

EXPRESS SETUP

PanelMate 1700 Series

PanelMate Power Pro



Cutler-Hammer

EAT•N

1 Installation

Unpacking

Carefully remove all equipment from the packing cartons and inspect all parts for damage in shipment. Check packing cartons for all items shown on the packing list. Keep the cartons and packing materials for future shipment.

If there is equipment damage due to shipment, report the damage to the carrier who delivered the equipment. Note: The Interstate Commerce Commission has a time limit on reporting concealed damage.

Parts Checklist

Your packing carton contains one parts kit containing:

- 1 Packet of mounting nuts and washers
- 2 Two-terminal connectors (audio output & security keyswitch)
- 1 Three-terminal connector (24VDC power)
- 1 Four-terminal connector (fault relay)

Mounting

Your PanelMate unit is designed for Type 4, 4X, and 12 installations when properly mounted in a correspondingly-rated enclosure.

Proper installation and enclosure sizing is essential to ensure long life and trouble-free operation. Your PanelMate unit should always be mounted in a vertical position. Flat or angled mounting positions will severely shorten the unit's life.

Refer to Cutler-Hammer's PanelMate Installation Guide for installation recommendations. The Guide is available on the Cutler-Hammer web site:

www.cutlerhammer.eaton.com/automation

Panel cutout dimensions and stud torque limits are shown on the reverse side of this Express Setup sheet.

Note: Stud nuts must be tightened enough to obtain a proper seal, but not over-tightened to the point where the threads are stripped or the gasket is rendered useless. Always use a torque wrench when installing your PanelMate unit.

Safety Considerations

This equipment is suitable for Class I, Division 2, Groups (A,B,C,D) or non-hazardous locations only.



CAUTION

EXPLOSION HAZARD. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.



ADVERTISSEMENT

RISQUE D'EXPLOSION. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2.



WARNING

EXPLOSION HAZARD. DO NOT REPLACE COMPONENTS UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.



ADVERTISSEMENT

RISQUE D'EXPLOSION. COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT ES DESIGNÉ NON DANGEREUX AVANT DE REMPLACER LE COMPOSANTS.

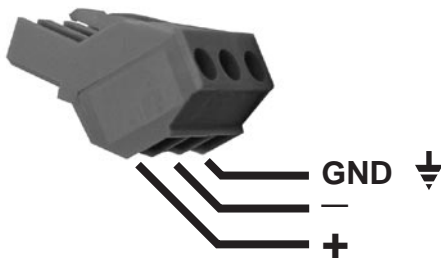
2 Connections

Connect DC Power

Your PanelMate unit is designed to operate at 24VDC -15%/+20%. A removable three-position DC power connector attaches to the unit's connector receptacle. The DC input common (-terminal) and the chassis GND terminal are both internally connected to the PanelMate chassis.

Note: Use #18 AWG (0.82mm²) copper wire for power and ground lead connections.

Note: Power conditioning may be required when the PanelMate unit is installed in areas of poor power quality.



CAUTION

Your PanelMate unit could be damaged if it is connected to voltages outside the range of 18 to 30VDC. Your PanelMate unit is fully protected against polarity reversal and will not operate if input polarity is reversed.



CAUTION

If you are replacing a PanelMate Power Series 1500 unit, check the rating of your existing 24VDC power supply. The PanelMate 1700 unit requires a power supply rated for 1.5A operation.

Connection to a Personal Computer

Executive firmware and PanelMate configurations are uploaded/downloaded to a personal computer using the PanelMate unit's serial port. A transfer serial cable is provided with your PanelMate Configuration software. Refer to your PanelMate Getting Started Manual for more information.

Connection to the Fault Relay

The fault relay may be wired in normally open or normally closed configuration. It is a Form C contact, rated for 2 amps at 120VAC, 2 amps at 230VAC, and 2 amps at 28VDC resistive load. During normal operation, the fault relay will energize after entering Run Mode. Whenever the PanelMate unit detects a communication error or system failure, the fault relay will be de-energized. It is also possible to de-energize the fault relay whenever an alarm condition occurs. You can set the fault relay to de-energize on alarms by using the System Parameters Table. Refer to the System Parameters topic in the Configuration Software Online Help and in the Configuration Editor User's Guide for more information.

