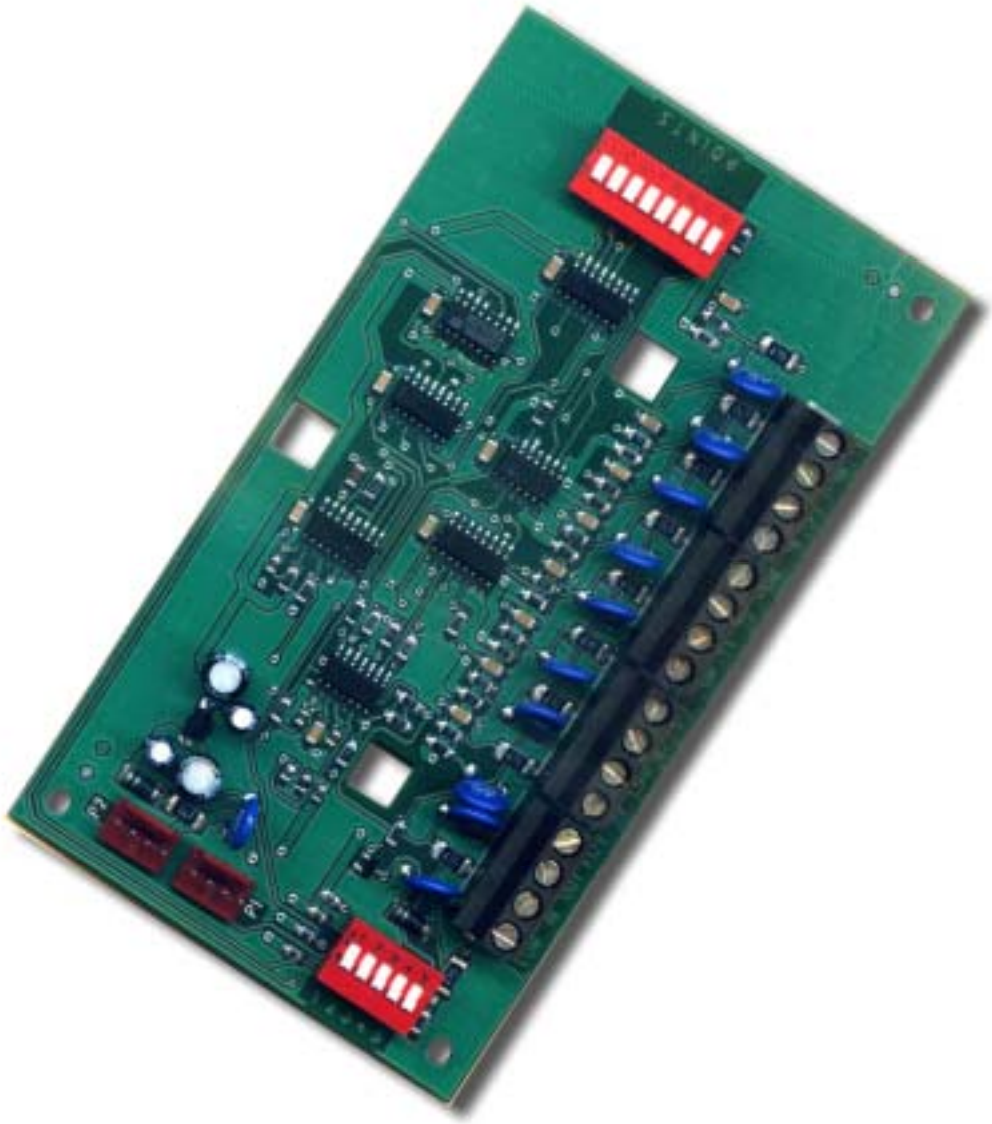
OctoPOPIT Module D8128D

Installation Guide



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The D8128D OctoPOPIT Module combines the functions of the D8125 POPEX module and the D8127/D9127 POPIT modules to provide eight off-board points in a single module. You can wire both D8128D OctoPOPIT and D8125 POPEX modules in parallel to the ZONEX Bus terminals on the same panel.

For a list of compatible panels and accessories, please see *Section 2.0 D8128D Overview*.

1.1 Document Organization

This document is divided into three sections and an index (refer to *Table 1*).

Section	Description
1	Introduction
2	Overview
3	Installation
Index	The index for this installation guide

Table 1: D8128D Installation Guide Organization

1.2 Documentation Conventions

These conventions are intended to call out important features, items, notes, cautions, and warnings that the reader should be aware of in reading this document.

