

CHAPTER 4 - INSTALL HARDWARE

CHAPTER OVERVIEW

This chapter explains how to install a V-Station 4G or V-Flex 4G device, how to mount a wall plate, how to attach a device to a wall plate, and how to make the required electrical connections to the device.

4.1 INSTALL HARDWARE

4.1.1 WALL-MOUNTING SCHEMES

The V-Station 4G and V-Flex 4G devices are mounted, by use of a mounting plate, either directly to a wall or to an electrical box recessed in the wall. The V-Station 4G device can be flush mounted only. The V-Flex 4G device can be either flush or recess-mounted on a wall.

The V-Station 4G Extreme devices are mounted, by use of a stainless steel mounting plate, directly to a wall.

4.1.2 INSTALLING A MOUNTING PLATE

The procedure for mounting a wall plate directly to a wall is as follows:

Hold the mounting plate onto the wall in the desired location, trace the square hole that will be cut out, and mark the mounting screw locations. Note that for the V-Flex 4G, the large square hole is at the bottom and for the V-Station 4G the hole is to the right.

Cut out the square hole with a jigsaw or drywall saw. If the V-Flex 4G device is to be recess-mounted, cut out a hole in the drywall to accommodate the rear extension on the device housing.

Drill holes for the nylon wall anchors and install them.

Fish wires through the wall to the square hole.

Align the hole in the wall plate with the hole in the wall.

Fasten the mounting plate to the nylon wall anchors in the wall with the provided screws.

If the V-Flex 4G device is to be recess-mounted on an electrical box, a double gang box is required to accept the rear extension of the housing.

If mounting the V-Station 4G device to an electrical box, attach the mounting plate to a single

gang box and use wall anchors on the remaining four holes for additional security.

To install the mounting plate on to an electrical box, screw the mounting plate to the box with the provided 6-32 screws.


	<p>CAUTION</p>
	<p>When installing a recess-mounted V-Flex 4G device, be careful not to damage the tamper switch, as careless handling can shear it off.</p>

Figure 4-1 V-Flex 4G Flush-mount Mounting Plate

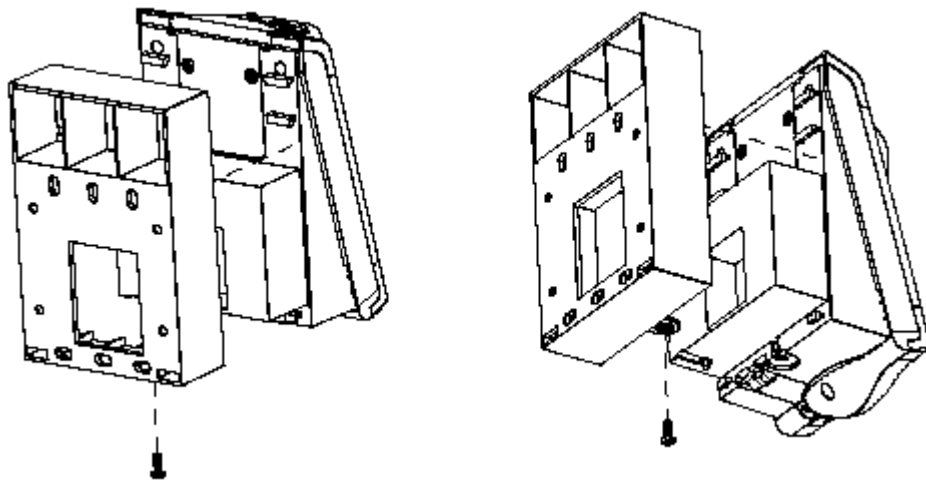


Figure 4-2 V-Flex 4G Recessed-mount Mounting Plate

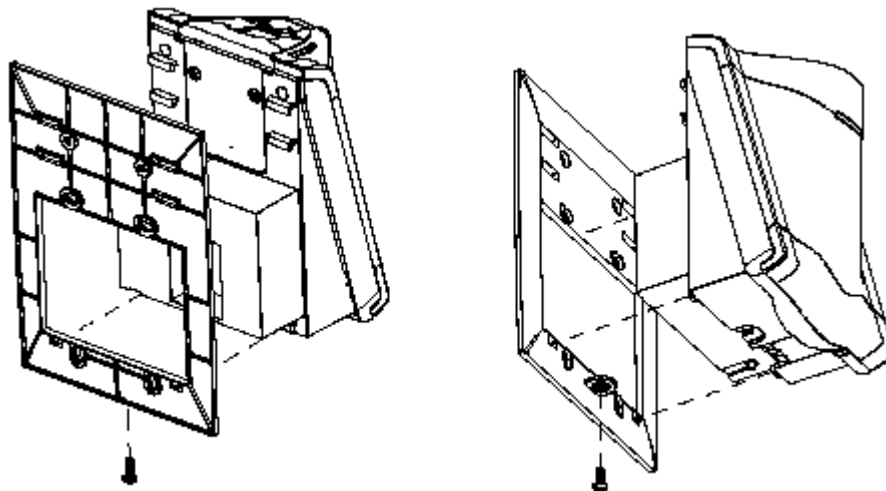
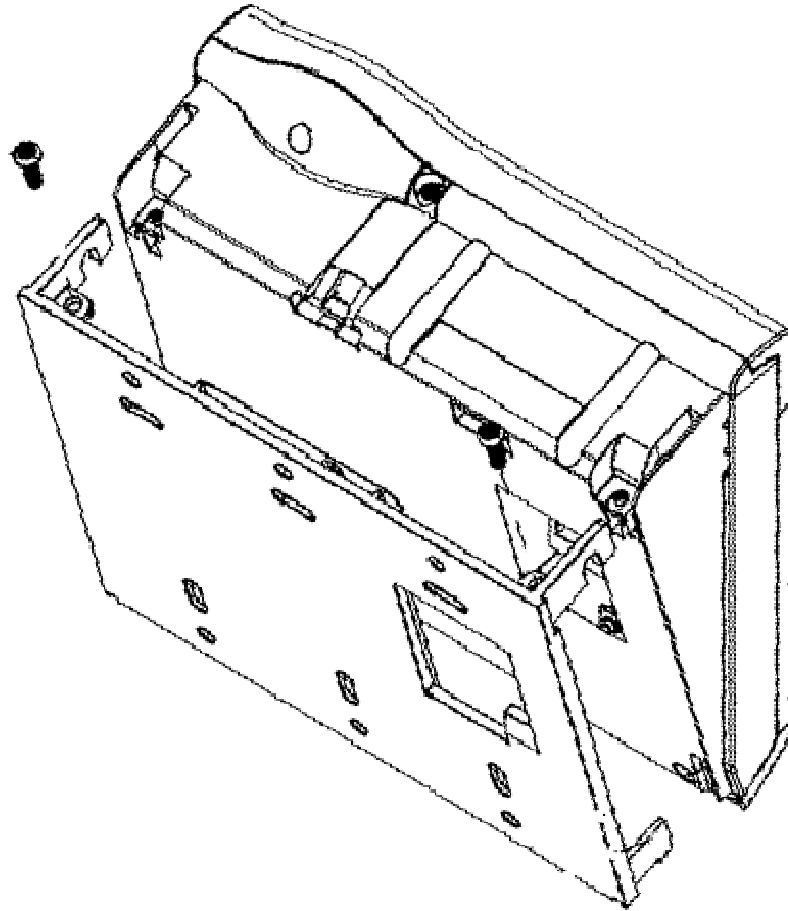


Figure 4-3 V-Station 4G Mounting Plate



NOTICE

The V-Station 4G device can only be flush mounted.

