CAN/ULC-S561-03

- Fire/Sprinkler Alarm Monitoring
- Ontario
Top 10 Things to Know About CAN/ULC-S561-03

• 1. Referenced in the OBC and OFC
• 2. Covers Signal Receiving Stations and Installations
• 3. Trained Staff
• 4. Signal Transmitting and Receiving Equipment
• 5. Communication Systems
10 Things - continued

- 6. Types of Systems
- 7. What is a compliant system
- 8. Transmission times
- 9. Periodic testing
- 10. ULC Certificate Program
Why is this important to you?

- Installed Systems must meet the intent of the Code.
- Know how to combine fire and burglar alarm detection systems.
- Understanding the AHJ requests for compliant systems
CAN/ULC-S561-03

Signals to the Fire Department

• New Buildings - OBC

• Existing Buildings – OFC
Mandated in Ontario Signals to the Fire Department

- Ontario Building Code
  - 3.2.4.7 (4) (CAN/ULC-S561)

- Ontario Fire Code
  - 6.3.1.2 (2) (CAN/ULC-S561)
All Code References

• OBC  3.2.4.5 (1) CAN/ULC-S524-06

• OBC  3.2.4.5.(2) CAN/ULC-S537-04

• OBC  3.2.4.7 (4) CAN/ULC-S561- 03

• OFC  6.3.1.2. (1) CAN/ULC-S536-04

• OFC  6.3.1.2 (2) CAN/ULC-S561-03
Fire Alarm System Monitoring

- 5.15.1 (CAN/ULC-S524) - The interconnection wiring from the fire alarm control unit or transponder to the fire signal receiving centre shall comply with CAN/ULC-S561, Installation and Services for Fire Signal Receiving Centres and Systems.

- CAN/ULC-S537-04 Appendix C2 (G)
  - Documentation to include the name and number of the Fire Signal Receiving Centre (CAN/ULC-S561)

- Extension of the Fire Alarm System
Fire Alarm Installation

- BUILDING and ELECTRICAL PERMIT
- FIRE ALARM SYSTEM INSTALLED
- FIRE ALARM SYSTEM VERIFIED
- VERIFICATION Documentation
- ULC CERTIFICATE/ Document Protective Signaling Certificate
- Building/Fire Official Acceptance
- Occupancy Granted
New Fire Alarm - Documents

• New Building
  – Building and Electrical Permit
  – Fire Alarm System- Design/ Build documentation from the Engineer on record – Stamped by the AHJ
  – Fire Alarm System is installed to CAN/ULC-S524
  – Verification – CAN/ULC-S537-04
  – Documentation to be provided to the building owner and building official
  – Letter from the Engineer on record – Sign-off on the design/build
  – Letter from the Electrical Contractor- Installation to CAN/ULC-S524
  – Verification Report- No Deficiencies
  – Certificate or Document – Monitoring of the Fire Alarm System in Accordance with CAN/ULC-S561-03
What makes up a compliant System?

Compliant System

Protected Premise
- Transmitter
- Fire Alarm Panel
- Sprinkler Riser

Communication Path
- Active or Passive
- Multiplex, Internet
- DACT c/w Cell

Fire Signal Receiving Centre
- Receiving Units
- Sufficient Staff
New Systems- CAN/ULC-S561

• Shall use CAN/ULC-S559 compliant Signal Transmitting unit.

• Communication Channel – Active/Passive – newest technology

• Manufacturer’s Installation Instructions
Existing Systems- CAN/ULC-S561

- Will accept CAN/ULC-S527 compliant signal transmitting units -
- Must upgrade connecting wiring –
  - conduit
  - supervision of fire alarm, trouble & supervision
  - communicate alarms within 60 sec.
- Signal Receiving Centre shall be CAN/ULC-S561 compliant
Signal Receiving Centres

- Full Service Signal Receiving Centre
- Shared Service Signal Receiving Centre
- Proprietary Signal Receiving Centre
Full and Shared Service Signal Receiving Centres

- Two Hour Fire Separation
- Security Vestibule (two door entry)
- Standby Power
- Compliant Signal Receiving Units
- Compliant Station Automation Software
- Sufficient Trained Staff to handle signals
- Full Service – Trained Technicians on Staff
- Shared Service- Partner with ULC Listed Alarm Service Companies
Proprietary Signal Receiving Centres

• Two Hour Fire Separation
• Exception: Sprinklered = 1 hour

• Single Locked Door

• Protect own properties

• Trained Staff to handle signal receiving and alarm installation
Qualification of Personnel

• Recognized by the AHJ

• Must have knowledge of the fire alarm panel and the interconnection with the fire alarm transmitter.

