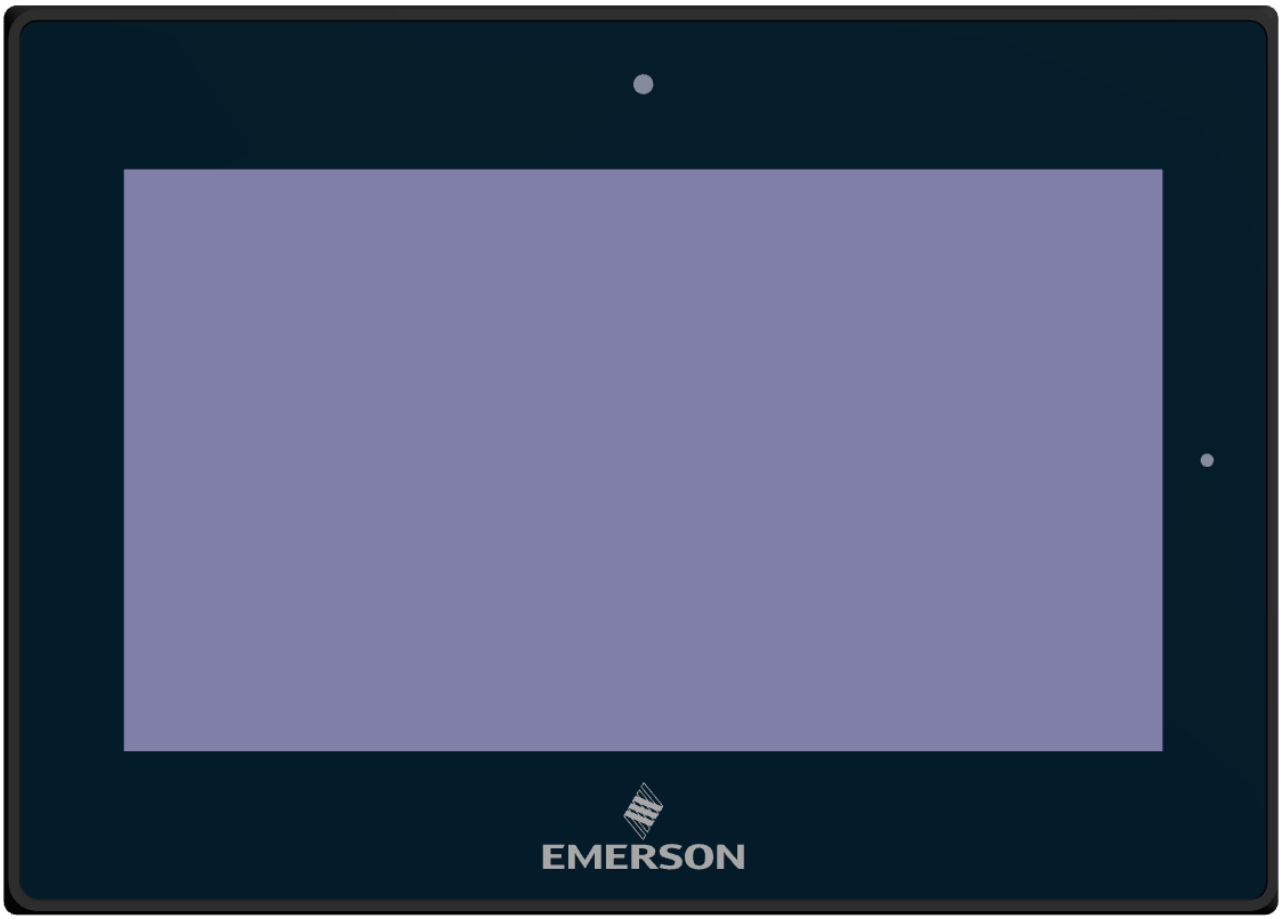
User Manual

GFK-3065

May 2019

RXi – Industrial Monitor



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Contents

Section 1: Getting Started

1.1 Features

Primary technical features:

- 7”/ 10”/ 12”/ 15”/ 19”/ 24” Widescreen Display
- TFT LCD Industrial Display
- Aluminum chassis
- HDMI, DP, DP-out(MST-daisy chain), Line-out, USB ports
- OSD on the left side
- DC 24V power input

1.2 Specifications

	Size (inch)	7"	10"	12"	15"	19"	24"
Display	Resolution	1024 x 600 WSVGA	1280 x 800 WXGA		1920 x 1080 Full HD		
	Format	Widescreen (16:0)	Widescreen (16:10)		Widescreen (16:9)		
	Orientation	Landscape					
	Reading Angle (°)	150 (H) / 145 (V)	170 (H) / 170 (V)	176 (H) / 176 (V)	170 (H) / 170 (V)	178 (H) / 178 (V)	
	Display Off-Color	Black					
	Contrast	800:1		1000:1	800:1	1000:1	5000:1
	Brightness (cd/m2)	500		400	450	350	300
	Brightness with Outdoor SLR Screen (cd/m2)	1000				N/A	
	MTBF Backlighting	50 000 h (at 25°C)					
Touchscreen	Technology	Projected Capacitive Touch (PCT/PCAP)					
	Touch Sensor	Multi-touch (Ten-Point)					
Interfaces	Port 1	1 x HDMI-In					
	Port 2	1 x Display Port-In					
	Port 3	1 x Display Port-Out					
	Port 4	(MST - Daisy Chain)					
	Port 5	1 x USB Input (For Touch)					
Status Indicators	Front Bezel Tri-color LED	Amber/Green/Red					
Power-Supply	Voltage [V]	+24VDC ±20% (19.2 V to 28.8 V, 3-Pin Connector) Isolated					
Protection-Class	Front-Side	IP66 (When Installed to a Wall/Panel)					
	Back-Side	IP20					
Design	Housing	Aluminum Die Casting (Front)					
Environment	Operating Temperature	-20°C to +65°C					
	Storage Temperature	-30°C to +70°C					
	Operating Humidity	85% RH (non- condensing) @ 30°C					
	Operating Altitude	10000 f t. (3.000 m)					
	Vibration	1Grms / 5 ~ 500Hz (Random) / Operation IEC 60068-2-64 10G peak acceleration (11 msec. duration)/operation IEC 60068-2-27					
Compliance	Certifications	UL and cUL 62368, UL and cUL 61010, IECEE CB Scheme					
		UL TYPE 4 & 4X, IP66 (ANSI/IEC 60529)					
		CE (EN 62368, EN 61000-6-4, 61000-6-2)					
		FCC Part15 Class A					
		RoHS					
	Certifications Coming Q4 2019	UL Listed US/CAN Hazardous Locations: Class 1 Division 2, Class 2 Division 2, Class 3 Division 1					
		ATEX Zone 2/22 & IECEX					
		BIS					
Mounting	Panel Cutout Dimensions (W x H)	183.5 x 128.5 mm	255.5 x 174 mm	317 x 214.5 mm	398 x 245.5 mm	482 x 297 mm	581 x 360 mm
	VESA Mounting	75 x 75		100 x 100			
	Hardware Included	Mounting Clamps and Allen Screws					
Physical Specification	Net Weight (kg)	2.0	2.6	3.8	5.1	6.9	9.0
	Dimensions (W x H x D)	192 x 137 x 65 mm	267 x 186.2 x 65 mm	329.1 x 226.8 x 66 mm	410.2 x 257.6 x 65 mm	500 x 315 x 70 mm	600 x 382 x 71 mm

1.3 Technical Drawings & Dimensions

Figure 1.1 Dimensions of 7”

