PowerPanel™

Hardware User Manual

(Manual Part Number MAN-UTICW-001)

WARNING!

Programmable control devices such as PowerPanels 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

Manual P/N MAN-UTICW-001

PowerPanel™

MANUFACTURED and MARKETED by

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Manual Part Number: MAN-UTICW-001
Manual Title: PowerPanel Hardware 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–iv 1–42 Appendix A 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

If you 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 Maintenance, page 36, for a list of compatible/incompatible chemicals and compounds.

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Manual Organization

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

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

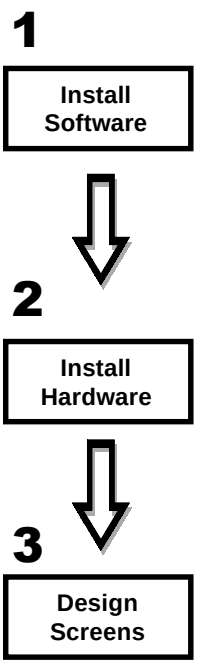
1 Getting Started

Introduction

There are *two manuals* that you will need to use the PowerPanel — this manual, the PowerPanel Hardware User Manual, and the PowerPanel Programming Software User Manual (P/N MAN-UTICW-M). 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. The flow chart below will show you where you need to go, and — how to get there from here!

Easy as 1 - 2 - 3



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

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

This manual will provide you with the instructions you need to install the PowerPanel. Included are mounting diagrams for **Stud Mounting** (page 14). Connections and wiring requirements are provided beginning on page 21. Panel **Setup** instructions begin on page 24. For Maintenance information, see section 5 (page 29) and for Troubleshooting, refer to section 6 (page 37).

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

What you need to get started:

Hardware

- PowerPanel (6" Monochrome, 6" Color, 8" Color, or 10" Color)
- 24 Volt Power Supply
- RS-232C Programming Cable (P/N CBL-UTICW-009)
- RS-232C PLC Interface Cable (see page 9 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?

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

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, hit the F1 function key while in that area and a popup window will be displayed. Also, most dialog boxes contain a Help button, you may click on it to get help, too!

Fly-Over HELP

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

PLC HELP

If you need help with the PLC to 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 Programming Software HELP topics or the manuals, if you are still having difficulty with a particular aspect of installation or screen design, technical support is available at **1-800-TEC-ENGR (832-3647) or FAX us at 1-563-359-9094. Visit our website at *www.uticor.net.***

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

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. PowerPanel Programming Software makes it easy to configure your application. Using a Windows-based architecture and lots of popup screens with pull-down selections, you should be able to quickly build and setup your screens.

The PowerPanel is available in a variety of models to suit your application. Refer to the table, below, for a model descriptions and some important features of the various models, i.e., user memory, memory expandibility, etc.

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

- Pre-built panel components for easy screen design
- Special parts, such as: Toggle Switch, Slide Switch, Selector Switch, Throw Switch, Thumbwheel Object, Meters, PID Faceplates, and Analog/Digital Clock
- Flash based design for easy firmware upgrade
- Field expandable user RAM
- 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 user groups
- 16 level undo and redo
- Import bitmaps
- Serial Printer support
- 40-character tag names allows you to use meaningful names for PLC memory locations instead of cryptic PLC addresses

PLCs Supported by the 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)

Replacement and Optional Equipment

There are replacement parts and other optional equipment available to customize or upgrade the PowerPanel to fit your application. The table, below, provides you with a list of this equipment. Instructions, if necessary, on how to install this equipment to upgrade your unit are also provided.

To order from this list, phone Uticor Technology, L. P. at 1-563-359-7501.

Item	Part Number
PowerPanel Programming Software	ACC-UTICW-EDIT
512K RAM Upgrade	ACC-UTICW-512KR
512K Flash Upgrade	ACC-UTICW-512KF
1 MEG Flash Upgrade	ACC-UTICW-1MEGF
Replacement Battery	ACC-UTICW-BAT
RS422 Terminal Block Adaptor (15 Pin)	ACC-UTICW-ADP15

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

CBL-UTICW-009	RS-232 Programming Cable

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 w/RJ45 (RS-232C)
CBL-UTICW-011	Modicon ModBus (RS-232C)
CBL-UTICW-012	Siemens S7 MPI Adaptor (RS-232C)
CBL-UTICW-013	OMRON Programming Port (RS-232C)
CBL-UTICW-014	GE Versamax (RS-232C)

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Hardware Specifications for all models are provided in the table below (and continued on the next page).

Specification	PowerPanel Model			
	6" Monochrome **100G-UT06M2R0**	**6" Color** **100G-UT06S2R0**	**8" Color** **100G-UT08S2R0**	**10" Color** **100G-UT10T2R0**
Display Type	5.7" STN (16 Shades of Gray)	5.7" STN (128-Color Palette)	8.2" STN (128-Color Palette)	10.4" TFT (128-Color Palette)
Display Size (Viewing Area)	4.72" x 3.5" (119.4 x 88.9 mm)	4.65" x 3.5" (118.1 x 88.9 mm)	6.65" x 5.024" (168.9 x 127.61 mm)	8.31" x 6.22" (211.07 x 158 mm)
Screen Pixels	320 x 240		640 x 480	
Display Brightness	140 nits	180 nits	90 nits	200 nits
Touch Screen	48 resistive touch cells (8 x 6)		192 resistive touch cells (16 x 12)	
CPU Type	Motorola Coldfire 32 bit CPU (40 MHZ)			
Service Power	24 VDC (20–30 VDC operating range)			
Power Consumption	13 Watts @ 24VDC	15 Watts @ 24VDC	16 Watts @ 24VDC	18 Watts @ 24VDC
Enclosure	NEMA 4, 4X (indoor)			
Agency Approvals	UL, CUL, CE			
Operating Temperature	0 to 45 °C (32 to 113 °F)		0 to 40 °C (32 to 104 °F)	0 to 50 °C (32 to 122 °F)
Storage Temperature	–20 to +60 °C (–4 to +140 °F)	–25 to +60 °C (–13 to+140 °F)	–20 to +60 °C (–4 to +140 °F)	–25 to +60 °C (–13 to +140 °F)
Humidity	10–95% R.H., noncondensing			
Electrical Noise Tolerance	NEMA ICS 2-230 showering arc ANSI C37.90a-1974 SWC Level C Chattering Relay Test			
Withstand Voltage	1000 VDC (1 minute), between power supply input terminal and protective ground (FG)			
Insulation Resistance	Over 20 M-ohm, between power supply input and terminal and protective ground (FG)			
Vibration	5 to 55 Hz 2G for 2 hours in the X, Y, and Z axes			

—continued, next page

3 Specifications

Specification *(continued)*	PowerPanel Model			
	6" Monochrome 100G-UT06M2R0	**6" Color** 100G-UT06S2R0	**8" Color** 100G-UT08S2R0	**10" Color** 100G-UT10T2R0
Shock	10G for under 12 ms in the X, Y, and Z axes			
User Memory	512K System Ram Memory, 512K Option Ram Card for Memory Expansion, 512K Option Flash Card for Memory Backup, 1 Meg Option Flash Card for Memory Backup			
Number of Screens	Up to 999, limited by memory			
Real-time Clock	Built into panel (PLC clock is still accessible, if available)			
Serial Communications	**PLC Port:** RS-232C, RS-422A, RS-485A, 15-pin D-Sub (Female) **Download/Program Port:** RS-232C,RS-422A, RS-485A, 9-pin D-Sub (Female)			
Screen Saver	**Yes, backlight off**			
External Dimensions	6.80" x 8.58" x 2.80" (172.72 x 217.84 x 71.12 mm)		8.21" x 10.52" x 2.85" (208.59 x 267.11 x 72.39 mm)	10.12" x 13.17" x 3.04" (257.15 x 334.47 x 77.09 mm)
Weight	2.2 lbs	2.3 lbs	2.9 lbs	5.0 lbs

Installing the PowerPanel requires the following three major steps:

Mounting

The PowerPanel is a front-panel mount unit. Mounting of the unit requires a panel cutout, and drilling six or eight holes (depending on the model) in the mounting surface for the mounting studs. Please see the *Mounting* section beginning on page 14 for mounting diagrams and instructions.

