



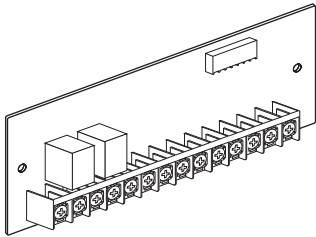
**interlogix**

A UTC Fire & Security Company

# 4Z Input/2 Output Expansion SnapCard™ Installation Instructions

## Product summary

### 4Z Input/2 Output Expansion SnapCard



The 4Z Input/2 Output Expansion SnapCard™ combines the capabilities of the 8Z Input and 4 Output Expansion SnapCards. The card expands Concord, Concord Express, and Advent Panels.

The card includes the following features.

- One 12V, Class B, two-wire smoke detector loop that provides up to 100 mA. Concord and Concord Express panels support up to 10 smoke detectors, while Advent panels support up to 20.

Compatible smoke detectors include:

- System Sensor Models—2100S, 2100TS, 2100D, 2100TD, 2400, 2400TH
- Sentrol (ESL) Models—429AT, 521B, 521BXT

Two “Form C” contact relays. The relays are controlled by system commands or a combination of states and system events.

- Three supervised, UL Fire rated, hardwire loops (2k ohm end-of-line resistors required) that can be used for any UL listed hardwire device including
  - Four-wire smoke detectors,
  - Fire pull stations,
  - Water flow detector switches,

- Gate valve switches,
- Control valve supervisory switches,
- Butterfly valve switches,
- Rate-of-rise detectors,
- Carbon monoxide (and other gas) detectors, and
- Standard burglar detection devices.

On Advent panels, this card may be installed into the primary or secondary expansion slot and in combination with other cards.

Outputs may be programmed to turn on lights, open drapes and garage doors, turn on a closed-circuit-TV (CCTV) camera during a burglary alarm, turn exit lighting on during fire alarms, and activate backup cellular phones or long-range radios if primary communications are inoperable.

## Installation guidelines

- Install a 2k ohm end-of-line resistor at the end device on each supervised two-wire hardwire loop.
- Install a power supervision module at the end device on four-wire smoke loops.
- Plug the expansion card into the Concord panel expansion card connector, the Concord Express expansion card connector, or either the primary or secondary expansion card connector of the Advent panel.

**Important:** On Advent panels SnapCard expansion slots must be used for either fire or burglary applications. Do not mix fire and burglary applications on SnapCard inputs and outputs.

- Use 4-conductor, 22-gauge or larger wire from the terminals to the devices. Use 18-gauge or larger for all fire applications.

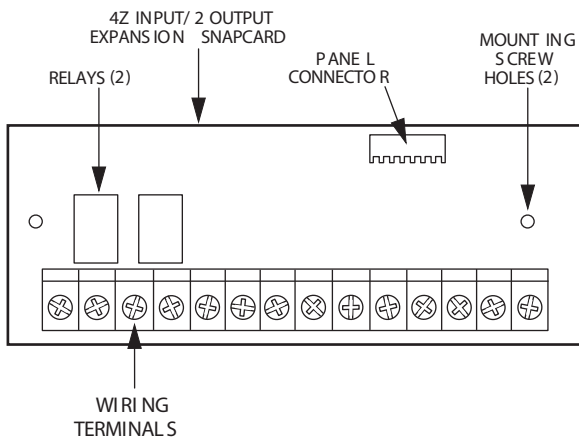
## Tools needed

- Screwdrivers
- 22-gauge or larger hookup wire
- Thread-rolling mounting screws (included)
- 2k ohm end-of-line resistors (included)

## Installation

Use the following instructions to install the card, wire input devices, and program the panel.

Figure 1. Card components



**Caution:** To prevent damage to the panel or card, always remove panel AC power and disconnect the backup battery before installation.

1. Remove panel AC power and disconnect backup battery.

**Caution:** You must be free of static electricity when handling electronic components. Touch a bare metal surface before touching the circuit board.

2. Align the card holes with the standoffs and connector pins as shown in [Figure 2](#), [3](#) or [4](#).
3. Press firmly to secure the board to the connector.
4. Secure the card with the two thread-rolling mounting screws.

