

CHAPTER 1 - INTRODUCTION

CHAPTER OVERVIEW

This chapter provides an introduction to the V-Station 4G and V-Flex 4G devices, their specifications and features, and safety guidelines that should be observed when using or handling the devices.

1.1 INTRODUCTION

This manual provides step-by-step procedures for installing a L-1 Identity Solutions V-Station 4G or V-Flex 4G device. It covers the entire process of physically installing the device, making the necessary power, ground, and network connections, and registering the device in SecureAdmin. Instructions for field repairs and cleaning are also provided.

1.1.1 SYMBOLS USED IN THIS GUIDE

The symbols shown below are used throughout this manual. They denote special issues the user might encounter. Their definitions are given below.

	<i>DANGER</i>
	This symbol denotes a danger condition that may cause death or excessive damage to property.

	<i>WARNING</i>
	This symbol denotes a warning condition that may cause severe injury or major damage to property.

	<i>CAUTION</i>
	This symbol denotes a cautionary condition that may cause injury or minor damage to property.



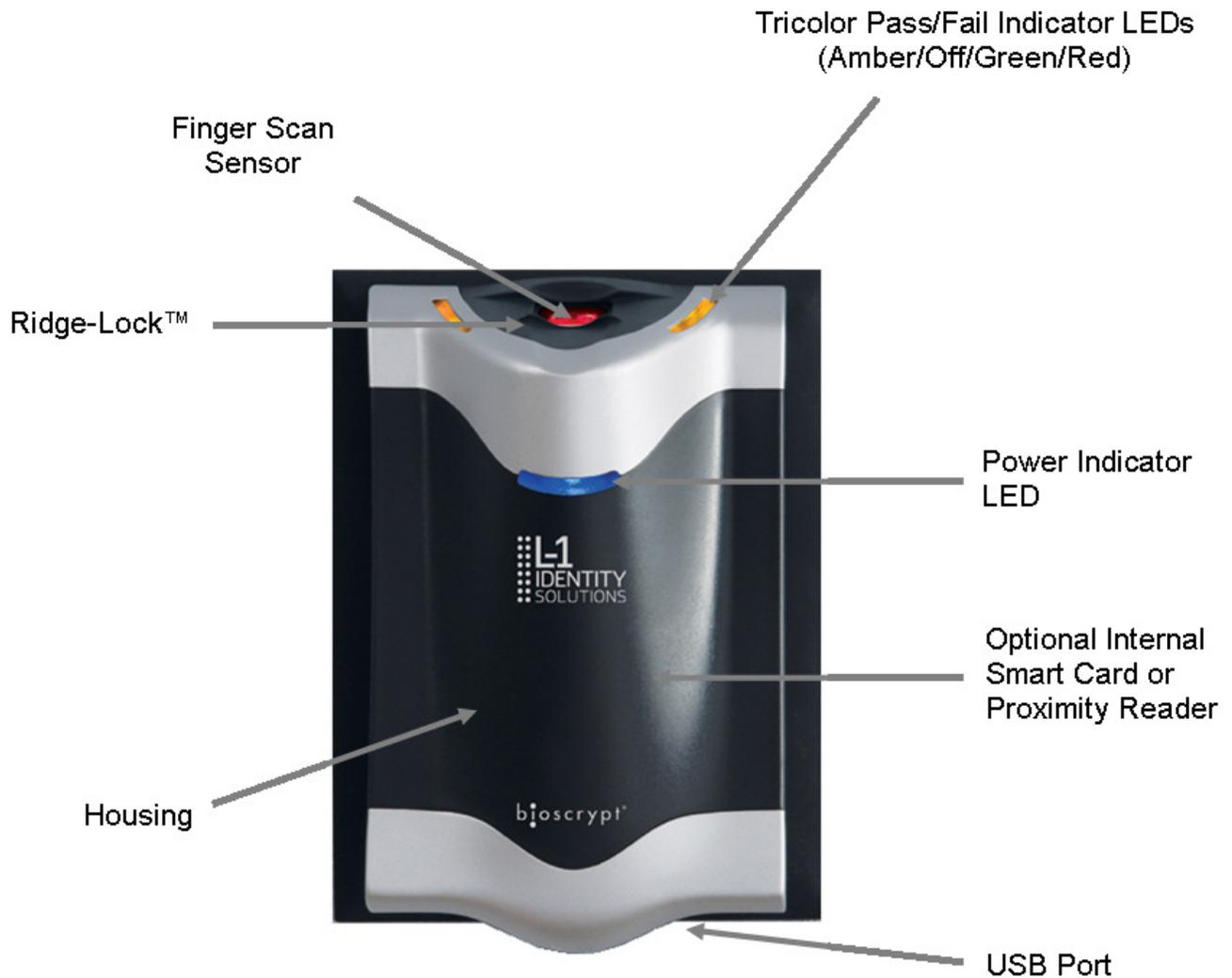
NOTICE

This symbol denotes a situation needing additional advice to avoid incorrect usage.

1.2 PRODUCT OVERVIEW

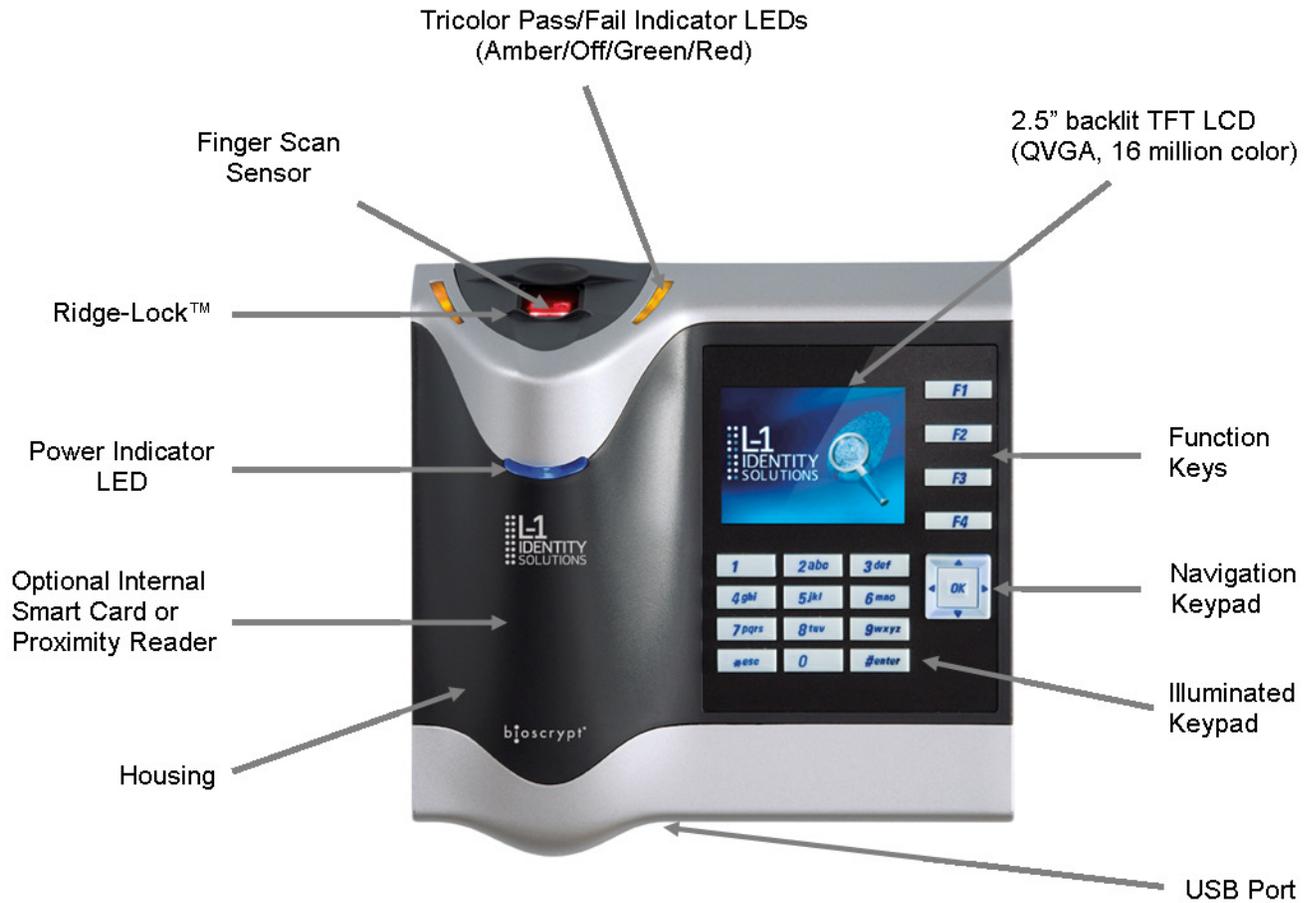
1.2.1 V-FLEX 4G

Figure 1-1 4G Flex Device



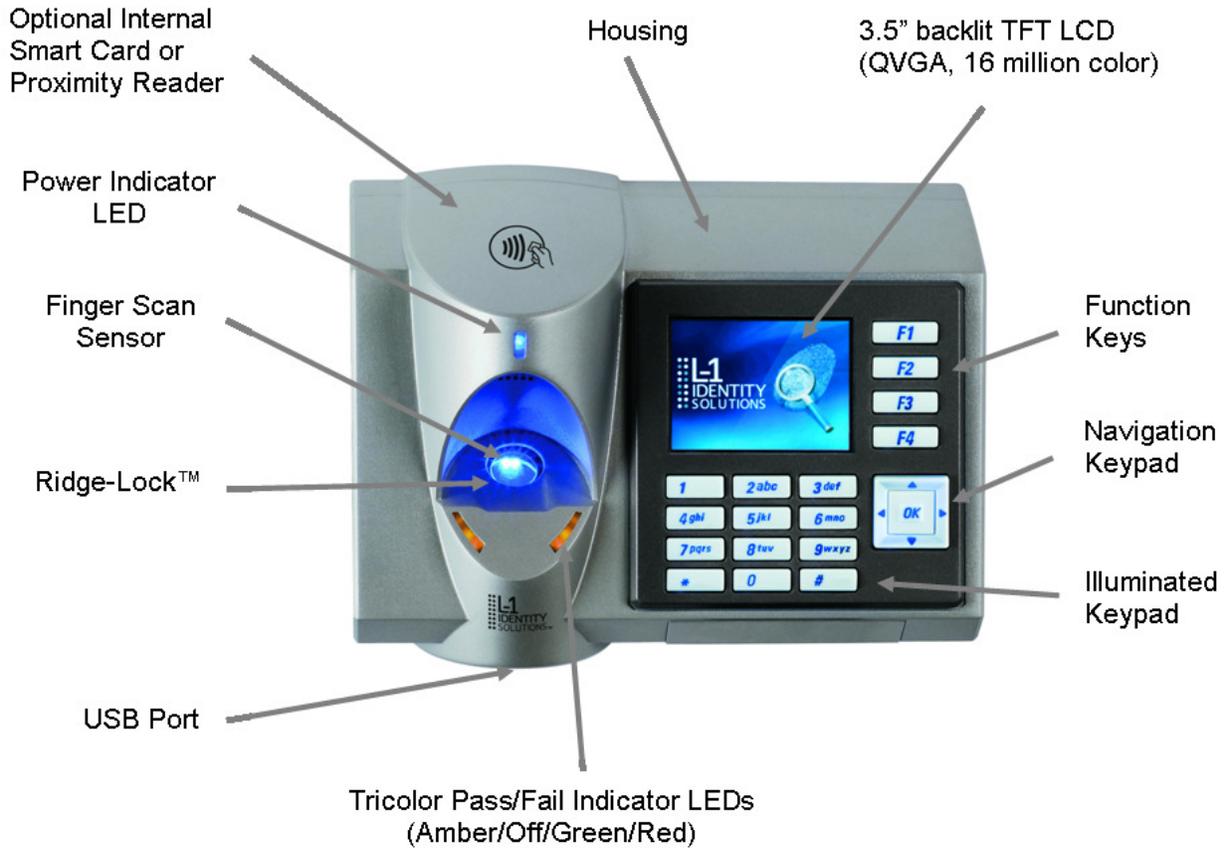
1.2.2 V-STATION 4G

Figure 1-2 V-Station 4G Device



1.2.3 V-Station 4G EXTREME Device

Figure 1-3 V-Station EXTREME Device



1.2.4 V-Station 4G PIV/TWIC Indoor

Figure 1-4 V-Station 4G PIV/TWIC Indoor



1.2.5 V-Station 4G EXTREME PIV/TWIC

Figure 1-5 V-Station 4G Extreme PIV/TWIC



1.2.6 FINGERVEIN STATION 4G DEVICES

Figure 1-6 FingerVein Station 4G

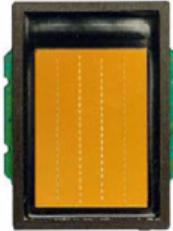


1.2.7 SENSORS

The V-Station 4G and V-Flex 4G devices offer three types of sensor interfaces.