Connections and Wiring

Now that your PowerPanel is mounted, you are ready to connect your unit to the power source, PLC, and programming computer or printer. The PowerPanel's PLC Port and COM1 Port support RS-232C, RS-422A and RS-485A connections. Note that the PowerPanel is a DC powered unit (24 VDC). See the section on *Connections and Wiring*, beginning on page 23 for further information.

Communications Setup

The PowerPanel has some adjustable features and panel tests, such as, Contrast, Clock, and Touchpad Test. You will also select whether the COM1 port will be used to connect to a Programming PC or a printer. The unit is shipped with factory default values for some of these features, but they can be adjusted by the user. To change any value, enter the SETUP MODE on powerup and follow the procedures provided in the *Communications Setup* section beginning on page 26.

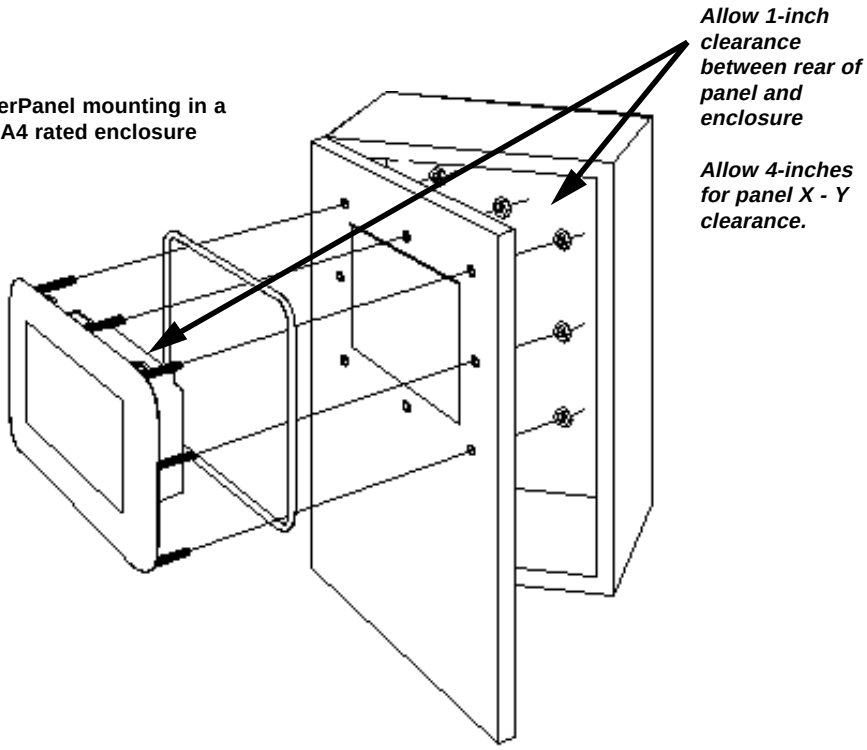
Mounting

PowerPanel is a panel-mount unit. The following diagrams show the outline and cutout dimensions necessary to mount the panel using the studs.

CAUTION

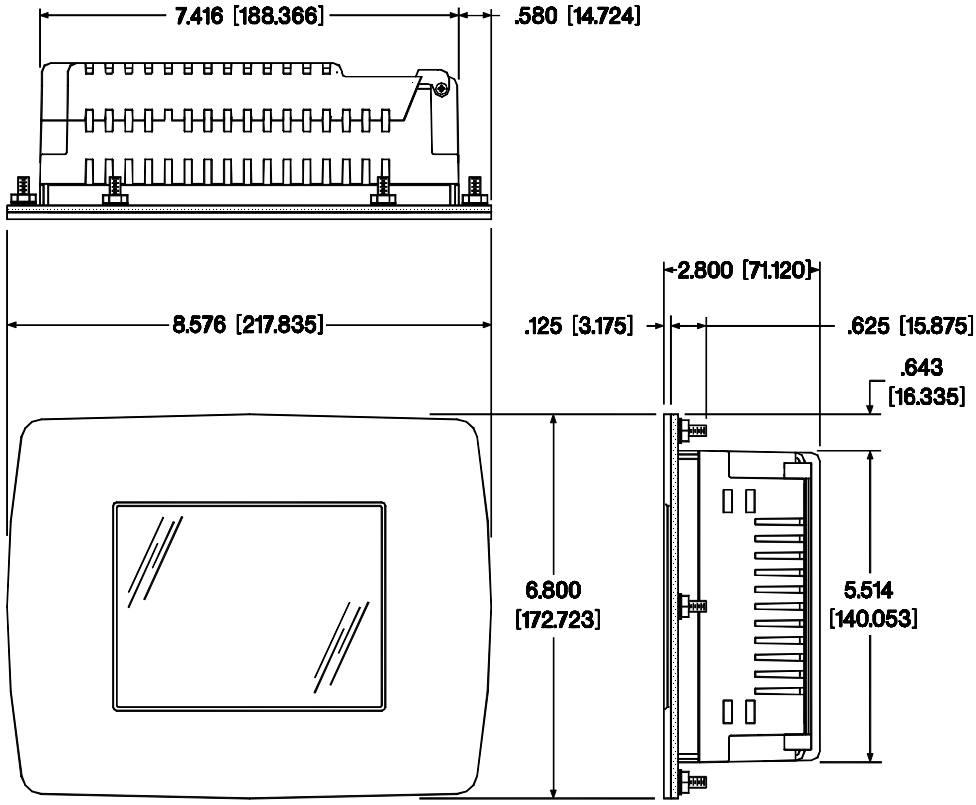
Mount on a VERTICAL SURFACE ONLY in order to ensure proper cooling of the panel.