Connection to the Audio Output

The Audio Feedback Kit is an optional accessory to your PanelMate unit. To connect the external 8 Ohm speaker to your PanelMate unit, connect the speaker to the Audio connector.

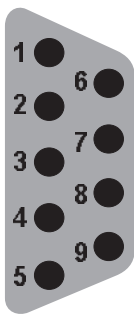
Connection to the Security Keyswitch

The Security Keyswitch connection is provided for external security/password applications.

Connection to Serial Ports

Serial Port 1 may be used for a printer, for PLC (or Host) communications, or for connection to a personal computer for upload or download. Serial Port 2 may be used for a printer, or for PLC (or Host) communications.

Selection of Port 1 for a serial printer must be done with the Configuration Software. Refer to the PLC Name and Port Table topic in the Configuration Software Online Help and in the PanelMate Configuration Editor User's Guide.



| Pin | Description |
|-----|----------------------------------|
| 1 | RS422 Transmit Data (+) (Output) |
| 2 | RS232 Receive Data (Input) |
| 3 | RS232 Transmit Data (Output) |
| 4 | RS422 Receive Data (+) (Input) |
| 5 | Signal Ground |
| 6 | RS422 Transmit Data (-) (Output) |
| 7 | RS232 Request to Send (Output) |
| 8 | RS232 Clear to Send (Input) |
| 9 | RS422 Receive Data (-) |

Serial Port Termination

Your PanelMate unit is sent without termination. For serial port termination switch locations, refer to Figure A. Recommended termination for RS232, DH485 and RS422 communication is shown in the table. For setting the termination on Serial Port 1, use the termination switch on the left of Serial Port 1. For setting the termination on Serial Port 2, use the termination switch to the right of Serial Port 2.

| Communication | Position | Termination |
|---------------|----------|--|
| RS232 | 1 | None (factory setting) |
| DH485 | 4 | 120 Ohm AC coupled |
| RS422/RS485 | 2 & 3 | Refer to your PLC Communications Driver Manual for termination information |

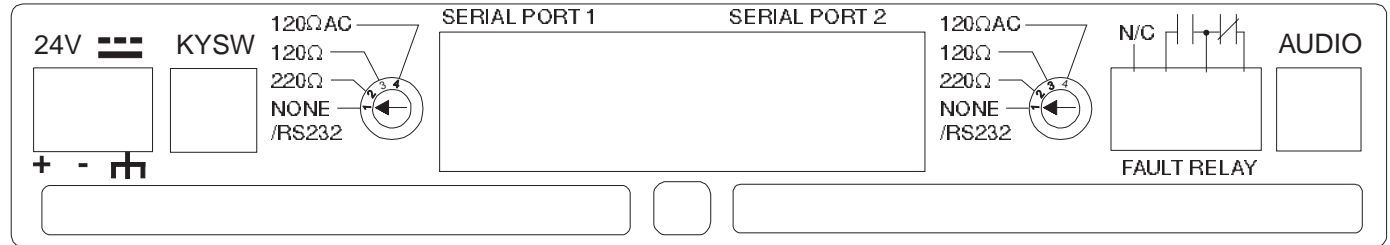


Figure A



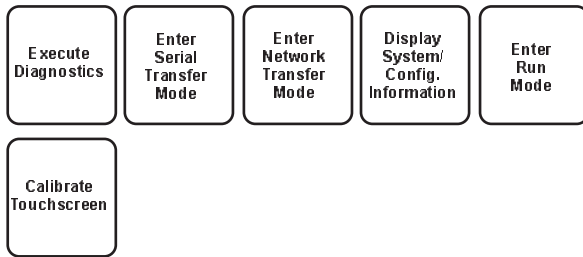
CAUTION

Your PanelMate unit is equipped with isolated serial ports for improved communications reliability. If you are replacing a 120VAC Power Series unit or a Power Series 1500 unit, and are using an RS422 or RS485 cable for PLC communications, you may need to install a new cable equipped with a ground wire. Consult your PLC communications driver manual or contact Cutler-Hammer Technical Support for more information.

