

## BURGLAR ALARM SYSTEM

### Part 1 Statement of Work

#### 1.1 Scope of Work

##### A General

- 1 This document describes the requirements for the contractors relating to the installation of the Burglar Alarm System.
- 2 The Burglar Alarm System as described in this document is fundamentally designed to detect unauthorized entry into the building and identify, immediately, the specific zone of entry to a 24-hour central station that provides supervised monitoring and/or to the onsite security staff.
- 3 Provide all labor, materials, tools and equipment required for the complete installation of work called for on the Construction Drawings and described in the Specifying Documentation.
- 4 Provide all cabling required to supply a complete and operable system at the locations shown on the drawings and to the “future” locations. See drawing for locations.
- 5 Product specifications, general design considerations, and installation guidelines are provided in this document. The drawings indicate the locations of the devices. If the bid documents are in conflict, this specification shall take precedence. The successful vendor shall meet or exceed all requirements for the fire alarm system described in this document.
- 6 The system shall be monitored off-site by the security monitoring station via the data network. No additional telephone lines shall be required to accommodate this feature.
- 7 The Contractor shall include in their bid documentation the cost of a yearly maintenance contract to maintain this system and a separate proposal on the cost of the second year of the maintenance contract.
- 8 Supply and install all grounding, bonding, and fireproofing required by the local authorities and by code. All cables installed through fire rated walls shall be fire-proofed.

##### B General Requirements

- 1 The work described by this part includes the furnishings of all materials, equipment, supplies, labor and the performing of all operations necessary for the installation of a complete operating system.
- 2 The conduit, outlets, terminal cabinets, etc., which form a part of the rough-in work shall be furnished and installed complete by the electrical contractor. The balance of the system, including the furnishing and installation of cable, furnishing and installation of equipment, making all connections, etc., shall be installed by the Burglar Alarm Contractor.
- 3 The entire responsibility of the system, its operation, function, testing and maintenance for one year after final acceptance of the project by the owner, shall be the responsibility of the Burglar Alarm Contractor.
- 4 The Burglar Alarm Contractor shall furnish and install all equipment, cables, devices, which are necessary for the proper integration of the system so that the system shall perform the function listed herein in compliance with all the specified requirements.
- 5 The Alarm Contractor shall furnish a letter which certifies that the equipment has been installed according to factory intended practices and that the system is operating satisfactorily.
- 6 The Burglar Alarm Contractor shall also furnish a written unconditional guarantee, guaranteeing all parts and labor for a period of one year after final acceptance of the project by the owner.

### Part 2 System

#### 2.1 System Description

##### A Basic Function

- 1 The first basic intent of the alarm system is to detect unauthorized entry into the building and identify, immediately, the specific zone of entry to a 24-hour central station that provides supervised monitoring and/or to the onsite security staff.

- 2 Zones of entry to be monitored will be all outside doors unless specified otherwise.
- 3 Selected corridors have passive detector coverage to supplement the door entry protection.
- 4 All doors on the outside of the building shall be equipped with door sensors and window break-glass detectors will be located at each window on the first floor only.
- 5 The second basic intent is to minimize response to false alarm. Alarm pads placed in protected buildings shall have appropriate time delays to avoid false activations.
- 6 The third basic intent is to provide a flexible, expandable system, which is fully electronically supervised.
- 7 The system shall have the capability of connection for audible alarm and/or monitoring.

## 2.2 System Function

### A Requirements

- 1 The activation of any alarm initiating device in the system shall cause the alarm panel to go into alarm mode.
- 2 The alarm shall then be digitally transmitted to the alarm pad. It shall annunciate, by zone on the alpha-numeric display and transmit all signals to the central monitoring station.
- 3 The system shall include required network interfaces to monitor over the internet.
- 4 The system shall be completely programmable either locally from a keypad, through a network connected device, or remotely through the central monitoring station.
- 5 Input/Output Capacity
  - This system shall be capable of monitoring up to 32 areas/zones, up to 32 doors, up to 599 points (either hardwired or wireless), maintain up to 2,000 users.

