UVU ELECTRONIC ACCESS CONTROL

HARDWARE STANDARDS DIV. 28

(Last Revised 10-20-2022)

Category	Description
AC Connections	If the power supplies are in an IDF room, a pigtail connection to an emergency power outlet is preferred. If the power supplies are anywhere else where they could be unplugged inadvertently, the power supply should have a direct connection to 120vac (no pigtail).
Access Control Cabinets	Access control cabinet will house all power supplies, power accessory boards, and Lenel access control panels. Finger duct should be used to manage wires. Cabinet will be installed in a central IDF/MDF room. Battery Cabinet will be attached to access control cabinet with conduit fittings. At the initial install of access control cabinet, no more than 75% of the cabinet should be filled to leave room for future expansion. Access control cabinets must be installed within arm's reach and cannot be installed where a person must climb on a ladder to get to it. Acceptable product: Life Safety Power Enclosure for Mercury Panels. Example Enclosure Part: FPO250/250-3D83M8NLXE12M.
Access Control Software	Lenel Onguard
ADA Operators	Access control must be hooked up to ADA operators. Use relays onboard the ADA operator or auxiliary relays on Lenel board for any access control coordination. All ADA coordination must be done inside operator or access control cabinet.
Approved Security Integration Contractors	Any electronic access control installation and integration must be done by an approved security contractor. Approved security contractors: Convergint Technologies, Stone Security, Stanley Security, Security 101.
Auxiliary Inputs (LNL-1320, LNL-1100)	Use Auxiliary Inputs on LNL-1320 first, and if there are more inputs needed, provide LNL-1100 for inputs. All power supply fail relays, fire alarm relays, motion sensors, cabinet tampers, and exterior doors with door contacts must be hooked up to an auxiliary input or LNL-1100 panel.
Backup Battery	12VDC/12AH batteries should be included for each power supply in the main access control cabinet. Batteries will be housed in separate battery cabinet.
Battery Cabinet	Life Safety Power battery cabinet will house the Access Control Cabinet back up batteries. This cabinet should have a conduit connection to the main access control cabinet.
Cabinet Wires	All connections from Lenel Panels to power distribution board must be 18awg or larger. All RS485 connections between Lenel Panels should follow the guidelines for RS485 communication wiring: twisted pair, signal ground, drain wire hooked to earth ground, etc. Lenel panels must have the proper end of line resistor jumpers set to the correct position.

Cable Runs	All cabling must be run through cable trays, conduit, or J-hooks. Cables are not allowed directly on ceiling grid.
Card Readers	All Card readers will be wired for OSDP connection. Must be set to secure channel. Only acceptable product: Wall Mount HID SIGNO 40TKS-02-00037F Mullion Mount HID 20TKS-02-00037F Wall Mount w/keypad HID SIGNO 40KTKS-02-00037F Mullion Mount w/keypad HID SIGNO 20KTKS-02-00037F (40TKS-T2-00037F, 20TKS-T2-00037F, 40KTKS-T2-00037F, 20KTKS-T2-00037F Also Acceptable)
Access Control Cable	Only acceptable cable: Windy City Wire 4461030-OSDP. All access control cabling will be "homerun" configuration. "Daisy chain" configuration between doors is not acceptable.
Other Cable	Because power supplies are not allowed above doors, upsized wire back to access control cabinet in IDF may be required. For example if using a panic device that requires 1.2 amps and is over 200ft away, use 14awg wire per each device, hooked to its own relay/fuse on an LSP C8 or M8 board. Windy City Wire preferred.
Conduit in New Construction	Depending on the door hardware, a J-box should be provided above the door for REX, with conduit connections to the DPS, hinge or strike. 1" conduit will be run from j-box above door, back to the access control cabinet. Every piece of conduit must have a pull string.
Conduit in Retrofit Applications	Conduit may be required where cables cannot be run through the door frame. High traffic areas avoid using conduit. If conduit must be used in high traffic areas, use matching color aluminum channel (not spray painted) or steel wire mold type conduit. In low traffic areas such as mechanical or IDF rooms where conduit is needed, use ¾' conduit with handy boxes or four-square boxes and appropriate fittings.
Data Connections	All data connections to Lenel ISC panels must have a verified Cat6 or better cable. Any fabricated cables must have proper connectors, boots, and must be verified for proper connectivity. TLS encryption from switch to Lenel Panel is required.
Earth Ground	Inside each access control cabinet there needs to be an earth grounding hub that connects all RS485 communication drain wires from Lenel ISCs and Card reader RS485 cable runs. Only connect drain wires at one end. The grounding hub inside the access control cabinet needs to be attached to the main earth ground hub in the room where the cabinet is installed.
Electronic Locks	See UVU Door Hardware Standards.
Emergency Power	If the building has emergency power, the access control power should be connected to an emergency circuit.
Exterior Doors	All exterior doors that allow access to the main building need a door position switch, Request to Exit, and Latchbolt monitoring. Signaling connection cables must be 22AWG or bigger and run back to access control cabinet. All exterior doors that are designed to be unlocked during business hours must be electronically controlled so they can be locked automatically and don't depend on a person to undog or relock the doors. No Manual Dogging on electronic Crashbars.

