

PART I – GENERAL**SUMMARY**

Related Documents: Drawings, General Conditions and Division 1 Specification Sections apply to this section.

Related Work Specified Elsewhere: 15204 Heating and Ventilation Systems

- 15300 Automatic Sprinkler Systems
- 16010 General Provisions - Electrical
- 16100 Basic Materials & Methods

This section is valid only when considered in total with other Contract Documents. Cross references are for convenience of reader and their inclusion in or omission from any section in no way limits its scope or intent of any Contract Document.

DESCRIPTION OF WORK

- Furnish and install all labor, material and equipment necessary for the fire alarm and water flow notification system, as herein specified. System shall be tested and left in first class operating condition. Furnish and install all miscellaneous control wiring complete as specified herein, including all labor, materials, equipment, accessories, services and tests of all systems. The system shall perform the sequence of operation herein specified and shall provide all devices shown on the drawings, called for in the specifications and as required by the applicable codes and standards.
- This Contractor shall, under this contract, obtain the services of an authorized representative of the sprinkler control communicator system manufacturer to assure that the system is in proper operating condition and compliance with all applicable regulations. The authorized representative of the sprinkler communicator system manufacturer shall provide all certification, inspection, testing and other services required by the testing and certification provisions of this specification.
- Water flow switch and sprinkler supervisory tie-ins: Contractor shall provide connection to water flow switches and sprinkler supervisory switches. Switches to be supplied by sprinkler contractor in accordance with NFPA 72.
- Contractor shall provide necessary openings in floors, walls, ceilings, provide sleeves, inserts and templates required for installation compliant with applicable sections of this specification.

REFERENCES

Codes and Standards: Installation methods and system performance shall be in compliance with the most currently recognized building code and:

NFPA 70, National Electrical Code,

NFPA 72, National Fire Alarm Code,

Applicable CSA/ULC Listing

All equipment and wiring shall be installed in accordance with the requirements of the manufacturer, these specifications, the codes and standards listed above, and with all applicable regulations.

SUBMITTALS

- Unless otherwise noted, the contractor shall prepare all shop drawings, product literature, etc. only as required to properly coordinate and construct the project.
- Upon completion, copies of all inspection/certification reports required by, issued to, or issued by the Local Authority Having Jurisdiction.
- Upon completion, record drawings of the custom wiring schematic, riser diagram, and point-to-point wiring diagrams specified above but modified to include any changes incorporated in construction.
- A letter from the manufacturer's representative certifying that the installation is compliant with all requirements of the manufacturer.
- A copy of the manufacturer's warrantee, modified if necessary to comply with the requirements of the warrantee sections of this specification.

PART II – PRODUCTS**ACCEPTABLE MANUFACTURERS**

"Alarm Package" (Fire and Burglar) shall be provided and installed by a Required Vendor as noted in "Bidding Requirements" Section 5 for approved vendor.

SEQUENCE OF OPERATION

1. The system shall operate as a low voltage water flow reporting system and shall be a complete non-coded, zoned, electrically supervised fire communicator system as herein specified. Initiation circuits shall be NFPA 72 Class B, Style B. Supervisory circuits shall be NFPA 72 Class B, Style B. Notification circuits shall be NFPA 72 Class B, Style X. Circuits for relay coil operation shall be 24 volt maximum and be derived from the fire communicator panel.
2. Power supply shall be 120 volts, 60 Hz. The 24 volts, DC power for all system supervisory and control functions shall be provided by the main fire communicator power supply.
3. Upon loss of building power, the entire system shall operate on battery power for 24 hours.
4. System Operation shall be:
 - Any abnormal circuit conditions as specified for the Class and Style designated for the system shall initiate a "trouble" condition at the panel and indicate a "trouble" condition at a ULC listed central station.
 - Any abnormal condition of the position of a sprinkler system control valve shall indicate a distinct "supervisory" alarm condition at the panel, illuminate a "supervisory" indication on

the remote annunciator, and indicate a "supervisory" alarm condition at a ULC listed central station.

- Activation of any device monitoring water flow in the sprinkler system shall initiate a "General Alarm" condition as hereinafter described at the panel and a ULC listed central station.
- Malfunction of the battery circuits, low battery levels or any charger malfunctions shall initiate a "trouble" condition at the panel, and indicate a "trouble" condition at a ULC listed central station.

5. Initiation of a "General Alarm" condition shall result in the following functions to be performed by the system:

- Initiate an alarm indication on the panel remote annunciator by tone and illuminate the corresponding English zone description. Manually activating the "Alarm Silence" shall silence the tone at the remote annunciator silence the building audio device controlled by this fire alarm system. The alarm condition displayed on the panel and at the remote annunciator will remain on until the condition causing the alarm has been cleared and reset.
- Illuminate the water flow alarm English display and activate sounding device on the remote annunciator located at the store as shown on the drawings.
- Panel will automatically notify the ULC listed central station of the alarm condition.

