PowerPanel™

Programming Software
User Manual

(Manual P/N MAN-UTICW-M)

WARNING!

Programmable control devices such as PowerPanel 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 PowerPanel touchscreen with any sharp objects. This practice may damage the unit beyond repair.

Trademarks

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Manual Part No. MAN-UTICW-M

PowerPanel™

MANUFACTURED and MARKETED by

UTICOR

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PowerPanel™ Programming Software User Manual

Table of Contents

PowerPanel™ Programming Software User Manual

Manual Revisions

Manual Part Number: MAN-UTICW-M
Manual Title: PowerPanel Programming Software User Manual

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	07/2001	Cover Warning/Copyright i–vi 1–160 Appendix A Appendix B Index	Original Release of Manual

EU Information

The PowerPanel is manufactured in compliance with European Union (EU) Directives and carries the CE mark. The PowerPanel 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 UTICOR Technology, L. P. or its agents should be used.

Technical Support

Consult PowerPanel Programming Software Help or you may find answers to your questions at our web site @ www.uticor.net. If you still need assistance, please call our technical support at 1-800-832-3647 or FAX us at 1-563-359-9094.

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

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

Operating Humidity .... 10–95% R.H., noncondensing

Air Composition .... No corrosive gases permitted

Preventative Maintenance and Cleaning

No preventative maintenance is required. The PowerPanel touchscreen should be cleaned as needed with warm, soapy water. See the PowerPanel Hardware User Manual (P/N MAN-UTICW-001) for a list of compatible/incompatible chemicals and compounds.

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1

Introduction

In this chapter....

Manual Organization

The PowerPanel Programming Software User Manual is arranged in chapters. A description of key information contained in each chapter is provided below.

Chapter	Description
1	**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, and their special features. Lists the important features of all PowerPanels. Lists the PLCs supported by the panels, by brand, model and protocol. Lists the part numbers for PLC cables and the programming cable. Tells how to install programming software.
2	**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 a PowerPanel project using the programming software. Shows you how to transfer the project to the panel, and testing the project once transferred.
3	**Project Setup** Discusses ON-LINE and OFF-LINE configuration options. Tells you how to set up a project by entering project information (Step 1). Discusses screen design (Step 2), and how to transfer the project to the panel (Step 3).
4	**Objects** Provides step-by-step instructions for configuring each of the PowerPanel objects.
5	**Reference** Provides more details on menu commands. Takes you through the main menu bar item by item, command by command, with instructions. Contains information on the various tool bars and the status bar. Describes right click menus
A	**Appendix A Troubleshooting** Aids in diagnosing problems you might encounter when installing or operating your PowerPanel. Provides steps to take to isolate and correct problems. Lists panel error messages, programming software error messages, and PLC Driver Error messages.
B	**Appendix B Characters** Provides a list of the ASCII Characters supported by the PowerPanel. This information may be useful when creating a Text Entry or Dynamic Text object.
C	**Appendix C PLC Communications Setup** Provides instructions on how to set up most PLC Types to communicate with the PowerPanel.

Introduction
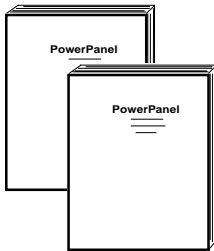
Install the PowerPanel using the instructions in the Hardware Manual.

Program the PowerPanel using the instructions in this Software Manual.

There are *two manuals* that you will need for installation — this manual, the PowerPanel Software User Manual, and the PowerPanel Hardware User Manual (P/N MAN-UTICW-001) shipped with your PowerPanel.

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 PowerPanel 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.

What you need to get started....

Hardware

- PowerPanel (6" Monochrome, 6" Color, 8" Color, or 10" Color)
- 24 Volt DC Power Supply (FA-24PS recommended)
- RS-232C Programming Cable (P/N CBL-UTICW-009)
- RS-232C or RS-422A/485A PLC Interface Cable (see page 8 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 95/98/NT4.0/2000® Requirements
  — CD ROM Drive

Software

- PowerPanel Programming Software (P/N MAN-UTICW-CD)

Need HELP?

> **PLEASE NOTE:** The Troubleshooting section (Appendix A) should be able to help you with most problems you might encounter.

Onscreen HELP

One of the most important features of the PowerPanel 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, press the F1 function key while in that area and a popup window will be displayed. You may also click on the Help button located at the bottom of most dialog boxes to go to the help topic.

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 PowerPanel Interface, consult the PowerPanel 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 PowerPanel wiring diagrams.

Technical Support

Although most questions can be answered with PowerPanel HELP or the manuals, you may find answers to your questions in the operator interface section of our web site @ www.uticor.net. If you still need assistance, please call our technical support at **1-800-832-3647 or FAX us at 1-563-359-9094.**

PowerPanel Models

The PowerPanel 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 PowerPanel is available in a variety of models to suit your application. Refer to the table below for a list of model descriptions and some important options that are available.

Introduction

Description	User Memory	Field Expandable User RAM?	Nonvolatile Flash Backup Card Option for Program Backup?	PLC Drivers Supported? *	Option Cards Available
6" Monochrome Panel					
6" STN Color Panel	512K	Yes — to 1 MEG	Yes	All	A-B Data Highway Plus ModBus Plus Ethernet
8" STN Color Panel					
10" TFT Color Panel**					

* A list of PLC Drivers supported is provided on page 7 of this manual.

** The 10" TFT Color Model is offered in two sizes. One that has the same footprint as the previous version of the PowerPanel and the new PowerPanel standard size (smaller than previous version).

Features

The following is a list of important features for the PowerPanels:

- 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 Clock
- Flash based design for easy firmware upgrade
- Field expandable user RAM
- Nonvolatile flash card option for user program backup
- 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 definable user groups
- 16 level undo and redo
- Import bitmaps
- Serial Printer support
- 40-character tag names allow you to use meaningful names for PLC memory locations instead of cryptic PLC addresses

PLCs Supported by PowerPanels

PLC Brand	Model		Protocols Supported
Allen-Bradley	Micrologix 1000/1200/1500, SLC500, 5/01,/02,/03		DH485/AIC/AIC+
	SLC5/04, PLC5		DH+ (option card) (check for availability)
	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, Multidrop
Modicon	984 CPU, Quantum 113 CPU AEG Modicon Micro Series 110 CPU: 311-xx, 411-xx, 512-xx, 612-xx		Modbus RTU
	984 Series, Quantum Series		Modbus Plus (option card) (check for availability)
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
Siemens	Siemens 7 MPI Adapter		3964R
Other	H2- WinPLC (Think-N-Do V5.2, check for version compatibility)		Modbus RTU (serial port)

PLC Cable Part Numbers — 3m (9.8 ft.)

Part Number	Cable Description
CBL-UTICW-001	GE 90/30 and 90/70 15-pin Dsub port (RS-422A)
CBL-UTICW-002	AB SLC 5/03/04/05 DF1 port (RS-232C)
CBL-UTICW-003	AB PLC5 DF1 port (RS-232C)
CBL-UTICW-004	AB SLC DH485 port (RS-485A)
CBL-UTICW-005	AB MicroLogix 1000, 1200 & 1500 (RS-232C)
CBL-UTICW-006	Mitsubishi FX Series 25-pin port (RS-422A)
CBL-UTICW-007	Mitsubishi FX Series 8-pin MINI-DIN (RS-422A)
CBL-UTICW-008	Omron C200, C500 (RS-232C)
CBL-UTICW-010	ModBus with RJ45 (RS-232C)
CBL-UTICW-011	Modicon ModBus (RS-232C)
CBL-UTICW-012	Siemens S7 MPI Adaptor (RS-232C)
CBL-UTICW-013	Omron 9-pin Programming Port (RS-232C)
CBL-UTICW-014	GE Versmax (RS-232C)

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

CBL-UTICW-009	RS-232 Programming Cable

See the PowerPanel Hardware User Manual (P/N MAN-UTICW-001), Appendix A for cable pinouts, or use the PowerPanel Programming Software Help Topics.

PowerPanel Programming Software

PowerPanels are configured with software running on an IBM or compatible personal computer. This software is available through Uticor Technology, L. P., part number MAN-UTICW-CD. The panel can be configured on-line or off-line.

(See page 3 for requirements.)

Installing the Software

Perform the following steps to install the PowerPanel Programming Software onto your PC.

• Place the CD into your **CD ROM drive.**

• From Windows click on the **Start** Button, and then click on **R**un from the menu. The **Run** dialog box will pop up.

• At the prompt type D:\ (or your CD ROM drive) setup.exe or click on the **Browse** Button and find the **Setup.exe** file for PowerPanel Programming Software.

• Click on the **OK** button to begin the installation. The PowerPanel Programming Software Installation Screen will appear.

• Follow the onscreen prompts to load the software. (Installation screens are shown, next page.)

Introduction
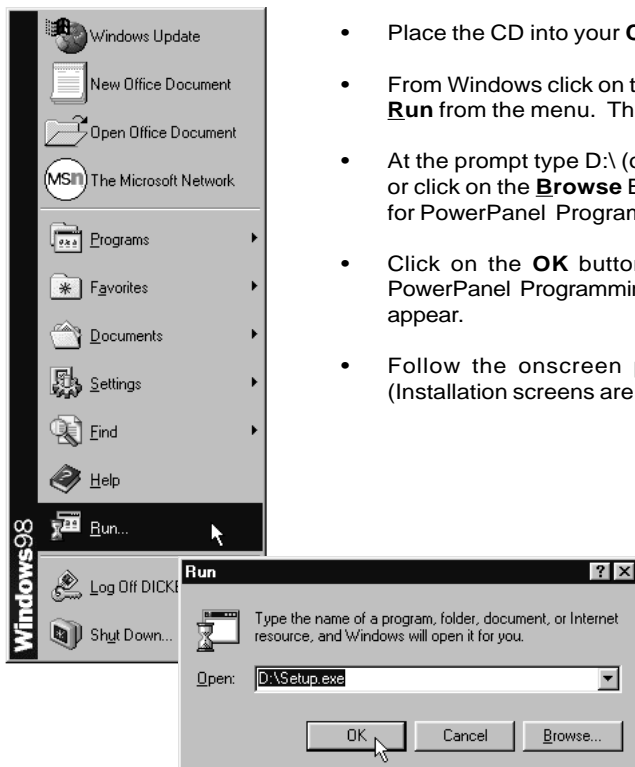
PowerPanel Programming Software (Version 1.02)
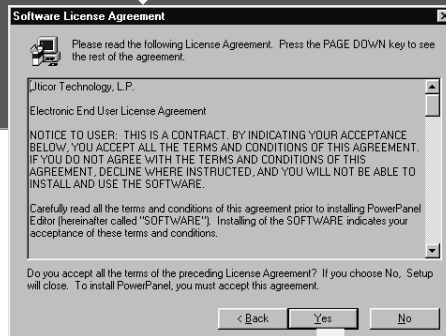*Installation*
A new breed of Touch panels from Uticor Technology

PowerPanel Programming Software Icon

This icon will appear on your desktop after installation.

This is the final installation screen. Here you select the destination folder where your software program will be installed. The default destination location is C:\ Program Files\PowerPanel. If you wish to select another destination, click on the Browse button.

To complete the installation, click on Next> button. That's all there is to it! The PowerPanel Icon shown above will appear on your desktop. Simply click on it to open the Programming Software!

Tutorial

In this chapter....

— Configure a PLC

— Create a Project
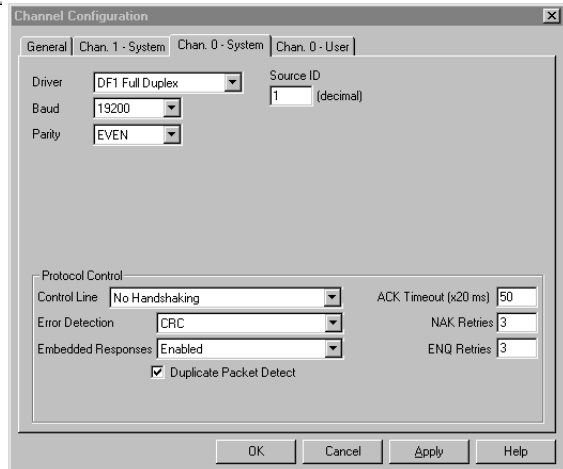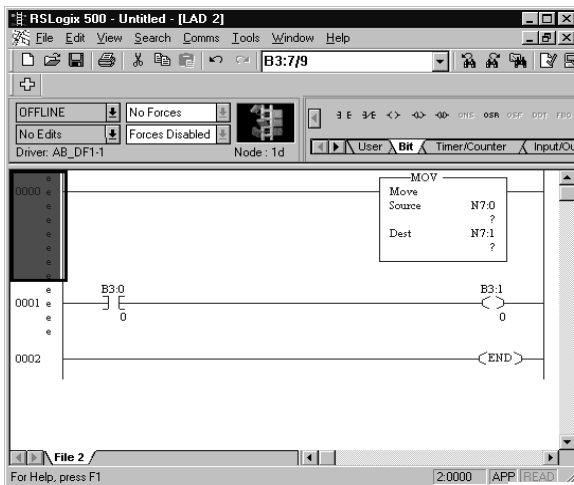
Tutorial — Configure PLC

For the purposes of this Tutorial, we will be using an Allen-Bradley SLC 500 Programmable Logic Controller (PLC), with Full Duplex Protocol. To configure the PLC we are using RSLogix® Programming Software. The purpose of this part of the tutorial is to show you how to configure your PLC to communicate with a PowerPanel.

Connect the programming PC to the Alllen-Bradley SLC 500 PLC. With RSLogix Programming Software running on your PC, perform the following steps.

1. Enter the Ladder Logic as shown in the example (below, left). These PLC locations will be used by Tags that you will create in the PowerPanel Programming Software.

2. Configure **Channel 0**, **System**, as shown in the graphic (below, right).

3. Save this program and transfer it to the PLC. Place the PLC in Run Mode.

4. Exit RSLogix Programming Software.

For this tutorial, we will be connecting the panel to DF1 Port of an Allen-Bradley SLC 500 with Full Duplex Protocol. These are the settings that will be used when setting up the panel communications.

You have now configured the PLC to communicate with a PowerPanel Project that you will create in the next section of this tutorial.
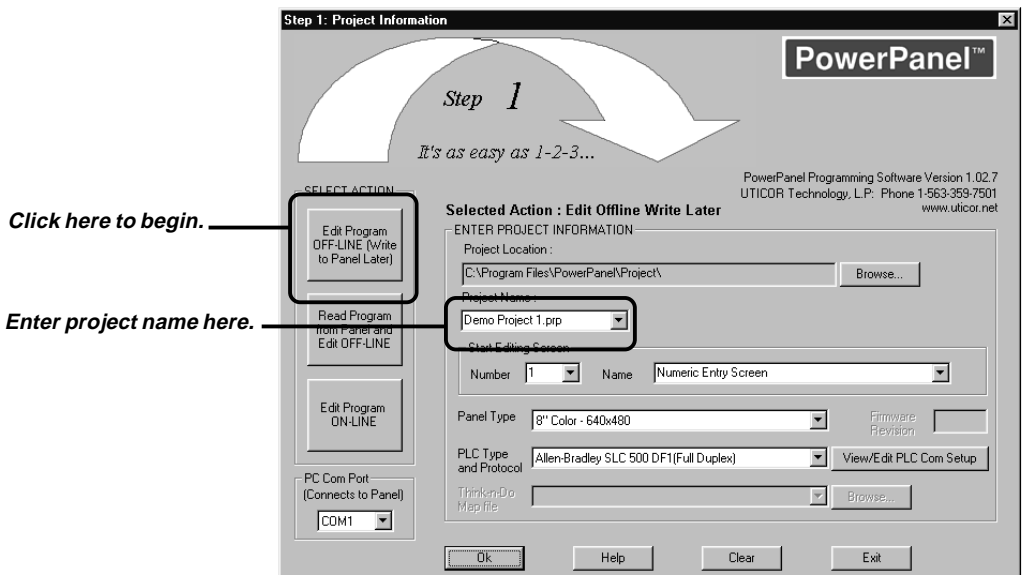
Tutorial — Create a Project

The following is a project tutorial. You've already configured your PLC to work with the PowerPanel project you will be creating in this section. Now we'll take you through the process of creating a new project, placing objects on the screen, and transferring a project to the PowerPanel. This should help familiarize you with the PowerPanel Programming Software environment.

Let's assume you have the programming software installed on your PC (if you don't, go back to page 9 and install now). Connect the PowerPanel to your PC using the P/N CBL-UTICW-009 cable. Connect the PowerPanel to your PLC using the appropriate panel to PLC cable.

Step 1

In **Step 1, Project Information**, you will be setting up your project by entering project information.

1. From the **Project Information** screen, click on the **Edit Program OFF-LINE (Write to Panel Later)** button.

2. Under **Project Name**, type in **Demo Project 1**. Press **Enter**. The primary PowerPanel Program file has a ".prp" suffix.

3. Under **Start Editing Screen**, leave the screen number as 1. Click in the field next to **Name**. Replace **New Screen** by typing in **Numeric Entry Screen**.

Tutorial

Click here to begin.

Enter project name here.

Enter Screen Number

Type in "Numeric Entry Screen" here.

Start Editing Screen

Number 1

Name Numeric Entry Screen

Panel Type 8" Color - 640x480
6" Mono - 320x240
6" Color - 320x240
8" Color - 640x480
10" Color - 640x480

Firmware Revision

View/Edit PLC Com Setup

PLC Type and Protocol

Think-n-Do Map file   Browse...

Click on DOWN arrow to view Panel Types and select the Part Number/ Model Type you are using.

Tutorial

4. Click on the DOWN arrow to the right of the **Panel Type** field to view choices. Select the Panel Type you are using. In this Demo Program we are using the **8" Color - 640x480**.

Click on DOWN arrow to view PLC Type and Protocol and select the type you are using.

Panel Type 8" Color - 640x480

Firmware Revision

PLC Type and Protocol   Allen-Bradley SLC 500 DF1(Full Duplex)

View/Edit PLC Com Setup

Allen-Bradley PLC 5 DF1
Allen-Bradley SLC 500 DF1(Full Duplex)
Allen-Bradley SLC 500/MicroLogix DH-485/AIC
DirectLogic K-Sequence
DirectLogic Modbus (Koyo addressing)
DirectLogic (Except 330/340) DirectNet

Think-n-Do Map file   Browse...

Ok

To set PLC Attributes, click on this button. A dialog box particular to the type PLC and Protocol you have selected will appear.

5. Click on the DOWN arrow to the right of **PLC Type and Protocol** to view the list. For the purpose of this Demo Program, select **Allen-Bradley SLC 500 DF1 (Full Duplex).** (We are using an Allen-Bradley SLC 500 with Full Duplex Protocol.)

6. Click on the **View/Edit PLC Com Setup** to edit the PLC Attributes. Set the attributes to match those in the **Allen Bradley SLC 500 (Full Duplex)** attributes dialog box shown below. Click **OK**. *(These settings must match the PLC Com Port settings. Check your PLC User Manual for port settings for your particular PLC.)*
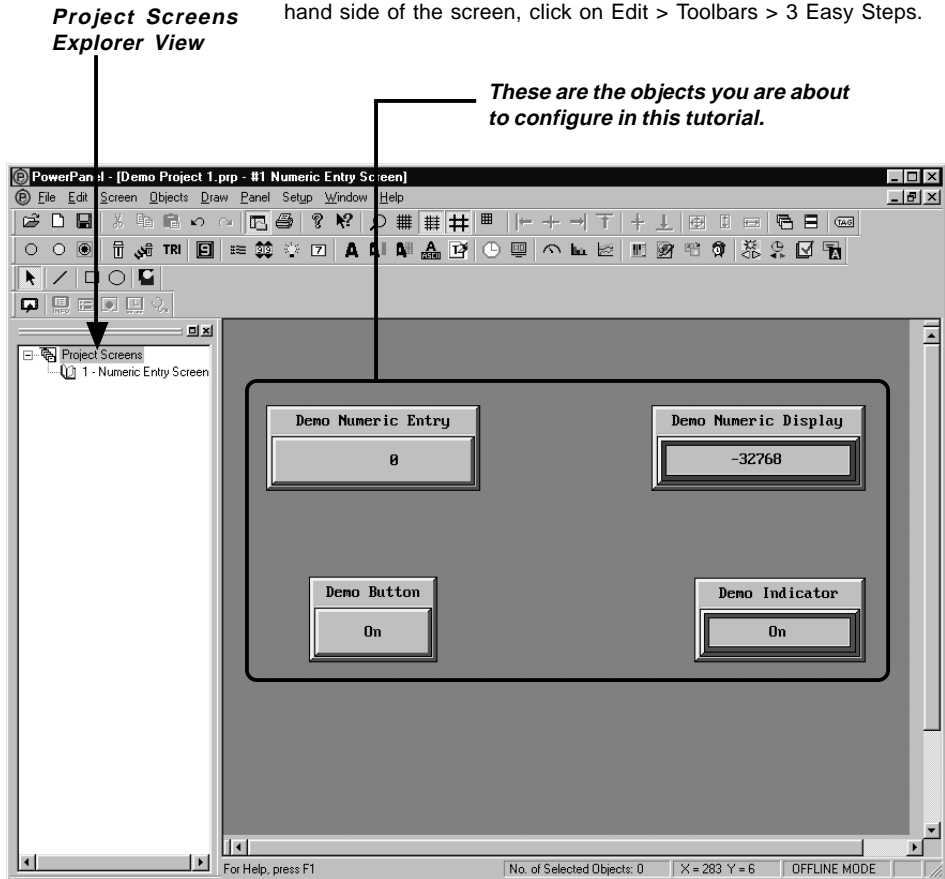
Step 1 is complete!

Allen Bradley SLC 500 (Full Duplex)

PLC Editor Revision : A

Baud Rate 19200
Parity Even
Stop bits One
Transmit RS 232
Checksum Type CRC
Timeout Time (1-255) tenths of a second. 30
Poll time (0-255) tenths of a second. 0

OK   Cancel   Help

Step 2

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

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

The Main Programming Screen opens with the toolbars shown below. If you want the "3 Easy Steps" Navigation Toolbar to appear on the right hand side of the screen, click on Edit > Toolbars > 3 Easy Steps.

Project Screens Explorer View

Tutorial

These are the objects you are about to configure in this tutorial.

1. Click on **Objects>Numeric Entry**. The following screen will appear.

There are many more features that you may program, such as, Position of Label, Color of Text and Background, and Language, but for the purposes of this tutorial, we will use the Defaults (except for Character Size).

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

3. In the field next to **Label Text,** type in **Demo Numeric Entry** as shown above.

4. Click in the field next to **Tag Name** and type in **NUMERIC ENTRY**. Press **Enter**. The following screen will appear.

PLEASE NOTE: If your panel is connected to multiple PLCs, see Mapping Tags in the Help file for your type PLC.

5. In the field next to **Address String**, type in **N7:0**, as shown above. Select **SIGNED_INT_16** for the **Data Type**. Click **OK**.

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

Tutorial

NOTES ON RESIZING AN OBJECT:

Drag the object to move, or drag a handle to resize, the object. The pointer changes to a four-way arrowhead (for moving), or a two-way arrow (for resizing).

Dragging a side handle changes the width or height only; dragging a corner handle changes the width and height simultaneously.

To EDIT TAG DETAILS, right click the mouse while the cursor is on the Tag Name.
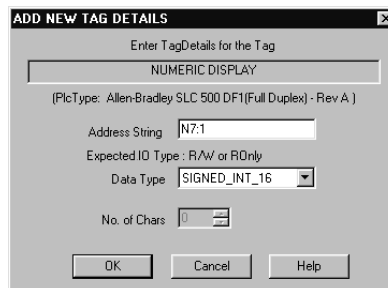
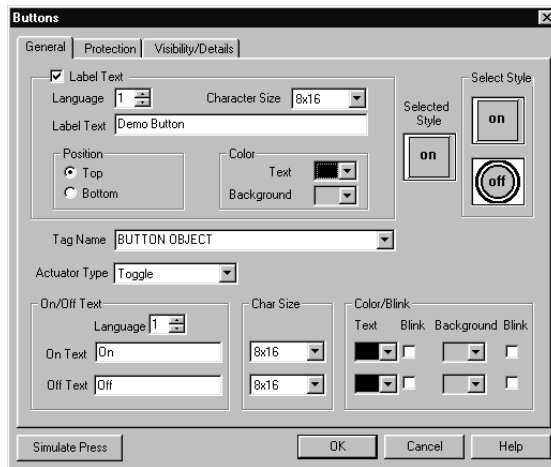7. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.
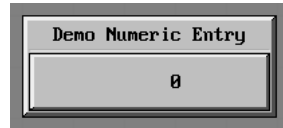
8. Next, we'll create a **Numeric Display** object. Click on **Objects > Numeric Display**. The following dialog box will appear.
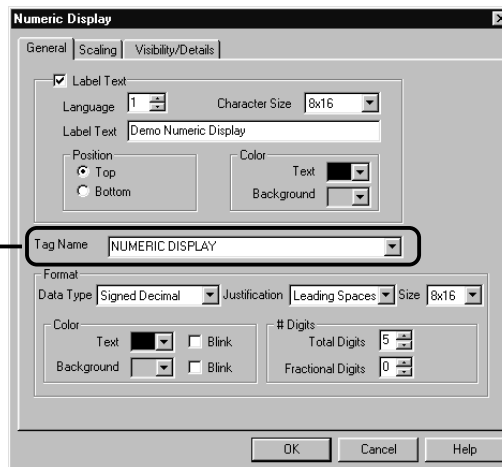
9. Click on the box in front of **Label Text t**o activate the object label.

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

11. Click in the field next to **Tag Name** and type in **NUMERIC DISPLAY**. Press **Enter**. The following screen will appear.
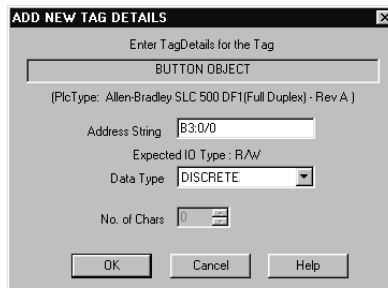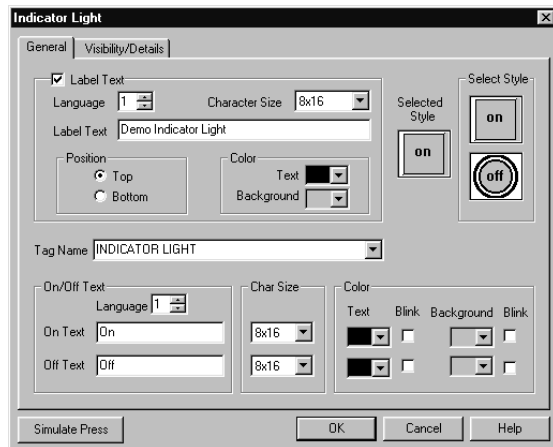
Tutorial

12. In the field next to **Address String**, type in **N7:1**, as shown above. Select **SIGNED_INT_16** as the **Data Type**. Click **OK**.

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

14. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown to the right.
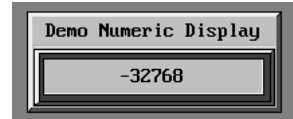
15. Next, we'll create a **Button** object. Click on **Objects > Buttons**. The following dialog box will appear.

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

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

18. Click in the field next to **Tag Name** and type in **BUTTON OBJECT**. Press **Enter**. The following screen will appear.
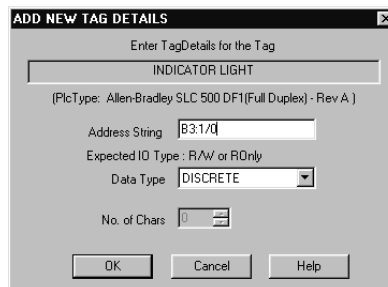
19. In the field next to **Address String**, type in **B3:0/0**, as shown above. The **Data Type** will remain as **DISCRETE**. Click **OK**.

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

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

22. Next, we'll create an **Indicator Light** object. Click on **Objects > Indicator Lights**. The following dialog box will appear.

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

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

25. Click in the field next to **Tag Name** and type in **INDICATOR LIGHT**. Press **Enter**. The following screen will appear.
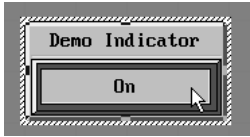
To select an object on the screen, move your cursor over the object and a line will appear around the object to highlight it, click the left mouse button to select.

26. In the field next to **Address String**, type in **B3:1/0**, as shown above. The **Data Type** will remain as **DISCRETE**. Click **OK**.

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

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

29. Click on **File > Save Projec**t.
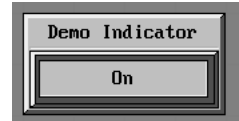
You've just completed Step 2, Design Your Screens! Now we will transfer Demo Project 1 to the PowerPanel.


The PowerPanel is shipped with a bitmap program installed. The image shown above will display on the PowerPanel screen upon initial power-up. The first project you transfer to the panel will replace this bitmap program!

Step 3

You are now ready for **Step 3, Write Your Program to Panel**. **Demo Project 1** should look similar to that shown below.

1. Click on the **3** button **(Write Your Program to Panel)** as shown in the graphic below.

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

Tutorial

Click on 3, Write Your Program to Panel

This screen will appear
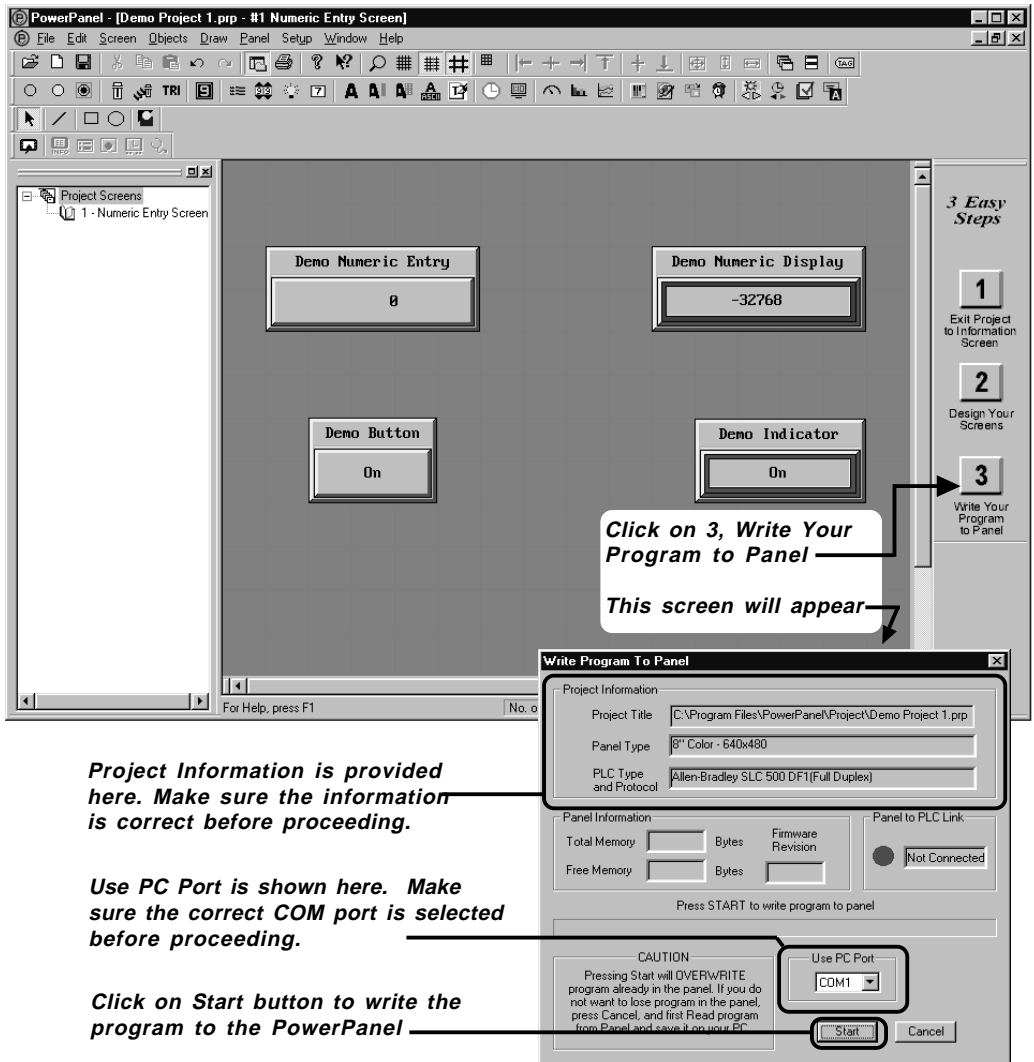
*Project Information is provided here. Make sure the information is correct before proceeding.*

Use PC Port is shown here. Make sure the correct COM port is selected before proceeding.

Click on Start button to write the program to the PowerPanel

3. Your user program, **Demo Project 1**, should now be written to the PowerPanel, and the screen you have created should be displayed on the panel.

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

The Panel to PLC Link will display a green dot next to the "Connected" message to indicate that a link between the panel and PLC is established.

Panel Information will display the Total and Free Memory in Bytes. It will also display the Firmware Revision number — the revision of the PowerPanel internal software.
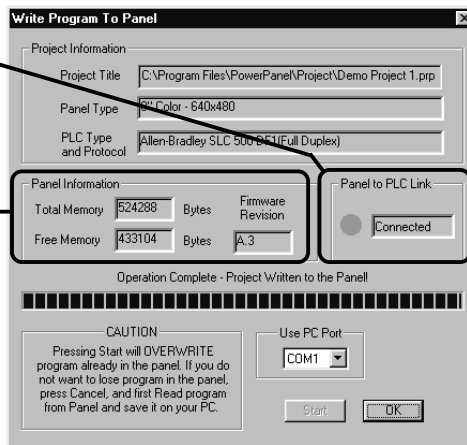
5. To test the link, press the **Demo Numeric Entry** button on your PowerPanel panel screen. A popup keypad similar to the one shown below should display.

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

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

Tutorial *(side tab)*

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

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

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

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

The PowerPanel and PowerPanel Programming Software are practical, versatile— and best of all — make it easy for you to create a dynamic interface for your application!

Tutorial

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MAN-UTICW-M

Project Setup

In this chapter....

Project Setup

Decide now if you want to work ON-LINE or OFF-LINE....

You may create a new project on your PC by working off-line (not connected to a PowerPanel.) You may also work on-line with the PowerPanel unit to make changes to an existing project.

Working **off-line** you may use PowerPanel Programming Software to design your PowerPanel in your office or home — or even while traveling. Your project becomes as portable as your laptop, and your PowerPanel is not "down" while you are redesigning or making modifications as your unique application needs grow or change. Your project may be transferred to the PowerPanel at any time. The transfer function allows you to select a project to be transferred to the Panel.

Working **on-line** is unique to PowerPanels. Working in this mode allows you to make quick fixes or design changes to an installed PowerPanel and its existing program. You can eliminate a step or two and save time by transferring these changes directly to the current opened screen. Now you can see the effect of the screen design changes you have made immediately, eliminating the traditional "edit-compile-download" cycle. Simply click on **Save Screen** or **Save Project** and all changes on the current opened screen will immediately be saved in the PowerPanel.

Most users will employ both methods at one time or another, but whether working off-line or on-line — you will certainly appreciate the versatility and accessibility provided by the PowerPanel and its easy-to-use programming software.

The next section takes you through the steps necessary to create a project and transfer it to the PowerPanel. PowerPanel Programming Software simplifies this process by using Windows-based architecture and lots of popup and pulldown selections that guide you through the process to quickly build your screens and get you up and running in no time at all!

We recommend you go through the tutorial beginning on page 11 of this manual. You'll see how easy it is to get up and running!

