EZ Series HMI Quick Start Guide

EZAutomation

EZAutomation.net

1-877-774-EASY (3279)

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Warnings

Programmable control devices such as the EZ7 Series HMI are not fail-safe devices and as such must not be used for stand-alone protection in any application.   Unless proper safeguards are used, unwanted start-ups could result in equipment damage or personal injury.   The operator must be made aware of this hazard and appropriate precautions must be taken. In addition, consideration must be given to the use of an emergency stop function that is independent of the EZ7 Series HMI.

The diagrams and examples in this user manual are included for illustrative purposes only. The manufacturer cannot assume responsibility or liability for actual use based on the diagrams and examples.

Trademarks

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EU Information

The EZ7 Series HMI is manufactured in compliance with European Union (EU) Directives and carries the CE mark. They been tested under CE Test Standard #EN55011, and is submitted for UL Certification. Products with CE marks perform their required functions safely and adhere to relevant standards as specified by EU directives provided they are used according to their intended purpose and that the instructions in this manual are adhered to. The protection provided by the equipment may be impaired if this equipment is not used in accordance with this manual. Only replacement parts supplied by AVG Automation or its agents should be used.

Technical Support

Consult Panel Editor Programming Software Help. You may also find answers to your questions in the operator interface section of our website @ flash.ezautomation.net. If you still need assistance, please call our technical support at 1-877-774-EASY or FAX us at 1-877-775-EASY.

SELV Circuits

All electrical circuits connected to the communications port receptacle are rated as Safety Extra Low Voltage (SELV).
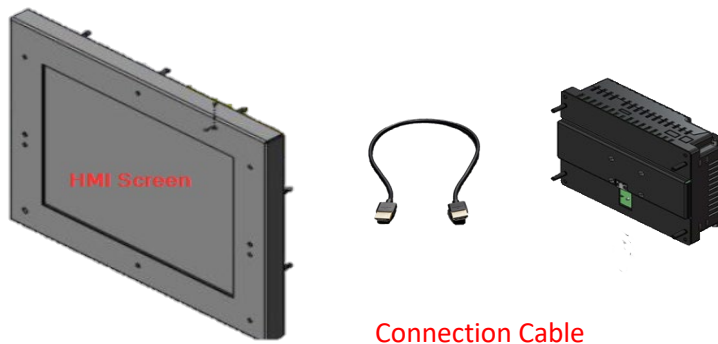
1 INTRODUCTION

Thank You for your interest in AVG Automation's latest unique offering, the **EZ7 Series HMI.**
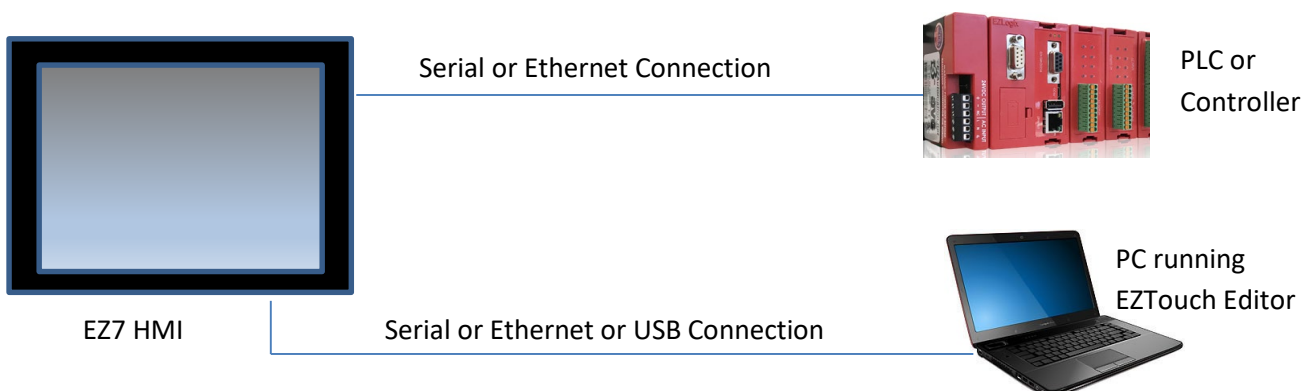
EZ7 HMI is two piece products: Front part consisting of display (and touch screen) housed in metal, and a back part that has HMI processor. Front part is installed on the front of the control cabinet, while the back part is installed on the back of the control cabinet door. The two are connected using a cable.

This construction has following benefits:

- No large cutouts for the HMI, only drill holes for the studs, and a hold for cable
- Easily replace worn-out touch screens instead of changing whole unit
- If required, upgrade to larger display sizes without need to change the back.
- Use the same EZTouch editor that is used for other EZTouch families of HMI
- Support for a variety of PLC Protocols including DH+ and Remote I/O

Connection Cable

1.1 SYSTEM DIAGRAM

Serial or Ethernet Connection

PLC or Controller

PC running EZTouch Editor

EZ7 HMI

Serial or Ethernet or USB Connection

2 PART NUMBERS

EZ7 is available in 7, 8, 12, and 15 inch display sizes:

EZ7DT-T7C-EE	EZ7 7" Inch HMI
EZ7DT-T8C-EE	EZ7 8" Inch HMI
EZ7DT-T10C-EE	EZ7 10" Inch HMI
EZ7DT-T12C-EE	EZ7 12" Inch HMI

Above units with DH+ Option

EZ7DT-T7C-EEH	EZ7 7" Inch HMI, with DH+
EZ7DT-T8C-EEH	EZ7 8" Inch HMI, with DH+
EZ7DT-T10C-EEH	EZ7 10" Inch HMI, with DH+
EZ7DT-T12C-EEH	EZ7 12" Inch HMI, with DH+

Programming software and cable

EZPANEL-EDIT	HMI Editor runs on windows 7 or higher (common to all EZTouch models)
EZ-PGMCBL	Serial cable for PC to HMI connection

Replacement Part numbers

Back only

EZ7DT-BACK	EZ7 Back (HMI Processor unit)

Front (Displays including Touch screen)

EZ7DT-T7C-FR	EZ7 7" Inch Display Only
EZ7DT-T8C-FR	EZ7 8" Inch Display Only
EZ7DT-T10C-FR	EZ7 10" Inch Display Only
EZ7DT-T12C-FR	EZ7 12" Inch Display Only

Cable

EZ7DT-CBL-012	Cable between Front and back of EZ7, 12"

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3 SPECIFICATIONS

General

INPUT POWER
    Voltage: 24 VDC nominal (20-28VDC)
    Max. Power Consumption: 15 Watts
ENVIRONMENTAL
    Operating Temperature: -10°C to 60°C
    Storage Temperature: -20°C to 70°C
    Humidity: 10-95% Non-Condensing
    Atmospheric Conditions: Non-corrosive gases
    Vibration: 5 to 55Hz, 2g for 2 hours in X, Y, and Z axis
    Shock: 10g for under 12ms in the X, Y, and Z axis
    Electrical Noise: Nema ICS 2-230 Showering arc, ANSI C37.90a SWC; Level C Chattering Relay Test
    Withstand Voltage: 1000VDC (1 minute) between power supply input terminal and protective ground)
    Insulation Resistance: Over 20 MΩ between power supply input terminal and protective ground

Processor Unit (Back Unit)
(Common unit for all supported display sizes)

Number of Screens: Up to 999 limited by memory
Real Time Clock: Yes
Screen Saver: Yes
Battery: ?????
Dimensions
    Installed 7.42" x 5.52" x 2.47"
COMMUNICATIONS
    Serial Ports: 2
    COMPUTER port: 9 Pin D-Sub RS-232 port, usually used for programming
    PLC port: 15 Pin D-Sub, RS-232/422/485, usually used for serial PLC connection

Ethernet Port: 100 MB, RJ 45, used for programming as well as to communicate with PLCs
USB Ports: 2
Host: Type A connector for USB Flash drives
Device: Type B Connector for programming

PLC Protocols Supported:
    Serial/Ethernet Drivers for many popular PLC protocols

Display (Front) Specifications

Touch Screen: Analog Resistive
Mounting: Stud mount
Enclosure: Nema 4, 4x (indoor)
Backlight: White LED
Brightness/Life: 400 nits/75,000 hours

Installed Dimensions
T7C Unit
    Size: 7", 800x480 pixel
    Dimensions: 8.66x5.91x0.78"
T8C Unit
    Size: 8", 800x600 pixel
    Dimensions: 10.62x8.52x0.78"
T10C Unit
    Size: 10", 800x600 pixel
    Dimensions: 12.00x9.50x0.78"
T12C Unit
    Size: 12", 800x600 pixel
    Dimensions: 13.19x10.63x0.97"

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4 INSTALLATION

4.1 GUIDELINES

Safety Considerations

Please follow all applicable local and national codes to ensure maximum safety of the equipment and personnel. The installation and operational environment must be maintained per the latest revision of these codes.

You are responsible to determine the codes to be followed and to verify the compliance of equipment, installation, and operation with the latest revision of these codes.

It is an absolute must to follow all applicable sections of:

- The National Fire Code
- The National Electrical Code (NEC)
- The National Electrical Manufacturer's Association (NEMA) codes

Safety Guidelines

Safety is the most important element of a proper system installation. Adhering to these safety considerations ensures the safety of yourself and others, as well as the condition of your equipment. We recommend reviewing the following safety guidelines:

1) *Disconnecting Main Power*
   The main power switch should be easily accessible to the operators and maintenance personnel. It is important to make sure that all other sources of power including pneumatic and hydraulic are de-energized before starting the work on a machine or process controlled by an EZ EZ7 Series HMI.

2) *Safety Circuits*
   Most of the machines are installed with safety circuits such as limit switches, emergency stop push buttons, and interlocks. These circuits should always be hardwired directly to the EZ7 Series HMI. These devices must be wired in series so that when any one device opens, the PLC is automatically de-energized. This removes power to the machine. These circuits should not be altered in any case, since this could result in serious injury or damage to the machine.

3) *Fail-Safe Operation*
   Our products are not fault-tolerant. They are not designed or intended for use as online control equipment in hazardous environments requiring fail-safe performance, such as in operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life-support machines, weapons systems, clutch control systems on presses, in which the failure of the product could lead directly to death, personal injury or severe physical or environmental damage. External fail-safe and/or redundant components are required to make your control system fail-safe.

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Installation Considerations

Our products have been designed and tested for operation in the most demanding industrial environments. Modern solid-state industrial controls are complex electronic equipment that operate at low levels of voltage and current, co-existing with components that operate at much higher levels of power. The difference in operating power characteristics between the high and low power control devices creates the possibility of unwanted signals being generated, thus causing interference. The interference, which is a by-product of electrical noise, is not present at all times. However, if it appears at random and for brief periods of time, it can cause disruptions and errors in the operation of a control system.

Enhancement of a system's noise level immunity and its tolerance to other environmental hazards can be accomplished by following proper system installation guidelines. The recommendations are of a general nature and constitute good industrial installation practice.