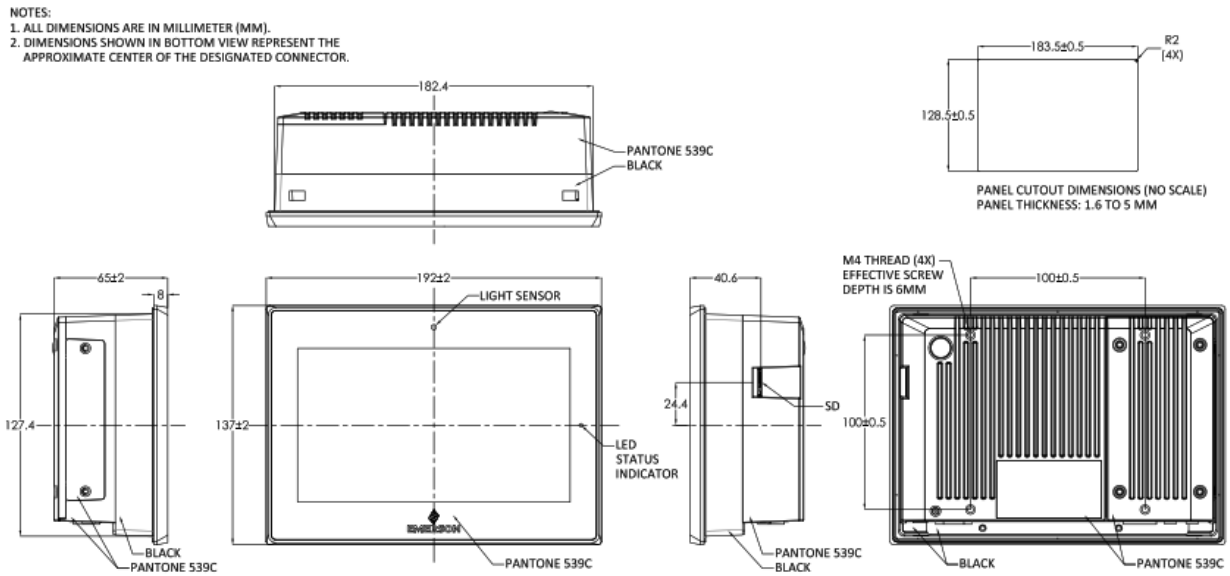


Figure 1.2 Dimensions of 10”

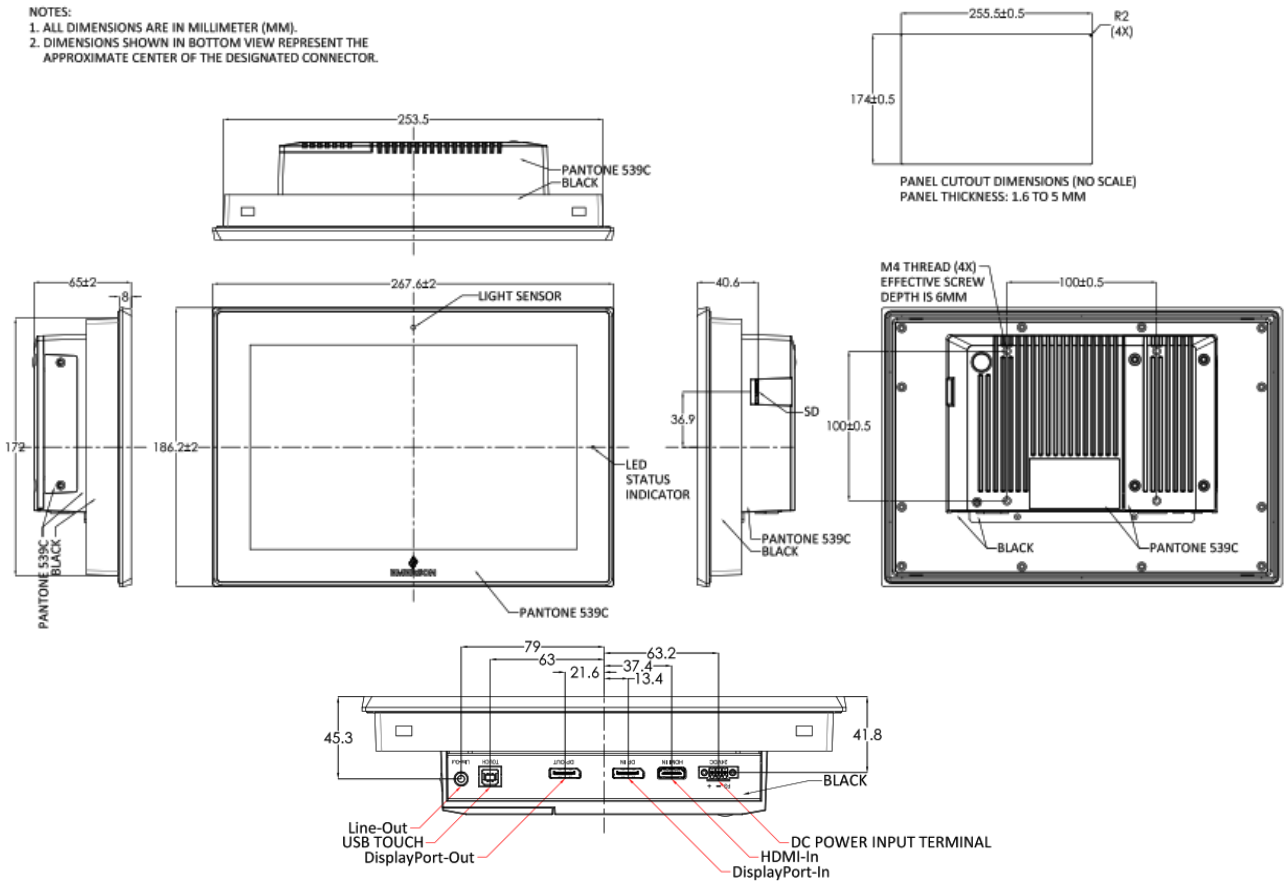


Figure 1.3 Dimensions of 12”

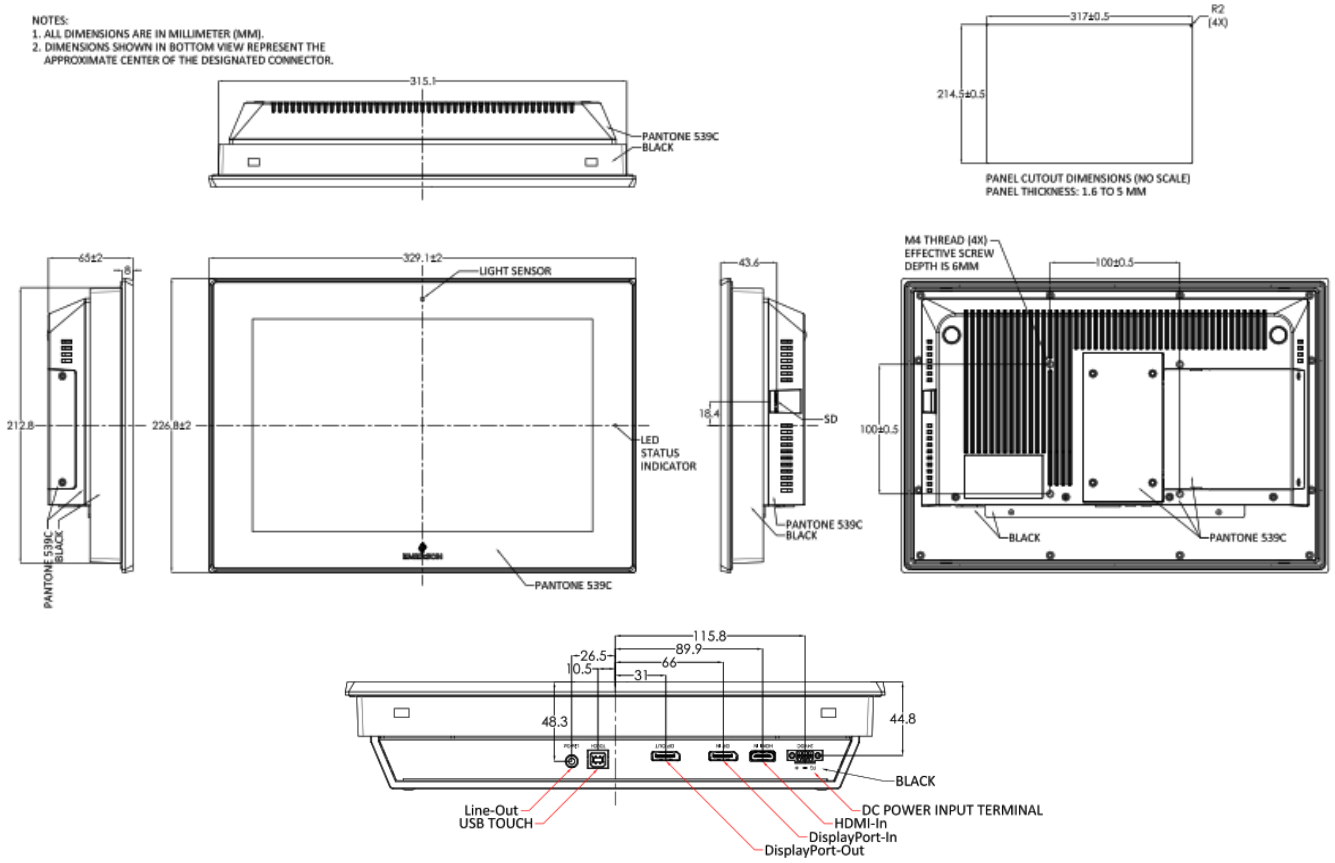


Figure 1.4 Dimensions of 15”