Project Setup

Step 1 — Project Information

3 Easy Steps

1 Setup Your Project Information

2 Design Your Screens

3 Write Your Program to Panel
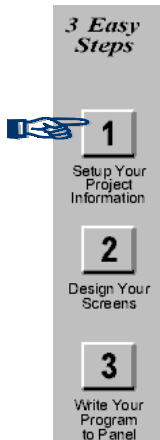
To have the toolbar, shown above, appear on the righthand side of the Main Programming Screen, click on Edit > Toolbar > 3 Easy Steps on the Main Menu. (You can do this after you've opened a project.)
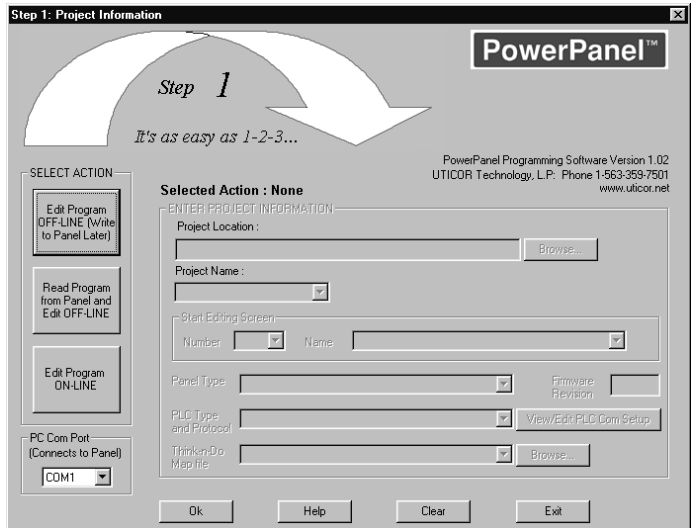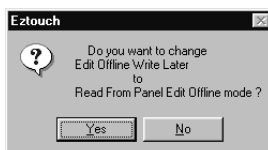

### SELECT ACTION

Edit Program OFF-LINE (Write to Panel Later)

📎 *PLEASE NOTE:*

If you change your mind and click on another SELECT ACTION button, a "confirm action" message will appear, just to make sure that this is what you intended to do. Click on Yes or No.

Under **SELECT ACTION**, click on one of the three "working mode buttons." If you want to work offline (not connected to a PowerPanel), click on the button labeled **Edit Program OFF-LINE (Write to Panel Later)**. You will use this mode when creating a new project.

1. From **Project Information** screen, click on the **Edit Program OFF-LINE (Write to Panel Later)** button.

2. Click on the **Browse** button if you want to navigate to another Directory or Folder where you will store your project. If you want to accept the default folder (where PowerPanel Programming Software resides), just enter the name of your new project in the empty field under **Project Name**.

3. Under **Start Editing Screen**, leave the screen number as **1**. Click in the field next to **Name** to highlight **New Screen**. Replace this by typing in the name of your first screen. If you haven't decided on a name, just leave it as is, you can change it later.

Project Setup

4. Click on the DOWN arrow to the right of the **Panel Type** field to view choices. Select the **Panel Type** you are using.

5. Click on the DOWN arrow to the right of **PLC Type and Protocol** to view the list. Select the PLC Type and Protocol you are using.

6. Click on the **View/Edit PLC COM Setup** to edit the PLC Attributes. A dialog box will appear that is particular to the type of PLC you have selected in the previous step. Set the attributes to match your PLC. Click **OK**.
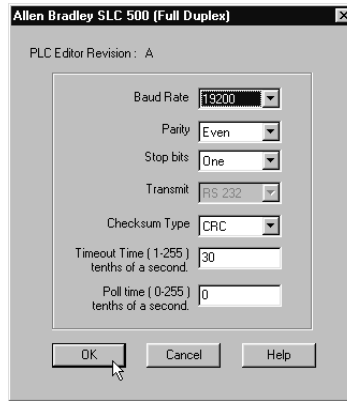
7. You should now be back to the **Project Information** screen. Check to ensure that your **PC COM Port (Connects to Panel)** is set to match your PC. Click on the **OK** button to accept all settings.

You are now ready to begin configuring your first screen.

Read Program from Panel and Edit OFF-LINE

If you are connected to a panel and want to transfer a project from the panel to your PowerPanel Programming Software for editing, click on the **Read Program from Panel and Edit OFF-LINE button**. Any changes you make to the project will not take effect until you write the edited project to your PowerPanel.

1. From the Project Information screen, click on the **Read Program from Panel and Edit OFF-LINE**. The following screen will appear.

If not using the default directory, click on the Browse button to go to directory and folder where project will be stored.

Select or enter Project Name.

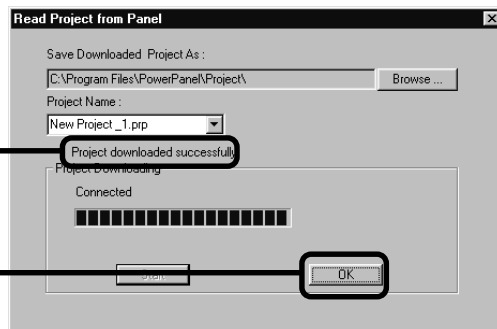*Click on Start button to Start Reading Project from Panel or Abort to quit.*
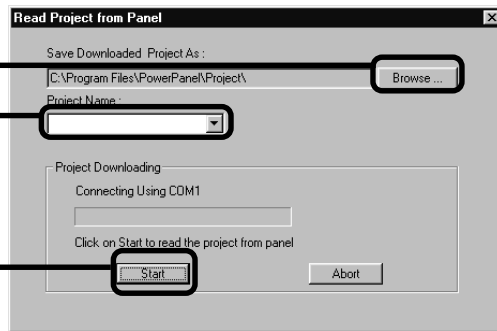
Read Project from Panel

Save Downloaded Project As :

C:\Program Files\PowerPanel\Project\   Browse ...

Project Name :

Project Downloading

Connecting Using COM1

Click on Start to read the project from panel

Start   Abort

2. Click on the **Browse** button if you want to navigate to another Directory or Folder where you will store your program. If you want to accept the default folder (usually where the PowerPanel Programming Software resides), just enter the name that you desire for the project you are about to Read in the empty field under **Project Name**.

3. Click on the **Start** button to start reading the project from the panel.

The message "Project downloaded successfully" will appear when the program has finished downloading.

Click on OK to exit screen.

Read Project from Panel

Save Downloaded Project As :

C:\Program Files\PowerPanel\Project\   Browse ...

Project Name :

New Project _1.prp

Project downloaded successfully

Project Downloading

Connected

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

Start   OK

4. When the program has been read from panel, click **OK**.

5. You will be taken back to the **Project Information** Screen. Notice that the project name entered now appears under **Project Name** in this screen.

Project Setup

6. Under **Start Editing Screen**, the **Name** and **Number** of Screen number 1 will appear. If you want to begin editing another screen, click on the down arrow next to Name or Number and select.

7. Click on the **OK** button to begin editing. You will go to the PowerPanel Main Programming Screen. You are now ready to edit the selected screen.

Edit Program ON-LINE

The third choice available is to make changes to the project online. Click on the button labeled, **Edit Program ON-LINE**. The changes are effective each time Save Screen or Save Project is selected, reducing no downtime. Click on **Save Screen** or **Save Project** and the changes will appear on the panel screen immediately. This is recommended when you need to make changes quickly to an existing user program without shutting down the system.

1. From the **Project Information** screen, click on the button labeled, **Edit Program ON-LINE**. The **Panel Type**, **PLC Type**, and **Firmware Revision** of the panel will soon display.

2. Under **Start Editing Screen**, screen **Number** 1 will appear with that screen's **Name**. If you want to begin editing a screen other than Number 1, click on the down arrow next to the **Number** field or the down arrow next to the **Name** field to select the screen you want to edit.

3. Click on **OK**. The screen you have selected will open on the main programming screen for you to make changes.

4. Click on **Save Screen** to download changes to the screen immediately. Click on **Save Project** to transfer all changes, including project attributes and databases. They will be immediately downloaded to the PowerPanel.

Project Setup

A QUICK REVIEW for "ENTER PROJECT INFORMATION"

```
┌─ ENTER PROJECT INFORMATION ──────────────────────────────┐
│  Project Location :                                       │
│  [C:\Program Files\PowerPanel\Project\        ]  [Browse...]│
│  Project Name :                                           │
│  [Demo Project 1.prp        ▼]                            │
│  ┌─ Start Editing Screen ─────────────────────────────┐  │
│  │  Number [1 ▼]   Name  [Numeric Entry Screen      ▼]│  │
│  └────────────────────────────────────────────────────┘  │
│                                                           │
│  Panel Type  [8" Color - 640x480            ▼]  Firmware  │
│                                                 Revision [    ]│
│  PLC Type    [Allen-Bradley SLC 500 DF1(Full Duplex) ▼] [View/Edit PLC Com Setup]│
│  and Protocol                                             │
│  Think-n-Do  [                              ▼] [Browse...]│
│  Map file                                                 │
└───────────────────────────────────────────────────────────┘
```

Under **ENTER PROJECT INFORMATION** you will perform all or some of the following actions (depending upon the working mode you have selected):

1. **Project Location** will default to the directory where the PowerPanel Software program is stored. If your project resides in another location, click on the **Browse** button to navigate to a different directory and folder.

2. Under **Project Name**, click on the down arrow to view saved projects or enter the new project name.

Click on the Help Button at anytime for help.

Click on Clear to clear your entries and start over.

Click on Exit to quit without saving your selections, or click on OK to save and begin editing.

3. **Start Editing Screen** allows you to select the screen that you want to begin editing. To have the project open to the screen you wish to edit, click on the down arrow to select the **Name** or the **Number** of the screen. If it is a new project, the screen will default to screen 1 with **New Screen** in the Name field. Replace this with whatever name you wish or wait until later and rename.

4. The next field, **Panel Type**, allows you to select, or change, your PowerPanel type. Choose from the following available types:

   6" Mono - 320 x 240
   6" Color - 320 x 240
   8" Color - 640 x 480
   10" Color - 640 x 480

   If you are connected to the panel (editing project on-line), the **Firmware Revision** of the PowerPanel's internal software will be displayed.

Project Setup

Project Setup

5. **PLC Type and Protocol** allows you to further define your project by selecting the PLC used in your application and the protocol it uses. Click on the down arrow for a list of the available PLC types.

6. Click on the **View/Edit PLC COM Setup** button to display the PLC Attributes. The attributes screen particular to the PLC and Protocol type you have selected will appear. You may change attributes from this screen.

7. If you are using a **Think-N-Do Map File**, click on the Browse button to go to the directory or folder where the map file resides.

    The map file is simply a text delimited file that resides in any Think-N-Do project. The PowerPanel Programming Software is set up to pull tag names from your Think-N-Do project. This frees the user from having to remember these tag names.

    The map file will load into the project's **Tag Database**. **Tag Database Log View** will open if there are problems. You may correct any problems from within the Think-N-Do map file or the Tag Database.

    Once you click on **OK**, the project will open to the screen you have selected and you may begin creating or editing your project!
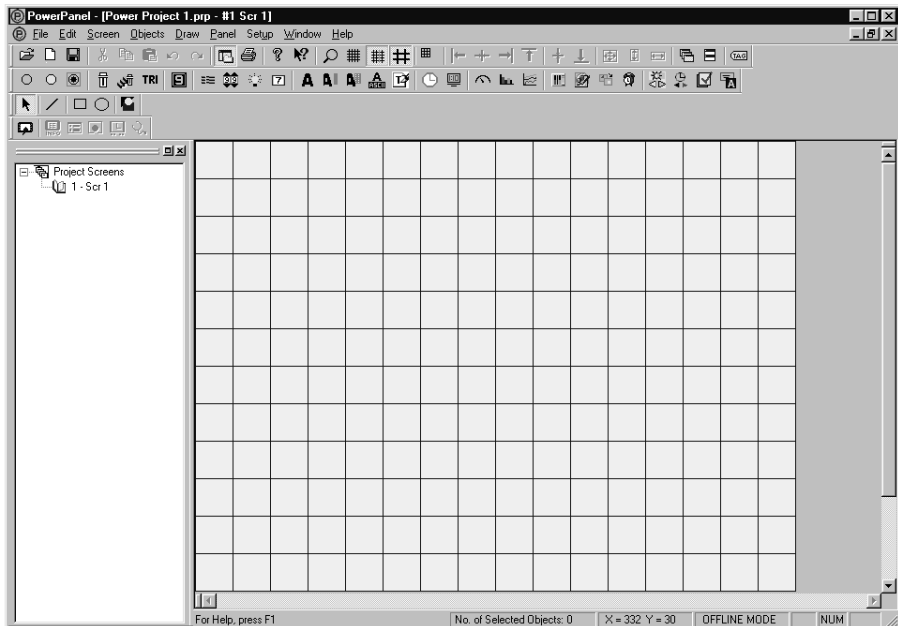
Step *2* *Design Your Screens*

Your project information has been entered and you are now ready to begin designing your screens. Remember that you can go back to step one and change project information, if necessary. Just click on the 1 button on the 3 Easy Steps Navigation Tool Bar, shown to the left. (This toolbar does not display by default. To have it display on your main programming screen as shown below, click on Edit > Toolbars > 3 Easy Steps. *For more information on the Main Programming Screen, see page 108.*

Right click here in the Project Screens Explorer View window and this menu will appear.

New Screen...
Open Screen...
Rename Screen...
Delete Screen...

1. Right click anywhere in the Project Screens Explorer View window (shown above on the left hand side) and a popup menu will appear. Click on New Screen (or you may click on the **2** button, **Design Your Screens,** on the right hand side) and the following screen will appear.

Open New Screen

Number   Title

Screen List

1 - Numeric Entry Screen

Open   Cancel   Help

Project Setup

2. Double click on one of the screens in the **Screen List** to open it, or enter a new screen number and name and click on the **Open** button.

3. Right click the mouse at any time while designing your screens to access the following menu.

```
Cut Objects
Copy Objects
Paste Objects

Select All

Insert Screen
Open Screen
Rename Screen

Display Grid
Snap to Grid
Grid Size

✓ Show Touch Cells

Screen Description
Background Color
```
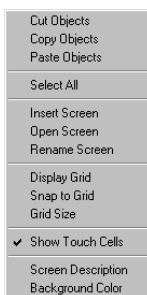
Some of the screen design features available to you are:

*   Program labels in up to 9 languages
*   Popup Keypad that allows you to enter data
*   Vector-based graphics for easy sizing, displayed in up to 128 colors
*   Graphical trending
*   PID loop tune face plates
*   Recipe download
*   Thumbwheel interface
*   Radio buttons
*   Analog clocks
*   Meters, switches and lamps
*   Symbol Factory® library of over 3,000 factory objects

4. You are now ready to begin configuring objects.

Step *3*   *Write Your Program to Panel*

3 Easy Steps

1 Setup Your Project Information

2 Design Your Screens

☞ **3** Write Your Program to Panel

Click on button for **Step 3, Write Your Program to Panel**. Check to ensure that **"Use PC Port"** matches the port that is connected to your panel and click on the **Start** button. Read the information below to learn more about the "**Write Program to Panel**" screen.

Before Panel Write....

Project Information: Provides information about the current project you are about to transfer to the panel.

Panel to PLC Link will display "Not Connected" until download is completed.

DON'T LOSE AN EXISTING PROGRAM! If you're not sure of the changes you have made, save the existing program to a different project name from the one you are about to transfer to the panel before you click on the Start button.

Press the Start Button, the program will be transferred to the panel.

Write Program To Panel ☒

Project Information
Project Title | C:\Program Files\PowerPanel\Project\Demo Project 1.prp
Panel Type | 8" Color - 640x480
PLC Type and Protocol | Allen-Bradley SLC 500 DF1(Full Duplex)

Panel Information
Total Memory | | Bytes | Firmware Revision
Free Memory | | Bytes

Panel to PLC Link
● Not Connected

Press START to write program to panel

CAUTION
Pressing Start will OVERWRITE program already in the panel. If you do not want to lose program in the panel, press Cancel, and first Read program from Panel and save it on your PC.

Use PC Port
COM1

Start | Cancel

Panel Write Completed....

If the panel is connected to a PLC, the Panel to PLC Link will display a green dot next to the "Connected" message to indicate that a link is established.

Panel Information will display the Total and Free Memory in Bytes. (Most models allow you to increase memory by adding another RAM card.) It will also display the Firmware Revision number — the revision of the PowerPanel internal firmware.

Write Program To Panel ☒

Project Information
Project Title | C:\Program Files\PowerPanel\Project\Demo Project 1.prp
Panel Type | 8" Color - 640x480
PLC Type and Protocol | Allen-Bradley SLC 500 DF1(Full Duplex)

Panel Information
Total Memory | 524288 | Bytes | Firmware Revision
Free Memory | 433104 | Bytes | A.3

Panel to PLC Link
● Connected

Operation Complete - Project Written to the Panel!

CAUTION
Pressing Start will OVERWRITE program already in the panel. If you do not want to lose program in the panel, press Cancel, and first Read program from Panel and save it on your PC.

Use PC Port
COM1

Start | OK

Project Setup

35

The PowerPanel is shipped with a bitmap program installed. The image shown above will display on the PowerPanel screen upon initial power-up. The first project you transfer to the panel will replace this bitmap program!

4

Objects

In this chapter you will be shown how to create....
- — Buttons
- — Indicator Buttons
- — Radio Buttons
- — Switches
- — Step Switch
- — Tri-state Switch
- — Recipe
- — Thumbwheel
- — Indicator Lights
- — Numeric Display
- — Text
- — Clock
- — Meter
- — Bar Graphs
- — Line Graph
- — PID Face Plate
- — Dynamic Bitmap
- — Change Screen
- — Alarm History
- — System Objects

Objects Menu

Objects
- Buttons...
- Indicator Buttons
- Radio Buttons...

- Switches...
- Step Switch...
- Tri-state Switch...

- Numeric Entry...
- Recipe...
- Thumbwheel...

- Indicator Lights...
- Numeric Display...
- Text ▶
- Clock ▶

- Meter...
- Bar Graphs...
- Line Graph...
- PID Face Plate...
- Dynamic Bitmap...

- Change Screen
- Alarm History

- System Objects ▶

In PLC-based control, the PLC performs the following control sequence continuously: reads inputs, solves control logic (ladder logic), writes values, and sets/resets outputs. The state of inputs and outputs is kept as bits in a data table. The data table is typically organized in words, with each word having 16 bits. Data values, such as parts count, are also kept as words in the data table.

The PowerPanel provides direct access to the bits and words of the PLC data table, without going through I/O modules. The panel provides this access through its tags. The PowerPanel has tags that are mapped to the PLC data table. The mapping between panel tags and PLC data tables is user-defined through a simple dialog box. PowerPanel objects allow you to set/reset bits and to read/write from the PLC data table through the panel tags.

For example, when a panel button object is pressed, it sets a panel tag. The panel transfers the state of this tag to the mapped bit in the PLC data table. Similarly, the PLC may set an output bit that turns on a pilot light on the panel.

> ***Please Note: Panel Tags may be internal (not mapped to the PLC) or external (mapped to the PLC).***

Panel Tags may be:
- Discrete
- 16-bit (Signed/Unsigned)
- 32-bit (Signed/Unsigned)
- 16-bit BCD
- 32-bit BCD
- 32-bit Floating Point
- ASCII String

Objects (side tab)
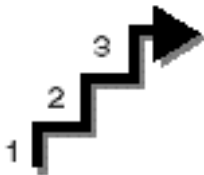
IMPORTANT! To learn all the steps to configuring an object, read the instructions for the first object, Button Object, in its entirety. It will take you through each step in detail, explaining all the variables and choices. Because the objects share many common features, they are not repeated for each object. Any features that are unique to a particular object are explained in its own section. We recommend that you try out the tutorial, beginning on page 11, to learn the steps involved in creating a PowerPanel project.

MAN-UTICW-M

Objects

Buttons...
Indicator Buttons
Radio Buttons...

Switches...
Step Switch...
Tri-state Switch...

Numeric Entry...
Recipe...
Thumbwheel...

Indicator Lights...
Numeric Display...
Text ▸
Clock ▸

Meter...
Bar Graphs...
Line Graph...
PID Face Plate...
Dynamic Bitmap...

Change Screen
Alarm History

System Objects ▸

The **Objects** menu allows you to choose from several predefined objects. Objects provide generic panel functions. The objects can be accessed from both the Object Tool Bar and the Objects Menu.

All of the objects in this menu have user-defined frame types, line and fill colors, and text. To configure an object, click on the object icon on the object tool bar or on the object name in the menu drop down list with your mouse.

Configure an object by selecting it from the OBJECT MENU or OBJECT TOOL BAR

- ○ Button
- ○ Indicator Button
- ◉ Radio Button
- Switches
- Step Switch
- TRI Tri-State Switch
- Numeric Entry
- Recipe
- Thumbwheel
- Indicator Light
- 7 Numeric Display
- A Static Text
- Triggered Text
- Lookup Text
- Dynamic Text

- Text Entry
- Analog Clock
- Digital Clock
- Meter
- Bar Graph
- Line Graph
- PID Face Plate
- Dynamic Bitmap
- Change Screen
- Alarm History
- Adjust Contrast
- Increment/Decrement Hour
- Activate Screen Saver
- Select Language

Objects

Button Object

Pressing a **Button** object allows you to WRITE to a Tag. It can be displayed in a variety of colors, sizes and shapes and has a simulation option (allowing you to see how it will look when pressed). You may select from 5 types of button states: Momentary ON, Momentary OFF, Set ON, Set OFF and TOGGLE.
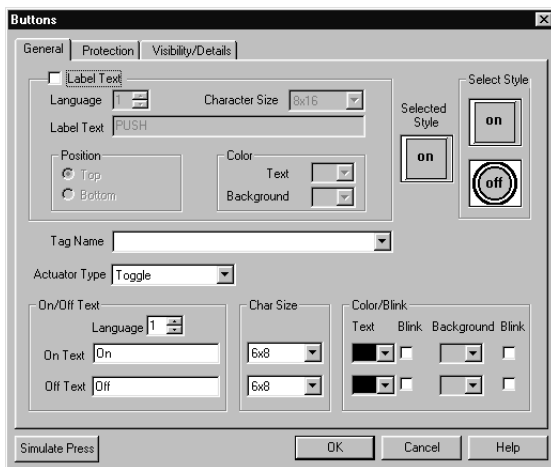
Choose from 128 Colors!
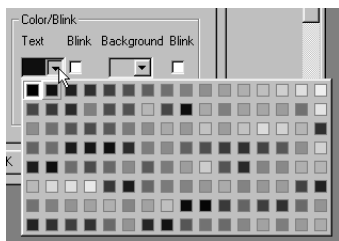
Click on the down arrow next to the default color block for text or background to view the color palette. Move the cursor over your choice and simply click to select.

To put a Label on a Button, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose a Button Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Objects
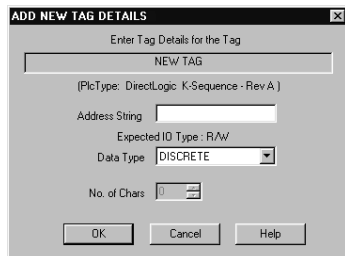
For more information about Tags, see Tag Database, page 133.

PLEASE NOTE: If your panel is connected to multiple PLCs, use the Station Number to address a specific PLC. For example: 2–V2002 would address the PLC Station Number 2.

Hello...
Hola...
Guten Tag...

For each object, you may program the text to display in up to 9 Languages! (See Language section on page 153.)

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the button to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will map the tag. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The Edit Tag Details screen will appear.

Select from the following Actuator Types:
Actuator Type determines how the tag will be controlled. *NOTE: If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature is disabled with this actuator type.*

- **Momentary On** will turn the tag on for as long as you touch the button. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the button. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the button is pressed.

Enter On/Off Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the **On/Off Text**.
2. Type in what you want to appear within the button for the **On Text** and for the **Off Text** (i.e., you might want to place the words STOP and RUN inside the buttons, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Objects

*Grab a handle with
your mouse*

Place Button on the screen and size it.
- To size the button, grab a handle and drag it to the size you want.
- To move the button, select it, click and hold left mouse button and drag it to the area of the screen where you want it to appear.

Simulate Press

To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Click on the Simulate Press button to see how the button object will display on the screen when pressed.

Click on the Protection Tab

Protection Tab

The following touch objects allow you to enable protection and assign passwords to allow a group or individual (user-defined) to have access to that object:

> *Buttons*
> *Indicator Buttons*
> *Switches*
> *Step Switches*
> *Tri-State Switches*
> *Numeric Entry*
> *Recipe*
> *Thumbwheel*
> *Text Entry*
> *Change Screen*
> *Alarm History*
> *Increment/Decrement Hour*
> *Activate Screen Saver*
> *Adjust Contrast*
> *Select Language*

IMPORTANT!

Password Protection is not intended to work with objects when the actuator type selected is Momentary On and Momentary Off.
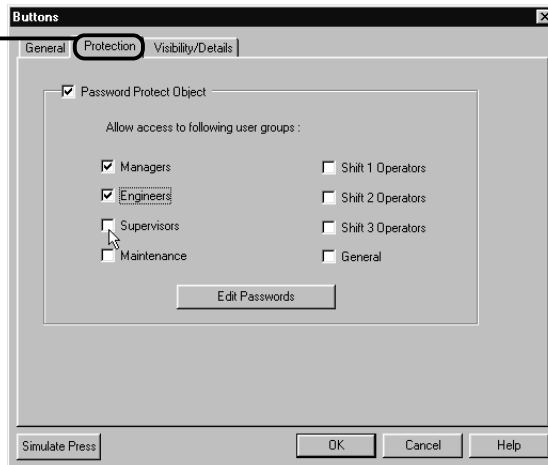
The **Password Protect Object** feature allows you to prevent unauthorized users from accessing certain objects and their functions. With Protection enabled, when the operator presses the object on the panel screen, a keypad will appear prompting the operator to enter the password. This feature is useful when several people will be using the PowerPanel to perform different tasks, such as, changing initial values, or monitoring system status. To enable password protection for the object, click in the box in front of the groups you wish to allow access.

Edit Passwords

There are eight groups that you may assign Passwords to. Passwords allow you to implement restrictions on who can use the password protected objects (e.g., to make system or internal panel adjustments, enter text or values, or control a machine function in your application). Click on the **Edit Passwords** button to setup or change the passwords.

Objects

MAN-UTICW-M

GROUP
(You may change the Group names to suit your application.)

- ✔ Managers
- ✔ Engineers
- ✔ Supervisors
- ✔ Maintenance
- ✔ Shift 1 Operator
- ✔ Shift 2 Operator
- ✔ Shift 3 Operator
- ✔ General

Please NOTE: If you enter a password with leading zeroes, e.g., 00003 or 00533, the leading zeroes will be ignored!

A keypad similar to the one shown below will appear on the panel when a protected objected is pressed, prompting the operator to enter the password.

Password/Tag
Select whether or not you want your password to be stored in the PowerPanel or in the PLC. If you choose Password, it will be stored in the panel. If you choose Tag, it will be stored in the PLC.

PASSWORD
A 1–10 digit number (numeric only) is assigned here that the user must enter to perform protected functions for a particular Group. You will not be allowed to enter a password if you select Tag in the second column. *Do not enter leading zeroes in a password. Leading zeroes are ignored. In other words, if you enter a password of 00456, your password will be 456.*

TAG
Tag names are assigned to PLC addresses that hold the passwords. This allows you to store the codes in your PLC. You will not be allowed to enter a **Tag** if you select **Password** in the second column.

Objects

Visibility/Details Tab

Click on the Visibility/Details Tab

Visibility

1. Check the box in front of **Visibility Tag** if you want to control when the object is visible on the screen. (If it is not checked the object will always be visible.)
2. Click on the down arrow next to the **Tag Name** box to view a list of the tags you have previously programmed or create a new one. Select the tag that links the object to the register bit that you want to control it.
3. Select whether you want the **Object Visible** when the bit is ON or OFF.

Details

1. Type in a name for the object in the space provided under **Object Name**. The name can be up to 40 characters long.
2. Type in a description of the object in the space provided under **Object Description**. An Object Description can be up to 400 characters long.

Objects

MAN-UTICW-M

Indicator Button Object

An **Indicator Button** combines a regular button with an indicator light. It allows you to perform a WRITE operation to one bit and a READ operation from a second discrete location. The state of that READ location determines whether the button is displayed in the ON or OFF mode. You may choose to make the READ and WRITE location the same.
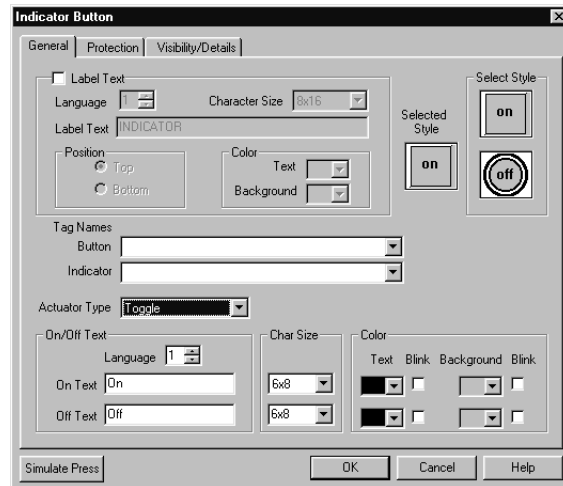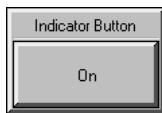
To put a Label on an Indicator Button, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose an Indicator Button Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Indicator button and the Indicator to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The Edit Tag Details screen will appear.

Objects

Select from the following Actuator Types:
Actuator Type determines how the tag will be controlled. *If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature will not be enabled.*

- **Momentary On** will turn the tag on for as long as you touch the button. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the button. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the button is pressed.

Enter On/Off Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the button for the On Text and for the Off Text (i.e., you might want to place the words **STOP** and **RUN** inside the buttons, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Indicator Button on the screen and size it.
- To size the Indicator button, select it, grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag it to where you want it to appear on the screen.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to one side to see the object on the programming screen.) Click on the **Simulate Press** button to see how the button object will display on the screen when pressed.

Objects

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MAN-UTICW-M
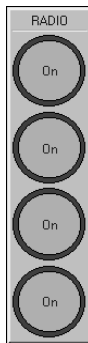
Radio Buttons

The **Radio Button** object has a maximum of 8 buttons, however, only one can be ON at any given time. When a button is pressed it releases any button that may be ON, and becomes the active button. Each button controls a bit and is assigned an area of the touchscreen. Radio buttons can have from 2 to 8 buttons. (Please note that no more that 6 vertical buttons can be used for 6-inch panels.)
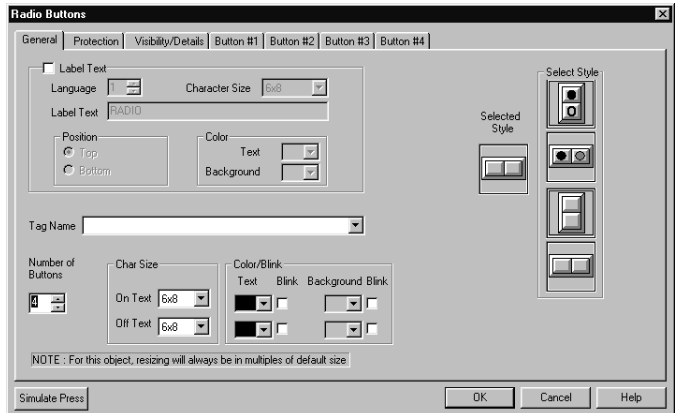
To put a Label on a Radio Button, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose a Radio Button Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want to button to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Objects

Please Note: This object can use a signed or unsigned Data Type. Button 1 = Bit 0 in assigned tag. Button 8 = Bit 7 in assigned tag. Bit 9 to 15, not used.

Select Number of Buttons:

1. Click on the UP or DOWN arrow to select the number of radio buttons. You may choose from 2 to 8 buttons. (You may only have 6 buttons for 6-inch panels.)

Enter On/Off Text:

Text size and color are programmed under the General Tab. These characteristics will be implemented for all of the inside button text.

1. Select the **Character Size** for the On Text and the Off Text.
2. Choose the **Color** of the **Text** by clicking on the arrow button to view the color palette. Move the cursor over the color you want and click to select.
3. Select whether or not the Text will **Blink**.
4. Next, select the **Background Color** of the button and whether or not it will **Blink**.
5. Each Radio Button (from 2 to 8) may contain different text and a different language. Click on the **Button #1** tab.
6. Choose the **Language** number (1–9) and type in the text as you want it to appear within that button when ON and when OFF (i.e., you might want to place the words **STOP** and **RUN** inside the buttons, instead of Off and On).

Click on the Button #1 Tab to edit Language and On/Off Text.
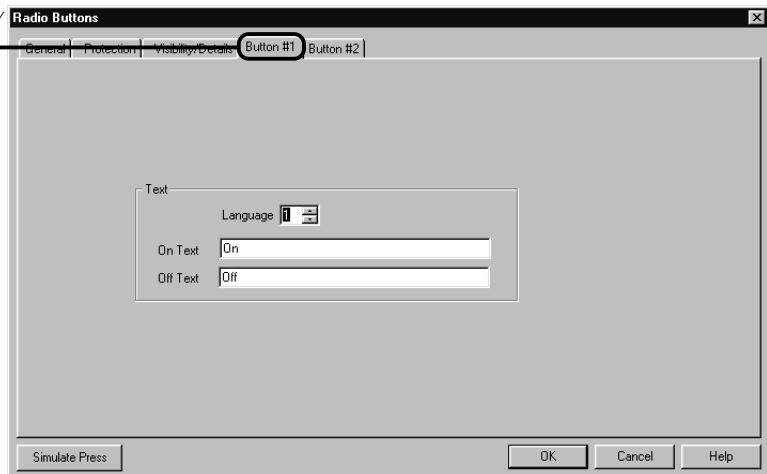
Remember that the other universal characteristics for the button text and background have been chosen under the General Tab (character size, color, etc.).

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Radio Button on the screen and size it.
- To size the button, select it, grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Select the tab of the button you want to simulate. Click on the **Simulate Press** button to see how the button object will display on the screen when pressed.

Objects
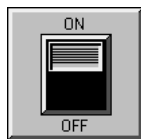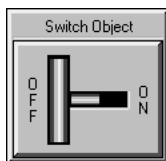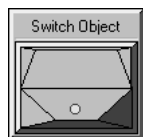
Switch Object

There are several types of **Switch** objects that you may place on the PowerPanel screen. They simulate mechanical switches of the same type, e.g.; Throw Switch, Selector Switch, Slide Switch, Toggle Switch, etc.
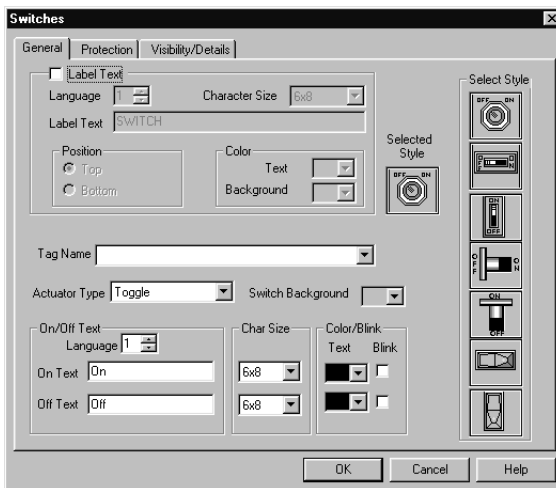
To put a Label on a Switch, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose a Switch Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the switch object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the switch to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

*NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.*

Objects

Select the **Switch Background** color by clicking on the DOWN arrow and selecting a color from the palette.

Select from the following Actuator Types:
Actuator Type determines how the tag will be controlled. ***If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature will not be enabled with this actuator type.***
- **Momentary On** will turn the tag on for as long as you touch the switch. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the switch. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the switch is pressed.

Enter On/Off Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.
1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the switch for the On Text and for the Off Text (i.e., you might want to place the words **STOP** and **RUN** inside the switches, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **On Text** and the **Color** of the **Off Text**.
5. If you want the **Text** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Switch on the screen and size it.
- To size a switch, click on it to select, grab a handle with the mouse and drag to the size you want.
- To move the switch, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

Objects

Step Switch Object

The **Step Switch** object simulates a Mechanical Step Switch on the PowerPanel. It allows you to simultaneously monitor and control two, three, or four different bits and display ON and OFF text for each bit. Each time the Step Switch is pressed, each bit will be cycled one at a time from OFF to ON with only one bit ON at a time.
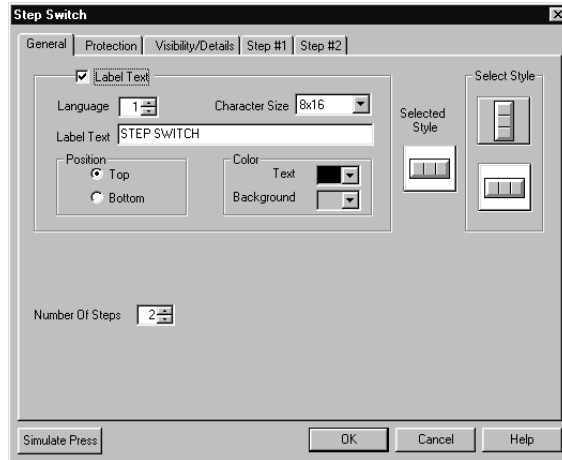
To put a Label on a Switch, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose a Step Switch Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Choose the **Number of Steps** (from 1 to 4) in the process or application that you want your switch to control. Enter the number of steps or click on the up/down arrows to select.