PowerPanel mounting in a NEMA4 rated enclosure

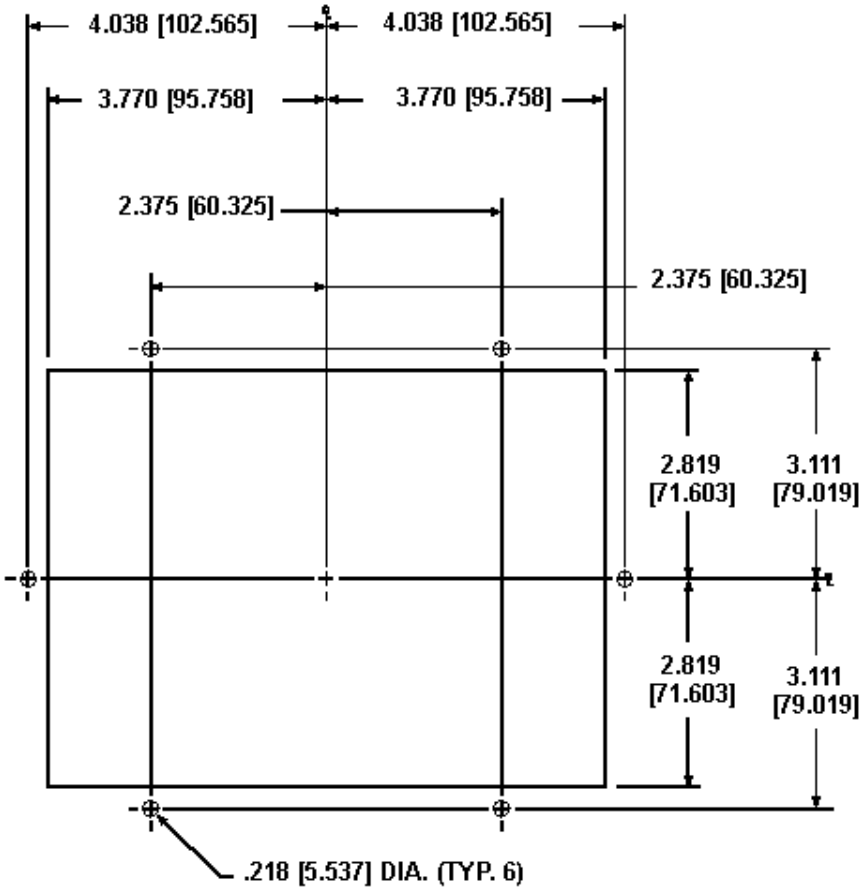


6-inch PowerPanel Dimensions

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

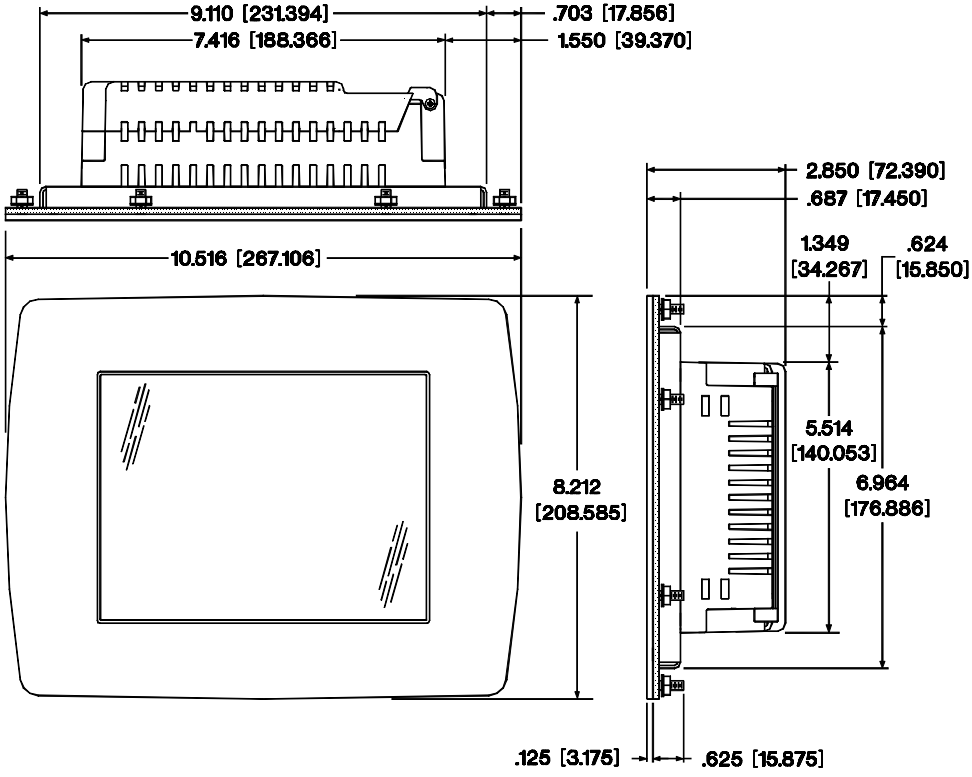


6-inch PowerPanel Mounting Template

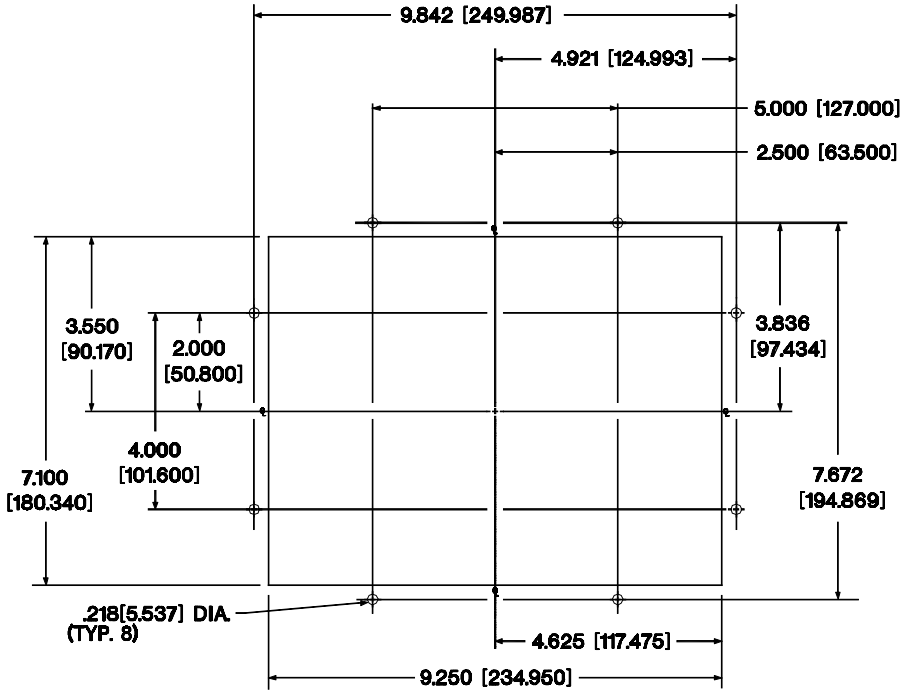


8-inch PowerPanel Dimensions

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

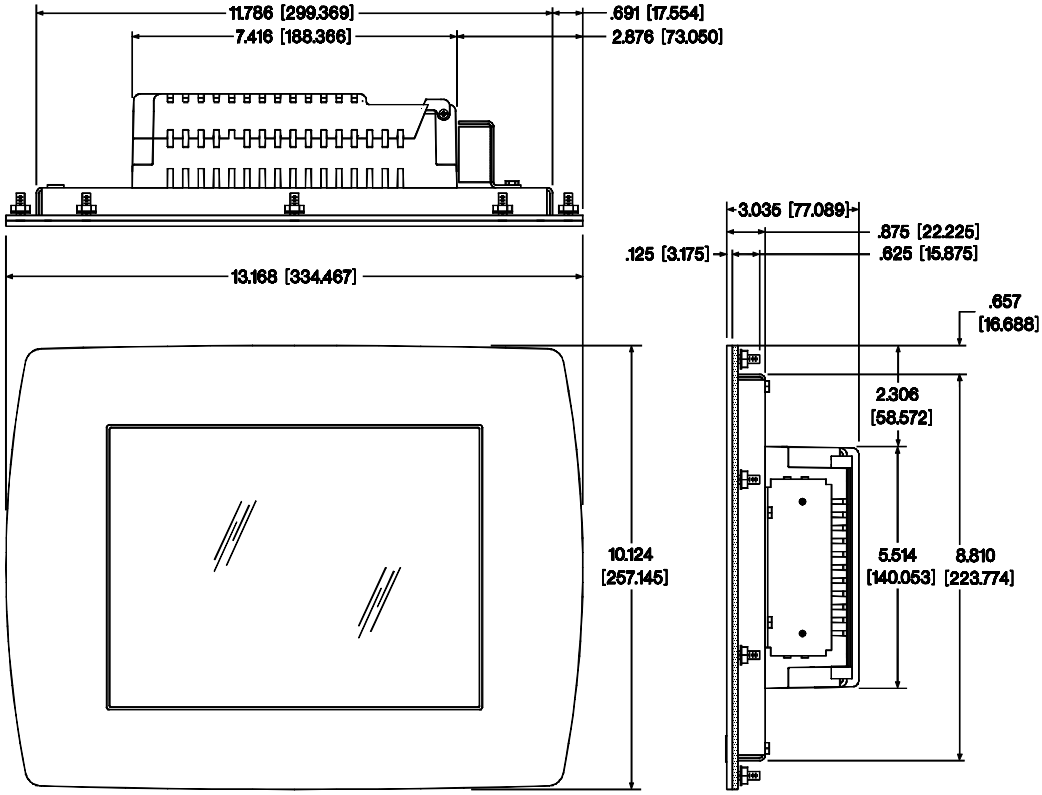


8-inch PowerPanel Mounting Template

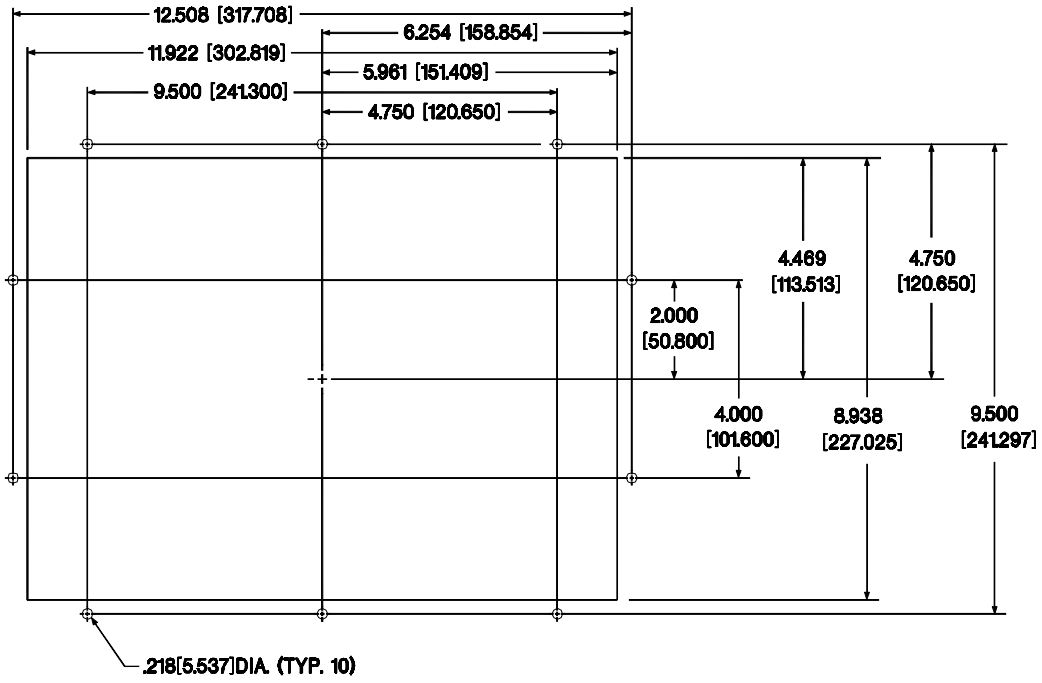


10-inch PowerPanel Dimensions

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



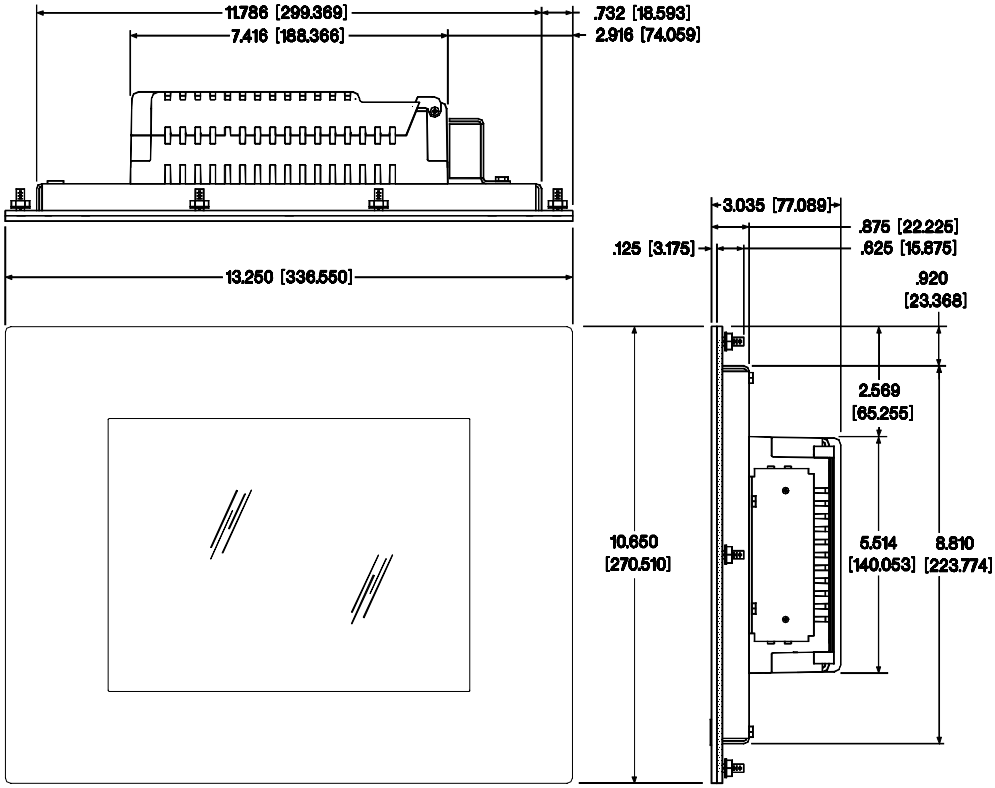
10-inch PowerPanel Mounting Template



RECOMMENDED CUTOUT

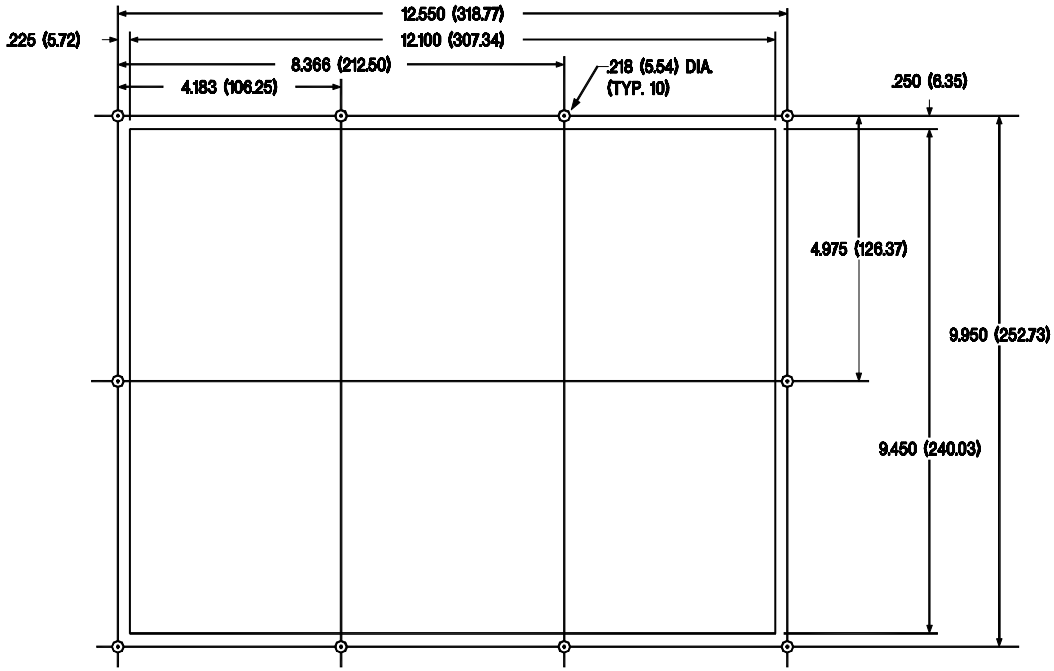
Alternate 10-inch PowerPanel Dimensions