General Environmental Considerations

Avoid installing EZ7 Series HMI in areas where the following conditions may exist:

- Environmental temperatures above or below those specified by the EZ7 Series HMI
- Prolonged exposure to humidity and liquids which may be sprayed or splashed on the equipment
- Dusty environments where airborne particles may accumulate on equipment causing reduction of heat dissipation and reduction in effective electrical spacing between components
- Areas with excessive vibration
- Areas with high-radiated electrical noise, such as near fields of transmitting antennas and areas in close proximity of arc welding stations

Physical Layout in a Control Cabinet

When possible, cabinets housing electronic equipment should be designed with provisions for natural or forced ventilation to facilitate heat dissipation. Observe the following rules for cabinet installation:

- Heat generating equipment (power supplies and other heat inducing components) should be installed toward the top of the cabinet. The lower space in the cabinet is cooler than the top area.
- Install heat-sensitive components in the lower section.
- Provide enough space between components to allow a free flow of air for better heat dissipation.

- Provide the maximum possible physical separation between solid state and electromechanical controls. If possible, the electromechanical controls (motors, starters, solenoids, etc.) should be housed separately or at the farthest point when enclosed within the cabinet.
- We recommend that the EZ7 Series HMI have a minimum clear space of 2" on all sides for adequate ventilation as shown in the image on the left.
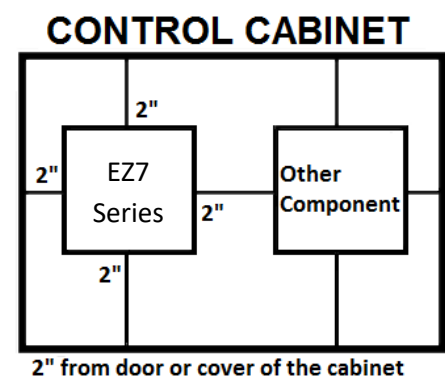
Electrical Considerations

This section is designed to provide you with a very basic understanding of electrical noise and how to keep it away from CPUs. Industrial plants have a number of generators of electrical noise that are sometimes also referred to as Radio Frequency Interference (RFI). Anytime an inductive load like a motor, motor starter, or solenoid is turned off, it generates a burst of excess energy that has to flow back to ground, just like electrical energy from a lightning storm has to flow back to Earth. RFI is short bursts of electrical energy at very high frequencies.   Other sources include RF Welders or Radio Transmitters.

Effect of RFI on Electronic Automation Equipment

Electronic controls use faster and faster CPUs today. These CPUs are also operating at 2.5V to 5VDC logic level power supply. RFI, if allowed to enter the CPU inside, is a killer of logic. A CPU under this environment loses its brain and behaves erratically. A smart industrial-grade CPU like the EZ7 Series HMI Card Engine, when faced with RFI, halts its operation instead of giving false outputs.

Types of RFI

RFI enters electronic controls in two ways: radiated RFI or conducted RFI. For most practical purposes, electronic devices, unless sitting right next to a powerful RFI transmitter, will not be affected by noise because air space severely attenuates such interference. On the other hand, conducted RFI travels over conductive surfaces such as power supply wires, electrical wiring of field devices, and worst of all; improper ground planes.

Equipment cabinets usually incorporate one or two doors and/or hinged cabinet panels. Relying on door hinges and swinging panels for a good metallic bond between hinged parts and the main body of the cabinet does not insure adequate grounding. Instead, the use of ground straps is recommended.   It is vital for the reliable operation of any electronic device to have any of its metallic surfaces well ground to Earth. This not only provides for safe operation, it will also drain out any conducted RFI to Earth, away from the CPU's signal ground.

Shielding from RFI

Shielded Cables

Power cables, I/O cables or wiring, and communication cables should all be separate so that they do not couple the conducted RFI on any of these wires/cables. Another path for RFI into the PLC is through its RS232 port. Hence, the cables to this port must be shielded properly.

Equipment Cabinets

As mentioned, equipment cabinets typically incorporate one or two doors and/or hinged cabinet panels. In addition, sub-panels may be utilized on those electronic controls and electromechanical items that are mounted.   The goal is to create a medium for mounting the equipment and ensure grounding of the control's chassis to it. However, the door hinges and swinging panels by themselves are not enough to ensure adequate grounding.

Similarly, the equipment enclosures are generally either painted or anodized. Mounting of painted or anodized enclosures to like surfaces also does not ensure good metallic contact between the equipment chassis and cabinet. It is imperative that the equipment chassis are grounded such as through the use of grounding straps as illustrated below.

Cabinet Door Grounding Straps
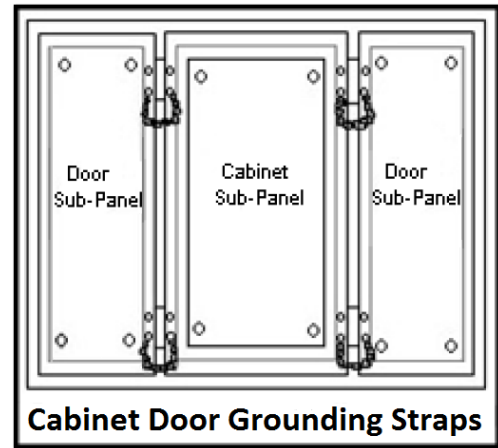
Cabinet Wiring

The wiring of the EZ7 Series HMI to the "field" outside the cabinet must be by design. The wiring cannot be random in order to get the various points of the cabinet and the "field" electrically connected. Below are some general rules that apply in most situations:

Provide a separate power source to electronic controls and keep this power bus away from any I/O power.

The cabinet should be wired with a safety ground (the main safety ground wire gauge is determined by the cabinet's total current consumption) and in accordance with all electrical code requirements.

Once the cabinet doors, stationary sub-panels and swing-out sub-panels have been "strapped" to the main cabinet, it is not necessary to run safety ground wires from the equipment chassis terminals to the main safety ground connection.

The safety ground terminal of each component can, and should be, connected with the shortest wire possible, to the cabinet or sub-panel frame.

Plan the wiring routing. Keep all switched power in separate ducts and if there is AC and DC power being switched, keep the wiring of each branch separate from all wires and cables carrying low level signals.

Keep all three phase power outside of the cabinet, but if it becomes necessary, keep the runs as short as possible and maintain the maximum possible distance between the three phase bus and all other wiring.

Primary power leads to the control equipment (Base power terminals) should be made with a two wire twisted cable with approximately 12 turns per foot. The length of these cables should be kept to a minimum, and to the greatest extent possible, such cable runs should be kept separate from other wiring.

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4.2 DIMENSIONAL DRAWINGS
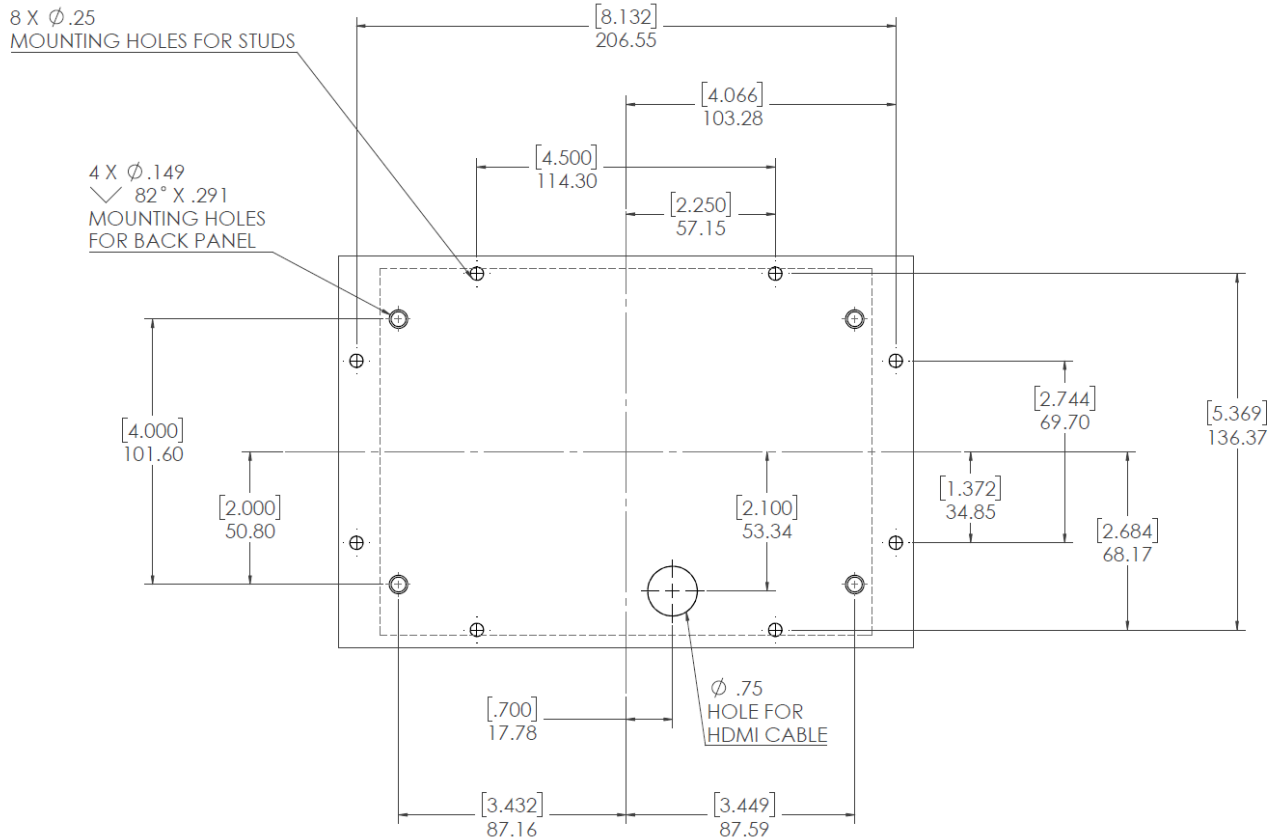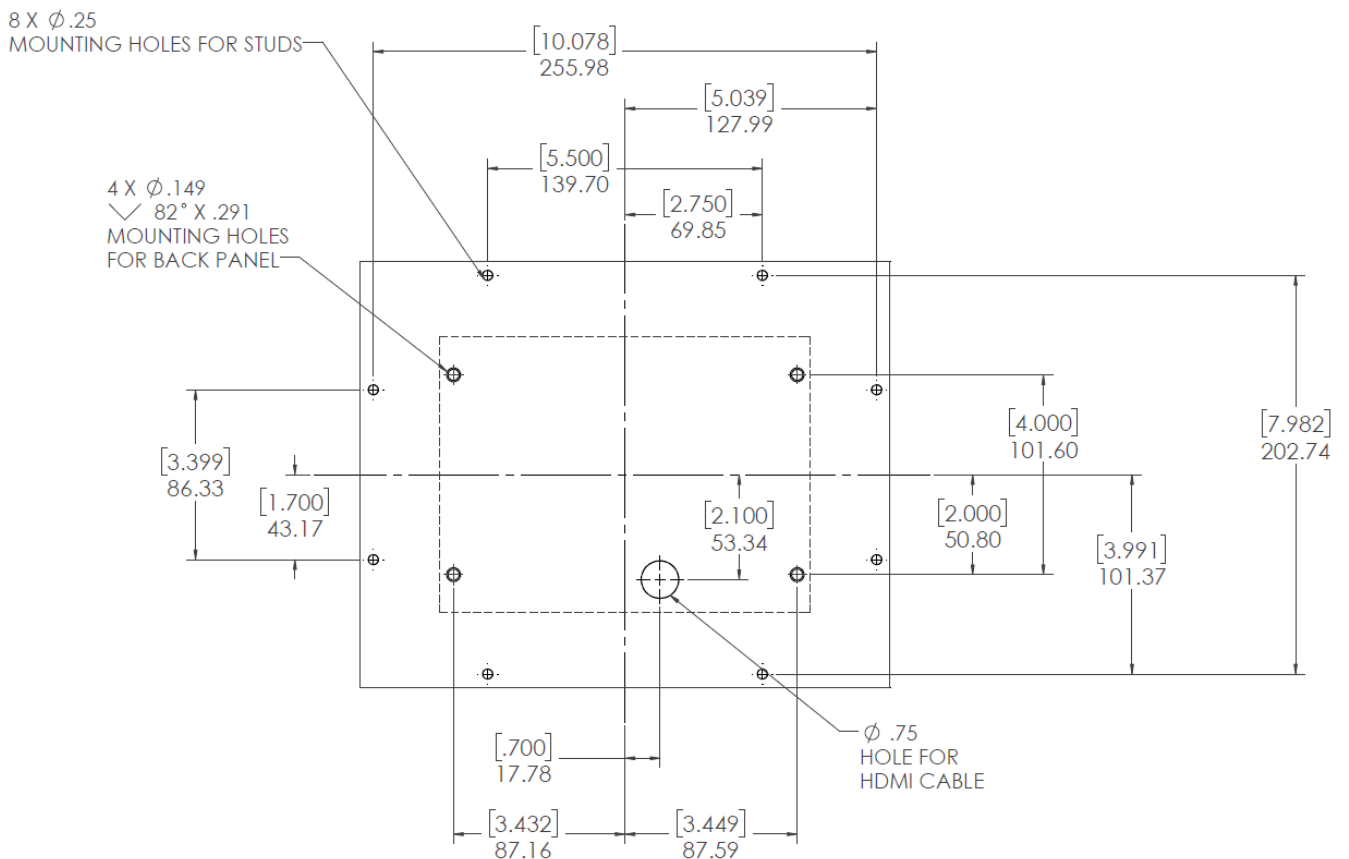
4.2.1 Overall Dimensions
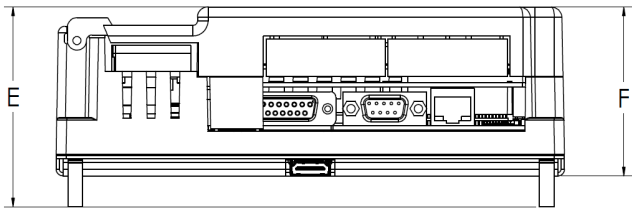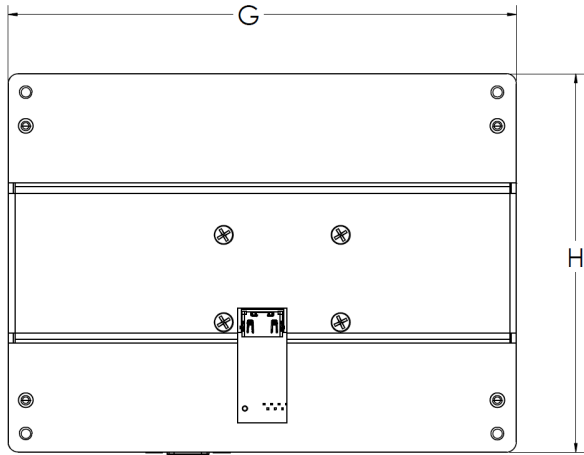
PREOCESSOR SIDE
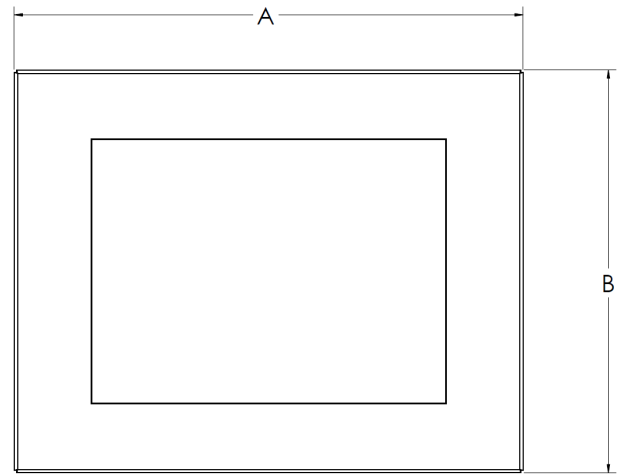
DISPLAY SIDE

