PINpad 1000SE CTLS

Installation Guide

VeriFone Part Number 28610, Revision A

PINpad 1000SE CTLS Installation Guide

Comments? Please e-mail all comments on this document to your local VeriFone Support Team.

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VeriFone Part Number 28610, Revision A

CONTENTS

Overview

This chapter provides a brief description of VeriFone's PINpad 1000SE CTLS.

PINpad 1000SE CTLS

The PINpad 1000SE CTLS is a peripheral data entry device that accepts and encrypts Personal Identification Numbers (PINs) in addition to accepting contactless card input. Typically, a PIN is a four- to twelve-digit code, known only by the customer and the issuer. A PIN is requested during a transaction to verify that a customer is authorized to use the account (card) offered. The PIN also serves as the electronic signature for the credit or debit transaction. The contactless card reader allows user to quickly pay for items using their contactless card and tapping it on the device, thus completing the transaction without further input.

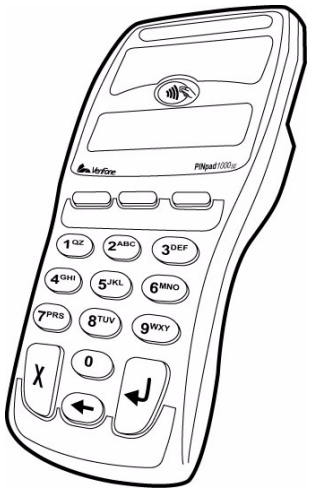


Figure 1 PINpad 1000SE CTLS

VeriFone's PINpad 1000SE CTLS builds on the success of existing PINpad 1000SE products by integrating further functionality to create a solution for PIN and contactless card entry. The product continues to offer high security and functional ergonomics in addition to backwards compatibility with PCI approved PINpad 1000SE.

The PINpad 1000SE CTLS provides the perfect solution for acquirers, processors, and merchants looking to capitalize on the expanding payment options in the debit arena. Card issuers are pushing contactless offerings and this product allows the merchant to take advantage of both existing PIN debit and contactless. This compact, easy-to-use, device connects to most existing point-of-sale (POS) controllers such as V^X or NURIT transaction terminals, as well as most ECR based systems on the market.

The PCI-compliant PINpad 1000SE CTLS incorporates a broad array of sophisticated security features to guard against fraud and abuse. This includes full support for the 3DES encryption standard, and a choice of Master/Session or DUKPT (Derived Unique Key Per Transaction) key management methods. The PINpad 1000SE CTLS also supports MAC (Message Authentication Code) to protect debit transaction data from accidental or fraudulent tampering during transfer to its host. The device is also certified to accept a broad array of MSD and EMV contactless based payment, including Visa, Mastercard, American Express and Discover.

The PINpad 1000SE CTLS features great ergonomic features such as large, hard-rubber keys for ease of use, and a sleek design that fits in the palm of the hand or can be counter mounted. The device is rugged and reliable, built to withstand rough handling at the point-of-sale. Most importantly, the PINpad 1000SE CTLS PCI is fully compatible with existing PCI PINpad 1000SE.

Features and Benefits

Exceptional Ease of Use and Ergonomics

- Contactless logo placement on lens of device for optimized user experience.
- Bright LEDs for both customer and merchant viewing of transaction process.
- Sleek and stylish shape occupies minimal counter space.
- Bold, ergonomic design fits comfortably in the palm of a hand.
- Waisted area for an easy and secure grip.
- Large, hard-rubber keys provide improved tactile feedback, minimizing errors and maximizing ease-of-use for consumers of all ages.
- Intuitive telco-style interface and colored control keys simplify training and reduce support requests.
- Programmable function keys allows selection of functions within an application.
- Highly readable optional backlit 128x32 graphic liquid crystal display (LCD), which supports multiple languages for global applications.
- Font generation tool kit allows easy language set-up with multiple size fonts.

Critical Security Protection

- VeriFone's advanced contactless architecture future proofs your investment with Single Contactless Interface (SingleCI), SoftSAMs, and side by side application architecture
- Supports 3DES, Verishield Security Scripts, Master/Session and DUKPT key management.
- Offers secure, reliable PIN input for expanding range of PIN-based transactions.
- PCI approved for secure, reliable PIN entry.

- Meets ISO and ANSI standards for PIN encryption, key management, and MAC.
- Key injection simplified and secured with VeriFone's SecureKit key loading software.
- Rugged and reliable design absorbs hard knocks found at POS.
- Removable privacy shield offers option of supplemental physical security.
- Well-planned shape works with existing VeriFone PINpad stands and wall- or counter-mounting hardware.
- Connects with most POS payment terminals, PCs, and ECRs.
- Backward-compatible with VeriFone's legacy PINpad 1000SE.
- Compatible with existing PINpad 1000 stands, and wall- or counter-mounting hardware.
- USB connectivity that gives another option to connect with payment terminals, personal computers, and electronic cash registers (ECRs).
- Supports payment transactions in a variety of payment environments.

