

Introduction

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Manual Organization



This manual is all you'll need to get the EZText Panel installed and configured. This manual covers models EZ-220P and EZ-220P-DEV

In this manual we will take you through the steps necessary to get your EZText Panel up and running in the shortest possible time. Although your familiarity with programmable operator interface devices will determine how quickly you move through the steps — it's as easy as 1 — 2 — 3. This manual is arranged in chapters. A description of key information contained in each chapter is provided below.

Chapter	Description
	<p>Introduction 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. Provides you with a table listing the various models, their part numbers and special features. Lists the important features of the EZ-220P EZText Panel. Lists the PLCs supported by the panel, by brand, model and protocol. Lists the part numbers for PLC cables and the programming cable. Tells how to install programming software.</p>
	<p>Hardware Installation Provides instructions on how to install custom labels and the EMI Noise Filter. Discusses two mounting techniques — stud mounting and DIN clip mounting. Provides Outline Dimensions and Mounting Template. Provides you with instructions on connecting the unit to power, a programming PC and a PLC.</p>
	<p>Learning the Features Provides an Overview of the panel features. Front Panel Features, including; Function Pushbuttons/LEDs, Annunciator Lamps, Character LCD Display, PLC Message LED and Control Pushbuttons are discussed. Local and PLC Messages are described, along with types of Messages and Embedded Data Variables (DATA 1, 2, and 3).</p>
	<p>Tutorial Provides instructions to create an example (or “demo”) project. Discusses how to configure a PLC ladder logic program to use with the demo project. Takes you through the steps necessary to create an EZText Panel project using the programming software and application worksheets. Shows you how to transfer a project to the panel.</p>



Configuration

Step-by-step instructions for configuring the EZText Panel using the EZText Programming Software are provided.



Maintenance and Troubleshooting

Instructions for maintaining the EZ-220P panel are provided, including; Fuse Reset, Precautions, Chemical Compatibility, Cleaning, and Gasket Replacement. Troubleshooting section aids in diagnosing problems you might encounter when installing or operating the panel. Provides steps to take to isolate and correct problems.



Appendix A

Application Worksheets are provided to help you plan and implement your system configuration.



Appendix B

Wiring diagrams for several PLC cables are provided.



Appendix C

Error Message for PLC Drivers, EZText Panel, and EZText Programming Software.

Introduction to the EZText Panel

The EZ-220P EZText Panel provides a man-machine interface to your PLC automation system. The panel provides features such as 5 user-defined push-buttons with LED indicators, annunciator lamps, arrow adjust buttons, a numeric keypad, and a built-in menu system. The panel communicates with a PLC using either RS-232C or RS-422A/485A serial communication. Configuration software and panel programming are covered in chapter 5 of this manual.

The panel allows you to configure up to 256 20-character text strings configured as PLC Messages and Local Messages. Local Messages are internal panel messages that the operator can scroll in a menu tree hierarchy. PLC Messages are displayed when prompted from the PLC program. A PLC Message LED illuminates whenever a PLC Message is being displayed. Either message type can have up to three embedded data variables, one of which can be edited by using the arrow adjust buttons.

The panel has sealed membrane function pushbuttons that allow you to trigger PLC actions with the push of a button. These pushbuttons are used for input signals to the PLC. Each pushbutton can be configured to function as one of three switch types:

- **ALTERNATE**—keeps its current state until the button is pushed again
- **MOMENTARY**— is activated only while the button is being pushed
- **PANEL SET AND PLC RELEASE** —sets a bit in the PLC when pressed and is reset by either the PLC program or by pressing the button again.

The LCD display window supports two message lines that can display up to 20 characters each. The messages are programmed using the EZText Panel Programming Software. The message control type may be either **static**—text displays that have NO embedded data, **dynamic** —text messages that include embedded data (READ access only), or **interactive** —text messages that allow the operator to enter data, or change values that are stored in the PLC registers (READ/WRITE access).

The panel has a 12-key numeric keypad for entering values in an interactive message. A **decimal** and **ce** (clear entry) button are included. There are 3 annunciator lamps above the LCD display window. Each lamp has a tri-color indicator (red, amber, or green) that is controlled through the PLC program.

