EZ9 Series HMI Manual

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Warnings

Programmable control devices such as the EZ9 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 EZ9 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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Manual part number EZ9-TC-M

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EU Information

The EZ9 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).

EZ9 Series HMI

Thank You for using AVG Automation's latest offering, the **EZ9 Series HMI** - a 10.4" Touch Panel. This guide covers information on the installation, wiring and specifications of the EZ9 Series HMI. It also outlines the troubleshooting and maintenance of an existing setup.

The software used to program the EZ9 Series HMI is: EZTouch Editor version 2.0.15 or later.

EZ9 Specifications

INPUT POWER

Voltage: 24 VDC nominal (20-28VDC)
Max. Power Consumption: 15 Watts

DISPLAY

Display Type: 10.4" TFT, VGA 800x600 pixel
Backlight: White LED
Brightness/Life: 400 nits/75,000 hours
Touch Screen: Analog Resistive Touch Screen

MECHANICAL

10.4" External dimensions: 10.59" x 13.58" x 2.86" (268.99mm x 344.93mm x 72.64mm)
Enclosure: Nema 4, 4x (indoor)
Mounting: Stud Mount (using 8 studs)

ENVIRONMENTAL

Operating Temperature: 0°C to 55°C
Storage Temperature: -25°C to 65°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

MEMORY

Number of Screens: Up to 999 limited by memory

COMMUNICATIONS

COM port: 1 RS-232 port, 9 pin D-Sub
Ethernet Port: RJ 45
Protocol Supported: Serial/Ethernet Drivers for most popular PLC protocols
USB Port: Type B for programming

Installation

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 EZ9 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 EZ9 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.

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.

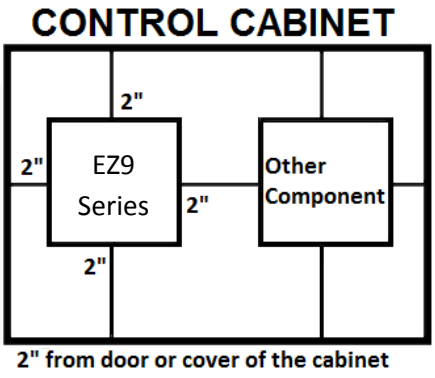
General Environmental Considerations

Avoid installing EZ9 Series HMI in areas where the following conditions may exist:

- Environmental temperatures above or below those specified by the EZ9 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 EZ9 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 EZ9 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

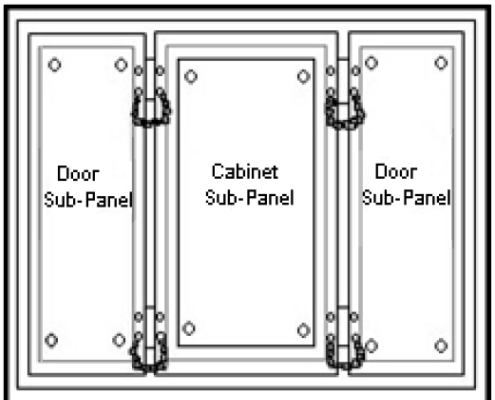
Shielded Cables

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 EZ9 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.

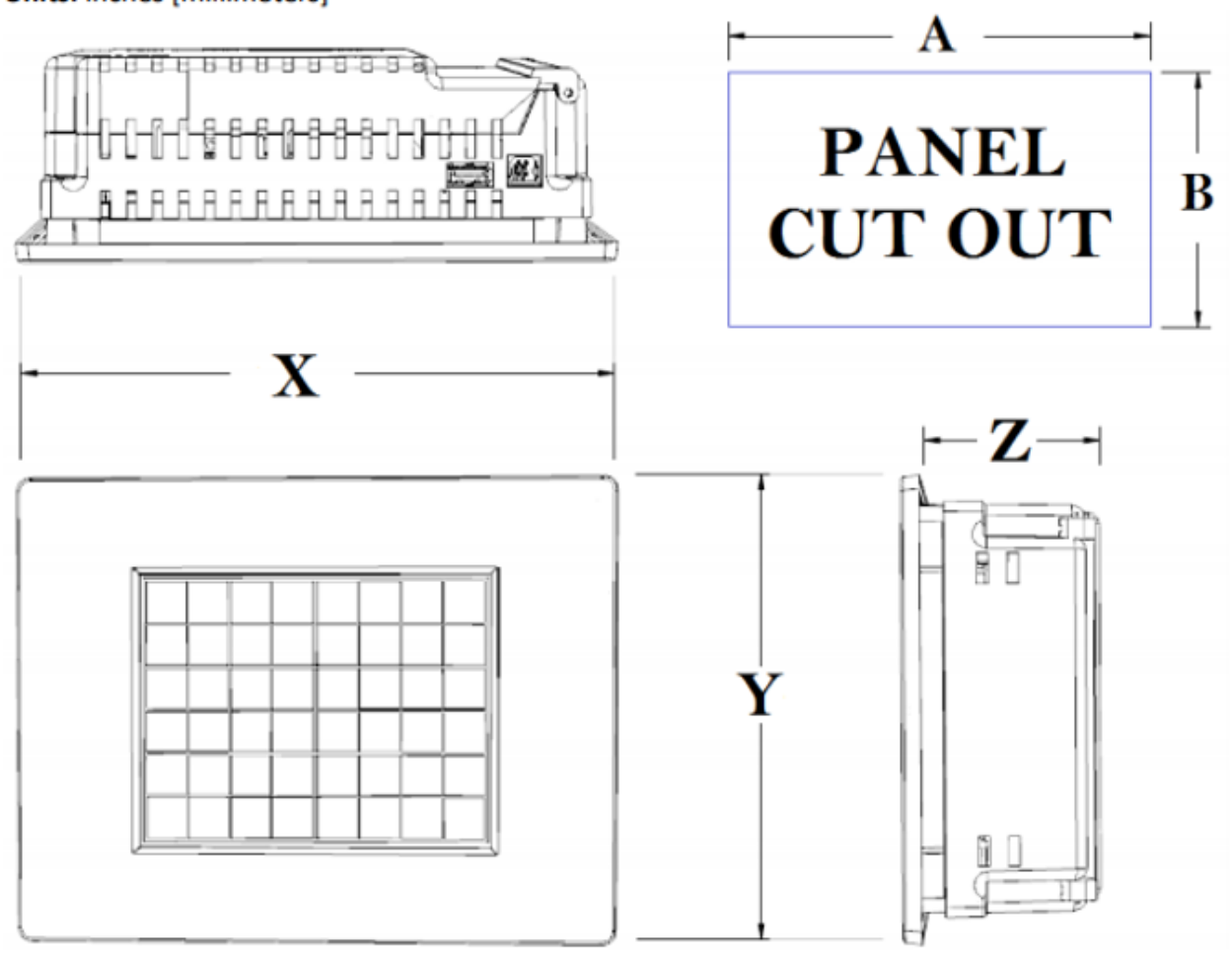
Plan the wiring routing. Keep all switched power in separate ducts and if there is AC and DC power being switched, keep the wiring of each branch separate from all wires and cables carrying low level signals.

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.