1.2.1 Tips, Important Notes, Cautions and Warnings

Throughout this document, helpful tips, important notes, cautions and warnings will be presented for the reader to keep in mind. These appear different from the rest of the text as follows;

Important Notes - should be heeded for successful operation and programming. Also tips and shortcuts may be included here.

Caution - These caution the operator that physical damage to the program and/or equipment may occur.

Warning - These warn of the possibility of physical damage to the operator, program and/or equipment.

1.3 Listings

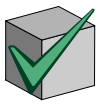
The D8128D OctoPOPIT Module is UL Listed for Local or Police Connected Burglary Alarm, Central Station Burglary Alarm, Household Burglary Alarm applications, and commercial fire applications (UL 864 and NFPA 72). The D8128D is also suitable for fire supervisory applications, such as indicating circuit supervision (using the *D192C Bell Circuit Supervision Module*), sprinkler supervision, and valve tamper protection.

1.3.1 Requirements for Fire Initiation Applications

You may connect non-powered, fire initiating devices such as pull-stations, heat detectors, and UL Listed four-wire smoke detectors directly to the point inputs on the D8128D.

The D125B Dual Powered Loop Interface Module or the D129 Dual Class “A” Module zone outputs may be connected directly to the point inputs on the D8128D. Use the D125B to connect 2-wire smoke detectors. Typically, the D129 is used for connecting waterflow switches.

The D125B or D129 and the OctoPOPIT can be mounted in the same enclosure with the panel or in a separate enclosure connected to the panel’s enclosure by conduit not more than 20 ft. (6 m) in length.



D7212G CONTROL PANEL LISTINGS

The D7212G Control Panel is NOT listed for commercial fire applications.

2.0 D8128D Overview

2.1 Specifications

Compatible Panels	See *Table 3*
Power Requirements	
Voltage (Operating):	10.2 VDC to 13.8 VDC, supplied by the panel
Current (Maximum):	51 mA per OctoPOPIT module (all points shorted @ 13.8 VDC)
Environmental Considerations	
Relative Humidity:	5% to 85% at +86°F (+30°C), non-condensing
Temperature (Operating):	+32°F to +120°F (0°C to +49°C)
Loop	
Resistance:	1 kΩ (+/-100 Ω)
Response Time:	Approximately 1 second. OctoPOPIT sensor loops are supervised with a 1 kΩ end-of-line resistor: Bosch's D105BL or D105FL (for fire supervisory applications)
Cabling	*Burglary applications:* D8128D OctoPOPITs may be installed up to 200 ft. (61 m) from the control panel using standard 4-conductor 22 AWG (0.8 mm) wire. Shielded cable is recommended when the D8128D is located outside the control panel enclosure. *Fire applications:* UL Listed fire-rated cable approved by the AHJ must be used when connecting fire-initiating or fire-supervisory devices to the D8128D. D8128D Octopopits may be located up to 200 ft. (61m) maximum from the control panel and must be mounted in a D8109 or D8108A enclosure. If a D125B Dual Powered Loop Interface Module or D129 Dual Class A Module is required, they must also be mounted in the same enclosure as the D8128D Octopopit. Each OctoPOPIT uses 51 mA (worst case). This affects the number of units that can be connected on a single wire run.

Table 2: D8128D Specifications

2.2 Module Description

The D8128D OctoPOPIT Module combines the functions of the D8125 POPEX module and the D8127/D9127 POPIT modules to provide eight off-board points in a single module. You can wire both D8128D OctoPOPIT and D8125 POPEX modules in parallel to the ZONEX Bus terminals on the same panel.

Review the *Power Outputs* section of your panel's *Operation and Installation Guide* to be sure you provide enough power for the OctoPOPITs and other powered devices you wish to connect to your system.

The D8128D is designed for use with the Bosch Security Systems' panels shown in *Table 3*. (Also shown are previously manufactured D8128 OctoPOPIT Modules.)

	Bosch Security Systems Control Panel							
OctoPOPIT	D7212B1	D7212G/ D7212	D7412G/ D7412	D8112	D9112B1	D9112	D9124	D9412G/ D9412
D8128A	✓				✓		*	
D8128B				✓				
D8128C	✓	✓	✓		✓	✓	*	✓
D8128D	✓	✓	✓		✓	✓	*	✓

* D9124 w/D9112LTB uses D8128A, D9124 w/D9112LTB-EX or w/D9412GLTB uses D8128C or D8128D.

Table 3: Compatible Control Panels

Note: As shown in Table 3, *D8128A OctoPOPITs cannot be used on the new D7212, D7212G, D7412, D7412G, D9112, D9412, or D9412G Control Panels. However, D8128D OctoPOPITs may be used and intermixed with D8128A OctoPOPITs on the D7212B1 and D9112B1 Control Panels.*

The maximum number of D8128D Modules that can be connected to your system depends on the control panel being used (see *Table 4*). Please refer to *Table 7* through *Table 10* for proper switch settings.

