



# Alliance Arming Station • AL-1111, AL-1116 Installation Instructions

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## Introduction

This is the GE Alliance Arming Station Installation Instructions for models AL-1111 (four-line LCD) and AL-1116 (four-line LCD with Smart Card reader). These units are used with Alliance control panels to control security system alarm and access functions. Features include:

- Beeper.
- Integrated tamper switch.
- Four-line liquid crystal display (LCD).
- Multiple text formats.
- Embedded Smart Card reader (AL-1116 only).
- Access and system status LEDs.
- One open collector output to drive a small relay (an external UL Listed power supply is required for UL installations).
- One input for an egress function.
- Plastic hinged cover.

The unit may be used up to 5,000 ft. (1.5 km) from the control panel or 4 door/elevator controller DGP.

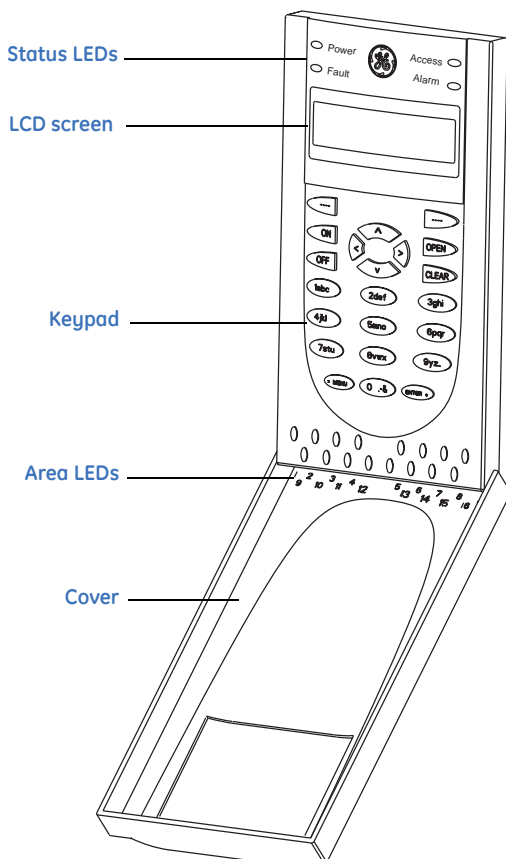
**Note:** An external UL Listed power supply is required for UL installations.

## Installation

To install the unit, do the following:

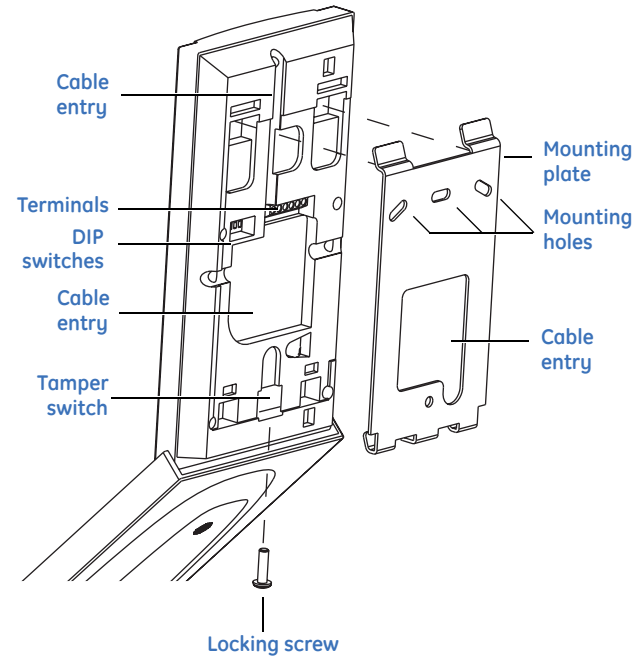
1. The cover is hinged at the bottom. To open, grasp the cover at the sides or the top and pull gently. The cover will swing down on its pins (*Figure 1*). To remove the cover, gently pry one of the pins away from the body of the unit and pull.

Figure 1. Unit front



2. The metal mounting plate at the back of the unit is held by a locking screw (*Figure 2*). To remove the mounting plate, loosen the screw by at least 0.3 in. (8 mm), slide the mounting plate down, and then pull the bottom of the mounting plate away from the body of the unit.

Figure 2. Unit back and mounting plate



3. Attach the mounting plate to the mounting surface using the three screws provided.
  4. Set the RAS address using DIP switches 1 through 4 (see [DIP switch settings](#) on page 2).
  5. Set the system bus termination switch using DIP switch 5, if required.
  6. Wire the COMMS system bus cabling (see [Wiring](#) on page 2).
- Note:** All power should be turned off to the control panel before wiring the unit.
7. Insert plastic cable entry blanking plugs (provided) into the back of the unit to blank any unused cable entry channels (*Figure 2*).
  8. Place the unit onto the mounting plate and move the unit down about 0.3 in. (8 mm) to lock in place.
  9. Tighten the locking screw at the base of the unit until firm. This will also ensure that the tamper switch (*Figure 2*) is properly secured. Do not overtighten the screw.

