

University of Houston Master Specification

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SECTION 28 1600 - INTRUSION DETECTION

Maintain Section format, including the UH master spec designation and version date in bold in the center columns of the header and footer. Complete the header and footer with Project information.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

Delete hidden text after this Section has been edited for the Project.

Designer is required to adhere to the University's "Network Infrastructure Design Standards," "UH System IT Facilities: Baseline Standards," and "Electronic Access Control Design Guide" available in Owner's Design Guidelines on the University Information Technology and Facilities Planning and Construction web sites.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this Section.
- B. The Contractor's attention is specifically directed, but not limited, to the following documents for additional requirements:
 - 1. The current version of the *Uniform General Conditions for Construction Contracts*, State of Texas, available on the web site of the Texas Facilities Commission.
 - 2. The University of Houston's Supplemental General Conditions and Special Conditions for Construction.

1.2 SECTION INCLUDES

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

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code; National Fire Protection Association.
- B. NFPA 72 - National Fire Alarm Code; National Fire Protection Association.

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1.4 SYSTEM DESCRIPTION

- A. Intrusion Detection System: Protect building and selected areas from intrusion during secure hours as follows:
 - 1. Exterior Doors: Refer to Drawings for locations.
 - 2. Interior PIR Detectors: Refer to Drawings for locations.
- B. Duress Alarm: Enable discreet assistance during all hours as follows:
 - 1. Duress Buttons: Refer to Drawings for locations.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: Include system wiring diagram showing each device and wiring connection required.
- B. Product Data: Provide electrical characteristics and connection requirements.
- C. Test Reports: Indicate satisfactory completion of required tests and inspections.

1.6 INFORMATIONAL SUBMITTALS

- A. 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.
- B. Operation Data: Operating instructions.
- C. 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 (UHPD). Confirm updates to Project-specific requirements with Owner's Project Manager, UHPD and Campus Safety Representative during Security kick-off meeting.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience and service facilities within 100 miles of Project.
- D. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose indicated.

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1.8 MAINTENANCE SERVICE

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

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Intrusion Detection System:
 - 1. Digital Security Controls (DSC).
 - a. Use products that integrate with Owner's existing Campus System.
 - 2. Other manufacturers as listed in Article 2.3 below.
 - 3. Substitutions: See Section 01 2500 "Substitution Procedures."

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 shall place 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 shall place circuit in trouble mode and not prevent 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: Coordinate with Owner's Campus Safety Representative.
- I. Entry and Exit Time Delays: Coordinate with Owner's Campus Safety Representative.
- J. Trouble Sequence of Operation: Coordinate with Owner's Campus Safety Representative.

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- K. Alarm Sequence of Operation: Actuation of intrusion detecting device shall place system in alarm mode and cause the following operations:
1. Sound and display local alarm signaling devices with non-coded signal.
 2. Transmit non-coded signal to UHPD.
 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: Coordinate with Owner's Campus Safety Representative.
 8. Lamp Test: Manual lamp test function to cause alarm indication at each zone at control panel and at annunciator panel.

2.3 INITIATING DEVICES

- A. Alarm System Components:
- a. Security Control Panel – DSC HS2064
 - b. Cellular Alarm Communicator – DSC LE2080
 - c. IP Communicator – DSC TL280
 - d. Wireless Transceiver – DSC HSM2HOST9
 - e. Keypad – DSC HS2LCD
 - f. One Button Wireless Duress – DSC PG9938
 - g. Accessory Kit – DSC ACCK-1NT
 - h. Wall Mount Duress – Alarm Controls KR-1-4
 - i. Desk Mount Duress – Potter HUSK-20
 - j. Cable – WCW - 1804P-WHT
 - k. Cable – WCW – 1802PRB-WHT

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. Duress Button
1. Recessed button to prevent accidental activation.
 2. Latching switch action with manual reset.
 3. Switch configuration to be single pole, double throw.
 4. Screw wiring termination.
 5. UL listed.

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PART 3 - EXECUTION

3.1 INTRUSION DETECTION

- A. Door status switches at card reader-controlled locations shall indicate the open/closed status of the associated door and establish the basis for reporting a "door propped open" or an "unauthorized entry" condition.
- B. Door status switches at lock-secured locations shall indicate the open/closed status of the associated door and establish the basis for reporting an "unauthorized entry" condition.
- C. Passive Infrared (PIR) Detectors in non-electrified entry and hallway locations shall establish the basis for reporting an "unauthorized in-building movement" after hours.
- D. Contractor is responsible for coordinating:
 - 1. Contact configuration: Single Pole Double Throw (SPDT) or Double Pole Double Throw (DPDT).
 - 2. Rating of door status switches.
 - 3. Connection of switches with the Electronic Access Control System.
- E. 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.
- F. 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.
- G. Refer to Drawings for locations of Duress Buttons. Buttons shall report to the Owner's existing campus central alarm monitoring and control system. Wired Duress Buttons shall include the installation of duress buttons, end of line supervision modules, wireways and required wiring.

3.2 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. Refer to Section 28 0528 "Pathways for Electronic Safety and Security" for additional requirements.
- C. Connect conduit and wiring to door hardware devices furnished and installed under Section 08 7100 "Door Hardware."

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3.3 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with Section 01 4000 "Quality Requirements."
- B. Test in accordance with NFPA 72.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Provide 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 training of Owner's personnel.

3.5 DEMONSTRATION

- A. Demonstrate normal and abnormal modes of operation and required responses to each.
- B. Provide four hours of instruction each for two Owner representatives.
 - 1. Conduct instruction at Project site with manufacturer's representative.

3.6 PROJECT CLOSE-OUT

- A. As-Built Drawings: Submit drawings in .rvt, .dwg and .pdf formats showing actual plan locations of initiating devices, signaling appliances, and end-of-line devices.

END OF SECTION 28 1600