2 Booting the device

The ED-MONITOR-156C does not include a physical power switch. After connecting to a power source, the device will automatically power on. Once fully booted, it will display the desktop of the connected PC host.

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WARNING

- When using the device, do not hot-plug or unplug the DC Jack connector during operation. To power off or restart the device, always control it by plugging or unplugging the AC power supply at the adapter end.
- Recommended power-up sequence:
  1. Plug the DC connector of the power adapter into the device's DC Jack receptacle.
  2. Plug the 100–240V AC connector into an AC power outlet.
- Recommended power-down sequence (reverse of power-up):
  1. Unplug the 100–240V AC connector from the AC power outlet.
  2. Unplug the DC connector from the device's DC Jack receptacle.

3.3 Adjusting brightness and Volume

The ED-MONITOR-156C supports brightness and volume adjustment via physical buttons and software.

3.3.1 Adjust brightness and volume via buttons

Once the ED-MONITOR-156C is operational, the screen's backlight brightness and volume can be adjusted via five dedicated buttons located on the side panel.

Button	Description
☀+	Press the button to increase the backlight brightness of the LCD screen.
☀−	Press the button to decrease the backlight brightness of the LCD screen.
🔊+	Press the button to increase the output volume.
🔊−	Press the button to decrease the output volume.
🔇	Press the button to mute the output audio.

3.3.2 Adjust Brightness and Volume via Software

Once the ED-MONITOR-156C is connected to a PC host and displays properly, screen backlight and output volume can be adjusted via software. The operation methods vary for Desktop and Lite OS versions.

3.3.2.1 Raspberry Pi OS (Desktop)

Introducing how to adjust backlight brightness via the UI in Raspberry Pi OS (Desktop).

Preparation:

- ED-MONITOR-156C is properly connected to the Raspberry Pi host with normal display output.
- The Raspberry Pi host has stable network connectivity.

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Steps:

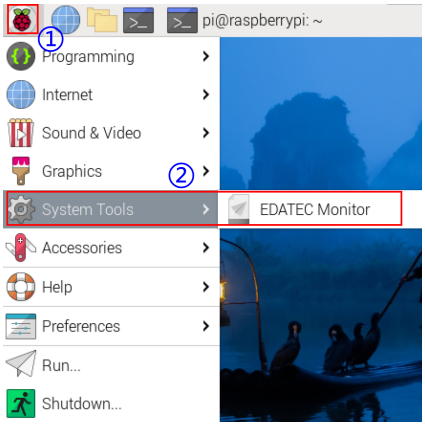
1. Add EDATEC apt repository by executing the following commands sequentially in the terminal.

```sh
curl -sS https://apt.edatec.cn/pubkey.gpg | sudo apt-key add -
echo "deb https://apt.edatec.cn/raspbian stable main" | sudo tee /etc/apt/sources.list.d/edate
sudo apt update
```

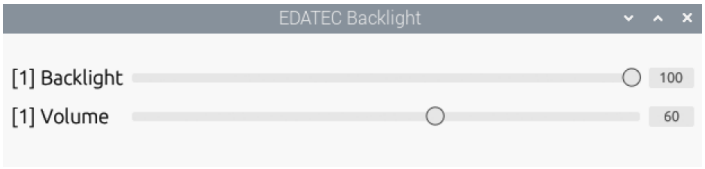
2. Install the software toolkit.

```sh
sudo apt install -y ed-ddcci-mib-tool
```

3. Click the  icon in the top-left desktop corner. Then select to "System Tools" → "EDATEC Monitor".



4. Adjust brightness and volume using the slider in the "EDATEC Backlight" panel.



> TIP
>
> Support executing the `sudo ed-ddc-ui` command in the terminal window to open the "EDATEC Backlight" panel.

3.3.2.2 Raspberry Pi OS (Lite)

Adjusting brightness and volume via CLI on Raspberry Pi OS (Lite).

Preparation:

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- ED-MONITOR-156C is properly connected to the Raspberry Pi host with normal display output.
- The Raspberry Pi host has stable network connectivity.

Steps:

1. Add EDATEC apt repository by executing the following commands sequentially in the terminal.

```sh
curl -sS https://apt.edatec.cn/pubkey.gpg | sudo apt-key add -
echo "deb https://apt.edatec.cn/raspbian stable main" | sudo tee /etc/apt/sources.list.d/edate
sudo apt update
```

2. Install the software toolkit.

```sh
sudo apt install -y ed-ddcci-mib-tool
```

3. Execute the following commands to query the current brightness level and volume level settings separately.

   • Query current brightness level:

```sh
sudo ed-ddc-server brightness read
```

   • Query current volume level:

```sh
sudo ed-ddc-server volume read
```

4. Execute the following commands to set brightness level and volume level as required.

   • Set brightness level:

```sh
sudo ed-ddc-server brightness write -v X
```

Where `X` represents the brightness level with a range of 0~100.

   • Set volume level:

```sh
sudo ed-ddc-server volume write -v Y
```

Where `Y` represents the volume level with a range of 0~100.