Control Panel	Max. # of D8128D's
D9412G	30
D9412	30
D9112	30
D9112B1	16
D9124 w/D9112LTB	16
D9124 w/D9112LTB-EX	30
D9124 w/D9412GLTB	30
D7412G	9*
D7412	9*
D7212	9*
D7212B1	5
D7212G	4

*Three points may be used on the last octopopit.

Table 4: Maximum D8128D Connections

The number of D8129 OctoRelays that can be connected to each Zonex terminal on the D9412G panels is limited by the number of D8128D OctoPOPITs connected.

Using D8129 OctoRelays and D8128D OctoPOPITs together on the same Zonex Terminals is limited and depends on the number of D8128D OctoPOPITs and D8129 OctoRelays connected to a single Zonex Bus. Refer to Table 5 *for information on the maximum number of D8128Ds and D8129s that may be connected to a single Zonex Bus.*

Number of D8128Ds Connected to a Single ZONEX Bus	Maximum Number of D8129s that can be Connected
9	6
10	5
11	4
12	3
13	1
14	1

Table 5: Number of D8128Ds used with D8129s

D8128D Overview

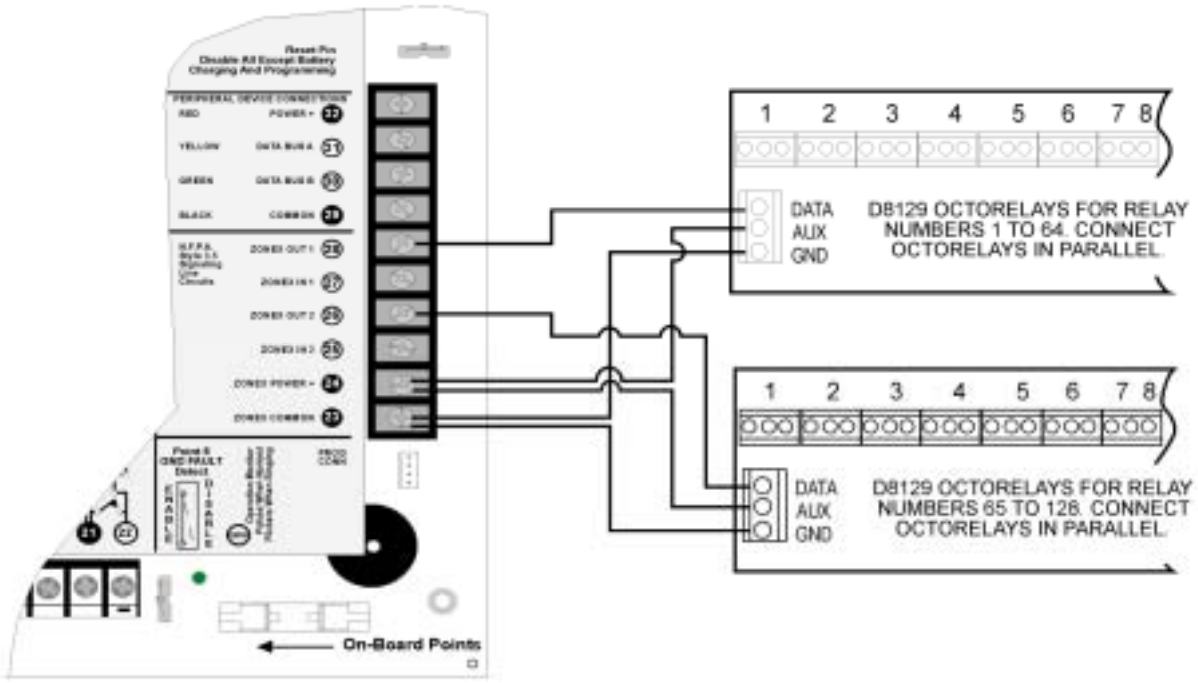


Figure 1: D8129 Connections to the D9412G

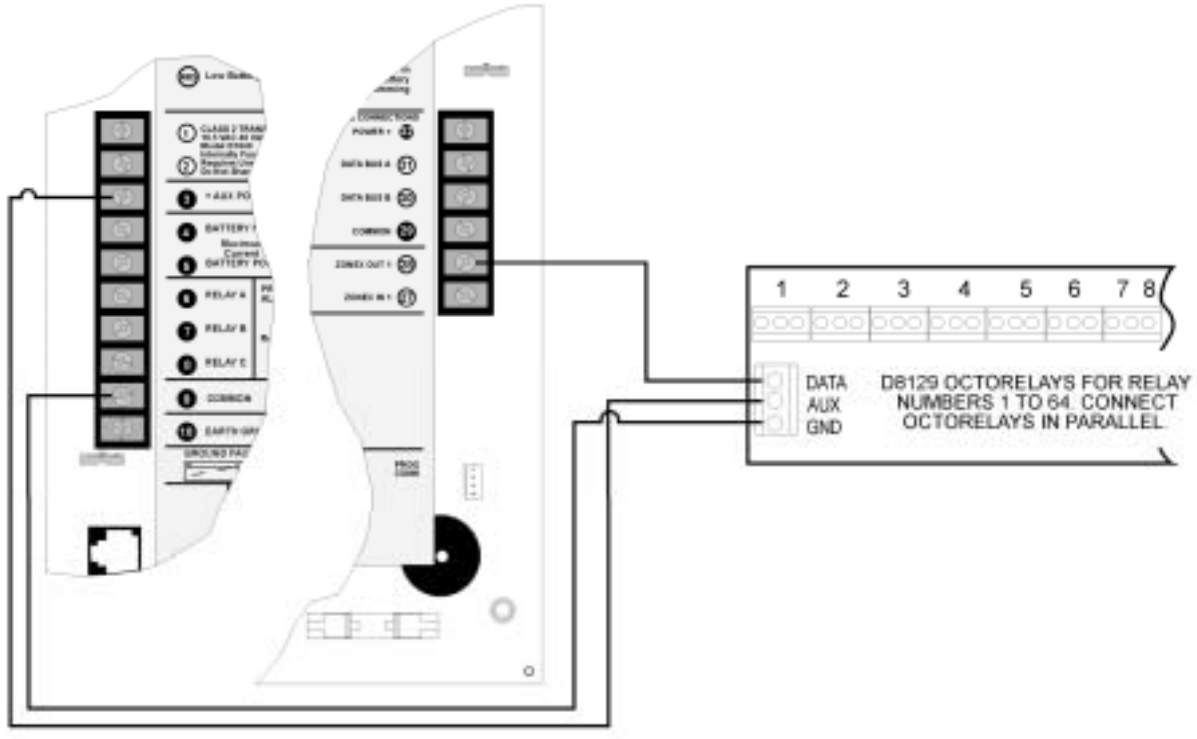


Figure 2: D8129 Connections to the D7412G

3.0 Installation

Before installing the D8128D OctoPOPIT, become familiar with the *Operation and Installation Guide* and the *Program Entry Guide* corresponding to your system. Bosch Security Systems recommends the following four-step process for the most effective installation:

1. setting the OctoPOPIT switches,
2. physically mounting the OctoPOPIT to the enclosure,
3. wiring the OctoPOPIT, and
4. wiring OctoPOPIT sensor loops.

Each step is explained more fully in this chapter.

3.1 Setting OctoPOPIT Switches

The D8128D OctoPOPIT has two sets of DIP switches. The DIP switches on the top of the unit (with the terminal strip along the left edge) are used to set the OctoPOPIT's address. The DIP switches at the bottom of the unit are used to enable or disable individual points connected to the OctoPOPIT.

3.1.1 Address Switches

The switches on the D8128D OctoPOPIT set point assignments and line termination (see *Figure 3*). These switches are easier to set before mounting the D8128D in the enclosure.

3.1.1.1 Address Assignment Switches

Switches 1, 2, 3, and 4 assign the OctoPOPIT sensor loops to point numbers on the panel. *Table 7* through *Table 10* show the OctoPOPIT switch settings for point assignments, depending on the control panel being used.

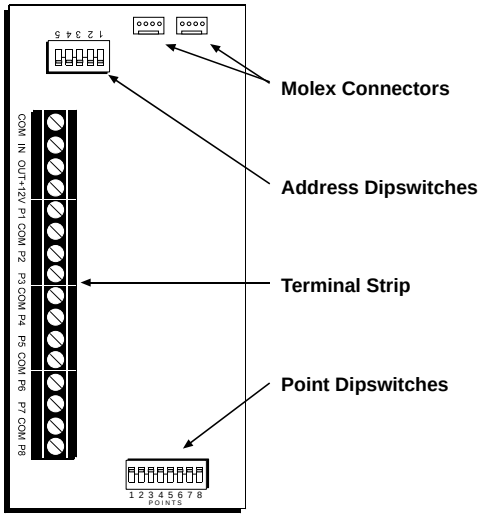


Figure 3: D8128D OctoPOPIT Layout

3.1.1.2 Line Termination Switch Settings

Switch 5 sets line termination.