1.2.7.1 UPEK TCS

Figure 1-6 UPEK TCS Sensor



Key Features:

- Active Capacitive Fingerprint sensing
- 256 x 360 Sensor Array 508 DPI
- +/- 15kV Air ESD Resistance

1.2.7.2 SECUGEN OPTICAL

Figure 1-7 Secugen Optical Sensor



Key Features:

- Optical Fingerprint sensing
- 256 x 336 Sensor Array 500 DPI
- +/- 15kV Air ESD Resistance

1.2.7.3 LUMIDIGM VENUS OPTICAL SENSOR

Figure 1-8 Lumidigm Venus Optical Sensor



Key Features:

- TBD
- TBD
- TBD

1.2.7.4 HITACHI FINGERVEIN SENSOR

Figure 1-9 Hitachi FingerVein Sensor



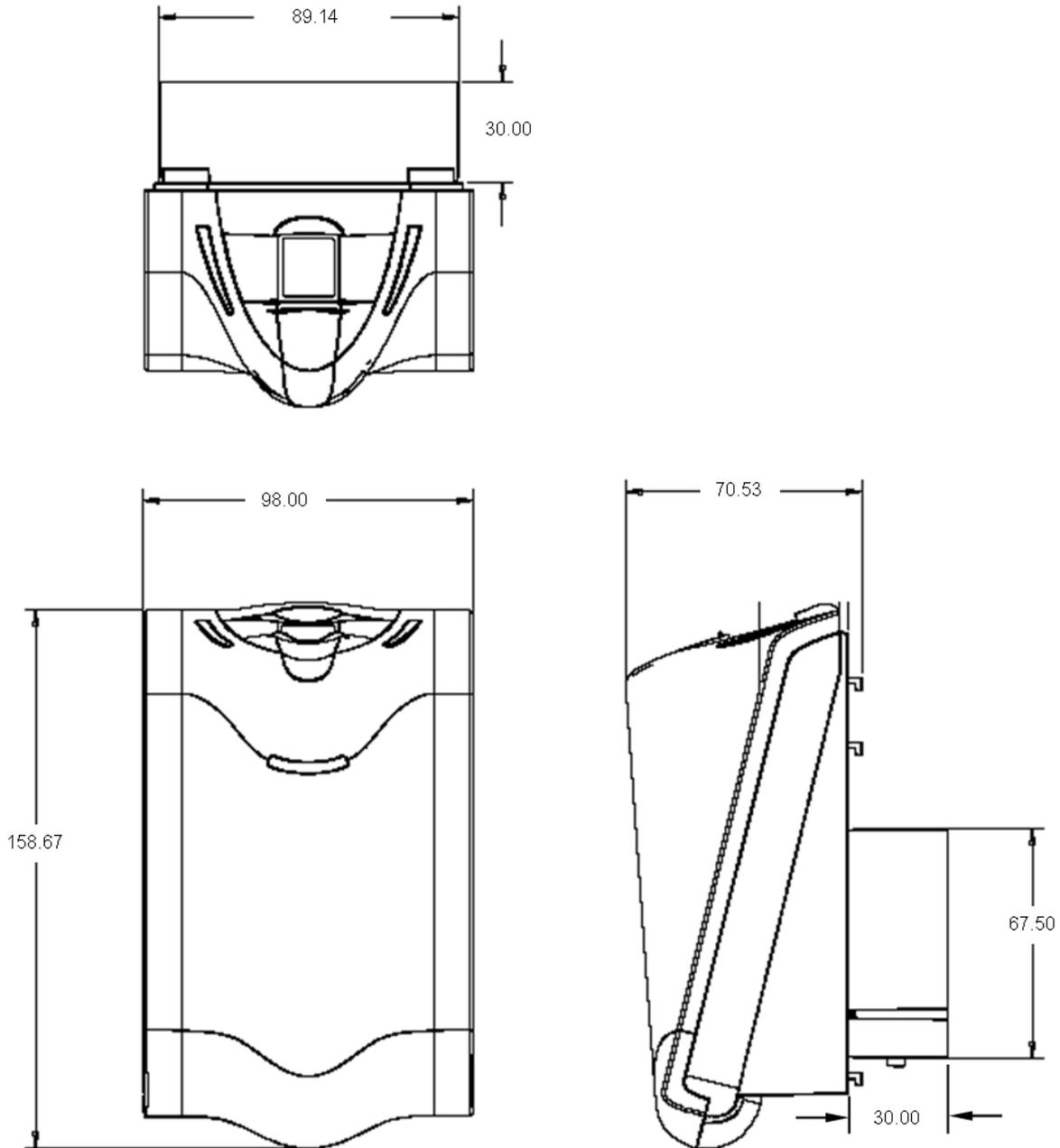
Key Features:

