



ADEMCO 6164/6164US KEYPAD

With Built-in 4-Zone Expander and Relay

Installation and Setup Guide

GENERAL INFORMATION

The 6164/6164US is a general-purpose keypad that provides four 2K EOLR zones and one form-C relay. The general features of the 6164/6164US can be used with any ADEMCO control panel that supports the 6160 keypad. To utilize zone/relay features of the 6164/6164US, the control panel must be capable of supporting the 4229 ECP expander module. Depending on the keypad option selected, the zones can either be configured as EOLR or double-balanced supervised zones. Check the control panel's Installation Guide for the supervision type(s) supported.



The internal relay is not intended for UL installations.

KEYPAD DISPLAYS AND LEDS

The 6164/6164US has the following features:

- Large backlit, 2-line, 32-character alphanumeric LCD.
- 16 large telephone-style backlit keys located behind a decorative door that swings down to provide access to the keys.

The following table shows the LEDs and their functions:

LED	Function
ARMED (Red)	Lights when the system is armed in any mode.
READY (Green)	Lights when the system is ready to be armed.
CPU (Yellow)*	Lights when CPU failure is detected.

* 6164 Keypad only

FUNCTION KEYS AND LABELS

The A, B, C and D keys are designed for use as "panic" keys (e.g., fire, police, personal emergency, etc.) or for single button arming functions as programmed in the control panel.



The A, B, C, and D keys must be pressed and held down for at least two seconds to activate their programmed panic functions.

A set of adhesive labels with typical panic symbols is provided. Place the appropriate label in the indented area on each key, so that the user can easily identify each key's function.

BUILT-IN SPEAKER

The built-in speaker has the following functions:

- Produces warning sounds during alarm and trouble conditions, and also during entry/exit delay periods.
- Provides acknowledgment tones when keys are pressed, and confirmation tones for successful command entries.

ZONES-INPUTS

The four 2K EOLR zones have 300mS response. A local programming option allows selecting conventional EOLR type or double-balanced type for all zones as a group. Each double-balanced zone type supports up to 10 sensors. Four 2K EOL resistors are furnished, as well as four additional 2K resistors for use when double-balanced zones are used.



Do not use the zones on this keypad for commercial fire applications.

RELAY OUTPUTS

One Form-C relay provides contacts rated 1A, 24V AC/DC.

CASE TAMPER

An on-board tamper switch detects removal of case front from case back, and removal of the case back from its mounting surface. A local programming option allows you to disable the detection of a tamper condition.

For tamper protection, an additional mounting screw must be used in the case back, as shown in Figure 2.

When the 6164/6164US keypad is used in the addressable mode, it will report a tamper condition to the control panel as a 4229 case tamper when the zone/relay feature is enabled, or as a general keypad tamper when the zone/relay feature is disabled.

On newer control panels (e.g., Vista-20P and Vista-12/48 series) the tamper will be reported using the ECP address assigned to the Zone Expander. Note that the tamper feature will function only if the zone expander has been enabled; Zone 96 can then be used as a keypad panic.



The 6164/6164US will not support general keypad tamper reporting when set to the non-addressable mode (keypad address 31). In the non-addressable mode, tamper will be reported as if it were a "C" function key/zone 96. Program this zone as a Type 5 Tamper Zone Type for proper reporting. Also, not all control panels support general keypad tamper reporting. Check with the control panel's instructions. If the tamper is enabled, Zone 96 cannot be used as a keypad panic.

MOUNTING AND WIRING

The 6164/6164US has terminal blocks for connection to keypad power and data wires, sensors/contacts zone wires, and relay contact wires. Removing the keypad's case back accesses these terminal blocks.

The 6164/6164US can be surface mounted directly to walls, or to a single- or double-gang U.S. style electrical box. Follow these steps to mount and wire the keypad:

1. Push the two case release snaps at the bottom of the keypad with the blade of a medium screwdriver (this will push in the release snap), then pull that side of the case back away. Insert the screwdriver in the side of the keypad (between the front and back case) and gently twist to release the side locking tab. Repeat for the other side. Refer to Figure 1 for location of the case back release snaps and locking tabs.

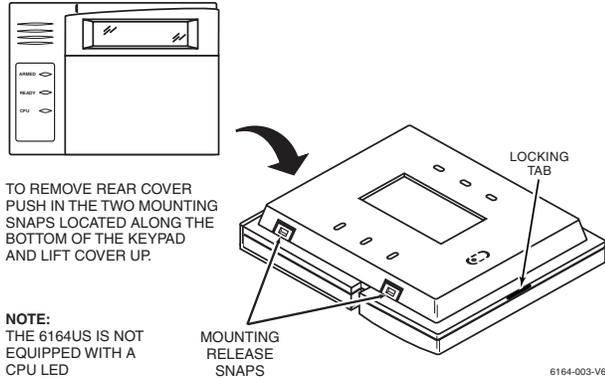


Figure 1. Removing the Case Back

2. Mount the case back to a wall or to an electrical box using the 25mm-long self-tapping screws supplied (anchors for drywall are not supplied).