This 10-inch panel has the same footprint as the old 10-inch PowerPanel units. All the necessary mounting hardware is provided with the unit. Use the 8 studs and 8 nuts with captive washers to secure the unit to the mounting surface.



Alternate 10-inch PowerPanel Mounting Template

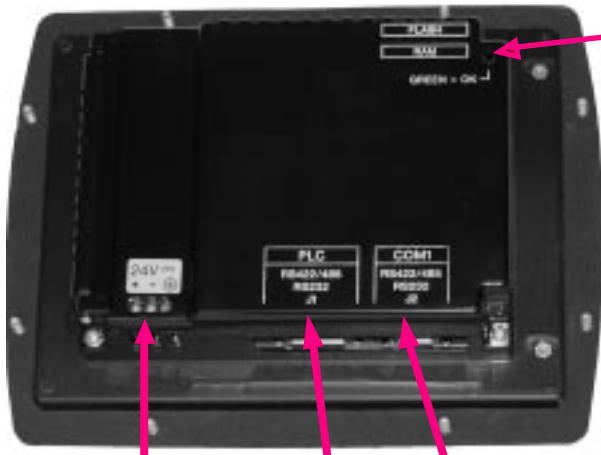
This 10-inch panel has the same footprint as the old 10-inch PowerPanel units.



Connections and Wiring

Wiring Diagram

Back View

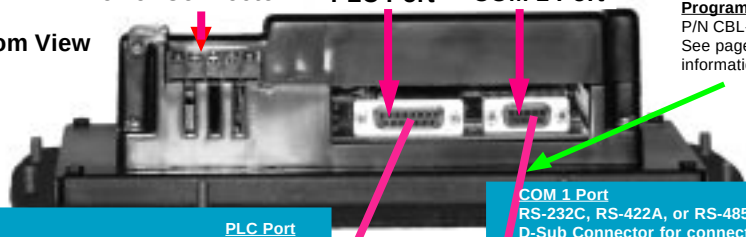


Status LED
The Status LED provides an indication of unit status. It will illuminate as RED or GREEN. If the LED does not light, this indicates that there is NO POWER to unit or the power supply failed. Check or replace power supply. If the LED turns RED and stays RED, it indicates a "unit failure." If this happens, return the panel to the factory for service. If the LED flashes RED and turns GREEN that indicates normal operation. For more information, see the *Troubleshooting* section of this manual.