Figure 4-4 FingerVein Station 4G Mounting Plate

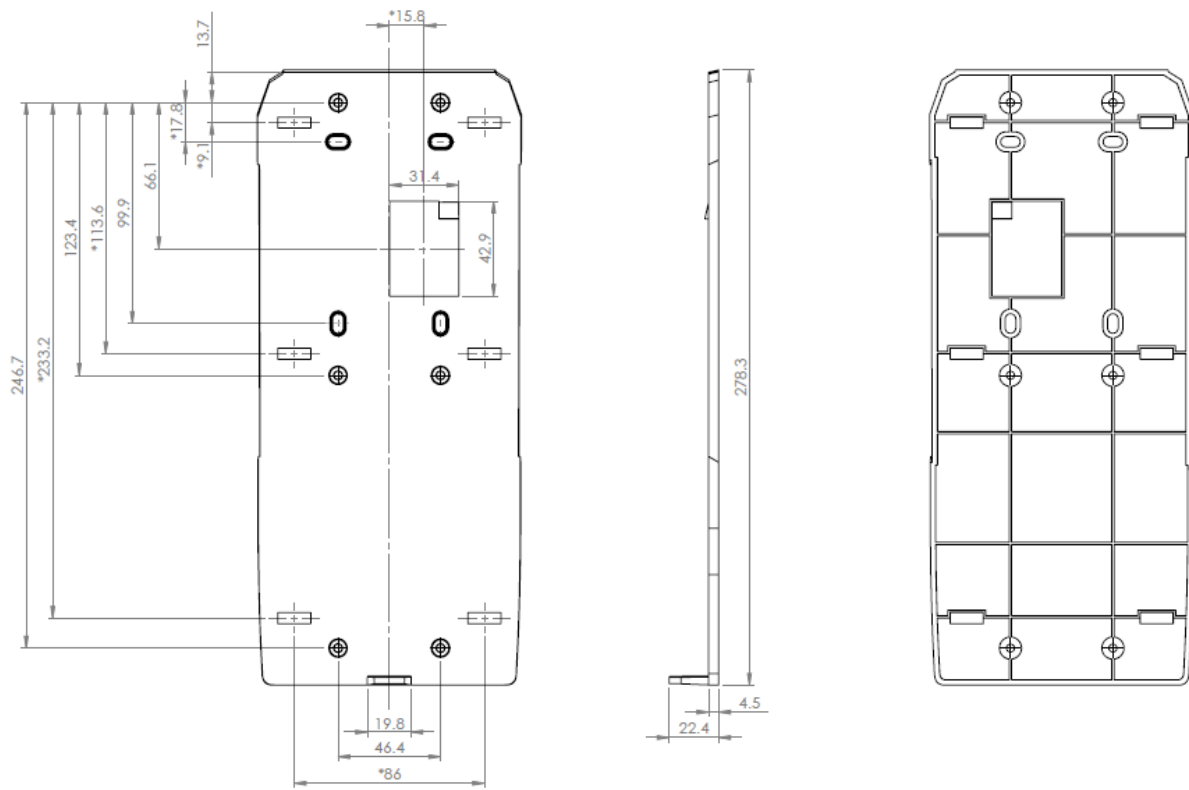


Figure 4-5 V-Station 4G Extreme Mounting Plate

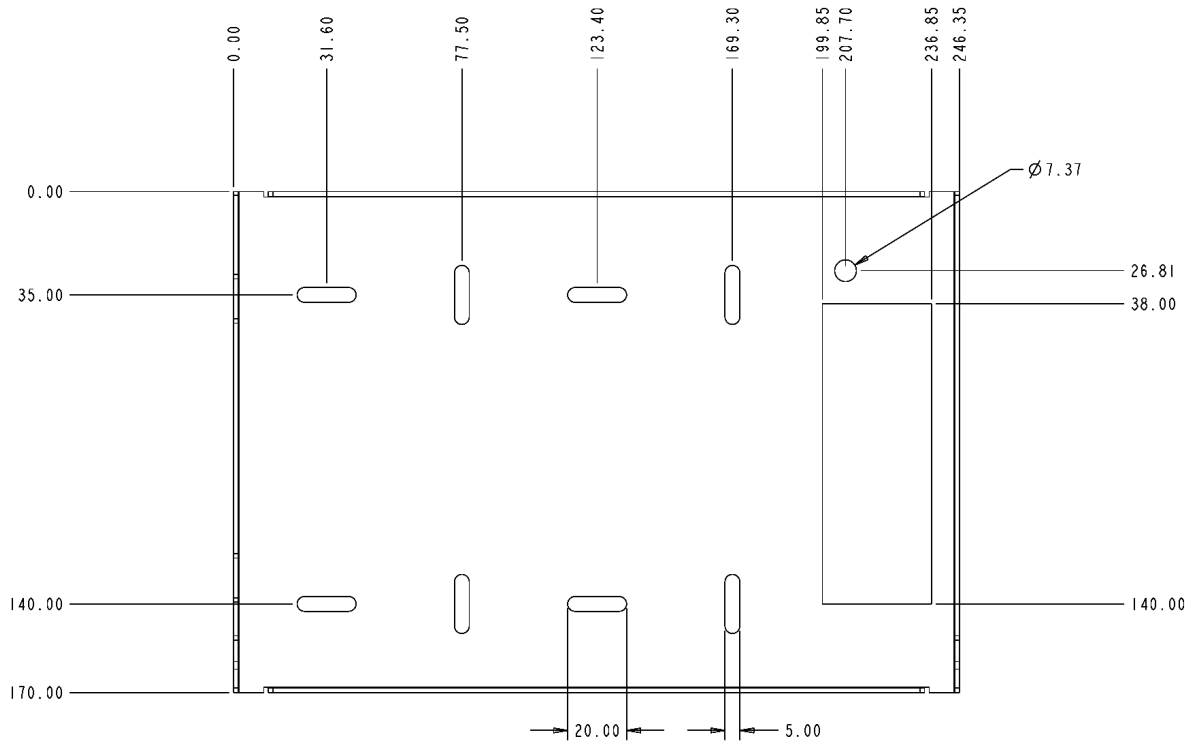
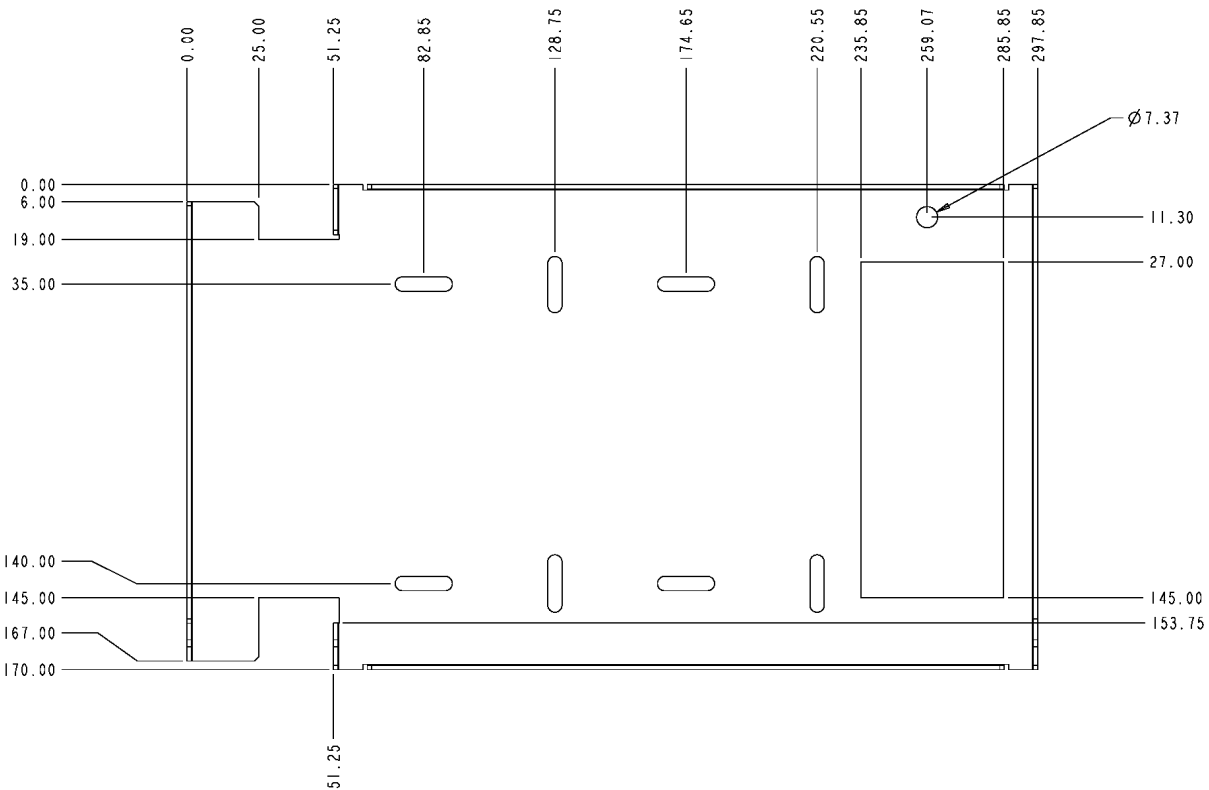


Figure 4-5 4G Extreme PIV/TWIC Mounting Plate



4.1.3 INSTALLATION HARDWARE

4.1.3.1 4G V-Station and V-Flex Indoor devices

Quantity

- ✓ 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

The hardware shown above is provided to mount the mounting plate to the wall and the V- Station 4G or V-Flex 4G device to the mounting plate.

4.1.3.2 4G Extreme Devices

- ✓ 1 Stainless Steel, Wall Mount Plate
- ✓ 8 wall mount anchor, conical, for #8 screws
- ✓ 6 6-32 Security Screw 1/8" pin-in-hex 3/8" length

- ✓ 8 #8x1" thread forming screw, pan head, Philips
- ✓ 8 wall mount anchor, conical, for #8 screws

4.1.4 ATTACH DEVICE TO MOUNTING PLATE

4.1.4.1 4G V-STATION AND V-FLEX INDOOR DEVICES

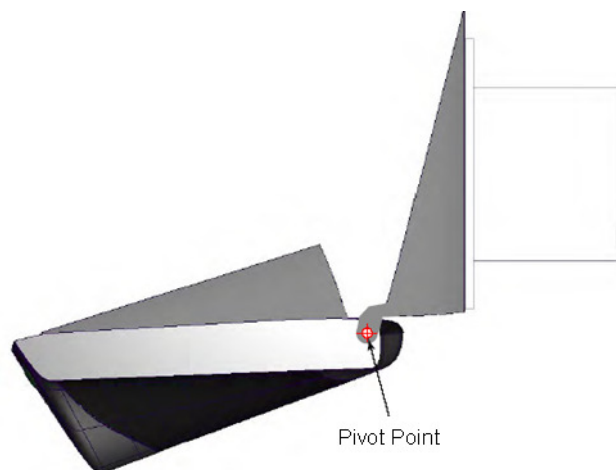
Once all the electrical connections have been made to the device, it can be attached to the mounting plate as follows:

For the V-Flex 4G, insert the four hooked protrusions on the rear of the device into the corresponding slots on the mounting plate. Hold the device against the plate and gently press it in a downward direction to engage the hooks. Insert the star-shaped screw at the bottom center of the mounting plate and tighten with the wrench provided. Do not over-tighten.

For the V-Station 4G, hold the device with the top slightly tilted toward you, at about a 30-degree angle to the wall. Hold the bottom of the device against the mounting plate and lower it so that the two hooks on the bottom of the mounting plate engage the corresponding slots on the device. When the hooks are properly engaged, the top of the device can be pivoted up against the mounting plate. It will drop down slightly, locking itself in the closed position, and should be secured in this position with the star-shaped screws in the holes at the right and left ends on the bottom of the device. Do not over-tighten.

With the securing screws removed, the V-Station 4G device can be pivoted down 90 degrees from the wall, to allow access for making connections, etc. The device can be removed from the mounting plate by tilting it at an angle approximately 30 degrees to the wall and gently lifting it up off the hooks on the mounting plate.

Figure 4-6 Device Open for Installation or Service



4.1.4.2 4G EXTREME DEVICES

TBD

4.1.5 CONNECT DEVICE TO POWER SOURCE

The V-Station 4G and V-Flex 4G, and 4G Extreme devices can be powered by 12V-24V DC power sources, or through a Power Over Ethernet (PoE) injector for V-Station 4G and V-Flex 4G.

The two options for providing 12V power to V-Station 4G and V-Flex 4G devices are by using an external wall plug-in adapter (Figure 4-7), or through external wiring and a mini plug (Figure 4-8).

12V power can be provided to 4G Extreme devices only through the 3-Wire back cable (Figure 4-9).

Figure 4-7 Connections for an External Wall Adapter (4G Indoor)

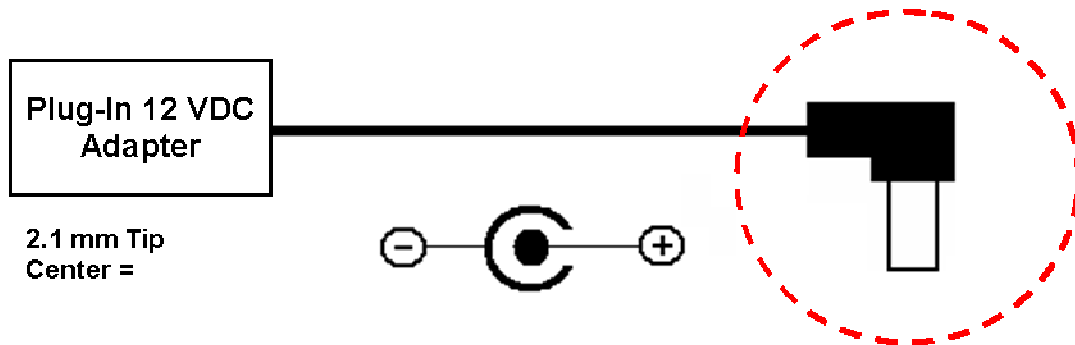


Figure 4-8 Connections for an External Power Source (4G Indoor)

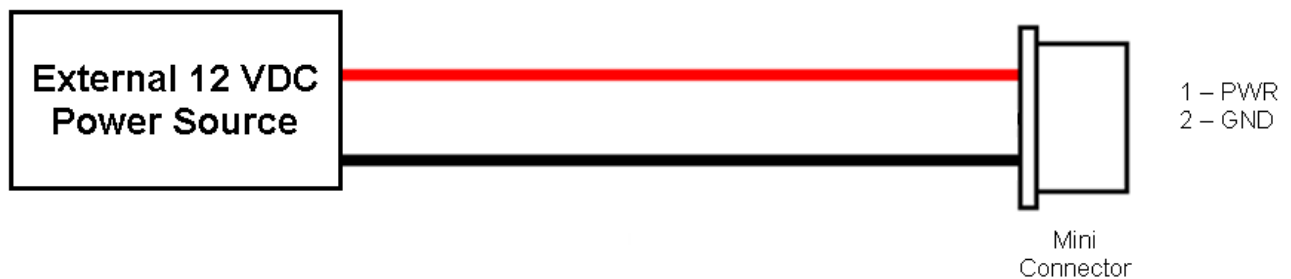


Figure 4-9 Connections for an External Power Source (4G Extreme)



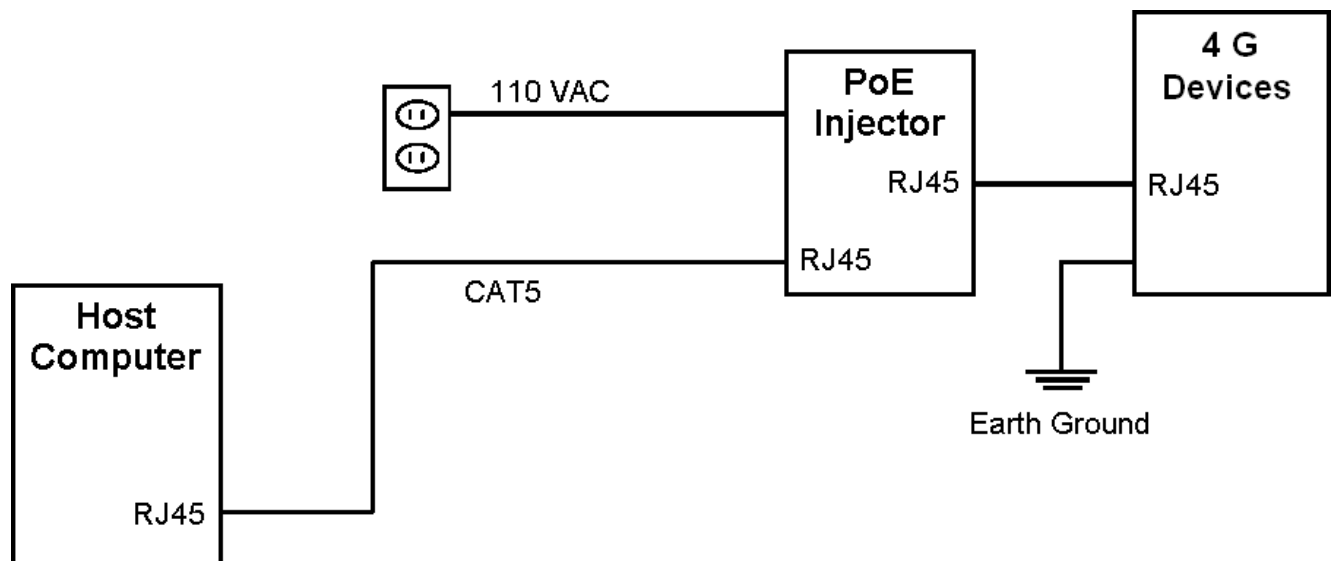
The V-Station 4G, V-Flex 4G devices both support Power over Ethernet (PoE), using their RJ-45 Ethernet interface. When these devices are to be powered over Ethernet, an IEEE 802.3af compliant Active Midspan Injector must be used. Such an injector is not supplied with L-1 Identity Solutions products. An example of a suitable PoE injector is Model No. AT-61 01 G from Allied Telesis Inc. (<http://www.alliedtelesis.com>).

Any such device should carry at least one of the certifications shown below and should be FCC listed.

Figure 4-10 Certification Marks



Figure 4-11 Power Over Ethernet Connection



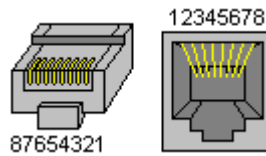
Specifications for suitable PoE Injectors for 4G Indoor devices are as follows:

- ✓ Input voltage: 90-264 VAC, 60 Hz
- ✓ Input current: 0.4A @ 100 VAC
- ✓ Output voltage: -48 VDC
- ✓ Output current: 0.32A
- ✓ Power: 15.36 W

For Power over Ethernet, RJ-45 pin numbers 4, 5 are considered VB1 (+) positive DC supply, and pin numbers 7, 8 are VB2(-) DC return.

Detailed RJ-45 pin assignments for PoE are given in Table PoE Pin Assignments, and the physical location of the pins in the RJ-45 connector.

