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# EZTouch Panel
# Hardware User Manual

**Revision 4**

**Manual Part Number EZ-TOUCH-M**

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## WARNING!

Programmable control devices such as EZTouch Panels must not be used as 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 programmable controller.

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.

### CAUTION

Do not press the EZTouch Panel touchscreen with any sharp objects. This practice may damage the unit beyond repair.

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**MAN-EZTCH-HDW, Rev 4, 07/03**

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## Manual Revisions

**Manual Part Number:** EZ-TOUCH-M
**Manual Title:** EZTouch Panel Hardware User Manual, Revision 4

The following table provides you with update information. If you call technical support with a question about this manual, please be aware of the revision number.

| Revision | Date | Effective Pages | Description of Changes |
|---|---|---|---|
| Original Release | 11/2000 | Cover<br>Warning/Copyright<br>i–iv<br>1–40<br>Appendix<br>Index | Original Release of Manual |
| Maintenance Release 1 | 04/2001 | Warning/Copyright, pp. 4, 6, 7, 9, 21, 22, 32, 39<br>Appendix, pages 45-46 | Miscellaneous clerical changes.<br><br>Cable wiring diagram added. |
| Revision 1 | 3/2002 | All | 6" Slim Bezel Models added. AB DH+ option card added. EZEthernet option card added. Siemens PLC Cable added. EZTouch Panel RS-422A wiring connections added. Mounting options for 8- and 10-inch models changed. |
| Revision 2 | 9/2002 | Pages i-iv, 2, 3, 5, 6, 8-13, 15, 16, 18, 20, 21, 23-25, 28, 31, 37, 40-46<br>Index | 8-, 10-, and 15-inch Slim Bezel Models added. Touchscreen chemical compatibility table added (for Slim Bezel models) |
| Revision 3 | 02/2003 | Pages i-vi, 1, 2, 6, 8, 10, 13, 15, 23-26, 29, 30, 32-39, 43, A-8, A10, A-11, Index | Modicon Modbus Plus, Generic Devicenet I/O, Generic Ethernet/IP, Generic Profibus-DP option card information added. Added wiring diagram for Omron PLC. Added RS-485A wiring diagram for DirectLogic PLCs. |
| Revision 4 | 07/2003 | Pages i, iii, v, vi, 8, 17, 18, A-1, A-7–A-12 | Added wiring diagrams for Modicon ModBus RS-232, minor changes to outline dimensions, changed OMRON wiring diagram for CQM1 and CPM1 |



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# EU Information

The EZTouch Panel is manufactured in compliance with European Union (EU) Directives and carries the CE mark. The EZTouch Panel has been tested under CE Test Standard #EN55011, and is listed under UL File #E209355. The following information is provided to comply with EU documentation requirements.



Please NOTE: 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 Automationdirect.com or its agents should be used.

**Technical Support**

Consult EZTouch Programming Software Help or you may find answers to your questions in the operator interface section of our web site @ www.Automationdirect.com. If you still need assistance, please call our technical support at 1-770-844-4200 or FAX us at 1-770-886-3199.

**SELV Circuits**

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

**Environmental Specifications**

**Operating Temperature**

| | |
|---|---|
| 6" Monochrome/6" Color | 0 to 45 °C |
| 8" Color | 0 to 40 °C |
| 10" Color | 0 to 50 °C |
| 15" Color | 0 to 45 °C |

**Storage Temperature**

| | |
|---|---|
| 6" Mono | –20 to +60 °C |
| 6" Color | –25 to +60 °C |
| 8" Color | –20 to +60 °C |
| 10" Color | –25 to +60 °C |
| 15" Color | –25 to +60 °C |

**Operating Humidity** ..... 10–95% R.H., noncondensing
**Air Composition** ..... No corrosive gases permitted

**Preventative Maintenance and Cleaning**

No preventative maintenance is required. The EZTouch Panel touchscreen should be cleaned as needed with warm, soapy water. See Chapter 5, *Maintenance*, for a list of compatible/incompatible chemicals and compounds.



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## Manual Organization

***The table, below provides an overall description of the topics covered within this manual.***

| Chapters | | |
|---|---|---|
| 1 | **Getting Started** | Provides Manual Organization, and lists what you need to get started, hardware and software. Discusses how to get help with questions or problems you might encounter through Onscreen Help and Technical Support. |
| 2 | **Models, Features, and Accessories** | Provides you with a table listing the various models, their part numbers and special features. Lists the important features of all EZTouch Panels. Lists the PLCs supported by the panels, by brand, model and protocol. Lists the replacement and optional equipment available, including memory cards, PLC cables and programming cable. |
| 3 | **Specifications** | Specifications for each model provide detailed information. Included are display size, brightness and pixels; CPU type; service power requirements; operating and storage temperatures; available memory, serial communications specs; dimensions, weight, etc. |
| 4 | **Installation** | Shows the mounting and cutout dimensions for the panel models. Tells you how to connect the unit to power supply, programming computer, printer, and a PLC. Special option card connector instructions are also provided.Shows the setup screens displayed after initial powerup of the panel. Describes each setup screen and how to use it to set up your panel. |
| 5 | **Maintenance** | Provides instructions on battery replacement, gasket replacement, memory upgrade (FLASH and RAM), Fuse Reset, and fluorescent backlight replacement. Discusses precautions and cleaning necessary to ensure longevity of the panel. |
| 6 | **Troubleshooting** | Aids in diagnosing problems you might encounter when installing or operating your EZTouch Panel. Provides steps to take to isolate and correct problems. |
| A | **Appendix A** | PLC Cable Wiring Diagrams are provided. |



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## Introduction



There are *two manuals* that you will need to use the EZTouch Panel — this manual, the EZTouch Panel Hardware User Manual, and the *EZTouch Panel Programming Software User Manual* (included with P/N EZ-TOUCHEDIT, EZ-Touch Programming Software). Don't worry — you won't be bouncing back and forth between them — and we'll always let you know exactly where the information is that you will need for the next step.

These manuals will take you through the steps necessary to get your EZTouch Panel up and running in the shortest possible time. Although your familiarity with programmable graphic operator interface devices will determine how quickly you move through the steps — it's as easy as 1 — 2 — 3. The flow chart below will show you where you need to go, and — how to get there from here!

**Easy as 1 - 2 - 3**

☐ **Install Software**

EZTouch Programming Software is a user-friendly Windows-based program that allows you to design screens for the EZTouch Panel series of operator interfaces. To install EZTouch Panel Programming Software, run the install program from the CD and follow the onscreen prompts. For more information, please refer to the *EZTouch Programming Software Manual.*

***You can start designing your screen off-line immediately after installing EZTouch Programming Software — you don't need to have the hardware installed!***



☐ **Install Hardware**

This manual will provide you with the instructions you need to install the EZ-Touch Panel. Included are mounting diagrams for both **Stud Mounting** (page 16) and **DIN Clip Mounting** (page 27). Connections and wiring requirements are provided beginning on page 29. Option Card connector information is provided beginning on page 32. Panel **Setup** instructions begin on page 41. For Maintenance information, see Chapter 5 (page 45) and for Troubleshooting, refer to Chapter 6 (page 55).

☐ **Design Screens**

You may design your screen on-line or off-line (without connection to an EZ-Touch Panel). When designing screens with EZTouch Programming Software, you will program objects on the EZTouch Panel providing a graphical interface designed to interchange and display data from a PLC by merely viewing or touching the screen — all unique to your particular application. For instructions on how to design screens, refer to the *EZTouch Panel Programming Software User Manual.*



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## What you need to get started:



### Hardware

- EZTouch Panel (6" Monochrome, 6" Color, 8" Color, or 10" Color, including 6", 8", and 10" Slim Bezel Models, 15" Slim Bezel Model, and Option Card models)
- 24 Volt Power Supply (24 VDC with 1.5A switching supply is recommended) (1.5 Amp Slo-Blo input power fuse is also recommended)
- RS-232C Programming Cable (P/N EZTOUCH-PGMCBL)
- RS-232C PLC Interface Cable (see page 10 for part numbers)
- PC requirements:
  - — IBM or compatible PC (486 or better) with a mouse and separate serial port
  - — VGA display with at least 800 x 600 resolution (1024 x 768 recommended)
  - — Standard Windows 98/NT4.0/ME/2000® /XP Home/XP Pro Requirements
  - — CD ROM Drive

### Software

- EZTouch Programming Software (P/N EZ-TOUCHEDIT)

## Need HELP?



***Help is never more than a mouse click or a key press away!***

### Onscreen HELP

One of the most important features of the EZTouch Programming Software is the availability of context sensitive onscreen help. To access the Help windows, simply press the F1 function key while on the topic where you need help. For example, if you need help while working with screens, hit the F1 function key while in that area and a popup window will be displayed. Also, most dialog boxes contain a Help button, you may click on it to get help, too!

### Fly-Over HELP

When the mouse cursor comes to rest over any tool bar or object button for a short while, a small window will appear containing a brief description of the function of that particular button. The window will disappear as soon as the cursor has been moved off the button.

### PLC HELP

If you need help with the PLC to EZTouch Panel Interface, consult the EZ-Touch Panel Programming Software Help. Each PLC Driver has a Help Topic that lists the error messages and provides an explanation for each. Also provided are PLC to EZTouch Panel wiring diagrams.



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### Technical Support

Although most questions can be answered with EZTouch HELP or the manuals, if you are still having difficulty with a particular aspect of installation or screen design, technical support is available at **1-770-844-4200 or FAX us at 1-770-886-3199. Visit our website at *www.Automationdirect.com.***

**PLEASE NOTE:** Chapter 6, Troubleshooting, at the end of this manual should be able to help you with most problems you might encounter.





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## Models



The EZTouch Panel is an intelligent, programmable, flat panel display. It has been designed to interchange and display graphical data from a PLC by merely viewing or touching the screen.

The EZTouch Panel is available in a variety of models to suit your application. Refer to the table below for a list of part numbers, descriptions and options for all 6-inch Models (including Option Board Models and Slim Bezel Models.) See next page for 8-, 10-, and 15-inch Models.

### 6-inch EZTouch Panel Models

| Part Number | Description | User Memory | Field Expandable User RAM? | Nonvolatile Flash Backup Card Option for Program Backup? | PLC Drivers Supported? * |
|---|---|---|---|---|---|
| EZ-S6M-R | 6" Monochrome Touch Panel | 256K | No | No | See Note #1 |
| EZ-S6M-RS | 6" Monochrome Touch Panel with Slim Bezel | 256K | No | No | See Note #1 |
| EZ-S6M-F | 6" Monochrome Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S6M-FH | 6" DH+ Mono Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-S6M-FS | 6" Monochrome Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S6M-FSH | 6" DH+ Mono Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-S6C-K | 6" Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | See Note #2 |
| EZ-S6C-KS | 6" Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | See Note #2 |
| EZ-S6C-F | 6" Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S6C-FH | 6" DH+ Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-S6C-FS | 6" Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S6C-FSH | 6" DH+ Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |

** List of PLC Drivers supported is provided on page 8 of this manual.*
*Note #1: Supports all drivers in list, but NO OPTION BOARDS.*
*Note #2: Supports AutomationDirect (DirectLogic) Serial Drivers including H2-WPLC-XX.*



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## 8-inch, 10-inch, and 15-inch EZTouch Panel Models

In the table below are the 8-, 10-, and 15-inch EZTouch Panel models including the Slim Bezel Models and Models with the A-B Data Highway Plus (and Remote I/O), DeviceNet I/O, Ethernet/IP, Modicon ModBus Plus, or Profibus-DP Network interface module (option card) installed. If using an option board connector, you cannot use the PLC port at the same time to connect to another type PLC. The panel supports only one PLC driver at a time.

| Part Number | Description | User Memory | Field Expandable User RAM? | Nonvolatile Flash Backup Card Option for Program Backup? | PLC Drivers Supported? * |
|---|---|---|---|---|---|
| EZ-S8C-F | 8" Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S8C-FS | 8" Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-S8C-FH | 8" DH+ Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-S8C-FSH | 8" DH+ Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-T10C-F | 10.4" Color Touch Panel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-T10C-FH | 10.4" DH+ Color Touch Panel | 512L | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-T10C-FS | 10.4" Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus EZ Ethernet |
| EZ-T10C-FSH | 10.4" DH+ Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-T10C-FSD | 10.4" DeviceNet I/O Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus DeviceNet I/O |
| EZ-T10C-FSE | 10.4" Ethernet/IP Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Ethernet/IP |
| EZ-T10C-FSM | 10.4" Modbus Plus Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Modbus Plus |
| EZ-T10C-FSP | 10.4" Profibus-DP Color Touch Panel with Slim Bezel | 512K | Yes — to 1 or 1.5 MEG | Yes | All, plus Profibus-DP |
| EZ-T15C-FS | 15" Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus EZ Ethernet |
| EZ-T15C-FSH | 15" DH+ Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus Allen-Bradley DH+ and Remote I/O |
| EZ-T15C-FSD | 15" DeviceNet I/O Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus DeviceNet I/O |
| EZ-T15C-FSE | 15" Ethernet/IP Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus Ethernet/IP |
| EZ-T15C-FSM | 15" Modbus Plus Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus Modbus Plus |
| EZ-T15C-FSP | 15" Profibus-DP Color Touch Panel with Slim Bezel | 1024K | Yes — to 1.5 or 2 MEG | Yes | All, plus Profibus-DP |

** List of PLC Drivers supported is provided on page 8 of this manual.*



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## Features








- Pre-built panel components for easy screen design
- Special parts, such as: Toggle Switch, Slide Switch, Selector Switch, Throw Switch, Thumbwheel Object, Meters, PID Faceplates, and Analog/Digital Clock
- Flash based design for easy firmware upgrade
- Field expandable user RAM (not all models)
- Nonvolatile flash card option for user program backup (not all models)
- Color models support 128-color palette for components and bitmaps
- 16 shades of gray on monochrome models
- Multiple languages (up to 9)
- Two communications ports — Computer (RS-232C) and PLC (RS-232C, RS-422A, or RS-485A)
- Up to 999 screens
- Built-in clock and calendar or reference the PLC clock
- Built-in soft keypad for numeric and alphanumeric entry
- Password Protection for every touch object
- Passwords for up to 8 user groups
- 16 level undo and redo
- Import bitmaps
- Serial Printer support
- 40-character tag names allows you to use meaningful names for PLC memory locations instead of cryptic PLC addresses



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## PLCs Supported by the EZTouch Panels

| PLC Brand | Model | | Protocols Supported |
|---|---|---|---|
| Allen-Bradley | Micrologix 1000/1200/1500, SLC500, 5/01,/02,/03 | | DH485/AIC/AIC+ |
| | Micrologix 1000/1200/1500 | | DF1 Half Duplex, DF1 Full Duplex |
| | SLC5/03, 5/04, and 5/05 | | DF1 Half Duplex, DF1 Full Duplex |
| | PLC5 | | DF1 |
| | SLC5/04, PLC5 | | DH+ (Option Card) |
| | PLC2, 3 and 5 | | Remote I/O (w/ DH+ Plus Option Card) |
| DeviceNet | DeviceNet I/O | | DeviceNet I/O (Option Card) |
| Ethernet | Ethernet/IP (ControlLogix) | | Ethernet/IP (Option Card) |
| General Electric | 90/30 and 90/70<br>Versamax | | SNPX<br>SNP |
| Mitsubishi | FX Series (all) | | FX, Direct |
| Modicon | 984 CPU, Quantum 113 CPU<br>AEG Modicon Micro Series 110 CPU. 311-xx, 411-xx, 512-xx, 612-xx | | Modbus RTU |
| | 984 Series, Quantum Series | | Modbus Plus (Option Card) |
| Omron | C200, C500, CQM1, CPM1 | | Host Link |
| Profibus | Profibus-DP | | Profibus-DP (Option Card) |
| DirectLogic | DL05, DL06 | | K-Sequence, DirectNet, ModBus (Koyo addressing) |
| | DL105 | | K-Sequence |
| | DL205 | D2-230 | K-Sequence |
| | | D2-240 | K-Sequence, DirectNet |
| | | D2-250/D2-250-1/260 | K-Sequence, DirectNet, ModBus (Koyo addressing) |
| | | D2-240/250 w/DCM | DirectNet |
| | DL305 | D3-330/330P | DirectNet |
| | | D3-340 | DirectNet |
| | | D3-350 | K-Sequence, DirectNet, ModBus (Koyo addressing) |
| | | D3-350 w/DCM | DirectNet |
| | DL405 | D4-430 | K-Sequence, DirectNet |
| | | D4-440 | K-Sequence, DirectNet |
| | | D4-450 | K-Sequence, DirectNet, ModBus (Koyo addressing) |
| | | All with DCM | DirectNet |
| Siemens | Siemens S7 MPI Adaptor 300, 400 | | 3964R |
| Other | H2- WinPLC [Entivity (Think & Do) V5.2 or later, check for version compatibility] | | Entivity (Think & Do) Modbus RTU (serial port) |
| | H2/H4 EBC, T1H-EBC | | K-Sequence (serial port) |





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## Replacement and Optional Equipment

There are replacement parts and other optional equipment available to customize or upgrade the EZTouch Panel to fit your application. The table, below, provides you with a list of this equipment. Instructions, if necessary, on how to install this equipment to upgrade your unit are also provided. (For instructions to mount the 6-inch EZTouch Panel with DIN clips, see pages 27 and 28.)

To order from this list, phone Automationdirect.com at 1-800-663-0405.

| Item | Part Number |
|---|---|
| EZTouch Panel Programming Software | EZ-TOUCHEDIT |
| 512K RAM Card | EZ-RAM-1 |
| 1 MEG RAM Card | EZ-RAM-2 |
| 512K Flash Option (Flash backup card) | EZ-FLASH-1 |
| 1 MEG Flash Option (Flash backup card) | EZ-FLASH-2 |
| 2 MEG Flash Option (Flash backup card) | EZ-FLASH-3 |
| EZTouch Replacement Battery | EZ-BAT |
| EZTouch Optional DIN Mounting Clips (package of 6) | EZ-BRK-1 |
| Mounting Studs (package of 8) | EZ-TOUCH-STUDS |
| Standard Replacement Gasket (6" Model) | EZ-TOUCH6-GSK |
| Standard Replacement Gasket (8" Model) | EZ-TOUCH8-GSK |
| Standard Replacement Gasket (10" Model) | EZ-TOUCH10-GSK |
| Slim Replacement Gasket (6" Model) FDA Compliant | EZ-6SLIMF-GSK |
| Slim Replacement Gasket (8" Model) FDA Compliant | EZ-8SLIMF-GSK |
| Slim Replacement Gasket (10" Model) FDA Compliant | EZ-10SLIMF-GSK |
| Slim Replacement Gasket (15" Model) FDA Compliant | EZ-15SLIMF-GSK |
| EZTouch Panel Ethernet Card | EZ-ETHERNET |
| EZTouch Panel Hardware User Manual | EZ-TOUCH-M |
| EZ Ethernet Option Card Manual | EZ-ETHERNET-M |



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## PLC Cable Part Numbers — 3m (9.8 ft.)

| Part Number | Cable Description |
|---|---|
| EZ-2CBL | ***Direct*** Logic PLC RJ12 port, DL05, DL06 DL105, DL205, DL350 & DL450 (RS-232C) |
| EZ-2CBL-1 | ***Direct*** Logic (VGA Style) 15-pin port, DL 250 (250-1), DL260, DL06 (RS-232C) |
| EZ-3CBL | ***Direct*** Logic PLC RJ11 port, DL340 (RS-232C) |
| EZ-4CBL-1 | ***Direct*** Logic PLC 15-Pin Dsub port, DL405 (RS-232C) |
| EZ-4CBL-2 | ***Direct*** Logic PLC 25-Pin Dsub port, DL405, DL350, DL305 DCU, and all DCM's (RS-232C) |
| EZ-90-30-CBL | GE 90/30 and 90/70 15-pin Dsub port (RS-422A) |
| EZ-DH458-CBL | AB SLC DH-485 port (RS-232C) |
| EZ-SLC-232-CBL | AB SLC 5/03/04/05 DF1 port (RS-232C) |
| EZPLC5-232-CBL | AB PLC5 DF1 port (RS-232C) |
| EZ-MLOGIX-CBL | AB MicroLogix 1000, 1200 & 1500 (RS-232C) |
| EZ-MITSU-CBL | Mitsubishi FX Series 25-pin port (RS-422A) |
| EZ-MITSU-CBL-1 | Mitsubishi FX Series 8-pin (RS-422A) |
| EZ-OMRON-CBL | Omron C200, C500 (RS-232C) |
| EZ-S7MPI-CBL | Siemens 7 MPI Adapter (RS-232C) |

## Programming Cable Part Number — 2m (6.56 ft.)

| | |
|---|---|
| EZTOUCH-PGMCBL | RS-232 Programming Cable |



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## Hardware Specifications

Specifications for all 6-inch EZTouch Panel Models (including Slim Bezel and A-B DH+ Option Card Models) are provided in the table below. * An "H" at the end of a part number indicates an A-B DH+ option card has been installed. An "S" indicates a Slim Bezel Model.