PREFACE

This guide is the primary source of information for setting up and installing a PINpad 1000SE CTLS device.

Audience

This guide provides simple descriptions of the PINpad 1000SE CTLS features, as well as basic information for installing and configuring a PINpad 1000SE CTLS.

Organization

This guide is organized as follows:

Chapter 1, Overview. Provides an overview of a PINpad 1000SE CTLS terminal.

Chapter 2, Setup. Explains how to set up and install the PINpad 1000SE CTLS as well as how to select a location and establish connections with other devices.

Chapter 3, Specifications. Discusses the power requirements and dimensions of PINpad 1000SE CTLS.

Chapter 4, Service and Support. Provides information on contacting your VeriFone service provider, ordering accessories or documentation from VeriFone, and maintaining the PINpad 1000SE CTLS.

Chapter 5, Troubleshooting Guidelines. Provides troubleshooting guidelines, should you encounter a problem in terminal installation and configuration.

Related Documentation

To learn more about the PINpad 1000SE CTLS, you may look at the following documents and their associated VeriFone Part Numbers (VPN):

- *PINpad 1000SE CTLS Certifications and Regulations* — VPN - DOC115EN06-A
- *PINpad 1000SE CTLS Quick Installation Guide* — VPN - DOC115EN05-A
- *PINpad 1000SE Reference and Programmers Guide* — VPN - 26803
- *PINpad 1000SE Stand Adapter Quick Installation Guide* — VPN - DOC115EN03-A

Guide Conventions

Various conventions are used to help you quickly identify special formatting. Table 1 describes these conventions and provides examples of their use.

Table 1 Document Conventions

Convention	Meaning	Example
Blue	Text in blue indicates terms that are cross references.	See Guide Conventions.
Italics	Italic typeface indicates book titles or emphasis.	You *must* not use this unit underwater.
NOTE 	The pencil icon is used to highlight important information.	RS232-type devices do not work on the PINpad 1000SE CTLS communication port.
CAUTION 	The caution symbol indicates hardware or software failure, or loss of data.	The unit is not waterproof or dustproof, and is intended for indoor use only.
WARNING 	The lighting symbol is used as a warning when bodily injury might occur.	Due to risk of shock do not use the terminal near water.

Acronym Definitions

Various acronyms are used in place of the full definition. Table 2 presents acronyms and their definitions.

Table 2 Acronym Definitions

Acronym	Definitions
DEA/DES	Data Encryption Algorithm/Standard, as defined in ANSI X3.92
DUKPT	Derived Unique Key Per Transaction Method as defined in the VISA's POS Equipment Requirement: PIN processing and Data Authentication, International Version 1.0, August 1988
EBT	Electronic Benefits Transfer
ECR	Electronic Cash Register
LED	Light Emitting Diode
LCD	Liquid Crystal Display
MAC	Message Authentication Code, as defined in ANSI X9.19
PED	PIN Entry Device
PIN	Personal Identification Number
POS	Point-of-Sale
RFID	Radio Frequency Identification
SAM	Secure Access Module
USB	Universal Serial Bus

CHAPTER 2

Setup

This chapter describes the setup procedure for the PINpad 1000SE CTLS, in the following sections:

Selecting Location

Use the following guidelines to select the best location for the PINpad 1000SE CTLS.

To Select a Location

- Select a location convenient for both merchant and cardholder.
- Select a location that is far from heavy metal objects.
- Select a flat support surface, such as a countertop or table.
- Select a location near a power outlet and the terminal or computer connected to the PINpad 1000SE CTLS unit.

For safety, do not string cables or cords across a walkway.

Environmental Factors

- Do not use the unit where there is high heat, dust, humidity, moisture, or caustic chemicals or oils.
- Keep the unit away from direct sunlight and anything that radiates heat, such as a stove or a motor.

- Do not use the PINpad 1000SE CTLS outdoors.

CAUTION

The PINpad 1000SE CTLS is not waterproof or dustproof, and is intended for *indoor use only*. Any damage to the unit from exposure to rain or dust can void any warranty.

Electrical Considerations

- Avoid using this product during electrical storms.
- Avoid locations near electrical appliances or other devices that cause excessive voltage fluctuations or emit electrical noise (for example, air conditioners, electric motors, neon signs, high-frequency or magnetic security devices, or computer equipment).
- Do not use the PINpad 1000SE CTLS unit water or in moist conditions.
- Disconnect the device from its POS terminal before cleaning.

Unpacking Shipping Carton

Carefully inspect the shipping carton and its content for possible tampering or damage.

CAUTION

The PINpad 1000SE CTLS is a secure product and any tampering can cause it to cease to function or operate in an unsecured manner.