COMMUNICATOR PANEL

The communicator panel shall be as supplied by the Required Vendor and shall provide power, annunciation, supervision and control for the water flow alarm, annunciation and supervisory system. All external circuits shall be listed as power limited circuits per article 760 of The Canadian Electrical Code. The control panel shall operate according with this section, the sequence of operation and applicable drawings. All zones shall be capable of alarming up to the total number connected to the system. The panel shall have the ability to by-pass a zone or an output through programming.

RELAYS

Relays provided for the control of external auxiliary devices shall have energizing coils of a low voltage (24 volts). Contacts shall consist of a minimum one each of normally open and normally closed contacts. Contacts shall be rated at a minimum of 5 amps and 120 volts. The enclosure for the relay shall be NEMA 1 rating unless the relay is mounted where subject to weather, moisture, hazardous or other extreme classified conditions in which case the relay shall be provided with an enclosure of the appropriate rating.

REMOTE ANNUNCIATOR

The remote annunciator shall be located as shown on the drawings. The assembly shall consist of a coverplate with English readout of "alarm",

"supervisory" and "trouble" conditions. The unit shall be surface mounted and operate in compliance with the "Sequence of Operation" described herein. The "water flow" indication and "water flow" sounding device shall derive power from the sprinkler alarm communicator. The "supervisory" indication shall derive its power from the sprinkler alarm communicator.

PART III – EXECUTION

INSTALLATION/APPLICATION

- This contractor shall furnish and install all control wiring and outlet boxes required for a complete system as described herein and as detailed on the drawings. All back boxes shall be furnished by the electrical contractor. Any required conduit shown in the submittals referenced by this section shall be furnished and installed by the licensed electrical contractor.
- All wiring to be installed exposed at 8' or less above the finished floor or, where subject to physical damage, shall be in conduit. All cables shall be type FPL or FPLP and shall meet the requirements of all national, provincial, and local electrical codes. The sizes of the different wires shall be those specified by the manufacturer or as indicated on the drawing whichever is the larger wire or more stringent requirement. All wires shall be tagged at all junction points and shall test free from grounds or crosses between conductors. Only low voltage, current limited, burglar and fire alarm wiring may be installed in conduits with conductors for the fire communicator system.
- Circuits installed at more than 8' above finished floor, concealed above lay-in ceilings or concealed within partitions shall be installed without conduits and supported using plastic supports in a manner and at intervals compliant with CEC requirements. In addition, conductors installed above lay-in ceilings shall be supported from the building structure and shall not be permitted less than 9" above the removable ceiling tiles or panels. Conductors shall be concealed from public view at all locations by routing conductors on the inside of joists, over girders, within partitions or in any other manner acceptable to the owner. All conductors shall be installed at right angles to the building walls, floors and ceilings.
- All circuits required for operation of the relays, initiation devices, supervisory devices and panel in accordance with these specifications will be provided by this contractor whether or not expressly shown on the drawings. The fire communicator equipment manufacturer shall have final responsibility for exact definition of the circuits.
- Final connections between equipment and the wiring system shall be made under direct supervision of a representative of the manufacturer.

TESTS AND CERTIFICATIONS

All certifications specified in this section shall be in writing and submitted as part of the certification requested in the paragraph specifying submittals.

The system shall meet all the requirements of the listed applicable codes and the requirements of the Local Authority Having Jurisdiction. The system test certification documents, including those required for and of the central station shall meet the requirements of the Local Authority Having Jurisdiction.

Any and all testing and retesting required for certification and for or after warrantee replacement shall be compliant with all the requirements of the listed applicable codes and the requirements of the Local Authority Having Jurisdiction and shall be completed at no additional cost to the Owner.

Contractor shall notify the Owner in writing a minimum of two weeks prior to testing so that the Owner may, at the Owner's option, have a representative present for testing.

If testing and/or inspection agreements are required by the Local Authority Having Jurisdiction for building occupancy, a compliant agreement shall be offered to the owner in writing a minimum of two weeks prior to sprinkler communicator system testing. The cost of the Test and Inspection Agreement shall not be included in this section and will be paid by the Owner separately unless the Owner is bound to either the manufacturer or installer for inspection and testing as terms of the manufacturer's or installer's warrantee. If testing or inspection of the system by organizations other than the installer or manufacturer would void any warranties, a testing and inspection agreement satisfactory to the Local Authority Having Jurisdiction and valid for the length of time of the warrantee will be provided under this section at no additional cost to the Owner.

The systems in their entirety shall be warranted for a period of 1 year from the date of final acceptance or beneficial use of the systems by the Owner. Warranty shall be documented by the issuance of a written service agreement in the name of the Owner.

END OF SECTION

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