UNIT SIZE	E	F	G	H
7, 8, 10, 12 INCH	2.92 [74.2]	2.47 [62.7]	7.42 [188.5]	5.52 [140.2]

UNIT SIZE	A	B	C	D
7 INCH	8.66 [220.0]	5.91 [150.1]	.78 [19.8]	1.36 [34.5]
8 INCH	10.62 [269.7]	8.52 [216.4]	.78 [19.8]	1.36 [34.5]
10 INCH	12.00 [304.8]	9.50 [241.3]	.78 [19.8]	1.36 [34.5]
12 INCH	13.19 [335.0]	10.63 [270.0]	.97 [24.6]	1.55 [39.4]

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4.2.2 T7C (7" Display) Mounting dimensions

8 X Ø .25
MOUNTING HOLES FOR STUDS

4 X Ø .149
⌵ 82° X .291
MOUNTING HOLES
FOR BACK PANEL

[8.132]
206.55

[4.066]
103.28

[4.500]
114.30

[2.250]
57.15

[2.744]
69.70

[5.369]
136.37

[4.000]
101.60

[2.000]
50.80

[1.372]
34.85

[2.100]
53.34

[2.684]
68.17

[.700]
17.78

Ø .75
HOLE FOR
HDMI CABLE

[3.432]
87.16

[3.449]
87.59

4.2.3 T8C (8" Display) Mounting dimensions

8 X Ø .25
MOUNTING HOLES FOR STUDS

4 X Ø .149
⌵ 82° X .291
MOUNTING HOLES
FOR BACK PANEL

[10.078]
255.98

[5.039]
127.99

[5.500]
139.70

[2.750]
69.85

[3.399]
86.33

[1.700]
43.17

[4.000]
101.60

[2.000]
50.80

[7.982]
202.74

[2.100]
53.34

[3.991]
101.37

[.700]
17.78

Ø .75
HOLE FOR
HDMI CABLE

[3.432]
87.16

[3.449]
87.59

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4.2.4 T10C (10" Display) Mounting dimensions

10 X Ø.25
MOUNTING HOLES FOR STUDS

4 X Ø.149
⌵ 82° X .291
MOUNTING HOLES
FOR BACK PANEL

[11.464] 291.19
[5.732] 145.59
[8.000] 203.20
[4.000] 101.60
[4.000] 101.60
[8.964] 227.69
[2.100] 53.34
[2.000] 50.80
[4.482] 113.84
[.700] 17.78
[3.432] 87.16
[3.449] 87.59

Ø .75
HOLE FOR
HDMI CABLE
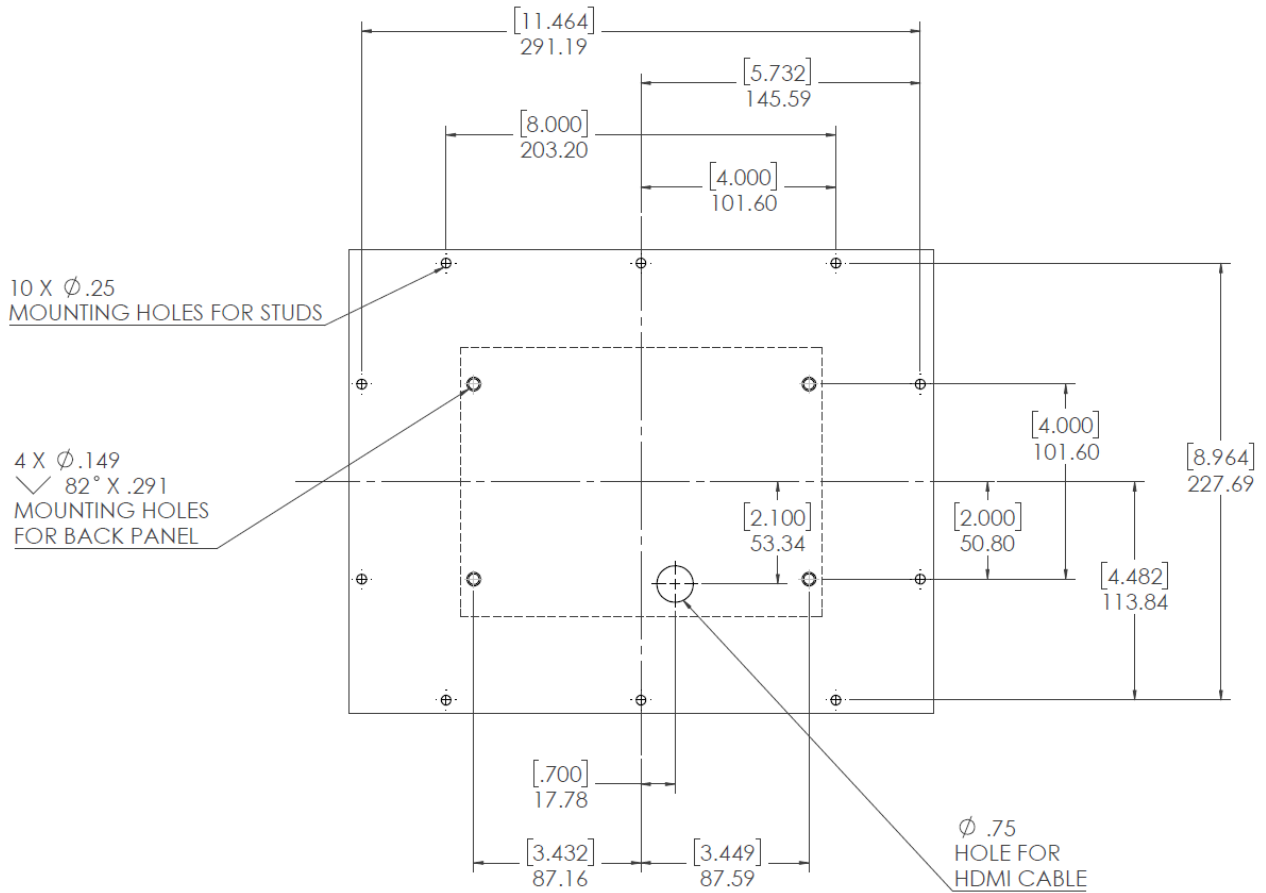
4.2.5 T12C (12" Display) Mounting dimensions

10 X Ø.25
MOUNTING HOLES FOR STUDS

4 X Ø.149
⌵ 82° X .291
MOUNTING HOLES
FOR BACK PANEL

[12.652] 321.36
[6.326] 160.68
[8.000] 203.20
[4.000] 101.60
[4.000] 101.60
[10.094] 256.39
[2.100] 53.34
[2.000] 50.80
[5.047] 128.19
[.700] 17.78
[3.432] 87.16
[3.449] 87.59

