Section 1
Introduction

The Model 4825 is a hardwire zone expander that allows 64 zones to be added to the 4821/4820 system. A total of six 4825 modules could be added to the system (if no other zone expansion device is used).

1.1   About this Manual

4825 zones are installed in the same manner as 4821/4820 internal zones. For your convenience, some zone installation information from the 4821/4820 installation manual is repeated here.

The programmable options available for 4821/4820 zones are also available for 4825 zones. Be sure to read Section 5 of the *4821/4820 Installation Manual* (P/N 150960) for complete information.

Section 2
Installation

Installation of the 4825 is simple. The 4825 connects to the 4820 via the SBUS. The expansion zones are installed in exactly the same way as 4820 internal zones. See Section 4 of the 4820 installation manual (P/N 150960) for complete zone installation information.

Before you begin installation of the 4825 zones, you must add the 4825 device to the system through 4820 programming (System Devices Menu). See Section 5 of the *4820 Installation Manual* (P/N 150960) if you need more information.

2.1   Connecting the 4825 to the 4820
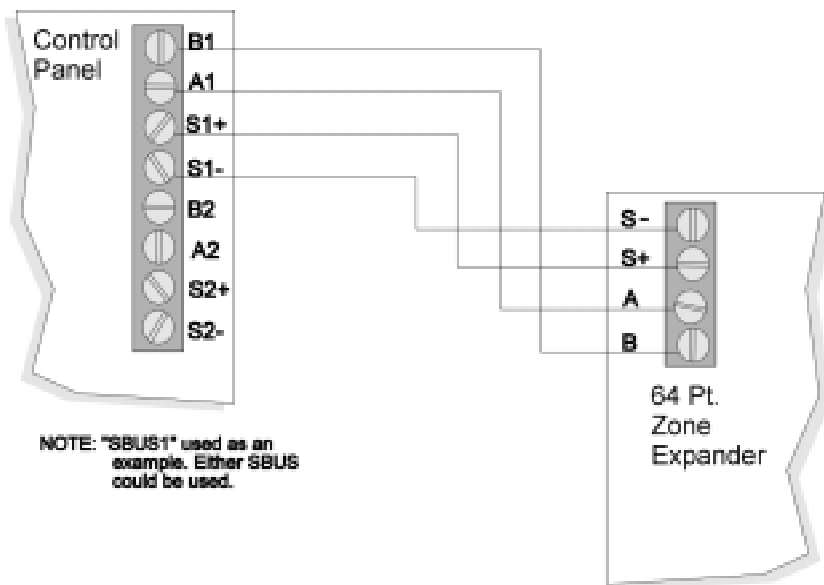
The 4825 connects to the 4820 via the SBUS.

Figure 2-1 4820 to 4825 Connection

To Control Panel ←

Terminals 1-64
are Zone Inputs →
(Rated at 14 VDC @ 1.4 mA)

Terminals labeled "C+"
are common outputs for →
a group of 8 zones.

(Rated @ 10.0 - 14.0 VDC)

(Dotted lines show
zones that are
electrically the same
point. See Section 3.1
for more information.)

64 Pt. Zone
Expander

**Figure 2-2 Model 4825 Hardwire Zone Expander Board**

2.2   Zone Installation

Each 4825 can add up to 64 zones. A total of six 4825s, adding 384 zones, could be used (if no other expansion devices were used). 4825 zones are installed in exactly the same way as 4820 internal zones. Be sure to read Section 3 of the *4820 Installation Manual* (P/N 150960) for complete zone installation information.

2.2.1   Zone Configuration

At any moment an input zone can be in one (and only one) of three states, depending on the state of the hardware circuit connected to the zone input. The possible states are Open Circuit, EOL Circuit, and Short Circuit. The value of the EOL resistor used on all input zones in the 4820 system is 4.7k Ohms (Silent Knight part number 7628).

Open circuit at zone interface

Open Circuit
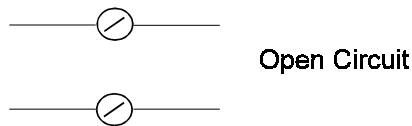
EOL present at zone interface

EOL Circuit
**Required for
Fire Alarm
Monitoring circuits**
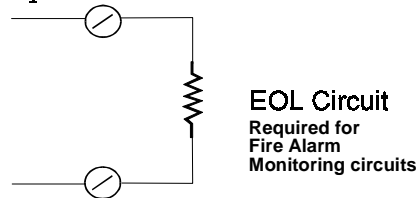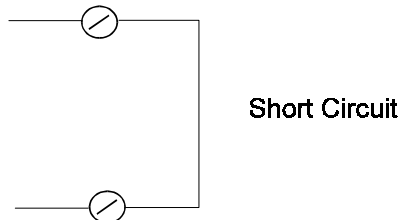
Short circuit at zone interface