Power Terminals
Connect (+) on the unit to the (+) lead of your power source; (-) on the unit is connected to the (-) lead, and chassis GND (on the unit) is connected to the chassis ground of the cabinet. See page 24 for more information on power connector.

Power Connector **PLC Port** **COM 1 Port**

Bottom View



Programming PC Cable
P/N CBL-UTICW-009
See page 25 for more information.

PLC Port
RS-232C, RS-422A or RS-485A Female 15-pin D-Sub Connector. Most PLCs connect to 15-pin D-Sub with cable specific to the PLC type (see table, page 24, for cable part numbers.) Special interface boards with PLC connector are available for PLCs requiring a special connector.

COM 1 Port
RS-232C, RS-422A, or RS-485A Female 9-pin D-Sub Connector for connection to programming computer. When not in use for programming, it may be used for connection to a serial printer. See page 25.

PLC Cable
See page 24 for more information.

Power Terminal

The PowerPanel requires a regulated 0.3 Amps @ 24 VDC (±10) power source. Connect (+) on the unit to the (+) lead of your power source; (-) on the unit is connected to the (-) lead and GND (on the unit) is connected to the chassis ground of the cabinet. It is recommended you use a regulated power source isolated from relays, valves, etc.

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

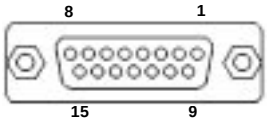
PLC Port

The table, below left, provides the pinout for the panel PLC connector. The table,below right, provides the PLC Cable Part Number that is specific to your PLC. Cable wiring diagrams for each PLC are provided in the Appendix A. (Special interface boards with PLC connector are available for PLCs requiring a special connector. For more information, call Technical Support).

PLC Cable Part Numbers

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)

PLC Connector Pinout

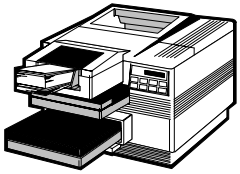


Pin Number	Connection
1	Chassis GND
2	PLC TXD (RS-232C)
3	PLC RXD (RS-232C)
4	+5V (100Ω)
5	Logic GND
6	LE
7	PLC CTS (RS-232C)
8	PLC RTS (RS-232C)
9	RXD+ (RS-422A)
10	RXD- (RS-422A)
11	TXD+ (RS-422A)
12	TXD- (RS-422A)
13	Terminating Resistor (connect to pin 9)
14	NC
15	NC

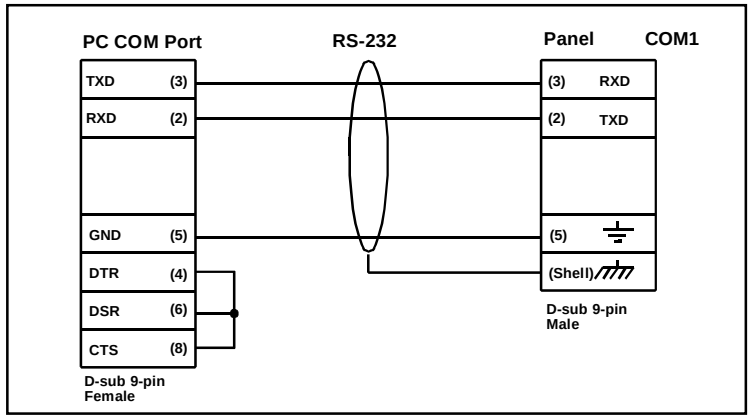
COM1 Port

The COM1 Port is used to connect a programming computer or a printer to the PowerPanel. *The panel only needs to be connected to a PC when you are programming the unit.* You will use the PowerPanel Programming Software to design the touch panel screens. A wiring diagram for the PowerPanel Programming Cable is shown below.

Connect a Programming PC or Printer



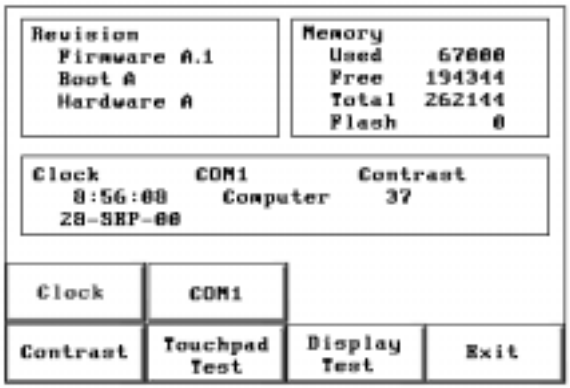
RS-232 PowerPanel Programming Cable (P/N CBL-UTICW-009)



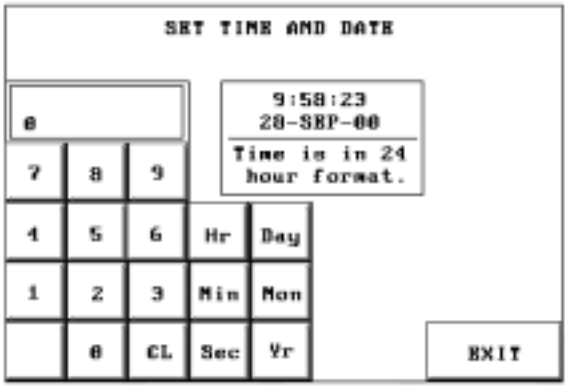
COM1 Connector	
Pin #	**RS-232C Connection**
1	*DO NOT USE TXD– (RS-422/485)*
2	TXD (RS-232C)
3	RXD (RS-232C)
4	*DO NOT USE RXD– (RS-422/485)*
5	Logic GND
6	*DO NOT USE TXD+ (RS-422/485)*
7	*DO NOT USE CTS (NOT USED)*
8	*DO NOT USE RTS (NOT USED)*
9	*DO NOT USE RXD+ (RS-422/485)*

Communications Setup

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



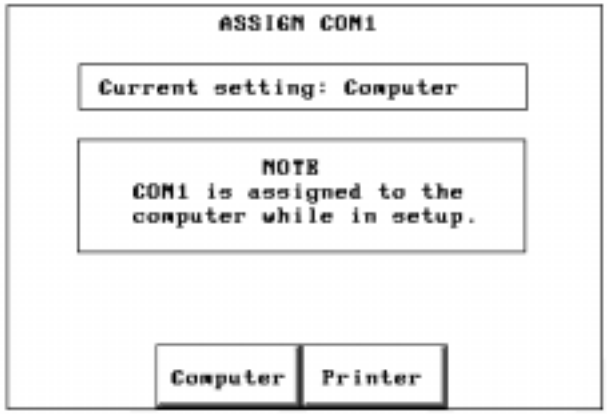
Clock



When you press the **Clock** button, the screen shown above will appear. Enter the current time and date. Press the keypad button of the number you want to enter. It will show in the display window. If correct, press **Hr**, **Min,**

Sec, or Day, **Mon**, **Yr** corresponding to the time or date position you are setting. If not correct, press **CL** to clear the window. For the month, enter the number of the month and the three letter abbreviation for the month will be displayed (e.g., 7 = July = JUL).