## Tamper switch

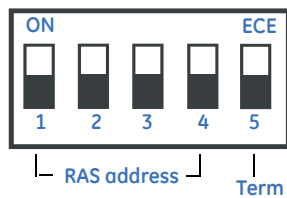
The back tamper switch (*Figure 2* on page 1) must be secured to work correctly. Make sure that the tamper switch remains depressed when the unit is mounted. If the unit is tampered with, the tamper switch should spring open.

In operation, the LCD screen will show RAS **tamper** when not sealed.

## DIP switch settings

Use the DIP switches located on the back of the unit (*Figure 2* on page 1) to set the RAS address and the system bus termination condition (*Figure 3*).

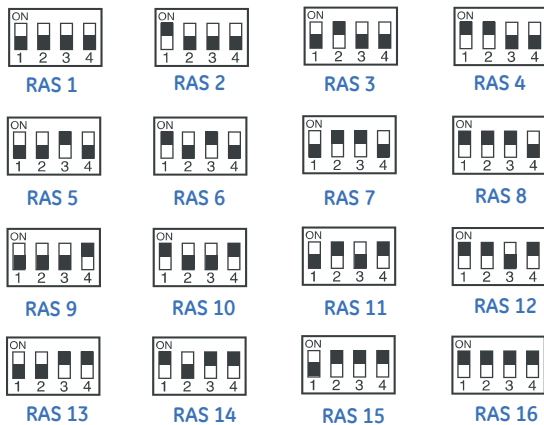
Figure 3. DIP switches



## RAS address switches

Use switches 1 to 4 to set the RAS address (as well as the reader address for the AL-1116). *Figure 4* shows the DIP switch settings for the system RAS addresses. Switch toggles are indicated as black. For example, RAS 1 is Off, Off, Off, Off.

Figure 4. RAS addresses



## Term switch

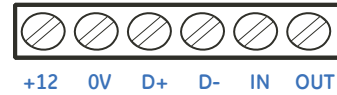
Use switch 5 (*Figure 3*) to set the system bus termination to *ON*, if needed.

There must be no more than two Term switches or links set to *ON* for any system bus. Refer to the control panel installation manual for details about the Term switches or links.

## Wiring

Use the terminal block (*Figure 5*) on the back of the unit to wire the COMMS system bus connection.

Figure 5. Terminal block



## System bus connection (D+ and D-)

Connect the unit to the Alliance panel via the RS-485 system bus. You can connect the unit up to 5,000 ft. (1.5 km) from the control panel or 4 door/elevator controller DGP. We recommend you use a Beldon 8723 twisted-pair, shielded data cable.

The shield of any system bus cable must be connected to system ground at one end only. This unit does not provide an Earth connection for this purpose. If you daisy-chain the system bus to the unit, ensure that the shield of the cable is jointed to provide continuity of the data cable shield.

**D+**. Data positive connection of the system bus.

**D-**. Data negative connection of the system bus.

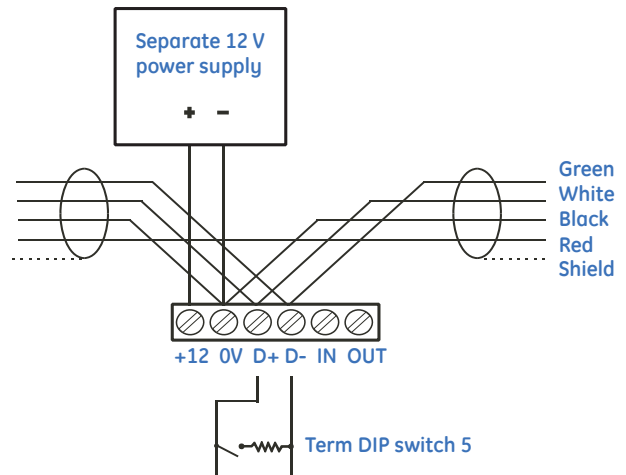
## Power supply (+12 and 0V)

You can power the unit by the control panel or by a separate power supply. If you use the control panel's + and - power, the distance between the unit and the control panel must not exceed 328 ft. (100 m).

To power the unit by the AUX PWR from a DGP, or by an auxiliary power source, do the following:

1. Connect the + of the local power supply to the +12 terminal of the unit (*Figure 6*). Do not connect the + power of the system bus to the unit.
2. Connect the - of the local power supply to the 0V terminal of the unit and to the - power of the system bus.
3. For optimal performance, adjust the power supply to 13.8 VDC.

