Control Panels

B9512G/B8512G/B6512/B5512/B4512/B3512 (B9512G-E/B8512G-E/B5512E/B4512E/B3512E)

en ULC Installation manual
1 ULC Installation Guide

During any ULC installation described within this document, follow all rules for safe installation specified in the CEC (Canadian Electrical Code).

Control panels
Use this guide with the following control panel models (unless otherwise stated) and the model’s installation guide:
- B9512G/B9512G-E v3.02.006 and higher
- B8512G/B8512G-E v3.02.006 and higher
- B6512
- B5512/B5512E v3.02.007 and higher
- B4512/B4512E v3.02.007 and higher
- B3512/B3512E v3.02.007 and higher
The listed control panels are approved as ULC-S559 Fire Alarm Signal Communicators.

Notice!
Control panel mounting
For mounting on the exterior of vault, safe, or stockroom, install a vibration detector (s304, 8.1.5).

Combination ULC-S559 and ULC-S304 control panels
The following control panel models can be configured as combination control panels:
- B9512G/B9512G-E v3.02.006 and higher
- B8512G/B8512G-E v3.02.006 and higher
When used a combination control panel, Fire and Burg points must reside in separate areas.

Keypads
Use this guide with the following keypad models and the model’s installation guide:
- B915/B915I v1.00.017 or higher
- B920 v1.05.004 or higher

Transformers
For transformers, use:
- B9512G/B9512G-E, B8512G/B8512G-E. Plug-in or hardwire 120 VAC primary, 16.5 VAC 37-40 VA secondary Class 2 Power Limited CSA/cUL listed.
- B6512, B5512/B5512E, B4512/B4512E, B3512/B3512E. Plug-in 120 VAC primary, 18 VAC 22 VA secondary class 2 power limited CSA/cUL Listed. Hardwire 120 VAC primary, 16.5 VAC 40 VA secondary Class 2 Power Limited CSA/cUL listed.

Refer to Compatible transformers, page 15.
Install with ULC Listed devices where applicable.

**Wiring**
Use unshielded cable only.

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**Trademarks**
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**Bosch Security Systems, Inc. product manufacturing dates**
Use the serial number located on the product label and refer to the Bosch Security Systems, Inc. website at http://www.boschsecurity.com/datecodes/.

### 1.1 Requirements

Key:
P = Programmable
R = Required
O = Optional
E = Enable
## Requirements

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Minimum battery standby</td>
<td>24 hours</td>
<td>24 hours</td>
<td>24 hours</td>
<td>24 hours</td>
<td>4 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>Battery size¹</td>
<td>B9512G/B8512G/B6512/B5512/B4512/B3512: 1 x 12 V/7 Ah, 1 x 12 V/18 Ah, 2x 12 V/7 Ah: B9512G/B8512G: 2x 12 V/18 Ah²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry delay</td>
<td>≤ 45 sec</td>
<td>P</td>
<td>N/A</td>
<td>N/A</td>
<td>≤ 45 sec</td>
<td>≤ 45 sec</td>
</tr>
<tr>
<td>Exit delay</td>
<td>≤ 45 sec</td>
<td>P</td>
<td>N/A</td>
<td>N/A</td>
<td>≤ 60 sec</td>
<td>≤ 45 sec</td>
</tr>
<tr>
<td>Minimum Bell cutoff time</td>
<td>P</td>
<td>P</td>
<td>5 min</td>
<td>N/A²</td>
<td>4 min</td>
<td>N/A</td>
</tr>
<tr>
<td>Communicator</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>AC power</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Tamper protection</td>
<td>R</td>
<td>R</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>Enclosures</td>
<td>For compatible enclosures, refer to <em>Compatibilities</em>, page 9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Select battery capacity based on calculated AUX current consumption for the system, including all accessories.

² Do not use 2 x 12 V/18 Ah with a Solex 16.5 VAC 37 VA transformer.

³ Bell should not sound.

⁴ Plug-in transformer, optional hardwired connection.
In ULC-S559 applications, the control panel AC input shall be hard-wired in accordance with Sec. 32 of CSA C22.1, Canadian Electrical Code.

Communication Channel Security (applicable to Commercial Burglary/Financial installations)

Notice!

Active and passive communication

Systems are passive-only communication systems when the only communication method is over PSTN using the B430 module.

Systems that use the on-board Ethernet, B426 module, or a cellular module are active or passive communication systems depending on the programmed poll rates.