Figure 2. Installing the card in a Concord panel

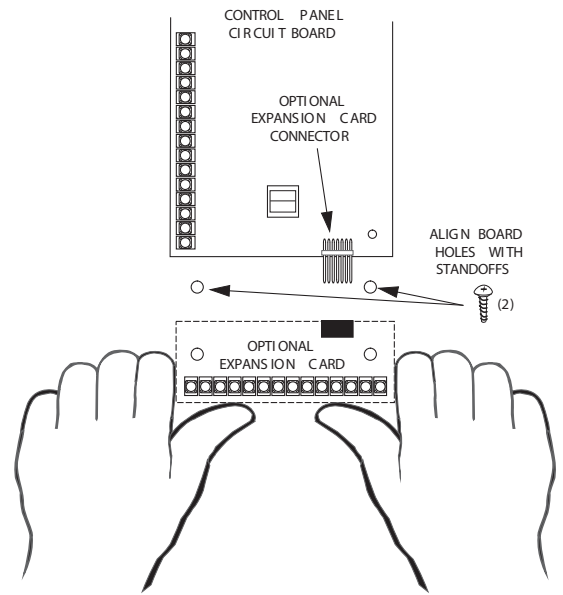


Figure 3. Installing the card in a Concord Express panel

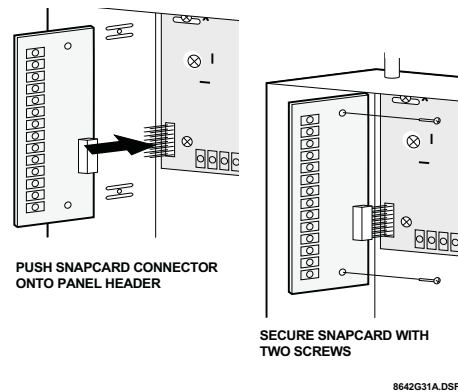
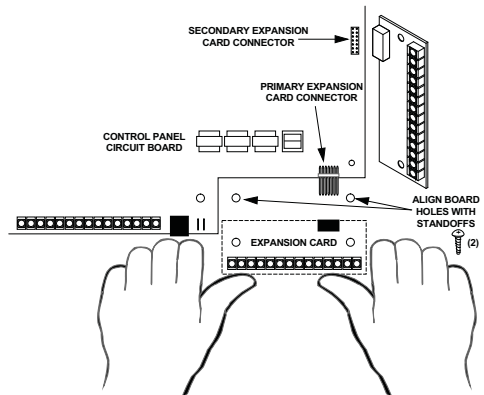


Figure 4. Installing the card in an Advent panel



## Wiring

[Table 1](#) describes each SnapCard terminal. Terminals are numbered left to right. Figure 5 shows how to wire detection loops and devices to the card.

**Note:** Terminal 11 (SMK+) can also power 4-wire smoke detectors

**Table 1. Card wiring terminal descriptions**

Terminal number	Description	Use
1	Relay 1 NC	Normally closed (N/C) (opens on activation) output 1 dry relay contact connection.
2	Relay 1 COM	Common (C) side of output 1 dry relay N/C and N/O contacts (terminals 1 and 3). Contacts rated 5.0A @ 30 VDC or 5.0A @ 70 VAC maximum.
3	Relay 1 NO	Normally open (N/O) (closes on activation) output 1 dry relay contact connection.
4	Relay 2 NC	Normally closed (N/C) (opens on activation) output 2 dry relay contact connection.
5	Relay 2 COM	Common (C) side of output 2 dry relay N/C and N/O contacts (terminals 2 and 6). 5.0A @ 30 VDC or 5.0A @ 70 VAC maximum.
6	Relay 2 NO	Normally open (N/O) (closes on activation) output 2 dry relay contact connection.
7	ZN1	Hardwire Input zone 1.
8	ZCOM	Common for hardwire input zones 1, 2, and 3.
9	ZN2	Hardwire Input zone 2.
10	ZN3	Hardwire Input zone 3.
11	SMK+	Smoke sensor power supply. Switched 12 VDC @ 100 mA maximum. Positive (+) side of 2-wire, 12 VDC smoke loop.
12	SMK-	Negative (-) side of 2-wire, 12 VDC smoke loop.
13	GND	Ground for 4-wire smoke sensors and rate-of-rise heat sensors
14	12V Out	Auxiliary output regulated DC power supply. 12 VDC @ 0.5A maximum.  <b>Note:</b> If this output is used, it will draw up to 500 mA from the panel. Remember to include this current draw when calculating total panel power.

### To wire the card (all panels):

1. Disconnect panel AC power and backup battery.

2. Wire the input devices or smoke detectors as shown in Figure 5. Use terminals 11 and 12 for the two-wire 12V smoke detector loop. You can connect up to 10 twowire smoke detectors on the loop for Concord and Concord Express panels. Advent panels allow up to 20 twowire smoke detectors.