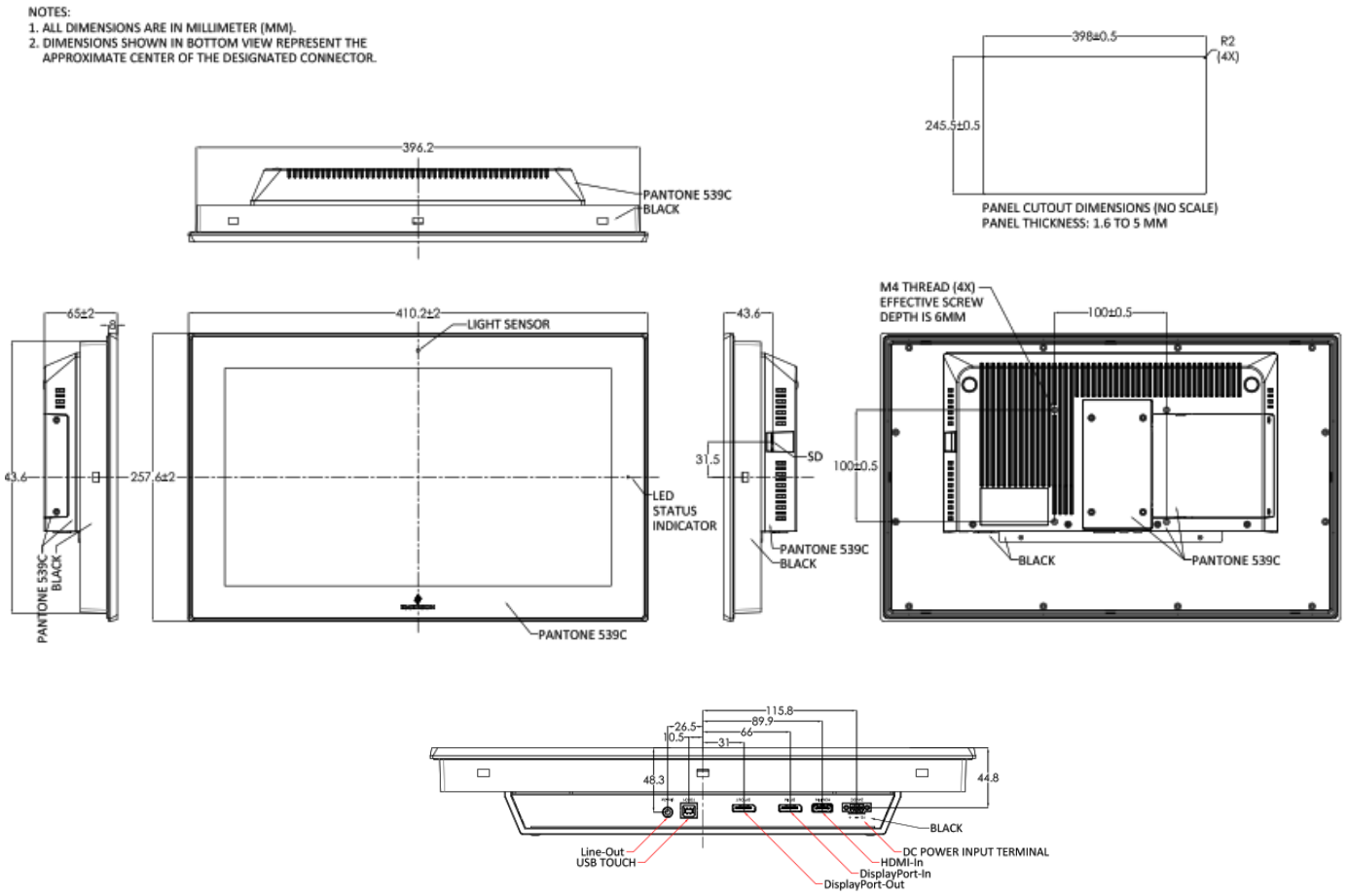


Figure 1.5 Dimensions of 19”

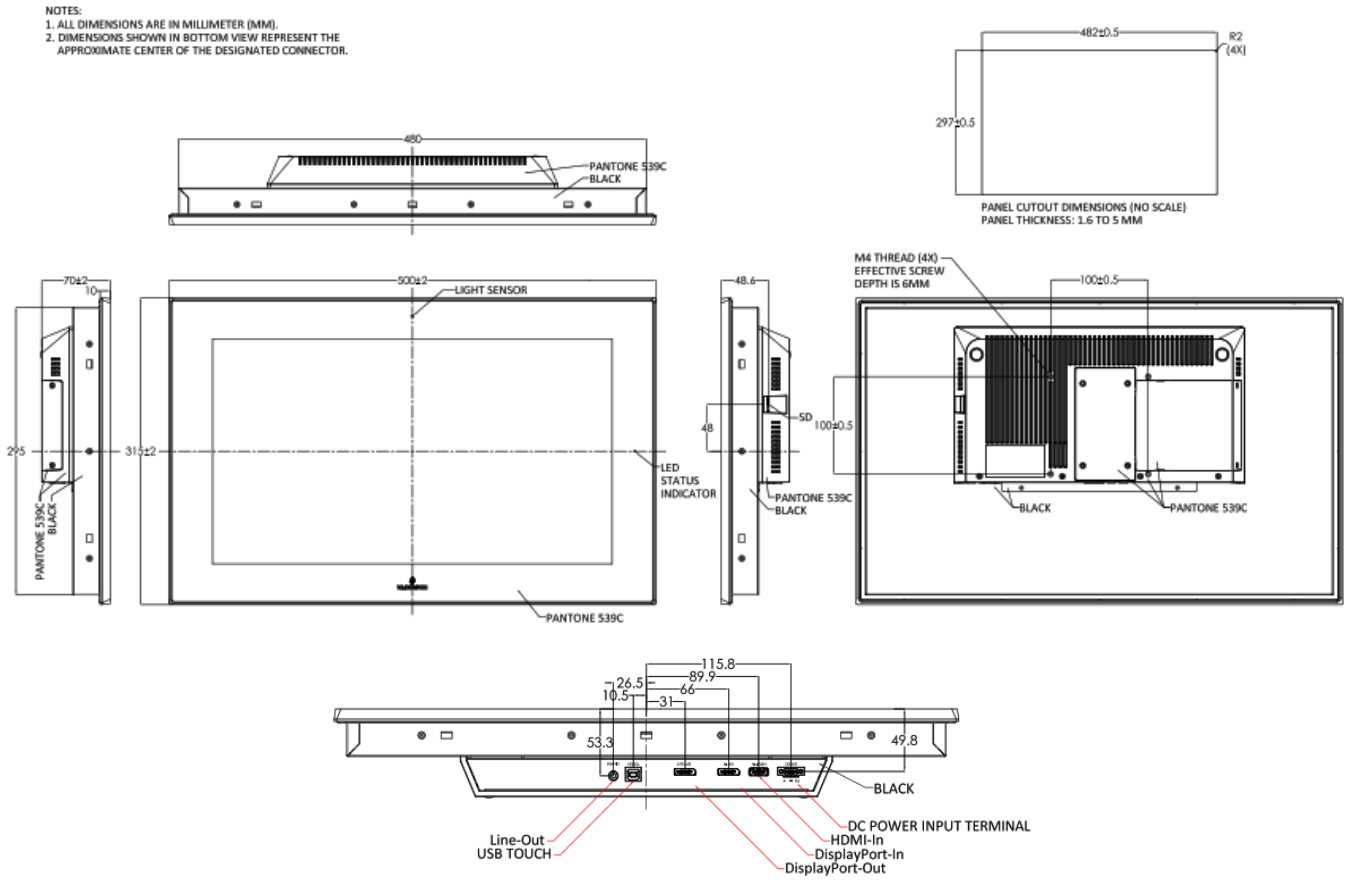
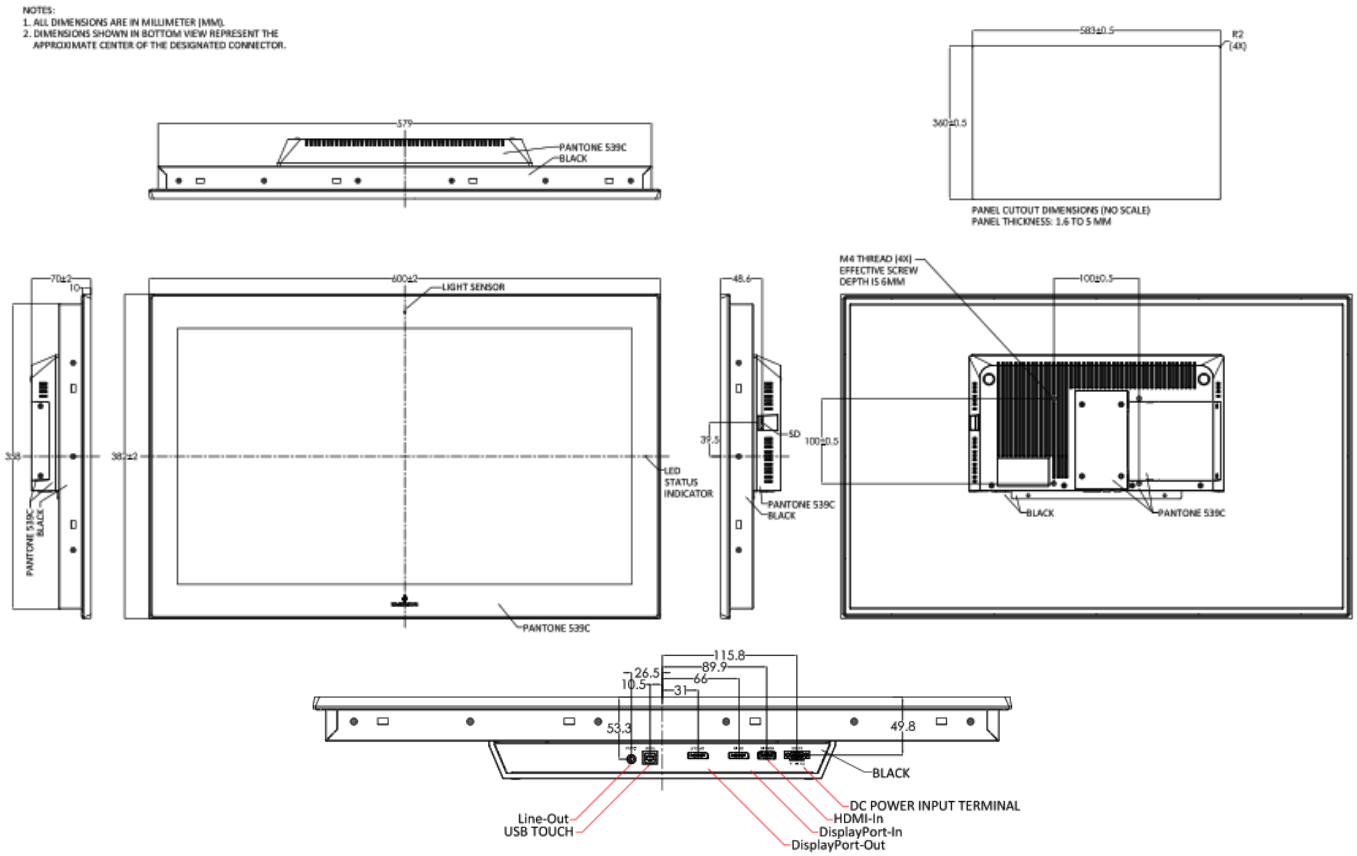