Ø .75
HOLE FOR
HDMI CABLE

EZAutomation
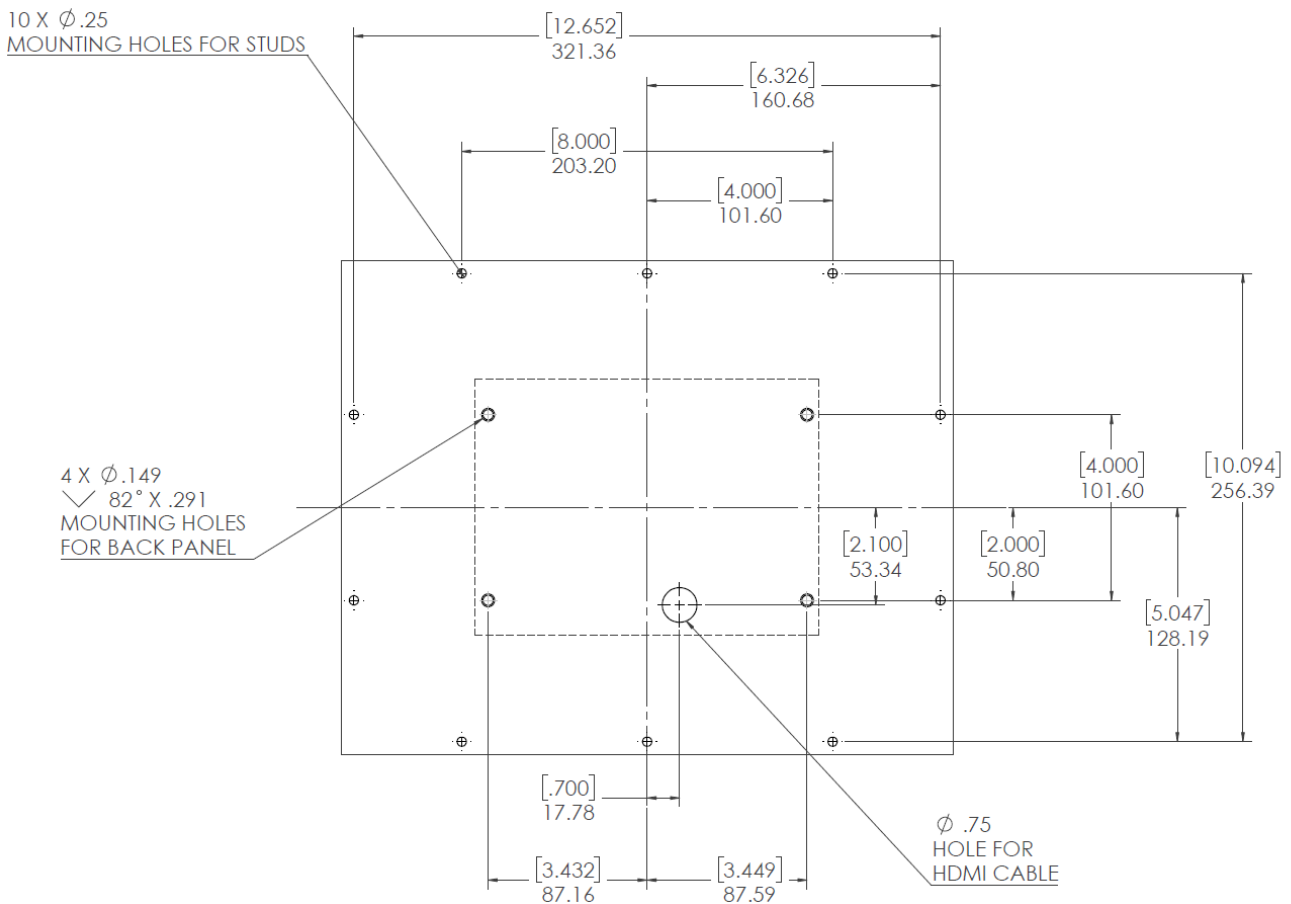
4.3 MOUNTING INSTRUCTIONS

EZ7 comes in two parts:

1. HMI Processor Unit, mounted using 4 studs on backside of the control cabinet door
2. Display Unit, mounted on studs (number of studs depends on size).

A cable connects the two parts, which passes through a ¾" hole in the cabinet door.

To mount the unit, in summary:

- Mark location of all holes
- Drill holes for the back and front unit mounting studs. (Please note that the mounting holes for the back unit require countersink holes.
- Drill ¾" hole for the cable.
- Connect display cable to the back side and mount the back side
- Thread the display cable through ¾" cable hole to the other side.
- Connect cable to front side and mount the front unit.

These steps are described below with pictures:

The EZ7 is stud mounted. All the necessary mounting hardware is provided with the unit. Both the processor and the HMI screen have studs with nuts provided. Below is a full installation guide with step by step instructions.

1. Use the provided screen with screw hole indicators to drill holes in your control cabinet.
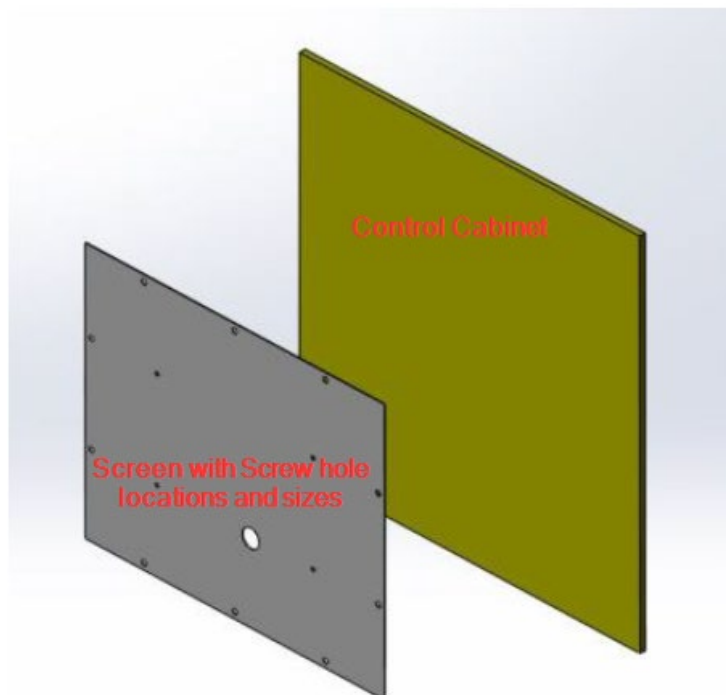
2. Once all the holes have been drilled in the cabinet. Take the Processor Box and plug in the provided HDMI cable into its connector port.
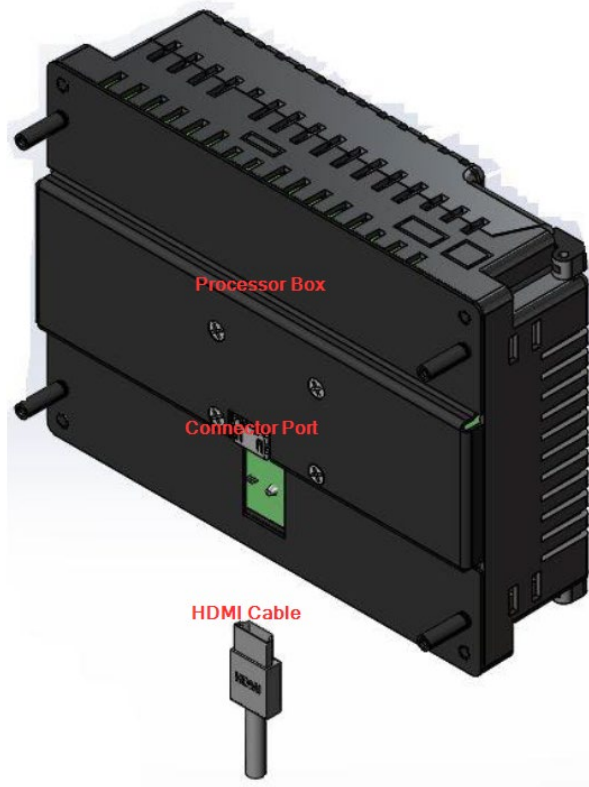
3. Then use the provided screws (*6-32 Philips Flat head ½" length. (X 4),Screw driver – Philips #2*) to install the Processor Box to the inside of the Control Cabinet. Also make sure that the HDMI cable is pulled through the large middle hole.
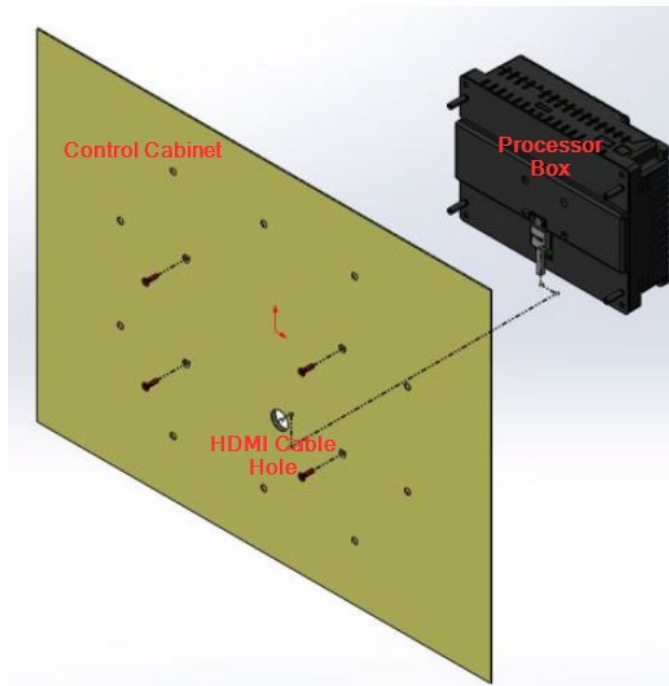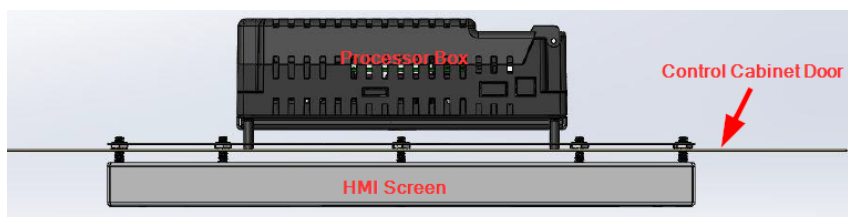
1) Now connect the HDMI cable to the HMI screen, make sure that the cable is pulled through the large middle hole.
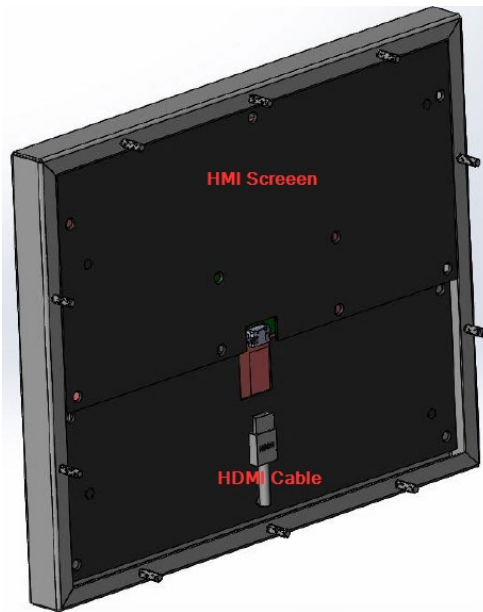
2) Now insert all studs through their respective holes, and use provided nuts (*Hex-head nut, size 10-32 requiring 3/8" nut driver/wrench*) to secure the front to the cabinet.
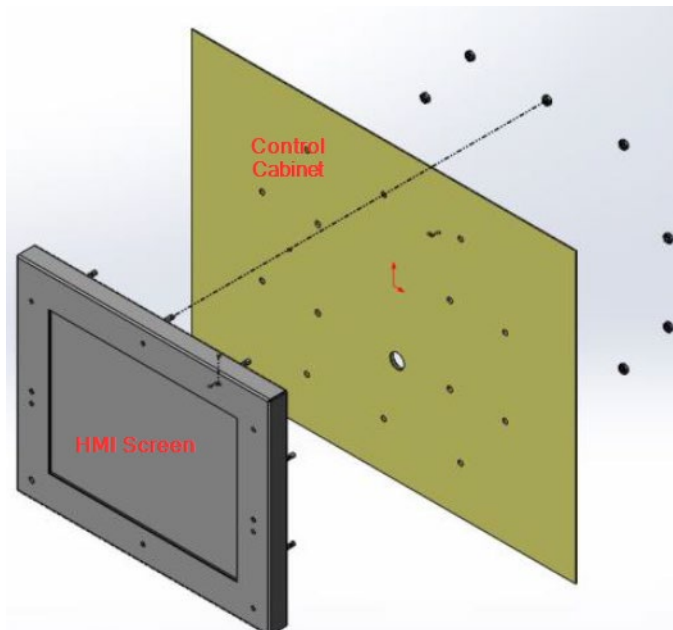
3) When looking from bottom or top the screen should look like the image below.