- TBD
- TBD
- TBD

1.2.8 DEVICE DIMENSIONS

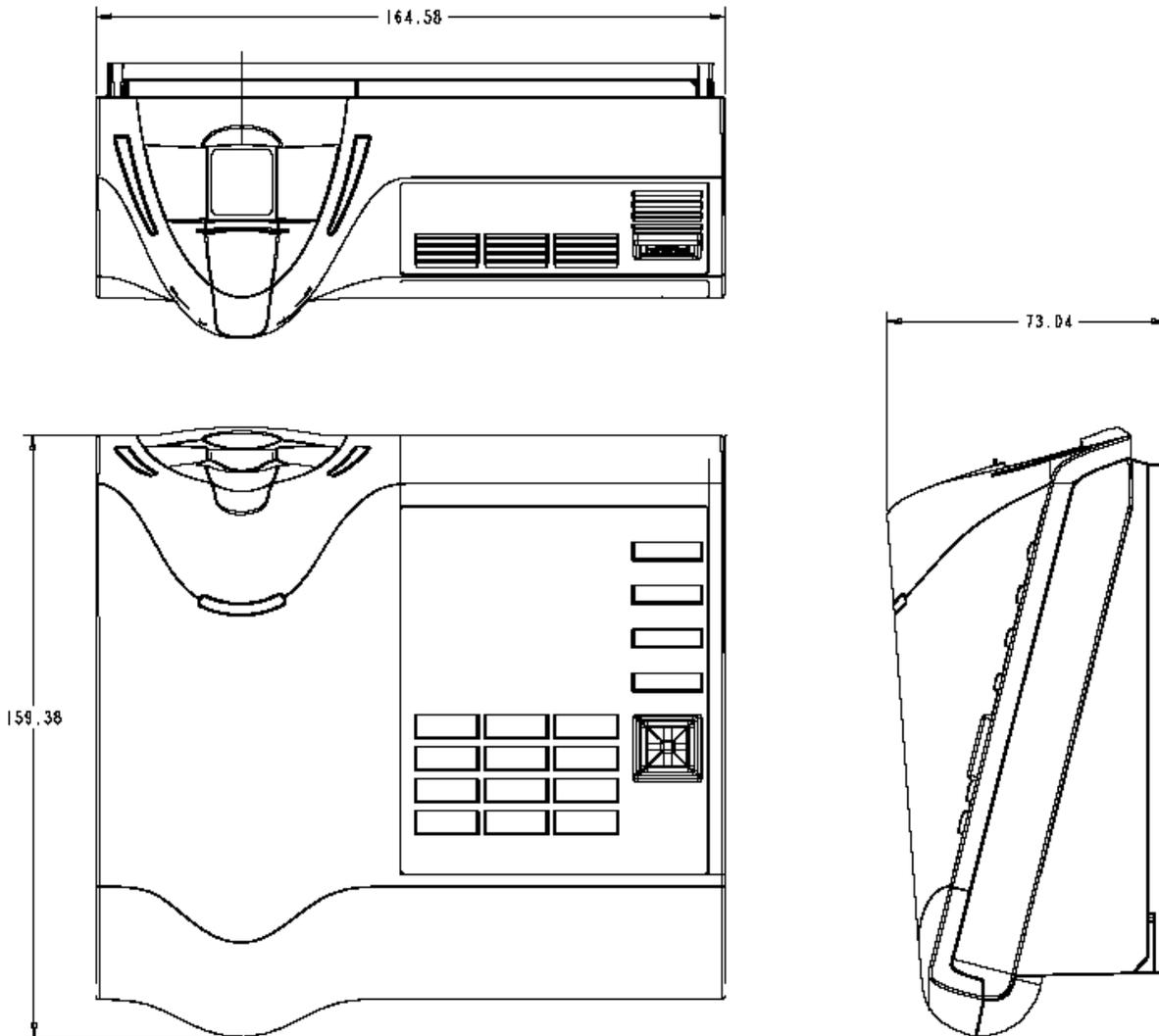
1.2.8.1 V-Flex 4G Device

Figure 1-9 V-Flex 4G Dimensions



1.2.8.2 V-STATION 4G

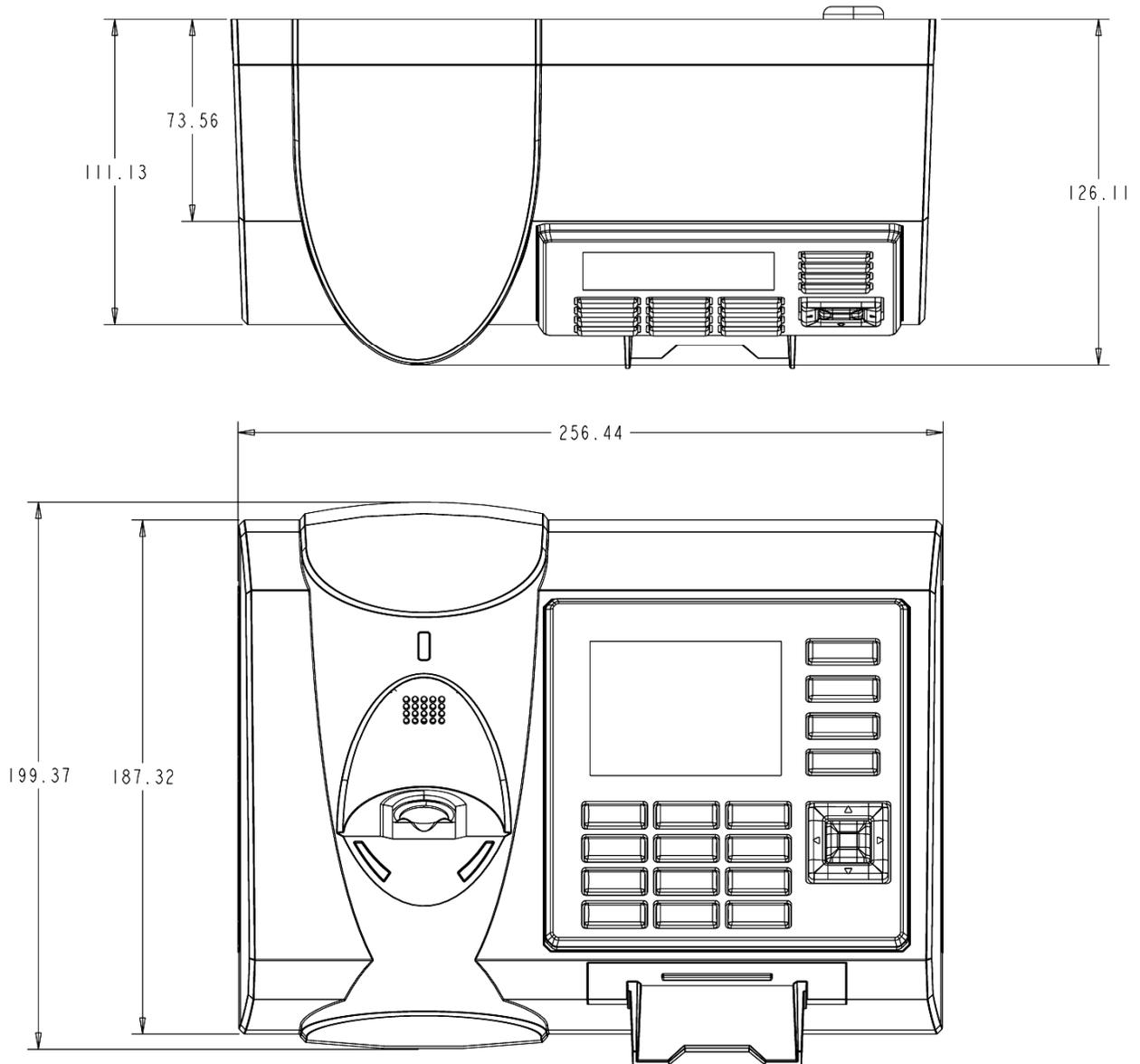
Figure 1-10 V-Station 4G Dimensions



1.2.8.3 V-STATION EXTREME PIV/TWIC DEVICES

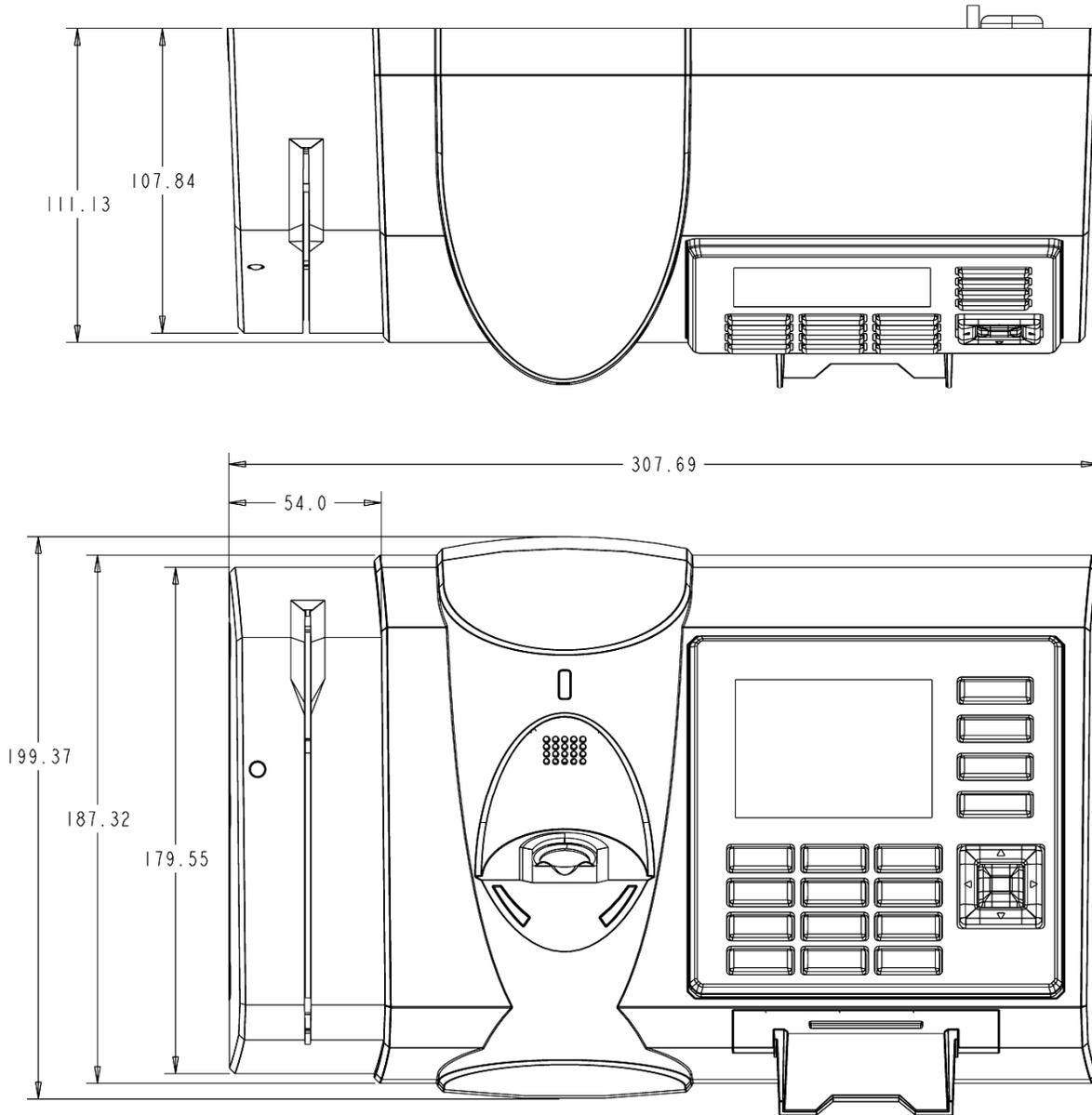
1.2.8.3.1 V-STATION 4G EXTREME

Figure 1-11 V-Station 4G Extreme Dimensions



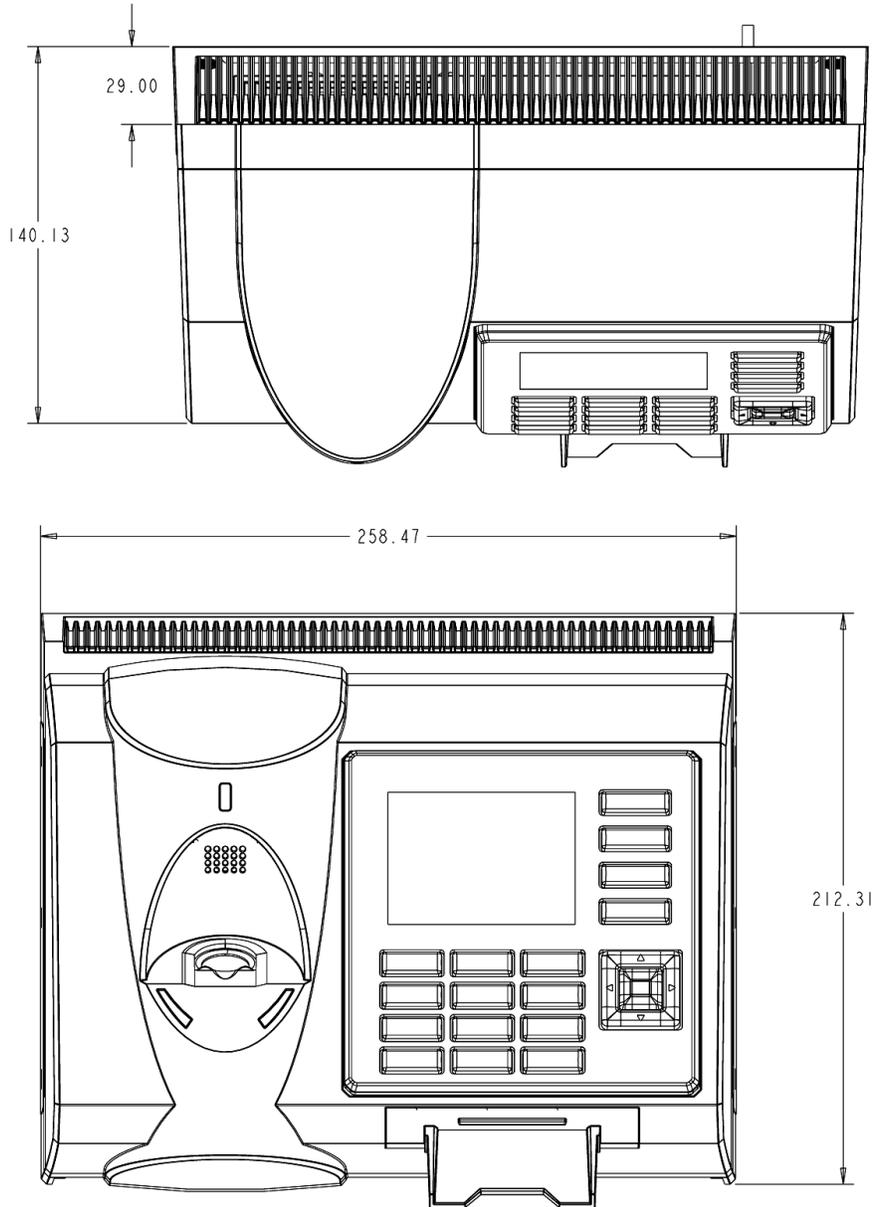
1.2.8.3.2 V-STATION 4G EXTREME WITH ACCESSORIES

Figure 1-12 V-Station 4G Extreme with Accessories Dimensions



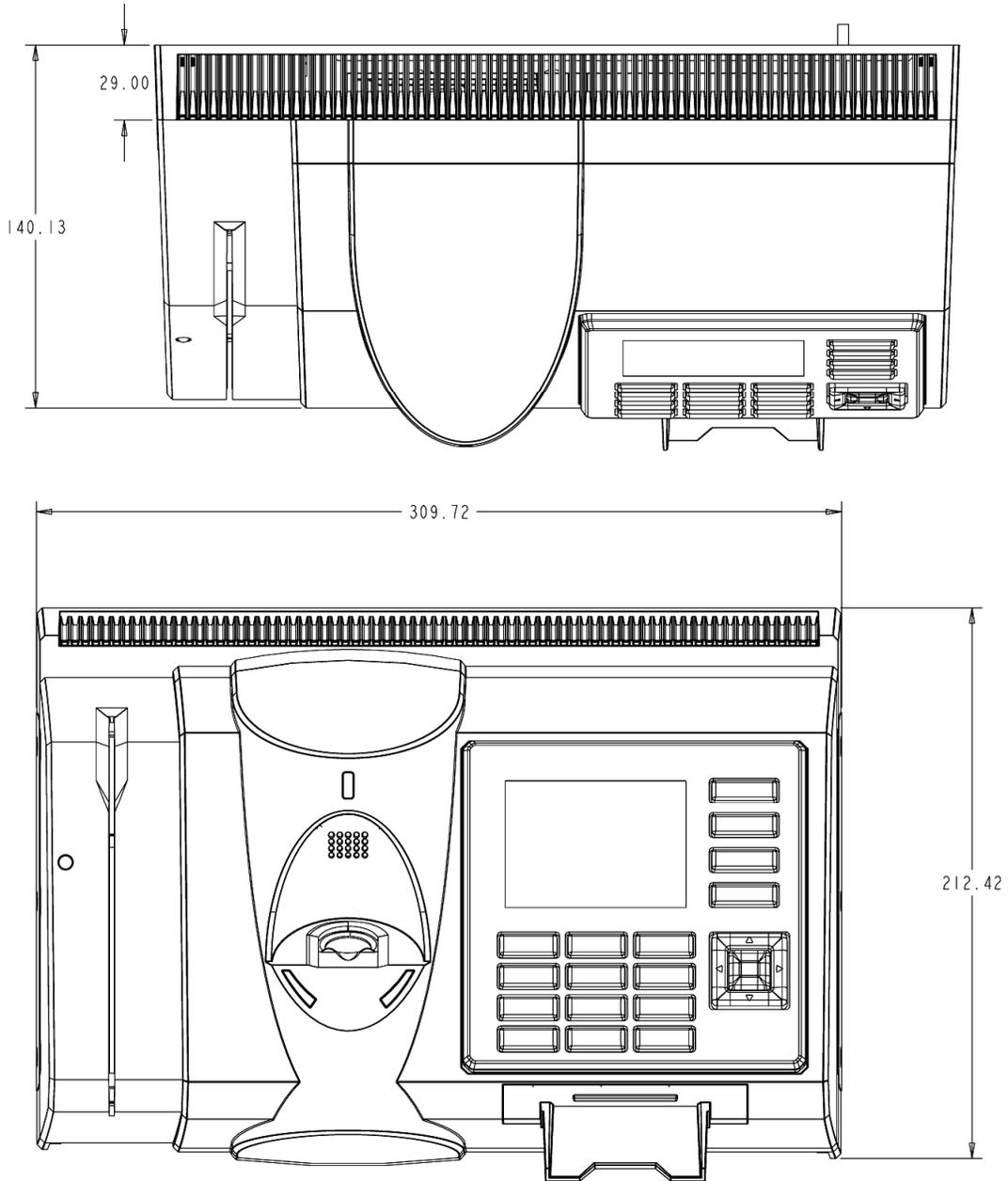
1.2.8.3.3 V-STATION 4G EXTREME PIV/TWIC

Figure 1-13 V-Station 4G Extreme PIV/TWIC



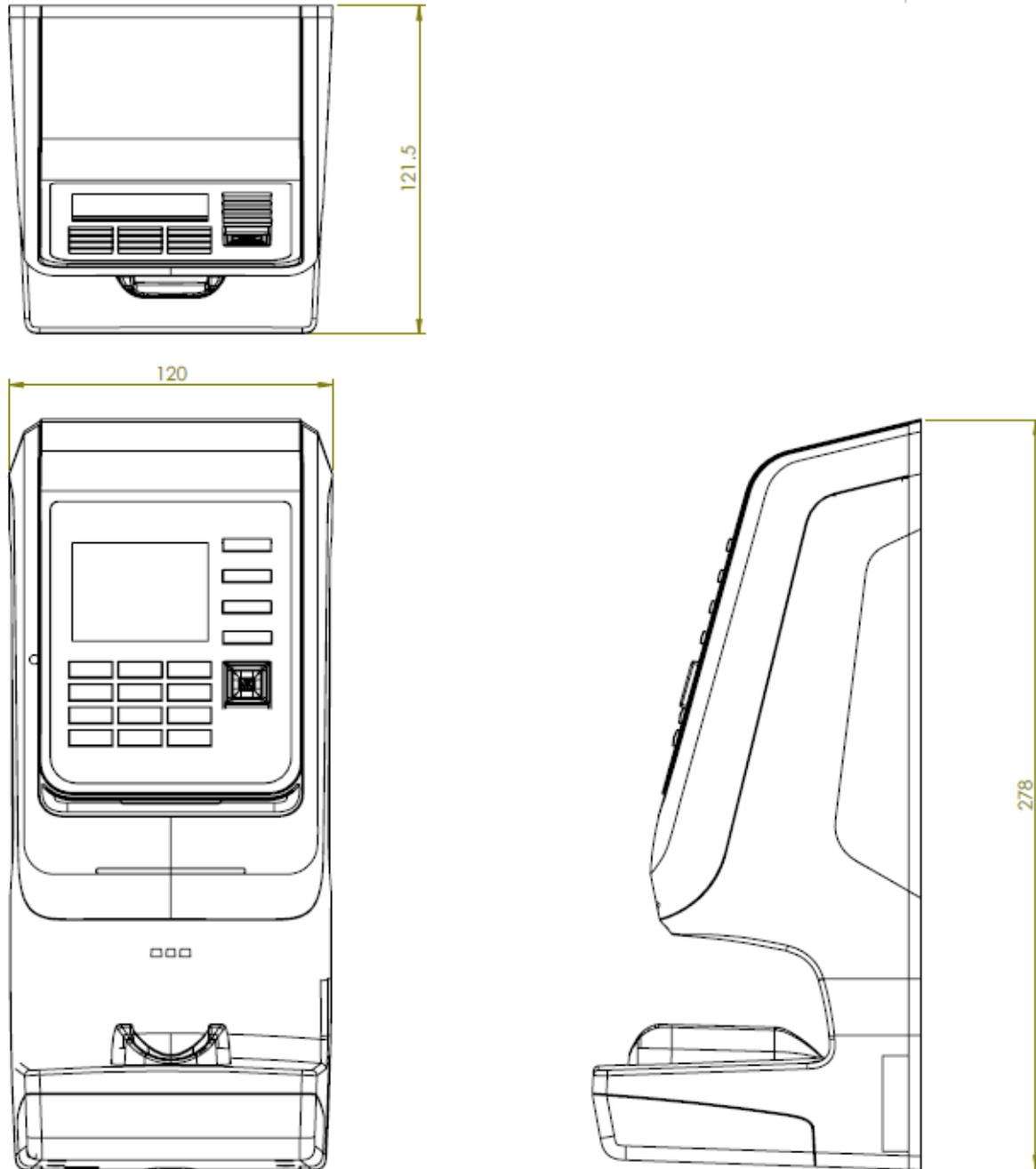
1.2.8.3.4 V-STATION EXTREME PIV/TWIC WITH ACCESSORIES

Figure 1-14 V-Station 4G Extreme PIV/TWIC with Accessories Dimensions



1.2.8.4 FINGERVEIN STATION 4G DEVICES

Figure 1-15 FingerVein Station 4G Dimensions



1.2.9 SAFETY PRECAUTIONS

Below are safety precautions that should be observed when operating or installing a device.

1.2.9.1 ELECTRO-STATIC DISCHARGE

L-1 Identity Solutions recommends that Administrators inform Users of these points during the enrollment process:

- ✓ Always use the Ridge-Lock to position a finger *before* touching the sensor.
- ✓ Always stand on the ESD-dissipative floor covering (if installed).
- ✓ Do not touch other people or objects when touching the sensor.
- ✓ Always maintain at least 12 inches of space around yourself when touching the sensor.
- ✓ Do not allow articles of clothing to touch the sensor.

L-1 Identity Solutions recommends that Installers always follow these points (in addition to the points listed above):

- ✓ When installing or working on a unit, always use a grounding wrist-strap that is connected to a quality Earth ground.
- ✓ Check the device's cabling for ground faults.
- ✓ Ensure that the device's ground connection (located on the rear of the device) is connected to a quality Earth Ground.

1.2.9.2 DEVICE HANDLING GUIDELINES

- ✓ Do not install the device in locations where the device would be exposed to direct sunlight, high levels of relative humidity, particulate matter, or flammable vapors.
- ✓ Do not install the device near radiators or other heat sources.
- ✓ Do not allow magnetic objects to come within close proximity to the device.
- ✓ Strong magnetic fields might damage the device.
- ✓ Do not let liquids Card the device.

- ✓ Do not attempt to alter the device for any reason. Modifications will void the product guarantee.
- ✓ Do not attempt to disassemble the device in any way beyond what is necessary for sensor field replacement.
- ✓ Do not use the device for any purpose other than for what it was designed.
- ✓ Do not plug any equipment into the USB port other than flash memory devices.
- ✓ Do not allow users to place or hang objects on the device, such as coffee cups or purses.
- ✓ Do clean the device regularly to remove dust, grime, and fingerprint residue.

CHAPTER 2 - PLANNING THE INSTALLATION

CHAPTER OVERVIEW

This chapter details how to plan a successful installation, recommended steps, and explains the hardware and software components of typical setup scenarios.

2.1 PLANNING THE INSTALLATION

Planning the installation is the single most important aspect of a successful installation. In general, you need to consider the access controller, the door locks, the devices, and the need for a network. By the time you are ready to install the system, all of the details presented in the list below should be known. Take a moment to go through them now before starting your installation.

During the planning phase, you should determine:

- ✓ What type of authentication is required for your application?
- ✓ How many doors need to be secured?
- ✓ What type of device will be on each door? Doors already inside a secure area might not need the same type or level of security.
- ✓ If multiple V-Series 4G devices require networking for template distribution/management, then a dedicated PC is recommended to administer the system, as well as an RS-485 to RS-232 converter, and cabling for serial communications or cabling for Ethernet.
- ✓ Verify that the chosen access controller supports the Wiegand formats supported by V-Station 4G devices.
- ✓ Identify all wiring by the signal levels it is to carry. Use separate cables and conduits for different signal groups to avoid cross talk. Plan to separate them by these groups:

Power distribution: Wires carry power to devices, door strikes, etc.

Data communication: RS-485, RS-232, USB, Wiegand, Ethernet, etc.

Signal: Door contact, request-to-exit push button, alarm input, etc.

- ✓ When planning device placement, determine the distance limitation of each signal type and use repeaters if necessary.

- ✓ V-Series 4G devices are intended for indoor use only.