Mounting

Units: inches [millimeters]



EZ9 Panel Dimensions

Unit Size	X	Y	Z
10”	13.58” [345.03mm]	10.59” [269.09]	2.86” [72.64]

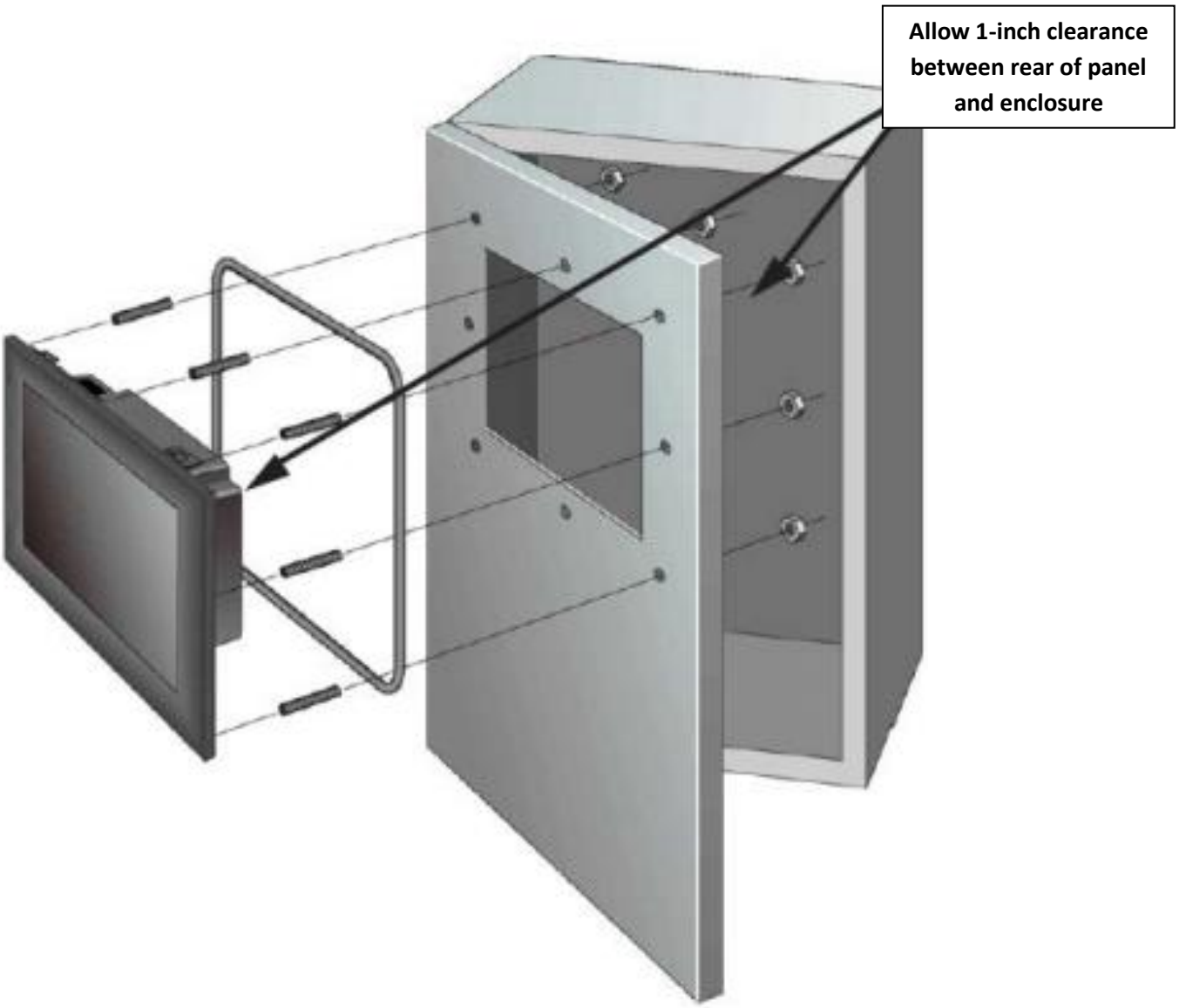
EZ9 Cutout Dimensions

Unit Size	A	B	Depth
10”	11.91” [302.41mm]	8.92” [226.48]	3.86” [98.04]

Mounting Instructions

The EZ9 is stud mounted. All the necessary mounting hardware is provided with the unit. Use the 8 studs and 8 nuts with captive washers to secure the unit to the mounting surface.

Note: Nuts are to be tightened with no more than 1 inch-pound of torque.



Powering the EZ9 Series HMI

Connect the power input wires into the HMI's power terminals. Supply 24VDC nominal (20-30VDC) power to the system. If the unit does not power up correctly, remove power from the system and check all the wiring. In addition see the Indicator Light section below for troubleshooting.

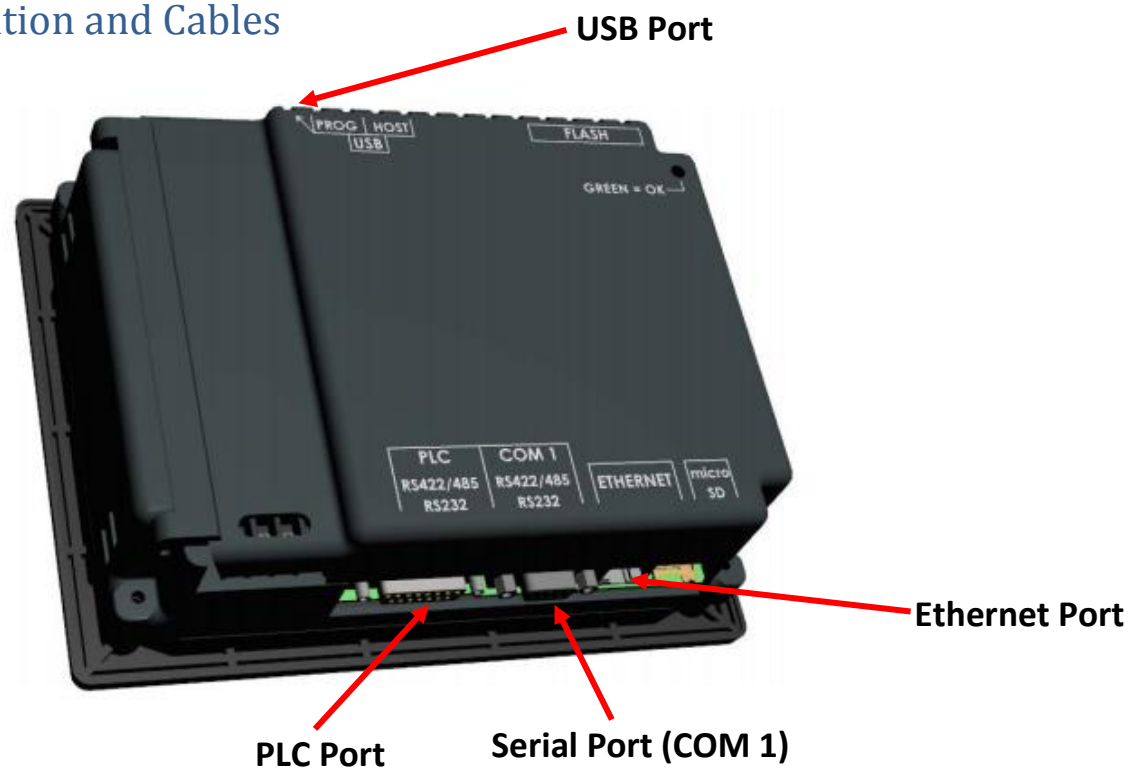
24 VDC	
1	Positive
2	Negative
3	Earth GND

Indicator Light

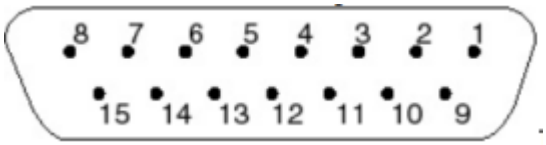
When power flows to the EZ9 Series HMI unit's power terminal, the indicator LED (located on the back of the unit) should turn on showing a blinking green LED. If not, remove power from the system and check all the wiring.

Indicator Light	
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

Communication and Cables



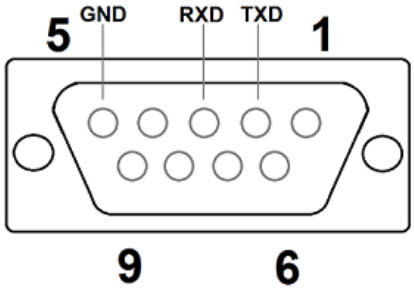
PLC Port



This is the RS-232C, RS-422A or RS-485A female 15-pin D Sub Connector to connect to other PLCs. Most PLC's connect to the 15-pin D Sub with a cable specific to the PLC type.

