

EZ 12 Series[®]

Getting Started Guide



EZAutomation.net

Innovative Low Cost Automation Equipment Made in

America 

Getting Started

EZ12 & EZTouch Editor 2.0



Manual # EZ12-USER-M

EZ12 Getting Started

Revision History		
Issue	Date	Description of changes
First Edition	May - 2018	Original

WARNING!

Thank you for purchasing American made automation products from EZAutomation. We want to ensure your new automation equipment works well for your application and also operates safely. Hence we have created this manual so anyone who installs the equipment should read this manual to ensure proper installation and setup.

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. Please note these codes vary from state to state and usually change with time.

Programmable control devices such as EZ12 HMIs are not designed, manufactured or intended for use as on-line control equipment in hazardous environments requiring fail-safe performance, in which the failure of the product could lead directly to death, personal injury, or severe physical or environmental damage. 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.

The diagrams and examples in this user manual are included for illustrative purposes only. We do not assume responsibility or liability for your product design, installation or operation. If you have any questions concerning the installation or operation of this equipment, please call us at 1-877-774-EASY (3279).

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Contents

Introduction EZ12 Panel.....	1
Safety Considerations	2
Environmental Specifications.....	3
EZ12 Dimensions	7
EZ12 Mounting.....	8
EZ12 Ports and Indicators	9
EZ12 USB Features	14
EZ12 Analog Resistive Touch Pixel Level Accuracy	15
EZ12 Private Labeling	16
EZ12 Models.....	20
EZ12 Drivers Supported	21
EZ12 Access Setup Menu	22
Setup Menu Functionality.....	24
EZTouch Editor 2.0	27
Creating Your First Project	35
Firmware Upgrade	43
Calibration.....	46
Project File Load.....	47
Image Database	49
AVG Image Library	52
Email Setup (Gmail, Yahoo, etc.).....	53
Ethernet and NTP Setup.....	60

Introduction EZ12 Panel

The new EZAutomation EZ12 Panel is designed with efficiency and versatility in mind. The new design includes a smaller depth profile and a streamlined design.

The new front of the panel is now one single piece making the design more durable and wash down proof. Further the touch screen has been improved to be pixel level sensitive allowing full use of all the screen for touch objects.



Finally the design has been created with Private Labeling in mind. This includes a simple and easy way to change the EZAutomation Label to your own. Furthermore you can add an on screen private label.

The EZ12 panel also comes with the release of the new EZTouch Editor 2.0 which includes many quality of life improvements as well as user requested functionality. This includes USB firmware upgrade, new Setup Screen features, and on screen calibration options.

Safety Considerations

Please follow all applicable sections of the National Fire Code, National Electrical Code, and the codes of the National Electrical Manufacturer's Association (NEMA) to ensure maximum safety of the equipment and personnel.

Plan for Safety

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.

Local regulatory and government offices usually provide excellent help to determine which codes and standards are necessary for safe installation and operation. Please note these codes may change from time to time, so it is the responsibility of the user to keep up to date.

Safety Techniques

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 considerations:

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 a PLC.

2) *Safety Circuits*

Most of the machines are installed with safety circuits, like Limit switches, Emergency stop push buttons, and Interlocks. These circuits should always be hard-wired directly to the PLC. 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 serious injury or machine damage could result.

3) *Fail-Safe Operation*

Our products are not fault-tolerant and are not designed or intended for use as on-line 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.

Environmental Specifications

The following table lists the environmental specifications that generally apply to the EZ12 HMI.

Parameter	Ratings
Operating Temperature	0 to 55°C (32 to 131° F)
Storage Temperature	-25 to 65°C (-13 to 149° F)
Humidity	10 to 95% Relative Humidity, Non-condensing
Vibration Resistance	5 to 55Hz 2G for 2 hours in the X, Y and Z axes
Shock Resistance	10G for under 12ms in the X, Y and Z axes
Electrical Noise (ESD Immunity)	NEMA ICS 2-230 showering arc ANSI C37.90a-1974 SWC Level C Chattering Relay Test
Atmospheric Conditions	Non-corrosive gases

Agency Approvals

Your application may require agency approval. EZ12 HMI's agency approvals are:

- UL (Underwriter's Laboratories, Inc)
- CUL (Canadian Underwriter's Laboratories, Inc)
- CE (EU Certification)

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.

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 unit's 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-grounded 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

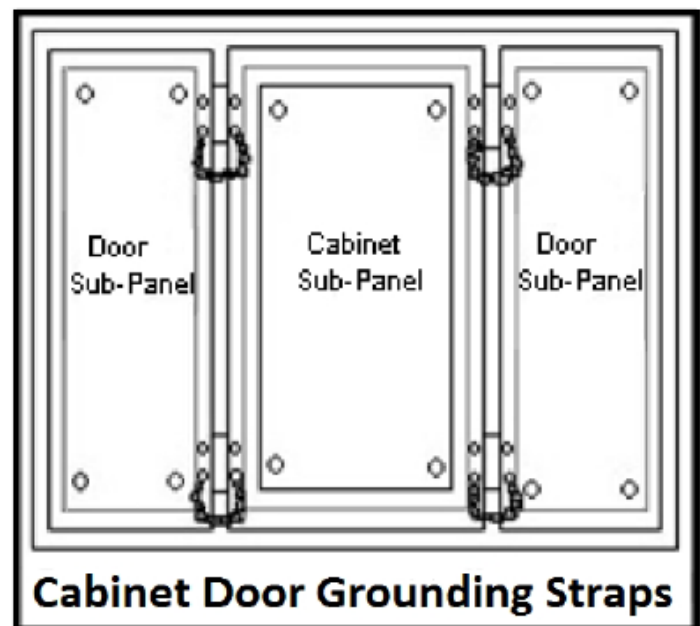
Shielded Cables

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.

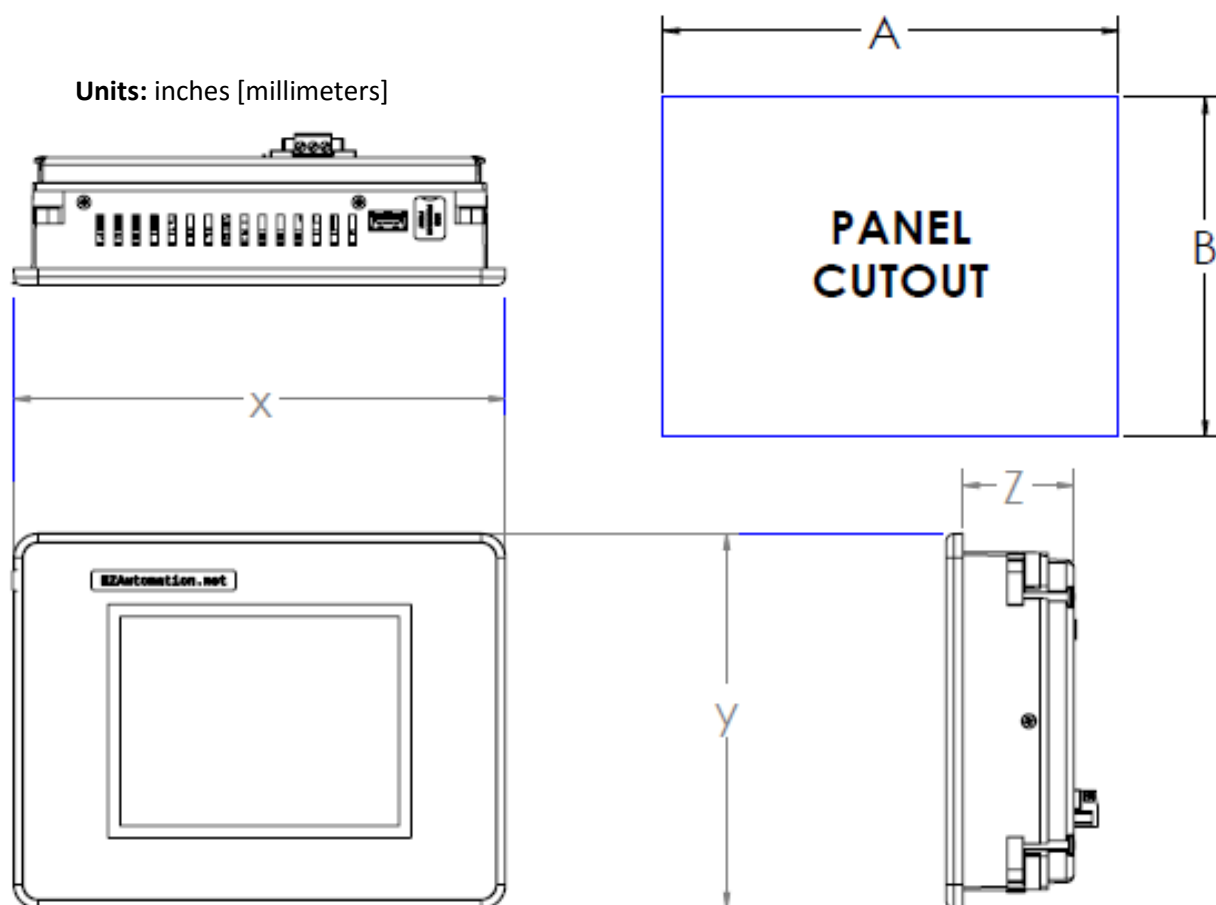


Cabinet Wiring

The wiring of the EZ12 unit 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.

EZ12 Dimensions



EZ12 PANEL DIMENSIONS

UNIT SIZE	X	Y	Z
6"	8.05 [204.50]	6.15 [156.20]	2.10 [53.34]
7"	8.05 [204.50]	6.15 [156.20]	1.82 [46.23]
8"	10.90 [276.76]	8.75 [222.25]	1.87 [47.60]
10"	13.59 [345.06]	10.62 [269.90]	1.82 [46.23]

PANEL CUTOUT DIMENSIONS

UNIT SIZE	A	B	DEPTH
6"	7.47 [189.73]	5.57 [141.48]	3.60 [91.44]
7"	7.47 [189.73]	5.57 [141.48]	3.32 [84.33]
8"	9.17 [232.92]	7.04 [178.82]	3.38 [85.68]
10"	11.87 [301.50]	8.90 [226.00]	3.32 [84.28]

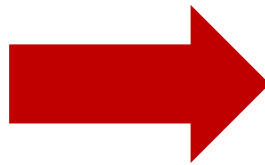
EZ12 Mounting

All EZ12 panels have a new innovative mounting design. This design allows the unit to not need any external mounting components. The mounting brackets and screws are already included in the unit. Also the unit is designed to be very easy and simple to mount. No more trying to figure out which way to attach DIN clips and no more looking for screws and nuts. This design has also been used in all sizes of EZ12 units to make the design consistent and making mounting simple and easy no matter which size panel you have.

NOTE: The maximum torque force that should be applied is 2 ½ to 3 inch-pounds.

Mounting directions:

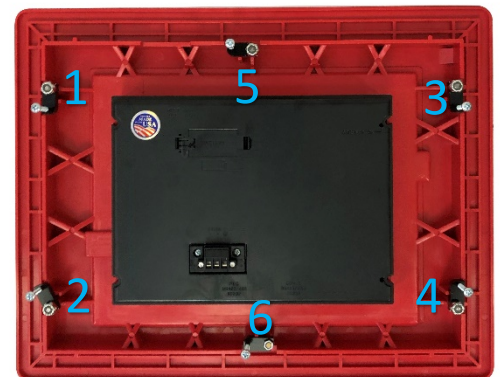
1. When looking at the back of the unit please look at the screws in the corners of the unit. These screws are screwed into the flip out din brackets (retainers) for the panel.
2. Unscrew the screws and you can flip out the din brackets. The 6" and 7" units have 4 (1 in each corner), the 8" has 5 (1 in each corner and 1 at the top midpoint), and the 10" unit has 6 (1 in each corner and 1 at the midpoint at top/bottom).
3. Then use the screws and the din brackets to mount the panel. The maximum torque force that should be applied is 2 ½ to 3 inch-pounds.



6"/7" Inch

8" Inch

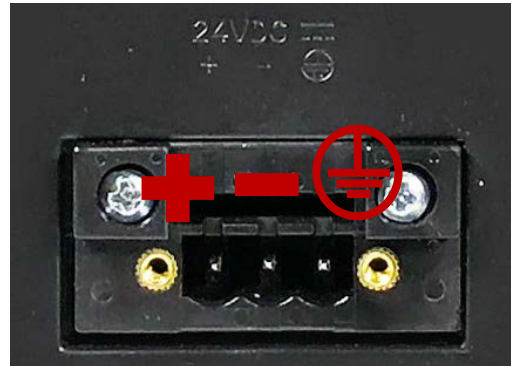
10" Inch



EZ12 Ports and Indicators

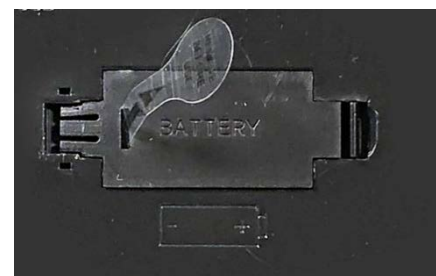
Unit Power

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.

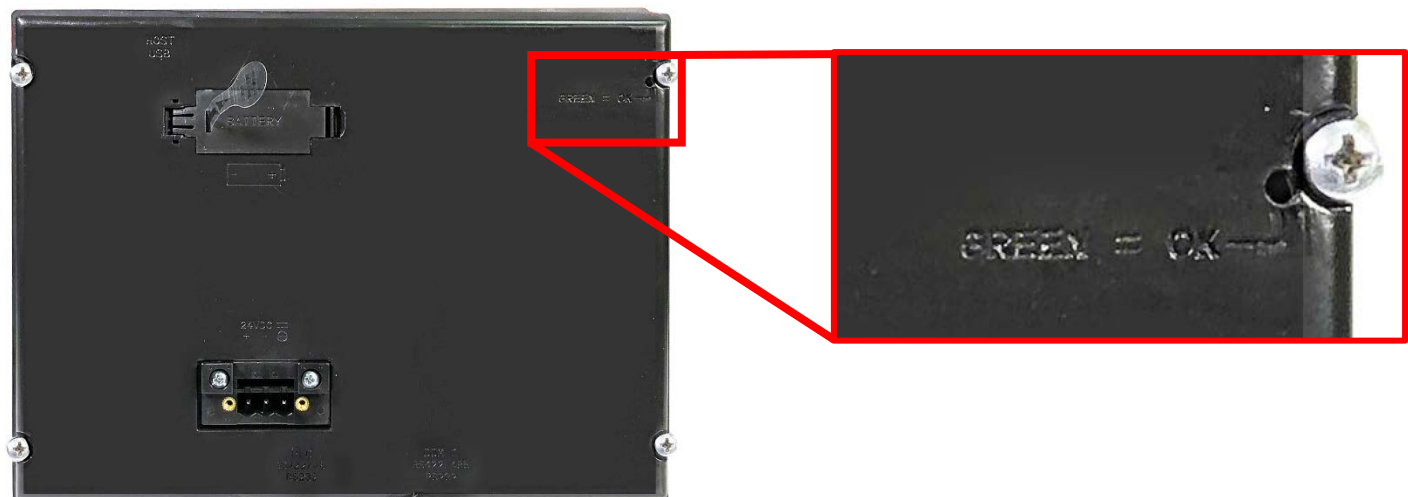


Battery

The EZ12 uses battery to retain retentive tags and clock over a power cycle. The battery will not work till the plastic battery tab is removed. For replacement please use 3.6 V ½ AA batteries. Recommended to replace batteries every year.

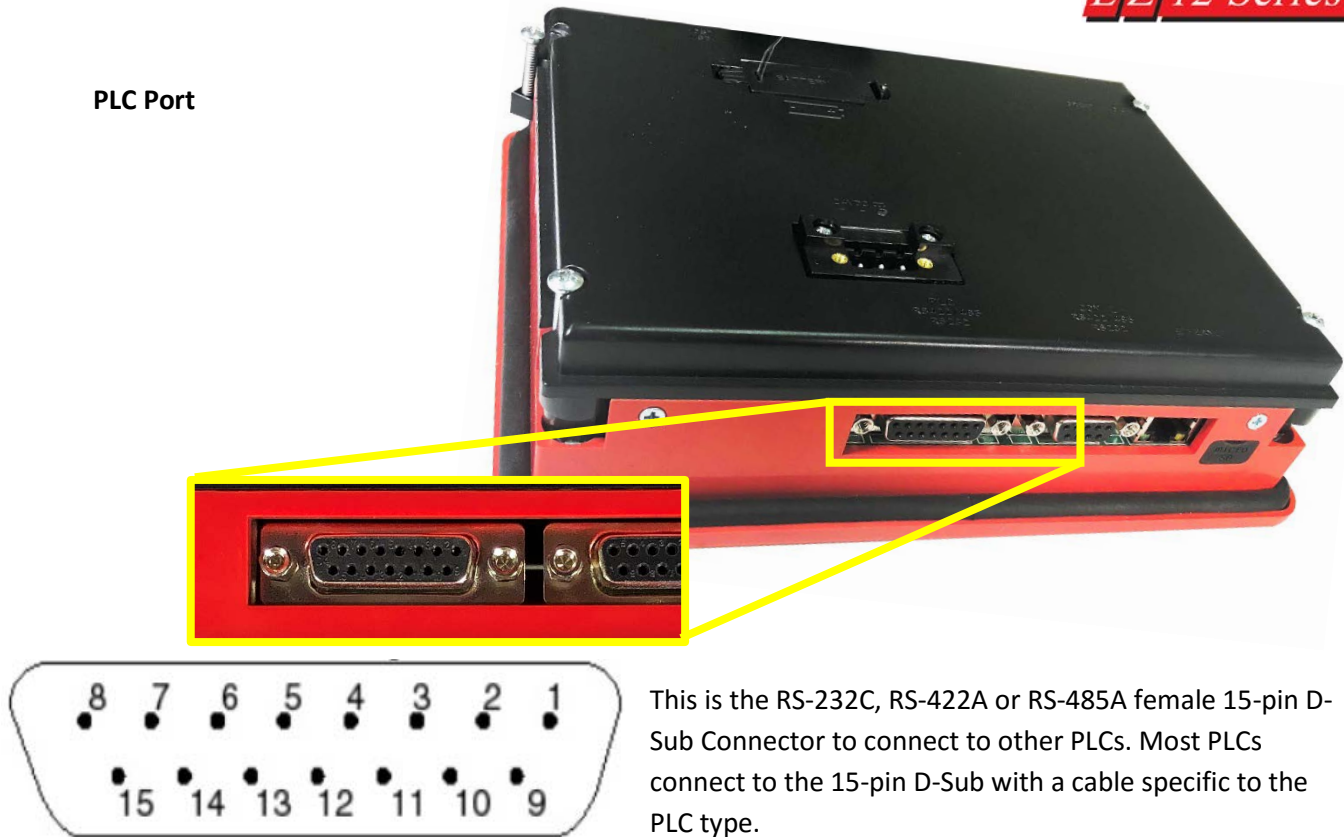


Status LED



LED Behavior	Status Description	Suggested Response
Flashes Red, then continuously Green	Normal Operation	Proceed to use unit
Continuously Red	Unit Failure	Return unit to factory for service
Does Not Light	No Power	Check or Replace 24 VDC Power Supply - if condition continues return unit to factory for service

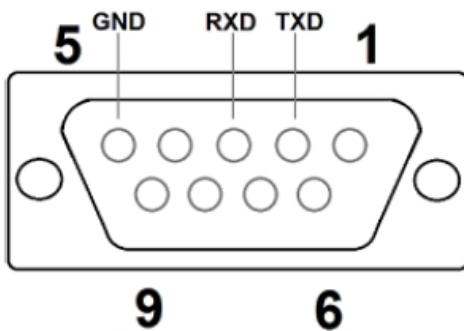
PLC Port



Pin Number	Connection
1	Chassis GND
2	PLC TXD (RS-232)
3	PLC RXD (RS-232)
4	+5 V (100 Ω)
5	Logic GND
6	LE
7	PLC CTS (RS-232)
8	PLC RTS (RS-232)

Pin Number	Connection
9	RXD+ (RS-422)
10	RXD- (RS-422)
11	TXD+ (RS-422)
12	RXD- (RS-422)
13	Terminating Resistor (Connect to pin 9)
14	NC
15	NC

COM1 Port

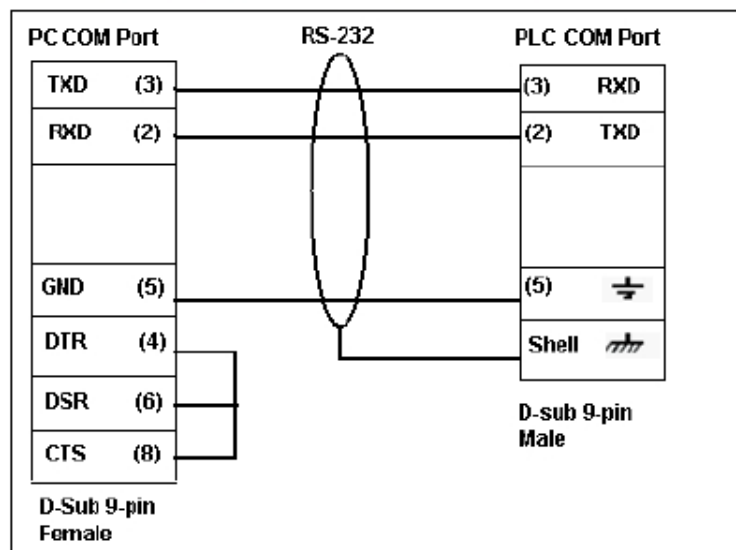


The EZ12 Series has a built-in serial port (COM1 PORT) located on the 9-pin D-Sub connector. COM1 PORT is an RS-232 port which requires an appropriate RS-232C cable (P/N: EZ-PGMCBL) for programming the unit through a PC. It serves as the default programming port on the EZ12 Series. Since COM1 has fixed communication parameters, you can always connect the programming software to the PLC 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.