Applicable for both IP and cellular communication.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision interval for IP and Cellular communication is 200 seconds (UL)</td>
<td>Panel Wide Parameters &gt; Enhanced Communications &gt; Receiver Supervision Time set to 200 seconds</td>
</tr>
<tr>
<td>Supervision interval for IP and Cellular communication is 180 seconds (ULC)</td>
<td>Panel Wide Parameters &gt; Enhanced Communications &gt; Receiver Supervision Time set to Custom, Poll Rate set to 89, ACK Wait Time set to 15, and Retry Count set to 5</td>
</tr>
</tbody>
</table>
Control Panels

<table>
<thead>
<tr>
<th>Passive levels*</th>
<th>Transmitters and supervision</th>
<th>Receivers</th>
<th>Risk Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>For transmitters at the protected premises and supervision of communication channels, refer to the figures in <em>Fire monitoring communication systems wiring diagrams, page 18.</em></td>
<td>D6600 or D6100IPv6</td>
<td>Low</td>
</tr>
<tr>
<td>P2</td>
<td></td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>P3</td>
<td></td>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>

*Test the transmission on each communication channel every 24 hours. The telephone service should be of a type that provides for timed release disconnect. In order to give the digital alarm communicator transmitter (dialer) the ability to disconnect an incoming call to the protected premises.

<table>
<thead>
<tr>
<th>Active levels*</th>
<th>Transmitters and supervision</th>
<th>Receivers</th>
<th>Risk Levels</th>
<th>Backup requirements for network equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>For transmitters at the protected premises and supervision of communication channels, refer to the figures in <em>Fire monitoring communication systems wiring diagrams, page 18.</em></td>
<td>D6600 or D6100IPv6</td>
<td>Low</td>
<td>24 hr standby or dialer as backup</td>
</tr>
<tr>
<td>A2</td>
<td></td>
<td></td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td></td>
<td></td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td></td>
<td></td>
<td>Very high</td>
<td>24 hr standby</td>
</tr>
</tbody>
</table>

*Check-in/polling signal required every 180 seconds. For equipment used at the protected premises intended to facilitate communications (hubs, routers, NIM, cable modems) 24-hour backup power is required. Where such cannot be facilitated a secondary (backup) communication channel is required.

For using private, corporate, and high speed data networks, network access and domain access policies must restrict unauthorized network access, and “spoofing” or “denial of service” attacks. Select the internet...
service providers that have redundant servers/systems, backup power, routers with firewalls enabled, and methods to identify and protect against “denial of service” attacks.
For using public switched and wireless data networks, communication channels must be facilitated such that the communicator will restrict unauthorized access which could otherwise compromise security.

Fire Monitoring Communication Systems
Refer to Wiring, page 15. The central station receiver must receive fire alarms in 60 seconds and trouble signals in 90 seconds.

<table>
<thead>
<tr>
<th>Type</th>
<th>Transmitters and supervision</th>
<th>Receivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive¹</td>
<td>For transmitters at the protected premises and supervision of communication channels, refer to the figures in Fire monitoring communication systems wiring diagrams, page 18.</td>
<td>D6600 or D6100IPv6</td>
</tr>
<tr>
<td>Active²</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹Test the transmission on each communication channel every 24 hours.
²Check-in/polling signal required every 90 seconds.
To monitor a complete fire system, each ULC labeled intrusion system must be connected to a ULC labeled fire alarm control panel. The system must transmit system fire alarms, and supervisory and troubles signals to the central station receiver.

Programming
You must follow the notes in the installation and programming sections describing the system configurations for ULC Listed installations.
Protecting the control panel - Burglary
The local control panel and local power supply must be protected in one of the following ways:

- The control panel and power supply must be located within the area of greatest protection on a tamper protected circuit.
- When arming, each area must arm the area that is protecting the control panel and any external power supply running an audible device. This might require duplicate protection armed by each area. Access to this protected area, without causing an alarm, requires that all areas are disarmed.

Additionally, the protected area for the control panel must be programmed so that it cannot be bypassed, and must be installed in accordance with CAN/ULC-S302 or CAN/ULC-S310.

User information
Inform the users of and note the following in the owner’s manual:

- Service organization name and telephone number
- The programmed exit time
- The programmed entry time
- Safety precautions specified for the connected equipment.

