

(NOTE TO DESIGNER: These Specifications are basic minimum criteria to be met in preparing the final specifications for this section, which is the responsibility of the Designer.)

SECTION 28 16 00
INTRUSION DETECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Intrusion detection devices.
- B. Alarm control panel.
- C. Signaling devices.

1.2 RELATED SECTIONS

- A. 08 71 00 - Door Hardware.
- B. 11 12 00 - Parking Control Equipment.
- C. 14 20 10 - Passenger Elevators.
- D. 26 05 19 - Low-Voltage Electrical Power Conductors and Cables (600 V and Less).
- E. 28 05 00 - Common Work Results for Electronic Safety and Security
- F. 28 05 26 - Grounding and Bonding for Electronic Safety and Security.
- G. 28 05 28 - Pathways for Electronic Safety and Security.
- H. 28 05 53 - Identification for Electronic Safety and Security.
- I. 28 06 00 - Testing for Electronic Safety and Security.
- J. 28 16 00 – Intrusion Detection.
- K. 28 23 00 - Video Surveillance.
- L. 28 26 00 - Electronic Personal Protection System.
- M. Conduit, cable tray and back boxes for this system shall be furnished and installed by the electrical contractor under the supervision of the security contractor.
- O. See Division 26 for all information relating to the fire alarm system and required relay interface to release emergency delay exit doors. The fire alarm integrator shall provide the control relays as required.
 - 1. See Division 26 for all specifications governing the performance of work associated with the installation of raceway, system junction and pull boxes and device rough-in boxes for all work shown in the Access Control System refer to the security drawings.

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code; National Fire Protection Association.
- B. NFPA 72 - National Fire Alarm Code; National Fire Protection Association.
- C. University of Houston Campus Design Guideline and Standards Security System Standards (latest edition)

1.4 INTRUSION DETECTION

- A. Door status switches at card reader controlled locations serve to indicate the open/closed status of the associated door and shall establish the basis for reporting a door-propped or unauthorized entry condition.
- B. Door status switches at lock secured locations serve to indicate the open/closed status of the associated door and shall establish the basis for reporting an unauthorized entry condition.
- C. Passive Infrared (PIR) Detectors in key entry and hallway locations serve to establish the basis for reporting an unauthorized in-building movement after hours.
- D. Security contractor is responsible for coordinating the contact configuration single pole single throw (SPDT) Double Pole Double Throw (DPDT) and rating for door status switches, and for connection of switches with the ACID.
 - 1. Request-to-exit devices at designated card reader controlled doors shall cause the associated door status switches to be shunted. The alarm shunt shall not affect the supervision of the alarm detection circuit.
 - 2. The data gathering panels shall be locked units equipped with internal tamper switches to report unauthorized access. Each panel shall be independent of the central server and capable of processing and storing requests for access even if the central server is temporarily out of service. The panel shall have LAN interface to facilitate communication with the main server and workstations.
- E. Designated positions to have duress buttons: designated positions which report on the existing campus central alarm monitoring and control system. Work per this section shall include the installation of duress buttons, end of line supervision modules, wireways and required wiring.

1.5 SYSTEM DESCRIPTION

- A. This Section specifies the requirements for the Intrusion Detection system for the University of Houston [Project Name]. [Insert Project description].
- B. Intrusion Detection System: Protect building and selected areas from intrusion during SECURE hours as follows:
 - 1. Exterior Doors: Per University of Houston Standard.
 - 2. Interior Passive Infrared Detectors: Per University of Houston Standard.
 - 3. Duress Buttons

1.6 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate system wiring diagram showing each device and wiring connection required.
- C. Product Data: Provide electrical characteristics and connection requirements.
- D. Test Reports: Indicate satisfactory completion of required tests and inspections.
- E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
- F. Project Record Documents: Record actual locations of initiating devices, signaling appliances, and end-of-line devices.
- G. Operation Data: Operating instructions.
- H. Maintenance Data: Maintenance and repair procedures.

1.7 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

- B. Conform to requirements of University of Houston Police Department.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience and with service facilities within 100 miles of Project.
- D. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

1.8 MAINTENANCE SERVICE

- A. Furnish service and maintenance of intrusion detection system for one year from Date of Substantial Completion.