Step #1 Tab
1. Click on **Step #1** tab.
2. Enter **Tag Name** for Step #1.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.
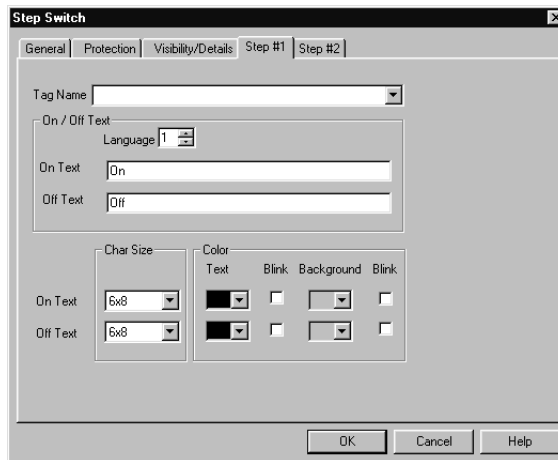
3. Select **Language** (1 to 9) for **On/Off Text** and then enter the **On Text** and **Off Text** that you want to appear within Step Switch #1.
4. Select **Character Size**, **Color** of **Text** and **Background** and whether or not, Text and/or Background will **Blink**.
5. Repeat for **Step #2**, **Step #3** and **Step #4**, if necessary.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Step Switch on the screen and size it.
- To size the switch, grab a handle and drag.
- To move the switch, select it, click and hold left mouse button and drag.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Select the tab of the Step you want to simulate (if on **General** tab, will simulate Step 1 only). Click on the **Simulate Press** button to see how the switch object will display on the screen when pressed.

Objects

Tri-State Switch Object

The **Tri-State Switch** object controls two bits at a time from two different tags. It consists of three buttons. If the first button is pressed, both the bits are OFF. If the second button is pressed, the first bit is ON and second bit is OFF. If third button is pressed, the first bit is OFF and second bit is ON.
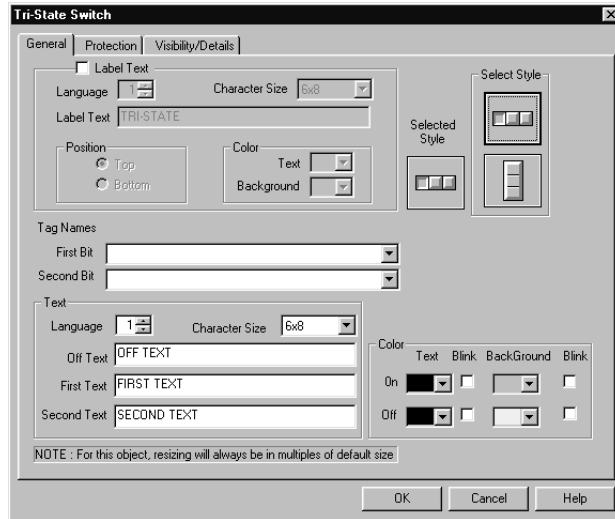
PLEASE NOTE:
The Tri-State switch object is always snapped to a touch cell to ensure that it operates properly on the panel screen. If you select the vertical style, you will notice that a label is not available (grayed out).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

To put a Label on a Switch, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose a Tri-State Switch Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Tag Names
Click on the down arrow to select or enter new **Tag Names** for the **First Bit** and for the **Second Bit**. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Text
Here you will enter the **Text** that will appear within the object, and control how that text will appear.
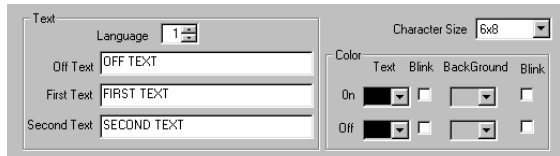
1. Select the **Language** number for the **Off**, **First** (bit) and **Second** (bit) Text.
2. Type in what you want to appear within the button for the Off Text, First Text and for the Second Text.
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**. If you want the Text or the Background to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection *(see Button Object.)*

Visibility/Details *(see Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Tri-State Switch on the screen and size it.
- To size the switch, grab a handle and drag it to size you want.
- To move the switch, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

Numeric Entry Object

The **Numeric Entry** object allows you to write a value to a PLC register. A numeric keypad will pop up when the Numeric Entry object is pressed on the PowerPanel screen. When you select a **Tag Name**, you will be selecting the PLC location where you want the keypad accumulator data to go. In other words, the value the operator enters on the keypad will be written to the PLC location.
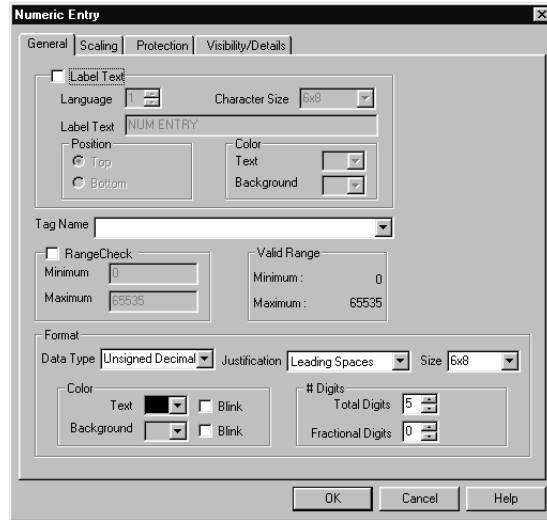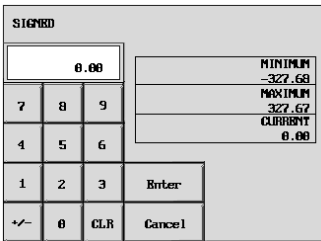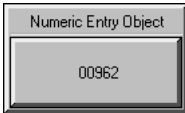
To put a Label on the Numeric Entry object, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the object to correspond to.
2. If the **Tag Name** is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Objects

To Enter Range Check , perform the following steps:

1. Under **Range Check**, set the minimum and maximum set points. Click on **Minimum**, the low end point, and enter a value. The operator will not be allowed to enter a value lower than the value in this field.
2. Click on **Maximum**, the high end point, and enter a value. The operator will not be allowed to enter a value higher than the value in this field. (Valid Range is shown in the next window.)
3. The **Valid Range** is shown. Your minimum and maximum set points must be within these limits.

To Select the Format of the Numeric Entry Keypad, perform the following steps:

The **Data Type** is dependent upon the Tag data type. In turn, the Tag data type is dependent upon the type of PLC you are using. Therefore, your selections next to Data Type in this object will be limited by your Tag and PLC data type. PowerPanel Programming Software will automatically limit your selections based on the PLC and Tag address format. The program will also let you know if you have entered an invalid data type.

SIGNED DATA TAG: SIGNED Keypad only
UNSIGNED DATA TAG: UNSIGNED, OCTAL, HEX Keypad
BCD DATA TAG: BCD Keypad only
FLOATING POINT TAG
(if available for that PLC):   FLOATING POINT Keypad only

The **Data Types**, and their respective ranges, that may be available, are as follows:

Signed 16 Decimal:	-32768 to +32767
Signed 32 Decimal:	-2147483648 to +2147483647
Unsigned 16 Decimal:	0 to 65535
Unsigned 32 Decimal:	0 to 4294967295
Octal 16:	0 to 177777
Octal 32:	0 to 37777777777
Hex 16:	0 to FFFF
Hex 32:	0 to FFFFFFFF
BCD 16:	0 to 9999
BCD 32:	0 to 99999999

Objects

1. Click on **Data Type** and select from the available choices.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.
3. Click on **Size** and select from the available character sizes. (Click on down arrow to view list of sizes.)
4. Under **Color**, click on down arrow to view the color palette for **Text**. Click on any color to select.
5. Click on the box in front of **Blink** if you want your text characters to blink.
6. Select color for **Background** and whether or not you want it to **Blink**.
7. Click on **Total Digits** under **# Digits**. The PowerPanel will display the minimum value and the maximum number inside the keypad. Here you will select how many digits, from 1 to 10 (depending on the data type and tag value type chosen), that you want to display.
8. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under **Total Digits** and 1 under **Fractional Digits**.

This is an example of a SIGNED DECIMAL Popup Keypad as it will display on your PowerPanel Screen.

If you enter an invalid value, press the Clear (CLR) button and reenter.

Objects

Scaling Tab

Click on the Scaling tab if you want the Display Value to be different than the PLC Value.

Under the **Numeric Entry** object **Scaling** tab, you can scale the entered value from the numeric entry object to another value in the PLC. Enter the **Minimum (Point 1)** and **Maximum (Point 2) PLC Values. The Display Value Point 1** MUST match the **Range Check Minimum** and **Point 2** must match the **Range Check Maximum**.

(An example of SCALING is provided on the dialog box, above.)

Protection *(see Button Object.)*

Visibility/Details *(see Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Object on the screen and size it.
- To size the Numeric Entry object, grab a handle and drag.
- To move the object, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects
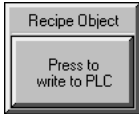
Recipe Object

The **Recipe** object allows you to write preset values of up to 20 Tags to the PLC to change the process. Thus, this feature can be used to download "recipes" to the PLC.
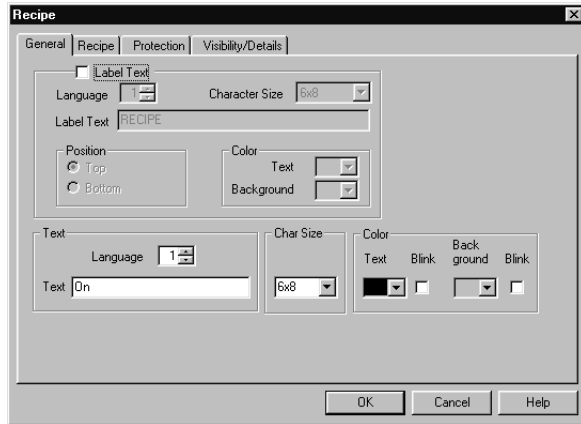
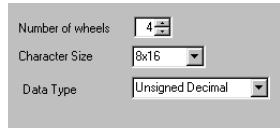**To put a Label on the Recipe object button, perform the following steps:**

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter Text:

Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the Text.
2. Type in what you want to appear within the button.
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Objects

Enter Tag Name and Register Values:

Pressing the **Recipe** button allows you to write values to several locations at once. The screen shown above is where you will enter the values to be written to the PLC location.

1. Click on the **Recipe Tab**.
2. Under **Tag Name**, click on the down arrow to view list of available tags (or enter a new name). Select the tag you wish to use.
3. Select the Data Type that the panel will use to write the values under **Display Format**. Select from the available choices (i.e., Unsigned Decimal, Signed Decimal, Octal or Hex.)
4. Type in the **Value** you want written to the register.
5. Repeat for the second entry with the value you want written to in the next register. You may continue writing values for up to 20 Tags (locations). *Note: If a Discrete tag is chosen, enter a 0 for OFF or a 1 for ON.*

Protection *(see Button Object.)*

Visibility/Details *(see Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Recipe object button on the screen and size it.
- To size the object, grab a handle and drag.
- To move the object, select it, click and hold left mouse button while dragging the object to where you want it placed on the screen.

Objects

Thumbwheel Object

The function of this object is similar to Numeric Entry Button. The **Thumbwheel** object allows you to display a Thumbwheel keypad on the panel. This button can be 1 to 5 digits. Using the popup thumbwheel, the operator can change each digit separately. The operator presses the UP or DOWN arrow to increment or decrement the value of each digit. Press the enter button to write that value to the defined tag. This allows the operator to assign a value to a specific PLC register.
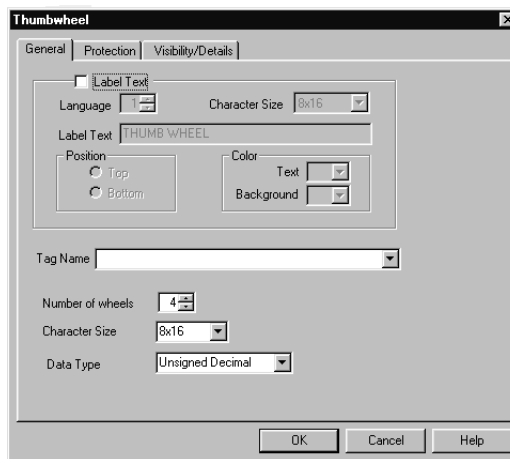
To put a Label on the Thumbwheel object button, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the object to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Note: UNSIGNED_INT_16 and BCD_INT_16 are the only available choices.

Select Thumbwheel Format:

Number of wheels	4
Character Size	8x16
Data Type	Unsigned Decimal

1. Select the **Number of Wheels** (from 1 to 5) for the object. *You will only be able to use 4 digits (wheels) when using BCD or Hex data formats.*
2. Choose the size of the numbers (**Character Size**) that will appear within the thumbwheels.
3. Select the **Data Type** of the numbers from the available selections.

Protection *(see Button Object.)*

Visibility/Details *(see Button Object.)*

OK/Cancel/Help Buttons
*   Click on **OK** button to save your selections and exit the dialog box.
*   Click on **Cancel** button to exit the dialog box without saving your selections.
*   Click on **Help** button to go to the Help Topic for that dialog box.

Place Thumbwheel object button on the screen and size it.
*   To size object, grab a handle and drag the object to the size that you want.
*   To move the object, select it, click and hold left mouse while dragging to where you want it to appear on the screen.

Objects

Indicator Light Object

An **Indicator Light** object allows you to monitor and display the state of a bit. The Indicator Light reads the bit information and produces the appropriate display. For example, the Indictor Light could display the status of a bit linked to a push button.
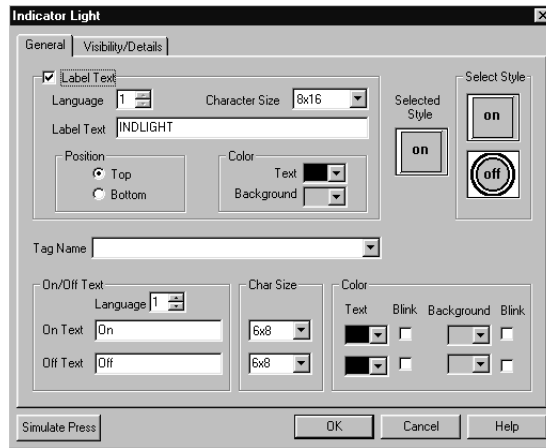
To put a Label on the Indicator Light object, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose an Indicator Light Style, perform the following steps:
1. Under **Select Style**, click on the style you prefer for the indicator light object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Indicator Light to monitor.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Objects

Enter On/Off Text:

Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the Indicator Light object for the On Text and for the Off Text (i.e., you might want to place the words **STOPPED** and **RUNNING** inside the Indicator light, instead of Off and On).
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.
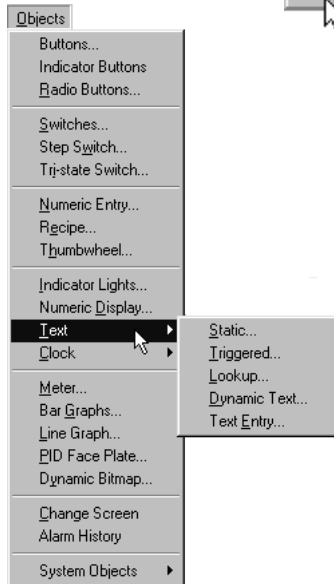
Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.
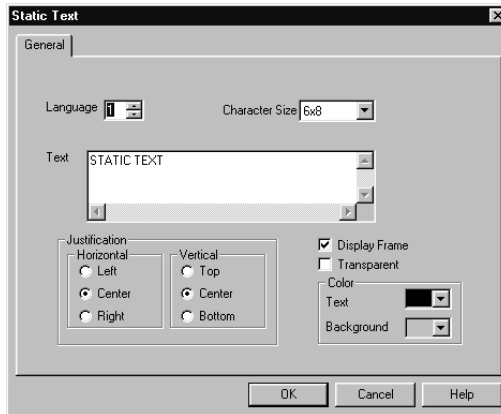
Place Indicator Light object on the screen and size it.

- To size it grab a handle and drag it to the size that you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Simulate Press

To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Click on the **Simulate Press** button to see how the Indicator Light object will display on the screen when pressed.

Objects

Numeric Display Object

The **Numeric Display** object allows you to display a Tag value within a frame on the screen.

Demo Numeric Display

0000

Numeric Display

General | Visibility/Details | Scaling

☐ Label Text

Language [1] Character Size [8x16]

Label Text [NUMDISP]

Position
○ Top
○ Bottom

Color
Text [ ]
Background [ ]

Tag Name [ ]

Format
Data Type [Signed Decimal] Justification [Leading Zeros] Size [6x8]

Color
Text [ ] ☐ Blink
Background [ ] ☐ Blink

Digits
Total Digits [1]
Fractional Digits [0]

OK | Cancel | Help
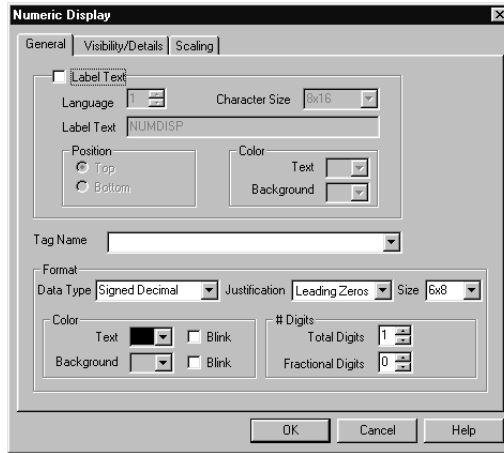
To put a Label on the Numeric Display object, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Numeric Display object to monitor.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Objects

Enter the Format of the Numeric Display:

The **Data Type** is dependent upon the Tag type. In turn, the Tag data type is dependent upon the type of PLC you are using. Therefore, your selections next to Data Type in this object will be limited by your Tag and PLC data type. PowerPanel Programming Software will automatically limit your selections based on the PLC and Tag address format.

The **Data Types**, and their respective ranges, that may be available, are as follows:

Signed 16 Decimal:	-32768 to +32767
Signed 32 Decimal:	-2147483648 to +2147483647
Unsigned 16 Decimal:	0 to 65535
Unsigned 32 Decimal:	0 to 4294967295
Octal 16:	0 to 177777
Octal 32:	0 to 37777777777
Hex 16:	0 to FFFF
Hex 32:	0 to FFFFFFFF
BCD 16:	0 to 9999
BCD 32:	0 to 99999999

1. Click on **Data Type** and select from the available choices.
2. Click on **Justification** and select from the following: Left Justify, Right Justify, or Leading Zeroes.
3. Click on **Size** and select from the available character sizes. (Click on down arrow to view list of sizes.)
4. Under **Color**, click on down arrow to view the color palette for **Text**. Click on any color to select.
5. Click on the box in front of **Blink** if you want your text characters to blink.
6. Select color for **Background** and whether or not you want it to **Blink**.
7. Click on **Total Digits** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type and Tag Type), that you want to display.
8. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.

Objects

Scaling Tab

Click on the Scaling tab if you want the Display Value to be different than the PLC Value.
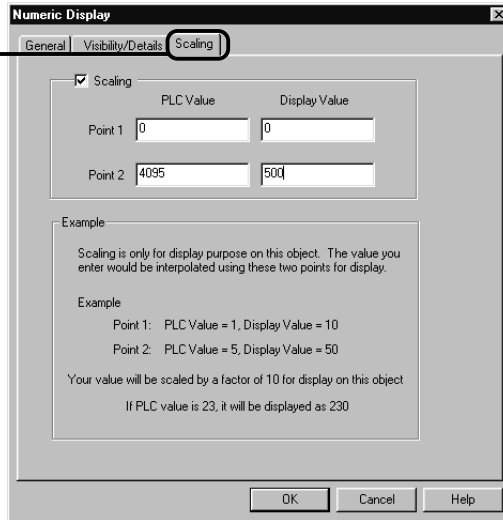
Under the **Scaling** tab, you can scale the value in the PLC to another value on the Numeric Display. Enter **Point 1 (Minimum Value)** and **Point 2 (Maximum) PLC Values**. Scale these values by entering the **Display Value Minimum** and **Maximum**.

For example, say the PLC values are an analog value of 0–4095, and represent a range of 0–500 PSI.
> Enter a PLC Value Minimum (Point 1) = 0 and a Display Value Minimum = 0 (PSI)
> Enter a PLC Value Maximum (Point 2) = 4095 and a Display Value Maximum = 500 (PSI)
> If the PLC Value is then = 1024, the Display Value will be 125.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Object on the screen and size it.
- To size the object, grab a handle and drag it to the size you want.
- To move the button, select it, click and hold left mouse button and drag to the area on the screen that you want it to appear.

Text Object

Objects
- Buttons...
- Indicator Buttons
- Radio Buttons...

- Switches...
- Step Switch...
- Tri-state Switch...

- Numeric Entry...
- Recipe...
- Thumbwheel...

- Indicator Lights...
- Numeric Display...
- Text ▸
- Clock ▸

- Meter...
- Bar Graphs...
- Line Graph...
- PID Face Plate...
- Dynamic Bitmap...

- Change Screen
- Alarm History

- System Objects ▸

Text submenu:
- Static...
- Triggered...
- Lookup...
- Dynamic Text...
- Text Entry...

Static Text

This object allows you to place text anywhere on the screen to provide information, screen description, etc. You can choose whether or not to display a frame around the text and whether or not you want it to be transparent.

Static Text dialog (General tab)

Language: 1
Character Size: 6x8
Text: STATIC TEXT

Justification
Horizontal: Left / Center / Right (Center selected)
Vertical: Top / Center / Bottom (Center selected)

☑ Display Frame
☐ Transparent
Color
Text
Background

OK   Cancel   Help

Under the General tab you will make the following selections:

1. Select a **Language** (1–9) that you want the text to display in.
2. Select a **Character Size** from those available (e.g., 6 x 8, 8 x 16, 8 x 32).
3. Type in the **Text** as you want it to display on the PowerPanel Panel screen. The text can be up to 500 characters and wraps within the frame.
4. Select **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) **Justification** for the text. Default for both is "Center".
5. If you want the text to appear within a frame, click on the box in front of **Display Frame** to enable. If you want to see through the text and/or frame to what lies underneath, click on the box in front of **Transparent**.
6. Select the Text and Background **Color** from the available choices. Default Text color is black and the default Background color is gray.

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Text Object on the screen and size it.

- To size the object, grab a handle and drag.
- To move the button, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

Objects

Triggered Text

The **Triggered Text** object monitors a bit to display different text strings for "ON" and "OFF" conditions. This would be used in applications where you want to provide a message or a description of the process or condition.
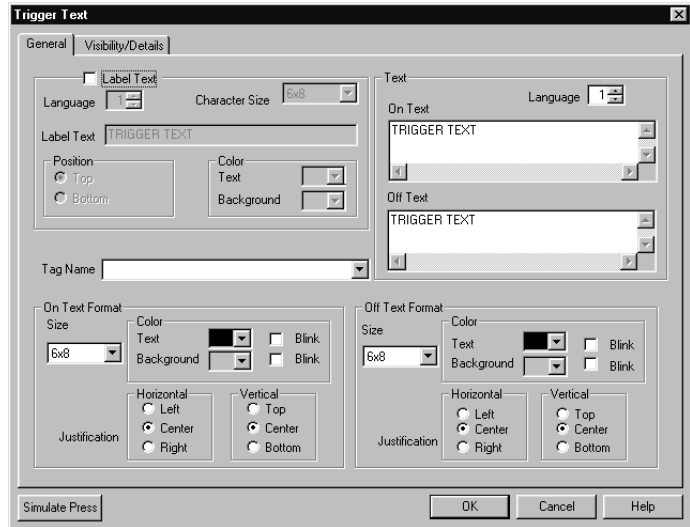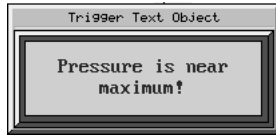
To put a Label on the Triggered Text object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter the Text you want to appear on the display when ON and when OFF:

1. Select the **Language** number for the On Text and the Off Text.
2. Type in what you want to appear within the frame for the On Text and for the Off Text (up to 500 characters).

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Trigger Text object to monitor.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Objects

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Make selections for On Text and Off Text Format:
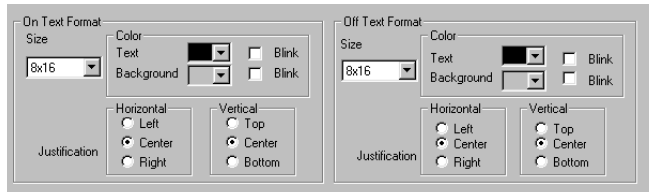
Under **On Text Format:**
1. Select **Size** from the available choices.
2. Select the **Color** of the **Text** and the **Color** of the **Background**.
3. If you want the Text or the Background to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.
4. Choose the Horizontal and Vertical **Justification** for the On Text. For **Horizontal** justification, click in front of one of the following: **Left**, **Center**, or **Right**. For **Vertical** Justification, click in front of **Top**, **Center**, or **Bottom**.

Under **Off Text Format**, repeat the steps above.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
• Click on **OK** button to save your selections and exit the dialog box.
• Click on **Cancel** button to exit the dialog box without saving your selections.
• Click on **Help** button to go to the Help Topic for that dialog box.

Place Text Object on the screen and size it.
• To size the object, select it, grab a handle and drag.
• To move the object, select it, click and hold left mouse button and drag it to where you want it to appear on the screen.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to one side to see the object on the programming screen.) Click on the **Simulate Press** button to see how the object will display on the screen when pressed.

Objects

Lookup Text

Lookup Text is an object that is created to display preprogrammed messages within a frame on the PowerPanel screen. These preprogrammed messages are stored in the "Message Database." It displays one message at a time. (Click on the Message Database button at the bottom of the dialog box to program messages in the database.)

A Value corresponding to the Tag Name is the Message Number that will be displayed inside the frame of the Lookup Text. Each message designed in the Message Database is numbered from 1 to 999. So, if the Value corresponding to the Tag Name is 10, Message Number 10 will be displayed within the Lookup Text Frame.

LOOK UP TEXT

Message displays here.
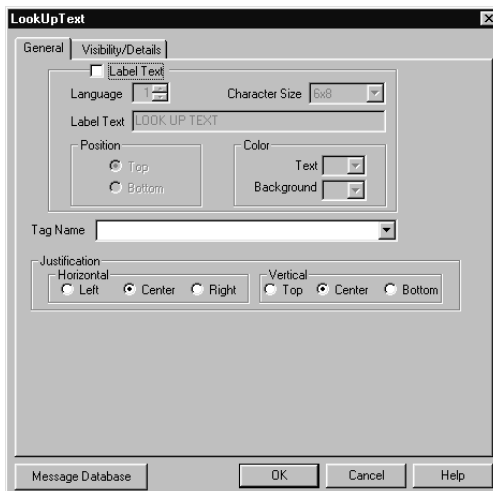
To put a Label on the Lookup Text object, perform the following steps:
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter a Tag Name:
1. Enter a **Tag Name**, or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name**

Objects

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Please Note: The value corresponding to the Tag Name tells which message number from the message database is to be displayed.

will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Messages are created using the Message Database. (*See page 143 for* **Message Database** *setup.*)

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Lookup Text object on the screen and size it.
- To size it grab a handle and drag.
- To move the object, select it, click and hold left mouse button and drag.

Message Database

Here you may create up to 999 messages (limited by available memory). Each message may be up to 200 characters and you can choose various message attributes such as, **Character Size**, **Text Color**, **Background Color**, **Blink** (for text and/or background), and **Language**. The Message Database is used by the **Lookup Text** object to display a message on the panel. Go to page 143 for instructions on how to create a Message.

Msg.#	Print	Char Size	Text Color	Blink	Bkg Color	Blink	Lang.#	Msg Text

Message Database — Total Number of Messages : 0   Current Editing Language : 1

Add   Delete   Help   OK   Cancel

Objects

Dynamic Text

The **Dynamic Text** object will allow you to display the characters from ASCII values stored in a Tag. The tag will read a block of registers in the PLC. Each 16-bit register in the PLC can contain 2 ASCII characters. The maximum number of PLC registers in the block is 20 (a maximum of 40 ASCII characters). This object allows you to place text anywhere on the screen to provide information. It is typically used for displaying part numbers, VIN numbers, or production numbers. Dynamic Text is triggered by a bit Tag in the PLC. You choose whether the Text is triggered by the bit when it is in the ON state or the OFF state. The **Dynamic Text** object will then display a text string that is programmed in the PLC.
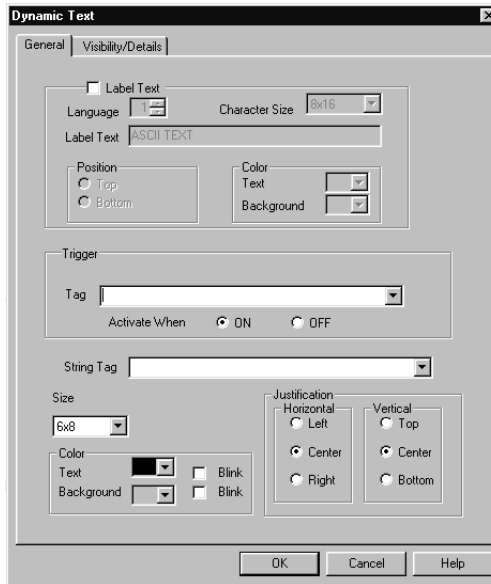
NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

To put a Label on the Dynamic Text object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Choose the Trigger Tag Name:
This Tag allows the PowerPanel to monitor a bit in the PLC and display text based on the ASCII values in a block of PLC registers.

1. Select the **Trigger** Tag Name by clicking on the down arrow to display the list or enter a Tag Name in the entry field. If the Tag Name is new, the **ADD NEW TAG DETAILS** dialog box will appear. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

2. Choose to **Activate** when **ON** or **Activate** when **OFF**. If you choose ON, the Text will display when the bit is ON. When the bit is OFF, the Text will disappear.

Choose the String Tag Name:
The **String** Tag is the **PLC register** location where the values are read and displayed in a character string. The string may be up to 40 characters long. The **Address String** is the beginning register for the text.

Choose the Tag Name by clicking on the down arrow to display the list of Tags or type in the Tag Name in the entry field. If the Tag Name is new, the **ADD NEW TAG DETAILS** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC (ASCII STRING is the only choice). Click on the **OK** button.

Please Note: For a list of ASCII Characters that the PowerPanelSupports, see Appendix B.

Select the Dynamic Text Characteristics:
1. Select the **Character Size** from the available choices.
2. Select the **Color** of the **Text** and **Background** and whether or not they will **Blink**.
3. Choose the **Justification** of the Text that is displayed within the frame. Choose both **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) justification for the Text within the frame.

**Visibility/Details** *(See Button Object.)*

OK/Cancel/Help Buttons
• Click on **OK** button to save your selections and exit the dialog box.
• Click on **Cancel** button to exit the dialog box without saving your selections.
• Click on **Help** button to go to the Help Topic for that dialog box.

Place object on the screen and size it.
• To size the object, grab a handle and drag it to the size you want.
• To move the object, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

Text Entry

The **Text Entry** object, when pressed on the panel, brings up a character entry (alphanumeric) keypad. This allows the operator to enter text up to 40 characters to send to a Tag assigned to an address in a PLC. It has many uses, some of which may be: to send part numbers or production numbers to a PLC, or to send a message to a PLC that will, in turn, route it to one or more plant floor message display(s).
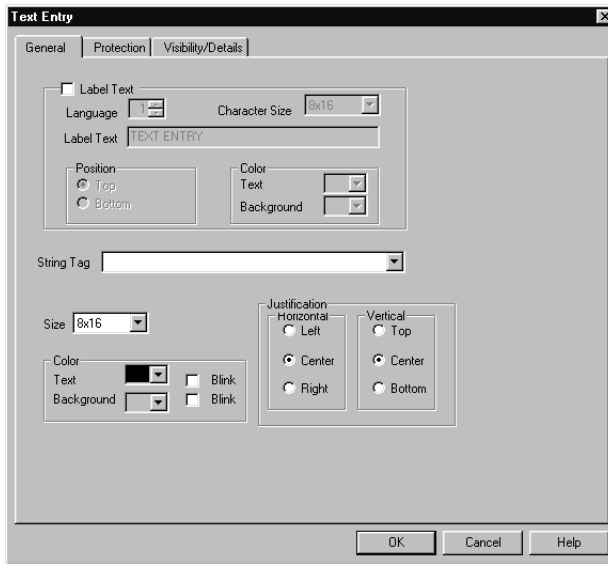
To put a Label on the Text Entry object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Choose the String Tag Name:

The **String Tag** represents the PLC locations where the values are sent. The string may be up to 40 characters long.

1. Choose the **Tag Name** by clicking on the down arrow to display the list of Tags or type in the Tag Name in the entry field. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Objects

PLEASE NOTE: For a list of ASCII Characters that the PowerPanelSupports, see Appendix B.

PLEASE NOTE: Each ASCII character uses 1 byte of data. There are 2 characters per register. 40 character maximum uses 20 consecutive registers. The Address String is the first register of the consecutive register block.

appear in the first field. Enter an **Address String** appropriate for your type PLC. (ASCII STRING is only choice available.) Select the **Number of Characters**. Click on the **OK** button.

Select the String Characteristics:
1. Select the **Character Size** from the available choices.
2. Select the **Color** of the **Text** and **Background** and whether or not they will **Blink**.
3. Choose the **Justification** of the **Text** that is displayed within the frame. Choose both **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) justification for the Text within the frame.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Text object on the screen and size it.
- To size the Text Entry object, select it, grab a handle, and drag until it is the size you want.
- To move the object, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

This is the Popup (alphanumeric) Keypad that displays on the PowerPanel touchscreen when the Text Entry object is pressed.

						CAN	ENT
A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	1	2	3	4	CAP	SP
5	6	7	8	9	0	DEL	CLR

Objects

Clock Object

The **Clock** object allows you to display a real time clock, showing the current date, time, or both (analog clock displays time only.) It can display as either an **Analog** or **Digital Clock**.

Analog Clock

See page 139 to set up the Clock Attributes.
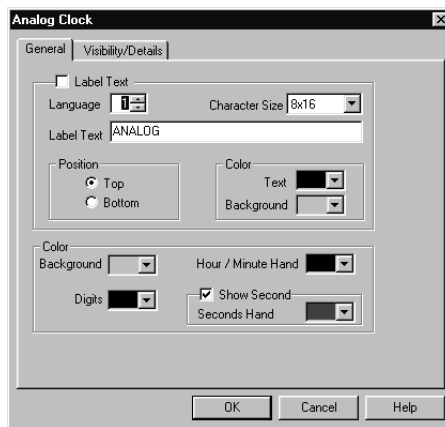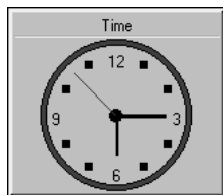
Clock with label

Clock without label
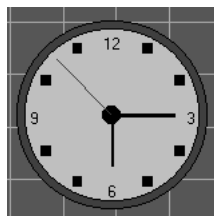
To put a Label on the Clock object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Choose how the Analog Clock will appear, perform the following steps:
1. Under **Color**, choose the color of the **Background** (face of the clock), **Digits**, and **Hour/Minute Hand**.
2. Select whether or not you want the **Second Hand** to Display and the **Color**, if enabled.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.
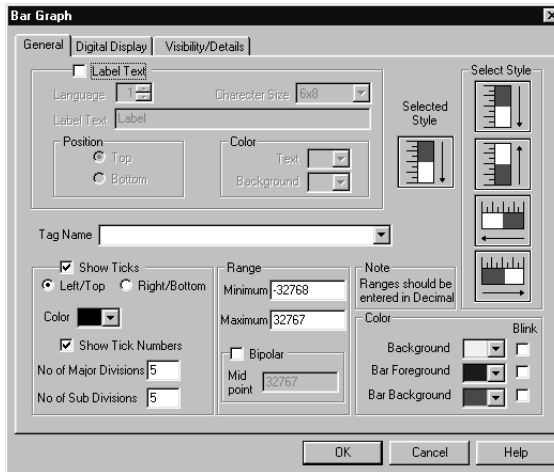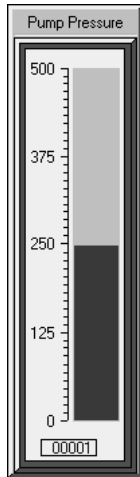
Objects

Digital Clock
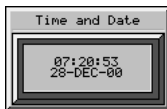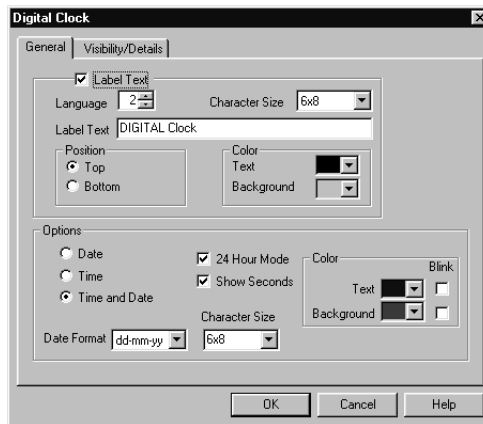
Clock with frame
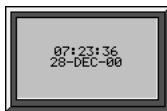
Clock without frame

To put a Label on the Clock object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To choose how the Digital Clock will appear, perform the following steps:
1. Under **Options**, choose to display just the **Date**, just the **Time**, or both **Time and Date**.
2. Select whether or not you want the Time to be displayed in **24-Hour Mode** and whether or not to **Show Seconds**.
3. Choose the **Date Format** from the available choices and the **Character Size**.
4. Under **Color**, click on the down arrow next to **Text** and **Background** to view the color palette. Click on a color swatch to select.
5. Click on the box under **Blink** if you want the **Background** or **Text** to Blink.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Objects

Meter Object

A **Meter** object is used to display an analog gauge, such as a speedometer. The meter consists of a data tag, a data type, data value range, location of the meter on the screen, the sweep direction for the needle, the needle color, and the number of ticks to display.