1.2 Compatibilities

Accessory compatibility
The following table lists accessories that are compatible with the control panel. An X in a column indicates the accessory is compatible with the standard.
<table>
<thead>
<tr>
<th>Model number</th>
<th>Description</th>
<th>CAN/ULC S303 - Local Burglary</th>
<th>CAN/ULC S304 - Signal Receiving Centre and Premise</th>
<th>CAN/ULC S545 - Residential Fire</th>
<th>CAN/ULC S559 - Fire Signal Receiving Centres and Systems</th>
<th>ULC-ORD C1023 - Household Burglary</th>
<th>ULC-ORD C1076 - Proprietary Burglary</th>
</tr>
</thead>
<tbody>
<tr>
<td>B915/B915I*</td>
<td>Basic</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B920*</td>
<td>2-line</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B921C*†</td>
<td>Capacitive</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>B925F*</td>
<td>Fire/Burg</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>B926F*</td>
<td>Fire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>B930*</td>
<td>ATM style</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>B940W</td>
<td>Touch screen</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>B942/B942W*</td>
<td>Touch screen</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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</tr>
</tbody>
</table>

**Transformers, batteries, power supplies, etc.**

<table>
<thead>
<tr>
<th>Model number</th>
<th>Description</th>
<th>CAN/ULC S303 - Local Burglary</th>
<th>CAN/ULC S304 - Signal Receiving Centre and Premise</th>
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<tbody>
<tr>
<td>B520</td>
<td>Power supply</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>D122/D122L</td>
<td>Battery harness</td>
<td>Suitable for use on approved applications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Model number</td>
<td>Description</td>
<td>CAN/ULC S303 - Local Burglary</td>
<td>CAN/ULC S304 - Signal Receiving Centre and Premise</td>
<td>CAN/ULC S545 - Residential Fire</td>
<td>CAN/ULC S559 - Fire Signal Receiving Centres and Systems</td>
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<td>ULC-ORD C1076 - Proprietary Burglary</td>
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<td>---------------------------------</td>
</tr>
<tr>
<td>D135A</td>
<td>Low-battery disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Suitable for use on approved applications.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>D126</td>
<td>Battery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12.0 VDC, 7 Ah)</td>
<td></td>
<td>Suitable for use on approved applications.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D1218</td>
<td>Battery</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(12 V, 18 Ah)</td>
<td></td>
<td>Suitable for use on approved applications.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>D1640-CA</td>
<td>Transformer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Suitable for use on approved applications in Canada.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suitable for use on approved applications in Canada.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ICP-TR1822-CAN</td>
<td>Transformer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Suitable for use on approved applications in Canada.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suitable for use on approved applications in Canada.</td>
<td></td>
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</tbody>
</table>

**Enclosures**

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>Medium</th>
<th>Small</th>
<th>Large, white</th>
<th>Large, grey</th>
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<tbody>
<tr>
<td>B10***2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>B11²</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B8103**</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
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<td></td>
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<td>X</td>
<td>X</td>
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<td>D8103**</td>
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<td></td>
<td></td>
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<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Model number</td>
<td>Description</td>
<td>CAN/ULC S303 - Local Burglary</td>
<td>CAN/ULC S304 - Signal Receiving Centre and Premise</td>
<td>CAN/ULC S545 - Residential Fire</td>
</tr>
<tr>
<td>--------------</td>
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<td>-----------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>D8109**</td>
<td>Fire</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D8108A* **</td>
<td>Attack resistant</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

**Expansion modules**

<table>
<thead>
<tr>
<th>Model number</th>
<th>Description</th>
<th>CAN/ULC S303 - Local Burglary</th>
<th>CAN/ULC S304 - Signal Receiving Centre and Premise</th>
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<th>ULC-ORD C1023 - Household Burglary</th>
<th>ULC-ORD C1076 - Proprietary Burglary</th>
</tr>
</thead>
<tbody>
<tr>
<td>B208</td>
<td>Octo-input</td>
<td>X</td>
<td>X</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B299</td>
<td>POPEX</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td>B308</td>
<td>Octo-output</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B600</td>
<td>ZONEX</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>D125B³</td>
<td>Dual initiating B</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>D129</td>
<td>Dual initiating A</td>
<td>X</td>
<td></td>
<td></td>
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<td>X</td>
</tr>
<tr>
<td>D192G</td>
<td>NAC</td>
<td>X</td>
<td></td>
<td></td>
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<td>D8125</td>
<td>POPEX</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>D8125M UX</td>
<td>Multiplex</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Model number</td>
<td>Description</td>
<td>CAN/ULC S303 - Local Burglary</td>
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<td>-------------------------------</td>
</tr>
<tr>
<td>D8128D</td>
<td>OctoPOPIT</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>D8129</td>
<td>Octo-relay</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>D8130</td>
<td>Door release</td>
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<td></td>
<td></td>
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<td>X</td>
<td>X</td>
</tr>
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<td>D9127U/T</td>
<td>POPIT</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Communicators**