Figure 1.6 Dimensions of 24”



1.4 Brief Description of Industrial Display

The RXi – Industrial Display is an IP66 front bezel aluminum die-cast chassis display, with TFT LCD widescreen displays sized from 7" to 24". The 1000 nit LCD options are ideal for sunlight readable semi-outdoor applications and the auto-dimming function allows for dynamic auto-adjustment of the displays for both day and nighttime use in outdoor applications. The Industrial Monitor series supports DP and HDMI input, and it can be VESA 100 x 100 mounted. This Industrial display series has even more outstanding features providing the best in monitoring and control applications.

Figure 1.7 Front View of 7”

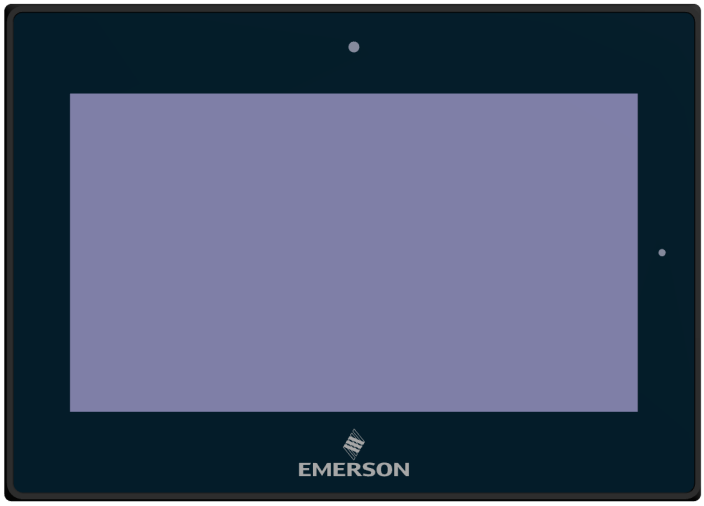


Figure 1.8 Front View of 10”

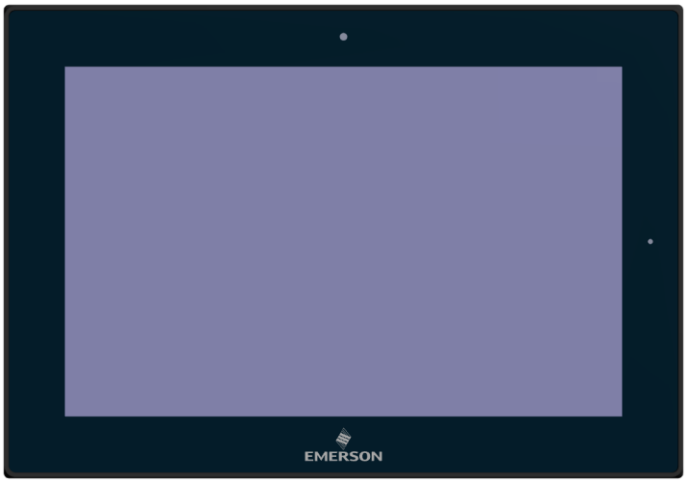


Figure 1.9 Front View of 12”

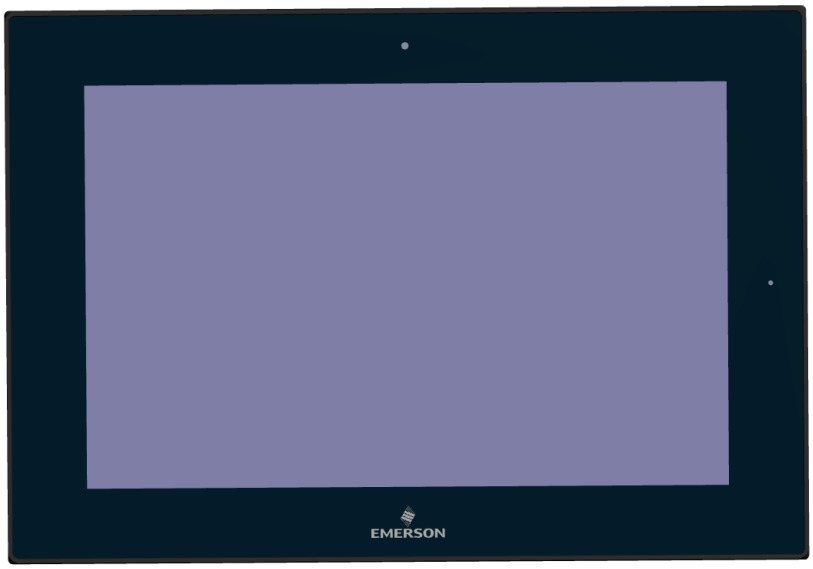


Figure 1.10 Front View of 15”

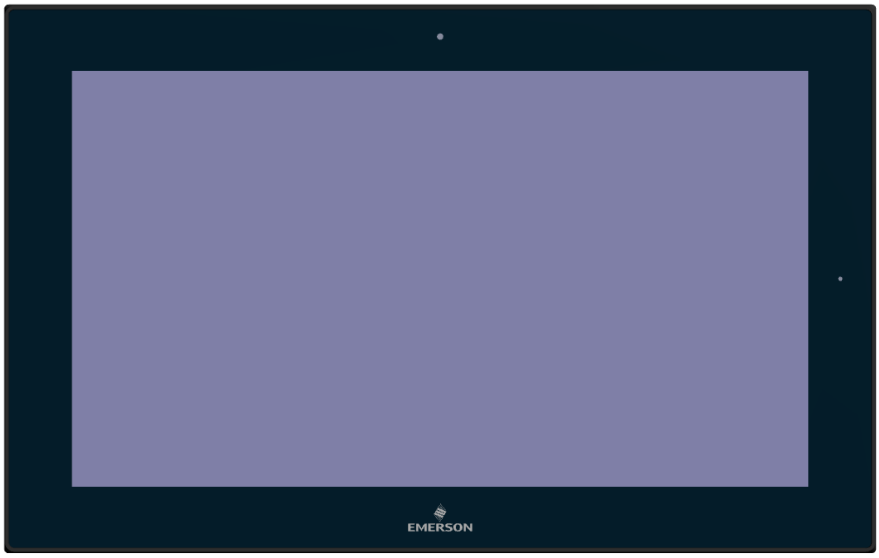


Figure 1.11 Front View of 19”

