# LANpoint® CE
# Installation and Maintenance Manual



**www.lanpoint.com**

# ⫦INTELLIGENT
# ⫦INSTRUMENTATION®

**855M502        version 1.1**

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Seller warrants that its products furnished hereunder will, at the time of delivery, be free from defects in material and workmanship and will conform to Seller's published specifications applicable at the time of sale. Seller's obligation or liability to Buyer for products which do not conform to above stated warranty shall be limited to Seller, at Seller's sole discretion, either repairing the product, replacing the product with a like or similar product, or refunding the purchase price of the nonconforming product, provided that written notice of said nonconformance is received by Seller within the time periods set forth below:

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Intelligent Instrumentation's World Wide Web site *http:// www.lanpoint.com* provides online support through technical support links. The site contains information on Intelligent Instrumentation's products, new developments, announcements, application notes, application examples, and other useful information. The site and support areas continue to grow as new products, updates, and features are added.

## Email Support

Intelligent Instrumentation's technical support can be reached via email. When sending an email message, be sure to include complete contact information as well as a detailed description of the problem and products being used to:

support@lanpoint.com

## Static Sensitivity

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## FCC Radio Frequency Interference Statement

This equipment generates and uses radio frequency energy, and may cause interference to radio or television reception.

Per FCC rules, Part 15, Subpart J, operation of this equipment is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by other incidental or restricted radiation devices, industrial, scientific or medical equipment, or from any authorized radio user.

The operator of a computing device may be required to stop operating his device upon a finding that the device is causing harmful interference and it is in the public interest to stop operation until the interference problem has been corrected.

The user of this equipment is responsible for any interference to radio or television reception caused by the equipment. It is the responsibility of the user to correct such interference.

## Revision History for the LANpoint CE Installation and Maintenance Manual

| Version | Date | Revision |
|---------|--------|----------------------------------|
| 1.0 | 062101 | Initial Release |
| 1.1 | 032706 | Cover change, minor corrections |

# Table of Contents

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# LANpoint CE Terminal

## 1.0    About this Manual

This LANpoint CE Installation & Maintenance Manual includes instructions for installing and operating the LANpoint CE terminal. Mounting options vary, depending on the requirements for your application.

The LANpoint CE terminal supports the use of a bar code laser, wand, and/or magnetic stripe reader and operates using several types of power adapters that can be ordered through Intelligent Instrumentation.

Maintenance of the LANpoint CE terminal is minimal. This manual includes instructions for replacing the real-time clock battery and the optional battery backup pack.

## 2.0    Features, Specifications, and Options

The LANpoint CE product line includes a variety of standard features, options, and a full line of accessories for mounting and operation. See Intelligent Instrumentation's web site www.lanpoint.com for a complete listing of these items.

### 2.0.1    LANpoint CE Terminal Features

This section includes an overview of the LANpoint CE terminal 's features.

#### 2.0.1.1    Case

The front case of the LANpoint CE terminal is molded of a textured high-impact plastic. All connectors are in the rear of the LANpoint CE terminal, with special rubber grommets for routing scanner cables through either or both side caps. The terminal ships without a protective rear cover. There are several types of rear covers available from Intelligent Instrumentation. See the Web site www.lanpoint.com for information on rear covers.

#### 2.0.1.2    Display

There are two types of displays for the LANpoint CE terminal, a standard 640 x 240 pixel backlit monochrome LCD or an optional 640 x 240 pixel backlit color display. The LANpoint CE terminals with the backlit color display option are set for maximum intensity at the factory. If it is necessary to adjust the intensity of the color display, contact customer support.

The LANpoint CE terminal has a VGA video output that drives a standard VGA monitor or compatible display. Either the built-in LCD on the terminal or the external VGA monitor can be active, but not simultaneously.

### 2.0.1.3   Keyboard

The sealed elastomeric construction features a long-life industrial design. The keyboard configuration is a standard 69-key QWERTY.

### 2.0.1.4   Connectors

The LANpoint CE terminal includes the following connectors:

- Power
- +3.3 V, +5 V, and +12 V accessory power output
- Ethernet RJ45 10/100 Base-T
- Serial ports COM1, COM2
- Mini-DIN6 mouse
- Mini-DIN6 keyboard
- PCMCIA type I, II, III
- One DRAM memory slot
- Digital I/O
- Battery backup
- External VGA monitor

**Auto-ID Device Interfaces**

- Wand/wand emulation laser Bar Code port (feeds to an internal COM3 serial port)
- Undecoded Laser port (feeds to an internal COM3 serial port)
- Slot reader port

### 2.0.1.5   Networks

The LANpoint CE terminal includes the following network software:

- Web-enabled remote management software
- SNMP

### 2.0.1.6   Status LEDs

Eight LEDs are visible on the face of the terminal:

- Four status LEDs include External Power, Ethernet Link, Battery Power, and Low Battery
- Four user-definable/programmable LEDs

## 2.0.2   Specifications

This section includes information on the LANpoint CE terminal 's specifications.

### 2.0.2.1  Dimensions

Base model: 36.8 cm W x 24.6 cm H x 8.9 cm D (14.5 in. W x 9.7 in. H x 3.5 in. D)

### 2.0.2.2  Operating System

The LANpoint CE operating system: Microsoft Windows CE version 3.0.

### 2.0.2.3  Power Requirements

The LANpoint CE power requirements: 12 V - 28 VAC or 15 V - 30 Vdc.

The power adapters available through Intelligent Instrumentation supply 24 VAC @ 1.2 A.

### 2.0.2.4  Decoded Symbologies

The LANpoint CE terminal supports the following bar code symbologies:

- Code 3 of 9 (Mod 43 and full ASCII)
- Codabar
- Code 128
- Code16K
- Interleaved 2 of 5
- Industrial 2 of 5
- Matrix 2 of 5
- Code 11
- UPC/EAN/JAN
- MSI Plessey
- Plessey

### 2.0.2.5  Temperature Ranges

The temperature ranges for the LANpoint CE terminal include:

| Temperature Ranges | Monochrome | Color |
|---|---|---|
| Operational | 0-60° C | 0-40° C |
| Storage | -20-60° C | -20-80° C |

### 2.0.3  Options

The options for the LANpoint CE terminal include several metal rear covers, a battery backup pack that provides enough time to close a program during an interruption in AC power, Digital I/O, and several external power adapters for AC power.

## 2.0.3.1   Battery Backup Pack

An optional 0.5 Amp-hour, NiCd battery pack is available. When fully charged, the battery backup pack provides approximately 30 minutes of power. This provides a sufficient amount of time to close down a program that is running during a power outage.

Each LANpoint CE terminal includes a built-in trickle charger for automatic recharging of the battery pack. The optional battery backup pack has reached the end of its life cycle when it is not able to hold a charge. See www.lanpoint.com to obtain the correct part number and instructions on how to order a battery back up pack.

When the external power source is not available, such as during a power failure, the battery power LED illuminates. The Battery Low LED illuminates when the battery backup pack is approaching full discharge and shut-down is imminent.