1. Remove the PINpad 1000SE CTLS from the shipping carton.
2. Remove any protective plastic wrap and place the unit on a table or countertop.
3. Remove the clear protective film from the display.
4. Replace all the packing materials, close the lid, and save the carton for repacking or moving the PINpad 1000SE CTLS in the future.

WARNING

Do not use a unit that has been tampered with or otherwise damaged.The PINpad 1000SE CTLS comes equipped with tamper-evident label. If a label or component appears damaged, immediately notify the shipping company and your VeriFone representative or service provider immediately.

Examining Features

Before continuing the installation process, observe features of the PINpad 1000SE CTLS. Figure 2 illustrates the basic features:

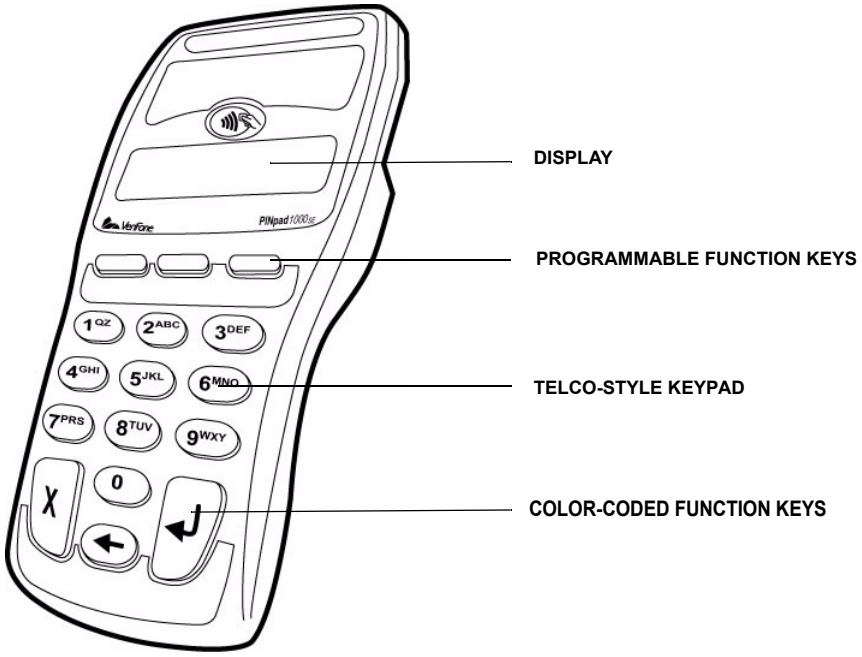
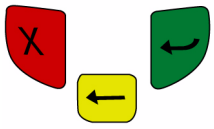


Figure 2 PINpad 1000SE CTLS Features

The PINpad 1000SE CTLS includes the following features:

- A **display**.
- Three types of keys:
  - A 10-key, **telco-style keypad**.
  - Three unlabeled, **programmable function keys** above the keypad.
  - Three **color-coded function keys** below the keypad (icons at right, left-to-right: CANCEL, BACKSPACE, ENTER).



Connecting Unit to Controller

The PINpad 1000SE CTLS rear panel has a modular, four-wire interface port for power and communication connection to the controller. The connection methods differ between two specific versions of the PINpad 1000SE CTLS – USB and RS-232. This section discusses a connection to the RS-232 version of the PINpad 1000SE CTLS.

WARNING

Turn off or unplug the controller when connecting or disconnecting the PINpad 1000SE CTLS. Memory corruption and data loss can result if the controller is processing data when power is removed.

Refer to the controller device instructions for any controller-specific warnings.

Figure 3 illustrates how to connect the PINpad 1000SE CTLS to a Omni 37xx series terminal. For other terminal or controller connections, refer to the reference manual for that controller.

