Viewpoint III Touchscreen HMI Panels

Installation

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Introduction

Viewpoint III industrial touch screen HMI panels are browser based devices that are compatible with ICLs graphical Web User Interface (WUI) and textual Mobile User Interface (MUI). They can be used with both Modulus and Scadaflex II series controllers, as well as legacy Pinnacle and Sentry series controllers.

Viewpoint III HMI panels are available in 7", 10", and 15" configurations (measured diagonally). The 7" and 10" panels have a resolution of 800 x 480 pixels, while the 15" panel has a resolution of 1024 x 768. All three sizes include a pressure-sensitive resistive film touch screen interface that eliminates the need for a separate keyboard or mouse.

Viewpoint III HMI panels come from the factory pre-configured and ready to run with ICL controllers. The configuration settings can be edited to match varying system installations that do not use the controllers with their default settings.

The Viewpoint III HMI panels are based on a powerful ARM processor running a Chrome browser. HMI screens developed for other hardware platforms such as PCs, phones and tablets will be displayed the same on the Viewpoint III HMIs, eliminating duplicate development efforts.

The HMI panels can be powered from either 12V or 24V DC power. They are very efficient, utilizing far less power than competitive units on the market. The panels only draw 6W, 10W or 21W for the 7", 10" and 15" sizes respectively, making them a practical solution in solar powered and battery backed applications.

This manual describes the physical installation of the HMI panels. The HMI panels are designed to be installed on the front panel or door of a protective enclosure. The process of making a cut-out in the enclosure door and mounting the HMI panel is described in the "Mechanical Installation" section.

This manual also describes the configuration of the panels (if needed). By default, the panels expect to communicate with a controller whose IP address **192.168.237.199** which is the factory default address for Modulus and Scadaflex II controllers. The HMI panel address is defaulted to **192.168.237.151**. The HMI panel can also be configured to receive an address from a networks DHCP server or ICL controller so that manual static configuration is not required. In the same section, you can set the display backlight to automatically turn off after a period of no activity to reduce power consumption.

A standard PC USB-type keyboard and mouse (not supplied) is all that is required for making configuration changes via a built-in web interface. The process for altering these settings is described in the "Configuration" section of this manual.

Mechanical Installation

Viewpoint III HMIs are designed to be panel mounted, typically on the front door of an electrical enclosure. The recommended panel thickness is 0.07" to 0.2" (1.6mm to 5.0mm). For mounting, a rectangular hole must be cut into the enclosure door.