To install or replace a battery pack:

1.  Follow proper ESD grounding procedures to prevent damage to electronics.
2.  Disconnect the power cable P1, and cables to auxiliary power outputs P4 and P5, on the LANpoint CE terminal shown in FIGURE 1, *Power Board Connectors.*
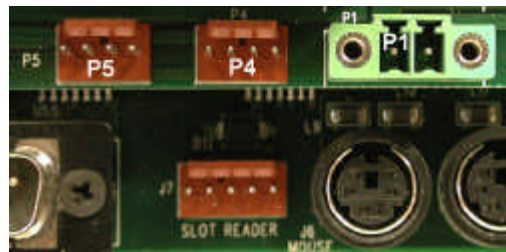


**FIGURE 1 Power Board Connectors**

3.  If a rear cover is present, remove and save the 4 phillips screws and remove the cover.
4.  Disconnect the battery backup power cable from P3 on the power board as shown in FIGURE 2, *Battery Back-up Connector.*
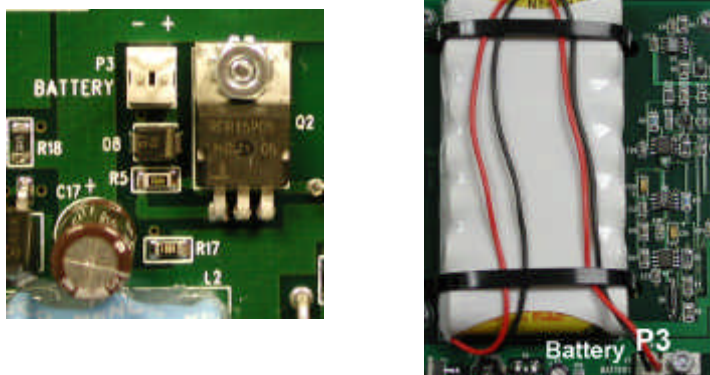


**FIGURE 2 Battery Back-up Connector**

5. Remove and save the 5 power board mounting screws.

6. Carefully disconnect and remove the power board from the CPU board.

7. If the battery backup pack is being replaced, remove the battery pack by cutting the two existing cable ties.

8. Secure the new battery backup pack to the power board using the two new cable ties provided. Secure any excess cable under the cable ties as shown in FIGURE 2, *Battery Back-up Connector.*

9. Align the CPU female header J1 with the pins on the power board connector. Verify the holes for the screws in the power board are aligned with the stand-offs on the CPU board before fully seating the power board.

10. Fasten the power board to the CPU board stand-offs. Use the five screws removed in step 5.

11. Connect the new battery backup power cable to pin connector P3 on the power board.

12. Reinstall the optional rear cover (if present) and fasten the hardware removed in step 3.

13. Reconnect cables to auxiliary power outputs P4 and P5, if applicable.

14. Verify the plug for the AC adapter connector is inserted into connector P1 and the AC adapter is plugged into a 120 VAC electrical outlet and is receiving power.

15. Verify the External Power LED illuminates. The Low Battery LED does not illuminate.

## 2.0.3.2   Digital I/O

The digital I/O option has eight optically isolated digital inputs rated to 24 Vdc. The two, four, or eight relay digital outputs are rated for 250 VAC or Vdc. Terminal blocks accept #26 to #14 gauge stranded wire.



**FIGURE 3 Digital I/O Input and Relay Output Terminal Blocks**

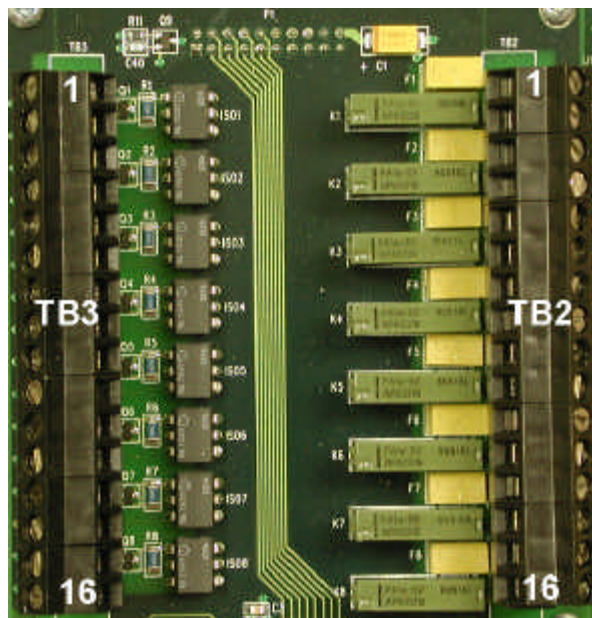Refer to FIGURE 3, *Digital I/O Input and Relay Output Terminal Blocks* for pin numbers 1 through 16 on TB2 and TB3.

The current rating for inputs: 10 mA (minimum)

| Digital I/O Input Terminal Block TB3 | | | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | + Digital Input channel 0 | 9 | + Digital Input channel 4 |
| 2 | - Digital Input channel 0 | 10 | - Digital Input channel 4 |
| 3 | + Digital Input channel 1 | 11 | + Digital Input channel 5 |
| 4 | - Digital Input channel 1 | 12 | - Digital Input channel 5 |
| 5 | + Digital Input channel 2 | 13 | + Digital Input channel 6 |
| 6 | - Digital Input channel 2 | 14 | - Digital Input channel 6 |
| 7 | + Digital Input channel 3 | 15 | + Digital Input channel 7 |
| 8 | - Digital Input channel 3 | 16 | - Digital Input channel 7 |

The current rating for outputs: fused at 1 A

| Digital I/O Output Terminal Block TB2 | | | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | Relay channel 0 Common | 9 | Relay channel 4 Common |
| 2 | Relay channel 0 Normally open | 10 | Relay channel 4 Normally open |
| 3 | Relay channel 1 Common | 11 | Relay channel 5 Common |
| 4 | Relay channel 1 Normally open | 12 | Relay channel 5 Normally open |
| 5 | Relay channel 2 Common | 13 | Relay channel 6 Common |
| 6 | Relay channel 2 Normally open | 14 | Relay channel 6 Normally open |
| 7 | Relay channel 3 Common | 15 | Relay channel 7 Common |
| 8 | Relay channel 3 Normally open | 16 | Relay channel 7 Normally open |
| Pins 1 - 4 are available on *all* relay output versions<br>Pins 5 - 8 are available on the *4 or 8* relay output versions<br>Pins 9 -16 are only available on the *8* relay output version | | | |

## 2.0.3.2.1  Digital I/O Strain Relief

A nylon tie-down for accommodating cable ties for digital I/O relay wires is located at the corner of the digital I/O board as shown in FIGURE 4, *Strain Relief for Digital I/O Relay Wiring*.



**FIGURE 4 Strain Relief for Digital I/O Relay Wiring**

## 2.0.3.2.2  Relay Fuses

There are two, four, or eight relay fuses F1 - F8 located on the digital I/O board as shown in FIGURE 5, *Digital I/O Relay Fuses*. Each output is protected by a 1 amp socketed fuse. Replace fuses as needed using Bossman PCC bi-pin style fuses and needle-nose pliers.
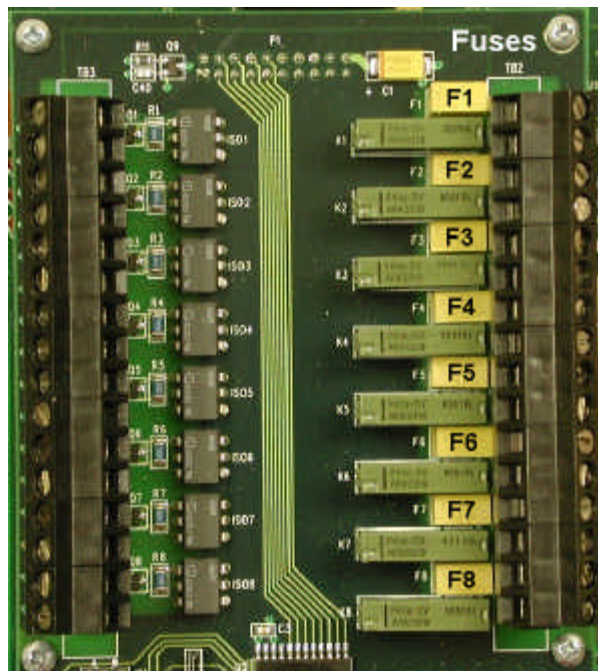


**FIGURE 5 Digital I/O Relay Fuses**

### 2.0.3.3   External Power Adapter

You can connect either a 120 VAC 60 Hz or 240 VAC 50 Hz power adapter to the LANpoint CE power adapter connector on the power board. Both power adapters supply 24 VAC @ 1.2 A.

