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Lenel onguard hardware installation guide

Lenel onguard 8.0 installation guide. Lenel onguard client installation guide. Lenel onguard 7.6 installation guide. Lenel onguard. Lenel onguard 7.6 hardware installation guide. Lenel onguard installation guide. Lenel hardware installation guide. Lenel onguard hardware installation manual. How to install lenel onguard. Lenel onguard 7.5 installation guide.

Hardware Installation Guides and Warranty Information Lenel's warranty covers repairs or replacements for defective units, excluding consequential damages. Warranty Table of Contents page listed on page 17 Inputs, Outputs, and Interfaces section starts on page 19 RS-232 interfaces discussed on page 4 Installation guidelines begin on page 9 Maintenance information can be found starting on pages 11 and 20 Specifications for various modules, including the LNL-2210, LNL-3300, LNL-1100-U, LNL-1200-U, and LNL-1300e Table of Contents for Hardware Installation and Configuration Chapter 67: Installation and Setup (Pages 355-368) - 67.1 Wiring and Setup - 67.2 Recommended Settings for PoE - 67.3 Install Jumpers Chapter 78: External Tamper and Power Considerations (Page 399) - 78.7 External (Cabinet) Tamper - 78.8 Power and Communications - 78.9 UL Listed Installations Specifications (Page 401) LNL-1320 Dual Reader Interface Module (Page 403) Overview of the LNL-1320 (Page 405) - 80.1 Interfaces - 80.2 The Dual Reader Interface Module (Series 2) Chapter 89: Specifications (Page 449) LNL-8000 Star Multiplexer (Page 451) Overview of the LNL-8000 Board (Page 453) - 90.1 Interfaces - 90.2 The Star Multiplexer Board Installation Instructions for the LNL-8000 (Page 455) - 91.1 Wiring - 91.2 Wiring and Termination Chapter 100: DIP Switch/Jumper Settings and Configuration (Pages 482-486) - 100.2 DIP Switch/Jumper Setting - 100.3 Keypad Data and Tamper Monitor Signaling - 100.4 TTL Interface - 100.5 OnGuard Configuration - 100.6 Grounding the Reader - 100.7 Reader Verification - 100.8 Status Indicators - 100.9 Maintenance Chapter 104: Lenel OpenCard Readers (Page 535) Lenel OpenCard Readers Overview (Pages 537-542) - 104.1 OpenCard ISO-X Readers - 104.2 OpenCard XF1050-K - 104.3 OpenCard XF1500 BlueDiamond Mobile Readers (Pages 545-547) - 105.1 Readers Chapter 115: 4G Configuration for SecureAdmin and OnGuard (Page 609) - 115.3 4G Configuration in SecureAdmin - 115.4 4G Reader Interface Connections - 115.5 Wiring 4G Verification Readers - 115.6 4G Reader Configuration in OnGuard - 115.7 Enrollment Configuration - 115.8 Encoding Configuration Chapter 116: Bioscrypt 3G Series Readers (Page 621) Bioscrypt 3G Series Readers Overview (Pages 621-623) - 116.1 V-Pass FX and V-StationA Chapter 121: DIP Switches, Jumpers, and Reader Configuration (Pages 683-687) - 121.4 DIP Switches - 121.5 Jumpers - 121.6 Command Keypad Configuration - 121.7 Status Display - 121.8 OnGuard Configuration - 121.9 Command Programming - 121.10 Command Keypad Behavior Specifications (Page 689) **Hardware Installation and Power Requirements** Installing access/alarm systems requires careful consideration of interface compatibility, power supply sizing, and reliable wiring. The recommended interfaces include RS-485, RS-232C, Modem, 20mA Loop, Mode of Differential DC, Single-ended DC, and Differential AC. **Power Supply Considerations** Choosing the right power supply is crucial for safe and reliable system operation. A minimum 25% overage factor should be applied when sizing the supply to prevent current overload. Isolated, non-switching, regulated power supplies are recommended. Specific device power requirements are listed in tables for devices such as LNL-1100-U, LNL-1320-U, and others. **Device Power Requirements** Devices like LNL-XF1100D, LNL-XF2100D, and LNL-XF2110D require specific voltage and current ranges. The typical door strike power is estimated at 24VDC, 300mA. Consult manufacturer specifications for actual values. **Hardware Installation Guidelines** System wiring must be properly planned and executed to ensure safe and reliable operation. Improper or incorrect wiring can lead to system failure or damage. Care must be exercised when powering system components with different power sources. **Physical Installation Considerations** The LNL-CTX-6 hardware enclosure supports up to six Lenel access hardware modules, while the ABT-12 battery kit provides a 12VDC, 12AH power supply. Physical installation guidelines include mounting the hardware standoffs and using support standoffs for certain devices. **Important Notes** Refer to specific device diagrams for termination configuration guidance. The LNL-CTX knockout can be used in standard 2-gang or 3-gang junction enclosures. The LNL-AL400ULX installation should follow the National Electrical Code (NEC) article 760 and NFPA70 guidelines, as well as local codes. Install the enclosure in the desired location. Connect the unswitched AC power to terminals marked L, G, N, dedicated to the Burglar Alarm/Access Control Subsystem. The input requires 120 VAC, 60 Hz, 1.45 amp, with a DC output and battery & AC supervision circuit (power limited). For UL-certified installations, wire connections crossing the hinge side of the door must be wrapped or tied together. Install multiple Lenel hardware panels into a single enclosure using the provided guidelines. Connect the cabinet tamper switch to the cabinet tamper circuit on the Lenel access hardware. Each hardware product must be grounded for ESD protection, personnel safety, and signal reference. Grounding provides a shield against external transients. All alarm inputs require twisted pair wires with an end-of-line (EOL) resistor terminator for each supervised alarm input. Connect normally closed (NC) contacts in series and normally open (NO) contacts in parallel. Refer to the diagrams for RS-485 Signal Ground and Termination. For multi-drop wiring, use the provided diagrams for ISC and LNL-500B. Shield Earth Ground, one point only per ISC. When using multiple power supplies on a single ISC, connect DC- when necessary. Protecting DC inductive loads is feasible using clamp diodes, selecting ones with a reverse breakdown voltage ten times higher than the circuit voltage. AC inductive loads can be safeguarded by metal-oxide varistors (MOVs), particularly effective when the load voltage falls within 100V to 200V. When turning up a system, it should never be powered and wired at once; instead, follow a step-by-step process ensuring no power is applied to any device. Verify all wiring and device switch settings before proceeding. Before connecting a device to an RS-485 communication line, check for ground fault to avoid potential damage to connected devices. For wireless readers functionality, the LNL-500W requires firmware version 1.10 or higher; the most current firmware is shipped with OnGuard software and can be updated through its interface. Equipment installation should take place in a temperature-controlled environment (13°C - 35°C or 55°F - 95°F) maintained by an HVAC system, ensuring at least 24 hours of standby time for the system. For UL1076 compliance, systems must meet requirements specified in Section 25A and use UL Listed power supplies along with specific hardware configurations. This guide outlines requirements and installation procedures for HID Edge devices, Lenel OpenCard XF series, and other compatible hardware for access control applications. Specific devices such as LNL-CK are mentioned for remote arming purposes. Installation involves creating local I/O functions in the Access Control menu, including steps for mask groups and alarm points. Hardware must meet CAN/ULC-S319-05 requirements, particularly for OnGuard monitoring software versions 7.0 through 7.3. Additionally, EN Certified Readers such as AWID Sentinel Prox KP-6840GRMP are approved for use with the OnGuard system. Troubleshooting sections address potential causes of system problems and provide specific solutions related to software configuration and panel memory verification. The guide also includes an overview of the LNL-500 Intelligent System Controller, detailing its features and installation procedures, including wiring requirements for unsupervised alarm inputs, upstream host communication, and downstream device communication. Direct-connect RS-232 cables should not exceed 50 feet; leased lines or fiber optics can be used instead, while RS-485 requires a specific type of twisted pair cable. RS-485 cable configuration can be used for a maximum distance of 4000 feet (1219 meters), with an impedance of no more than 120 ohms, using Belden 9842 4-wire or 9841 2-wire plenum cabling. The drop cables to readers and other devices should not exceed 10 feet in length. An RS-232 to RS-485 converter is required at the host workstation if RS-485 communication is used. To connect the ISC (Intelligent System Controller) to Rocket Port via 2-wire RS-485, the toggle RTS low checkbox should be checked in the Rocket Port settings. For downstream device communication wiring, the Ports 2-3 configuration uses TR1+, TR1-, R1+, and so on. The LNL-500 ISC can be located anywhere along the RS-485 line, with an RS-485 terminator installed at each end-of-line device. The ISC accepts either a 12 VDC or 12 VAC ± power supply. Configuration involves setting DIP switches and jumpers on the ISC board for system-specific settings. Communication handshake status is configured using DIP switch 5, with specific settings depending on the type of communication being used (RS-232, RS-485, etc.). The LNL-500 ISC requires firmware updates periodically. Verification of correct installation can be done using the three Status LEDs on the ISC board after power up. The LNL-500 is designed for use in low voltage, class 2 circuits only, with specific power and memory requirements outlined in the specifications. This document is designed for technicians who will be setting up and maintaining the Intelligent System Controller (ISC). The ISC acts as the main access control system and provides power, performance, and flexibility for demanding applications. It contains an ISC board with various components such as alarm inputs, interfaces, power input, switches, and jumpers. To install the ISC, follow the procedures in order, starting from wiring the unsupervised alarm inputs to the downstream device communication. For RS-485 communication, use a 24 AWG twisted pair cable no longer than 4000 feet with a maximum impedance of 100 ohms. The drop cables to readers and other devices should be kept as short as possible, not exceeding 10 feet. Note that an RS-232 to RS-485 converter is required at the host workstation if using RS-485 communication. The ISC can communicate downstream with up to 16 input/output devices through Port 2, Port 3, Port 4, and Port 5. Each port can be