In simulating an analog gauge, the Meter object displays a needle that sweeps through an arc as the tag value changes. Tick marks are displayed along the arc.
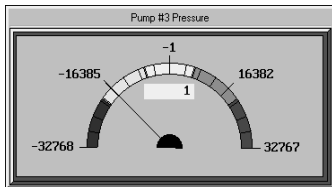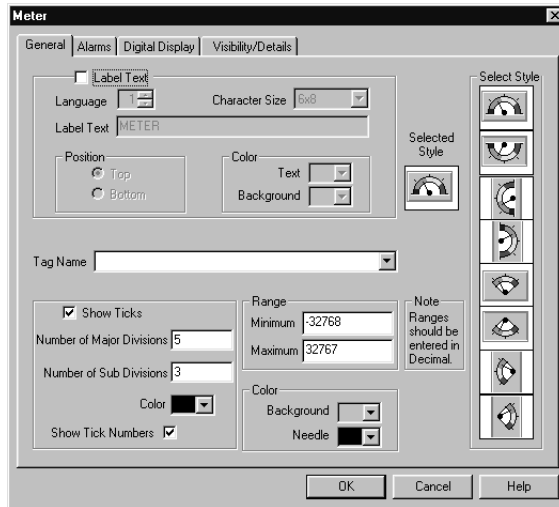
Objects

To put a Label on the Meter object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. Click on a Style under **Select Style**.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Make the following selections to Format your meter:

Maximum Number for the Major Divisions and Sub Divisions is 20!

1. If you want to show tick marks on your meter, click on box in front of **Show Ticks** to enable.
2. Next select the **Number of Major Divisions** and the **Number of Minor (Sub) Divisions** to display (maximum for each is 20).
3. Click on the down arrow next to **Color** to view the color palette for the Tick marks. Place the cursor over a color, and click to select.
4. If you want to show numbers indicating the value of a particular Tick mark, click on the box behind **Show Tick Numbers**.
5. Select the **Minimum** and **Maximum Range** of the values represented in the meter display. Ranges should be entered in decimal only
6. Select the **Color** of the **Background** and the **Color** of the **Needle** from the available choices.

Click on the Alarms Tab to set the Visual Alarm parameters:

NOTE: When entering limits, the ranges cannot overlap!

NOTE: These visual alarm settings are only for display on the meter, and are not related to actual alarms in the alarm database.

Objects

The **Visual Alarm Settings**, provide a color band on the arc representing various limit parameters set by the programmer. They provide the operator with a visual indication of current readings (as needle sweeps over area) that may or may not exceed/fall below important values for the process or function the meter is monitoring.

1. Click on the box in front of **Low Low Limit**, **Low Limit**, **High Limit**, and/or **High High Limit**, to display a visual alarm for that parameter.
2. Click on the down arrow under **Color** to view the color palette. Move your cursor over the color you want and click to select.
3. Enter the **Set Limit** for each of the parameters. They must fall within the **Range Minimum** and **Maximum** set under the **General** tab.
4. Choose the **Needle Direction**, **Clockwise** or **Counterclockwise**.

Click on the Digital Display Tab to Format the numbers and how they will be displayed on the Meter:
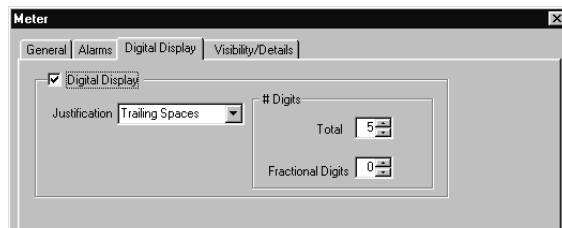
1. Click on the box in front of **Digital Display** if you want the current register values to display on the meter.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.
3. Click on **Total** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type of the Tag), that you want to display.
4. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Meter on the screen and size it.
- To size the Meter, select it, grab a handle and drag to the size you want.
- To move the Meter, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

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Bar Graph Object

The **Bar Graph** object allows you to monitor and display a tag value in a bar graph form on the screen. The Bar Graph can be displayed in various formats and can be programmed to read from top to bottom, left to right, right to left, etc.

To put a Label on the Bar Graph object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Objects

Make the following selections to Format the Bar Graph:

Maximum Number for the Major Divisions and Sub Divisions is 20!

1. If you want to show tick marks on your bar graph, click on box in front of **Show Ticks** to enable.
2. Select where you want the tick marks to be on the graph; **Left/ Top**, or **Right/Bottom**. Select the **Color** of the tick marks.
3. Next select whether or not you want to show numeric values for the tick marks, and the **Number of Major Divisions** and the **Number of Minor (Sub) Divisions** to display. *The maximum ticks allowed for Major or Minor Divisions is 20.*
4. Select the **Minimum** and **Maximum Range** of the values represented in the bar graph display. Ranges must be entered in Decimal.
5. If you want a Bipolar bar graph, click on the box in front of **Bipolar** and enter a **Midpoint** value.
6. Under **Color**, click on the down arrows next to **Background**, **Bar Foreground** (fill) and **Bar Background t**o view the color palettes and make your selections. Click on the box below **Blink** to enable that feature.

Click on the Digital Display Tab to Format the numbers and how they will be displayed on the Bar Graph:

1. Click on the box in front of **Digital Display** if you want the current register values to display on the bar graph.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.
3. Click on **Total** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type of the Tag), that you want to display.
4. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you

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would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Bar Graph on the screen and size it.
- To size the Bar Graph, grab a handle and drag to size you want.
- To move the Line Graph, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

Objects

Line Graph Object

The **Line Graph** object will continuously monitor specific Tags in the PowerPanel Panel and display the value of these data tags as they change over time. This allows the panel to display the graph as soon as the screen containing the graph is selected. Up to 6 tags can be monitored per line graph and up to 100 line graphs can be programmed. Line graphs are unique in that most of the work is done for you. The line graph plots the tag values on a line as they change over a period of time.
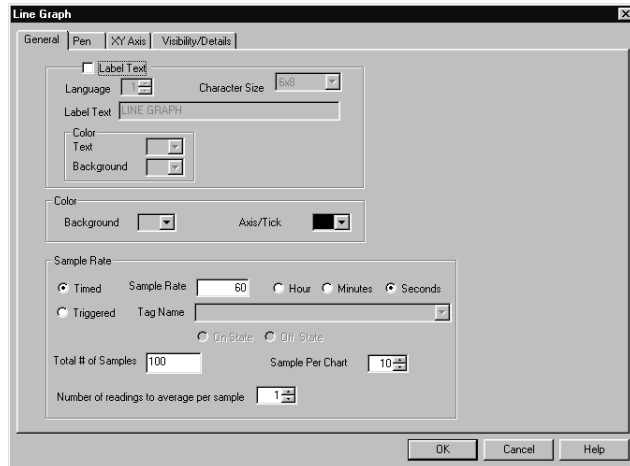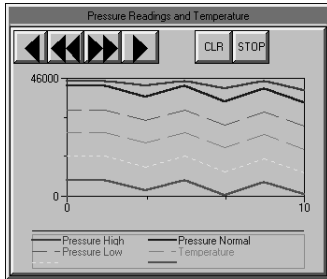
To put a Label on the Line Graph object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Select the **Background Color** and the **Axis/Tick Color** from those offered on the color palette. To select a Color, click on the down arrow to see the palette, and then simply click on the color swatch you want.

The **Sample Rate** for the Line Graph can be timed or triggered by an event.

- **Timed** — how often, in **Seconds**, **Minutes**, or **Hours** the line graph will update. Enter this parameter next to **Sample Rate** and select (per) **Hour**, **Minutes** or **Seconds**.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

- • **Triggered —**- triggered by a bit that will be monitored to up date the line graph. The trigger state conveys whether the line graph will be updated when the monitor bit is on or off. Select the **Tag Name** for the monitor bit. Select **On State** or **Off State**.

Total # of Samples is the number of readings stored in the line graph at one time. The maximum number of readings is 999. **Sample per Chart** is the maximum number of readings that will be visible on the chart. Use the arrow buttons on the object to view more of the chart.

Number of readings to average per sample: You may choose to have the graph average a number of readings in a sample and display that sample average on a the chart. For instance, if you want to take several temperature readings in an hour's time and then have the graph display this average as one sample on the chart. Select a number between 1 and 255.

NOTE: The minimum number of readings is two!

Click on the Pen tab to program the individual readings/lines:

1. Click on the down arrow to select the **Tag Name** for the register you want Pen 1 (or 2, 3, 4, 5) to monitor and illustrate.
2. Select the **Color** and **Line Type** from the available choices.
3. Select the **Language** Number (1–9).
4. Click in the "**Legend**" field and type in the text you would like to display in the legend for Pens 1 through 5. (The legend will display the Color and Line type and what you enter in the Legend field.) Limit the legend names to 16 characters (maximum).
5. Click on the box in front of **Display Legend** if you want the legend to appear on the line graph object.

Objects

Click on the XY Axis tab to continue formatting your Line Graph:

The Line Graph is set up with the vertical axis (Y) representing the Tag value (Value), and the horizontal axis (X) represents time (Readings) .
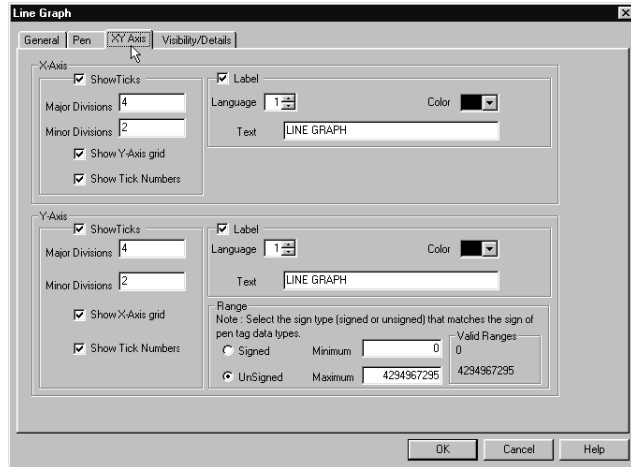
Under X-Axis make the following selections:
1. Choose whether or not to **Show Ticks** for the X-Axis (Reading). Click on the box in front of **Show Ticks** if you want them display on the object.
2. Enter the number of **Major Divisions** and the number of **Minor Divisions** you want to display on the graph. 20 tick marks are the maximum allowable for major and minor divisions.
3. Choose whether or not to **Show X-Axis Grid** and **Show Tick Numbers**.
4. Click in the box in front of **Label** if you want if you want a label for the X-Axis. Here you will enter the label **Text** and make selections for the text **Language** number, and **Color**.

Under Y-Axis make the following selections:
1. Choose whether or not to **Show Ticks** for the Y-Axis (Value). Click on the box in front of **Show Ticks** if you want them to display on the object.
2. Enter the number of **Major Divisions** and the number of **Minor Divisions** you want to display on the graph. 20 tick marks are the maximum allowable for major and minor divisions.
3. Choose whether or not to **Show Vertical Grid** and **Show Tick Numbers**.
4. Click in the box in front of **Label** if you want if you want a label for the X-Axis. Here you will enter the label **Text** and make selections for the text **Language** number, and **Color**.

Objects

5. Under **Range**, click on **Signed** or **Unsigned** (they must match Pen tag type — signed or unsigned.) **Valid Ranges** will display for your selection.
6. Enter a **Minimum** and **Maximum** Range within the **Valid Range** displayed.

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
•   Click on **OK** button to save your selections and exit the dialog box.
•   Click on **Cancel** button to exit the dialog box without saving your selections.
•   Click on **Help** button to go to the Help Topic for that dialog box.

Place Line Graph on the screen and size it.
•   To size the Line Graph, select it, grab a handle and drag to the size you want.
•   To move the Line Graph, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Not all of the line graph may be shown on the panel. Use the ARROW keys to scroll forwards and backwards along the graph. Press the **CLR** button to clear the readings displayed on the line graph. Press the **STOP** button to stop the line graph from displaying the current readings.
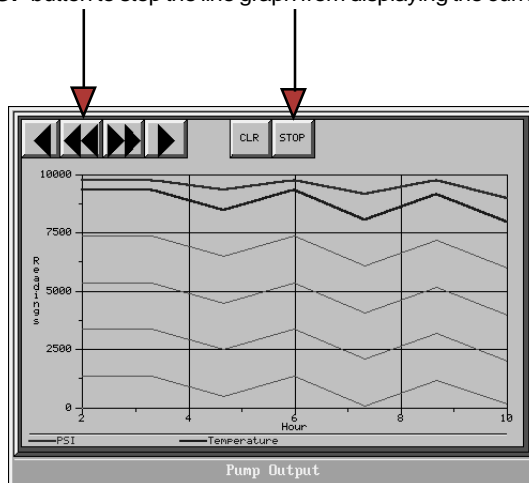
Objects

PID Faceplate Object
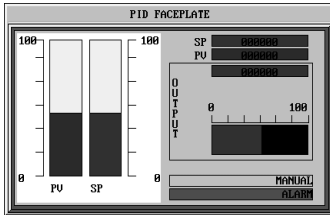
In addition to a ladder logic program, some PLCs have process control loop capability. These PLCs use a Proportional Integral Derivative (PID) algorithm to generate the control output value. The **PID Faceplate**, below, is an object that reads three controlled values of the PID loop and displays them in the form of a bar graph. This graph provides valuable and timely process information, that allows the operator to take suitable action at the appropriate time.

The **PID Faceplate** also monitors two discrete bits: **Mode Bit** and **Alarm Bit**. **Mode Bit** tells the operator whether the process is in **Auto Mode** or **Manual Mode**. **Alarm Bit** tells the operator if any alarm for the process is active or not.

Process Variable (PV) is the controlled variable in the process. It is the actual value measured.

Set Point (SP) is the theoretical perfect value of the Process Variable. Output Variable controls the Process Variable. Using PID algorithm, the PLC calculates this value and uses it to keep the Process Variable as close the to Set Point value as possible.
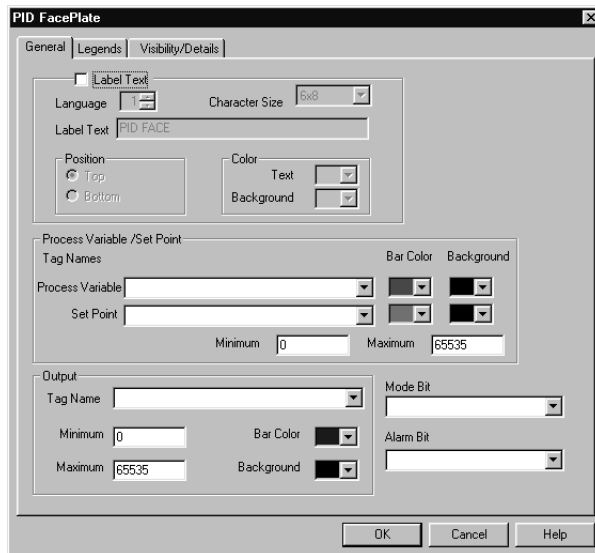
To put a Label on the PID Faceplate object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)

Objects

3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Under Process Variable/Set Point you will make the following selections:

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

1. Select the **Tag Name** for **Process Variable** that will monitor the process.
2. Select the **Bar Color** and **Background Color** for the **Process Variable** as displayed on the PID Faceplate object.
3. Select the **Tag Name** for the **Set Point**.
4. Select the **Bar Color** and the **Background Color** for the **Set Point** as displayed on the PID Faceplate object.
5. Select the **Minimum** and **Maximum** Range for the bar graph.

Under Output you will make the selections for the output as displayed on the PID Faceplate object:

1. Click on the down arrow to reveal **Tag Names** and make your selection.
2. Enter the **Minimum** and **Maximum** ranges for the Output bar graph display.
3. Choose the **Color** for the **Bar** and **Background**.
4. The PID Faceplate monitors two discrete bits:

   • **Mode Bit** tells the operator whether the process is in Auto Mode or Manual Mode. Enter the tag name for the discrete bit to be monitored for Mode. **ON= Manual, OFF = Auto**

   • **Alarm Bit** tells the operator if any alarm for the process is active or not. Enter the tag name for the discrete bit to be monitored for active alarms. **ON = Alarm, OFF = no display**

Objects

Click on the Legend tab to make your selections for the Legend that will display on the object:
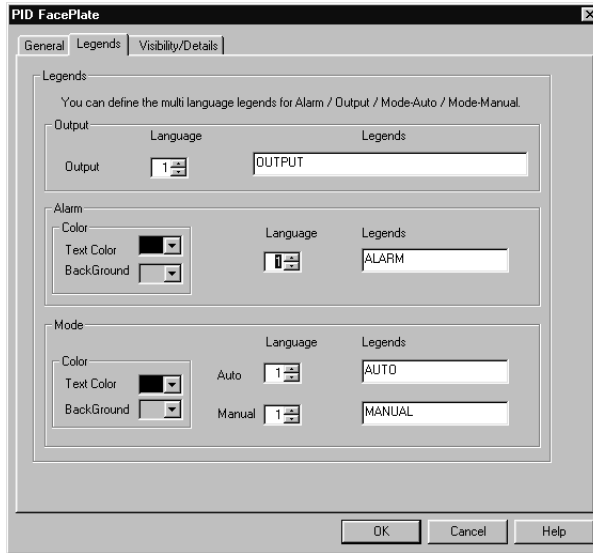
1. Under **Output** , select the **Language** number for the Legend text you want to enter. You may program up to 9 different languages to display on the legend.
2. Type in the text for the **Legend**.
3. Under **Alarm**, select the **Text** and **Background Color**.
4. Select the **Language** number, and type in the text you want to appear for the **Legend**.
5. Under **Mode**, select the **Text** and **Background Color**.
6. Select the **Language** number for **Auto** and **Manual**.
7. Type in the **Legend** text for **Auto** and for **Manual** that you want to appear on the object

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
• Click on **OK** button to save your selections and exit the dialog box.
• Click on **Cancel** button to exit the dialog box without saving your selections.
• Click on **Help** button to go to the Help Topic for that dialog box.

Place PID Faceplate object on the screen and size it.
• To size the object, select it, grab a handle and drag to the size you want.
• To move the object, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

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Dynamic Bitmap Object

The **Dynamic Bitmap** object allows you to create simple to complex objects. You can use the extensive built-in **Symbol Factory** library to copy and paste hundreds of graphic objects directly to the project screen. They can be arranged and positioned in just about any manner you prefer. And it's not just bitmaps —you can import a Bitmap (.BMP) file, a Windows Metafile (.WMF), or a Enhanced Windows Metafile (.EMF).

NOTE: To size a bitmap when it is placed on the screen, grab a handle with your mouse cursor and pull across the screen until it is the size you want.

A Dynamic Bitmap can show a visual representation of a process. There are two bitmaps per object, one that is shown when a bit is ON and another that is displayed when the bit is OFF. For example, you could create a green blower and a red blower to display. If the process is running, the green blower would be shown. If the process is not running, the red blower would be displayed.
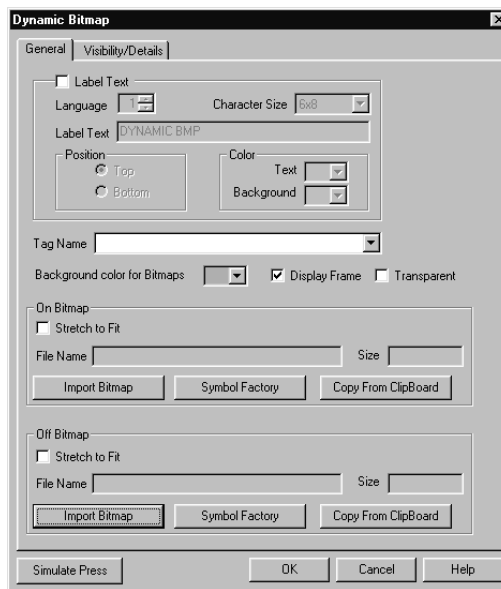
To put a Label on the Dynamic Bitmap object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Objects

To create On Bitmap and Off Bitmap:

Objects

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.
3. Select **Background color for Bitmaps.** Click on the down arrow to view the color palette. Select the color for the background of the Bitmap object.
4. Select whether or not you want to **Display Frame** around the bitmap and whether or not you want the Background to be **Transparent**.
5. Under **On Bitmap** or **Off Bitmap** (the On Bitmap is the one that is triggered to display when the bit is ON, the Off Bitmap is triggered to display when the bit is OFF) you have three choices. Click on **Stretch to Fit** if you want the ON bitmap and/or OFF bitmap to automatically stretch to fit the object when you have increased or decreased the object's size on the screen.

   a. Click on the **Import Bitmap** button and a window will appear allowing you to navigate to the directory/folder where the graphic file resides. Click on it to highlight and click on the **Open** button. The **File Name** and **Size** of the Bitmap will be displayed. If the Bitmap is too large, you will be warned by a message and prompted to select another bitmap.
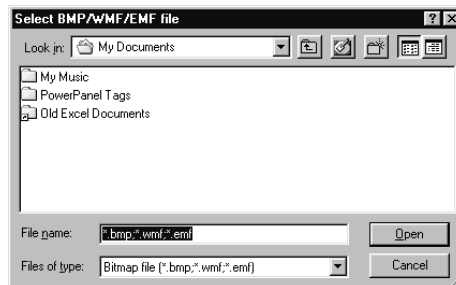
b. You may also click on **Symbol Factory®** to gain access to a library of over 3,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. Once in Symbol Factory, navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object.

c. The third option is to click on **Copy from Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it inot the current screen.

Visibility/Details *(See Button Object.)*

Simulate Press
Press the **Simulate Press** button to see how the Dynamic Bitmap object will be displayed on the screen when pressed.

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Dynamic Bitmap on screen.
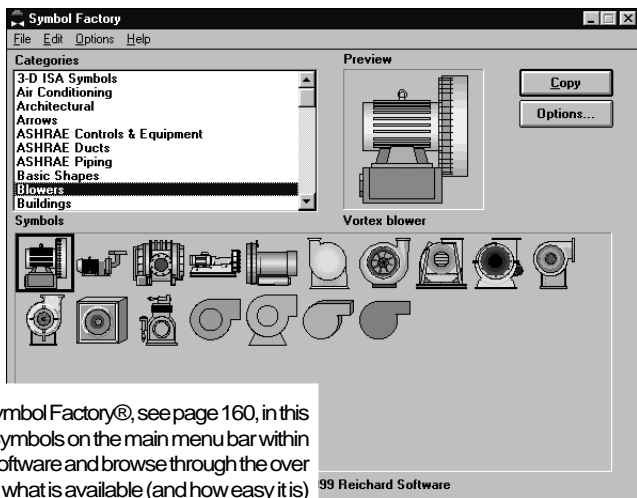
For more information about the Symbol Factory®, see page 160, in this manual — or better yet, click on Symbols on the main menu bar within the PowerPanel Programming Software and browse through the over 3,000 symbols to see for yourself what is available (and how easy it is) to use in building dynamic PowerPanel screens!

Objects

Change Screen Object
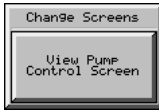
This object will allow the PowerPanel to change to (display) another Screen.
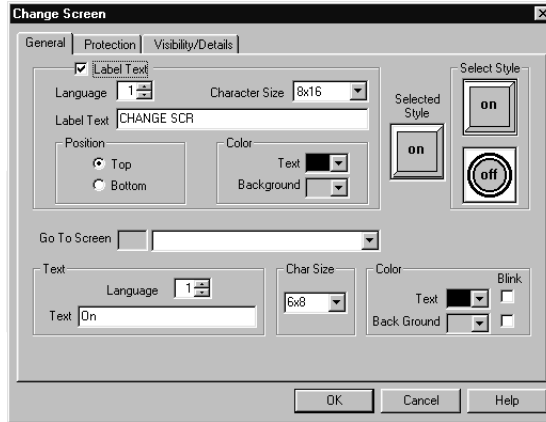
To put a Label on the Change Screen object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

To Create the Change Screen Button object:
1. Select the **Style** of the button from the available choices.
2. Click in the empty field next to **Go To Screen** and type in the name of the screen or click on the down arrow for a list of screens in the project and select.
3. Select the **Language** Number (1–9) for the **Text** that will appear within the button.
4. Type in the **Text** that you wish to appear within the button.
5. Select **Character Size** from the available choices.
6. Select the **Color** of the **Text** and the **Background** (inside the button) from the available choices.
7. Click in the box under **Blink** if you want the **Text** or **Background** to blink.

Objects

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Change Screen Button on the screen and size it.
- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

Alarm History Object

The **Alarm History Object** allows you to configure a button, that when pressed, will provide the **Alarm Count** or **Alarm History**. **Alarm Details** are accessed through the Alarm History object. Alarms are set up in the Alarm Database (see page 140 for setup instructions.)

The **Alarm Count** lists all alarms and shows the total count for each alarm.

Alarm History Object

Press to view
Alarm History

The **Alarm History** will show each alarm that has occurred with the most recent at the top. When you press the **Alarm Detail** button, you will get the Entry Number (No.) of the Alarm, when it was activated (time and date), when it was cleared, actual value, high/low limits, and which limit is tripped (HIGH/LOW/DIS).

PLEASE NOTE: The steps necessary to program your PowerPanel to monitor the PLC for errors and trigger an alarm are provided in Appendix A, Troubleshooting, "How do I Log and Display a PLC Error Message?"

Objects

NOTE: An active alarm will be displayed across the bottom of the panel screen. To see a history, use the Alarm History object.
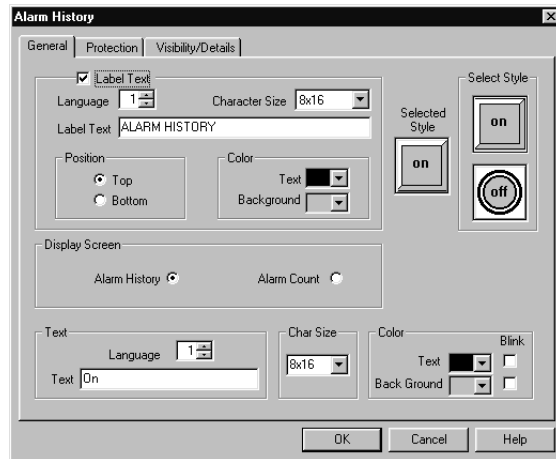
To put a Label on the Alarm History object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available sizes.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Under **Display Screen**, you will choose which alarm screen you want to display when the Alarm History button object is pressed — Alarm History or Alarm Count. It should be noted that you can switch from one to the other from either screen.

Under **Text**, choose the **Language**, **Character Size**, **Color** of **Text** and **Background**, and whether or not you want to enable the **Blink** feature for the text that will appear within the Alarm History button. Enter the **Text** that you want to appear.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Alarm History Button on the screen and size it.
- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

System Objects

Increment/Decrement Hour

The Increment/Decrement Hour object allows you to place a button on the screen that allows you to adjust the hour (up or down) of the internal Real-Time clock.

CHANGE TIME

PUSH TO ADVANCE
ONE HOUR

Increment Decrement Hour

General | Protection | Visibility/Details

☐ Label Text

Language 1   Character Size 8x16

Label Text INCRE/DECRE HOUR

Position
  ○ Top
  ○ Bottom

Color
  Text
  Background

Increment/Decrement

  Increment ●   Decrement ○

Text
  Language 1
  Text On

Char Size
  8x16

Color
  Text
  Back Ground

Blink
  ☐
  ☐

OK   Cancel   Help
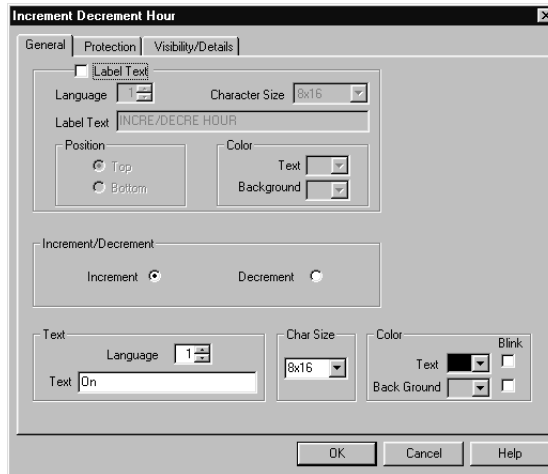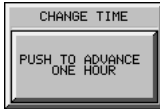
IMPORTANT NOTE:
This object is to be used with the Internal clock, only. Do not use the Increment/ Decrement object if you have chosen External clock under Project Attributes > Clock.

To Create Label Text, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number.
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Choose the function of the button:
Select **Increment** or **Decrement** for the button function. If increment is selected, when pressed it will increase the time on a clock object by one hour. If decrement is selected, when pressed it will decrease the time on a clock object by one hour.

Enter Text for the button object:
Choose the **Language**, **Character Size**, **Color** of **Text** and Background, and whether or not you want to enable the **Blink** feature for the text that will appear within the button and/or the background. Enter the **Text** that you want to appear.

Objects

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Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Increment/Decrement Clock Button on the screen and size it.
- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Activate Screen Saver

The **Activate Screen Saver** object allows you to place a button on the screen that enables you to activate the panel screen saver. (Screen Saver time-out is programmed under Setup > Project Attributes > General Tab > Display Saver.)
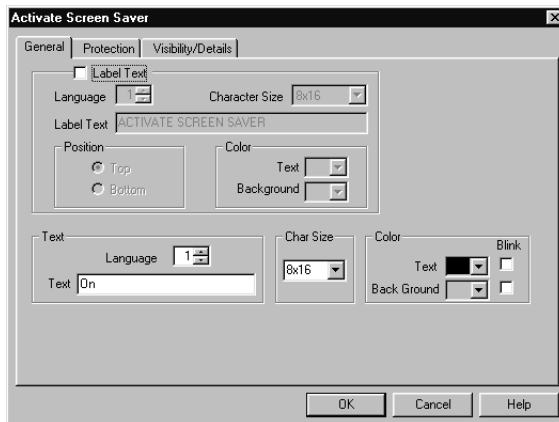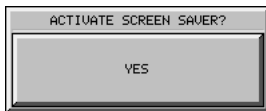
Objects

To put a Label on the object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.

2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Enter Text for the button object:
Choose the Language, Character Size, Color of Text and Background, and whether or not you want to enable the Blink feature for the text that will appear within the button. Enter the Text that you want to appear.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
• Click on **OK** button to save your selections and exit the dialog box.
• Click on **Cancel** button to exit the dialog box without saving your selections.
• Click on **Help** button to go to the Help Topic for that dialog box.

Place Screen Saver Button on the screen and size it.
• To size the button, select it, grab a handle and drag to the size you want.
• To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

Adjust Contrast

Use the **Adjust Contrast** object to place a button on the PowerPanel screen that gives you access to the panel's adjust contrast feature. Use the UP and DOWN arrows that appear on the button to adjust the screen contrast. The current setting will appear on the button above the arrows and will change as you press the arrow keys.
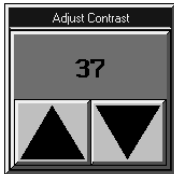
NOTE: Contrast cannot be adjusted on 10-inch PowerPanels.
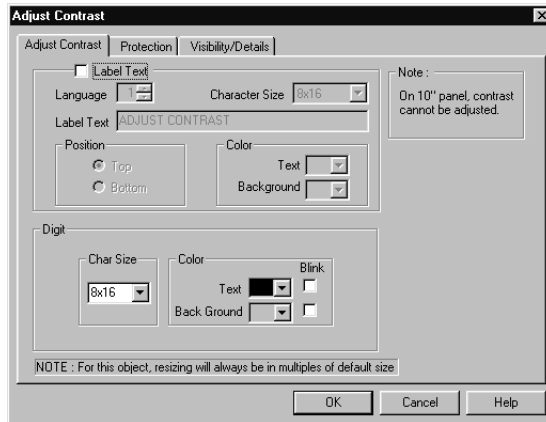
To put a Label on the Adjust Contrast object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Select Digit Format:

This allows you to program characteristics of the current contrast setting that will display on the button. The current setting will appear on the button above the UP and DOWN arrows. Use the arrows to increment or decrement the setting. Select the **Size** and **Color** of the characters (**Text**) and whether or not they will **Blink**, and set the color of the button **Background** and whether or not it will **Blink**.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

Objects

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Adjust Contrast Button on the screen and size it.
- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Select Language

The **Select Language** object allows the operator to change the Language by pressing a button on the PowerPanel. Text that has been programmed for that language will convert to the language that the operator selects. If an object's text has not been programmed for the language selected, it will default to Language 1.
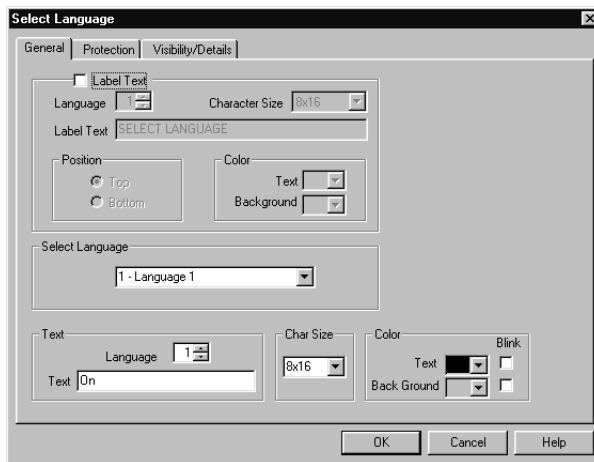
To put a Label on the Select Language object, perform the following steps:
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 153.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.

Objects

5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Select Language that you want to switch to.
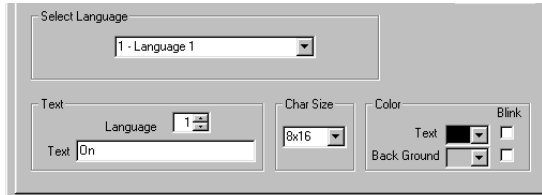
Languages are named under Setup > Project Attributes > Language tab.

Enter Text for the button object:
Choose the Language, Character Size, Color of Text and Background, and whether or not you want to enable the Blink feature for the text that will appear within the button. Enter the Text that you want to appear.

Protection *(See Button Object.)*

Visibility/Details *(See Button Object.)*

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Select Language Button on the screen and size it.
- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Objects

This page intentionally left blank.

Objects

5

Main Programming Screen

In this chapter....