<table>
<thead>
<tr>
<th></th>
<th>Ethernet</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
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<tr>
<td>B426</td>
<td>PSTN</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>B430</td>
<td>Cellular</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>B442²</td>
<td>Cellular</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B44x²</td>
<td>Cellular</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>B450</td>
<td>SDI2 adapter</td>
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<td>X</td>
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**Accessories**

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<tbody>
<tr>
<td>Model number</td>
<td>Description</td>
<td>CAN/ULC S303 - Local Burglary</td>
<td>CAN/ULC S304 - Signal Receiving Centre and Premise</td>
<td>CAN/ULC S545 - Fire</td>
<td>CAN/ULC S559 - Fire Signal Receiving Centres and Systems</td>
<td>ULC-ORD C1023 - Household Burglary</td>
<td>ULC-ORD C1076 - Proprietary Burglary</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------</td>
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<td>------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>D132A</td>
<td>Smoke reversing</td>
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<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>D161</td>
<td>Phone switcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D162</td>
<td>Phone cord</td>
<td>Suitable for use on approved applications.</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>ICP-SDI-911 4</td>
<td>SDI splitter</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>ICP-EZTS</td>
<td>Tamper</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td><strong>Door control (Access)</strong></td>
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<td></td>
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<tr>
<td>B901^8</td>
<td>SDI2 door controller</td>
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<td>X</td>
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<td>D9210C^9</td>
<td>SDI door controller</td>
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<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*Approved for use on combination fire and burg systems when on a different bus from fire devices.
**Combination fire and burg systems using SDI devices might require an ICP-SDI-9114 to separate fire and intrusion devices onto separate circuits.**

***In ULC-S559, the enclosure is certified for use with B9512G/B8512G only.***

1. **ULC listed for Proprietary Burglary and Residential Fire only.**
2. **B6512/B5512/B4512/B3512 only.**
3. **Refer to the *Dual Class B Initiating Module (D125B) Installation Instructions* (P/N: F01U036340) for compatible D125B devices.**
4. **Refer to the section within this section for compatible RADION devices.**
5. **Refer to the section within this section for compatible Inovonics devices.**
6. **Check for availability in your region.**
7. **B9512G/B8512G/B6512 only.**
8. **B9512G/B8512G only.**

### 1.3 Wiring

**Notice!**

When used in ULC-S559 installations, B6512/B5512/B4512/B3512 control panels must have keypads installed in the same room within 18 m and in metallic conduit.

B9512G and B8512G control panels are not required to have keypad installed in the same room within 18 m.

- For B6512/B5512/B4512/B3512 control panels, refer to the D135A Installation Guide (P/N: 4998122704) for instructions.

**Compatible transformers**

Use one of the following transformers when wiring the system.

---

**Model number**

<table>
<thead>
<tr>
<th>Description</th>
<th>CAN/ULC S303 - Local Burglary</th>
<th>CAN/ULC S304 - Signal Receiving Centre and Premise</th>
<th>CAN/ULC S545 - Residential Fire</th>
<th>CAN/ULC S559 - Fire Signal Receiving Centres and Systems</th>
<th>ULC-ORD C1023 - Household Burglary</th>
<th>ULC-ORD C1076 - Proprietary Burglary</th>
</tr>
</thead>
</table>

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### Input point wiring diagrams

**Required control panel-to-fire alarm panel wiring**

Wire three control panel points to the fire control panel outputs. Recommended: Wire as described in this section and follow the specific instructions for each point in *Programming, page 26*

---

**Notice!**

**Removable terminals**

For FACP units with detachable terminals, wire the FACP points as Form C relays.

---

Wire control panel point 1 to the fire control panel's alarm output.

Wire control panel point 2 to the fire control panel's trouble output.
Wire control panel point 3 to the fire control panel's supervisory output.