3 Tests & Adjustments

PanelMate Diagnostic Tests

When power is applied to your PanelMate unit, the unit will display a listing of internal diagnostic checks as they are executed. After completing its internal diagnostic checks, the unit will display the Offline Mode Menu. This menu displays six selections described below:



Execute Diagnostics

This template allows you to perform a series of tests:

- Set Date and Time
- Display test
- Touchscreen test
- Tone, relay and battery test
- System status

For information on performing these tests, refer to your PanelMate Getting Started Manual.

Enter Serial Transfer Mode

To download, upload or read system information over a serial port, your PanelMate unit must be in Serial Transfer Mode. For more information on downloading and uploading PanelMate configurations, refer to your PanelMate Getting Started Manual.

Enter Network Transfer Mode

Network transfer mode is used to read system information over a remote network or remotely place your PanelMate unit into Run Mode. For more information, refer to your PanelMate Transfer Utility User's Manual.

Display System Configuration Information

This selection displays your PanelMate unit's current configuration. Your PanelMate unit is shipped with a demonstration PanelMate configuration. Once you have downloaded a new configuration, this information will be updated to reflect the new configuration information.

Enter Run Mode

Run Mode allows you to display the configuration downloaded to the PanelMate unit and communicate to the PLC (or Host) of your choice. If a new configuration has not been downloaded, the unit will display the demonstration configuration. For more information on Run Mode, refer to your PanelMate Getting Started Manual.

Calibrate Touchscreen

Touchscreen units have a calibration routine that must be performed to determine the boundaries of the video on your touchscreen. Refer to Touchscreen Information for instructions on calibrating the touchscreen.

Display Contrast Adjustment

Units equipped with grayscale or dual-scan color displays feature software-controlled contrast adjustment. To adjust the contrast, follow these steps:

- 1) Place the unit in Run Mode
- 2) Select the Get Page control button from the default control buttons
- 3) Select the More control button
- 4) Select the Setup Page control button
- 5) Select the Adjust Contrast control button and use the Lighter and Darker control buttons to adjust the display's contrast.

To save the new setting, press the Save Setting control button. To revert to the previous contrast setting, press the Cancel key. The unit will return to the last saved contrast level after power is cycled to the unit.

4 Touchscreen Information

PanelMate Operation

The most basic job of a PanelMate unit is to replace the functions of hard-wired operator station devices such as pushbuttons, lamps and message displays. To replace these devices, the PanelMate unit supplies a "template".

During operation, you can select a template to "arm" control buttons or numeric entry. Once a template has been selected or "armed", you can press any desired control button to take action.

The touchscreen is designed for finger or gloved operation only, and does not require the same actuation force as a mechanical switch. A light touch will produce the same result as a heavy one.

For more information refer to your PanelMate Online Operation User's Guide.



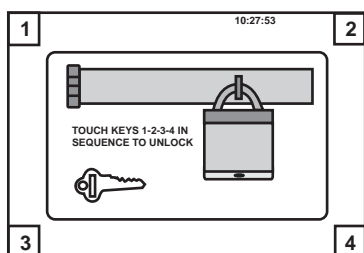
Pressing directly on the display will activate a template.

Touchscreen Cleaning

A Cleaning Mode utility is provided to make touchscreen cleaning safe and easy. To access it:

- 1) Place the PanelMate unit in Run Mode
- 2) Select the Get Page control button
- 3) Select the More control button
- 4) Select the Setup Page control button
- 5) Select the Cleaning Mode template
- 6) Press the Execute control button

After pressing the Execute button, the Cleaning Mode screen will appear. While this screen is displayed, the touchscreen will not respond to your random touch. After you have finished cleaning the touchscreen, you must return to normal operation by pressing the screen's numbered corners in sequential order: 1,2,3,4.



