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## **PART 1      GENERAL**

### **1.1            RELATED REQUIREMENTS**

- .1      Section 26 05 00 – Common Work Results - Electrical.

### **1.2            STANDARDS**

- .1      National Fire Protection Association (NFPA)
  - .1      NFPA 70 (2017), Article 517, National Electric Code.
  - .2      NFPA 101 (2015), Life Safety Code.
- .2      Underwriters Laboratories of Canada (ULC)
  - .1      CAN/ULC-S302 (2014), Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults.
  - .2      CAN/ULC-S303(1999), Local Burglar Alarm Units and Systems.
  - .3      CAN/ULC-S304(2016), Intrusion Detection.
  - .4      CAN/ULC-S306 (2003), Intrusion Detection Units.
  - .5      ULC-S318 (1996), Power Supplies for Burglar Alarm Systems.
  - .6      ORD-C634, Connectors and Switches for Use with Burglar Alarm Systems.
- .3      Underwriters' Laboratories (UL)
  - .1      UL 603 (2008), Standard for Power Supplies for Use With Burglar-Alarm Systems.
  - .2      UL 639 (2007), Standard for Intrusion-Detection Units.

### **1.3            DEFINITIONS**

- .1      EAC: Electronic Access Control System.
- .2      PIR: Passive Infrared Detectors.

### **1.4            DESIGN PERFORMANCE REQUIREMENTS**

- .1      Design intrusion detection system using ULC/UL Listed Alarm Service Company.
- .2      Design system as a modular access control, alarm monitoring system expandable, and easily modified for inputs, outputs and remote control stations.
  - .1      Design components in accordance with CAN/ULC-S306 and be capable of:
    - .1      Annunciating undesirable, abnormal or dangerous condition.
    - .2      Prioritizing alarms by alarm type; i.e. panic/duress, intrusion and tamper.
    - .3      Determining zone where alarm occurred.
    - .4      Annunciating power failure and power restoration.

- .5 Annunciating low battery condition.
  - .6 Operate continuously for minimum period of 4 hours in the event of a power failure.
- .3 Equip control panels with continuous tamper detection on door and wall.
  - .1 Tamper detection to trigger alarm and trouble light.
- .4 Design system with:
  - .1 Alarm masking.
  - .2 Remote maintenance or diagnostics with password activation and call back modem.
  - .3 Unique identifier for each authorized person.
  - .4 Arming and disarming capabilities: manual and automatic by time of day, day of week, or by operator command.
  - .5 Support both manual and automatic responses to alarms entering system.
  - .6 Each alarm capable of initiating different functions of camera, homing, and activation of remote devices, audio switching, door control and card or pin validation.
  - .7 Zone or alarm location annunciated at monitoring station.
- .5 Communications link: security level of I as described in CAN/ULC-S304.
- .6 Signal link: Security level of I as described in CAN/ULC-S304.
- .7 Alarm condition: Design system to provide maximum time for an alarm to be communicated of 60 seconds from alarm initiation to annunciation at remote monitoring location.
- .8 Junction boxes: tamper proof with continuous tamper-detection capability.
- .9 Design system power supplies rated to provide cumulative load of all systems components plus safety factor of 50% or greater.

## **1.5 SUBMITTALS**

- .1 Product Data: Submit manufacturer's printed product literature, specifications and datasheet.
  - .1 Submit two copies of WHMIS MSDS - Material Safety Data Sheets.
  - .2 Submit manufacture's literature for each control panel and detection accessory device.
  - .3 Submit:
    - .1 Functional description of equipment.
    - .2 Technical data for all devices.
    - .3 Device location plans and cable lists.
    - .4 Devices mounting location detail drawings.
    - .5 Typical devices connection detail drawings

- .2 Submit shop drawings to indicate project layout, mounting heights and locations, wiring diagrams, detection device coverage patterns and contact operating gaps.
- .3 Submit zone layout drawing indicating number and location of zones and areas covered.
- .4 Submit one sample of each control panel and detection device accessory. Reviewed and accepted control panel, detection device accessory will be returned for incorporation into work.
- .5 Test Reports: Submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.
- .6 Certificates: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .1 Submit UL Product Safety Certificates.
  - .2 Submit verification Certificate that service company is ULC/UL List alarm service company.
  - .3 Submit verification Certificate that intrusion alarm system is Certified Alarm System.
- .7 Instructions: Submit manufacturer's installation instructions.
- .8 Manufacturer's Field Services: Submit copies of manufacturer's field reports.
- .9 Maintenance Data: Submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
  - .1 Include:
    - .1 System configuration and equipment physical layout.
    - .2 Functional description of equipment.
    - .3 Instructions of operation of equipment.
    - .4 Illustrations and diagrams to supplement procedures.
    - .5 Operation instructions provided by manufacturer.
    - .6 Cleaning instructions.

## **1.6 WARRANTY**

- .1 Manufacturer's Warranty: Submit, for Owner's Representative's acceptance, manufacturer's warranty document executed by authorized company official, stating that the Intrusion Detection system is warranted against defects in operation, material and workmanship for a period of 12 months from date of substantial completion of the project.