Figure 4-12 RJ45 Pin Location



4.1.6 CONNECT DEVICE TO NETWORK

The V-Station 4G and V-Flex 4G devices support both RS-232/RS-485 and Ethernet 10baseT and 100baseTX network protocols.

4.1.6.1 ETHERNET NETWORK CONNECTIONS

Ethernet connections to the device are made through a standard RJ-45 connector on the back of the device.

4.1.6.2 RS-232/RS-485 NETWORK CONNECTIONS

To connect a device to an RS-232 or RS-485 network, connect the appropriate wires to the provided pigtail in accordance with the pin-out diagram.

Table 4-1 Pin-out Diagram

Connector Pin No.	Wire Color	Connector Pin No.	Wire Color
Pin1 (<i>RS485A</i>)	Blue	Pin2 (<i>RS232_RX</i>)	Violet/White
Pin3 (<i>RS485B</i>)	Blue/Black	Pin4 (<i>RS232_TX</i>)	Violet
Pin5 (<i>SGND</i>)	Black/Red	Pin6 (<i>SGND</i>)	Black/Red
Pin7 (<i>WIEGAND_LED_IN0</i>)	Grey/Black	Pin8 (<i>WIEGAND_DIN0</i>)	Green/White
Pin9 (<i>Not Connected</i>)		Pin10 (<i>WIEGAND_DIN1</i>)	White/Black
Pin11 (<i>WIEGAND_LED_OUT0</i>)	Brown/Green	Pin12 (<i>WIEGAND_DOUT0</i>)	Green
Pin13 (<i>WIEGAND_LED_OUT1</i>)	Brown/Black	Pin14 (<i>WIEGAND_DOUT1</i>)	White
Pin15 (<i>TTL0UT_OH</i>)	White/Brown	Pin16 (<i>WGND</i>)	Black/White
Pin17 (<i>TTL0UT_OL</i>)	White/Red	Pin18 (<i>TTLIN0</i>)	Yellow/Blue
Pin19 (<i>TTL0UT_1H</i>)	Brown/White	Pin20 (<i>TTLIN1</i>)	Blue/Brown
Pin21 (<i>TTL0UT_1L</i>)	Yellow/Black	Pin22 (<i>TTLIN2</i>)	Brown/Violet
Pin23 (<i>TTL0UT_2H</i>)	Grey/Orange	Pin24 (<i>TTLGND</i>)	Green/Brown
Pin25 (<i>TTL0UT_2L</i>)	White/Green	Pin26 (<i>RELAY_NC</i>)	Orange
Pin27 (<i>RELAY_NO</i>)	Yellow	Pin28 (<i>RELAY_COM</i>)	Grey

When connecting the device to the network, the following procedures must be followed:

- ✓ Use Category 5 cabling with a characteristic impedance of 120 ohms for RS-485 networks. Category 5 cables with a characteristic impedance of 100 ohms can also be used, but with lower performance.
- ✓ Cable manufacturers provide cables with multiple twisted pairs designed for this type of communication (characteristic impedance is 120 ohm).
- ✓ Unused pairs within the cable must be terminated with characteristic impedance (100 or 120 ohm) on both ends.
- ✓ AWG 24 should be considered as the minimum gauge.
- ✓ Choose one twisted pair of conductors to use for RS-485 differential connections, other conductors should be used for Signal Ground (RS-485 GND on Weidmuller connection).
- ✓ The RS-232 to RS-485 converter must support Sense Data to be able to switch from Send to Receive mode.
- ✓ Check each device's cabling for ground faults before connecting to an RS-485 network.
- ✓ Each device should have pin 3 of the mini-connector connected to earth ground.

After all devices are configured and connected to the RS-485 network, the baud rate can be increased to the highest supported rate (some experimentation might be required).

4.1.6.3 WIRELESS NETWORK CONNECTIONS

After the physical installation, the device can be configured for wireless network connection. The wireless network can be set up either through SecureAdmin (see Chapter 7 in the Operator's Manual) or through the front panel of the V-Station 4G device.

To set up wireless operation through the front panel of a V-Station 4G device, perform the following steps:


2. Power up the device.

Ensure that the wireless network is functioning.

Use one of these supported modes:

- ✓ WEP Open
- ✓ WPA Personal

✓ WPA2 Personal.

	NOTICE
	L-1 Identity Solutions does not recommend using the "No encryption" mode.

Enter the Admin menu on the device by pressing the Left arrow and Enter keys simultaneously.

Key in the Admin password (default is "0000") and press OK.

Select the Communications icon and press OK

Select "Network Interface" and press OK.

Select "WLAN" Configuration and press OK.

Select Managed/Adhoc mode from WLAN Network type.

Select the intended wireless networks.

Enable WLAN mode from WLAN parameters.


Choose Encryption mode and encryption .

Enter the key.

Select "DHCP" or "Static" and press OK. If you selected "DHCP", the device reboots.

Afterwards, it will have a dynamic IP address. If you selected "Static IP", specify an IP, a Net Mask, a Gateway, and then press OK.

SecureAdmin can scan for and auto-detect wireless devices. If you want to use SecureAdmin to scan for wireless devices, ensure that the "multicasting" option is enabled in your router.

	NOTICE
	The maximum recommended distance from an access point is 25 feet.

4.1.7 SINGLE-DOOR CONTROLLER INSTALLATION

The V-Station 4G and V-Flex 4G devices incorporate an internal relay that enables them to operate a deadbolt/door strike directly.

**WARNING**

The internal relay is limited to a maximum current of 170 mA. If the deadbolt/ doorstrike to be controlled draws more than 170 mA, damage to the device may occur. If the deadbolt/door strike load exceeds 170 mA, an external relay must be used, as described below. Do not use the same power supply to power a V-Series 4G device and a door strike.

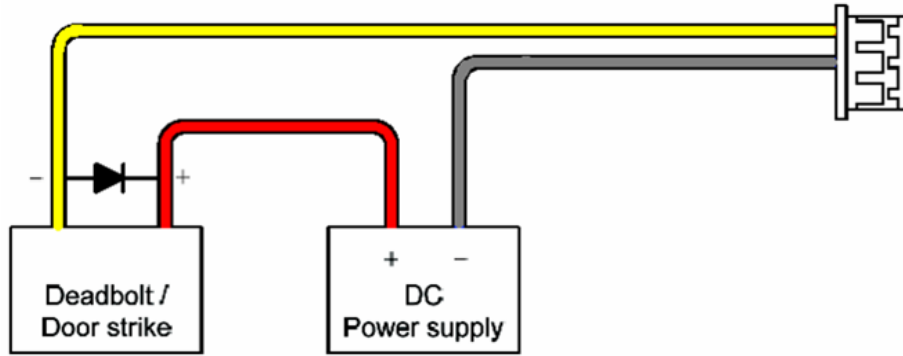
Assuming the current drawn by the deadbolt/door strike is less than 170 mA, the connections between the V-Station 4G or V-Flex 4G device, deadbolt/door strike, and power supply for the deadbolt/door strike should be made. Note that a snubber diode (1 N4007 or equivalent) must be connected across the deadbolt/door strike to protect the DC power supply from inductive kickback.

**CAUTION**

The snubber diode and DC power supply for the deadbolt/door strike are not supplied with the V-Station 4G and V-Flex 4G devices. The power supply should be specified in accordance with the voltage and current requirements of the deadbolt/door strike, but it must be ensured that the current to operate the dead bolt/door strike does not exceed 170 mA.

If the current required to operate the deadbolt/door strike exceeds 170 mA, an external relay must be used in conjunction with the V-Station 4G or V-Flex 4G device. The external relay must be specified so that its contacts are rated to carry the current required by the deadbolt/door strike, and that the current required to operate its energizing coil is within the 170 mA capacity of the V-Station 4G or V-Flex 4G device's internal relay.

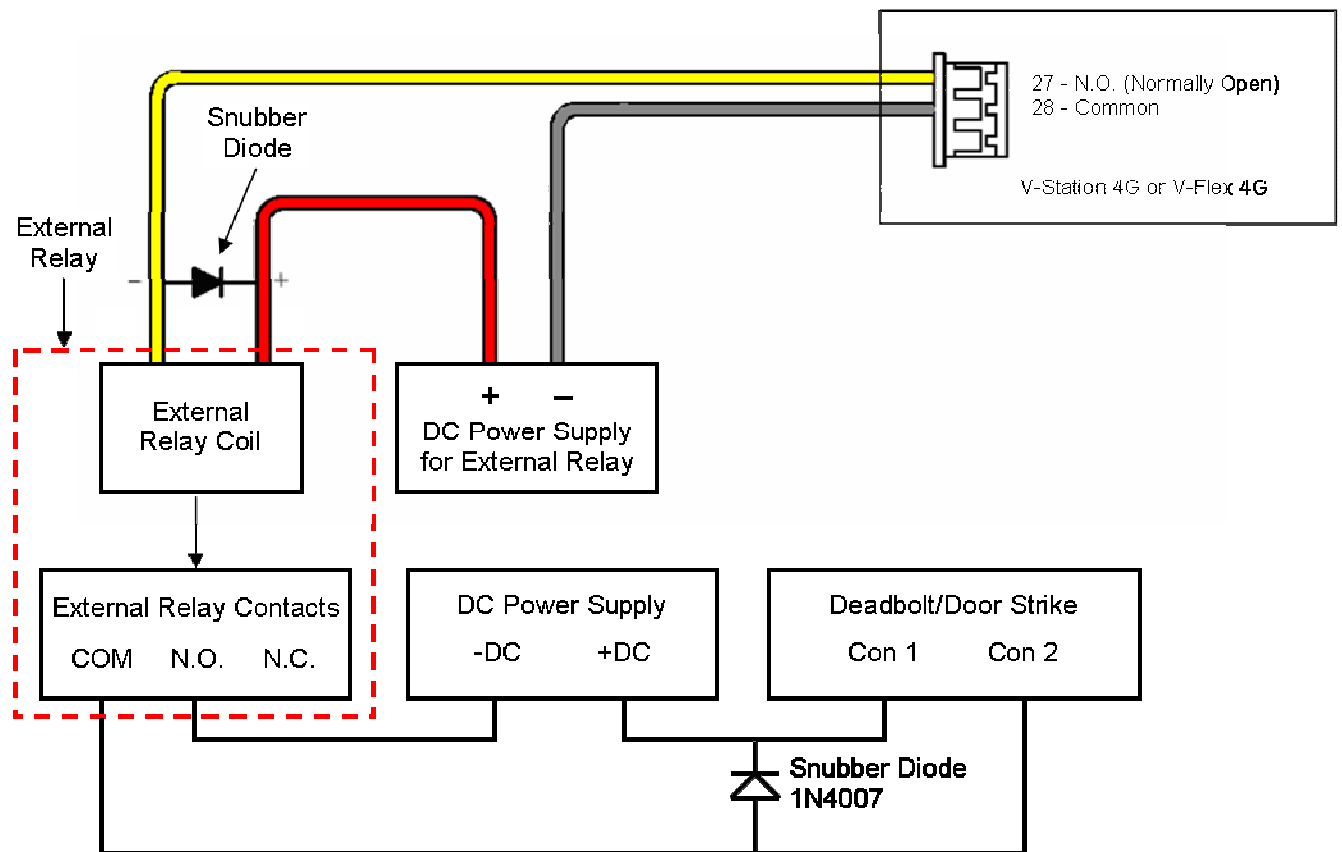
Figure 4-13 Connections for Internal Relay Operation



The power supply for the external relay must be chosen to match the operating voltage and current of the external relay coil, but its voltage must not exceed the V-Station 4G or V-Flex 4G device's internal relay maximum voltage rating of 250 volts.

The external relay should be connected. Note that snubber diodes (1 N2007 or equivalent) should be connected across the external relay coil and the deadbolt/door strike.

Figure 4-14 Connections for External Relay Operation



4.1.8 AUX PORT

The Aux port is a USB 2.0 auto-negotiate connector located on the bottom of the device. To access the Aux port, the Aux port door must first be removed. Use the provided pin-in-hex security key to remove the #6-32 security screw retaining the plastic Aux port door. Gently remove the plastic Aux port door to reveal the USB connector.

To attach a USB memory key or other "gadget" serial device by way of the Aux port, use the USB Type A female to USB Micro A/B male adapter cable provided in the installation kit.

The Aux port is used to transfer files to and from the device. Audio, images, firmware, logs, and configuration files can be transferred quickly and easily to a device without the need for a computer.

