

SECTION 13825

SECURITY MANAGEMENT SYSTEMS

PART 1 DESIGN DIRECTIVES

1.1 OVERVIEW

- A. The access control, surveillance, and intrusion detection system implemented for use at Dartmouth College is a Lenel International Systems, Inc HID proximity card system and all parts and components shall be compatible with this system. The Dartmouth campus has a variety of structures with a variety of uses making blanket statements misleading. However, a typical system includes:
 - 1. Typical access controlled door system includes:
 - a. A Request to Enter Device (CR).
 - b. A Request to Exit device (REX).
 - c. A Electronic Locking Device (EL) with manufacture's recommended power supply
 - d. An Electronic Power Transfer Device (EPT).
 - e. A local audible device (PIEZO).
 - f. A Door Position Switch (DPS)
 - g. An Access Control Panel (ACP) composed of appropriate devices and power supplies.
 - 2. An access controlled door system may include:
 - a. An interface to the building fire alarm system.
 - b. An interface to a door power operator.
- B. All of the above are linked together electronically, door device cables are gathered in a junction box and run back to a central location in the building where they are connected to an access control panel (ACP).
- C. Access Control may be utilized on interior doors as well as exterior doors.
- D. A connection to the Dartmouth College access control VLAN.
 - 1. In extreme circumstances DSL and Dial-up connections are possible.
 - 2. DSL and Dial-up redundant communication if required.
- E. Intrusion detection shall be applied to provide protection of persons and assets as required.
- F. Digital CCTV systems shall be applied to provide surveillance of persons and assets as required.
- G. Wireless access control shall be considered in buildings given the following criteria:
 - 1. This will control for access only, not security functions.
 - 2. Applicable only to athletic and general plant operation buildings. Other buildings such as Residence Halls and Professional Schools require review and approval by their designated representative.
 - 3. Interior use only.
 - 4. Not applicable to high traffic areas.
 - 5. System shall be Schlage Wyreless Access system as manufactured by Ingersoll Rand.
 - 6. All proposed systems require review at the mandatory Access Control Design Meeting.

1.2 DESIGN CRITERIA

- A. Design Meeting: During the Schematic Design phase of the project, the consultant(s) shall meet with the designated representative of Safety and Security, departmental representatives, and FO&M to review access control system, surveillance, and intrusion detection needs for the project. The function of the system will be reviewed at this meeting with the consultants to gain an understanding of how the system works. The spatial considerations for the system shall be identified and located.
- B. For pathway requirements, refer to DC Standards 16010 BASIC ELECTRICAL REQUIREMENTS, 16110 RACEWAYS, and 16135 CABINETS, BOXES, AND FITTINGS. All wiring shall be in conduit or cable tray.
- C. Where power operated doors are utilized, the designer will determine and document the interaction between the power door control and the access control equipment. The resolution shall be shown on the drawings and reflected in the specifications.
- D. Where card readers are installed at exterior doors, at least one main door shall have a phone placed at the doorway. Refer to DC Standards 10750, TELEPHONE SPECIALTIES, for details.
- E. The consultant, in conjunction with DC representatives, shall determine the number of events anticipated for 6 – 8 hours of battery back-up. If the building is served by an emergency generator, the access control system shall be powered from the non-life safety emergency power system.
- F. Door Alarm sequences
 - 1. All exterior access controlled doors shall provide for Forced and Held door alarm function
 - a. Held open alarm sequence. A door position switch change of state (NC) with a valid request to enter or exit shall start a door held open sequence. Sixty (60) seconds (programmable) from a door position change of state, the system shall activate the local audible device. Ninety (90) seconds (programmable) from door position change of state a door held open alarm will be generated, logged to the system database and reported to the Department of Safety and Security
 - b. Door Forced alarm sequence. A door position switch change of state (NC) without a valid request to enter or exit shall start a forced door sequence. The system shall immediately activate the local audible device, generate a forced door alarm, logged to the system database and reported to the Department of Safety & Security
 - 2. Interior doors are not required to provide for alarm function, but may include such function if requested.
- G. Access Control Room contents and environment:
 - 1. Access control (and door hardware) power supplies.
 - 2. Lenel system controller and IO devices.
 - 3. Adequate electric power on dedicated circuits to power all devices.
 - 4. Sufficient lighting to provide 60 foot-candles on the panels.
 - 5. Temperature control: 45° - 95°.
 - 6. Humidity control: non condensing
- H. Enclosure monitoring
 - 1. Access control panels (ACP), ACP power supplies and door power supplies shall be provided with cabinet tamper alarm monitoring.
 - 2. ACP power supplies shall provide AC power and battery failure alarm monitoring