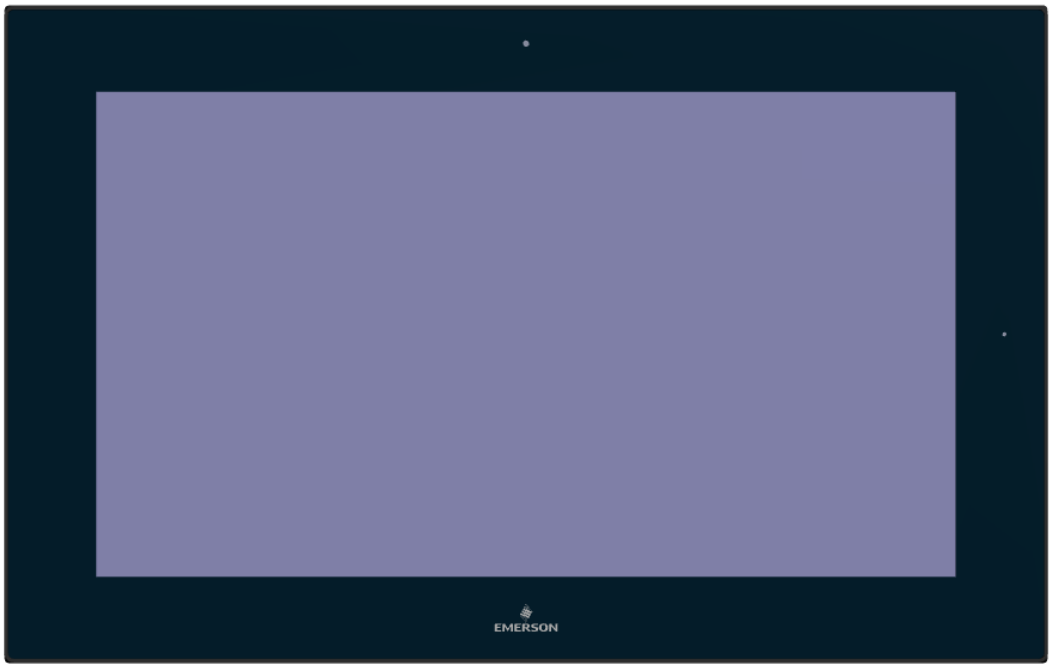


Figure 1.12 Front View of 24”

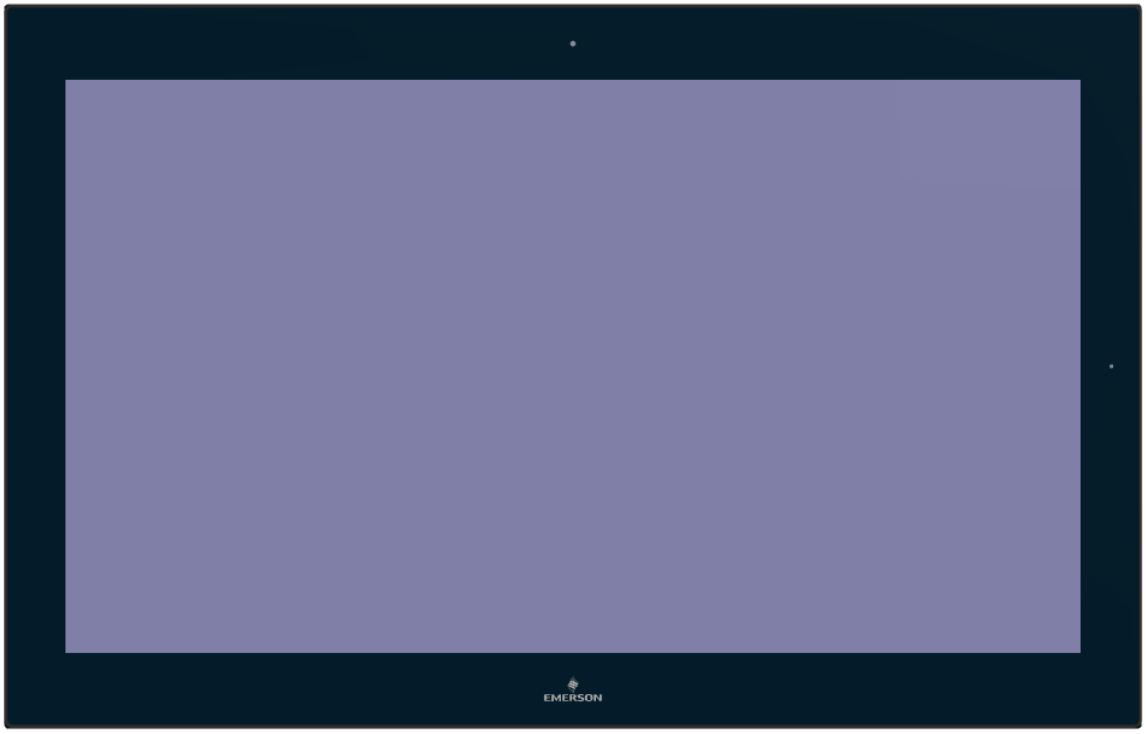


Figure 1.15 Rear View of 12”

Figure 1.16 Rear View of 15”

Figure 1.17 Rear View of 19”

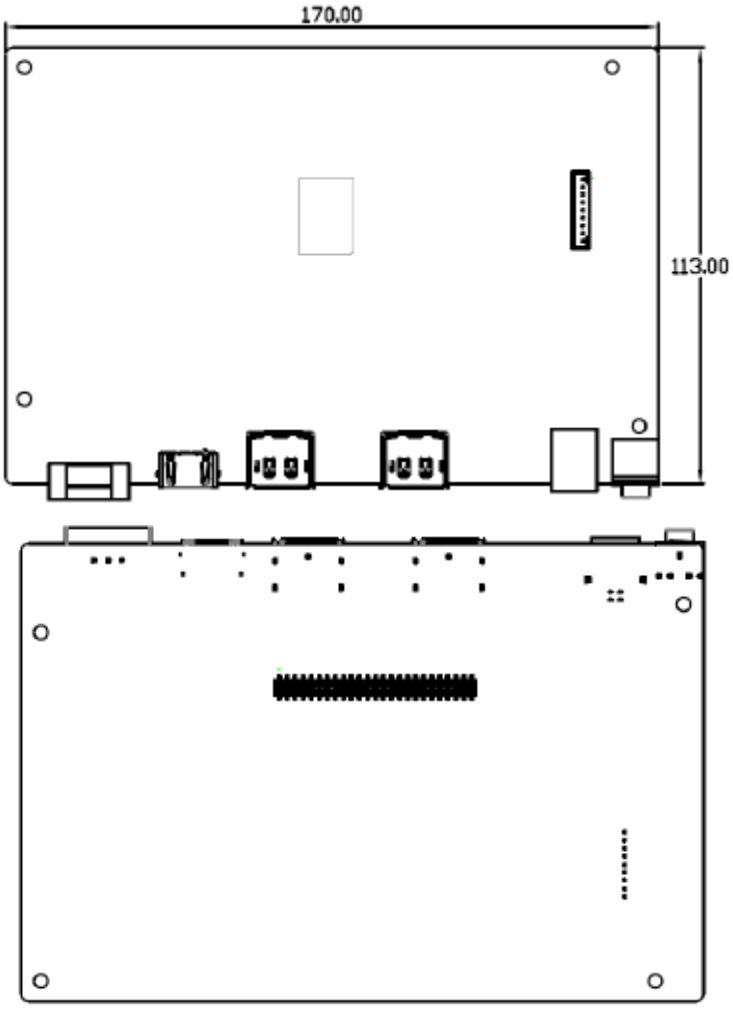
Figure 1.18 Rear View of 24”