5 PORTS AND WIRING

3-Terminal Power Connector

| Power: 24 VDC	
1	Positive
2	Negative
3	Earth GND

Display Cable Connector *for connecting FRONT unit*

RJ45-Ethernet connector

Micro SD card Connector

**9 Pin D-Sub Serial Programming Port**

15 Pin D-Sub Serial RS232/422/485 PLC Port
Use it to connect PLCs serially. EZAutomation offers cables for most PLCs

Pin Number	Connection
1	Chassis GND
2	PLC TXD (RS-232C)
3	PLC RXD (RS-232C)
4	+5V (100Ω)
5	Logic GND
6	LE
7	PLC CTS (RS-232C)
8	PLC RTS (RS-232C)
9	RXD+ (RS-422A)
10	RXD- (RS-422A)
11	TXD+ (RS-422A)
12	TXD- (RS-422A)
13	Terminating Resistor (connect to pin 9)
14	NC
15	NC

PGMCBL: Programming Cable Wiring
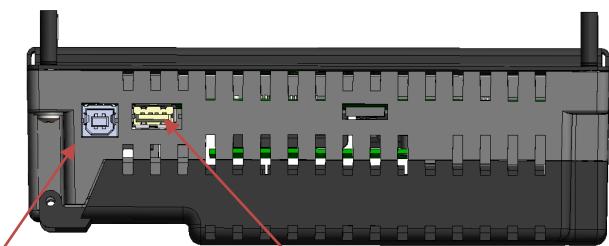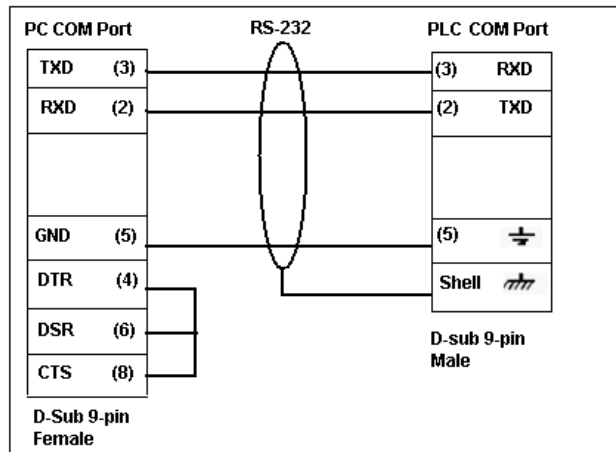
USB Type B for Programming

USB Type A for flash drives

Indicator Light at the backside of the unit	
Flashes Red, then continuously Green	Power connected, Normal Operation
Blinking Red / Continuously Red	Some Panel Issue has occurred. Please try a power cycle, if that does not fix the issue please contact Tech Support.
No Light	Power source not connected or inadequate

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6 QUICKSTART

System diagram shown in introduction is repeated here. As shown, EZTouch Editor is required to program EZ7. This is a common editor software for all EZTouch Families of panels.
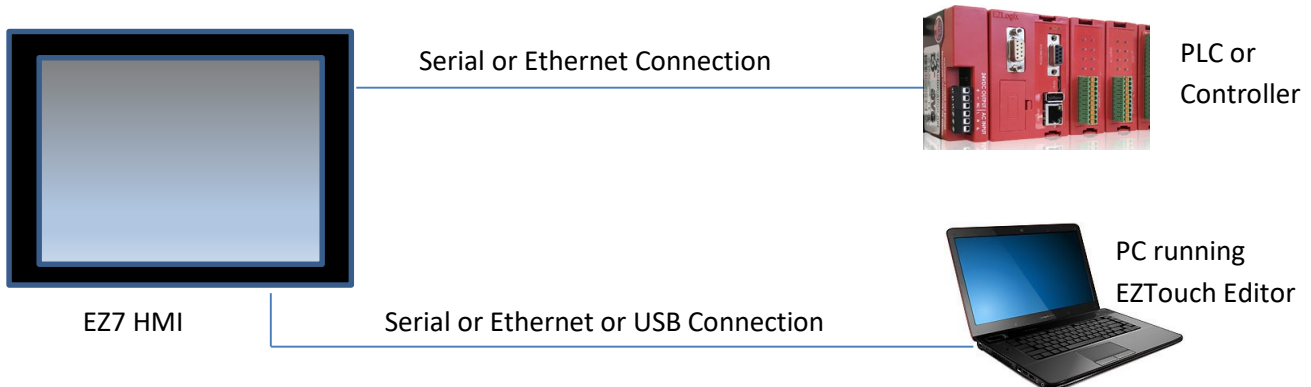
Pre-requisite- Make sure you have everything you need:

This is what you will need to get started:

- EZ7 HMI Unit
- A PC Running Windows 7 or Windows 10 with EZTouch Editor Programming Software* installed
- Proper cable to connect the PC to EZ7 Panel for project transfer and monitoring:
  - RS-232C Programming cable (P/N EZ-PGMCBL) (or make your own) *, and/or
  - USB Type A to Type B cable, and/or
  - Ethernet cable (*Ethernet IP must be setup before using Ethernet connection*)
- 24VDC Power Supply*
- Optionally, your plc and connecting cable

   These accessories have to be purchased separately

Follow these steps to get started:

1. Please connect power to the unit, and (optionally) connect your PLC.
2. If not already done, please Install EZTouch Editor on the PC. See below.
3. Run EZTouch Edit and start creating project
4. Transfer the project to the panel and start working with screens.

6.1 EZTOUCH EDITOR

If you already have EZTouch Editor installed, please ignore this section.

EZTouch Editor software is used to program all EZTouch Panels. This allows you to move projects from one family to another easily. If you don't have a copy of the editor, please acquire one. EZTouch Editor is distributed as a single setup file, typically names as **EZTouch Editor x.x.x (FULL).exe**, where x.x.x is version number of the software.

To install, just run the file, and follow on-screen instructions. For more information on the editor please refer to the help in software and the EZTouch Editor User Manual (download from website)

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6.2 CREATE A PROJECT

This section outlines the basics of creating a project using the **EZ-PANELEDIT** software. Further programming information for the EZ7 Series HMI is located in the **EZ Touch Editor Software Manual** and the **EZ PLC Software Manual.**

Launch your EZTouch Editor and select how you would like the program to link to the EZ7 Series HMI unit. For this scenario, you can select "Open / New Project". This will enable you to create a program without having the EZ7 Series HMI unit connected through the serial port or the Ethernet connection. This example will use the demonstration driver which does not require an external PLC.

Note: The steps outlined below are based on the EZTouch Editor version 2.0.13 and may vary slightly between versions.

4) Open the EZTouch Editor Software. You will see the Project Information screen, example below.
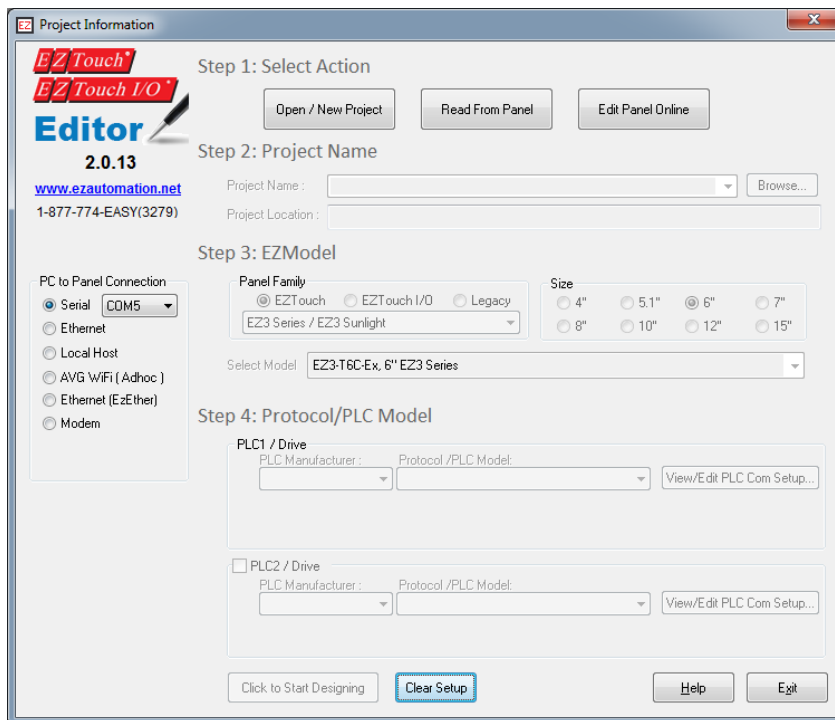
5) Click on Open / New Project then enter a project name (e.g. Test). Then press enter.