- I. Request to Enter Devices (CR)
 - 1. The HID Prox Pro reader with keypad is standard for the campus.
 - 2. Exception -The Tuck School of Business uses the HID Mini Prox or Thinline II readers

- J. Request to Exit Devices (REX)
 - 1. Passive Infrared motion detection is the typically preferred device.
 - 2. Exit card readers are required where access is controlled/monitored in both directions
 - 3. REX switches mounted within panic hardware may be used as a aesthetic solution.
 - 4. Specific project requirements may require alternate devices

- K. Electronic locking devices (EL)
 - 1. Electronic locking devices and appurtenances are specified in DC Standards 08710, DOOR HARDWARE.

- L. Local Audible Device (PIEZO)
 - 1. The PIEZO may be combined with the REX device.

- M. Door Position Monitoring(DPS)
 - 1. A duel pole duel throw (DPDT) magnetic operated switch mounted in the door header is the preferred device.
 - 2. Specific project requirements may require alternate devices.

- N. Surveillance
 - 1. Surveillance devices shall be compatible with the installed Lenel Systems International, Inc system.

- O. Intrusion Detection
 - 1. Intrusion detection panels must be IP Addressable panels capable of communicating with the installed Lenel Systems International, Inc system
 - a. Bosch Radionics D7212G/D9212G Intrusion Panels
 - 2. Intrusion Devices
 - a. Glass Break sensors
 - b. Motion intrusion detection
 - c. Manually operated distress devices
 - d. Door position switches
 - e. Beam detectors
 - f. Specific project requirements may require alternate devices.