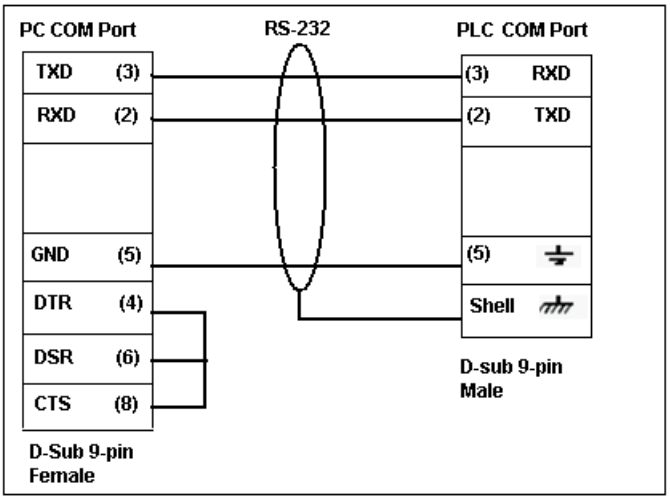
Pin Number	Connection
1	Chassis GND
2	PLC TXD (RS-232C)
3	PLC RXD (RS-232C)
4	+5V (100Ω)
5	Logic GND
6	LE
7	PLC CTS (RS-232C)
8	PLC RTS (RS-232C)
9	RXD+ (RS-422A)
10	RXD- (RS-422A)
11	TXD+ (RS-422A)
12	TXD- (RS-422A)
13	Terminating Resistor (connect to pin 9)
14	NC
15	NC

Serial Port (COM1)



The EZ9 Series HMI model has a built-in serial port (COM1 PORT) located on the 9-pin D-Sub connector. COM1 PORT is an RS-232 port which requires an appropriate RS-232C cable (**P/N: EZ-PGMCBL**) for programming the EZ9 Series HMI through a PC. It serves as the default programming port on the EZ EZ9 Series HMI since COM1 has fixed communication parameters, you can always connect the programming software to the EZ9 Series HMI through the port without needing to make different configuration changes. In addition, this connection can be utilized to update firmware when needed.

PGMCBL: Programming Cable Wiring



CAUTION! *Keep the signal reference GND wire well protected from external noise by using shielded cable.*

Ethernet Port

There is an Ethernet port available on the EZ9 Series. This port enables users to add/update programming through an Ethernet connection. It allows for both PC and PLC simultaneous communications. It can also be used for Internet access and email alerts.

Note: Before the Ethernet port can be used for programming, the IP Address listed on the EZ9 Series HMI may require editing. To edit the IP Address, please consult the Editing IP Address section.

USB Port

EZ9 Series HMIs come equipped with an USB ports. The port on this for program upload through a USB A to USB B programming cable.

Note: If a power cycle occurs while the USB programming cable is connected, the cable will need unplugged and then replugged in to reestablish a connection. The PC driver will not reestablish connection unless the cable is unplugged and reinserted.

Using the EZ9 Series HMI

Quickstart the EZ9 Series HMI

This section outlines the steps needed to setup the EZ9 Series HMI and get it started. This is not intended to explain specific details needed to start your system. Rather, it provides a general reference to give a broad picture of what is needed to get your EZ9 Series HMI system up and running.

Step 1: Check all System Components

It is always recommended to make sure you have all the right parts to build your system. This is what you will need to get started:

- EZ9 Unit HMI
- PC Running Windows 7 or Windows 10
- USB to serial port connector (if the Programming Computer does not include a RS-232 port)
- RS-232C Programming cable (P/N EZ-PGMCBL)*
- EZTouch Editor Programming Software*
- 24VDC Power Supply*

**These accessories have to be purchased separately*

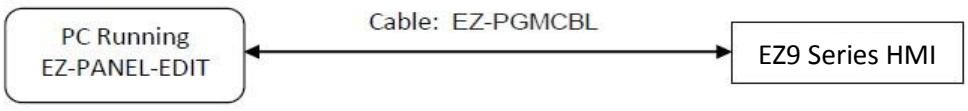
Step 2: Connect Power

If not already completed, please connect the power input wires to the EZ9 Series HMI unit's as outlined in the Connections Overview section. Supply 24VDC power to the system and ensure the indicator LED located behind the EZ9 Series HMI base is ON (blinking green LED). If not, remove power from the system and check all the wiring.

Step 3: Install Programming Software on your PC and connect the PLC to PC port

Install the programming software EZTouch Editor on your Personal Computer (PC). Next connect the PC to the 9-pin RS-232 COM1 PORT on the EZ9 Series HMI unit using the serial programming cable (**P/N: EZ-PGMCBL**).

Connect the PLC and the PC as shown below:



Note: COM1 PORT is a programming port on the EZ EZ9 Series HMI with fixed communication parameters, so you can always connect the programming software to the EZ9 Series HMI through the port without having to make different configuration changes.

Programming the Touch EZ9

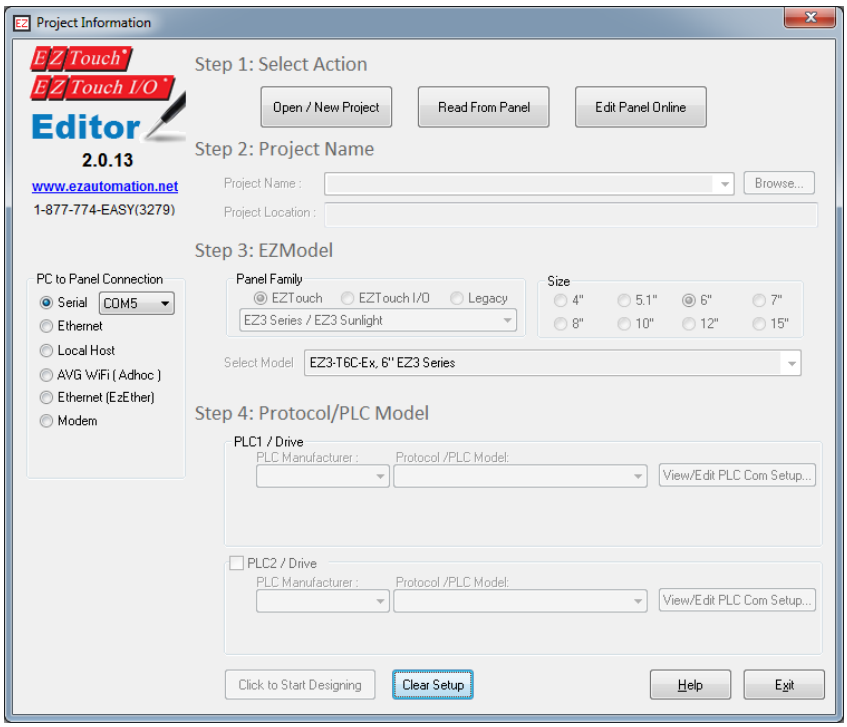
Create a Project

This section outlines the basics of creating a project using the **EZ-PANELEDIT** software. Further programming information for the EZ9 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 EZ9 Series HMI unit. For this scenario, you can select "Open / New Project". This will enable you to create a program without having the EZ9 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.

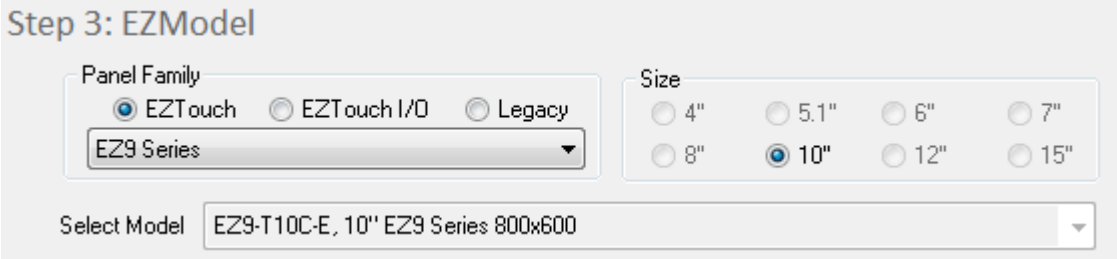
Note: The steps outlined below are based on the EZTouch Editor version 2.0.13 and may vary slightly between versions.

1) Open the EZTouch Editor Software. You will see the Project Information screen, example below.