Main Programming Screen

Title Bar   Main Menu Bar   Standard Tool Bar   Object Tool Bar

Draw Tool Bar

Panel Tool Bar

Project Screens
Explorer View

Status Bar

3 Easy Steps
Tool Bar
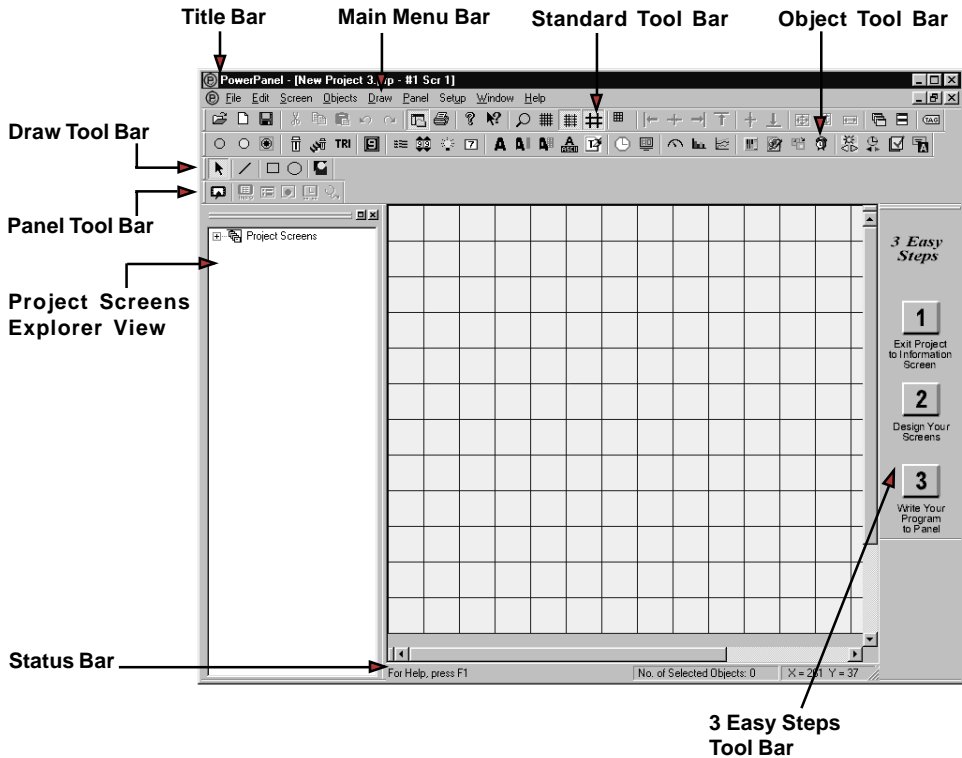
The Main Programming Screen is shown above. It is here that you will design your PowerPanel operator interface screens. In this section, we'll briefly identify and describe the main features of this screen and familiarize you with the PowerPanel Programming Software work area.

Title Bar

The **Title Bar** tells you the name of the project and name and number of the screen that you currently have open.

File   Edit   Screen   Objects   Draw   Panel   Setup   Window   Help
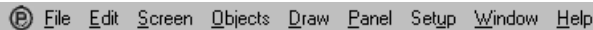
Main Menu Bar

This is the **Main Menu Bar**. PowerPanel Programming Software menus are represented by the names listed across the top of the Main Programming Screen and directly under the Title Bar. Each menu item is discussed in detail in Chapter 6, *Reference*, beginning on page 115.

Standard Tool Bar

The **Standard Tool Bar** consists of icons for frequently used commands. These commands are also found in, and accessible from, the Main Menu Bar.

From left to right as placed on the tool bar, the icons and their functions are shown below.

- 　　Open Project

- 　　Open Screen

- 　　Save Screen

- 　　Cut the selection and put it on the clipboard

- 　　Copy the selection and put it on the clipboard

- 　　Paste clipboard contents

- 　　Undo the last action or Redo the previously undone action

- 　　Project Screens Explorer View

- 　　Print the active document

- 　　Display program information, version number, and copyright

- 　　Display help for clicked on buttons, menus and windows

- 　　Zoom to a predefined screen magnification

- 　　Displays Grid on the Screen

- 　　Snaps to Grid

- 　　Show or Hide Touch Cells

- 　　Show 320 x 240 Rectangle (size of 6-inch panel screen)

- ⬅️ Aligns left sides of all the selected objects to that of left most object

- ↔️ Aligns all the selected objects to the vertical center of screen

- ➡️ Aligns right sides of all the selected objects to that of right most object

- ⬆️ Aligns top sides of all the selected objects to that of top most object

- ↕️ Aligns all the selected objects to the horizontal center of screen

- ⬇️ Aligns bottom sides of all the selected objects to that of bottom most object

- 🔲 Make all selected objects the same size

- 📏 Make all selected objects the same height

- ↔️ Make all selected objects the same width

- 🪟 Arrange windows so they overlap

- 🪟 Arrange windows as non-overlapping tiles

- TAG Shows Tag Database

Object Tool Bar

The Object Tool bar consists of icons that provide a shortcut to the predefined programming objects. These objects provide generic panel replacement functions. Click on the icon to place the object on the screen and set the object parameters. These objects are also found in, and accessible from the Main Menu Bar.

From left to right as placed on the tool bar, the icons and the object they represent are shown below.

- ⭕ Push Button

- 🟡 Indicator Button

- ◉ Radio Button

- 🔲 Switches

- 🔀 Step Switch

- TRI Tri-State Switch
- 9 Numeric Entry
- ≡ Recipe
- 99 Thumbwheel
- 💡 Indicator Light
- 7 Numeric Display
- A Static Text
- A Triggered Text
- A Lookup Text
- A ASCII Dynamic Text
- T Text Entry
- 🕐 Analog Clock
- :0 Digital Clock
- ⌓ Meter
- 📊 Bar Graph
- 📈 Line Graph
- III PID Face Plate
- 🖼 Dynamic Bitmap
- 🖥 Change Screen
- 🔔 Alarm History
- ⚙ Adjust Contrast
- 🕐 Increment/Decrement Hour
- ☑ Activate Screen Saver
- 🅰 Select Language

Draw Tool Bar

Any of the following draw functions can be accessed by choosing the selection from the Draw Menu or by clicking on the specific Draw Tool Bar icons shown below.

- Pointer
- Line
- Rectangle
- Circle
- Static Bitmap

Panel Tool Bar

The Panel Tool bar consists of icons for frequently used commands. These commands are also found in, and accessible from the Main Menu Bar. From left to right, they are as follows:

NOTE: The Panel Tool Bar is for on-line editing.

- Transfer to Panel
- Panel Information
- Display Screen
- Reboot Panel
- Panel Time and Date
- Diagnostics

For Help, press F1   No. of Selected Objects: 0   X = 112 Y = 328   OFFLINE MODE   NUM

Status Bar

The Status Bar is located at the bottom of the Programming Screen and shows the status of the current screen. It provides information about a tool bar or menu item on the main programming screen that the pointer passes over, displays the number of selected objects, the XY location (coordinates) of the cursor, and the current programming mode (ONLINE or OFFLINE).
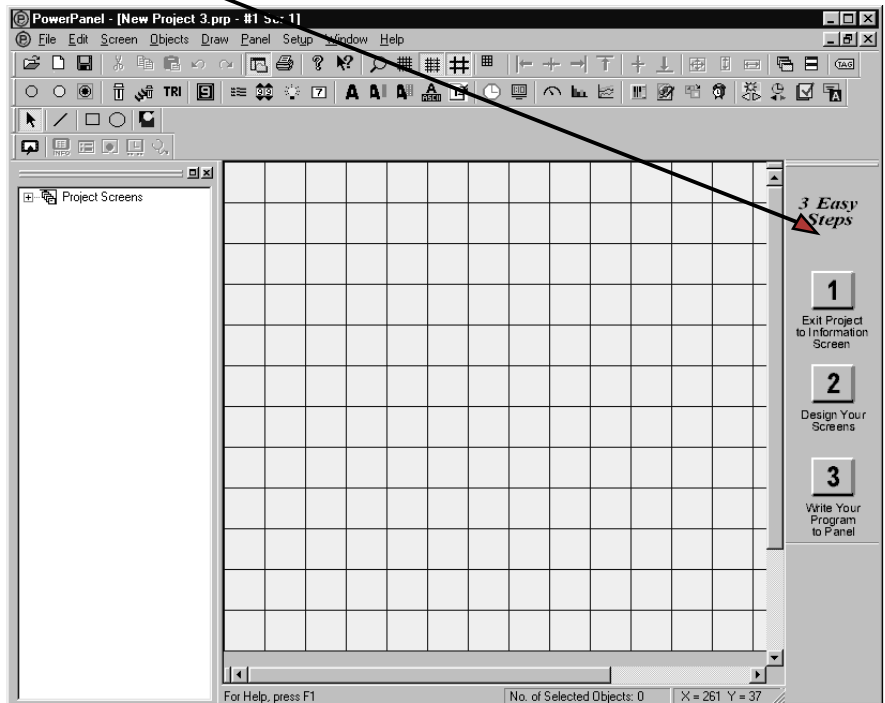
Main Programming Screen

112
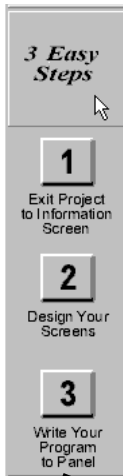
3 Easy Steps Tool Bar

This tool bar appears on the right hand side of the main programming screen. It allows you to easily navigate to one of the three main steps in creating a program for your PowerPanel using the PowerPanel Programming Software. To open, click on **Edit > Toolbar > 3 Easy Steps**.

Click on button number **1** to **Exit Project to Information Screen**. You will exit your current project and return to the **Step 1, Project Information Screen**.

Click on button number **2** to **Design Your Screens**. The **Open New Screen** dialog box will appear. You can select from one of the current project's screens, or enter a new number and name to create a new screen. Click on this button to quickly go to another screen in your project for editing, or create a new screen.

Click on button number **3** to **Write Your Program to Panel**. When you are finished with the project, or want to test it on the PowerPanel, select this button. The **Write Program to Panel Screen** will appear allowing you to transfer the current project to the panel memory. Click on this button to transfer your project to the PowerPanel.

Main Programming Screen

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Programming Screen

This is the programming screen where you will build project screens that will in turn be displayed on the PowerPanel. You may program from 1 to 999 screens in a project.

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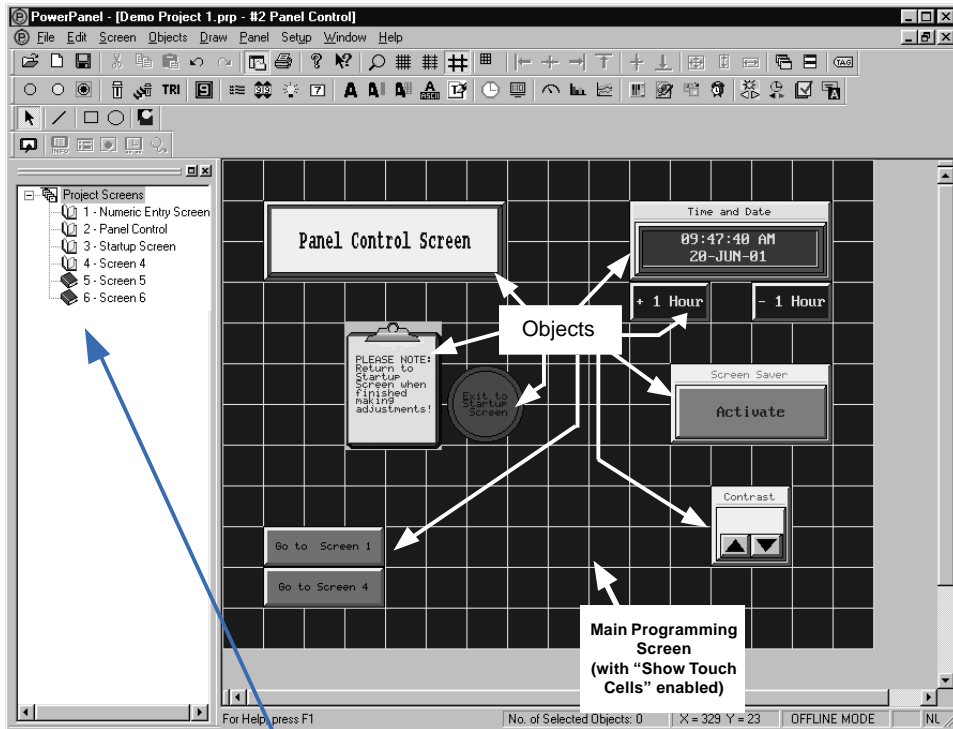
Project Screens Explorer View

Right click your mouse anywhere in the project screens window and a popup menu will appear allowing you to Open, Rename, Delete, or add a New Screen.

This view opens to show you the project screens that you have created and to allow you to easily navigate between the screens. If you click on the "+" in front of Project Screens, the screens you have designed will cascade in the window. (A "-" will display in front of Project Screens indicating you have opened the Project Screens Explorer View.) To open or switch to another screen in your project, double click on the book icon in front of the screen. Your programming window will display the selected screen and the book icon will change to an "open" book to show you that the screen is open in your project.
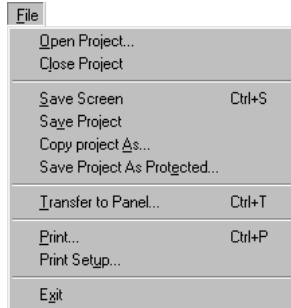
6

Reference

In this chapter....

Reference

The Reference Section provides more details on Menu commands. It takes you through the Main Menu Bar item by item, command by command, with instructions. It also contains information about the various tool bars and the status bar.

File Menu

Open Project

To open an existing project or to create a new project while in a programming window, click on File > Open Project. The Step 1, Project Information dialog box will appear. Click on one of the SELECT ACTION buttons. Choose from the available project files or enter a new Project Name. Click on **OK** to open the project, or **Exit** to quit without opening.
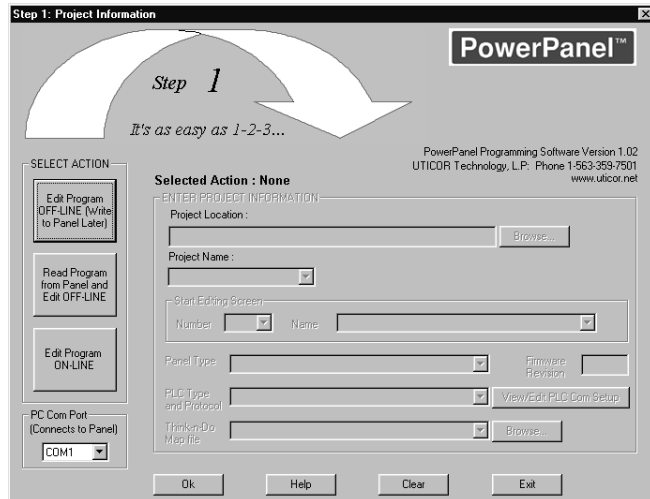
Close Project
Click on **File>Close Project** to quit the current project.

Save Screen
Click on **File > Save Screen** to save the current, active screen.

Save Project
Click on **File > Save Project** to save the current project. Screens, Project Attributes and databases will all be saved.

Copy Project As...

Click on **File > Copy Project As...** to save your project under another name. The dialog box shown to the right will appear allowing you to enter a name for the copied project.
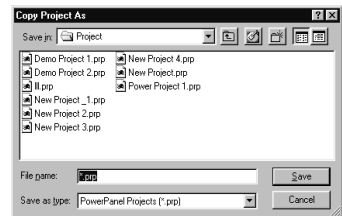
Save Project As Protected

If you click on **Save Project As Protected**, you will only be able to transfer the project, to and from the panel, as is. The project will not open in PowerPanel Programming Software to allow editing. This protects the project from unauthorized changes after distribution. Make sure you have another copy saved if it will require changes or updates.
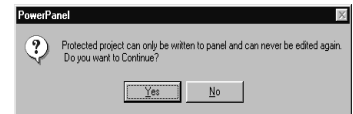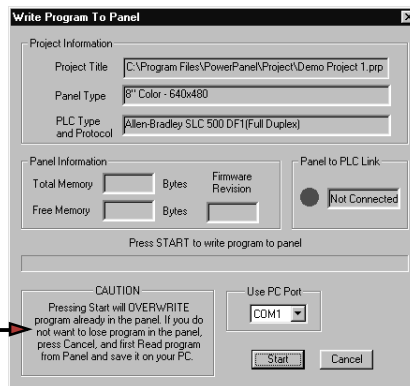
Transfer to Panel...

Transfer to Panel... allows you to transfer the current (open) project to the PowerPanel.

Click on **Transfer to Panel** and the following dialog box will open. This dialog box provides information about the current project and the PowerPanel memory available.

DON'T LOSE AN EXISTING PROGRAM! When you write the program to the panel, it will write over any program already loaded into panel. Save the existing program before you click on the Start button to transfer your new program. To do this, exit project and Read Program from Panel, then save it to your PC.

Under **Project Information**, the screen provides you with the **Project Title** you are about to transfer, the **Panel Type** you are transferring the project to, and the **PLC Type and Protocol** that you have selected as used by your application. Press **Start** to begin the transfer or **Cancel** to abort.

If you receive an error message, check to ensure your panel to PC connections are correct. Under **Use PC Port**, click on the down arrow to select the correct PC Port (COM1, COM2, COM3, or COM4)

The Progress Bar will let you know where you are in the transfer process and when the process is complete.

After the transfer is complete, **Panel Information** gathered during transfer communication is displayed. It will tell

you the **Total Memory** installed in your panel (in bytes) and the **Free Memory** available after the project upload. The panel **Firmware Revision** (internal software) number is displayed and whether or not a **Panel to PLC Link** is established.

Print

Be sure to select screens (click on them to select) here — if you choose Selected Screens here!

When you click on the **Print** menu item, the screen, above, will appear. **Select Items for Printing** — Choose **Print Alarm Database, Print Tag Database** (select **Sort by Tag Name** or **Sort by Tag Address**), or **Print Message Database.** If you want to **Print Screens**, select **All Screens** to print all of the screens from the project, or **Selected Screens** to print selected screens from the list. Click on a screen in the list to highlight it. Press and hold the **Ctrl** key and click to select more than one. Click on **OK** when you have made your selections.

Print Setup
Choose or change your print settings here.

Exit
Click on **Exit** to quit the program.

Edit Menu

Undo

The **Undo** command is used to reverse the previous action. This function must be performed next in order for the action to be undone. The undo command goes back sixteen levels of undo. **Redo** will "redo" the previously undone action.

Cut

This allows you to **Cut** (remove) a selected item(s) to the clipboard.

Copy

This allows you to **Copy** (without removing) a selected item(s) to the clipboard.

Paste

This allows you to **Paste** a selected item from the clipboard onto the displayed screen.

Select All

Click on **Select All** to select all items on the displayed screen.

Align

This allows you to **Align** selected items on the screen. You may also execute these commands by clicking on their respective icons on the standard tool bar. You must have at least two objects selected in order to execute the **Left**, **Right**, **Top**, or **Bottom** Align commands.

Left— Aligns left sides of all the selected objects to that of left most object

Vertical Center— Aligns all the selected objects to the vertical center of screen

Right — Aligns right sides of all the selected objects to that of right most object

Top — Aligns top sides of all the selected objects to that of top most object

Horizontal Center — Aligns all the selected objects to the horizontal center of screen

Bottom — Aligns bottom sides of all the selected objects to that of bottom most object

Delete

Click on **Delete** to remove a selected item without placing it on the clipboard.
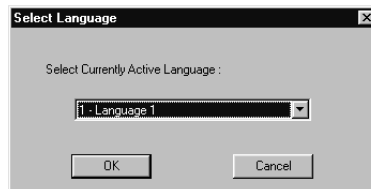
Edit

Select an object and then click on the **Edit** command to make changes to an object's characteristics.

Tool bar

Click on **Tool bar** to see menu. Click on **Standard**, **Object**, **Draw, Panel**, **3 Easy Steps** (Navigation Tool bar), or **Project Screens** (Explorer View) to place a check mark enabling that tool bar, or click on a selected tool bar to remove check mark and thereby remove it from view. All tool bars, except 3 Easy Steps, are displayed by default.
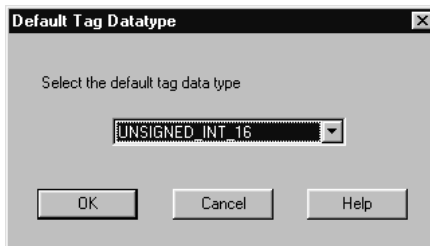

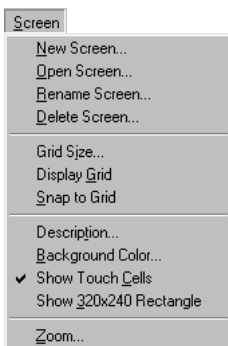### Current Editing Language

Allows you to select the **Current Editing Language**. Click on down arrow to view list of languages.

Default Tag Data Type

Click on this menu item to set the **Default Tag Data Type**. Click on the down arrow to view the list of data types.
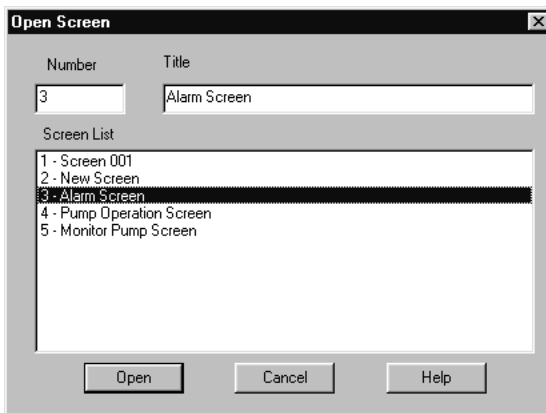
Reference

Screen Menu

New Screen

Enter a screen **Number** and a **Title** for the New Screen. Click on **Open** to display the new screen or Cancel to exit without saving the new screen.

Open New Screen

Number | Title
2 | New Screen

Screen List
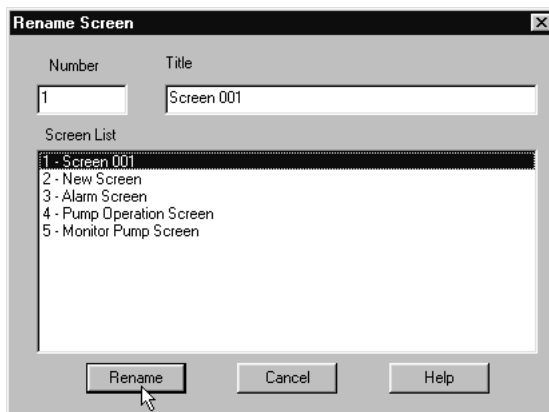1 - Scr 1

[Open] [Cancel] [Help]
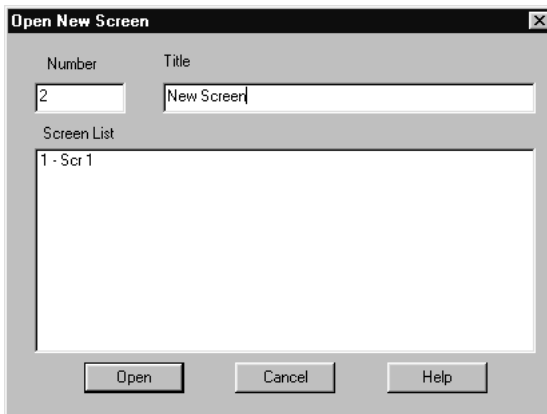
Open Screen

The Open Screen command brings up the dialog box shown below. Click on the screen in the **Screen List** that you want to open and then click on the **Open** button.

Open Screen

Number | Title
3 | Alarm Screen

Screen List
1 - Screen 001
2 - New Screen
3 - Alarm Screen
4 - Pump Operation Screen
5 - Monitor Pump Screen

[Open] [Cancel] [Help]

Screen menu:
- New Screen...
- Open Screen...
- Rename Screen...
- Delete Screen...
- Grid Size...
- Display Grid
- Snap to Grid
- Description...
- Background Color...
- ✓ Show Touch Cells
- Show 320x240 Rectangle
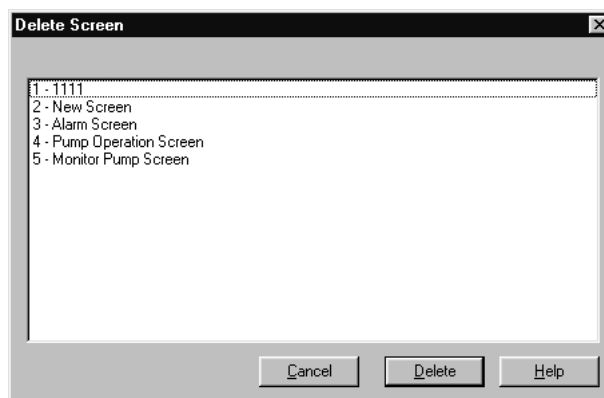- Zoom...

Rename Screen

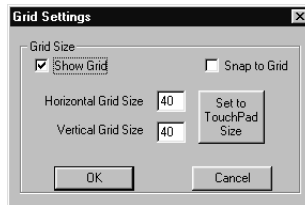This dialog box allows you to **Rename** an existing screen in your project.

1. Select the screen you wish to change from the **Screen List**.
2. Click in the **Title** box and change the title to the new name.
3. Click on the **Rename** button. Your screen will be renamed to the Title you have entered.

Delete Screen

Click on the screen(s) you want to delete from the project, and then press the **Delete** button.

Grid Size

Grid Settings

Grid Size
☑ Show Grid   ☐ Snap to Grid

Horizontal Grid Size [40]   Set to
                                TouchPad
Vertical Grid Size   [40]   Size

[OK]   [Cancel]

When you click on **Grid Size** on the Screen Menu, the dialog box shown above will appear, allowing you to adjust the spacing between the grid points. You may want to adjust to a character size, touch cell size or specific values. The size range is 3 to 100 (you will not be allowed to enter a value outside these parameters.) From here you may enable the **Show Grid** and the **Snap to Grid** features.

To adjust the grid size:

1. Type in a value in the box after Horizontal and Vertical Grid Size, or click on the Set to TouchPad Size to set the grid to 40 by 40. 40 pixels by 40 pixels is the size of a single touch cell on the PowerPanel and is the minimum size for any touch object.
2. Click OK to exit and save settings, or Cancel to exit without making any changes.
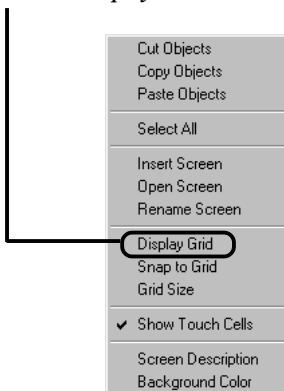
Display Grid

The Display Grid function is the display equivalent of graph paper. Represented by a series of dots, the grid helps you align your drawings and objects and make them more precise.

There are three ways to enable this function:

Click here to Display Grid

Cut Objects
Copy Objects
Paste Objects

Select All

Insert Screen
Open Screen
Rename Screen

Display Grid
Snap to Grid
Grid Size

✓ Show Touch Cells

Screen Description
Background Color

1. Click on the ▦ icon in the Standard Tool bar.
2. Right click on an empty area of the screen window. The menu shown to the left will appear. Click on **Display Grid**.
3. From the Main Menu Bar, click on **Screen**>**Display Grid**. (You can also activate this feature from the **Grid Size** dialog box, described above.) A check mark will appear to show you that it is enabled. Click on it again to hide the Grid.
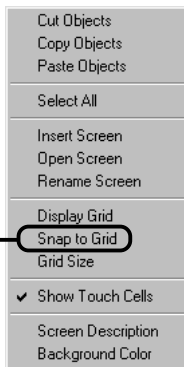
Snap to Grid

Snap to Grid attaches lines, rectangles, circles and other drawn objects to grid points as they are drawn. Objects placed on the screen will align with the grid also.

Click here to Snap to Grid

Cut Objects
Copy Objects
Paste Objects
Select All
Insert Screen
Open Screen
Rename Screen
Display Grid
Snap to Grid
Grid Size
✔ Show Touch Cells
Screen Description
Background Color

There are three ways to enable this function:

1.   Click on the ▦ icon in the Standard Tool bar.
2.   Right click on an empty area of the screen window. The menu shown to the left will appear. Click on **Snap to Grid.**
3.   From the Main Menu Bar, click on **Screen > Grid Size**. A dialog box will appear. Click on the box in front of **Snap to Grid**. (You can also activate this feature from the **Grid Size** dialog box, described on the previous page.) A check mark will appear to show you that it is enabled. Click on it again to disable snap feature.

Description (Screen)

Click on this menu item to view, enter, or edit a description of the current screen You may enter up to 400 characters. When you print this screen, the description you have entered here will appear on the printed page beneath the picture of the screen.
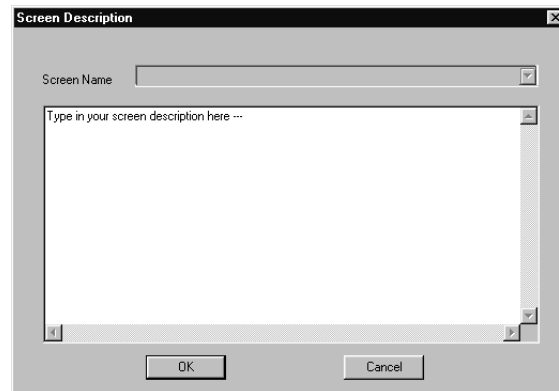
Screen Background Color

This feature allows you to change the color of your Screen Background. Click on the down arrow to view the color palette. Move the pointer over the color swatches to view the color of the background on your current screen. Click on the color you want to select.
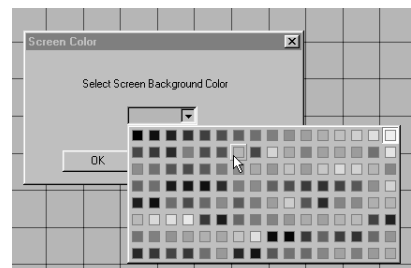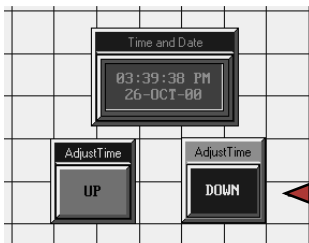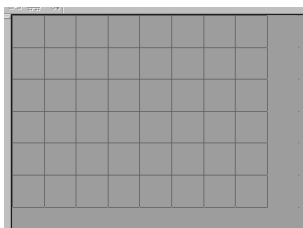
Show Touch Cells

Click on Show Touch Cells and a grid will appear on the screen representing the touch cells on your size screen. This makes it easier to place your objects directly over touch cells. Click on this menu item again to disable.
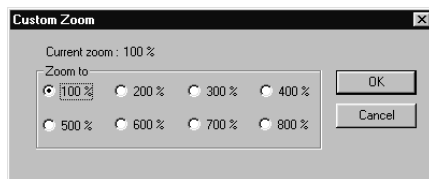
with Show Touch Cells selected

Show 320x240 Rectangle

Click on this menu item or the [icon] icon to show a 320 x 240 area on your 8-inch or 10-inch programming screen. The 320 x 240 area depicts the size of the 6-inch PowerPanel screen. This is useful when designing screens for more than one panel size.
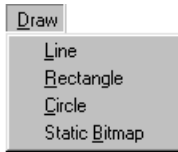
Zoom

Click on Zoom [icon] to view your screens at preset magnifications. Select from the available magnifications. Use the scroll bars to the right and bottom of the screen to view another area of the screen.

Custom Zoom

Current zoom : 100 %

Zoom to

- ⊙ 100 % ○ 200 % ○ 300 % ○ 400 %
- ○ 500 % ○ 600 % ○ 700 % ○ 800 %

OK   Cancel

Objects Menu

Because objects are the main screen creation tool in the project, a section of this manual is dedicated to explaining each object in detail. For information about an object seen on the menu to your left, see the OBJECTS chapter of this manual on page 37.

Objects
- Buttons...
- Indicator Buttons
- Radio Buttons...

- Switches...
- Step Switch...
- Tri-state Switch...

- Numeric Entry...
- Recipe...
- Thumbwheel...

- Indicator Lights...
- Numeric Display...
- Text ▶
- Clock ▶

- Meter...
- Bar Graphs...
- Line Graph...
- PID Face Plate...
- Dynamic Bitmap...

- Change Screen
- Alarm History

- System Objects ▶

Draw
   Line
   Rectangle
   Circle
   Static Bitmap

Note: To toggle between horizontal/vertical lines and diagonal lines, you may press F8 on your keyboard.
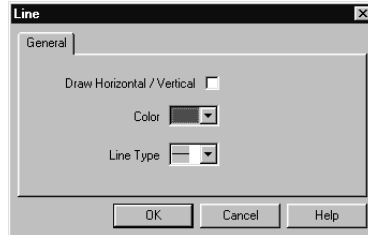
Draw Menu

Line
The Line draw tools allows you to draw a line.

To draw a **Line**:

1. Click on the Line icon [/] on the tool bar or select Line from the Draw Menu.

Line _____ [×]
 General
   Draw Horizontal / Vertical ☐
   Color [▮ ▼]
   Line Type [━ ▼]
   [OK] [Cancel] [Help]

2. A dialog box will appear allowing you to select the color and type of line to draw.
3. Click on the box following **Draw Horizontal/Vertical** to limit the line draw to horizontal and vertical lines. All lines will automatically be drawn either up and down (vertically), or across the screen (horizontally).
4. Select a point on the screen with the pointer and click the left mouse button. Move the mouse to draw the line. When you've completed the line, click the button again to terminate the segment.

Rectangle
This Draw tool allows you to draw a Rectangle
   To draw a Rectangle:

1. Click on the Rectangle icon [□] on the tool bar or select Rectangle from the Draw Menu.
2. A dialog box will appear allowing you to select the outline and the fill color.
3. Select a point on the screen with the pointer and click the left mouse button to locate the first corner of the rectangle. Pull the box with the mouse to the size you want and release the mouse button to set the box size.

Circle
The Circle Draw tool allows you to draw a circle.
   To draw a Circle:

1. Click on the Circle icon [○] or select Circle from the Draw Menu.
2. A dialog box will appear allowing you to select the outline and fill color of the circle.

3. Select a point on the screen with the pointer and click the left mouse button to locate the starting point of the circle. Pull the circle with the mouse to the size you want and release the mouse button to set the perimeter size.

Static Bitmap

This object allows you to import a bitmap and place it on the screen.

IMPORTANT NOTE: (IMPORT BITMAP option) To size a Bitmap once it has been placed on the screen, click on it to select, grab one of the handles and drag to the size you want.

To place a Bitmap on the screen:

1. Click on the Static Bitmap icon or select Static Bitmap from the Draw Menu. The following dialog box will appear.

IMPORTANT NOTE: (SYMBOL FACTORY option) To SIZE a symbol in Symbol Factory, go to Options in the Symbol Factory when selecting the symbol. (See instructions on page 129.)
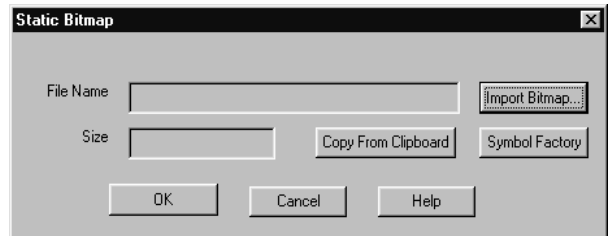
2. There are 3 options for importing a bitmap:

a. Click on the **Import Bitmap** button and a window will appear (shown below) allowing you to navigate to the directory/folder where a Bitmap (.BMP), Windows Metafile (.WMF), Windows Enhanced Metafile (.EMF) file resides. Click on it to highlight and click on the Open button. The File Name and Size of the graphic file will be displayed. If the graphic file is too large, you will be warned by a message and prompted to select another file.
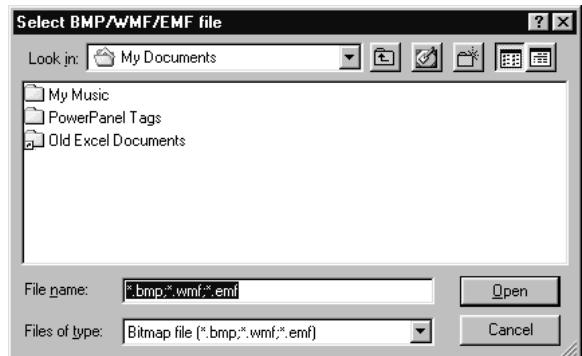
b. You may also click on **Symbol Factory®** to gain access to a library of over 3,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLC's, transmitters, and ISA symbols. Once in Symbol Factory navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object. (See next page, 129, for sizing a bitmap in Symbol Factory.)

c. The third option is to click on **Copy from Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it into the current screen.

3.   Click **OK** to import the bitmap, or **Cancel** to quit.

Sizing a Bitmap in Symbol Factory

Double click on the Static Bitmap symbol already placed on the screen to change the size (resize object). The screen to the right will appear. Click on **Symbol Factory** button.

The **Symbol Factory** screen to the right will appear.

Click on the **Options...** button.

When picture symbols are exported as bitmaps, they are exported at the size of the **Preview** window. If you need a larger bitmap, you can increase the **Export Scale Factor** from 1X to 10X from the **Symbol Options** screen. Fine adjustment of the exported bitmap size can be done by resizing the **Preview** window. To resize the **Preview** window, drag its right or bottom edge.

