

SECTION 16725

SECURITY ALARM SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, Division 0, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 16010, Basic Electrical Requirements.
- C. Section 16050, Basic Electrical Materials and Methods.

1.02 WORK INCLUDED

- A. Security alarm system, including materials, labor, services of a UL certified installer, final test and letter certifying that system has been properly installed and operates in accordance with applicable codes and these specifications.

1.03 QUALITY ASSURANCE

- A. Equipment supplier/integrator shall have a minimum of 5 years experience, and maintain a full time service office within 200 miles of the building site. Service office shall be staffed with factory trained technicians and stocked with sufficient parts so that repairs can be made within 24 hours after receipt of notice of equipment failure.
- B. Prior to installation submit data showing that the supplier/integrator has at least five years experience successfully installing security alarm systems of the same type and design as specified herein or that he has a firm contractual agreement with a subcontractor having such required experience. The data shall include the names, locations, and points of contact of at least two installations of the same type and design as specified herein where the Contractor, or the subcontractor referred to above, has installed such systems. The Contractor shall indicate the type of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 18 months.
- C. Furnish the services of one or more qualified security alarm system manufacturer's representatives or technician, experienced in the installation and operation of the type of systems being provided, to supervise the testing, including formal testing, adjustment of the system, and instruction to Owner's personnel.

1.04 SUBMITTALS

- A. Deliver submittals as directed in Section 16010 for:
 - 1. Security alarm control panel.
 - 2. Door alarm switches.
- B. Provide shop drawings and product data to indicate system components, size of components, location, and full one line schematic of wiring system showing every alarm device, building and operation details, wire type, wire size, number of conductors, device location and room name, and battery calculations.
- C. Submit manufacturer's installation instructions.
- D. Submit manufacturer's descriptive literature, operating instructions, and maintenance and repair data.

- E. Have manufacturer submit, on completion of system verification, a point by point check list indicating the date and time of each item inspected and issue a certificate confirming that the inspection has been completed and the system is installed and functioning in accordance with the specifications.

1.05 SYSTEM DESCRIPTION

- A. System shall be a complete, electrically supervised, security alarm system arranged as an open circuit system such that a break (open) or any other abnormal condition that would prevent transmission of an alarm in any detection circuit shall not result in an alarm but shall cause activation of system trouble signal at the system control panel. System shall remain in the alarm mode until the control panel is restored to normal. An open or ground fault condition in any local audible alarm circuit shall cause activation of system trouble signal. Loss of primary (AC) power shall cause instantaneous switchover to auxiliary (DC) power and activation of system trouble signals. Upon restoration of AC power, switchover back to primary power shall also be automatic. Low or no standby battery voltage or an "open" in the battery circuit shall cause activation of system trouble signal. The abnormal position of any control panel switch shall also cause activation of system trouble signals. Trouble signals shall be annunciated audibly and visually at the control panel and be transmitted to the central monitoring unit at the security office.
- B. Operation of any of the door switch or other alarm initiating device shall activate its respective security control panel, give visual indication on the annunciator panel, cause activation of local alarms, and send a signal via a dedicated telephone circuit to the security office monitor unit.
- C. Secure/access zone switch installed shall permit deactivation of the door switches during normal working hours. Change in status of security control unit shall generate a signal at the security office monitor unit.

PART 2 - PRODUCTS

2.01 SECURITY CONTROL PANEL

- A. Modular type, installed in a surface mounted steel cabinet with hinged door and cylinder lock. Control panel shall be a neat, compact, factory wired assembly containing all components and equipment required to provide all specified operating and supervisory functions of the system. Finish panel cabinet on the inside and outside with enamel and provide prominent rigid plastic or metal identification plates for all lamps and switches. Switches and any other controls shall not be accessible without the use of a key. Access to controls shall be by unlocking and opening a panel or door.
- B. Panel functions shall include visual indication, line supervision, contact recognition; have test/silence/reset switches, battery power, access/secure key switch with one minute time delay in secure mode. The security control panel shall be the supervised line type with a line transmitter and a zone annunciator panel.
- C. Design control panel for connection to digital dialer.
- D. On the annunciator panel, each lamp shall provide specific identification of the zone by means of a permanently attached rigid plastic or metal sign with either raised or engraved letters. In no case shall zone identification consist of the words "Zone 1, Zone 2," etc., but shall consist of the description of the zone or device.

2.02 PRIMARY POWER

- A. Power shall be 120 volts AC service. Operation of all signal initiating, signal sounding, trouble signal and tripping circuits shall be 12 or 24 volts DC. AC operating power shall be obtained from circuit indicated on the drawings.
- B. Auxiliary power shall consist of alkaline nickel cadmium rechargeable storage batteries and battery charger. Gelled electrolyte batteries are not permitted. Battery power supply circuits shall be supervised against low and no standby battery voltage and "opens" in the battery circuits. Provide adequate ampere

hour rating to operate the system and tripping circuits under supervisory conditions for 60 hours and then be capable of operating all alarm signal devices under alarm conditions for 30 minutes. Enclose batteries in a well constructed locked steel cabinet with a noncorrosive base and finished inside and out with baked enamel paint.

- C. Battery Charger: Solid state type to provide completely automatic high/low charging rate and be capable of recovery of the batteries from full discharge to full charge in 24 hours or less. Pilot light to indicate when batteries are discharging. Charger shall be located in control panel or battery cabinet.

2.03 ALARM DEVICES

- A. Hinged Door Switch: Recessed balanced magnetic door switch, SPDT alarm contacts; equip with a bias magnet in conjunction with a standard magnet on the movable portion. Will respond to an excessive magnetic field as well as a reduced magnetic field. Contacts shall be SPDT. For use with wood or metal doors.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install the security alarm equipment at the locations indicated, provide all wiring necessary to interconnect the equipment, and connect all equipment in accordance with the manufacturer's recommended instructions. Provide the services of a qualified manufacturer's representative to supervise wiring and component installation. Do not connect or wire any components without direct supervision by the alarm supplier's representative.
- B. Coordinate the relationship of this work to the building structure and the work of all trades. Become thoroughly familiar with all details of the work and project conditions. Verify all dimensions in the field and advise the Engineer of any discrepancy before performing any work.
- C. Provide functionally complete system with all accessories as necessary for system to perform as described in these specifications.
- D. Splices shall be solder or crimp type approved for security installation. Cable shall be clearly tagged and labeled at all termination points and junction boxes.
- E. The number of interconnecting wires, type of cable, shielding and grounding requirements are specialized for each type of equipment and shall be coordinated with the manufacturer to assure all wiring and connections are in accordance with recommendations.
- F. Door switch installation shall be coordinated with suppliers of doors to assure proper door frame modifications to accept recessed door switches. All wiring to be run concealed.
- G. Provide wiring extension from each control panel to the main telephone terminal boards in the main mechanical rooms for completion of the alarm wiring system.
- H. Recessed type door switches on personnel doors shall have all wiring in concealed conduit. No exposed wiring or conduit will be permitted at or to door switches.
- I. Provide weatherproof, key operated shunt switches at the locations shown on the drawings.
- J. System wiring shall be of size and type specified by the equipment manufacturer. All wiring shall be color coded. Equipment supplier shall prepare and submit wiring diagrams along with all descriptive data for approval. Wiring for DC circuits shall not be permitted in the same conduit or tubing as wiring for AC circuits.

- K. Tests: After complete installation of the equipment and at the time directed, the Contractor shall conduct tests to demonstrate that operating and installation requirements of this specification have been met.

END OF SECTION