If you have any unresolved issues with the items on this list, contact L-1 Identity Solutions Technical Support for additional information before beginning any installation.

	WARNING
	V-Station 4G and V-Flex 4G devices should be installed by only a qualified technician. If you are not qualified to perform an installation task, call L-1 Identity Solutions Technical Support or contact a qualified installer.

2.1.1 RECOMENDED STEPS FOR A SUCCESSFUL INSTALLATION

Every installation is unique. Sometimes the issues are well defined and can be handled in a standard fashion; sometimes the issues are very specific and may not be immediately recognizable.

L-1 Identity Solutions recommends following these steps for a successful installation:

- ✓ Plan the installation Choose the type of hardware required, decide if a network is required, and decide on the location and number of required devices.
- ✓ Unpack all items Unpack all items and check against the packing list.
- ✓ Install network hardware components Install the cabling and components needed to run the system.
- ✓ Install software Install the software needed to set up the devices.
- ✓ Preconfigure device Connect the device to the USB cable, supply power to the device, and preconfigure the device.
- ✓ Mount devices Mount the devices in their final locations
- ✓ Power distribution and device hook up Connect the device wiring via the back panel.
- ✓ Power-up procedure Check the power connections and start the system safely. Enroll users Enroll users into the system (for user enrollment procedures).

Chapters 3 through 7 in this document present more information on these steps.

2.1.2 REQUIREMENTS

- ✓ PC workstation with:
- ✓ 1 GHz Intel(r) Pentium(r) 4 processor or equivalent
- ✓ 1 GB RAM (2 GB recommended)
- ✓ CD-ROM drive
- ✓ One available COM port or USB port
- ✓ Ethernet card
- ✓ Display: 1024 x 768 high color (minimum)
- ✓ Regulated DC Power supply
- ✓ Door controller
- ✓ TCP/IP network environment
- ✓ RS-232 to RS-485 converter with power supply (for advanced administrative features).

2.1.2.1 HARDWARE REQUIREMENTS

- ✓ Deadbolt/door strike
- ✓ Snubber diode required to protect regulated DC power supply from inductive kickback(1 N4007 diode or equivalent recommended)
- ✓ Separate power supply for the deadbolt/door strike based on supplier's recommendations.
- ✓ External relay (if required)
- ✓ Networking cable

2.1.2.2 COMPUTER REQUIREMENTS

2.1.2.2.1 SECURE ADMIN SERVER REQUIREMENTS

- ✓ Hard disk space: 10 MB

2.1.2.2.2 SECUREADMIN CLIENT REQUIREMENTS

- ✓ Hard disk space: 25 MB <http://2.2.2.3.microsoft.net/>

2.1.2.2.3 MICROSOFT .NET FRAMEWORK 3.5 SP1 REQUIREMENTS

- ✓ Hard disk space: Up to 600 MB might be required

2.1.2.2.4 SUPPORTED OPERATING SYSTEMS

SecureAdmin Server and SecureAdmin Client support these operating systems:

- ✓ Windows Server 2003 R2
- ✓ Windows Server 2008
- ✓ Windows Vista
- ✓ Windows XP Service Pack 2 or higher

2.1.2.2.5 SQL SERVER 2008 EXPRESS EDITION

- ✓ Hard disk space: 350 MB of available hard-disk space for the recommended installation. Approximately 425 MB of additional available hard-disk space for SQL Server Books Online, SQL Server Mobile Books Online, and sample databases.
- ✓ During installation of SQL Server 2008, Windows Installer creates temporary files on the system drive. Before running setup to install or upgrade SQL Server, verify that at least 2.0 GB of disk space is available on the system drive for these files
- ✓ Actual Hard Disk Space Requirements: 280 MB for the recommended installation.

2.1.2.2.6 ORACLE 10G EXPRESS

- ✓ Hard disk space:
- ✓ Server component: 1.6 GB Client component: 75 MB

2.1.2.3 NETWORK REQUIREMENTS

- ✓ The V-Station 4G and V-Flex 4G devices function on 100 baseT networks.

2.1.2.4 SOFTWARE REQUIREMENTS

Both SecureAdmin Server and SecureAdmin Client require these software applications as prerequisites:

- ✓ .net Framework 3.5
- ✓ Windows Installer 4.5

If these applications are not already installed, they will get installed during the setup process.

SecureAdmin Server and SecureAdmin Client also require System Administrator access to install the application.

SecureAdmin uses a self-signed certificate (x.509 certificate) with a file extension of .pfx.

You have the option of installing your own certificate, which must be purchased from a recognized authority in advance. The SecureAdmin self-signed certificate is installed only with the SecureAdmin server component. No certificate is installed with the SecureAdmin client component, and during the client installation, you are asked to specify which type of certificate SecureAdmin server will be using (the self-signed certificate provided with the SecureAdmin server component installation or a signed certificate from another authority such as VeriSign).