The HMI panel is retained in the cutout by four mounting brackets (supplied) that are tightened from the back side of the panel, pulling the HMI panel against a seal ring and the enclosure front panel surface as shown.
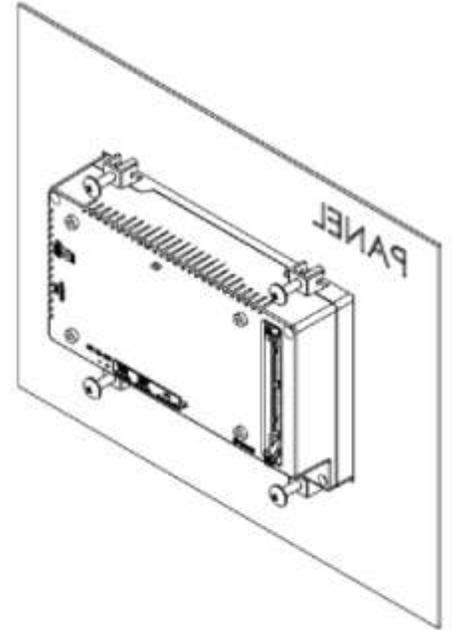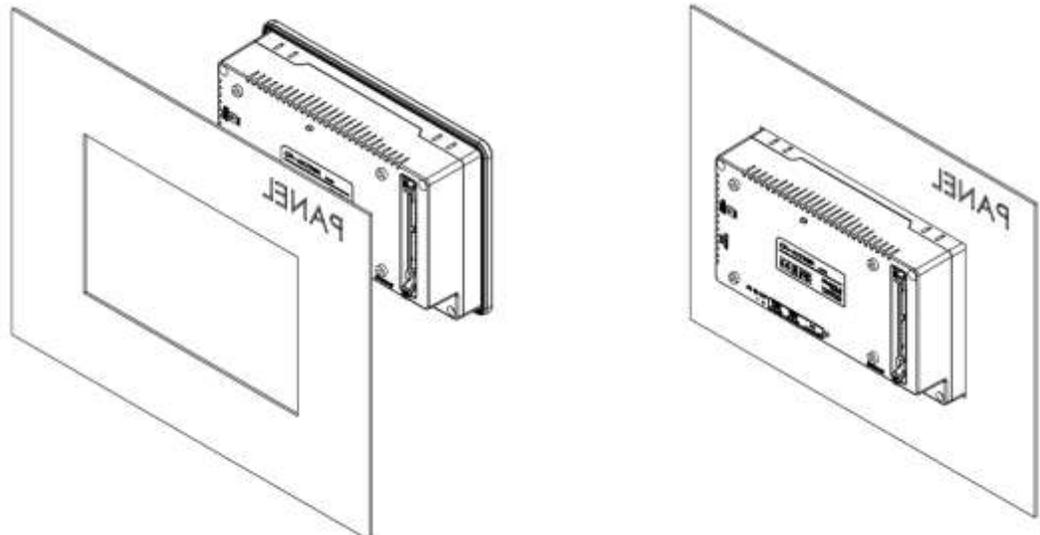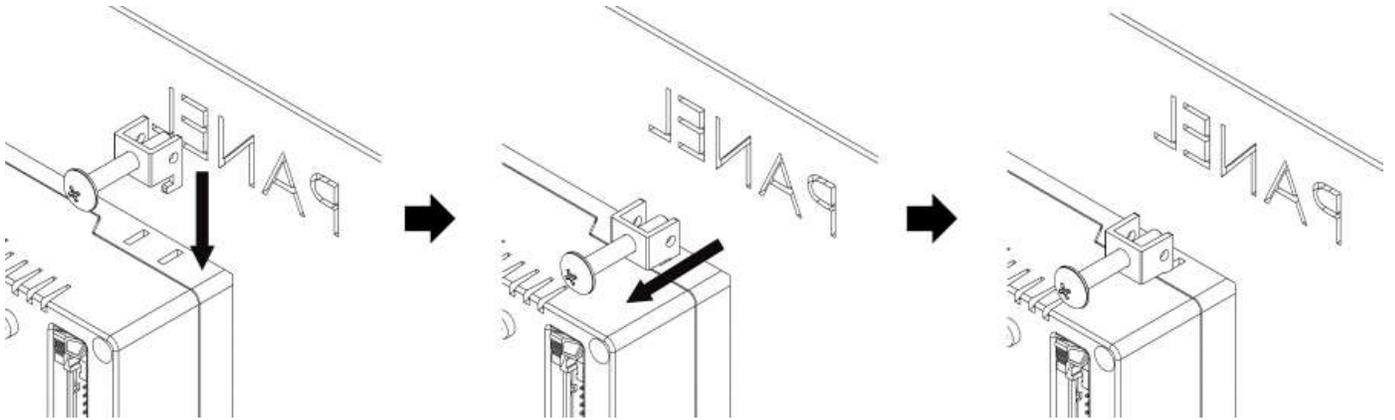
Mounting

Mounting brackets are included with the purchase of each HMI panel. (Do not separate the bolts and the brackets. Leave the bolts inserted into the brackets as show in the image to the right.)
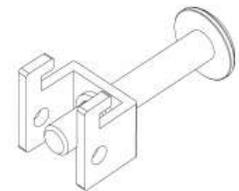
Prepare a panel cutout according to the HMI panel dimensions, and insert the HMI panel into the cutout.

Insert the brackets into the bracket mounting holes as shown below, pulling the brackets back to lock it into place.
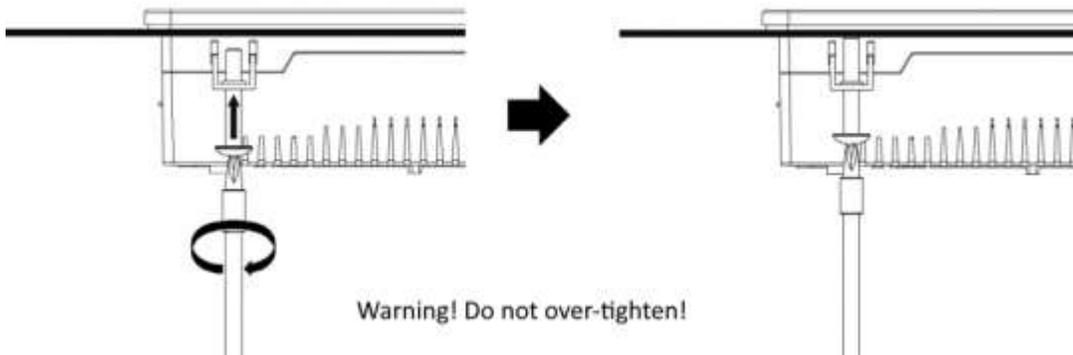
Tighten the bracket mounting bolts to secure the HMI panel.

