Installation Instructions

English Text Display   **Digital Keypad**

Sounder   **Emergency Keys**

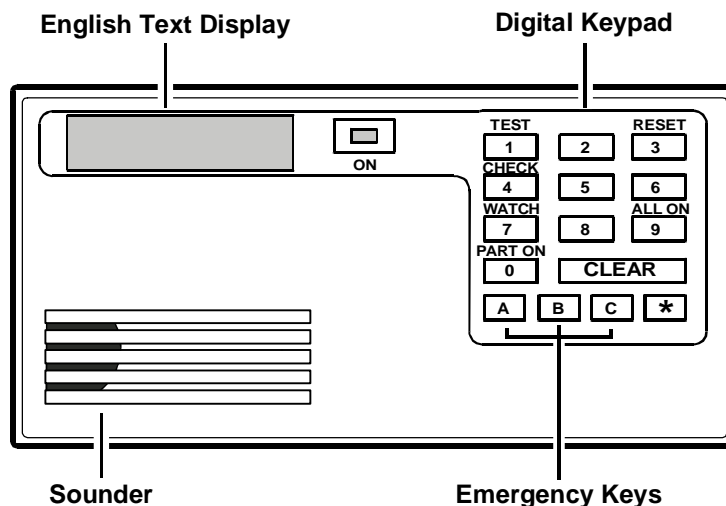## Description

The D222 Keypad is a low-profile, surface-mount, three-wire unit with four hardwired expansion points for use with the Radionics D2000 Series Control/Communicator. The D222 features an illuminated keypad, a backlit two-line LCD text display, an armed status indicator, three programmable emergency keys, and a built-in sounder that emits several distinct tones.

The control/communicator supplies all power and data requirements for the D222 using a simple three-wire connection. Depending on the panel's available auxiliary power, you can install up to eight D222 Keypads in one system.

You can program custom text locally using either the D5200 Programmer or keypad programming. If using the D5200, be sure to lock the panel's standby pin down *before* connecting the programmer. You can program text remotely using the D5300, RAM II.

The Display

The D222 Keypad continuously displays the latest status conditions of the security system. It takes up to 30 seconds after the program has been received for the new text to replace the old text. When a series of events occur that affect the system, the D222 displays each event by priority, for example, the D222 displays alarms before point faults.

The LCD display is normally illuminated constantly. You can choose to make it illuminate only after a key is pressed. With this option, the display and backlights extinguish after approximately 18 seconds. Press and hold the CLEAR key for five seconds to turn this feature on or off.

The Keys

The D222 Keypad has a CLEAR key, * key, three emergency keys labeled A, B, and C, and number keys from 0 to 9. These keys are used to enter functions and personal passcodes into the panel.

Response Tones

The D222 Keypad contains a sounder used to annunciate several system conditions. You can disable the sounder if you choose.

Wiring the D222 Points

The D222 expands the system with four hardwired protective point inputs (See Figure 2). Each point functions independently and does not interfere with the operation of the others.

Each point is supervised with a 1K Ω end-of-line resistor (Radionics D105BL, four supplied with the unit). Connect dry contact sensing devices in series (normally closed) or in parallel (normally open) to any of these points. Each point can detect open circuit, closed circuit, and normal circuit conditions.