2.1.3 UNPACK EQUIPMENT

Unpack all items and check against the packing list.

2.1.3.1 PARTS LIST

2.1.3.1.1 V-STATION 4G or V-FLEX 4G DEVICES

Hardware

- ✓ 1 V-Station 4G or V-Flex 4G device
- ✓ 1 Wall mounting plate/mullion mounting plate
- ✓ 6 #6-32 3/4" Philips pan-head screw
- ✓ 6 #6 1" Philips pan-head self-tapping screws
- ✓ 6 #4-8 1" nylon wall anchors
- ✓ 29 Crimp connector, B Wire (RoHS)
- ✓ 2 6-32 security screw, pin-in hex, 3/8
- ✓ 2 0.013" ID, 3/8" OD, 1/32" thick, fiber washers
- ✓ 1 Ethernet ferrite core
- ✓ 1 DC & I/O lines ferrite core
- ✓ 1 External power cable
- ✓ 1 External signal cable

- ✓ 1 Micro-USB device cable
- ✓ 1 Micro-USB PC cable

Tools

- ✓ 1 1/8" pin-in-hex security key 2.5

2.1.3.1.2 V-STATION 4G EXTREME DEVICES

Hardware

- ✓ 1 V-Station Indoor or Outdoor 4G device
- ✓ 29 Super B-Wire Connectors, Dolphin DC-100-S
- ✓ 2 dielectric grease (maybe 1 is enough, need to try out)
- ✓ 1 Cable, User Wiegand, 4G Outdoor
- ✓ 8 wall mount anchor, conical, for #8 screws
- ✓ 1 8-32x11/32"UNC K-Lot Hex nut RoHS
- ✓ 1 8-32-MALE-FEMALE-HEXSTAND-1.25L
- ✓ 1 mech, AS101001_ACTUATOR_MAGNET
- ✓ 8 #8x1" thread forming screw, pan head, philips,
- ✓ 6 6-32 Security Screw 1/8" pin-in-hex 3/8" length
- ✓ 1 Stainless Steel, Wall Mount Plate with Magnetic Reader, 4G Outdoor
- ✓ 1 Cable, MicroUSB PC, NGV
- ✓ 1 Cable, MicroUSB Device, NGV
- ✓ 1 Cable, User Comm and Ctrl, 4G Outdoor
- ✓ 1 Cable, User TTL, 4G Outdoor

2.1.3.1.4 FingerVein STATION 4G

Hardware

- ✓ 1 FingerVein Station 4G
- ✓ 1 Wall mounting plate/mullion mounting plate
- ✓ 8 #6-32 3/4" Philips pan-head screw
- ✓ 8 #6 1" Philips pan-head self-tapping screws
- ✓ 8 #4-8 1" nylon wall anchors
- ✓ 29 Crimp connector, B Wire (RoHS)
- ✓ 2 6-32 security screw, pin-in hex, 3/8
- ✓ 2 0.013" ID, 3/8" OD, 1/32" thick, fiber washers
- ✓ 1 Ethernet ferrite core
- ✓ 1 DC & I/O lines ferrite core
- ✓ 1 External power cable
- ✓ 1 External signal cable
- ✓ 1 Micro-USB device cable
- ✓ 1 Micro-USB PC cable

Tools

- ✓ 1 1/8" pin-in-hex security key 2.5

2.1.3.1.4 DOCUMENTATION

- ✓ 1 Installation Guide (on Installation CD)
- ✓ 1 Operator's Manual (on Installation CD)
- ✓ 1 Quick Start Guide (on Installation CD and printed copy in package)

Documentation for your new device is installed onto your computer when you install the SecureAdmin software. The product documentation is also available online at: <http://www.l1id.com/pages/450-product-manuals>

The documentation is provided in Adobe Acrobat format (PDF). The Adobe Acrobat Reader application is available on the Installation CD or at: <http://www.adobe.com>

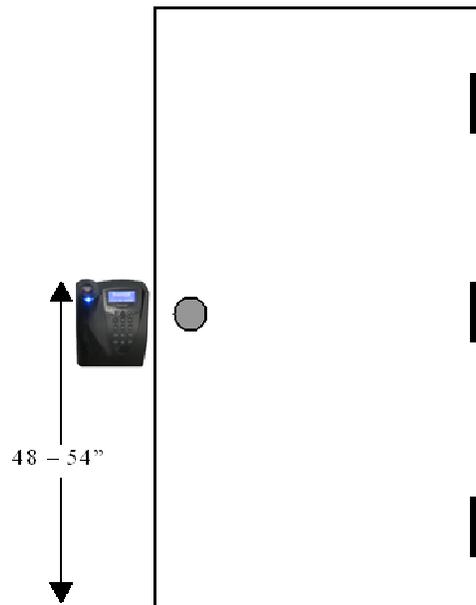
2.1.4 CHOOSING THE INSTALL LOCATION

V-Station 4G and V-Flex 4G devices are designed to mount on either a double-gang electrical box or on any flat surface. Consult with local professionals regarding any building and safety codes that might affect your installation. The correct mounting height is shown below.

Factors to consider when determining the position of a device on the wall:

- ✓ Proximity to other switch plates or fixtures (the device should ideally be mounted in-line with other plates or fixtures)
- ✓ Distance from the floor to the top of the device (L-1 Identity Solutions recommends using a height between 48 and 54 inches).
- ✓ The device should be mounted on the knob-side of the door
- ✓ Compliance with the Americans with Disabilities Act if in the United States. Information about <http://www.usdoj.gov>.

Figure 2-1 Correct Mounting Height



2.1.5 PLAN DEVICE NETWORK

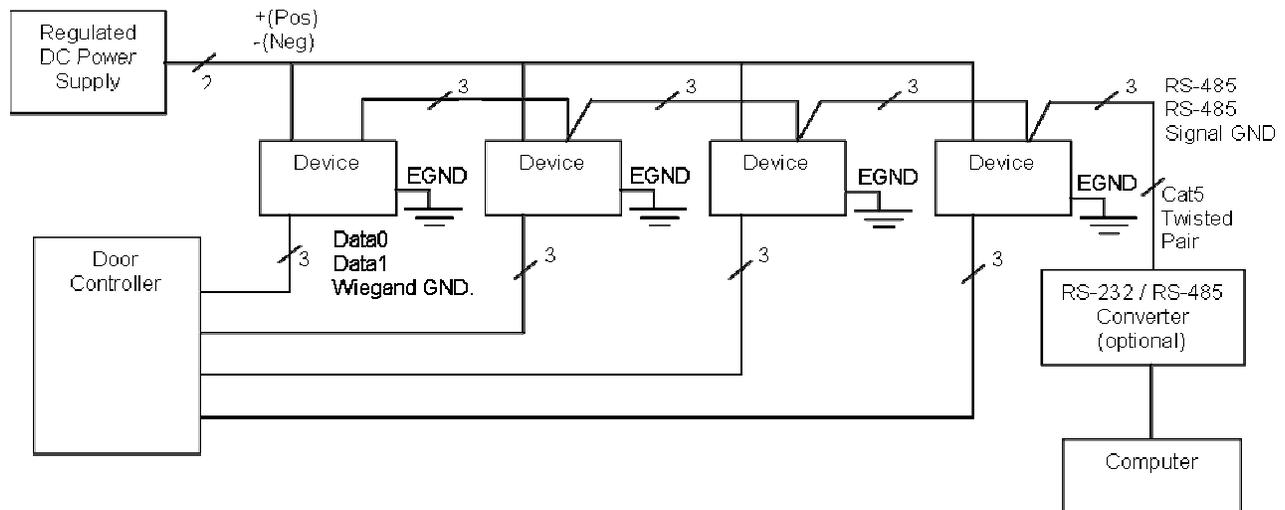
The 4G devices feature a built-in single-door relay that allows them to control a single door lock. They can therefore function on their own or as part of a larger access control system.

System component selection is specific to each installation, but a minimum system would consist of a finger-scan device mounted on or near an access point, an electric lock, and cabling.

A more complex system might consist of devices at multiple access points (each with an electric door lock), a multi-point controller, networking, and a PC to run the access controller and SecureAdmin Server software.

See the diagram below for an example (non-Ethernet) system diagram.

Figure 2-2 Example RS-485 System Diagram



Installation of locks and access controllers should be completed according to their respective manufacturers' specifications and in accordance with all local codes. Final connections to the device are explained in more detail in Chapter 4.

To avoid externally generated transients, do not run any wires near utility AC power wiring, lightning rod grounding wire, etc. Grounding equipment is required for ESD protection and safety.

2.1.6 CHOOSE NETWORK TYPE

If your installation requires the use of network communications, then the choice of cable, the cable run length, the network topology, and the termination of the network are important aspects that must be considered. The V-Station 4G and V-Flex 4G devices can be networked using RS-232, RS-485, or Ethernet protocols.

The table below outlines relevant parameters of the RS-485, RS-232, and 100 baseT Ethernet communication protocols.

Table 2-1 Communications Network Comparison

Spec	RS-485	RS-232	100BaseT
------	--------	--------	----------

Spec	RS-485	RS-232	100BaseT
Mode of Operation	Differential DC Coupled	Single-ended DC Coupled	Multi
DC Isolation	No	No	No
Maximum Distance	4000 feet	150 feet	330 feet
Number of Devices on one line	31	1	Unlimited
Maximum Data Rate	56 Kbps (recommended)	56 Kbps* (recommended)	Auto-negotiated

2.1.6.1 RS-232

If your system has only one device, or a few devices (each only a short distance away from the SecureAdmin PC) then RS-232 can be used, provided that each device can have a dedicated RS-232 port.

With RS-232 at 9600 baud, a distance of 150 feet is possible with shielded cable, but at 56 Kbps, a maximum of only 20 feet is recommended.

2.1.6.2 RS-485

RS-485 has two distinct advantages over the more common RS-232. First, it allows you to connect up to 31 4G devices to a PC with an external RS-232 to RS-485 converter (available from L-1 Identity Solutions). Second, the RS-485 specification allows for cable

run lengths up to 4000 feet (1200 meters) at modest baud rates.

An RS-485 network is required instead of RS-232 if:

- ✓ Multiple devices must be connected together so that templates can be distributed among the devices
- ✓ The installation has only a single device, but it is over 150 feet (45 meters) from the host PC.

2.1.6.2.1 RS-485 CABLE SPECIFICATION

V-Station 4G devices provide a 2-wire, half-duplex RS-485 interface. The main cable run should be low capacitance, twisted-pair cable, with approximately 120 -ohm characteristic impedance. Category-5 rated communications cable is used in RS-485 networks and its characteristics are defined below. This is the recommended cabling for

RS-485 communications. The cable connection includes a differential line (+ and -) and a GND connection.

Table 2-2 Category 5 Cable Characteristics

Specification	Recommendation
Capacitance (conductor to conductor)	<20 pF/ft.
Characteristic Impedance	100 - 120 ohms
Nominal DC resistance	<100 ohms/1000 ft.
Wire gauge	24 AWG stranded
Conductors/Shielding	>2 pair (shielding is recommended)

2.1.6.2.2 RS-485 CABLE LENGTHS

As outlined in the RS-485 specification, the total length of the communication cable (adding up all of the segments of the run) should not exceed 1200 meters (4000 feet). Although the RS-485 specification calls for a maximum cable length of 1200 meters and provides a maximum baud rate well above that of the 4G device, a more conservative system should be configured to no more than 1000 meters and run at a baud rate of 9600 bits per second. After the network is configured and is running in a stable manner, the baud rate can be increased if faster network communications are desired.

Drops (down-leads, stubs, T-connections, etc.) to equipment are not recommended, but if required, should not exceed one foot) and should use the same cable recommended above. On a long stub, a signal that travels down the wire reflects to the main line after hitting the input impedance of the device at the end. This impedance is high compared with that of the cable and the net

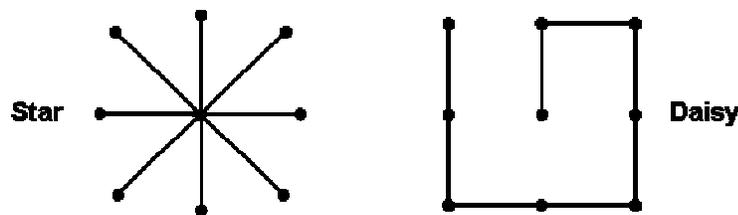
effect is degradation of signal quality on the bus.