- Use end-of-line resistors on all hardwire input loops as shown.
- Use [Table 2](#) for two-wire smoke detector loop and zone input wire lengths.

**Important:** For Advent UL 864 listed applications all inputs and outputs must be dedicated to either fire or burglary applications. Do not mix fire and burglary on any SnapCard in any partition for these installations.

3. Reconnect the backup battery(s) and restore panel AC power.

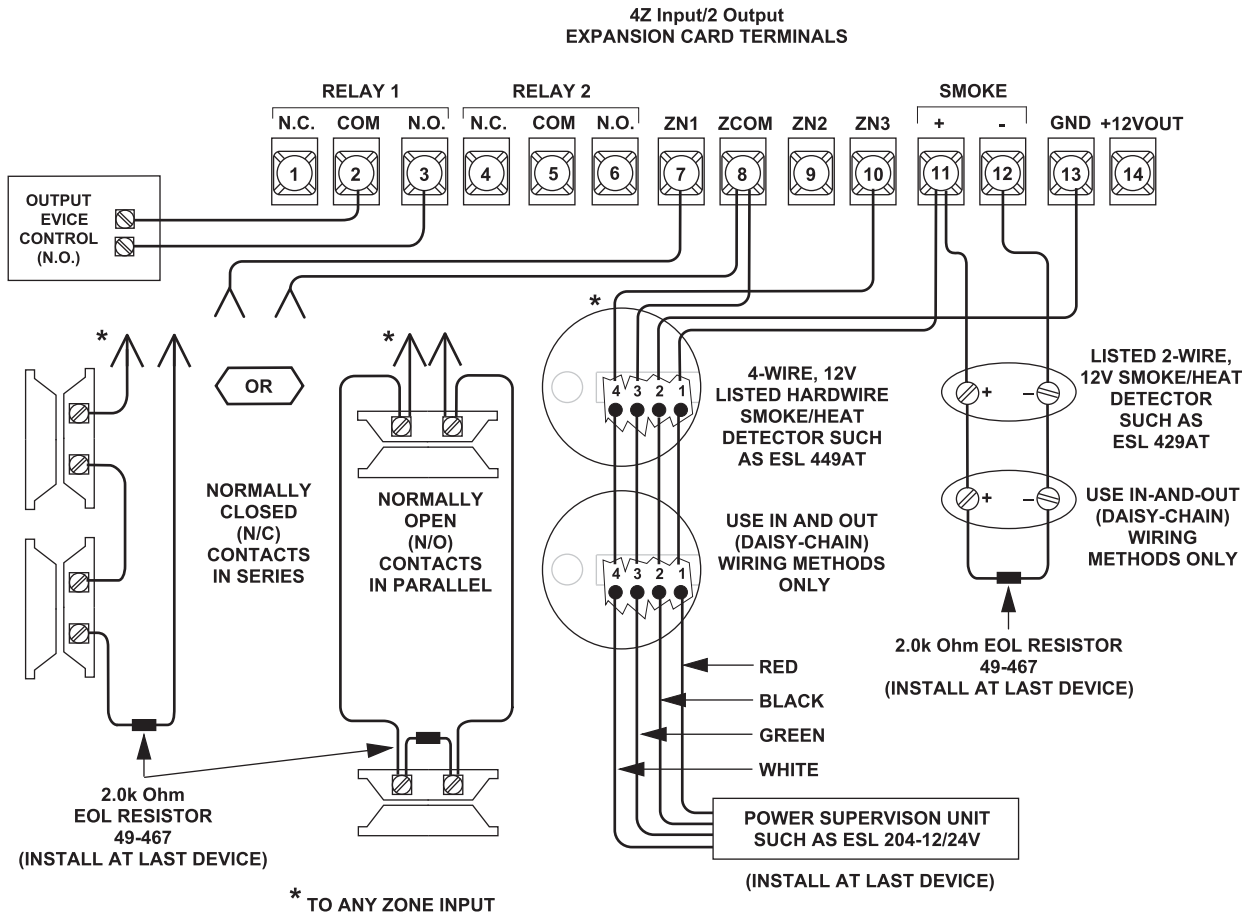
**Table 2. Maximum wire lengths**

Gauge	Two-wire Smoke Detector Loop Lengths*	Zone Input Wire Run Lengths**
	Max Distance (feet)	
22	330	300
20	470	
18	830	750
16	1200	
14	1900	
12	2900	

\* 10 ohms maximum wire resistance.