Program the panel with a point code for each protective point. The point codes determine how each point responds to faults. See *Point Codes* in the *D2000 Series Program Entry Guide* (P/N 35114) for programming details.
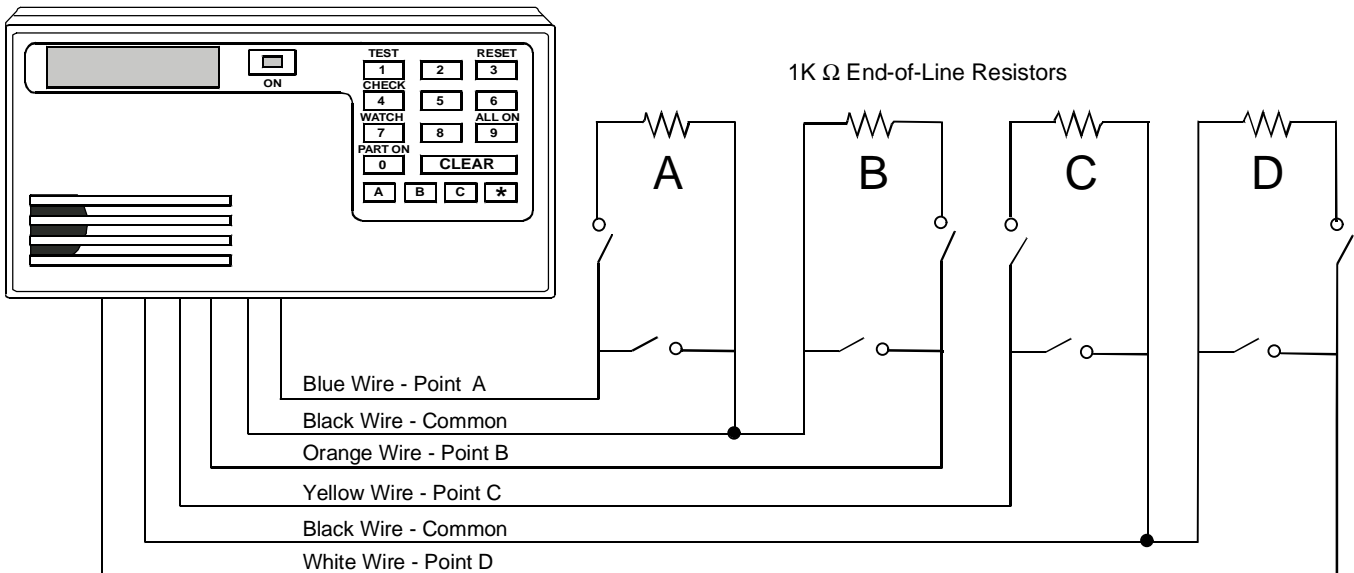
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Figure 2: Wiring the D222 Protective Points

Installing the Keypad

Select a Mounting Location - Do not locate the D222 in areas of extreme cold for example, in an uninsulated building, refrigerated areas, outdoors, or in areas where the temperature can drop below 32°F. Do not mount the keypad in a location exposed to direct sunlight. Direct sunlight makes the display less visible and may also damage the keypad components.

You can mount the D222 on a flat wall, or on the following Radionics accessories:

- D54B Brass Flush Mount Kit
- D54C Chrome Flush Mount Kit
- D55 Command Center Desk Stand
- D56 Command Center Conduit Box

Route the Point Expansion Wire - Route the wire from points of protection to the location where you will mount the keypad. See the panel's installation manual for information about the maximum length of point cables and wire resistance. Route wire runs away from electrical, telephone, and other data wiring.

Wire the Point Connector - The D222 has two sets of color-coded flying leads attached to connector plugs. The point expansion flying leads are colored blue, orange, yellow, white, and black. This connector plugs into the top plug (J2). When wiring point inputs, the two black wires are the point commons, and the blue, orange, yellow, and white wires are the point inputs.

Use solder to splice the connector to the point inputs. Be sure to insulate all exposed splices with tape so that they do not short to one another.

Route Keypad Wire - Route the wire to the keypad location. See the panel's installation manual for information about the maximum length of keypad cables and wire resistance. Route data wire runs away from electrical, telephone, and other data wiring.

Splice Connectors to the Wires - Use solder to splice the connectors to the wires. The three-wire cable connects to the panel. The six-wire cable connects to the expanded points. Be sure to insulate all exposed splices with tape so that they do not short to one another.

Remove the Front Cover - Remove the front cover from the enclosure base. Use a small flat-bladed screwdriver to gently push the two bottom cover tabs back. As you push back the tabs, lift the bottom of the cover away from the base, then remove the cover.