wired as an RS-485 interface for multi-drop communication on a single bus of up to 4000 feet. The power source should be a 12 VDC or 12 VAC ± 15% supply, located close to the ISC, and connected with an 18 AWG twisted pair cable. The ISC board is a crucial component of the LNL-1000 Intelligent System Controller, requiring proper configuration for optimal system performance. The board features 8 DIP switches and 16 jumpers that must be set up according to specific guidelines. For configuring the communication handshake status, DIP switch 5 plays a key role. Table settings indicate that it should remain ON for Lantronix, dial-up, and RS-232 communications, while being OFF for RS-485 communication. Regarding jumper configuration, the diagram on Page 89 provides essential details for setting up each jumper on the ISC board. This includes [J9] Control for Port 1, RS-232 or RS-485, and [J14] Control for Port 1, 2-wire or 4-wire configurations. The Memory Expansion Board is an optional feature that allows additional memory to be added when the database requirement exceeds the base memory capacity of the ISC processor. This expansion card accommodates up to a total of 3 MB. For proper RS-485 cable termination from the ISC to downstream modules, refer to the Hardware Installation Guide for instructions on how to configure this section of the bus. It is also crucial to verify correct installation after power-up by checking the Status LEDs (LED A, LED B, LED C) on the ISC board. The LNL-1000 Intelligent System Controller specifications highlight its use in low-voltage, class 2 circuits only. The primary power input accepts DC or AC voltage within specific ranges, while the memory and clock backup utilize a 3 V lithium battery. Lastly, the LNL-2000 Intelligent System Controller features dual-path access to interfaces upstream with Access Control software on a host system and downstream with Lenel field hardware components. Installation and configuration procedures for the LNL-2000 Intelligent System Controller include setting DIP switches and jumpers according to specific wiring configurations for RS-232, RS-485, and Ethernet communications. For short distance wiring or point-to-point communications, the RS-232 interface is used, requiring termination on-board but with the installer determining the end device. Belden wire specifications provide guidelines for Trade Number wires with nominal shield and impedance values, and are typically used in conjunction with direct connect (RS-232) and Lantronix Ethernet network configurations. DIP Switch 5 needs to be ON using connection cables provided by Lenel for these configurations. The LNL-2000 can communicate downstream with up to 16 input/output devices using Port 2 through Port 5, configured as RS-485. The ISC can be located anywhere along the RS-485 line and requires an RS-485 terminator at each end-of-line device. Powering the ISC accepts either 12 VDC or 12 VAC, with a preferred location of power source close to the unit. Configuration of DIP switches and jumpers is necessary for system-specific setup, including jumper settings for Port 1, which depends on whether it's configured as RS-232/Lantronix MSS-LITE or RS-485. Additionally, communication passwords and status are controlled by DIP switch 8, supporting encryption with AES firmware but requiring a 256 KB chip; otherwise, the controller must be upgraded. The LNL-2000 comes with permanently installed 1 MB RAM and allows for optional memory expansion using a Memory Expansion card. The database requirement exceeds the base memory capacity on the ISC, which can accommodate up to 3 Megabytes of data through its three banks of low power static RAMs. For most devices used for Host-to-ISC communications, termination configuration should be followed as specified in their documentation, except for those approved by Lenel, which may have unique requirements. The RS-485 cable termination remains consistent throughout the bus. The LNL-2000 Intelligent System Controller features four 2-wire ports and two 4-wire ports, with options for multi-drop configurations. The board contains three status LEDs for verifying correct installation and power-up. The controller is designed for use in low-voltage, class 2 circuits only, with a recommended primary power input of 12 VDC or AC. The LNL-2210 Intelligent Single Door Controller can be integrated into the OnGuard Communication Server or used as a standalone device. It features a PoE/12VDC power selector jumper and tamper switch connection. The board also includes DIP switches, status LEDs, an Ethernet reset switch connector, and relay K1 and K2. Security enhancements in firmware version 1.194 or later restrict the default login account's conditions for enabling, reducing the risk of unauthorized access. When logging out or applying settings, two checks are made: if the DIP switches are set to normal operating mode and if at least one user-defined account has been created. If either check fails, an error message appears. Login failed screens may appear when the login time window expires or no user-defined accounts are detected. The Configuration Manager screen appears when attempting to log out with invalid settings. To install the intelligent single door controller, follow the procedures outlined in the sections below. First, wire the device for communication and readers according to the specifications on pages 122-124. If the power requirements exceed the reader port's capabilities, use an external power supply (page 123). For OSDP protocol devices, configure each device with a unique address and terminate only the first and last module on the RS-485 bus (pages 125-126). When using the "F/2F Format" output type in System Administration, door monitor contact and REX are terminated on the LNL-2210 inputs. Consult the reader manufacturer's documentation for proper connection terminals (page 127). For supervised F/2F readers, install a jumper between D1 and LED terminals, and connect TB4-1 to +12 VDC (pages 128-129). Finally, ensure that power supply requirements do not exceed the port's capacity. For supervised F/2F readers, a jumper is needed between D1 and LED terminals on TB2-1. This setup supports various input circuit wiring configurations like the Standard Supervised Circuit with a 1K,1% Normally Open Contact or a Normally Closed Contact. The Unsupervised Circuit also has options for Normally Closed or Normally Open Contacts. The LNL-2210 Intelligent Single Door Controller requires a 12 VDC power supply with a DC strike fuse and diode protection. Diodes must have a current rating of at least the strike current and a breakdown voltage that is four times the strike voltage, typically using a diode like the 1N4002 for 12 or 24 VDC strikes. For UL compliance, power connections should be made with minimum 18 AWG wire at TB4-3 and TB4-4. The LNL-2210 can configure its operating mode through DIP switches on S1 or by using an embedded web server accessed after initial configuration with the default login credentials. This setup allows viewing device information, configuring users, setting a session timer, and disabling the web server to isolate ports except for host communication. Lastly, the hardware installation guide includes notes on grounding the controller mounting plate separately due to its non-earthing contact with the main enclosure (J-Box). Maintenance involves downloading firmware updates as per instructions in the Hardware Installation Guidelines section. The status LEDs power up all OFF and go through a sequence during initialization before turning specific ones ON for approximately 1 second each, ending with LED 7 being turned ON to indicate successful completion of the process. Hardware Initialization and Installation Guide for LNL-2210 Intelligent Single Door Controller After hardware initialization, the application code is initialized seconds later. For UL installations, follow these guidelines: * Field wiring terminals must be suitable for single wire only. * RS-485 is not evaluated by UL and cannot be used in UL installations. * The interface is designed for low-voltage, Class 2 circuits and is intended for use with UL-listed access control or burglar alarm power-limited power supplies. **Device Specifications:** * Dimensions: 5.5 x 2.75 x 0.96 in (140 x 70 x 24 mm) * Weight: 3.8 oz (106.35 g) nominal, board only; 4.7 oz (133.28 g) with bracket **LNL-2220 Intelligent Dual Reader Controller:** * Installation guide intended for technicians installing and maintaining the LNL-2220 Intelligent Dual Reader Controller. * The IDRC provides a single-board solution to control two doors or a single door in paired mode, holding database configuration and card holder database in nonvolatile memory. **IDRC Board Components:** * Host Ethernet interface * RS-485 interface * Power-in input * Unsupervised alarm inputs (2) * Unsupervised/supervised inputs (8) * Reader interfaces (2) * Output relays (4) * DIP switches (4) * Jumpers (8) * Status LEDs (22) * Memory backup battery **Installation Procedure:** 1. Wire the device for communication. 2. Wire readers, if applicable. 3. Wire the input circuit. 4. Wire the relay circuit. Refer to pages 140 and 117 for UL Listed Installations and Default Login Security Enhancements respectively. Powering devices with different voltage requirements should be handled separately. The LNL-2220 Intelligent Dual Reader Controller has specific wiring configurations for various reader types, including Unsupervised F/2F readers and Supervised 4-State F/2F readers. Wiring callouts are provided for connections such as Ground, Reader Data 1, and LED terminal on the TB8 or TB9 terminal blocks of the LNL-2220. For Supervised F/2F readers, a jumper between D1 and LED terminals is required. Additionally, wiring specifications are given for OSDP readers, including GROUND, DATA 0, DAT/D0, CLK/D1, and READER PORT connections on TB8 or TB9 terminal blocks. The LNL-2220 Intelligent Dual Reader Controller also supports the connection of Bioscrypt Readers, requiring specific power and ground connections as per the provided diagram. Furthermore, guidelines are given for installing a standard supervised circuit with 1K Ohm resistors near the sensor to facilitate proper reporting. Hardware Installation Guide for LNL-2220 emphasizes the importance of using sufficient gauge wire to avoid voltage loss and selecting appropriate diodes based on strike current and voltage requirements. Wiring configurations for power, power fault, and cabinet tampering are also provided. Lastly, instructions are given for clearing memory by pressing the reset button or power up, accompanied by LED indicators during this process. Initial IP Addressing Mode ### Set the board for the desired initial IP addressing mode. The board can be initially configured using a fixed static IP address or an automatically assigned IP address by a DHCP server. Page 162 - LNL-2220 Intelligent Dual Reader Controller The Home page indicates the device type and has a Notes field, where you may add a description and save it. To configure network settings, click [Network] ###. If using DHCP, specify a host name. The default host name consists of "MAC" followed by the device's MAC address number. Page 163 - Hardware Installation Guide Access View allowed Edit allowed Apply Setting page Level 2: No Level 3: No For pages that cannot be viewed, a message is displayed when users attempt to access the page: "This page is unavailable due to one of the following reasons: your user level is not authorized to view this page, or another level 1 user is logged in at this time."