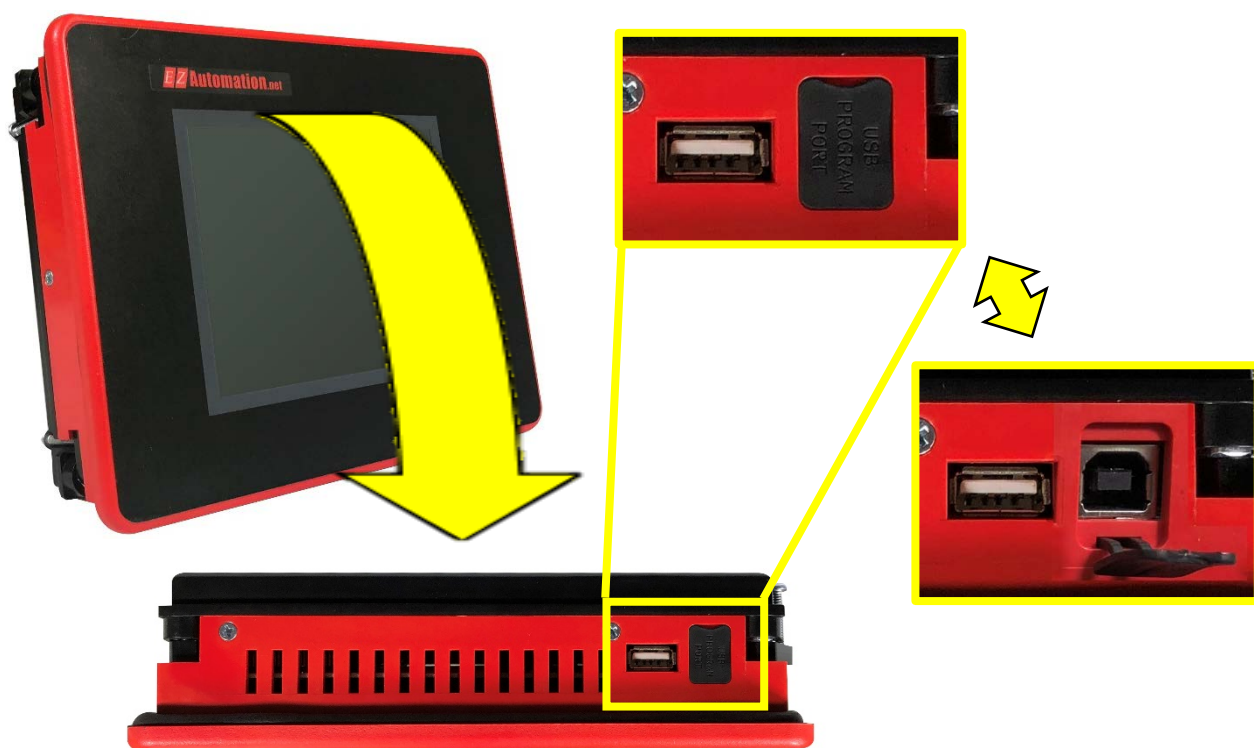
Ethernet Port

There is an Ethernet port available on the EZ12 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.

Micro SD slot

A Micro SD slot is available to allow for additional storage or data transfer. Insert a Micro SD into the slot and it will load automatically. When finished, push against the Micro SD card to eject it from the unit.

Note: Please you cannot use Micro SD and USB drive to log data simultaneously.

USB Ports

EZ12 Series HMIs come equipped with two USB ports. The port on the left is 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 Host USB port (on the right) can connect to a USB Flash drive for program upload by simply using our EZ Editor Software to create a USB Loader file (.hmi). It also allows the user to upgrade firmware (.mme), enter the Setup menu (.set), and calibrate the HMI (.cal) if need be. This process benefits system integrators and OEMs by permitting them to upgrade panels on site without the need to connect to a computer or programming software. Please see our EZTouch Editor Software Help for detailed instructions on this process. In addition, the Host USB can be utilized for data logging purposes in combination with our AVG Remote File Manager Utility.

EZ12 USB Features

The EZ12 Series HMI has been upgraded to include many new USB features. Since we listen to our customer requests, certain features which were available in our software and hardware has been improved and some new features has been added.

Note: Recommended USB size is 4 GB and maximum size that can be used is 8GB. Format is FAT32.

USB Firmware Upgrade – All EZ12 panels will allow users to upgrade the firmware using a USB flash drive. To do so, you will take the normal firmware and convert it to a USB firmware file (.mme). For more directions please see the Firmware Upgrade Section.

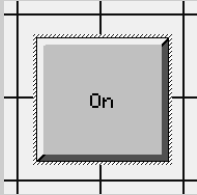
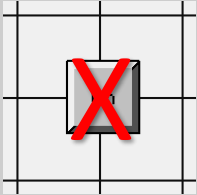
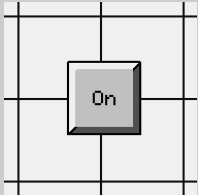
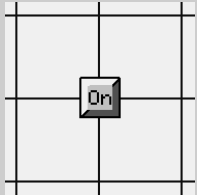
USB Calibration – All EZ12 panels allow users to calibrate the panel from the Setup Menu in the EZ12 Touch Panel. Also in case the calibration is such that you cannot access the Setup menu, you can use a calibration file on USB (.cal) to initiate calibration on any panel. For more directions please see the Calibration Section.

USB Setup Menu Access – All EZ12 panels now allow users to disable access to the Setup Menu. If the Setup Menu is disabled, then the user can use a setup USB file (.set) to go to the Setup Menu if need be. This feature is outlined more in the Setup Menu Section.

USB Project Load – As previous panels, all EZ12 panels allow users to load or transfer a project using USB (.hmi). This feature allows users to have multiple project files on the USB flash drive and select a particular file which should be loaded onto the panel. For more information please see the Project File Load Section.

EZ12 Analog Resistive Touch Pixel Level Accuracy

All EZ12 Series HMIs have been developed with pixel level accuracy. This means that there is no need for touch cells anymore. All objects no matter the size or position can be pressed and used.

Older Panels		EZ12 Panel	
Minimum Touch Object Size needs to cover $\frac{3}{4}$ of Touch cell for it function		No Minimum Touch Object Size	
			
Okay	Not Work	Okay	Okay

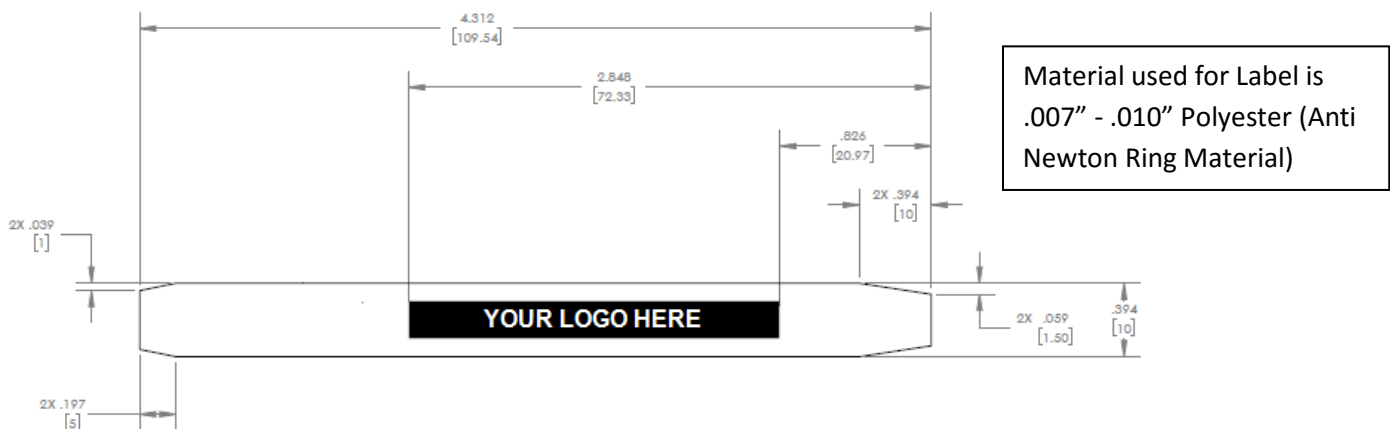
Note: The EZTouch Editor still includes a Guiding Grid (only on PC) and Snap to Grid option to allow for easier object alignment. The only difference is that you can now change the Grid Size and know that there is no position where an object will not work. Furthermore, we have added Scales to help with positioning.

EZ12 Private Labeling

The EZ12 Panels have built in methods of private labeling panels. These options include both a Private Label Power Up Screen and Logo Label. You can do one or both, to find out how to use these features please see directions below.

Logo Label Insert

All EZ12 Panels have an EZAutomation Logo inserted when shipped. Customers can replace this logo by making their own. Below are the dimensions and materials needed to print your own label. Also directions on how to remove and insert labels are below.



Removal – Remove the insulation (if needed), then use a small tool such as jeweler screwdriver and pull tab away from housing.



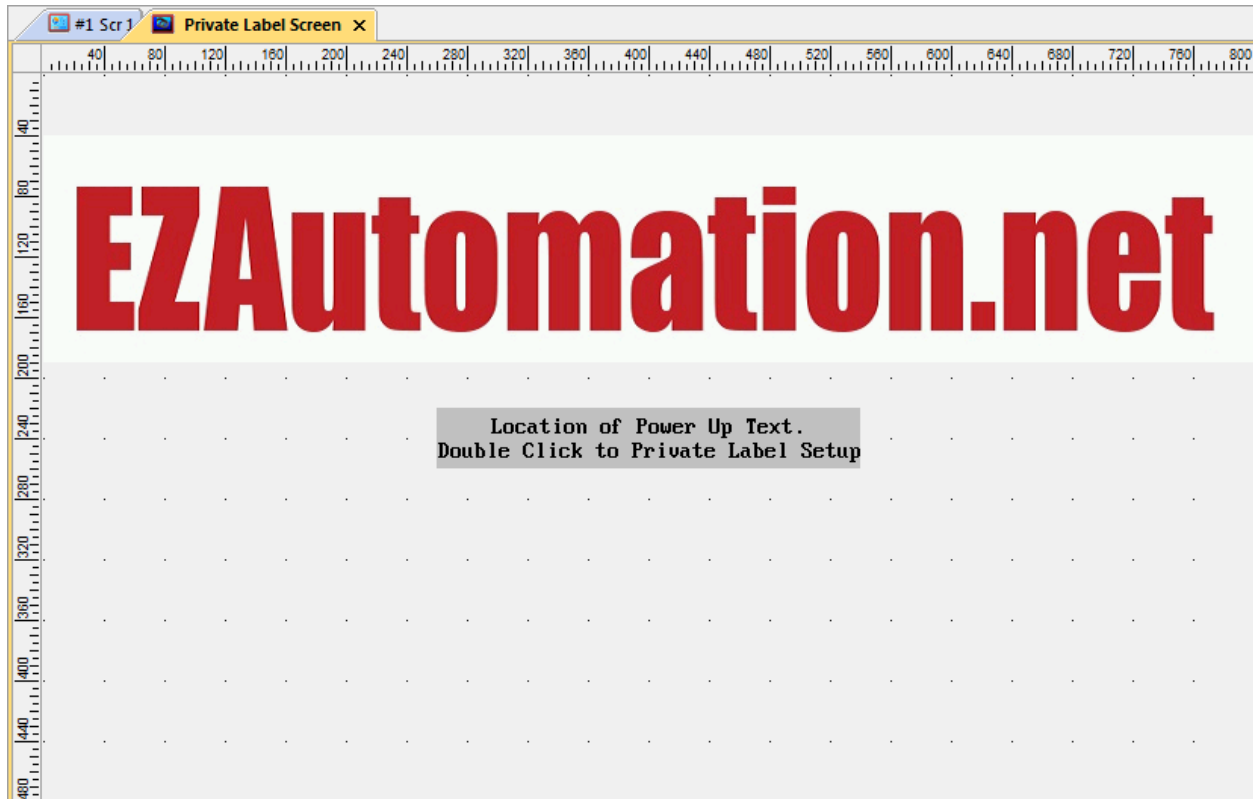
Installation – Insert your own label into slot, see above for needed dimensions. Then lock tab into place.



Private Label Screen

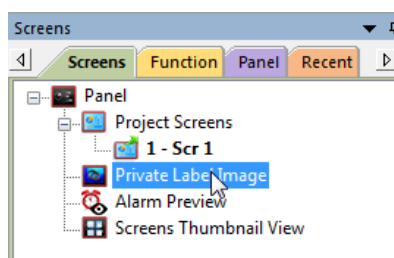
The EZ12 panels support Private Label Images that are displayed upon panel startup. The startup process is the time when the EZTouch Panel displays the Panel Part Number, Panel IP, and Panel MAC address.

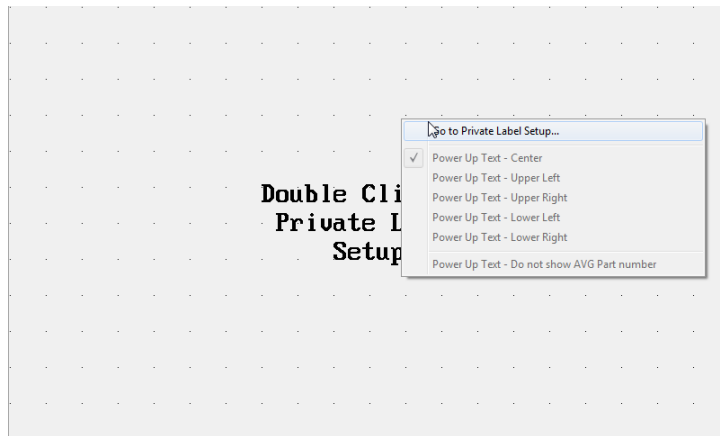
The Private Label Image can be position anywhere you like. Also the Power Up Message Text can be moved to certain locations: Center, Upper Left, Upper Right, Lower Left, and Lower Right. To Add Private Label Image please see below.



To modify a private label image you can double click it or right click anywhere in the Private Label Screen. Below are instructions on how to add a private label image (splash screen) from the main screen of a project.

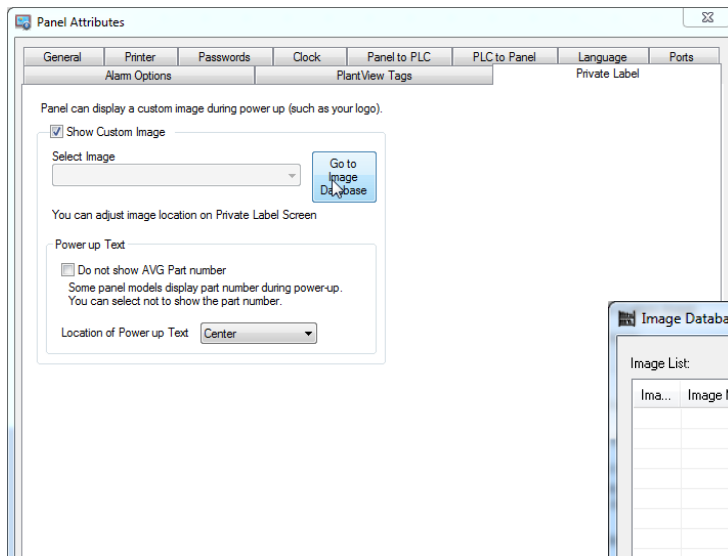
1. In the main screen of an open project. In the project screens list double click on the Private Label Image.



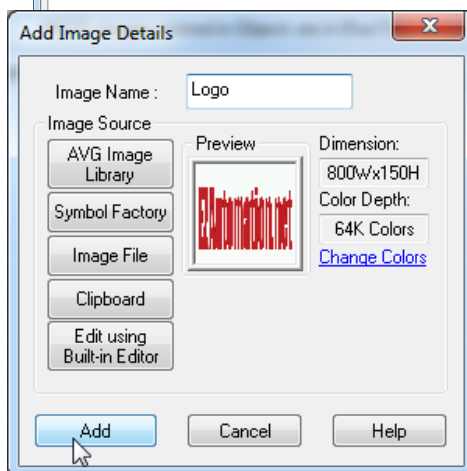
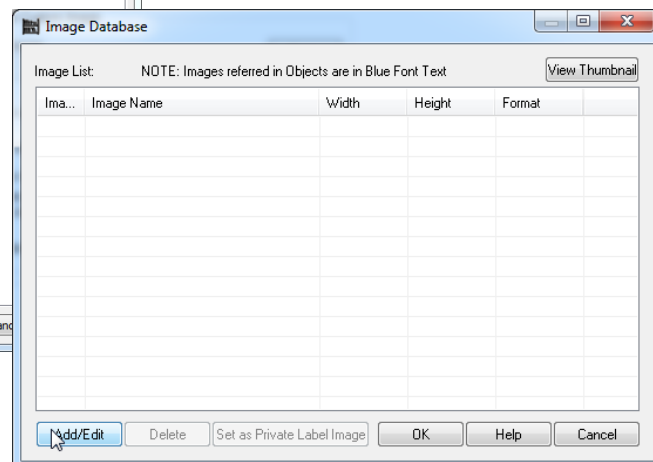


2. Once in the Private Label Image screen double click on the text that says double click. You can also right click and then click on Go to Private Label Setup. You can also enter this setup through the Panel Attributes Menu.

3. In the Panel Attributes you will have to Enable Show Custom Image. Then click the Go to Image Database



4. In the Image Database you can hit Add / Edit to add your image to the Database. If you have already added an image you can skip this step.

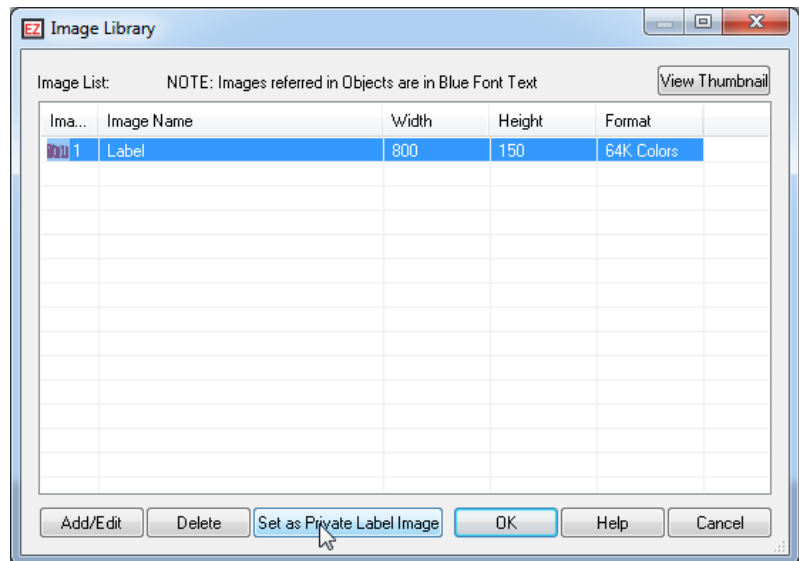


5. In the Add Image Details you can select an image from the two provided libraries (AVG Image Database, Symbol Factory) or you can select an image from your computer files. We also allow copied images from clipboard to be used. Once an image has been selected you can edit in with our Editor.