### 2.0.3.4   Rear Cover

Several optional metal rear covers are available for the LANpoint CE terminal. See the web site www.lanpoint.com for more information.

# 3.0   Installing the LANpoint CE Terminal

The currently available mounting options for the LANpoint CE terminal include the flush mount, reversible metal desk/wall mount, and two adjustable metal desk/wall mounts. Installation instructions ship with the two adjustable metal desk/wall mounts and are available on the web site www.lanpoint.com.

See Intelligent Instrumentation's web site www.lanpoint.com for the most current information on available mounting options and installation kits for the LANpoint CE terminal.

## 3.0.1   Flush Mount Option

This section includes the installation instructions for the flush mount option. It includes a list of the items required for the installation, describes how to prepare the mounting surface, install the LANpoint CE terminal, and connect the cables.

### 3.0.1.1   Required Items

The following items are provided to flush mount the LANpoint CE terminal:

- Alignment studs (2)
- Laser cable grommets (2)
- Dimensional drawing for the LANpoint CE terminal located at the end of this manual
- Gasket (1)
- Steel backing plate (1) provides strain relief for mounting surface
- Screws:
  - For optional rear cover: #6-32 (2 short and 2 long)
  - For LANpoint CE installation: #6-32 7/16-inch length flat head (17)
    (Note: 9/16-inch length accommodates an 1/8-inch thick mounting surface)
- Washers (17) #6

**Items not included**

- Marker for transferring the cut-out dimensions from the drawing to the mounting surface
- Tape measure or ruler
- Reciprocating saw or appropriate tool for cutting the mounting surface

- Drill and drill bit to accommodate #6 screws
- File or sandpaper
- Phillips screw driver (medium size)
- 9/64-inch hex allen wrench for removing and reinstalling side covers
  Some terminals require a 1/4-inch thin-wall socket for removing and reinstalling side covers
- Cable ties (strain relief for laser cables)
- Sharp knife (to cut an incision in the grommet)
- Tube of RTV Silicon for grommet installation (follow the manufacturer's instructions)

## 3.0.1.2   Preparing the Mounting Surface

This section includes instructions on how to prepare the mounting surface for the installation of the LANpoint CE terminal.

### Dimensional Drawing of the LANpoint CE terminal

A dimensional drawing showing the areas to be cut and removed from the mounting surface and the locations of the 17 holes to drill through the mounting surface for the hardware that secures the LANpoint CE to the mounting surface is provided in FIGURE 19, *Wall Mount Cutout Dimensions*.

> **Note:** If you plan to use one or both grommets for the installation of laser cables, use the Wall Mount Cutout for LANpoint CE Terminal drawing to mark the cutouts for the grommet(s) on the mounting surface.

The backing plate may also be used as a template to mark the area of the mounting surface to cut and remove and the 17 holes to drill around the cut out area.
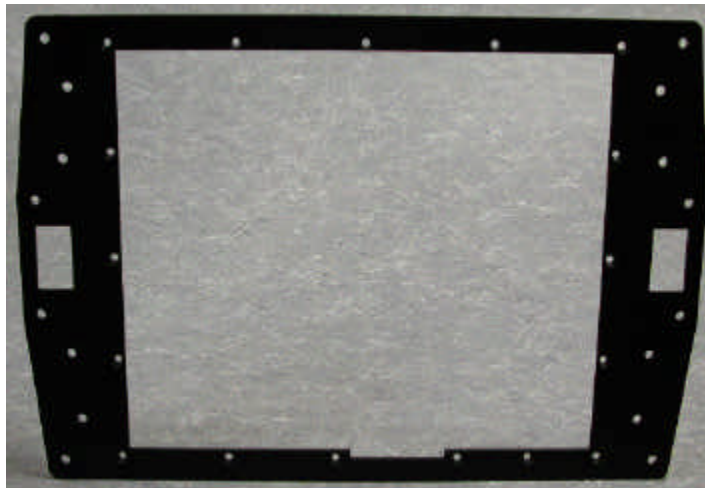


**FIGURE 6 Steel Backing Plate**

**Measuring and Cutting the Mounting Surface**

1. Using the LP CE Plate/wall Opening drawing or the backing plate, measure and mark the areas to cut and remove and drill on the mounting surface.

2. Drill the 17 holes in the mounting surface for the #6 screws.

3. Using a reciprocating saw or appropriate cutting tool for the mounting surface, cut the area(s) marked in step 1. Remove the cutout area of the mounting surface.

4. Smooth any rough edges around the opening(s) with a file or sandpaper.

### 3.0.1.3   Installing the LANpoint CE Terminal

This section contains instructions for installing the gasket on the LANpoint CE terminal, and installing the terminal and fastening it to the mounting surface.

> **Note:** Installing the LANpoint CE terminal requires accessibility to the front and back of the mounting surface.

1. Install the gasket by seating the ridged side of the gasket into the slot that runs completely around the edge of the back of the LANpoint CE case as shown in FIGURE 7, *Installing the LANpoint CE Gasket.*

**FIGURE 7 Installing the LANpoint CE Gasket**

2. Install the two nylon alignment studs in the holes located in the upper right-hand and left-hand corners of the terminal as shown in FIGURE 8, *Terminal with Alignment Studs and Rear Cover* to support the terminal while installing the mounting hardware.

**FIGURE 8 Terminal with Alignment Studs and Rear Cover**

3. Align and carefully insert the LANpoint CE terminal through the opening in the front of the mounting surface. The alignment studs protrude through the mounting surface to the back side of the mounting surface.

4. On the back side of the mounting surface, install the backing plate. Install and finger-tighten two #6 washers and #6 screws in the lower left- and right-hand corner holes.

5. Install thirteen #6 washers and #6 screws and finger-tighten.

6. Remove and discard the two alignment studs and install the remaining two #6 washers and #6 screws and finger-tighten.

7. Using an alternating pattern, tighten the seventeen screws to approximately 15 to 20 inch-pounds.

### 3.0.1.3.1  Installing Laser Cables using a Grommet

Laser cables can be routed from the left and right-hand sides of the LANpoint CE terminal. Use the rubber grommets provided when installing the laser cables.

1. Use a 9/64-inch allen wrench or 1/4-inch thin-wall socket to remove and save the four #8 hex screws on the yellow side cover(s) on the LANpoint CE terminal.

2. Feed the laser cable from the front of the LANpoint CE terminal through the grommet cutout in the mounting surface.

3. Connect the laser cable to the proper port(s) on the LANpoint CE terminal.

    The available ports are: Bar Code and Laser as shown in FIGURE 9, *Connectors for Bar Code and Laser Cables*.
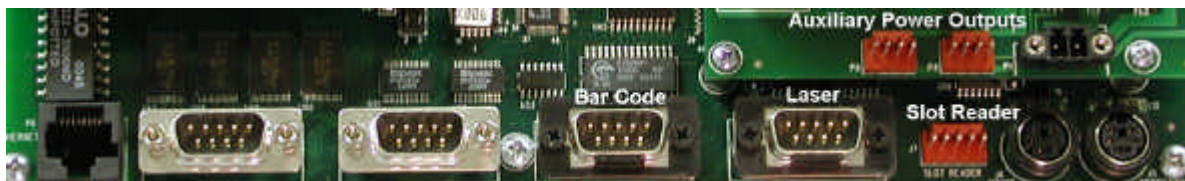


**FIGURE 9 Connectors for Bar Code and Laser Cables**

4. Determine the amount of strain relief for the laser cable.

5. To hold the cable in place, attach a cable tie to the cable and the built-in strain relief anchor located on each side of the LANpoint CE terminal as shown in FIGURE 10, *Strain Relief on Terminal Case*.