... LNL-2220 Intelligent Dual Reader Controller Maintenance Refer to Firmware Updates in the Hardware Installation Guidelines section for instructions on downloading firmware. 30.1 Verification Power-up: All LEDs OFF. Initialization: LEDs are sequenced during initialization. The following chart describes the purpose of each LED on the IDRC board. Initialization: LED 1 LED 2... Page 165 - Hardware Installation Guide Run time: Description PFL: power fail R1: reader port 1: Clock/Data mode: Flashes when data is received, either input Data 0/Data 1 mode: Flashes when data is received, either input RS-485 mode: Flashes when transmitting data R2: reader port 2 (same behavior as R1 LED) Input status: IN1 Input in inactive state: off (briefly flashes ON every three seconds) Input in active state: ON (briefly flashes off every three seconds) LNL-2220 Intelligent Dual Reader Controller 30.2 Replace Memory Backup Battery The event log buffer and the real-time clock are backed up by a 3V lithium battery. Without power being applied to the LNL-2220, the battery will retain events and transactions for 3 months. This battery should be replaced annually to ensure proper backup functionality is maintained. Hardware Installation Guide Specifications The IDRC is for use with UL Listed access control power-limited power supplies. • Primary Power: 12 to 24 VDC ±10%, 500mA maximum (plus reader current) 12 VDC @ 250mA (plus reader current) nominal 24 VDC @ 150mA (plus reader current) nominal Page 168 - LNL-2220 Intelligent Dual Reader Controller WEEE Note: These specifications are subject to change without notice. LNL-3300 INTELLIGENT SYSTEM CONTROLLER... Hardware Installation Guide Overview of the LNL-3300 This installation guide is intended for use by technicians who will be installing and maintaining the Intelligent System Controller. The LNL-3300 provides real-time processing for the I/O interfaces connected to it. The database for the subsystem configuration and card holders are stored in flash memory. LNL-3300 Intelligent System Controller The ISC Board BR/CR2330 32.3 Default Settings Each board ships with the following default configuration. • All DIP switches are off. • IP Addressing: DHCP • DNS Name: "MAC" followed by the 12-character MAC address. • Device address: 0. With firmware version 1.194 or later, security enhancements were made regarding the default login account. Lenel LNL-3300 Intelligent System Controller Installation and Security Guide To install the ISC, follow the installation procedures described in the following sections, in the order presented. Wiring ports must be wired according to the guidelines below: TR2+ TR2+ TR2- TR2- TR3+ TR3+ TR3- TR3- Earth Earth PORT 2 PORT 3 Ground Ground The LNL-3300 accepts power between 12 to 24 VDC, and connections should be made with a minimum of 18 AWG wires. Page 176. When changing settings on the board, note that some switch settings behave differently at power up than they do after initialization. Use default login credentials when SW1 is on. Jumpers set at: Factory use only Port 2 RS-485 EOL terminator is off. Port 3 RS-485 EOL terminator is off. Connector for Lantronix CoBox-micro connection - port 1 J7, J8, J9 To configure the LNL-3300 without DIP switches or jumpers, use the web interface. Choose IP Server, Serial-RS232, or Serial-modem, Serial-RS485 (LNL-3300 only) and Serial-Adapter (LNL-3300 only). Page 179. Data Security: The controller is capable of Password/AES encryption. Port Number (default 3001) Must match setting in the access control software. High: Minimum password length is eight characters. Three of the password strength criteria must be met. Strong passwords are checked to make sure that they are not based on the user name. Maintenance: Refer to Firmware Updates in the Hardware Installation Guidelines section for instructions for downloading firmware. The Intelligent Dual Reader Controller (IDRC) is a crucial component of the Lenel hardware platform. It provides decision-making, event reporting, and database storage capabilities. The IDRC board features an on-board dual reader interface that can control up to two single reader doors. **Key Components:** * One (1) host Ethernet interface * One (1) RS-485 interface * One (1) power-in input * Two (2) unsupervised alarm inputs * Eight (8) unsupervised/supervised inputs * Two (2) reader interfaces * Four (4) output relays * Four (4) DIP switches * Eight (8) jumpers * A set of 22 status LEDs * One (1) memory backup (3 volt lithium) battery **Default Settings:** * All DIP switches are off. * IP Addressing: DHCP * DNS Name: "MAC" followed by the 12-character MAC address. * Device address: 0. **Installation Procedures:** 1. Wire the device for communication. 2. Wire readers, if applicable. 3. Wire the input circuit. 4. Wire the relay circuit. **Important Considerations:** * Install the termination jumper ONLY on the panel at each end of the RS-485 bus to ensure proper operation of the communication channel. * Power to the reader is selectable between 12 VDC and passing-through (PASS) from the input voltage of the LNL-4420, current-limited to 150 mA for each reader port. Hardware Installation Guide For a supervised input circuit, two resistors need to be added to ensure proper reporting. The standard supervised circuit requires 1K Ohm, 1% resistors, and should be placed close to the sensor. Custom EOL resistance settings can be configured through the host software. Diode selection: For 12 VDC or 24 VDC strike, a diode with 100V/1A rating is typical. TB10 or TB11 MOV Selection: Clamp voltage should be 1.5x VAC RMS for 24 VAC strike. During power-up, both SW1 and SW2 set to on for 10 seconds enables DHCP and disables SSL by default. Turn SW3 ON to disable SSL settings. To enable the default login, turn off SW2 and turn on SW1 after reaching the login screen. The board will not respond to web communications requests for about 15 seconds after power up or reset. Security enhancements starting from firmware version 1.194 restrict the conditions in which the default login account is enabled, exposing controllers to unauthorized access. Configure Primary Host Port as follows: Connection Type - IP Server, Serial-RS232, or Serial-modem (IP Client not supported), and configure additional settings under this section. After configuring the device, click [Apply Settings], [Apply Settings, Reboot], and then [Log Out]. To configure the Auxiliary Authentication Module, follow the configuration process on the OnGuard web page. Prerequisites are listed in the user guide. To configure connection settings to the pivCLASS PACS service, click [pivCLASS-Embedded-Auth]. Configure server address, port address, and enable encryption communication as required. For firmware updates, refer to Firmware Updates in the Hardware Installation Guidelines section of the user guide. Verification process: Power-up - All LEDs OFF. Initialization - LEDs are sequenced during initialization. Running - After initialization is complete, LEDs have the following meanings: - At power up, LEDs 2-6 are turned ON then OFF in sequence. The LNL-4420 has been evaluated according to its specifications, including Destructive Line Security Endurance Standby Attack (Encryption) Power. The intelligent dual reader controller is designed for use in low-voltage, class 2 circuits only and operates within a power range of 12 to 24 VDC ±10%, with a maximum current draw of 500mA. The device features primary power options of 12 VDC @ 250mA and 24 VDC @ 150mA. These specifications are subject to change without notice, and the latest version of EZWebCon can be downloaded from the Lantronix website for configuration details. For LAN connections, any baud rate set on an ISC (primary path port 1 via DIP switches 6 and 7) will work as long as the baud rate on the Lantronix box is set to match. The LNL-ETHLAN (MSS1/MSS100 Ethernet Controller) is a network device that requires transient protection. To configure the ETHLAN, users should make any additional changes specific to the hardware being connected to, such as baud rate, parity, stop bit, byte size, and flow control. Flow control can be enabled by typing "change flow control [FLOW CONTROL]" and pressing Enter, where [FLOW CONTROL] is xonoff, ctsrts, slowcts, or none. For CoBox Micro 100 communication, the device plugs directly into the LNL-2000 or LNL-500 ISC. Jumper settings must be adjusted to enable communication on either device. Refer to the CoBox Micro 100 documentation, noting that Lenel recommends enabling enhanced passwords for increased security with a maximum of 16 characters. Complete Server configuration and choose option 1 for Channel 1 setup. Disconnect Time = 00:00 Send Char 1 = 00 Send Char 2 = 00 After the changes are made, save and exit by typing '9' at the main screen. The changes will be stored in the CoBox Micro 100, terminating the connection. ISC Communications recommends security enhancements to prevent unauthorized access. To configure, telnet into the unit using the IP address. After firmware upgrade, disable port 77FE to prevent unauthorized access. Otherwise, the device should appear in DeviceInstaller. To upgrade the firmware, select the device and click [Upgrade]. The Device Upgrade Wizard will appear. A PC is required for CoBox Token Ring Serial Server configuration, with installed components including a Token Ring Network Interface Card (NIC), OnGuard Software, and HyperTerminal Software. Configure the CoBox Token Ring Serial Server: Step 1: Establish serial communication by connecting the power-off CoBox device to the PC's serial port using HyperTerminal. Select Direct Connect and choose the COM port. Change Communication settings to 9600 Baud, 8 data bits, 1 stop bit, and No Parity. Once in Terminal mode, hold down the key on the keyboard and plug in power to the CoBox device. port pin 3 pin 4 485 232 Hardware Installation Guide To configure the server and channel 1, refer to the following screen shots. Information is available for hexidecimal values. See Commonly Used Valueson page 241. Server configuration Channel 