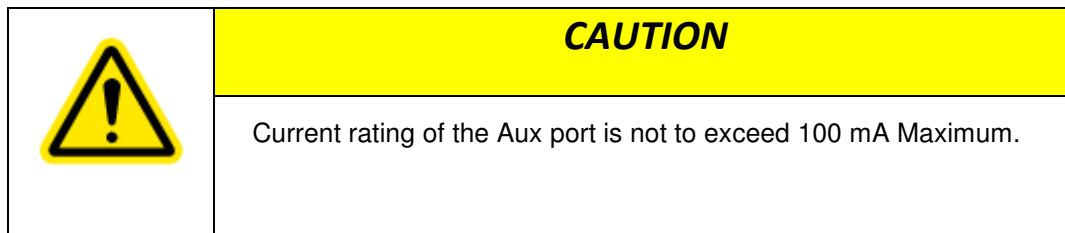


Figure 4-15 Location of Aux Port (V-Station 4G)

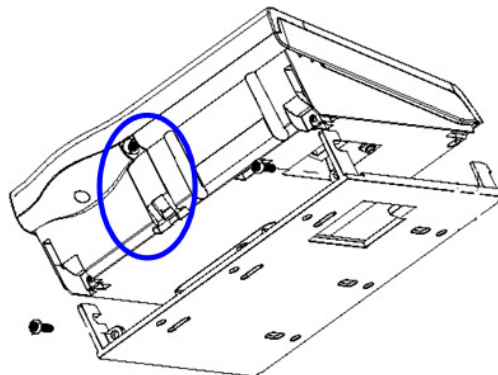


Figure 4-16 Location of Aux Port (FingerVein Station 4G)

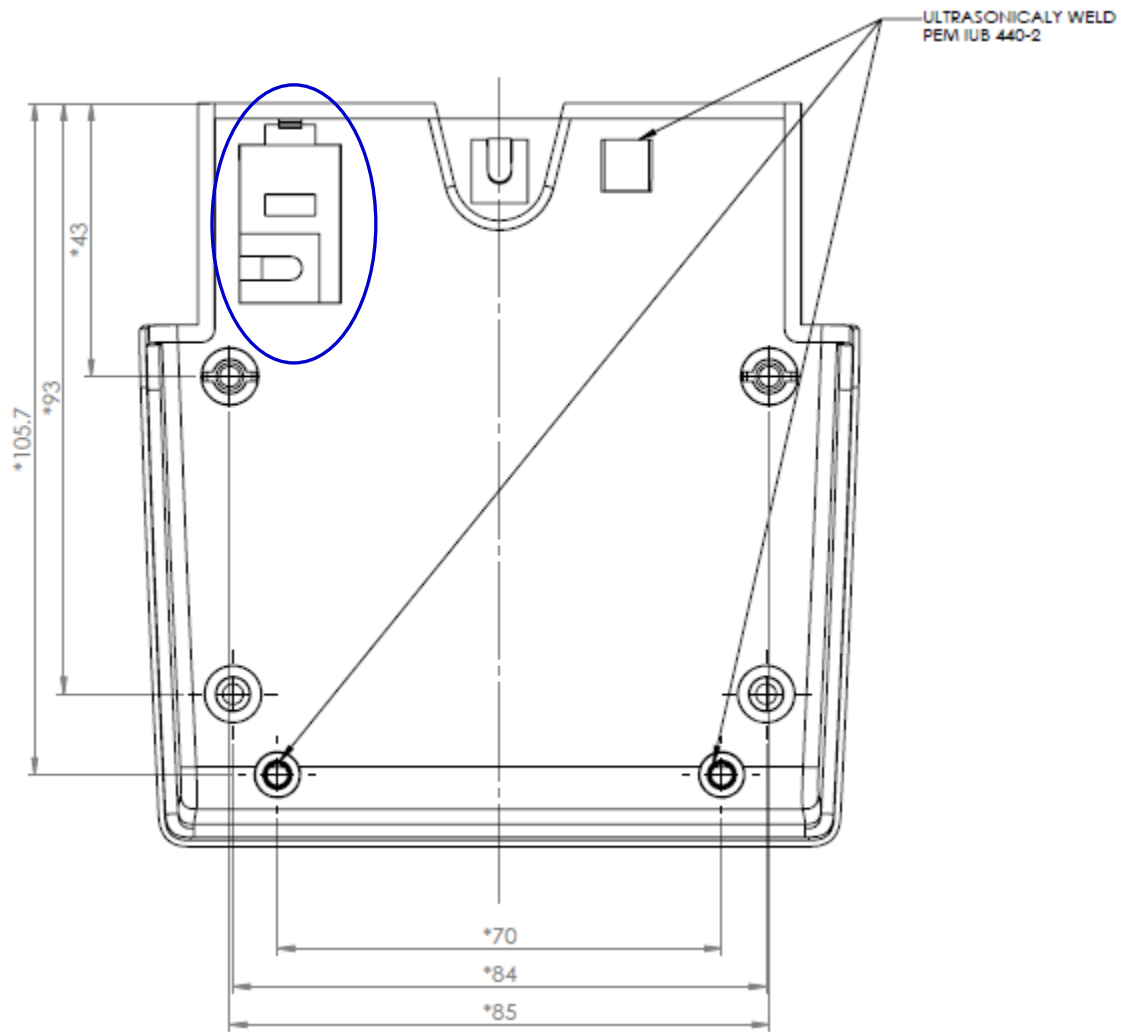


Figure 4-17 Location of Aux Port (4G Extreme)

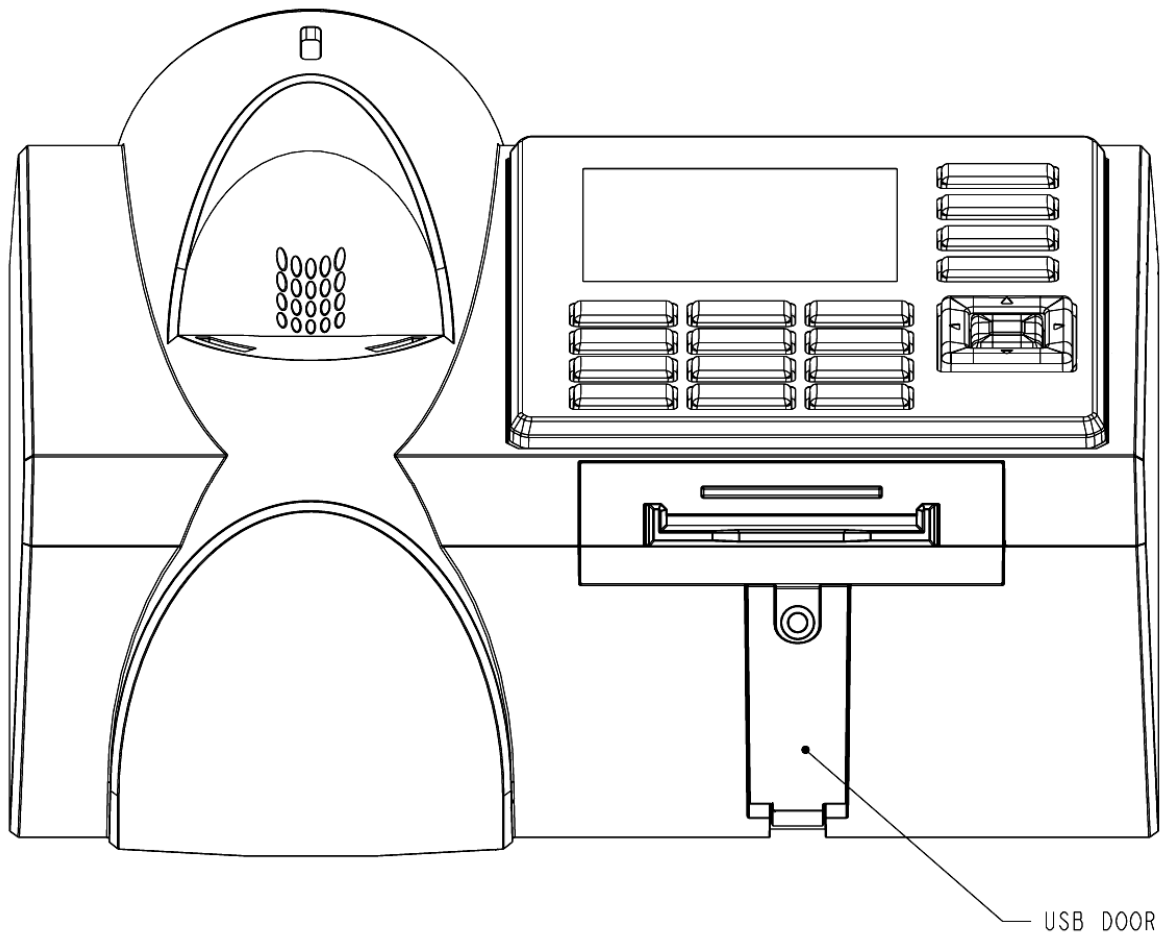


Figure 4-18 USB Memory Key



4.1.9 INSTALL FERRITE CORE

In order for the V-Station 4G and V-Flex 4G devices to comply with FCC Class B & CISPR 22 Class B regulations, the installer and/or end user is required to use the supplied Ferrite Material on the Ethernet, DC, and all I/O cables exiting the rear of the device. This ferrite material is located within the installation kit that is supplied with each product.

Ethernet Ferrite P/N: STEWARD 28A2432-0A2 DC & I/O Lines P/N: STEWARD 28A4155-0A2

Install the ferrite cores as close to the device as possible.

Figure 4-18 Installation of Ferrite Cores



CHAPTER 5 - SYSTEM START-UP PROCEDURES

CHAPTER OVERVIEW

This chapter explains the various start-up procedures and checks that should be performed before applying power to a device.

Chapter Index

5.1 SYSTEM START-UP PROCEDURES

To avoid the need for difficult troubleshooting, system start-up must follow this step-by-step procedure. Never wire up a system and apply power to it all at once.

SYSTEM START-UP OVERVIEW

L-1 Identity Solutions recommends always following these system start-up steps:

Do not apply power to any device.

Check all wiring and device configurations.

Disconnect all devices from the communication line.

Check the supply voltage for correct voltage.

Power up the PC running SecureAdmin.

Power up the RS-232 to RS-485 converter (if installed).

Configure SecureAdmin.

Perform a ground fault check for the converter (if installed).

Connect the PC and converter (if installed) to the communication line.

Verify that the device powers up correctly, but do not connect it to the communication line. The power LED should be illuminated. Check the power lines with a voltmeter.

Perform a ground fault check for the device (if using RS-485, see below).

Connect the device to the communication line.

Verify that the device communicates with SecureAdmin.

If there are more device, repeat Steps 10 through 13 for each device.

5.1.1 DEVICE CONFIGURATION CHECK

Devices must be configured correctly before they can communicate. Common problems include incorrect Host Port Protocol settings, mismatched Baud rates, and incorrect

device Net-work IDs. Each device sharing a communication line must have a unique device Network ID.

5.1.2 RS-232 TO RS-485 CONVERTER GROUND FAULT CHECK

Before a device can be connected to an RS-485 subsystem, it must be checked for ground faults. An uncorrected ground fault can damage all devices connected to the RS-485 communication line.

To check for a ground fault on the RS-232 to RS-485 converter:

3. Apply power to the RS-232 to RS-485 converter.

Connect the signal ground of the RS-485 line through a 10k ohm current-limiting resistor to the signal ground of the RS-232 to RS-485 converter. There should be no more than 1 volt across the resistor.

5.1.3 DEVICE GROUND FAULT CHECK

To check for a ground fault on a new V-Station 4G or V-Flex 4G device:

4. Apply power to all devices already successfully connected to the RS-485 line.

Power up the new device but do not connect it to the RS-485 line.

Connect the signal ground of the RS-485 line through a 10k ohm current-limiting resistor to the signal ground of the V-Station 4G device.

There should be no more than 1 volt across the resistor. If there is, find and clear the fault.

Repeat Steps 1 through 3 with each of the RS-485 signal lines (+ and -).

Connect the new device to the RS-485 line only if no ground fault is found.

6.1 CONFIGURE DEVICE

V-Station 4G and V-Flex 4G devices must be configured before use. This includes setting various communication parameters and calibrating the device's sensor

6.1.1 REGISTER DEVICE

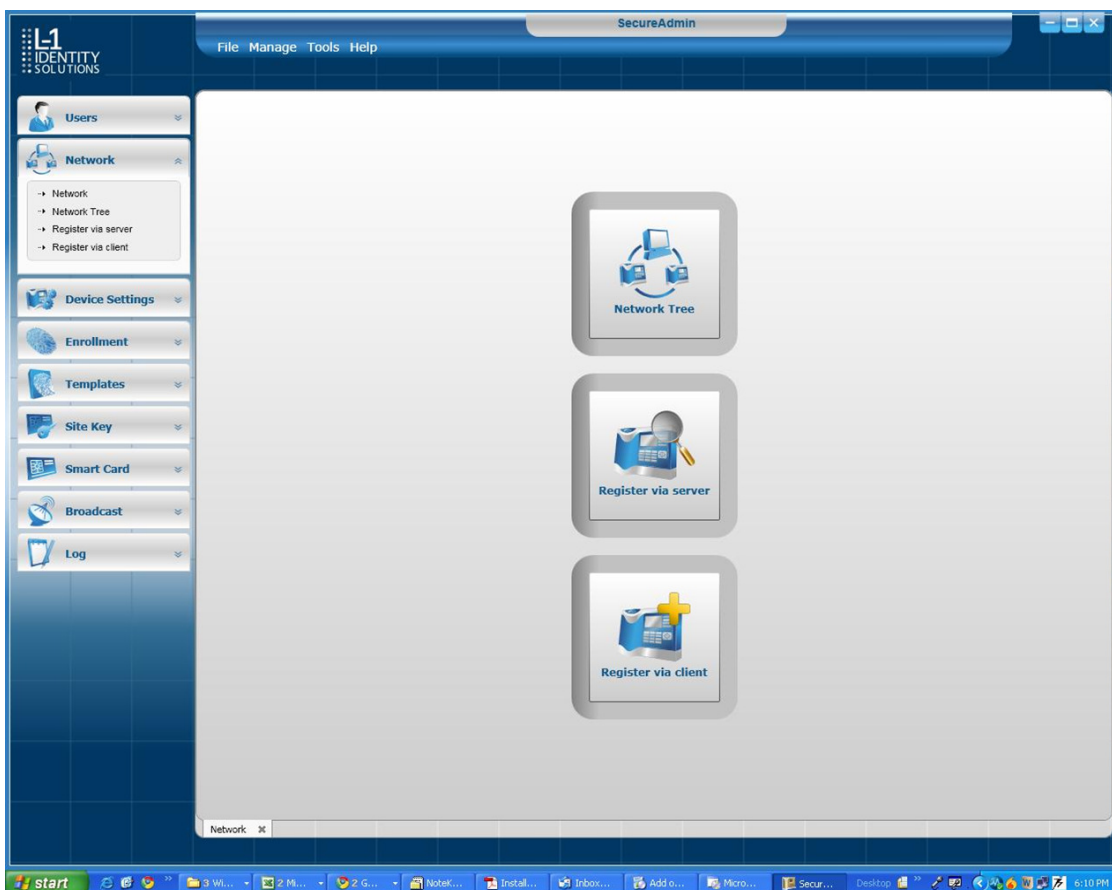
After a device is physically installed, it must be registered. This can be done several ways -
- when a device is connected by means of a network (this is the recommended method),
or when the device is connected directly to the host computer upon which SecureAdmin is running.

