

**EXPRESS SETUP**

# PanelMate 3985T Power Pro



*Powered by*  **ATS**

# 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.

Report any damage to the carrier who delivered the equipment, then contact your ATS distributor. If you purchased the equipment from ATS, call the Order Processing Department at 800.328.7287. 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 NEMA 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 shorten the unit's life.

## Note:

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

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

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**EXPLOSION HAZARD. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.**



### ADVERTISSMENT

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**RISQUE D'EXPLOSION. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1, DIVISION 2.**



### WARNING

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



### ADVERTISSMENT

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**RESQUE D'EXPLOSION. COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT ES DESIGNE NON DANGEREUX AVANT DE REPLACER LE COMPOSANTS.**

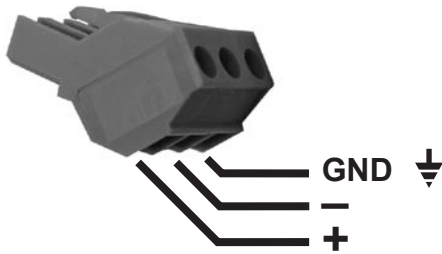
# 2 Connections

## Connect DC Power

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

**Note:** Use #18 AWG (0.82mm<sup>2</sup>) 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

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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

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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 PC using the PanelMate unit's serial port. A download 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 8Ohm speaker to your PanelMate unit, connect the speaker to the Audio connector.

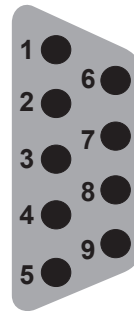
## Connection to the Security Keyswitch

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
RS 232	1	None (factory Setting)
DH 485	4	120 Ohm AC coupled
RS422/RS485	2 & 3	Refer to your PLC Communications Driver Manual for termination information

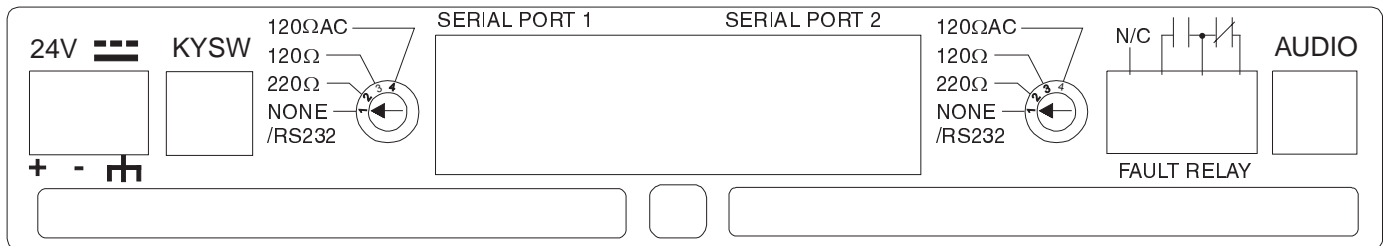


Figure A



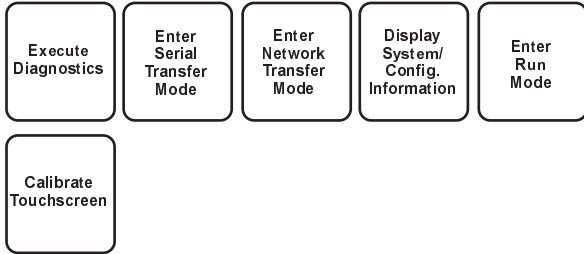
## CAUTION

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 will need to install a new cable equipped with a ground wire. Consult your PLC Communications driver manual or contact ~~Cutler-Hammer Support Services 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
- Serial port test

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 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.



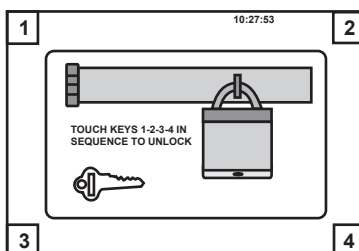
Pressing directly on the display will activate a template.

## 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 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

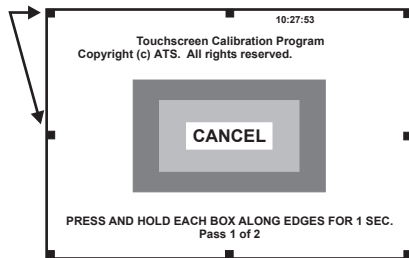
You can calibrate your unit's touchscreen in both Offline and Run modes. To access the calibration screen when in Offline mode, select the Calibrate Touchscreen template on the Offline Mode Menu. To access the calibration in Run mode:

- 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 control button
- 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 (different shade of gray on grayscale units) 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, in order (1,2,3,4,1,2,3,4)