**EZTouch Panel Specifications — all 6-inch Models**

| Specification | EZTouch Panel 6-inch Models | | | |
|---|---|---|---|---|
| | 6" Mono EZ-S6M-R, EZ-S6M-F, and *EZ-S6M-FH | 6" Mono Slim EZ-S6M-RS, EZ-S6M-FS, and *EZ-S6M-FSH | 6" Color EZ-S6C-K, EZ-S6C-F, and *EZ-S6C-FH | 6" Color Slim EZ-S6C-KS, EZ-S6C-FS, and *EZ-S6C-FSH |
| Display Type | 5.7" STN (16 Shades of Gray) | | 5.7" STN (128-Color Palette) | |
| Display Size (Viewing Area) | 4.72" x 3.5" (119.4 x 88.9 mm) | | 4.65" x 3.5" (118.1 x 88.9 mm) | |
| Screen Pixels | 320 x 240 | | | |
| Display Brightness | 140 nits | | 180 nits | |
| Touch Screen | 48 resistive touch cells (8 x 6) | **EZ-S6M-RS**: 48 resistive touch cells (8 x 6) **EZ-S6M-FS/FSH:** 192 resistive touch cells (16 x 12) | 48 resistive touch cells (8 x 6) | 192 resistive touch cells (16 x 12) |
| CPU Type | Motorola Coldfire 32 bit CPU (40 MHZ) | | | |
| Service Power | 24 VDC (20–30 VDC operating range) | | | |
| Power Consumption | 13 Watts @ 24VDC | | 15 Watts @ 24VDC | |
| Enclosure | NEMA 4, 4X (indoor) | | | |
| Agency Approvals | UL, CUL, CE | | | |
| Operating Temperature | 0 to 45 °C (32 to 113 °F) | | | |
| Storage Temperature | –20 to +60 °C (–4 to +140 °F) | | –25 to +60 °C (–13 to+140 °F) | |
| Humidity | 10–95% R.H., noncondensing | | | |
| Electrical Noise Interference | 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 Resistance | Over 20 M-ohm, between power supply input and terminal and protective ground (FG) | | | |
| Vibration | 5 to 55 Hz 2G for 2 hours in the X, Y, and Z axes | | | |
| Shock | 10G for under 12 ms in the X, Y, and Z axes | | | |
| User Memory | **EZ-S6M-R, EZ-S6M-RS:** 256K system RAM Memory (only) **All other models:** 512K System RAM Memory, 512K Option RAM Card for Memory Expansion, 512K Option Flash Card for Memory Backup, 1 Meg Option Flash Card for Memory Backup | | | |
| Number of Screens | Up to 999, limited by memory | | | |
| Real-time Clock | Built into panel (PLC clock is still accessible, if available) | | | |
| Serial Communications | **PLC Port:** RS-232C, RS-422A, RS-485A, 15-pin D-Sub (Female)] **Download/Program Port:** RS-232C, RS-422A, RS-485A, 9-pin D-Sub (Female) **DH+ Port:** (EZ-S6M-FH/FSH, EZ-S6C-FH/FSH Models) DH+ option board 25-pin connector (Female) | | | |
| Screen Saver | Yes, backlight off | | | |
| External Dimensions | 7.30" x 8.94" x 2.94" (185.42 x 226.076 x 74.68 mm) | 7.250" x 8.048" x 2.68" (156.078 x 204.407 x 68.07 mm) | 7.30" x 8.94" x 2.94" (185.42 x 226.076 x 74.68 mm) | 7.250" x 8.048" x 2.68" (156.078 x 204.407 x 68.07 mm) |
| Weight | 1.7 lbs. | | | |



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## EZTouch Panel Specifications — 8-inch and 10-inch Standard Bezel Models

| Specification | EZTouch Panel Models | |
|---|---|---|
| | 8" Color EZ-S8C-F and EZ-S8C-FH | 10" Color EZ-T10C-F and EZ-T10FH |
| Display Type | 8.2" STN (128-Color Palette) | 10.4" TFT (128-Color Palette) |
| Display Size (Viewing Area) | 6.65" x 5.024" (168.9 x 127.61 mm) | 8.31" x 6.22" (211.07 x 158 mm) |
| Screen Pixels | 640 x 480 | |
| Display Brightness | 90 nits | 200 nits |
| Touch Screen | 192 resistive touch cells (16 x 12) | |
| CPU Type | Motorola Coldfire 32 bit CPU (40 MHZ) | |
| Service Power | 24 VDC (20–30 VDC operating range) | |
| Power Consumption | 16 Watts @ 24VDC | 18 Watts @ 24VDC |
| Enclosure | NEMA 4, 4X (indoor) | |
| Agency Approvals | UL, CUL, CE | |
| Operating Temperature | 0 to 40 °C (32 to 104 °F) | 0 to 50 °C (32 to 122 °F) |
| Storage Temperature | –20 to +60 °C (–4 to +140 °F) | –25 to +60 °C (–13 to +140 °F) |
| Humidity | 10–95% R.H., noncondensing | |
| Electrical Noise Interference | 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 Resistance | Over 20 M-ohm, between power supply input and terminal and protective ground (FG) | |
| Vibration | 5 to 55 Hz 2G for 2 hours in the X, Y, and Z axes | |
| Shock | 10G for under 12 ms in the X, Y, and Z axes | |
| User Memory | 512K System RAM Memory, 512K Option RAM Card for Memory Expansion, 512K Option Flash Card for Memory Backup, 1 Meg Option Flash Card for Memory Backup | |
| Number of Screens | Up to 999, limited by memory | |
| Real-time Clock | Built into panel (PLC clock is still accessible, if available) | |
| Serial Communications | **PLC Port:** RS-232C, RS-422A, RS-485A, 15-pin D-Sub (Female)<br>**Download/Program Port:** RS-232C, RS-422A, RS-485A, 9-pin D-Sub (Female)<br>**DH+ Port:** (EZ-S8C-FH, EZ-T10C-FH Models) DH+ option board 25-pin connector (Female) | |
| Screen Saver | Yes, backlight off | |
| External Dimensions | 8.76" x 10.915" x 3.093" (222.38 x 277.24 x 78.56 mm) | 10.60" x 13.59" x 3.19" (269.22 x 345.186 x 81.03 mm) |
| Weight | 1.6 lbs. | 3.8 lbs. |



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## EZTouch Panel Specifications — 8-inch, 10-inch, and 15-inch Slim Bezel Models

| Specification | EZTouch Panel Models | | |
|---|---|---|---|
| | 8" Color EZ-S8C-FS and EZ-S8C-FSH | 10" Color EZ-T10C-FS and EZ-T10C-FSH/FSD/FSM/FSE/FSP | 15" Color EZ-T15C-FS and EZ-T15C-FSH/FSD/FSM/FSE/FSP |
| Display Type | 8.2" STN (128-Color Palette) | 10.4" TFT (128-Color Palette) | 15.0" TFT (128-Color Palette) |
| Display Size (Viewing Area) | 6.65" x 5.024" (168.9 x 127.61 mm) | 8.31" x 6.22" (211.07 x 158 mm) | 12.02" x 9.01" (305.28 x 228.96 mm) |
| Screen Pixels | 640 x 480 | | |
| Display Brightness | 90 nits | 200 nits | 250 nits |
| Touch Screen | 192 resistive touch cells (16 x 12) | | |
| CPU Type | Motorola Coldfire 32 bit CPU (40 MHZ) | | |
| Service Power | 24 VDC (20–30 VDC operating range) | | |
| Power Consumption | 16 Watts @ 24VDC | 18 Watts @ 24VDC | 33 Watts @ 24VDC |
| Enclosure | NEMA 4, 4X (indoor) | | |
| Agency Approvals | UL, CUL, CE | | |
| Operating Temperature | 0 to 40 °C (32 to 104 °F) | 0 to 50 °C (32 to 122 °F) | 0 to 45 °C (32 to 113 °F) |
| Storage Temperature | –20 to +60 °C (–4 to +140 °F) | –25 to +60 °C (–13 to +140 °F) | |
| Humidity | 10–95% R.H., noncondensing | | |
| Electrical Noise Interference | 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 Resistance | Over 20 M-ohm, between power supply input and terminal and protective ground (FG) | | |
| Vibration | 5 to 55 Hz 2G for 2 hours in the X, Y, and Z axes | | |
| Shock | 10G for under 12 ms in the X, Y, and Z axes | | |
| User Memory | **8" and 10" Models:** 512K System RAM Memory, 512K and 1 MEG Option RAM Card for Memory Expansion; 512K, 1 or 2 MEG Option Flash Card for Memory Backup<br>**15" Model:** 1024K System RAM Memory, 512K and 1 MEG Option RAM Card for Memory Expansion; 1or 2 Meg Option Flash Card for Memory Backup | | |
| Number of Screens | Up to 999, limited by memory | | |
| Real-time Clock | Built into panel (PLC clock is still accessible, if available) | | |
| Serial Communications | **PLC Port:** RS-232C, RS-422A, RS-485A, 15-pin D-Sub (Female)<br>**Download/Program Port:** RS-232C, RS-422A, RS-485A, 9-pin D-Sub (Female)<br>**DH+ Port:** (EZ-S8C-FH, EZ-T10C-FH Models) DH+ option board 25-pin connector (Female) | | |
| Screen Saver | Yes, backlight off | | |
| External Dimensions | 8.75" x 10.89" x 2.76" (222.25 x 276.61 x 70.10 mm) | 10.59" x 13.58" x 2.86" (268.99 x 344.93 x 72.64 mm) | 13.00" x 16.75" x 4.66" (330.2 x 425.45 x 118.36 mm) |
| Weight | 2.9 lbs. | 5.0 lbs. | 8.9 lbs. |



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**Installing the EZTouch Panel requires the following three major steps:**

**Mounting**

The EZTouch Panel is a front-panel mount unit. Mounting of the unit requires a panel cutout, and drilling six, eight, or ten holes (depending on the model) for the mounting screws. You may also mount the 6-inch units using the optional DIN clips. Some 6-inch units (Slim Bezel models) can **only** be mounted using DIN clips. The 8-, 10- and 15-inch Slim Bezel Models are **Stud Mount ONLY.** Please see the *Mounting* section beginning on page 16 for mounting diagrams and instructions.

***CAUTION: DO NOT use any thread locking compounds to secure the studs to Plastic Bezel Models. Many of these compounds will degrade the plastic housing.***

**Connections and Wiring**

Now that your EZTouch Panel is mounted, you are ready to connect your unit to the power source, PLC, and programming computer or printer. The EZTouch Panel's PLC Port and COM1 Port support RS-232C, RS-422A and RS-485A connections. Note that the EZTouch Panel is a DC powered unit (24 VDC). See the section on *Connections and Wiring*, beginning on page 29 for further information. See the section on Option Card Installation, beginning on page 32 if you have an option card installed in your EZTouch Panel.

**Communications Setup**

The EZTouch Panel has some adjustable features and panel tests, such as, Contrast, Clock, and Touchpad Test. You will also select whether the COM1 port will be used to connect to a Programming PC or a printer. The unit is shipped with factory default values for some of these features, but they can be adjusted by the user. To change any value, enter the SETUP MODE on powerup and follow the procedures provided in the *Communications Setup* section beginning on page 41.





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## Mounting

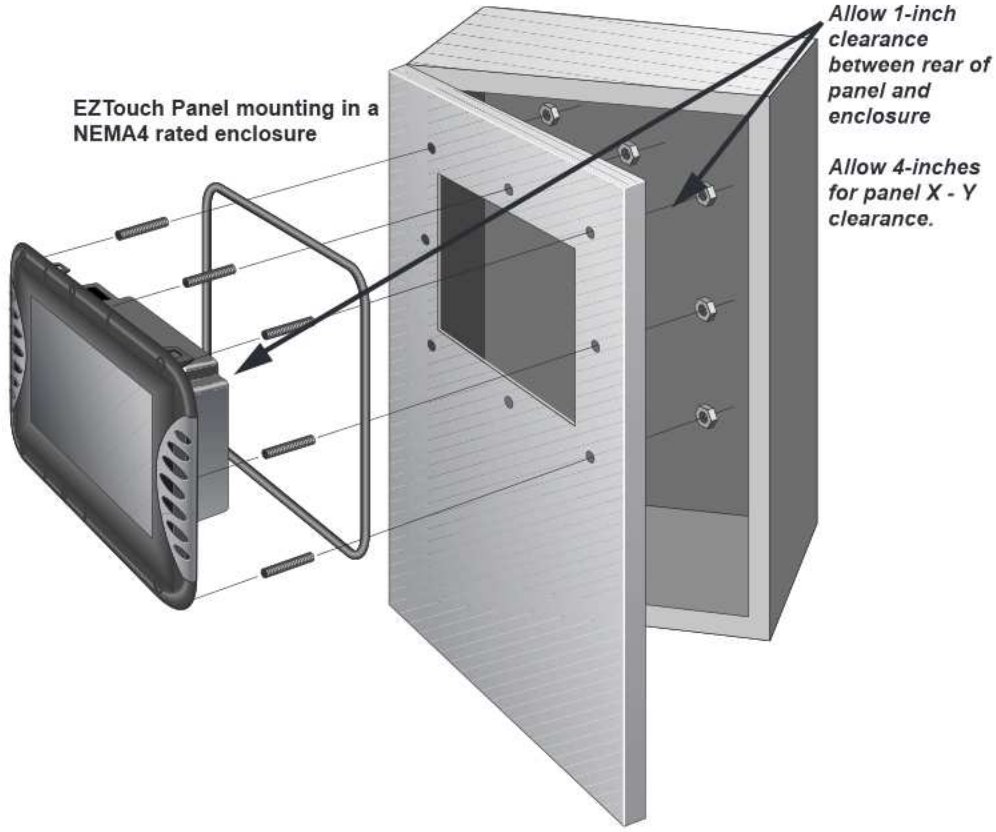
EZTouch is a panel-mount unit. Most 6-inch units (6-inch Slim models are DIN Clip mounted only) can be mounted using one of the following methods: 1. Studs; or 2. DIN Clips. 8-, 10-, and 15-inch units are stud mounted only. The following diagrams show the outline and cutout dimensions necessary to mount the panel using Method 1. Studs. (See pages 27 and 28 for diagrams showing Method 2. DIN Clips.)

## METHOD 1. Stud Mounting

***CAUTION***

***1) DO NOT use any thread locking compounds to secure the studs. Many of these compounds will degrade the plastic housing.***

***2) Mount on a VERTICAL SURFACE ONLY in order to ensure proper cooling of the panel.***

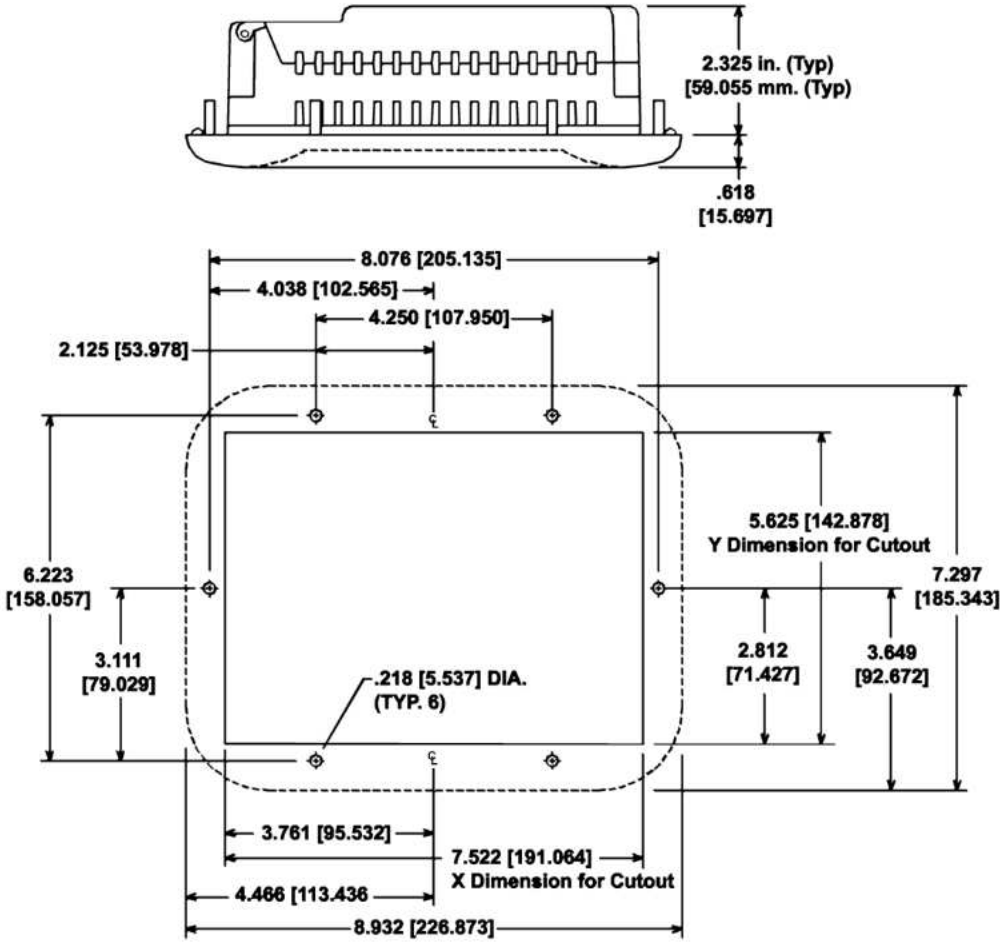





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## EZ-S6M-R, EZ-S6M-F, EZ-S6M-FH, EZ-S6C-K, EZ-S6C-F, EZ-S6C-FH Outline & Cutout Dimensions

*All the necessary mounting hardware is provided with the unit. Use the 6 studs and 6 nuts with captive washers to secure the unit to the mounting surface. Dimensions are provided in inches and millimeters, mm appear in brackets [ ].*