6.1.1.1 TO REGISTER A NETWORKED DEVICE

Launch SecureAdmin.

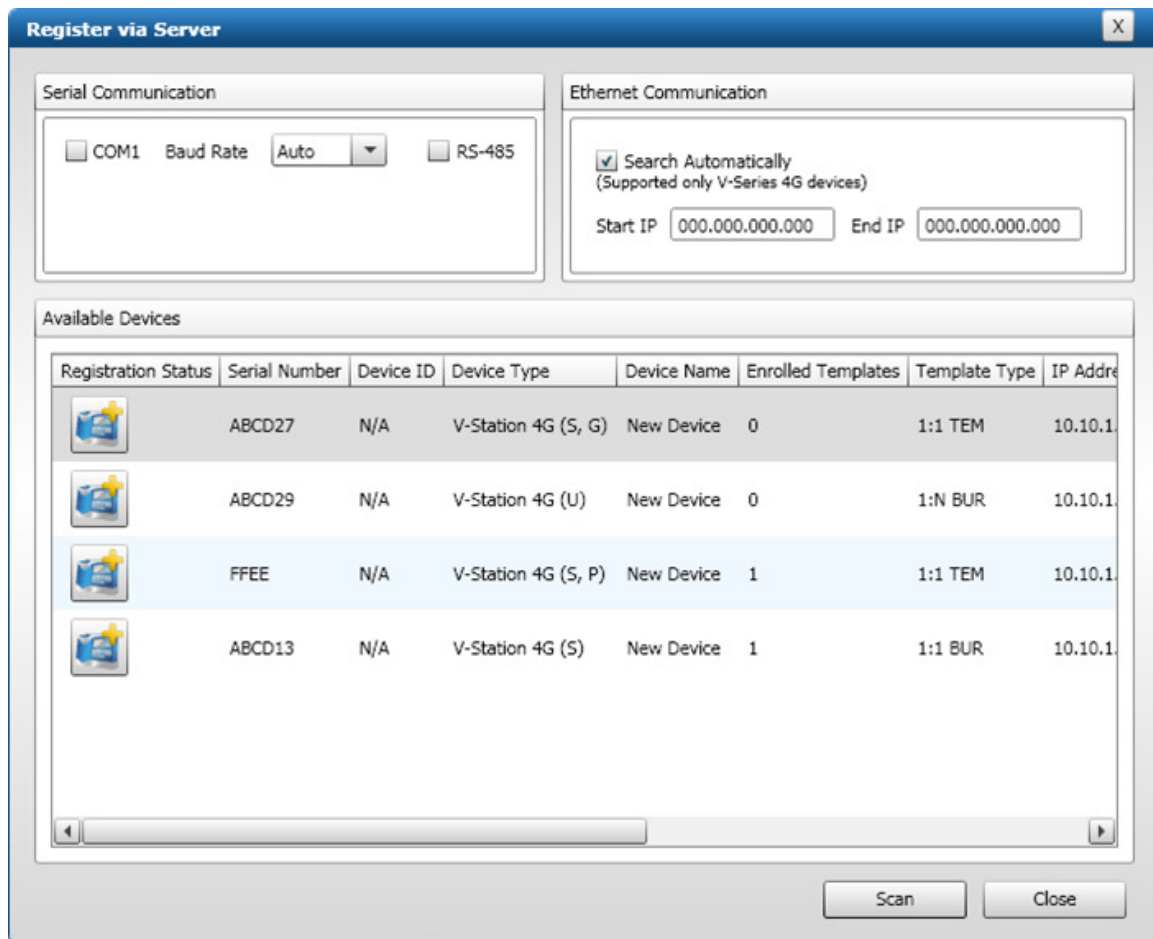
Double-click the **Network** tab. Three buttons are displayed.

Figure 6-1 Network Sidebar Tab



Click the **Register via Server** button. A **Register via Server** dialog box is displayed.

Figure 6-2 Register via Server Dialog Box



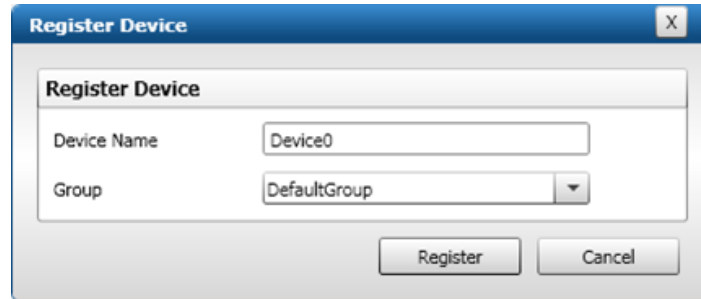
Select the **Search Automatically** check box (UDP protocol must be enabled on the network).

Click the **Scan** button. SecureAdmin scans the network for connected devices and lists the results. Devices with "plus" signs in their icon are available to add.

In the list, click the **icon of the device** you want to register. The server communication parameter dialog box is displayed. A **Register Device** dialog box is displayed.

Select the **communication parameter** (if connecting via RS-232 or RS-485), enter the appropriate Port, Baud Rate, Device ID, and select the communication protocol from the drop-down. If connecting via enter the network IP address of the device (select the DHCP check box if dynamic IP addressing is used).

Figure 6-3 Register Device Dialog Box

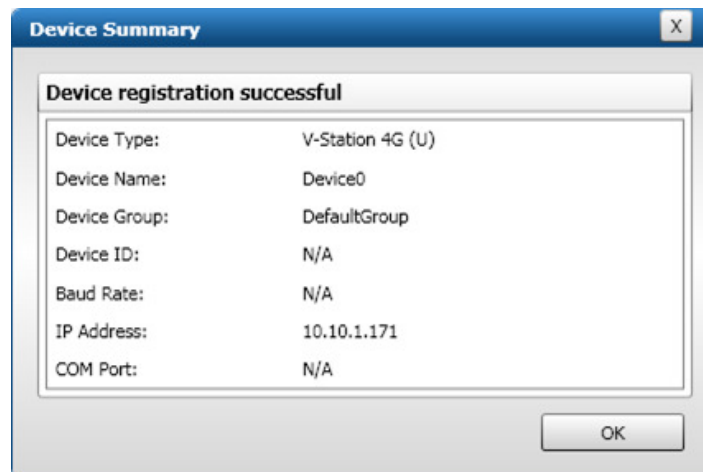


Enter a **Device Name**.

Select a **Group**.

Click **Register**. A Device Summary is displayed.

Figure 6-4 Device Summary Dialog Box



Click **OK**.

Click **Close**. The device is registered.

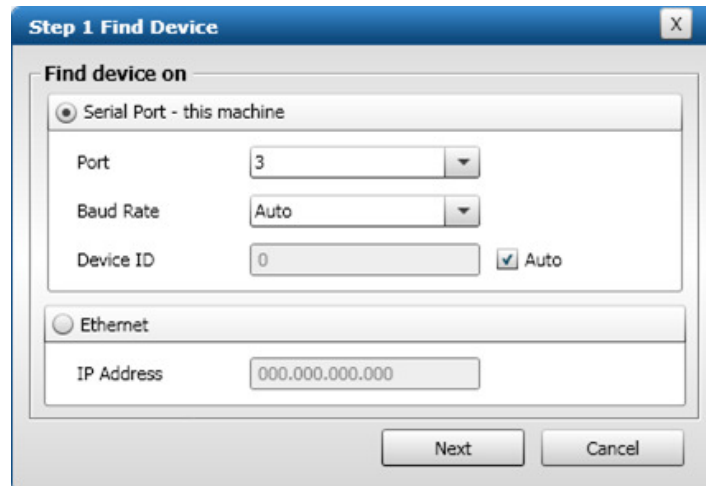
6.1.1.2 TO REGISTER A DEVICE VIA A CLIENT

5. Launch **SecureAdmin**.

Double-click the **Network** tab. Three buttons are displayed.

Click the **Register via client** button. The Step 1 Find Device dialog box is displayed.

Figure 6-5 Step 1 Find Device Dialog Box



Select either **Serial Port - this machine** or **Ethernet** radio button.

Enter the appropriate connection details.

If you are connecting via USB/RS-232:


Enter the appropriate **Port Number** (to determine the correct port number, look in the Win-dows Device Manager for a "Gadget Serial" entry under the "Ports (COM & LPT)" heading), Baud Rate, and Device ID.

If you are connecting via RS-485:

Enter the appropriate **Port Number** (to determine the correct port number, look in the Win-dows Device Manager for your RS-485 entry under the "Ports (COM & LPT)" heading), Baud Rate, and Device ID.

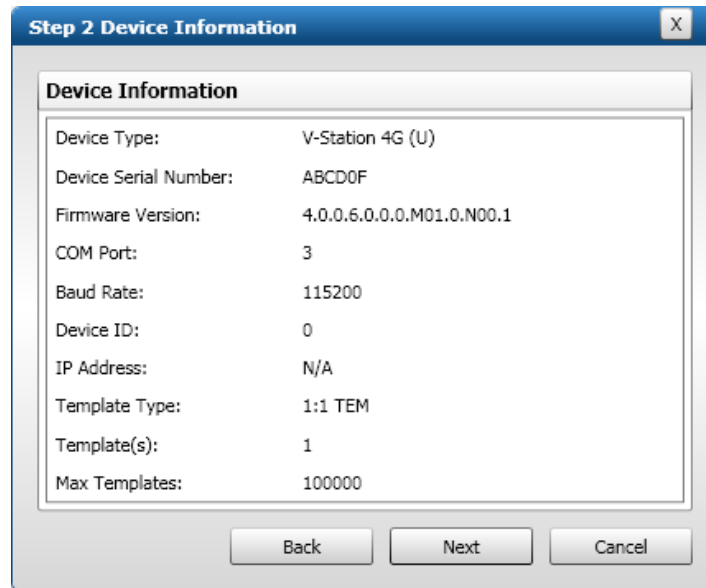
If you are connecting via Ethernet:

Enter the network **IP Address** of the device you want to connect to.

NOTICE	
	<p>The first time a V-Station 4G or V-Flex 4G device is connected to the computer via the USB/RS-232 interface, the Windows Found New Hardware Wizard might start. As all required device drivers are installed when Secu-reAdmin is installed, simply follow the prompts, accepting the default choices when possible, to install the device.</p>

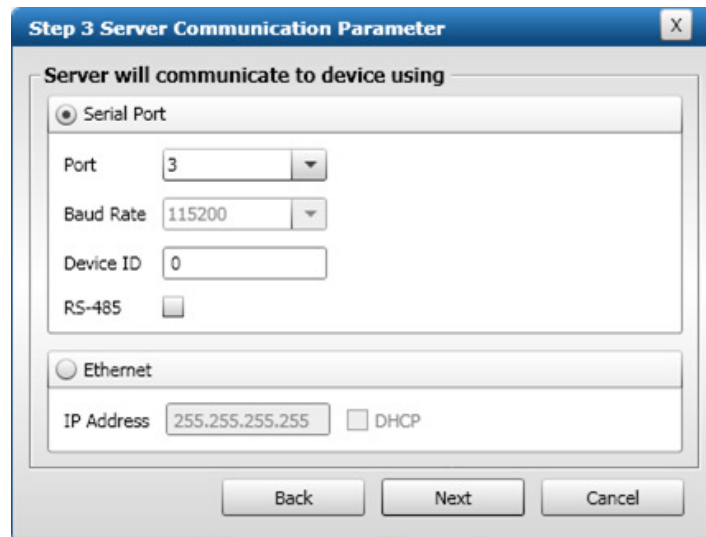
Click **Next**. The Step 2 **Device Information** dialog box is displayed.

Figure 6-6 Step 2 Device Information Dialog Box



Click **Next**. The Step 3 **Server Communication Parameter** dialog box is displayed.