- If there is no D8125 POPEX module connected to ZONEX 1, set switch 5 of only one D8128D connected to those terminals to the ON position.
- If there is a D8125 POPEX module connected to ZONEX 1, set switch 5 of all D8128Ds connected to those terminals to the OFF position.
- If there is no D8125 POPEX module connected to ZONEX 2, set switch 5 of only one D8128D connected to those terminals to the ON position.
- If there is a D8125 POPEX module connected to ZONEX 2, set switch 5 of all D8128Ds connected to those terminals to the OFF position.

3.1.2 Point DIP Switches

Each point connected to the D8128D is enabled or disable by turning its respective DIP switch to the closed or open position, respectively. For example, to disable a device connected to the P3 terminal (Point 3), move DIP switch number 3 to the OPEN position.

Use the point DIP switches to disable conflicting points, such as when a *D9210B Access Control module* must be assigned to a point that falls within the range of the D8128D OctoPOPIT. In this example, a D9210B is assigned to Point 20. On the same system, a D8128D OctoPOPIT is assigned to Points 17 through 24. Moving the DIP switch for Point 4 to the OFF position would effectively disable Point 20, allowing normal operation of the D9210B and the OctoPOPIT.

Terminate each OctoPOPIT sensor loop with a 1 kΩ end-of-line resistor. Attach a resistor even if you don't enable the loop.

Installation

3.2 Mounting the OctoPOPIT

The D8128D OctoPOPIT Module can be installed in the enclosure with the panel using standard four-conductor 22 AWG (0.8 mm) wire, or in a separate enclosure (model D8103, D8108A, or D8109) up to 200 ft. (61 m) from the panel using shielded (recommended) standard four-conductor 22 AWG (0.8 mm) wire. Refer to the *Cabling Specifications* in *Section 2.1* when using the D125B or the D129.

For UL Listed systems, mount the D8128D in a tamper-proof enclosure.

To install OctoPOPITs in the panel's enclosure, complete the following procedure. Use the D137 Mounting Bracket to install OctoPOPITs in enclosures with no module-mounting locations available.

1. Align the OctoPOPIT module with any of the four mounting locations in the enclosure (refer to *Figure 4*).
2. Use the screws provided with the module to secure it in the enclosure.

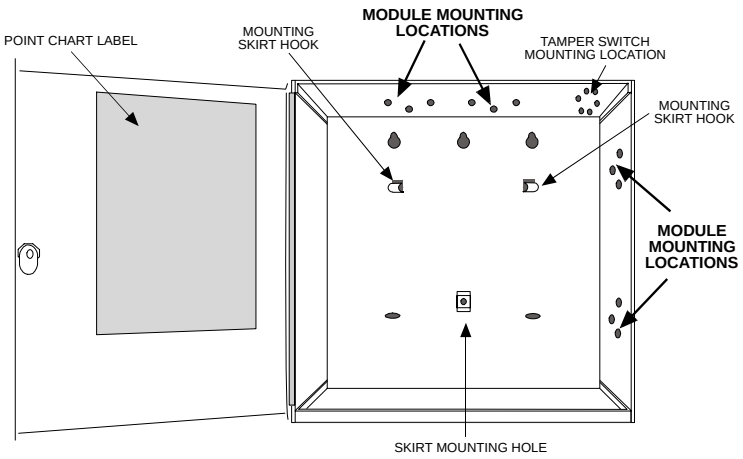


Figure 4: Mounting Enclosure

3.3 Wiring the OctoPOPIT

Disconnect all power to the control panel before beginning any work with the internal components. Serious injury could result from electrical shock.

Power down the panel by disconnecting the positive (red) battery lead at the battery and unplugging the transformer.

The D8128D can be installed up to 200 ft. (61 m) from the control panel. There are two methods for connecting the D8128D to a control panel: wire the OctoPOPIT to the control panel using the terminal strip on the side of the module or connect using the Molex connectors (P1 and P2).

AC INDUCTION: Avoid installing ZONEX data wires and ZONEX input (sensor loop) wires around any AC conduit/wiring or electrical devices that emit fields of electromagnetic interference (EMI).