The recommended torque is 0.4(N.m).

CAUTION!! Over-tightening the bolts can cause deformation and/or damage to the HMI or the enclosure.

Warning! Do not over-tighten!

Correct!

Incorrect!

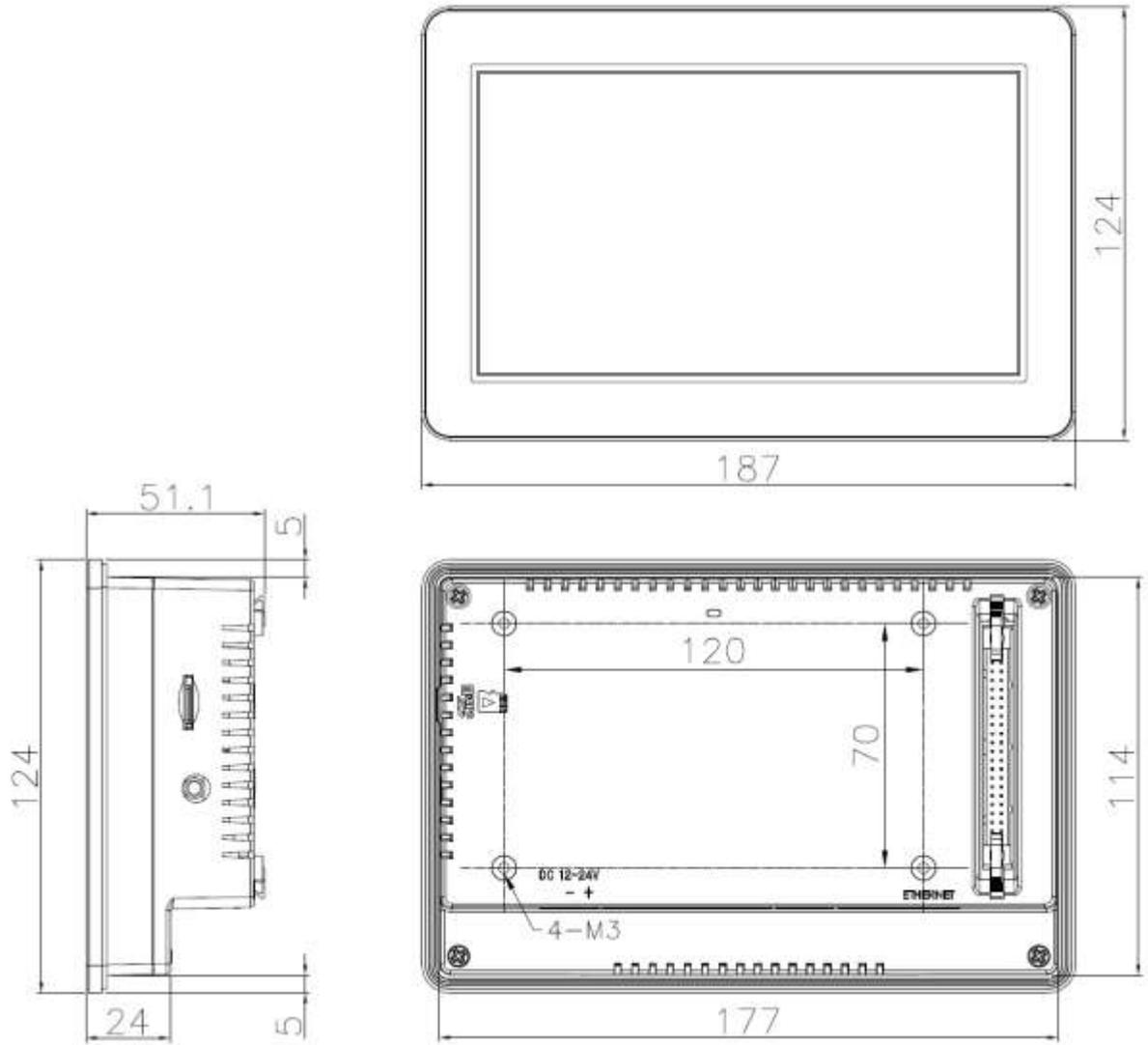Over-tightening may result in damage to the product and/or the panel.