2.1.6.2.3 RS-485 NETWORK TOPOLOGY

Communication cables for RS-485 should be laid out in a daisy chain configuration (See Figure 2-3 below). Long stubs or drop downs and the star configuration should be avoided because they create discontinuities and degrade signal quality. The star configuration usually does not provide a clean signaling environment even if the cable runs are all of equal length. The star configuration also presents a termination problem, because terminating every endpoint overloads the driver. Terminating only two endpoints solves the loading problem, but creates transmission line problems at the unterminated ends. A true daisy chain configuration avoids these problems.

	NOTICE
	<p>The device on the end of the network should be terminated with a 120 ohm resistor.</p>

Figure 2-3 Network Topologies Star and Daisy Chain Configurations



	NOTICE
	<p>A Daisy configuration is recommended over a Star configuration..</p>

2.1.6.3 ETHERNET

If your system is to be configured for use over Ethernet, the wiring will be slightly different. Communication cables for Ethernet logically form a straight line bus but the more devices on that bus, the less efficient the network becomes due to increased collisions, and the weaker the signal will get over distance. Repeaters can be used to boost the signal strength; however, a better solution is to place switches at intermediate positions along the bus. The most common Ethernet topology in use today is the star configuration with a hub or switch in the center.

2.1.6.4 WIRELESS NETWORK DESIGN CONSIDERATIONS

A wireless network of V-Station 4G offers several advantages over wired networks, such as convenience, speed of installation, and less wiring. If you are planning to design a wireless network, consider these points:

Wireless signal interference Metal masses such as HVAC ducts, fire doors, vents, stairs, etc. disrupt wireless signals. Building and stairwell structures, as well as internal

building walls, also impede wireless signals. Some electrical equipment, such as microwaves, large-screen TVs, cordless telephones are also known to affect wireless signals. Consider the proximity of devices to these objects.

Distance from access points How far a device is from the closest access point plays a major factor in determining the stability and strength of the wireless signal.

Multiple Access Points "Repeaters" or multiple access points can solve signal strength problems that may be caused by either distance or loss due to interference.

2.1.7 CHOOSE POWER SOURCE

V-Station 4G and V-Flex 4G devices can be powered by several methods:

- ✓ 1 2V DC regulated adapter/bullet jack (4G Indoor only)
- ✓ Power Over Internet (POE) through an inline PoE 802.3af power injector
- ✓ Power Over Internet (POE) through an inline PoE36U-1AT-R power injector (4G Extreme with heater only)
- ✓ 2-pin mini connector with dedicated power source (4G Indoor only)
- ✓ 3-wire cable (4G Extreme).

Power sources should be:

- ✓ Isolated from other equipment
- ✓ Filtered
- ✓ Protected by an Uninterruptible Power Supply (UPS) or battery backup
- ✓ Protected by a voltage suppression device if transient electrical surges are an issue in the location.

When planning a system, know the power requirement of each device. If multiple devices are to share a common power supply, exercise care to avoid excessive voltage loss on the wires. Voltage loss can lead to communication problems when devices are talking and/or listening on different ground references.

Voltage loss is directly proportional to wire resistance and the current the wire carries. Always place the device as close as possible to the power supply and always select a wire size appropriate for the load. V-Station 4G devices run on DC power between 12.5 and 24 VDC.

Power requirements for all V-Station 4G and V-Flex 4G models are listed below.

Table 2-3 V-Station 4G, V-Flex 4G and FingerVein Station 4G Power Requirements

Power Requirement:	12 watts
Input Voltage Range:	12-24.0 VDC
Peak Current (12 VDC)	1 A
Peak Current (24 VDC)	500 mA

Table 2-4 V-Station 4G Extreme Power Requirements

Power Requirement	12 watts
Input Voltage Range	12-24.0 VDC @ 3 Amps
Peak Current (12 VDC)	1 A
Peak Current (24 VDC)	500 mA
Cooler Module	12 to 24VDC @ 10Amps

Most power supplies on the market today provide good input and output isolation. However, power supplies which do not provide isolation (or have high leakage capacitance), coupled with accidental AC power line interchanges, present serious ground fault problems for installers. With a ground fault, the signal reference between subsystems may be 115 VAC apart. If these subsystems are interconnected, the large potential difference can cause equipment damage or personal injury. L-1 Identity Solutions recommends using a dedicated regulated DC power supply.

All factory-supplied power supply assemblies are either switching or regulated linear supplies and are isolated for safety and to minimize ground loop problems.

CHAPTER 3 - INSTALL SOFTWARE

CHAPTER OVERVIEW

This chapter shows how to install, repair, modify, upgrade, and uninstall the SecureAdmin Server and Client software packages.

3.1 INSTALL SOFTWARE

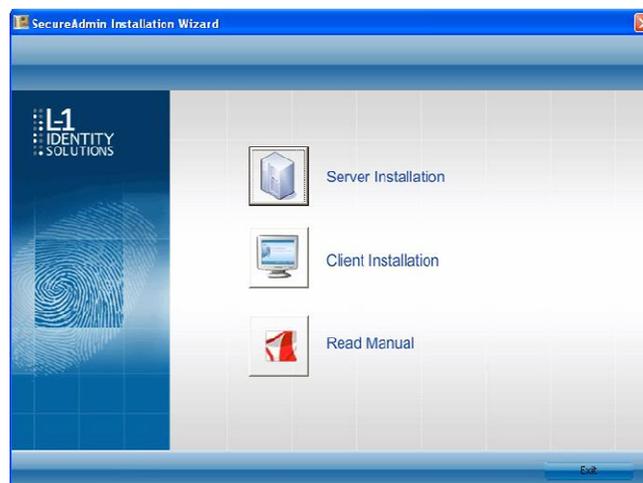
To install the SecureAdmin software, the user must have Administrator rights. Any software required to install SecureAdmin is detected and installed automatically during the setup process.

3.1.1 SECUREADMIN SERVER

To install the SecureAdmin Server software, follow these steps:

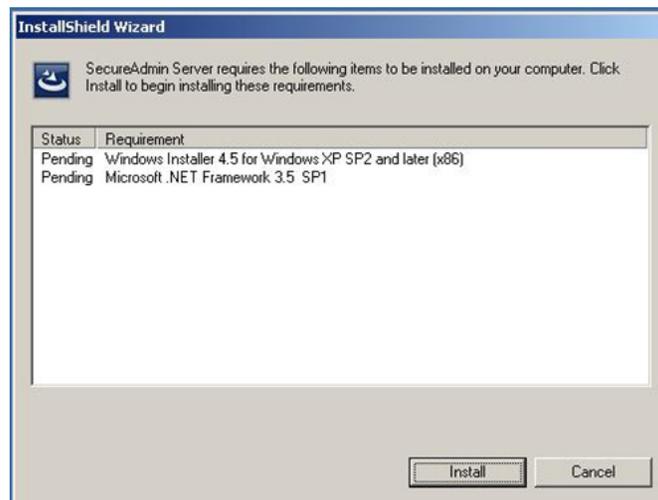
Insert the CD into the optical drive. If Autoplay is enabled, the installation process will start automatically. A menu is displayed. If Autoplay is not enabled, start the installation process manually by doubleclicking the Setup.exe file located in the "Bioscryptsetup" folder on the root of the CD.

Figure 3-1 Install Menu



Click **Server Installation**. The **InstallShield Wizard** starts and the target system is examined for prerequisite software. Any necessary software is listed.

Figure 3-2 Prerequisites



Click **Install** . Microsoft .NET Framework 3.5 SP1 is installed. Restart the computer when asked. The installation process continues automatically after the computer is restarted. Repeat the same process for Windows Installer 4.5.

Figure 3-3 Restart Message

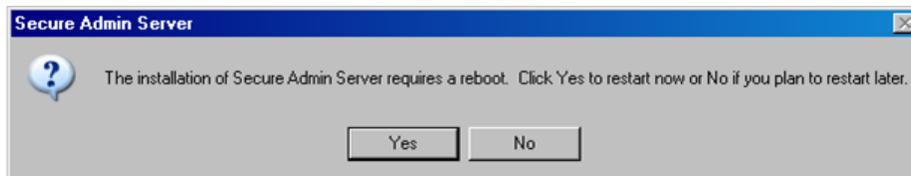
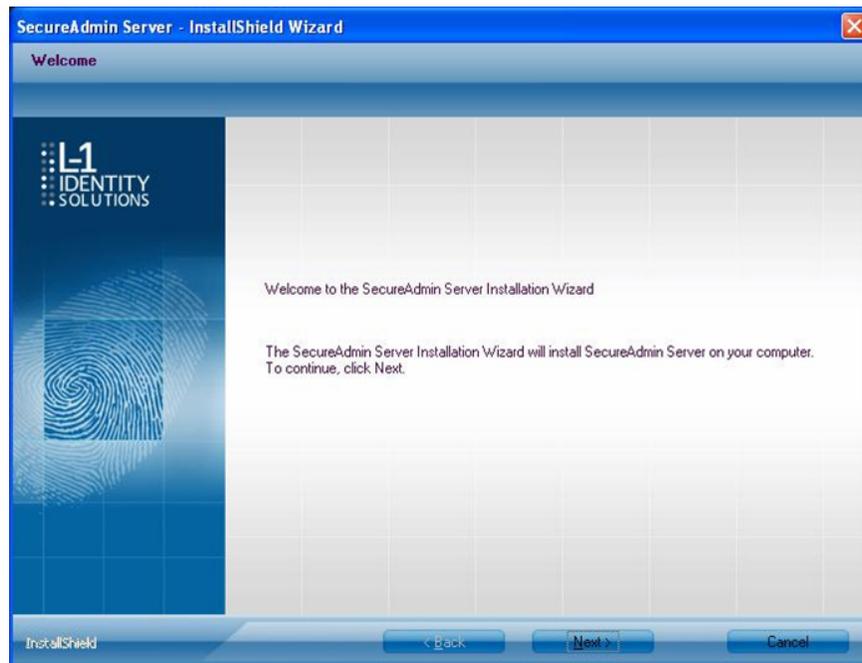
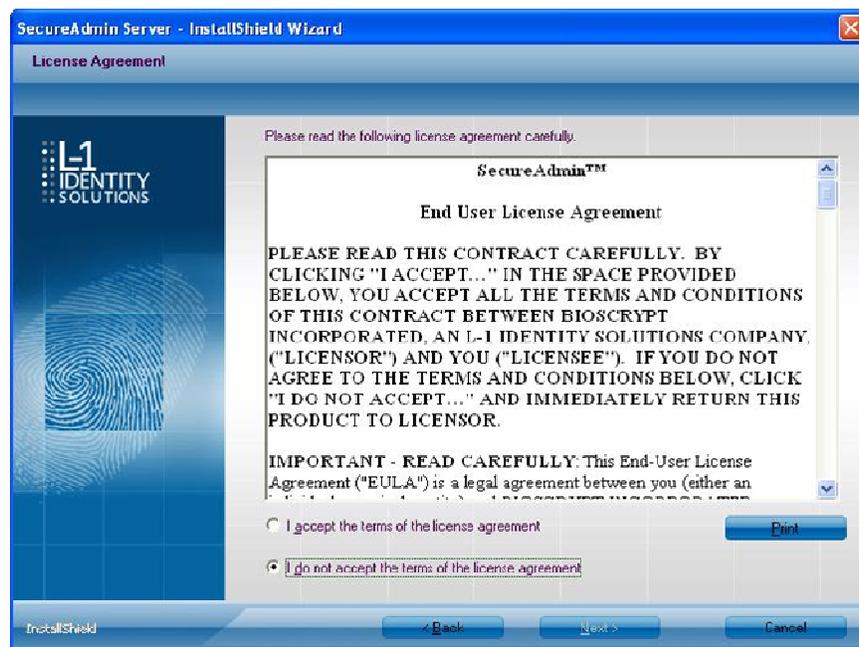


Figure 3-4 SecureAdmin Server Installation Wizard



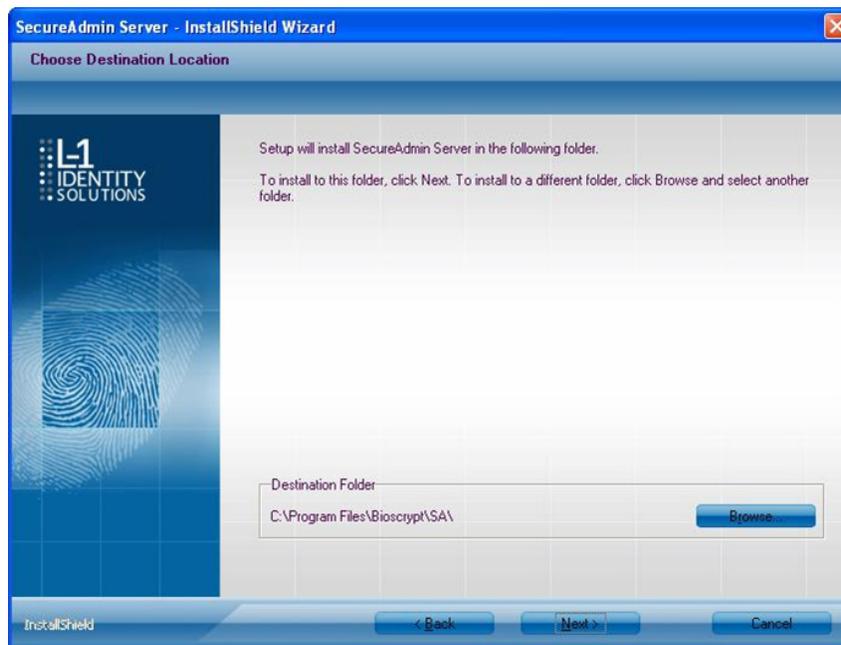
The **Secure Admin Server Installation Wizard** is displayed. Click Next to continue the setup process.