Figure 1.1: Fire alarm control unit dry contact outputs to control panel points 1, 2, and 3

ULC Listed seismic detector

Figure 1.2: ULC Bank Safe and Vault installation

ULC commercial motion detector with tamper

Figure 1.3: Double EOL input
ULC commercial door/window contact (1)

Figure 1.4: Double EOL input for one Form C contact

<table>
<thead>
<tr>
<th>Callout</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Point sensor loop terminals</td>
</tr>
<tr>
<td>2</td>
<td>Normally closed device (contact)</td>
</tr>
<tr>
<td>3</td>
<td>EOL Resistor – 1.0 kΩ (2.0 kΩ and No EOL optional) at device</td>
</tr>
</tbody>
</table>

1.3.2 Fire monitoring communication systems wiring diagrams

These wiring diagrams are also representative for Commercial Burglary Monitoring applications.

Notice!

ULC-S559 communication requirements

Passive systems must send alarm signals over both communication devices programmed as primary. All non-PSTN systems must send reports to the central station using encryption.
Notice!
ULC-S559 for passive systems allows for any compatible communication devices to be used in tandem for the communication system (per section 5.4.2 of S559-13) with the exceptions of S559-13, section 5.4.1. Where passive communication systems are used, there shall be two or more separate communication channels and at least two of the passive communication channels shall use non-interdependent types of communications. A communication channel is a path extending from the protected premises.
Exception: If only one type of passive communication is available at the protected premises, there shall be two channels provided. Separate paths throughout the protected premises and through any common carrier or third party communications network to the fire signal receiving center shall be provided for each communication channel.

Dual dialer passive communication system

Figure 1.5: Control panel with 2 B430 (PSTN) modules

NOTE: Use of 2 B430 modules is permitted only when no other technologies are available.
**IP communication systems (on-board IP)**

- **Control panel** (models B9512G/B8512G/B6512/B5512/B4512/B3512)
- **Inputs**
- **On-board IP**
- **Internet/modem**
- **Listed enclosure**
- **Keypad** (models B915/B915I/B920)

*Figure 1.6: Control panel with on-board IP*

NOTES: The B9512G-E/B8512G-E/B5512E/B4512E/B3512E control panels do not include on-board IP. Systems with single communication channels must be active.

**IP communication system (SDI2 IP)**

- **Control panel** (models B9512G-E/B8512G-E/B5512E/B4512E/B3512E)
- **Inputs**
- **Bus connection, supervised**
- **B426**
- **Listed enclosure**
- **Keypad** (models B915/B915I/B920)

*Figure 1.7: Control panel with a B426 module*

NOTES: The B9512G-E/B8512G-E/B5512E/B4512E/B3512E control panels require a B426 for IP. Systems with single communication channels must be active.
**PSTN/IP communication system (on-board IP)**

![Diagram of PSTN/IP communication system (on-board IP)](image)

**Figure 1.8: Control panel with on-board IP and a 430 (PSTN) module**

NOTES: The B9512G-E/B8512G-E/B5512E/B4512E/B3512E control panels do not include on-board IP.

**PSTN/IP communication system (SDI2 IP)**

![Diagram of PSTN/IP communication system (SDI2 IP)](image)

**Figure 1.9: Control panel with a B426 module and a B430 (PSTN) module**

NOTES: The B9512G-E/B8512G-E/B5512E/B4512E/B3512E control panels require a B426 for IP.
**Cellular communication system**

- Fire alarm control unit
- Outputs
- Fire Supervisory Trouble
- Control panel (models B9512G/B8512G/B6512/B5512/B4512/B3512*)
- Inputs
- B44x
- Listed enclosure
- Antenna
- Keypad (models B915/B915I/B920)

*Figure 1.10: Control panel* with a B44x (cellular) module

NOTES: *Includes B9512G-E/B8512G-E/B5512E/B4512E/B3512E control panels. Systems with single communication channels must be active*

**Cellular/IP communication system (on-board IP)**

- Fire alarm control unit
- Outputs
- Fire Supervisory Trouble
- Control panel (models B9512G/B8512G/B6512/B5512/B4512/B3512)
- Internet/Intranet
- Router/modem
- On-board IP
- B44x
- Listed enclosure
- Antenna
- Keypad (models B915/B915I/B920)

*Figure 1.11: Control panel with on-board IP and a B44x (cellular) module*
PSTN/cellular communication system

Figure 1.12: Control panel with a compatible cellular module and a 430 (PSTN) module