 If you wish to tamper-protect the keypad for removal from the wall, use an additional mounting screw in the tamper hole in the case back (see Figure 2 for location).

3. Pass the four power/data wires, wires for up to four zones, and two or three relay contact wires through the opening in the case back. If surface wiring is being used, wiring may be routed through the top or the bottom left-side breakout in the case back. See Figure 2. The breakouts must be punched out using a screwdriver before mounting the case back. If desired, wires may be strain-relieved to the wire tie point on the inside of the case back with a tie wrap (not supplied).

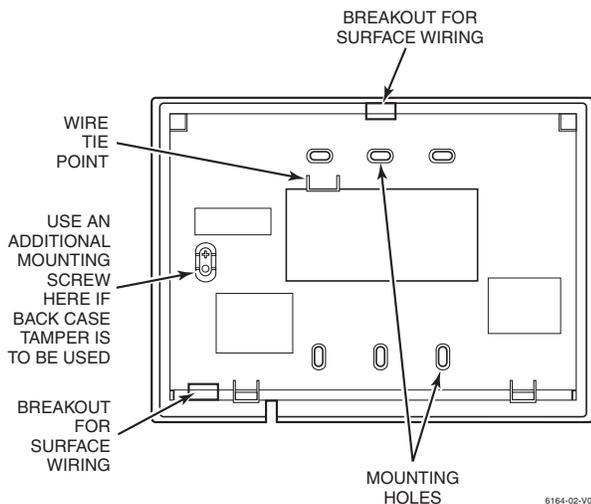


Figure 2. Wiring Entry (Case Back)

4. Connect the power/data wires to the four screw terminals on the keypad's PC board marked as shown in Figure 3 and as follows:

Wiring Table			
Keypad		Control Panel	Color
▲ G	Data Out	Data In	Green
-	GND	- Aux Pwr	Black
+	+12VDC	+ Aux Pwr	Red
▼ Y	Data In	Data Out	Yellow

5. Connect the wires for the four 2K EOLR zones to the six screw terminals on keypad PC board as shown in Figure 3 and as follows:

Keypad	Wired Zone
Z1	+ Zone 1
↓	- Zone 1 and Zone 2 return
Z2	+ Zone 2
.....	
Z3	+ Zone 3
↓	- Zone 3 and Zone 4 return
Z4	+ Zone 4

Note: There is a common ground for zones 1 and 2, and one for zones 3 and 4.

6. Connect the zone contact's wires (door strike, etc.) to the three relay terminals marked NC, NO, and C as shown in Figure 3 and as follows:

Keypad	Relay
NO	N.O. contact
C	Pole contact (common)
NC	N.C. contact
↓	-

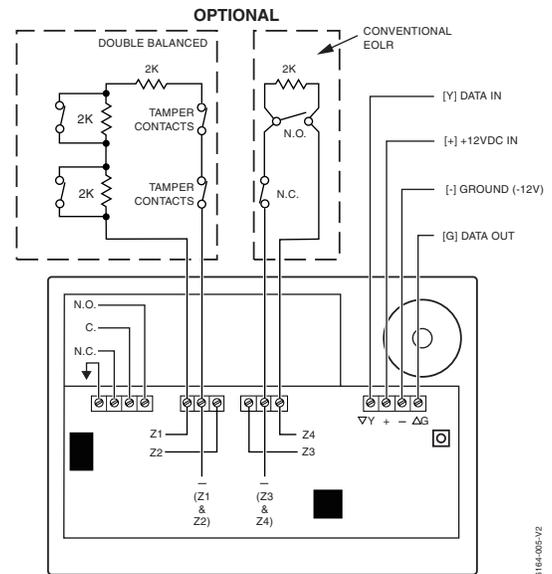


Figure 3. Wiring Details

7. Reattach the keypad to the mounted case back. Attach the top of the keypad first, and then press the bottom section down until it snaps into place securely.
8. Peel off the protective film on the LED and keypad labels.

SETTING THE KEYPAD OPTIONS

The 6164/6164US allows eight items to be programmed via local keypad programming mode:

- Keypad address
- Zone expander enable
- Zone expander address
- Zone type
- Tamper enable
- Display option
- Sound option
- Language option

These settings are maintained even when keypad power is removed.



The keypad options may only be programmed within 60 seconds of applying power. After that, they are not accessible for editing or viewing. The Address can still be viewed by holding down the 1 and 3 keys for approximately three (3) seconds. To re-enter programming mode, remove and reapply power and proceed as follows:

Perform the following steps to change the keypad options.

1. Enter the keypad's local program mode within 60 seconds of power-up by pressing and holding down the [1] and [3] keys at the same time for 3 seconds. The current keypad address will be displayed with the cursor under the "tens" digit.

```
CONADDRESS = 31
```

2. If the current keypad address setting is acceptable (the default = 31), press the [*] key to advance to the Zone Expander Enable field and go to step 3.