Figure 3-5 SecureAdmin Server License Agreement



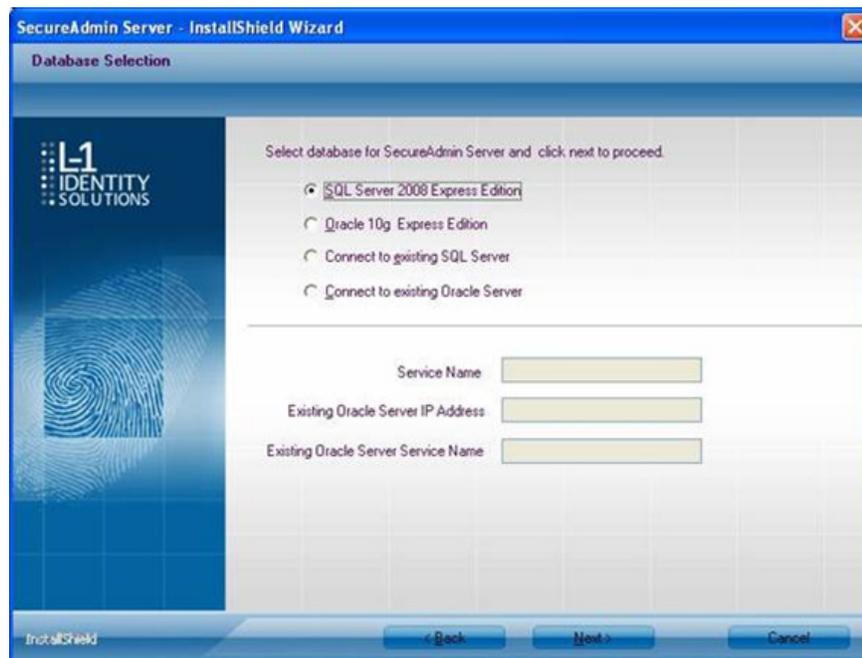
The L-1 Identity Solutions License Agreement is displayed. Select the appropriate radio button to agree with the terms and then click the **Next** button (You must accept the terms of the licence agreement to continue the installation process).

Figure 3-6 SecureAdmin Server Choose Destination Location



The **Choose Destination Location** screen is displayed. Accept the default installation folder and click the Next button or click Browse to choose your own installation path. After you specify a destination folder, the Database Selection screen is displayed.

Figure 3-7 Database Selection

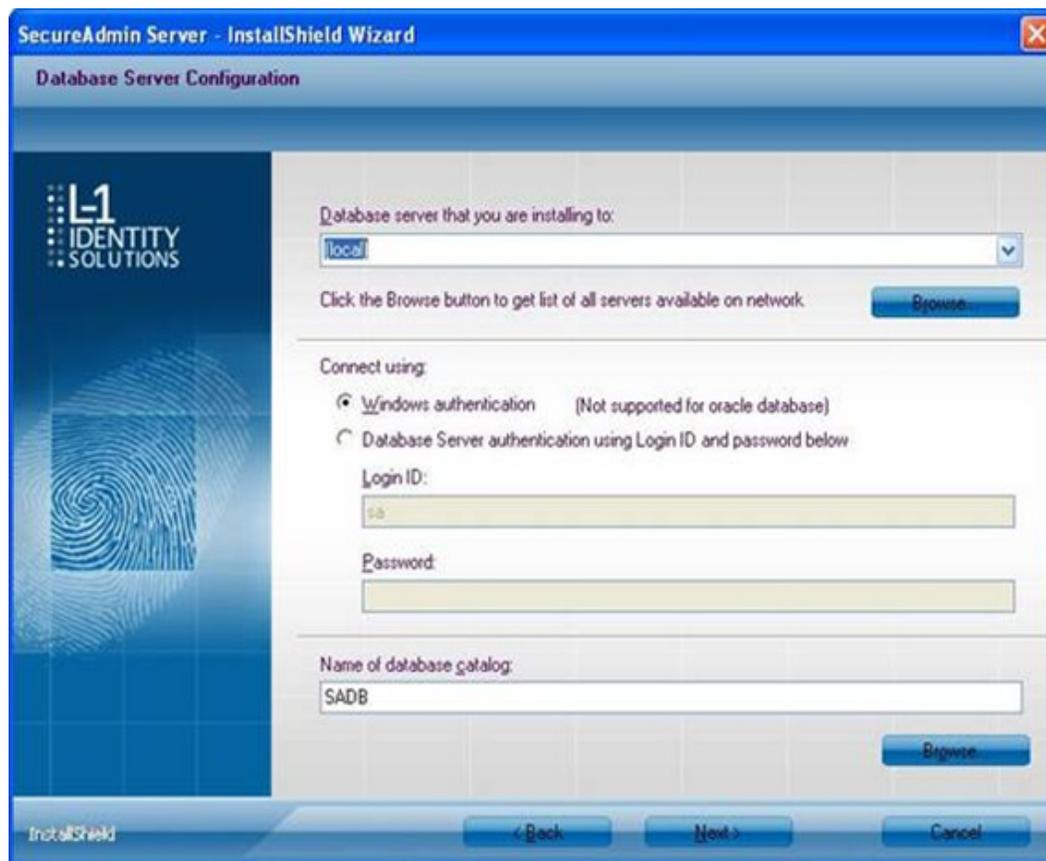


Using the radio buttons, select the type of database application you intend to work with, or select an existing database. Click the **Next** button.

If you selected the SQL Server 2008 Express Edition option, it will be installed locally if it is not already installed.

- ✓ Select **SQL Server 2008 Express Edition** option to install SQL Server 2008 on the local machine and Click **Next**.
- ✓ Select Windows **authentication** or **Database server authentication** option and enter a valid login ID and password values.
- ✓ Enter the **name of the database catalog** or click **Browse** to select an existing database catalog.
- ✓ Click **Next** to continue.

Figure 3-8 Connecting to SQL Server option



If you selected Connect to Existing SQL Server option,

- ✓ Select **Connect to Existing SQL Server** option and Click on Next.

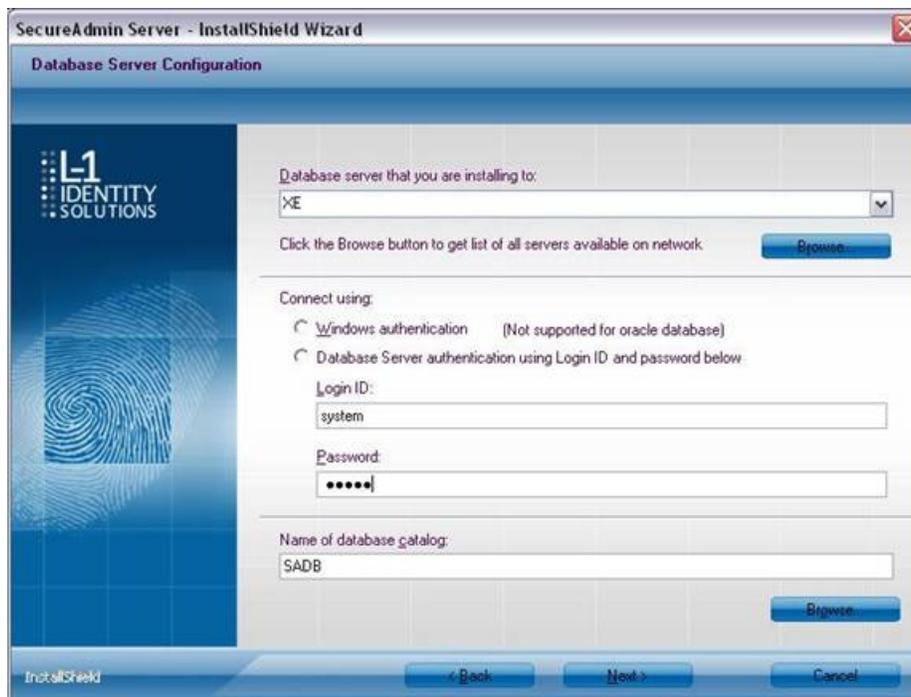
- ✓ You can select existing database instance of SQL Server 2005 or SQL Server 2008 as required from the drop-down of **Database server that you are installing to**.
- ✓ Select the **Database server authentication** option and enter valid Login ID and password values.
- ✓ Accept the default database catalog or click **Browse** to select a different database catalog.
- ✓ Click **Next** to continue

If you selected the Oracle 1 0G Express Edition option, it will be installed locally if it is not already installed.

If you selected Connect to Existing Oracle Server option,

- ✓ Select **Connect to Existing Oracle Server** option and Click **Next**.
- ✓ Select the **Service name**, existing **Oracle Server IP Address** and **Existing Oracle Server Service** name.
- ✓ Accept the default database catalog or click **Browse** to select a different database catalog.
- ✓ Click **Next** to continue.
- ✓ Select **database server** and enter valid Login Id and password. Accept the default database catalog or click **Browse** to select a different database catalog.
- ✓ Click **Next** to continue.

Figure 3-9 Database Server Configuration



3.1.1.1 REPAIRING AN INSTALLATION OF SECUREADMIN SERVER

To repair an installation:

1. Login as **Administrator** and go to the Install.

Double-click the **Setup.exe** installer file to start the installer.

On the L1 Identity Solutions screen, select the **Server Installation** option.

On the **SecureAdmin Welcome** screen, select the **Repair** option. Click **Next** to continue.

On the **Maintenance Complete** screen, click the **Finish** button to complete the repair installation process.

3.1.1.2 UNINSTALLING SECUREADMIN SERVER

Uninstall SecureAdmin Server by using either the **Add/Remove Program** function in Windows or by using the **Remove** option from the installation file as outlined below.

You can also uninstall SecureAdmin Server by using the Remove option within the installation file. Follow the instructions above for repairing an Installation. Select the Remove option instead of the **Repair** option, then follow the prompts.

3.1.1.3 UPGRADING AN INSTALLATION OF SECUREADMIN SERVER

Installer of SecureAdmin supports upgrading SecureAdmin server from existing (currently installed) version to a newer one.

1. When you run the setup of SecureAdmin server, it checks to see if previous version of SecureAdmin server is already installed on the machine. If yes, it prompts to upgrade SecureAdmin server. Click **Yes** to continue with upgrade install.