COM1

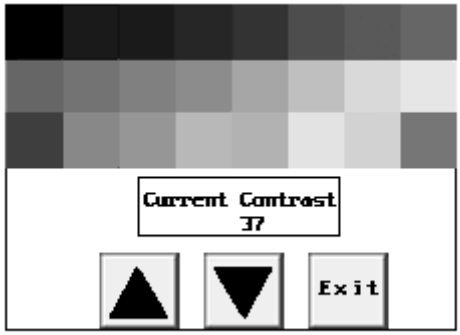


The COM1 button is used to assign the COM1 port for use with an external device. When you press the COM 1 button, the screen shown above will appear. Press the **Computer** button if the port will be connected to the programming computer. Press the **Printer** button if the port will be connected to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

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

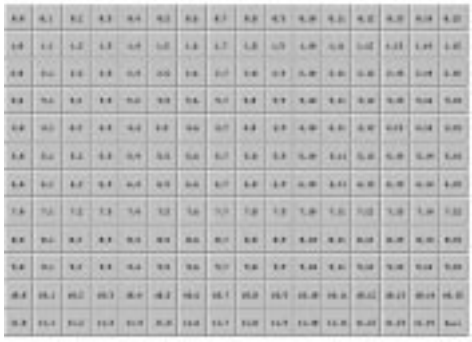
To enter Setup Mode from the user program, press on the extreme upper and extreme lower touch cell on the PowerPanel touchscreen. On the first Setup Mode Screen, press the COM1 button. From the ASSIGN COM1 screen (shown above), press Computer. You are automatically taken back to the first setup screen.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

Contrast



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

Touchpad Test



Shown above is the **Test** screen for the 8" Color screen touch pad. There are 192 touch cells on the 8" and 10" panel screens (16 x 12), and 48 (8 x 6) on the

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

Display Test

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

Exit

Press the **Exit** button to return to the programmed screen you were on when you entered the Setup Mode.

Setup Mode

To enter the PowerPanel's Setup Mode from any programmed screen, simultaneously press the extreme upper left and extreme lower left touchpad area on the panel screen. To return to the program, press the **Exit** button on the initial setup screen. You will return to the programmed screen you were on when you entered the Setup Mode.

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Shutting Off Power to PowerPanel

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

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

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

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

3. Then save the user program to disk by performing the following steps:
   a. Power down panel.
   b. Install Flash option card (see page 36).
   c. Power up panel.
   d. Transfer saved program to the panel. (At end of program upload, you will be asked if you want to transfer the program to Flash.)

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

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

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

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

— continued, next page

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

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

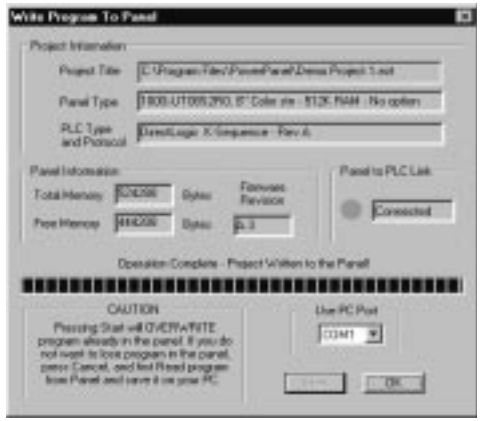
2. From the Start Screen (Project Information, Step 1) under **SELECT ACTION**, click on **Read Program from Panel and Edit OFF-LINE**. The screen shown below will appear.

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

4. Shut off power and perform maintenance task.

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

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

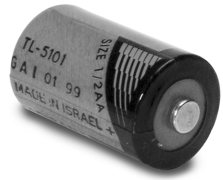


Lithium Battery Replacement

CAUTION

BEFORE REMOVING BATTERY, back up the user program and save in accordance with the instructions on page 29.

Typical battery life is 5 years.



a. Connect PowerPanel to a computer and, following instructions on the pages 31–32 to **save the user program to disk.**

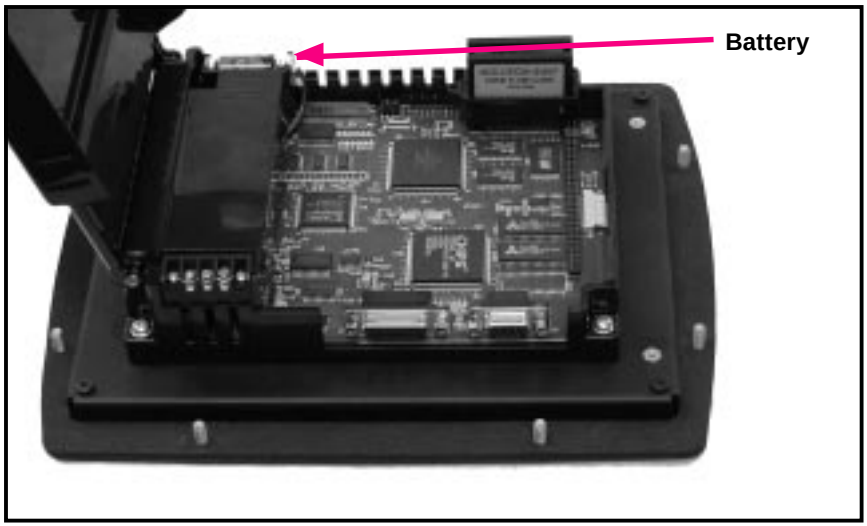
b. Disconnect power source.

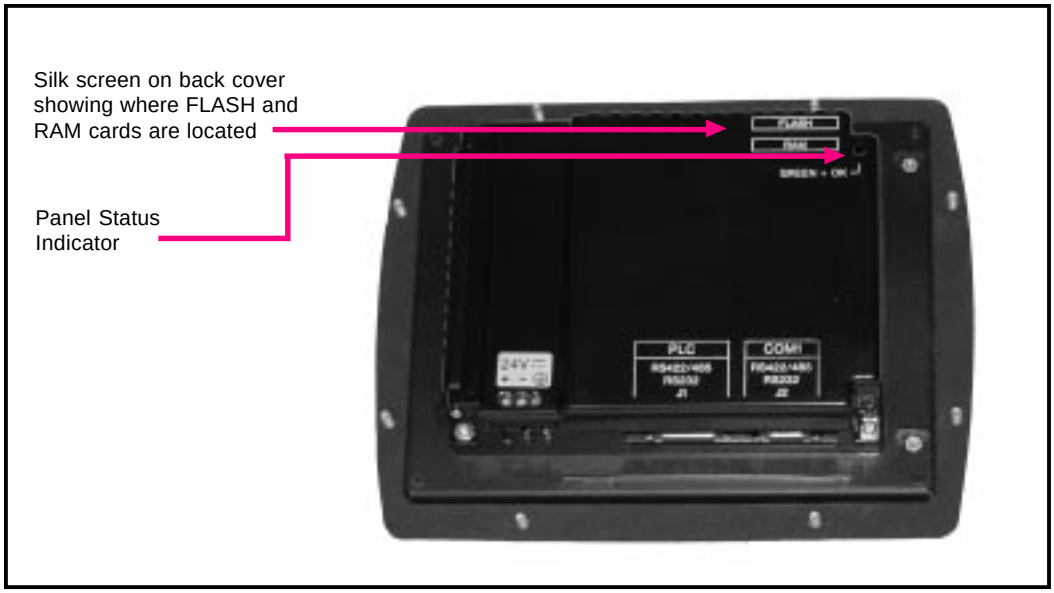
c. Open back cover (shown open in figure below) to access the battery.

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

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

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



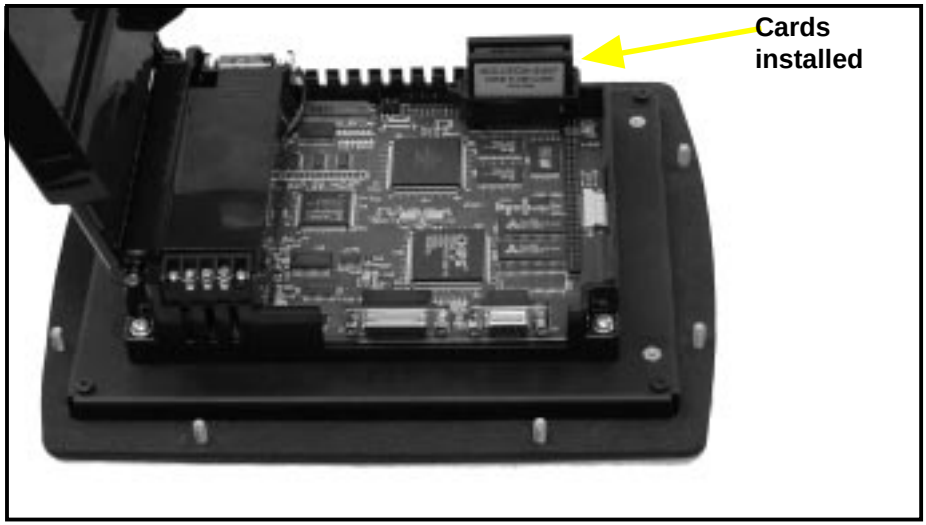


Panel Status Indicator Light

The Status LED provides an indication of unit status. It will illuminate as RED or GREEN. If the LED does not light, this indicates that there is NO POWER to unit or the power supply failed. Check or replace 24 VDC power supply. If ok, send unit back to factory for repair. If the LED turns RED and stays RED, it indicates a “unit failure.” If this happens, return the panel to the factory for service. If the LED flashes RED and turns GREEN that indicates normal operation. For more information, see the *Troubleshooting* section of this manual.