\*\* Wire run based on 10 ohms maximum wire and device resistance including 2.0k ohm EOL resistor.

Figure 5. Typical 4Z Input/2 Output SnapCard Wiring



## Programming

Input and output zones must be programmed to communicate with the panel and to function as desired. For zone programming information, refer to the panel *Installation Instructions*.

## Testing

Once installed, the card becomes an integral part of the panel. We recommend that you test all zone inputs and outputs after all programming is completed and whenever a sensor or output related problem occurs. Refer to the panel *Installation Instructions* and *User's Manual* for sensor/zone or output testing information.

**Note:** While the sensor test is a valuable installation and service tool, it only tests sensor operation for the current conditions. You should perform a sensor test after any change in environment, equipment, or programming.

## Troubleshooting (all panels)

Use [Tables 3](#) and [4](#) to help diagnose and fix problems.

**Table 3. Troubleshooting Hardwire Inputs**

Problem	Action/Solution
One, wrong, or no inputs are detected.	<ul style="list-style-type: none"> <li>Check input device wiring and connections.</li> <li>Check panel input programming.</li> </ul>
Sensor trouble is indicated.	<ul style="list-style-type: none"> <li>Check that the 2k ohm end-of-line resistor is correctly installed in the zone loop circuit.</li> <li>Check normally open (N/O) input circuit for a break in the wires.</li> <li>Check normally closed (N/C) input circuit for a short in the wires.</li> <li>Check input circuit for wires shorted to ground.</li> <li>Check that ZCOM terminal 8 is used for input zone common and not GND terminal 13.</li> </ul>

**Table 4. Troubleshooting Hardwire Outputs**

Problem	Action/Solution
No outputs activate.	<ul style="list-style-type: none"> <li>Check panel/card programming.</li> <li>Check output wiring and connections.</li> <li>Check panel/card power supplies.</li> <li>If used, check the optional external supply powering the output devices.</li> </ul>

One output never activates.	<ul style="list-style-type: none"> <li>Check panel/card programming for that output.</li> <li>Check output wiring and connections.</li> <li>Check that the output programmed trigger event actually occurs.</li> <li>An output relay may have failed or been overloaded. Reprogram to use a different (unused) output or replace the card.</li> </ul>
Wrong output activates.	<ul style="list-style-type: none"> <li>Check panel output programming.</li> <li>Check output device wiring and connections.</li> </ul>

## Specifications

Compatibility	Concord, Concord Express, and Advent panels
Power requirements	12 VDC @ 185 mA maximum (from panel and panel backup battery)
Storage temperature	-30° to 140° F (-34° to 60° C)
Operating temperature	32° to 140° F (0° to 60° C)
Maximum humidity	90% relative humidity, noncondensing
Inputs	<ul style="list-style-type: none"> <li>Three supervised UL Fire rated hardwire zones.</li> <li>One 12V Class B (style B) two-wire smoke detector loop that provides up to 100 mA. (10 detectors on Concord panels, 20 detectors on Advent panels).</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>Two "Form C" relay contacts.</li> <li>Contacts rated 5.0A @ 30 VDC maximum (each contact) or 5.0A @ 70 VAC.</li> <li>One 12 VDC, 500 mA regulated power output (from the panel) Power limited to 6 watts.</li> </ul>
Dimensions	2.0" x 5.25" x 0.75" (H x W x D)
Installation	In panel mounting

## Regulatory information

Manufacturer	UTC Fire & Security Americas Corporation, Inc. 1275 Red Fox Rd., Arden Hills, MN 55112-6943, USA
UL listings	<ul style="list-style-type: none"> <li>UL 985 Household Fire Warning System Units</li> <li>UL 1023 Household Burglar-Alarm System Units</li> <li>UL 1610 Central-Station Burglar- Alarm Units (Commercial Burglary)</li> <li>CSFM California State Fire Marshall</li> </ul>

**FCC Part 15 Information to the User**

Changes or modifications not expressly approved by Interlogix can void the user's authority to operate the equipment.

**FCC Part 15 Class A**

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

**FCC Part 15 Class B**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the affected equipment and the panel receiver to separate outlets, on different branch circuits.

Consult the dealer or an experienced radio/TV technician for help

**Contact information**

For contact information, see [www.utcfireandsecurity.com](http://www.utcfireandsecurity.com) or [www.interlogix.com](http://www.interlogix.com).

For technical support, toll-free: 888.437.3287 in the US including Alaska, Hawaii, Puerto Rico, and Canada. Outside the toll-free area, contact your dealer.

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