**FIGURE 10 Strain Relief on Terminal Case**

6. To install the grommet(s) in the cutout area of the mounting surface:
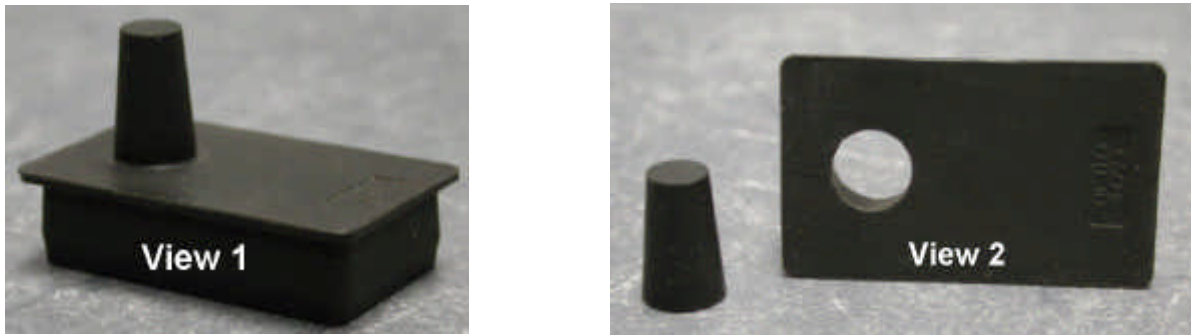


**FIGURE 11 Grommet**

    a. Grasp the protruding conical shaped rubber piece shown in FIGURE 11, *Grommet* view 1, with your fingers or a pair of pliers and gently twist until the rubber piece separates from the grommet as shown in FIGURE 11, *Grommet*, View 2. Discard the cone-shaped rubber piece.

    b. Using a sharp knife, make an incision above the center of the hole in the grommet and cut through the rubber to the hole.

7. Insert the laser cable through the grommet as shown in FIGURE 12, *Installing the Laser Cable using a Grommet*.



**FIGURE 12 Installing the Laser Cable using a Grommet**

8. Open the incision in the grommet and apply a small amount of RTV silicon and press the sides of the grommet together.

9. Apply a small amount of RTV silicon around the lip on the grommet and install the grommet into the grommet cutout.

10. If there is additional space around the laser cable in the grommet, fill it with RTV Silicon.

11. If routing cables through both sides of the terminal, repeat steps 1 through 10 to install the second grommet.

12. Reinstall the side cover(s) removed in step 1. Tighten the screws to approximately 20 to 25 inch-pounds.

## 3.0.2   Reversible Desk/Wall Mount Option

This section includes the installation instructions for the reversible desk/wall mount. It includes a list of the items required for the installation, describes how to prepare the mounting surface, install the LANpoint CE terminal, and connect the cables.

### 3.0.2.1   Required Items

The following items are provided to mount the LANpoint CE terminal:

- Reversible metal desk/wall mount with legs (2)
- # 6-32 1/4-inch screws to fasten the mount to the terminal (14)
- Self-adhesive rubber cushions for desk mount (4)
- Rear cover (1) and screws to secure the cover to the terminal (4)

**Items not Included**

- 9/64-inch hex allen wrench or 1/4-inch thin-wall socket for removing and reinstalling side covers
- Phillips screw driver (medium size to accommodate #6 screws)
- Cable ties (strain relief for laser cables)

If installing the desk/wall mount to a desktop surface or wall:

- Marker to mark the location to drill four holes in the mounting surface
- Drill and drill bit to accommodate #6 screws
- Hardware for fastening the desk/wall mount to the wall or desktop (4)

### 3.0.2.2   Preparing the Mounting Surface

**Mounting the Terminal on a Vertical Surface**

If you are mounting the terminal on a vertical surface, attach the reversible desk/wall mount to the LANpoint CE terminal before drilling the four holes in the mounting surface.

### 3.0.2.3   Installing the Desk/Wall Mounts

The reversible desk/wall mounts are able to accommodate a desktop or wall mount installation. Hardware for fastening the terminal to a desktop or wall is not provided.

### 3.0.2.3.1  Desktop Mount

For desktop mount applications, attach the shorter legs of the reversible desk/wall mount to the bottom edge of the terminal. Refer to FIGURE 13, *Desk/Wall Mount* for this installation.
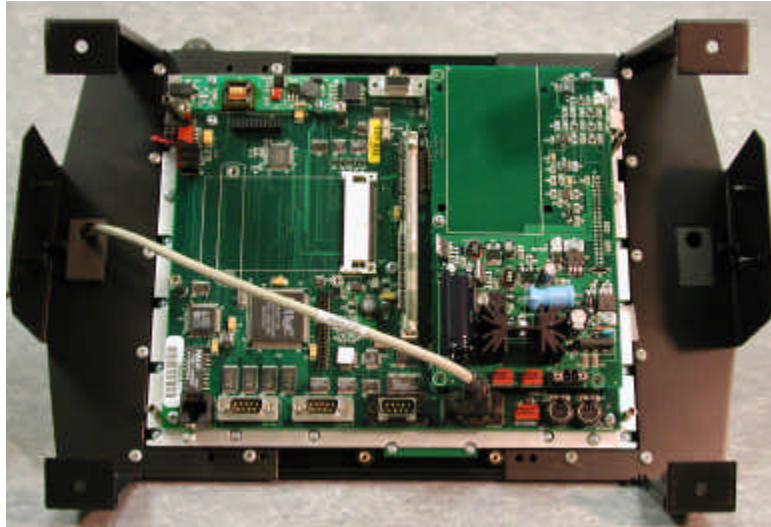


**FIGURE 13 Desk/Wall Mount**

1. Install one of the reversible desk/wall mount using seven screws. Align the holes in the mount with the pre-drilled threaded screw holes in the terminal and install the screws loosely. Tighten the screws using an alternating pattern. Repeat this step to install the second reversible desk/wall mount.

2. Install the rear cover and secure it to the terminal using the four screws provided.

3. If you are mounting the terminal to the desktop:

   a. Mark the mounting surface by using the four pre-drilled holes on the legs as a template.

   b. Drill the four holes and attach the terminal to the mounting surface.

4. If the terminal is to sit on the desktop:

   a. To protect the desktop and keep the terminal stationary, attach one self-adhesive rubber foot to each of the four feet on the mount that contact the desktop.

### 3.0.2.3.2  Wall Mount

For wall mount applications, attach the longer bosses of the reversible desk/wall mount to the bottom edge of the terminal. Hardware for the mounting the terminal to the wall is not provided.

1. Follow the instructions in section 3.0.2.3.1, *Desktop Mount*, steps 1 through 4.

2. Use the pre-drilled holes in the desk/wall mount feet as a template to mark the location on the mounting surface where to drill the holes.

3. Drill the holes and fasten the LANpoint CE terminal desk/wall mount to the wall.

### 3.0.2.3.3 Industrial Mounts

There are other industrial mounting options available for the LANpoint CE terminal. Each mounting option ships with installation instructions which are also available on the web site www.lanpoint.com as Adobe Acrobat files.

# 4.0 Cable Connections

This section provides cable connection information for the Ethernet, serial ports, bar code port, laser port, slot reader, external mouse, external keyboard, auxiliary power connectors, power input connector, and external VGA monitor connector. Refer to FIGURE 14, *LANpoint CE Terminal Connectors*.



