

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1    Fire alarm control panels.
- .2    Fire alarm initiating and signaling devices.
- .3    Auxiliary fire alarm equipment and wiring.

**1.2                RELATED SECTIONS**

- .1    Section 08 71 00 - Door Hardware - General: Door closers, electric locks, electric releases.
- .2    Section 21 13 00 - Sprinklers.
- .3    Section 26 05 00 - Common Work Results for Electrical
- .4    Section 26 05 19 - Building Wire and Cable.

**1.3                REFERENCES**

- .1    The latest version of the following including all amendments:
  - .1    CAN/ULC S524 - Standard for the Installation of Fire Alarm Systems.
  - .2    CAN/ULC S524 - Standard for the Installation of Fire Alarm Systems.
  - .3    CAN/ULC S525 - Audible Signal Devices for Fire Alarm Systems, Including Accessories.
  - .4    CAN/ULC S526 - Visible Signal Devices for Fire Alarm Systems.
  - .5    CAN/ULC S527 - Control Units for Fire Alarm Systems
  - .6    CAN/ULC S528 - Manual Pull Stations for Fire Alarm Systems.
  - .7    CAN/ULC S529 - Smoke Detectors for Fire Alarm Systems.
  - .8    CAN/ULC S530 - Heat Actuated Fire Detectors for Fire Alarm Systems.
  - .9    CAN/ULC S536 - Inspection and Testing of Fire Alarm Systems.
  - .10    CAN/ULC S541 - Speakers for Fire Alarm Systems, Including Accessories.
  - .11    ULC ORD-C386-1990 - Flame Detectors.

**1.4                SYSTEM DESCRIPTION**

- .1    Fire Alarm System: Existing Simplex Grinnel 4100U.
- .2    The Fire Alarm System shall consist of all necessary hardware equipment and software programming to perform the following functions:
  - .1    Fire alarm system detection and notification operations.
  - .2    Control and monitoring of elevators, door hold-open devices, and other equipment as indicated in the drawings and specifications.

**1.5                SUBMITTALS FOR REVIEW**

- .1    Section 01 33 00: Submission procedures.

- .2 Product Data: Provide electrical characteristics and connection requirements.
- .3 Shop Drawings: Provide annunciator layout and 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 products.

#### **1.7 CLOSEOUT SUBMITTALS**

- .1 Section 01 78 00: Submission procedures.
- .2 Maintenance Contracts: Provide service and maintenance of fire alarm 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.

#### **1.8 MAINTENANCE MATERIAL SUBMITTALS**

- .1 Section 01 78 40: Maintenance and extra material requirements.

#### **1.9 QUALITY ASSURANCE**

- .1 Design and install fire alarm system to CAN/ULC S524.

#### **1.10 REGULATORY REQUIREMENTS**

- .1 Products Requiring Electrical Connection: Listed and classified by ULC and as suitable for the purpose specified and indicated.

### **Part 2 Products**

#### **2.1 MANUFACTURERS**

- .1 Simplex Grinnell.
- .2 Substitutions: None.

#### **2.2 FIRE ALARM AND SMOKE DETECTION CONTROL PANEL**

- .1 Control Panel: Existing Simplex 4100U

### **2.3 INITIATING DEVICES**

- .1 Manual Station: Match existing.
- .2 Heat Detector: Match existing.
- .3 Ceiling Mounted Smoke Detector: Match existing.
- .4 Ceiling Mounted Combination Smoke Detector and Fixed Temperature Heat Detector: Match existing.
- .5 Duct Mounted Photoelectric Smoke Detector: Match existing.
- .6 Multi-Criteria Fire/CO Detector: Match existing.
- .7 Stand-Alone CO Detector: Match existing.

### **2.4 SIGNALING APPLIANCES**

- .1 Alarm Horns and Strobes: Match existing.
- .2 Interior Remote Annunciator: Match existing.

### **2.5 FIRE ALARM WIRE AND CABLE**

- .1 Fire Alarm Power Branch Circuits: Building wire as specified in Section 26 05 19.
- .2 Initiating Device and Indicating Appliance Circuits: Power limited fire-protective signaling cable classified for fire and smoke characteristics, copper conductor, 300 volts insulation rated 105 degrees C, suitable for use in air handling ducts, hollow spaces used as ducts, and plenums
- .3 Wiring shall be as per manufacturer's recommendations. All wiring shall be in conduit unless noted otherwise. [All wiring shall be wire in conduit unless noted otherwise.]

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install products to manufacturer's written instructions and CAN/ULC S524, local and national codes, as indicated, and as recommended by the manufacturer.
- .2 All initiating and signalling devices, control panels and remote annunciators shall be flush mounted unless indicated otherwise.
- .3 Install devices at heights indicated in Section 26 05 00.
- .4 Mount end-of-line devices in separate box adjacent to last device in circuit.
- .5 Mount outlet box for electric door holder to withstand 36 kg (80 lbs) pulling force.
- .6 Make conduit and wiring connections to duct smoke detectors, sprinkler valve tamper and flow switches, fire suppression system control panels, door release devices, smoke control fans and equipment.
- .7 Circuiting for fire alarm devices shall be as follows:
  - .1 Provide Class "A" addressable initiating/alarm circuits throughout unless indicated otherwise.

- .2 Provide Class “B” audible/visual signal circuits for signal circuits throughout unless indicated otherwise.
- .3 Provide Class “A” audible/visual signal circuits for residential dwelling unit signal circuits only.
- .4 Circuits shall have a minimum 15% spare capacity for future system expansion.
- .5 All SLC, signal and power riser wiring shall be supervised, including internal wiring between modules.
- .8 Where wiring is required to be surface mounted within finished areas, wiring shall be installed in a single piece metal raceway unless noted otherwise. Color of raceway shall be white unless noted otherwise.
- .9 Where devices are surface mounted in finished areas, provide a surface mounted metal raceway device box. Color of box shall match the device.

### **3.2 FIELD QUALITY CONTROL**

- .1 Section 01 45 00: Field inspection and testing.
- .2 Test to CAN/ULC S536 and local inspection authority requirements.
- .3 Include services to re-test system one (1) month prior to

### **3.3 MANUFACTURER'S FIELD SERVICES**

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

### **3.4 FIRE ALARM WIRE AND CABLE COLOUR CODE**

- .1 Match existing.

### **3.5 CLOSEOUT ACTIVITIES**

- .1 Demonstration: Demonstrate normal and abnormal modes of operation, and required responses to each.

**END OF SECTION**