From the **Symbol Options** screen, click on the DOWN Arrow next to **Export Scale Factor** under **Export Options**. Select the Scale Factor (in this case 3X). Click on **OK**.

You will be taken back to the **Symbol Factory** screen shown to the right. Click on the **Copy** button.

You will be taken back to the **Static Bitmap** Screen (first screen capture shown above, right), click on OK.

You will return to the PowerPanel Programming Screen you were configuring. Your object will be scaled to the size you have selected. If the Scale Factor you have selected is too large for the screen, you will receive a warning message and will not be allowed to import the bitmap. If this happens, select a smaller Scale Factor.

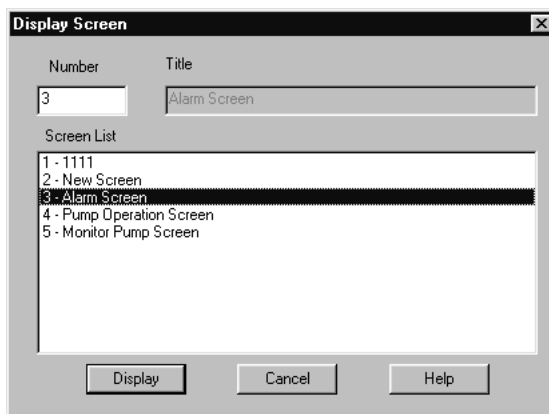> *Sizing a Dynamic Bitmap object in Symbol Factory works the same way!*

This Symbol when changed to a Scale Factor of 3X will be replaced with this size symbol.
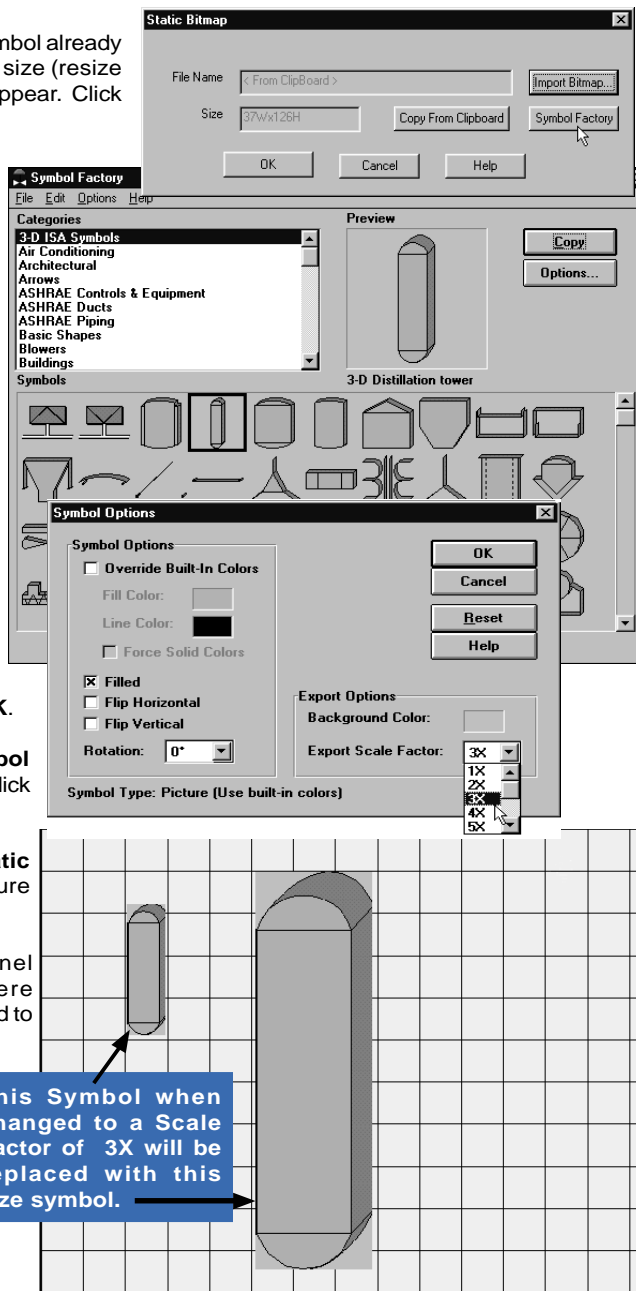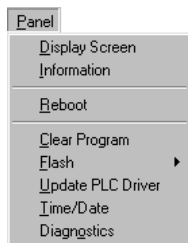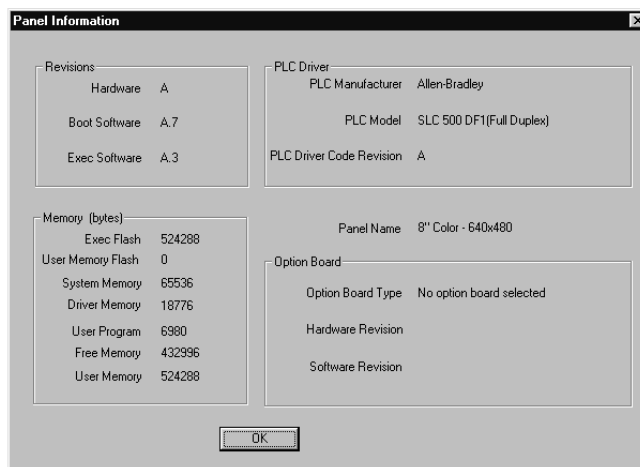
Panel Menu (ONLINE editing only)

The Panel Menu is available for online editing only.

Display Screen

This selection allows you to select a screen to display on the PowerPanel. To display a screen, enter the number or click on the name in the Screen List to highlight it, and then click on the Display button.

Information

Click for important information about the PowerPanel you are using and your PLC. Information includes:

Revisions:

Hardware: This is the revision of the PowerPanel unit.

Boot Software: This is internal panel firmware used to power-up the panel.

Exec Software: This is also internal firmware, used to display panel information and allow panel adjustments to the internal clock, Contrast adjustment, and testing of the Touch cells and Display.

Memory (bytes):

Exec Flash: This will let you know if the PowerPanel has a Flash Memory card installed. (It will say 0 if not installed.) This feature allows you to back up your program from the panel itself. There are two available memory sizes — 512K and 1 MEG. 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.

User Memory Flash: This will let you know how much FLASH memory you have available.

System Memory: This tells you how much RAM memory you have installed in your panel.

Driver Memory: This is the PLC Driver memory that is available.

User Program: This is the size of the program that you currently have loaded into your PowerPanel.

Free Memory: This is the RAM memory that you have left to use in the PowerPanel.

User Memory: This is the total RAM Memory available for use in the PowerPanel.

PLC Driver:

PLC Manufacturer, PLC Model, PLC Driver Code Revision: This provides information about the type of PLC you are using.

Panel Name: A description of the panel model is provided.

Option Board:

Option Board Type: This tells you if you have an option board installed and the type.

Hardware Revision: Current hardware (board revision)

Software Revision: Current software.

Reboot

Click here to reboot the PowerPanel.

Clear Program

Click here to Clear the current user program from the panel.

Flash

| Flash	▶	RAM to Flash
		Flash to RAM

Click on **RAM to Flash** to copy RAM memory to Flash card. This will transfer the user program loaded on your panel to the Flash Card. Flash card may then be removed and installed into another panel to transfer to the RAM. You may also backup your user program to save it before shutting off power to the panel. You may then reinstall the program later.

Click on **Flash to RAM** to copy the contents of the Flash card to the panel RAM memory. This is used to copy the user program from one panel to another or to reinstall a program to the panel.
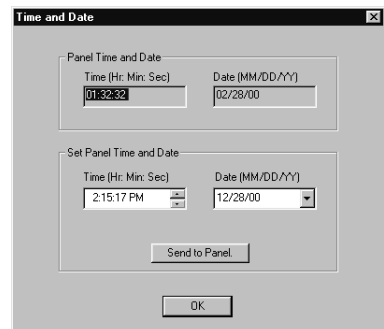
Update PLC Driver

Click on this to update your PLC Driver. This will send the current PLC Driver code to your panel (other project information is not sent.)

PLC DRIVER CODE only
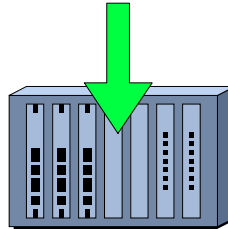
Time/Date

Here you may view and set the **Panel Time and Date** and then send it to the PowerPanel. The current Panel Time and Date will display in the window. Under **Set Panel Time and Date**, your PC time will display. To change the **Time**, click on the hour, minutes or seconds and type in the appropriate numbers or use the UP/DOWN arrows to change the time.

Time and Date

Panel Time and Date
Time (Hr: Min: Sec)   Date (MM/DD/YY)
01:32:32   02/28/00

Set Panel Time and Date
Time (Hr: Min: Sec)   Date (MM/DD/YY)
2:15:17 PM   12/28/00

Send to Panel.

OK

To change the **Date**, click the DOWN arrow next to the date field. A calendar, shown below, will appear. Use the arrows to search for date. (The current PC date will be circled.) Click on the **Send to Panel** button to send your changes to the PowerPanel clock.
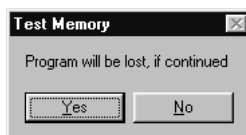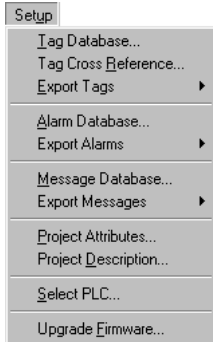

Diagnostics

To run a diagnostic program on the panel, click here. The following screen will appear, letting you choose from **Test RAM** and **Test Flash**. Click **OK** to begin diagnostic.
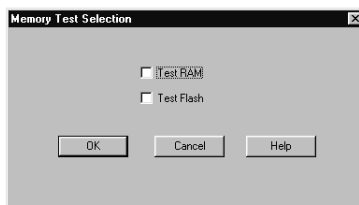
When you click on OK, you will receive the following "warning" message. Save program to disk before testing the panel memory!
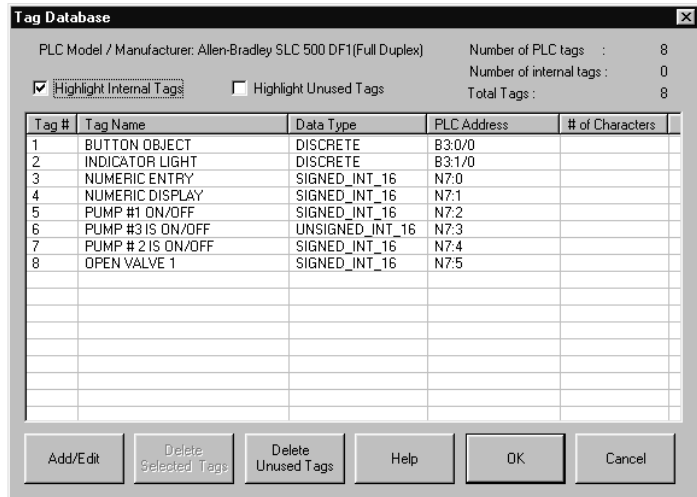
Setup Menu

Tag Database

The **Tag Databas**e is where you define the Tags for your project. A Tag can be a discrete (single bit) location or word location within the PowerPanel. Tags may be either **Internal** (no address) or **External** (PLC Address). In other words, a Tag is an alias for a PLC address or an Internal panel location that an object is communicating with.

Setup menu items:
- Tag Database...
- Tag Cross Reference...
- Export Tags
- Alarm Database...
- Export Alarms
- Message Database...
- Export Messages
- Project Attributes...
- Project Description...
- Select PLC...
- Upgrade Firmware...

Tag Database dialog:

PLC Model / Manufacturer: Allen-Bradley SLC 500 DF1(Full Duplex)

Number of PLC tags : 8
Number of internal tags : 0
Total Tags : 8

☑ Highlight Internal Tags   ☐ Highlight Unused Tags

Tag #	Tag Name	Data Type	PLC Address	# of Characters
1	BUTTON OBJECT	DISCRETE	B3:0/0	
2	INDICATOR LIGHT	DISCRETE	B3:1/0	
3	NUMERIC ENTRY	SIGNED_INT_16	N7:0	
4	NUMERIC DISPLAY	SIGNED_INT_16	N7:1	
5	PUMP #1 ON/OFF	SIGNED_INT_16	N7:2	
6	PUMP #3 IS ON/OFF	UNSIGNED_INT_16	N7:3	
7	PUMP # 2 IS ON/OFF	SIGNED_INT_16	N7:4	
8	OPEN VALVE 1	SIGNED_INT_16	N7:5	

Buttons: Add/Edit | Delete Selected Tags | Delete Unused Tags | Help | OK | Cancel

PLC Model/Manufacturer
The model and manufacturer of the PLC used in the project is listed at the top of this dialog box.

Number of PLC tags, Number of internal tags, and Total Tags
The number of PLC and internal tags that are currently programmed in the project are provided. Also provided is the combined total of both kinds of tags.

Highlight Internal Tags
This is enabled by default. Click on the box with the check mark to deselect this option. When it is selected the internal tags in the list will be displayed in blue.

Highlight Unused Tags
Click in the box in front of Highlight Unused Tags to enable this option. The tags that are not currently linked to an object or attribute are highlighted in the list. The unused tags are highlighted in yellow.

Tag

This is the number of the Tag in the list.

Tag Name

You may enter a descriptive **Tag Name** of up to 40 characters.

Data Type

This is the format of the data. Select the **Data Type** that is appropriate for your type PLC. Choose from DISCRETE, SIGNED_INT_16, SIGNED_INT_32, UNSIGNED_INT_16, UNSIGNED_INT_32, BCD_INT_16, BCD_INT_32, FLOATING_PT_32, and ASCII_STRING.

PLC Address

The syntax for entering PLC addresses depends on the type of PLC. A message (similar to the one shown to the left) will display letting you know if the PLC Address type and Tag Data Type don't match or if the Address is invalid.

Number of Characters
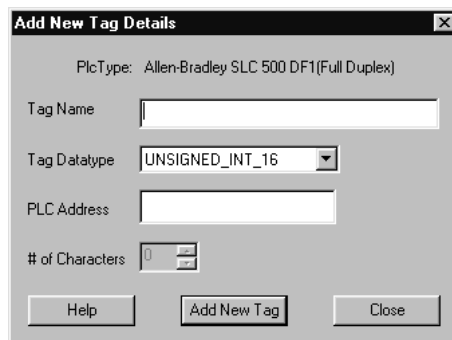
If the Tag will read a character (ASCII) string from the PLC or write a character string to the PLC, you will need to enter the number of characters here. Each PLC register can contain 2 characters. You may enter up to 40 characters. The PLC will assign the correct number of sequential registers needed for the string. The address you have entered for the tag is the starting address. **See Appendix B for a list of ASCII characters supported by the PowerPanel.**

Add/Edit Button

Click on this button to **Add** a new tag, or **Edit** an existing tag.

To Add a New Tag:

1. Click on **Add/Edit** button. (If you have existing tags, ensure that none are highlighted or you will go to the edit tag window.) The following screen will appear.

PLEASE NOTE: If your panel is connected to multiple PLCs, see Mapping Tags in the Help file for your PLC Type.

The message shown above will appear after you have clicked on the Add New Tag button. Click on Yes if you have another tag to add to the database or click on No if you are finished adding tags.
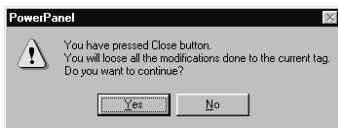

When adding a new tag and you click on the close buttons dialog box, BEFORE you click on the Add New Tag button, the message shown above will appear, allowing you to return to the tag or exit the dialog box without saving the tag to the database.

2. Click in the field next to **Tag Name** and enter a name for the tag.

3. Click on the DOWN arrow next to the **Tag Data Type** field and select the data type from the list.

4. Enter a PLC **Address**, or leave blank if it is an Internal Tag.

5. If you have selected **ASCII String** as your **Data Type**, the **# of Characters** field will become available. Enter or select the number of characters (up to 40) for the ASCII String.

6. Click on the **Add New Tag** button. The new tag will appear in the Tag Database list.

To edit an existing tag:

1. Highlight the tag in the list that you wish to edit.

2. Click on the **Add/Edit** button. The following screen will appear.
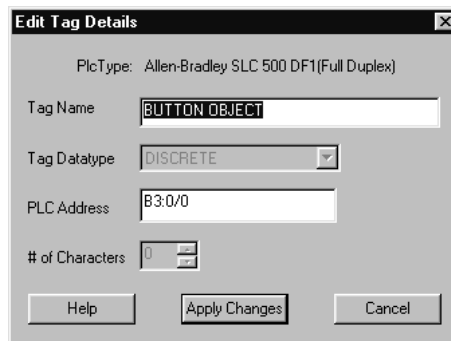
3. Make any changes and then click on the **Apply Tag Changes** button. The changes will be made to the tag and are reflected in the Tag Database list.

To sort the Tag Database list:

1. Right click your mouse while your cursor resides anywhere in the Tag Database list. The popup menu to the right will appear.

2. From here you may **Add**, **Edit**, or **Delete** a tag. You may also choose to sort the list by **Address**, **Tag Name**, or **Data Type**.

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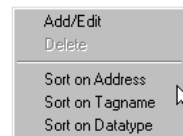
If you click on **Sort by Address**, the list will be sorted alpha-numerically by the PLC address.

If you click on **Sort by Tag Name**, the list list will be sorted alphabetically (A to Z) by the name of the tag.

If you click on **Sort by Data Type**, the tag list will be sorted by Data Type. For tags with same data type, it will perform a second sort by the address.

Tag Cross Reference

NOTE: The Tag Cross Reference screen is for information purposes only. You cannot change or edit the tag parameters from this window.

The **Tag Cross Reference** screen provides you with a list of the programmed tags and a cross reference to the objects that use them. Information is provided on the **PLC Name** (type and protocol) at the top of the screen. **Tag Names** are listed alphabetically. Click on the arrow to scroll to a particular tag name. Information on the **Address**, **Data Type**, **I/O Type** and **Number of Alarms** programmed to the tag is given.

In the **Object List** you are provided with the objects or Project Attributes that use the selected Tag. The **Object Type,Tag Type in Object**, and the **Screen Name** of where the Object appears is listed in the window. To view specifics for each Tag, go to the **Tag Name** field, click on the DOWN arrow, and select one from the drop down list.

Reference
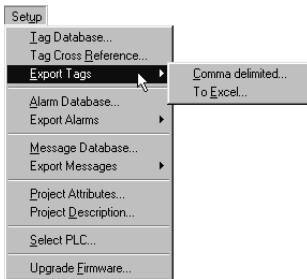
Export Tags
Click on the **Export Tags** menu item to write the tags from your current (open) project to an Excel file or a CSV file.

Comma delimited...
The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Tag Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

> NUMERIC ENTRY,BCD_INT_16,V02002,
> NUMERIC DISPLAY,BCD_INT_16,V02003,
> BUTTON OBJECT,DISCRETE,C0000,
> INDICATOR LIGHT,DISCRETE,C0001,

Click on **Comma delimited...** if you want to save the tag database as a .CSV file. The following window will appear allowing you to name the file and navigate to the directory and folder where you want to save it.
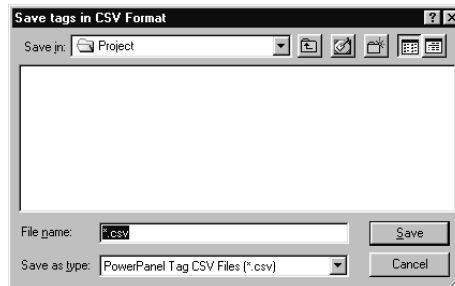
A status window will appear letting you know the progress of the Exporting Tags process.
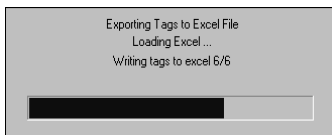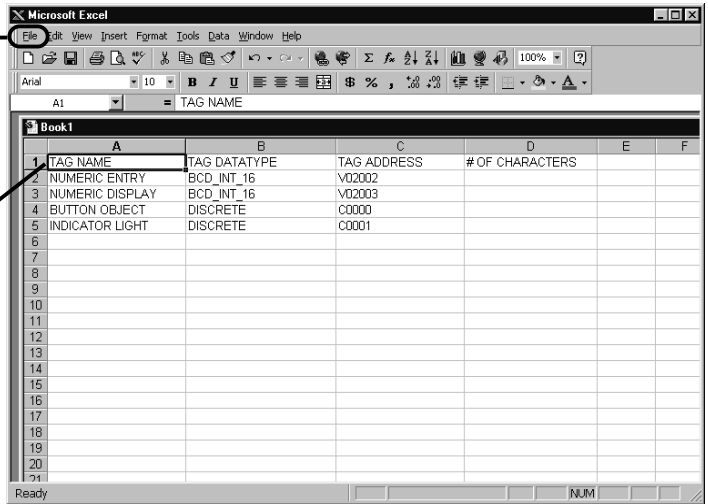
To Excel...
Click on the **To Excel...** menu item to write the tags from your current (open) project to a Microsoft Excel® file. The PowerPanel Programming Software will open Microsoft Excel and write the tags to an Excel book as shown on the next page. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to PowerPanel Programming Software.

Microsoft Excel opens with exported tags written to the book.

Click on File > Save As, navigate to directory/folder where you want to save the Tag Database as an Excel file.

The first line is a header line. Tag Name, Tag Data Type, Tag Address, and # of Characters (if applicable) are listed for each tag in the project database.

A message will appear letting you know whether or not the export was successful and how many tags were exported.

Alarm Database

To program the panel to monitor the PLC for errors and trigger an alarm, see page 151, **Project Attributes, Panel to PLC tab, PLC Error and PLC Error Code Value**.

To program an alarm in the Alarm Database, perform the following steps: (Alarms are numbered from 1 to 999.)

PLEASE NOTE:
The steps necessary to program your PowerPanel to monitor the PLC for errors and trigger an alarm are provided in Appendix A, Troubleshooting, "How do I Log and Display a PLC Error Message?"

1. Click on the **Add/Edit** button to add a new alarm. To edit an existing alarm, click on it in the list to highlight and then click on the **Add/Edit** button. The following screen will appear.

Add New Alarm Dialog Box

NOTE: Alarms will be displayed across the bottom of the PowerPanel Screen.

Edit Alarm Details Dialog Box

2. Use the UP/DOWN arrows next to the **Alarm Number** field to scroll to the alarm number you wish to add. Click on the DOWN arrow next to the **Tag Name** field and select the tag that will trigger the alarm.

3. If your Data Type is **DISCRETE**, you will be able to select whether the alarm will be displayed when the bit is **On** or when the bit is **Off**. (If the data type of the tag is another data type, the **Alarm State** selections are not available.) The default is "On."

4. Enter the **Limits** (tag set points) — **Low Limit** and **High Limit**. The alarm will activate when the tag value goes outside the set point limits. The available ranges for the Low and High Limits will be displayed in these fields and are particular to the data type. The limits you place here must be within these ranges. (If the data type of tag is Discrete then data boxes for Low Limit and High Limit will not be available.)

Please Note: The Add New Alarm and Edit Alarm Details dialog boxes default to Log and Display enabled (check mark in box preceding feature).

5. Click on the box next to **Log** if you want the alarm to be logged in Alarm History when it is triggered. The Alarm History object will store up to 64 alarms and, when the 65th alarm comes in, it will dump the oldest alarm.

6. Click on the box next to **Print** if you want the alarm message to print out the Serial Port of the panel every time it is triggered.

7. Click on the box next to **Display** if you want the alarm to be displayed on the panel when triggered.

8. Select the **Language** number and type in the **Alarm Text** (message) you want to display on the PowerPanel when the alarm is triggered. The message can be up to 34 characters in up to 9 different languages.

9. Click on **Add New Alarm #** or **Apply Changes Alarm #** button to save and exit the dialog box.
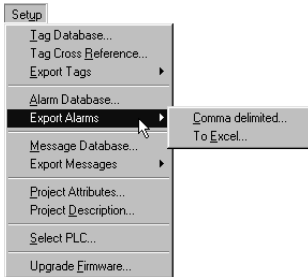
Export Alarms

Click on the **Export Alarms** menu item to write the alarms from your current (open) project to an Excel file or a CSV file.

Comma delimited...

The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Alarm Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

> 1,NUMERIC ENTRY,,-32768,32767,YES,NO,NO,1,
> 2,INDICATOR LIGHT,OFF,,,YES,NO,NO,1,
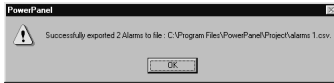
Click on **Comma delimited...** if you want to save the alarm database as a .CSV file. The following window will appear allowing you to name the file and navigate to the directory and folder where you want it to be saved.
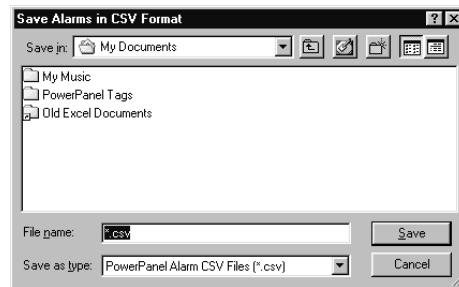
To Excel...

Click on the **To Excel...** menu item to write the alarms from your current (open) project to a Microsoft Excel® file. The PowerPanel Programming Software will open Microsoft Excel and write the alarms to an Excel book as shown below. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to PowerPanel Programming Software.

|	A	B	C	D	E	F	G	H	I	J
1	ALARM #	TAG NAME	ALARM STATE	LOW LIMIT	HIGH LIMIT	DISPLAY	LOG	PRINT	LANG #	ALARM TEXT
2	1	NUMERIC ENTRY		-32768	32767	YES	NO	NO	1	
3	2	INDICATOR LIGHT	OFF			YES	NO	NO	1	
4										

Message Database

Here you may create up to 999 messages (limited by available memory). Each message may be up to 200 characters and you can choose various message attributes such as, **Character Size**, **Text Color**, **Background Color**, **Blink** (for text and/or background), and **Language**. The Message Database is used by the **Lookup Text** object to display a message on the panel. The value for the message is assigned in the Tag associated with a **Lookup Text** object.
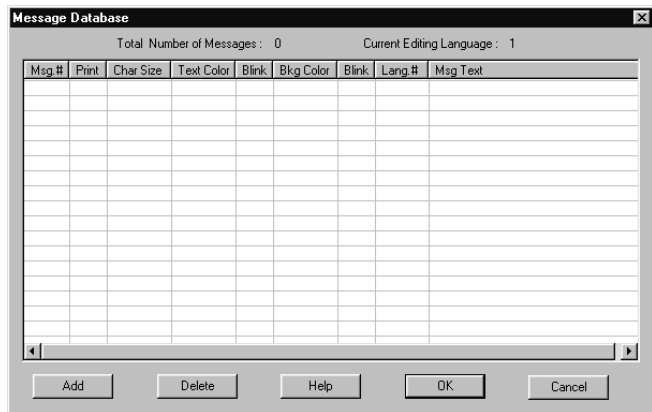
To create a new message:

1. Click on the **Add** button. The following **Add New Message** dialog box will appear.

Add New Message Dialog Box
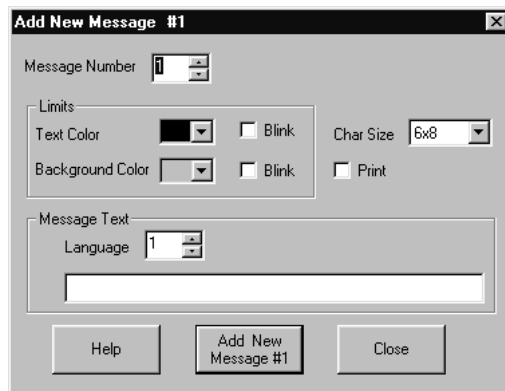
2. Select the **Message Number** using the UP/DOWN arrows.
3. Select the **Text Color** by clicking on the DOWN arrow to view the color palette. Click on the box in front of **Blink** if you want the text in the message to blink on and off.
4. Select the **Background Color** and whether or not you want the background of the message to **Blink**.

The message shown above will appear after you have clicked on the Add New Message button. Click on Yes if you have another message to add to the database or click on No if you are finished adding messages.

5. Select the Character Size of the Message Text by clicking on the down arrow next to the **Char. Size** field to choose from the available choices.
6. Click on the box in front of **Print** if you want the message to print to a printer anytime it is displayed on the Panel.
7. Under **Message Text**, select the **Language** for the message (up to 9) and then enter the text for the message. When finished, click on the **Add New Message #** button.

To edit an existing message:

1. Click on the message in the **Message Database** list to highlight it and then double click or click on the **Add** button. The following dialog box will appear.

Edit Message Details Dialog Box
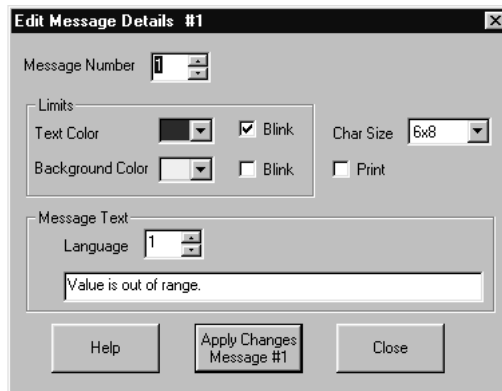
2. Make changes and then click on the **Apply Changes Message #** button. The changes will be saved to the Message Database.

Colors you have selected for the message text and background display right in the message database window!
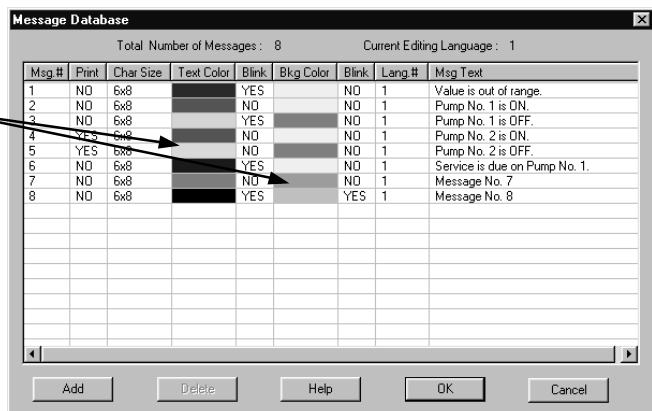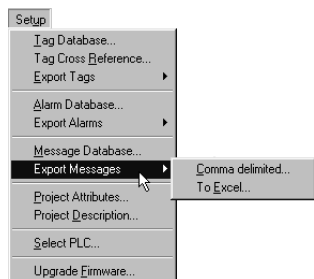
Export Messages
Click on the **Export Messages** menu item to write the messages from your current (open) project to an Excel file or a CSV file.

Comma delimited...
The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Message Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

1,YES,6x8,144,NO,3195072,NO,1,This is message number 1.
2,NO,6x8,49152,NO,15765504,NO,1,This is message number 2.
3,NO,8x16,0,NO,12632256,NO,1,This is message number 3.
4,NO,6x8,15728640,YES,12632304,YES,1,This is message number 4.

Click on **Comma delimited...** if you want to save the Message Database as a .CSV file. The following window will appear allowing you to name the file and navigate to the directory and folder where you want to save it.
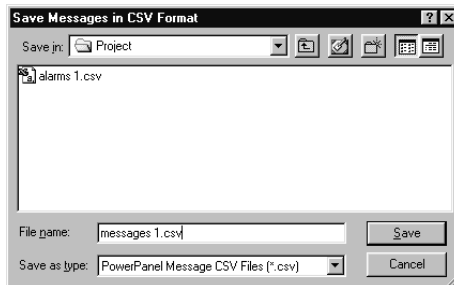
To Excel...
Click on the **To Excel...** menu item to write the messages from your current (open) project to a Microsoft Excel® file. The PowerPanel Programming Software will open Microsoft Excel and write the messages to an Excel book as shown below. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to PowerPanel Programming Software.

	A	B	C	D	E	F	G	H	I	J	K	L
1	MESSAGE #	PRINT	CHAR SIZE	TEXT COL	BLINK	BKG COL	BLINK	LANG #	MESSAGE TEXT			
2	1	YES	6x8	□	NO	À	NO	1	This is message number 1.			
3	2	NO	6x8		NO		NO	1	This is message number 2.			
4	3	NO	8x16		NO	À	NO	1	This is message number 3.			
5	4	NO	6x8		YES	δ	YES	1	This is message number 4.			
6												

Project Attributes

Project Attributes represent the attributes that contribute to the configuration of the PowerPanel. Attributes listed under the General, Printer, Passwords, Clock, Panel to PLC, PLC to Panel, and Language tabs are provided below.

Under the **General** tab, you will enter the following attributes:
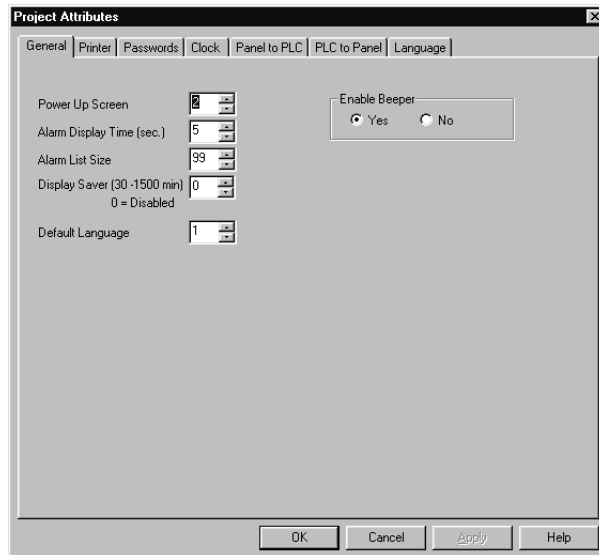
Power-Up Screen
This is the screen that will be displayed after the unit completes its power-up sequence. If the initial value of the "Switch to Screen Number" (from PLC) is anything but zero, this entry will be ignored. Range is 1–999.

Alarm Display Time (sec.)
Specifies the length of time in seconds (1 to 60) that each alarm will remain displayed before the next alarm, in the circular queue, is displayed.

Alarm List Size
If two or more alarms are active, they are placed in a circular queue and displayed one after another. This parameter specifies the length of the queue. Range is 1-99. In other words, this is the maximum number of alarms that will be on at one time. This is not the number of alarm inputs that are monitored. See the section on alarms for more information.

Display Saver (30-1500 minutes) 0 = Disabled

The length of time in minutes that passes before the screen saver is activated. The timer is reset when a new screen is displayed, or when the screen is touched or an alarm is activated.

Default Language

This value is the language that the panel will use when it powers up. Choose from Languages 1 to 9. Languages are programmed when creating the object text or in the Message Database. Languages are named under the Language Tab.

To change the active language when in the PowerPanel Programming Software, click on Edit > Current Editing Language.

Enable Beeper

When the buzzer is enabled, the buzzer will sound when the screen is touched on an active area. If the buzzer is disabled, the buzzer never sounds. Select Yes or No.

Under the **Printer** tab, you will make selections for the following attributes:
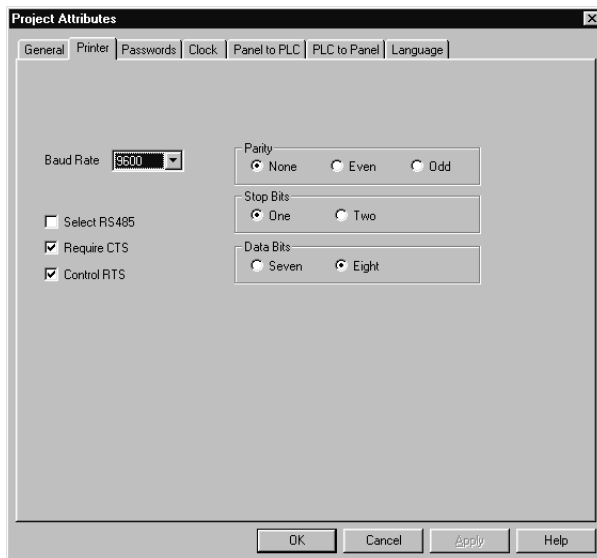
Baud Rate

Select baud rate to match Printer. Select from 1200, 2400, 4800, 9600, 19200, or 38400. Default is 9600.

Parity, Stop Bits, Data Bits

Select the corresponding attributes of the printer.

Select RS485
This allows you to select RS-485 as the communication protocol. If you are connecting RS-232 or RS-422, do NOT select this feature. Click on the box to place a check mark, if you want to enable RS-485.

Require CTS
Select this to match the printer.

Control RTS
Select this to match the printer.

Under the **Passwords** tab, you can make the following selections:

There are eight groups to which you may assign Passwords. Passwords restrict a user from using objects, such as push Buttons, Numerical Entry, etc. Passwords can also be used with Change Screen buttons to restrict access to other screens. Select from the following Group headings, or enter your own.