**FIGURE 14 LANpoint CE Terminal Connectors**

## 4.0.1 Connecting 2D Scanners and Auto-ID Devices

To connect 2D Scanners and Auto-ID devices, pin connectors P4 and P5 on the power board each provide power outputs of +3.3 Vdc, +5 Vdc, and +12 Vdc. See Appendix A, *Connector Diagrams*, section A.1.6, *Auxiliary Power Outputs* for wiring information.

## 4.0.2 COM Ports

Two serial COM ports are located on the back of the terminal.

## 4.0.3 Bar Code Port

Connect wands and decoded laser devices to the bar code port located on the back of the terminal.

## 4.0.4 Laser Port

Connect undecoded lasers to the laser port located on the back of the back of the terminal.

## 4.0.5 Ethernet

The LANpoint CE terminal has one RJ45 Ethernet port on the back of the terminal that accommodates a 10/100 Base-T Ethernet cable.

### 4.0.6   Using an External Keyboard

To use an external keyboard and/or a keyboard wedge auto-ID reader with the LANpoint CE terminal, connect the keyboard *before* applying power to the terminal. The keyboard is not hot swappable or plug and play.

To install an external keyboard:

• Connect the keyboard cable to the keyboard mini-DIN6 connector J5 on the LANpoint CE terminal as shown in FIGURE 15, *External Mouse and Keyboard Connectors* and restart the LANpoint CE terminal to allow the terminal to check the system for an external keyboard.
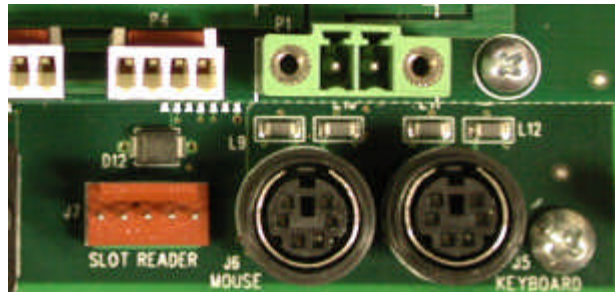


**FIGURE 15 External Mouse and Keyboard Connectors**

### 4.0.7   Using an External Mouse

To use an external mouse with the LANpoint CE terminal, connect the mouse *before* applying power to the terminal. The mouse is not hot swappable or plug and play.

To install an external mouse:

• Connect the mouse cable to the mouse mini-DIN6 connector J6 on the LANpoint CE terminal as shown in FIGURE 15, *External Mouse and Keyboard Connectors* and restart the LANpoint CE terminal to allow the system to check for an external mouse.

### 4.0.8   Using an External VGA Monitor

An external VGA monitor can be used with the LANpoint CE terminal. Using an external VGA monitor with the LANpoint CE terminal requires that you reconfigure the Display settings *before* disconnecting power to the LANpoint CE terminal.See the LANpoint CE Developer's Manual for instructions on using an external VGA monitor.

> **Note:** Only one display device may be active at a time. If an external VGA monitor is in use, the LANpoint CE LCD is not operational.

## 5.0   Operating the LANpoint CE Terminal

This section provides information on how to power-up the terminal, includes definitions for the LEDs on the front of the terminal, network configurations, adjusting the LCD contrast, and adjusting the speaker volume.

## 5.0.1 Power

The LANpoint CE terminal does not have a power switch. The terminal receives power from an external power source via an adapter that you connect to the AC/DC power input connector on the power board.

The power-up sequence begins after connecting the power adapter cable to connector P1. The *External Power* LED on the front of the LANpoint CE terminal immediately illuminates and the terminal's speaker emits an audible double-beep.

The LANpoint CE splash screen appears and the progress bar moves across the bottom edge of the splash screen from left to right as the system boots up. When it reaches the right-hand edge of the splash screen, the screen changes, displaying the Microsoft Windows CE desktop.

During power-up, the LANpoint CE terminal launches the Monitor program which allows certain configuration characteristics of the terminal to be set by commands sent to the serial port of the terminal. For information on the Monitor program, see the *LANpoint CE Developer's Manual*.

## 5.0.2 Keyboard Navigation

You can operate the LANpoint CE terminal by using the built-in keyboard or an external keyboard. This section describes how to use the keyboard.

### Combination Keystrokes

For keyboard combination keystrokes, such as Ctrl+Tab, press and hold the first key (Ctrl) while you press and release the second key (Tab).

| Key or keystroke combination | Action |
|---|---|
| Ctrl+Esc | Opens the Windows CE Start menu. |
| Esc | Cancels or closes the current menu or dialog that is open without saving any changes. Retains the previous settings. |
| Tab | Moves the cursor from one menu item to another in tabbed dialogs and drop-down lists. |
| Ctrl+Tab | Moves cursor from one tabbed dialog to another from left to right. |
| Alt+Tab | Opens the Task manager window. |
| Alt+X, where X = the underlined letter in the menu item name. | Selects and opens a menu item. |
| Shift+X, where X = the underlined letter in a sub-menu name. | Selects and opens a sub-menu item. |

| Key or keystroke combination | Action |
|---|---|
| Arrow keys:<br>up ↑, down ↓,<br>left ←, right → | Moves the cursor in the direction of the arrow key. |
| Ctrl+Arrow key | Moves the cursor in a text field to the next word in the direction of the arrow key. |
| Alt+Arrow key | Opens a drop-down list. Use arrow keys to navigate up and down the list. |
| Shift+Arrow key | Selects a letter in a text field. |
| Shift+Ctrl+Arrow key | Selects a word from a text field. |
| Backspace key | Moves the cursor to the left in an entry field. If a value or text is present in an entry field, pressing this key deletes the existing entry. |
| Del | Deletes the selected item. |
| Enter | Changes made to settings are sent to the Windows Registry, then flushed to CompactFlash by RegScan. |
| c | Closes a sub-menu item. |
| spacebar | Toggles to insert or remove a check √ in a checkbox. |
| Ctrl+c | Copies selected item to clip board. |
| Ctrl+v | Pastes contents of clip board into present cursor location. |
| Ctrl+x | Cuts and places selected item in clipboard. |

## 5.0.3   LED Definitions

There are eight LEDs on the front of the LANpoint CE terminal:

### External Power

This green LED illuminates when the LANpoint CE terminal is running on an external power source using a power adapter.

### Link

This green LED illuminates when the LANpoint CE terminal has a successful 10/100 Base-T Ethernet link.

### Battery Power

This green LED illuminates when the terminal is operating on the battery backup pack.

**Low Battery**

This red LED illuminates when the LANpoint CE terminal's battery backup pack's power is running very low. When this LED is illuminated, terminal power-down is imminent. The battery backup pack receives a trickle charge when external power is connected to the LANpoint CE terminal. The *Low Battery* LED does not indicate the charge status except when running on battery power.

> **Note:** The battery backup pack is shipped without being charged and requires 48 hours of initial trickle charging to become fully charged or recharged.

**Status 1 through 4**

The four yellow status LEDs are available for use by your application. See the *LANpoint CE Developer's Manual* for information on how to use these LEDs.

## 5.0.4   Network Configurations

To perform the procedures in this section, you should be familiar with computer settings.

### 5.0.4.1   Configuring the TCP/IP Address

To change the IP address, subnet mask, and gateway, use the Control Panel in Windows CE, the Monitor program, or the embedded Telnet server. Use an external or keystrokes described in section 5.0.2, *Keyboard Navigation*.

For more information, see the *LANpoint CE Developer's Manual*.

#### 5.0.4.1.1  Using the Windows CE Control Panel

Modifying the network configuration using the Windows CE Control Panel is the recommended method to use for changing the IP address, subnet mask, and default gateway on the LANpoint CE terminal.