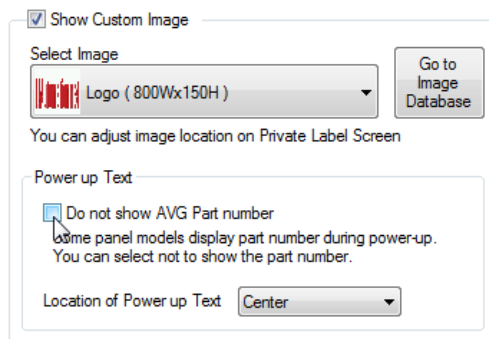
- Once the image is selected enter an Image Name. Then push the Add button. You can continue adding more images if you like. Otherwise click the Cancel to exit the Add Image Details dialog box.

- In the Image Database select your image and then click the Set as Private Label Image.

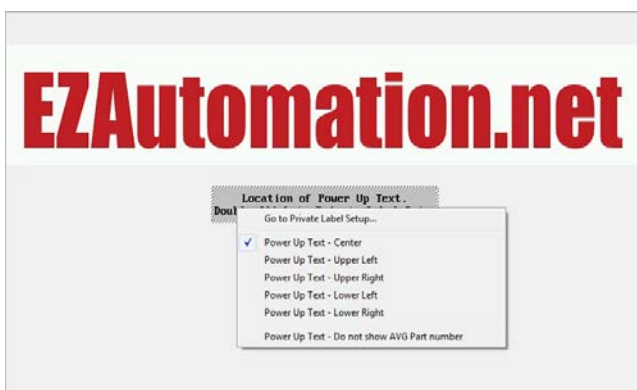
- The selected Image will appear in the Selected Image Option. If more than 1 Image exist in the library the drop down can be used to change the Private Label Image.







- You also have the option to change the position of the Power up Text as well as disable the seeing the EZAutomation Part Number upon power up of the unit. Once done click OK.



- Now the image will appear on the Private Label Image. You can at this point move the image around if it is not the same size as the screen (max size images will fill the entire screen). You can also use the right click menu to move the Location of Power Up Message Text to different spot.



EZ12 Models

EZ12 Series 6", 7", 8" and 10" Model Specifications				
Part Number	EZ12-T6C-E \$695	EZ12-T7C-E \$535	EZ12-T8C-E \$995	EZ12-T10C-E \$1295
				
Specification	6" TFT Color Slim Bezel	7" Wide TFT Color Slim Bezel	8" TFT Color Slim Bezel	10" TFT Color Slim Bezel
Enclosure	NEMA 4, 4X (indoor)			
Display Type	5.7" TFT (65K Colors)	7" TFT (65K Colors)	8" TFT (65K Colors)	10.4" TFT (65K Colors)
Display View Area	4.65"x3.5" (118.1 x 88.9mm)	6.49"x3.9" (164.9 x 100mm)	6.05"x4.55" (153.7 x 115.8mm)	8.31"x6.22" (211.07 x 158mm)
Screen Pixels	320x240	800 x 480	800 x 600	800 x 600
Brightness/Life	400 nits/75,000 hours (Even at extreme Operating Temp.)			
Backlight	White LED Strips			
Touch Screen	Analog Resistive Touch Screen			
Service Power	24 VDC (20-30 VDC Operating Range), 1.5A switching supply recommended			
Operating Temperature	0-55°C (32 - 131°F)			
Power	Backlight OFF	8 Watts @ 24 VDC		
	Backlight ON	15 Watts @ 24 VDC	15 Watts @ 24 VDC	18 Watts @ 24 VDC
Storage Temp.	-25 to 65°C (-13 to 149°F)			
Humidity	10-95% RH, non-condensing			
Electrical Noise	NEMA ICS 2-230 showering arc ANSI C37.90a-1974 SWC Level C Chattering Relay Test			
Withstand Voltage	1000 VDC (1 Minute), between power supply input terminal and protective ground (FG)			
Insulation Res.	Over 20 MΩ , between power supply input terminal and protective ground (FG)			
Vibration	5 to 55Hz 2G for 2 hours in the X, Y and Z axes			
Shock	10G for under 12ms in the X, Y and Z axes			
# of Screens	Up to 999 limited by memory			
Real Time Clock	Built into Panel (PLC clock is still accessible if available)			
Screen Saver	Yes, Backlight off			
Communication Ports	Download/Programming port: 9-pin D-Sub (female) - RS-232 PLC Communication port: 15-pin D-Sub (female) - RS-232/RS-422/RS-485 Ethernet (10/100 Base-T): Programming & PLC Communication port USB Type A: Programming/Data Logging port USB Type B: Programming port Micro SD slot: Datalogging			
External Dimensions	6.15"x8.05"x2.10" (156.20x204.50x53.34 mm)	6.15"x8.05"x1.82" (156.20x204.50x46.23 mm)	8.75"x10.90"x1.87" (222.25x276.76x47.60 mm)	10.62"x13.59"x1.82" (269.90x345.06x46.23 mm)
Weight	1.7 lbs	1.7 lbs	2.9 lbs	3.8 lbs

EZ12 Drivers Supported

The following is a list of current drivers supported by the EZ12 Series units. However, we are always updating PLC compatibility; visit our web site at http://www.ezautomation.net/com-drivers_pg1.htm for the latest information.

PLC Manufacturer	Serial Drivers	Ethernet Drivers
AVG/EZAutomation	EZPLC EZ Rack PLC	EZPLC TCP/IP EZ Rack TCP/IP
Allen Bradley	DH485/AIC/AIC+ DF1 Half Duplex DF1 Full Duplex	EtherNet/IP DF1 over Ethernet Micro800 Ethernet
KOYO (AutomationDirect)	Modbus (Koyo addressing) Modbus RTU Direct NET ADC K-Sequence Do More Serial Productivity	Modbus TCP/IP ECOM Ethernet Do More Ethernet Productivity Ethernet
Modicon	Modbus RTU Modbus Uni-Telway	Modbus TCP/IP
Mitsubishi	Computer Link Mitsubishi FX	
Omron	Host link adapter	
GE	GE SNP-X	GE SRTP
Siemens	S7	Siemens ISO Ethernet
Siemens/TL	Series 5x5	
All Motion	EZStepper	
Animatics	Smart Motor	
Applied Motion	SCL	
Aromat	Mewtocol COM	
Baldor	Host Comms2	
Bristol Babcock	BSAP	
CTC Binary	CTC Binary	
IDEC	Computer Link	
Keyence	CV 5000	
Yaskawa	Memobus Native Memobus RTU	

EZ12 Access Setup Menu

The EZ12 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, change data log option, and disable USB.

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:

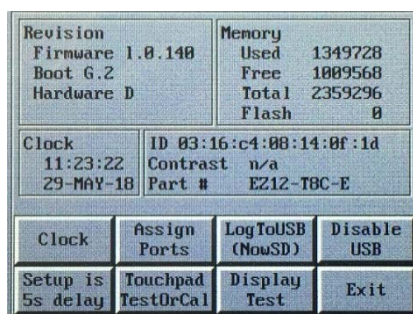
1. To access the setup menu press and hold left upper corner (40x40) of screen for 5 seconds.



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.

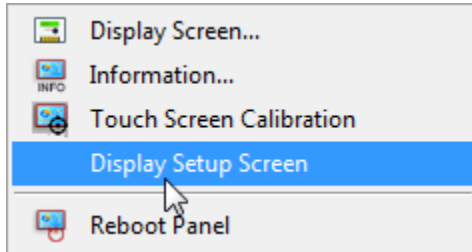
Disabled Setup Screen Steps: Press the upper left corner (40x40 pixels), then release. Then press again and hold for at least 2 seconds. Then release (initializing screen appears for total of 8 seconds).



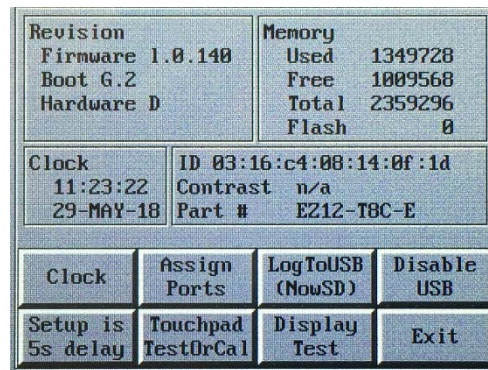
3. After the language is selected you will see the following screen. This is the main Setup Screen from which all the options can be accessed. Also it is the screen which will tell you some troubleshooting information such as Firmware revision.

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.

USB Setup Screen Access:

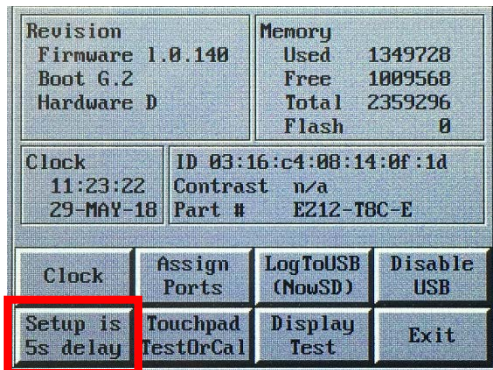
You can use any file with the extension .set on a USB to have the panel enter the setup screen (even if it is disabled). For example an empty text doc which extension is changed to ".set"(ex: Setup_menu.set). Once USB is put in panel the panel will immediately enter the setup menu language screen (if it does not then you might need to power cycle the panel). Please remove the USB before exiting the Setup Menu otherwise the menu will reappear almost immediately.

Note: The USB Setup menu access will not work if the USB is disabled.

Setup Menu Functionality

Below is outlined all the Setup Menu functionality. The EZ12 new functionality is highlighted at the beginning.

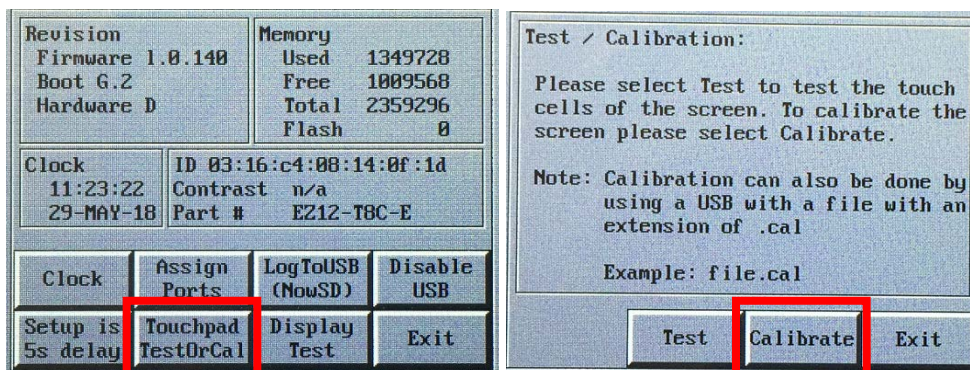
EZ12 Disable Setup Menu



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.

EZ12 Screen Calibration

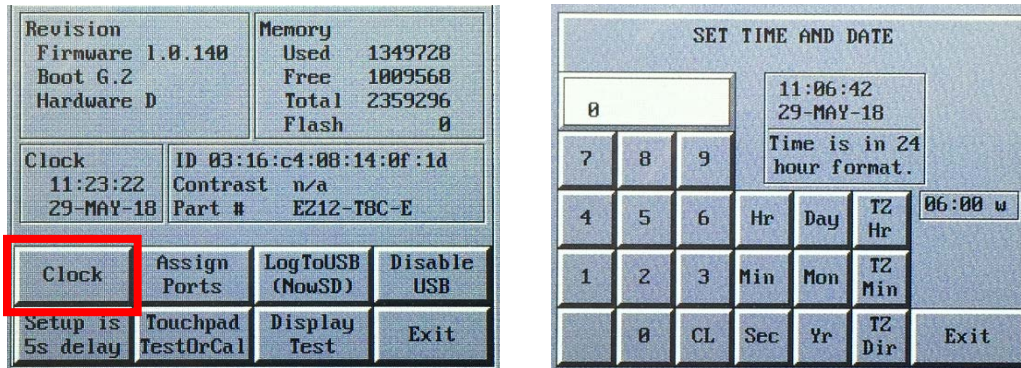


You can now calibrate all EZ12 panels using the Setup Screen calibrate option. Just press the Touchpad TestOrCal button then press Calibrate.

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

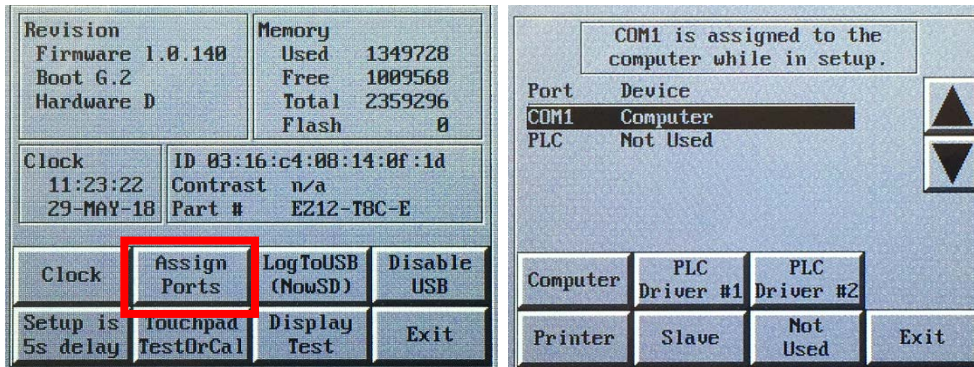
Note: If nothing is pressed for 15-20 seconds during calibration mode then previous calibration is used and panel will restart. Therefore if you accidentally enter calibration mode you only need to wait and panel will exit by itself.

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 new EZTouch Editor 2.0 now 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:

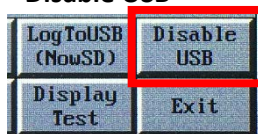
- Computer – For communicating to the PC (default 9 pin)
- PLC Driver #1 – PLC driver for PLC 1 in project (default 15 pin)
- PLC Driver #2 – PLC driver for PLC 1 in project
- Printer – Serial printer option (used with alarms and reports)
- Slave – ASCII Marquee Slave (used with alarms and reports)
-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

Data Log USB vs SD Option



Pressing the Log ToUSB will switch Data Logging from SD to USB. After pressing it will say NowUSB. Note: the 7" and 8" EZ12 do not support USB data logging.

Disable USB



You can at any point disable all UBS functionality (includes USB A to B cable transfer). This can be done if you want to speed up your panel.

Setup Menu Troubleshoot

Test Touchscreen

Revision	Firmware 1.0.140	Memory	Used 1349728
	Boot G.2		Free 1009568
	Hardware D		Total 2359296
			Flash 0
Clock	ID 03:16:c4:08:14:0f:1d		
11:23:22	Contrast n/a		
29-MAY-18	Part # EZ12-T8C-E		
Clock	Assign Ports	LogToUSB (NowSD)	Disable USB
Setup is 5s delay	Touchpad TestOrCal	Display Test	Exit

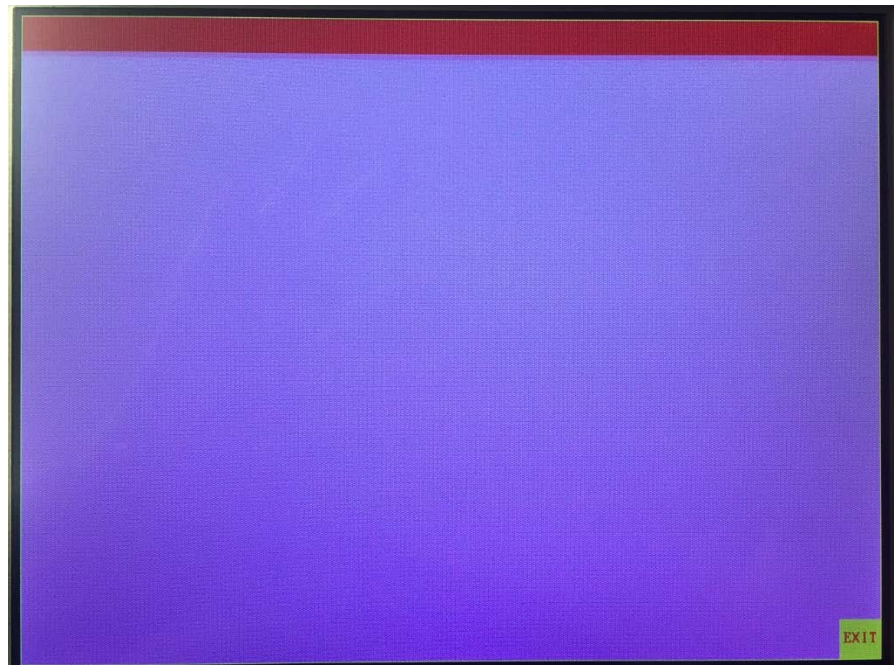
Test / Calibration:
Please select Test to test the touch cells of the screen. To calibrate the screen please select Calibrate.
Note: Calibration can also be done by using a USB with a file with an extension of .cal
Example: file.cal
Test Calibrate Exit

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

Revision	Firmware 1.0.140	Memory	Used 1349728
	Boot G.2		Free 1009568
	Hardware D		Total 2359296
			Flash 0
Clock	ID 03:16:c4:08:14:0f:1d		
11:23:22	Contrast n/a		
29-MAY-18	Part # EZ12-T8C-E		
Clock	Assign Ports	LogToUSB (NowSD)	Disable USB
Setup is 5s delay	Touchpad TestOrCal	Display Test	Exit

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).



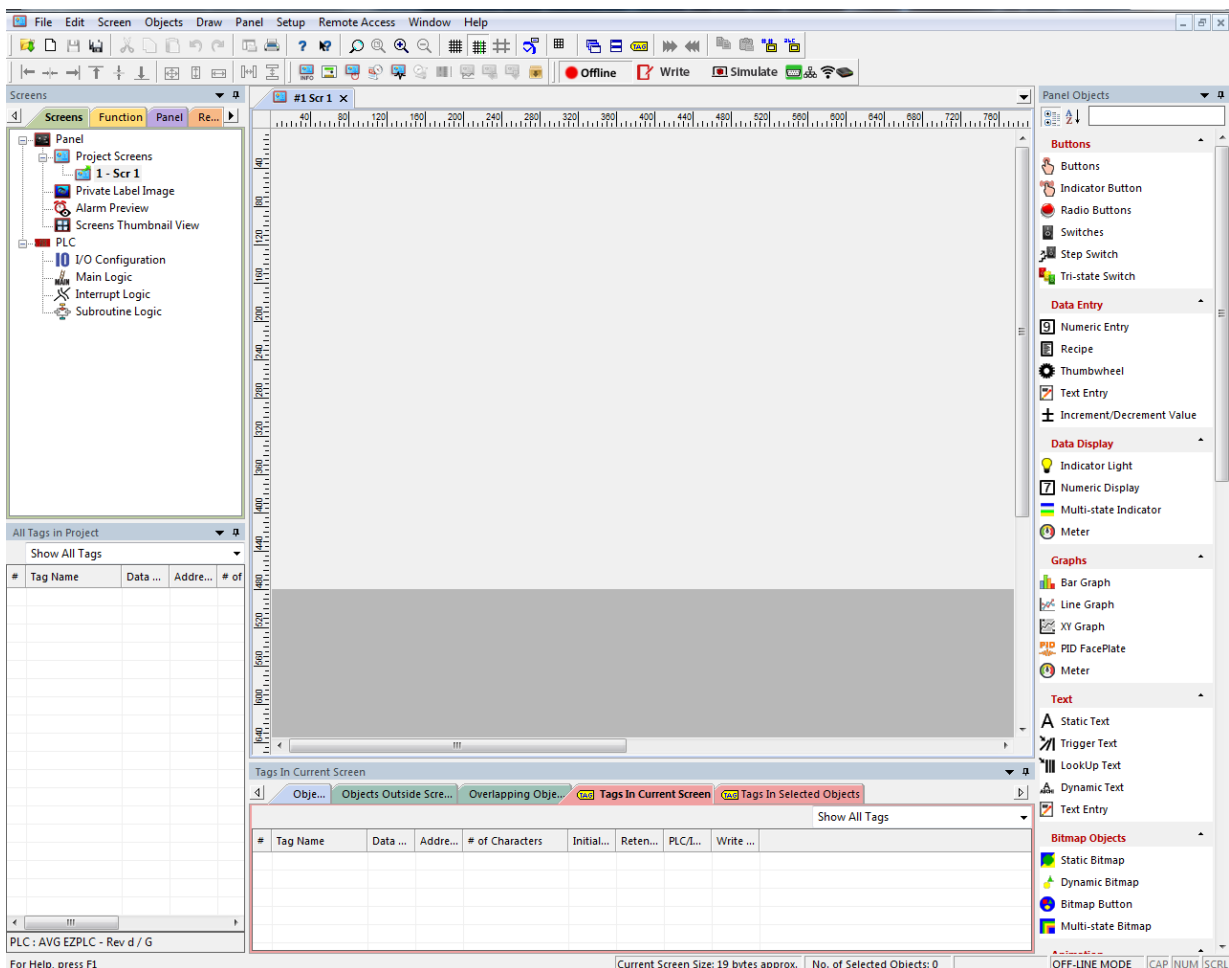
EZTouch Editor 2.0

With the EZ12 panel comes with a new version of EZTouch Editor. This version of the of the EZTouch Editor comes with a vast improvement to quality of life and also includes new features available to all panels.

