

PART 1 GENERAL**1.1 REFERENCE STANDARDS**

- .1 National Research Council Canada (NRC)
 - .1 National Building Code of Canada (NBC).
- .2 Treasury Board of Canada (TBS), Occupational Safety and Health (OSH)
 - .1 Fire Protection Standard.
- .3 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S524-2014, Standard for the Installation of Fire Alarm Systems.
 - .2 CAN/ULC-S529-2016, Smoke Detectors for Fire Alarm Systems.
 - .3 CAN/ULC-S537-2013, Standard for the Verification of Fire Alarm Systems.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for multiplex fire alarm system and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for fire alarm system for incorporation into manual.
- .3 Include:
 - .1 Technical data - illustrated parts lists with parts catalogue numbers.
 - .2 Copy of approved shop drawings with corrections completed and marks removed except review stamps.
 - .3 List of recommended spare parts for system.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
 - .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
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PART 2 PRODUCTS**2.1 EXISTING SYSTEM**

- .1 Existing fire alarm signalling system is addressable, two (2) stages signalling system. Fire alarm control unit (FACU) is XLS-V and is manufactured by Siemens. Existing detection circuits are connected on DCLB circuits. New components shall be fully compatible and ULC cross-listed with existing equipment.

2.2 ADDRESSABLE INTERFACE MODULE (MIA)

- .1 Addressable interface module shall provide supervision of devices with short-circuiting contacts.
- .2 Existing model: HTRI-S of Siemens.

2.3 ADDRESSABLE RELAY MODULE (MRA)

- .1 Control relays used to interface the fire alarm system with other systems shall have 2 A minimum, 120 Vac/24 Vdc dry type C contacts.
- .2 Existing model: HTRI-R of Siemens.

2.4 WIRING

- .1 Twisted copper conductors: rated 300 V.
- .2 To initiating circuits: 18 AWG minimum, and in accordance with manufacturer's requirements.
- .3 Cable type FAS105:
 - .1 In suspended ceilings, drywalls, and dry areas.
 - .2 For the connection of fire alarm detection devices.

2.5 AUTOMATIC ALARM INITIATING DEVICES

- .1 Addressable variable-sensitivity smoke detectors.
 - .1 Photo-electric type.
 - .2 Electronics to communicate detector's status to addressable module/transponder.
 - .3 Detector address to be set on detector head in field.
 - .4 Ability to annunciate minimum of 2 levels of detector contamination automatically with trouble condition at control panel.
 - .5 All hidden detectors must have a remote LED indicator.
 - .6 Existing model: HFP-11 of Siemens.

PART 3 EXECUTION**3.1 INSTALLATION**

- .1 Install systems in accordance with CAN/ULC-S524.
 - .2 Locate and install detectors and connect to alarm circuit wiring.
 - .3 Install the addressable relay modules used to control elevator recall.
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- .4 Install monitoring modules for emergency and pre-transfer signals of the emergency network transfer switch.
- .5 Splices are not permitted.

3.2 OPERATING SEQUENCES

- .1 Addressable relay modules for performing elevator recalls will be activated according to the following alarm conditions:
 - .1 Elevator shaft recall: This relay module is activated when there is detection of smoke in the elevator shaft.
 - .2 Elevator mechanical room recall: This relay module is activated when there is a detection of smoke in the elevator machinery room. Since the mechanical room of the elevator is located on the same level as the main recall, the recall must be done at the alternate landing.
 - .3 Alternative recall: This relay module is activated when there is a detection of smoke in the elevator hall on the main level.
 - .4 General recall: This relay module is activated when the panel activates the general alarm signal.
- .2 The relay and supervision modules for the emergency control sequence of elevators 3 and 4 must operate as follows:
 - .1 The MRA-Emergency Mode relay module will be activated when the MIA-Emergency Mode supervision module detects a power failure and the emergency power supply is switched.
 - .2 The MRA-Pre-transfer signal relay module will be activated during the time that the MIA-Pre-transfer signal supervision module monitors the activation of the transfer switch prior signal, which must prevent switching to the normal power supply for at least 20 seconds.
 - .3 The operation of the modules must comply with article 6.14.2 of standard CSA-C282-15 | Emergency power supply for buildings.
 - .4 Coordinate with the elevator contractor for the connection of the relay module contacts to the controller.
- .3 The operating sequences described above are not restrictive; contractors must follow the standards and codes in force.

3.3 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical and CAN/ULC-S537.
- .2 Fire alarm system:
 - .1 Test such device and alarm circuit to ensure manual stations, smoke detectors transmit alarm to control panel and actuate first stage alarm.
 - .2 Check annunciator panels to ensure zones are shown correctly.
 - .3 Simulate grounds and breaks on alarm and signalling circuits to ensure proper operation of systems.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
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3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by fire alarm system installation.

3.6 CLOSEOUT ACTIVITIES

- .1 Provide on-site lectures and demonstration by fire alarm equipment manufacturer to train operational personnel in use and maintenance of fire alarm system.

END OF SECTION