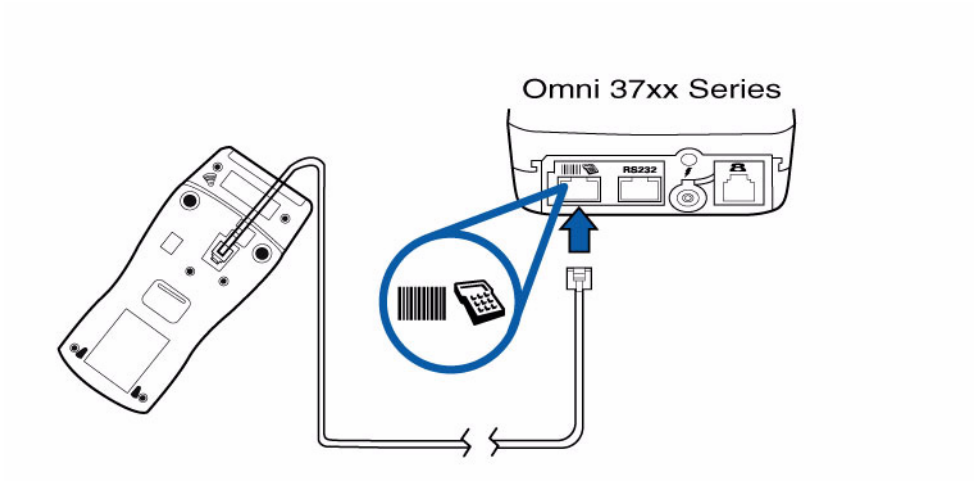


Figure 3 PINpad 1000SE CTLS and Terminal Cable Connections

1. Disconnect power from the terminal or ECR.
2. Position the PINpad 1000SE CTLS face down on a soft, smooth surface to avoid damaging the keypad or display.
3. Connect the modular plug on the cable to the modular jack on the rear of the PINpad 1000SE CTLS device.
4. Connect the other end of the cable to the PIN pad port on the rear of the terminal.
5. Reconnect power to the terminal.

NOTE

For cable removal, use the same steps described above in reverse. If exchanging cables, use a VeriFone-approved cable. For more information, refer to PINpad 1000SE CTLS Quick Installation Guide, VPN - DOC115EN05-A.

Connecting Unit to a PC and ECR (optional)

The RS-232 version of the PINpad 1000SE CTLS also connects to a PC or ECR thru special cable products to provide power for the PINpad 1000SE CTLS (refer to Accessories and Documentation). These cables plug into the PINpad 1000SE CTLS with a DB9 connector housing. The connector housing has a DC jack that connects to a power supply for external AC power.

Figure 4 illustrates how to connect the PINpad 1000SE CTLS to an ECR or compatible computers.

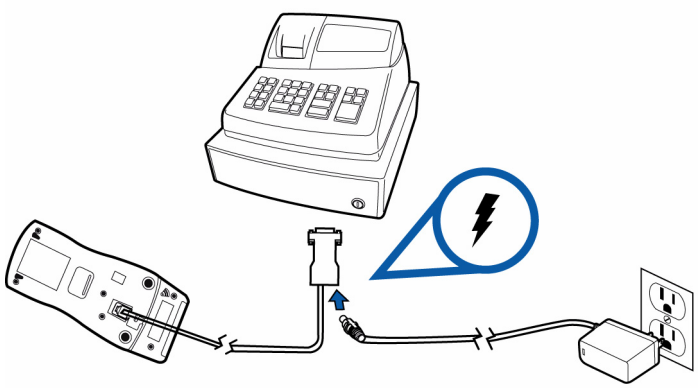


Figure 4 PINpad 1000SE CTLS and DB9 ECR Cable Connection

1. Disconnect power from the PC/ECR.
2. Connect the end of the cord with the DB9 connector to the PC/ECR.
3. Connect the modular plug on the other end of the cord to the PINpad 1000SE CTLS.
4. Plug the power supply into the socket at the base of the PC/ECR connector.
5. Plug the power supply into an AC wall outlet.
6. Reconnect power to the PC/ECR.

CAUTION

Using an incorrectly rated power supply can damage the unit or cause it not to work properly. For U.S. – VeriFone recommends using only VPN# CPS11212-1C-R. For other uses see Specifications for detailed power supply specifications.

Connecting via USB

The USB version of the PINpad 1000SE CTLS can also be connected to a terminal, ECR, or a host PC using a coiled USB cable (VPN#WCL115013-A). When connecting to a PC via a USB port, the device, in either PINpad 1000SE CTLS PCI mode or NURIT 222 mode – requires the additional installation of device drivers.

1. Connect the device to the host PC.
2. Connect the cable to external power supply.
3. Wait until the host PC recognizes the new hardware and starts the Found New Hardware Wizard.
4. Follow the instructions on the Found New Hardware Wizard to install the USB-UART driver.

CAUTION

If an extension cable is required when connecting by the device's USB port, only USB-certified cables should be used.

NOTE

Additional instructions and device drivers are found and downloaded from the VeriFone Technical Support page: (http://www.verifone.com/technical-support.aspx).

Browse to the INF file provided by VeriFone when specifying the driver location. When the installation is done, check the list of ports on the Device Manager to see the new USB device.

Contactless Support

The PINpad 1000SE CTLS supports the global contactless program specifications from American Express, MasterCard, Visa, and Discover with virtually no changes to existing payment hardware or software.

Selecting Contactless Device Modes

To allow a *PINpad 1000SE* CTLS device to process contactless transactions, its device mode should be set to Contactless. By default, operating mode of all *PINpad 1000SE* CTLS devices, including the *PINpad 1000SE* CTLS, is set to PINpad.

Users can switch from PINpad mode to Contactless mode thru menu options shown at the terminal's interface.