1 configuration 41.7 Lantronix SecureBox SDS1100/1101 Connect the SDS device with an ISC. revision 7 —... Page 230 ISC Communications SDS1100 to ISC, 2-wire RS-485 To LAN 9-30VDC 10/100 Ports 1 & 6 Wiring Configuration 25-Pin Connector TXD/TR1+ Pin 14 and 21 RXD/TR1- Pin 15 and 22 RTS/R1+ Not Used Lantronix CTS/R1- Not Used Pin 7 25 -Pin Fem ale Serial Connector ISC: Communications Interface Type = RS-485 RS-485 Type = 2-W ire RS-485... Page 231 Hardware Installation Guide SDS1100 to ISC, 4-wire RS-485 To LAN 9-30VDC 10/100 Ports 1 & 6 Wiring Configuration 25-Pin Connector TXD/TR1+ Pin 2 RXD/TR1- Pin 3 RTS/R1+ Not Used CTS/R1- Pins 4 & 5 Pin 7 Lantronix Jumper Together 6,8 & 20 25 -Pin Female Serial Connector ISC: Communications Interface Type = RS-232... Page 232 These instructions also apply for the CoBox-FL, with the exception of encryption. Encryption is not available on the CoBox-FL. Encryption using the Lantronix SDS is supported only for third-party devices, and not Lenel access panels. Ensure that encryption is turned off for use with Lenel access panels. Page 233 Hardware Installation Guide Server configuration IP Address. If DHCP is not used to assign IP addresses, enter the IP address manually. The IP address must be set to a unique value in the network. Enter each octet and press between each section. ISC Communications Flow. Flow control sets the local handshaking method for stopping serial input/output. The default setting is 00. See Common Flow Control Valueson page 241. Port No. The port number setting represents the source port number in TCP connections. It is the number that identifies the channel for remote initiating connections. Page 235 Hardware Installation Guide Hold down the key on your keyboard and plug the power back into the UDS device. This will allow you to enter the setup mode on the ETHLAN. At this point, type , and follow the onscreen instructions for programming. When prompted for a password, please use UDS and press . Page 236 ISC Communications Step 3: Configure the UDS ETHLAN Make sure that the device is powered up, completely booted, and connected to the Network. Start Telnet. From the connect menu, connect to the device using the IP address, Port address of 9999, and terminal type of VT100. Page 237 Hardware Installation Guide 41.8.1 Wiring Configuration for Custom DB25 Serial Cable The cable for the UDS must be a straight through cable. The Other LANTRONIX devices, such as the MSS- 100, require a null cable for serial communication to the ISC. The cable is also different because the MSS- 100 uses a serial cable with a female DB25 connector. Page 238 ISC Communications To LAN Configuring UDS-10 to ISC 4-Wire (232) 10 Base T 6 VDC Lantronix ISC: Communications Interface Type = RS-232 25-Pin Female Serial Connector RS-232 Type = 4-Wire RS-232 (Refer to ISC documentation for more information) Pin 2 TX D 485 232 TR1+... Page 239 Hardware Installation Guide Unit Setup (RS-232 4-wire) As of March 2004, the current firmware version is 4.5. Connect to the unit via Telnet through port 9999. The Channel 1 configuration is shown below. Wiring for RS-485 **Ports and Wiring** * For a 2-wire (RS-485) connection, use pins 14 and 21 on a 25-pin connector for TXD/TR1+. * The default firmware version as of March 2004 is 4.5. **Configuring UDS-10 to ISC via LAN** * Connect to the unit via Telnet through port 9999. * Configure Channel 1 using common interface mode values in hexadecimal notation. **RS-232 to RS-485 Converters (Black Box Settings)** * For a 2-wire configuration: + W5: A-B + W8: B-C + W9: C + W15: B-C + W16: B * For a 4-wire configuration: + W5: A-B + W8: B-C + W9: D + W15: B-C + W16: A **Multidropping ISC Panels** * Use the above settings to multidrop ISC panels on an RS-485 line. **Dial-Up Configuration** * Use a 9Vac (1000mA) power supply. * Configure US Robotics Sportster 56Kbps modems using DIP switches: + Data Terminal Ready: normal DOWN + Data Terminal Ready Override: [insert setting] Note that I've kept the main ideas and technical information from the original text, but condensed it into a more readable format. **Modem Settings and Installation** The Sportster modem features a row of indicator lights that display various status codes, including error control, clear to send, terminal ready, send data, received data, and carrier detect. The modem can be configured using AT commands, such as AT&F0 and AT+PIG=1+PMH=1+PQC=3. **Securcomm Uniflex DC336 Modem** The Securcomm Uniflex DC336 modem is the recommended modem for ISC dial-up configurations. It has a two-pin jumper that can be set to either dumb or smart mode, with the default setting being smart mode. The modem also features a 25-pin female RS-232 connector and a power switch. **RocketPort Hub Settings** The RocketPort hub settings can be modified in Device Manager. The settings include port mode, baud rate, timeout periods, and modem emulation options. It's recommended to install the driver for the RocketPort Si Hub before configuring the hub. **Configuring the RocketPort Hub** To configure the RocketPort hub, refer to the Single Multi-Mode Duplex Data Transmitters Receivers Installation Guide, which is included with the device. The DFDMM001-TX and DFDMM001-RX are both needed, as they work as a pair connecting upstream to a Lenel Access or Security Series controller. **Important Safety Notice** When disconnecting the fiber optic connector from the RocketPort hub, be sure to turn off the power first to avoid exposure to Class I invisible optical radiation. To ensure safe radiation exposure, follow specified procedures and avoid making unauthorized adjustments or performing operations. The LNL-1100 Input Control Module (ICM) provides high-speed acknowledgment of critical alarm points in monitored areas, featuring sixteen configurable input control points and two output control relays. The ICM supports various circuit types, including normally open, normally closed, supervised, and non-supervised circuits. Scalis To configure the elevator control, navigate to the Elevator Hardware tab in the System Administration software's Readers window. The device communication address can be set by configuring DIP switches 1-5 on the Input Control Module board according to a specific table. For communication baud rate, set DIP switches 6 and 7 to match one of three available options: 38,400 bps, 19,200 bps, or 9600 bps, but note that OnGuard only supports 38400 bps. The communication password status is controlled by DIP switch 8. Installation involves setting the baud rate, address, and LED control switches, installing jumpers, and mounting the board in an enclosure. The Input Control Module board has user-selectable DIP switches for configuring addressing, baud rate, and other functions, as well as an RS-485 termination jumper. 2. For RS-485 communication termination, a jumper must be installed on the last ICM unit on the communication line. Refer to page 293 of the upstream wiring diagram for more information. LNL-1100-U Input Control Module 48.3 Status LEDs Note: The status LEDs only function when the cabinet door is open. When closed, they remain off. 48.3.1 LED Table for Series 2 LNL-1100 Mode When switch 5 is in the ON position, the LEDs behave like the series 2 LNL-1100. Page 287 Hardware Installation Guide: CPU Status LED and Module Error Conditions Error condition Flashing Description pattern No valid application firmware Red The module is not operational. Firmware must be loaded using a console, e.g., HyperTerminal with Xmodem. LNL-1100-U Input Control Module Mounting The ICM can be mounted in various enclosures using the Universal Mounting Plate (UMP). Mounting the ICM in specific enclosures requires reference to page 289 and page 288 of the Hardware Installation Guide. LNL-1100-U Input Control Module Wiring Wire inputs I1 through I16 using a twisted pair cable with a maximum resistance of 30 ohms. Use a minimum of 24 AWG wire. For UL installations, refer to section UL Listed Installations on page 296. ICM input wiring requires reference to the Input Resistor Table. Each supervised alarm must be terminated with two (2) 1K (1000) ohm resistors, provided with the module. Given text here The Power In input with a minimum 18 AWG twisted pair cable is required. DC power source requirements include: - Isolated, non-switching, regulated DC power - Current: 300mA for 12VDC and 150mA for 24VDC Note to observe polarity. Power source wiring must be installed according to 50.7 UL Listed Installations specifications. LNL-1100-U is for low voltage, class 2 power-limited circuits only. Primary power: - 12 to 24 VDC + 10% - Nominal values: 12VDC @ 300 mA and 24VDC @ 150 mA - 12.3 BTU/hour Input Control Module: - Revision 7 - LNL-1200 Output Control Module - RS-485 communication Each OCM is an individually addressed device with a maximum of 16 devices on each ISC. OCM can be powered by 12 to 24 VDC power. Dedicated tamper and power failure input contacts are included with every OCM. Output Control Module: - Series 2 board contains components such as alarm output relays, unsupervised alarm inputs, RS-485 interface, power input, DIP switches, and jumpers. 20 LEDs verify correct installation after power up. Power-up: All LED's OFF. Initialization begins once power is applied. A LED turns on at the beginning of initialization. If application program cannot be run, A LED flashes rapidly. To install Output Control Module, perform procedures in Hardware Installation Guide sections, in order presented. Wiring includes unsupervised alarm inputs for power fault and cabinet tamper monitoring, upstream host communication. RS-485 communication is asynchronous, half-duplex with 1 start bit, 8 data bits, 1 stop bit. LNL-1200 series 2 upstream controller communication wiring: 2-wire (port 1) RS-485. Elevator Control OnGuard hardware supports elevator control for up to 128 floors. Application software must be configured for elevator control on Elevator Hardware tab in Readers window of System Administration software. "Elevator" box should be checked for reader's type, name, port, address, access panel definition. To set up communication on the LNL-1200 Output Control Module (OCM), you need to configure the baud rate using DIP switches 6 and 7. The default baud rate is 38,400 bps, but you can change it to 19,200 bps or 115,200 bps if needed. The OCM board has two types of ports: 2-wire and 4-wire. It also has a RS-485 interface that allows for communication with other devices on the same circuit. The board is designed for use in low-voltage, class 2 circuits only. To install the OCM board, you need to set up the DIP switches, install jumpers, and mount the board into an enclosure. The board has two 8-position DIP switches that control addressing, baud rate, and other functions. One of these switches controls the utilization of