CAUTION

DO NOT REMOVE THE RAM OR FLASH CARD WHILE POWER IS APPLIED TO THE PANEL. TO DO SO WILL IRREPARABLY DAMAGE THE CARD. BACK UP YOUR USER PROGRAM AND REMOVE POWER TO THE UNIT BEFORE REMOVING A MEMORY CARD. SEE PROGRAM BACKUP INSTRUCTIONS, PAGE 31.



RAM Upgrade

User RAM memory of all standard units can be upgraded to 1 MEG of memory from the standard 512K. If your program requires more than the standard 512K memory, upgrade the RAM to 1 MEG by inserting the optional RAM Card (512K) (P/N ACC-UTICW-512KR). To install card, perform the following steps:

1. Back up your user program (see page 29) and **REMOVE POWER TO THE UNIT.**
2. Open back cover to access RAM card slot (upper right hand corner, bottom slot).
3. Simply insert the new card, being careful to seat the card properly into the backplane connector. (Do not force the card, it should connect easily if properly aligned.)
4. Close back cover and reapply power to the panel.
5. Upload saved user program.

1) DO NOT REMOVE THE RAM OR FLASH CARD WHILE POWER IS APPLIED TO THE PANEL. TO DO SO WILL IRREPARABLY DAMAGE THE CARD. BACK UP YOUR USER PROGRAM AND REMOVE POWER TO THE UNIT BEFORE REMOVING A MEMORY CARD. SEE PROGRAM BACKUP INSTRUCTIONS, PAGE 31.

2) USE ONLY UTICOR TECHNOLOGY, L. P. FLASH CARDS IN THE POWERPANEL. USE OF ANOTHER CARD WILL DAMAGE THE UNIT AND WILL VOID WARRANTY.

FLASH Program Backup

All the PowerPanels can have Flash Program Backup Cards. This feature allows you to store your user program into nonvolatile memory. The FLASH Card is easily installed in the slot provided in the back of the unit. Depending upon the size of your program, choose from two available memory sizes — 512K (P/N ACC-UTICW-512KF) and 1 MEG (P/N ACC-UTICW-1MEGF). *Note: the user RAM size must match your user Flash size: 512K RAM = 512K Flash, 1 Meg RAM = 1 Meg Flash.* With the panel connected to a programming PC and the Power Programming Software running, click on Panel >Flash > RAM to FLASH from the main menu. Once the program is backed up onto the card, you can use it to load the program into different units — no programming computer is necessary. To install either card:

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

Fuse Reset

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

Fluorescent Backlight Bulb Replacement

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

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

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

Precautions

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

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

Touchscreen/Chemical Compatibility

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

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

Touchscreen Cleaning

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

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.

See "Connections and Wiring," this manual, 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 (see page 26, this manual).

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

Problem: Communications with PLC

Action:

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

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

Problem: Memory Card

Action:

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

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

Problem: Display Blank

Action:

1. Display indicates NO SCREEN for 3 seconds after powerup. 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.)
   a. There is no change, display remains blank. Indicates UNIT FAILURE, return for service.
   b. Unit SETUP screen appears, screen is hard to read. Adjust screen contrast control for 6- or 8-inch units (10-inch units have no contrast adjustment).
   c. Unit SETUP screen appears normal. Unit has no user program — install user program.

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

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

Action:

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

Still need Help?

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

Visit our website at www.uticor.net. Our web site contains information about any new feature releases, technical support, plus much more ...

Call our **Technical Support Group** at 1-800-832-3647 or FAX us at 1-563-359-9094.

If you have any questions that you can't find an answer to, give us a call at the number above and we will be glad to assist you.

Warranty Repairs

If your PowerPanel is under warranty, **contact UTICOR Techonolgy, L.P. @ 1-563-359-7501.**

Out of Warranty Repairs

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

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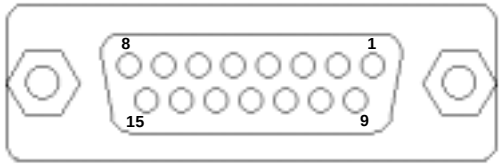
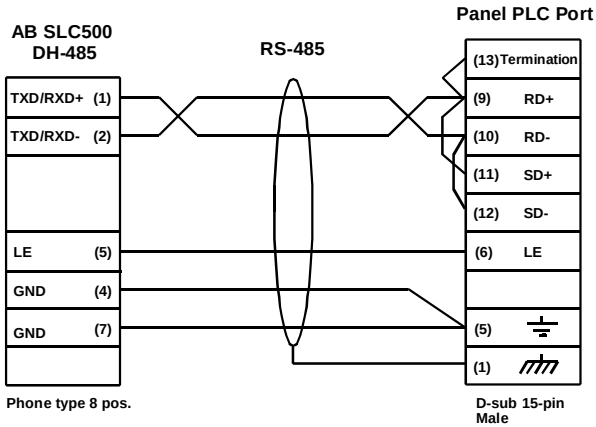
The following diagrams depict the wiring pinouts for the PowerPanel to PLC Cables.

PowerPanel Female PLC Port (located on bottom of unit)

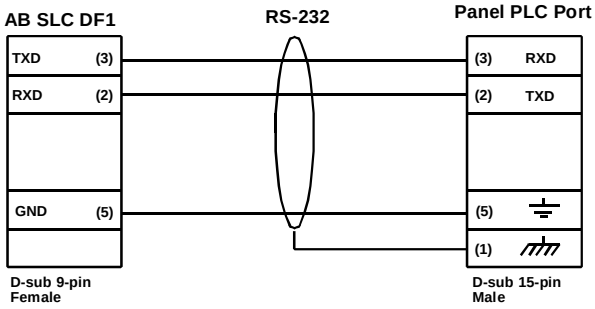


Allen-Bradley SLC500, 5/01, /02, /03 DH-485/AIC (P/N CBL-UTICW-004)

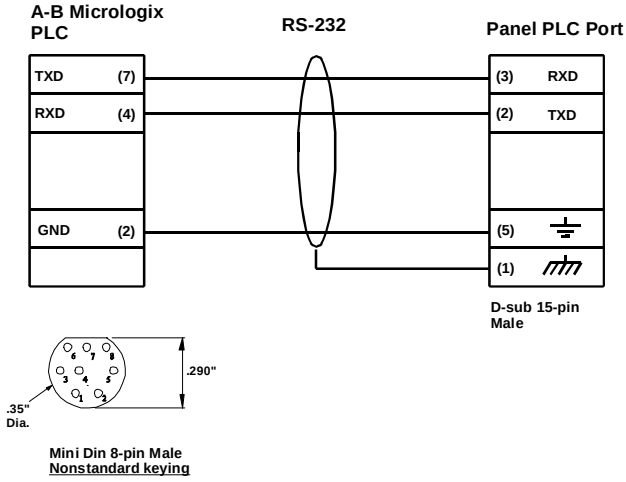
Allen-Bradley SLC500 DH-485/AIC (Point-to-Point or Multi-drop)



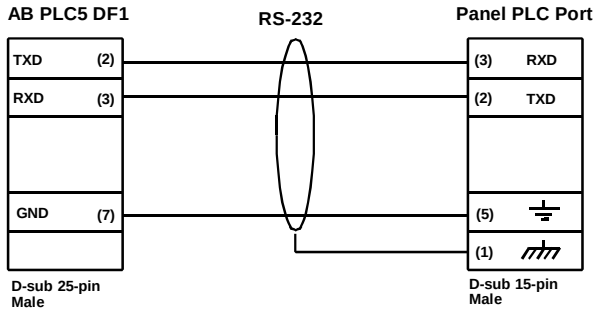
Allen-Bradley SLC DF1 RS-232 (P/N CBL-UTICW-002)



