

PART 1 GENERAL

1.1 RELATED WORK

- .1 Wiring: Section 26 05 21
- .2 Conduits: Section 26 05 34

1.2 REFERENCES

- .1 CAN/ULC-S524-2014, Installation of Fire Alarm Systems.
- .2 ULC-S525-2007, Audible Signal Appliances for Fire Alarm.
- .3 CAN/ULC-S527-2011, Control Units, Fire Alarm.
- .4 CAN/ULC-S528-2005, Manual Pull Stations.
- .5 CAN/ULC-S529-2009, Smoke Detectors, Fire Alarm.
- .6 CAN/ULC-S530-M91, Heat Actuated Fire Detectors, Fire Alarm.
- .7 CAN/ULC-S536-2013, Inspection and Testing of Fire Alarm Systems. All new/relocated devices are to be connected to the existing system.
- .8 CAN/ULC-S537-2013, Verification of Fire Alarm Systems.
- .9 NBC, National Building Code of Canada, 2011.

1.3 SYSTEM DESCRIPTION

- .1 The existing buildings fire alarm system is manufactured and maintained by Simplex.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00.
- .2 Include details for devices.

1.5 OPERATION AND MAINTENANCE DATA

- .1 Provide operation and maintenance data for fire alarm system for incorporation into manual specified in Section 01 78 00.
- .2 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.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Equipment and devices: ULC listed and labelled and supplied by single manufacturer.

2.2 MANUAL ALARM STATIONS

- .1 Addressable manual pull station:

- .1 Pull lever, semi-flush wall mounted type, single action, dual stage, electronics to communicate station's status to addressable module/transponder over two (2) wires and to supply power to station. Station address to be set on station in field.
- .2 Standard of Acceptance: Simplex 4099-9001CB Series.

2.3 AUTOMATIC ALARM INITIATING DEVICES

- .1 Addressable thermal fire detectors, combination fixed temperature of 57 C. Electronics to communicate detector's status to addressable module/transponder.
 - .1 Detector address to be set on detector base and head in field.
- .2 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 base and head in field.
 - .4 Sensitivity settings: determined and operated by control panel. No shifting in detector sensitivity due to atmospheric conditions (dust, dirt) within certain parameters.
 - .5 Ability to annunciate minimum of two (2) levels of detector contamination automatically with trouble condition at control panel.
 - .6 Duct mounted where indicated. Duct mounted detectors to come complete with relay base for fan shut down.
 - .7 Standard of Acceptance: Simplex 4098-9714 Series.
- .3 Addressable Interface Modules (AIM).
 - .1 To provide ability to communicate with CCU for sprinkler supervisory devices and other equipment which would otherwise be unaddressed.
 - .2 Provide as indicated and as coordinated on-site with sprinkler system installed.
 - .3 Standard of Acceptance: Simplex 4090-9002 Series.
- .4 Addressable Relays.
 - .1 To allow the CCU to selectively monitor and control equipment.
 - .2 Provide as indicated.
 - .3 Standard of Acceptance: Simplex 4099-9001CB Series.

2.4 SIGNALLING DEVICES

- .1 Combination horn/strobe unit.
- .2 Surface mounted, red in colour.
- .3 High-low dB setting.
- .4 Selectable candila output.
- .5 Standard of Acceptance: Simplex.

2.5 END-OF LINE DEVICES

- .1 End-of-line devices to control supervisory current in alarm circuits and signalling circuits, sized to ensure correct supervisory current for each circuit. Open, short or ground fault in any circuit will alter supervisory current in that circuit, producing audible and visible alarm at main control panel.

2.6 ANCILLARY DEVICES

- .1 Remote relay unit to initiate equipment shutdown, as indicated.

PART 3 EXECUTION

3.1 INSTALLATION

- .1 Install systems in accordance with CAN/ULC-S524.
- .2 Install manual alarm stations and connect to local alarm circuit wiring.
- .3 Locate and install detectors and connect to local alarm circuit wiring. Do not mount detectors within 1m of air outlets. Maintain at least 600mm radius clear space on ceiling, below and around detectors. Locate duct type detectors in straight portions of ducts.
- .4 Install signal horns and visual signal devices and connect to local signalling circuits.
- .5 Install end-of-line devices at end of alarm and signalling circuits as required.
- .6 Install remote relay units to control equipment shut down and shunt trips.
- .7 Sprinkler system: wire alarm and supervisory switches and connect to control panel as indicated.
- .8 Splices are not permitted.
- .9 Confirm wiring is free of opens, shorts or grounds, before system testing and handing over.
- .10 Provide all programming and verification required to ensure full system functionality.

3.2 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Electrical General Requirements and CAN/ULC-S537. \
- .2 Fire alarm system:
 - .1 Test such device and alarm circuit to ensure manual stations, thermal and smoke detectors, sprinkler system transmit alarm to control panel and actuate general alarm and ancillary devices.
 - .2 Check annunciator panels to ensure zones are shown correctly.
 - .3 Simulate grounds and breaks on alarm and signaling circuits to ensure proper operation of systems.
 - .4 Addressable circuits system style DCLB:
 - .1 Test each conductor on all DCLB addressable links for capability of providing 3 or more subsequent alarm signals on line side of single open-circuit fault condition imposed near electrically most remote device on each link. Operate Acknowledge/Silence switch after reception of each of the three (3) signals. Correct imposed fault after completion of each series of tests.
 - .2 Test each conductor on all DCLB addressable links for capability of providing three (3) or more subsequent alarm signals during ground- fault condition imposed near electrically most remote device on each link. Operate Acknowledge/Silence switch after reception of each of the three (3) signals. Correct imposed fault after completion of each series of tests.
- .3 Test complete operation of fire alarm system ventilation unit control. Coordinate commissioning with commissioning Agent and other trades.
- .4 Verification agency to provide Verification Certification to Departmental Representative upon completion of all testing.
- .5 Confirm transmission of signals to ULC monitoring agency.

END OF SECTION