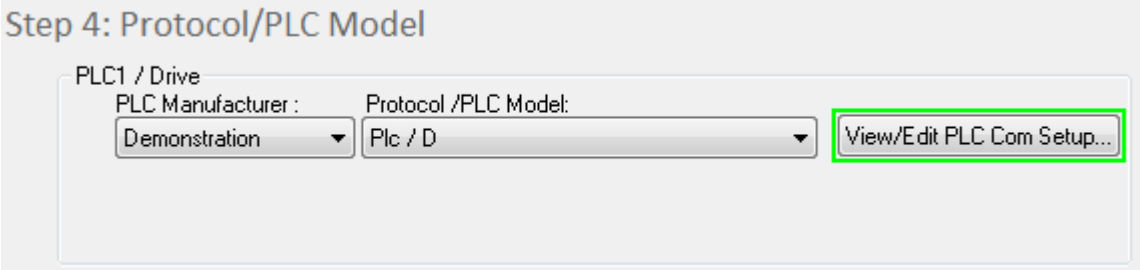


2) Click on Open / New Project then enter a project name (e.g. Test). Then press enter.

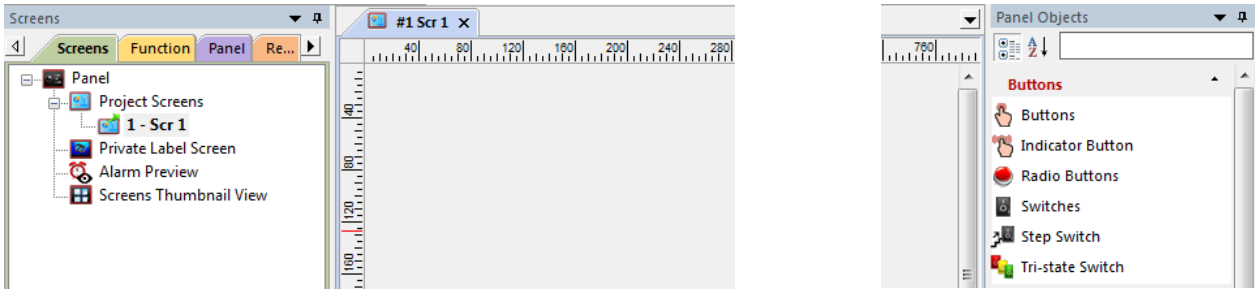
3) Next select EZTouch in the radio buttons below Panel Family. Then select EZ9 Series from the drop-down list.



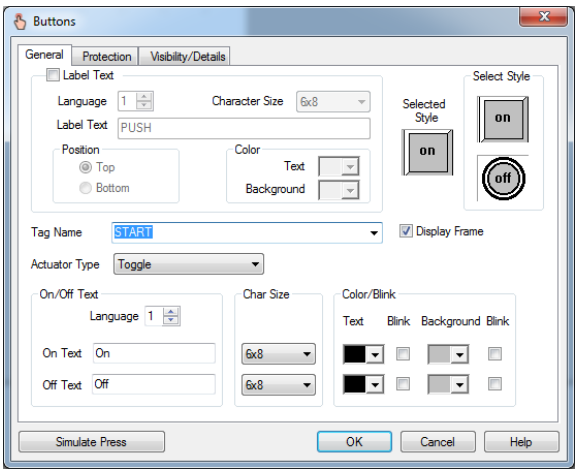
4) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.



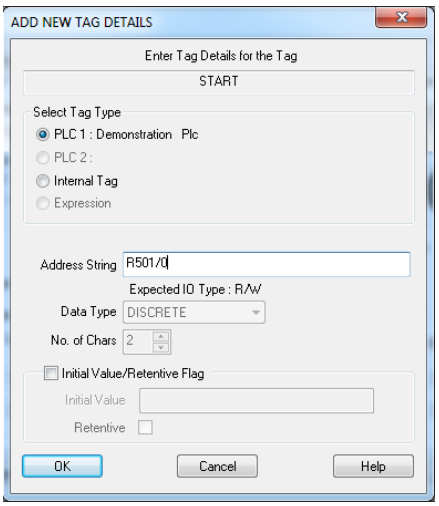
5) Click "Click to Start Designing" to launch the editing software program. The Main Project Window will then appear showing Panel sides to the program.



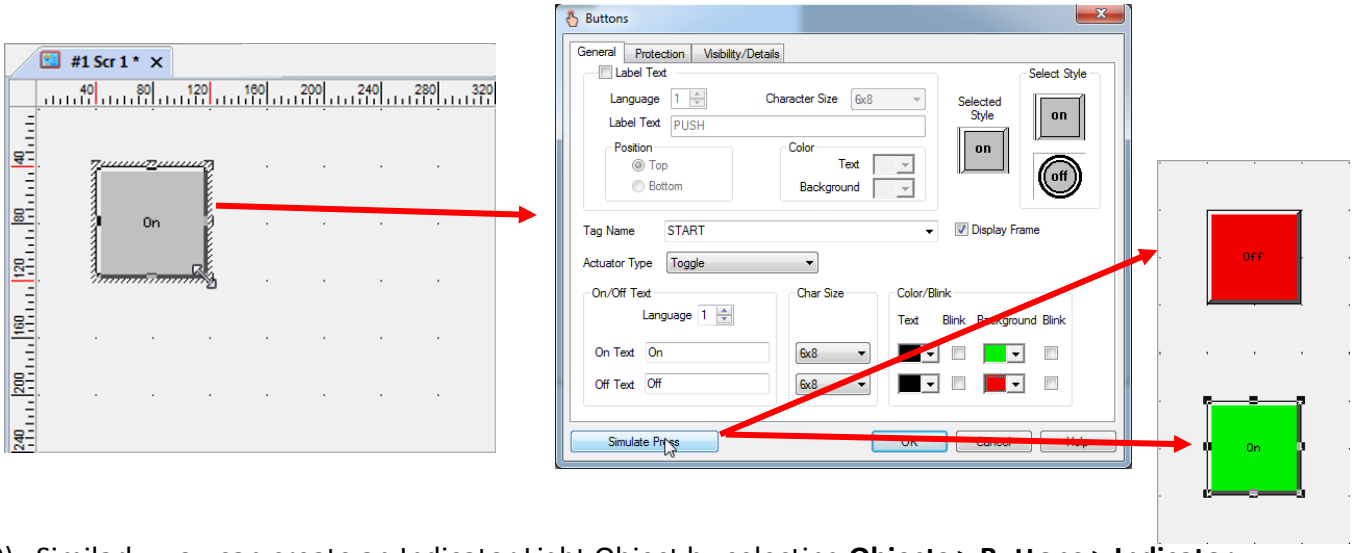
6) On the right side of the screen find Buttons and click on the icon. The screen below will appear. Enter **START** for Tag Name. Click OK.



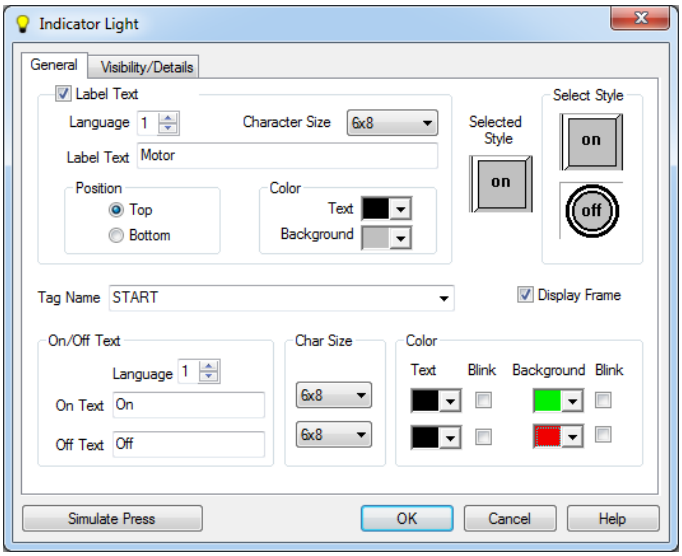
7) The "Add New Tag Details" screen will ask for tag address. Please enter R501/0 for the address. Then click OK. Note: All previous address are used and could cause unpredictable behavior.