GROUP

- Managers
- Engineers
- Supervisors
- Maintenance
- Shift 1 Operator
- Shift 2 Operator
- Shift 3 Operator
- General

Reference

All "touch" objects allow you to select the security or Protection level of those that have access to that screen. A numerical keypad will pop up when the touch object is pressed, prompting the user to enter a password. Select Password or Tag under the **Password/Tag** heading. If you select Tag, the password value will be stored in the PLC. If you select Password, you will enter the password here. Passwords are entered by the operator with a popup keypad.

PLEASE NOTE:
Leading Zeroes are ignored in passwords. In other words, if you enter a password of 000455, the password will be 455.

PASSWORD
A 1-10 digit number is assigned here that the user must enter to perform protected functions for a particular Group level. A password is an internal value stored in the panel.

TAG
Tag names are assigned to PLC registers that hold the passwords. This allows you to change the codes by writing new code values in the assigned PLC registers. It also gives you the ability to design a screen that allows a Supervisor to change security codes from the touch screen. *Only use positive values when assigning tag values.*

Under the **Clock** tab, you will select the following attributes:

Date Tags:
> **Year (word)**: Tag for the location that the panel sets with the year (0–99).

Month (word): Tag for the location that the panel sets with the month (1–12).

Day (word): Tag for location that the panel sets with the day (1–31).

Time Tags

Hour (word): Tag for internal location that the panel sets with the hour (1–12).

Minute (word): Tag for internal location that the panel sets with the minute (00–59).

Second (word): Tag for internal location that the panel sets with the second (00–59).

*NOTE: If using **Internal**, the tag address string must use a READ/WRITE register in the PLC. The PLCs use READ ONLY registers for their internal clock/calendars and cannot be written to. If using **External**, be sure to use the correct PLC addresses!*

Clock Source

If you select **Internal**, the panel maintains clock using onboard Real-Time Clock chip. The panel will write data and time values to the PLC, if the tags are mapped to the PLC. **(SEE NOTE TO THE LEFT.)**

If you select **External**, the panel uses values from the tags in place of internal Real-Time Clock. The panel will read these values from the PLC if the tags are mapped to the PLC. **(SEE NOTE TO THE LEFT.)**

Under the Panel to PLC tab, you will enter the following attributes:

Current Screen (word)

Tag for the register that the panel writes to, indicating the screen number that is currently displayed on the panel.

Good Communication Toggle (Discrete)

Watchdog — this bit is toggled every 5 seconds allowing the PLC to determine if the panel is communicating.

Low Battery (Discrete)

Indicates battery for system RAM needs to be replaced. Cleared on power-up, set when low battery is detected.

Screen Buffer Overflow (Discrete)

Indicates that the current screen and its objects and graphics contain more data than the screen buffer can hold. Set/cleared when switching screens.

Popup Keypad (Discrete)

Indicates that the Popup Keypad is active on the panel screen.

Current Language Number (word)

Shows the value (1–9) of the current language being used on the screen.

NOTE: Map to internal tag only — DO NOT assign PLC addresses or other objects to these tags:

PLC Error (discrete) and PLC Error Code Value (word)

Error Code Value (word)

Tag for internal location that the panel writes values to indicating which PLC errors have occurred in the unit. The values are in decimal only. Convert them to Hex to find the PLC Error Code Value. PLC Error messages are listed in the Appendix A, PLC Error Messages, and in the programming software help under the PLC Help topic, Driver Errors.

NOTE: The steps necessary to program your PowerPanel to monitor the PLC for errors and trigger an alarm are provided in the Troubleshooting Appendix A (see "How do I Log and Display PLC Error Messages?").

PLC Error (Discrete)

Tag for internal location where the panel sets a bit to indicate that a PLC error has occurred.

Leave the Address String Field EMPTY when programming PLC Error Tags!

ADD NEW TAG DETAILS

Enter TagDetails for the Tag

ERROR CODE VALUE

(PlcType: DirectLogic K-Sequence)

Address String

Expected IOType : R/W

Data Type UNSIGNED_INT_16

No. of Chars 0

OK   Cancel   Help

ADD NEW TAG DETAILS

Enter TagDetails for the Tag

PLC ERROR

(PlcType: DirectLogic K-Sequence)

Address String

Expected IOType : R/W

Data Type DISCRETE

No. of Chars 0

OK   Cancel   Help

Under the **PLC to Pane**l tab, you will enter the following attributes:

Under this Project Attributes tab, you will enter a tag to an internal panel location. These locations can be written to by the PLC.

Switch to Screen Number (word)
This tag can be written to by the PLC to display a screen on the PowerPanel. This will allow the PLC to change screens at anytime. A zero (0) placed in the tag will return the customer to the previous screen.

Beeper On/Off (Discrete)
This tag can by written to by the PLC to turn on the panel beeper. This will allow the PLC to turn on the panel beeper at anytime. (Beeper is activated by PLC and not by a press to a touch cell.)

Increase Clock by 1 hour (Discrete)
This allows the PLC to increment the panel system clock by 1 hour.

Decrease Clock by 1 hour (Discrete)
This allows the PLC to decrement the system clock by 1 hour.

Clear Alarm History (Discrete)
This allows the PLC to clear the panel alarm history.

Clear Alarm Count (Discrete)
This allows the PLC to clear the panel alarm count.

MAN-UTICW-M

Trigger Screen Saver (Discrete)
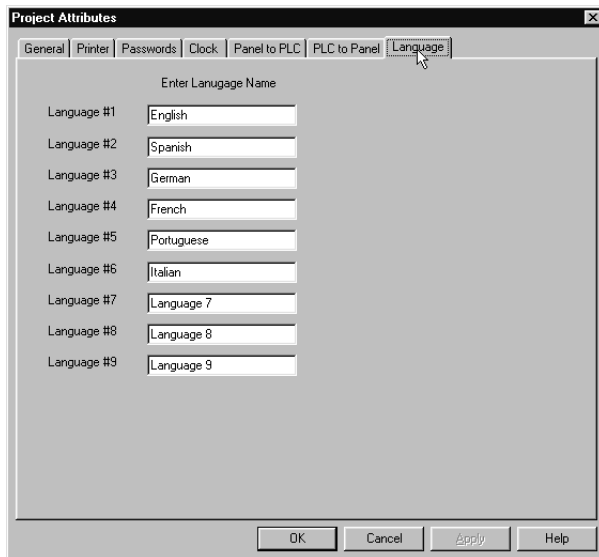This allows the PLC to trigger the panel screen saver.

Select Current Language (word)
This allows the PLC to select the current language (1–9).

Under the **Language** tab, you will assign the following attributes:

The PowerPanel supports Multiple Languages. Language Preference allows you to select and view different versions of text strings while you are working in the programming software. Each version can be created for a different language (up to 9) for each Object where text is displayed.

The Default Language is the language to be used by the PowerPanel on power-up.

A brief tutorial is provided here to show you how the Multi-Language Support Feature works. If, for instance, you are creating a Push Button Object, and you want the text within the button to say "Hello" in Language Number 1, "HOLA" (Spanish equivalent) in Language Number 2, and "GUTEN TAG" (German equivalent) in Language Number 3, do the following:

1. Click on the Button Object, and then click on the General tab, if necessary.

Hello...

        Hola...

                Guten Tag...

2. In the **Language Number** box type in "1" (or click on arrows to scroll up or down), then type "**HELLO**" in the text box. Go back to Language Number box and type in "2", then type "**HOLA**" in the text box, and repeat for "3" and "**GUTEN TAG**."

3. Click on **OK**.

4. The next time you type in **Language Number** 1, 2 or 3, the corresponding text string will come up in the text box.

5. To view the different languages for the **Button** object text, click on **Edit** on the **Main Menu Bar** and select **Current Editing Language...**, and then enter the "Working" language number that you want to view in PowerPanel Programming Software. The text in your Button Object will change accordingly. Keep in mind that this is for viewing only while working in the PowerPanel Programming Software. To set the language preference that will be displayed on the PowerPanel, you must select the preferred Language Number as the **Default Language** while programming your **Project Attributes**.

Project Description

Enter text here to describe your project. You may enter up to 400 characters. Click on the **OK** button when you are finished.
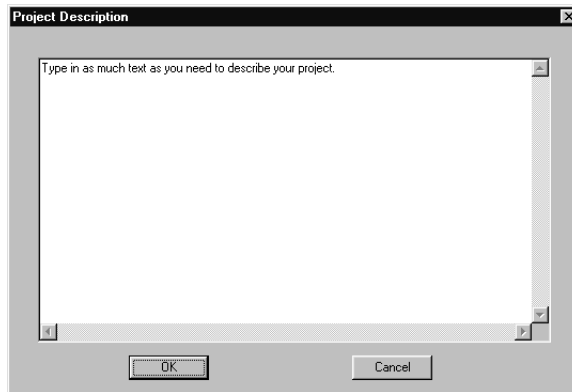
Select PLC

Click on the down arrow to view the available PLCs. Select the type/ protocol you are using. If you want to View or Edit the PLC Attributes, click on the **View/Edit Attributes** button. Click on **OK** to save selection. The dialog box shown below appears when you click on the **View/Edit Attributes** button. It is specific to the type PLC and protocol you have selected in the previous dialog box (in this case, DirectLogic K-Sequence).
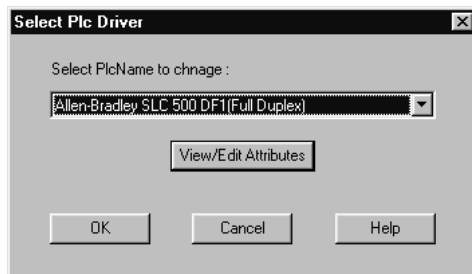
You may change the attributes from this dialog box. Click on **OK** to save your changes or **Help** to view the help topics available for that particular PLC.

Upgrade Firmware (SEE CAUTION, BELOW)

There may be occasional upgrades to the PowerPanel internal software, also referred to as the Exec or Firmware. *(Check the www.uticor.net website periodically for information about software and firmware upgrades.)*

NOTE: These settings must match the PLC Communications Port that you are connecting the PowerPanel to.
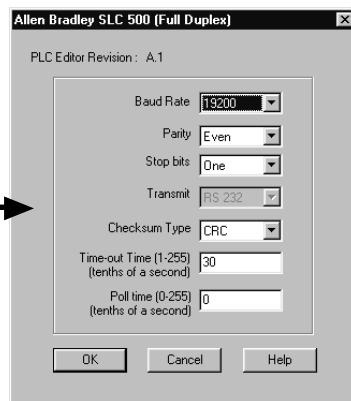
CAUTION: Existing programs that are saved to Flash memory must be resaved to Flash after upgrade. When upgrading firmware, YOU MUST write the program to the panel and save the program to FLASH using Panel > Flash > RAM to Flash.

CAUTION

To Upgrade Firmware:

1. Back up the user program currently stored in the PowerPanel and save to disk or Flash option card.

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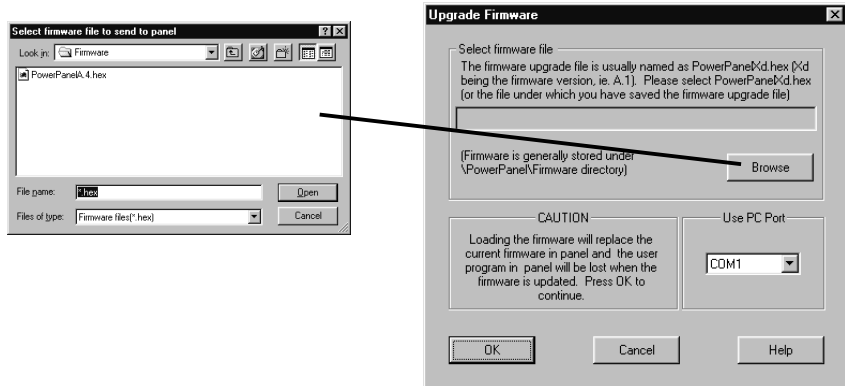

3. Select the appropriate COM port under **Use PC Port** and click on the **OK** button to begin the upgrade. A status bar will let you know when the upgrade is complete.

Check File Revision number against Panel Revision number.
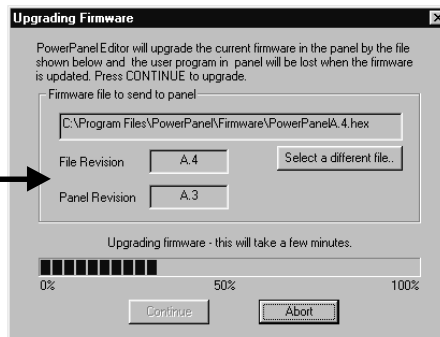
The dialog box will show the **File Revision** number of the firmware and the **Panel Revision** of the Firmware. Check these revision numbers. If they are the same (no upgrade is needed) you may click on the **Abort** button to exit. If the file you have selected is not the right one, click on the **Select a different file...** button.

Window Menu
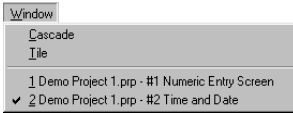
Cascade

Click here to view open screen files in the window. Screens will cascade down window, overlapping each other, but with their title bars in view. This is helpful when you are making changes to two or more screens at the same time. Click on the title bar of one of the screens to bring it to the front. The title bar is grayed out in screens that are not currently active.

Tile

Click here to view open screen files in the window. Screens will be arranged within the window. This is helpful if you want to copy or cut and paste objects or drawings between screens. The title bar is grayed out in screens that are not currently active

1 Demo Project 1.prp - #1 Numeric Entry Screen
2 Demo Project 1.prp - #2 Time and Date

This is a list of the project screens that are currently open. Click on a screen in this list to bring it into view. A check mark will appear in front of the active screen in this list.
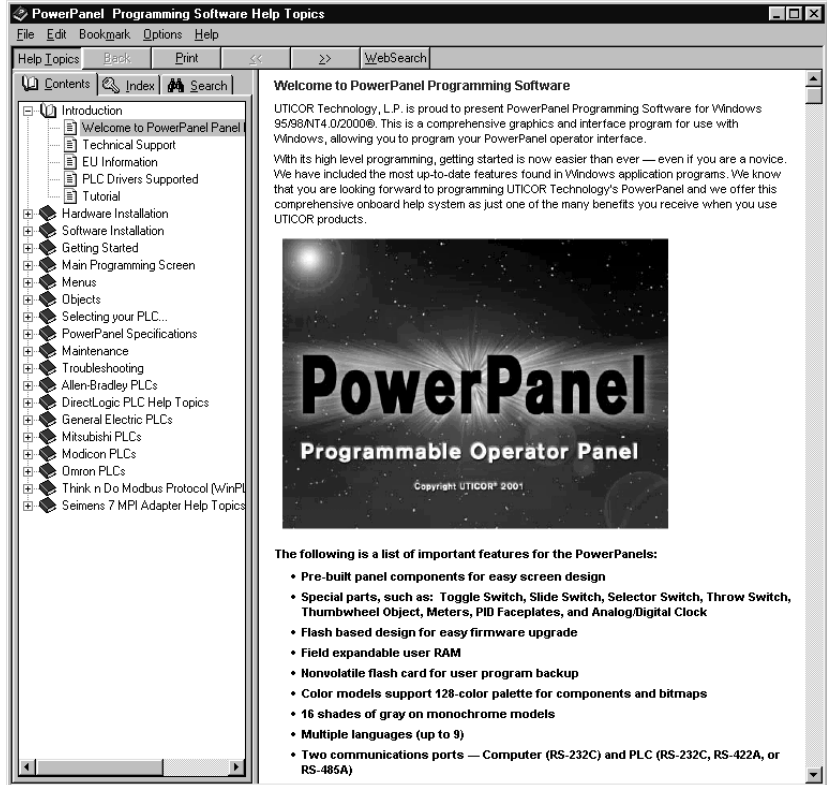
Reference

Help Menu

Help Topics
Click on Help Topics to view the help topics for PowerPanel Programming Software. The help window is in Windows 2000 format. Use the **Contents** tab to view help topics by category. Click on the **Index** tab to view an alphabetical list of all help topics. Click on the **Search** tab and enter a word or words to search the help topics for.

About PowerPanel
Click on About PowerPanel for copyright, manufacturer, and version number of the PowerPanel Programming Software.

Reference

Right Click Menus

Right click while cursor is on programming screen

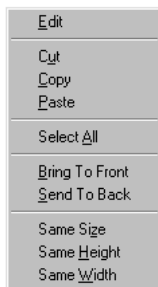| |
|---|
| Cut Objects |
| Copy Objects |
| Paste Objects |
| Select All |
| New Screen |
| Open Screen |
| Rename Screen |
| Zoom... |
| Display Grid |
| ✓ Snap to Grid |
| Grid Size |
| ✓ Show Touch Cells |
| Screen Description |
| Background Color |

Some functions are accessible with a click on the right mouse button. With your cursor anywhere on the programming window, click the right mouse button. The menu to your left will appear. Some items may be grayed out (not available), depending upon the objects you have selected.

From this menu you can:

♦ Cut, Copy, or Paste selected Objects (you must select more than one object)
♦ Select All objects on screen
♦ Create New, Open an existing, or Rename a Screen
♦ Change the screen magnification with the Zoom control
♦ Display Grid, activate Snap to Grid, or change Grid Size
♦ Show Touch Cell grid
♦ Enter or Change the current Screen Description
♦ Change Background Color of the screen

Right click while cursor is on an object

| |
|---|
| Edit |
| Cut |
| Copy |
| Paste |
| Select All |
| Bring To Front |
| Send To Back |
| Same Size |
| Same Height |
| Same Width |

The functions on the menu to the left are accessible when you have one or more objects selected on a screen and click the right mouse button. Some items may be grayed out (not available), depending upon the objects you have selected.

From this menu you can:

♦ Edit an object
♦ Cut, Copy, or Paste an object
♦ Select All objects on current screen
♦ Bring selected object(s) to Front of screen
♦ Send selected object(s) to Back of screen
♦ Make selected objects the Same Size, Height, or Width (you must select more than one object)

Right click while cursor is in the Project Screens Explorer View window

New Screen...
Open Screen...
Rename Screen...
Delete Screen...
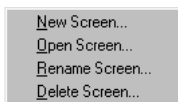
The functions on the menu to the left are accessible when you right click the mouse button while in the Project Screens Explorer View window.

♦ Add a New Screen to your project
♦ Open an existing Screen
♦ Rename a Screen from your project
♦ Delete a Screen

**Reference**

Symbol Factory®

Symbol Factory® is a product we have included in our software for your use in creating screen graphics. The Symbol Factory is a library of over 3,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. It is accessible from the **Draw > Static Bitmap** and **Objects > Dynamic Bitmap** menus. Once opened, click on Symbol Factory Help menu item for Help.

NOTE: Go back to page 129 for instructions on how to size a symbol bitmap before or after importing onto a screen, or see Symbol Factory Help.
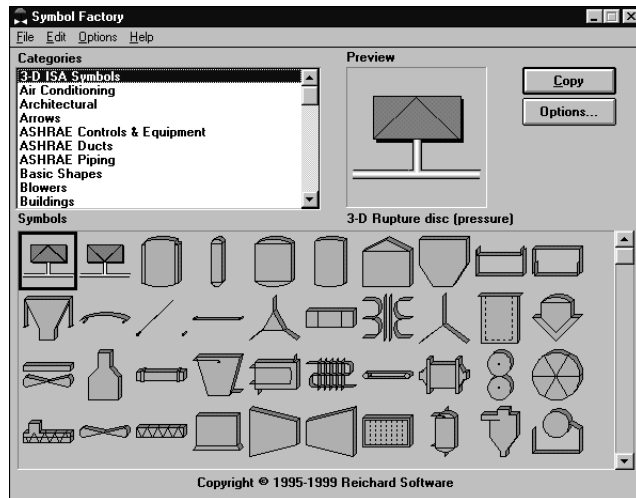
Over 3000 Symbols to choose from — customize your panel screens!

MAN-UTICW-M
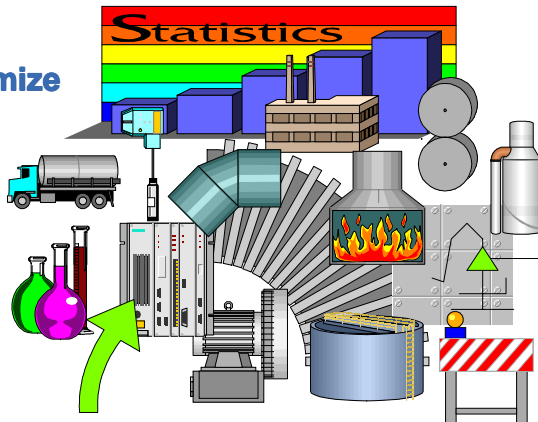
Troubleshooting

In this Appendix....

        — Frequently Asked Questions (FAQs)
        —Troubleshooting
        — PowerPanel Error Messages
        — PowerPanel Programming Software Error Messages

Frequently Asked Questions (FAQs)

1. How do I format an address string when connecting to multiple PLCs?

Simply add the PLC Station Number to the beginning of the address string. (For example, if the PLC Station number is 3 and the address is V2003, enter **3-**V2003 for the address string.)

2. Can I change the Data Type of a Tag Name's assigned Address String (PLC Address)?

Yes, but only if the Tag is used on <u>no more than one object</u>. If it is currently used by more than one object, you must:
  a. assign the other objects to a new or different tag(s)—or delete those objects
  b. change the data type of the PLC Address under Setup > Tag Database
  c. reassign the other objects to the original tag as necessary

3. Can the Tag Database be exported to other applications?

Yes, the Tag Database can be exported. You can export your Tag Database from the PowerPanel to Microsoft Excel® or you can export it as a Comma Separated Value (.CSV) file (also referred to as a Comma delimited file format).

4. How do I convert a project from one panel size to another?

Converting a project created on a 6" panel to an 8" or 10" panel requires nothing more than opening the project with the new size selected. Converting from 8" or 10" to 6" size is best done by the following procedure:
  a. Select Screen > Show 320x240 Rectangle.
  b. Move all the objects onto the new small 6" grid shown.
  c. Save the project.
  d. Open the project again, selecting the new panel size on the Project Information box.

5. Can I use the Power Up Screen selection (under the Project Attributes > General menu) and also use the Switch to Screen Number (under Project Attributes > PLC to Panel)?

Not exactly, because before the panel can actually display the Power Up Screen, it reads from the PLC and displays the Switch to Screen Number.

6. Can I place objects anywhere on the screen?

There are two types of objects in PowerPanel Editor. One is Touch Objects (pushbutton, switches, numeric entry, etc.) and the other is Display Objects (meter, bar graph, numeric display, line, circle, etc.) Touch Objects will always snap to the touchcell grid by the upper left corner. You can then click on the object to highlight and then resize by clicking on one of the other side or corner handles and dragging it to the size you want. Ensure that the Snap to Grid feature is turned off if you want the Touch Object to be positioned to within a touchcell area. Display Objects may be placed anywhere on the screen.

7. What is a touchcell?

A touchcell is the physical area on the panel that defines user selection by touching. A Touch

Object can contain more than one touchcell, but cannot contain less than one touchcell. On all PowerPanels, the size of a touchcell is 40 x 40 pixels. However, since the screen size differs, the physical size of 40 pixels does as well. On the 6-inch panels, 40 pixels = 0.57". On the 8-inch panel 40 pixels = 0.52". On the 10-inch panel 40 pixels = 0.41".

8. Can I use the floating point data type with all objects?

No, only numeric entry, numeric display and recipe objects support floating point tags. All other objects do not support floating point tags.

9. Why do I not see all the discrete tags in a pushbutton object on the Tag Name pulldown?

You may have defined tags as discrete but if the PLC addresses assigned to these tags are read only addresses, then you will not see these tags. The reason is because a pushbutton writes discrete data to the PLC address and if a tag is mapped to a Read Only PLC address, the pushbutton is not allowed to write the data.

10. Can I use a label on a vertical Radio button?

No, a label is not available for either vertical style Radio button or vertical style Tri-State Switch.

11. How does a Radio button work?

A Radio button is assigned to a word (16 bit register) in the PLC. Each bit in the word (of this associated tag) corresponds to an individual button of the Radio button object. Only one button can be ON at a time. So, turning one button ON automatically turns all other buttons OFF.

12. What is the initial state of objects when the project is written to the panel?

If the object reads from the PLC, it will show the current PLC value. If it writes to the PLC, it will default to zero (for OFF).

13. What will be the state of objects if they are mapped to internal tags?

Internal tags are initialized to OFF.

14. When I select a group of objects and try to move, all the objects do not move. Why?

If you have selected a mix of touch and display objects and try to move this group, you will be able to move only display objects. Remember, touch objects are always snapped to a touchcell, whereas display objects are not necessarily snapped to touchcells. Try moving the touch objects first, then move the display objects.

15. When I have objects at the boundary of the screen, I am not able to move the objects freely (vertically up/down or Horizontally left/right near the boundary). What can I do to correct this?

You can use the PC's keyboard arrow keys to move objects up or down along the boundary line.

16. What is the maximum number of screens that a project can have?

The maximum possible is 999. However, the panel's memory may limit the achievable maximum to a lower number of screens, depending on the complexity of bitmaps and objects.

17. What is the maximum number of alarms that a project can have?

The maximum is 999, but there is no limit to how many times each alarm can be used in the panel.

18. What is the maximum number of messages that a project can have?

You can define a maximum of 999 messages in a project.

19. Can I insert a 640 x 480 bitmap on a screen?

The maximum size of a bitmap that can ever be placed on a screen is 640 x 480 on a 8" or 10" panel. But, the compressed size of bitmap is also a limitation. The PowerPanel uses an RLE (RunLength Encoding) algorithm to compress bitmaps for storage. If this compressed bitmap size exceeds 64K bytes, you cannot place the bitmap on the screen.

20. Is it possible to find out whether the compressed bitmap size is less than 64K before trying to insert the bitmap?

No, the only sure way to know is to try. An error message will alert you immediately if the 64K size is exceeded. Using fewer colors (like 256 vs. 24 bit) will help prevent this problem.

21. Is there a limit to the number of objects that can be placed on a single screen?

No, not exactly, but the maximum memory size of a screen is 128K bytes.

Troubleshooting

→ **Problem: Panel won't power up.**

Action:
1. Connect power to the PowerPanel (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: Unit failure, return for service.
   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.

Refer to the PowerPanel Programming Software Help topic, or the PowerPanel Hardware Manual chapter on "Connections and Wiring" for more information.

→ **Problem: Cannot communicate with PowerPanel from Programming Computer.**

Action:
1. Check cable, ensure that it is the correct cable 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 PowerPanel Programming Software and that it is available in the PC.
4. Check the COM1 setting in Setup Mode on the panel.

Refer to the PowerPanel Programming Software Help topic, or the PowerPanel Hardware Manual chapter on "Connections and Wiring" for more information.

→ **Problem: Panel does not communicate 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?

Refer to the PowerPanel Programming Software Help topic, or the PowerPanel Hardware Manual chapter on "Connections and Wiring" for more information.

➡ ## Problem: Memory unavailable.

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

Refer to the PowerPanel Programming Software Help topic, or the PowerPanel Hardware Manual chapter on "Connections and Wiring" for more information.

➡ ## Problem: Display is Blank.

Action:
1. Display indicates NO SCREEN for 3 seconds after power up. There is no user program installed into the panel.
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.) At this point, one of the following will occur:
    a. There is no change, and the display remains blank. This 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 units have no contrast adjustment).
    c. Unit SETUP screen appears normal. Unit has no user program —   transfer user program to panel.

Refer to the PowerPanel Programming Software Help topic, or the PowerPanel Hardware Manual chapter on "Connections and Wiring" 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 PowerPanel Programming Software. Select Panel > Clear Memory from main menu bar, or transfer a new user program to the panel.

Problem: "How do I log and display PLC Error Messages?"

Action: Following is a description of how to set up the panel to monitor communications between the PLC and panel. This will allow the panel to detect a PLC error and log the PLC ERROR CODE VALUE in the Alarm Database. Open your PowerPanel Project in the PowerPanel Programming Software. For the purposes of this demo, we are using DirectLogic K-Sequence Protocol.
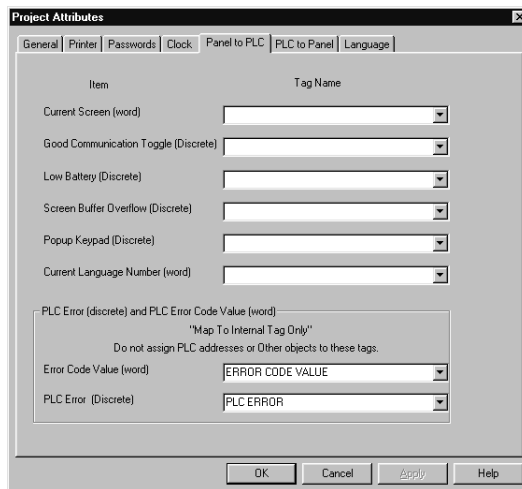
1. From the Main Menu Bar, click on **Setup > Project Attributes** and then click on the **Panel to PLC** tab.

2. Click in the field next to Error Code Value (word). Type in **ERROR CODE VALUE** for the tag name as shown below.
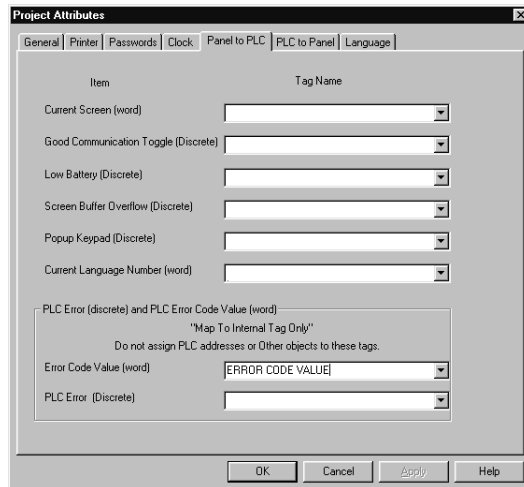
3. Press **Enter**. The following **ADD NEW TAG DETAILS** dialog box will appear.
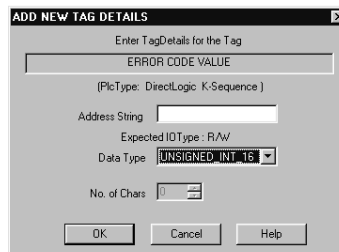
4. LEAVE THE **Address String** FIELD EMPTY and select **UNSIGNED_INT_16** as the Data Type. Click **OK**.

5. Click in the field next to **PLC Error (Discrete)** and type in **PLC ERROR** as shown below.

6. Press **Enter**. The following **ADD NEW TAG DETAILS** dialog box will appear.
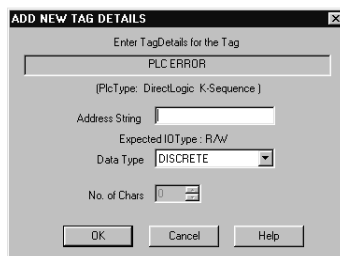
7. LEAVE THE **Address String** FIELD EMPTY and select **DISCRETE** as the Data Type. Click **OK**.

8. From the Main Menu Bar, click on **Setup > Alarm Database**. The following dialog box will appear.
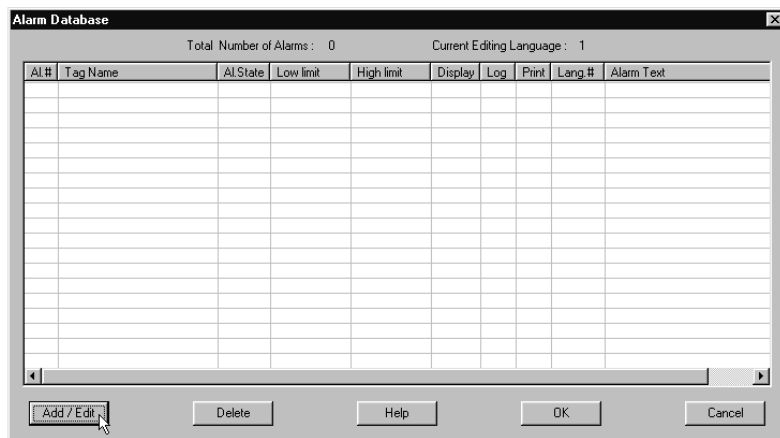
9. On the **Alarm Database** dialog box, click on the **Add/Edit** button. The following **Add New Alarm** dialog box will appear.
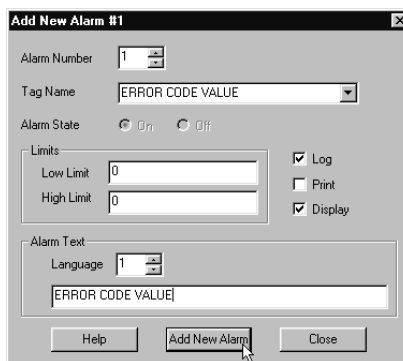
10. For **Alarm No. 1**, click on the down arrow next to **Tag Name** and select **ERROR CODE VALUE** from the list.

11. Set both the **Low Limit** and the **High Limit** to **0**. Leave **Log** and **Display** selected.

12. Under **Alarm Text**, type in the alarm message as **ERROR CODE VALUE**.

13. Click on the **Add New Alarm Button**. The message shown below will appear. Click on the **Yes** button.
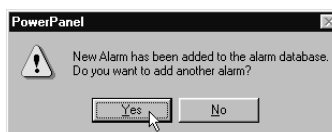
14. For **Alarm No. 2**, click on the down arrow next to **Tag Name** and select **PLC ERROR** from the list.

15. For **Alarm State**, leave the selection to **On**. Leave **Log** and **Display** selected, also.

16. Under **Alarm Text**, type in the alarm message as **PLC ERROR**.

17. Click on the **Add New Alarm** button. The following message will appear. Click on the **No** button.

18. The **Alarm Database** should now show the two new alarms that you have just added, as shown below.

To be able to view the Alarm History and the PLC ERROR CODE VALUE, perform the steps below.

1. First we'll program a screen with an **Alarm History** button that will allow you to view alarm history. Open the screen in your PowerPanel Programming Software where you want to place the **Alarm History** Button.

2. Click on **Objects > Alarm History**. The following screen will appear.
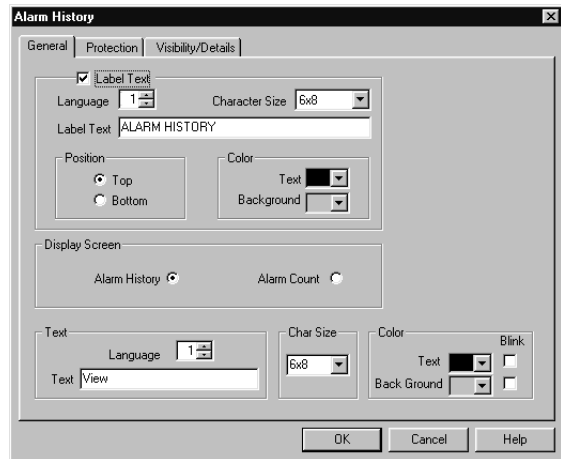
3. Type in **View** in the **Text** field. Click on **OK**.

4. A crosshair cursor will appear on the programming screen. Position the crosshair where you want the object to appear (center at the bottom of the screen), and click once.

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

6. Click on **File > Save Project**.

7. Transfer the saved Project to the panel.

A-11

8. To test the Alarms, perform the following steps.

a. Disconnect the PLC and then reconnect it as soon as you can after the first error message flashes on the panel screen.

(While disconnected the "**PLC COMMUNICATION TIMEOUT**" error message will flash across the top of the PowerPanel Screen, and the "**01/02 ERROR CODE VALUE**" error message will flash across the bottom of the screen.)

Please Note: Alarm History and Alarm Counts are retentive — they are cleared from the Alarm History/ Count screen or from Project Attributes (PLC to Panel).

b. Press the **ALARM HISTORY** button on the panel screen. The Alarm History screen will appear. It will look similar to the one shown below. (Each time the error message flashes on the panel screen it is counted as an entry.)

c. Press the **ALARM COUNT** button. The following screen will appear, showing you the number of times the messages was sent.