Short Circuit

Figure 2-3 Zone States

Through programming, you determine how the zone will respond to the three possible states when it is armed and disarmed. The possible system responses for all three states are Ready, Not Ready, Trouble, or Alarm.
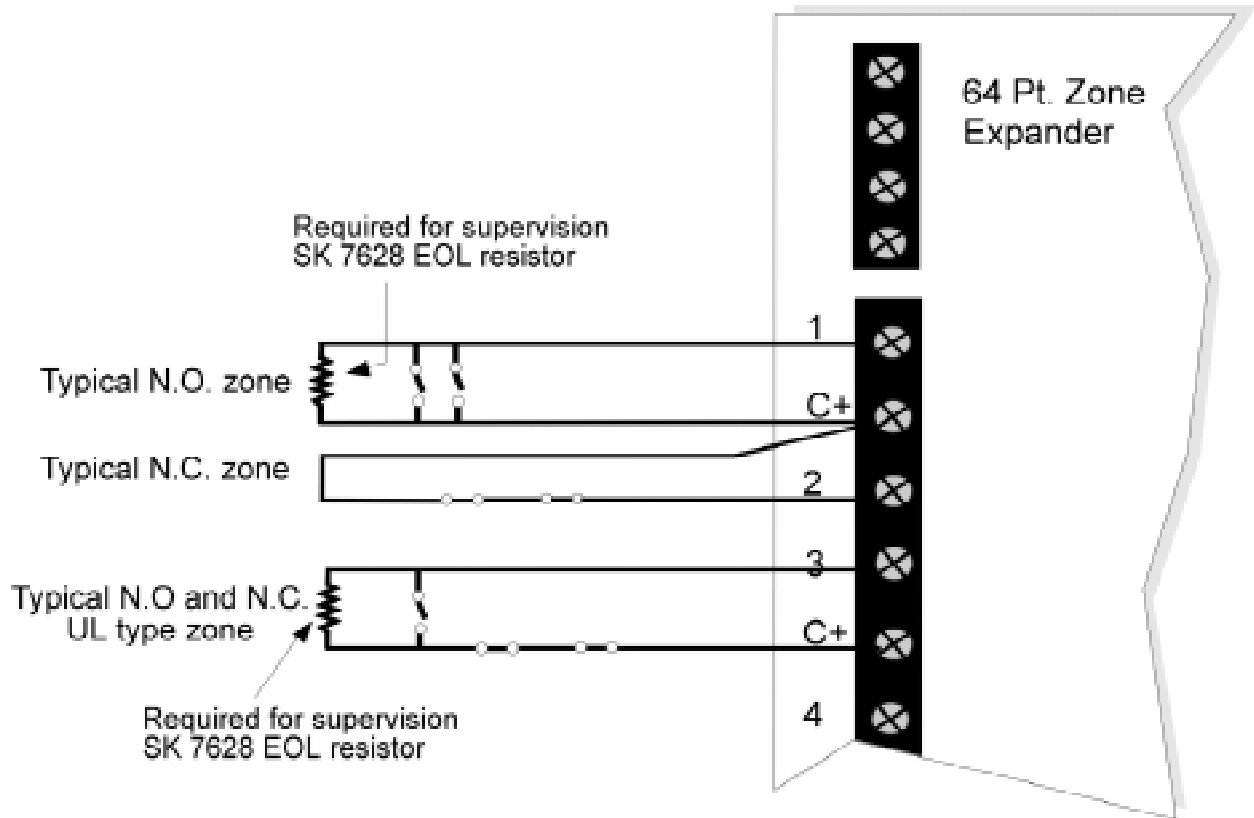
Figure 2-4 Zone wiring example

2.2.2 Zone Response Speed

Through programming, you select the zone response (debounce) speed for the type of hardware you are installing. The following zone response speeds are available. See Section 5 the *4820 Installation Manual* (P/N 150960) for details about how to make selections.

• 10 milliseconds (9 to 18 milliseconds)

• 100 milliseconds (55 to 100 milliseconds)

• 1 second (0.5 to 1 second)

• 10 seconds (5 to 10 seconds)

Note: The 250 millisecond response time is not available for 4825 (or 4820 internal) zones.

Table 2-1: 4825 Terminal Description

Name	Terminal Description	Electrical Ratings
S-	Expansion Bus (-)	0 VDC
S+	Expansion Bus (+)	10.0 - 14.0 VDC
A	Expansion Bus (data)	0 - 5 VDC
B	Expansion Bus (data)	0 - 5 VDC
1-64	Zone Inputs	14 VDC max. at 1.4 mA 9.45 VDC nominal
C+	Power Output (for adjacent zones)	10.0 to 14.0 VDC

Section 3
Troubleshooting

3.1   Power Outputs Shared for Groups of 8 Zones

On the 4825, every eight zones are electrically the same point and share the same power outputs. This means that a hardware fault occurring in one point in the group of 8 will occur in all zones in that group. The board layout diagram in Section 2 shows which zones are grouped together.

3.2   Voltage Levels

The chart below shows acceptable voltage ranges and what is indicated by readings outside the acceptable range. Measurements in the chart below are from zone input to circuit ground.

Voltage Range		Indicates
With EOL	With no EOL	
4 - 8 V	1 - 12 V	Good voltage
8 or higher	13 or higher	Short
3 or lower	0	Open