As soon as you open up the EZTouch Editor and open a new project you will notice the new layout. The layout has been improved to provide clearer icons for all objects, make menu options easier to access, group similar options together, improve ability to position objects and overall improve the ability to make changes. Also we have added new features such as encrypted email functionality, Private Label Images (discussed in the EZ12 section before this section), and Improved the Image Database.

Main Programming Screen

In the new EZTouch Editor, once you are done configuring the Project Information screen, by default the editor will display the EZTouch Panel Main Programming Screen. The new screen layout has an improved Toolbar at the top, redesigned Project Explorer View on upper left, Tag Database on lower left, Screen Info tables at the bottom, and the Object Dashboard on the right. All the views can be modified, moved, or hidden based on user preference. The next section will give a brief overview of functionality.

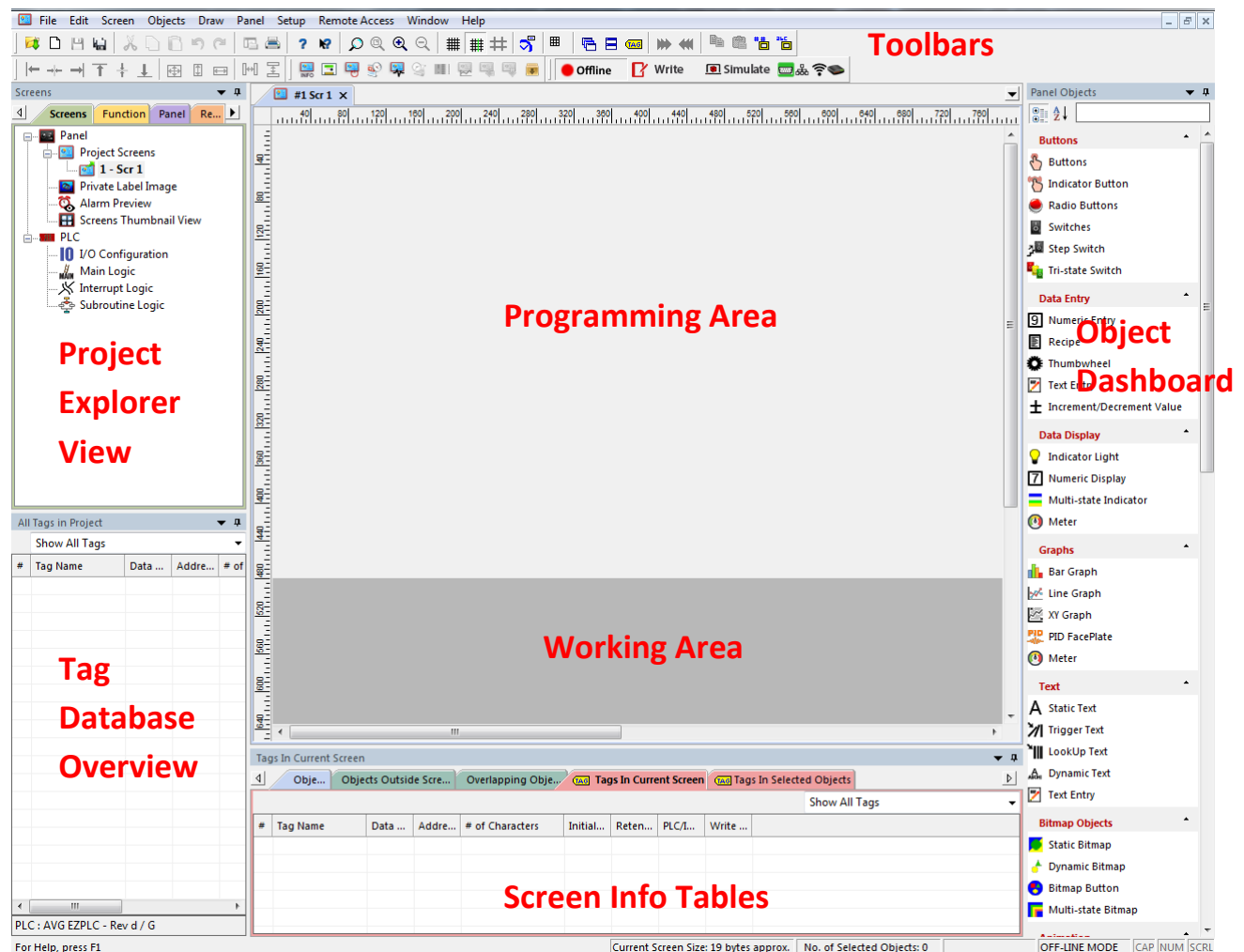


Programming Area

This is the **programming screen** or the foundation where you will build project screens that will in turn be displayed on the EZTouch Panel unit. The screens can be chosen from the panel touchscreen or controlled by a PLC or computer. The range of these programming screens is 1 to 999.

These screens are used primarily to incorporate objects and messages. Placing these items onto the programming screen allows you to have input and control over what is being displayed on the panel.

The Screen now allows a working area around the display area which is equivalent to 3 other screen areas. Whatever exist in this area does not display on the EZTouch Panel unit but allows for creating and modifying objects.

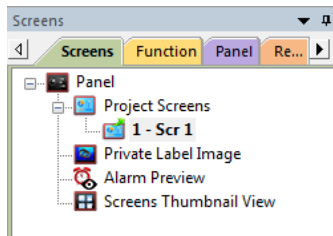


Certain screen editing functions are available from a popup menu that will display when you click the right mouse button.

Project Explorer View

The project explorer section is located on the left sidebar. It can be hidden or moved based on preference. Also each tab in the explorer can be moved and positioned based on your preference. The tab selection includes:

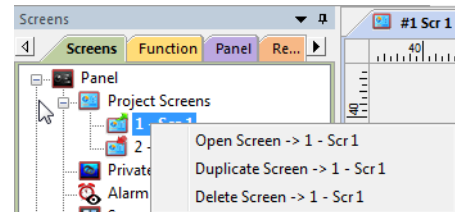
Screens



This window is located on the left hand side of the main programming screen. It is displayed by default. You can have this section auto hide it by clicking the pin icon.

To go to a screen shown in the Project Screens list, double click on it. Also to go to ladder logic you can also double click that selection.

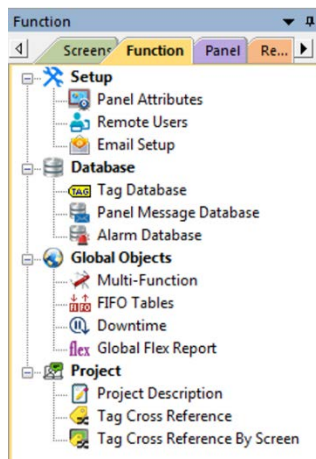
The explorer view allows the user to Open, Duplicate and Delete Screens. These options are available in the right click menu and they operate the same way as the Add / Edit / Delete Screen(s) menu.



You can move the window to a different location in the programming window. Just click on the bar at the top, hold the left mouse button, and drag it to where you want it to appear. If you double click on the bar at the top it will change to a floating window. Double click on the title bar on the floating tool box and it will relocate to its last position. You can also use the arrow drop down at top to select to make it floating or to hide it.

Function

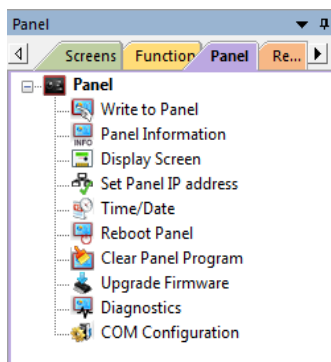
This is the second tab in the Explorer view as default but it can be moved to any position you would like. This has some of the more commonly used EZTouch Editor Setup functions. This includes:



- Panel Attributes - These are the global panel settings for the project.
- Remote Users - To setup RMC use this setup.
- Email Setup - To create alarm or scheduled Emails use this setup.
- Tag Database - To make changes to the tags in your project use the tag database.
- Panel Message Database - Global messages can be setup in this database and then used on multiple screens.
- Alarm Database - All alarms can be configured in this database.

- Multi-Function - To use global functions (constantly change tags etc.) use this setup.
- FIFO Tables - If you would like to have a FIFO table use this setup.
- Downtime - If you would like to have a downtime table use this setup.
- Global Flex Report - To print a global report you will have to use this setup.
- Project Description - Each project can have its own project description.
- Tag Cross Reference - If you would like to search for tags use this.
- Tag Cross Reference by Screen - If you want to see a full list of tags that are on a screen use this.

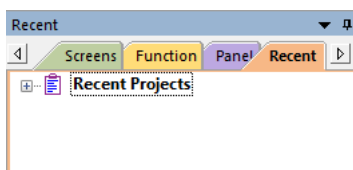
Panel Options



This is the third tab in the Explorer view as default but it can be moved to any position you would like. This has some of the more commonly used EZTouch Panel functions. This includes:

- Write to Panel - Transfer current project to EZTouch Panel.
- Panel Information - Get current setup information about a connected Panel.
- Display Screen - Change screens on the EZTouch Panel to specified screen.
- Set Panel IP address - Change the IP address of the EZTouch Panel.
- Time / Date - Change the Time / Date of the EZTouch Panel.
- Reboot Panel - Reboot the EZTouch Panel.
- Clear Panel Program - Clear the current program on the EZTouch Panel.
- Upgrade Firmware - Upgrade the firmware of the EZTouch Panel.
- Diagnostics - Check the current condition of the EZTouch Panel.
- COM Configuration - Change the PC to Panel COM configuration.

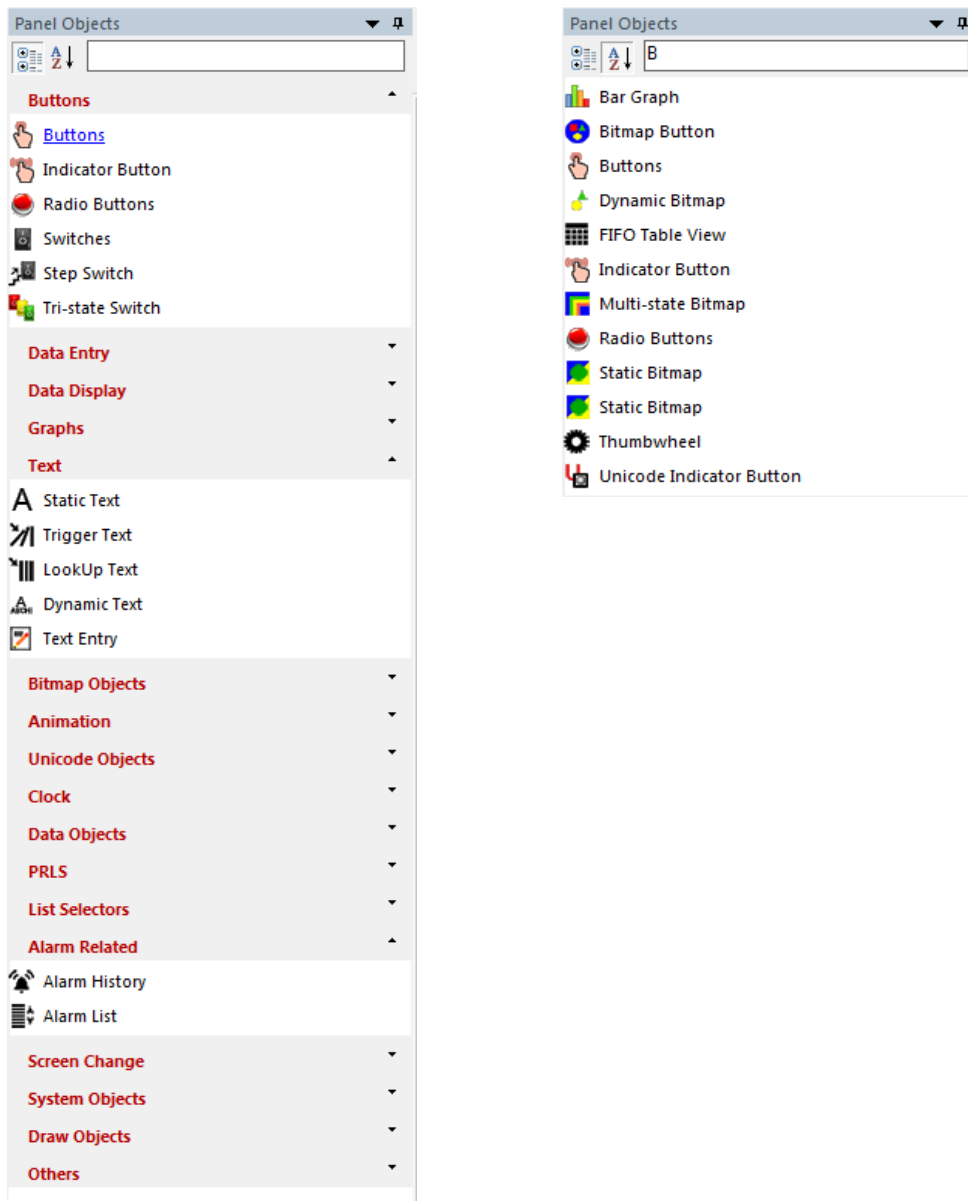
Recent Projects



This is the fourth tab in the Explorer view as default but it can be moved to any position you would like. This will have a full list of the 12 most recent projects that you have opened.

Panel Objects Dashboard

The Panel Objects Dashboard has a full list of all available objects that can be placed on the screen. These objects are grouped by category and multiple categories can be open at the same time. They can also be listed in alphabetical order and even searched through to find the object you are looking for. The Panel Objects Dashboard defaults to the right side but it can be moved to any location you want and also can be hidden till needed.



Tag Database Overview

The Tag Database Overview has a full list of all tags in the tag database. This list can be reordered and double clicking on any tag will allow you to edit that tag. If you would like you can restrict this view to specific types of tags. The Tag Database Overview defaults to the lower left side but it can be moved to any location you want and also can be hidden till needed.

Note: All editing is still done in the Tag Database, double clicking on any tag will bring it up and allow you to Edit Tag Details.

All Tags in Project				
Show All Tags				
#	Tag Name	Data ...	Addr...	# of Characters
1	BUTTON	BIT	S1	
2	INDICATOR	BIT	S2	
3	STRING	ASCII	R1	40
4	FLOAT	F32	R200	
5	NUMERIC TAG	U16	R300	

All Tags in Project				
BIT, Strings				
#	Tag Name	Data ...	Addr...	# of Characters
1	BUTTON	BIT	S1	
2	INDICATOR	BIT	S2	
3	STRING	ASCII	R1	40

Screen Info Tables

The Screen Info Tables will provide detailed information on all object and tags in the current screen. The Screen Info Tables default to the bottom of the main programming area but it can be moved to any location you want and also can be hidden till needed.


On the next few pages is a detailed description of each available table.

Objects

Objects										
4 Objects Objects Outside Scre... Overlapping Obje... Tags In Current Screen Tags In Selected Objects										
#	Object Type	Rank	Overlapping Group	Top	Left	Width	Height	On Border	Outside Screen	
1	Static Text	1	0	0	0	398	79	No	No	
2	Static Text	2	0	0	400	373	163	No	No	
3	Static Text	3	1	170	425	298	79	No	No	
4	Static Text	4	1	240	600	193	159	No	No	
5	Indicator Button	5	0	80	0	398	159	No	No	
6	Indicator Light	6	0	240	0	298	159	No	No	
7	Buttons	7	1	240	300	298	159	No	No	
8	Recipe	8	0	400	0	148	79	No	No	
9	Recipe	9	0	400	150	148	79	No	No	
10	Buttons	10	0	400	300	148	79	No	No	
11	Buttons	11	0	400	450	148	79	No	No	
12	Recipe	12	0	400	600	98	79	No	No	

The Objects table lists all the objects in the currently open screen and includes details on the object such as position, size, what objects overlap, and if it is not on the screen. Double clicking the Object in the table will open up its Object Details.

Objects Outside Screen

#	Object Type	Rank	Overlapping Group	Top	Left	Width	Height	On Border
1	 Recipe	13	0	400	760	98	79	Yes

The Objects Outside Screen Table will only list the currently open screen's object which are not on screen. *Note: Objects that are not on the screen will not be visible on the panel.*

Overlapping Objects

[illegible]

The Overlapping Objects Table will only list the currently open screen's object which are overlapping. It will also give the position of the objects, which is there rank. The higher the rank the more in front the object is and therefore visible. If object are the same size and at the same position then only the highest ranked object will be visible.

Overlapping objects position can be changed in the Overlapping Objects Information screen in the Edit Menu.

Tags in Current Screen

Tags In Current Screen									
4	Obj...	Objects Outside Scre...	Overlapping Obje...	Tags In Current Screen	Tags In Selected Objects				
#	Tag Name	Data ...	Address/Exp	# of Characters	Initial Value	Retentive Flag	PLC/Int/Exp	Write...	
1	AUTO SCR SW	BIT					INTERNAL		
2	INDICATOR	BIT					INTERNAL		
3	INDICATOR B...	BIT					INTERNAL		
4	PAUSE SCR SW	BIT					INTERNAL		
5	PAUSE_VIS	BIT					INTERNAL		
6	RESUME_VIS	BIT					INTERNAL		
7	SCR_AUTO_M...	BIT					INTERNAL		
8	SCR_MAN_MO...	BIT					INTERNAL		
9	SWITCH TO S...	U16	R308				PLC1		

The Tags in Current Screen Table will list all the tags that are currently used on this screen with their details. Double clicking any of these tags allows you to enter the Edit Tag Details screen and make changes to that tag.

Tags in Selected Objects

Tags In Selected Objects									
4	Obj...	Objects Outside Scre...	Overlapping Obje...	Tags In Current Screen	Tags In Selected Objects				
#	Tag Name	Data ...	Addre...	# of Characters	Initial...	Reten...	PLC/I...	Write ...	
1	PAUSE SCR SW	BIT					INTE...		
2	SCR_AUTO_M...	BIT					INTE...		
3	SCR_MAN_MO...	BIT					INTE...		
4	SWITCH TO S...	U16	R308				PLC1		

The Tags in Selected Objects Table will list all the tags that are currently selected by you. Double clicking any of these tags allows you to enter the Edit Tag Details screen and make changes to that tag.

Creating Your First Project

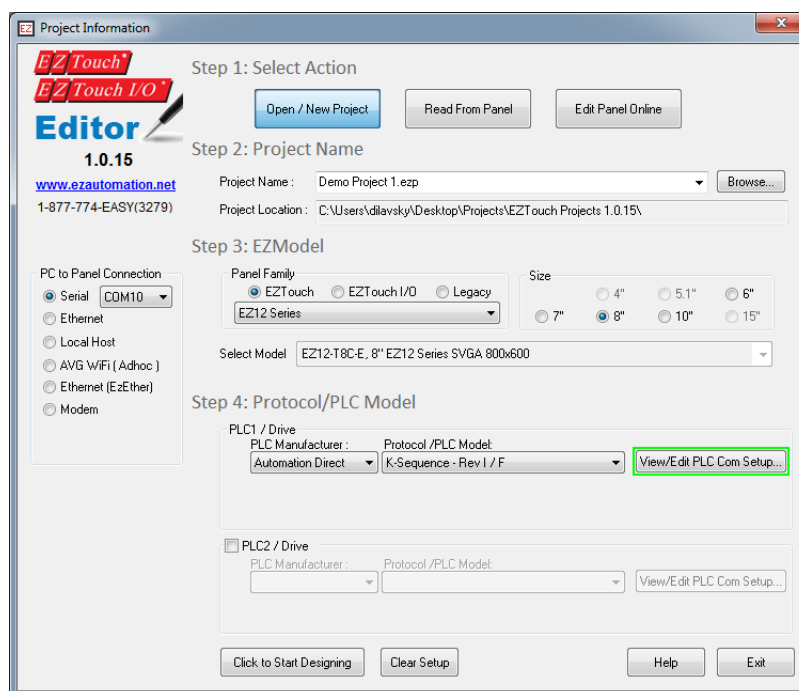
The following is a project tutorial. This section will take you through the process of creating a new project, placing objects on the screen, and transferring a project to the EZTouch Panel unit. This should help familiarize you with the EZTouch Editor environment.