NOTE

For more information on switching Device Modes, refer to *PINpad 1000SE Reference and Programmers Guide*, *VPN - 26803.* Device mode refers to the device's current operating mode, either PINpad or Contactless.

Install/Replace SAM Card

You may need to install a security access module (SAM) card or replace an old card.

CAUTION

Observe standard precautions in handling electrostatically sensitive devices. Electrostatic discharges can damage the equipment. VeriFone recommends using a grounded anti-static wrist strap.

To change or install MSAMs

1. Remove the data cable from the back of the unit.
2. Place the PINpad 1000SE CTLS facedown on a soft, clean surface to protect the lens from scratches.
3. Lift open the compartment door. The SAM cardholder is now accessible.

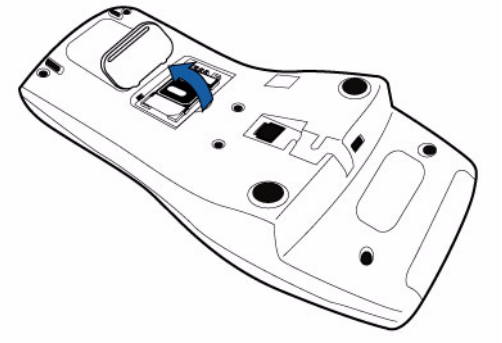


Figure 5 Opening SAM Compartment Door

NOTE

Before inserting the SAM card, position it as shown in Figure 6, with the card's gold contacts facing away from you, toward the unit. The cardholder slot in the PINpad 1000SE CTLS has a set of contacts. The SAM card has a notch on one corner to ensure that it fits into the connector base in only one way; the PINpad 1000SE CTLS has a matching notch cast into the backside of the SAM compartment door to ensure the SAM card is positioned correctly when the cover is closed.

4 Install the SAM card by aligning the card and carefully sliding it into the slot until fully inserted.

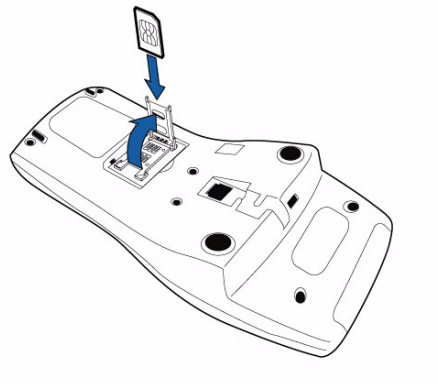


Figure 6 SAM Insertion

5 Push the SAM card holder back and close the compartment door.

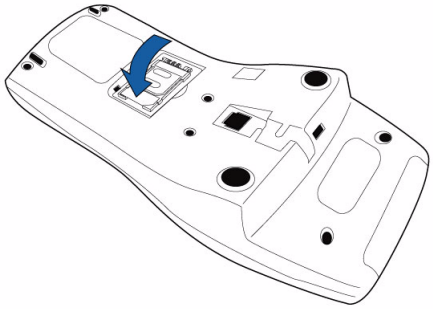


Figure 7 SAM Card Holder

Processing Contactless Transactions

The PINpad 1000SE CTLS is only active when signaled by an application for the conduction of a contactless smart card transaction.

To perform a contactless smart card transaction:

1. Gently tap the card onto or hold the card (within to 4 cm) against the surface of the RFID antenna.
2. A short beeping sound and the lighting of four LEDs indicates a successful transaction.

Figure 8 PINpad 1000SE CTLS with Smart Card

Using the Stand Adapter

The optional stand adapter holds the PINpad 1000SE CTLS securely to a countertop or a wall. The unit can be removed from the stand adapter for handheld operation.

Mounting the Adapter to Plate

Figure 9 shows how to install a stand adapter onto a pre-existing flat mounting plate.

1. Select a location for the stand adapter on a smooth wall or countertop. Be sure the cable can easily reach the controller from this position without stretching.
2. Position the keyholes on the molded cradle over the slotted screws on mounting plate. Slide the adapter downward until the screws are in the narrow ends of the keyholes.

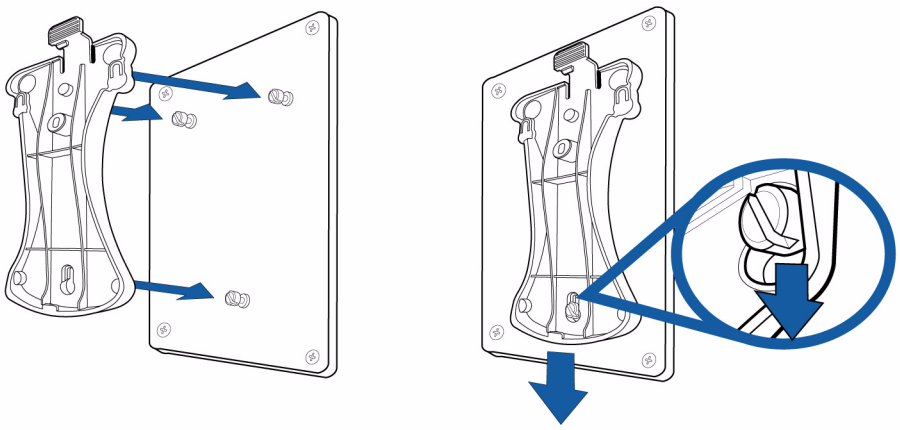


Figure 9 Stand Adapter Installation

Screw-Mounting the Adapter

The stand adapter may also be screwed directly to a wall or countertop.