Repeat for each bracket, and verify that the HMI panel is properly mounted and secured to the enclosure door.
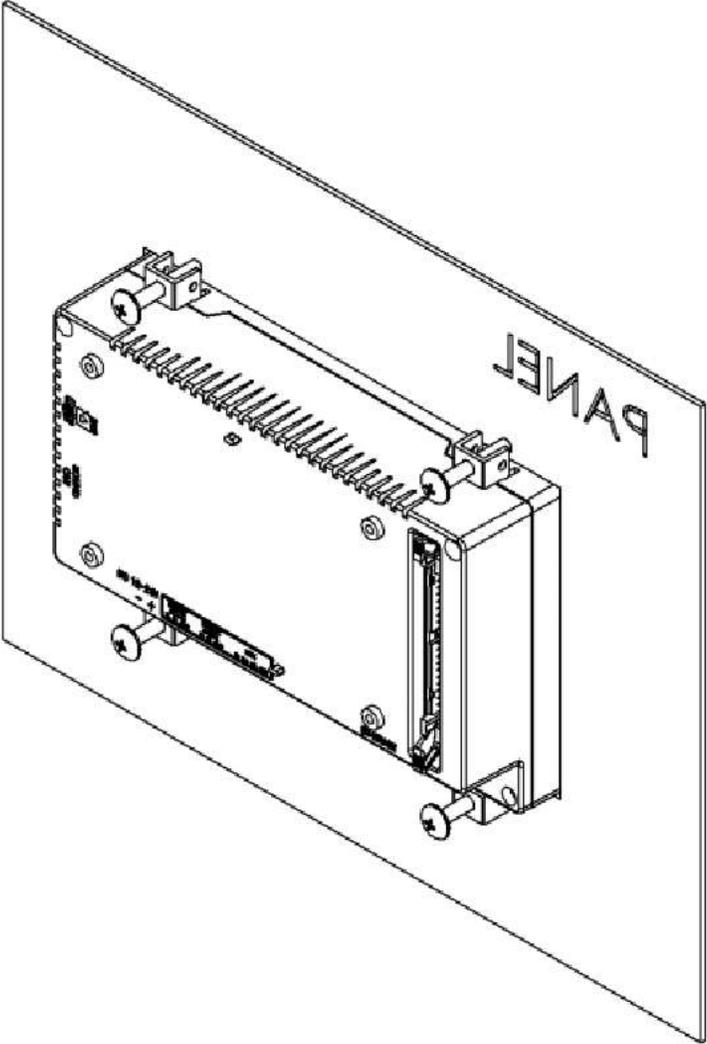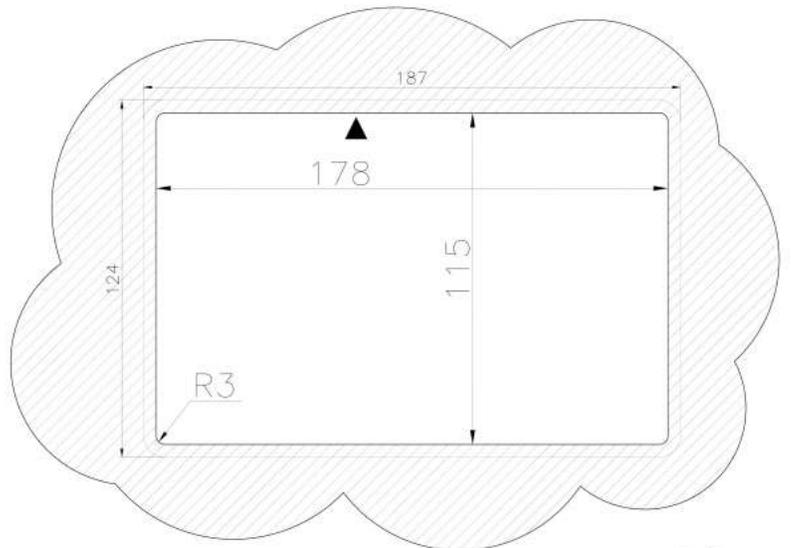

The HMI dimensions and recommended cut-out dimensions for the 7", 10" and 15" Viewpoint III HMI panels are shown in the figures on the next few pages.