Section 2: Hardware

2.1 Motherboard Specifications

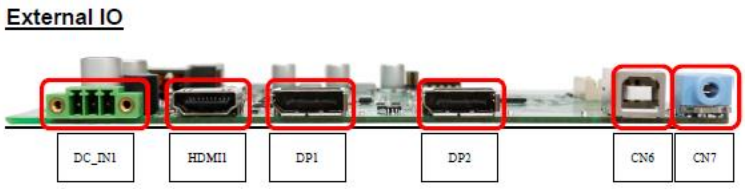
Board Size	170 x 113mm
Scalar IC	Realtek RTD2556T-CG
Input	1 x HDMI Input 1 x Display Port (DP) Input (DP1) 1 x USB 2.0 (Type B)
Output	1 x Support up to 24-bit LVDS FULL HD panel interface 1 x Display Port (DP) Output (DP2) 1 x Line-Out (Audio Jack)
Resolution	Up to 1920 x 1080@60Hz for LVDS Up to 1920 x 1080@60Hz for Display Port
Power Input	DC24V±20%
Temperature	Operating:-20°C to 65°C Storage:-30°C to 85°C
Humidity	10%-90%, non-condensing, operating
EMI/EMS	Meet CE/FCC class A

Figure 2.1 Board Dimensions (mm)

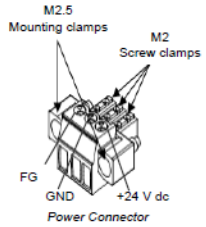


2.2 Jumpers and Connectors Location

Figure 2.2 Jumpers and Connectors Location



2.2.1 Connecting Input Power (24V DC-in)



To connect to power, follow these steps:

1. Verify that the power cable is not energized.
2. Loosen the screw clamps on the mating power connector.
3. Strip the insulation from the power cables.
4. Secure the power cable to the mating connector, noting polarity, and tighten the screw clamps. The torque for the attaching screws is 0.3 Nm (2.26 in-lb).
5. Apply dc power to the unit. During normal startup and operation, the LED status indicator displays as follows:
    - Solid amber while the RXi Industrial Display unit is starting up
    - Solid green during normal operation
6. Once power is applied, the unit begins initializing. The first thing to display is the splash screen.

Be sure to connect a DC power cord to this 3-pin power connector. Using a voltage out of the range may fail to boot the system or cause damage to the system board.

2.3 I/O and Connectors

2.3.1 DC_IN1

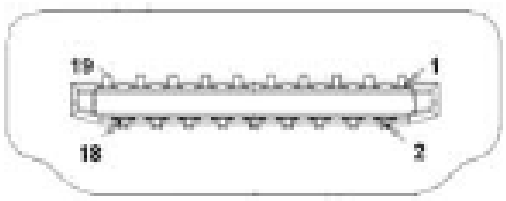
(3.5mm Pitch 1x3 Pin Connector), DC24V power input connector

Pin #	Power Input
Pin1	DC+24V
Pin2	Ground
Pin3	FG

2.3.2 HDMI (HDMI Input)

(HDMI Connector), High Definition Multimedia Interface connector, provide high-quality video and audio input.

Figure 2.3 HDMI Layout



Signal Name	Pin#	Pin#	Signal Name
DATA2+	1	2	DATA2 Shield
DATA2-	3	4	DATA1+
DATA1 Shield	5	6	DATA1-
DATA0+	7	8	DATA0 Shield
DATA0-	9	10	CLK+
HDMI CAB DET	11	12	CLK-
NC	13	14	NC
HDMI SCL	15	16	HDMI SDA
GND	17	18	HDMI 5V
HDMI HPD	19		

2.3.3 DP1 (Display Port Input)

(Display Port Connector), Display Port Interface connector, provide high-quality video and audio input.

Signal Name	Pin#	Pin#	Signal Name
LANE3-	1	2	GND
LANE3+	3	4	LANE2-
GND	5	6	LANE2+
LANE1-	7	8	GND
LANE1+	9	10	LANE0-
GND	11	12	LANE0+
GND	13	14	GND
AUX_CHP	15	16	DP CAB DET
AUX_CHN	17	18	DP HPD
RETURN	19	20	DP 3.3V

2.3.4 DP2 (Display Port Output)

(Display Port Connector), Display Port Interface connector, provide high-quality video and audio output.

Signal Name	Pin#	Pin#	Signal Name
LANE0+	1	2	GND
LANE0-	3	4	LANE1+
GND	5	6	LANE1-
LANE2+	7	8	GND
LANE2-	9	10	LANE3+
GND	11	12	LANE3-
GND	13	14	GND
AUX_CHP	15	16	GND
AUX_CHN	17	18	DP HPD
RETURN	19	20	DP 3.3V

2.3.5 CN1 (Debug) - Reserved

(2.0mm 1x4 Pin Header), Reserved for debug only.

Pin #	Signal Name
1	3.3V
2	UART TX
3	UART RX
4	GND

2.3.6 CN2 - Reserved

(2.0mm 1x4 Pin Header)

Pin #	Signal Name
1	HOST_I2C_SCL
2	HOST_I2C_SDA
3	HOST_IRQ_OUT
4	GND

2.3.7 CN3 - Reserved

(2.0mm 1x4 Pin wafer connector), Reserved for IR receiver

Pin #	Signal Name
1	GND
2	IR
3	3.3V
4	NC

2.3.8 CN4 (OSD)

(2.0mm 1x9 Pin wafer connector), On-Screen Display menu Control connector.

Pin #	Signal Name
1	Power Key
2	R_LED
3	G_LED
4	GND
5	MENU Key
6	DOWN Key
7	UP Key
8	SELECT Key
9	NC

2.3.9 CN5 (LVDS Output)

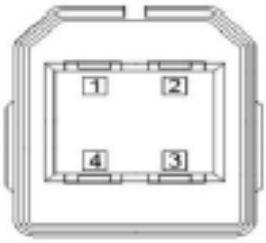
(2.0mm 2x25 Female Pin Header), Connect to TB-572B, providing LVDS, USB, SM BUS and LED signals.

Signal Name	Pin#	Pin#	Signal Name
+12V	1	2	+12V
BackLight Enable	3	4	BackLight CTRL
GND	5	6	GND
Panel 3.3V	7	8	Panel 3.3V
Panel 5V	9	10	Panel 5V
GND	11	12	GND
LVDS Odd0-	13	14	LVDS Odd0+
LVDS Odd1-	15	16	LVDS Odd1+
LVDS Odd2-	17	18	LVDS Odd2+
LVDS Odd CLK-	19	20	LVDS Odd CLK+
LVDS Odd3-	21	22	LVDS Odd3+
LVDS Even0-	23	24	LVDS Even0+
LVDS Even1-	25	26	LVDS Even1+
LVDS Even2-	27	28	LVDS Even2+
LVDS Even CLK-	29	30	LVDS Even CLK+
LVDS Even3-	31	32	LVDS Even3+
GND	33	34	GND
USB D-	35	36	USB 5V
USB D+	37	38	GND
GND	39	40	SM Bus CLK1
5V	41	42	SM Bus Data1
Reserved	43	44	Reserved
GND	45	46	SM Bus CLK2
3.3V	47	48	SM Bus Data2
LED1	49	50	LED2

2.3.10 CN6 (USB 2.0)

(2.0mm 1x9 Pin wafer connector), For external USB2.0 signal.

Figure 2.4 USB 2.0



Pin #	Signal Name
1	USB 5V
2	USB-
3	USB+
4	GND

2.3.11 CN7 (Line Out)

(Diameter 3.5mm Jack), Line Out audio port. Line Out can be connected to headphones, speakers or an amplifier.

Figure 2.5 Line out

2.3.12 JP1

(2.0mm Pitch 1x3 Pin Header),

JP1 Pin #	Function
Close 1-2	Backlight Enable & Backlight PWM Level select 3.3V
Close 2-3	Backlight Enable & Backlight PWM Level select 5V

2.3.13 JP2

(2.0mm Pitch 1x3 Pin Header), Backlight control setting.

JP1 Pin #	Function
Close 1-2	For PWM Mode (Default)
Close 2-3	For DC Mode

2.3.14 SW1 - Reserved

Panel Type Select.

2.4 LED Indicators

2.4.1 Operation Status LEDs (Screen)

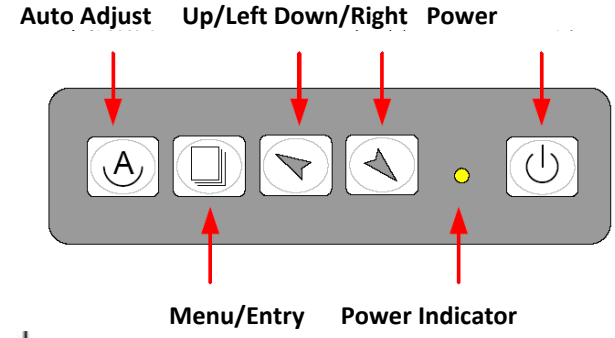
All RXi Industrial Displays have a tri-color LED built into the screen that provides visual indication of the operation status.