PSTN/cellular communication system (SDI2 cellular)

Figure 1.13: Control panel with a B44x module and a B430 (PSTN) module
Off-board cellular passive communication system - detailed wiring G Series

Figure 1.14: B9512G/B8512G* control panel with a B44x (cellular) module connected through a B450 module

NOTES: *B9512G-E/B8512G-E control panels are supported in the configuration shown. In this configuration, the control panel can also connect to up to 2 B430 modules. In this configuration, the control panel also supports IP (B9512G-E/B8512G-E control panels require a B426 module, supervised). AC input is required (not shown).
Off-board cellular passive communication system - detailed wiring B Series

Figure 1.15: B6512/B5512/B4512/B3512* control panel with a B44x (cellular) module connected through a B450 module

NOTES: *B5512E/B4512E/B3512E control panels are supported in the configuration shown. In this configuration, the control panel can also connect to a B430 module. In this configuration, the control panel also supports IP (B5512E/B4512E/B3512E control panels require a B426 module, supervised). AC input is required (not shown).

1.3.3 B Series sounder wiring diagram

For B6512/B5512/B4512/B3512 control panels, use a ULC Listed, 12 VDC (100 mA maximum) sounder connected to output 1.
Configure OUTPUT A to AUX PWR using the jumper.
Wire a 12 VDC (100 mA maximum) sounder to OUTPUT A.

**Figure 1.16:** B6512/B5512/B4512/B3512 control panel sounder wiring and hardware configuration

### 1.4 Keypad segment test

You can test B915/B915I and B920 keypads to ensure that the LEDs and display are working.

- To test a keypad, simultaneously press and hold the [NEXT]/[▼] and [3] keys for 3 seconds.
- The segment test lights the LEDs and the display.

**NOTE:** During the segment test, the B915/B915I reports a missing trouble.

### 1.5 Programming

Complete the programming steps in this section for ULC compliance.
1.5.1 Required programming

**COMPLIANCE SETTINGS > UL Canada Compliance**
Set the COMPLIANCE SETTINGS > UL Canada Compliance parameter to Yes.

**PANEL WIDE PARAMETERS > Report Routing > Fire Reports > Fire Cancel**
Set the PANEL WIDE PARAMETERS > Report Routing > Fire Reports > Fire Cancel parameter for each Route Group (1 to 4) to No.

![Figure 1.17: Fire Cancel](image)

**POINTS > Point Profiles (Point Indexes)**
Configure Point Profiles 1, 4, and 6 as shown below.
It is important to configure the parameters in order.

**Point Profile 1**
Set Alarm Abort to: No.
Set Point Profile Text (First Language) to: Fire Panel Trouble.
Set Point Type / Response / Circuit Style > Point Type to: Fire Point.
Set Point Type / Response / Circuit Style > Circuit Style to: Single EOL (1KΩ) or Single EOL (2KΩ).
Set Response to: 3.

**Point Profile 4**
Set Point Profile Text (First Language) to: Fire Panel Alarm.
Set Point Type / Response / Circuit Style > Point Type to: Fire Point.
Set Point Type / Response / Circuit Style > Circuit Style to: Single EOL (1KΩ), Single EOL (2KΩ), or Dual EOL.

If you set Point Type / Response / Circuit Style > Circuit Style to Single EOL (1KΩ) or Single EOL (2KΩ), set Response to: 1.

If you set Point Type / Response / Circuit Style > Circuit Style to Dual EOL, set Response to: 0.

**Point Profile 6**

Set Point Profile Text (First Language) to: Fire Panel Supervisory.

Set Point Type / Response / Circuit Style > Point Type to: Fire Point.

Set Point Type / Response / Circuit Style > Circuit Style to: Single EOL (1KΩ), Single EOL (2KΩ), or Dual EOL.

If you set Point Type / Response / Circuit Style > Circuit Style to Single EOL (1KΩ) or Single EOL (2KΩ), set Response to: 9.

If you set Point Type / Response / Circuit Style > Circuit Style to Dual EOL, set Response to: 2.
Figure 1.19: Point Type Response and Circuit Style

POINTS > Point Assignments
Set the POINTS > Point Assignments, Text and Profile parameters, for on-board points 1, 2, and 3 as follows.