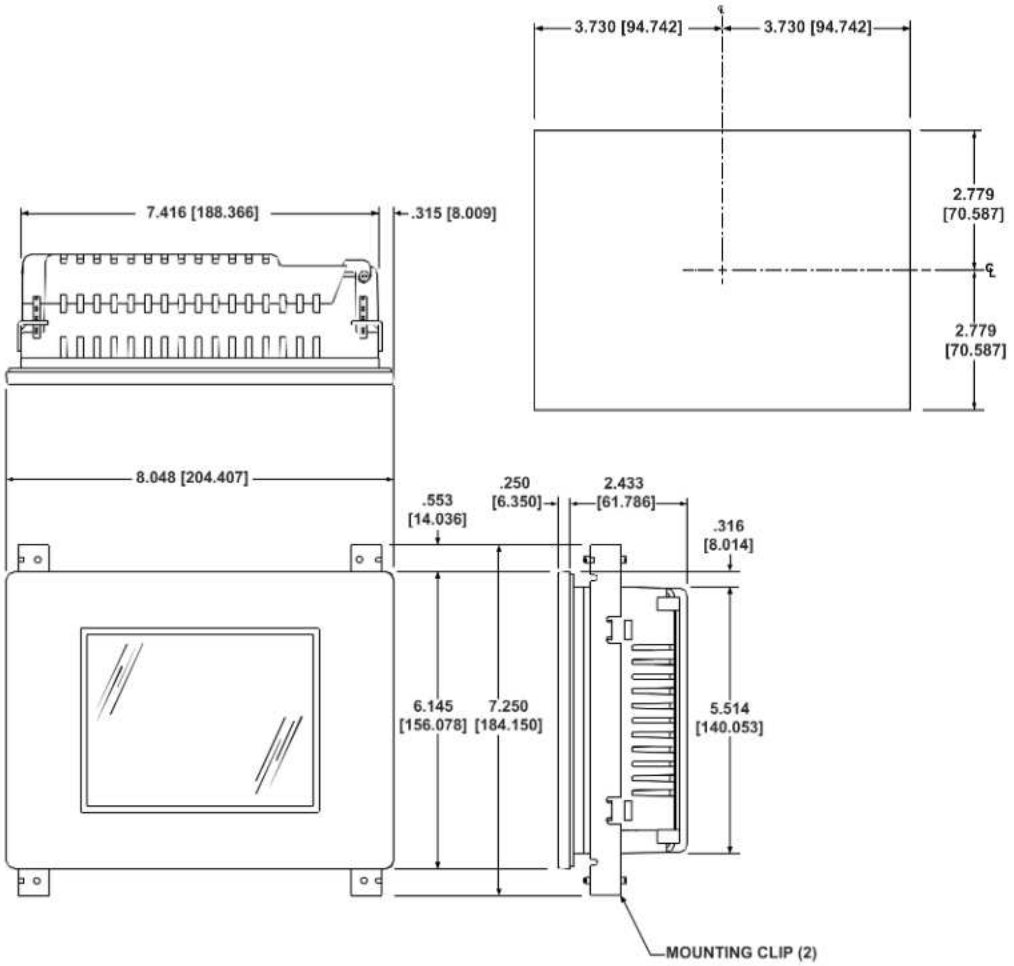





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## EZ-S6M-RS, EZ-S6M-FS, EZ-S6M-FSH, EZ-S6C-KS, EZ-S6C-FS, EZ-S6C-FSH Outline & Cutout Dimensions

*All the necessary mounting hardware is provided with the unit. See page 28 for DIN Clip installation instructions. Dimensions are provided in inches and millimeters, mm appear in brackets [ ].*

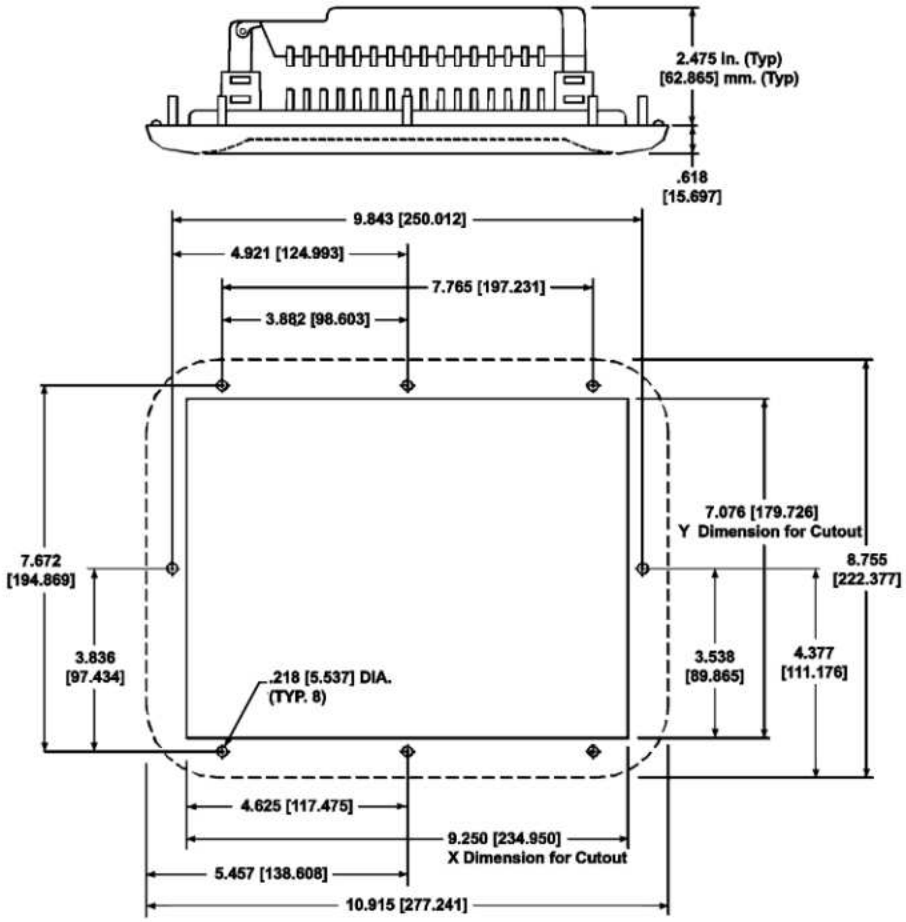





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## EZ-S8C-F and EZ-S8C-FH Outline & Cutout Dimensions

*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. Dimensions are provided in inches and millimeters, mm appear in brackets [ ].*

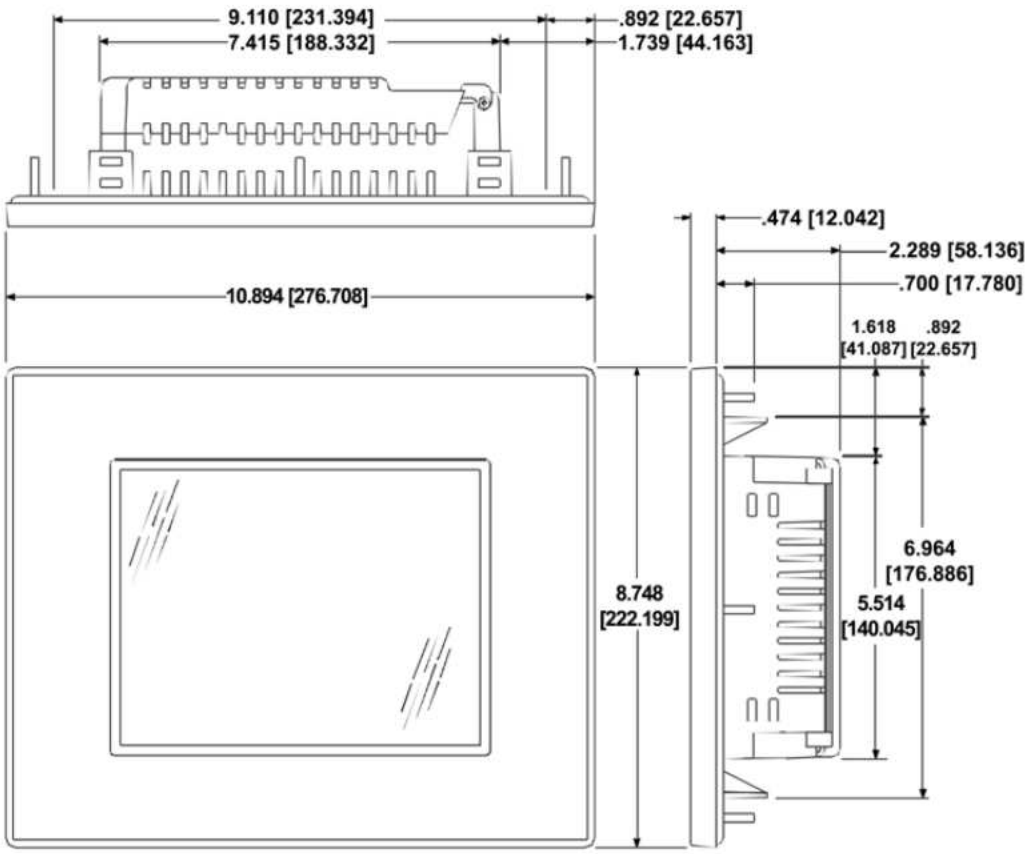





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### EZ-S8C-FS and EZ-S8C-FSH Outline Dimensions

*The 8-inch Slim Bezel Models are Stud Mount only. 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. Dimensions are provided in inches and millimeters, mm appear in brackets [ ].*

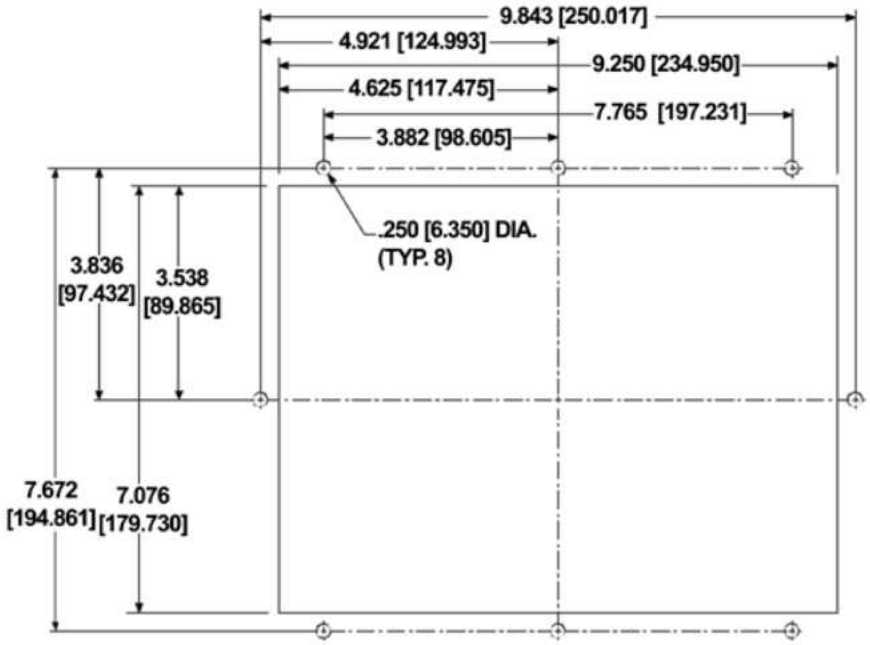





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### EZ-S8C-FS and EZ-S8C-FSH Cutout Dimensions

*The 8-inch Slim Bezel Models are Stud Mount only. 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. Dimensions are provided in inches and millimeters, mm appear in brackets [ ].*

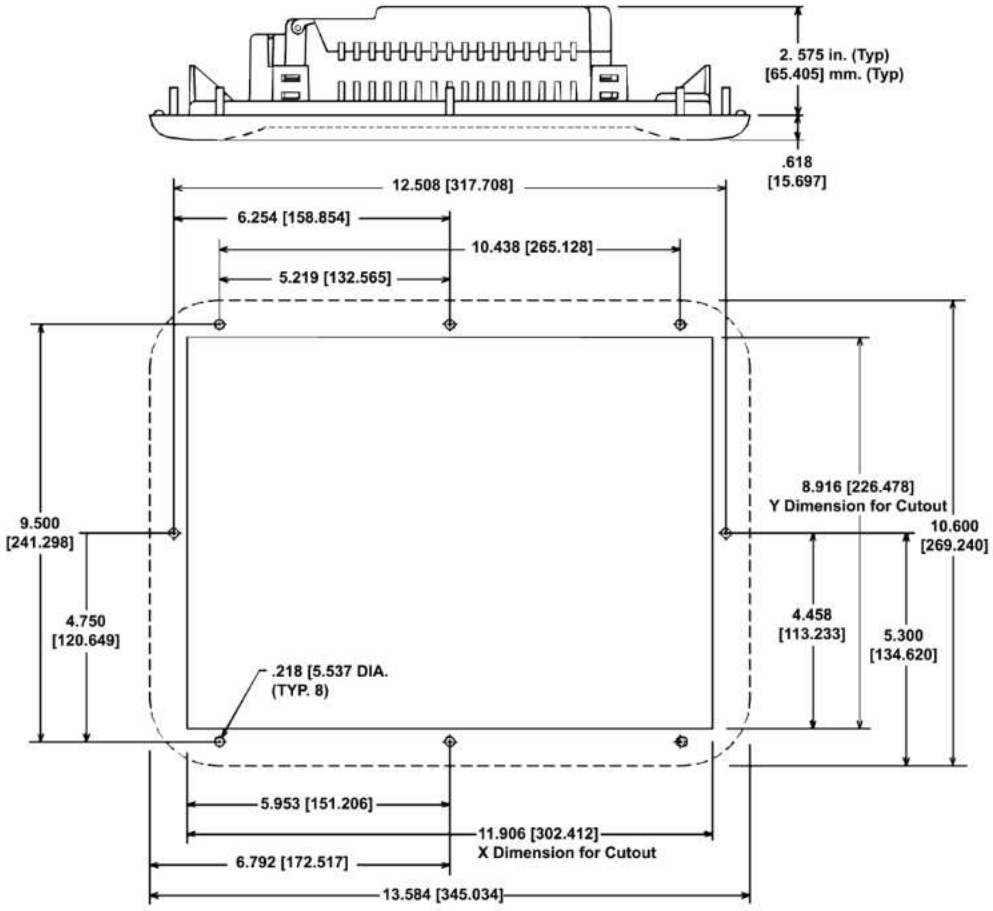





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## EZ-T10C-F and EZ-T10C-FH Outline & Cutout Dimensions

*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.*

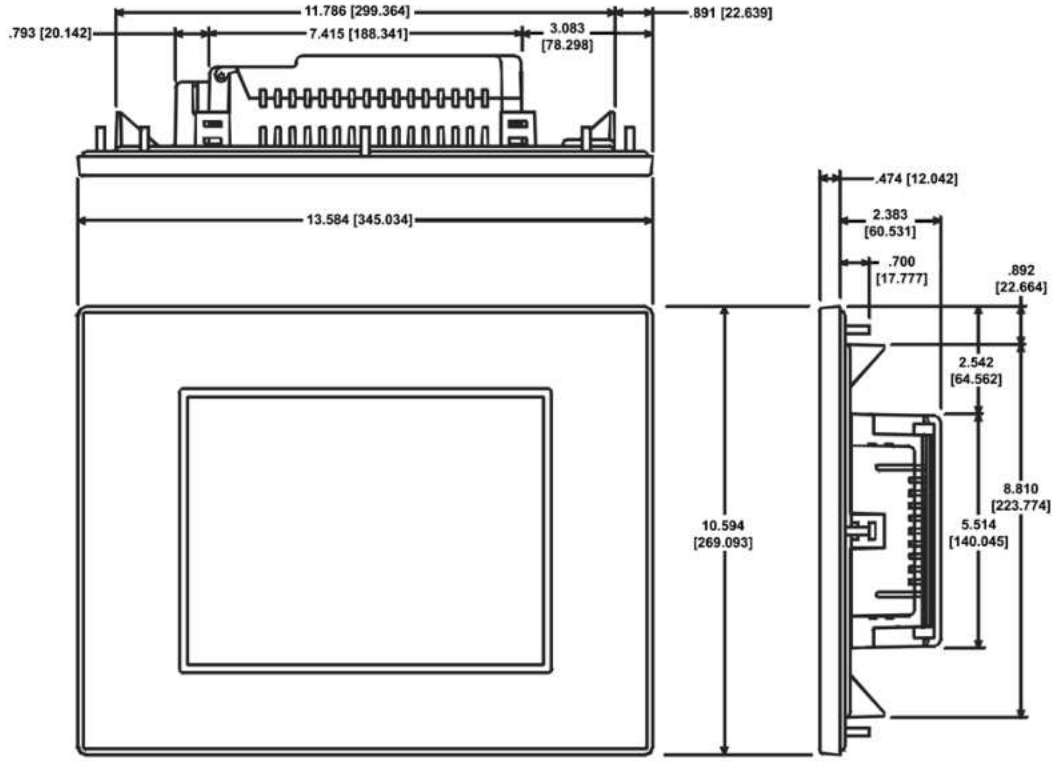





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## EZ-T10C-FS, EZ-T10C-FSH, EZ-T10C-FSD, EZ-T10C-FSE, EZ-T10C-FSM, and EZ-T10C-FSP Outline Dimensions

*The 10-inch Slim Bezel Models are Stud Mount ONLY. 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.*

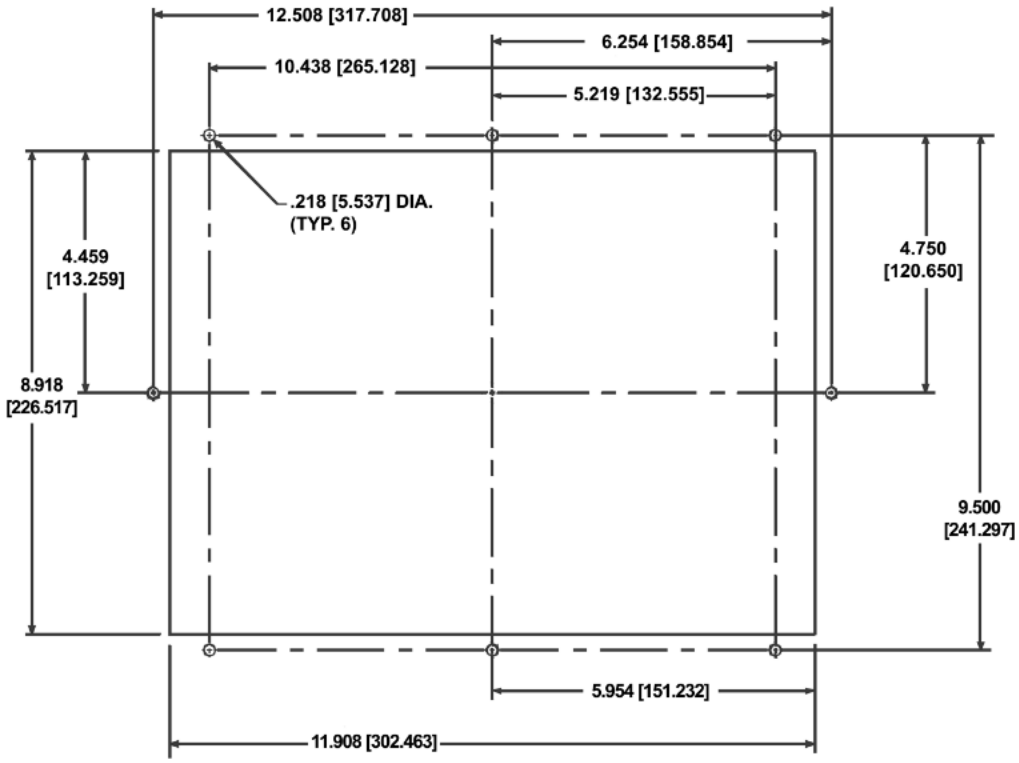





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### EZ-T10C-FS, EZ-T10C-FSH, EZ-T10C-FSD, EZ-T10C-FSE, EZ-T10C-FSM, and EZ-T10C-FSP Cutout Dimensions

*The 10-inch Slim Bezel Models are Stud Mount ONLY. 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.*