To configure the IP address:

1.   Select *Start/Settings/Control Panel*.

2.   Select the *Network* icon to open the Network Configuration dialog.

3.   In the *Adapters* tabbed dialog, select *LAN9000 Compatible Network Adapter* from the drop-down list and select the *Properties* button. The *LAN9000 Compatible Network Adapter Settings* dialog opens.

4.   In the *IP Address* tabbed dialog, in the *IP Address* field, enter the new IP address.

5.   In the *Subnet Mask* field, enter the new subnet mask.

6.   In the *Default Gateway* field, enter the new default gateway address.

7.   When you finish making entries in this dialog, select the *OK* button in the dialog.

8.   Save the settings to CompactFLASH:

a. Open the *Start* menu.

b. Select *Programs*, select *Windows Explorer*.

c. Select and open the *Storage Card* folder.

d. Select and open the CEFlush.exe program.

   The CEFlush program runs, writing the changes from the registry to CompactFLASH and shuts down.

9. Restart the LANpoint CE terminal and verify the new settings.

### 5.0.4.1.2  Using the LANpoint CE Monitor Program

Refer to the *LANpoint CE Developer's Manual* for more information on changing IP addresses using the Monitor program. To obtain a copy of this manual, either download the Acrobat file 855M502 from Intelligent Instrumentation's web site at www.lanpoint.com, or contact Intelligent Instrumentation Incorporated.

## 5.0.4.2   Network Servers

To set network adapter settings on the LANpoint CE terminal using Windows CE:

1. Select *Start/Settings/Control Panel*.

2. Select the *Network* icon to open the Network Configuration dialog.

3. In the *Adapters* tabbed dialog, select *LAN9000 Compatible Network Adapter* from the drop-down list and select the *Properties* button. The *LAN9000 Compatible Network Adapter Settings* dialog opens.

4. In the *LAN9000 Compatible Network Adapter Settings* dialog, the *Name Servers* tabbed dialog contains fields for the DNS and WINS servers.

5. When you finish making entries in this dialog, click the *OK* button in the dialog.

6. Save the settings to CompactFLASH:

   a. Open the *Start* menu.

   b. Select *Programs*, select *Windows Explorer*.

   c. Select and open the *Storage Card* folder.

   d. Select and open the CEFlush.exe program.

      The CEFlush program runs, writing the changes from the registry to CompactFLASH and shuts down.

7. Restart the LANpoint CE terminal and verify the new settings.

## 5.0.5   Adjusting the Display Contrast

You can increase or decrease the contrast on the LANpoint CE terminal's color or monochrome LCD. The terminal has a contrast application, contrast.exe, located on CompactFLASH. The contrast.exe program maintains a file called contrast.txt on the root of the storage card that is used during power-up to establish the initial contrast display.

There are several methods that you can use to adjust the display contrast: command line, shortcuts, and programmable function keys.

**Command Line**

Using large values for n to increase or decrease contrast can make the display illegible. If this occurs, contact customer support.

To increase contrast to lighten the display:

In \Start\Run type "\Storage Card\Contrast.exe" +n
For the value of n, use small increments such as +2 and view the results.

To decrease contrast to darken the display:

In \Start\Run type "\Storage Card\Contrast.exe" -n
For the value of n, use small increments such as -2 and view the results.

**Shortcuts**

Lighten Display shortcut

In \Storage Card select and open the *Lighten Display* shortcut icon. The contrast LCD immediately lightens.

Darken Display shortcut

In \Storage Card select and open the *Darken Display* shortcut icon. The contrast LCD immediately darkens.

**Programmable Function Keys**

See the *LANpoint CE Developer's Manual* for more information on creating PFKs.

## 5.0.6   Adjusting the Speaker Volume

The speaker volume is controlled by a potentiometer. The LANpoint CE terminal ships from the factory with the speaker volume set to the maximum position.

To decrease to volume level:

1. Use proper grounding before handling the CPU board as it contains ESD-sensitive components.
2. Locate potentiometer R1 (near the top of the CPU board below the external VGA connector).
3. Turning the potentiometer R1 clockwise reduces the volume.

To test the volume level of the speaker disconnect external power and reconnect the power. The terminal emits a double-beep when the terminal powers up.



**FIGURE 16  Volume Adjustment**

## 5.0.7   Internal LEDs

Internal LEDs on the CPU board indicate network activity or inactivity. See FIGURE 17, *Internal LEDs*. Their functions are described in TABLE 1, *Internal LED Indicators*.
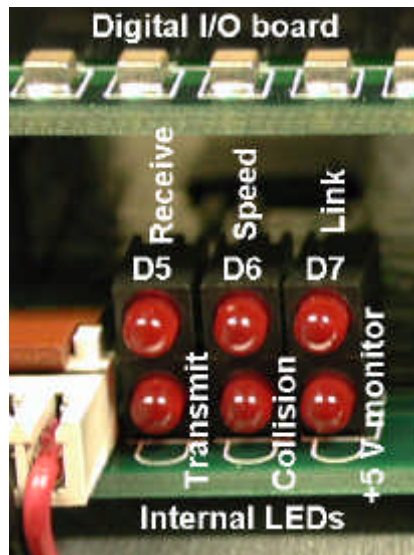


**FIGURE 17 Internal LEDs**

| LED | Function Description | Function Description |
|---|---|---|
| D5 | Transmit: Indicates the terminal is transmitting data packets via Ethernet. | Receive: Indicates the terminal is receiving data packets via Ethernet. |
| D6 | Collision: Indicates that data transmitted via Ethernet is colliding with other network traffic. | Speed: Indicates data is being transmitted or received using 10Base T or 100Base T Ethernet connection.<br>LED ON: 100 MB/s using the 100Base T<br>LED OFF: 10 MB/s using the 10Base T |
| D7 | +5V monitor: Verifies there is power to the terminal. | Link: Verifies there is a valid Ethernet connection with another device. |

**TABLE 1  Internal LED Indicators**

# 6.0   Maintenance

Maintenance of the LANpoint CE terminal includes replacing the real-time clock battery and the optional battery backup pack.

## 6.0.1   Replacing the Real-time Clock Battery

The real-time clock battery maintains the current date and time. It has a life expectancy of 5 years.

To replace the real-time clock battery:

1.  Obtain battery replacement part: 3 V lithium CR 2032

2.  Follow proper ESD grounding procedures to prevent damage to electronics.

3.  Disconnect the external power cable from connector P1 and all cables connected to the power board, including auxiliary power outputs P4 and P5 if they are in use.

4.  Access the back of the LANpoint CE terminal. If the optional rear cover is present, remove and save the 4 screws holding the cover on the terminal and remove the cover.

5.  If an optional battery backup pack is present, disconnect the optional battery backup pack cable from connector P3. Leaving P3 connected may cause damage to the terminal during reinstallation.

6.  Remove the five screws that secure the power board to the CPU board.

7.  Carefully remove the power board.

8.  Lift the retaining clip holding the existing lithium real-time clock battery and remove the battery from its holder BT1 on the CPU board as shown in FIGURE 18, *Real-time Clock Battery*.

9. Insert the new lithium real-time clock battery into the holder (BT1) with the positive + battery terminal side of the battery facing you. Carefully release the retaining clip.



**FIGURE 18 Real-time Clock Battery**

10. Align the pins on the power board connector with the CPU female header J1. Verify the holes for the screws in the power board align with the stand-offs on the CPU board before fully seating the power board onto the CPU board.

11. Fasten the power board to the CPU board using the five screws removed in step 6 for the stand-offs.

12. Reconnect the battery backup pack cable, if present, to the connector P3.

13. Reinstall the optional rear cover (if present) and fasten the hardware removed in step 4.

14. Reconnect power to the LANpoint CE terminal at P1, and cables to auxiliary power output connectors P4 and P5, if present.