Touchscreen Calibration

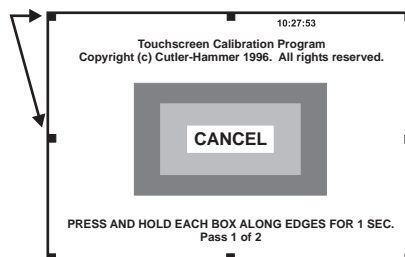
You can calibrate your unit's touchscreen in both Offline and Run modes. To access the calibration screen when in Offline mode, select the Calibrate Touchscreen template on the Offline Mode Menu. To access the calibration in Run mode:

- 1) Select the Get Page control button from the default control buttons
- 2) Select the More control button
- 3) Select the Setup Page control button
- 4) Select the Calibrate Touchscreen template
- 5) Press the Execute control button

Although the Offline and Run mode calibration screens are slightly different in appearance, they both use the same calibration process. To calibrate, press the eight boxes/crosshairs located around the screen edges. You may press them in any order, but all must be pressed to calibrate.

Each box/crosshair will turn green when pressed. After the first pass, the boxes/crosshairs will change color to indicate the screen is ready for the second pass. Again, press all eight boxes/crosshairs around the screen edge. When you have pressed the last, the unit will return to normal operation.

Press these boxes/crosshairs twice



CAUTION

Never use foreign objects (pens, screwdrivers or similar) to activate the touchscreen. Foreign objects may damage the touchscreen, causing unreliable operation or failure.

Do not use solvents or other harsh cleaning compounds on the touchscreen. Solvents and abrasive cleaning compounds will cause permanent damage to the touchscreen.

5 Cutout Template



CAUTION

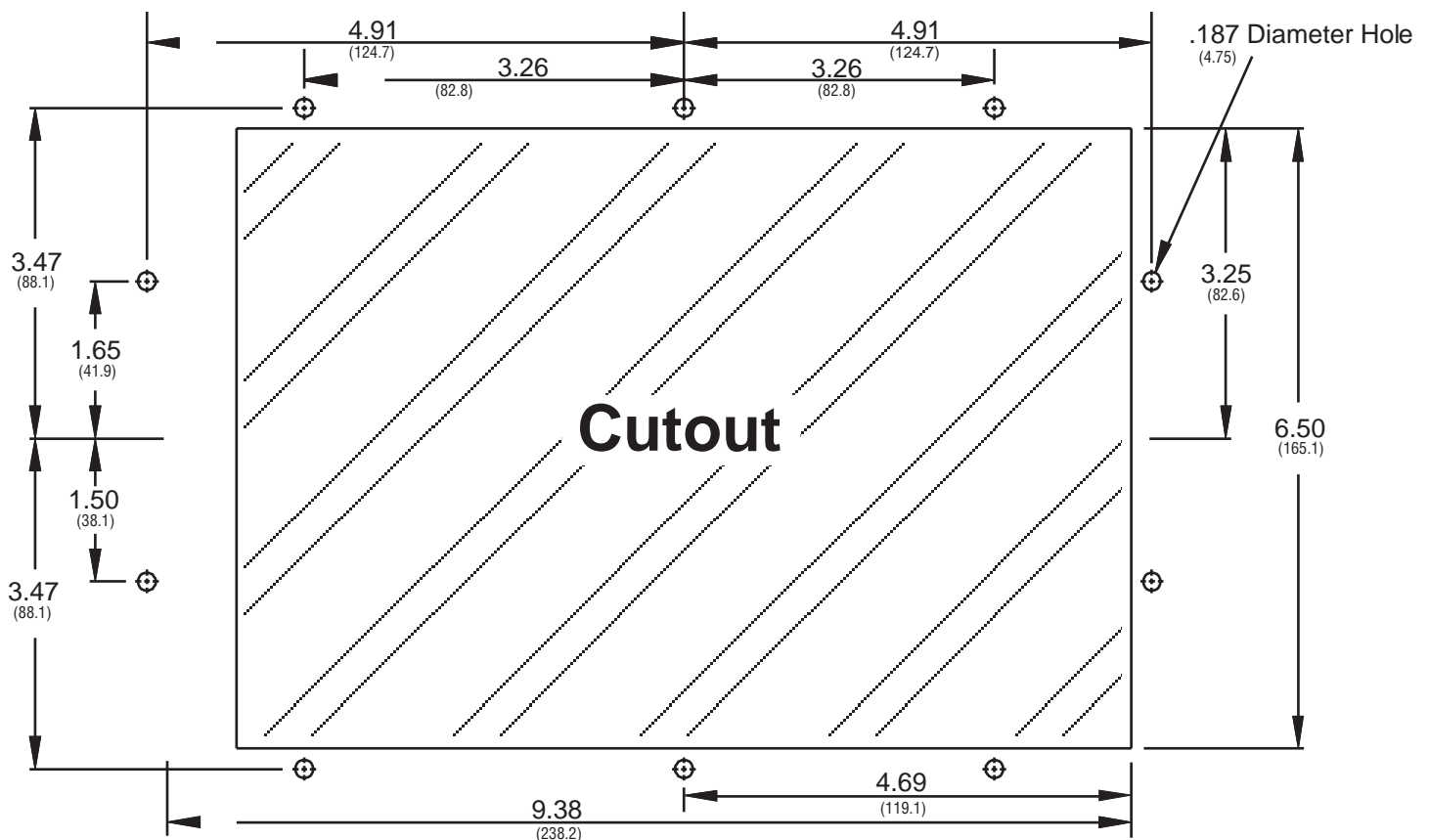
Care should be taken when tightening the nuts. The fasteners must be tightened enough to obtain a proper seal, but not over tightened to the point where the threads are stripped or the gasket is rendered useless. Always use a torque wrench when installing your PanelMate unit.