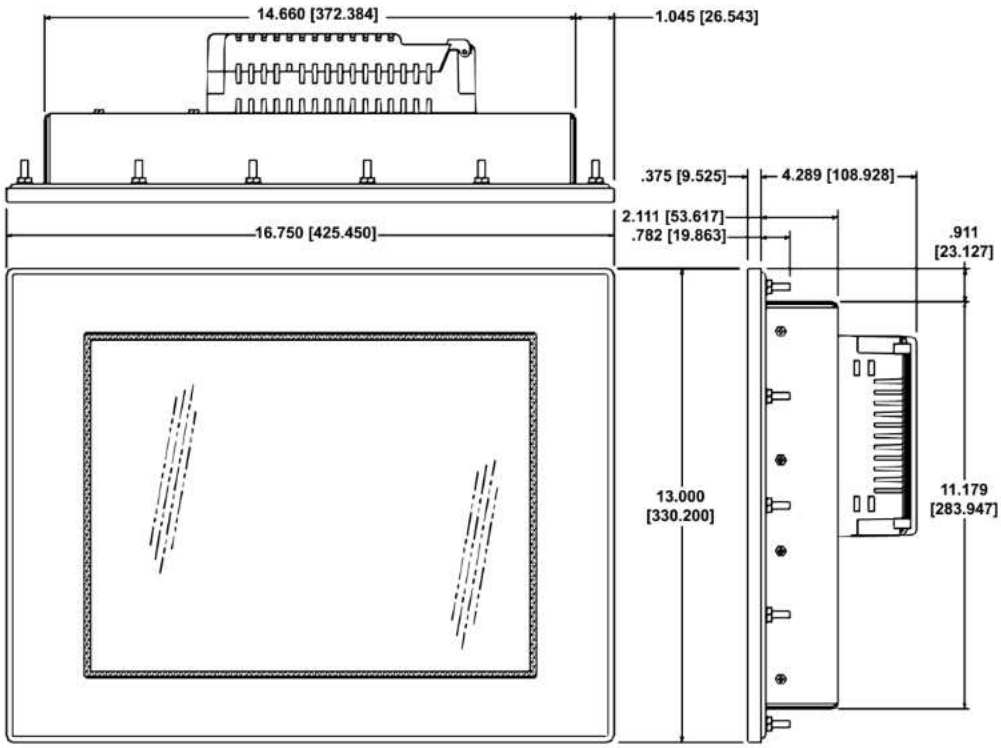





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## EZ-T15C-FS, EZ-T15C-FSH, EZ-T15C-FSD, EZ-T15C-FSE, EZ-T15C-FSM, and EZ-T15C-FSP Outline Dimensions

*The 15-inch Slim Bezel Models are Stud Mount ONLY. All the necessary mounting hardware is provided with the unit. Use the 18 studs and 18 nuts with captive washers to secure the unit to the mounting surface.*

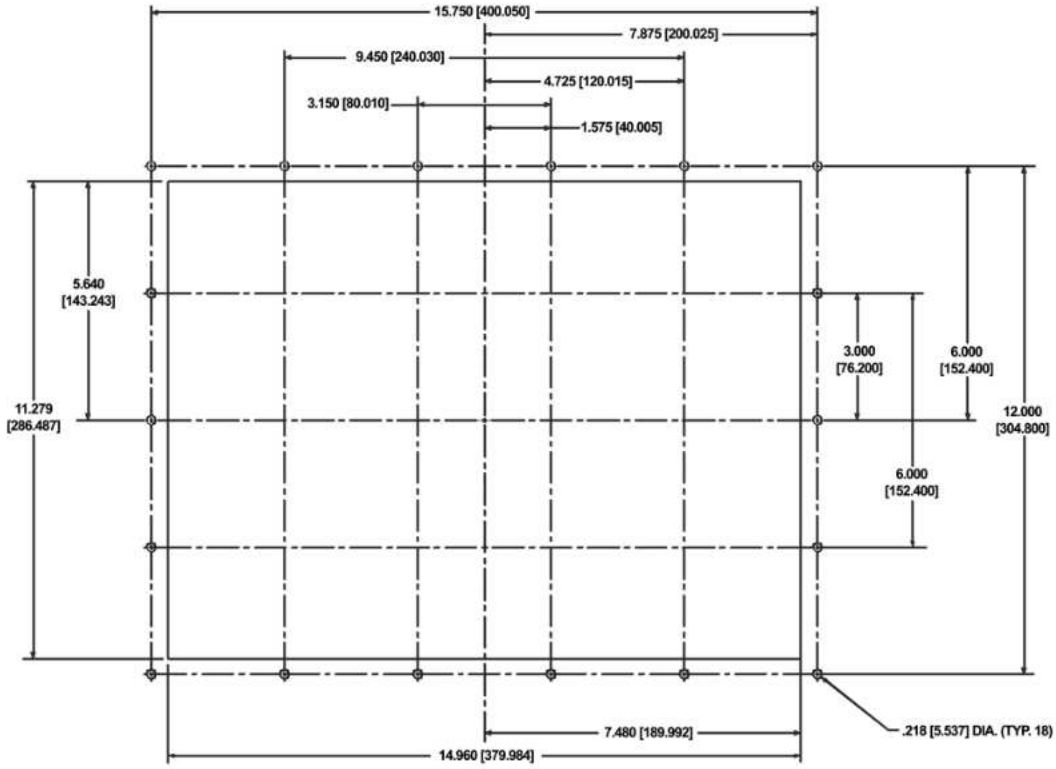





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## EZ-T15C-FS, EZ-T15C-FSH, EZ-T15C-FSD, EZ-T15C-FSE, EZ-T15C-FSM, and EZ-T15C-FSP Cutout Dimensions

*The 15-inch Slim Bezel Models are Stud Mount ONLY. All the necessary mounting hardware is provided with the unit. Use the 18 studs and 18 nuts with captive washers to secure the unit to the mounting surface.*






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## METHOD 2. DIN Clips

**The 6-inch Slim Bezel models must be mounted using DIN Clips**. It is optional for the other 6-inch models. DIN Clips are metal brackets (P/N EZ-BRK-1, package of 2 brackets and 4 screws) that attach to the panel and secure the front panel to a mounting surface with 4 screws. Use the diagram and instructions below to mount the EZTouch Panel using DIN Clips.

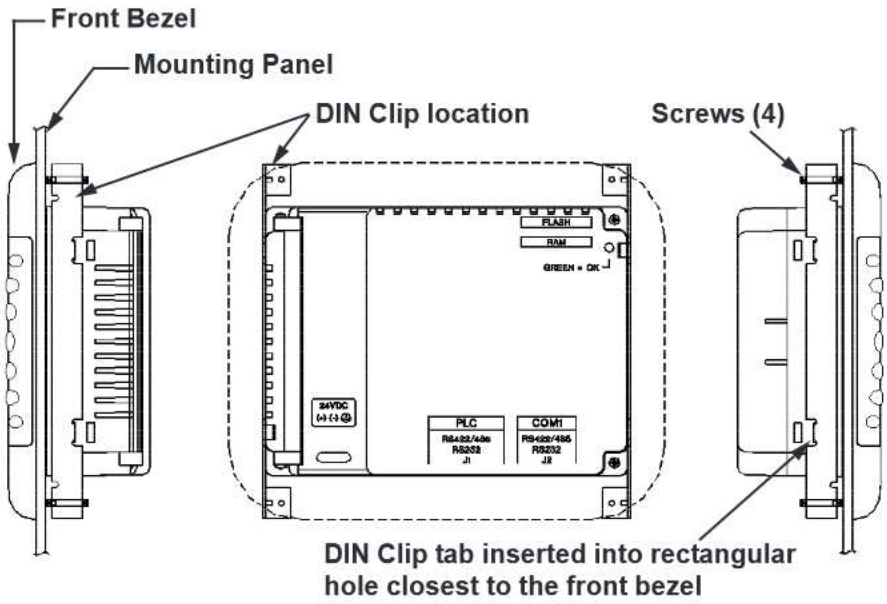
1. There are 4 rectangular holes in each side (two at the top and two at the bottom) of the chassis as shown in the following figure. Choose the holes that allow the appropriate space for your mounting panel thickness.

2. On each DIN Clip there are two metal tabs (bent inward) that fit into these holes. Insert the two clip tabs into two holes (top and bottom) and secure the panel by alternately tightening the DIN Clip screws (4) until the back edge of the EZTouch Panel front bezel is flush with the mounting panel.




**CAUTION: Tighten DIN Clips to a maximum of 1.5 inch-pounds to provide a proper seal. Automationdirect.com assumes no responsibility for "liquids" damage to the unit or other equipment within the enclosure because of improper installation.**

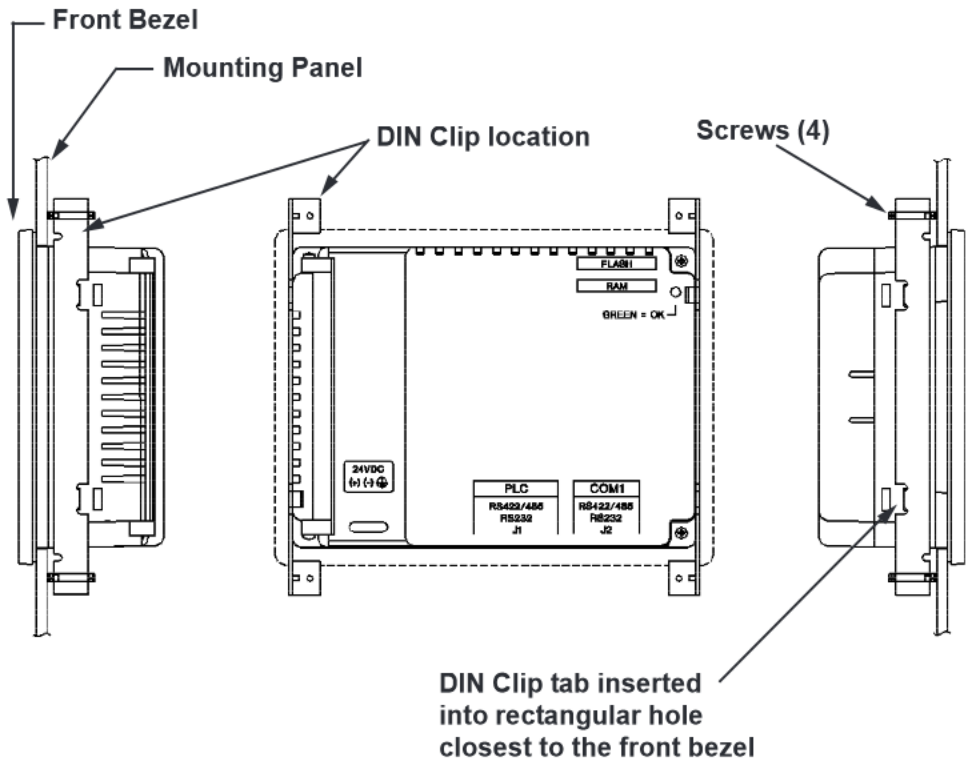
**EZ-S6M-R, EZ-S6M-F, EZ-S6M-FH, EZ-S6C-K, EZ-S6C-F, EZ-S6C-FH DIN Clip Slot Location**






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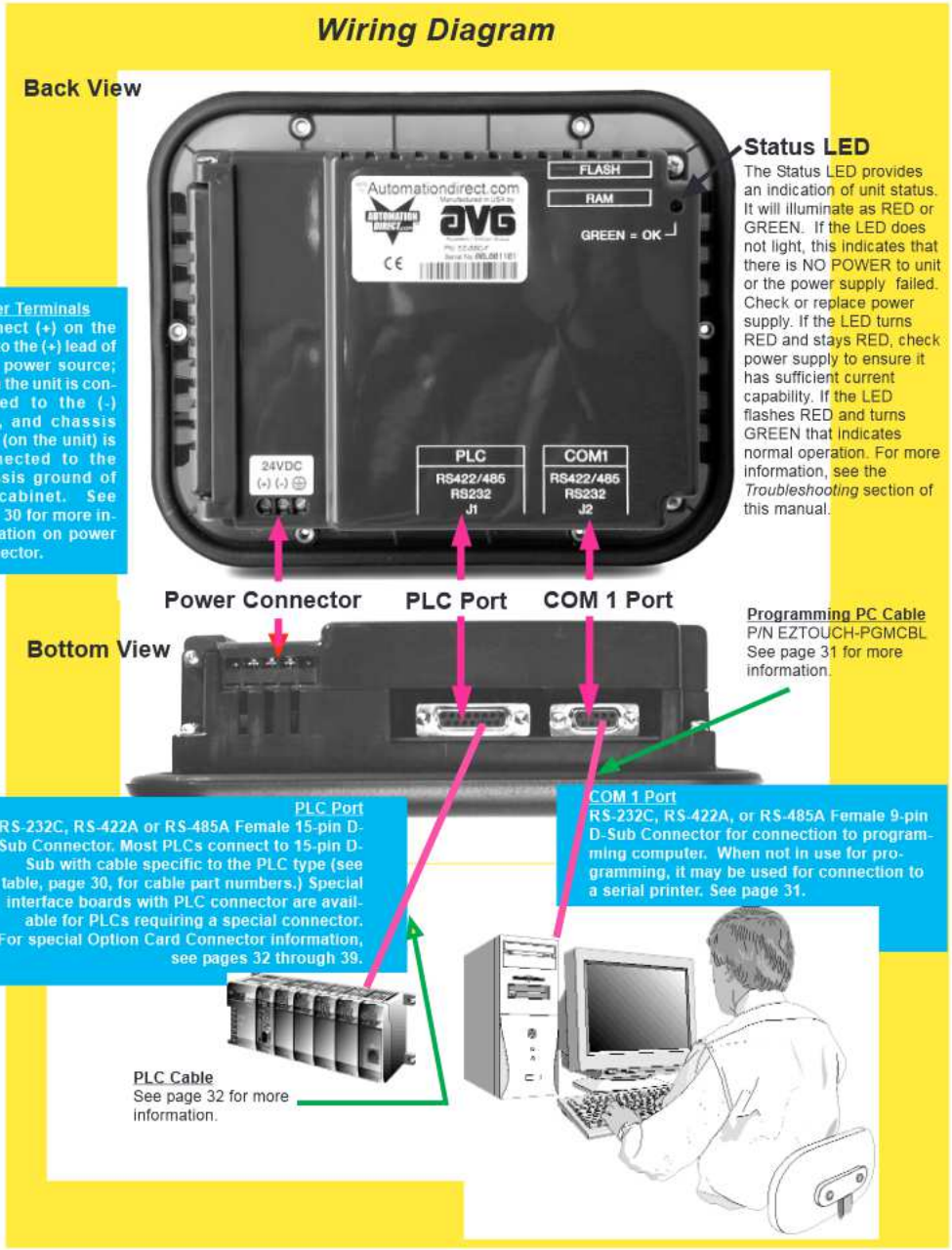
**Slim Bezel Models EZ-S6M-RS, EZ-S6M-FS, EZ-S6M-FSH, EZ-S6C-FS, EZ-S6C-KS, EZ-S6C-FSH DIN Clip Slot Location**






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## Connections and Wiring






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## Power Terminal

It is recommended you use a regulated power source isolated from relays, valves, etc.

**Power Connector** (P4, Phoenix 3-pin Header, 0.2 cntr)

| Pin # | Connection | |
|---|---|---|
| 1 | +V | 24VDC (20–30 VDC) |
| 2 | –V | |
| 3 | Chassis Ground | |



## PLC Port

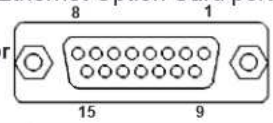
The table, below left, provides the pinout for the panel PLC connector. The table,below right, provides the PLC Cable Part Number that is specific to your PLC. Cable wiring diagrams for each PLC are provided in Appendix A. Special interface boards with PLC connector are available for PLCs requiring a special connector. For EZTouch Panels with A-B DH+ option cards installed, see tables on pages 5 and 6 in Chapter 2. See page 33 for EZEthernet Option Card port.

**PLC Cable Part Numbers**



| Part Number | Cable Description |
|---|---|
| EZ-2CBL | ***Direct*** Logic PLC RJ12 port, DL05, DL06, DL105, DL205, DL350 & DL450 (RS-232C) |
| EZ-2CBL-1 | ***Direct*** Logic (VGA Style) 15-pin port, DL250 (250-1), DL260, DL06 (RS-232C) |
| EZ-3CBL | ***Direct*** Logic PLC RJ11 port, DL340 (RS-232C) |
| EZ-4CBL-1 | ***Direct*** Logic PLC 15-Pin Dsub port, DL405 (RS-232C) |
| EZ-4CBL-2 | ***Direct*** Logic PLC 25-Pin Dsub port, DL405, DL350, DL305 DCU, and all DCM's (RS-232C) |
| EZ-90-30-CBL | GE 90/30 and 90/70 15-pin Dsub port (RS-422A) |
| EZ-DH485-CBL | AB SLC DH-485 port (RS-232C) |
| EZ-SLC-232-CBL | AB SLC 5/03/04/05 DF1 port (RS-232C) |
| EZPLC5-232-CBL | AB PLC5 DF1 port (RS-232C) |
| EZ-MLOGIX-CBL | AB MicroLogix 1000, 1200 & 1500 (RS-232C) |
| EZ-MITSU-CBL | Mitsubishi FX Series 25-pin port (RS-422A) |
| EZ-MITSU-CBL-1 | Mitsubishi FX Series 8-pin (RS-422A) |
| EZ-OMRON-CBL | Omron C200, C500 (RS-232C) |
| EZ-S7MPI-CBL | Siemens 7 MPI Adapter (RS-232C) |

**PLC Connector Pinout**




| Pin Number | Connection |
|---|---|
| 1 | Chassis GND |
| 2 | PLC TXD (RS-232C) |
| 3 | PLC RXD (RS-232C) |
| 4 | +5V (100W) |
| 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 |



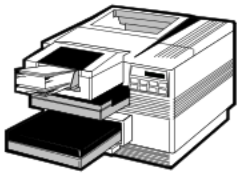
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## COM1 Port

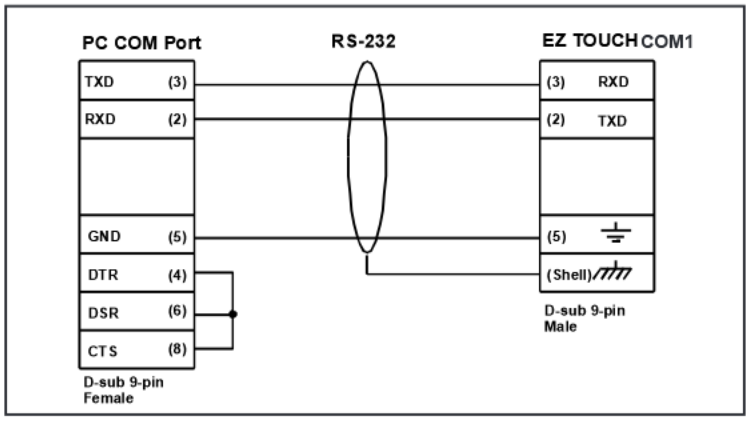
The COM1 Port is used to connect a programming computer or a printer to the EZTouch Panel. *The panel only needs to be connected to a PC when you are programming the unit.* You will use the EZTouch Panel Programming Software to design the touch panel screens. A wiring diagram for the EZTouch Panel RS-232C Programming Cable is shown below. The table shows EZTouch's pinout for RS-232C and RS-422A connections.



Connect a Programming PC or Printer



**RS-232C EZTouch Panel Programming Cable (P/N EZTOUCH-PGMCBL)**




| COM1 Connector | | |
|---|---|---|
| **Pin #** | **RS-232C Connection** | **RS-422A Connection** |
| 1 | ***DO NOT USE*** *TXD– (RS-422/485)* | TXD– (RS-422/485) |
| 2 | TXD (RS-232C) | ***DO NOT USE*** *TXD (RS-232C)* |
| 3 | RXD (RS-232C) | ***DO NOT USE*** *RXD (RS-232C)* |
| 4 | ***DO NOT USE*** *RXD– (RS-422/485)* | RXD– (RS-422/485) |
| 5 | Logic GND | Logic GND |
| 6 | ***DO NOT USE*** *TXD+ (RS-422/485)* | TXD+ (RS-422/485) |
| 7 | ***DO NOT USE*** *CTS (NOT USED)* | ***DO NOT USE*** *CTS (NOT USED)* |
| 8 | ***DO NOT USE*** *RTS (NOT USED)* | ***DO NOT USE*** *RTS (NOT USED)* |
| 9 | ***DO NOT USE*** *RXD+ (RS-422/485)* | RXD+ (RS-422/485) |



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## Option Card Installation

The EZTouch Panel Models EZ-S6M-FH, EZ-S6M-FSH, EZ-S6C-FH, EZ-S6C-FSH, EZ-S8C-FH, EZ-S8C-FSH, EZ-T10C-FH, EZ-T10C-FSH, and EZ-T15C-FSH have the Allen-Bradley Data Highway Plus/Remote I/O Option Card installed. (Allen-Bradley option cards are designated by an "H" at the end of the part number.