Let's assume you have the EZTouch Editor 2.0 installed on your PC (if you don't, install now). Connect the EZTouch Panel unit to your PC using the P/N EZ-PGMCBL cable or with an USB A to USB B cable [printer cable]]. Connect the EZTouch unit to your PLC using the appropriate panel to PLC cable.

Step 1:

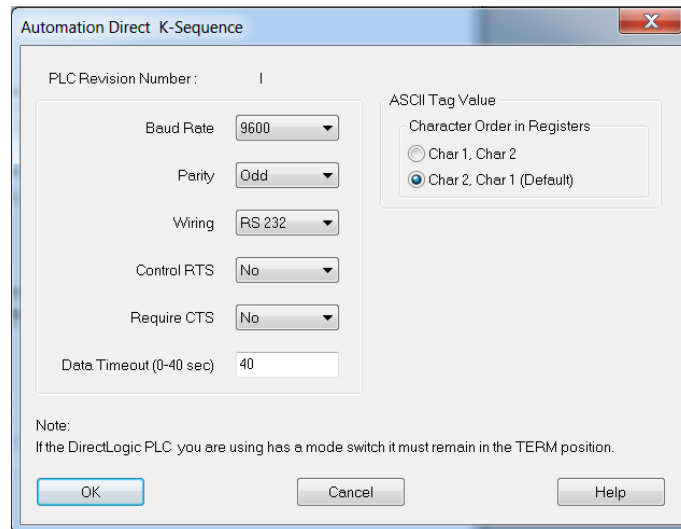
In Step 1 you will be setting up your project by entering project information.

1. From Project Information screen, click on the Open/New Project button.



2. Under Project Name, type in Demo Project 1. The primary EZTouch Panel Program file has an ".ezp" suffix.
3. Under Panel Family Select EZ12 and then in drop down select the Panel Family. In this demo we are using an EZ12.
4. Select the Panel size. In this Demo Program we are using the 8".
5. Under Protocol/PLC Model select Automation Direct for PLC Manufacturer then in the dropdown for Protocol/PLC Type select DirectLogic K-Sequence.

- Click on the View/Edit PLC Com Setup to edit the PLC Attributes. Set the attributes to match those in the DirectLogic K-Sequence attributes dialog box shown below. Click OK.

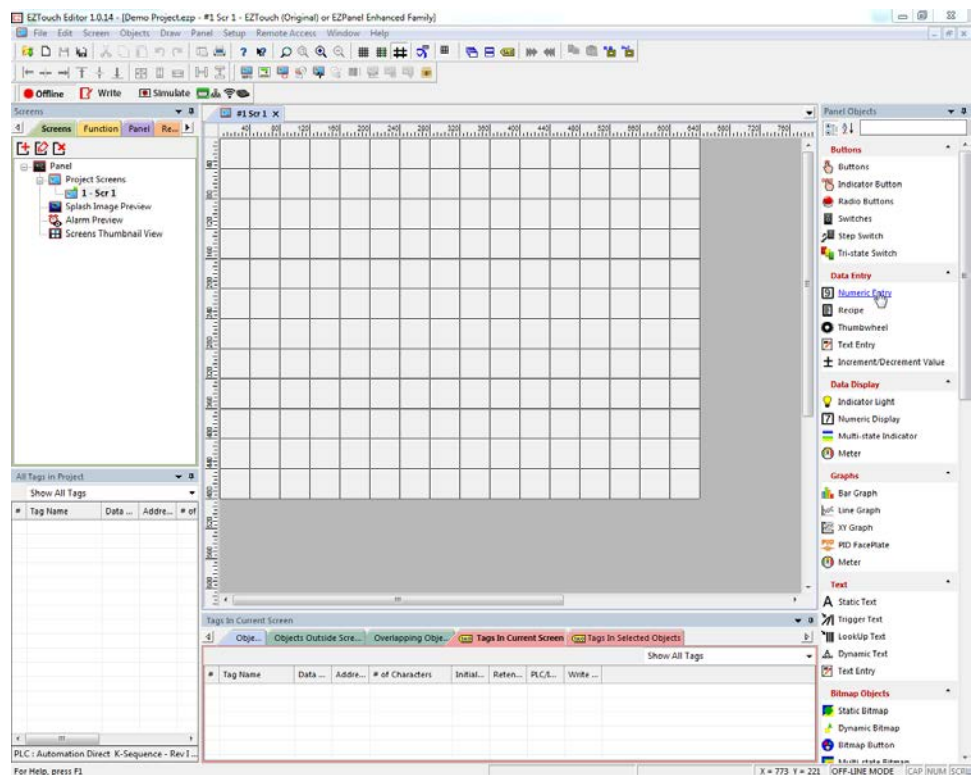


Step 1 is complete!

Step 2:

You are now ready for Step 2, Design Your Screens. In Step 2 we will place 4 objects on the screen. You have already configured your PLC ladder logic for this Demo Project in the first part of the tutorial.

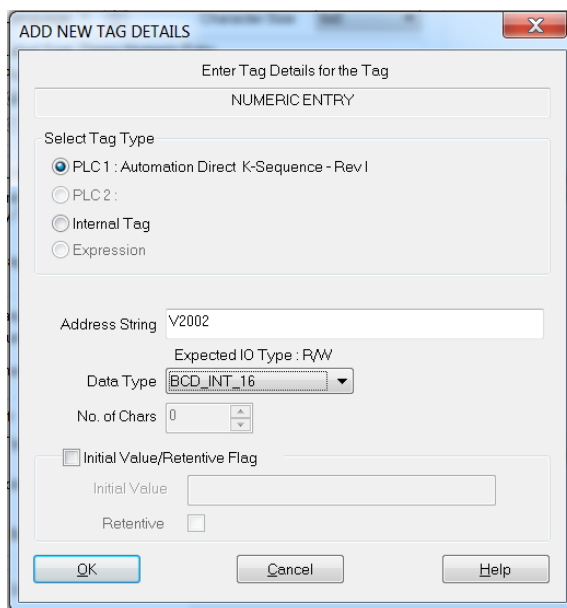
The EZTouch Editor working environment is shown below. Toolbars provide easy access to all major programming functions and features. The objects shown below represent the touch buttons and displays that will be transferred to the panel and communicate with the PLC when this tutorial is completed.



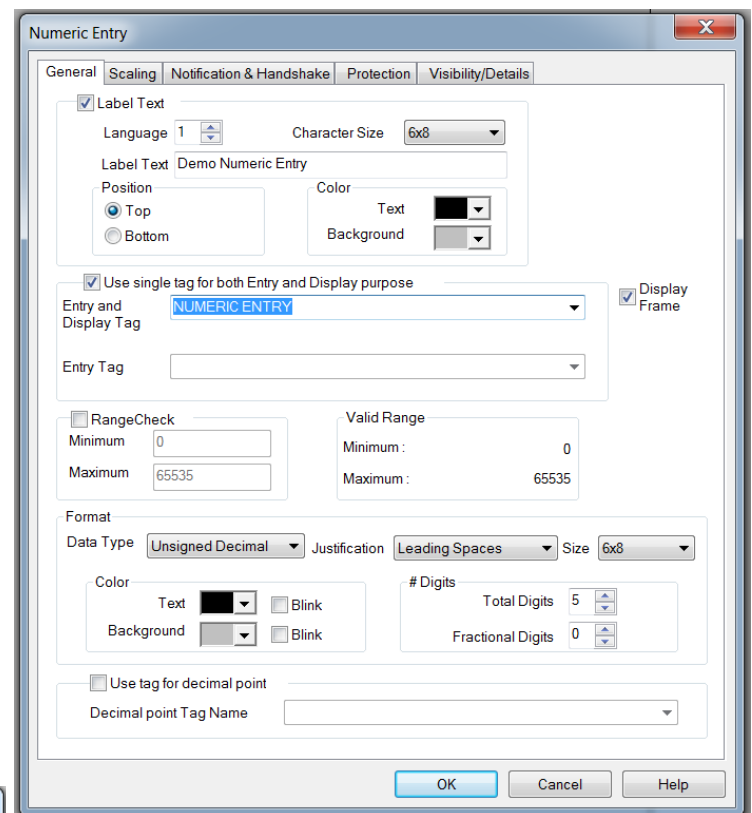
Go to Data Entry tab on the right side of the screen and select the Numeric Entry.

After selecting Numeric Entry the following screen will appear.

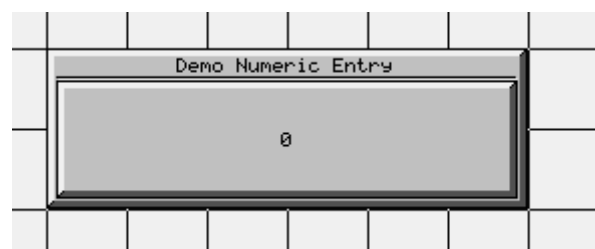
1. Click on the box in front of Label Text to activate the object label.
2. In the field next to Label Text, type in Demo Numeric Entry as shown above.
3. Click in the field next to Tag Name and type in Numeric Entry. Press Enter. The following screen will appear.

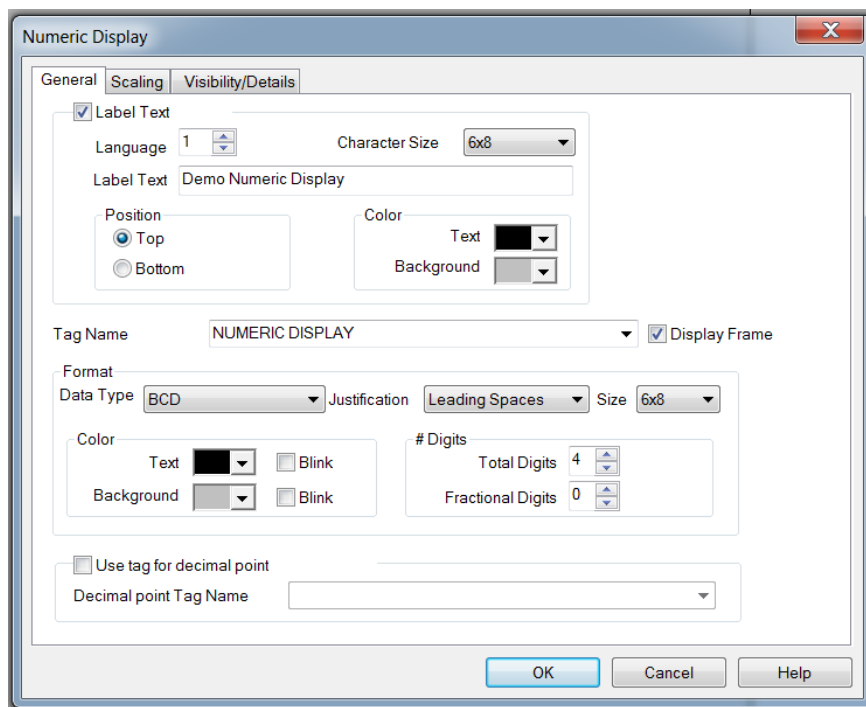


7. Next, we'll create a Numeric Display object. Click on Data Display tab. There select the Numeric Display. The following dialog box will appear.



4. In the field next to Address String, type in V2002, as shown above. Select BCD_INT_16 for the Data Type. Click OK.
5. A crosshair cursor will appear on the programming screen. Position crosshair where you want the object to appear, and click once.
6. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.



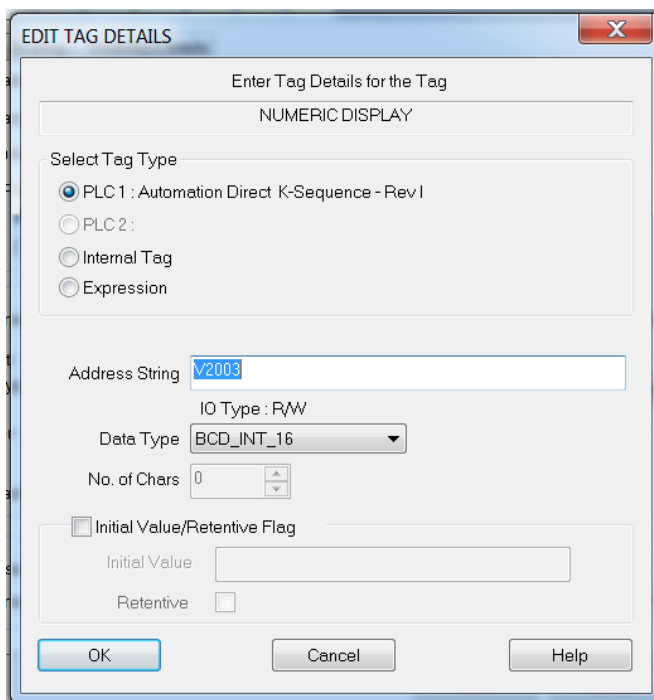


8. Click on the box in front of Label Text to activate the object label.

9. In the field next to Label Text, type in Demo Numeric Display as shown above.

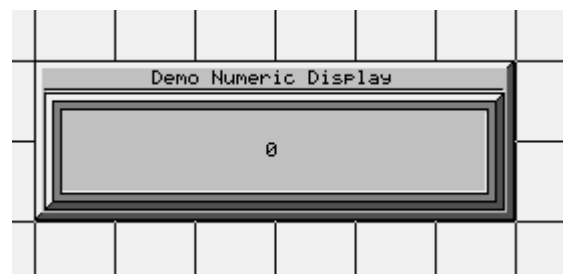
10. Click in the field next to Tag Name and type in Numeric Display. Press Enter.

11. The following screen will appear. In the field next to Address String, type in V2003, as shown above. Select BCD_INT_16 as the Data Type. Click OK.

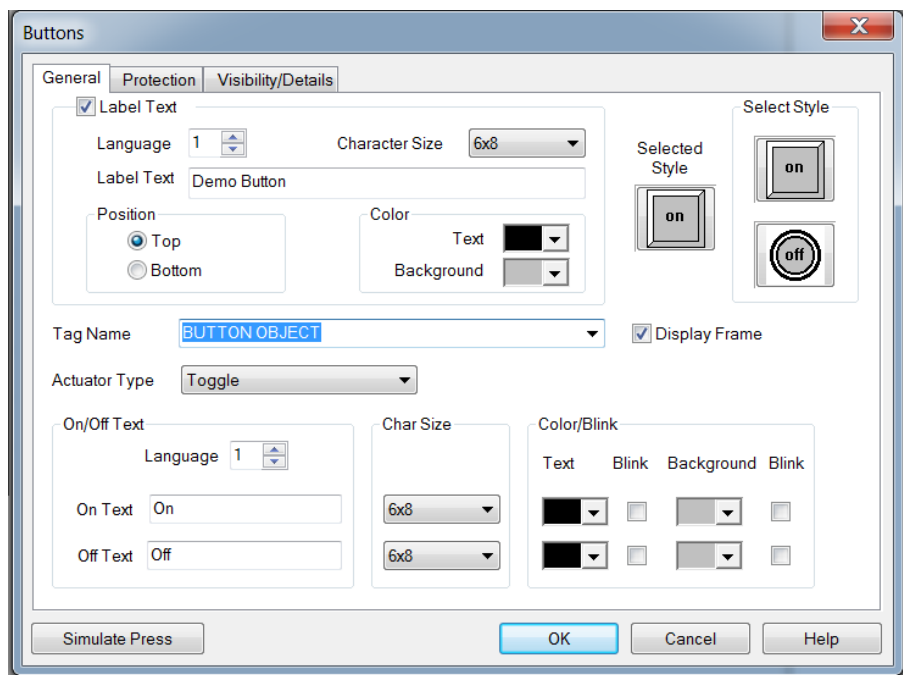


12. A crosshair cursor will appear on the programming screen. Position crosshair where you want the object to appear, and click once.

13. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.



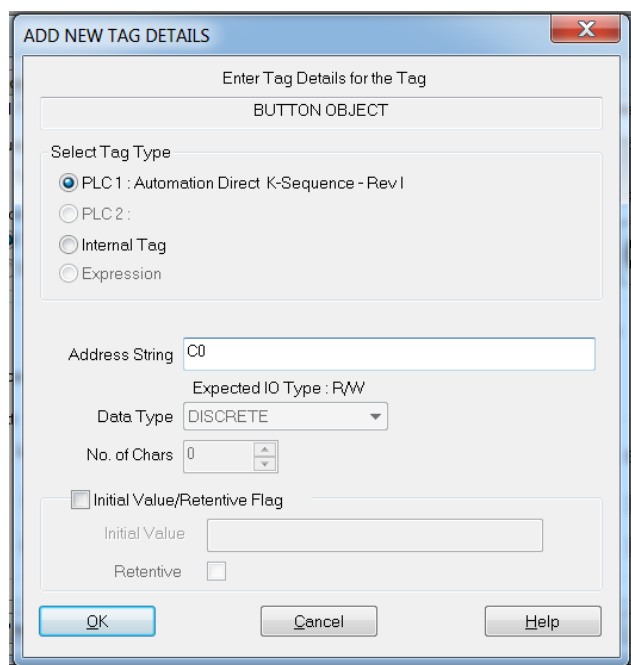
14. Next, we'll create a Button object. Click on Buttons tab. There click on Buttons. The following dialog box will appear.



15. Click on the box in front of Label Text to activate the object label.

16. In the field next to Label Text, type in Demo Button.

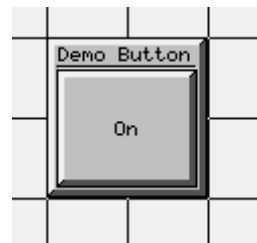
17. Click in the field next to Tag Name and type in BUTTON OBJECT. Press Enter. The following screen will appear.



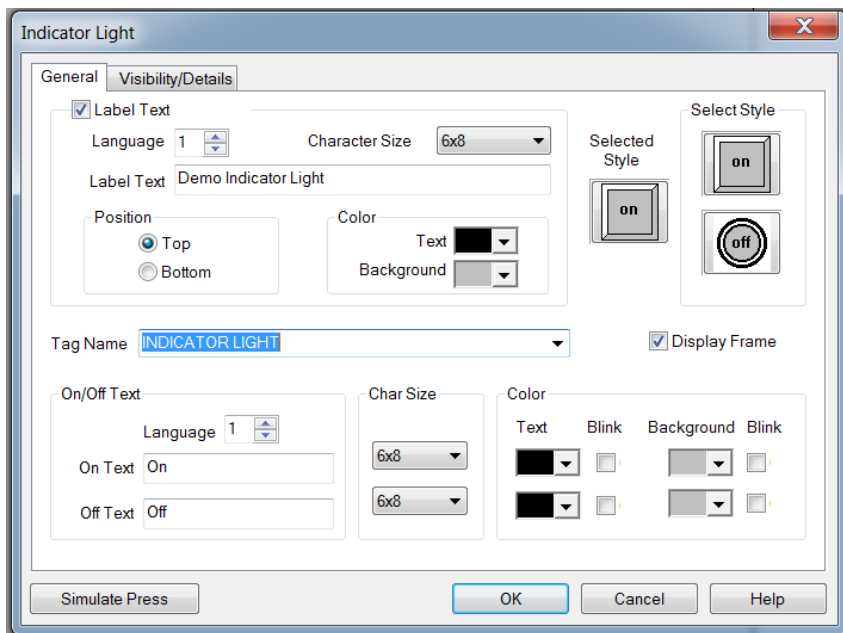
18. In the field next to Address String, type in C0, as shown above. The Data Type should remain as DISCRETE. Click OK.

19. A crosshair cursor will appear on the programming screen. Position where you want the object to appear (under the Numeric Entry object), and click once.

20. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.



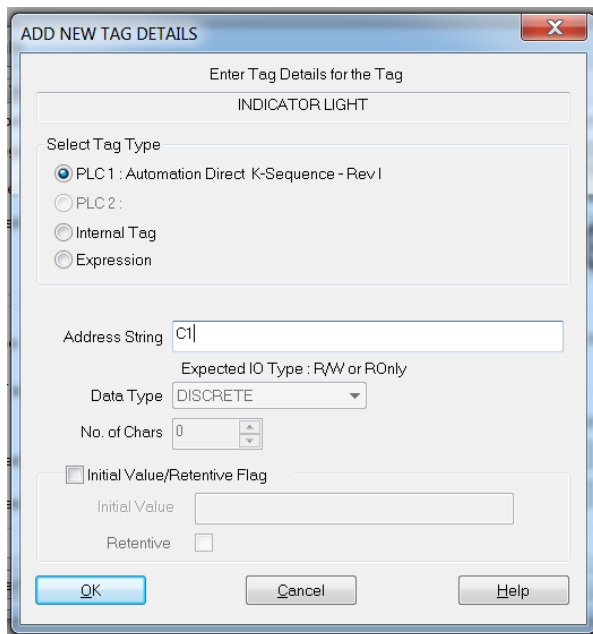
21. Next, we'll create an Indicator Light object. Go back to Data Display tab. Click on the Indicator Light. The following dialog box will appear.