- Use screw anchors when fastening the adapter to a cement or brick wall.
- When fastening the plate to drywall, the screws must go into the studs behind the wall. Screw anchors alone will not safely hold the adapter to drywall.

To screw-mount the stand adaptor to the PINpad 1000SE CTLS, use American National Standard #8 or Metric M3 screws 8 mm length, with head diameter between 4.5 and 6.0 mm, and head thickness less than 2.5 mm. Use the stand adaptor to mark the hole placement on the desired location, and then insert screws, adjusting the screw depth until the unit is firmly mounted.

Using the Stand Adapter

Figure 10 shows how to insert a PINpad 1000SE CTLS into a stand adapter. Slide the end of the PINpad 1000SE CTLS into the bottom of the stand adapter, then press the screen end of the PINpad 1000SE CTLS firmly into the top of the stand adapter until you hear and feel the release lever click.

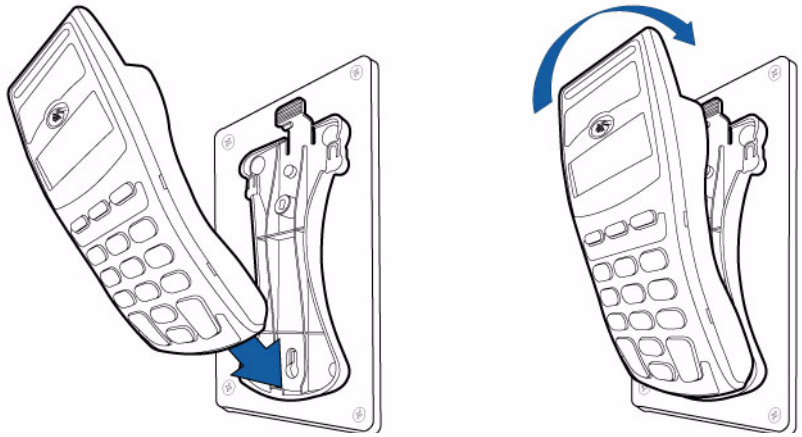


Figure 10 Inserting the PINpad 1000SE CTLS into the Stand Adapter

To remove the adapter, press the release lever at the top of the stand and pull the PINpad 1000SE CTLS up and out of the stand adapter.

Using the Privacy Shield

Figure 11 shows an example of an installed privacy shield.

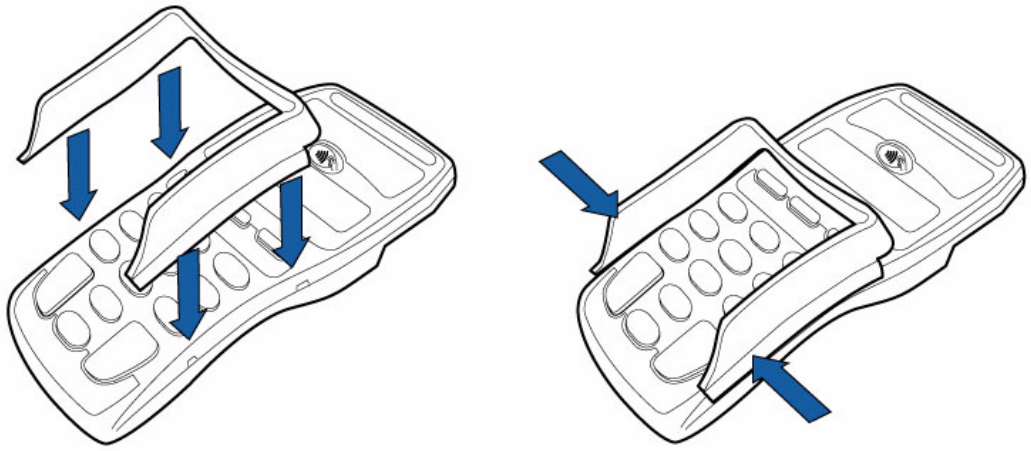


Figure 11 Installed Privacy Shield

Using the Unit

Startup

Upon startup, the PINpad 1000SE CTLS briefly displays the version and date (example: 10.24.00 06/07), followed by the idle prompt.

Idle Prompt

The idle prompt indicates the PINpad 1000SE CTLS is ready for use. The default idle prompt is a row of characters that resembles a marching arrow (<----------).