Also, EZ Ethernet Models (P/N EZ-ETHERNET) and EZTouch Panel Models EZ-T10C-FSD, EZ-T10C-FSE, EZ-T10C-FSM, EZ-T10C-FSP, EZ-T15C-FSD, EZ-T15C-FSE, EZ-T15C-FSM, and EZ-T15C-FSP, have an option card installed. Those with a "D" at the end of the part number have a generic DeviceNet I/O card installed, with an "E" have a generic Ethernet I/O card installed, those with a "M" have a Modicon Modbus Plus card installed, and those with a "P" have a generic Profibus-DP option card installed. A connector, unique to each option, is attached to these option boards and is accessible from the bottom of the unit.

The option card has been installed to the backplane connector shown below. (The connector on the bottom right side of the card installs into the backplane connector.) The card is secured with two screws.

A section of the plastic back cover has been removed to allow access to option card connectors that extend over the edge of the board. See the following pages for more information on each board.



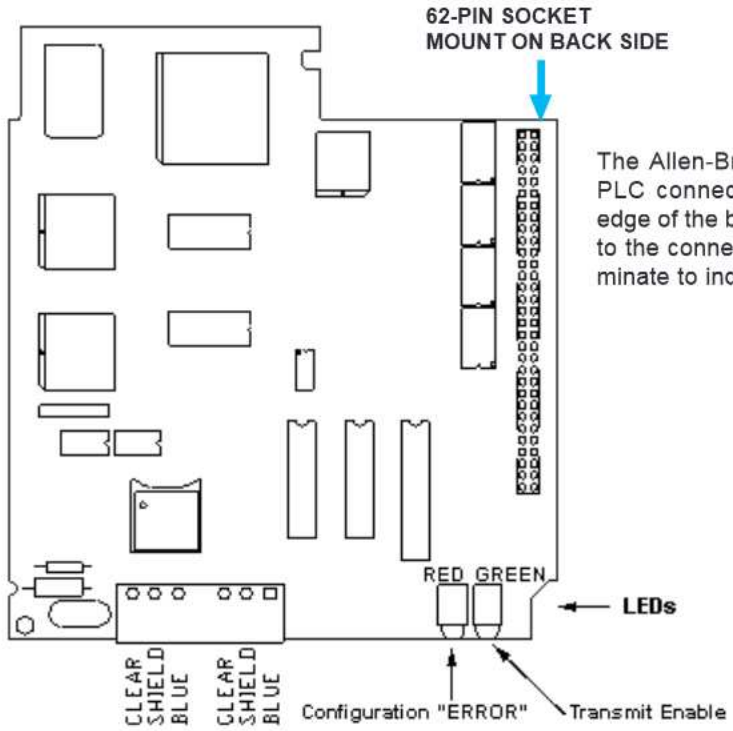






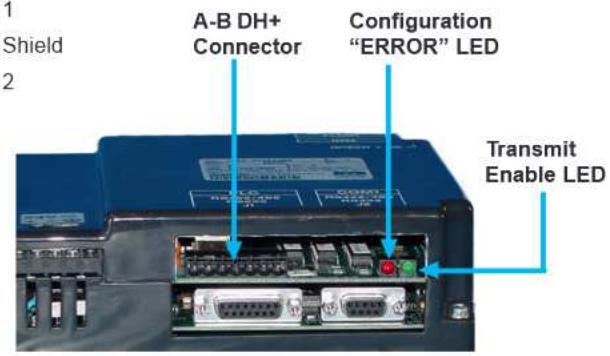
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## Allen-Bradley Data Highway Plus Option Card




The Allen-Bradley Data Highway Plus PLC connector that extends over the edge of the board is shown below. Next to the connector are two LEDs that illuminate to indicate status.

| EZTouch Panel Remote I/O Option Card | A-B PLC Data Highway Plus Connector |
|---|---|
| 1 Blue | 1 |
| Shield | Shield |
| 2 Clear | 2 |






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## EZ Ethernet Option Card

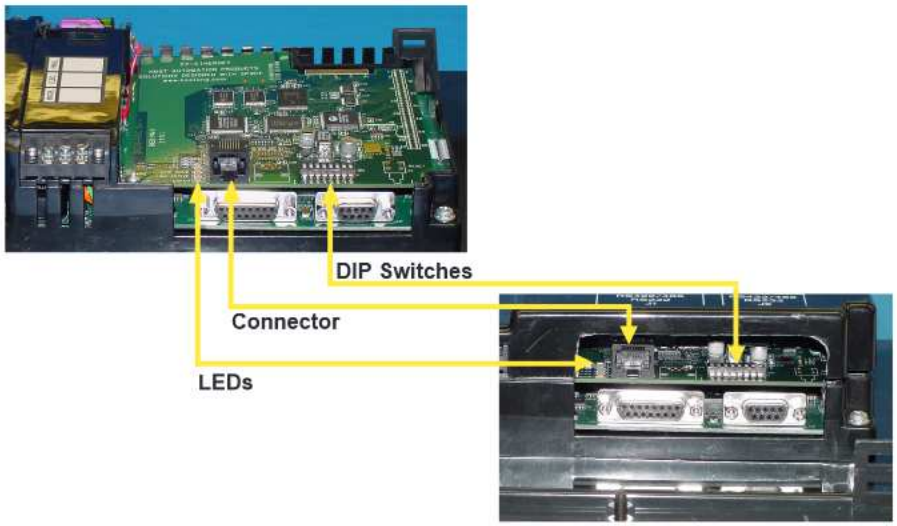
The EZ Ethernet Option Card (P/N EZ-ETHERNET) comes with two different type screws. Remove the screws from the packaging and set aside.

DO NOT FORCE THE CARD CONNECTOR into the backplane — to do so may bend or break the pins and permanently damage the card. First, ensure that the pins are aligned properly, and then press firmly into place.

a. Connect EZTouch Panel to a computer and, following instructions in EZTouch Panel Software Help Topics or User Manual, upload the user program from the Panel to the computer. Save the user program to disk.



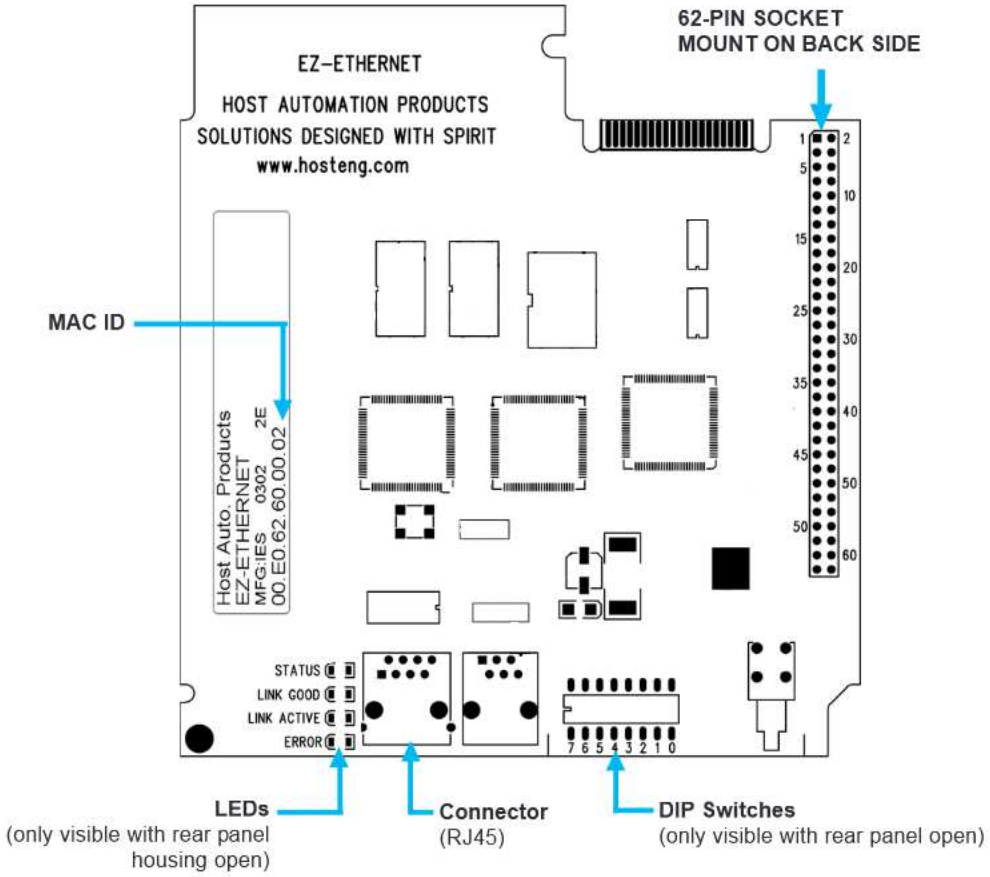

b. Disconnect panel power source.
c. Open back cover (shown open in figure to the right) to install the card.
d. The connector on the bottom right side of the card installs into the backplane connector.
e. Secure the card into place by installing the two screws.
f. The bottom of the plastic back cover has a section that must be removed to allow access to the EZ Ethernet connector that extends over the edge of the board. To remove this plastic section, look for the perforation and snap it out along the performation with a pair of pliers.
g. Close rear cover and press so that it snaps into place.
h. Reconnect power source, connect to PC, run EZTouch Programming Software and follow instructions to download the user program previously saved to disk.
i. Consult the EZ Ethernet Option Card Manual (P/N EZ-ETHERNET-M) for programming instructions.






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**EZ Ethernet Option Card Outline Drawing**
For more information about the card, connector, LEDs and Switches, see the EZ Ethernet Option Card Manual (P/N EZ-ETHERNET-M)




***For information about LEDs, DIP Switches, Connections and programming, refer to the EZ Ethernet Option Card Manual, P/N EZ-ETHERNET-M.***

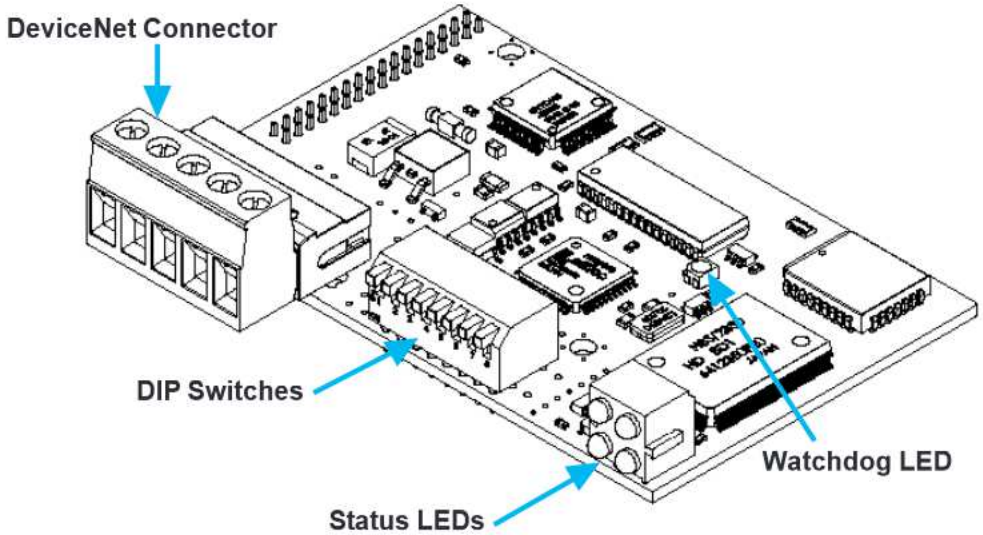


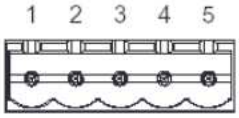
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## Generic DeviceNet I/O Option Card

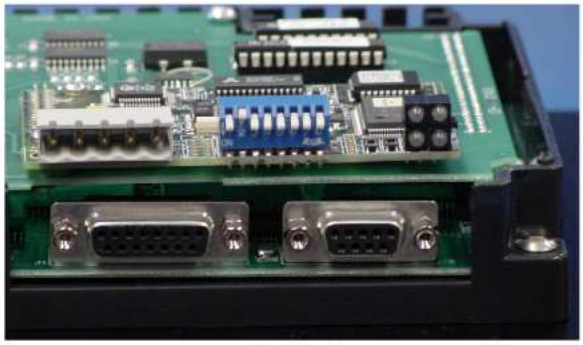
The EZTouch Panel Models EZ-T10C-FSD, and EZ-T15C-FSD have the DeviceNet I/O Option Card installed. A special connector is attached to these option boards and is accessible from the bottom of the unit.

The bottom of the plastic back cover has a section that has been removed to allow access to the DeviceNet connector that extends over the edge of the board. Next to the connector are DIP Switches and then four LEDs that illuminate to indicate status. The Watchdog LED is only visible when you open the back cover.




| Connector Pin | Signal | Description |
|---|---|---|
| 1 | V- | Negative supply voltage |
| 2 | CAN_L | CAN_L bus line |
| 3 | SHIELD | Cable shield |
| 4 | CAN_H | CAN_H bus line |
| 5 | V+ | Positive supply voltage |



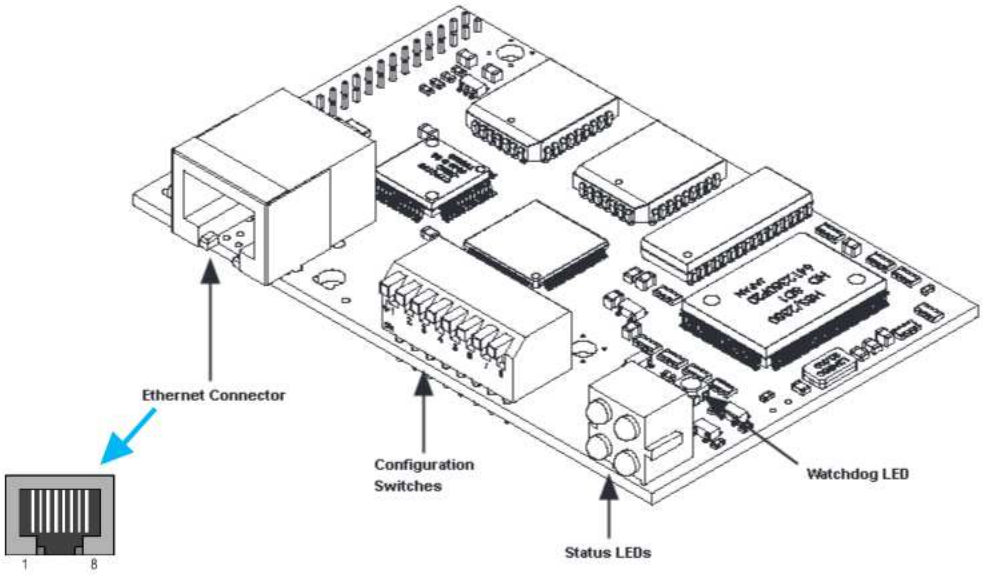


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## Generic Ethernet/IP Option Card

EZTouch Panel Models EZ-T10C-FSE, and EZ-T15C-FSE have the Ethernet/IP Option Card installed. A special connector is attached to these option boards and is accessible from the bottom of the unit.

The bottom of the plastic back cover has a section that has been removed to allow access to the Ethernet /IPconnector that extends over the edge of the board. Next to the connector are DIP Switches used for configuration, and four LEDs that illuminate to indicate status. The Watchdog LED is only visible when you open the back cover. The module uses twisted-pair cables, and no external termination is required.




| RJ45 (Standard) | |
|---|---|
| Pin | Signal |
| 1 | TD+ |
| 2 | TD- |
| 3 | RD+ |
| 4 | Termination |
| 5 | Termination |
| 6 | RD- |
| 7 | Termination |
| 8 | Termination |





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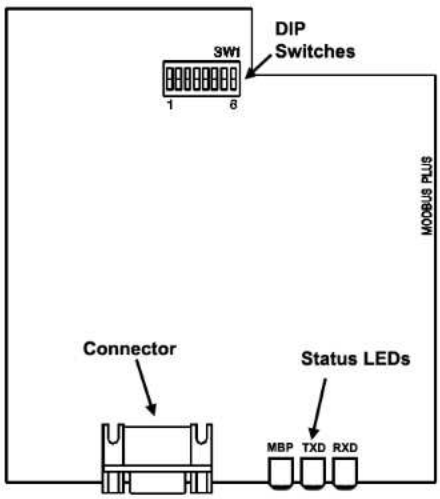
## Modicon Modbus Plus Option Card

The EZTouch Panel Models EZ-T10C-FSM, and EZ-T15C-FSM have the Modbus Plus Option Card installed. A special connector is attached to these option boards and is accessible from the bottom of the unit.

The bottom of the plastic back cover has a section that has been removed to allow access to the Modbus connector (9-pin Female D-SUB) that extends over the edge of the board. Two types of connectors are available from Modicon for connecting devices to the network. Each inline drop requires a line connector, Modicon part number AS-MBKT-085. This part number contains one connector. The drops at the two ends of the cable, each require a terminating connector, Modicon part number AS-MBKT-185. This contains two connectors.

The Modbus Plus node address can be set using the first six positions of the DIP switches located at the top of the option board as shown in the diagram below. When the board is seated in the panel, setting the DIP Switch in the UP position is the ON position. There are three Status LEDs on the Modbus Plus option card: MBP, TXD, and RXD. The TXD and RXD LEDs indicate the board is transmitting or receiving data. The MPB LED (leftmost LED) indicates Modbus Plus status.





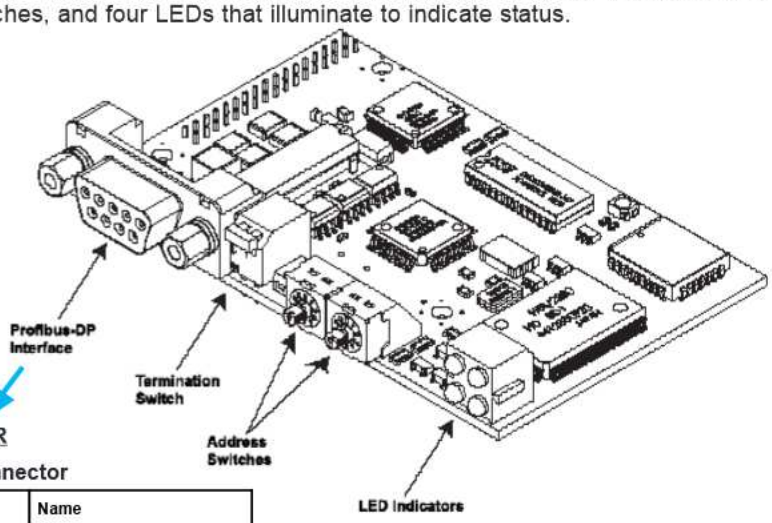



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## Generic Profibus-DP Option Card

The EZTouch Panel Models EZ-T10C-FSP, and EZ-T15C-FSP have the Profibus-DP Option Card installed. A special connector is attached to these option boards and is accessible from the bottom of the unit.

The bottom of the plastic back cover has a section that has been removed to allow access to the Profibus-DP connector that extends over the edge of the board. Next to the connector are a Termination Switch, Rotary Address Switches, and four LEDs that illuminate to indicate status.




**FIELDBUS CONNECTOR**

**9-pin female D-SUB connector**

| D-SUB | Screw Terminal | Name |
|---|---|---|
| Housing | Shield | Connected to PE |
| 1 | Not connected | - |
| 2 | Not connected | - |
| 3 | B-Line | Positive RxD/TxD according to RS-485 specification |
| 4 | RTS | Request to Send* |
| 5 | GND BUS | Isolated GND from RS-485 side* |
| 6 | +5 V BUS | Isolated +5 V from RS-485 side |
| 7 | Not connected | - |
| 8 | A-Line | Negative RxD/TxD according to RS-485 specification |
| 9 | Not connected | - |

* +5V BUS and GND BUS are used for bus termination. Some devices, like optical transceivers (RS-485 to fiber optics) might require external power supply from these points. RTS is used in some equipment to determine the direction of transmission. In normal applications only A-Line, B-Line, and Shield are used.