encryption. The OCM board also has status LEDs that indicate the state of the relays and power supply. There are 16 alarm output relays with corresponding status LEDs, as well as two unsupervised alarm inputs and one RS-485 interface. To configure the OCM board, you need to set up the DIP switches, install jumpers, and configure the RS-485 termination jumper. This jumper is used to enable RS-485 communications on the last OCM on the communication line. The OCM board also has a package contents list that includes the board itself, as well as any necessary jumpers or screws. Finally, there are some error conditions described in the text, including flashing LED patterns that indicate when the boot loader is loading a firmware file, or if an invalid EFL file is detected. The EFL specified for loading with Console 2 Green loader is not a valid EFL file. The Output Control Module (OCM) can be mounted in various enclosures using the Universal Mounting Plate (UMP). For specific mounting instructions, refer to the Hardware Installation Guide. The OCM features two unsupervised alarm inputs for power fail and external tamper monitoring. It also uses Port 1 for upstream communication with the Intelligent System Controller via a 2-wire RS-485 interface. The module contains 16 form-C dry-contact relay outputs and is capable of supporting elevator control for up to 128 floors. The OnGuard software must be configured for elevator control, which can be done through System Administration. For UL installations, specific wiring requirements apply, including the use of 22 AWG minimum for RS-485 wiring. The module is designed for connection to low-voltage, class 2 power-limited circuits only. The LNL-1300 Single Reader Interface (SRI) module supports various access control solutions, including readers with keypads and off-line access modes. It also supports lock/unlock and facility code functionality on all connected readers. The Single Reader Interface Module Board contains components for supervised alarm inputs, RS-485 interface, relay outputs, power input, and jumpers. This module communicates with the Intelligent System Controller using a 2-wire RS-485 interface and can be configured to select door contact and REX status through access control software. The Single Reader Interface Module uses Port 1 for communication, requiring a specific type of RS-485 cable. The module also contains two form-C dry-contact relay outputs, K1 and K2, which are used for various functions such as reader authentication and system configuration. In addition to its primary function, the Single Reader Interface Module can communicate downstream with one keypad or card reader using a six-wire interface that includes a buzzer control wire and an LED control wire. The module accepts data from readers with F/2F and supervised F/2F signaling and door hardware, and is compatible with firmware version 1.52.13 or later. The Single Reader Interface Module installation process involves wiring the supervised alarm inputs for door position and REX exit push button monitoring, as well as upstream host communication. The module can be configured to select the type of reader edge inputs, which include 2-State or 4-State supervision options. OnGuard hardware is capable of supporting elevator control for up to 128 floors, allowing for efficient access management via an elevator reader. To configure the device, install jumpers between D1 and LED terminals on LNL-1300 TB4-6: +12 VDC connection normally 63.1... Elevator Control OnGuard hardware installation guide The intelligent single door controller requires a series of installation procedures, which must be completed in order. This includes wiring the device for communication, wiring readers, and supplying power to the controller. ####Reader Wiring Two reader ports are supported: 1. The first reader port supports Wiegand, magnetic stripe, and 2-wire RS-485 interfaces. It is powered with 12 VDC, limited to 150 mA. 2. The second reader port supports Wiegand and magnetic stripe interfaces. It can be powered from the auxiliary output on TB5-1 and TB5-2. Optional wiring to reader port 1 may utilize power and ground connections from this port. ####Unsupervised F/2F Wiring Two configurations for unsupervised readers are described: 1. **Reader Port 1**: This configuration includes a +12 VDC connection, an LED terminal connection, Reader Data 1 connection, and Ground connection. 2. **Reader Port 2**: Similar to the first, but with different terminal callouts. ####Supervised F/2F Wiring Two configurations for supervised readers are described: 1. **Reader Port 1**: This configuration includes a +12 VDC connection, a jumper between D1 and LED terminals, Buzzer terminal to Reader DO (GREEN LED) connection, Reader Data 1 connection, and Ground connection. 2. **Reader Port 2**: Similar to the first, but with different terminal callouts. ####Supervised Board Edge Wiring This configuration is for supervised readers on reader port 1. It includes a +12 VDC connection, jumper between D1 and LED terminals, Buzzer terminal to Reader DO (GREEN LED) connection, Reader Data 1 connection, and Ground connection. The LNL-1300e Single Door IP Interface Module supports various input circuit wiring configurations, but these may not be typical. For standard supervised circuits, normally open and closed contacts are used, as well as unsupervised circuits with normaly open and closed contacts. When using power-over-Ethernet (PoE) on the LNL-1300e, it is recommended to configure the network switch to 10 Mbps or half duplex to avoid intermittent communication issues. Two addressing modes are available: static IP addresses and public DHCP. To set up a static IP address, users must configure the DIP switches to "0010" and enter three digits in the address field with leading zeros. After completing this setup, the device will display its assigned IP configuration. The LNL-1300e is capable of supporting elevator control for up to 128 floors, but requires OnGuard software configuration. The mounting plate dimensions are Ø0.16 [Ø4.0] and Ø0.16 [Ø4.0] with specific holes for the magnetic switch set and blank cover. LEDs on the device indicate status updates, including a power-up sequence and periodic pulsing of the LED to its opposite state if input IN1, IN2, or IN3 is defined. The LNL-1300-U Single Door Controller Module is a solution for interfacing with Wiegand/RS-485 type readers and door hardware. It can accept data from a reader using various signaling methods. For UL installations, it's crucial to note that RS-485 cannot be used, and each field-wiring terminal must support single conductor only. The module provides tri-stated LED control and buzzer control, with detailed mounting instructions available in the Hardware Installation Guide (DOC-600). The

LNL-1300e Single Door IP Interface Module operates within low voltage Class 2 circuits only, powered by PoE at 12.95 watts or a 12 VDC ± 10% power supply up to 900 mA maximum. The module is FCC Part 15 compliant and CE marked, adhering to RoHS and WEEE standards. Its specifications may be subject to change without notice. Installation involves setting baud rate, address, and LED control switches, installing jumpers, and mounting the board into an enclosure, requiring the LNL-CONV-4 Universal Mounting Plate for CTX enclosures. Configuration is facilitated through two 8-position DIP switches and four jumpers. The module offers various settings, including communication baud rate, LED mode, address selection, jumper configuration, and status LEDs that only function when the cabinet tamper switch is open. The SDC (Single Door Controller) can be mounted in various enclosures using the Universal Mounting Plate (UMP). This plate can hold up to two LNL-1300-U modules. The SDC requires specific wiring and connections for alarm inputs, which are configured according to a standard resistor table. For UL installations, refer to page 400 for wiring specifications. The alarm inputs use a twisted pair cable with resistors to terminate each input. The Single Reader SDC Interface Module can communicate downstream with one card reader using six wires that include buzzer and LED control. The interface uses an open collector type switching circuit and requires power voltage of 12V DC or optional 5V DC jumper selectable. The Open Supervised Device Protocol (OSDP) enables bi-directional communication between readers and the reader interface, providing real-time monitoring and control of reader operation and configuration. The SDC supports elevator control for up to 128 floors, requiring software configuration from System Administration. An external cabinet tamper can be configured by connecting a device across pins 3 & 4 of J18 on the SDC. Note that power fail is not supported on the SDC, and an AC transformer should not be used to directly power the Single Reader SDC Interface Module. For UL installations, specific requirements must be observed as outlined in the Hardware Installation Guide. • Primary power: 12 to 24 VDC, with a nominal 24 VDC at 350 mA (includes reader current), or 12 VDC at 700 mA (includes reader current) @ 10% variation. • The LNL-1320 Dual Reader Interface Module supports up to 64 access control card readers, keypads, or combinations of both that use standard data1/data0 and clock/data Wiegand communications. • Lock/unlock and facility code functions are supported for all readers connected to the DRI. • The module features eight supervised/non-supervised alarm inputs, one RS-485 interface, two reader interfaces, six relay outputs, one power input, one cabinet tamper, jumpers, and eight DIP switches. 81.1.4... Page 414 LNL-1320 Dual Reader Interface Module Typical Reader Wiring RED (1) BRN (4) ORG (5) WHT (3) D1/CLK GRN (2) D0/DAT BLK (6) All readers with a buzzer will beep during pre-alarm in extended held open mode, including primary and alternate readers. Page 415 Hardware Installation Guide Unsupervised F/2F Reader Wiring Callouts Callout Description TB8 or TB9 on LNL-1320 Unsupervised F/2F reader TB8-1: +12 VDC connections TB8-2: LED terminal to Reader DO (GREEN LED) connection TB8-4: Reader Data 1 connection TB8-6: Ground connection Typical Supervised F/2F Reader Edge Inputs Inputs for door position monitor and REX switches are directly wired to the F/2F reader, configured for 2-State or 4-State Supervision. Page 416 LNL-1320 Dual Reader Interface Module Supervised 4-State F/2F Reader Edge Wiring Callouts Callout Description TB8 or TB9 on LNL-1320 Supervised F/2F reader TB8-1: +12 VDC connection For supervised readers, install jumper between D1 and LED terminals. TB8-3: Buzzer terminal to Reader DO (GREEN LED) connection TB8-4: Reader Data 1 connection TB8-6: Ground connection Normally Closed contact for door monitor switch... Page 417 Hardware Installation Guide Supervised Board Edge Wiring Callouts Callout Description TB8 or TB9 on LNL-1320 Supervised F/2F reader TB8-1: +12 VDC connection For supervised readers, install jumper between D1 and LED terminals. TB8-3: Buzzer terminal to Reader DO (GREEN LED) connection TB8-4: Reader Data 1 connection TB8-6: Ground connection 81.1.6... Page 418 LNL-1320 Dual Reader Interface Module Wire BA and CT inputs using twisted pair cable, 30 ohms maximum. No EOL resistors are required. CABINET IN 9 TAMPER POWER FAULT IN 10 The Electronic Industries Association standard defines RS-485 for multi-port communications on a bus transmission line. Hardware Installation Guide Supply Power to the Interface 12 to 24 VDC 81.2 Elevator Control Currently, elevator control is supported for up to six floors on the Dual Reader Interface Module. Access Control System Intelligent System Controller Maximum: 500 feet Dual Reader 6 conductors Interface... Page 420 LNL-1320 Dual Reader Interface Module Contact Wiring for Elevator Control DRI Alarm Input Contact Wiring DRI Alarm Output Contact Wiring Floor Output 1 Reader Aux 1 In 1 RLY 1 Reader Aux 2 In 2 RLY 2 Floor Output 2 Reserved for Future Use In 3 Floor Output 3 Device communication address (0 - 31) 6, 7 Communication baud rate Downstream encryption (available with OnGuard 2009 or later) Given article text here