15. Reset the clock in the Microsoft Windows Control Panel in \Start\Settings\Control Panel and select the *Date/Time* icon. Use the built-in keyboard or an external mouse to reset the clock and click the *Apply* button.

   You can also use the Time Synchronization program and Monitor program to reset the clock (see the *LANpoint CE Developer's Manual* for more information).

## 6.0.2   Replacing the Optional Battery Backup Pack

To replace the battery backup pack when it no longer holds a charge, see section 2.0.3.1, *Battery Backup Pack* for installation instructions.

# 7.0   Dimensional Drawing for Mounting the Terminal

FIGURE 19, *Wall Mount Cutout Dimensions* provides metric and English dimensions for mounting the LANpoint CE terminal to a wall. See section 3.0.1, *Flush Mount Option* for installation instructions.
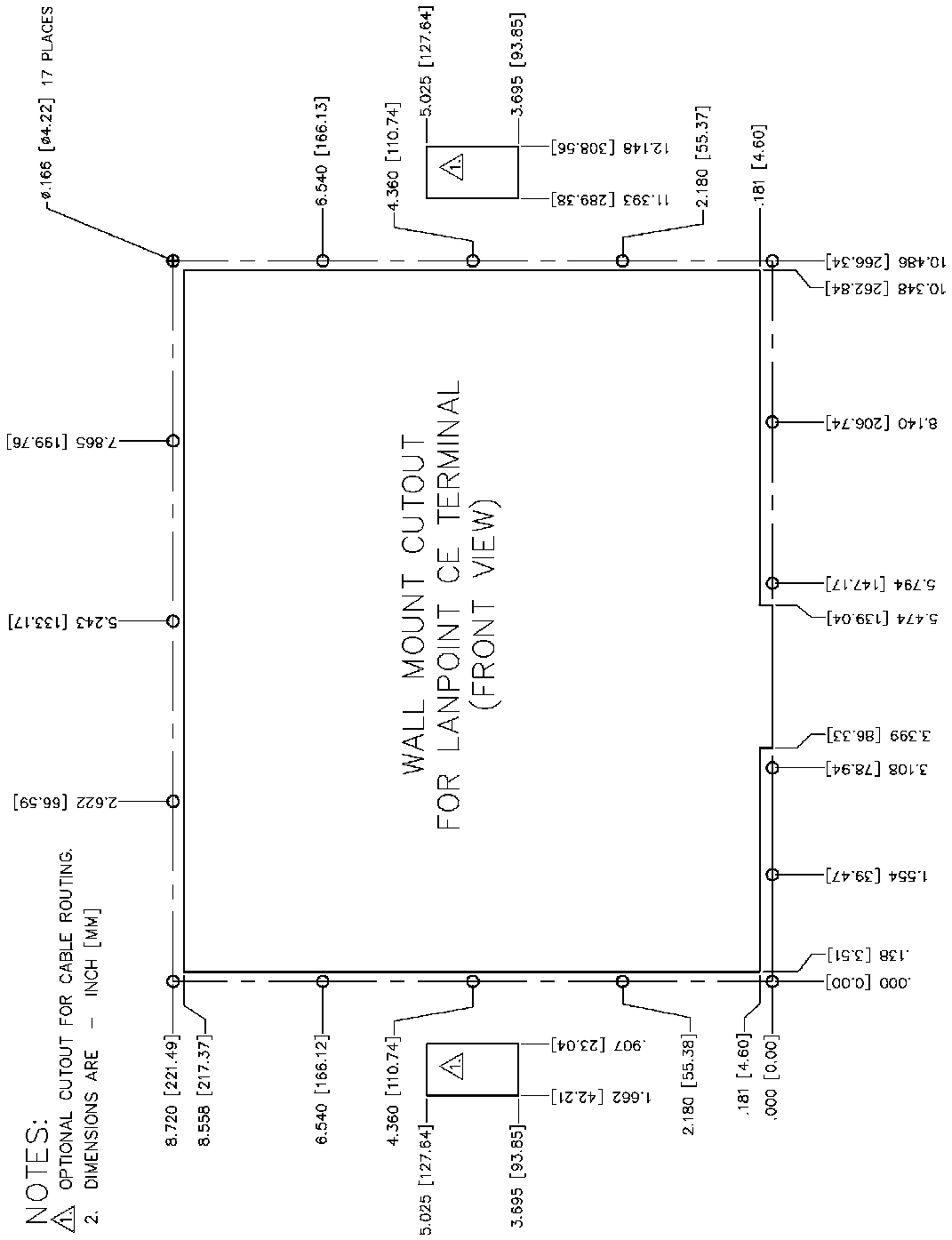
**FIGURE 19 Wall Mount Cutout Dimensions**

# Appendix A   Connector Diagrams

## A.1 Connector Pinout Diagrams

This appendix contains information for wiring the following:

| | |
|---|---|
| Ethernet | External Mouse |
| COM1 and COM2 | External Keyboard |
| Bar Code | Auxiliary Power Output |
| Laser | External Power Input |
| Slot Reader | External VGA Monitor |

## A.1.1   Ethernet

The LANpoint CE terminal has one Ethernet 10/100 Base-T Connector shown in FIGURE A-1, *Ethernet 10/100 Base-T connector* located on the back of the terminal in the lower left-hand corner.



**FIGURE A-1 Ethernet 10/100 Base-T connector**

| Ethernet 10/100 Base-T connector | |
|---|---|
| **Pin Number** | **Function** |
| 1 | TX+ |
| 2 | TX- |
| 3 | RX+ |
| 4, 5, 7, 8 | Not used |
| 6 | RX- |

## A.1.2   COM1 and COM2 Ports

The LANpoint CE terminal has two COM ports located on the back of the terminal as shown in FIGURE A-2, *COM1 and COM2 Ports.*



**FIGURE A-2 COM1 and COM2 Ports**

| COM1 RS-232 DB9- pin connector P3 | | COM2 RS-232 DB9- pin connector P8 | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | DCD | 1 | DCD |
| 2 | RX | 2 | RX |
| 3 | TX | 3 | TX |
| 4 | DTR | 4 | DTR |
| 5 | GND | 5 | GND |
| 6 | DSR | 6 | DSR |
| 7 | RTS | 7 | RTS |
| 8 | CTS | 8 | CTS |
| 9 | RI | 9 | RI |

## A.1.3 Bar Code and Laser Ports

There are two ports for laser scanners or bar code wands located on the back of the LANpoint CE terminal as shown in FIGURE A-3, *Laser Scanning Device Input Ports.*
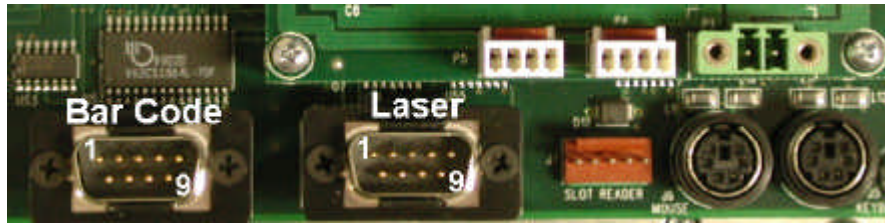


**FIGURE A-3 Laser Scanning Device Input Ports**

| Bar Code Wand Input / Decoded Laser DB9-pin connector P10 | | Undecoded Laser Input DB9- pin connector P9 | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | +5 V Pullup | 1 | No connect |
| 2 | Bar code data | 2 | Laser data |
| 3 | No connect | 3 | Good Read |
| 4 | GND | 4 | No connect |
| 5 | No connect | 5 | Trigger |
| 6 | No connect | 6 | Laser Enable |
| 7 | GND | 7 | GND |
| 8 | No connect | 8 | GND |
| 9 | +5 V | 9 | +5 V |