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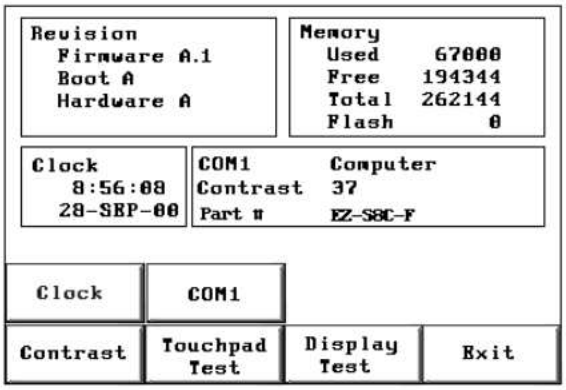


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## Communications Setup

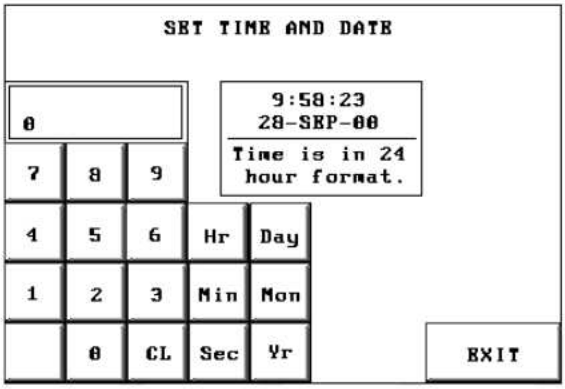


After the EZTouch Panel is powered up, you may enter the Setup Mode by simultaneously pressing the extreme upper left and lower left touch cells on the panel screen. The following screen is displayed. Information is displayed in the upper left hand corner about the current revision of the Firmware, Hardware, and Boot program. Also shown is RAM memory — Used, Free and Total, and Flash memory. Below that is displayed the time and date, whether the COM1 port is connected to a computer or a printer, and the current Contrast setting. There are six buttons at the bottom of the screen. They are labeled **Clock, COM1, Contrast, Touchpad Test, Display Test and Exit.**




Main Setup Screen

## Clock




Clock Setup Screen
SET TIME AND DATE

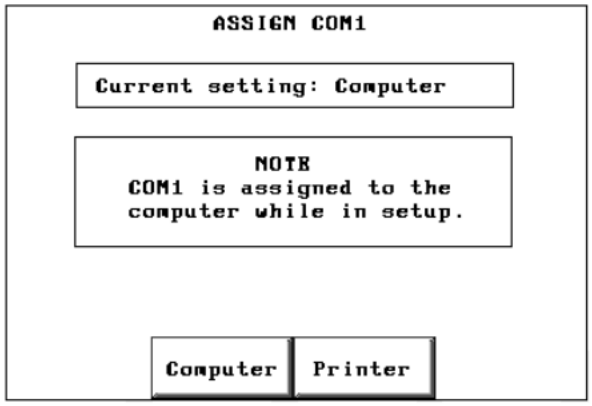
When you press the **Clock** button, the screen shown above will appear.



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Enter the current time and date. Press the keypad button of the number you want to enter. It will show in the display window. If correct, press **Hr**, **Min, Sec, or Day**, **Mon**, **Yr** corresponding to the time or date position you are setting. If not correct, press **CL** to clear the window. For the month, enter the number of the month and the three letter abbreviation for the month will be displayed (e.g., 7 = July = JUL).

## COM1




COM1 Port Setup Screen ASSIGN COM1

The COM1 button is used to assign the COM1 port for use with an external device. When you press the COM 1 button, the screen shown above will appear. Press the **Computer** button if the port will be connected to the programming computer. Press the **Printer** button if the port will be connected to a printer.

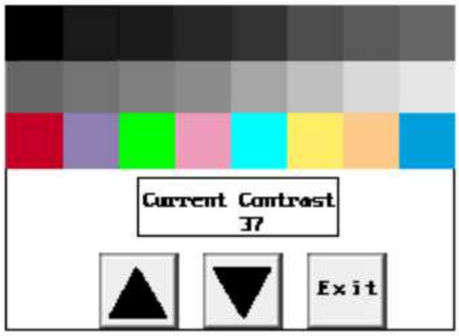
***Please Note: If you are in Setup Mode, it doesn't matter what the COM1 setting is (Printer or Computer), you CAN STILL TRANSFER A PROGRAM from EZTouch Programming Software to the panel. The COM1 setting to Printer is OVERRIDEN while in Setup Mode. When you exit Setup Mode, however, the Printer assignment to COM1 becomes effective—you WILL NOT have a connection established between the computer and the panel and WILL NOT be able to transfer a program. You must return to Setup Mode and REMAIN in Setup Mode while transferring, OR change the COM1 assignment on the ASSIGN COM1 screen, shown above, to Computer, exit Setup Mode, and THEN you can transfer the program to the panel.***

***To enter Setup Mode from the user program, press on the extreme upper and extreme lower touch cell on the EZTouch Panel touchscreen. On the first Setup Mode Screen, press the COM1 button. From the ASSIGN COM1 screen (shown above), press Computer. You are automatically taken back to the first setup screen. Press the Exit button to return to the user program.***



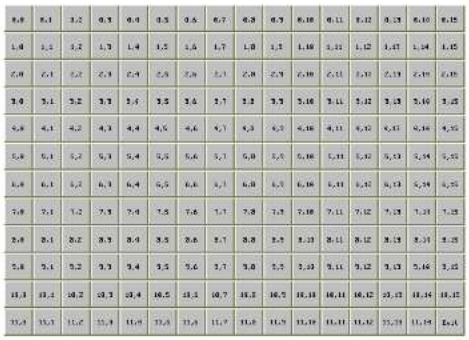
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## Contrast




When you press the **Contrast** button, the screen shown above will appear (except that the monochrome units will not have color). From this screen you can adjust the panel screen contrast (except on the 10" and 15" TFT Color units). Press **Exit** to return to the previous screen. In the **Current Contrast** window, the current contrast setting is displayed. The 6" Monochrome units will have a contrast range of 87 to 119. The 10" and 15" TFT Color units will not have a contrast adjustment feature. The 8" Color unit will have a contrast range of 21 to 52, and the 6" Color unit's contrast range is 0 to 32. Press the up and down arrow buttons to adjust the screen display contrast. Press **Exit** to return to the setup screen.

## Touchpad Test



**Model Part Numbers**

| 192 Touch Cells: | 48 Touch Cells: |
|---|---|
| EZ-S6M-FS | EZ-S6M-R |
| EZ-S6M-FSH | EZ-S6M-F |
| EZ-S6C-KS | EZ-S6M-FH |
| EZ-S6C-FS | EZ-S6M-RS |
| EZ-S6C-FSH | EZ-S6C-K |
| EZ-S8C-* | EZ-S6C-F |
| EZ-T10C-* | |
| EZ-T15C-* | |

* (all 8-, 10-, and 15-inch models have 192 Touch Cells)

Shown above is the **Test** screen for the 8" Color screen touch pad. There are 192 touch cells on some of the 6" models (see table, above, right) and on the 8", 10", and 15" panel screens (16 x 12), and 48 (8 x 6) on the other 6" models.



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Each touchpad is numbered for reference. Press on each or any square to test that it is active. It will be highlighted after pressing to show that it has been tested. Press the square again to deselect it. Each square should beep when pressed. Press **Exit** in the lower right hand corner to quit.

## Display Test



The Display Test button is primarily used for production testing at the factory. Bands of color scroll horizontally and vertically across the screen during this test. It is used to check the pixel quality of the display before shipping the unit.

## Exit

Press the Exit button to display the Powerup screen you have selected in your project (selected under Project Attributes.)

## Reboot

To reboot the EZTouch Panel from any programmed screen, simultaneously press the extreme upper left and extreme lower left touchpad area on the panel screen.



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## Shutting Off Power to EZTouch Panel

**Removing power from the EZTouch Panel does not normally cause a loss of the user program that is stored in the panel unless the battery voltage is low or the battery has been removed. A low battery can be programmed to a hard-coded system alarm that will display a message on all user-programmed screens.* It is recommended that you back up your user program on multiple PC disks and/or install a flash option card, which will provide a nonvolatile storage of the user program.**

***The steps to install a Flash option card and to load the user program onto a Flash option card are as follows:***

1. Run the EZTouch Programming Software and connect the PC serial port to **COM1** on the panel. Power up the panel.

2. If the user program is not stored on the connected PC, then "Transfer the program from the panel." See the instructions below, *"To save program to computer disk, ..."*

3. Then save the user program to disk by performing the following steps:
   a. Power down panel.
   b. Install Flash option card (see page 50).
   c. Power up panel.
   d. Transfer saved program to the panel.

4. From the Start Screen (**Project Information, Step 1**), under **SELECT ACTION**, click on **Edit Program ON-LINE**. Click **Panel > Flash > RAM to Flash**.

5. The user program will now be stored to both the Flash and RAM memory.

6. Each time the panel is powered with the Flash card installed, the user program will load from the nonvolatile Flash option card to the battery-backed user RAM. ***This is a very useful feature for performing field upgrades or changes to user programs. OEMs can send updated Flash cards to field locations for operators to upgrade their systems without using a PC!***

— continued, next page



* A low battery sets a System Attribute that may be programmed to display an alarm. You must program the attribute and alarm for this to happen. See EZTouch Programming Help or Manual, Project Attributes > Panel to PLC > Low Battery.

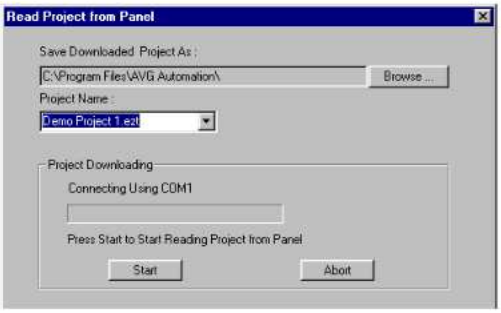


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***To save a program to computer disk, perform the following steps:***

1. Have programming computer connected to the panel and EZTouch Programming Software running.

2. From the Start Screen (Project Information, Step 1) under **SELECT ACTION**, click on **Read Program from Panel and Edit OFF-LINE**. The screen shown below will appear.

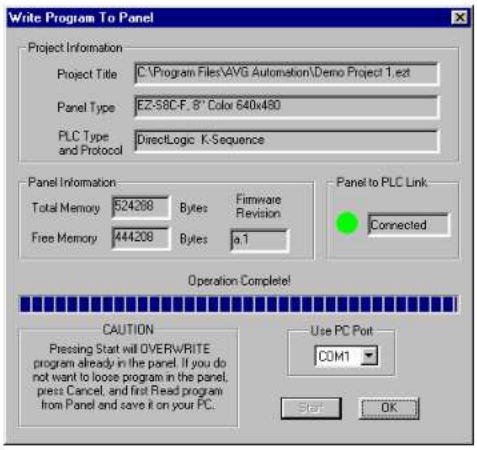



3. Save the project to the computer hard drive or a floppy disk by clicking on the **Browse** Button and navigating to the directory and folder where you want to save the project. Click on the **Start** button.

4. Shut off power and perform maintenance task.

5. Reapply power to panel and with programming software running, click on **Edit Program OFF-LINE** and select the saved project file.

6. Click on **File > Transfer to Panel**. The **Write Program to Panel** screen, shown to the right, will appear. Click on the **Start** button to transfer the program to the EZTouch Panel.






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## Lithium Battery Replacement

CAUTION

**BEFORE REMOVING BATTERY, back up the user program and save in accordance with the instructions on page 45.**

***Typical battery life is 5 years.***



a. Connect EZTouch Panel to a computer and, following instructions on the pages 45 and 46 to **save the user program to disk.**

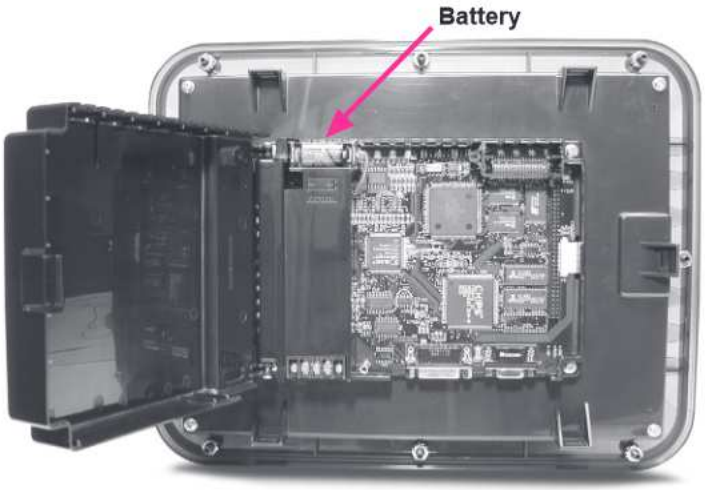
b. Disconnect power source.

c. Open back cover (shown open in figure below) to access the battery.

d. The battery is located in the upper-left hand corner as shown in the figure below. Remove old battery and replace with a new 1/2 AA, 3.6 V Lithium Battery (Part Number EZ-BAT).

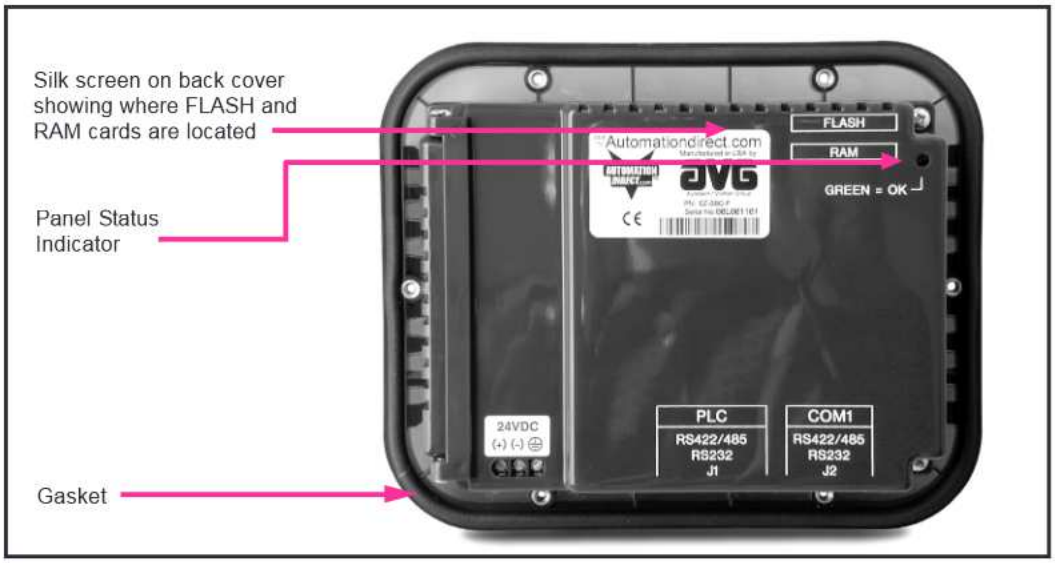
e. Close rear cover and ensure that the door latches.

f. Reconnect power source, connect to PC, run EZTouch Panel Programming Software, and follow instructions to transfer the user program that was previously saved to disk.






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## Gasket Replacement

The standard gasket may need to be replaced if it becomes damaged or worn. To replace the gasket **(P/N EZ-TOUCH6-GSK, EZ-TOUCH8-GSK, or EZ-TOUCH10-GSK)** perform the following steps:

1. Ensure that all pieces of old gasket have been removed from the gasket slot.
2. Remove the new replacement gasket from its plastic bag and position over the gasket slot.
3. Press the gasket into the slot. Friction between the slot and gasket will hold it into place during installation.

**6-, 8-, 10-, and 15- inch Slim Bezel Gasket Replacement (P/N's EZ-6SLIMF-GSK, EZ-8SLIMF-GSK, EZ-10SLIMF-GSK, or EZ-15SLIMF-GSK)**
Please note that this gasket is **NOT REUSABLE**. If you remove the panel from its mounting surface for any reason, discard the old gasket and **REPLACE** with a new gasket to remount the panel.

## Panel Status Indicator Light

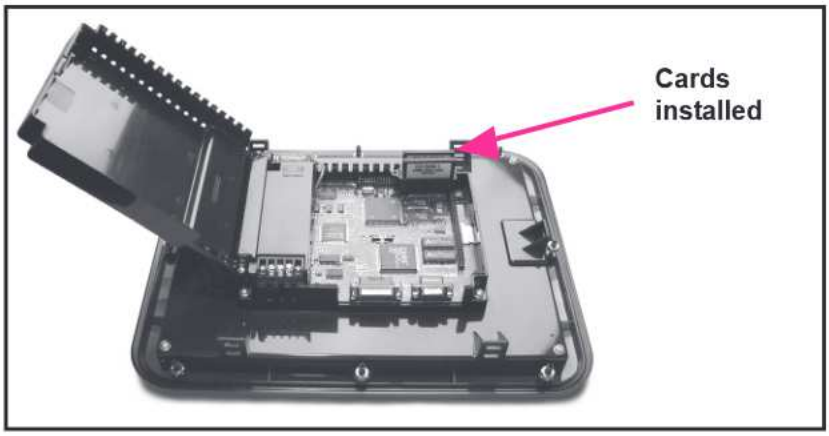
The Status LED provides an indication of unit status. It will illuminate as RED or GREEN. If the LED does not light, this indicates that there is NO POWER to unit or the power supply failed. Check or replace 24 VDC power supply. If ok, send unit back to factory for repair. If the LED turns RED and stays RED, your power supply may be too small (see page 55.) If the LED flashes RED and turns GREEN that indicates normal operation. For more information, see the *Troubleshooting* Chapter of this manual.



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CAUTION

**DO NOT REMOVE THE RAM OR FLASH CARD WHILE POWER IS APPLIED TO THE PANEL. TO DO SO WILL IRREPARABLY DAMAGE THE CARD. BACK UP YOUR USER PROGRAM AND REMOVE POWER TO THE UNIT BEFORE REMOVING A MEMORY CARD. SEE PROGRAM BACKUP INSTRUCTIONS, PAGE 45.**







## RAM Upgrade

User RAM memory of all standard units, except the 6" Monochrome Model P/N EZ-S6M-R, can be upgraded. The 6-, 8-, and 10-inch models are 512K standard. If your program requires more than the sandard 512K memory, you can upgrade to 1 MEG of memory from the standard 512K be inserting the optional 512K RAM Card (P/N EZ-RAM-1), or you can upgrade to 1.5 MEG by inserrting the optional 1 MEG RAM Card (P/N EZ-RAM-2). The 15-inch model is 1 MEG standard. You can upgrade to 1.5 MEG by inserting the optional 512K RAM Card, or upgrade to 2 MEG with the optonal 1 MEG RAM Card. To install card, perform the following steps:

Please Note. Your FLASH Program Backup must match or be larger than your RAM memory to ensure all of your program is saved. See next page (50).

1. Back up your user program (see page 45) and **REMOVE POWER TO THE UNIT.**
2. Open back cover to access RAM card slot (upper right hand corner, bottom slot).
3. Simply insert the new card, being careful to seat the card properly into the backplane connector. (Do not force the card, it should connect easily if properly aligned.)
4. Close back cover and reapply power to the panel.
5. Upload saved user program.