Figure 6-7 Step 3 Server Communication Parameter Dialog Box

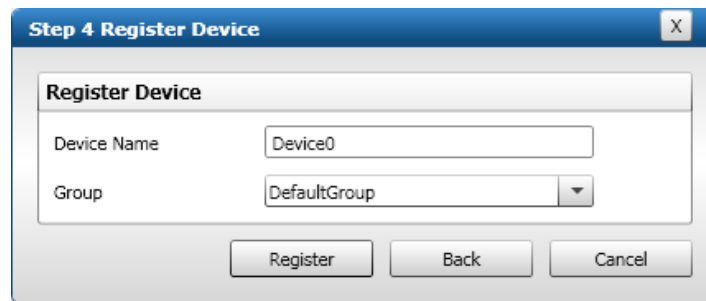


Select the **radio button** that corresponds how the server will connect to the device, either by **Serial Port** or by **Ethernet**.

If connecting via RS-232 or RS-485, enter the appropriate **Port**, **Baud Rate**, and **Device ID** and select the communication protocol from the dropdown. If connecting via Ethernet, enter the network **IP Address** of the device (select the **DHCP** check box if dynamic IP addressing is used).

Click **Next**. The Step 4 **Register Device** dialog box is displayed.

Figure 6-8 Step 4 Register Device Dialog Box

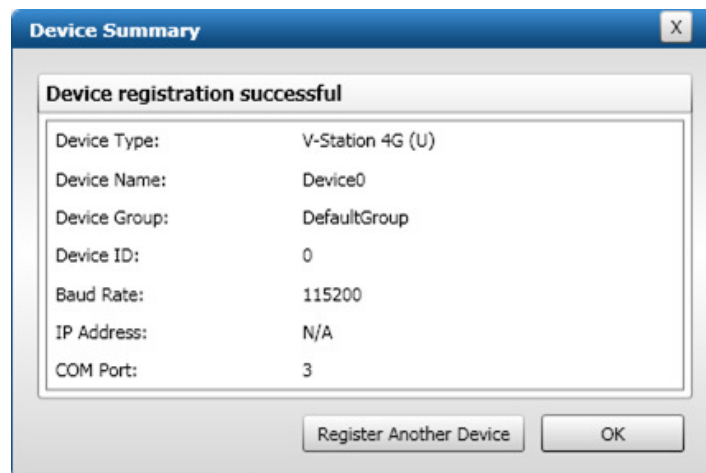


Enter a **Device Name**.

Select the **Group** the device will belong to from the drop-down menu.

Click **Register**. The **Device Summary** dialog box is displayed.

Figure 6-9 Device Summary Dialog Box



CHAPTER 7 - MAINTENANCE AND CLEANING

CHAPTER OVERVIEW

This chapter explains how to replace and calibrate the fingerprint sensor module, and how to clean the device sensor.

7.1 MAINTENANCE AND CLEANING

The V-Station 4G and V-Flex 4G devices require very little in the way of daily maintenance except for occasional cleaning and disinfecting. The V-Station 4G and V-Flex 4G devices feature field-replaceable sensors.

7.1.1 FIELD MAINTENANCE

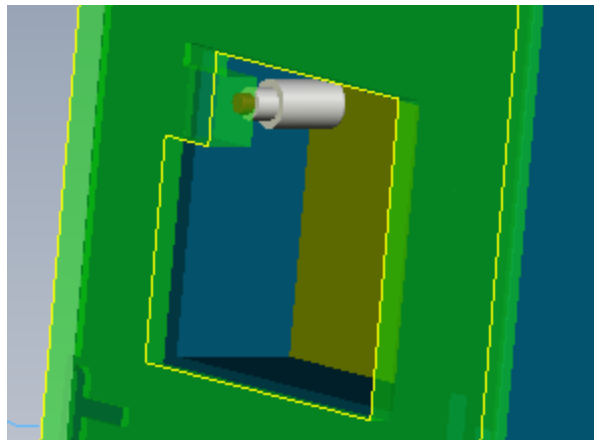
V-Station 4G and V-Flex 4G fingerprint sensors can be replaced quickly and easily in the field. The following sections explain in detail the steps required to replace a sensor.

7.1.1.1 DISARMING THE TAMPER PROTECTION

The Tamper Switch is a momentary push-button switch on the back of the device within the I/O cable interface pocket.

The tamper protection feature allows the device to sound an audio alert, flash LEDs, send a pre-defined Wiegand string to the control panel, or disable biometrics if the tamper switch is triggered.

Figure 7-1 Tamper Switch Location For V-Station 4G



With the wall mounting plate mounted and the device secured to the mounting plate, the tamper switch is depressed, closing the electrical circuit. When the device is removed from the wall by removing the security screws or in the event that the device is removed from the wall by force, the tamper switch opens.

To access the tamper-protection setting on the V-Station 4G device using the keypad:

Enter the **Admin** menu on the device by pressing the **Left** arrow and **Enter** keys simultaneously.

Key in the **Admin** password (default is "0000") and press OK.

Select the **System** icon and press **OK**.


Select **Device Settings** and press **OK**.


Select **SDC/Tamper Settings** and press **OK**.

Select **Tamper Settings** and press **OK**.

If the alarm has sounded, select **Clear** and **Re-enable**. The Tamper protection setting is set to disabled by default.

7.1.1.2 REPLACING THE SENSOR

	WARNING
	<p>The sensors can only be replaced with the same type as previously used. L-1 EAS does not support changing the type of sensor. Different types of sensors are not interchangeable, and the device will fail to operate.</p>

	NOTICE
	<ul style="list-style-type: none">• Power to the device MUST BE DISCONNECTED prior to servicing.• If the device is secured to the wall please be sure to follow the Disable instructions.• Tamper settings prior to the removal of the device from the wall.• ESD protective handling procedures must be followed before any service is applied to the device.

7.1.1.2.1 V-FLEX 4G

To replace the sensor module in a V-Flex 4G device, follow these steps:

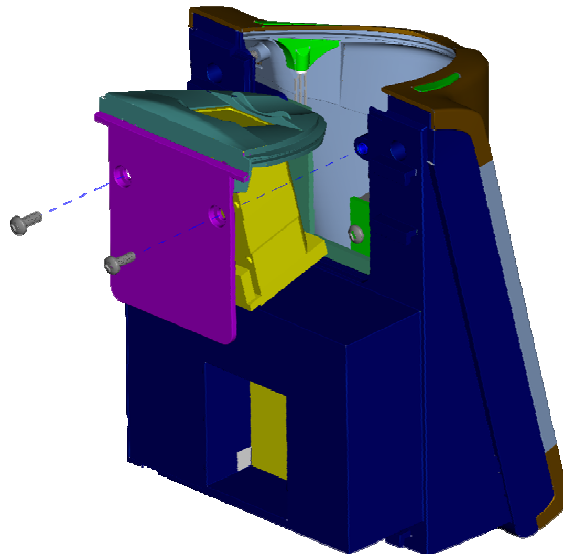
6. Remove the security screw and slide the V-Flex 4G device up until the hooks are free from the wall-mounting plate.

Remove two Philips screws.

Gently slide the sensor back plate, sensor mask, and sensor out of the V-Flex 4G device. Be careful not to damage any internal wiring.

Disconnect the sensor module wiring harness from the internal device connector. It might be necessary to rock the connector back and forth to work it out. Do not pull with excessive force as you might damage the mating connector.

Figure 7-2 Removal of Sensor Module from V-Flex 4G Device



Disconnect the sensor module wiring harness from the sensor module. Do not damage the wiring harness as it will be re-used with the new sensor module.

Reassembly is the reverse of disassembly.


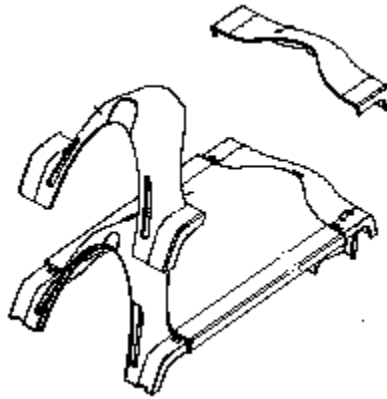
	CAUTION
	The parts are assembled at the factory and are not meant to be removed by the end user. Removing any of these parts will void the warranty.

Figure 7-3 Non-Removable Parts (V-Flex 4G)



7.1.1.2.2 V-STATION 4G

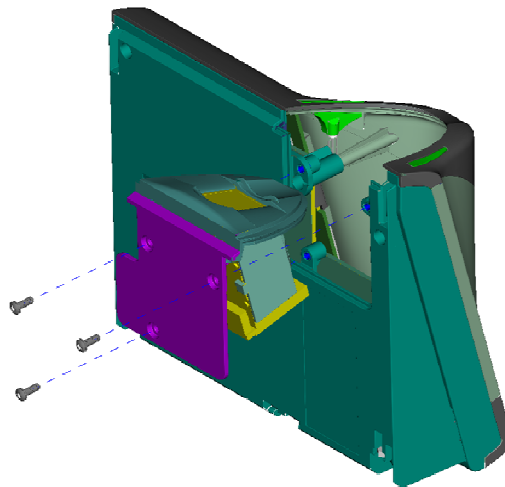
To replace the sensor module in a V-Station 4G device, follow these steps:

7. Remove the security screw.

Tilt the device at an angle approximately 90 degrees to the wall.

Remove the three Philips screws.

Figure 7-4 Removal of Sensor Module from V-Station 4G Device



Gently slide the sensor back plate, sensor mask, and sensor out of the V- Station 4G device. Be careful not to damage any internal wiring.

Disconnect the sensor module wiring harness from the internal device connector. It might be necessary to rock the connector back and forth to work it out. Do not pull with excessive force as you might damage the mating connector.

Disconnect the sensor module wiring harness from the sensor module. Do not damage the wiring harness as it will be re-used with the new sensor module.

Reassembly is the reverse of disassembly.

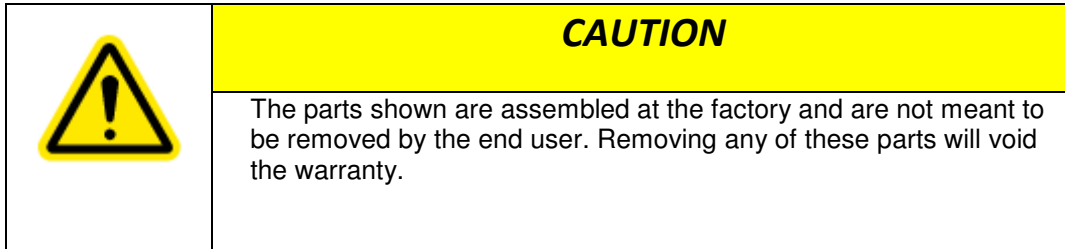
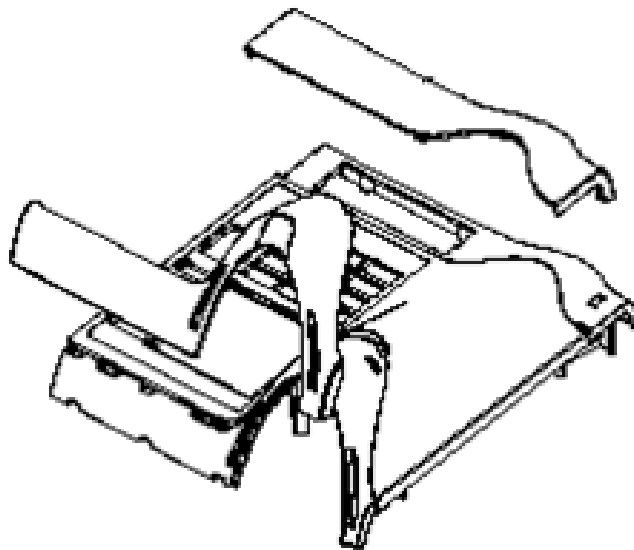


Figure 7-5 Non-Removable Parts (V-Station 4G)



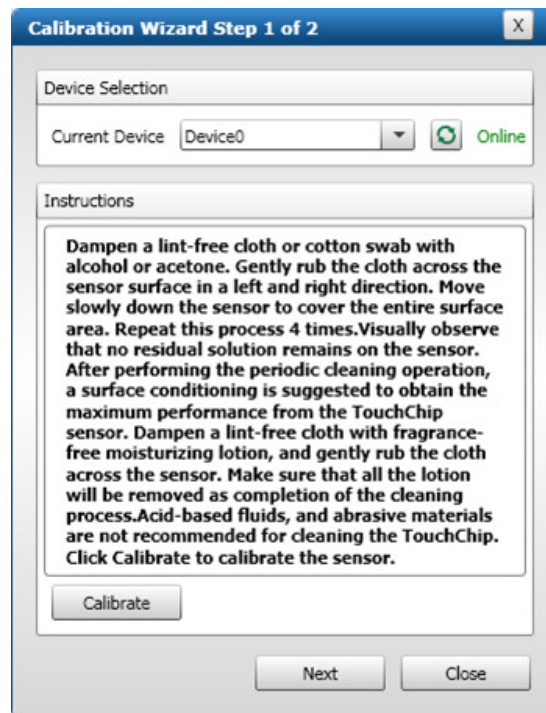
7.1.1.3 CALIBRATING THE SENSOR

After a device sensor is replaced, it must be calibrated before it can be used (Only available for UPEK sensors).