93-2207 7" HMI Panel Dimensions (mm)
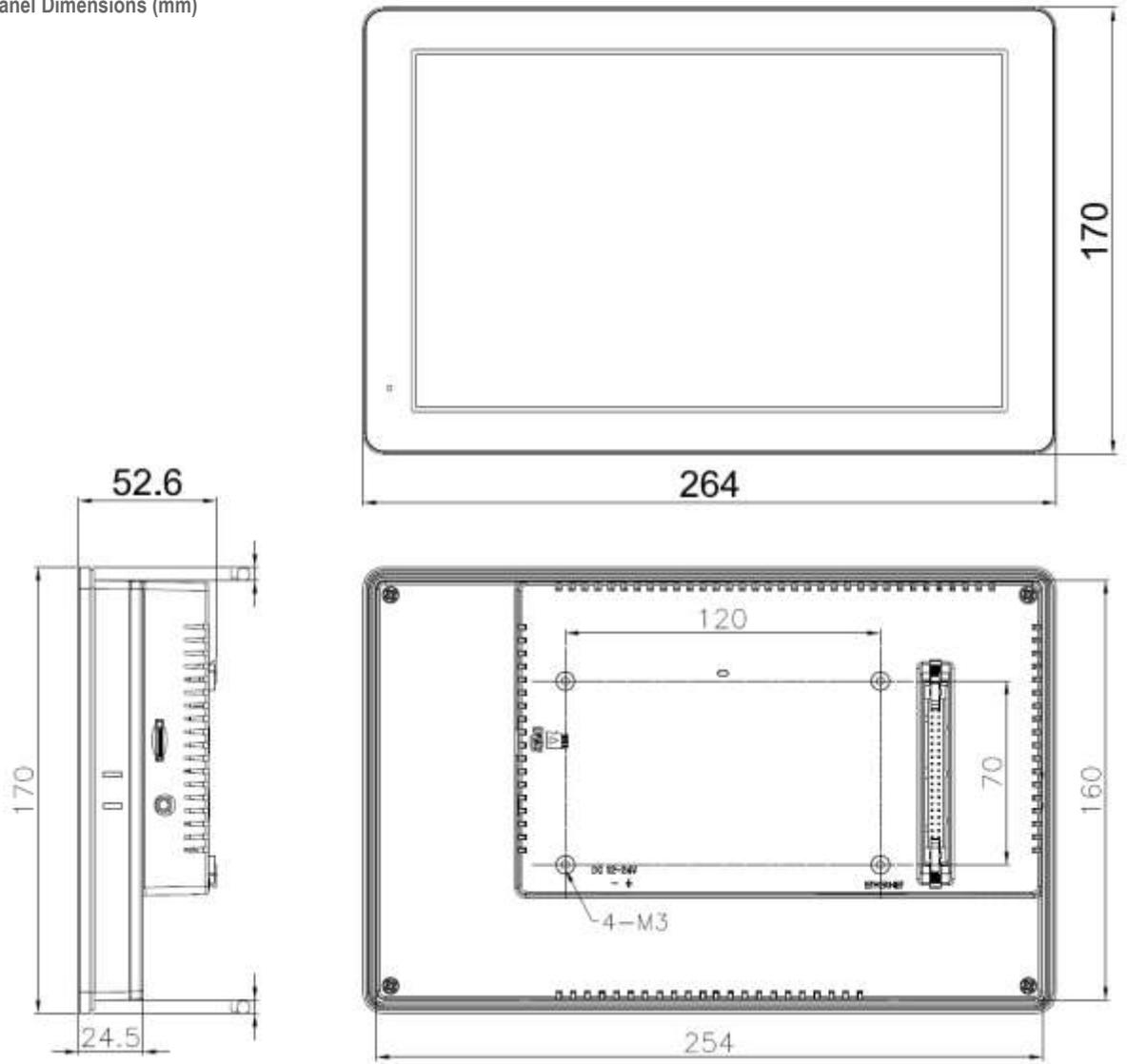

93-2207 7" HMI Panel Cutout Dimensions (mm)
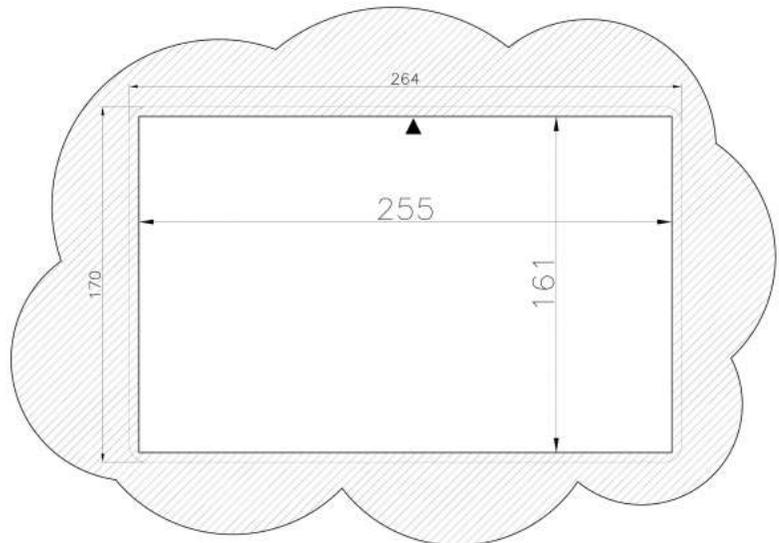