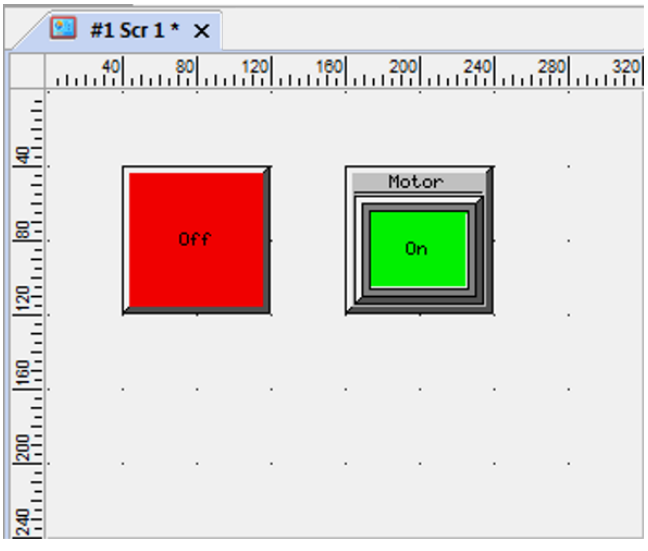


8) Click anywhere on the screen to place the Button object. Double click the icon to open its object dialog box if you need to make any adjustments to the object's appearance or attributes. Clicking "Simulates Press" will allow you to toggle between On and Off states.



9) 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.

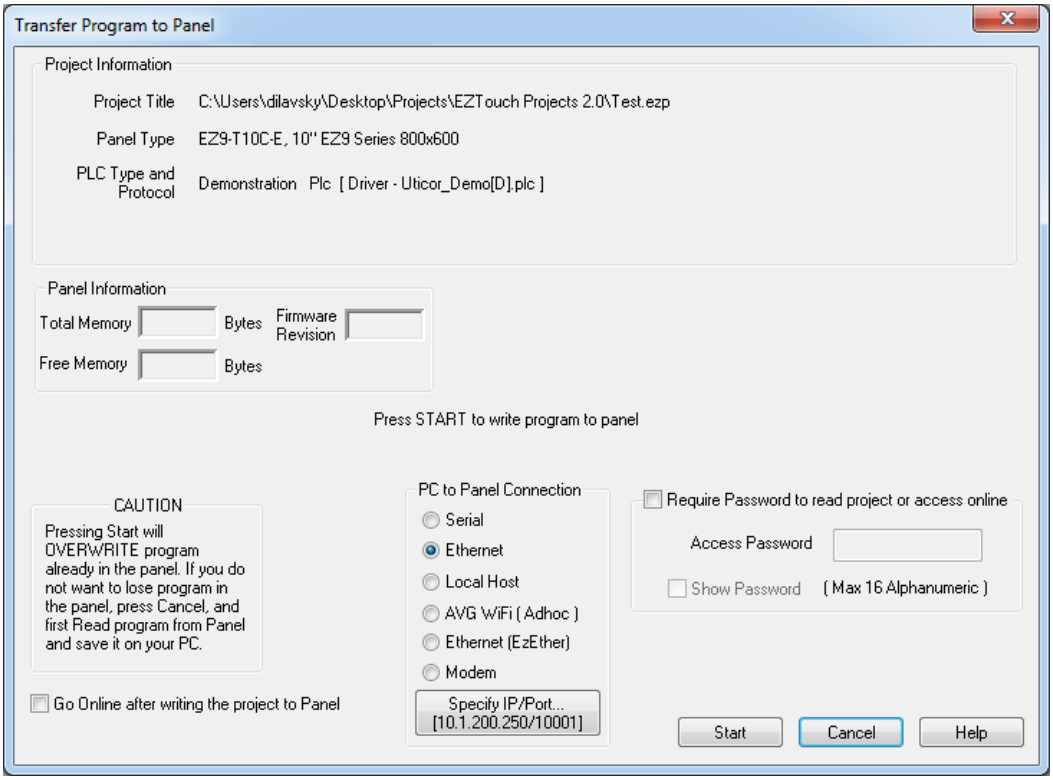




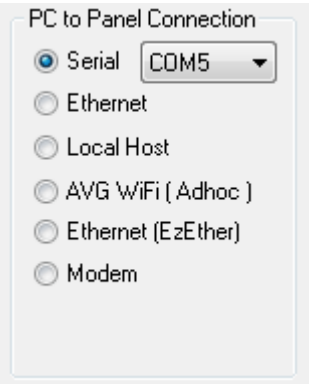
Transfer a Project

After a project is complete, the next step is to transfer the project to the EZ9 Series HMI. When editing projects online, programming information is automatically sent to the EZ9 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 **EZ PLC Software Manual**. 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.



There are two connections available to transfer the program.



Serial Port (COM1):

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 *Serial (COM5)* as method of transfer. And then click *Start*.

Ethernet

1) Verify the EZ9 Series HMI is connected through the Ethernet connection.

2) A dialog box will request confirmation of the IP Address associated with the EZ9 Series HMI.
   a. Until the IP Address has been changed to match the LAN, the Ethernet connection won't be able to be used to program the unit.
   b. If you are unsure of IP Address associated with the EZ9 Series HMI unit, the unit's current IP Address is displayed during the power up sequence.

3) Select *Ethernet* as method of transfer.

4) After confirming the mode to transfer the project, click *Start* to write the project data from the PC to the EZ9 Series HMI.

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

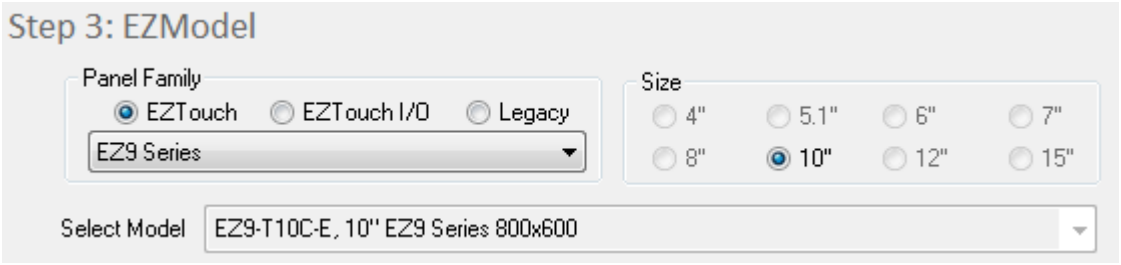
Set IP Address

This section applies only to the units purchased with Ethernet capabilities. Each EZ9 Series HMI unit with Ethernet comes with a factory-programmed IP Address that may need edited to be compatible with your LAN network. The serial port (COM1), 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.

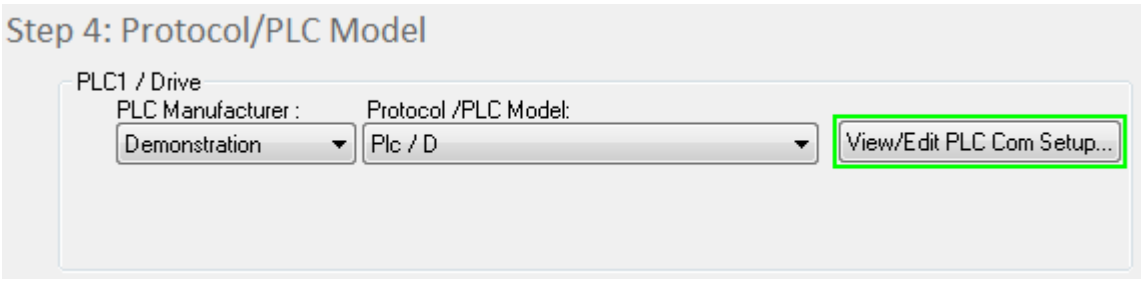
Serial Port (COM1) Method

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 EZ9 Series from the drop-down list.

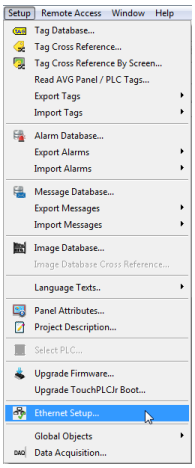


4) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.