To calibrate a device:

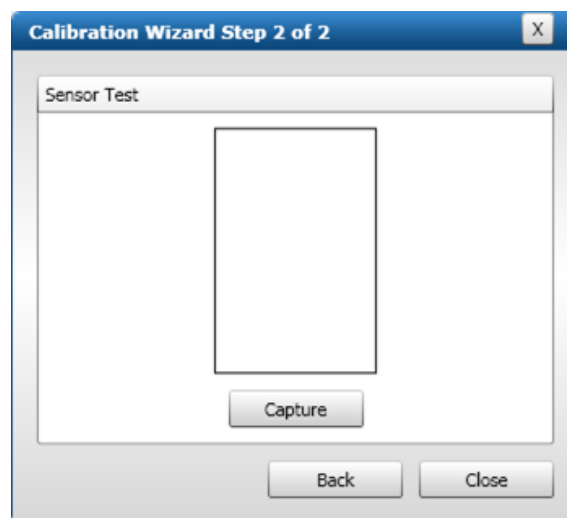
8. Select **Sensor Calibration** in the **Tools** drop-down menu. The Calibration Wizard appears.

Figure 7-6 Calibration Wizard Step 1 of 2 Dialog Box



Select the device you want to calibrate in the **Current Device** menu.
Click **Calibrate**. Wait as the device sensor is calibrated.
Click **Next**. The **Calibration Wizard Step 2** dialog box is displayed.

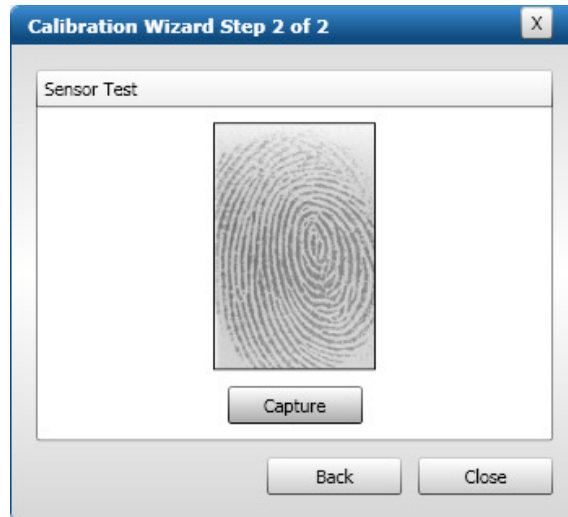
Figure 7-7 Calibration Wizard Step 2 of 2 Dialog Box



Click **Capture**.

Place a finger on the sensor, hold it, and remove it as directed by the on-screen prompts. The capture results are displayed.

Figure 7-8 Calibration Wizard Capture Results Dialog Box



Click **Close**. The device sensor is now fully calibrated and ready to use.


7.1.2 CLEANING

Sensors become soiled with residue, oils, or other contaminants due to contact with fingers and exposure to the elements. The sensor surface should be cleaned periodically for performance, aesthetic, and hygienic reasons. Care must be taken when cleaning the sensor to prevent dam-aging the sensor surface or surrounding components.

To clean the fingerprint sensor in a V-Station 4G or V-Flex 4G device:

9. Remove the electrical power from the device.

Moisten (do not saturate) a clean cotton swab or a lint-free cloth with rubbing (Isopropyl) alcohol.

	CAUTION
	<p>Do not use chlorine-based cleaners, such as bleach, or chlorine-based bath-room or mildew cleaners. Chlorine-based cleaners will not adversely affect the fingerprint sensor, but they could damage the electronic circuitry sur-rounding the fingerprint sensor.</p> <p>Do not use solvents such as acetone, methyl ethyl ketone, lacquer thinner, etc. Solvents will not adversely affect the sensor, but they are likely to damage the reader housing or other peripheral components.</p>

**WARNING**

Never use products such as abrasive cleaning powders, steel wool, scouring pads, or fine sandpaper to clean the sensor surface. These types of cleaning products will damage the sensor surface.

Rub the sensor surface with the moistened cotton swab or lint-free cloth. Do not allow the cleaning product to drip onto any electronic components near the sensor.

Rub the sensor with a clean dry cotton swab or lint-free cloth to remove any traces of cleaning product.

Reconnect power to the device.

**NOTICE**

Disposable ESD-safe wipes, such as ACL Staticide wipes, can be used to disinfect the sensor and buttons on a daily (or even more frequent) basis. Be aware that some wipes might not offer the same cleaning power as the products mentioned above and thus should not be relied upon to thoroughly remove all residue. Use of wipes does, however, help keep sensor and button surfaces hygienic and makes an excellent complement to periodic cleaning.

CHAPTER 8 - TROUBLESHOOTING

CHAPTER OVERVIEW

This chapter information about any error messages that might be experienced during the installation process.

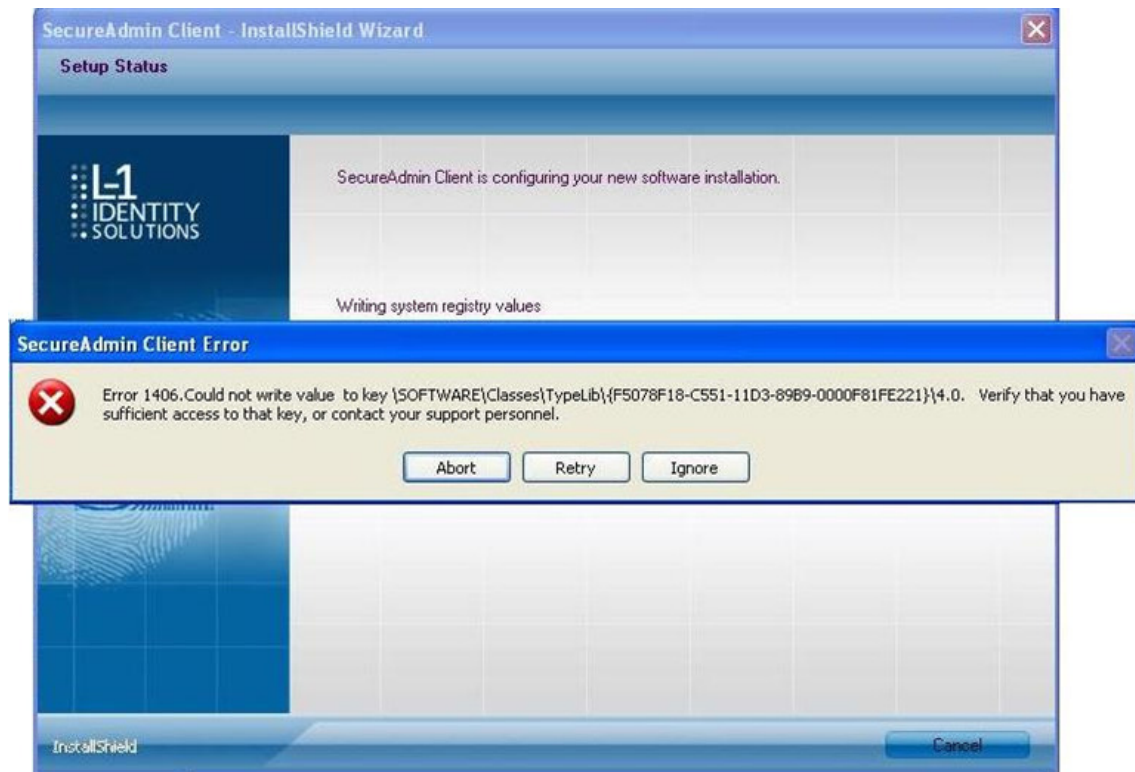
8.1 TROUBLESHOOTING

8.1.1 INSTALLATION ERROR MESSAGES

These error messages might occur during the SecureAdmin installation process.

8.1.1.1 ERROR 1406 - INSUFFICIENT PRIVILEGES

Figure 8-1 Error 1406

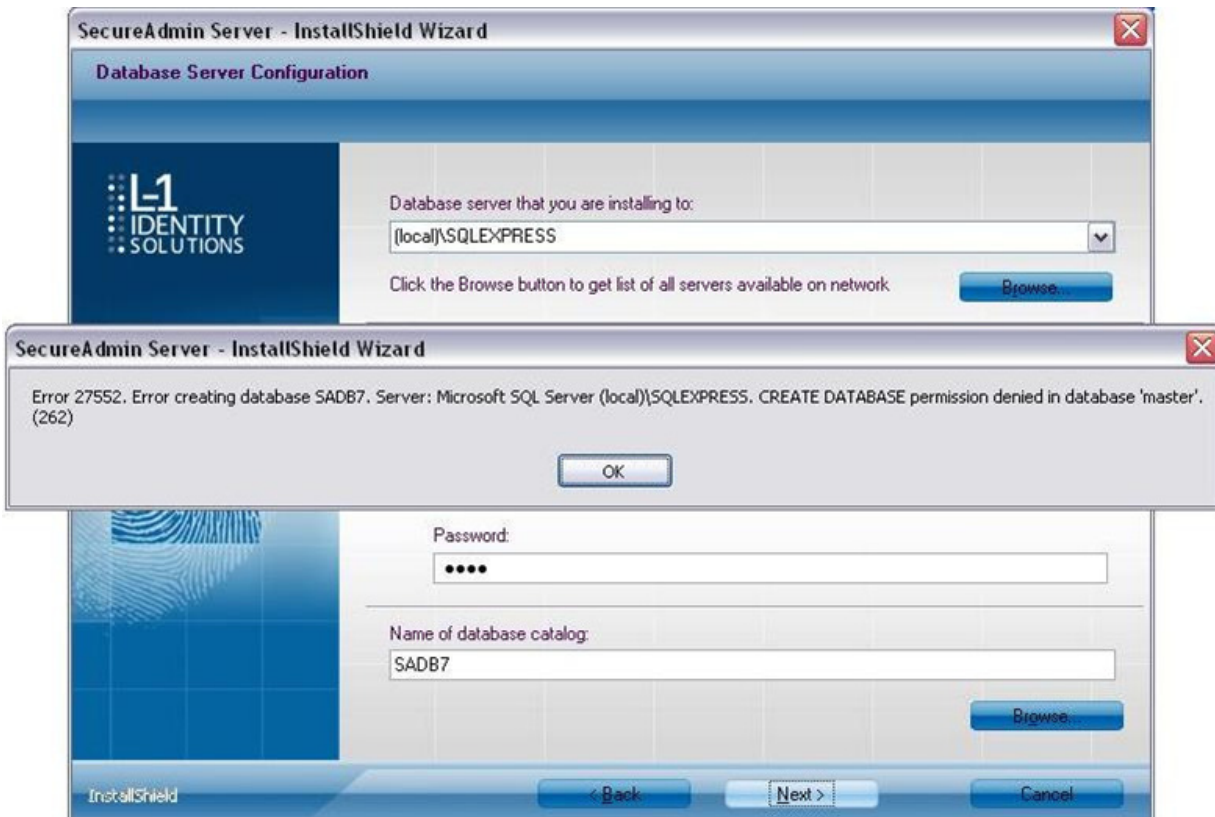


This error can occur during SecureAdmin Client installation at the last step (right before "Finish"). If it occurs, it means that the user does not have sufficient rights to install software on the computer.

Log off and log on either as a Administrator or another user that has sufficient privileges to install software and perform the setup process again.

8.1.1.2 ERROR 27552 - ERROR CREATING DATABASE

Figure 8-2 Error 27552

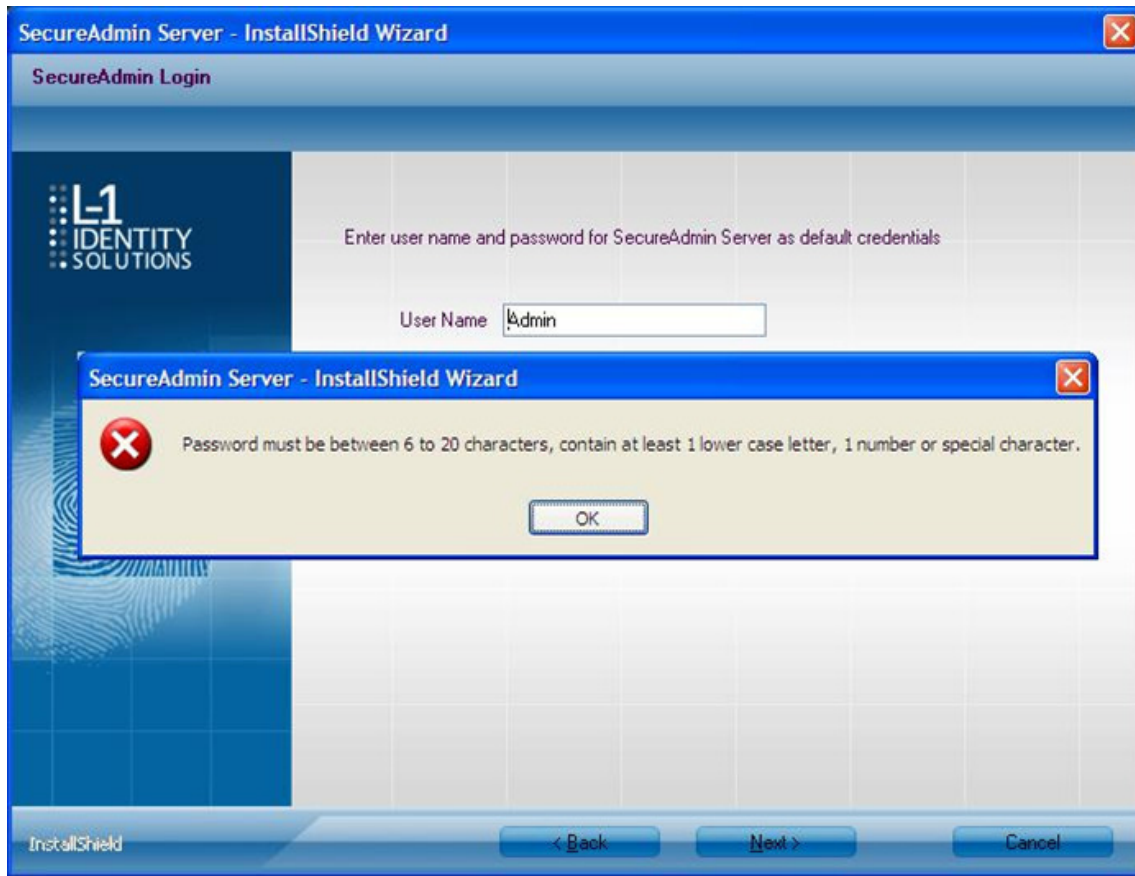


This error can occur during SecureAdmin Server installation process. If it occurs, it means that the user does not have sufficient privileges to access a specific SQL database.