Connect the Keypad - Plug the data wire into the serial data wiring connector (J1) in the keypad. Plug the point expansion wire into J2 (see Figure 3).

Mount the Enclosure Base - While pushing any excess keypad wire back into the wall or gang box, place the enclosure base on the wall in the desired location. Use a center punch or a pencil to mark the locations of the mounting holes.

You can mount the enclosure base to a recessed single-gang wall box if desired. Secure the enclosure base to the wall or gang box.

Connect the Keypad Wire to the Panel - The maximum length for all wires connected to the panel's data termimal combined is 500 feet. Route data wire runs away from electrical, telephone, and other data wiring.

Figure 3 shows a typical installation using one D222 Keypad. Use parallel connections for additional keypads or expanders. For more information refer to the *D2212 Installation Manual* (74-07361-000).

Assigning the D222 to a Device Address - Before you begin, be sure that the panel's standby pin is locked down to prevent missing point reports being sent. To set the D222 keypad's address, follow these steps:

1. Turn DIP switch #1 to the **ON** position.

2. The display shows:

   SET ADDRESS MODE

   ADDRESS IS ##

3. Enter the address (1 to 8) with a leading zero (for example, 01 for address 1).

   Important! Use only address numbers 1 to 8.

4. Set dip switch #1 back to the **OFF** position.

   If you are going to use a D222 keypad, at least one D222 must be set to address 1.

The panel's program affects the keypad's address: Choose the keypad address in the panel's program. Select **Text Keypad** or **Text Keypad with Points** for the device type of the chosen address. For more information, see *Address Configuration* in the *D2000 Series Program Entry Guide* (P/N 35114).

If a D222 at address 1 is to be replaced, and the system has custom text, you must do the following in order to preserve the custom text:

1. Using a D5200, copy the panel's program.

2. Attach a new D222 at address 1.

3. Reprogram the panel using the copied program.

Keypad Sounder Disable - To disable the sounder, turn DIP Switch #3 **OFF** (see Figure 4).

Fire Points need the trouble sounder: Disabling the sounder with switch #3 stops the D222 from annunciating fire point trouble. If fire points are installed as part of this system, contact the local AHJ to verify code requirements for fire trouble sounders before disabling the D222 sounder.

Enable sounder for UL systems: For UL installations, the sounder on at least one keypad in the system must remain connected.

Adjust the D222 Display - With the D222 mounted to the desired surface, view the display from the approximate angle for the user. If the display requires adjustment for clarity, use the Display Adjustment Potentiometer (R50) in the lower right-hand corner of the D222 circuit board.

Replace the Front Cover - Align the top two tabs of the enclosure cover with the top two tab slots in the enclosure base. Slide the top of the cover into the base. Gently push the bottom of the cover down on the base until it snaps into place.

Adjust the Keys - Push each key on the keypad towards the top of the enclosure to ensure proper mating with the openings in the top cover.
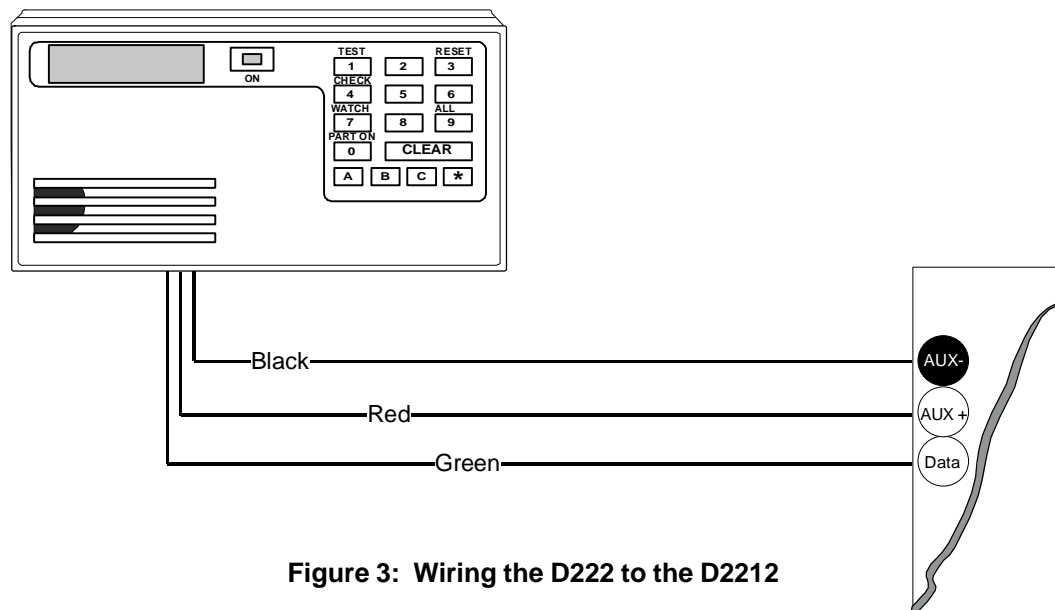