LED State	**System State**
Amber, Solid	Operating system starting
Green, Solid	Normal operating state
Green, Blinking	Backlight off
Red, Blinking	Backlight failure
Off	Power not applied to unit

Section 3: OSD

3.1 AD Board OSD Functions

Figure 3.1 AD Board OSD Functions Legend



Power switch: To turn ON or OFF the power

Shift the icon to the left side or shift it up

Shift the icon to the right side or shift it down

Menu: To enter OSD menu for related icon and item

Auto Button: One-touch auto adjustment

3.1.1 Enter Burn-in Mode

Before entering burn-in mode, first disconnect the AC power cord, then press and hold the buttons, then release after the AC power cord is connected and the “RGB” appears on the top left corner of your screen. Now it can be put into the burn-in mode for changing colors.

3.1.2 Exit Burn-in Mode

Before exiting burn-in mode, please first disconnect the AC power cord, then press the button (If for any reason this button is non-functional, press and hold the button) until the AC power cord is connected. Do not release the button until the AC power cord is connected again and the wording of “RGB” appears on the top left corner of your screen, then wait for 3 seconds. If there is no input plugged into the unit, the “CABLE NOT CONNECTED” message will denote that it has successfully left burn-in mode.

3.1.2.1 If unable to exit Burn-in Mode

If the “RGB” is still on the top left corner of the screen, press to enter “Miscellaneous” and choose “Reset”, and then select “Yes”, and press . When the screen goes black, disconnect power and repeat the above steps.

If the “RGB” is not found, disconnect the AC power cord first, then press and hold the buttons until the AC power cord is connected, and wait for 2 to 3 seconds. When “RGB” appears, repeat the above steps.

3.2 OSD Controls

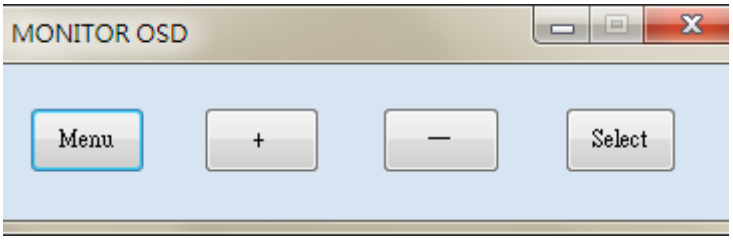
3.2.1 OSD Keypad

To make any adjustment to the settings of the Industrial Monitor, select the following:

1. Press (Menu) to show the OSD menu or dismiss the OSD menu.
2. Select the icon that you wish to adjust with the (/ or +/-) key in the menu.
3. Press (Menu) and then choose the item with the (/ or +/-) key.
4. Press (Menu) and then adjust the quality with the (/ or +/-) key.

3.2.2 Virtual OSD Keypad

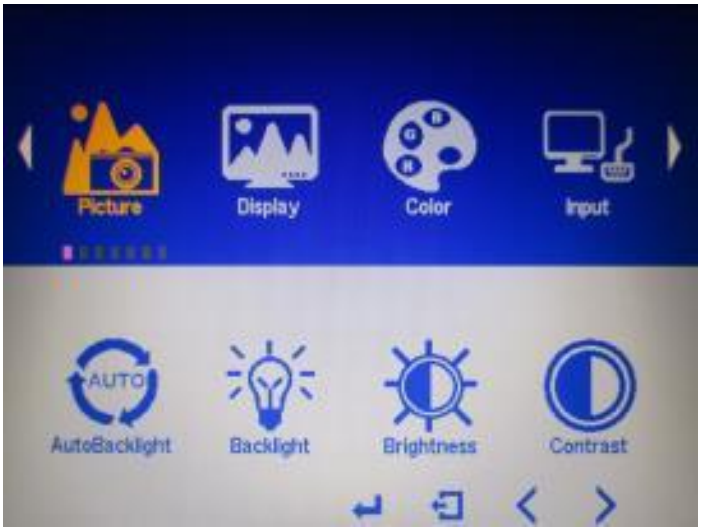
Figure 3.2 Virtual OSD Keyboard



3.3 Main Menu

3.3.1 Picture

Figure 3.3 Picture Menu Options

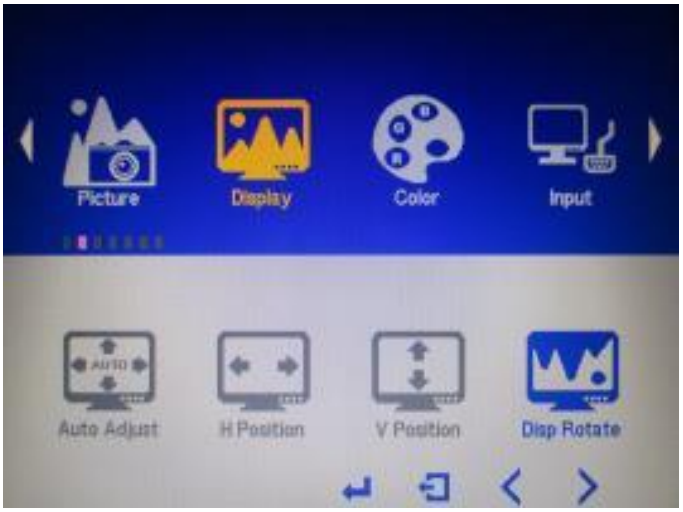


In the PICTURE menu, there are the following items:

- AutoBacklight
- Backlight
- Brightness
- Contrast
- Sharpness

3.3.2 Display

Figure 3.4 Display Menu Options

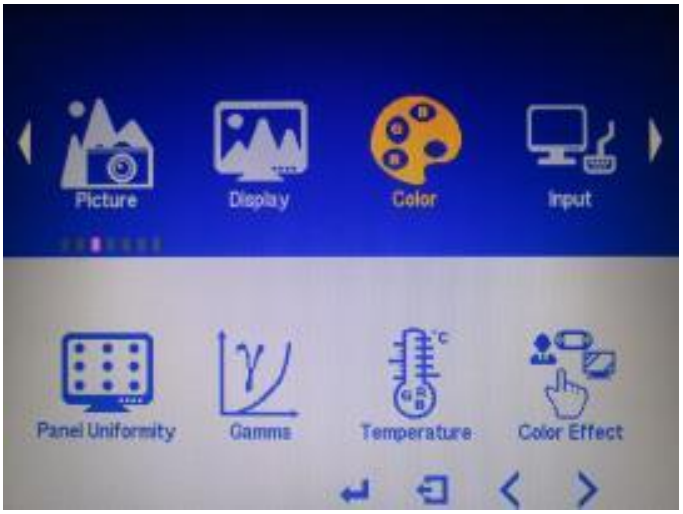


In the DISPLAY menu, there are the following items:

- AutoAdjust
- H Position
- V Position
- Disp Rotate

3.3.3 Color

Figure 3.5 Color Menu Options



In the COLOR menu, there are the following items:

- Panel Uniformity
- Gamma
- Temperature
- Color Effect

3.3.4 Input

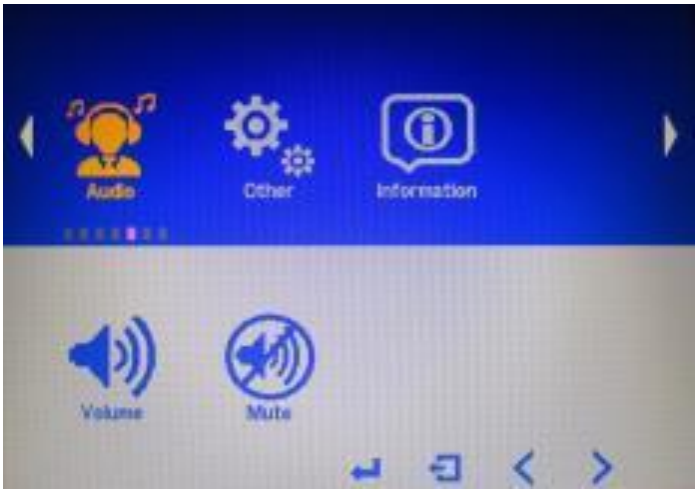
Figure 3.6 Input Menu Options

In the INPUT menu, there are the following items:

- Auto Select
- DP
- HDMI

3.3.5 Audio

Figure 3.7 Audio Menu Options

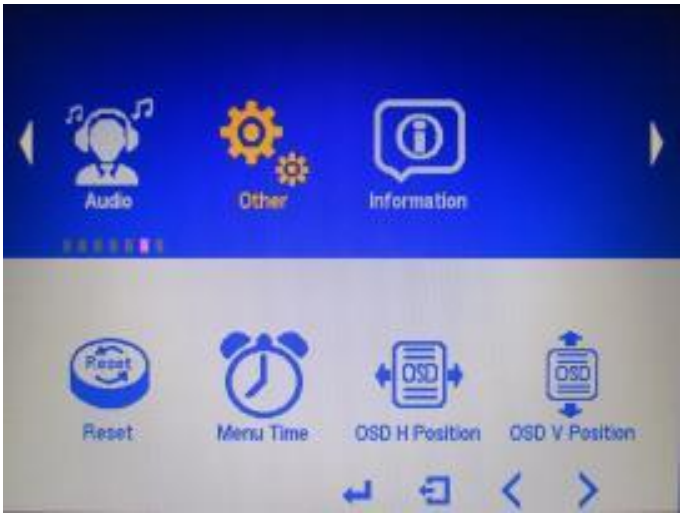


In the AUDIO menu, there are the following items:

- Volume
- Mute

3.3.6 Other

Figure 3.8 Other Menu Options



In the OTHER menu, there are the following items:

- Rest
- Menu Time
- OSD H Position
- OSD V Position

Section 4: Mounting Information

The Industrial Display series are designed to be panel-mounted or VESA mounted as shown in pictures below. Carefully place the unit through the hole and tighten the given screws from the rear to secure the mounting.