### B Zone Configuration

- 1 Each zone shall function in any of the following configurations: Night, Day, Exit, Fire, Supervisory, Emergency, Panic, Auxiliary 1, Auxiliary 2, Fire Verification, Cross Zone, Priority, Key switch Arming.

### C Communication

- 1 The system shall be capable of supporting DSL multiplex communication with digital dialer backup, existing data networks, satellite communication, fiber optic networks, local area networks, wide area networks, cellular communication, and retail data networks.

## Part 3 Products

### 3.1 Control Panel

#### A Features

- 1 Integrated intrusion alarm and access control system
- 2 Up to 32 remote keypads arming stations
- 3 Built-in dialer for monitoring and remote management
- 4 Up to 32 zone inputs and 32 doors
- 5 Up to 599 outputs
- 6 Logs 2,000 alarm and access events

#### B Electronic Components

- 1 All electronic components of the system shall be of the solid-state type, mounted on printed circuit boards conforming to UL 294, 609, 365, 1610 & 1635 standards.

#### C Relays

- 1 Relays and similar switching devices shall be solid-state type or electromechanical.

#### D Test Modes

- 1 The system shall include a provision that permits testing from any alphanumeric keypad. The test shall include standby battery, alarm bell or siren, and communication to the central station.

- 2 The system shall include a provision for an automatic, daily, weekly, thirty day, or up to sixty-day test of the communication link from the panel site to the central station.
- 3 The system shall include a provision for displaying the condition of the internal system power and wiring. Internal monitors shall include the bell circuit, AC power, battery voltage level, charging voltage, panel box tamper, phone trouble line 1, phone trouble line 2, and transmit trouble.

#### E Power Supplies

- 1 Power supplies for the Detection devices shall operate from 120 VAC, Supplied at the respective protected areas. Standby batteries shall be supplied to power the system in the event of a utility power failure. Batteries shall be sized to provide 105% capacity for eight hours. Standby batteries shall be sealed lead-acid. Power supplies shall be Solid State. Controls shall be designed to maintain full battery charge when alternating current is available. Batteries shall be recharged to 85% capacity within 24 hours from battery use. The system shall be automatically transferred to battery power upon loss of alternating current power and return to alternating current power upon restoration. Intrusion alarms shall not be initiated during switch over; a signal shall be initiated upon failure of battery and/or alternating current power.

#### F Control Panel Components

- 1 The approved control panel shall have the following features:
  - Communications
    - Ethernet: 10/100 full duplex
  - Power Equipment
    - Current (Max): Standby: 180mA, Alarm: 260mA
    - Output (Alarm): 2A at 12 VDC
    - Output (Aux): 1.4A at 12 VDC
    - Voltage (Operating): 12VDC
    - Voltage (AC): 16.5-18VAC
  - Wiring
    - Terminal Wire Size: 12 AWG to 22 AWG
    - SDI2 Wiring: Maximum distance – Wire size (unshielded only): 7,500 ft – 22AWG.
  - Number Of:
    - Areas: 32
    - Custom Functions: 32
    - Keypads: 32 keypads, including 16 SDI keypads
    - Events: Up to 10,192
    - Passcodes Users: 2,000, plus 1 installer passcode
    - Points: 599 (8 onboard, up to 591 off board and virtual)
    - Programmable outputs: 599 (3 on-board, up to 596 off-board and virtual)
    - RF points: 504
    - IP Cameras: 16
    - SKED's: 80

#### G Keypad

- 1 The approved keypad shall have the following features:
  - The keypad shall be a SDI2 bus compatible device.
  - The keypad features an illuminated touch screen and graphical interface.
  - The touch screen display uses icon, words, numbers and symbols to show the status of the security system and for interacting with the security system.
  - The keypad shall have a built-in speaker that produces several distinct warning tones.
  - The keypad shall have a built-in proximity reader that allows users to use a token or card in place of a passcode to turn on or off the security system.
  - Power Requirements
    - Current with Proximity Reader Disabled: Standby: 200 mA, Alarm: 300mA