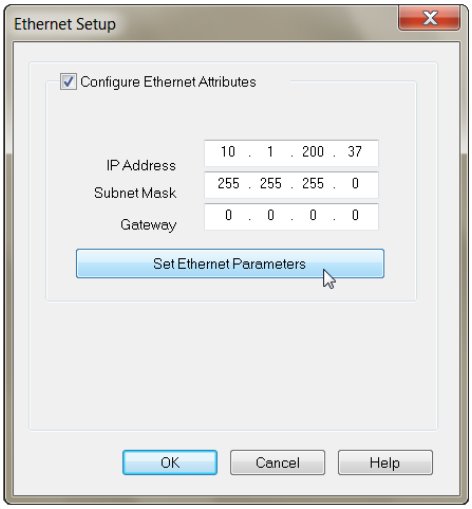


5) Next click the "Click to Start Designing" button. Now you will be in the Main Programming Window.

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



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

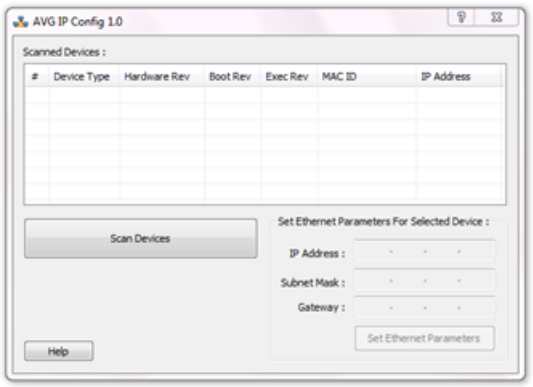


AVG IP Config Utility Method

The AVG 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.

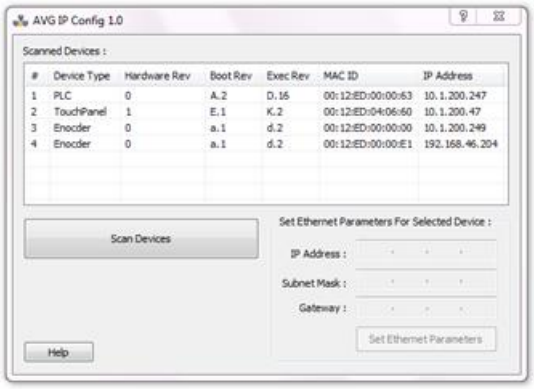
2) Once installed, launch the software by clicking on its icon or loading it from the Start Menu. A dialog box similar to the one shown below will appear.



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 EZ9 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 EZ9 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 EZ9 Series HMI can receive programming instructions through either the serial port (COM1) connection or via the Ethernet.

Setup Menu

The EZ9 Setup Menu has been expanded to include new features which make your life easier when working with your panel. Now that the Setup menu has been updated, you can do the following things in the menu: calibrate HMI, disable setup menu, test touchscreen, test color display, setup/change time and time zone, change port configuration.

Access Setup Menu

The setup menu now has 3 ways of being accessed. The main method is On Screen access, but note that this method can be disabled from the Setup Menu. If it is disabled you will need to use the other 2 methods.

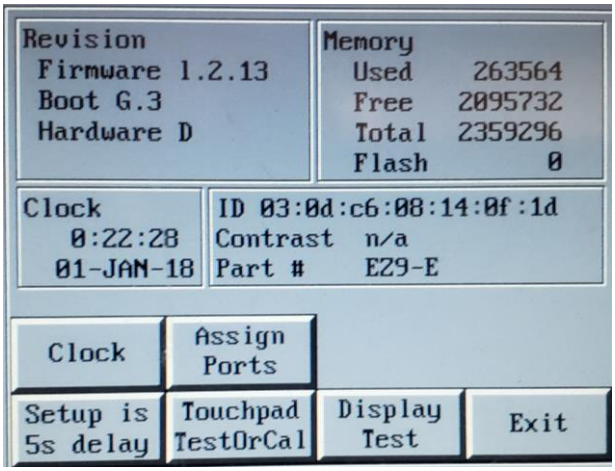
On Screen Setup Menu Access:

1. To access the setup menu press and hold left upper corner (40x40) of screen for 5 seconds.

2. If the Setup Menu is not disabled, you will see the screen above. Select the language to be used in the setup menu.

Note: If setup screen is disabled then it can still be accessed. To access Setup Screen when it is disabled you will have to power cycle the unit. Then during the initializing portion where Part Number, IP Address, and MAC address are visible you will press the upper left corner. You will then release and then press again for 2 seconds and release. The setup screen will appear after the panel finishes initializing.

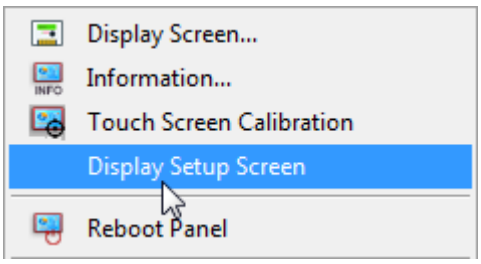
Disabled Setup Screen Steps: Press the upper left corner (40x40 pixels), then release. Then press again and hold for at least 2 seconds. Then release (initializing screen appears for total of 8 seconds).

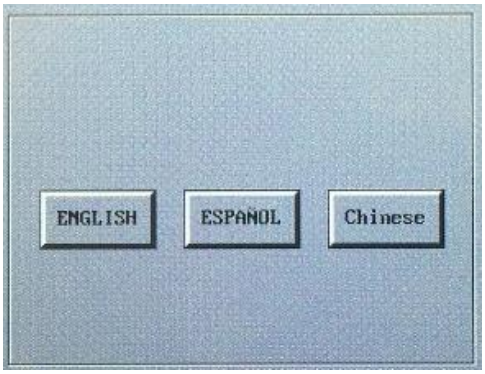


3. After the language is selected you will see the following screen. This is the main Setup Screen from which all the options can be accessed. Also it is the screen which will tell you some troubleshooting information such as Firmware revision.

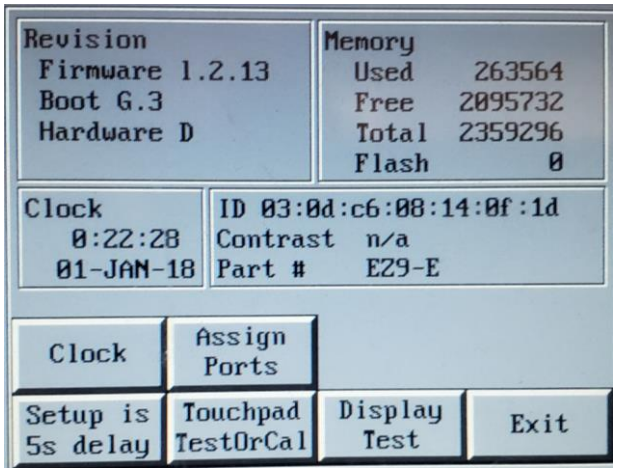
EZTouch Editor Setup Screen Access:

1. To access the setup menu, connect to panel from the PC. Open the EZTouch Editor and then in the Panel Menu select Display Setup Screen.



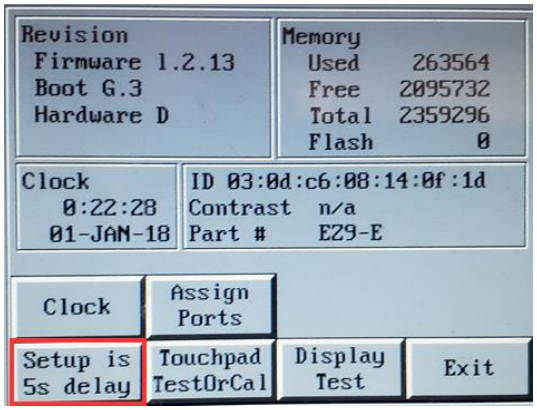


2. Now even if the Setup menu screen is disabled, you will see the screen above on the panel. Select the language to be used in the setup menu.



3. After the language is selected you will see the following screen. This is the main Setup Screen from which all the options can be accessed. Also it is the screen which will tell you some troubleshooting information such as Firmware revision.