The display and sequence of the idle prompts can be programmed through an application program written for the controller. The display has a multiple, 4-line graphics display which may be customized to show `ENTER YOUR PIN` and `WELCOME` messages.

In Contactless mode, the device displays the message `PLEASE TAP YOUR CARD.` This message varies to accomodate client requirements.

Keypad

The PINpad 1000SE CTLS has 10-key telco-style keypad that includes the letters A through Z and numerals 0 through 9, as well as three unlabeled, programmable function keys, and three color-coded function keys (see Figure 2).

At the PIN request prompt, enter the PIN and press ENTER. The PINpad 1000SE CTLS will show a processing display when the device successfully receives the PIN entry.

NOTE

Press BACKSPACE to clear the last number.

Press CANCEL to cancel the transaction.

CHAPTER 3

Specifications

This chapter discusses power requirements, dimensions, and other specifications of the PINpad 1000SE CTLS.

Unit Power Requirements

Input: 7.5 v - 20 v,

Maximum current: 500 mA

Temperature

Operating temperature: 0^{o} to 50^{o}C (32^{o} to 122^{o}F)

Humidity

Relative humidity: up to 95%; no condensation

External Dimensions

- **Length**: 181 mm (7.13 in)
- **Width**: 83 mm (3.26 in)
- **Depth**: 41 mm (1.61 in)

Weight

- **Unit weight**: 270 g (9.52 oz)
- **Shipping weight**: 400 g (0.881)

Service and Support

Maintenance and Cleaning

The PINpad 1000SE CTLS has no user-serviceable parts. Unless otherwise instructed, do not, under any circumstances, attempt any service, adjustments, or repairs on the unit. Disconnect the device before cleaning.

To clean the unit, periodically use a clean cloth, slightly dampened with water and a drop or two of mild soap. For stubborn stains, use alcohol or an alcohol-based cleaner. For best results, use a VeriFone Cleaning Kit (refer to Accessories and Documentation).

CAUTION

Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts.

Because the PINpad 1000SE CTLS can be damaged by liquid, do not spray cleaners or other solutions directly onto the keypad or display. Always apply the cleaner to a cloth before cleaning the device.

Service Returns

For PINpad 1000SE CTLS equipment failures that cannot be resolved by your help desk or service department, contact one of the following hotlines for product service and repair information:

- USA – VeriFone Service and Support Group, 1-800-834-9133, Monday - Friday, 8 A.M. - 7 P.M., EST
- International – Contact your VeriFone representative

Before returning PINpad 1000SE CTLS to VeriFone, you must obtain a Merchandise Return Authorization (MRA) number. The following procedure describes how to return one or more PINpad 1000SE CTLS for repair or replacement (U.S. customers only).

NOTE

International customers, please contact your local VeriFone representative for assistance with your service, return, or replacement.

1. Gather the following information from the printed labels (see Figure 12) on the bottom of *each* PINpad 1000SE CTLS to be returned:
   - Product ID, including the model and part number. For example, “P003-180-02-XXn”
   - Serial number (S/N xxx-xxx-xxx)
2. Within the United States, call VeriFone toll-free at 1-800-834-9133.

3 Select the MRA option from the automated message. The MRA department is open Monday–Friday, 8 A.M.–7 P.M., EST.

4 Give the MRA representative the information gathered in Step 1.
If the list of serial numbers is long, you can fax the list, along with the information gathered in Step 1, to the MRA department at 1-727-953-4172 (U.S.)

- Please address the fax clearly to the attention of the "VeriFone MRA Dept."
- Include a telephone number where you can be reached, as well as your fax number.
- You will be issued MRA number(s) and the fax will be returned to you.

NOTE

One MRA number must be issued for each PINpad 1000SE CTLS you return to VeriFone, even if you are returning several of the same model.

5 Describe the problem(s).

6 Provide the shipping address where the repaired or replacement unit must be returned.

7 Keep a record of the following items:

- Assigned MRA number(s).
- VeriFone serial number assigned to the PINpad 1000SE CTLS you are returning for service or repair (serial numbers are located on the bottom of the unit (see Figure 12).
- Shipping documentation, such as air bill numbers, used to trace the shipment.
- Model(s) returned (model numbers are located on the VeriFone label on the bottom of the PINpad 1000SE CTLS).

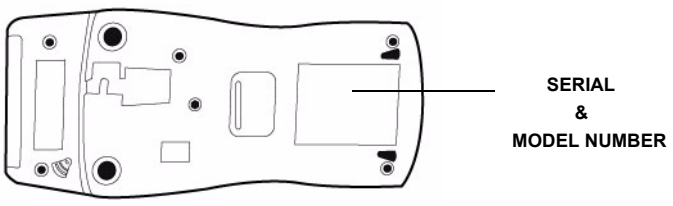


Figure 12 Information Label on Unit Bottom

Accessories and Documentation

VeriFone produces accessories and documentation for the PINpad 1000SE CTLS. When ordering, please refer to the part number in the left column.