Looking for a controller to manage doors, this dual door controller module seems like a good option. It has a specific voltage range of 12-24VDC and can handle up to 550mA of power. There are different settings and configurations to consider, such as baud rate and address switches, which can be adjusted using DIP switches or jumpers. The board contains seven jumpers that need to be configured for the system, including jumper J33 for RS-485 communications termination and jumper J17 for +12VDC readers. It's also important to note that there are different LED modes, such as series 2 LNL-1320 mode, which can be achieved by setting switch 5 to the ON position. To install the Dual Door Controller (DDC), you need to follow a specific order of installation procedures, including mounting the board in an enclosure and configuring the baud rate, address, and LED control switches. The DDC has two user-selectable DIP switches that allow for addressing and baud rate adjustments. The LNL-1320-U Dual Door Controller Module can be installed using the Universal Mounting Plate (UMP) LNL-CONV-U1 with enclosures such as the LNL-AL400ULX or LNL-CTX, and the LNL-AL600ULX-4CB6 or LNL-CTX6. For UL installations, refer to section UL Listed Installations on page 447. For wiring, use twisted pair cable with a maximum of 30 ohms and a minimum of 24 AWG for inputs I1 through I8 (J19 - J22). The DDC can communicate with two card readers using the six-wire interface that includes buzzer and LED control. Reader power is optional at 12 VDC or jumper-selectable to 5 VDC, with a maximum current of 400 mA. The module supports Open Supervised Device Protocol (OSDP) for bi-directional communications between readers and the reader interface. The DDC also features two unsupervised alarm inputs for power fail and external tamper monitoring. Hardware Installation Guide Refer to UL Listed Installations on page 447. The LNL-1320 is designed for connection to low voltage, class 2 power-limited circuits only. Specifications subject to change without notice. The Magnetic Card Access Readers are available in both 5VDC and 12VDC models, with fully weatherized metal casing shells providing strength and durability. The readers comply with FCC Part 15 rules and must accept any interference received to operate properly. Key features include DIP switches for configuration/parameter setting, keypad connectors, and RJ-11 jack connections. To install the reader, remove the top mounting bracket and access the DIP switches using a small tool. Clean the read head(s) as contamination can cause accelerated wear. The reader's wiring diagram shows typical settings for the keypad, terminal output, and LED modes. The reader is designed for use in low-voltage, class 2 circuits only and requires power between 5.8VDC (4.9-6.4VDC) or 12VDC (10.2-13.8VDC). It has a current rating of 80mA (25mA typical) and data output capabilities. For mounting, the reader comes with an optional wall plate and requires a mounting hole that is 1" x 1". The weather shield should be cleaned, sanded, and brushed to provide a smooth finish. The installation guide notes important specifications and precautions for safe operation. The Magnetic Card Access Readers, including LNL-2010W, LNL-2020W, LNL-2020W-NDK, and LNL-2020W-NDKV2 models, offer durability, dependability, convenience, and competitive pricing. These readers are available in both 5 VDC and 12 VDC versions. The LNL-2010W is a magnetic swipe-only model, while the LNL-2020W/NDK/V2 features a twelve-position keypad. Installation of these devices involves following specific guidelines to ensure compliance with part 15 of the FCC Rules. This includes not causing harmful interference and accepting any received interference, including that which may cause undesired operation. To disconnect the keypad, follow the previously described steps in reverse. It is crucial not to disconnect the keypad without disengaging the connector first. The readers are designed for heavy traffic areas, with extended life read heads available from the factory at the time of order, extending the read head life up to 1 million card swipes. For outdoor readers in heavy traffic areas, cleaning should be performed at least once per month. Configuration options include standard format codes and DIP switch/jumper settings. Keypad data and tamper monitor signaling are transmitted on the data lines as 8-bit blocks, encoded using the same signaling method selected for the card data output. Wiring for these readers includes connecting to an LNL-1300 or LNL-1320-U device, with specific wire descriptions and typical software settings provided. The reader has two blinking LEDs that signify its status, including card and PIN verification, cipher lock emulation, and facility behavior.

Installation Guide This guide provides information on installing the LNL-2010W/2020W/2020W-NDK/NDKV2 Magnetic Card Access Reader and LenelProx readers. **Product Identification** The reader product identification is provided on labels with information such as program ID, revision, product ID, supply voltage, and copyright notice.

Reader Specifications * The reader operates in low-voltage class 2 circuits only. * Power: 5V model (4.9-6.4 VDC) or 12V model (10.2-13.8 VDC). * Current: 80mA (25mA typical). **Installation Requirements** * Mounting dimensions: + LNL-2020W-NDK: 1.25" x 2x 0.18" mounting hole, 1.0" x 2.56" dimension. + Optional wall plate WP-10: 2.75" x 2x 0.18", 1.4" x 1.2" * Weather shield (part # LNL-WS10): + Must have rounded/smoothed edges with a radius of 0.015". + Material: stainless steel, type 304-2B, 18GA. **LenelProx Readers** The LenelProx readers are radio-frequency proximity readers with integrated keypads or without. Supported models include LPMM-6800, LPSP-6820, LPKP-6840, LPSR-2400, and others. **Important Installation Considerations** * Do not install the reader in areas with sources of broadband noise. * Do not bundle reader wires together with AC power cables or other signal wiring. * Ensure all readers are connected to a single ground point for multiple reader installations. Snap open the reader's top cover by inserting a screwdriver blade into the slot at the bottom edge of the cover and twisting it gently. Connect the reader to the access control panel according to the diagram. For unused wires, use tape or caps individually. Power up the reader; the LED will be steady amber. Present any Lenel proximity credential (card, keytag, or wafer) briefly to the reader. The beeper should sound a single short beep, and the LED will turn steady red, indicating standby mode. The reader is now initialized and prepared to read authorized cards. To change the LED standby mode from blinking red to steady red or vice versa, use an LED Mode Changer card (available from Lenel) by removing power from the reader for a few seconds, then restoring it while the LED is amber. For hardware installation, place a single-gang utility box at the desired mounting height, observing ADA requirements. Alternatively, drill clearance holes for the reader and one hole for the cable. When wiring the LPKP-6840 and LNL-1320 readers, ensure correct pin assignments according to the table provided. The typical software settings include setting the reader type to Wiegand/Prox, keypad output to 8-Bit, data 0 to green, and ground to black. It is essential to comply with FCC regulations by avoiding harmful interference in residential areas. Users are prohibited from modifying the product, as any such change will void their authority to operate under FCC Part 15 Subpart A Section 15.21 regulations. To change the LED mode of your LPRKP-4600, use an LED Mode Changer card from Lenel. Simply shut down power for a few seconds, then turn it back on while holding the card near the reader during its amber phase. This will toggle the LED's standby mode between blinking-red and steady-red. When mounting your reader, consider using a single-gang electric utility box or drilling clearance holes for screws and cable access. Ensure the surface is securely mounted to prevent damage from environmental factors. Use epoxy resin to protect against harsh conditions. For initialization, insert a valid Lenel proximity credential (card, keytag, or wafer) near the reader's lower-end indent. This will initialize the device. To read a credential or enter keystrokes, hold the card or press the marked key firmly over the designated area. If you have a LenelProx Reader with radio communications, be aware that its operation in residential areas may cause interference, requiring correction at your expense. Any modification to this product voids your authority to operate under FCC regulations. When using the LPMR-1824 reader, always mount it on a metal surface larger than its 8 x 8 inch housing, ideally with a minimum of 12 square inches. This enhances the device's performance and ensures proper functioning. For optimal read range, use Lenel's Prox-Linc CS clamshell cards or GR/GRMAG cards for rated performance. KT key tags offer about 75% of the GR cards' range, while PW proximity wafers provide approximately 40%. During installation, present a Lenel card to the reader, observing how its LED changes from red to amber and back to steady red when the card is removed. Experiment with the maximum reading distance and record your findings for future reference. Lastly, consider Single Point Grounding to ensure secure and efficient device operation. The LPLR-911 reader does not have ground loops and uses a uni-directional antenna with an