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**1) DO NOT REMOVE THE RAM OR FLASH CARD WHILE POWER IS APPLIED TO THE PANEL. TO DO SO WILL IRREPARABLY DAMAGE THE CARD. BACK UP YOUR USER PROGRAM AND REMOVE POWER TO THE UNIT BEFORE REMOVING A MEMORY CARD. SEE PROGRAM BACKUP INSTRUCTIONS, PAGE 45.**

**2) USE ONLY AUTOMATIONDIRECT.COM FLASH CARDS IN THE EZTOUCH PANEL. USE OF ANOTHER CARD WILL DAMAGE THE UNIT AND WILL VOID WARRANTY.**

## FLASH Program Backup




All the EZTouch Panels, except the 6" Monochrome Model P/N EZ-S6M-R, can have Flash Program Backup Cards. This feature allows you to store your user program into nonvolatile memory. The FLASH Card is easily installed in the slot provided in the back of the unit. Depending upon the size of your program, choose from three available memory sizes — 512K (P/N EZ-FLASH-1), 1 MEG (P/N EZ-FLASH-2), and 2 MEG (P/N EZ-FLASH-3). *Note: the user RAM size must match your user Flash size: 512K RAM = 512K Flash, 1 MEG RAM = 1 MEG Flash, 1.5 MEG RAM = 2 MEG Flash (must be larger, use 2 MEG), and 2 MEG RAM = 2 MEG Flash.* With the panel connected to a programming PC and the EZTouch Programming Software running, click on Panel >Flash > RAM to FLASH from the main menu. Once the program is backed up onto the card, you can use it to load the program into different units — no programming computer is necessary. To install either card:

1. Back up your user program and **REMOVE POWER TO THE UNIT.**
2. Open back cover to access FLASH card slot (upper right hand corner, upper slot).
3. Simply insert the new card, being careful to seat the card properly into the backplane connector. (Do not force the card, it should connect easily if properly aligned.)
4. Close back cover and reapply power to the panel.
5. Upload saved user program.
6. In EZTouch Programming Software click on Panel > FLASH > RAM to FLASH.

## Fuse Reset

The internal fuse does not require replacement. It is reset by removing power for 5 minutes and then reapplying power to the unit.



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## Fluorescent Backlight Bulb Replacement

Generally, backlight bulb life far exceeds the manufacturer's expected life. (The manufacturer's expected half-life rates are provided in the table below.)

***Using the Screen Saver feature should significantly extend the life of the fluorescent backlight bulb!*** (Refer to the EZTouch Programming Software Help or Manual. To program the Screen Saver feature, go to EZTouch Programming Software's main menu item **Objects > System Objects > Screen Saver**.)

| EZTouch Panel Model | Manufacturer's Expected Bulb Half-Life |
|---|---|
| 6" Monochrome | 25,000 hours |
| 6" Color | 25,000 hours |
| 8" Color | 10,000 hours |
| 10" Color | 50,000 hours |
| 15" Color | 50,000 hours |

## Precautions

To ensure the longevity and effectiveness of the EZTouch Panel please take note of the following precautions:



- Do not press sharp objects against the screen.
- Do not strike the panel with hard objects.
- Do not press the screen with excessive force.
- Once the panel is mounted and has power applied, do not place any objects over the ventilation slots. This will result in heat buildup and may damage the unit.



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## Touchscreen/Chemical Compatibility

**Standard Bezel**

The **6-, 8-, and 10-inch plastic (standard) bezel models' touchscreen has a polyester surface**. The following list is provided to make you aware of the general compatibility between chemicals that may be present in your work environment and the polyester surface of the touchscreen. Use the chart to determine those chemicals that are safe to use around your EZTouch Panel and those that may harm the touchscreen. The list rates these chemicals as **E—Excellent**, **G—Good**, **F—Fair**, and **N—Not Recommended.** Because the ratings are for ideal conditions at 57°C, consider all factors when evaluating your application.

| Chemical | Rating | Chemical | Rating |
|---|---|---|---|
| Acetone | G | Aniline | G |
| Auto fuel | E | Auto lubricants | E |
| Auto Hydraulics | E | Bromine (wet) | N |
| Butyl Cellosolve | E | Butyl Ether | G |
| Chloroform | G | Clorox | E |
| Coffee | E | Cupric Sulfate | E |
| Cyclohexanone | N | Cyclohexanol | E |
| Downy | E | Diethyl Ether | G |
| Dioctyl Phthalate | G | Ethyl Acetate | E |
| Ethanol | E | Ethylene Chloride | G |
| Fantastic | E | Formula 409 | E |
| Grape Juice | E | Heptane | E |
| Hexane | E | Hydrogen Peroxide | N |
| Isopropyl Alcohol | E | Ketchup | E |
| Lemon Juice | E | MEK | F |
| Methylene Chloride | N | Mineral Acids (dilute) | E |
| Mineral Acids (strong) | G | Mr. Clean | E |
| Mustard | G | Naphtha | G |
| Phenol | N | Sodium Hydroxide (dilute) | G |
| Sodium Hydroxide (strong) | F | Sodium Hypochlorite | E |
| Spray 'N Wash | E | Tea | E |
| Toluene | E | Tomato Juice | E |
| Top Job | E | Trichloroacetic acid | F |
| Triethanolamine | G | Vinegar | E |
| Wisk | F | Xylene | E |
| Zinc Chloride | E | | |

**Slim Bezel**

The **6-, 8-, 10-, and 15-inch slim bezel models' touchscreen has a polycarbonate surface.** The following list is provided to make you aware of the general compatibility between chemicals that may be present in your work environment and the polyester surface of the touchscreen. Use the chart to determine those chemicals that are safe to use around your EZTouch Panel and those that may harm the touchscreen. The list rates these chemicals as **E—Excellent**, **G—Good**, **F—Fair**, and **N—Not Recommended.** Because the ratings are for ideal conditions at 57°C, consider all factors when evaluating your application.



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| Chemical | Rating | Chemical | Rating |
|---|---|---|---|
| Acetaldehyde | N | Acetamide | N |
| Acetic Acid @ 5% | G | Acetic Acid @ 50% | G |
| Acetone | N | Acetonitrile | N |
| Acrylonitrile | N | Adipic Acid | E |
| Alanine | N | Allyl Alcohol | F |
| Alum. Hydroxide | N | Aluminum Salts | G |
| Amino Acids | E | Ammonia | N |
| Ammonium Acetate | E | Ammonium Gloclate | F |
| Ammonium Hydroxide @ 5% | N | Ammonium Hydroxide @ 30% | N |
| Ammonium Oxalate | E | Ammonium Salts | G |
| n-Amyl Acetate | N | Amyl Chloride | N |
| Aniline | N | Benzaldehyde | N |
| Benzene | N | Benzoic Acid | G |
| Benzyl Acetate | G | Benzyl Alcohol | G |
| Bromine | F | Bromobenzene | N |
| Bromoform | N | Butadiene | N |
| n-Butyl Acetate | N | n-Butyl Alcohol | F |
| sec-Butyl Alcohol | F | tert-Butyl Alcohol | F |
| Butyric Acid | N | Calcium Hydroxide | N |
| Calcium Hypochlorite | N | Formaldehyde @ 40% | G |
| Formic Acid @ 3% | G | Formic Acid @ 50% | G |
| Formic Acid @ 99% | F | Fuel Oil | G |
| Gasoline | F | Glacial Acetic Acid | N |
| Glycerin | E | n-Heptane | G |
| Hexane | N | Hydrochloric Acid @ 5% | E |
| Hydrochloric Acid @ 20% | F | Hydrochloric Acid @ 35% | N |
| Hydrofluoric Acid @ 5% | F | Hydrofluoric Acid @ 48% | N |
| Hydrogen Peroxide @ 5% | E | Hydrogen Peroxide @ 30% | E |
| Hydrogen Peroxide @ 90% | E | Isobutyl Alcohol | G |
| Isopropyl Acetate | N | Isopropyl Alcohol | E |
| Isopropyl Benzene | N | Kerosene | E |
| Lactic Acid @ 3% | G | Lactic Acid @ 85% | G |
| Methoxyethyl Oleate | N | Methyl Alcohol | F |
| Methyl Ethyl Ketone | N | Methyl Isobutyl Ketone | N |
| Methyl Propyl Ketone | N | Methylene Chloride | N |
| Mineral Oil | G | Nitric Acid @ 10% | G |
| Nitric Acid @ 50% | F | Nitric Acid @ 70% | N |
| Nitrobenzene | N | n-Octane | F |
| Orange Oil | F | Ozone | G |
| Carbazole | N | Carbon Disulfide | N |
| Carbon Tetrachloride | N | Cedarwood Oil | F |
| Cellosolve Acetate | N | Chlorine @ 10% in air | G |
| Chlorine @ 10% moist | F | Chloroacetic Acid | N |
| p-Chloroacetophenone | N | Chloroform | N |
| Chromic Acid @ 10% | N | Chromic Acid @ 50% | N |
| Cinnamon Oil | F | Citric Acid @ 10% | G |
| Cresol | N | Cyclohexane | G |
| Decalin | N | o-Dichlorobenzene | N |
| p-Dichlorobenzene | N | Diethyl Benzene | N |
| Diethyl ether | N | Diethyl Ketone | N |



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| Chemical | Rating | Chemical | Rating |
|---|---|---|---|
| Diethyl Malonate | N | Diethylene Glycol | F |
| Diethylene Glycol Ethyl Ether | N | Dimethylformamide | N |
| Dimethyl Sulfoxide | N | 1, 4-Dioxane | F |
| Dipropylene Glycol | F | Ether | N |
| Ethyl Acetate | N | Ethyl Alcohol | G |
| Ethyl Alcohol @ 40% | G | Ethyl Benzene | N |
| Ethyl Benzoate | N | Ethyl Butyrate | N |
| Ethyl Chloride Liquid | N | Ethyl Cyanoacetate | N |
| Ethyl Lactate | N | Ethylene Chloride | N |
| Ethylene Glycol | F | Ethylene Glycol Methyl Ether | N |
| Ethylene Oxide | N | Fluorides | E |
| Fluorine | F | Formaldehyde | G |
| Perchloric Acid | N | Perchloroethylene | N |
| Phenol Crystals | N | Phosphoric Acid @ 5% | E |
| Phosphoric Acid @ 85% | G | Pine Oil | E |
| Potassium Hydroxide @ 1% | N | Potassium Hydroxide conc. | N |
| Propane Gas | N | Propylene Glycol | F |
| Propylene Oxide | F | Resorcinol sat. | F |
| Resorcinol @ 5% | F | Salicylaldehyde | F |
| Salicylic Acid Powder | G | Salicylic Acid sat. | G |
| Salt Solutions Metallic | E | Silver Acetate | G |
| Silver Nitrate | E | Sodium Acetate sat. | G |
| Sodium Hydroxide @ 1% | N | Sodium Hydroxide @ 50%+ | N |
| Sodium Hypochlorite @ 15% | F | Stearic Acid Crystals | G |
| Sulfuric Acid @ 6% | E | Sulfuric Acid @ 20% | G |
| Sulfuric Acid @ 60% | F | Sulfuric Acid @ 98% | N |
| Sulfur Dioxide Liquid | G | Sulfur Dioxide dry | G |
| Sulfur Salts | N | Tartaric Acid | G |
| Tetrahydrofuran | N | Thionyl Chloride | N |
| Toluene | N | Tributyl Citrate | N |
| Trichloroethane | N | Trichloroethylene | N |
| Triethylene Glycol | G | Tripropylene Glycol | G |
| Turpentine | N | Undecyl Alcohol | F |
| Urea | N | Vinylidene Chloride | N |
| Xylene | N | Zinc Stearate | E |

## Touchscreen Cleaning

The EZTouch Panel touchscreen has a scratch resistant coating. This adds a slight chemical barrier to the screen, but the coating's primary purpose is to protect the screen from abrasion. The EZTouch Panel touchscreen should be cleaned as needed with warm, soapy water.



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## Troubleshooting

**Problem: Panel won't power up**

***Action:***

1. Connect power to the EZTouch Panel (24 VDC).
2. Apply power while observing the LED in the back of the panel.
   a. LED does not light means: NO POWER to unit or power supply failed. Check power supply or replace.
   b. LED turns RED and stays RED means: your power supply may be too small (1.5 A supply is recommended!) Make sure that your current capacity is sufficient. For example:
      *I = P/V I.E. Current = PWR (watts) / Supply voltage*
      *I = 33 (15" model) / 24 VDC*
      *I = 1.37 A*
   c. LED flashes RED and turns GREEN means: normal operation.
      (1) the display does not light after 10 seconds, see Display Blank, below.
      (2) the display lights, normal operation.

*See "Connections and Wiring," this manual, for more information.*

**Problem: Cannot communicate with EZTouch panel from Programming Computer**

***Action:***

1. Check cable, ensure that it is the correct cable (EZTOUCH-PGMCBL) and that it is properly connected at both ends.
2. Check panel for power.
3. Check to ensure the correct PC COM port is selected in the EZTouch Programming Software and that it is available in the PC.
4. Check the COM1 setting in Setup Mode on the panel (see page 42, this manual).

*See "Connections and Wiring," this manual, for more information.*

**Problem: Communications with PLC**

***Action:***

1. Check communications cable:
   a. Is it the right cable?
   b. Is it connected?
   c. Is the cable terminated properly?
2. Check PLC settings:
   a. Is PLC system powered?
   b. Is PLC COM Port properly configured?
   c. If there is a RUN switch on PLC, is it in the term/remote mode?

*See "Connections and Wiring," this manual, for more information.*



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**Problem: Memory Card**
***Action:***

1. Make sure that the Flash Card is in top slot, and the RAM Card is in the bottom slot.

*See "Connections and Wiring," this manual, for more information.*

**Problem: Display Blank**
***Action:***

1. Display indicates "NO POWER UP SCREEN" If this message is displayed the panel battery needs to be replaced.
2. Display is blank. Push extreme upper left and extreme lower left touch cells on front of panel (top and bottom of column 1 on panel.)
   a. There is no change, display remains blank. Indicates UNIT FAILURE, return for service.
   b. Unit SETUP screen appears, screen is hard to read. Adjust screen contrast control for 6- or 8-inch units (10-inch and 15-inch units have no contrast adjustment).
   c. Unit SETUP screen appears normal. Unit has no user program — install user program.

*See "Connections and Wiring," this manual, for more information.*

**Problem: Display hangs when unit is powered up, "Initializing..." message remains on screen (unit has invalid RAM memory)**
***Action:***

1. Remove power. While pressing extreme upper and lower left touch cells on the panel, reapply power.
2. You will now be in setup mode, press exit to enter run mode. Screen will be blank.
3. Run EZTouch Programming Software. Select Panel > Clear Memory from main menu bar, or upload a new user program to the panel.



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## Still need Help?

You have two additional sources for more information other than this manual.

**Visit our website at www.automationdirect.com**
Our web site contains all of this information, any new feature releases, technical support, plus much more ...

Call our **Technical Support Group** at 1-770-844-4200 or FAX us at 1-770-886-3199

If you have any questions that you can't find an answer to, give us a call from Monday through Friday, 9 a.m. to 6 p.m. EST at the number above and we will be glad to assist you.

## Warranty Repairs

If your EZTouch Panel is under warranty, **contact Automationdirect.com @ 1-770-844-4200.**

## Out of Warranty Repairs

If your EZTouch Panel is out of warranty, **contact AVG's Service Department for an evaluation of repair costs @ 1-563-359-7501**. You can then decide whether it is more economical to proceed with factory repairs or purchase a new panel.



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In this Appendix....

— EZTouch Panel Female PLC Port

**PLC Cable Wiring Diagrams:**

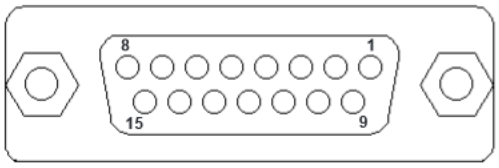
— Allen-Bradley SLC500, 5/01, /02, /03 DH-485/AIC, RS-485A (P/N EZ-DH485-CBL)
— Allen-Bradley SLC DF1, RS-232C (P/N EZ-SLC-232-CBL)
— Allen-Bradley Micrologix 1000/1200/1500 RS-232C (P/N EZ-MLOGIX-CBL)
— Allen-Bradley PLC5 DF1 RS-232C (P/N EZPLC5-232-CBL)
— DirectLogic PLC RJ-12, DL05, DL105, DL205, DL350, and DL450, RS-232C (P/N EZ-2CBL)
— DirectLogic PLC VGA 15-pin, 250, RS-232C (P/N EZ-2CBL-1)
— DirectLogic PLC RJ-11, 340, RS-232C (P/N EZ-3CBL)
— DirectLogic PLC 15-pin D-SUB, DL405, RS-232C (P/N EZ-4CBL-1)
— DirectLogic PLC 25-pin D-SUB, DL405, 350, 305 DCU, and all DCMs, RS-232C (P/N EZ-4CBL-2)
— General Electric 90/30 and 90/70 15-pin D-SUB,RS-422A (P/N EZ-90-30-CBL)
— Mitsubishi FX Series 25-pin, RS-422A (P/N EZ-MITSU-CBL)
— Mitsubishi FX Series 8-pin MINI-DIN, RS-422A (P/N EZ-MITSU-BL-1)
— Modicon Modbus RS-232
— Modicon ModBus with RJ45
— Omron C200, C500, RS-232C (P/N EZ-OMRON-CBL)
— Omron CQM1 amd CPM1
— Siemens S7 MPI Adaptor, RS-232C (P/N EZ-S7MPI-CBL)
— EZTouch RS-422A/RS-485A Wiring Connections for Direct Logic PLCs
— EZTouch RS-422A Wiring Connections for Allen-Bradley SLC 503/504 RS-232C Port



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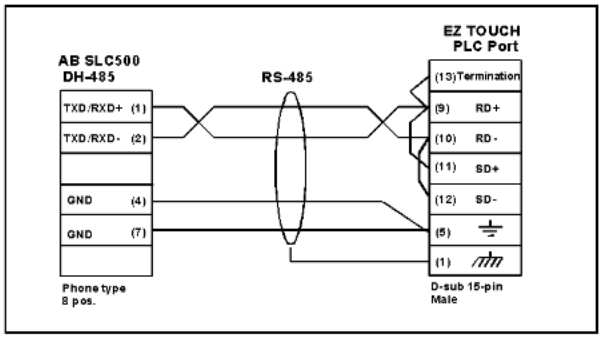
The following diagrams depict the wiring pinouts for the EZTouch Panel to PLC Cables.