## A.1.4   Using a Slot Reader

The LANpoint CE terminal has one slot reader connector located on the back of the terminal to the left of the external mouse connector shown in FIGURE A-4, *Slot Reader Input.*
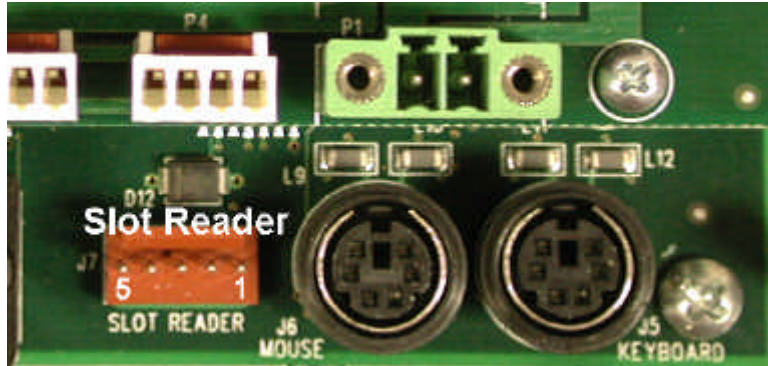


**FIGURE A-4 Slot Reader Input**

| Slot Reader Input connector J7 | |
|---|---|
| **Pin Number** | **Function** |
| 1 | GND |
| 2 | Bar code data |
| 3 | +5 V |
| 4 | Bar code data |
| 5 | GND |

## A.1.5 External Mouse and External Keyboard Connectors

The LANpoint CE terminal has one external mouse connector and one external keyboard connector located on the back of the terminal located below the external AC power connector shown in FIGURE A-5, *External Mouse and External Keyboard PS/2 Connectors.*
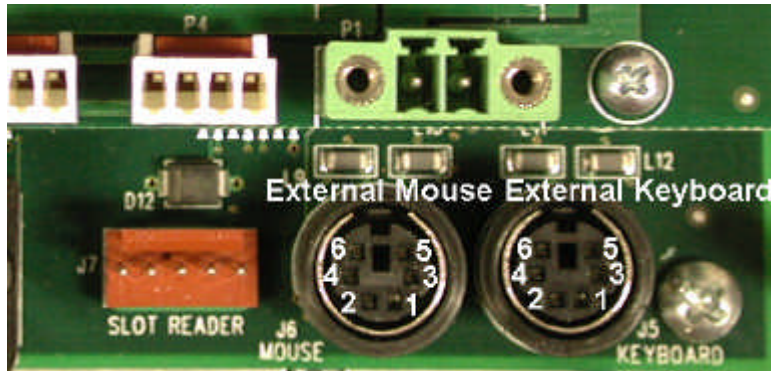


**FIGURE A-5 External Mouse and External Keyboard PS/2 Connectors**

| External Mouse PS/2 connector J6 | | External Keyboard PS/2 connector J5 | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | Mouse data | 1 | Keyboard data |
| 2 | No connect | 2 | No connect |
| 3 | GND | 3 | GND |
| 4 | +5 V | 4 | +5 V |
| 5 | Mouse clock | 5 | Keyboard clock |
| 6 | No connect | 6 | No connect |

## A.1.6   Auxiliary Power Outputs

The LANpoint CE terminal has two auxiliary power output connectors located on the back of the terminal as shown in FIGURE A-6, *Auxiliary Power Outputs.*
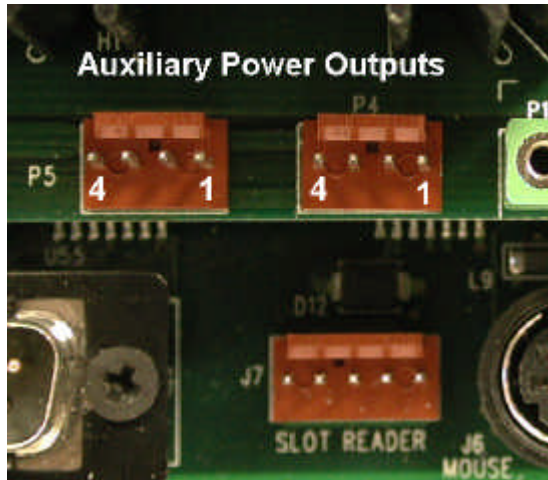


**FIGURE A-6 Auxiliary Power Outputs**

| Power Output P4 | Power Output P5 | Voltage | Total Current for the sum of P4 and P5 |
|---|---|---|---|
| Pin 1 | Pin 1 | +3.3 V | 0.5 A |
| Pin 2 | Pin 2 | +5 V | 2.0 A |
| Pin 3 | Pin 3 | +12 V | 0.75 A |
| Pin 4 | Pin 4 | GND | GND |

## A.1.7 External Power Input

The LANpoint CE terminal has one 24 VAC external power input with retaining screw threads. It is located on the back of the terminal above the external mouse and keyboard connectors as shown in FIGURE A-7, *External Power Input.*
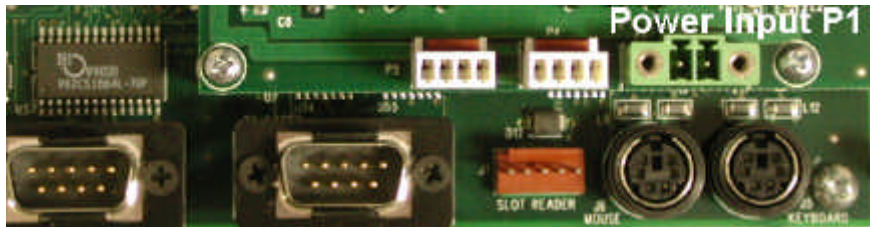


**FIGURE A-7 External Power Input**

| External Power connector P1 | |
|---|---|
| **Pin Number** | **Function** |
| 1 | Power input |
| 2 | Power input |
| There is no input polarity. | |

## A.1.8   External VGA Monitor

An external VGA monitor may be connected to the LANpoint CE terminal.  Before connecting the external VGA monitor cable to the LANpoint CE terminal, you are required to reconfigure the Display settings *before* disconnecting power to the LANpoint CE terminal. This is not plug and play.

When switching from the VGA monitor back to the LANpoint CE terminal, you are required to reconfigure the Display settings *before* disconnecting power to the LANpoint CE terminal. See section 4.0.8, *Using an External VGA Monitor* or the LANpoint CE Developer's Manual, Chapter 3, *Utility Programs*, section 3.8, *Display Application* for instructions.
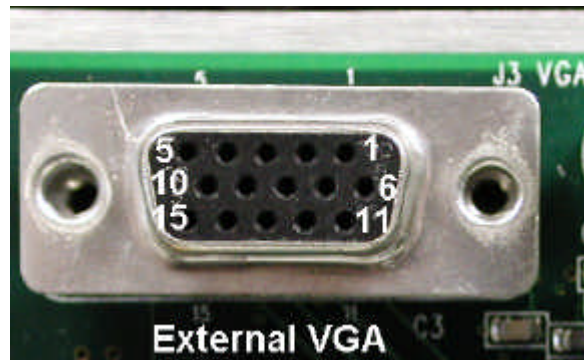


**FIGURE A-8 External VGA Connector**

| External VGA connector J3 | | | |
|---|---|---|---|
| **Pin Number** | **Function** | **Pin Number** | **Function** |
| 1 | Video output (red) | 9 | No connect |
| 2 | Video output (green) | 10 | GND |
| 3 | Video output (blue) | 11 | No connect |
| 4 | No connect | 12 | No connect |
| 5 | GND | 13 | Horizontal sync |
| 6 | Analog GND | 14 | Vertical sync |
| 7 | Analog GND | 15 | No connect |
| 8 | Analog GND | | |

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