LNL-M4420

Advanced Dual Reader Controller

RoHS compliant • CE • c UL us LISTED • OSDP™ • ASHRAE BACnet™
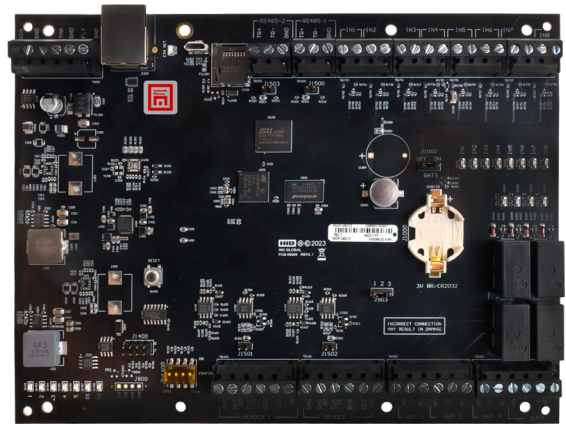

Overview

The LNL-M4420 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-M4420 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-M4420 controller can maintain most of its local functionality until the server connection is restored.

The LNL-M4420 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 secure 32-bit processor and a multiple-application operating system, the LNL-M4420 controller communicates upstream to the host computer through its Ethernet port. The LNL-M4420 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-M4420 controller supports up to 16 different card formats. The LNL-M4420 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
• Super Capacitor backed, non-volatile storage of 500,000 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
• TLS 1.2 / 1.3 communication to OnGuard

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 LenelS2 for OnGuard and third-party requirements)

LNL-M4420

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	12 to 24 VDC ± 10%, 550 mA maximum (reader current not included)
Reader Ports	600 mA maximum each (add up to 600 mA to primary power current each)
Primary Host Communication	Ethernet: 10-BaseT/100Base-TX
Secondary Host Communication	USB port (2.0) with optional adapter: pluggable model USB2-OTGE100
SIO Communications	Two each: 2-wire RS-485, 2,400 to 115,200 bps, asynchronous, half-duplex, 1 start bit, 8 data bits, and 1 stop bit
Inputs	Eight unsupervised / supervised, standard EOL: 1k/1k ohm, 1% 1/4 watt; two dedicated for tamper and UPS fault monitoring
Outputs	Four relays, Form-C with dry contacts: Normally open contact (NO): 5 A @ 30 VDC resistive; Normally closed contact (NC): 3 A @ 30 VDC resistive

Reader Interface

Power (Jumper selectable)	12 VDC ± 10% regulated, 600 mA maximum each reader (input voltage [VIN] must be greater than 17 VDC) or 12 to 24 VDC ± 10% (input voltage passed through), 600 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	18 AWG, 500 feet (152m) maximum
Alarm Input	One twisted pair, 30 ohms maximum, typically 24 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	FCC Part 15, CE, RoHS, UL 294

Parts and Spare Parts

Part No.	Description
LNL-M4420	Advanced Dual Reader Controller, 16-96 MB on-board flash memory available for cardholder database; 500,000 event super capacitor backed RAM for event log.
USB2-OTGE100	USB-to-Ethernet converter, for LNL X-Series and M-Series Controllers only. Provides optional Secondary NIC connection. Second NIC should be on different subnet than primary NIC.

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Specifications subject to change without notice.