## **1.7 SUPPORT SERVICES**

- .1 Provide manufacturer/dealer advice, information and support services for 1 year.

## **1.8 TRAINING**

- .1 Arrange and pay for on-site lectures and demonstrations by system manufacturer to train operational personnel in the use and maintenance of the system.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Control Panel: ULC approved, expandable and designed for multiplexed expansion.
  - .1 Zones (protection inputs): 8.
  - .2 Fixed Zones: 8.
  - .3 Expandable: 8 - 32 zones.
  - .4 Number of user codes required: 10.
  - .5 Number of Areas/Partitions required: 10.
  - .6 Keypads: LCD (liquid crystal display).
  - .7 Alarm: Monitored.
  - .8 System: Wired.
  - .9 Integrated with sub systems.
  - .10 Number of programmable outputs required: 5.
  - .11 System supervision: telephone line, battery, and AC power.
  - .12 Siren output.
  - .13 Number of devices per zone: as required.
- .2 Detection Accessories:
  - .1 Passive Infrared Detectors (PIR's): ULC approved, digital.
    - .1 Coverage pattern: as required/indicated.
    - .2 Temperature requirement: as required/indicated.
    - .3 Tamper switch.
    - .4 Mounting: wall or ceiling.
  - .2 Glassbreak Detector: ULC approved, complete with tamperproof switch and be designed to meet temperature and mounting requirements of project.
    - .1 Coverage pattern: as required/indicated.
  - .3 Dual Passive Infrared and Microwave: ULC approved, complete with tamperproof switch, and be designed to meet temperature and mounting requirements of project.
    - .1 Coverage pattern: as required/indicated
  - .4 Contacts: ULC approved.
    - .1 Mounting: surface.
    - .2 Mounting locations: door window or overhead door.
    - .3 Operating gap: 9.5 mm.
    - .4 Security level: high security
    - .5 Type: magnetic biased.

- .5 Vibration or Shock Sensors: as required.
- .6 Photo Electric Beams: as required.
- .7 Notification Devices:
  - .1 Siren: 15 watt.
  - .2 Speaker complete with driver voice annunciator.
- .3 Communications: telephone line Digital Dialer.
- .4 Environmental Monitoring: Design system for detection of Smoke/Heat, Temperature Humidity and Flood.
- .5 Connectors and switches: to ORD-C634.
- .6 Power supplies: to ULC-S318 or UL 603.

### **PART 3 EXECUTION**

#### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions, and datasheet.

#### **3.2 INSTALLATION**

- .1 Install panels, intrusion detection system and components in accordance with manufacturer's written installation instructions to locations, heights and surfaces shown on reviewed shop drawings.
- .2 Install panels, intrusion detection system and components secure to walls, ceilings or other substrates.
- .3 Install required boxes in inconspicuous accessible locations.
- .4 Conceal conduit and wiring.

#### **3.3 FIELD QUALITY CONTROL**

- .1 Manufacturer's Services:
  - .1 Have manufacturer of products, supplied under this Section, review Work involved in the handling, installation/application, protection and cleaning, of its products and submit written reports, in acceptable format, to verify compliance of Work with Contract.
  - .2 Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
  - .3 Schedule site visits, to review Work, at stages listed:

- .1 After delivery and storage of products, and when preparatory Work, or other Work, on which the Work of this Section depends, is complete but before installation begins.
- .2 During progress of Work at 25% and 60% complete.
- .3 Commissioning of the Work.
- .4 Obtain reports, within three (3) working days of review, and submit, immediately, to Departmental Representative.

### **3.4 VERIFICATION AND COMMISSIONING**

- .1 Perform verification inspections and test in the presence of Departmental Representative.
  - .1 Provide all necessary tools, ladders and equipment.
  - .2 Ensure appropriate subcontractors, and manufacturer's representatives and security specialists are present for verification.
- .2 Visual verification: Objective is to assess quality of installation and assembly and overall appearance to ensure compliance with Contract Documents. Visual inspection to include:
  - .1 Sturdiness of equipment fastening.
  - .2 Non-existence of installation related damages.
  - .3 Compliance of device locations with reviewed shop drawings.
  - .4 Compatibility of equipment installation with physical environment.
  - .5 Inclusion of all accessories.
  - .6 Device and cabling identification.
  - .7 Application and location of ULC approval decals.
- .3 Technical verification: Purpose to ensure that all systems and devices are properly installed and free of defects and damage. Technical verification includes:
  - .1 Measurements of coverage patterns
  - .2 Connecting joints and equipment fastening.
  - .3 Compliance with manufacturer's specification, product literature and installation instructions.
- .4 Operational verification: Purpose to ensure that devices and systems' performance meet or exceed established functional requirements. Operational verification includes:
  - .1 Operation of each device individually and within its environment.
  - .2 Operation of each device in relation with programmable schedule and or/specific functions.

### **3.5 CLEANING AND ADJUSTING**

- .1 Remove protective coverings from control panels, detection accessories and components.
- .2 Adjust all components for correct function.

**END OF SECTION**