Figure 3-10 Upgrade Confirmation

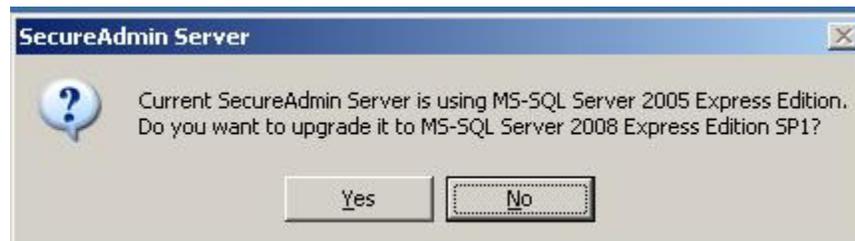


If you have installed previous version of SecureAdmin server with SQL Server 2005, installer prompts to upgrade from SQL Server 2005 to SQL Server 2008. Click **Yes** if you intend to migrate to SQL Server 2008.

Clicking **Yes** will install SQL Server 2008 locally if it is not installed. It will upgrade existing SQL Server 2005 database catalog and migrate it to SQL Server 2008.

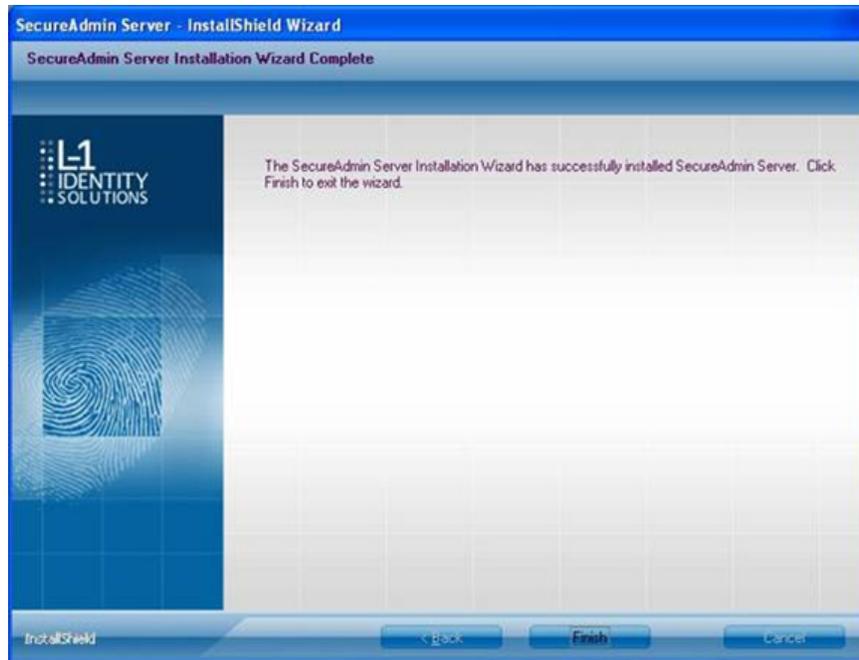
Clicking **No** will upgrade existing SQL Server 2005 database catalog.

Figure 3-11 Upgrade from MS-SQL Server 2005 Express Edition Confirmation



Click Finish. This completes the SecureAdmin server installation and exits the installer

Figure 3-12 SecureAdmin Server Installation Complete

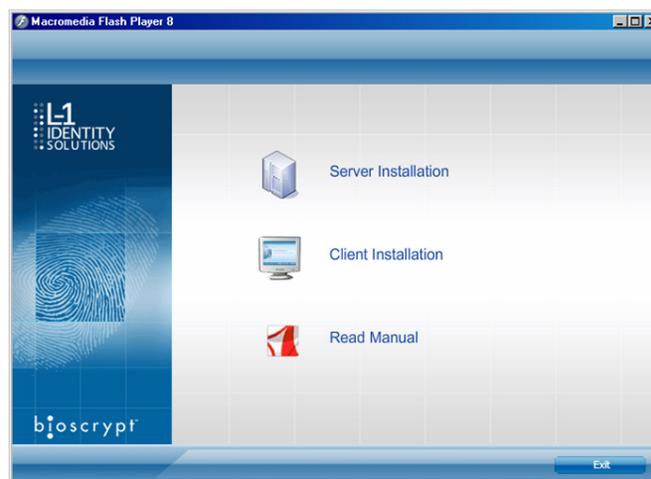


3.1.2 SECUREADMIN CLIENT

To install the SecureAdmin client software, follow these steps:

1. Insert the CD into the optical drive. If Autoplay is enabled, the installation process will start automatically. A menu is displayed. If Autoplay is not enabled, start the installation process manually by doubleclicking the **Setup.exe** file located in the SecureAdmin folder on the CD.

Figure 3-13 Menu



Click **Client Installation**. The InstallShield Wizard is started and the target system is examined. The **Welcome** screen is displayed.

Figure 3-14 InstallShield Wizard

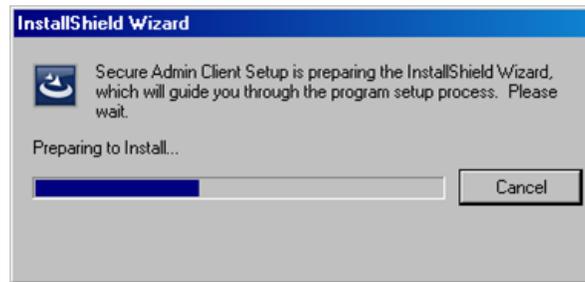
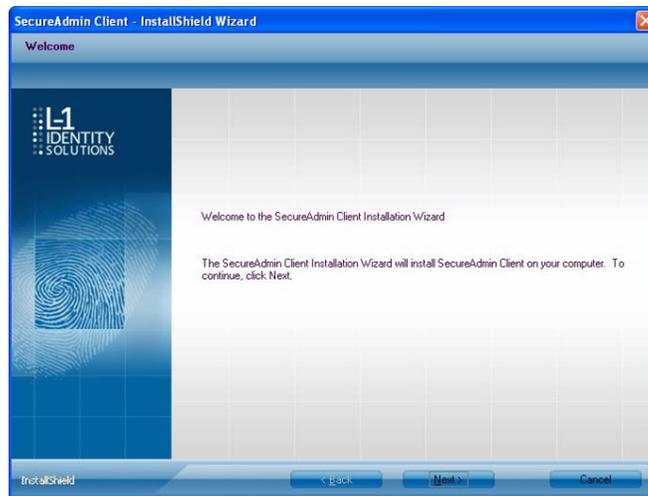
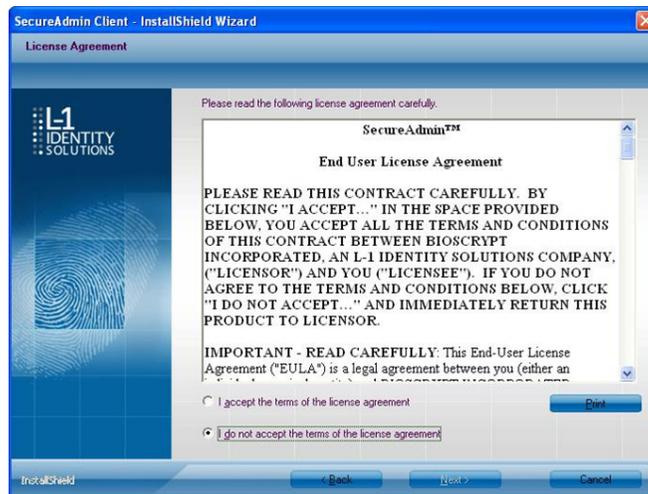


Figure 3-15 Welcome Screen



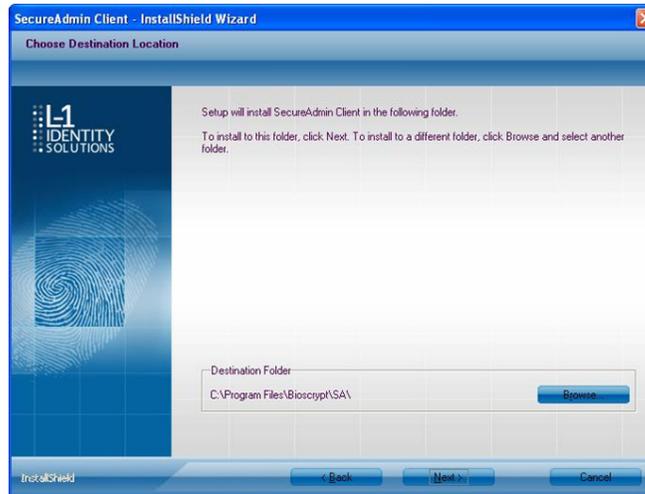
Click the **Next** button to continue. The **License Agreement** screen is displayed.

Figure 3-16 SecureAdmin Client License Agreement



The L-1 Identity Solutions License Agreement is displayed. Select the appropriate radio button to agree with the terms and then click the **Next** button. The **Choose Destination Location** screen is displayed.

Figure 3-17 SecureAdmin Client Choose Destination Location



Accept the default installation folder and click the **Next** button or click Browse to choose your own installation path. After you specify a destination folder, the **Fingerprint Selection Feedback** selection screen is displayed.

Figure 3-18 Fingerprint Placement Feedback Option Selection

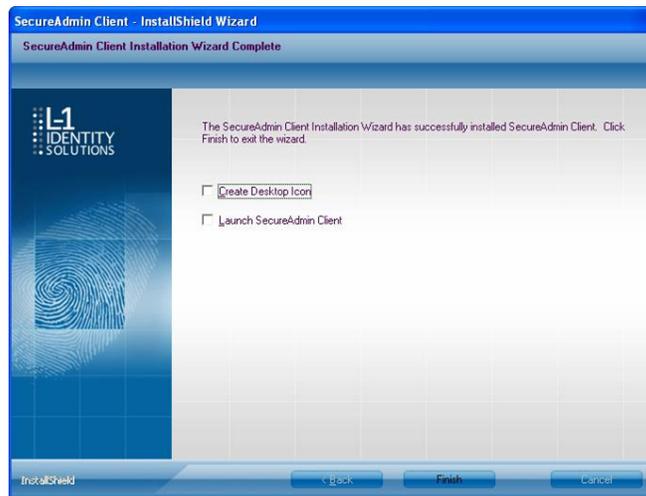


Select the appropriate radio button to either display or to not display fingerprint data. If **Display Fingerprint Image is selected**, a fingerprint will be displayed while enrolling templates. If the **Display Fingerprint Placement Feedback** option is selected, then SecureAdmin displays crosshair placement feedback instead of fingerprint images while enrolling templates.

Click the **Next** button. The InstallShield Wizard completes the installation and displays a **Finished** screen.

Select either or both of the optional Check **Create Desktop Icon** and **Launch Secure Admin Client** check boxes.

Figure 3-19 InstallShield Wizard Finished



Click the **Finish** button.

3.1.2.1 MODIFYING AN INSTALLATION OF SECUREADMIN CLIENT

To modify an installation:

1. Login as **Administrator** and go to the Secure Admin installer.

Double-click the **Setup.exe** installer file to start the installer.

On the L1 Identity Solutions screen, select the **Client Installation** option.

On the Secure Admin Welcome screen, select the **Modify** option. Click **Next** to continue.

Select the appropriate **Fingerprint Placement Feedback** option. If **Display Fingerprint Image** is selected, fingerprints will be displayed while enrolling templates. If **Display Fingerprint Placement Feedback** is selected, SecureAdmin displays crosshair feedback instead of fingerprint images while enrolling templates.

Click **Next** to continue.

On the **Maintenance Complete** screen, click the **Finish** button to complete the modified installation.

3.1.2.2 REPAIRING AN INSTALLATION OF SECUREADMIN CLIENT

To repair an installation:

1. Login as **Administrator** and go to the Secure Admin installer.

Double-click the **Setup.exe** installer file to start the installer.

On the L1 Identity Solutions screen, select the **Client Installation** option.

On the SecureAdmin Welcome screen, select the **Repair** option. Click **Next** to continue.

On the **Maintenance Complete** screen, click the **Finish** button to complete the repair installation process.

3.1.2.3 UNINSTALLING SECUREADMIN CLIENT

Uninstall SecureAdmin Client by using either the **Add/Remove Program** function in Windows or by using the **Remove** option from the installation file.

To uninstall SecureAdmin client by using the **Remove** option within the installation file, follow the instructions for repairing an installation. Select the **Remove** option instead of the **Repair** option, then follow the prompts.

3.1.2.4 UPGRADING AN INSTALLATION OF SECUREADMIN CLIENT

To upgrade a previous version of SecureAdmin Client, first uninstall the older version using Windows **Add/Remove Programs** or the SecureAdmin installer, then re-install the new version of SecureAdmin Client.