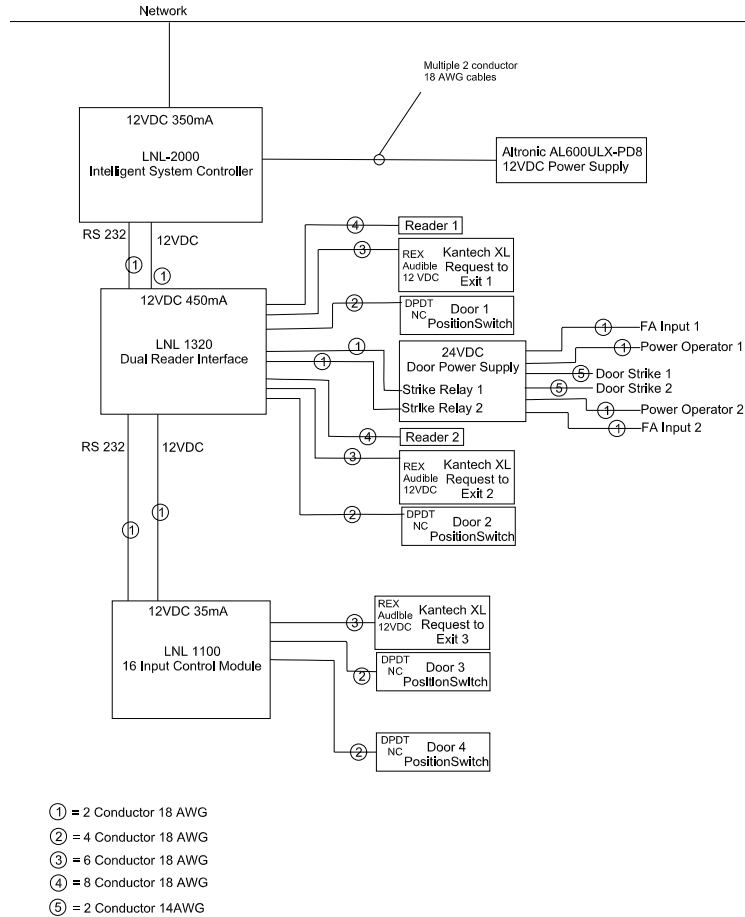
1.3 COORDINATION

- A. In order to minimize confusion in determining the appropriate trade, or specification division, the following is a recommendation of responsibility:

Equipment Description	Responsible specification section
Lenel Products, including controllers & IO devices	Division 13
Lenel Component Enclosures	Division 13
Power supply and battery backup for the Lenel system	Division 13
Door contact	Division 13
Door card reader	Division 13
Door motion sensor	Division 13
Cable for the Lenel system	Division 13
Exterior telephone	Division 10
Electric power transfer device	Division 8
Electric mortise lock	Division 8
Electric panic device	Division 8
Electric strike	Division 8
Power supply & battery backup for the lock devices.	Division 8
Electromagnetic Shear Locks	Division 8

1.4 TYPICAL DIAGRAMS

A. System Schematic



B. The following table represents the schematics available from FOM:

Door Detail	Description
Detail_A	Single Door, Panic Device, Exit Only
Detail_A1	Single Door Electromagnetic Device /w panic device door release, Exit Only
Detail_A2	Single Door Electromagnetic Device /w REX output door release, Exit Only
Detail_A3	Single Door Mortise, Exit only
Detail_B	Single Door, Electrified Strike
Detail_B1	Single Door, Electrified Strike, Access Only
Detail_B FA	Single Door, Electrified Strike w/ Fire Alarm input
Detail_C	Single Door, Electrified Panic Device
Detail_C FA	Single Door, Electrified Panic Device w/ Fire Alarm input
Detail_C AO	Single Door, Electrified Panic Device w/ Power Operator
Detail_C_FA_AO	Single Door, Electrified Panic Device w/ Fire Alarm input and Power Operator

Door Detail	Description
Detail_C_ORL	Single Door Electrified Panic Device w/ REX Switch in Panic Device
Detail_D_D	Double Door, Electrified Panic Device both doors
Detail_D_D_FA	Double Door, Electrified Panic Device both doors /w Fire Alarm input
Detail_D_D_AO	Double Door, Electrified Panic Device both doors /w Power Operator
Detail_D_D_FA_AO	Double Door, Electrified Panic Device both doors /w Fire Alarm input and Power Operator
Detail_D_S	Double Door, Electrified Panic Device single door
Detail_D_S_FA	Double Door, Electrified Panic Device single door /w Fire Alarm input
Detail_D_S_AO	Double Door, Electrified Panic Device single door /w Power Operator
Detail_D_S_FA_AO	Double Door, Electrified Panic Device single door /w Fire Alarm input and Power Operator
Detail_E	Single Door Electronic Delayed Egress Device (Von Duprin Chexit) In Reader, REX
Detail_E_2	Single Door Electronic Delayed Egress Device (Von Duprin Chexit) In/Out Reader
Detail_F	Single Door Electrified Panic Device /w Fire Alarm input and Push Button Override
Detail_G	Single Door Electrified Mortise Device
Detail_G_FA	Single Door Electrified Mortise Device /w Fire Alarm input
Detail_G_AO	Single Door Electrified Mortise Device /w Power Operator
Detail_G_FA_AO	Single Door Electrified Mortise Device /w Fire Alarm input and Power Operator
Detail_H_S	Single Door Electromagnetic Device / unlock at power supply
Detail_H_S1	Single Door Electromagnetic Device /unlock at device
Detail_H_S_FA	Single Door Electromagnetic Device /w Unlock & Fire Alarm input at power supply
Detail_H_S_FA1	Single Door Electromagnetic Device /w Unlock & Fire Alarm input at device
Detail_H_D_FA	Double Door Electromagnetic Device /w Unlock at power supply & Fire Alarm input at Device