EZTouch Panel Female PLC Port (located on bottom of unit)

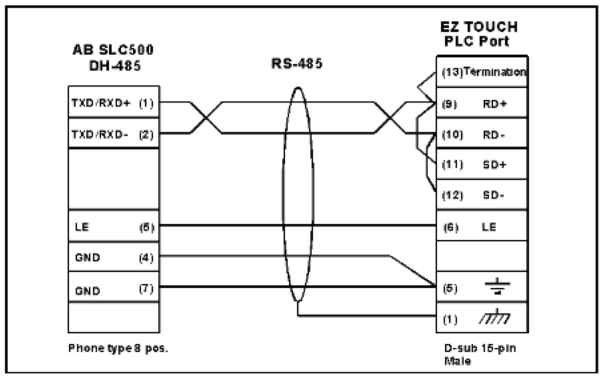



## Allen-Bradley SLC500, 5/01, /02, /03 DH-485/AIC, RS-485A (P/N EZ-DH485-CBL)

### Allen-Bradley SLC500 DH-485/AIC (Point-to-Point)



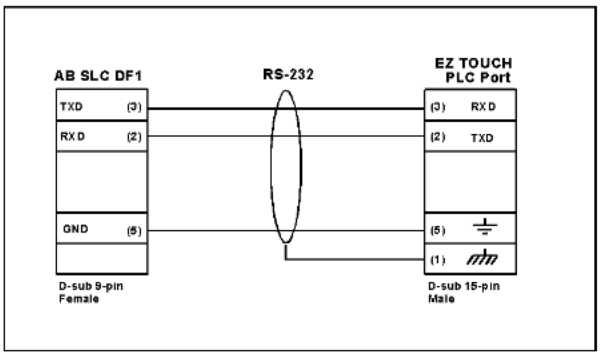

### Allen-Bradley SLC500 DH-485/AIC (Multi-drop)



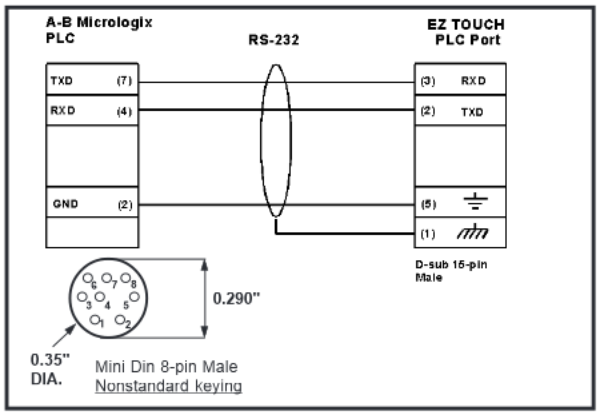



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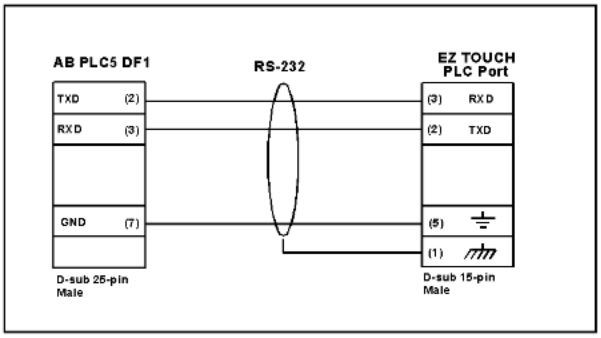
## Allen-Bradley SLC DF1, RS-232C (P/N EZ-SLC-232-CBL)




## Allen-Bradley Micrologix 1000/1200/1500 RS-232C (P/N EZ-MLOGIX-CBL)



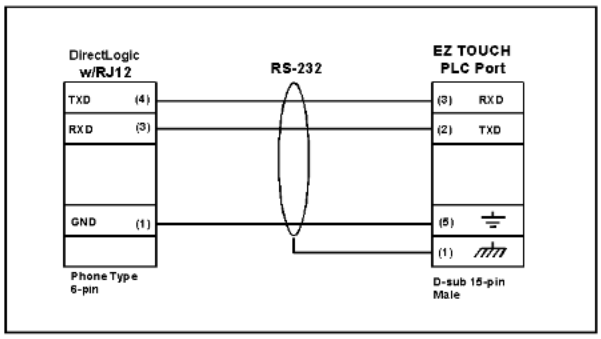

## Allen-Bradley PLC5 DF1 RS-232C (P/N EZPLC5-232-CBL)



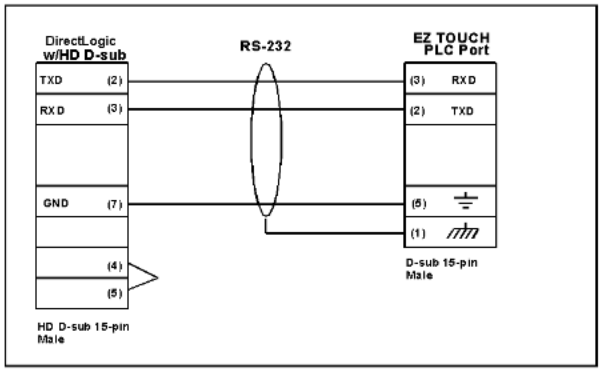



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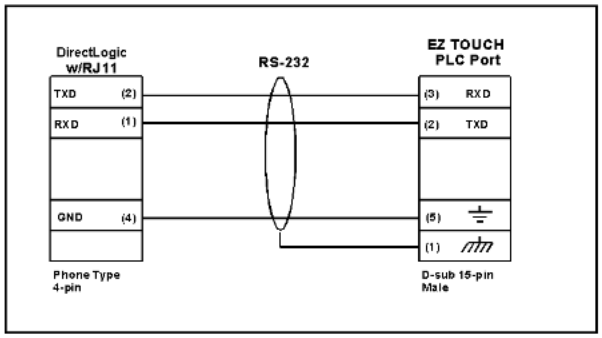
## DirectLogic PLC RJ-12, DL05, DL105, DL205, DL350, and DL450, RS-232C (P/N EZ-2CBL)




## DirectLogic PLC VGA 15-pin, 250, 250-1, 260, 06 RS-232C (P/N EZ-2CBL-1)



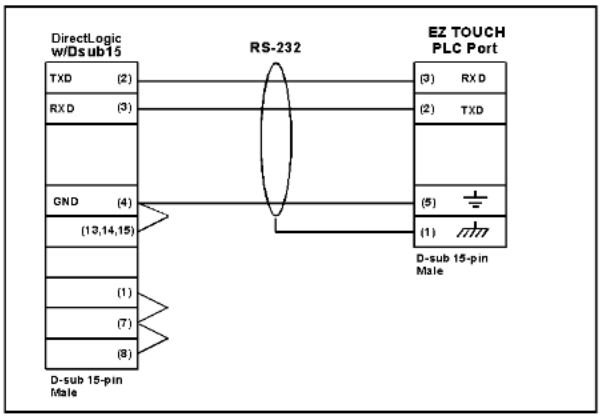

## DirectLogic PLC RJ-11, 340, RS-232C (P/N EZ-3CBL)



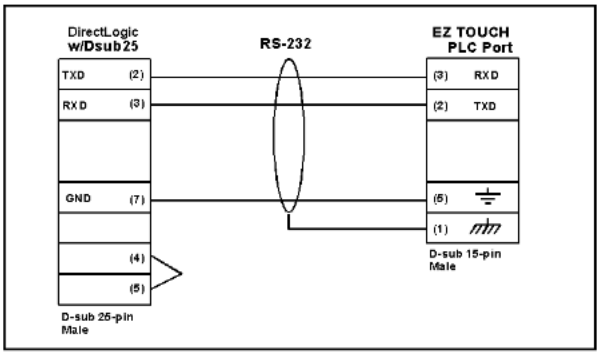



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## DirectLogic PLC 15-pin D-SUB, DL405, RS-232C (P/N EZ-4CBL-1)



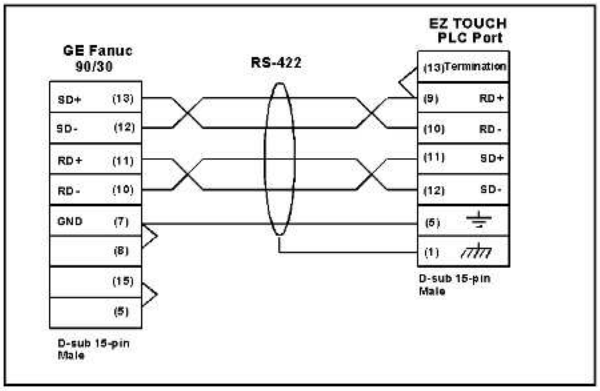

## DirectLogic PLC 25-pin D-SUB, DL405, 350, 305 DCU, and all DCMs, RS-232C (P/N EZ-4CBL-2)



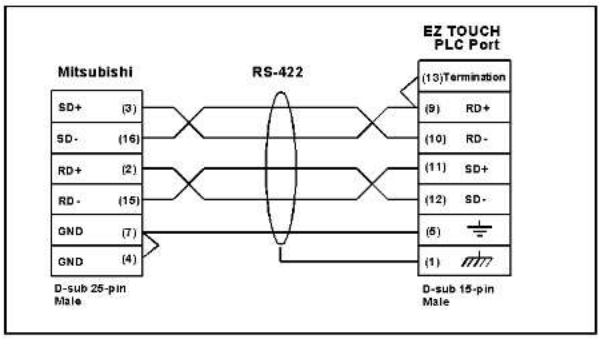



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## General Electric 90/30 and 90/70 15-pin D-SUB, RS-422A (P/N EZ-90-30-CBL)



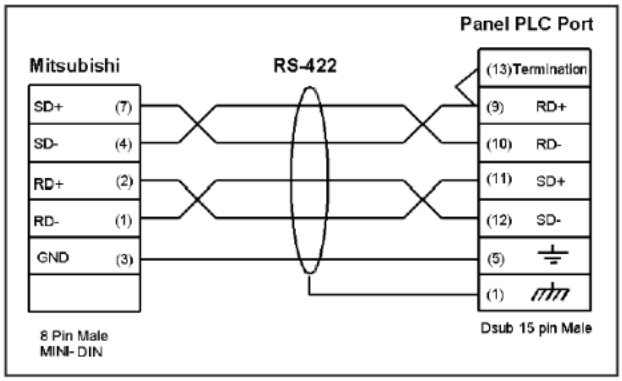

## Mitsubishi FX Series 25-pin, RS-422A (P/N EZ-MITSU-CBL)





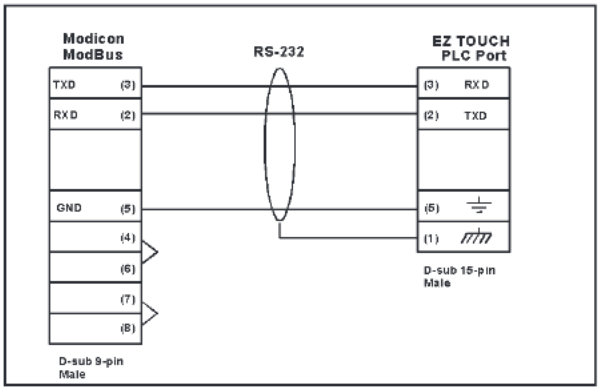

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## Mitsubishi FX Series 8-pin MINI-DIN, RS-422A (P/N EZ-MITSU-CBL-1)




## Modicon ModBus RS-232

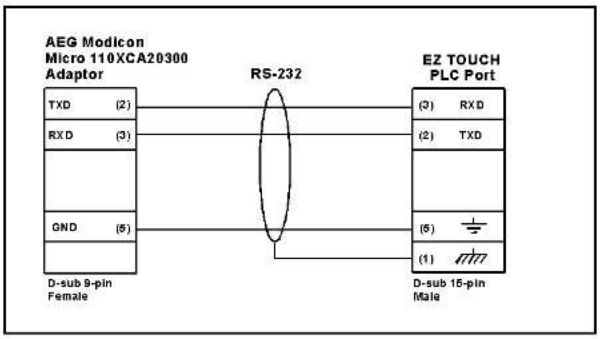
**Wiring Diagram for the 984 CPU, Quantum 113 CPU**



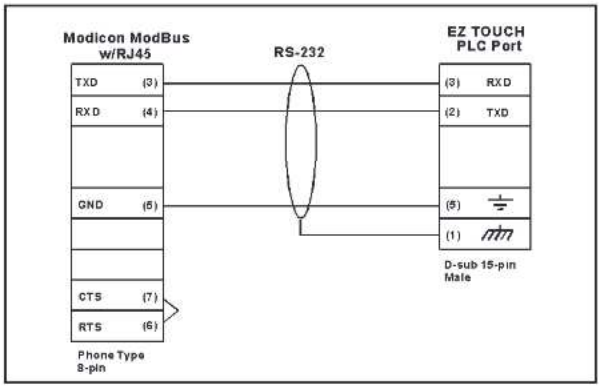



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Wiring Diagrams for AEG Modicon MICRO Series: 110 CPU 311-xx, 110 CPU 411-xx, 110 CPU 512-xx, 110 CPU 612-xx



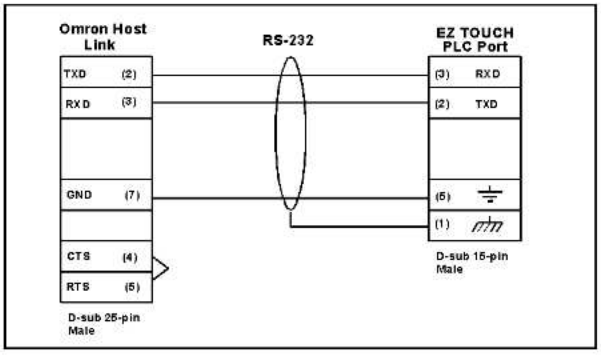

## Modicon ModBus with RJ45





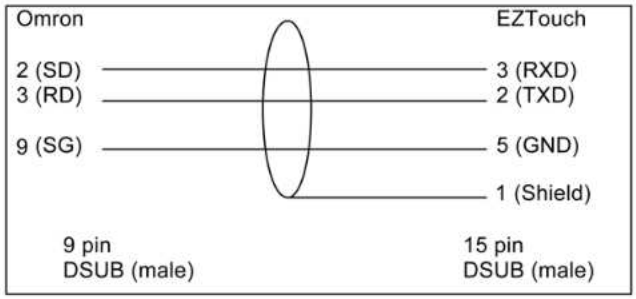

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## Omron C200, C500, RS-232C (P/N EZ-OMRON-CBL)

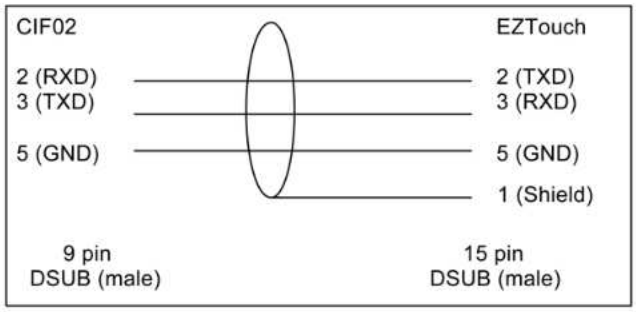



## Omron CQM1 amd CPM1

Omron CQM1, CPM1, CPM2 & C200



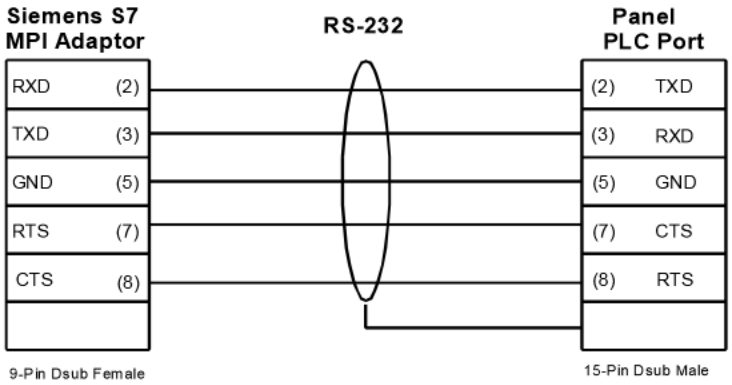

Omron CQM1 using CQM1-CIF02






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## Siemens S7 MPI Adaptor, RS-232C (P/N EZ-S7MPI-CBL)



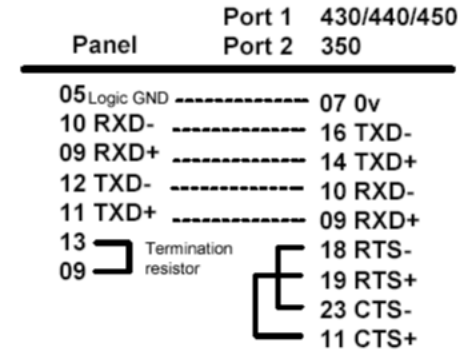


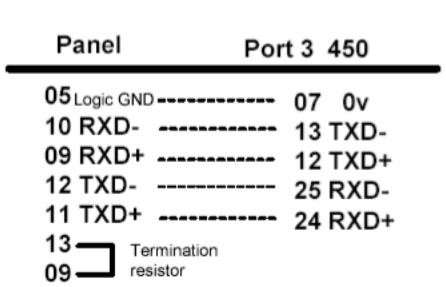

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## EZTouch RS-422A/RS-485A Wiring Connections for DirectLogic PLCs

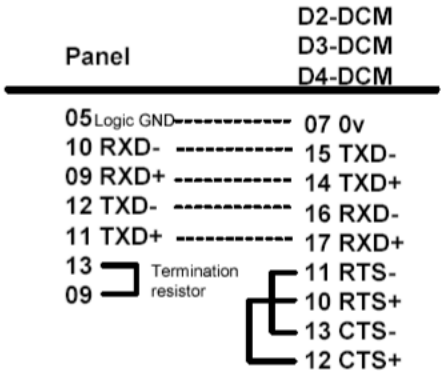
For RS-422A and RS-485A connections, we recommend Belden 9729 cable or equivalent. Please Note: The Termination Resistor is built in to pin 13 of EZTouch Panels. Jumper pin 13 to pin 9 (RXD+) to enable.

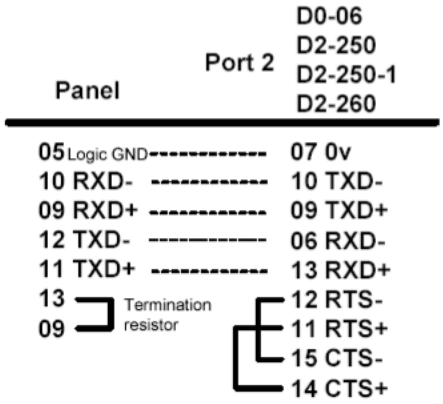
### RS-422A




RTS and CTS is not present on this port

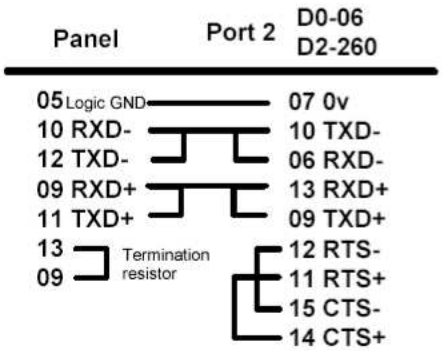


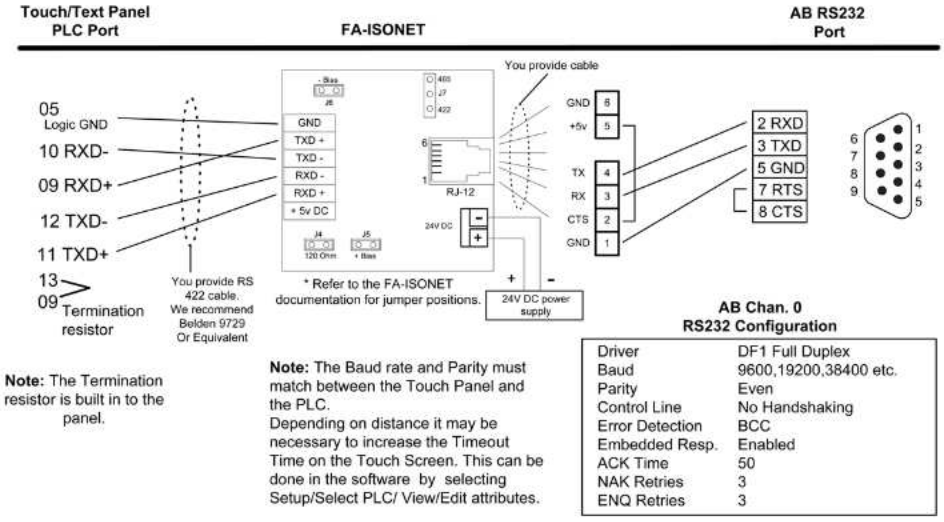



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## RS-485A




## EZTouch RS-422A Wiring Connections for Allen-Bradley SLC 503/504 RS-232 Port




**Note:** The Termination resistor is built in to the panel.

**Note:** The Baud rate and Parity must match between the Touch Panel and the PLC.
Depending on distance it may be necessary to increase the Timeout Time on the Touch Screen. This can be done in the software by selecting Setup/Select PLC/ View/Edit attributes.

**AB Chan. 0 RS232 Configuration**

| | |
|---|---|
| Driver | DF1 Full Duplex |
| Baud | 9600,19200,38400 etc. |
| Parity | Even |
| Control Line | No Handshaking |
| Error Detection | BCC |
| Embedded Resp. | Enabled |
| ACK Time | 50 |
| NAK Retries | 3 |
| ENQ Retries | 3 |



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