

D928



EN | Installation Instructions
Dual Phone Line
Switcher



BOSCH

Listings and Approvals

UL

The D928 Dual Phone Line Switcher is UL Listed for Control Units for Fire-protective Signaling Systems.

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1.0 Introduction

The D928 Dual Phone Line Switcher is used with the D9412GV2 Listed UL864 9th Edition, D7412GV2 Listed UL864 9th Edition, D9412G, D7412G, D9412, D9112, D7412, D7212, D9124, D9112B1, and D7212B1 Control Panels.

Before installing the D928, you should be familiar with the operation and installation guide and the program entry guide for the control panel you are installing. For additional installation information, refer to the *D9412GV2/D7412GV2 Approved Applications Compliance Guide* (P/N: F01U003639).

2.0 Overview

2.1 Description

2.1.1 D9412GV2, D7412GV2, D9412G, and D7412G Control Panels



Do not use the D928 with ground start systems for Commercial Fire applications.

When the D928 is installed, the control panel alternates between Phone Line 1 and Phone Line 2 to send its first report. For example, on Day 1, the control panel attempts to communicate on Phone Line 1. On Day 2, the control panel switches and attempts to communicate on Phone Line 2.



When the control panel is reset or powered on or off, the next reported event always attempts to call out on Phone Line 1 first.

If Phone Line 2 (secondary) is not in service on Day 2, the control panel switches to the primary phone line to send the report.

2.1.2 D9112B1 and D7212B1 Control Panels



Do not use the D928 with ground start systems for Commercial Fire applications.

The Bosch Security System D9112B1 and D7212B1 Control Panels use the D928 Dual Phone Line Switcher to transmit over a second phone line when the primary phone line has a fault. The control panel monitors the primary line and the D928 monitors the secondary line. If a signal is generated and the control panel senses that the primary phone line is bad, it will attempt to use the secondary phone line to send the message. For further explanation, refer to *Communication Failure* in the appropriate operation and installation guide.

2.1.3 Phone Line Failure Reporting

If the primary line has an electrical fault, the D928 switches to the secondary line and reports the fault. With the Modem II, IIe, and IIIa² formats, the control panel sends a PHONE LINE FAIL message to the D6500 and D6600 Receivers. The second row of the report indicates which telephone line is in trouble. When using BFSK, the control panel sends a TROUBLE ZN B message for trouble on the primary phone line and a TROUBLE ZN C message for trouble on the secondary phone line.

The D928 uses the primary or secondary phone line to dial a primary, backup, or duplicate phone number.

2.2 Status LEDs

Four LEDs mounted on the front edge of the D928 module indicate primary phone failure, secondary phone line failure, failure to communicate, and AC power status. Refer to *Figure 2* on page 5. When programmed and operating normally, only the green AC power status LED should be lit.

2.2.1 Phone Line Failure LEDs

Two yellow phone line status LEDs (one for the primary line and one for the secondary line) light when the phone line voltage drops to 6.0 VDC or below. The control panel monitors the faulty telephone line for the programmed interval before indicating a trouble condition. For more information, refer to the description of *Phone Supv Time* in the program entry guide for the control panel.

2.2.2 Failure to Communicate LED

A yellow LED lights when the control panel enters communications failure. The LED clears when communication restores.

2.2.3 AC Power Status LED

The green AC power status LED lights when the control panel is operating on AC power. When AC power is not available, the LED is not lit.

3.0 Installation

3.1 Hardware and Software Compatibility

3.1.1 D9412GV2, D7412GV2, D9412G, and D7412G Control Panels

All software versions are compatible with the D928

3.1.2 D9112B1 and D7212B1 Control Panels

The D928 is not compatible with:

- Firmware version 2.91 or lower
- Control panel board hardware version 04-05858-003 or lower

3.2 Mounting

The D928 Dual Phone Line Switcher mounts inside the D8103, D8108A, and D8109 Enclosures.



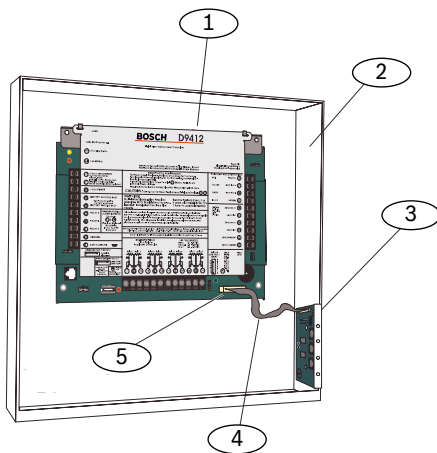
When using the D928 with a fire system, mount it inside an enclosure that is UL Listed for fire, such as the D8198A or D8109 Enclosure.