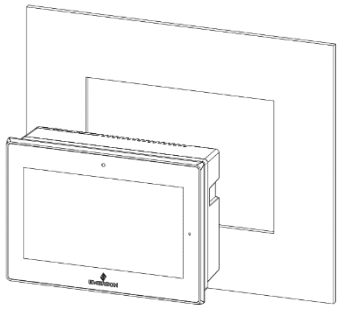
4.1 Panel Mount

4.1.1 Installation Steps

1. Verify that the gasket is present and properly seated in the bezel channel located on the sides of the unit

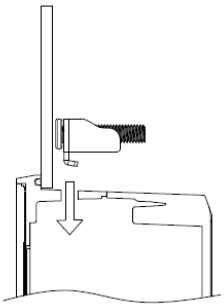
2. Insert the unit into the mounting panel cutout

Figure 4.1 Panel Install View



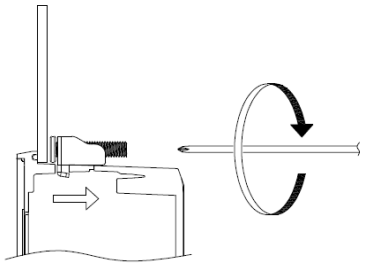
3. Insert the hook of the mounting bracket into the mounting hole as displayed in the following figure.

Figure 4.2 Mounting Bracket Insertion



4. Tighten the screws on the mounting bracket in a clock-wise direction.

Figure 4.3 Tighten Mounting Bracket



4.2 Mounting to Modular Display

Figure 4.4 12” Panel Mount

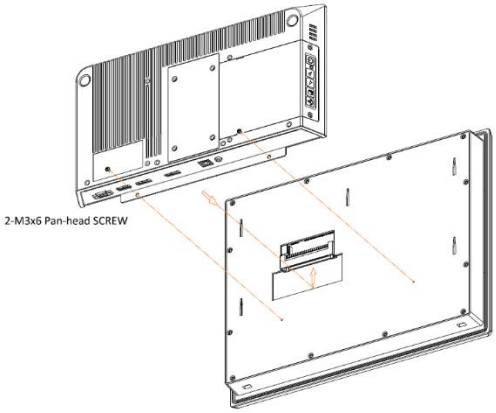


Figure 4.5 15” Panel Mount

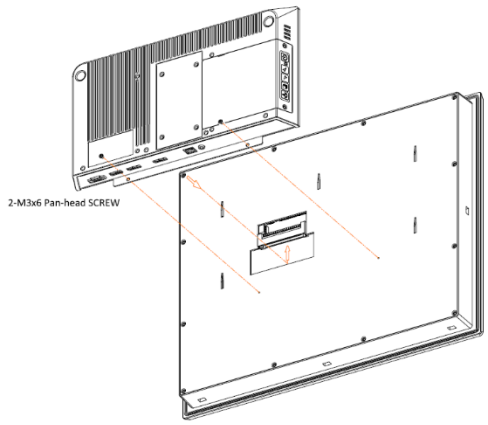
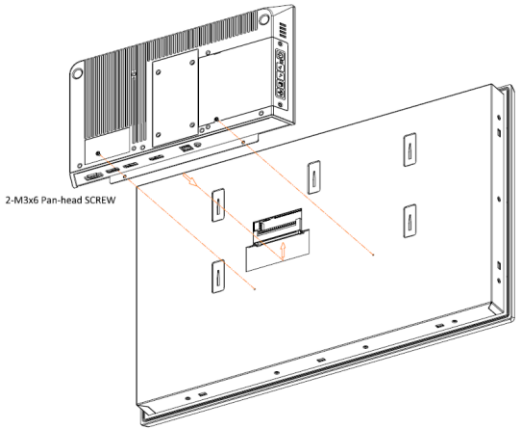


Figure 4.6 19”/24” Panel Mount



4.3 VESA Mount

Figure 4.7 10” VESA Mount

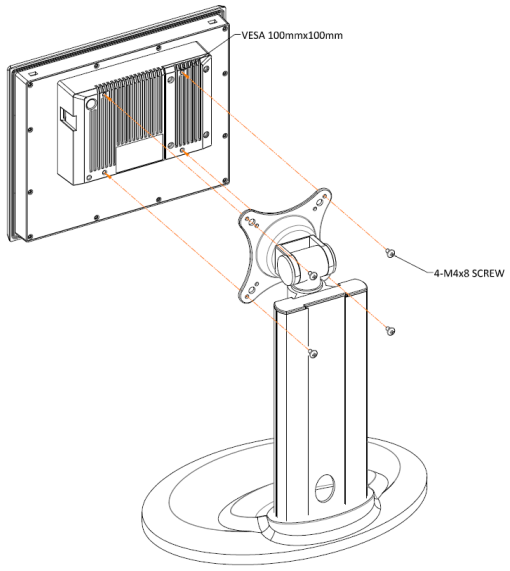


Figure 4.8 12” VESA Mount

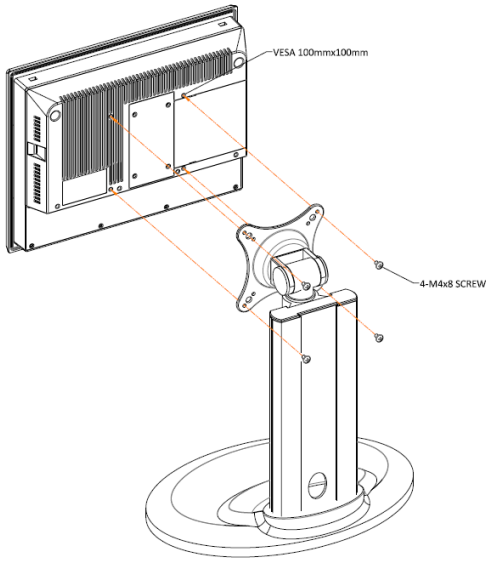


Figure 4.9 15” VESA Mount

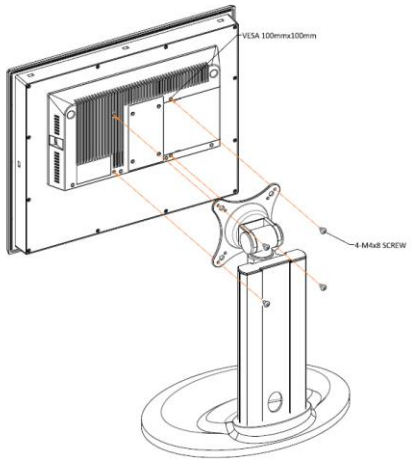
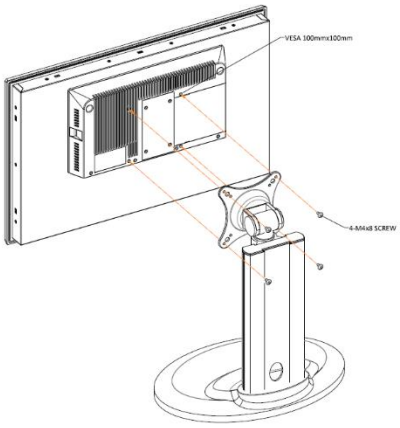


Figure 4.10 19”/24” VESA Mount



Attention

*Notice：

Tighten the mounting clip screws by hand until the gasket seal contacts the mounting surface uniformly.

Tighten the mounting clips screws to a torque of 8 ~ 10 kgf-cm by using the specified sequence, making sure not to overtighten.

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