Figure 3: Wiring the D222 to the D2212

D222 Keypad Specifications

Operating Voltage:

Nominal 12 VDC supplied by the control/communicator auxiliary power supply.

Current Requirements:

Maximum:	140mA	
Normal:	85mA	LCD on.
Standby:	30mA	No keypad backlighting.

Enclosure Dimensions:

Height 4.56",   Length 8.15",   Depth .816"

Color:

Off white

Operating Temperature:

0 to 50 °C (32 to 122 °F)

Non-condensing Relative Humidity:

5 to 85% at 30 °C (86 °F)

Command Center Wiring:

Three-wire cable supplies data-in, common, and positive voltage.

Point Wiring:

Four two-wire loops. Each loop uses a 1 K Ω end-of-line resistor for point supervision. Compatible with sensing devices having normally open dry contact output (wired in parallel) and/or normally closed dry contact output (wired in series).

Display:

ON Indicator: Lights when system is All or Part On.

LCD Display: Two-line 16-character, Liquid Crystal Display (LCD). The user can select to have the display backlit constantly, or when a keypad digit is pressed.

D222 Switch Settings

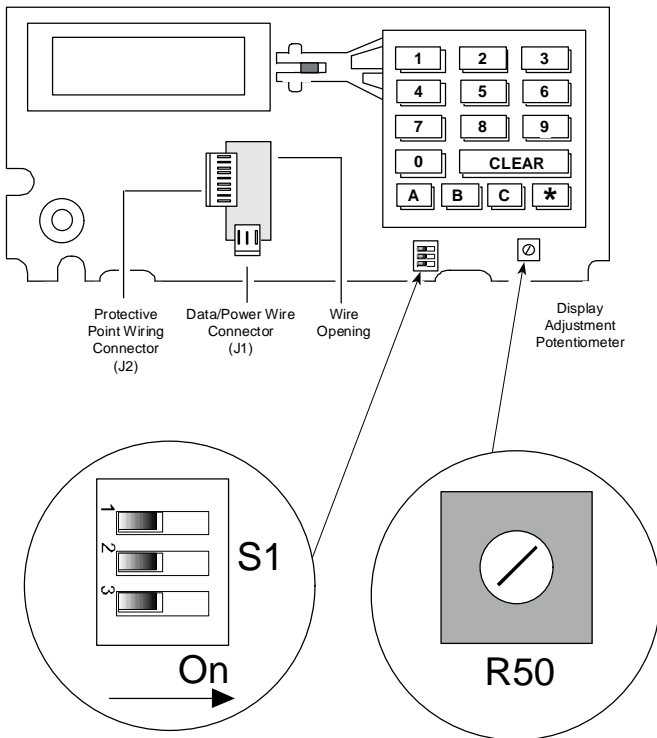| Switch #	ON	OFF
1	Set Address	Normal Operation
2	Not Used	Not Used
3	Enable Sounder	Disable Sounder

Figure 4: Inside the D222