22. Click on the box in front of Label Text to activate the object label.

23. In the field next to Label Text, type in Demo Indicator Light as shown above.

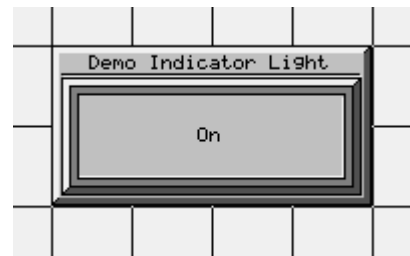
24. Click in the field next to Tag Name and type in INDICATOR LIGHT. Press Enter. The following screen will appear.



25. In the field next to Address String, type in C1, as shown above. The Data Type should remain as DISCRETE. Click OK.

26. A crosshair cursor will appear on the programming screen. Position the crosshair where you want the object to appear (under the Numeric Display object), and click once.

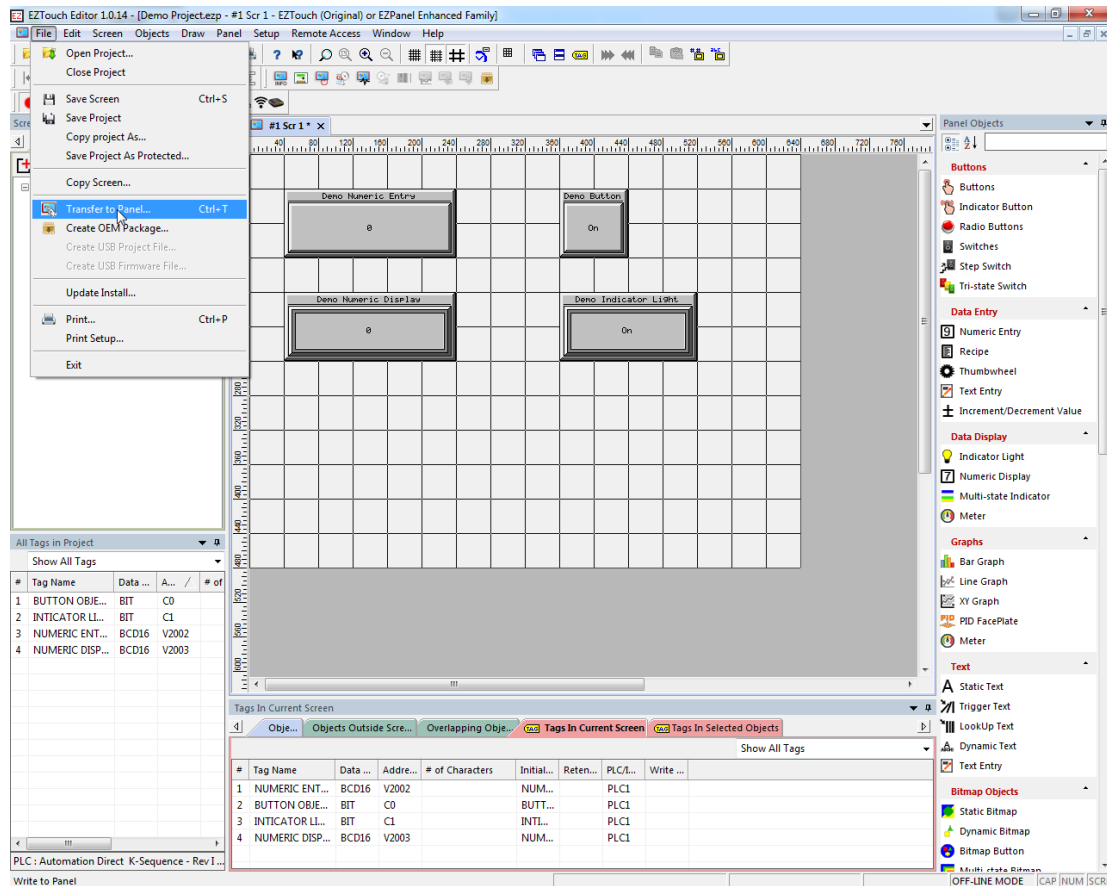
27. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.



28. Click on File > Save Project.

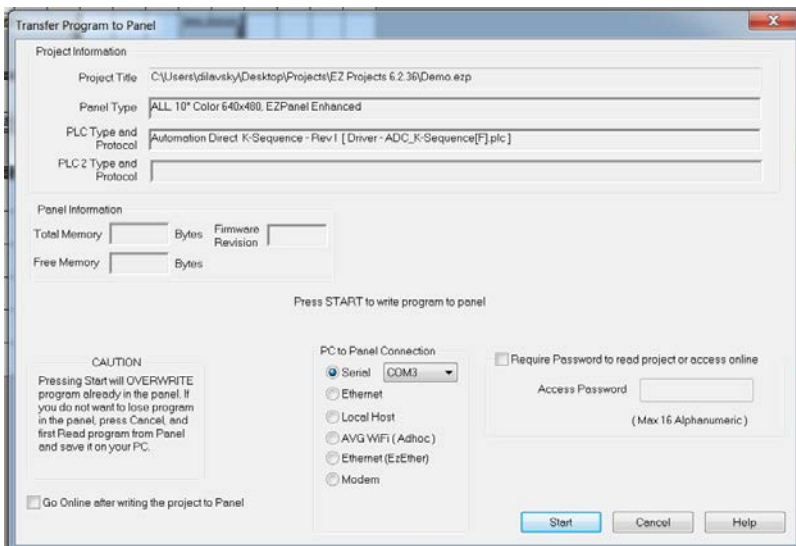
You've just completed Step 2, Design Your Screens! Now we will transfer Demo Project 1 to the EZ12 unit.

Step 3:



You are now ready for Step 3, Write Your Program to Panel.

1. Go to File > Transfer to Panel.. (Keyboard Link Ctr + T) as shown in the graphic below.



2. Click on the Start button at the bottom of the Write Program to Panel dialog box to begin transferring the project to the panel.

3. Your user program, Demo, should now be written to the EZTouch Panel unit, and the screen you have created should be displayed on the panel.

4. Panel Information will be updated with information it receives from establishing a link with the panel and the PLC.

To test the link, press the Demo Numeric Entry button on your EZTouch Panel screen. A popup keypad similar to the one shown below should display.

7	8	9	Demo Numeric Entry	
4	5	6	<input type="text"/>	
1	2	3	MINIMUM 0	
0	Clear		MAXIMUM 9999	
			CURRENT 0	
			Cancel	Enter

Enter a number on the keypad by pressing the number keys. Press Enter. The keypad will disappear and the number you entered should appear on the Demo Numeric Display on your panel screen.

Press the Demo Button on your panel screen. It will change from On to Off. The Demo Indicator Light should change from On to Off, also.

You've just completed Step 3, Write Your Program to Panel!

You have now successfully configured a PLC, created a user program, transferred it to the EZTouch Panel unit and established communication between the PLC and panel.

This simple tutorial has taken you through the major steps to creating a working link between your application and an EZTouch Panel unit. Of course, there are almost unlimited capabilities for creating a program unique to your application!



Changes are easy, too. Create your own Demo project based on this one, adding color, password protection, and dynamic graphics, for instance.

The EZTouch Panel unit and EZTouch Editor are practical, versatile — and best of all — make it "EZ" for you to create a dynamic interface for your application!

Firmware Upgrade

The EZ Touch program loader now includes a feature that allows EZ12 to upgrade firmware with a USB Flash drive. This process especially benefits System Integrators and OEMs with upgrading the Panels on-site without having to actually connect to a computer.

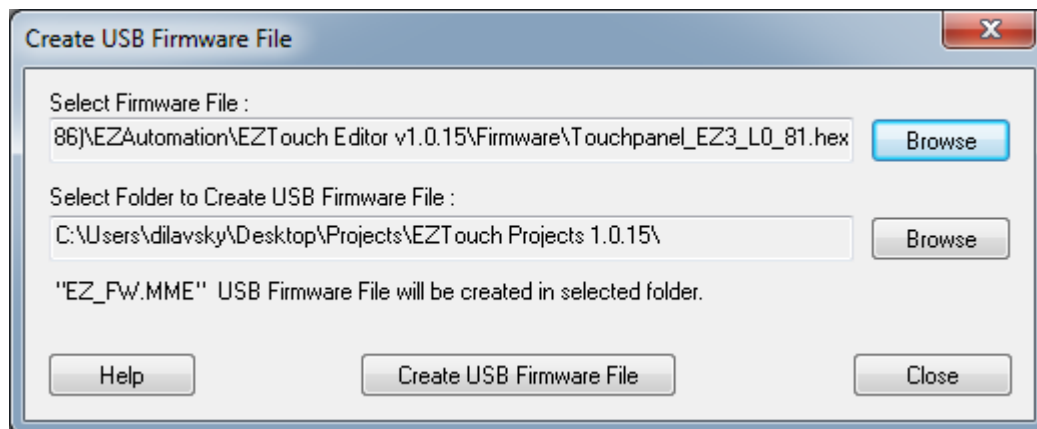
Note: Firmware upgrade will eliminate the program on the panel. Please backup the file.

If you would like to load a Project File to the panel using a USB, you will need to use another USB. A USB with firmware will only ever allow firmware upgrade.

Creating Firmware Upgrade files for use with USB Flash Drive

To create the USB firmware file, follow the direction below. Please be careful and use the correct firmware file.

1. In the EZTouch Main programming window, click on menu **File > Create USB Firmware File** to create user project file for use with the USB flash drive.



2. In the Select Firmware File, select the EZ12 firmware file.
3. Next select the folder you would like to save the USB firmware file to. This can be a USB folder.
4. Final click the **Create USB Firmware File** button. This will create the USB file which will be called "EZ_FW.MME".

Upgrading Firmware with USB Flash Drive

To actually upgrade the firmware on any EZ12 panel, follow the directions below.

1. Use the directions above to create USB firmware file and then move this file "EZ_FW.MME" to a USB. Note you cannot change the name otherwise this will not function.
2. Take the USB and insert it in a powered on EZ12 unit. Note firmware on the Panel has to be version L.0.130 or higher already for this to function. If it is not please use the serial firmware upgrade.
3. The panel will stop normal operations and you will see text on the panel saying it is verifying the firmware ("Verify file"). While this is happening please do not power off the unit or take out the USB.
4. Once the firmware file is verified, the firmware will upgrade on the panel ("Write file").
5. Once the upgrade is done the panel will tell you ("Done"). Please take out the USB at this point.
6. After about 5 seconds after firmware upgrade is done, the panel will restart. Note if you have not taken out the USB then the panel will check the USB firmware file on the USB again once it has powered on. It will not upgrade again after it verifies that the file is for the same firmware version.
7. You have now upgraded the firmware on the panel. You can at this point download a project to the panel or you can use a different USB to load a USB project file.

Upgrading Firmware over Serial Cable

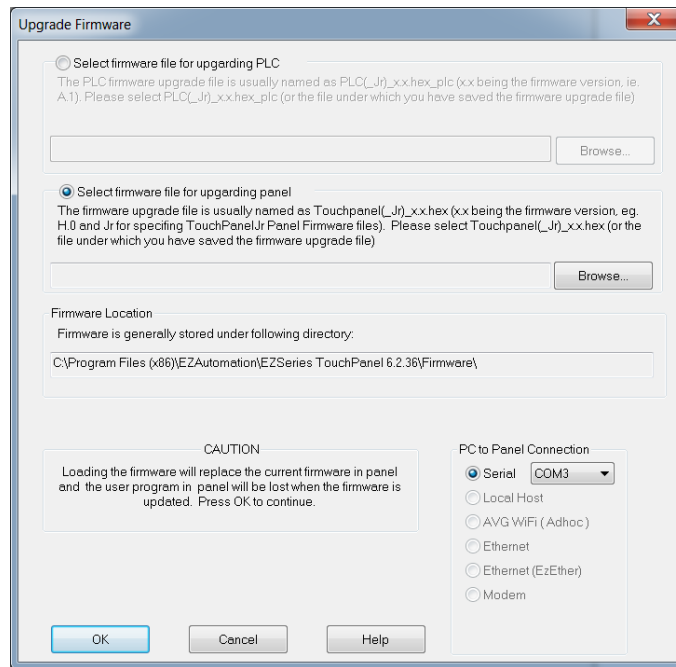
In the **Main Programming Window**, if you click on **Setup > Upgrade Firmware**, it will allow you to upgrade the firmware of your EZPanel.

There may be occasional upgrades to the EZTouch Panel internal software, also referred to as the Exec or Firmware. Check the EZAutomation web site (www.EZAutomation.net) periodically for information about software and firmware upgrades.

To Upgrade Firmware

1. Back up the user program currently stored in the EZTouch Panel unit and save to disk.

2. Click on **Upgrade Firmware** and navigate (click on Browse button) to the new firmware file (.hex file).



Note: If the EZPanel is connected to a PLC (other than the EZPLC), you will not see the option for EZPLC f/w upgrade.

3. Please make sure to use serial communication to upgrade firmware. In serial communication select the appropriate COM port and click on the **OK** button to begin the upgrade. A status bar will let you know when the upgrade is complete.
4. The dialog box will show the **File Revision** number of the firmware and the **Panel Revision** of the Firmware. Check these revision numbers. If they are the same (no upgrade is needed) you may click on the **Abort** button to exit. If the file you have selected is not the right one, click on the **Select a different file...** button.

Calibration

The new program loader and EZ12 panels have a couple new ways of calibrating screens. The program loader still has the ability to initiate calibration from the Panel Menu. Just go in the EZPanel Main Programming Window, to **Panel > Touch Screen Calibration**, and this will prompt the connected panel to go through the calibration sequence.

We also now have an on screen calibration option in the setup menu. As well as a USB calibration option.

Setup Menu Calibration

The setup menu (hold left upper corner (40x40) of screen for 5 seconds) has a button that allows for Touch Screen Calibration. For more Setup Menu information please see the Setup Menu Section.

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.

USB Calibration

You can use any file with the extension .cal on a USB to calibrate the panel. For example an empty text doc which extension is changed to ".cal"(ex: Calibrate_text.cal). Once USB is put in panel the panel will immediately enter calibration mode (if it does not then you might need to power cycle the unit). After calibration mode it will restart, please remove the USB during restart otherwise panel will reenter calibration mode once it finishes powering up.

Note: USB can be disabled. If it so you will need to go to the setup menu and reenale it for this functionality.

Project File Load

The EZTouch program loader now includes a feature that allows panels with a USB port, to be programmed with a USB Flash drive. This process especially benefits System Integrators and OEMs with upgrading the Panels on-site without having to actually connect to a computer. Since multiple programs can be saved on one USB Flash drive, the user can program different panels with the same USB Flash drive, or quickly change the Panel from for different jobs.

The panels can be programmed in following easy steps:

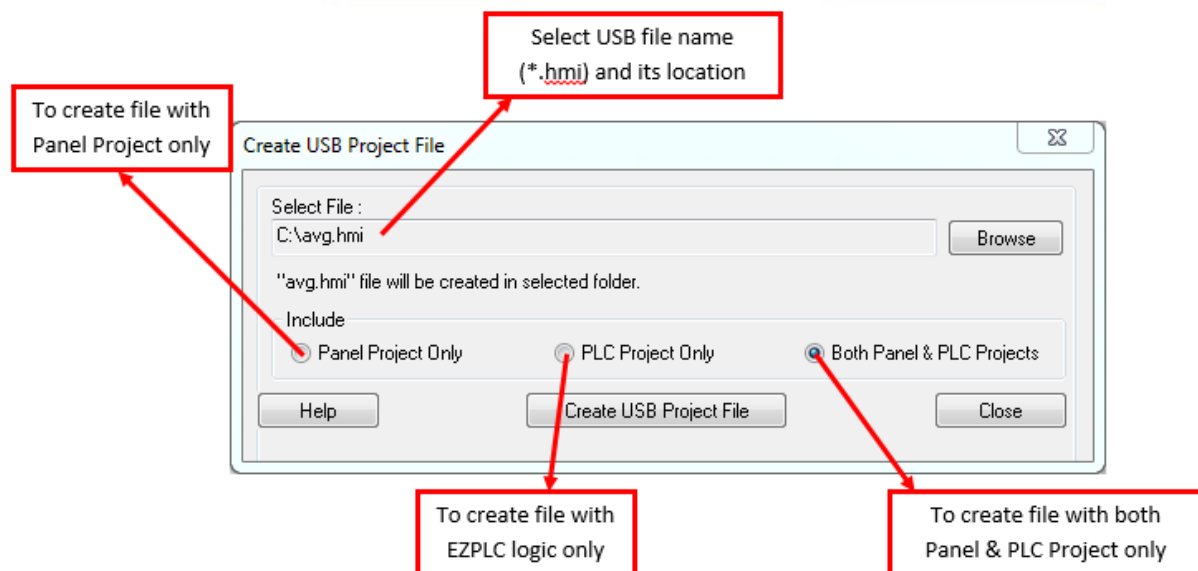
1. Create a USB file (*.hmi) using the EZ Touch Program Loader.
2. Save the file on the USB Flash drive (only in the root directory). It will ask if you would like to save to flash, select yes if you would like to have your program retain over power cycle.
3. Insert the USB stick into the panel's USB port. You might need to power cycle before the next step happens.
4. The panel brings up a list of projects that are available on the USB Flash drive. Select the necessary project and press OK. (If the panel is not compatible with the project selected, an Error message is displayed.)
5. The project is automatically loaded on the panel.

Creating files for use with USB Flash Drive

In the EZ Touch Main programming window, click on menu **File > Create USB Project File** to create user project file for use with the USB flash drive. User can select name. The file is saved with .hmi extension.

The dialog box shown below would appear:

Note: Radio button options are available only if you are using one of the AVG PLC drivers in the project.



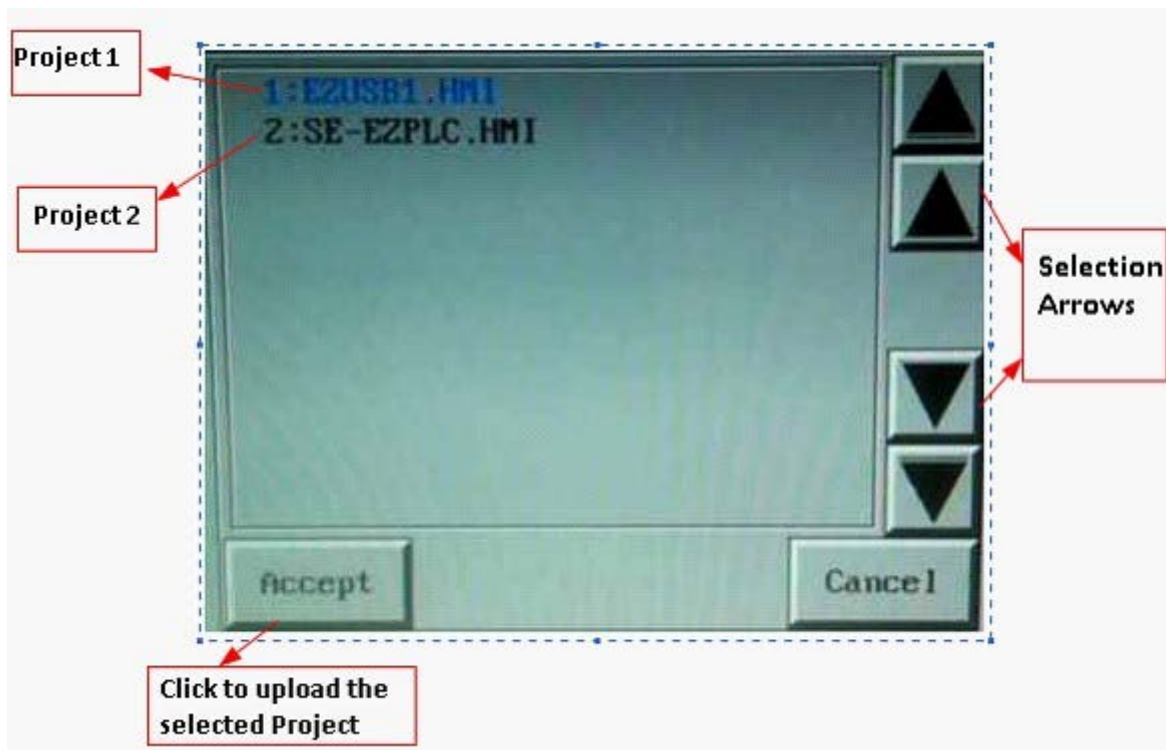
Copy file(s) on USB Drive

Copy file(s) created by the editor on the root directory of a USB flash disk. (Please note files copied in other than root directory would not be read by the panel.)