3.3.1 Connecting the D8128D to the Control Panel using the Terminal Strip

When connecting the D8128D to the control panel via the OctoPOPIT's terminal strip, the following connections must be made:

D8128D	D9412G/D9412/D9112/ D9112B1/D9124
Common	Terminal 23
Out	Zonex 1 = Terminal 27
	Zonex 2 = Terminal 25
In	Zonex 1 = Terminal 28
	Zonex 2= Terminal 26
+12 V	Terminal 24

D8128D	D7412G/D7412/D7212G/ D7212B1/D7212
Common	Terminal 9
Out	Terminal 27
In	Terminal 28
+12 V	Terminal 3

Table 6: Terminal Strip Connections

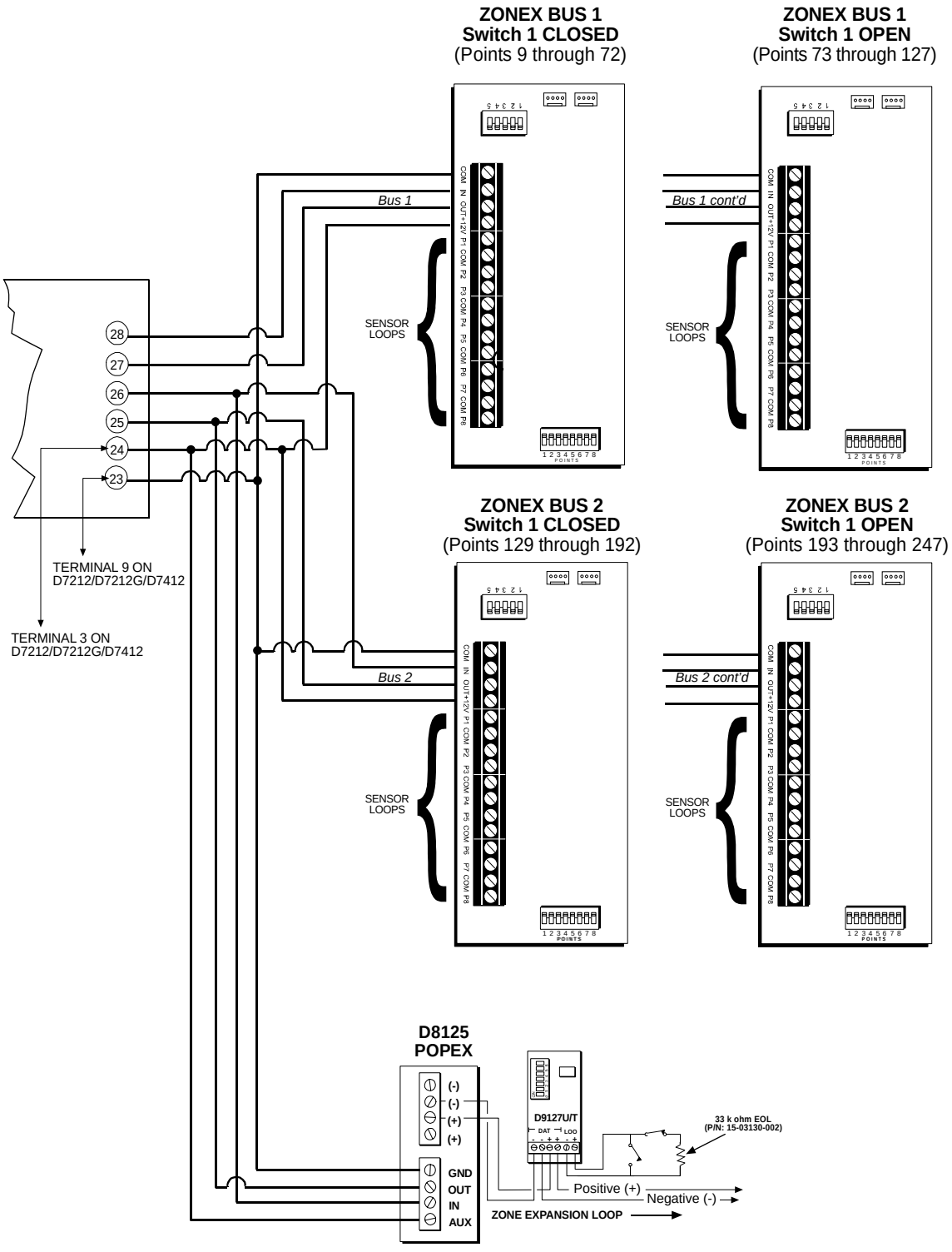


Figure 5: Wiring the D8128D to the Panel with a D8125 POPEX Module

Installation

3.3.2 Connecting the D8128D to the Control Panel using Molex Connectors

Each D8128D module is supplied with a 12-inch (30 cm) female-to-female Molex cable assembly.