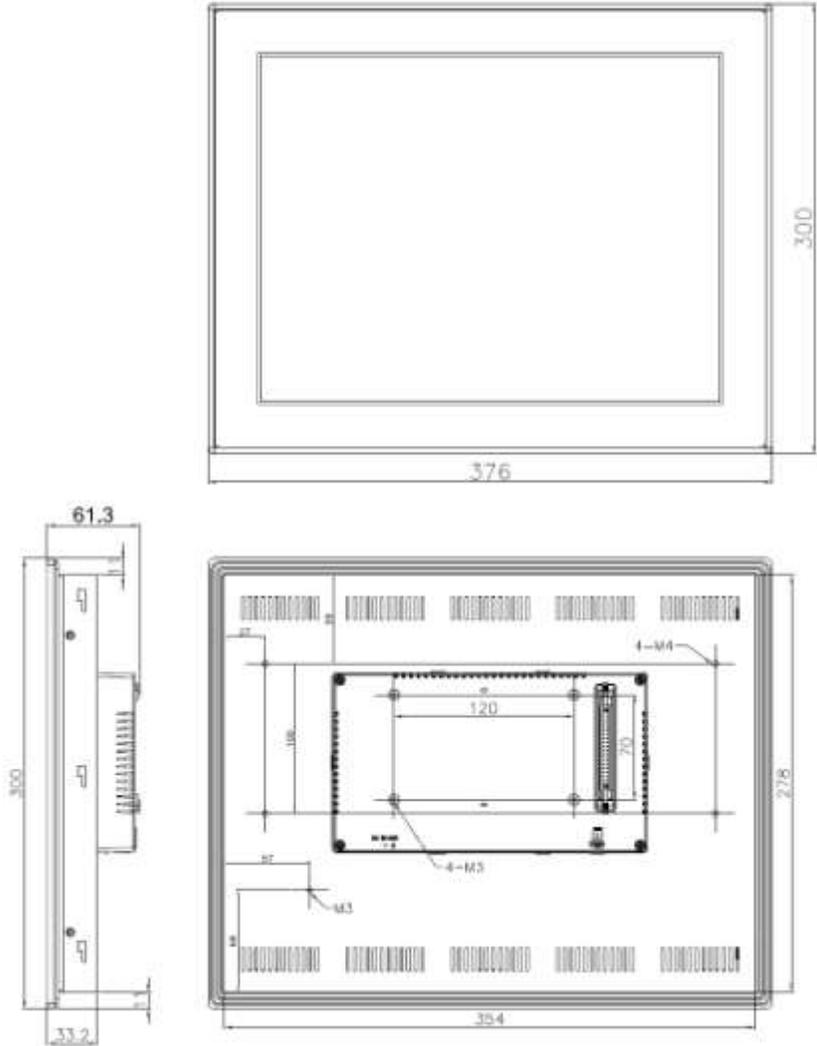

Unit: mm

93-2210 **10" HMI Panel Dimensions (mm)**

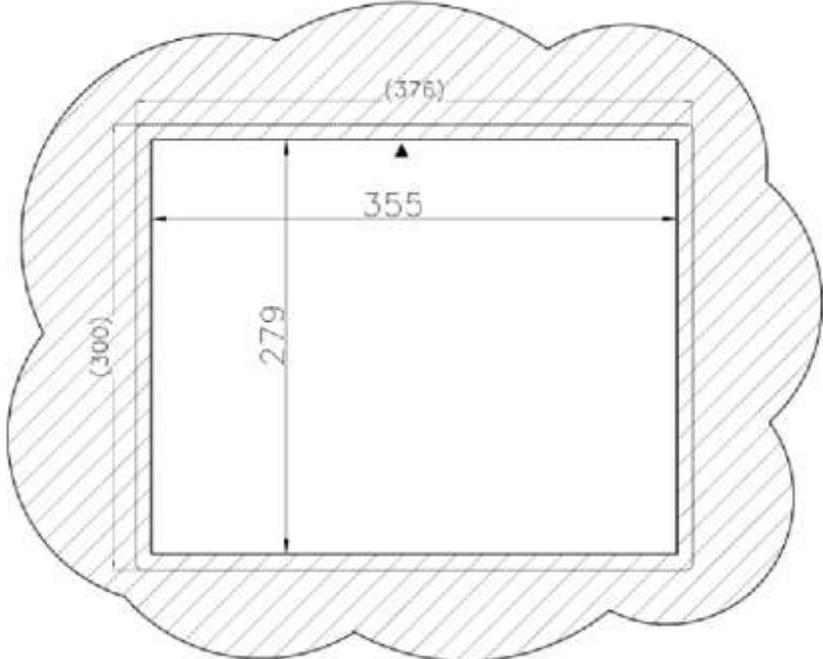**93-2210** **10" HMI Panel Cutout Dimensions (mm)**.