What you need to get started:

Hardware

- EZText Panel Model EZ-220P or EZ-220P-DEV
- 24 VDC Power Supply (FA-24PS recommended)
- Programming Cable (P/N EZTEXT-PGMCBL)
- RS-232C or RS-422A/485A PLC Cable (see page 9 for part numbers of cables)
- Programmable Logic Controller (PLC)
- 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 95/98 (Second Revision)/NT4.0/2000® requirements
 - CD ROM Drive

Software

- EZText Programming Software (P/N EZ-TEXTEDIT)

Need HELP?



PLEASE NOTE: Section 6, Maintenance and Troubleshooting, should be able to help you with most problems you might encounter.

Onscreen HELP

One of the most important features of the EZText Panel 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 or click on HELP in the main menu bar. For example, if you need help while working with panel configuration, hit the F1 function key when that dialog box is open and a pop-up HELP window will be displayed.

PLC HELP

If you need help with the PLC to EZText Panel Interface, see Appendix C or consult the EZText Programming Software Help. Each PLC Driver has a Help Topic that lists the error messages and provides an explanation for each. Also, for PLC to EZText Panel wiring diagrams, see Appendix B or the EZText Programming Software Help topics.




Technical Support

Although most questions can be answered with EZText HELP or the manuals, if you are still having difficulty with a particular aspect of installation or system design, technical support is available at **1-770-844-4200**, Monday through Friday, 9 a.m. to 6 p.m. EST, or FAX us at **1-770-886-3199**. Visit our website at www.Automationdirect.com.



Models

The EZText Panel provides a low-cost, easy-to-use operator interface alternative for your PLC system. With easy-to-configure Windows-based software and simple installation, you can be connected and running in minutes. If your application requires pushbuttons, LEDs, or text display, but your budget is low, check out the complete line of EZText Panels at our website at www.Automationdirect.com.

Part Number	
<p>EZ-220P</p> <ul style="list-style-type: none"> • 2 lines by 20 characters LCD display • Character height of 0.22" (5.55 mm) • stores up to 256 20-character messages • 5 user-defined function pushbuttons and LEDs • 4 control pushbuttons • 12 key numeric keypad • 3 annunciator lamps (each can illuminate in red, amber, or green) • up to three embedded PLC data variables per message • built-in menu system • EMI filtered power supply to reduce communication problems 	
<p>EZ-220P-DEV Above with DeviceNet communications</p>	

PLCs Supported by EZText Panels

Below is a list of various PLCs and their protocols supported by EZText Panel. Please note that we continue to add new drivers to this list. If you don't see your PLC listed here, please contact Automationdirect.com or visit our website.



PLC Brand	Model	Protocols Supported	
Allen-Bradley	Micrologix 1000, 1200 and 1500 SLC5/03, /04, /05 (with DF1)	DF1 Half Duplex; DF1 Full Duplex	
	PLC5	DF1	
General Electric	90/30 and 90/70	SNPX	
Mitsubishi	FX Series (all)	Direct	
Modicon	984 CPU, Quantum 113 CPU AEG Modicon Micro Series 110 CPU: 311-xx, 411-xx, 512-xx, 612-xx	Modbus RTU	
Omron	C200, C500	Host Link	
DirectLogic	DL05	K-Sequence; DirectNet; ModBus (Koyo addressing)	
	DL105	K-Sequence	
	DL205	D2-230	K-Sequence
		D2-240	K-Sequence; DirectNet
		D2-250	K-Sequence; DirectNet; ModBus (Koyo addressing)
		D2-240/250 DCM	DirectNet
	DL305	D3-330/330P	DirectNet
		D3-340	DirectNet
		D3-350	K-Sequence; DirectNet; ModBus (Koyo addressing)
		D3-350 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
	Other	H2- WinPLC (Think-N-Do V5.2, check for version compatability)	Modbus RTU (serial port)

PLC and Programming Cable Part Numbers

Part Number	Cable Description
EZ-2CBL	<i>Direct</i> Logic PLC RJ12 port, DL05, DL105, DL205, DL350 & DL450 (RS-232C)
EZ-2CBL-1	<i>Direct</i> Logic (VGA Style) 15-pin port, DL250 (RS-232C)
EZ-3CBL	<i>Direct</i> Logic PLC RJ11 port, DL340 (RS-232C)
EZ-4CBL-1	<i>Direct</i> Logic PLC 15-Pin Dsub port, DL405 (RS-232C)
EZ-4CBL-2	<i>Direct</i> 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-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)
EZTEXT-PGMCBL	EZText Programming Cable