Contact your IT department to ensure that your privileges are correct for the specified database.

8.1.1.3 INVALID PASSWORD

Figure 8-3 Invalid Password

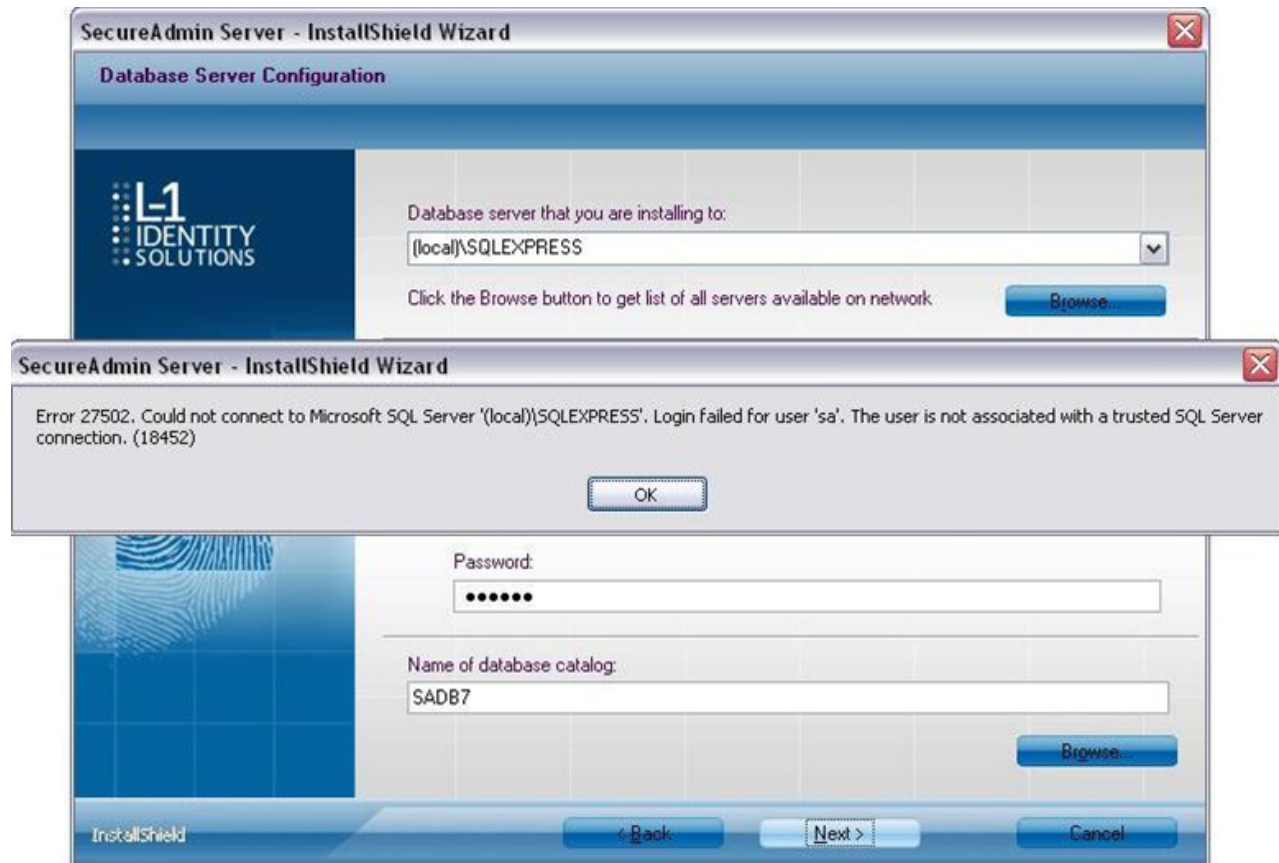


This error can occur during SecureAdmin Server installation process on the User configuration screen (after the database configuration screen).

If it occurs, it means that the password provided is not strong enough. Click OK, and re-enter a password that is considered more secure. The password should be between 8 and 30 characters long and contain at least one capital letter, one number, and one non-alphanumeric character.

8.1.1.4 ERROR 27502 - USER NOT ASSOCIATED WITH TRUSTED SQL SERVER

Figure 8-4 Error 27502 - User Not Associated

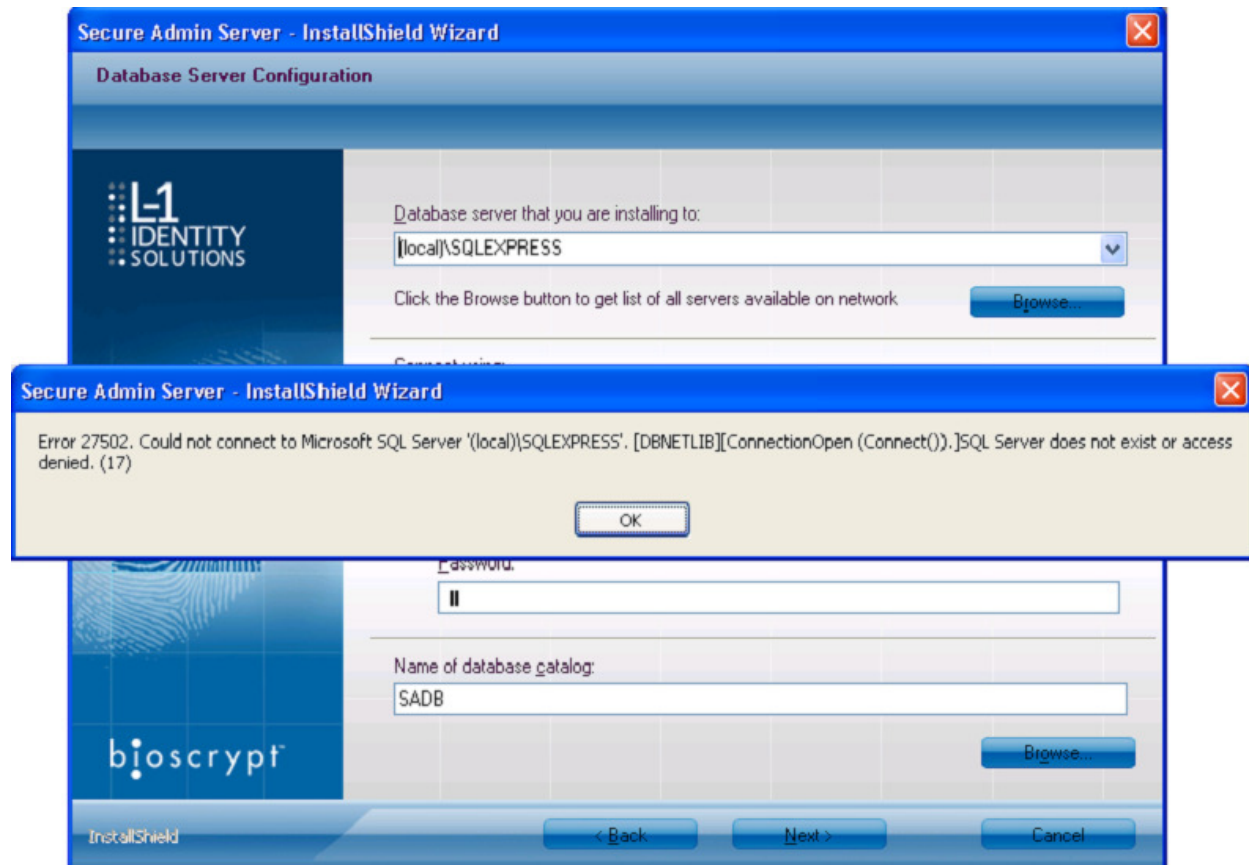


This error can occur during the SecureAdmin Server installation process. If it occurs, it means that the InstallShield Wizard could not access the specified SQL database.

Check your user name and password or contact your IT department to ensure that your user name is associated with the specified SQL database.

8.1.1.5 ERROR 27502 - SQL SERVER DOES NOT EXIST

Figure 8-5 Error 27502 - Server Does Not Exist



This error can occur during the SecureAdmin Server installation process (at the time of database configuration, after the database selection screen). If it occurs, it means that the InstallShield Wizard could not connect to the specified SQL database because it does not exist or because the user is not authorized to access that database.

Check your user name and password or contact your IT department to ensure that your user name is authorized to access the specified SQL database.

8.1.1.6 INSUFFICIENT SYSTEM MEMORY

Figure 8-6 Insufficient System Memory

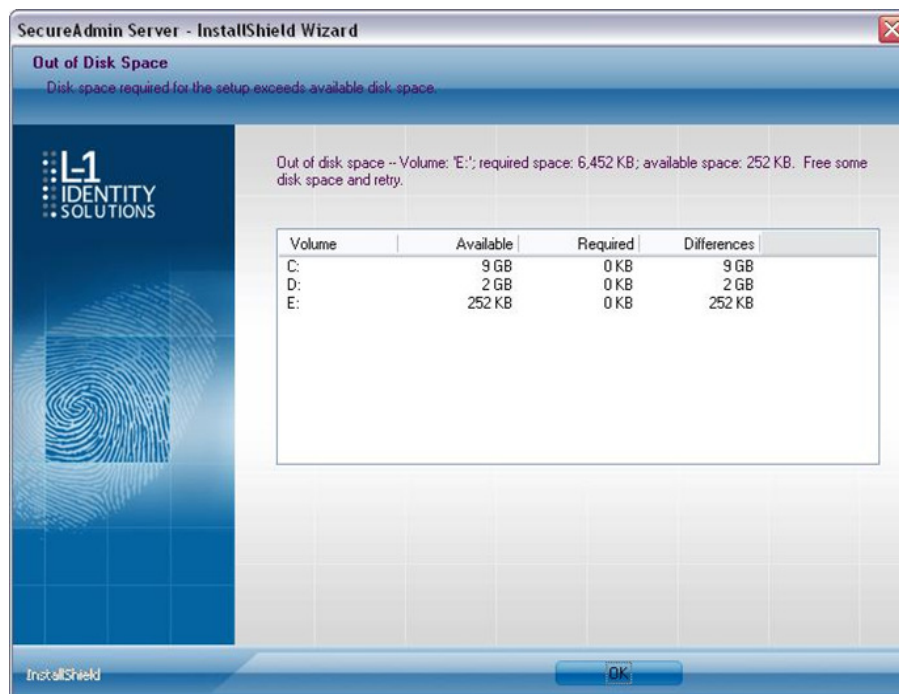


This error can occur during the SecureAdmin Server installation process at the first screen after selecting server installation from the options screen.

If it occurs, it means that the computer you are trying to install SecureAdmin Server on does not have sufficient system memory. Install more memory or install on a different machine.

8.1.1.7 OUT OF DISK SPACE

Figure 8-7 Out of Disk Space



This error can occur during the SecureAdmin Client installation process when Secu-reAdmin starts to configure components, after the fingerprint feedback options selection.

9.1 CHAPTER 9 - NOTICES

The 4G lines of products have been tested for compliance with all applicable international standards. The resulting approvals are listed below, and are additionally printed on the labelling located on the rear panel of the product.

V- Flex 4G	FCC, CE
V- Station 4G	FCC, CE
PIV-TWIC Station 4G	FCC, CE
FingerVein Station 4G	FCC, CE

9.1.1 FCC Information to Users

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ✓ Reorient or relocate the receiving antenna.
- ✓ Increase the separation between the equipment and receiver.
- ✓ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.


Applicable only to V-Station 4G, FingerVein Station and PIV-TWIC Station 4G series product: This product complies with FCC radiation exposure limits set forth for an uncontrolled environment. To comply with FCC RF exposure requirements, it must be installed and operated in accordance with provided instructions. The unit requires minimum 20cm (8inch) spacing between the unit and all persons' body (excluding hands and feet) during wireless modes of operation.

9.1.2 CE Information to Users

All Veri-Series 4G devices have the CE mark, for compliance with CISPR22/EN55022 requirements. For European Union (EU) countries, V-Flex 4G and V- Station 4G are

compliant with CE under the R&TTE Directive, related to the radio transceivers that are part of their design.

9.1.3 Warning to Users

	CAUTION
	Changes or modifications not expressly approved by L-1 Identity Solutions Inc. could void the user's authority to operate the equipment.