ALARM HISTORY		TOTAL OF 08 ALARMS

ENTRY	MESSAGE
01	PLC ERROR
02	ERROR CODE VALUE
03	PLC ERROR
04	ERROR CODE VALUE
05	PLC ERROR
06	ERROR CODE VALUE
07	PLC ERROR
08	ERROR CODE VALUE

ALARM COUNT	PAGE UP	PAGE DOWN	LINE UP	LINE DOWN	DETAILS	CLEAR ALL	EXIT

d. Press the **ALARM HISTOR**Y button. From this screen press the **DETAILS** button. The following screen will appear, showing the details of the alarm.

```
                    ALARM COUNT

┌─────────────────────────────────────────────────────┐
│ ALARM    COUNT          MESSAGE                       │
│─────────────────────────────────────────────────────│
│ 001      00004          ERROR CODE VALUE              │
│ 002      00004          PLC ERROR                     │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
│                                                       │
└─────────────────────────────────────────────────────┘
```

ALARM HISTORY	PAGE UP	PAGE DOWN	LINE UP	LINE DOWN	CLEAR	CLEAR ALL	EXIT

```
                ALARM HISTORY DETAILS

┌───────────────────────────────────────────┐
│ ENTRY NO.      01                          │
│     PLC ERROR                              │
│ ACTIVATED:      10:18:50   10-JAN-01       │
│ CLEARED:        10:18:53   10-JAN-01       │
│ ACTUAL VALUE: TRIGGER ONSTATE              │
│ HIGH/LOW/DIS: DISCRETE                     │
│ LOW LIMIT:                                 │
│ HIGH LIMIT:                                │
└───────────────────────────────────────────┘
```

e. Press on the **NEXT** button to view details of the second alarm. Remember or write down the **ACTUAL VALUE**. (In this case, the actual decimal value is **256**.)

```
              ALARM HISTORY DETAILS

    ┌─────────────────────────────────────────────┐
    │  ENTRY NO.      01                           │
    │     ERROR CODE VALUE                         │
    │  ACTIVATED:     10:18:50   10-JAN-01         │
    │  CLEARED:       10:18:53   10-JAN-01         │
    │  ACTUAL VALUE: 256                           │
    │  HIGH/LOW/DIS: HIGH                          │
    │  LOW LIMIT:     0                            │
    │  HIGH LIMIT:    0                            │
    └─────────────────────────────────────────────┘




                       ┌──────┬──────┬──────┐
                       │ EXIT │ PREV │ NEXT │
                       └──────┴──────┴──────┘
```

f. Press the **EXIT** button to return to **ALARM HISTORY** screen, and then press the **EXIT** button on this screen to return to the project screen.

g. Convert the **Actual Value** of the error that you wrote down from the **Alarm History Details** screen. All PLC ERROR CODE VALUEs are in decimal. Convert them to HEX. From the Actual Value of 256, you will get a Hex value of 100. Look for this value under Driver Errors (0x0100).

See the PowerPanel Programming Software Help for PLC Driver Error Messages —

PowerPanel Error Messages

WRITE QUEUE OVERFLOW

This message indicates that the panel was unable to write all of the tags to the PLC. The panel can queue up to 20 tags to write to the PLC. After the tag is written to the PLC it is removed from the queue. If a write is attempted while the queue is full then this error message is displayed and the write is ignored.

EXTERNAL CLOCK - OBJECT IGNORED

This message indicates that the increment/decrement hour system object was pressed while the external clock has been selected in the project attributes. The object can not change the external clock.

RAM TEST FAILED

This message indicates that the RAM test performed at reset failed. The RAM in the unit may be unreliable.

VIDEO CHIP TEST FAILED

This message indicates that the video controller chip did not program correctly.

VIDEO RAM TEST FAILED

This message indicates that the video RAM test performed at reset failed. The video RAM in the unit may be unreliable.

KEYPAD ENTRY TOO HIGH

This message indicates that the user attempted to enter a value that was greater than the maximum value for the numeric keypad. The value is ignored.

KEYPAD ENTRY TOO LOW

This message indicates that the user attempted to enter a value that was less than the minimum value for the numeric keypad. The value is ignored.

TAG TYPE VALUE MISMATCH

This message indicates that the object contains a value that is of a different type than the object's tag. For example, the value may be a signed value but the tag may be an unsigned value. The object should be edited to contain the correct value type.

INVALID CODE

This message indicates that the user entered an invalid password for a protected object. The user must enter a valid password. The passwords are defined in the project attributes.

SCREEN BUFFER OVERFLOW

This message indicates that there are more objects on the screen than the panel can display. When a screen is displayed, the panel copies the objects to a buffer. If the buffer is filled then this message is displayed and any remaining objects are ignored. The amount of memory used by an object is dependent on the type of object, visibility, the label, and strings used by the object. Some objects should be removed from the screen.

PowerPanel Programming Software Error Messages ────

Error Codes

Error Codes are divided into categories and are numbered with prefixes and 3 digits as follows:

Value Range Errors	Vxx_x
PLC Conversion Errors	Pxx_x
Tag Errors	Txx_x
Project **I**nformation (Step 1) Errors	Ixx_x
Saving Errors	Sxx_x
Ob**j**ect Errors	Jxx_x
Communication Errors	Cxx_x
Miscellaneous Errors	Mxx_x
Bitmap Errors	BMP_xx

Value Range Errors (Vxx_x)

Value Errors common to all objects:
Error V01_1: Minimum value is not within range.
Error V01_2: Maximum value is not within range.
Error V01_3: Minimum value is greater than maximum value.
Error V01_4: Maximum value is less than minimum value.

Value Errors related to Meter object:
Error V02_1: LowLow limit is not within range.
Error V02_2: Low limit is not within range.
Error V02_3: High limit is not within range.
Error V02_4: HighHigh limit is not within range.

Value Errors related to Numeric Entry/Numeric Display.
Error V03_1: PLC Value 1 is not within range.
Error V03_2: PLC Value 2 is not within range.
Error V03_3: Display Value 1 is not within range.
Error V03_4: Display Value 2 is not within range.

Value Error related to Bar Graph:
Error V04_1: Mid value is not within range.

Value Errors related to PID Faceplate:
Error V05_1: Process value (Minimum) is not within range.
Error V05_2: Process value (Maximum) is not within range.
Error V05_3: Output value (Minimum) is not within range.
Error V05_4: Output value (Maximum) is not within range.

Value Error related to Recipe object:
Error V06_1: Value is not within range.

Reason: These errors occur when a value is not within selected tag's data range.
Solution: Enter a value that is within the appropriate range.

Valid ranges for various tag data types are:

TAG DATA TYPE	MINIMUM	MAXIMUM
Signed 16 bit	-32768	32767
Signed 32 bit	-2147483648	2147483647
Unsigned 16 bit	0	65535
Unsigned 32 bit	0	4294967295
BCD 16 bit	0	9999
BCD 32 bit	0	99999999
Floating point	-9999999999	9999999999

PLC Conversion Errors (Pxx_x)

Error P01_1: The selected panel type does not support the PLC chosen for the project. Do you want to continue?

Reason: Some PowerPanel s support all of the available PLC drivers and some support only DirectLOGIC drivers.
Solution: Select an appropriate panel.

Error P02_1: <PLCFrom> is not compatible with <PLCTo>. If you continue, the PLC address from each tag will be lost and all the tags will become internal tags. Do you want to continue?
Error P02_2: Change in selected PLC would result in possible loss of tag data. Do you want to continue?
Error P02_3: Unable to convert to <PLCTo>.
Error P02_4: Unable to convert PLC Address.

Reason: This error occurs if, after creating a project with addressed tags, an attempt is made to change to a PLC with a different address format.
Solution: When changing PLCs, check the addressing in the PLC manuals to see if they are compatible. If they are not compatible, then the tag database is no longer valid and the addresses will have to be reentered.

Error P02_5: Unable to build PLC details structure while converting to < >.

Reason: If you try to change PLCs in a previously created project and select "Cancel" in the first message window, a second window will appear.
Solution: This message window appears to inform the user that no tag addresses were changed.

Tag Related Errors (Txx_x)

Error T01_1: Define a valid tag for <control name>.
> **Reason**: This error occurs when you have not defined all tags in an object requiring multiple tags.
> **Solution**: Define all the required tags for the selected object.

Error T01_2: Tag name already exists.
> **Reason**: The tag name that was entered is a name that already has a data type and/or PLC address assigned to it in the tag database.
> **Solution**: Change the tag name entered to a name that is unique when compared to all the other tags in the Tag Database.

Error T01_3: Tag category does not match.
> **Reason**: This error occurs when a Tag Name of an incorrect data type is typed into the Tag Name field of an object.
> **Solution**: Select a valid Tag Name from the pulldown list, or create a new valid Tag Name.

Error T02_1: Invalid Unit Number.
Error T02_2: Invalid Address Type.
Error T02_3: Invalid Address.
Error T02_4: Invalid Bit Number.
Error T02_5: Address in not Word Aligned (Even address is required).
Error T02_6: Address is not Word Aligned (Odd address is required).
> **Reason**: Address entered for the tag is not correct.
> **Solution**: Specify a valid PLC address.

Error T02_7: Address type does not match Tag data type, or the address is invalid.
Error T02_8: Tag IO Type does not match Object type.
> **Reason**: If you specify a discrete address to an object requiring a word address or vice versa, you will receive this error message.
> **Solution**: Specify a valid PLC address, with appropriate I/O Type.

Error T02_9: This object requires a Read/Write PLC address. Entered address is Read Only location.
> **Reason**: This error occurs if a Read Only PLC address was entered for a Touch Object.
> **Solution**: Enter a Read/Write location for touch objects.

Object Type	Type of Address
Touch Objects	Read/Write
Display Objects	Read/Write or Read Only
Alarms	Read/Write or Read Only
Project Attributes (Internal Clock)	Read/Write
Project Attributes (External Clock)	Read/Write or Read Only
Project Attributes (Passwords)	Read/Write or Read Only
Project Attributes (Panel to PLC)	Read/Write
Project Attributes (PLC to Panel)	Read/Write or Read Only

Error T02_10: Number of Characters must be even and valid range is from 2 to 40.
> **Reason**: In the process of making an ASCII tag, the number of characters must remain between

2 and 40. If the user enters a number outside of this range, this error occurs.
Solution: The user can either reenter a number within the specified range or use the wheel to the right edge of that field.

Error T02_11: IO Type is not valid for <ControlName>. Unable to convert.

Reason: If you specify a discrete address to an object requiring a word address or vice versa, you will receive this error message.
Solution: Specify a valid PLC address.

Error T03_1: Unable to get the data type.

Reason: The Tag Database has become corrupted.
Solution: Try the following:
   1) Go to Tag Database (Setup > Tag Database) and select a tag not associated with any object.
   2) Delete the tag by pressing Delete button or by using delete key on keyboard.
   3) Save the project.
   4) Close and then restart PowerPanel   software.
   5) Open the project and check for the error again.

Error T03_2: Tag index not found. Creating internal tags .

Solution: Try the following:
   1) Accept defaults
   2) Open Tag Database and check to see if all tags are there.
   3) Some Tags will be UNKNOWN, modify to your requirements.

Error T03_3: Unable to open tag database file (*.map).

Reason: This error occurs if the project map file gets deleted or is missing when an attempt to load the program is made.
Solution: Recovering or finding original map file will recover project; if this cannot be done, creating a new project with a new map file is the only solution.

Error T03_4: Tag index limit reached; unable to create a new tag.

Reason: You've reached the tag maximum. Maximum number of tags that can be entered is 32,000.

Error T03_5: Incorrect number of PLC tags and Internal tags.

Reason: Tag database is corrupted.
Solution: Rebuild the project.

Error T03_6: Tag expected but not found. Creating it as an internal tag.

Solution: Try the following:
   1) Accept defaults
   2) Open Tag Database and check to see if all tags are there.
   3) Some Tags will be UNKNOWN, modify to your requirements.

Error T04_1:   Cannot delete <Tag>. Tag associated with an object.

Reason: The selected tag is associated with an object/alarm/project attribute.
Solution: Use **Setup> Tag Cross Reference** to see what objects/alarms/project attributes

are linked to the tag.

Error T04_2: No map data found in tag database file named.

  Reason: Tag database is corrupted.
  Solution: Rebuild the project.

Project Information Dialog box (STEP 1) Errors (Ixx_x)

Error I01_1:   Attributes file associated with this project not found; creating one with default attributes.

  Reason: There are six different files that make up the project. If the saved attributes file (.atr) is moved, deleted, or is altered outside of PowerPanel , the file may not load or will not be found.
  Solution: The program loader will reset the attributes to default. Go to Setup > Select PLC and redefine the communication parameters required.

Error I02_1: Invalid file name or path

  Reason: You have specified an invalid file name.
  Solution: You have to specify a valid file name.
  Do not include any special characters (\, /,.,*,?,<,>,|,etc.) while naming your files. First character should be alphanumeric.

Error I02_2: Invalid file name. Do not use symbols.

  Reason: You have specified an invalid file name.
  Solution: To avoid getting both these messages, when creating a project do not use character symbols (/,{,},[,],<,>,…etc.) in the project name. Only use letters A-Z and/or numbers 0-9 for a unique project name.

Error I02_3: Invalid Think and Do map file.

  Reason: When working with Think and Do PLC type, this program will map the PowerPanel project to an existing Think and Do map file. If you try to map the PowerPanel project to a map file generated by any program other than Think and Do, this message will appear and prevent you from continuing with the project.
  Solution: Select a valid Think and Do map file.

Error I03_1: Unable to find the Dll Path. Unable to build the Tag Database

  Solution: If you have moved the Dlls to some other directory move them back. If you have deleted them, you must reinstall the software.

Error I03_2: Cannot edit Online unless the panel has a program. Edit Offline first and write a program to the panel.

  Reason: Having no project loaded into the touch panel, the program loader will not allow one to go into On-Line Edit mode, or if the map file has been altered, and this message will come up.
  Solution: Get into Off-Line Edit mode and upload a project, exit out to the "Step: Project Information", click on the On-Line edit mode, and select "OK". If that don't work, make new project with new map file.

Error I03_3: Screen Number must be in the 1..999 range.

  Reason: You have entered an invalid Screen number
  Solution: Enter a valid Screen number.

Saving Errors (Sxx_x)

Error S01_1: The PowerPanel Editor has detected that one or more static objects (line, arc, circle, pie, static bitmap and static text) are on top of dynamic objects. Static objects cannot be on top of dynamic objects. These static objects will be placed below the dynamic objects.

Reason: If you have any static and dynamic objects on the same screen, you need to make sure the dynamic objects are always on top or away from the static objects. Panel refreshes only the dynamic objects once all the objects are drawn. If for any reason a static object gets on top of a dynamic (or brought to front with the right-click menu option with dynamic object on top), this message will appear.

Solution:
1) The Editor will take care of this automatically. It would sequence the objects in such a way that static objects are drawn below the dynamic objects.
2) Other option is you can select the objects, right-click on the mouse and select Bring Forward/Send Backward to rearrange them manually.

Error S01_2: PowerPanel Editor detected that one or more objects on screen number x are outside the 320x240 resolution. Please move objects on this and all other screens within 320x240 limits BEFORE changing the panel. You may use "Show 320x240 Rectangle" icon to show a 320x240 rectangle. Please ensure on all screens that the objects are within this rectangle before trying to change to a lower resolution panel.

Solution: Move the objects to within the 320x240 rectangle on all screens.

Error S01_3: Unable to save this screen. Screen size exceeds the maximum: 128K. Please delete a few objects and try to save again.

Solution: Either delete a few of the objects or move the objects to a different screen.

Error S02_1: Unable to save the project to the panel.

Reason: When working ONLINE, the panel loses power or the communication link between the panel and PC is interrupted or disconnected. When you select Save Screen or Save Project, you will receive this error message.

Solution: Check to see if power is getting to the panel, then check the COM line between the panel and PC for a good connection.

Object Errors (Jxx_x)

Radio Buttons

Error J01_1: Object cannot be accommodated in the new position.

Reason: The radio buttons object cannot have any buttons over hanging on the screen. The vertical and horizontal radio buttons will only allow enough buttons to go from one end of the screen to the other end. Any more buttons will generate this message.

Solution: One of two courses of action may be taken. The first is to reduce the size of the object itself. The second option is to reduce the number of buttons in the object.

Error J01_2: Cannot add another button. To do so would exceed the panel size.

Reason: The radio button object will not allow more buttons when the object is the same height/width as the touch panel screen.

**Appendix A
Troubleshooting**

Step Switch

Error J02_1: Number of steps: Range is from 2 to 4.

> **Solution**: Enter a number between 2 and 4 or use the wheel next to the box.

Error J02_2: Step Switch x Tag is not Defined. (x being the step number)

> **Reason**: The "Tag Name", in the "Step #1" tab, was empty when the "OK" button was selected.
> **Solution**: Click on a tag from the drop-down menu for the "Tag Name" box, or type in a valid tag name in the "Tag Name" box, in the tab "Step #1".

Thumbwheel

Error J03_1: Number of Wheels: Range is from 1 to 5.

> **Solution**: Only enter a number between 1 and 5 into the "Number of Wheels" field, or use the wheel to the right side of the entry field. UNSIGNED DECIMAL format: 5 digits (wheels), HEX: 4 digits (wheels)

Recipe

Error J04_1: At least one valid recipe tag should be defined.

> **Reason**: When creating a recipe button, if there are no tags entered under the "Recipe" tab, this message will appear.
> **Solution**: Click on the "Recipe" tab and enter a tag in the first box.

Numeric Entry/Numeric Display

Error J05_1: PLC Value 1 is greater than PLC Value 2.

> **Solution**: Enter a value for PLC Value 1 that is less than PLC Value 2.

Error J05_2: Display Value 1 is greater than Display Value 2.

> **Solution**: Enter a value for Display Value 1 that is less than Display Value 2.

Meter

Error J06_1: LowLow limit should be greater than Minimum value.
Error J06_2: Low limit should be greater than LowLow limit.
Error J06_3: LowLow limit is greater than High limit.
Error J06_4: High limit is greater than HighHigh limit.
Error J06_5: HighHigh limit is greater than Maximum value.

> **Reason**: You will get above errors when the following rule is not met.
> **Minimum Value < Low Low Limit < Low Limit < High Limit < High High Limit < Maximum Value**
> **Solution**: Change the values appropriately.
> *Note: while changing the values of alarm limits, use the following rule of thumb:*
>
> - *If you are changing the values towards higher values, start from HighHigh limit and go backwards.*
>
> - *If you are changing the values towards lower values, start from LowLow limit and go upwards.*

Bar Graph

Error J07_1: Mid value is not in between Minimum and Maximum values.

> **Reason**: You will get above errors when the limits (for alarm) are not within selected tag's data range.
> **Solution**: You need to modify the values so that the values are within appropriate range.

PID Faceplate

Error J08_1: Process Variable Tag and Set Point Tag must be of same Data Type.

Solution: Ensure that the Process Variable tag and the Set Point Tag are of the same data type. In other words, if you define a signed tag for Process Variable, define a signed tag for Set Point tag, also. Always assign the same data tag type to both the Process Variable and Set Point.

Error J08_2: Process value (Maximum) is less than Present value (Minimum).

Solution: Ensure that Present value (Maximum) is greater than Present value (Minimum).

Error J08_3: Output value (Minimum) cannot be greater than Present value (Maximum).

Solution: Ensure that Output value (Maximum) is greater than Output value (Minimum).

Line Graph

Error J10_1: At least one valid Pen tag must be defined.

Reason: When using a line graph, there must be a minimum of one tag (signed, unsigned, or BCD) assigned to the Pen entries.
Solution: Be sure to assign a minimum of one tag (signed, unsigned, or BCD) to the Pen.

Error J10_2: All Pen tags must be of the same sign type.

Reason: The program loader requires that all the Pen tags have the same sign type for each line graph object. If you assign tags with different sign types (signed 16/32 and unsigned 16/32, or BCD 16/32 and signed 16/32) to the same line graph object, this message will appear.
Solution: If you need a line graph that contains a signed tag and an unsigned tag, they will then require multiple line graph objects (one for each individual sign type).

Error J10_3: Pen tags and Range type must be of same sign type.

Reason: When assigning tags to the Pen page, they all must be of the same tag type, and that also has to agree with the Range type under the XY Axis tab. If one is different from the other and the "OK" button is selected, this message will appear.
Solution: After assigning the Pen tags, (same sign type) go to the XY Axis tab and select the appropriate range type corresponding to the assigned Pen tags (or select the range type before assigning any tags to the Pen). Either way, the Pen tags and the Range type must be the same before the "OK" button is selected.

Error J10_4: Total number of line graphs must be between 0 and 255.

Reason: You will not be able to create more than 255 line graphs in a single screen.

Dynamic Bitmap/Static Bitmap

Error J11_1: Selected file is not a BMP file.

Solution: Select a valid Windows BMP file.

Error J11_2: No Bitmap file was selected. Please select a BMP File.

Solution: One of three actions can be taken:
1) Select "Copy from Clipboard" to copy the file name chosen from the Symbol Factory.
2) Select "Import Bitmap…" to choose a bitmap from a file somewhere in your computer or off the network to enter in the "File Name" box.

Error J11_3: Select either ON or OFF bitmap.

Reason: Dynamic bitmaps require at least one bitmap to be selected.

Error J11_4: Compressed BMP size exceeds the maximum size usable BMP size

Reason: PowerPanels use a Run Length Encoding (RLE) technique to compress Bitmaps for display and saving purposes. The maximum allowable size of a compressed BMP is 64K. If the selected BMP results more than 64K during compression, this error occurs. Even if the bitmap size is less than the panel's resolution, you may get this error.

Solution: You need to select a different BMP. If you would like to use the same bitmap, you need to reduce the complexity of the bitmap. Although, there is no straight forward way to tell that a bitmap would result in less than 64K during compression, the following tips might be useful:

   1) Try to have the same color across the bitmap. If you mix lot of color patches, that may increase the compressed bitmap size.

   2) Try to reduce the font usage in the bitmap.

Error J11_5: Selected BMP files combined must not exceed 64K size. Please select a different BMP file.

Reason: There are two BMP files for dynamic bitmap. Both BMP files would be compressed using RLE technique and combined length of compressed BMPs together should not exceed 64K in size. If it exceeds, you would get this error.

Solution: Select BMPs which do not exceed the 64K size limit.

Error J11_6: Height and Width out of range. BMP's height must be less than (h). BMP's width must be less than (w).

Reason: 10" and 8" panels support bitmaps no larger than 640 x 480 pixels. Similarly, 6" panels support a maximum bitmap size of 320x240 pixels. This error indicates that a bitmap exceeds the maximum size.

Solution: Select a bitmap that fits within the above ranges.

Error J11_7: Compressed BMP size exceeds the maximum usable BMP size; unable to save ON bitmap.

Error J11_8: Compressed BMP size exceeds the maximum usable BMP size; unable to save OFF bitmap.

Error J11_9: Compressed BMP size exceeds the maximum usable BMP size; unable to save Static Bitmap.

Reason: PowerPanel s use a Run Length Encoding (RLE) technique to compress Bitmaps for display and saving purposes. The maximum allowable size of a compressed BMP is 64K. If the selected BMP results more than 64K during compression, this error occurs. Even if the bitmap size is less than the panel's resolution, you may get this error.

Solution: You need to select a different BMP. If you would like to use the same bitmap, you need to reduce the complexity of the bitmap. Although, there is no straight forward way to tell that a bitmap would result in less than 64K during compression, the following tips might be useful:

   1) Try to have the same color across the bitmap. If you mix lot of color patches, that may increase the compressed bitmap size.

   2) Try to reduce the font usage in the bitmap.

Error J11_10: Error in extracting Bitmap for ON button.

Solution: Delete the bitmap object and recreate the object again. If you still receive this error message, close and then reopen the application and try again.

Error J11_11: Decompression was not successful.

Reason: The Project file is corrupted.

Solution: If you get this error, you will have to recreate this project.

Error J11_12: Select Palette failed in Paint DOB.

Reason: Resource not available in the system to draw the bitmap.
Solution: Close other applications and try to insert the bitmap. If it still does not work, restart the system.

Miscellaneous

Error J12_1: This field cannot be empty.

Solution: Your cursor will be located in the data entry field that requires data entry. Enter an appropriate value.

Communication Errors (Cxx_x)

Port Related Errors

Error C01_1: Unable to open communication port.

Solution: Select another COM port.

Error C01_2: Communications port not found.

Reason: No valid communication port is found on the computer.
Solution: At least one valid serial communication port should be available for communication between the panel and PC.

Error C01_3: Communications port is being used by some other application. Access denied.

Solution: Close the other application and try to communicate from PowerPanel or, if you have an extra serial port, connect the cable to that port and select that extra port for communication from PowerPanel .

Write to Panel Related Errors

Error C02_1: Selected panel does not match connected panel. Write to panel is aborted.

Reason: When writing to the panel, if the panel type selected on the screen "Step 1: Project Information" does not match the panel that the computer and PLC are physically connected to, the program loader will not upload project.
Solution: Exit the OFF-LINE Editor to the "Step 1: Project Information" screen, and select the appropriate panel type for the connected panel.

Error C02_2: Unable to update PLC driver.

Reason: You will receive this error message if communication is not working between the programming software and the panel, or if the panel is still trying to communicate with the old driver and you are attempting to update the driver.
Solution: Restart the panel and try communicating with the panel. If you still face this problem, clear memory from panel (using Panel > Clear Memory) and update the PLC driver and then, save your project. Ensure that you have the project saved to disk before you do clear memory.

Error C02_3: PLC Attributes could not be written to the Panel.
Error C02_4: Tags could not be written to the Panel.
Error C02_5: Error in sending Project attributes to panel.
Error C02_6: Error in sending screens to panel.
Error C02_7: Error in sending alarm database to panel.
Error C02_8: Error in sending message database to panel.

Solution: Check the connections between the panel and computer. Restart the panel and try communicating again.

Error C02_9: Objects are overlapping; project cannot be written to the panel.

Reason: Objects are overlapping in one or more screens; you will not be able to save / write to the panel.

Solution: If you get this error, you will see an object highlighted in the screen. The highlighted object is overlapping another object. Please move the object so that it does not overlap another object ,and send the project again.

Error C02_10: Uploading could not be completed.

Solution: Check the connections between the panel and computer. Restart the panel or resave the project and try communicating again.

Error C02_11: Out of Memory Error.

Reason: Flash card is smaller than user RAM size.

Solution: Please contact your panel vendor.

ONLINE Programming Communication Errors

Error C03_1: Unable to delete screen from panel.

Reason: If Screen > Delete Screen (on main menu bar) is selected while there is a disruption in the communication between the panel and computer, this error message is produced.

Solution: Check the COM line, power to panel, and COM port used for correct setting and function.

Error C03_2: Memory diagnosing failed.

Solution: Check connections and COM port settings. Ensure the proper function and power distribution of panel (no system faults). If all checks out OK and you are still receiving this error message, there maybe a physical problem with the panel's memory.

Error C03_3: Errors in Warm Boot.

Reason: Panel is not warm booting.

Solution: This could be due to panel not active/communication is not there between PC to panel. Please check the connection between panel to PC. If the problem persists, restart the panel.

Error C03_4: Unable to program User Flash.
Error C03_5: Errors in Reading Flash card.

Reason: If the flash card is not set properly / communication is not happening between the panel and editor, you would get this error.

Solution: Check whether the flash card is fit properly in the slot / restart the panel / check the cable for communication.

Error C03_6: Unable to read PLC Attributes from Panel.
Error C03_7: Unable to delete screen <screen number> from the panel.
Error C03_8: Unable to get Information from Panel. Please check the connection between panel and computer.
Error C03_9: Unable to read System Attributes from panel.
Error C03_10: Unable to read tags from the panel.

Solution: Check the connection between panel and computer. Restart the panel and try communicating again.

Error C03_11: Testing RAM - failed

Solution: If you have a RAM Card installed in the panel, remove this RAM card and redo the test. If the test passes, replace the RAM card with a new RAM card. It the test fails, there is a problem with the panel. Please contact technical support.

Error C03_12: Testing Flash - failed

Solution: Replace the Flash card.

Miscellaneous Errors (Mxx_x)

Error M01_1: Error in memory allocation.

Reason: You will get this error if PowerPanel Editor is not able to allocate certain amount of memory for doing some operations.
Solution: close other applications and try. If you still get this error, save the project and close the application. Restart your computer and try again.

Error M02_2: Unable to open the Project file (*.ezt).
Error M02_3: Unable to open message database file (*.msd).
Error M02_4: Unable to open alarm database file (*.alr).
Error M02_5: Unable to open PLC attributes file (*.atr).
Error M02_6: Unable to open annotations file (*.ano).
Error M02_7: Unable to open project options file (*.opt).

Solution: You have renamed your project accidentally while project was open in PowerPanel. Close this project and open it again.

Error M03_1: Unable to create project file (*.ezt).
Error M03_2: Unable to create PLC attributes file (*.atr).
Error M03_3: Unable to create message database file (*.msd).
Error M03_4: Unable to create alarm database file (*.alr).
Error M03_5: Unable to create annotation file (*.ano).
Error M03_6: Unable to create project options file (*.opt).
Error M03_7: Unable to save PLC Attributes file (*.atr).
Error M04_1: Unable to create temporary project file (*.ezt).
Error M04_2: Unable to create temporary annotations file (*.ano).
Error M04_3: Unable to create temporary PLC attributes file (*.atr).

Reason: You might receive these error messages if you are running two instances of the PowerPanel Programming Software, opened a project in one and then gave the same project name in another to be downloaded from panel.
Solution: Give a valid project file name that is not open in any application. If you still face the problem, close all your applications and run only one instance of PowerPanel and try again.

Error M05_1: Unable to unload.
Error M05_2: Unable to load.

Reason: There is a .dll file in the directory that doesn't belong. The program loader will report this error.
Solution: Remove the specified file, and reinstall the software.

Error M06_1: Not a PowerPanel.

Solution: Connect a PowerPanel to the computer and try to communicate with the panel.

Error M06_2: File corrupted; number of bytes in the screen is zero.
Error M06_3: Unable to rename the selected screen.
Error M06_4: Problems in project checksum
Error M06_5: Invalid screen checksum
  Solution: You need to recreate the project. If this problem persists, please report it to technical support.

Error M06_6: There are no PLC dlls available in this execution directory.
  Reason: If you have moved all the PLC dlls from the directory where PowerPanel .exe resides, you will receive this error message.
  Solution: Reinstall the software

Error M06_7: PLC Dll file being used by this project is not found.
  Reason: A PLC .dll file has been moved or deleted from the program directory.
  Solution: Reinstall the software.

Error M06_8: Received checksum is not equal to calculated checksum.
  Solution: Reinstall software and try again.

Error M06_9: No PLC has been selected.
  Solution: Reinstall software and try again.

Error M07_1: Invalid Screen Name.
Error M07_2: Invalid screen ID , screen ID range is 1..999.
  Reason: Valid screen name's length is 1 to 40 characters.
  Solution: You have to specify a valid screen name. Do not include any special characters (\, / ,.,*,?,<,>,|,etc.) while naming your files. First character should be alphanumeric.

Error M08_1: Downloaded project is a protected project. This cannot be edited/viewed in the editor."
  Reason: Project is write protected.
  Solution: You will not be able to open this project for viewing / editing purpose. Contact the people from whom you got this project.

Error M09_1: System out of memory to run Symbol Factory."
  Solution: Restart your system

Error M09_2: Invalid Symbol Factory.exe file."
  Solution: Reinstall the software

Error M09_3: Unable to find Symbol Factory application."
  Solution: If you have moved symbols directory to some other place, please copy it back. Otherwise, reinstall the software.

Bitmap Errors (BMP_xx)

Error BMP_1: Unable to display dynamic bitmap object
Error BMP_5: Unable to display static bitmap object
> **Reason:** You will receive this message if there is a problem in displaying the bitmap data.
> **Solution:** Delete and then reinsert the bitmap object.

Error BMP_2: Unable to read *.wmf file
Error BMP_3: Unable to read *.emf file
Error BMP_4: Unable to read meta file data from clipboard
> **Reason:** Unable to convert the .wmf/.emf file selected to .bmp.
> **Solution:** Check whether you are able to insert this bitmap in another application (e.g., Word). If yes, restart the system and try again.

Error BMP_6: Unable to calculate enhanced meta file dimension, \ntaking default 80Wx80H
Error BMP_7: Unable to calculate meta file dimension, taking default 80Wx80H
> **Reason:** Editor is unable to calculate enclosing rectangle of the selected .wmf/.emf.

Error BMP_8: Total compressed buffer size of on and off bitmaps must not \n exceed 64K; please reduce the size of object
Error BMP_9: Compressed buffer size of bitmap must not \nexceed 64K; please reduce the size of object
> **Solution:** Insert a different bitmap / try to reduce the complexity of this bitmap.

Error BMP_10: Unable to calculate static bitmap size
Error BMP_12: Unable to calculate dynamic bitmap size
> **Reason:** Editor is unable to calculate the bitmap size.
> **Solution:** Delete the object and try to reinsert the object.

Error BMP_11: Unable to read the project file
> **Solution:** You might get this message when attempting to download a project, or edit a project online, that contains bitmaps. If this happens, restart the system and try again.

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B

ASCII Characters

In this Appendix....

— Character List

PowerPanel ASCII Characters

Name	Octal	Dec	Hex	Description
SP	040	32	20	Space
!	041	33	21	Exclamation point
"	042	34	22	Double quote
#	043	35	23	Pound sign
$	044	36	24	Dollar sign
%	045	37	25	Percent sign
&	046	38	26	Ampersand
'	047	39	27	Apostrophe (single quote)
(	050	40	28	Left parenthesis
)	051	41	29	Right parenthesis
*	052	42	2A	Asterisk
+	053	43	2B	Plus
,	054	44	2C	Comma
-	055	45	2D	Hyphen (minus)
.	056	46	2E	Period (decimal point)/dot
/	057	47	2F	Slant (slash)
0	060	48	30	Zero
1	061	49	31	One
2	062	50	32	Two
3	063	51	33	Three
4	064	52	34	Four
5	065	53	35	Five
6	066	54	36	Six
7	067	55	37	Seven
8	070	56	38	Eight
9	071	57	39	Nine
:	072	58	3A	Colon
;	073	59	3B	Semicolon
<	074	60	3C	Less than / Left angle bracket
=	075	61	3D	Equals sign
>	076	62	3E	Greater than / Right angle bracket
?	077	63	3F	Question mark
@	0100	64	40	"At" sign
A	0101	65	41	Uppercase A
B	0102	66	42	Uppercase B

Name	Octal	Dec	Hex	Description
C	0103	67	43	Uppercase C
D	0104	68	44	Uppercase D
E	0105	69	45	Uppercase E
F	0106	70	46	Uppercase F
G	0107	71	47	Uppercase G
H	0110	72	48	Uppercase H
I	0111	73	49	Uppercase I
J	0112	74	4A	Uppercase J
K	0113	75	4B	Uppercase K
L	0114	76	4C	Uppercase L
M	0115	77	4D	Uppercase M
N	0116	78	4E	Uppercase N
O	0117	79	4F	Uppercase O
P	0120	80	50	Uppercase P
Q	0121	81	51	Uppercase Q
R	0122	82	52	Uppercase R
S	0123	83	53	Uppercase S
T	0124	84	54	Uppercase T
U	0125	85	55	Uppercase U
V	0126	86	56	Uppercase V
W	0127	87	57	Uppercase W
X	0130	88	58	Uppercase X
Y	0131	89	59	Uppercase Y
Z	0132	90	5A	Uppercase Z
[	0133	91	5B	Left square bracket
\	0134	92	5C	Back slash
]	0135	93	5D	Right square bracket
^	0136	94	5E	Caret
_	0137	95	5F	Underscore
'	0140	96	60	Back quote
a	0141	97	61	Lowercase a
b	0142	98	62	Lowercase b
c	0143	99	63	Lowercase c
d	0144	100	64	Lowercase d
e	0145	101	65	Lowercase e
f	0146	102	66	Lowercase f
g	0147	103	67	Lowercase g
h	0150	104	68	Lowercase h
i	0151	105	69	Lowercase i

Name	Octal	Dec	Hex	Description
j	0152	106	6A	Lowercase j
k	0153	107	6B	Lowercase k
l	0154	108	6C	Lowercase l
m	0155	109	6D	Lowercase m
n	0156	110	6E	Lowercase n
o	0157	111	6F	Lowercase o
p	0160	112	70	Lowercase p
q	0161	113	71	Lowercase q
r	0162	114	72	Lowercase r
s	0163	115	73	Lowercase s
t	0164	116	74	Lowercase t
u	0165	117	75	Lowercase u
v	0166	118	76	Lowercase v
w	0167	119	77	Lowercase w
x	0170	120	78	Lowercase x
y	0171	121	79	Lowercase y
z	0172	122	7A	Lowercase z
{	0173	123	7B	Left curly brace
|	0174	124	7C	Vertical bar
}	0175	125	7D	Right curly brace
~	0176	126	7E	Tilde

**Appendix B
Characters**

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