P1 and P2 are Molex connectors that parallel the COM, IN, OUT and +12 VDC terminals on the terminal strip. In installations where there are multiple D8128Ds in use, use these connectors (as opposed to terminals) with the supplied cable. However, when connecting D8128D modules directly to the panel, the terminal strip may be easier to use.

The Molex connectors provided are “keyed.” (molex plug can only fit in one direction). However, to be sure the connector is attached correctly, be sure the red wire is on the bottom of P1 (or P2) and the black wire is on the top.

When connecting multiple D8128Ds to a control panel, you may connect the control panel terminals to P1 or the Com, In, Out, and +12V terminals on the first D8128D and then connect P2 of the first D8128D to P1 of the second D8128D and so on.

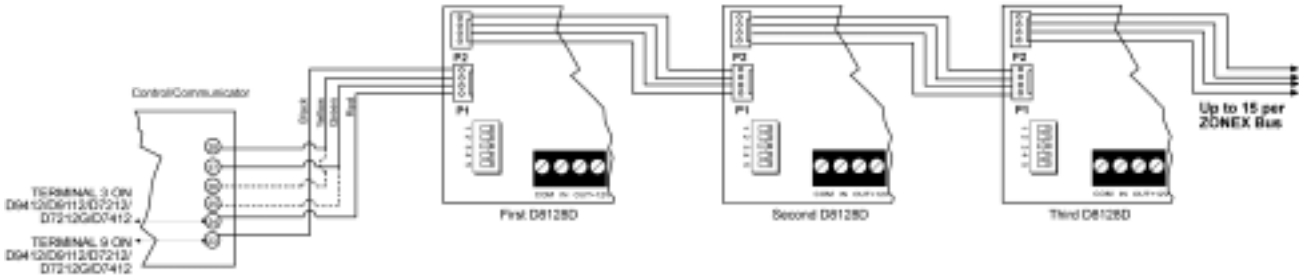


Figure 6: Wiring Multiple D8128Ds using Molex Connectors

3.4 Wiring OctoPOPIT Sensor Loops

3.4.1 OctoPOPIT Sensor Loops

Only the resistance on the loop limits the number of normally-open and/or normally-closed detection devices each sensor loop can supervise. Resistance on each sensor loop must be less than 100 Ω with the detection devices connected.

Certain UL and NFPA applications may limit the number of detection devices. Consult the appropriate UL or NFPA standards.

The OctoPOPIT detects open, short, normal, and grounded circuit conditions on its sensor loops and transmits the conditions to the panel. Each sensor loop is assigned a point number and transmits to the panel separately.

Bosch Security Systems recommends you use twisted-pair wire for the OctoPOPIT sensor loops to avoid EMI problems. Run wires away from the premises telephone and AC wiring. If you suspect a noisy environment, use shielded cable.

There are two rows of terminal numbers on the OctoPOPIT. In the row closest to the terminal blocks, the positive outputs for the sensor loops are labeled *P1* to *P8*. Sensor loop outputs P1 and P2, P3 and P4, P5 and P6, and P7 and P8 share common terminals. The common terminals for each pair are labeled *COM*.

Terminate each OctoPOPIT sensor loop with a 1 kΩ end-of-line resistor. Attach a resistor even if you don’t enable the loop. The OctoPOPIT comes with a D105BL resistor for each sensor loop.

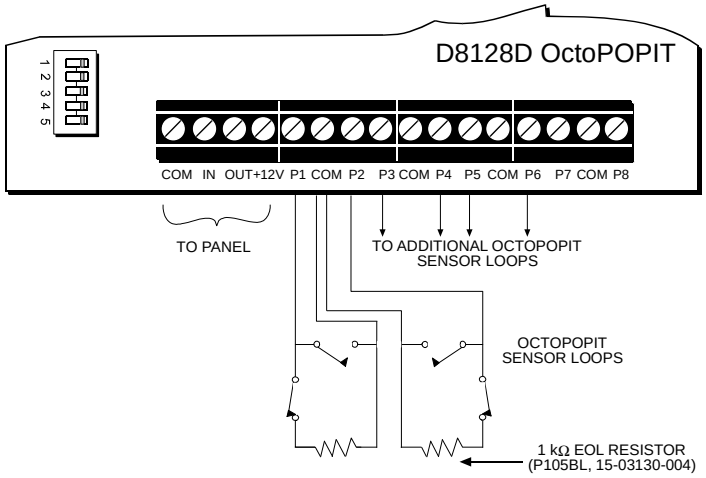


Figure 7: D8128D OctoPOPIT Sensor Loops

Do not to duplicate point assignments. Points do not function properly if assigned to both an OctoPOPIT sensor loop and a POPIT, to two OctoPOPIT sensor loops, or to two POPITs.