oval-shaped beam, which should be aimed at the transponder's path. For optimal results, mount it on a post about 6 to 7 feet above the pavement, angled slightly downward toward passing vehicles. The reader can detect WS tags or MT tags attached to vehicle windshields or other surfaces, and the firmware allows selecting read repetition rates. Failure to follow the installation guide may result in poor performance or damage to the reader, voiding the product warranty. The installation process involves attaching WS tags firmly to vehicle windshield glass or other surfaces using a one-time application adhesive. For outdoor installations, add silicone adhesive around the perimeter of the tag. The LPSP-6820-LR test unit is connected to the reader cable and powered using the plug-in DC power module in the Installation Kit. The LPLR-911 reader has operating specifications including temperature (-35° to 65°C), humidity (0 to 95% non-condensing), transmitting frequency (902 to 928 MHz), voltage (6.5 VDC to 15 VDC), and current requirement (1.0 A to 0.4 A). It outputs in Wiegand and RS-232 formats. Lenel Keypads are available in two styles: a 3 x 4 keypad and a 2 x 6 keypad. The reader power specifications for the LNL834S121NN and LNL826S121NN models include voltage and current requirements. When connecting multiple readers to one interface module, ensure that only one reader's LED control is connected at a time to avoid issues. Typical software settings for the LNL-1300 and LNL-1300-U models include keypad output, reader type, and LED mode. The OpenCard readers also have specific installation guides and specifications. The Lenel OpenCard readers (LNL-XF1100D, LNL-1300, and LNL-1500) require specific wiring to connect them to single or dual reader interface modules. The diagrams provide instructions for wiring these readers to the interface modules. For the LNL-1300 and LNL-1500 readers, the wiring involves connecting the clock/diagnostic pin (Green), data pin (White), drain/tamper input pin (Black), and power pins (Orange) to the reader. The typical software settings for each reader are also provided. Additionally, Lenel offers a Bluetooth-based mobile reader system called BlueDiamond Mobile Readers. This system uses a cardholder's virtual credential issued by the OnGuard system administrator to verify identities. Before using these readers, they must be commissioned and installed using the DirectKey Toolkit, which requires an authorization code for first-time users. Note: Reader names must be imported using a template to match the OnGuard configuration, as they are not automatically duplicated or synchronized. Installation Guide revision 7 — Page 558-562 BlueDiamond Mobile Readers 558-562 — revision 7... LNL-500B BIOMETRIC READER INTERFACE... 8 or higher for BRI configuration. The Biometric Reader Interface Board consists of two unsupervised alarm inputs, one upstream RS-232 or RS-485 interface, two downstream RS-485 interfaces, one power-in input, eight DIP switches, and eleven jumpers. Hardware Installation Guide: 1. Wire the upstream host communication. 2. Wire the power input. 3. Wire the downstream device communication. 4. Cycle power to the device. Wiring: * Use 24 AWG twisted pair (with shields) for RS-485 cables. * Keep main run RS-485 cable no longer than 4000 feet and impedance at 100 ohms maximum (Belden 9842 or equivalent). * Device drop cables should be kept as short as possible, no longer than 10 feet. RS-485 Communications: * The EIA standard defines RS-485 as an electrical interface for multipoint communications on a bus transmission line. Configuration: 1. Configure the BRI board by setting DIP switches and jumpers. 2. Use DIP switch chart to configure interface address, baud rate, and other settings. Note: This installation guide is for revision 7 of the BlueDiamond Mobile Readers hardware and software. This document describes the settings and configurations for the LNL-500B Biometric Reader Interface. The baud rate for upstream communication can be set using DIP switches 6 and 7, with different settings affecting the behavior of the interface depending on the firmware type. Additionally, downstream baud rates are controlled by DIP switch 8. The BRI board contains three status LEDs that indicate proper installation upon power-up. These LEDs serve as a verification tool to ensure correct setup after powering on the device. For biometric readers, it is mandatory to link them to a primary reader using OnGuard software for operation. However, setting up the reader for PIN and biometric verification without a primary reader also requires installing a standard reader interface module (LNL-1300 or LNL-1320). The supported biometric readers include HandKey CR, ID3D-R, and HandKey II. These hand geometry readers can be used for identity verification. Other supported readers are those with iCLASS and MIFARE capabilities. For the HandKey CR, II, and ID3D-R readers, voltage requirements range from 12-24 VDC at a maximum current of 1 A, and the controller supports up to 64 readers. Port configurations vary, and specific setup instructions for these readers can be found in their respective manuals. The Schlage HandKey Reader can interface with various devices, including the HandKey-II, HandKey-CR, and ID3D-R. The Access Control Server/Enrollment Controller connects to the WAN/LAN network, allowing for up to 64 readers. Configuration involves setting DIP switches on the HandKey unit, ensuring proper grounding, and configuring RS-232 communication settings. To set the time and date, use a 24-hour clock format with two-digit hour (00-23) and minute (00-59), along with a two-digit month (01-12). For specific reader configurations, refer to the HandKey Installation Manual for detailed procedures. When configuring readers like the ID3D-R for verification purposes, follow specific settings for DIP switches. This involves resetting default configurations by setting certain switches, then selecting the baud rate that matches the biometric reader interface. Once cards are encoded with devices configured in OnGuard under Workstations, they can be used on MIFARE or iCLASS HandKey readers. Encoding requires configuring a device's name and selecting which hand to capture. After capturing the biometric template, save it for proper functioning. Lastly, ensure that MIFARE HandKey readers run firmware version HK2-11045A.247 or higher, while iCLASS HandKey readers must have firmware HK2-11142A.175 or higher for compatibility with OnGuard software. Given article text here If the date format is aceptable, press [*/No] to move onto the next option or enter [#/Yes] at the prompt to set the date format. Once you do this, selecting [*/No] will allow you to pass each current date format. Page 599 Hardware Installation Guide Place your hand on the platen when instructed to do so. You may be instructed to place your hand a second time. Access is granted/denied depending on the results of the badge number and hand geometry data from the MIFARE/iCLASS HandKey reader, as well as on the System/Individual Reject Threshold for hand geometry templates selected for the settings to store minimum score per template. Page 600 HandKey Readers 600 — revision 7... BIOMETRIC READERS... Hardware Installation Guide Overview of Biometric Readers This installation guide is intended for use by technicians who will be installing and maintaining the OnGuard system with Bioscrypt readers. For more information, refer to the following: • MorphoAccess SIGMA Series Reader • DESFire EV1 cards encoded with the Open Encoding Standard (DESFire) application and OpenCapture fingerprint templates. In this case, the MorphoAccess SIGMA reader is connected to OnGuard via Ethernet. 114.1 Configure as an Alternate Bioscrypt Reader To use the MorphoAccess SIGMA Series reader as a Bioscrypt fingerprint identification terminal, configure it in System Administration as an alternate reader linked to a primary reader. MorphoAccess SIGMA Series reader and application key settings must be configured using MorphoBioToolbox. For information about configuring the Open Encoding Standard (DESFire) smart card format in OnGuard, refer to the "Open Encoding Standard (DESFire) Card Format Form" in the System Administration and ID Credential Center User Guides. Page 606 Enter a name for the card format and the length of the Wiegand data that will be encoded on the cards in BOTH Length fields. Length should match the length of the Access control card format configured for the Open Encoding Standard (DESFire) card format in the OnGuard software. Leave all other fields at their default value. Page 607 Hardware Installation Guide – Key validity start date: Select today's date. Press [Load Key]. revision 7 —... Biometric Readers Bioscrypt 4G V-Station and V-Flex Readers The Bioscrypt 4G V-Station and 4G V-Flex readers can be used with OnGuard the same as V-Station and V- Flex MV1610 (3G) devices for capturing and for fingerprint verification with primary and secondary templates. Hardware Installation Guide In the following example, the 4G reader is using COM7. Your setup may be different. Start the SecureAdmin software and log in. On the Network tab, click Register via Client. Configure the following settings: Port: Select the port number to which the device is connected. See step 1. b. Page 610 Biometric Readers On the Communication tab, verify the following settings: Device ID: (This value corresponds to the address of the reader and will be the Reader number in System Administration): – If you are using the reader as an enrollment/capture device, the ID should be 0. –... Page 611 Hardware Installation Guide The menu on the left side of the window, select Smart Card > Card Device Manager, and check boxes Use Wiegand String, Overwrite Card Wiegand String, and Read-Only Mode. Click [OK]. 