Accessories and Optional Equipment

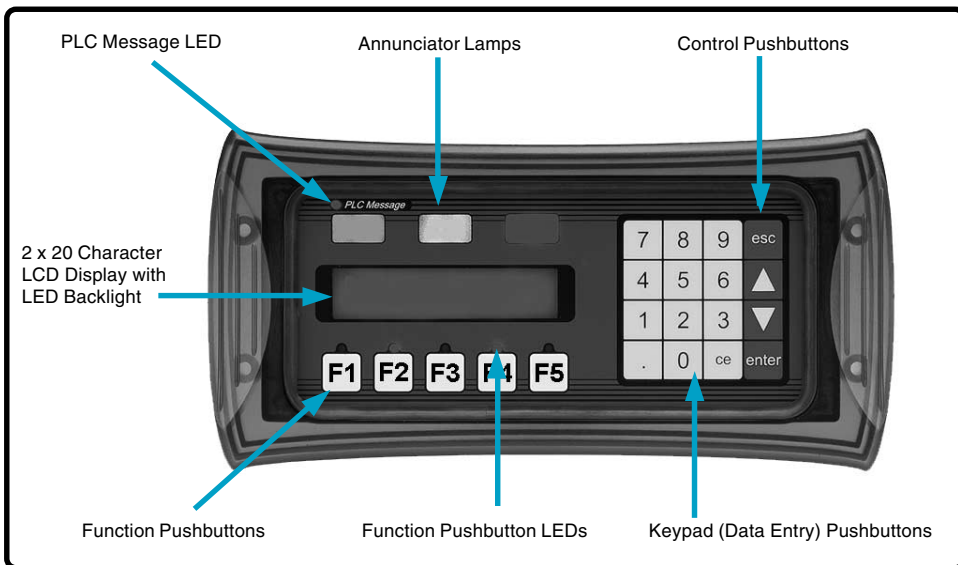
Part Number	Description
EZ-TEXTEDIT	EZ Text Panel Programming Software
EZ-TEXT-S-GSK	Standard Replacement Gasket (small)
EZ-TEXT-L-GSK	Standard Replacement Gasket (large)
EZ-BRK-2	DIN Clips (package of 4)
EZ-TEXT-STUDS	Mounting Studs (package of 4)
EZ-MULTIDROP	Serial Multiplexer
EZ-MULTIDROP-M	Serial Multiplexer Manual
EZTEXT-PGMCBL	EZ Text Panel Programming Cable
EZ-TEXT-M	EZ-220/220L/420 User Manual
EZ-TEXT-P-M	EZ-220P User Manual
EZ-TEXT-SP-M	EZ-SP User Manual

Front Panel Features

In this section, we will describe the front panel features of the EZText Panel. Descriptions of the PLC Message LED, Pushbuttons, Pushbutton LEDs, Annunciator Lamps, PLC messages, and Local Messages are provided. To understand the Features, see Chapter 3, *Learning the Features*. For a demonstration of how to program the panel indicators and controls, please refer to Chapter 4, *Tutorial*.

Operator Controls and Indicators

Each EZText Panel provides sealed membrane Pushbuttons for operator interface with a PLC. Pushbuttons may be used to begin events or tasks within the PLC, such as Start/Stop Control. Pushbutton inputs can be monitored for ON/OFF conditions in your PLC ladder logic program. EZText Panel Pushbuttons are Control Pushbuttons, Function Pushbuttons, or Data Entry (Keypad) Pushbuttons.



PLC Message LED

This LED will illuminate to indicate that the PLC has triggered a message that will be displayed in the LCD window. The pushbuttons are disabled for 3 seconds after a PLC message is displayed to ensure that the operator sees the message. The LED will turn OFF when the operator presses the escape pushbutton, thereby acknowledging message received. Press escape again and the PLC Message will re-display.





Control Pushbuttons

There are 4 Control Pushbuttons on the front panel. These buttons consist of an **esc** (escape), ▲ (UP Arrow), ▼ (DOWN Arrow), and **enter** pushbutton. The arrow buttons are used to scroll through local messages or to change a value within an interactive message. As the operator presses the buttons, the numeric value will increment or decrement, respectively. As it is adjusted, the value WILL NOT BE UPDATED in the PLC data register until the **enter** pushbutton is pressed. When completed, the operator will press the **enter** pushbutton and the value will be written to the PLC. Press **esc** to abort or cancel the adjustment without writing the value to the PLC.