PART 2 MATERIALS

2.1 EXTERIOR COMPONENTS

- A. Prox Card Reader: Readers shall have both Pin and Prox capabilities. Color: Gray
 - 1. HID Corp., ProxPro Reader #5355AGK09
 - 2. HID Corp., Mini Prox Classic Reader – thin style #5365-EGP00
 - 3. HID Corp., Thinline II Pro Prox Reader without keypad #5395-CG100

2.2 INTERIOR COMPONENTS

- A. Intelligent System Controller
 - 1. Base unit Lenel LNL 2000
 - a. Ethernet connection card: LNL-CoBox
 - b. One meg memory upgrade: LNL 1001-MK

- B. Input / Output Devices (All manufactured by Lenel)
 - 1. Dual reader interface device: LNL 1320
 - 2. Single reader interface device: LNL 1300
 - 3. Sixteen point input control board: LNL 1100
 - 4. Sixteen point output control board: LNL 1200

- C. Component Enclosures
 - 1. 24" wide x applicable height (x) Hoffman enclosure #A-xxN24ALP

- D. Power source
 - 1. 12VDC Power supply – 4 amp with 8 independent circuits: Altronics #AL600ULX-PD8
 - 2. Provide battery backup, quantity as described in Section One of this Standard section.

- E. Wire
 - 1. Wire type shall be minimum 18 gage, plenum rated PVC coated, stranded copper conductors, with overall shield and ground wire. Wire thickness for power supplies is heavier than 18 gage varying with manufacturers and length of wire run.
 - 2. Cable color shall be white.
 - 3. Manufacturers:
 - a. CSC: 112 & 113 series
 - b. Clifford of Vermont
 - c. Beldon

- F. Request to exit / audible alarm devices:
 - 1. Door header combination devices.
 - a. Kantech T-Rex #T.Rex-XL
 - 2. Piezo only devices:
 - a. Amseco P.A.L - 328
 - b. Moose MPI47E

- G. Door position switch:
 - 1. Sentrol 1076D recessed door contacts or other Sentrol (GE logic) product as conditions require.

- H. Pin Plunger:
 - 1. Sentrol recessed pin plunger #3012.

2.3 SPECIALTY ITEMS

- A. All devices in the access control system, including electric box cover plates, shall be fastened with ‘#6 Spanner’ tamper resistant fasteners.

PART 3 EXECUTION

3.1 QUALITY ASSURANCE

- A. Wiring shall be installed in accordance with DC Standards Division 16.

3.2 GENERAL REQUIREMENTS

- A. All wiring and enclosures shall comply with DC Standards 16010 BASIC ELECTRICAL REQUIREMENTS, 16110 RACEWAYS, 16135 CABINETS, BOXES, AND FITTINGS, and 16920 CLASS TWO WIRING.

- B. Access control wire from multiple doors may share common conduit providing the conduit size is adjusted per NEC.
- C. Splices in wire are not acceptable.
- D. Component enclosure requirements:
 - 1. Cylinder lock shall be furnished & installed by FOM.
 - 2. Each box shall be equipped with a pin plunger for alarm purposes.
- E. Contractor shall be responsible for appropriate wire size for all power supplies.
- F. *Proximity readers are to be place 34" above finish floor to centerline of the reader.*

3.3 COORDINATION

- A. The door hardware supplier and the access control supplier must coordinate with each other.

END OF SECTION 13825