CAUTION

The reproduction process may distort this cutout template. Always check your dimensions prior to cutting your panel.

Torque Limits for Studs 5 inch-pounds for #6-32 nuts



Notes:

Dimensions are in inches.

Millimeter dimensions are in parentheses.

Specifications

Temperature

Operating: 0 to 50 degree C (grayscale & TFT color)
0 to 40 degree C (dual-scan color)
Non-Operating: -20 to 60 degree C

Humidity (non-condensing)

Operating: 20% - 80% (grayscale)
20% - 90% (color)
Non-Operating: 20% - 90% (grayscale)
20% - 95% (color)

Installation Rating: Type 4, Type 4X, or Type 12, when properly mounted in a correspondingly-rated enclosure

Vibration

Operating: 1g at 10-500Hz
Non-Operating: 1g at 10-500Hz

Shock

Operating: 30g
Non-Operating: 30g

Pollution: Pollution Degree 1 - Rated for exposure to dry or non-conductive pollutants only

Altitude

Operating: 10,000 feet above sea level
Non-Operating: 40,000 feet above sea level

ESD Immunity

Air: IEC 1000-4-2, Level 4 (+/- 15kV)
Contact: IEC 1000-4-2, Level 4 (+/- 8kV)

Radiated Immunity: IEC 1000-4-3 (10V/m) 27mHz to 1GHz 80% AM modulation

Conducted Immunity: IEC 1000-4-6 10V from 150kHz to 80mHZ, 80% AM modulation with 1kHz sine wave

Surge Immunity: IEC 1000 - 4-5 500V

Radiated/Conductive: CISPR 22, Class A Emission

Electrical Fast Transient: IEC 1000-4-4, Level 3 (2kV) on power lines (1kV) on I/O lines

Line Frequency Magnetic Field Immunity: IEC 1000-4-8 Level 3, 30A/m at 50Hz and 60Hz

Specifications

Voltage: 24VDC - 15%/+20%

Power: 27W (with high speed interface installed)
23W (without high speed interface installed)

Current: 1.3A (with high speed interface installed)
1.1A (without high speed interface installed)

Peak Inrush Current: 5A

Serial Port Rate: Selectable; 110 to 38,400 baud

Serial Port 1 Configuration: DB9S connection selectable for RS232, RS422, or RS485-2 signal levels

Serial Port 2 Configuration: DB9S connection selectable for RS232, RS422, or RS485-2 signal levels

Weight: 4 Lbs
5 Lbs with high speed interface attached

Support Services

Technical Support

1-800-809-2772 Voice

1-614-882-0417 Fax

Information Fax-Back

614-899-5323

Website

<http://www.cutlerhammer.eaton.com/automation>

Technical Support E-mail

chatechsupport@ch.etn.com

All Other Inquiries

614-882-3282