6) Next select EZTouch in the radio buttons below Panel Family. Then select EZ7 Series from the drop-down list. Then select the size of the panel you will use (7", 8", 10", 12")
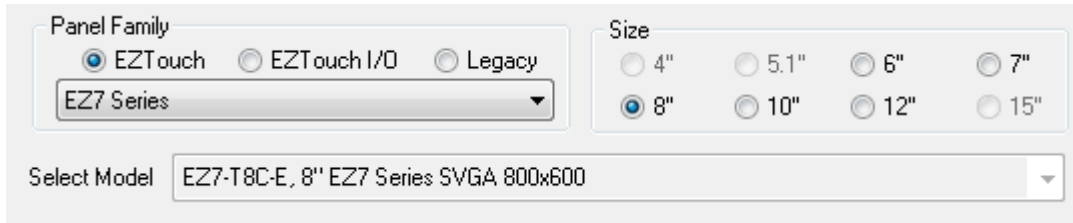
7) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.
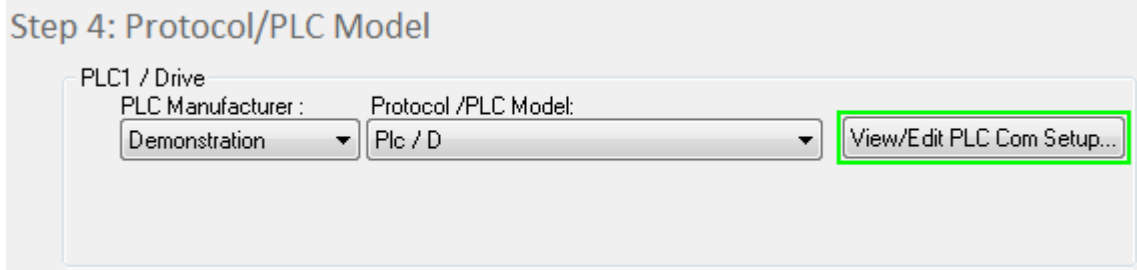
8) Click "Click to Start Designing" to launch the editing software program. The Main Project Window will then appear showing Panel sides to the program.
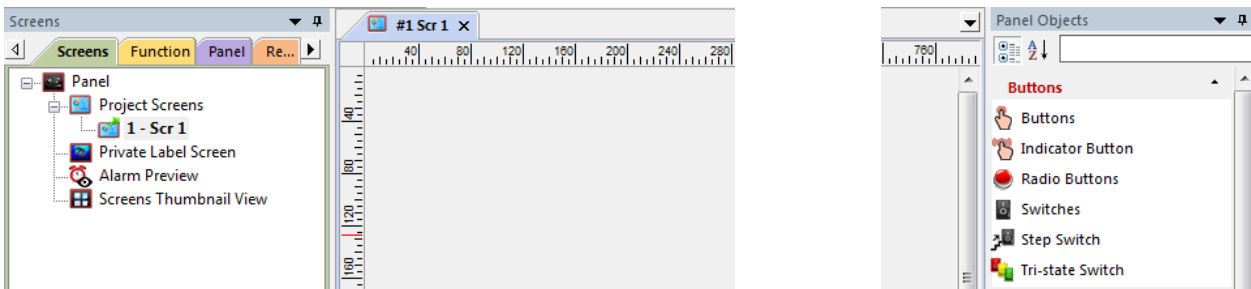
9) On the right side of the screen find Buttons and click on the icon.   The screen below will appear.   Enter **START** for Tag Name.   Click OK.
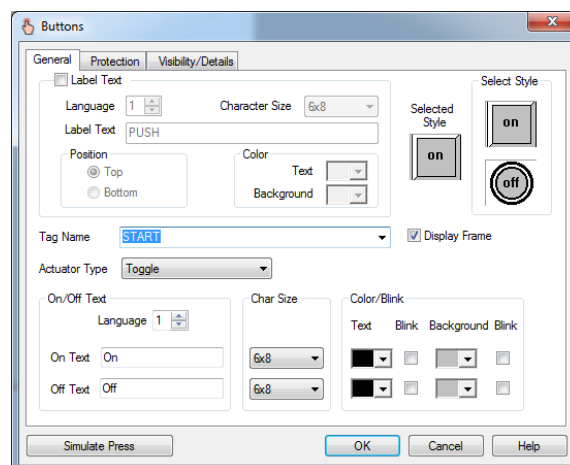
10) The "Add New Tag Details" screen will ask for tag address. Please enter R501/0 for the address. Then click OK. Note: All previous address are used and could cause unpredictable behavior.
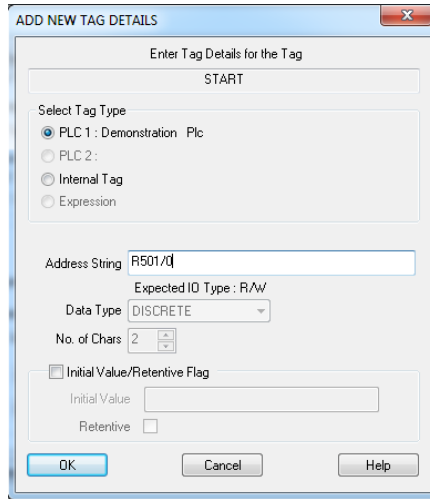
11) Click anywhere on the screen to place the Button object.   Double click the icon to open its object dialog box if you need to make any adjustments to the object's appearance or attributes.   Clicking "Simulates Press" will allow you to toggle between On and Off states.
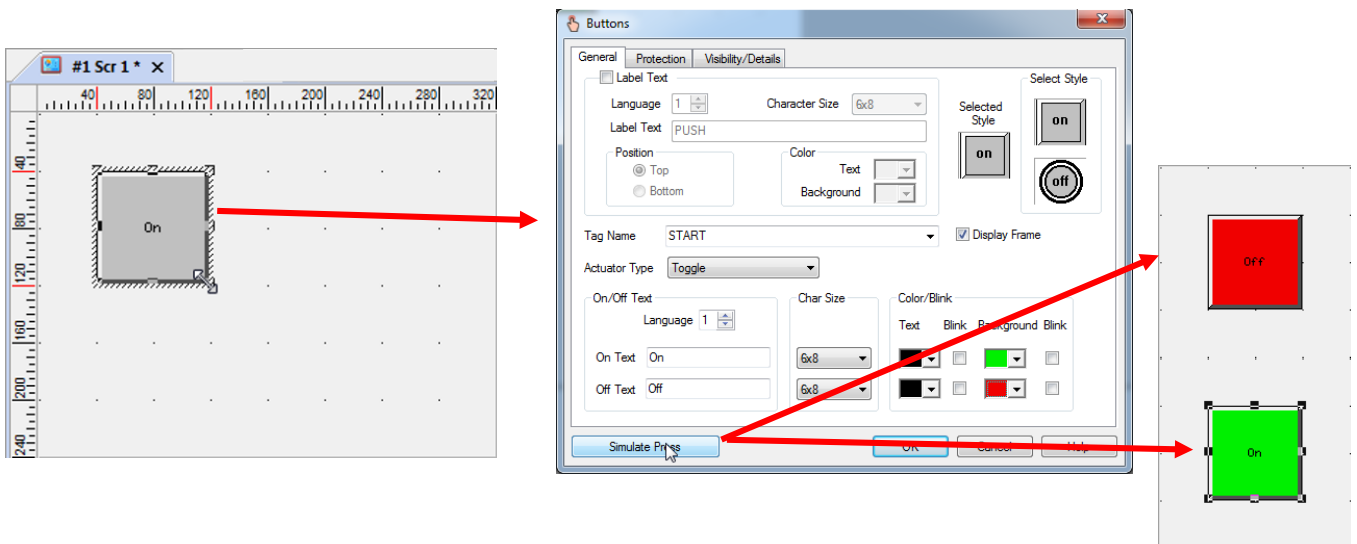

12) Similarly, you can create an Indicator Light Object by selecting **Objects > Buttons > Indicator Buttons**.   Enter **Start** for Tag Name.   Click OK. Place the object on the panel.   Your screen should look like the picture below.
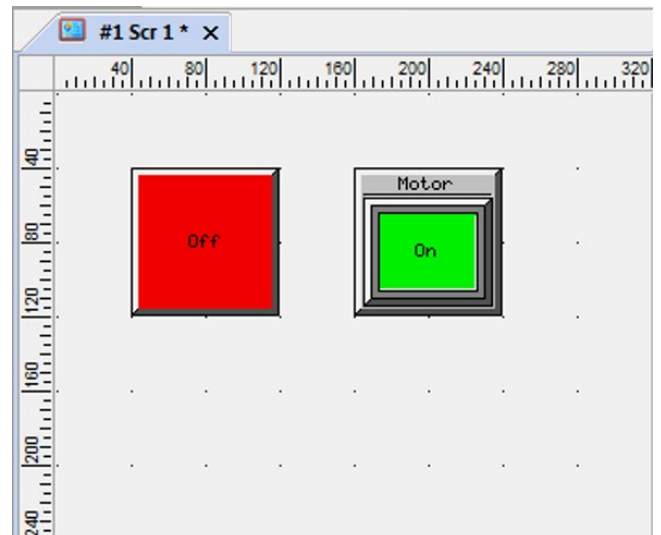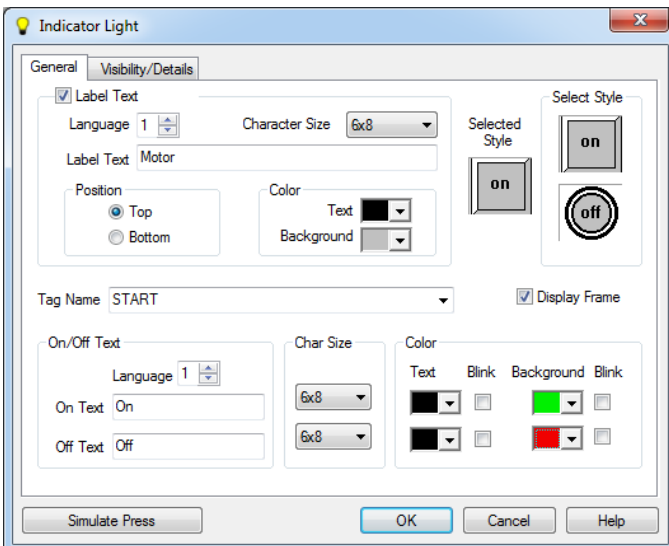
6.3 TRANSFER PROJECT

After a project is complete, the next step is to transfer the project to the HMI. When editing projects online, programming information is automatically sent to the EZ7 Series HMI unit once the project is saved.   When editing in an off-line mode, the project information will need to be transferred. More details about the transfer process is available in our **EZ Panel Enhanced Software Manual** and The basic instructions are as follows:

From the Project drop down menu, select **File > Transfer to Panel**. A dialog box similar to the one below will appear.
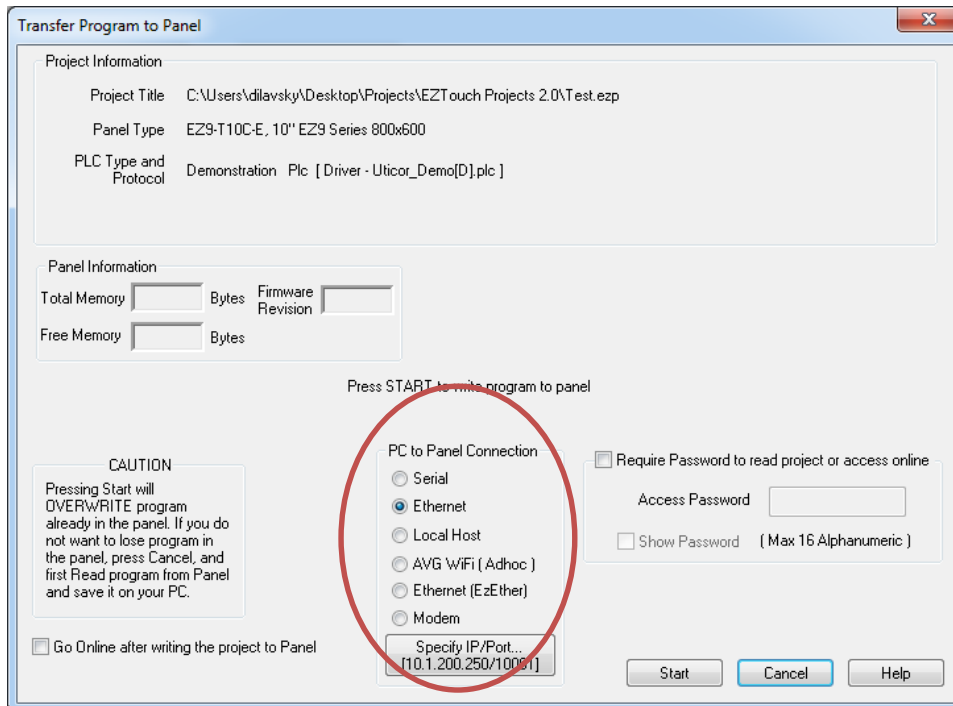
PC to Panel Connection group box lists several options. You can use Serial or Ethernet, or AVG Wifi (Adhoc) (this requires a special AVG Wifi module that plugs in 9 pin Serial port on panel)

Serial:
Use this option to use Serial port or USB type B on the panel. (When you connect USB cable, the panel would appear as a virtual com port). Here we describe serial port connection to the panel.