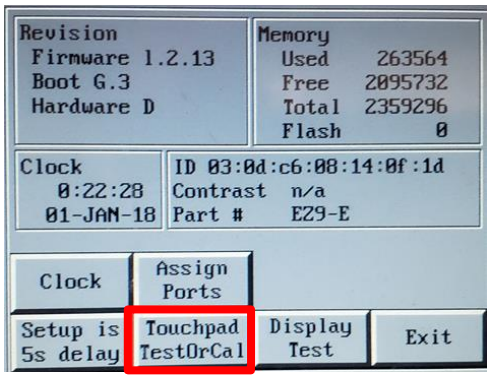
EZ9 Disable Setup Menu

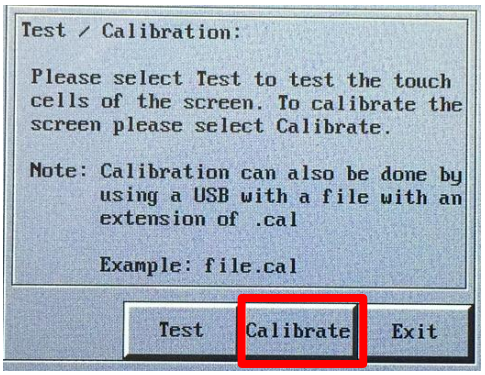


The setup menu can be disabled by pressing the Setup is 5s delay. The button will change to say Setup is Disabled, which when pressed again will re-enable the Setup Menu.

Note: This disable is only for the On Screen Access to the setup menu, you can still use USB or EZTouch Editor Menu to access the setup menu if even if it is disabled.

EZ9 Screen Calibration



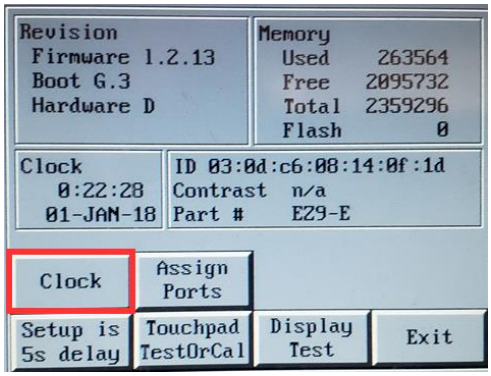


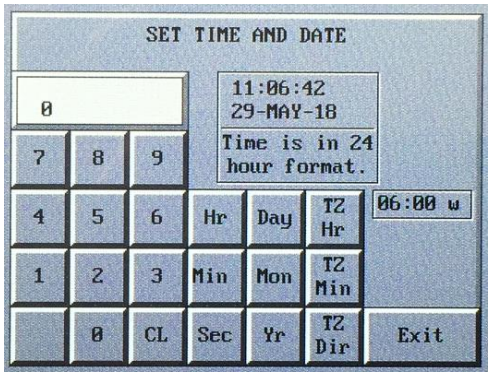
You can now calibrate all EZ9 panels using the Setup Screen calibrate option. Just press the Touchpad TestOrCal button then press Calibrate.

The Calibration setup will then start, follow those directions and the panel will afterwards restart.

Note: If nothing is pressed for 15-20 seconds during calibration mode then previous calibration is used and panel will restart. Therefore if you accidentally enter calibration mode you only need to wait and panel will exit by itself.

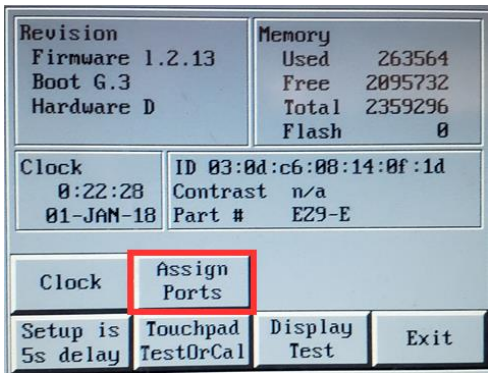
Setup/Change Time (Time Zone)

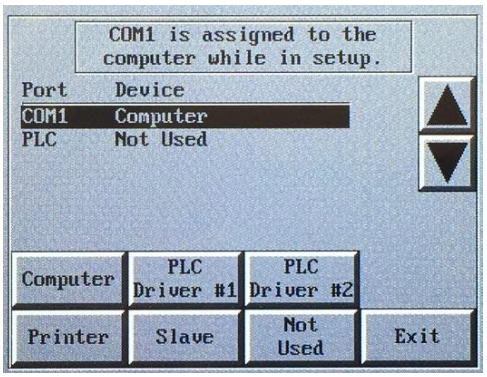




In the Setup Screen you can set the time and date. You can also setup the Time Zone if you are using NTP (you will need to use this for Daylight Savings). NTP Server setup is discussed in the NTP Setup Section. The EZTouch Editor includes a NTP setup options in the Ethernet Setup Menu.

Port Configuration





In the setup menu you can configure which serial port is used for what communication option. The COM1 is the 9 pin serial port and the PLC port is the 15 pin serial port. Below are the communications options you can use:

- Computer – For communicating to the PC (default 9 pin)
- PLC Driver #1 – PLC driver for PLC 1 in project (default 15 pin)
- PLC Driver #2 – PLC driver for PLC 1 in project
- Printer – Serial printer option (used with alarms and reports)
- Slave – ASCII Marquee Slave (used with alarms and reports)
- Not Used – Port is disabled (If set for both ports then no communication will happen)

Maintenance and Troubleshooting

Hardware Maintenance

Routine maintenance checks should be performed on the unit to avoid any risk of hardware problems. The EZ9 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 EZ9 Series HMI's environment within specified operating conditions is the best method to minimize the maintenance.

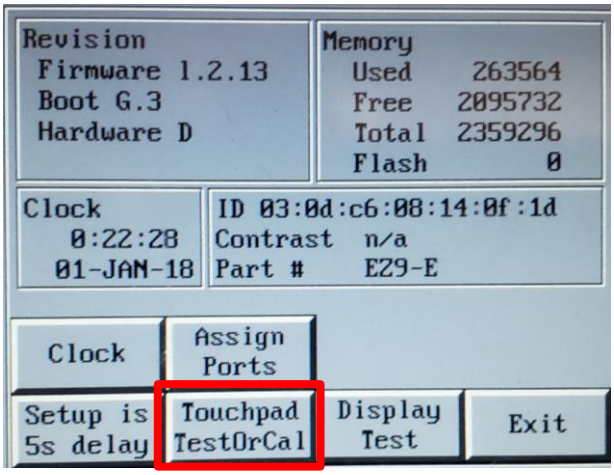
1. Always ensure that ambient temperature inside the cabinet is within EZ9 Series HMI's temperature ratings.
2. If any other equipment inside or outside of the cabinet is producing heat, employ cooling methods like a blower fan to reduce 'hot spots' around the EZ9 Series HMI
3. Periodically inspect and clean if there are any air filters on the cabinet. Ensure that the PLC is free from dust, humidity and corrosive gases.

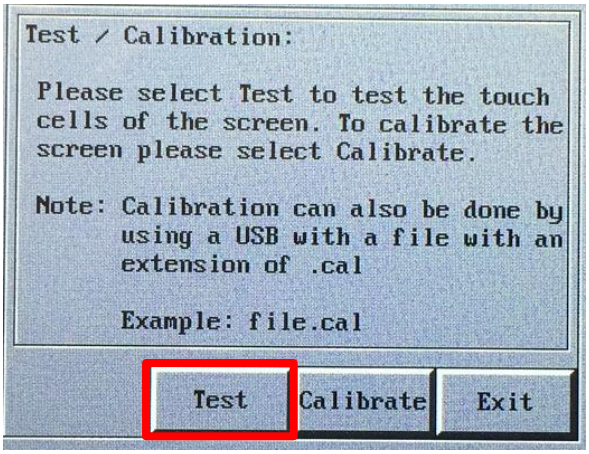
Display Verification Tests

The EZ9 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.

