

Part 1 General

1.1 SECTION INCLUDES

- .1 Alarm control panel.
- .2 Zone expansion panels.
- .3 Initiating Devices.
- .4 Signaling devices.

1.2 RELATED SECTIONS

- .1 Section 08 71 00 - Door Hardware - General.
- .2 Section 26 05 19 - Building Wire and Cable.

1.3 REFERENCES

- .1 CAN/ULC-S303-M91(R1999) - Local Burglar Alarm Units and Systems.
- .2 CAN/ULC-S304-06 - Signal Receiving Centre and Premise Burglar Alarm Control Units.
- .3 ULC-306-03 - Intrusion Detection Units.
- .4 ULC-S318-96 - Power Supplies for Burglar Alarm Systems.
- .5 NFPA 730 - Guide for Premises Security, 2011 Edition.
- .6 NFPA 731 - Installation of Electronic Premises Security Systems, 2011 Edition.

1.4 SYSTEM DESCRIPTION

- .1 Intrusion Detection System: Protect building and selected areas from intrusion during SECURE hours.
 - .1 Exterior Windows:
 - .1 Detect status of operable windows using magnetic contacts.
 - .2 Exterior Doors:
 - .1 Detect status of doors using magnetic contacts.
 - .3 Interior Secured Spaces
 - .1 Detect motion using passive infrared (PIR) technology.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data: Provide electrical characteristics and connection requirements.
- .3 Shop Drawings: Indicate system wiring diagram showing each device and wiring connection required.

1.6 SUBMITTALS FOR INFORMATION

- .1 Section 01 33 00: Submission procedures.

- .2 Test Reports: Indicate satisfactory completion of required tests and inspections.
- .3 Installation Data: Manufacturer's special installation requirements.
 - .1 Indicate application conditions and limitations of use stipulated by Product testing agency.
 - .2 Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.7 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals.
- .2 Maintenance Contracts: Provide service and maintenance of intrusion detection system for one (1) year from Date of Substantial Completion.
- .3 Operation Data: Operating instructions.
- .4 Maintenance Data: Maintenance and repair procedures.
- .5 Record Documentation: Record actual locations of initiating devices, signaling appliances, and end-of-line devices. Indicate all cable runs complete with identification scheme.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals
- .2 Extra Stock Materials:
 - .1 Provide six (6) keys of each type.

1.9 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten (10) years of experience and with service facilities within 160 km(100 miles) of Project.

1.10 REGULATORY REQUIREMENTS

- .1 Products: ULC listed and classified by CSA and as suitable for the purpose specified and indicated.

Part 2 Products

2.1 MANUFACTURERS

- .1 The system as described herein is based on a Bosch B Series intrusion alarm system.
- .2 Substitutions: Not permitted.

2.2 ALARM CONTROL PANEL

- .1 Control Panel: Modular construction with surface wall-mounted enclosure with adequate power supply to serve control panel modules, alarm signaling devices remote annunciator keypads, remote devices, and relays.

- .2 Include battery-operated emergency power supply with capacity for operating system in standby mode for twenty-four (24) hours.
- .3 System Supervision: Provide electrically-supervised system, with supervised alarm initiating and alarm signaling circuits. Component or power supply failure places system in AC fail condition.
- .4 Initiating Circuits: Supervised zone module with alarm and trouble indication.
- .5 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 does not disable that circuit from transmitting alarm.
- .6 Remote Station Signal Transmitter: Electrically supervised, capable of transmitting alarm and trouble signals over building management Metasys System.
- .7 Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts for each detection zone to provide accessory functions specified.
- .8 System partitioning: System shall be logically separated (partitioned) to effectively protect the building's perimeter and all interior areas. Partition design should meet the following specifications:
 - .1 Perimeter partition for main library.
 - .2 Perimeter partition for mechanical room.
 - .3 Interior partition for main library.
 - .4 Interior partition for mechanical room.
 - .5 Each partition shall be capable of arming as "Stay" or "Away".
 - .6 Where separate partitions which should stay armed during normal business hours and used only under special conditions (e.g. mechanical rooms) shall be equipped with a separate audible notification device, and a provision for arming and disarming, and a provision for local temporary silencing of the audible notification device (if the partition is armed and disarmed remotely).
 - .7 Each partition shall have dedicated output points for Arm, Burg, System Trouble, Zone Fault, and Zone Tamper
 - .8 Each partition shall have a single audible notification device.
 - .9 The audible notification devices signal should not lose more than 40% of SPL at the most distant point due to attenuation, refraction, reverberation, etc.
 - .10 Perimeter partition should have external weather resistant audible and visual notification devices (e.g. sirens, light strobes, etc)
- .9 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 zone-coded signal to building management Metasys System.
 - .3 Indicate location of actuated device on intrusion alarm keypad.
 - .4 Alarm Reset: Key-accessible reset function resets alarm system out of alarm if alarm initiating circuits have cleared.
 - .5 Lamp Test: Manual lamp test function causes alarm indication at each zone at remote annunciator keypad.