1. Verify the RS-232C cable (**P/N: EZ-PGMCBL**) is connected between the unit and the PC. In the absence of an RS-232 port on the PC, a USB to RS-232 converter may be used to connect the programming cable to the PC.
2. Select in the drop down (that appears next to Serial radio button after the option is chosen) COM port on the PC that is connected to the panel. And then click *Start*. If the panel is connected to the right com port, project would be downloaded to the panel.

Ethernet

(Before using Ethernet connectivity, IP address must be setup, please see <u>Setup IP address</u> below. The IP address of the panel is shown during power up on the panel)

1. Verify the EZ7 Series HMI is connected through the Ethernet connection.
2. Select *Ethernet* as method of transfer, and click Specify IP/Port button. A dialog box will request confirmation of the IP Address associated with the EZ7 Series HMI.
   Please note that until the IP Address has been <u>changed</u> to match the LAN, the Ethernet connection won't be able to be used to program the unit. If you are unsure of IP Address associated with the EZ7 Series HMI unit, the unit's current IP Address is displayed during the power up sequence.
3. After confirming the mode to transfer the project, click *Start* to write the project data from the PC to the EZ7 Series HMI.

When finished, a Transfer Completed message will be displayed. Click OK to continue and the project is now transferred.

6.4 SET IP ADDRESS

This section applies only to the units purchased with Ethernet capabilities.   Each EZ7 Series HMI unit with Ethernet comes with a factory-programmed IP Address that may need edited to be compatible with your LAN network.   The <u>serial port (COM1)</u>, in combination with the editing software, can be utilized to update the IP Address information. Alternatively, you can download our free IP Config Utility to make the necessary changes to the IP parameters.

IP Address can also be changed by using an object on the screen. (Menu: Object > Screen Change > Goto Setup Screen). This object on the panel when pressed would bring up IP address setup screen.

6.4.1 Using EZTouch Editor Serially Connected to EZ7:

Insert a RS-232C cable (**P/N: EZ-PGMCBL**) into the serial port (COM1) and launch the editing software EZTouch Editor.
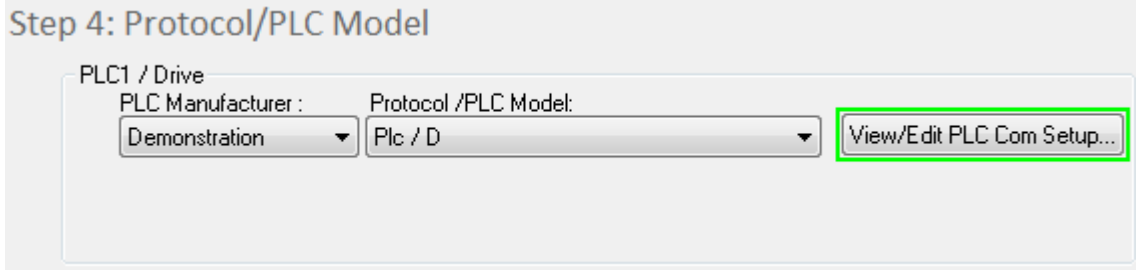
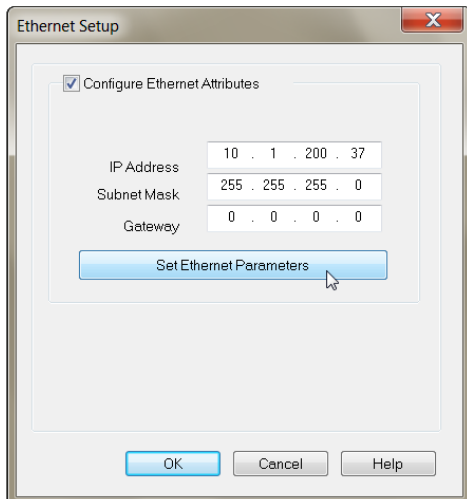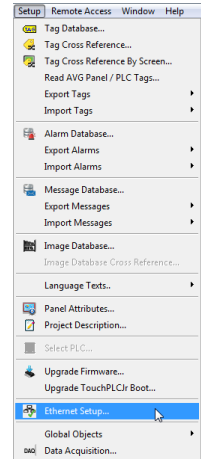1) Click on Open / New Project then enter a project name (e.g. Test). Then press enter.

2) Next select EZTouch in the radio buttons below Panel Family. Then select EZ7 Series from the drop-down list. Then select the size of the panel you will use (7", 8", 10", 12")

3) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.

Step 4: Protocol/PLC Model

PLC1 / Drive

PLC Manufacturer : Protocol /PLC Model:

Demonstration   Plc / D   View/Edit PLC Com Setup...

4) Next click the "Click to Start Designing" button. Now you will be in the Main Programming Window.

5) Click **Setup > Ethernet Setup**.   A dialog box will appear displaying the current IP parameters.

6) Once the dialog box appears, select 'Configure Ethernet Attributes.'   Type in the necessary changes and click 'Set Ethernet Parameters.' Click OK.

Ethernet Setup

☑ Configure Ethernet Attributes

IP Address   10 . 1 . 200 . 37
Subnet Mask   255 . 255 . 255 . 0
Gateway   0 . 0 . 0 . 0

Set Ethernet Parameters

OK   Cancel   Help

Setup | Remote Access | Window | Help
Tag Database...
Tag Cross Reference...
Tag Cross Reference By Screen...
Read AVG Panel / PLC Tags...
Export Tags
Import Tags
Alarm Database...
Export Alarms
Import Alarms
Message Database...
Export Messages
Import Messages
Image Database...
Image Database Cross Reference...
Language Texts..
Panel Attributes...
Project Description...
Select PLC...
Upgrade Firmware...
Upgrade TouchPLCJr Boot...
Ethernet Setup...
Global Objects
Data Acquisition...

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6.4.2 Using IP Config Utility:

The IP Config Utility enables IP parameter editing through the Ethernet connection and allows automatic discovery of AVG devices connected to the local area network (LAN) even if a device's IP address is not on the same subnet. To download this free utility please visit our website at www.ezautomation.net and click on the downloads tab.

1. Install the IP Config Utility.

2. Once installed, launch the software by clicking on its icon or loading it from the Start Menu. A dialog box similar to the one shown below will appear.

3. Click 'Scan Devices' to locate available AVG devices on the network. While the utility scans, a dialog box will appear temporarily.
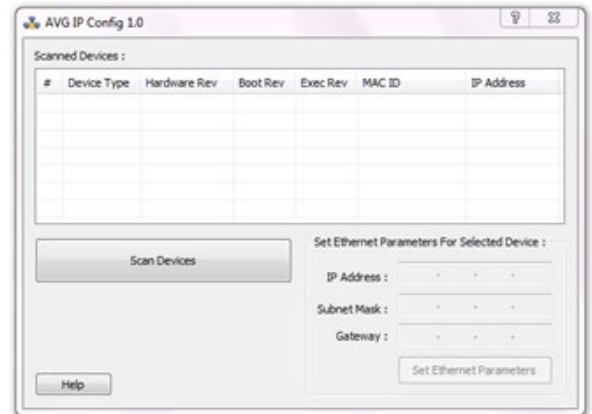
Note: If the computer has multiple networks, the utility will prompt you to choose one. Please select the network connected to the EZ7 Series HMI unit.

4. When the utility is finished scanning, a list of AVG devices will populate the field similar to the example shown below.

5. Next, identify the device in the list that you would like to edit. For example, if you know its current IP address, MAC-ID, or it's the only device of its type, use this information to select it from the list.
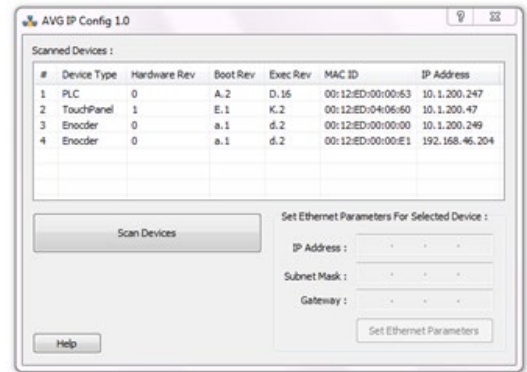
Note: The EZ7 Series HMI displays the MAC-ID address and current IP address at start up.

6. Once selected, the current IP address information for the unit will appear in the IP address field. Type in the necessary changes.

7. Click 'Set Ethernet Parameters' to save the new values for the device.

Once the IP Address has been changed, the EZ7 Series HMI can receive programming instructions through either the serial port (COM1) connection or via the Ethernet.

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6.5 SETTING DATE/TIME

The EZ7 Series HMI maintains a Real Time Clock (RTC) which can be adjusted from the EZ7 Series HMI unit itself.   Touch upper left corner of the panel for more than 6 sec. After selecting the appropriate language for the unit, the screen below will appear displaying the current firmware, the available memory as well as the time and date set on the unit.
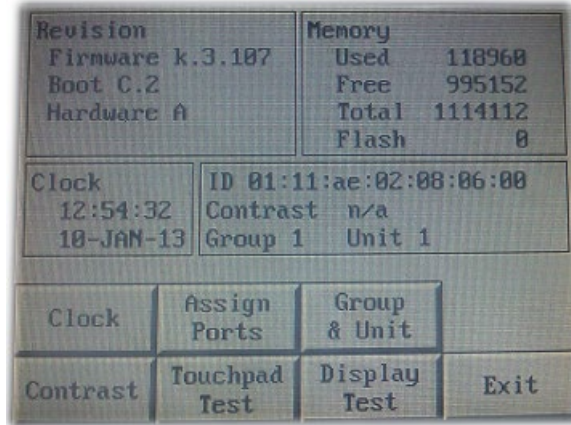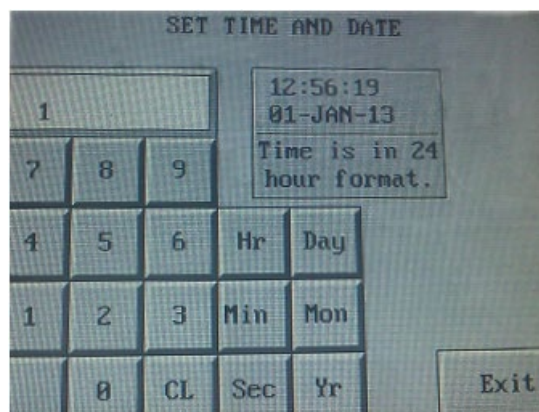

To change the Time/Date:

1) Press the *Clock* button.
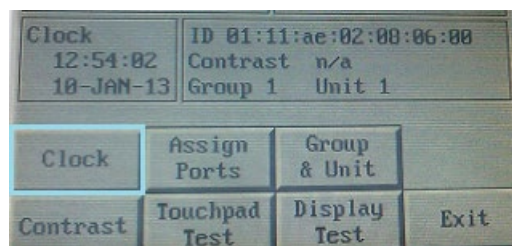
2) A new screen loads which displays a numeric keypad.   Enter the hour first, then select *Hr* to change the hour. Do the same to enter the minutes. Time is displayed in a 24 hour format.