Point 1
Set Point Assignments > Text to: Fire Panel Alarm.
Set Point Assignments > Profile to: 4 - Fire Panel Alarm

Point 2
Set Point Assignments > Text to: Fire Panel Trouble.
Set Point Assignments > Profile to: 1 - Fire Panel Trouble

Point 3
Set Point Assignments > Text to: Fire Panel Supervisory.
Set Point Assignments > Profile to: 6 - Fire Panel Supervisory
PANEL WIDE PARAMETERS > Report Routing

In the Route Group 4 column:

- Set Fire Reports, Gas Reports, Burglar Reports, Personal Emergency Reports, User Reports, and Test reports to No.
- Set Output Reports, Auto Function Reports, RPS Reports, Point Reports, User Change Reports, and Access Reports to No.
- Verify Diagnostic Reports is set to Custom. The next steps configure the Custom settings.

Figure 1.21: Report Routing

PANEL WIDE PARAMETERS > Report Routing > Diagnostic Reports

For the Route Group 4 column, set SDI2 Device Failure to Yes. Set the remaining reports to No.
Figure 1.22: SD12 Device Failure

PANEL WIDE PARAMETERS > Communicator > Primary Destination Device

For the Route Group 4 column, set Primary Destination Device to Destination 4 for the type of device in use (for example, Onboard IP, Destination 4 if the control panel sends reports using the on-board Ethernet.

Figure 1.23: Primary Destination Device

PANEL WIDE PARAMETERS > Enhanced Communication > Destinations

In the Destination 4 column, set Network Address to: 0.1.1.1 (this address is intentionally not a real address on the network). Set the following:

- Poll Rate (sec.): 0
- Ack Wait Time (sec.): 5
If any of the Route Group Destination Devices include a B444-A Cellular Communicator, configure those destinations as shown in the figure below, Destination 1. Set the following:

- Receiver Supervision Time: Custom
- Poll Rate (sec.): 60
- ACK Wait Time (sec.): 5
- Retry Count: 3

**Figure 1.24: Enhanced Communication parameters**

### 1.5.2 Recommended programming

AREA WIDE PARAMETERS > Area Name Text > Area 1

For ease of identification, name the AREA WIDE PARAMETERS > Area Name Text > Area 1 parameter FIRE AREA.

**Control panel silencing of fire alarm panel alarm, trouble, and supervisory events**

When control panels are configured as described below, they automatically silence keypads connected to the control panel for fire, trouble, and supervisory events from the fire panel.

**Notice!**

**Automatic silence not available for B3512 control panels**

Automatic silencing of fire alarm panel alarm, trouble, and supervisory events is not available for the B3512 control panel. Users must silence these events at the keypad.
CUSTOM FUNCTIONS > Custom Function 128
Set Custom Function 128 > Custom Function Text to: Silence.
Set Custom Function 128 > Function 1 to: Trouble Silence (set Parameter 1 to: Area 1).
Set Custom Function 128 > Function 2 to: Alarm Silence (set Parameter 1 to: Area 1).

OUTPUT PARAMETERS > Panel Wide Outputs
For virtual outputs:
Set Panel Wide Outputs > Summary Fire to: 9.
Set Panel Wide Outputs > Summary Fire Trouble to: 10.
Set Panel Wide Outputs > Summary Supervisory Fire to: 19.
POINTS > Point Profiles (Point Indexes)
Configure Point Profile 20 as shown below. It is important to configure the parameters in order.

Point Profile 20
Set Point Profile Text (First Language) to: CF: Silence.
Set Point Type / Response / Circuit Style > Point Type to: Custom Function.
Leave Point Type / Response / Circuit Style > Circuit Style at the default: Single EOL (1KΩ).
Leave Point Type / Response / Circuit Style > Response at the default: 7.

Figure 1.28: Point Profile 20

POINTS > Point Assignments
Set the POINTS > Point Assignments, Source, Text, and Profile parameters, for points 9, 10, and 19 as follows.

Point 9
Set Point Assignments > Source to: Output.
Set Point Assignments > Text to: Fire Alarm Active.
Set Point Assignments > Profile to: 20 - CF: Silence

**Point 10**
Set Point Assignments > Source to: Output.
Set Point Assignments > Text to: Fire Trouble Active.
Set Point Assignments > Profile to: 20 - CF: Silence

**Point 19**
Set Point Assignments > Source to: Output.
Set Point Assignments > Text to: Fire Supervisory Active.
Set Point Assignments > Profile to: 20 - CF: Silence

![Figure 1.29: Point Assignments]