115.4 4G Reader Interface Connections provided for LNL-500B biometric gateway and LNL-1300/1320 reader interface connections to 4G readers in System Administration in the Readers and Doors folder. Device ID in SecureAdmin must match Reader number in OnGuard configuration, wire pin 3 to earth ground, wire pins 1 and 2 to power source. Page 614 Biometric Readers Wiring for MIFARE/iCLASS/DESFire badges encoded using Bioscrypt 4G V-Flex or 4G V-Station connected to a reader interface module as Wiegand/prox Pin 14 (White) CLK/D1 Pin 12 (Green) DATA/D0 Pin 5 (Black/Red). Page 615 Hardware Installation Guide Wiring for fingerprint verification templates using Bioscrypt 4G V-Flex or 4G V-Station connected to a reader interface module as a Bioscrypt RS-485 alternate biometric reader Pin 1 (Blue) CLK/D1 Pin 3 (Blue/Black) DATA/D0 Pin 5 (Black/Red). Page 616 Biometric Readers Wiring for Bioscrypt 4G V-Flex or 4G V-Station and biometric reader gateway TR1+ TR1- Pin 1 (Blue) TR2+ Pin 3 (Blue/Black) TR2- Pin 5 (Black/Red) TR3+ TR3- Pigtail connected to back of reader 1 - PWR 12-24 VDC power source. It can also be obtained from the Supplemental Material disc, enrollment done through Multimedia Capture Module, and configuring Bioscrypt readers in OnGuard software. Hardware installation guide for Bioscrypt Interface ISC and related readers. The V-Smart reader is equipped with a fingerprint scanner and contactless smart card reader, supporting MIFARE or HID iCLASS model R10 cards. Installation requires software option SWG-1402 to function with OnGuard software. The V-SmartA-G reader supports MIFARE cards, while the V-SmartA-H reader supports HID iCLASS cards. The standard V-Smart reader interfaces with the reader interface module (LNL-1300 and LNL-1320), intelligent dual reader controller (LNL-2220), or intelligent single door controller (LNL-2210). Reader power requirements include an Earth ground connection for ESD dissipation, +12 VDC (@ 400 mA) power supply, and a smart card reader RJ-11 connector connected to the host PC's serial port. The V-Pass FX and standard V-StationA readers are connected to the LNL-500B or series 2 LNL-1300/1320/LNL-2220/LNL-2210 using RS-485 2-wire multi-drop. The use of series 2 reader interface modules requires OnGuard 5.12.012 or higher, and intelligent dual reader controller use demands OnGuard 5.12.110 or higher. V-Pass FX readers must be wired according to specific signal color pin configurations, ensuring correct signal ground connection for proper function. It is recommended that the RS-485 transmission line be terminated at both ends with fail-safe termination, ensuring a known state and reduced strain on the driver. V-StationA units require jumpering of TX(+) and RX(+) together, and TX(-) and RX(-) together, before connecting them to TR+ and TR- respectively on the BRI. Wiring Diagram: Biometric Readers V-StationA RS-485 (2-wire) to LNL-500B: ±15% Voltage: 12VDC or 12VDC Current Draw: 250mA @ 12 VDC ISC TR1+ ACDC TR1- 12VDC TR2+ TR2- TR3+ TR3- LITHIUM BR2325 Biometric Reader Interface Gateway: 12-24 VDC (12 V Recommended) Current Draw: Idle: 0.50 A @ 12 VDC; Max: 1.50 A @ 12 VDC Ethernet Hardware Installation Guide: firmware for these units must be upgraded using VeriAdmin. The reader must be configured using VeriAdmin software (version 7.40). Configure the LED Table Settings for the reader in Idle, Enroll, or Verify modes as shown in section 116.3.8 LED Settings. Biometric Readers: On the Biometrics tab, Select the Global Security Threshold. Make sure that Biometric Verification is Enabled, and that Finger Required is selected. Select the number of fingers required and enter the Inter-Finger Timeout in seconds. Under Unit Mode: Select Verify. Hardware Installation Guide: 116.3.6 V-Smart V-Smart readers can be used as access readers, connected to the reader interface module (LNL-1300, LNL-1320), intelligent dual reader controller (LNL-2220), or intelligent single door controller (LNL-2210). Wiring the V-Smart reader with the Single Reader Interface Module: Power Ground (11) Power Supply; Power In (8-12VDC 400 mA) (13). Biometric Readers: Configure the LED Table Settings for the reader in Idle, Enroll, or Verify modes. Configure the settings for the V-Smart reader as shown in the following screenshots. LED Table Settings for Idle mode LED Table Settings for Enroll mode LED Table Settings for Verify mode Hardware Installation Guide: 116.3.9 Smart Card Settings If the Smart Card Manager shows an error, this means that the reader is not properly connected. Configure the Smart Card settings via the Smart Card Manager. This is accessed by clicking the smart card button in the toolbar. Smart Card Manager (MIFARE shown) Click [Security Settings] to configure the smart card security settings. Smart Card Security Settings for MIFARE: In the ESI SiteKey Security section, if you are using a MIFARE reader, Key B Read/Write should be selected. If you are using an iCLASS reader, this field will be blank. Note that all units should be configured to these specifications for the Smartcard Administrator SiteKey: –... MIFARE Smart Card Layout Manager For iCLASS readers, cards should already be encoded. If you require encoding, use an iCLASS encoder for the enrollment workstation. Using Bioscrypt tools will create a 1K card, which is not practical. iCLASS Smart Card Layout Manager 116.3.10 Unit Parameter Settings: From the Configure menu, select Unit Parameters. Initially, the Aux Port is disabled and –... To use V-Smart units with OnGuard software, enable the Aux Port with the password "95186274". This will allow the software to recognize the password and enable the port without user intervention. For Lenel64 custom format, set the card format to 64 bits long, issue code start bit to 56, and number of bits to 8. Bits 0-55 can be configured as needed, with a recommended format of Lenel 64-bit Wiegand (0/8, 8/48, 56/8). When using Pass-Thru Format, configure the Wiegand tab according to the instructions. Ensure that Global Security Threshold is set to "Very High" and Biometric Verification is enabled. For hardware installation, refer to the Hardware Installation Guide for specific instructions on configuring card format and encoding for V-Smart units. For biometric readers, select the reader type (LNL-1300 or LNL-1320) and configure the reader output as Bioscrypt RS-485. 1. Under Template Security, select Page 654. Password Verification: Enabled For MV1610 (3G) devices connected to biometric gateways or reader interface modules, enable PIN capability by configuring Bioscrypt RS-485 readers in OnGuard software. 2. Unit Parameters, Misc. tab: - Reader draw: average 0.50 amps at 12 VDC, max 1.00 amp. - Power requirements: +12.5 to 24 VDC. 3. FASC-N 75 MSB Low Assurance Wiegand Output: select Wiegand/Prox in access control software. 4. LNL-500W Wireless Gateway Interface: - Supports up to 16 Schlage Wireless readers or locks. - Unique reader number specified according to port and gateway address. 5. Installation: - Wire upstream host communication. - Power input. - Downstream device communication. - Cycle power to device. 6. Cable specifications: no longer than 4000 feet, 100 ohms maximum (Belden 9842 4-wire or 9841 2-wire). 7. RS-485 Communications: - Defined by Electronic Industries Association standard. 8. LNL-500W Wireless Gateway Interface: - Wire configuration: DIP switch 5 must be OFF for all ISCs. - Power input: accepts 12 VDC or 12 VAC ± 15%. 9. Termination: termination at each end of the line, but link length is relatively short. 10. LNL-500W Wireless Gateway Interface Configuration: - Board contains 8 DIP switches and - Jumpers 19 & 20 must be ON. To configure jumpers for your system, refer to the chart below detailing the use of each DIP switch: DIP SWITCH USED TO CONFIGURE: 1 & 2 - Interface address; 3 & 4 (with 5) - Upstream communication baud rate. For downstream baud rate, set DIP switch 8 according to the following table: BAUD RATE DIP SWITCH 38400 bps: switches 6 & 7; 19200 bps: switches 6 & 7; 9600 bps: not supported. The LNL-500W Wireless Gateway Interface must be used in low voltage, class 2 circuits only. The LNL-2020W requires setting DIP switches 3 and 4 to format 3 for use with a WRI. In System Administration, configure the reader as "Mag with Wiegand Output." The LNL-CK command keypad integrates a back-lit LCD display, 16-position keypad, and reader port. It serves as a command reader with programming accomplished using OnGuard software. The device features time display and text feedback during reader operations. The command keypad can be installed as a stand-alone device or used as an alternate/primary reader device via RS-485. For configuration in OnGuard, add LNL-1300/LNL-1320 reader interface modules and set communication to RS-485 with baud rate at 9600 bps (or 38400 bps if connected directly to the controller). Adding an LNL-1300 or LNL-1320 reader interface module is necessary for another alternate reader in OnGuard. Configure the Command Keypad by following the setup mode instructions on page 684, and then reconnect the +12 VDC power. To properly install hardware, ensure controller firmware meets version requirements: 1.194 or later for LNL-2210, LNL-2220, or LNL-3300; or 3.099 or higher for LNL-500, LNL-1000, or LNL-2000. When connecting the command keypad to a pin block, align the red wire with pin #1 and the black wire with pin #14. Refer to the wiring table on page 682 for proper connection. The command keypad requires regulated +12 VDC power ± 15% and should be isolated from other devices. To ensure proper operation, terminate the command keypad correctly. If it's the first or last device on the RS-485 bus, set DIP switch 1 to ON. Disable the ability to change configuration during power-up by setting DIP switch 3 to ON. In OnGuard Configuration, select the reader type as RS-485 Command Keypad (LNL-1300T) if necessary. The LNL-1300T is no longer available for sale, but this selection is available in software for legacy support. All door inputs and outputs are controlled by the reader interface module. The text displayed on the command keypad can be configured through access control software. It may include time, status of default area, or user-definable text strings. When an access attempt awaits biometric data, "Enter Biometric" is displayed. Hardware Installation Guide for Security System Pre-requisites for OnGuard Installation Before installing OnGuard, several components must be installed and configured: - Local Administrative Privileges are required for the user account running the installation. - Full read and write permissions to Windows and Program Files directories are necessary, with no drive remapping. - User Account Control (UAC) should be set to Never Notify. - The OnGuard ISO file must be mounted, and setup.exe should be run as administrator. All computers running OnGuard software must be configured for TCP/IP network protocol before installation. Ensure Windows Service Packs are up to date, as they're not provided on the supplemental media. Database systems should have the latest approved service pack and updates installed, according to the release notes. Install updated drivers for video capture devices and printers. Upgrade Lenel Digital Video recorders to a supported version prior to OnGuard software update. Third-party apps like Crystal Reports must be purchased and upgraded separately, with versions confirmed in the release notes. Adobe Reader is recommended but not required for reading OnGuard documentation. OnGuard servers hosting web applications should run on a supported server OS. Note that Windows client OS has limitations on allowed connections, potentially affecting licensed functionality. IIS is only required for legacy clients like Area Access Manager and IDVM apps, as it's no longer needed for an OnGuard Platform Server.