Use the screws provided to fasten the module to the inside of the enclosure in the lower right hand corner. Refer to *Figure 1*.



Mount the D928 so that the ribbon cable reaches the accessory connector on the control panel.

Figure 1: D928 Mounting Location



- 1 - Control panel
- 2 - Enclosure
- 3 - D928 card
- 4 - Ribbon cable
- 5 - Accessory connector on control panel

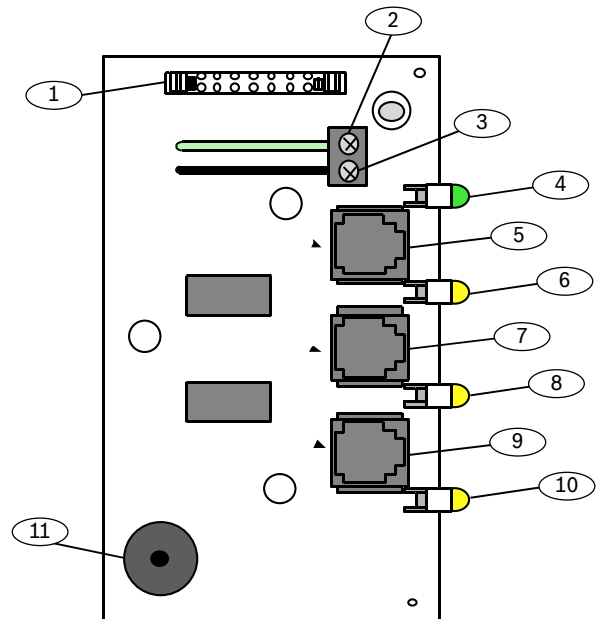
3.3 Wiring

The D928 has two flying leads.

1. For monitoring of AC power, connect the green lead to Terminal 2 on the control panel.
2. For surge protection for the two incoming phone lines and for ground reference for the AC power LED, connect the black lead to the correct terminal on the control panel.
 - For the D9412GV2, D7412GV2, D9412G, and D7412G, connect to Terminal 9.
 - For the D9112B1, D9412, D9112, D7412, D7212, and D7212B1, connect to Terminal 10.

Refer to *Figure 2*.

Figure 2: D928 Wiring and Phone Connections



- 1 - Connector J4
- 2 - Green lead
- 3 - Black lead
- 4 - AC power LED (green)
- 5 - Phone jack for primary phone line (J1)
- 6 - Primary failure LED (yellow)
- 7 - Phone jack for secondary phone line (J2)
- 8 - Secondary failure LED (yellow)
- 9 - Telco phone jack (J3)
- 10 - Communication failure LED (yellow)
- 11 - Buzzer

3.4 Phone Connections



Caution: Disconnect AC and battery power from the control panel before installing the D928.



The ribbon cable and the D162 phone cord are provided with the D928.

Refer to *Table 1* for phone cord lengths.

Refer to *Figure 2* on page 5.

1. Connect one end of the ribbon cable to J4 on the D928. Connect the other end of the ribbon cable to the ACCESSORY connector on the control panel.
2. Connect one end of the D162 phone cord to the TELCO jack (J3). Connect the other end of the D162 phone cord to the TELCO jack on the control panel.
3. Connect one end of a D161 or D162 phone cord to J1 on the D928. Connect the other end of the phone cord to the RJ31X for the primary phone line.
4. Connect one end of a D161 or D162 phone cord to J2 on the D928. Connect the other end of the phone cord to the RJ31X for the secondary phone line.

Phone Cord	Length
D161	2.4 m (8 ft)
D162	61 cm (2 ft)

4.0 Programming

To use the D928, program **Two Phone Lines** and **Phone Supv Time** in the control panel. Refer to the *Phone* section in the appropriate program entry guide for programming instructions.

5.0 Specifications

Table 2: Specifications	
Current Required	Maximum: 100 mA
	Operating voltage: 12 VDC nominal
Status Indicators	LEDs indicate: <ul style="list-style-type: none"> • AC power • Primary phone line failure • Secondary phone line failure • Failure to communicate
Wiring Connections	<ul style="list-style-type: none"> 3 Dual modular connector phone cords 1 Ribbon cable 2 Flying leads (green, black)

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