To change the current keypad address, first reset the current address to "00" as follows: press [0] to clear the "tens" digits. The cursor will move to the "ones" digit position. Press [0] again to clear the "ones" digit. The cursor will move back to the "tens" digit position. Now set the desired keypad address as follows:

Enter the proper "tens" digit for the keypad's address. The cursor will move to the "ones" digit. Enter the proper "ones" digit for the keypad's address. Press the [*] key to store the displayed address and to advance to the Zone Expander Enable field.

3. By pressing the [1] key, you can toggle the Zone Expander Enable option (default = OFF).

```
ZONE EXPANDER  
OFF [ ] = ON [ ]
```

- a. To use zone contacts or relay, set the option to ON. Use the [*] key to advance to the next option. The Zone Expander Address field will appear. Go to step 4.
 - b. To use the 6164/6164US as regular keypad, set the option to OFF. Use the [*] key to advance to the next option. The Tamper field will appear. Go to step 6.
4. Set the Expander zone address in the same way as the keypad address.

```
EXPADDRESS = 01
```

Consult the control panel's installation guide to select the correct address (default = 01). Use the [*] key to advance to the Zone Type option.



In order to use the built-in zones and relay, the panel must be programmed in the same way as for a 4229 module.

5. By pressing the [1] key, you can toggle the Zone Type option.

```
ZONETYPE  
EOLR [ ] = DBALAN [ ]
```

Either conventional EOL resistor supervised zones or double-balanced zones (see Fig. 3) may be selected (default = conventional EOLR). Consult the panel's installation guide for proper zone type selection. Use the [*] key to advance to the Tamper option.

6. By pressing the [1] key, you can toggle the Tamper Enable option (default = OFF).

```
TAMPER  
OFF [ ] = ON [ ]
```

Refer to the control panel's installation guide to see if the tamper feature is supported. Use the [*] key to advance to the LCD display option.

7. By pressing either the [1], [2], or [3] keys you can select the LCD display option.

```
DISPLAY  
1 = ON 2 = KEY 3 = DIS
```

- Option 1: The display is always active.
- Option 2: The display and LEDs are blanked until a key is pressed, then displays for 45 seconds after the last key was pressed.
- Option 3: The display and LEDs are blanked 45 seconds after the panel is armed and remains blanked until the panel is disarmed (default = 1).

Use the [*] key to advance to the Sounds option.

8. By pressing the [1] key, you can toggle the Sounds option (default = ALL SOUNDS).

```
SOUNDS  
ALL [ ] = ALARM [ ]
```

- a. To produce all sounds set the option to ALL SOUNDS.
- b. To produce only key click and alarm sounds set the option to ALARM.

Use the [*] key to advance to the Language option.



Use only English as the language for UL installations.

9. For languages other than English enter [*]. For English language press [#]. This will also store the displayed settings and exit from the local programming mode.

```
LANGUAGE?  
* = YES # = NO
```

Press [#] to advance to each of the listed languages. Place the cursor placed to the left of the selected language and press [*] to continue with the selected language prompts.

```
DEU ENG ESP FR  
IT NL  RUS
```

SPECIFICATIONS

Dimensions:

5-3/8"H x 7-3/8"W x 1-1/4"D
(137mm x 187mm x 32mm)

Wiring Terminals:

▲G	Data In to Control Panel
-	- Ground (12 VDC -)
+	+ 12 VDC Power Input
▼Y	Data Out from Control Panel
Z4	+ Wired Zone 4
↓	- Wired Zone 3 and Zone 4
Z3	+ Wired Zone 3
Z2	+ Wired Zone 2
↓	- Wired Zone 1 and Zone 2
Z1	+ Wired Zone 1
NO	Relay N.O. contact
C	Relay Pole contact (common)
NC	Relay N.C. contact
↓	-

LEGEND

↓ = - (Ground/Common)

NOTE: The keypad will display "OPEN CKT" and beep periodically when there is a fault that prevents data from reaching the keypad.

Display:

2 x 16 alphanumeric supertwist LCD, backlit.

Sounder:

Speaker (fire alarm sound is loud, temporal pattern pulsed tone; burglary alarm sound is loud, continuous, dual tone).

Voltage:

12 VDC

Current:

Alarm rating: 190mA (LCD backlight on, sounder on, relay OFF)

Standby rating: 115mA (LCD backlight on, sounder off, relay on); 55mA (LCD backlight off, sounder off, relay off)

The control panel determines whether LCD backlighting is on or off. When determining the capacity of the control panel's backup battery, use the following chart:

If Backlighting is . . .	Then . . .
On steadily	Use the 115 mA current rating.
Off when keypad is inactive	Use the 55mA current rating.

REFER TO THE INSTALLATION INSTRUCTIONS FOR THE CONTROL PANEL WITH WHICH THIS DEVICE IS USED FOR WARRANTY INFORMATION AND FOR LIMITATIONS OF THE ENTIRE ALARM SYSTEM.

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