Unit: mm

93-2215 **15" HMI Panel Dimensions (mm)**

**93-2215** **15" HMI Panel Cutout Dimensions (mm)**

Unit: mm

Configuration

This section described how to:

- Set the HMI panel IP address (or to set it to obtain one automatically from a DHCP server)
- Set the IP address of the controller that the panel is to access
- Setup the backlight control

For configuration, you will need a USB keyboard and mouse. Almost any USB keyboard and mouse will work, such as the ones supplied with PC computers. Simple plug them into any USB port on the back of the unit.

To configure the HMI panel, you will first need to power the unit up with a 12 to 24 VDC power supply. The power connector is a 3-terminal plug on the bottom of the "hump" on the back of the panel (far left in the picture below). Only the right-hand two pins are used (left pin is a no-connect)
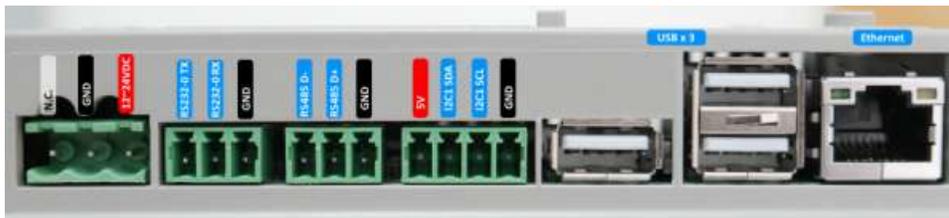
Configuring the Ethernet Port of the HMI Panel

By default, the HMI panel starts up in "kiosk mode" that hides the panel's "desktop" and uses the entire display area for the WUI web page. To make configuration changes such as setting an IP address, it will be necessary to bring up the desktop interface for configuration. To bring the HMI Panel display back to the desktop, see the Removing Kiosk Mode section below.

To configure the IP Address of the HMI panel, right click on the double arrow icon in the upper right hand corner:

Click on Wireless & Wired Network Settings…

Click on the far top right drop-down menu and select **eth0** then click on it again. You should see this dialog:

If you want the HMI panel to automatically obtain the network settings from a DHCP server on your network (the controller can act as such a server if enabled), then **check** the "Automatically configure empty options" and leave the "Disable IPv6" box checked.

If you want to manually set the network information (like the way that panel is shipped from the factory), you must:
- **uncheck** the "Automatically configure empty options"
- leave the "Disable IPv6" box checked.
- Enter the "IPv4 Address:" which needs to be a compatible address of the controller. For example, if your controller 192.168.237.199 (ICL default address) then this unit should be set to 192.168.237.xxx where xxx is any value from 1 to 254 (other than 199) **that is not being used by any other device on the network**. The other fields may be left blank if this is a local network only.

If there is an Internet Gateway then enter its address in the "Router:" field along with 2 valid DNS server addresses in the "DNS Servers:" and "DNS Search:" fields. A typical setup would look something like this using Google DNS servers:
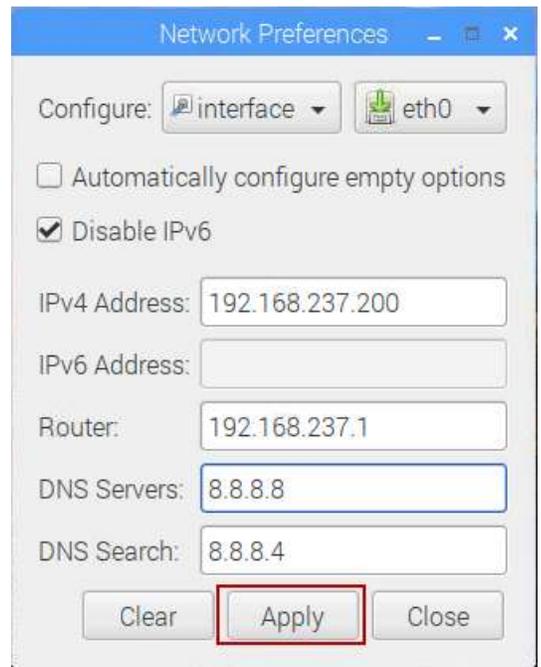
Click "Apply" then "Close".