Function Pushbuttons

There are 5 Function Pushbuttons that are user-defined. They may be configured as one of three “switch” types; **Alternate**, **Momentary**, or **Panel Set & PLC Release** (described on page 29.) They are configured as discrete input signals to the PLC. These pushbuttons are label F1 through F5 or may be **custom labeled** to suit their function or application.



Pushbutton LEDs

There are LEDs located above each of the user-defined pushbuttons. These LEDs can indicate if the pushbutton status condition is ON or OFF, or they can be controlled by the PLC. You may choose the **LED Control** while configuring your panel (see *Configuration*, Chapter 5). There are three different controls—**By Button**, **By Button & Flash**, or **By PLC**, that will determine LED response when the pushbuttons are pressed.



Annunciator Lamps

The EZ-220P Model contains 3 tri-color Annunciator Lamps above the LCD message window. Each of these lamps may be programmed to illuminate in green, amber, or red and may be labeled to fit your application. The lamps are turned ON and OFF through your PLC ladder logic program. They are configured with EZText Programming Software and may be configured to display status or the condition of any operation being controlled within the PLC.

Data Entry (Keypad) Pushbuttons



The EZ-220P also features a numeric keypad. Use this keypad to enter or change embedded data values. To update or enter a data value, the **enter** button must be pressed to select the data value. Then you may use the numeric keypad or the **UP Arrow** (increment) or **DOWN Arrow** (decrement) to adjust the value. For the PLC to acknowledge the change in value, you must press **enter** again (sends the updated value to the PLC.) The **CE** (Clear Entry) button is used to clear, or set back to zero, the current value.

Character LCD Display with LED Backlight

Messages display in the Character LCD Display Window with LED Backlight. The LCD window supports two line by twenty characters.



Messages

PLC Messages can be programmed to display PLC register values and allow the operator to change a PLC register value. Up to 3 data variables can be programmed to display in each message. The messages are entered using EZText Programming Software. Up to 256 **PLC Messages** may be configured and stored in the EZText Panel (Local Messages take away from the 256 Total Messages). PLC Messages are numbered 1 to 256. The message control type may be static text, dynamic, or interactive. The PLC logic program controls which messages are displayed. The **PLC Message LED** illuminates when a PLC generated message is being displayed.

Local Messages are also displayed in the LCD Display Window. Local Messages provide pertinent information or instructions to the operator and are displayed in a menu hierarchy. They can also be programmed to display values from a PLC register that the operator may change using the EZText Panel control buttons. You may create Folders to group messages pertaining to the same topic. Local Messages and Folders can be grouped in up to 3 levels using the EZText Panel Programming Software. The first character in a Folder message display is a "+" or "-" indicating folder status (closed or open). The next 19 characters of the display are for the Folder text. For Messages, all 20 characters are used as message text. Local Messages allow the operator to select and initiate user-defined interaction. See Chapter 3, *Learning the Features*, for more information.

Rear Panel Indicators

TXD LED—This LED will toggle “on” and “off” to signal activity on the transmission line.



RXD LED—This LED will toggle “on” and “off” to signal activity on the receive line.



Specifications

Display Type:	Character LCD, 2 lines by 20 characters with LED backlight 3 Annunciator Lamps (tri-color: red, amber, or green) (0.4" x 0.75")
Character Height:	0.22 inches (5.55 mm)
Keypad Overlay:	5 Function, 4 Control, and 12 Data Entry Pushbuttons
Service Power:	24 VDC (20–30 VDC operating range)
Power Consumption:	5.5 Watts @ 24 VDC
Inrush:	< 1 Amp with 50 mSec rise time to 30 VDC
Fuse:	Auto-Reset (0.65 Amp polyfuse)
Enclosure:	NEMA 4, 4X (Indoors)
Agency Approvals:	UL, CUL and CE
Operating Temperature:	0 to 45 °C (32 to 113 °F)
Storage Temperature:	–20 to +70 °C (–4 to +158 °F)
Humidity:	10–95% R.H. (noncondensing)
Electrical Noise Tolerance:	NEMA ICS 2-230 showering arc, ANSI C37.90a-1974 SWC Level C Chattering Relay Test
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
Serial Communications:	Download/Program/PLC Port — RS-232C, RS-422A, RS-485A 15-pin D-sub (female)
External Dimensions:	5 x 10 x 1.6 inches (127 x 254 x 40.6 mm)
Weight:	14 oz.