## 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

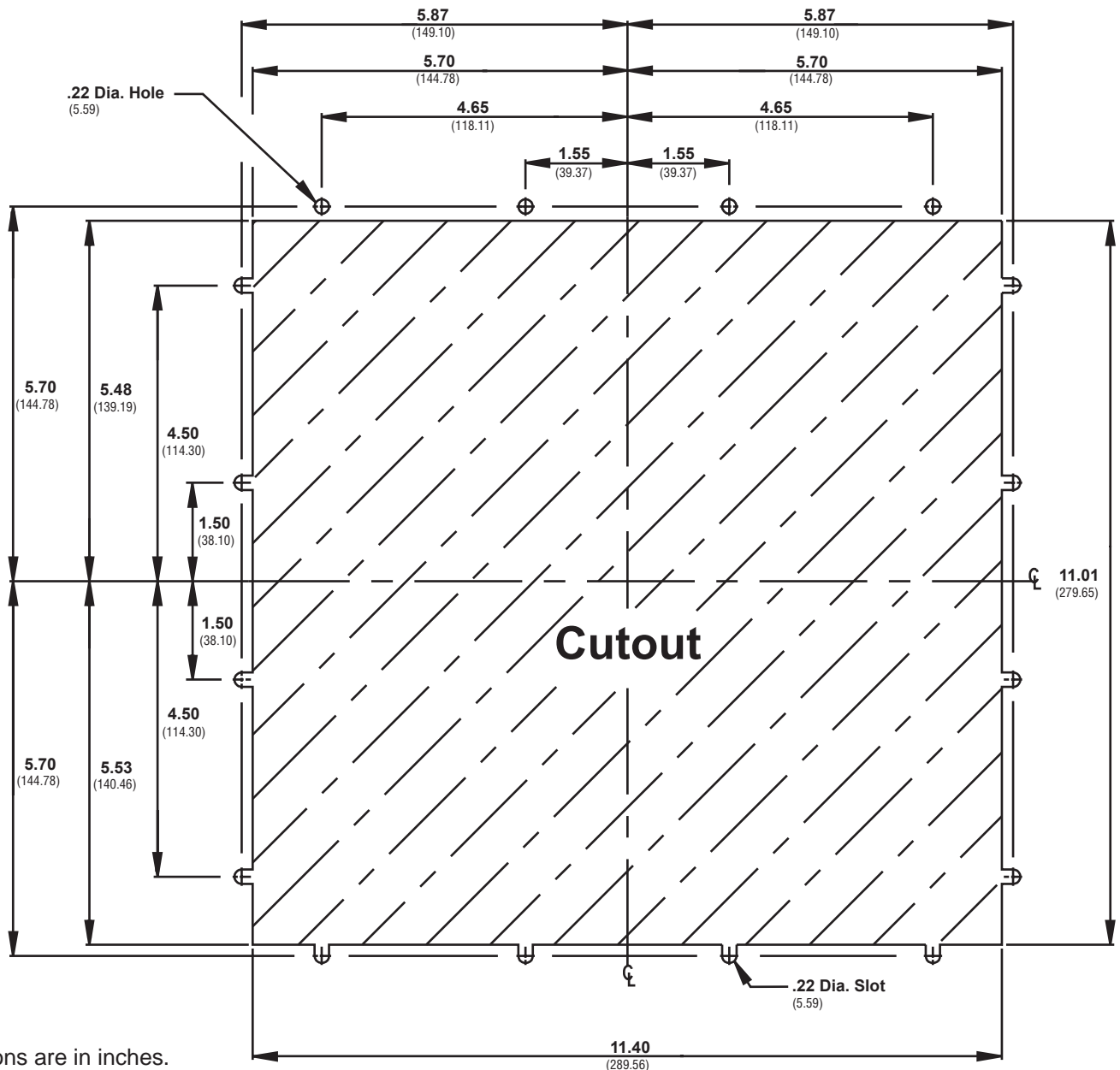
Care should be taken when tightening the nuts. The fasteners must be tightened enough to obtain a proper seal, but not over tightened to the point where the threads are stripped or the gasket is rendered useless. Always use a torque wrench when installing your PanelMate unit.



## CAUTION

This drawing is not 1:1 scale. Please refer to the Express Setup Sheet included with your PanelMate unit for a 1:1 cutout drawing.

**Torque Limits for Studs**  
7 inch-pounds for #8-32 nuts



**Notes:**  
Dimensions are in inches.  
Millimeter dimensions are in parentheses.

# Specifications

## Temperature

Operating: 0 to 50 degree C  
Non-Operating: -20 to 70 degree C

## Humidity (non-condensing)

Operating: 20% - 90%  
Non-Operating: 20% - 95%

NEMA Class: Type 4, 4X, or 12

## 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 2kV

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

Voltage: 24VDC -15%/+20%

Power 30W (with Fieldbus Interface installed)  
26W (without Fieldbus Interface installed)

Current: 1.3A (with Fieldbus Interface installed)  
1.1A (without Fieldbus Interface installed)

Peak Inrush Current: 6A

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: 10 Lbs  
11 Lbs with Fieldbus interface attached

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At ATS, our Legacy Products Division continues to support factories worldwide through partnerships with industry leading OEM's. This PanelMate product is our latest acquisition. It continues our tradition of assisting customers like you by allowing for capital investment decisions to be made within your timeframe. Through our support of end-of-life components, existing production lines stay running without the need for expensive upgrades.

ATS didn't earn its reputation for making factories run better by accident. We earned it by proving ourselves in some of the most advanced and demanding factories in the world. Our breadth of expertise stretches much farther than Legacy Products. With our award winning Industrial Parts Services we offer some of the world's top companies high quality repairs that look and perform like new. We also provide customers a variety of on-site Industrial Parts Services including Repair Parts Management, Reliability Engineering, Power Tool / Asset Management and Calibration Services. No one offers greater expertise in Repair Parts Services than ATS.

ATS' state-of-the-art repair centers are ISO 9001 registered assessed by the British Standards Institute (BSI). Our calibration labs are ISO 17025 accredited assessed by A2LA with standards traceable to the National Institute of Standards and Technology.

## **Avanced Technology Services**

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