3.4.2 D8128D OctoPOPIT Switch Settings for D9412, D9412G, D9124, and D9112

Refer to *Table 7* to set the OctoPOPIT switches for use with the D9412, D9412G, D9124, and D9112 Control Panels. Points 128 and 248 are reserved for ZONEX Bus supervision.

Note: For the OctoPOPITs assigned to points 121 through 127 and 241 through 247, set Point Input Switch 8 to the OFF position.

* Line Termination Switch (see *Section 3.1.1.2 Line Termination Switch Settings*).

ZONEX 1	D8128D Address Switches					ZONEX 2
Points 9 through 127	1	2	3	4	5	Points 129 through 247
9-16	ON	ON	ON	ON	*	129-136
17-24	ON	ON	ON	OFF	*	137-144
25-32	ON	ON	OFF	ON	*	145-152
33-40	ON	ON	OFF	OFF	*	153-160
41-48	ON	OFF	ON	ON	*	161-168
49-56	ON	OFF	ON	OFF	*	169-176
57-64	ON	OFF	OFF	ON	*	177-184
65-72	ON	OFF	OFF	OFF	*	185-182
73-80	OFF	ON	ON	ON	*	193-200
81-88	OFF	ON	ON	OFF	*	201-208
89-96	OFF	ON	OFF	ON	*	209-216
97-104	OFF	ON	OFF	OFF	*	217-224
105-112	OFF	OFF	ON	ON	*	225-232
113-120	OFF	OFF	ON	OFF	*	233-240
121-127	OFF	OFF	OFF	ON	*	241-247

Table 7: OctoPOPIT Settings - D9412, D9412G, D9124, and D9112

3.4.3 D8128D OctoPOPIT Switch Settings for D7412, D7412G, D7212, and D7212G

Refer to *Table 8* to set the OctoPOPIT switches for use with the D7412, D7412G, D7212, and D7212G Control Panels.

* Line Termination Switch (see *Section 3.1.1.2 Line Termination Switch Settings).*

Note: For the OctoPOPITs assigned to points 73-75, be sure to set Point Input Switches 4 through 8 to the OFF position.

Note: The D7212G supports points 9-40 only.

ZONEX 1	D8128D Address Switches				
Points 9 through 75	1	2	3	4	5
9-16	ON	ON	ON	ON	*
17-24	ON	ON	ON	OFF	*
25-32	ON	ON	OFF	ON	*
33-40	ON	ON	OFF	OFF	*
41-48	ON	OFF	ON	ON	*
49-56	ON	OFF	ON	OFF	*
57-64	ON	OFF	OFF	ON	*
65-72	ON	OFF	OFF	OFF	*
73-75	OFF	ON	ON	ON	*

Table 8: OctoPOPIT Settings - D7412, D7412G, D7212, and D7212G

3.4.4 D8128D OctoPOPIT Switch Settings for D9112B1

Refer to *Table 9* to set the OctoPOPIT switches for use with the D9112B1 Control Panel. Points 72 and 136 are reserved for ZONEX Bus supervision.

* Line Termination Switch (see *Section 3.1.1.2 Line Termination Switch Settings).*

Note: For the OctoPOPITs assigned to points 65-71 or 129 - 135, be sure to set Point Input Switch 8 to the OFF position.

ZONEX 1	D8128D Address Switches					ZONEX 2 Points 73 through 135
Points 9 through 71	1	2	3	4	5	
9-16	ON	ON	ON	ON	*	73-80
17-24	ON	ON	ON	OFF	*	81-88
25-32	ON	ON	OFF	ON	*	89-96
33-40	ON	ON	OFF	OFF	*	97-104
41-48	ON	OFF	ON	ON	*	105-112
49-56	ON	OFF	ON	OFF	*	113-120
57-64	ON	OFF	OFF	ON	*	121-128
65-71	ON	OFF	OFF	OFF	*	129-135

Table 9: OctoPOPIT Settings - D9112B1

3.4.5 D8128D OctoPOPIT Switch Settings for D7212B1

Refer to *Table 10* to set the OctoPOPIT switches for use with the D7212B1 Control Panel.

* Line Termination Switch (see *Section 3.1.1.2 Line Termination Switch Settings).*

ZONEX 1	D8128D Address Switches				
Points 9 through 48	1	2	3	4	5
9-16	ON	ON	ON	ON	*
17-24	ON	ON	ON	OFF	*
25-32	ON	ON	OFF	ON	*
33-40	ON	ON	OFF	OFF	*
41-48	ON	OFF	ON	ON	*

Table 10: OctoPOPIT Settings - D7212B1