2.3 POWER SUPPLY AND ENCLOSURE

- .1 Control Panel: Modular construction with surface wall-mounted enclosure with adequate power supply to serve control panel modules, alarm signaling devices remote annunciator keypads, remote devices, and relays.
- .2 **Power supplies shall be sized such that total load on power supply does not exceed 70% of full load rating.**
 - .1 **Product:**
 - .1 **10A AlarmSaf for main control panel**
 - .2 **4A AlarmSaf for expansion panels**

2.4 ARMING STATION

- .1 Arming Station shall consist of an Access Control Proximity Reader as per Section 28 13 00 Access Control, Intrusion Alarm Keypad and Device Vandal Guard.
- .2 Intrusion Alarm Keypad: Supervised intrusion alarm keypad complete with built-in tampers complete with backlit alpha-numeric keypad and LCD display including audible and visual indication of intrusion by zone, and audible and visual indication of system trouble.
- .3 Device Vandal Guard: Clear acrylic tamper resistant enclosure complete with opaque polystyrene wall plate, ring base, guard cover and tamper resistant tumbler lock. Outside dimensions 165mm(6-1/2inch)H x 190mm(7-1/2inch)W x 75mm(3inch)D.
 - .1 Product: Honeywell TG511A1000

2.5 INITIATING DEVICES

- .1 Motion Detector: Dual passive infrared (PIR) motion sensor complete with temperature compensation complete with RFI protection suitable for wall and ceiling mounting and up to 15m(50foot) x 18m(60foot) area of coverage. Swivel mounts are not acceptable.
 - .1 Product: Honeywell DT7550C
- .2 Door Contacts: Narrow gap recessed 1inch 2-wire magnetic door contacts.
 - .1 SPDT: Single pole double throw door contact for protected doors.
 - .2 DPDT: Double pole double throw door contact for protected doors monitored by both the intrusion alarm system and the access control system.
 - .3 Product: GE Security 1076 Series.

2.6 SIGNAL DEVICES

- .1 Interior Alarm Horn: Electric warbling tone, 125 mm(5 inch) siren. Sound Rating: 115 dB 3 m(10 ft).
- .2 Exterior Alarm Horn: Weather resistant electric warbling tone, 125 mm(5 inch) siren. Sound Rating: 115 dB 3 m(10 ft).

2.7 ENCLOSURES

- .1 Enclosures shall be CSA approved complete with tamper switches and keyed lock access. Padlocks are not acceptable.

- .2 All locks shall be keyed alike.
- .3 Main control panel shall be mounted within a 32inch x 20inch enclosure.
- .4 Expansion panels shall be mounted within an 18inch x 20inch enclosure.

2.8 WIRING

- .1 All wiring shall be premium quality stranded cable Belden or equal.

Part 3 Execution

3.1 INSTALLATION

- .1 Install to manufacturer's written instructions.
- .2 **Supply and install Bosch D9412GV4 controller, D8125 expansion module and battery backup (2x12v 7Ah) in the main control panel with all accessories outlined in the Bosch installation manual and terminal blocks to feed power to field devices that interconnect with IS1.**
- .3 **Supply and install Bosch expansion module D8125 and all accessories outline in the Bosch installation manual and terminal blocks to feed power to field devices that interconnect with IS2.**
- .4 Install enclosures within IT Room on plywood backboards. Enclosures shall be mounted at an accessible height minimum 915mm(36inch) to maximum 1825mm(72inch) above finished floor.
- .5 Provide conduit for interconnection between all enclosures. All conduit shall be sized to allow a minimum of 40% future fill capacity. Minimum size conduit shall be 19mm(3/4inch) EMT.
- .6 Daisy chaining of devices is not permitted. Each device shall be home run back to the head end location.
- .7 Install power supply transformers in a dedicated enclosure each. Enclosures shall be located within the same room as the controllers and expander panels.
- .8 Power supplies shall be fed from a dedicated circuit. Circuit breaker shall be lockable in the on position. Each power supply shall be loaded to 70% capacity maximum nominal load.
- .9 Provide a 7/8inch hole in the front cover of the arming station vandal guard aligned with a 1/2inch hole made in the front cover of the intrusion alarm keypad to allow users access to the right scroll button the keypad.
- .10 **The arming station devices shall be installed at a height of 47inches from centreline of device above finished floor and not more than 6inches apart.**
- .11 Install door magnets within 1/4inch alignment with the door contact. Secure door contacts using a bracket or woodblock.
- .12 Use minimum 4/C 22 AWG minimum size conductors for door contact connections. Door contact cabling shall be recessed at all transition points from the wall, ceiling, basement, crawlspace, etc.

- .13 Install motion detectors with ceiling mounting brackets where indicated as ceiling mounted.
- .14 Use minimum 6/C 22 AWG minimum size conductors for motion detector connections.
- .15 Use minimum 10/C 18 AWG minimum size conductors for interconnection between main control panel and expansion panels.
- .16 All wiring shall be run in conduit. J-Hooks are permitted in accessible ceiling spaces not used as air supply/returns.
- .17 Cable splicing is not acceptable. All devices shall be home run.
- .18 Field devices shall be wired for four-state supervision. Terminations and connections shall be soldered.
- .19 All cables shall be uniquely and clearly identified at both ends. Labels shall be permanent, and not susceptible to thermal or mechanical influence.
- .20 Label cables in ascending order in a clockwise direction relative to the floor plans. The labelling sequence shall start at the device installed at the primary entrance to the building or partition.
- .21 Status changing field devices shall have DEOL (Double End Of Line) supervision.
- .22 Confirm wiring with manufacturer.
- .23 All wiring shall be in conduit.
- .24 Make conduit and wiring connections to door hardware devices provided under Section 08 71 00.

3.2 MANUFACTURER'S FIELD SERVICES

- .1 Include services of technician to supervise installation, adjustments, final connections, system testing, and City training.

3.3 DEMONSTRATION

- .1 Demonstrate normal and abnormal modes of operation, and required responses to each.
- .2 Training and System Setup: Provide a minimum of ten(10)hours of training and system setup to Citys specific requirements. Provide sign-off sheet from City personnel to confirm acceptance of training and system setup.

END OF SECTION