• Working on Transmitter – No Requirement
Typical Installation
Newer Installation- Passive
New Installation- S561 Compliant
System Requirements for Installation

• ULC Listed Transmitter (S559/S527 Compliant)

• Electrical Permit required for 120v Supply

• Grounding of Transmitter (manufacturer’s specifications)

• AC Power from a separate breaker - label

• Transformer properly installed
System Requirements for Installation

• Install CA38A Jack – No direct wiring
• Do not twist wires or EOL’s under terminal screws
• Metallic conduit protection all connecting wires
• Standby Batteries (24hrs)- Dated
• Additional modules/relays properly mounted (Stand-offs, tie raps)
Additional requirements

• Supervised connections- (loop troubles)
  - fire alarm, fire trouble, fire supervisory
• Supervise removable terminal strips
• Monitor for AC failure
• Monitor for Communication failure
• Fire alarm signals transmitted in 60 sec.
• Dispatch on fire in 30 seconds
Communication Paths

• Active System
  - DVACS- active multiplex
  - GSM Units
  - Internet – constantly supervised
    - 24 hr standby power
    - Router, modem, Switches

• No VOIP allowed
Communication Paths

• Passive Communication

• Signals - Fire alarm on both paths
  - Separate paths - Telco and Cell
    - Telco and internet
    - Local annunciation
  - Exception - No cell service or internet
    - Separate path
    - Conduit on a single run
    - Local annunciation
    - Relocate the transmitter or use antenna extension
Communication Systems

• Methods of Communications:
  – Passive or Active

• Maximum Time to receive a fire alarm signal from a protected premises – 60 seconds

• A communication system shall be continuously supervised to detect line faults

• Passive Systems – Communication Path tested ever 24hrs.
Signaling Services – Clause 9.4

• Fire Alarm Control Units:
  – Alarm, troubles and Supervisory Signals – Restoration
  – Power failure conditions – Restoration
  – Alarm Signal shall be transmitted regardless of an abnormal condition at the protected premises.
  – Fire Alarm Signal shall always be the highest priority
  – Integral communication devices in fire alarm panels shall be programmed to transmit alarm, trouble & supervisory conditions.
Standalone Sprinkler Risers

• Waterflow
• Fire Trouble
• Fire Supervisory
Trimmed Sprinkler
Periodic Testing
Waterflow Switch
Gate Valve
Periodic Testing

• Fire Alarm System
  - Annually

• Waterflow
  – Every two months

• Supervisory- Gate Valves, Pressure
  - Every Six months
Disposition of Signals – Clause 9.4.4

• Fire Alarm Signals from a Fire Panel or Extinguishing System:
  – Contact fire department within 30 seconds
  – Contact persons designated by the owner within 5 minutes
Disposition of Signals Cont’s

• Fire Trouble and Supervisory
• Communication Troubles
• Signal Transmitting Unit Troubles

- Contact Owner within 5 min.
- Dispatch service within 4hrs.
Removable Terminal Strip
Removable Terminal Strip
CAN/ULC-S561-03

Property Managers and Alarm Companies

• Shall Comply to OFC – Signals to the Fire Department by way of Fire Alarm Monitoring System in Compliance to CAN/ULC-S561-03

• Shall provide a Certificate of Compliance attesting that the fire alarm monitoring system is in compliance to the applicable Standard. Submit document to AHJ

• Usually done by a ULC Listed Fire Alarm Monitoring/Installation Company
Ultraviolet Ray Detection System

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<th>Location</th>
<th>Status</th>
<th>Date</th>
<th>Time</th>
<th>Type of System</th>
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**MAINTENANCE**

- System shall be checked in accordance with the Annual Inspection Schedule.
Benefits of the ULC Certificate to the Local Authorities

• Extra Set of Eyes and Ears
  – Allows for a quicker inspection by Building and Fire Officials
  – Confidence in the Fire Alarm Monitoring System meets all the requirements of CAN/ULC-S561-03
  – Systems are audited on a random basis
  – Non-compliant systems can result in the cancellation of the ULC Certificate
Who can issue a ULC Certificate?

- **Full Service Monitoring Station - ULC**
  - Installation and monitoring – Same company

- **Proprietary Monitoring Service**
  - Trained Staff

- **Shared Service Monitoring Station with Installation Company - ULC**
  - Two different companies
ULC Certificate Program

• For CAN/ULC-S561-03 Compliant Systems, ULC can issue a Certificate stating Compliance to the Standard- Meets OBC & OFC

• The ULC Certificate is the only proof that the entire fire alarm monitoring system is compliant

• Each site is issued a certificate is subject to a random audit
Proper “Certified” Installation
Improper Installation

• ¿The Unknown?
  – What you get when no one Polices system installations!
System Modifications
Adding Unlisted Relays
ULC Listings- Online Directories

- **WWW.ULC.CA** - Online Directories
  - Category Codes associated to ULC Listings
    - DAYRC - CAN/ULC-S559-04 Equipment
    - DAYYC - CAN/ULC-S561-03 – Shared Installation Co.
    - DAYIC - CAN/ULC-S561-03 – Shared and Full Service Fire Signal Receiving Centres
Questions
CAN/ULC-S561-03

THANK YOU

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Improper Installation
Improper Installation