Connect your Ethernet cable to the network or directly to the unit serving pages.

⚠️ **If on a network and if you have set an address manually, be sure that the address that you have used is different from any other device on the network before you plug in the network cable.**

Testing the Connection

With the HMI Panel connected to the controller (directly or via a network connection), open the Chromium Browser by double clicking here:

Set the browser as Default if prompted and enter the address of the unit serving pages. A typical address would look something like:

http://192.168.237.199/wui if a Web User Interface is configured on the serving unit.

http://192.168.237.199/ if there is no Web User Interface currently configured.

This will test that the Display Panel has access to the unit.

Removing Kiosk Mode

As shipped from the factory, the HMI panel will come up in "kiosk mode" which uses the entire screen to show web pages (no browser address bar, etc.). In some cases, such as development, you may not wish for this mode to be enabled. To disable it, follow this procedure:

To bring the HMI panel back to the normal startup desktop, with a keyboard connected, hit the Start key (usually a small window looking key in the lower left of the keyboard that would open the Start menu on a Windows machine) and cursor to the airplane icon and hit enter to open the autostart file in the text editor. You will want to comment out or un-comment out lines in the file. Lines are commented out by adding a hash (pound sign) to the beginning of the line. To disable the kiosk mode, the file should look like this:

```
@lxpanel --profile LXDE-pi
@pcmanfm --desktop --profile LXDE-pi
@point-rpi

##### for kiosk mode comment out this line #####
@xscreensaver -no-splash

###### for kiosk mode comment in these lines ######
# @xset s off
# @xset -dpms
# @xset s noblank

##### for kiosk mode comment in this line and configure the target unit's ip address #####

# @/usr/bin/chromium-browser --kiosk --incognito --noerrdialogs --disable-infobars --app http://192.168.237.199/wui
```

Save the file and reboot the HMI panel to get the desktop configuration back again.

Enabling Kiosk Mode and Autostarting a Web Page

Once you have finished your screen development work, you may wish to enable kiosk mode so that end users do not see anything but the web interface. You will also most likely want to first web page of the user interface to come up automatically.

On the desktop (and in the Start menu) is an "Autostart" icon

Double click on the icon to bring up the text document. The editor works like notepad or any other text editor.

Scroll down to the line that says:
```
##### for kiosk mode comment out this line #####
```

Leave the lines above it alone as they are necessary for the user interface to work properly.

A comment is a pound character # at the beginning of a line.

Comment out the line following; it should look like:

```
# @xscreensaver –no-splash
```

Uncomment the following lines (remove the `#` front of them)

```
@xset s off
@xset -dpms
@xset s noblank
```

And finally uncomment and configure the line that says:

```
@/usr/bin/chromium-browser --kiosk --incognito --noerrdialogs --disable-infobars --app
http://192.168.237.199/wui
```

You will need to scroll right in the editor to see the entire line; you need to keep it as one line or it will not function. It is shown "wrapped" above.

Configure the http:// line for your unit's address and the page desired. The total file should look like this:

```
@lxpanel --profile LXDE-pi
@pcmanfm --desktop --profile LXDE-pi
@point-rpi

##### for kiosk mode comment out this line #####
# @xscreensaver -no-splash

###### for kiosk mode comment in these lines ######
@xset s off
@xset -dpms
@xset s noblank

##### for kiosk mode comment in this line and configure the target unit's ip address
#####

@/usr/bin/chromium-browser --kiosk --incognito --noerrdialogs --disable-infobars --app
http://192.168.237.199/wui
```

Keep in mind that the call to the Chromium Browser is all one line though it is shown in two lines here.

You may also which to set the "sudo backlightconfig 0" shown below to disable the backlight controller.

Restarting the unit will bring up the Chromium Browser in full screen mode with the http:// path specified.

Configuring the Back Light Screen Saver

The software on the Display Panel is configured to turn off its backlight display after 60 seconds by default. When the backlight of the Display Panel is off, nothing is shown on the screen. This is effectively a screen saver that greatly extends to life of the backlight hardware. The screen's backlight is turned back on when the Display Panel is touched.

To configure the Backlight time, open a terminal window here:

This will bring up a command prompt. At the command prompt, type in "sudo backlightconfig 120" and enter (without the quotes) to set the backlight timeout to two minutes.

To reconfigure the unit, you will need to reboot it. Type in "sudo reboot" and enter in the terminal window or click on the Start Button (berry) and click on "Shut Down…" and click the "Reboot" button in the Shutdown dialog.

If "sudo backlightconfig 0" is used, it will disable the backlight manager and the backlight will remain on full time regardless of touch screen activity.