1.9 EXTRA MATERIALS

- A. See Section 01600 (01 6000) - Product Requirements, for additional provisions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Intrusion Detection System:
 - 1. DSC; Product as required to integrate with existing Campus System.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.2 ALARM CONTROL PANEL

- A. Control Panel: Modular construction with flush wall-mounted enclosure.
- B. Power supply: Adequate to serve control panel modules, remote detectors, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode for 24 hours.
- C. System Supervision: Provide electrically-supervised system, with supervised alarm initiating and alarm signaling circuits. Component or power supply failure places system in alarm mode.
- D. Initiating Circuits: Supervised zone module with alarm and trouble indication.
- E. Signal Circuits: Supervised zone coded signal module, sufficient for signal devices connected to system; occurrence of single ground or open condition places circuit in trouble mode and do not disable that circuit from transmitting alarm.
- F. Remote Station Signal Transmitter: Electrically supervised, capable of transmitting alarm and trouble signals over telephone lines to central station receiver.
- G. Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts for each detection zone to provide accessory functions specified.
- H. Occupied/Unoccupied Selector: Per University of Houston Standard.
- I. Entry and Exit Time Delays: Per University of Houston Standard
- J. Trouble Sequence of Operation: Per University of Houston Standard.
- K. Alarm Sequence of Operation: Actuation of intrusion detecting device places system in alarm mode, which causes the following operations:
 - 1. Sound and display local alarm signaling devices with non-coded signal.
 - 2. Transmit non-coded signal to municipal connection.
 - 3. Indicate location of actuated device on control panel and on remote annunciator panel.
 - 4. Zone Bypass Switch
 - 5. Keyed Bypass Switch

6. Alarm Reset: Key-accessible reset function resets alarm system out of alarm if alarm initiating circuits have cleared.
7. Audible Alarm Sequence: Per University of Houston Standard
8. Lamp Test: Manual lamp test function causes alarm indication at each zone at control panel and at annunciator panel.

2.3 INITIATING DEVICES

Alarm System Components:

Part	Manufacturer	Description/Part Number
T-Link TL250	DSC	T-Link Starter Kit
LCD Keypad	DSC	PK 5500
Zone Expander Card	DSC	PC 5108
Accessory Kit	DSC	ACCK-1
Power Adapter/ ACCK1	DSC	PTD164DU-CC
Wireless Receiver	DSC	RF 5132-433
Panic Buttons	DSC	WS 4938 – One Button
Motion Detectors	DSC	EC – 300D
Wireless Receiver Card	DSC	PC 5320 Multiple Rcv Card
Door Contact	DSC	SM35W Surface Mount
Door Contact	DSC	DC 1641 W Flush Mount
Door Contact	DSC	OCD59A Overhead Door
Cable	Lake	P224C 22 AWG 2pr Plenum
Cable	Lake	P224C-09 22 AWG 4pr Plenum

2.4 SIGNAL DEVICES

- A. Alarm Bells: NFPA 72, electric vibrating, 8 inch (200 mm) bell with operating mechanism behind dome. Sound Rating: 81 dB at 10 feet (3 M).
- B. Remote Annunciator: Provide supervised remote annunciator including audible and visual indication of intrusion by zone, and audible and visual indication of system trouble, in flush wall-mounted enclosure.
 1. Product: Lenel or approved alternative.
 2. Duress buttons with connecting wiring
 3. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Duress Button
 1. Recessed button prevents accidental activation.
 2. Latching switch action with manual reset
 3. Switch configuration to be SPDT
 4. Screw wiring termination
 5. UL listed

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in conduit.
- C. Make conduit and wiring connections to door hardware devices furnished and installed under Section 08 71 00.

3.2 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with Section 01 40 00.
- B. Test in accordance with NFPA 72.

3.3 MANUFACTURER'S FIELD SERVICES

- A. Provide the services of the manufacturer's technical representative to prepare and start systems.
- B. Include services of technician to supervise installation, adjustments, final connections, system testing and University of Houston training.

3.4 DEMONSTRATION

- A. Demonstrate normal and abnormal modes of operation, and required responses to each.
- B. Provide four (4) hours of instruction each for two persons.
 - 1. Conduct instruction at project site with manufacturer's representative.
 - 2. Include travel and living expenses for University of Houston personnel.

END OF SECTION