- VeriFone Online Store at *www.store.verifone.com*
- USA – VeriFone Customer Development Center, 1-800-VeriFone (837-4366) Monday - Friday, 7 A.M. - 5 P.M., MST
- International – Contact your VeriFone representative

Cables

Contact your local VeriFone distributor to determine which cable fits your needs.

WCL112012-A	RJ11 to RJ11 cable (NURIT)
WCL115001-A	RJ11 to RJ45 cable (V^x)
WCL115010-A	M-cable (N8400)
WCL115021-A	DB9 with power to RJ11 (Shielded)
WCL115013-A	RJ11 to USB

Power Supply

CPS11212-1C-R	DC power supply (U.S.)
CPS11212-2D-R	DC power pack (Europe)
CPS11212-2E-R	DC power pack (China)
CPS11212-2F-R	DC power pack (UK)

PC/AT Interface Kit

10776-02	4PC plug to DB9 plug (most IBM AT or compatible computers)

Supplementary Hardware

PPL115-028-34-A	Stand adapter
PPL115002-A	Privacy shield

Cleaning Kit

02746-01	VeriFone Cleaning Kit

Documentation

• *PINpad 1000SE* CTLS *Certifications and Regulations*	VPN - DOC115EN06-A
• *PINpad 1000SE* CTLS *Quick Installation Guide*	VPN - DOC115EN05-A
• *PINpad 1000SE Reference and Programmers Guide*	VPN - 26803
• *PINpad 1000SE Stand Adapter Quick Installation Guide*	VPN - DOC115EN03-A

Troubleshooting Guidelines

This chapter lists typical malfunctions that may occur while operating a PINpad 1000SE CTLS and the appropriate corrective action. If the problem persists – even after performing the outlined guidelines, or if the problem is not described, contact your local VeriFone representative for assistance.

NOTE

The PINpad 1000SE CTLS uses a tamper-evident case and contains no user-serviceable parts. Do not, under any circumstance, attempt to disassemble the unit. Perform only those adjustments or repairs specified in this guide. For all other services, contact your local VeriFone service provider. Service conducted by parties other than authorized VeriFone representatives may void any warranty.

Display Panel Does Not Work

1. Check all the cable connections.
2. Check the controller's AC outlet to be sure the outlet is supplying sufficient power, substitute the controller's power pack with another power pack.
3. The controller's application program might not be loaded correctly. Download the application program and try again.
4. Run the display reliability test (option 5), as described in *Chapter 12* in the *PINpad 1000SE Reference and Programmers Manual* (VPN - 26803).
5. If the problem persists, contact your local VeriFone representative.

Keypad Does Not Respond

1. Check the display panel. If there are no characters, or the wrong characters are displayed, refer to Display Panel Does Not Work.
2. Run the keypad reliability test (option 4), as described in *Chapter 12* in the *PINpad 1000SE Reference and Programmers Manual* (VPN - 26803).
3. If the problem persists, contact your local VeriFone representative.

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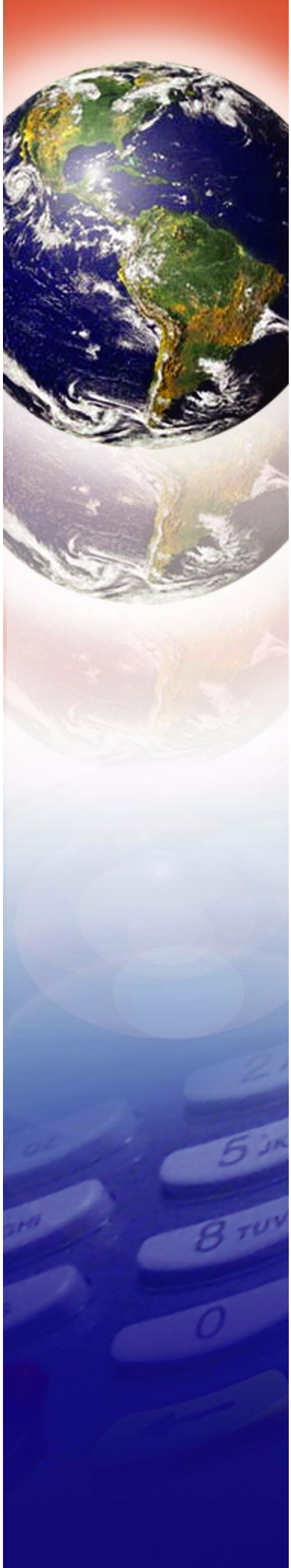

PINpad 1000SE CTLS

Installation Guide

VeriFone Part Number 28610, Revision A