Fire Alarm	All access control hardware must follow fire code. Fire alarm inputs must be provided where necessary. Access control that is hooked to a fire alarm input must get final pass off from UVU Fire Marshall.
Fire Walls	Any penetrations through firewalls must have appropriate firestopping and conduit.
Labeling	Label every wire in Access Control Cabinet
LENEL ISC/RIM/ICM/Multiplexer Controllers	Lenel Intelligent System Controller (ISC) use LNL-X2220 or newest version. Lenel Reader Interface Module (RIM) use LNL-1320-S3 or newest version. Lenel Input Control Module (ICM) use LNL-1100-S3 or newest version. Lenel Multiplexer use LNL-8000. Use LNL-8000 when needing to extend RS485 communication lines to different access control cabinets using the same Lenel ISC.
Lenel Panel Power/Auxiliary Distribution Boards	Each Individual Lenel Panel should be connected to a 2amp or larger blade fuse. PTC fuses not acceptable. Acceptable products: Life Safety Power D8.
Lenel Programming	Contractor will work with UVU Access Control Manager (ACM) to determine RS485 addresses, and alarm inputs/outputs. UVU ACM will program all the Lenel Boards, security contractor will be responsible for verifying all systems are operational at the door.
Line Drawings	A detailed layout of cabling routes must be provided with installation of electronic access control. Each door cable needs to have a line drawing showing the cable path back to the access control cabinet. Line drawings will be delivered to UVU lockshop upon completion of work.
Lock Power Distribution Boards	Each electronic locking device should be connected to its own relay on a power relay module. Acceptable products: Life Safety Power C8 or M8.
Mag Locks	Not Allowed. Please consult UVU Electronic Access Control specialist for any mag lock approval.
Memory Cards	Use 2GB FAT16 micro SD card for Lenel ISC panel.
Power Supply	All Power Supplies will be housed inside the access control cabinet. Power supplies above doors are not acceptable. If the locking devices at an opening are far away from the main power source, larger gauge wiring must be provided to provide proper current from power supply in IDF room to locking devices at the door. Power supply must have backup battery charger, power fail signaling relays, and fire alarm inputs. Must be UL listed. Use 24v power for Lenel panels. Power all new locks with 24v. See UVU door hardware standards for more information on the locking devices. Acceptable products: Life Safety Power FPO series
Request to Exit	All REX switches will be built into the lock or panic device.
Screw Clamp Connectors	Any penetration into the access control cabinet or conduit box must have a screw clamp connector or conduit pipe with appropriate fittings. There should never be wires going directly through a knockout.
Secondary Voltage Module	In smaller applications where two power supplies are not needed and 12v and 24v are needed, use a secondary voltage module. Acceptable products: Life Safety Power B100.
Signal Ground	Signal ground wire must be hooked to each RS485 Connection between Lenel panels. Drain wires do not get hooked to the signal ground. See Lenel Hardware installation guide for further clarification. Power supply

	grounds need to be hooked together if powering an RS485 connection between access control cabinets.
Software Licenses	If the current system does not have enough Lenel Reader licenses for the doors being added, security contractor must provide additional Lenel Reader Licenses. Any specialty Licenses must be provided if the hardware requires additional Lenel licenses to function.
Wire Management	Use plastic finger duct to keep wires organized. Keep all wires tight to the edges of the access control cabinet. Wires should never block mounting posts or the space where future Lenel panels are going to fit in the cabinet.
Power Supply Network Management	Use Life Safety Power NL4 or NLX Netlink power supply monitors in all access control cabinets. Hook up all sensors and connectors provided with netlink.

For any further clarification, please consult UVU Locksmith shop.

This document was prepared by:

Jacob Messenger

UVU Lead Locksmith

801-863-8019