Overview

The LNL-X4420 is an Advanced Dual Reader Controller that provides a single-board solution for interfacing up to 64 doors, plus auxiliary inputs and outputs, to an OnGuard® system.

The LNL-X4420 controller enables Ethernet connection directly from an entry location to the OnGuard server. In addition, other I/O and reader interface modules can be added on the controller's two downstream ports, further expanding its capabilities. In the event of communication loss, the LNL-X4420 controller can maintain most of its local functionality until the server connection is restored.

The LNL-X4420 controller can act as an interface to building automation systems via the ASHRAE BACnet™ protocol. Through the OnGuard software, up to 63 total BACnet points can be defined. These can be a mix of physical inputs connected to the board and virtual outputs. Virtual outputs can be set and read from a connected BACnet client, allowing two-way state exchange with a variety of building control systems. This information can be used by both OnGuard and the external system for status reporting, and as inputs to control logic.

Utilizing its 32-bit processor and a multiple-application operating system, the LNL-X4420 controller communicates upstream to the host computer through its Ethernet port. The LNL-X4420 controller can store more than 1,000,000 cardholders in non-volatile flash memory (depending on configuration), and supports selective download for larger cardholder databases. The two downstream RS-485 two-wire ports can be used to connect up to 64 devices (64 doors) in many combinations of LNL-1100, LNL-1200, LNL-1300, LNL-1320, Schlage® PIM-400 wireless interface (OnGuard 7.5 and higher), or Assa Abloy Aperio® wireless devices.

Each LNL-X4420 controller supports up to 16 different card formats. The LNL-X4420 controller also includes eight inputs — four designated for door interface support and four for general-purpose inputs.

Features & Functionality

Controller Functionality

- Support for DHCP and fixed IP addressing
- DNS device naming through DHCP extended commands
- 96 MB of available on-board, non-volatile flash memory for badge data, plus dedicated storage for future apps and extensions
- Battery-backed, non-volatile storage of 50,000 events
- Configurable option for Data at Rest encryption
- Firmware stored in flash memory
- Optional secondary Ethernet connection via USB adapter
- Biometric template storage ANSI/INCITS 378 templates
- Up to 32,000 access level permissions total (255 per badge)
- Elevator control support for up to 128 floors
- A dedicated input for cabinet tamper and power failure status
- Advanced Encryption Standard (AES) 256-bit algorithm for communications to downstream Lenel Series 3 reader and I/O interfaces; AES 128 bit encryption to Lenel Series 2 reader and I/O modules
- AES128 or TLS 1.2 (with AES256) communication to OnGuard
- RNDIS enables USB connection to display controller web configuration pages

Reader Interface Functionality

- Support for Data1/Data0, Clock/Data, Unsupervised F2F and OSDP™-compatible RS-485 readers and keypads, including OSDP Secure Channel (SC) encrypted communications

Extended Functionality

- Optional onboard HID® pivCLASS® or Technology Industries EntryPoint™ FIPS-201 Embedded Authentication (consult Lenel for OnGuard and third party requirements)
## Specifications

The interface is for use in low voltage, Class 2 Circuits only. The installation of this device must comply with all local fire and electrical codes.

### Primary Power

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>LNL-X4420</td>
<td>Advanced Dual Reader Controller, 16-96 MB on-board flash memory available for cardholder database; 50,000 event battery backed RAM for event log.</td>
</tr>
<tr>
<td>USB2-OTGE100</td>
<td>USB to Ethernet converter, for LNL-X Series Controllers only. Provides optional Secondary NIC connection. Second NIC should be on different subnet than primary NIC.</td>
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</tbody>
</table>

### Reader Interface

#### Power

- 12 VDC ± 10% regulated, 300 mA maximum each reader (input voltage [VIN] must be greater than 20 VDC) or 12 to 24 VDC ± 10% (input voltage passed through), 300 mA maximum each reader

#### Data Inputs

- TTL compatible inputs, magnetic stripe and Wiegand standards supported. Maximum cable length: 500 ft. (152m)

#### RS-485 Mode

- 9,600 to 115,200 bps, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit. Maximum cable length: 2,000 ft. (609.6m)

#### LED Output

- TTL levels, high > 3 V, low < 0.5 V, 5 mA source/sink maximum

#### Buzzer Output

- TTL levels, high > 3 V, low < 0.5 V, Low = Active, 5 mA source/sink maximum

### Cable Requirements

#### Power and Relays

- One twisted pair, 18 to 16 AWG

#### Ethernet

- CAT-5, minimum

#### TTL Reader

- 22 to 16 AWG, depending on length and requirements

#### Alarm Input

- One twisted pair, 30 ohms maximum, typically 22 AWG @ 1,000 ft. (304.8m)

#### RS-485 I/O Device Port

- One twisted pair with drain wire and shield, 120 ohm impedance, 24 AWG, 4,000 ft. (1,219m) maximum

#### RS-485 Reader Port

- One twisted pair with drain wire and shield, 120 ohm impedance, 24 AWG, 2,000 ft. (610m) maximum

### Mechanical

#### Dimensions

- 8.0 W x 6.0 L x 1.0 H in. (203.2 x 152.4 x 25mm)

#### Weight

- 10.65 oz. (302g) nominal

### Environmental

#### Temperature

- -55° to +85° C, storage
- 0° to +70° C, operating

#### Humidity

- 5 to 95% RHNC

#### Heat Output (BTUs)

- at 12 VDC, 22.5 BTU/hr
- at 24 VDC, 24.6 BTU/hr

#### Approvals


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Specifications subject to change without notice.

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