All files are saved automatically with .hmi extension. Files without this extension will not be read.

Programming the panel using USB Drive

To program the panel from USB Drive, insert the USB flash directly into the panel's USB port. The panel would display a list of files available in the root directory (with .hmi extension). An example is shown below:



Select the required project using the Up-Down arrows and press "Accept". If the panel is not compatible with the project selected, an Error message saying "Wrong panel Type" is displayed. The selected project is then automatically loaded into the Panel.

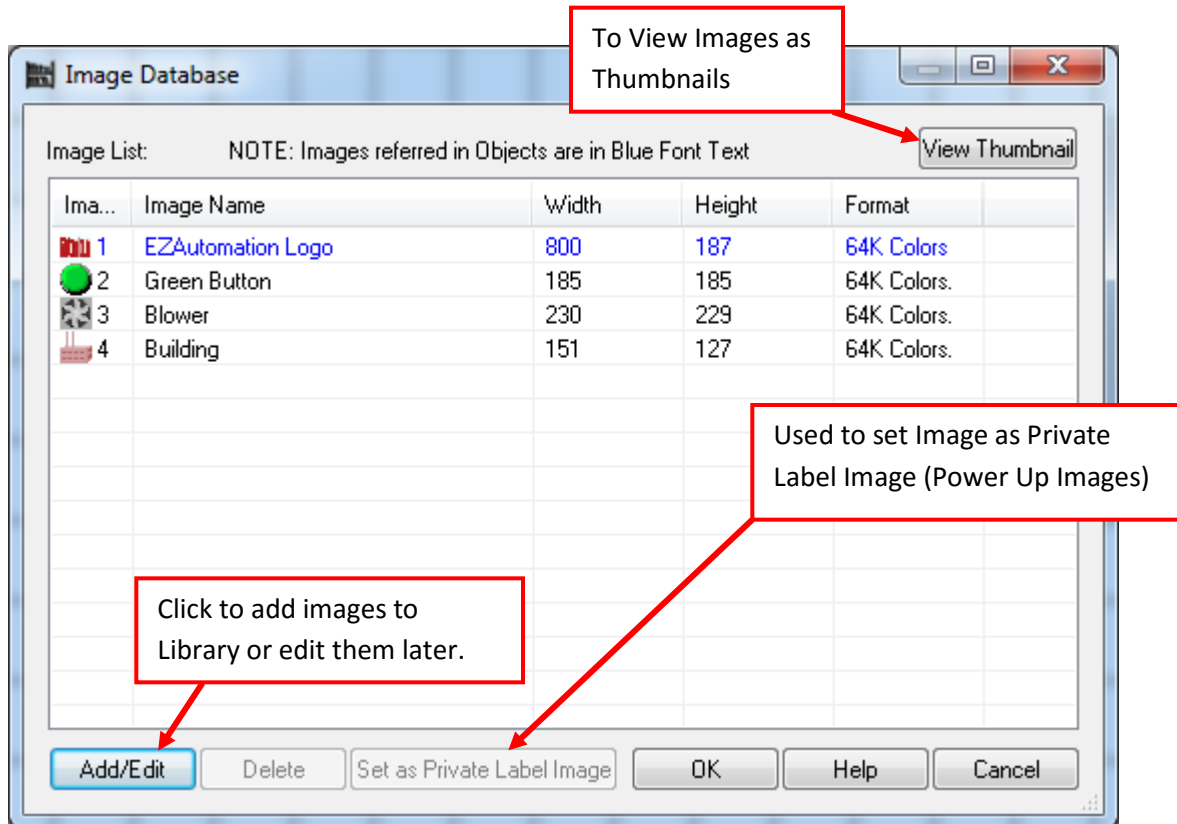
Image Database

In addition to the Bitmap objects already offered on the panels, EZTouch software now includes the Image Database. This Image Database is used in sync with Bitmap objects and/or Animation objects. It allows the user to refer and use one bitmap with several different objects, **thus saving a tremendous amount of memory**. The Image Database has following features:

1. An extensive built-in **Symbol Factory** of over 3000 images for industrial automation, including pumps, pipes, valves, tanks, mixers, material handling, sensors, PLCs, and ISA symbols to copy and paste hundreds of built-in graphic files directly to the project screen.
2. You may also click on **AVG Image Library** to gain access to a library of over 3,000 symbols for industrial automation. These images have been formatted to allow easy dimension changes.
3. The user can also download (or copy from clipboard) and use their own graphic image files. (e.g: **Bitmap(.bmp)**, **Windows Metafile (.wmf)**, **Windows Enhanced Metafile (.emf)** etc.)
4. The users also have an option of using the built-in photo Editor to create and customize images.

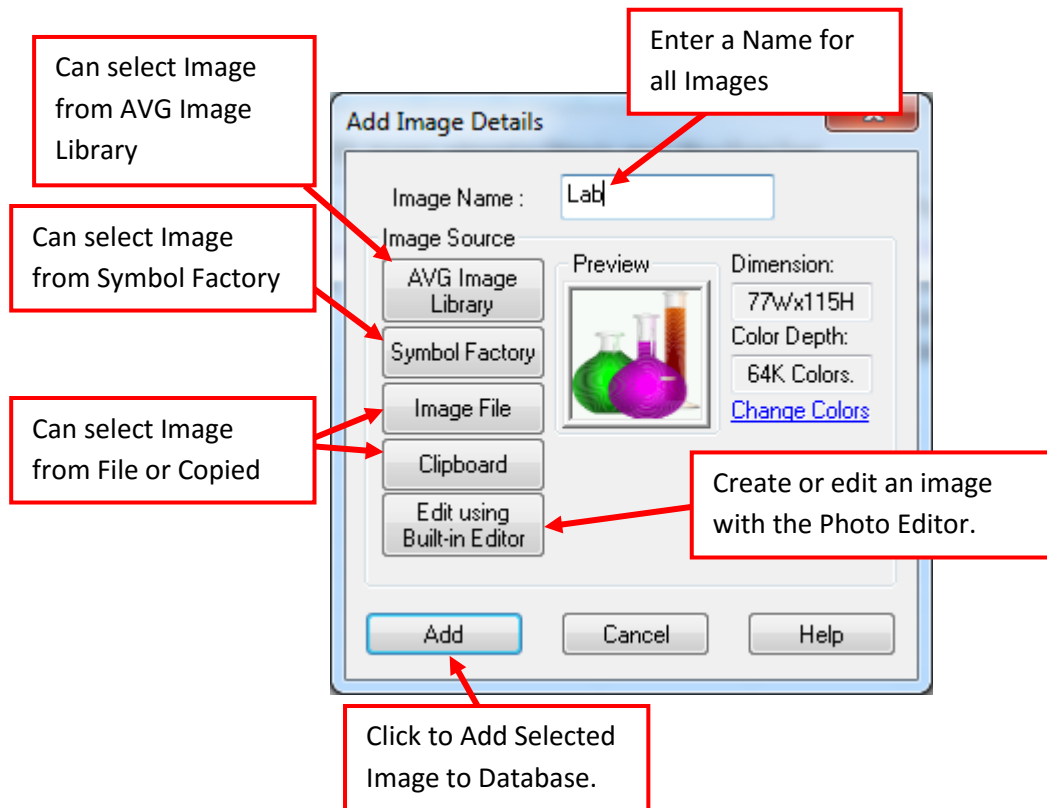
Programming Image Database

In the EZ Touch Main programming window, click on **Setup > Image Database** to create the Image Database. The dialog box similar to the one shown below would appear



Adding Images to the Database:

Once the user clicks the Add/Edit button, the following dialog box appears:



Repeat this process till all the required images have been added to the Database. Click **Cancel** when done. The Image Database dialog box would appear again. Press **OK**.

Using the Image Database:

The Image Database can be used with any of the following objects:

1. **Bitmap Objects:** In the EZ Touch Main Programming Window, click on Main Menu > Objects > Bitmap Objects

- *Dynamic Bitmap*
- *Bitmap Button Object*
- *Multi-state Bitmap*

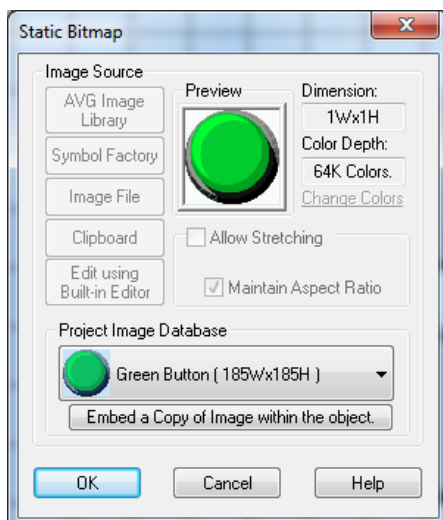
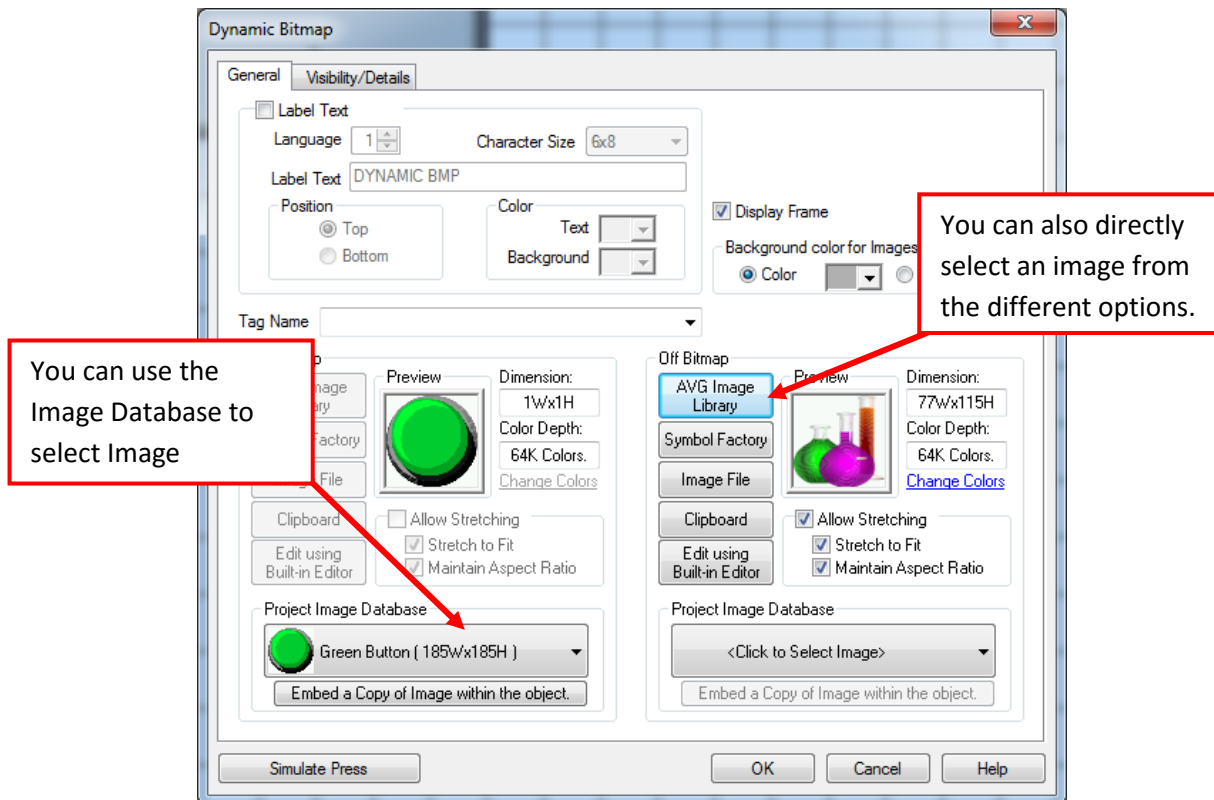
2. **Animation:** In the EZ Touch Main Programming Window, click on Main Menu > Objects > Animation

- *Single Position*
- *Multi Position*
- *Single Image Dynamic Position*

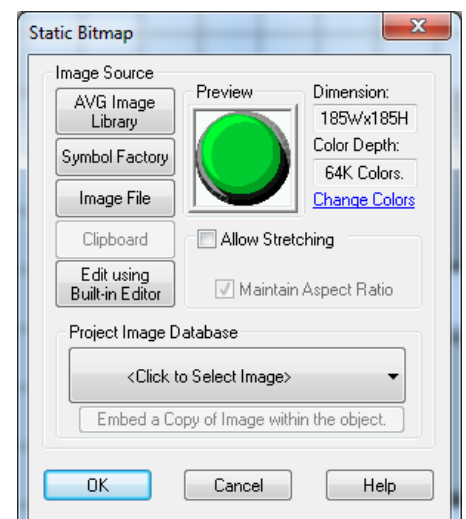
An Example: Using Image Database with a Dynamic Bitmap

A Dynamic Bitmap can show a visual representation of a process. There are two bitmaps per object, one that is shown when a bit is ON and another that is displayed when the bit is OFF. Depending on the state of the discrete tag, the corresponding bitmap is displayed on the panel.

In addition to other sources, Bitmaps can now also be selected from Image Database as shown in the dialog box below:



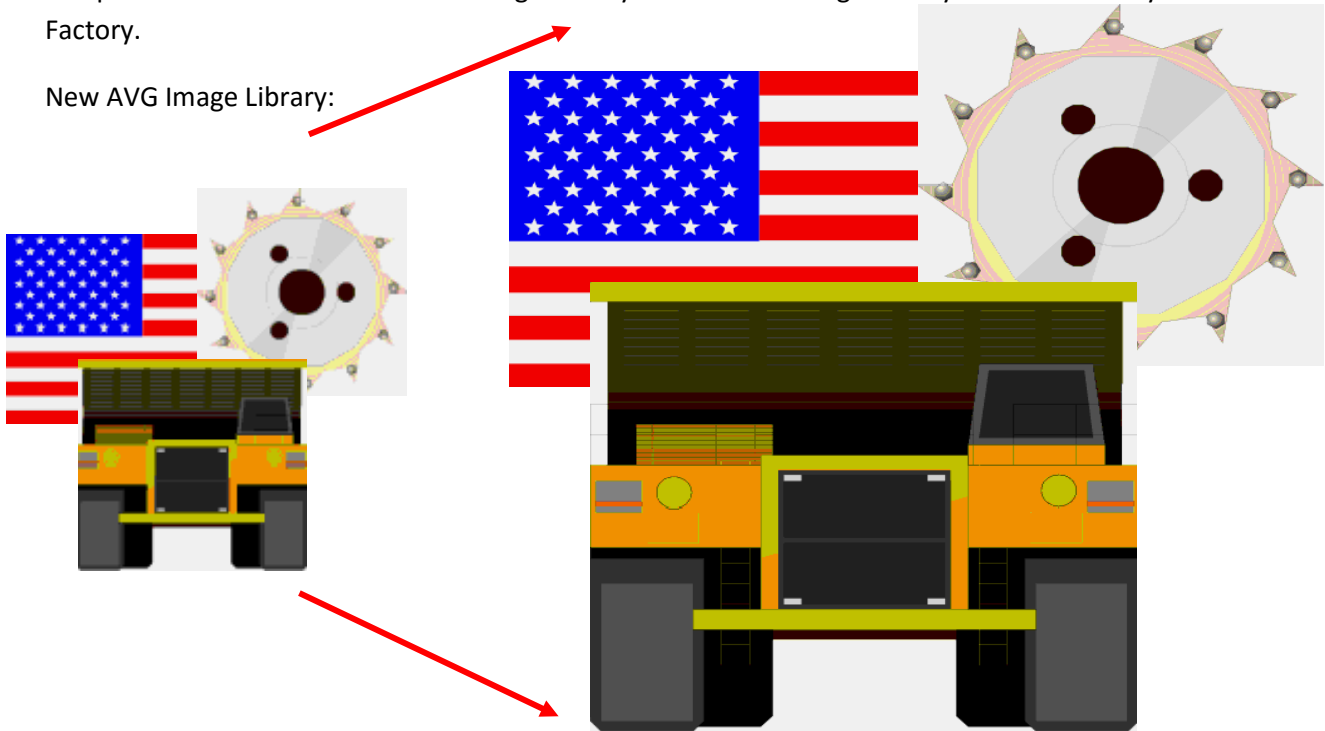
Once you use a library image in an object, and then you want to embed the image within the object itself for some reason (for example to resize the object, modify the image), click the button "Embed a Copy of Image within the object" in the dialog box. (see the left dialog box below. This button is only available when object refers to image from the Image Database.) It includes a copy of the library image within the object, and it would be delinked from the Image Database as shown in the dialog box on the right.



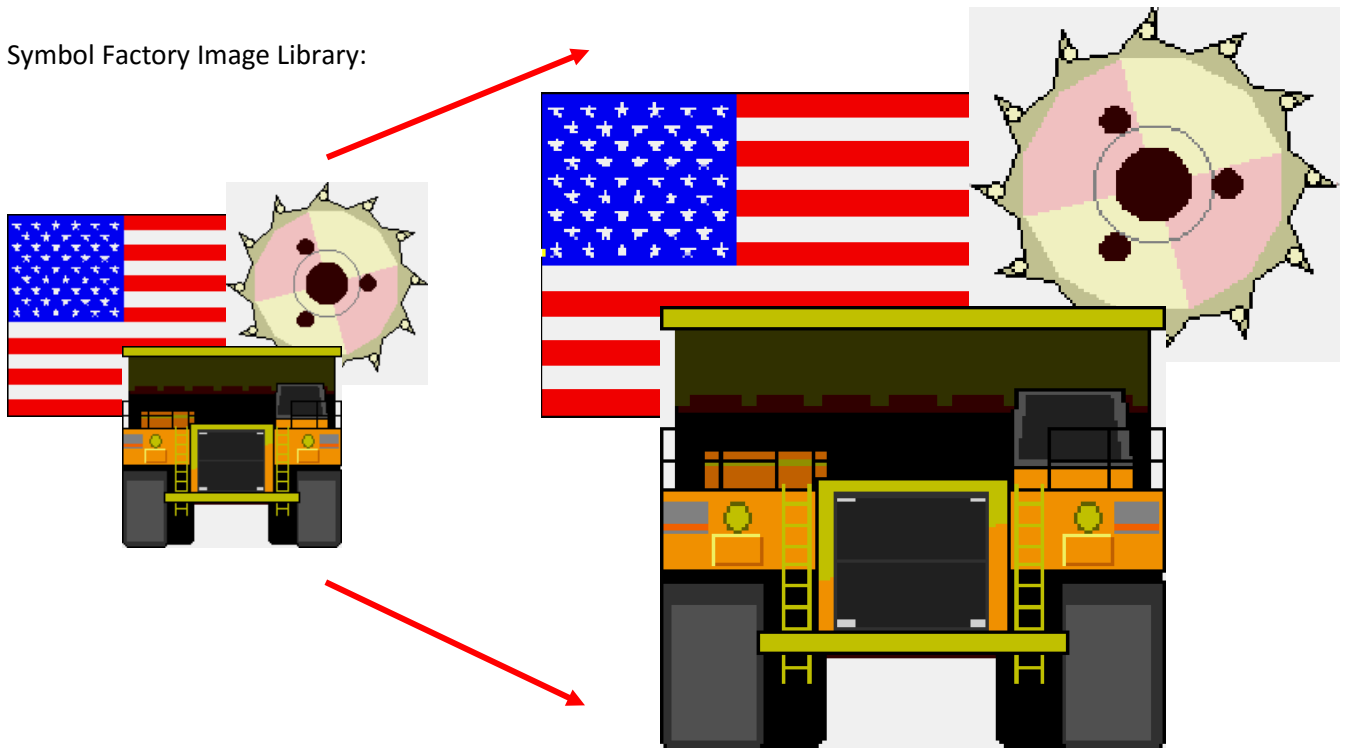
AVG Image Library

EZTouch Editor includes the AVG Image Library with Images that are detailed both when small size and when become larger. The other image library has also been left in just in case you need it but as a comparison see below. To use AVG Image Library use the AVG Image Library instead of the Symbol Factory.