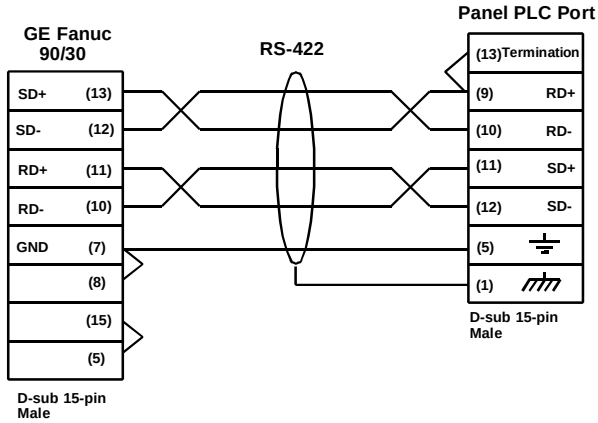
Allen-Bradley Micrologix 1000/1200/1500 RS-232 (P/N CBL-UTICW-005)



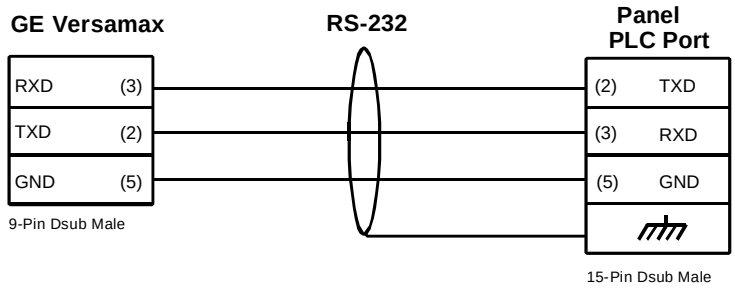
Allen-Bradley PLC5 DF1 RS-232 (P/N CBL-UTICW-003)



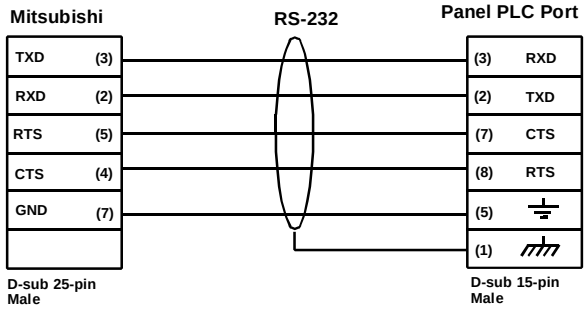
General Electric 90/30 and 90/70 15-pin D-SUB RS-422 (P/N CBL-UTICW-001)



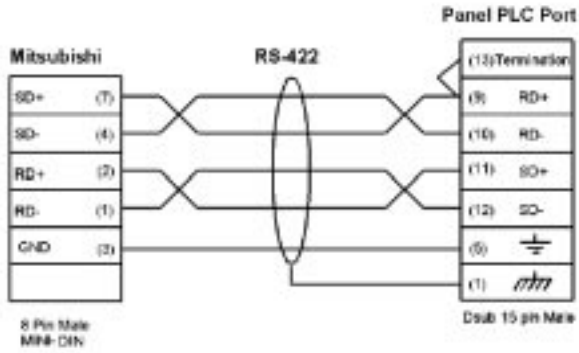
General Electric Versamax RS-232 (P/N CBL-UTICW-014)



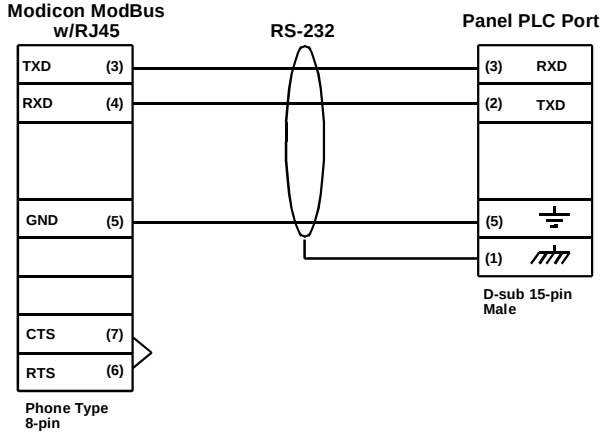
Mitsubishi FX Series 25-pin RS-422 (P/N CBL-UTICW-006)



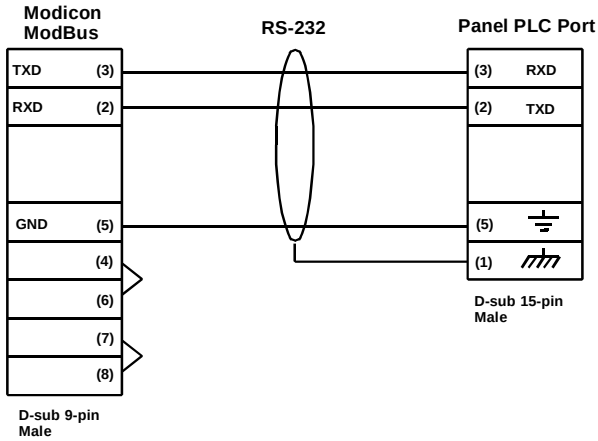
Mitsubishi FX Series 8-pin MINI-DIN RS-422 (P/N CBL-UTICW-007)



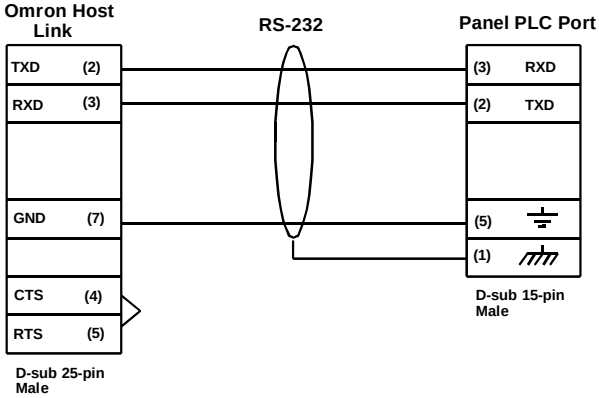
Modicon ModBus with RJ45 (P/N CBL-UTICW-010)



Modicon ModBus RS-232 (P/N CBL-UTICW-011)



Omron C200, C500 RS-232 (P/N CBL-UTICW-008)



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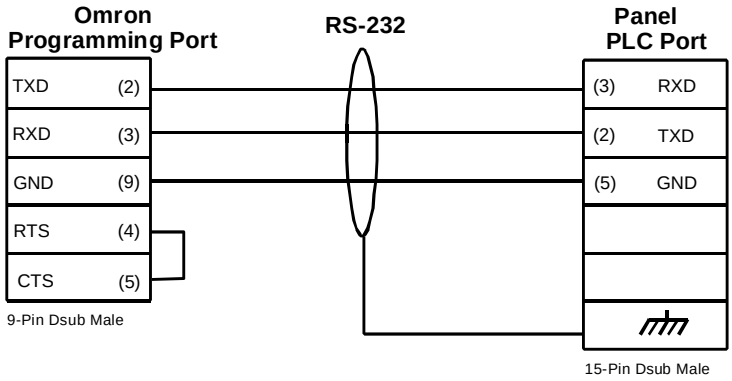
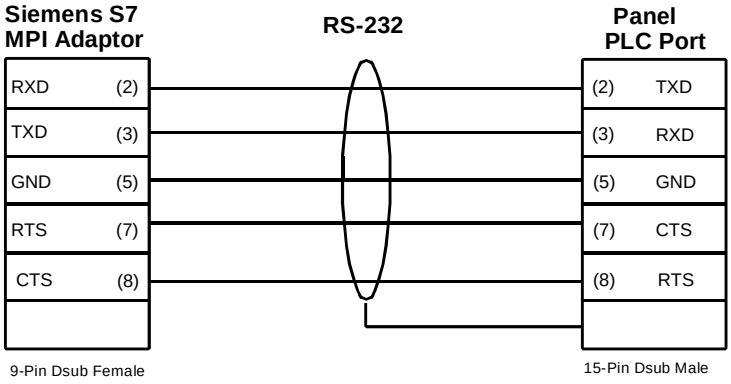


Siemens S7 MPI Adaptor (P/N CBL-UTICW-012)



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