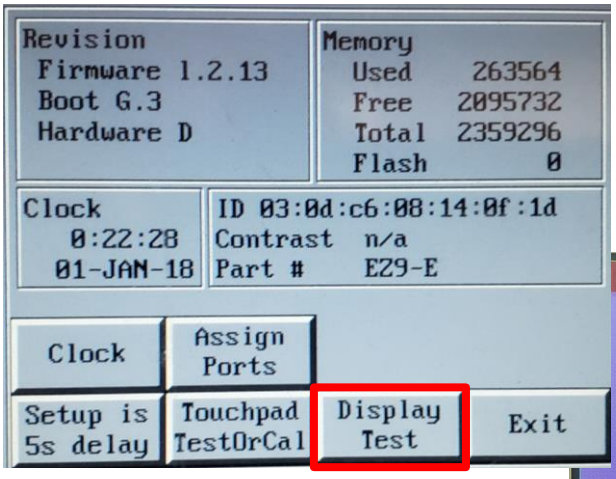
Test Touchscreen

When troubleshooting you can test the touch screen in the Setup menu. Just press the Touchpad TestOrCal button then press Test. This will bring up a touch screen test screen where every location becomes a button for touch testing.

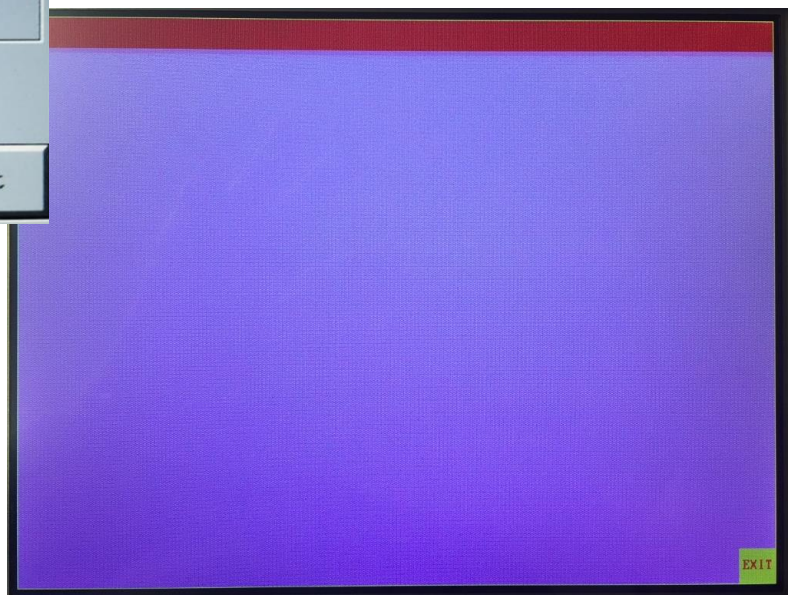




Test Color Display



You can at any point test that the entire display is working correctly by entering the Setup Screen and then pressing the display test button. This will bring up a screen which will have continues scrolling different color lines (horizontally then vertically).



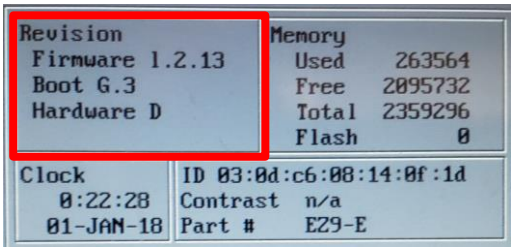
Update Firmware

Typically when power flows to the EZ9 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 EZ9 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.

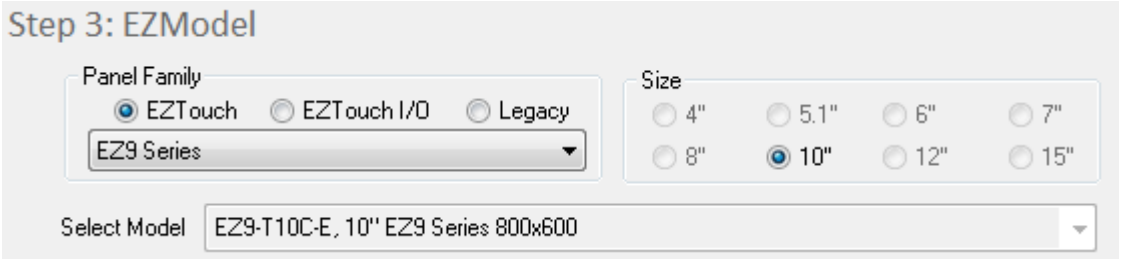


To update firmware:

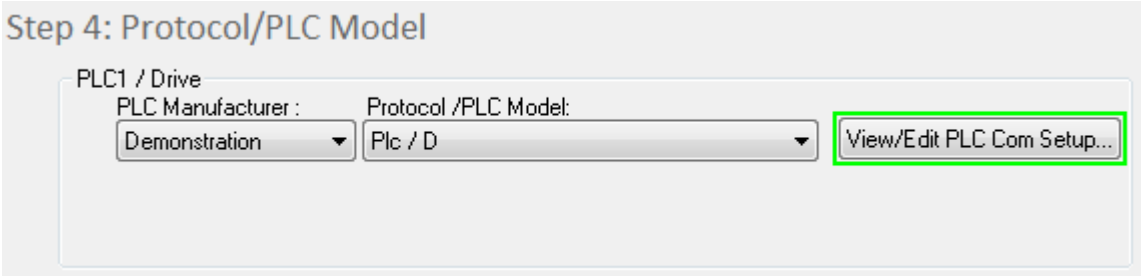
1) Insert a RS-232C cable (**P/N: EZ-PGMCBL**) into the serial port (COM1) and launch the editing software EZTouch Editor.

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

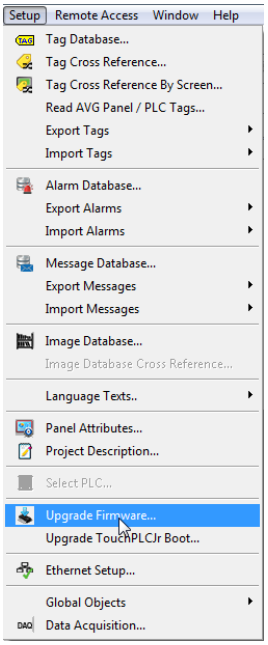
3) Next select EZTouch in the radio buttons below Panel Family. Then select EZ9 Series from the drop-down list.

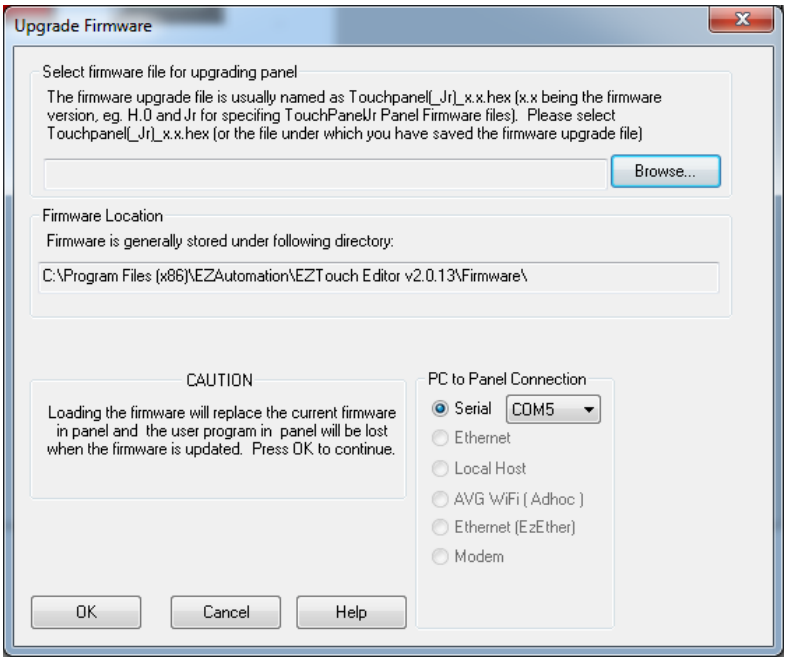


4) Now under Protocol / PLC Model please select PLC Manufacturer of Demonstration. The rest of the field will populate.



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.

Troubleshooting

If you encounter difficulties while using our EZ9 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 EZ9's power rating specifications	Ensure that the power being presented to the EZ9 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.
Communication	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.

Still Need Help?

Technical Support

Most of the frequently encountered problems regarding the EZ9 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 EZ9 Series HMI is under warranty, contact us at 1-877-774-EASY.

Out of Warranty Services

If your EZ9 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.

How To Order

To order contact EZ Automation at 1-877-774-EASY. Then use the Part Number below to place your order.

EZ9 – T10C –E