- Current with Proximity Reader Enabled: Standby: 200mA, Alarm: 400mA
- Voltage: 12VDC
- Wiring
  - Terminal Wire Size: 18AWG to 22AWG
  - SDI2 Wiring with Proximity: Max distance 150ft
- Inputs and Outputs
  - On-Board Points Voltage Ranges: Open 2.2 to 5.0 VDC, Normal: 1.4 to 1.8 VDC, Short: 0.0 to 1.0 VDC, Short Circuit Current: 2.3mA
  - Relay Contact Rating: 24 VDC, 1A, Power Factor: 1
  - Alarm pads shall be semi-flush, outlet box mounted, push button Arm, Monitor and Clear commands.

#### H Door Contacts

- 1 The approved door contact shall have the following features:
  - Gap Width: 1/2 inch
  - Wire Lead Type: 22 AWG, 7 stranded
  - Wire Lead Length: 18 inches
  - Switch Configuration Type: Single pole single throw
  - Maximum Contact Resistance: 150 $\mu\Omega$
  - Minimum Breakdown Voltage: 250 VDC
  - Contact Capacity: 10 VAC
  - Maximum Conductive Current: 1.0 A
  - Maximum Voltage: 100V
  - Color: White

#### I Passive Motion Detectors

- 1 The approved passive motion detector shall have the following features:
  - Passive infrared detector shall be designed to minimize false alarms and to fully sense protected areas.
  - Flush, concealed type for use in a standard single gang outlet box
  - 360deg ceiling and wall mount coverage of 15'
  - Wide angle range of 40'
  - Single spot range of 40'

#### J Glassbreak Detector

- 1 The approved Glassbreak sensor shall have the following features:
  - Glassbreak detector shall be designed to operate when glass has been broken or removed to gain entry into the building.
  - Microprocessor Based
  - Automatic adjustment
  - Detects all types of glass
  - Ceiling or Wall mounted

#### K Wire

- 1 All wiring shall be of the type and size recommended by the equipment supplier, and as approved by the authority having jurisdiction. Wire color-coding shall remain the same throughout the system.

**Execution****3.2 Testing****A General Requirements**

- 1 Upon completion of the installation, the Contractor shall test each and every detection, initiating, and control device for proper operation.
- 2 A monitoring report shall be submitted to the owner, or his representative, indicating proper operation, compliance, date of testing and the Contractor's signature.
- 3 On completion of the acceptance tests, the Owner or his representative shall be instructed in the operation and testing of the system. A minimum of two hours training shall be provided.

**3.3 Record Drawings****A Requirements**

- 1 The contractor shall prepare "Record" drawings that indicate the final location of all devices, conduit routing and wiring methods.
- 2 One copy of "Record" drawings shall be forwarded to the "Owner/Operator" and one copy shall be located at the alarm control panel or secure area.

**3.4 Responsibility****A Requirements**

- 1 It is mandatory, under this section of the specification, that the factory authorized representative, install and connect, supervise the installation and connection, or at the minimum, inspect and test the entire system after completion. A letter from the factory authorized representative certifying that this inspection and testing has been done and that the complete system is in full and proper operation and in compliance with this specification and the manufacturer's recommendations, shall be submitted before the project will be accepted.

**3.5 Central Station****A General**

- 1 The intrusion alarm equipment manufacturer's factory authorized representative shall have available a 24-hour, 7 day per week central station service to receive and respond to alarms from the intrusion alarm system.

**3.6 Service****A General**

- 1 The intrusion alarm equipment manufacturer's factory authorized representative shall have a 24-hour (maximum) response capability to service calls.

**END OF SECTION**