> **NOTE:** If at any time during this process, an incorrect number is pressed, you may use the *CL* button to clear the entry.

a. For example, to enter a time of 8:34 am you would press *8* then the *Hr* button.

b. Press *3* then *4* followed by the *Min* button. (Seconds can be inputted as well.)

3) Similarly, to change the date, enter the correct day and then press the *Day* button. Do the same for Month and Year.

> **NOTE:** Since the selection is limited to two digits, only the last two digits from the year may be entered and displayed.

   a. For example, to change the date to January 1, 2013 you would press *1* then *Day*.
   b. Press *1* then *Mon*.
   c. Press *1* then *3*, followed by *Yr*.

4) Once finished, press *Exit* to return to the previous screen. Pressing *Exit* again will bring you back to the main screen.

7 MAINTENANCE AND TROUBLESHOOTING

7.1 GENERAL

Hardware Maintenance

Routine maintenance checks should be performed on the unit to avoid any risk of hardware problems. The EZ7 Series HMI is designed to be a very rugged controller so that just a few checks periodically will help keep it up and running.

The key points to be checked include:

- · Ambient operating conditions
- · Wiring and connections

Maintaining the Ambient Operating Conditions

Keeping the EZ7 Series HMI's environment within specified operating conditions is the best method to minimize the maintenance.

1. Always ensure that ambient temperature inside the cabinet is within EZ7 Series HMI's temperature ratings.

2. If any other equipment inside or outside of the cabinet is producing heat, employ cooling methods like a blower fan to reduce 'hot spots' around the EZ7 Series HMI

3. Periodically inspect and clean if there are any air filters on the cabinet. Ensure that the PLC is free from dust, humidity and corrosive gases.

7.2 DISPLAY VERIFICATION TESTS

The EZ7 Series HMI allows for you to run display verification tests in the field that can check the pixel display and the response of the touchscreen interface. Follow the steps outlined below to utilize these tests.

First, simultaneously press the upper left corner and the bottom left corner of the screen to reach the language selection screen.   After selecting the appropriate language for the unit, the screen below will appear displaying the current firmware, the available memory as well as the time and date set on the unit.

To test the touchpad response:
1. Press the *Touchpad Test* button.

2. A new screen will appear. Press each box individually to ensure that the touchscreen is properly responding.
3. Once finished, press *Exit* to return to the previous screen. Pressing *Exit* again will bring you back to the main screen.

To test the pixel display:
1. Press the *Display Test* button.

2. The screen will then automatically go through a variety of colors.   Verify if all elements of the screen are lighting up appropriately.
3. Once finished, press *Exit* to return to the previous screen. Pressing *Exit* again will bring you back to the main screen.
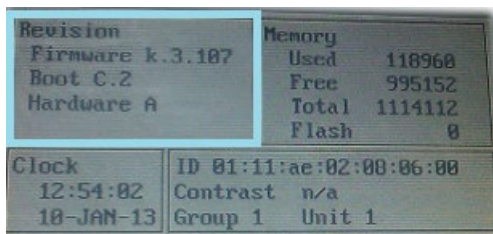
7.3 UPDATE FIRMWARE

Typically, when power flows to the EZ7 Series HMI unit's power terminals, the indicator LED (located on the back of the unit) displays a blinking green LED.   If the indicator LED is blinking red, then the firmware on the unit needs updated.

NOTE: Back up the user program stored on the EZ7 Series HMI unit prior to updating the firmware. Existing programs that are saved to Flash memory must be resaved to Flash after the upgrade.

To check firmware version:

1. Simultaneously press the upper left corner and the bottom left corner of the screen to reach the language selection screen.   Select the appropriate language.
2. The upper left corner will then display the firmware currently enabled on the unit.


To update firmware:

1) Insert a RS-232C cable (**P/N: EZ-PGMCBL**) into the serial port (COM1) and launch the editing software EZTouch Editor.

2) Click on Open / New Project then enter a project name (e.g. Test). Then press enter.

3) Next select EZTouch in the radio buttons below Panel Family. Then select EZ7 Series from the drop-down list. Then select the size of the panel you will use (7", 8", 10", 12")
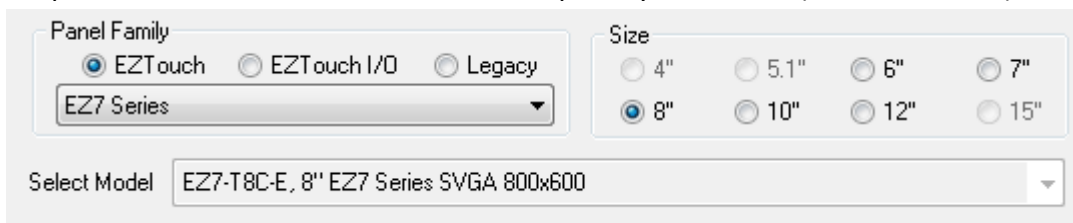
4) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.
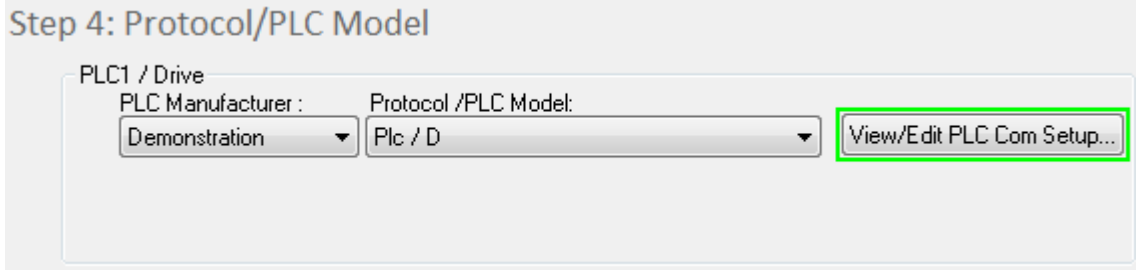
5) Click **Setup > Upgrade Firmware**.　A dialog box will appear displaying the Upgrade Firmware dialogue.
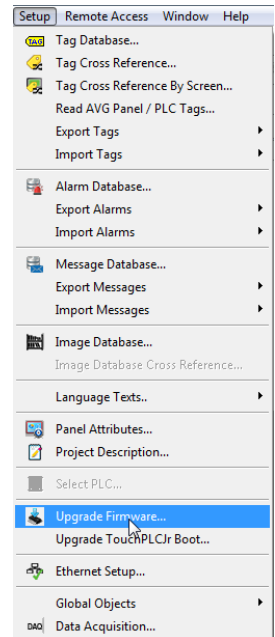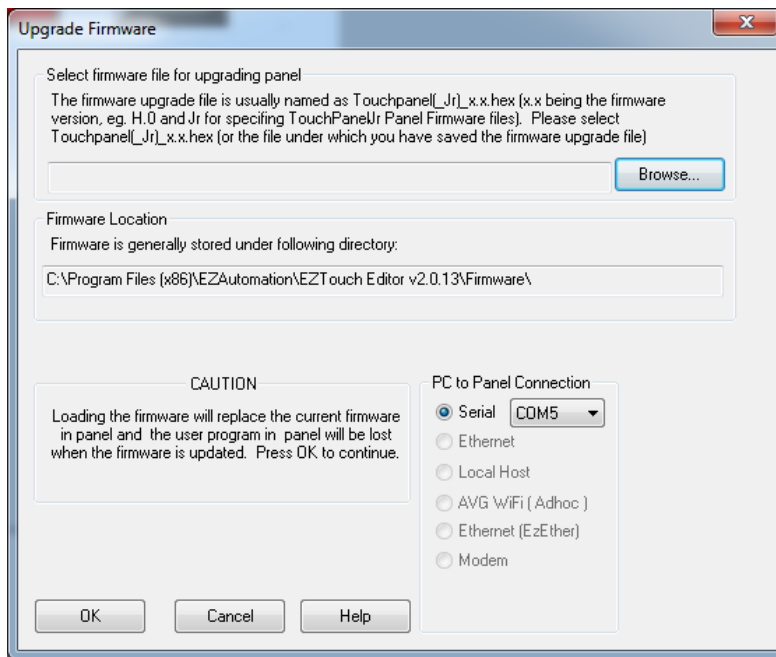
6) Use *Browse* to locate the appropriate firmware version.　Verify Serial (COM5) is selected under the PC to Panel Connection, then click OK.

7) On the next screen click continue. The firmware will upgrade and let you know when it is done. Please do not disconnect the cable or power cycle the unit since this could cause the unit to stop functioning.

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7.4 TROUBLESHOOTING

If you encounter difficulties while using our EZ7 Series HMI device, please consult the table below.   Additional assistance is also available within the **Panel Editor Programming Software Help**. Alternatively, you may also find answers to your questions on our website www.ezautomation.net.

Problem		Possible Cause	Suggested Action
Operation	Indicator LED is off	Disconnected or faulty power source	Check and repair power source. Also check the wiring for loose contacts and secure them if found. Finally ensure that proper polarity is observed.
		Input power level is outside of Touch EZ7's power rating specifications	Ensure that the power being presented to the EZ7 Series HMI terminal is within the specified range.
	Indicator LED is blinking red	Outdated firmware	Update firmware for unit.
	Real Time Clock function not enabled	Low Battery	Remove old battery and insert new CR1220 3V lithium battery.
Communicati on	No communication with PC via Ethernet	Disconnected or loose cable	Check the wiring for loose contacts and secure them if found.
		Wrong IP Address	Update IP address associated with unit and reattempt a connection.
	No communication with the PC (RS232 Port error)	Disconnected or loose cable	Check the wiring for loose contacts and secure them if found.
		Wrong/broken cable	Ensure the correct communication cable is being used (PGMCBL).
		Wrong communication port settings	Check and correct the COM port attributes.
		Wrong COM port assignment on the computer	Check if correct Serial Port (Com1) assignments on the computer have been made.

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8 STILL NEED HELP?

Technical Support

Most of the frequently encountered problems regarding the EZ7 Series HMI unit's operation are answered in the sections above. However, if you still need answers to your questions, please call our technical support at 1-877-774-EASY.

Warranty Repairs

If your EZ7 Series HMI is under warranty, contact us at 1-877-774-EASY.

Out of Warranty Services

If your EZ7 Series HMI is out of warranty, contact EZ Automation at 1-877-774-EASY for an evaluation of repair costs. You can then decide whether it is more economical to proceed with the repairs or to upgrade your system with a new unit.

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