New AVG Image Library:



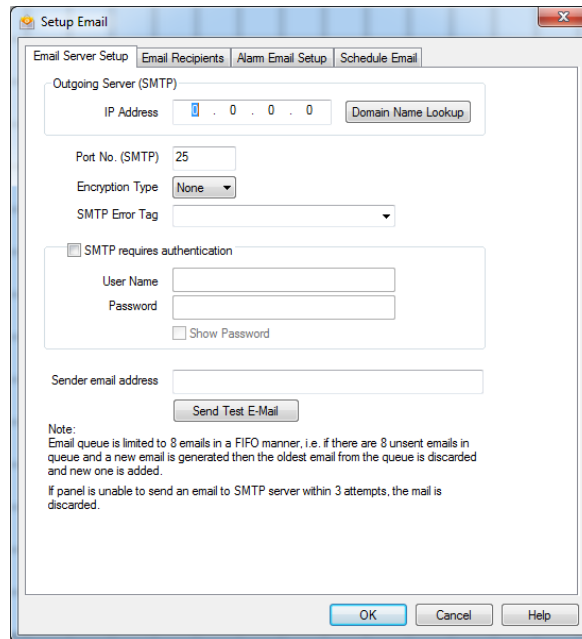
Symbol Factory Image Library:



Email Setup (Gmail, Yahoo, etc.)

The EZTouch Editor 2.0 now has support for sending emails that can be used with any Email Server (Gmail, Yahoo, etc.). The email setup is very fast and easy and allows for the EZ12 panel to send emails if there is an alarm or even on a scheduled basis (such as product count at shift change).

To setup the please go to **Remote Access > Email Setup...** The following dialog will appear with 4 tabs.



Email Server Setup

The main tab for setup is the Email Server Setup. Here you will need to input all the parameters for your email client, for example your gmail account. It is usually best to setup an account which you will use exclusively for these emails but it is not required.

Outgoing Server (SMTP)

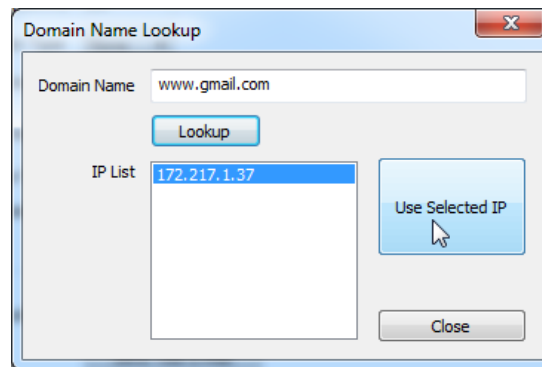
Outgoing Server (SMTP)

☒ IP Address

☐ Domain Name

To setup your emails you will have to enter the IP address of the server on your network. To find this IP address use the Domain Name Lookup and enter the domain name (ex. www.gmail.com). The found IP address will be the Server IP on your network. To use this IP address press the Use Selected IP.

Note: If the development network is different than production network the Server IP might be different.



You can also just directly enter the domain name and it will automatically detect the IP address needed. Note that the DNS Server has to configure for this to work correctly.

Outgoing Server (SMTP)

☐ IP Address 0 . 0 . 0 . 0

☒ Domain Name www.gmail.com

Port Number (SMTP)

Port No. (SMTP)

Every Server will have a specified Port No. that is used with it. Please enter the number here.

Note: Based on encryption the Port No. might change.

Encryption Type

Encryption Type

None
SSL
TLS

For most Email Servers you will be required to use encryption (encryption is different then authentication, you will most likely require both). Encryption is used to make sure your emails are not intercepted and go to the correct Server. The Email provider will inform you which encryption and Port Number should be used.

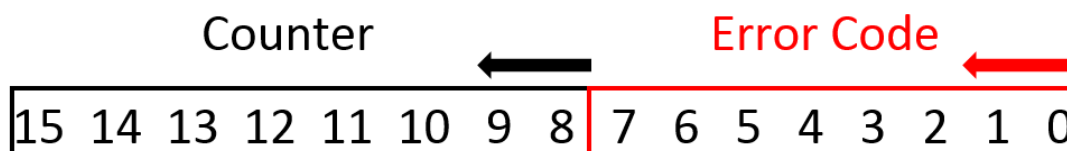
SMTP Error TagSMTP Error Tag

For easier troubleshooting a tag input is provided. This tag will display error codes based on what error has occurred. This error tag is divided in half contains both an error code and a count (up to 255) of how many emails have not been sent. The counter will reset when an email is finally sent.

The Most Significant 8 bits are the counter and the Least Significant 8 bits are the error code

Error Code	Error Cause
0	No Error
1	Internal Error. Re download Project.
2	Cannot connect to Server (check Ethernet cable, Panel IP and Mac address)
3	No TLS (check if TLS is required by Server)
4	Send Error (Cannot send email, check message and sender/receiver email address)
5	Authorization Error (Check Username / Password)
6	DNS Error (Please check DNS server and make sure it is connecting)

Note: To use this correctly you will most likely need to separate the bits and the easiest way is to move only certain bits in the PLC into another register.

Error Register:**SMTP Authentication**

☒ SMTP requires authentication

User Name

Password

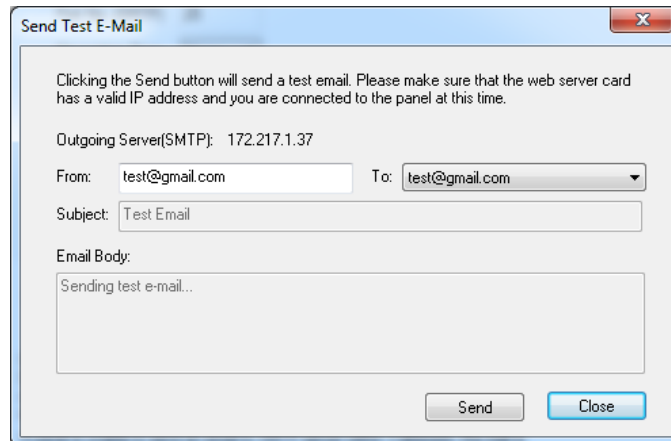
☐ Show Password

For most Email Servers each email address will have its own Username and Password. If the Email address to be used as the Sender email requires a Username and Password. Please activate the SMTP requires authentication and enter the specified emails Username and password here. Most current Email Servers will require both encryption and authentication.

Sender Email Address

Sender email address

Enter the Email address which the emails will be sent from here. Also you can use the Send Test Email option to verify that all your settings are correct.



A screenshot of a 'Send Test E-Mail' dialog box. The dialog has a title bar with a close button. Inside, there is a message: 'Clicking the Send button will send a test email. Please make sure that the web server card has a valid IP address and you are connected to the panel at this time.' Below this, it shows 'Outgoing Server(SMTP): 172.217.1.37'. There are fields for 'From:' (test@gmail.com) and 'To:' (test@gmail.com with a dropdown arrow). The 'Subject:' field contains 'Test Email'. The 'Email Body:' field contains 'Sending test e-mail...'. At the bottom right are 'Send' and 'Close' buttons.

The Send Test Email option requires all information to be entered and then it connects to your selected panel (make sure have Serial/Ethernet connection to panel) and request that the panel send the email to the specified recipient (you will need to enter a recipient in the Email recipient tab). If everything works correctly the recipient should receive the test email. If the recipient does not get the email please check all your settings.

Unsent Email FIFO

Sending email takes a certain amount of time and therefore email might be generated at a faster rate than they can be sent. Therefore there is a FIFO queue where up to 8 unsent emails are stored till they are sent. As mentioned this queue is a FIFO and therefore the oldest email will be dropped if a 9th email is generated.

Note: The panel will attempt to send each email up to 3 times and then the email will be discarded. Each attempt will be followed by short waiting period.

Email Recipients

Click on the Email Recipients tab to add the email addresses of the new recipients or to edit the email addresses of the existing recipients. Recipients can be tag based but if an email recipient address is incorrect you will not receive any indication from the panel. The panel cannot receive emails from server that an email was not delivered.

Note: The maximum number of recipients could be 8. Once an alarm is triggered, the alarm emails will be sent to all the email addresses added to this list.

The screenshot shows a window titled "Setup Email" with a close button (X) in the top right corner. Inside the window, there are four tabs: "Email Server Setup", "Email Recipients" (which is selected), "Alarm Email Setup", and "Schedule Email". Below the tabs, a message states: "Alarm marked for emails, when triggered, will sent to everyone in the list". On the left side, there is a list box containing the email address "test@gmail.com". To the right of the list box, there are two sections: "Add New Email Address" and "Edit Selected Email Address". Each section has two radio buttons: "Tag" and "Constant". In the "Add New Email Address" section, the "Tag" radio button is selected, and there is an empty text field next to it. In the "Edit Selected Email Address" section, the "Constant" radio button is selected, and the text field next to it contains "test@gmail.com". Below these sections are three buttons: "<< Add New Email", "<< Edit Selected Email", and "Delete Selected Email(s)". At the bottom of the window, there are three buttons: "OK", "Cancel", and "Help".

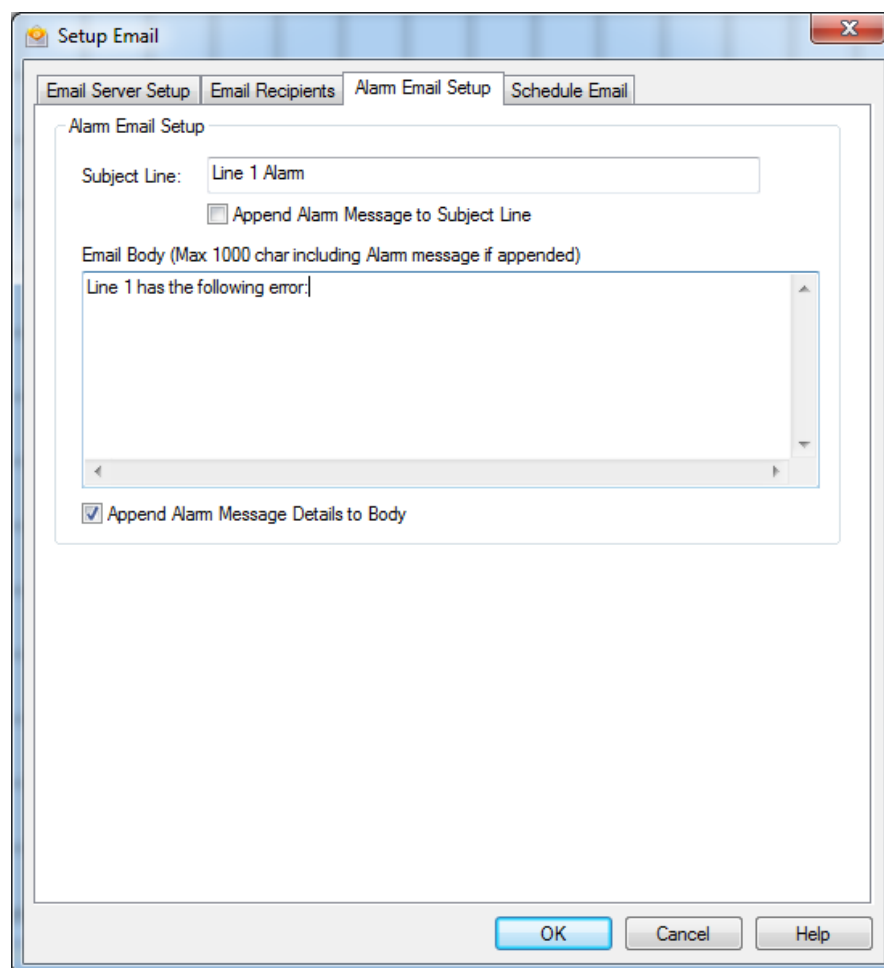
Alarm Email Setup

Alarm Email Setup allows you to create one template with user defined email subject line, and the user defined email body. You may check the Append Alarm Message to Subject Line, and the Append Alarm Message Details to the Body boxes to automatically add the triggered alarm message, or/and the alarm message details, right after your Subject Line and the Email Text.

Appending the alarm message allows inserting of tags to the email since Alarm messages can include tag data.

NOTE: Subject Line can be max of 128 characters including the triggered Alarm message. Whereas, the Email Body can be maximum of 1000 characters including the Alarm message details, if appended.

Example:



The screenshot shows the 'Setup Email' dialog box with the 'Alarm Email Setup' tab selected. The 'Subject Line' field contains 'Line 1 Alarm'. The 'Append Alarm Message to Subject Line' checkbox is unchecked. The 'Email Body (Max 1000 char including Alarm message if appended)' text area contains 'Line 1 has the following error:'. The 'Append Alarm Message Details to Body' checkbox is checked. The dialog has 'OK', 'Cancel', and 'Help' buttons at the bottom.

Setup Email

Email Server Setup | Email Recipients | Alarm Email Setup | Schedule Email

Alarm Email Setup

Subject Line: Line 1 Alarm

☐ Append Alarm Message to Subject Line

Email Body (Max 1000 char including Alarm message if appended)

Line 1 has the following error:

☒ Append Alarm Message Details to Body

OK Cancel Help

IMPORTANT NOTE: You may only add/edit the email addresses for the new or existing users in the OFF-LINE programming mode.

Schedule Email

Click on the Schedule Email tab to create a desired email schedule. This scheduled email will be sent at specified intervals to specific email recipients. The schedule can be tag-based or occur on regularly scheduled intervals such as hourly, daily, weekly, monthly or at specifically chosen times. The email can also be sent to one or several email recipients and include variables in the body of the email such as date, time, numeric tag, discrete tag, or ASCII tag information.

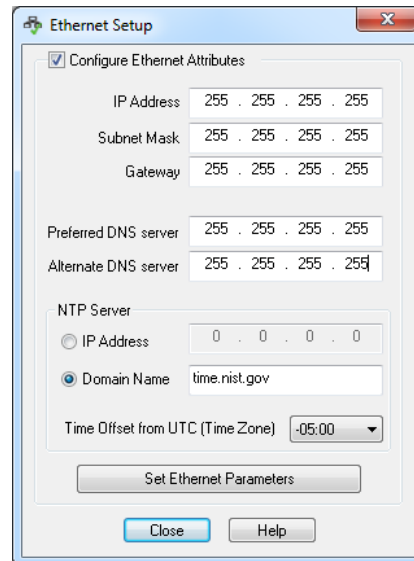
Below is an example which will be sent at 8:00 AM, 4:00 PM, and Midnight (12:00 AM). The example has a date and 2 tags embedded. Finally it has an ASCII tag which has the current status embedded as well.

Use the *Preview Body* button to view a generated email based on selections.

Ethernet and NTP Setup

In the **Panel Main Programming Window**, if you click on **Setup > Ethernet Setup**, it will display the Ethernet Setup window for defining the Ethernet settings for your corresponding Panel. When selected, the following screen will be shown.

Note: These settings can also be changed on the Panel using the Setup Screen Button.



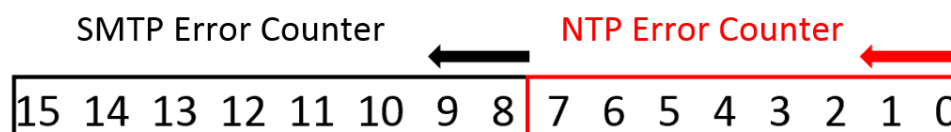
As shown in the above screen, user can specify the IP Address, Subnet Mask, and Gateway for the Panel. Also for Domain Name functionality you can configure your DNS server IP Addresses.

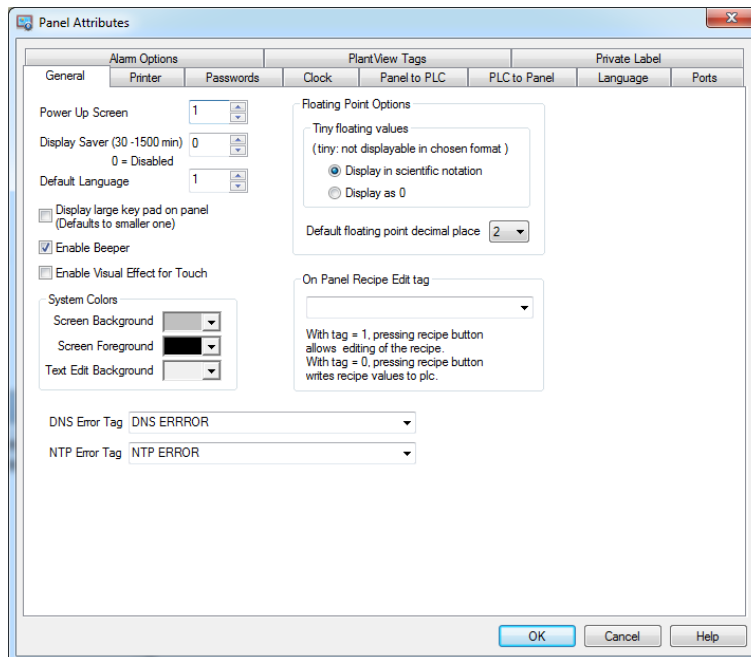
For easier troubleshooting a DNS Error Tag is provided in the Panel Attributes. This tag will display a count for both a DNS NTP lookup failure and a DNS SMTP lookup failure (up to 255). The counter will reset when a DNS lookup does not fail.

The Most Significant 8 bits are the SMTP lookup failure counter and the Least Significant 8 bits are the NTP lookup failure counter.

Note: To use this correctly you will most likely need to separate the bits and the easiest way is to move only certain bits in the PLC into another register.

Error Register:





NTP Setup

The NTP Server communication setup is also included in the Ethernet Setup. This means that the NTP Server will retain and function no matter what the project on the Panel is. To setup NTP server you only have to add the NTP Server IP and the Time Offset from UTC. Below is a simple chart of some UTC times.

Note: Current daylight savings is not implemented so might need to change the offset to allow for daylight saving.

NTP Server

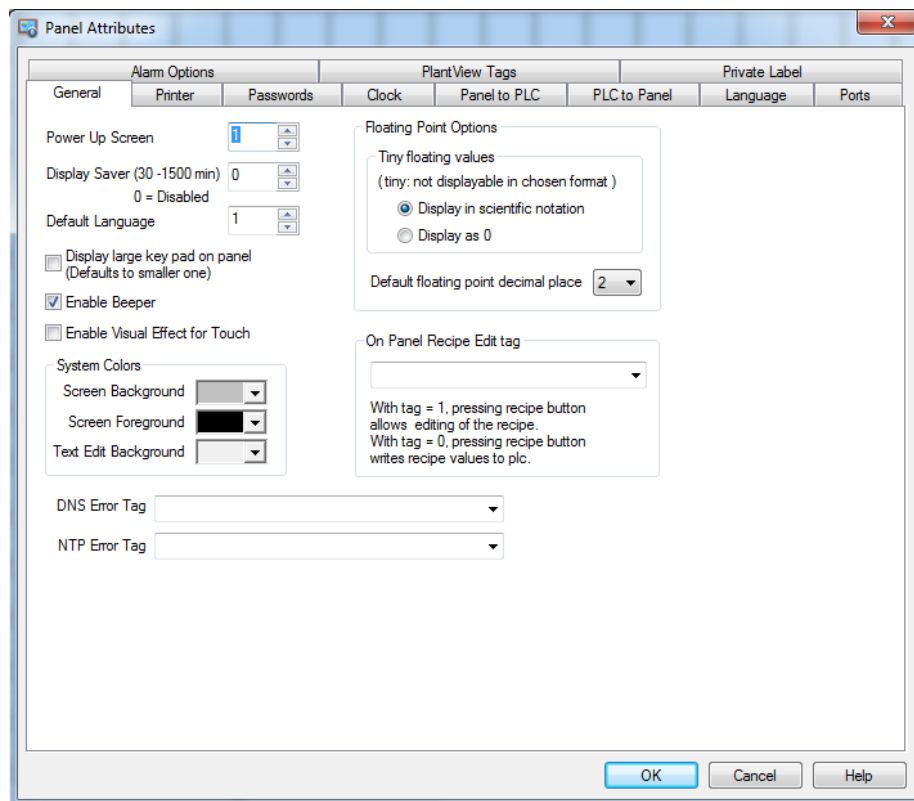
NTP Server IP 129 . 6 . 15 . 28

Time Offset from UTC (Time Zone) -07:00

Time Zone	GMT time offset (UTC)
Eastern Standard Time (EST)	- 5:00
Central Standard Time (CST)	- 6:00
Mountain Standard Time (MST)	- 7:00
Pacific Standard Time (PST)	- 8:00
Middle European Time (MET)	+ 1:00
Indian Standard Time (IST)	+ 5:30
China Standard Time (CST)	+ 8:00
Australian Eastern Standard Time (AEST)	+ 10:00

For troubleshooting there does exist a NTP Error Tag in Panel Attributes.

Error Code	Error Cause
0	No Error
>0	Cannot connect to NTP Server please check IP of server



If you need assistance, please call our Technical Support at 1-877-774-3279
Email us at techsupport@ezautomation.net or sales@ezautomation.net



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