Figure 6. Separate power supply connections



## Egress control and open connector (IN and OUT)

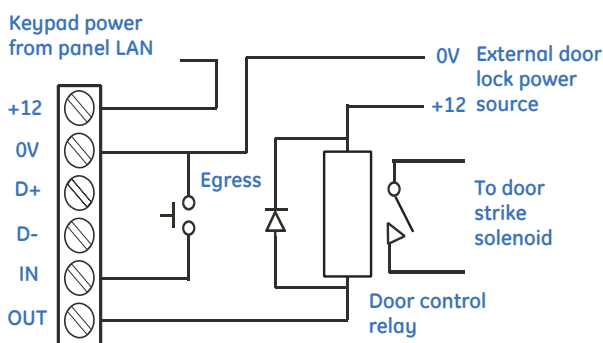
You can optionally use the IN and OUT terminals for egress control and door relay operation.

**IN.** An egress button (normally open, momentary push-button switch) can be connected across the IN and 0V terminals (*Figure 7*). When pressed, the button controls the request-to-exit function to the panel.

**Out.** Open collector output must be assigned with a number according to the output controller selected. Use the first output control assigned to the unit. Refer to the control panel programming manual for details.

**Note:** An external UL Listed power supply is required for UL installations.

Figure 7. Optional IN and OUT terminals



## LED indications

The unit provides both system status and area LEDs.

### Status LEDs

The unit has four status LEDs located above the LCD screen (*Figure 1* on page 1) that indicate that following:

**Power (green LED).** The green LED illuminates when the control panel is powered by the AC supply.

**Fault (yellow LED).** The yellow LED illuminates to indicate detection of a system fault.

**Access (blue LED).** The blue LED flashes when access to an area assigned to the unit is granted. It also flashes once when a card is badged at the AL-1116 (subject to valid card flashing programming).

**Alarm (red LED).** The red LED illuminates when there is a system tamper or an area assigned to the unit is in alarm state. To identify the area, view the 16 area LEDs hidden by the cover (*Figure 1* on page 1). See [Area LEDs](#).

### Area LEDs

When the unit cover is opened or removed, 16 LEDs are visible below the keypad (*Figure 1* on page 1). Each LED represents an area and indicates the following:

- Red LED illuminates when its corresponding area is armed.
- Red LED flashes when a fault is detected in its corresponding area.
- Green LED illuminates when the corresponding area is disarmed and ready to arm.
- No illumination indicates the corresponding area is disarmed but not ready to arm.

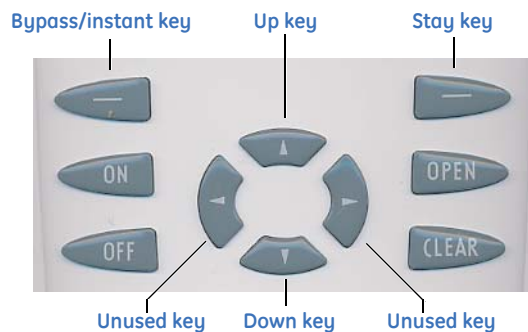
## Operating features

The unit includes the following features:

**Keyboard backlight and night light.** By default the keyboard backlight is on (bright) for approximately 4.15 minutes following a key press. The night light by default is on (dim). To change these options, see [Menu options](#) on page 4.

**LCD contrast.** To adjust the LCD contrast, press and hold the **Menu** key (*Figure 1* on page 1) while you press the **Up** or **Down** keys (*Figure 8*). The default setting is 12.

Figure 8. Keys



**Bypass/instant key.** To bypass active zones when you arm the system, press the **Bypass/instant** key (*Figure 8*). You can also use this key for instant arming. To use instant arming, enter the user PIN and press the **Bypass/instant** key.

**Stay key.** Use the **Stay** key (*Figure 8*) when you are arming the system to autobypass the interior zones and arm all the perimeter zones for access.

**LCD backlight.** The LCD backlight illuminates for 30 seconds following a key press.

**Beeper tone.** To adjust the beeper tone, press and hold the **Clear** key (*Figure 1* on page 1) while you press the **Up** or **Down** key (*Figure 8*). The default setting is 16.

**LCD text format.** The 4 line by 16 character LCD can display text in the following formats:

- Format 1 (default) wraps text using hyphens when a word is broken onto the next line.
- Format 2 wraps text without hyphens when a word is broken onto the next line.
- Format 3 wraps text to the next line without breaking words.

To change the format, press and hold the **0** key while you press the **Up** or **Down** key.

**Card reader (AL-1116 only).** The AL-1116 is fitted with a Smart Card reader that uses the address of the unit to communicate with the panel and so does not need its own system bus address. The reader is located behind the keypad with the number 2 key being the approximate center (*Figure 1* on page 1). The sensitivity of the reader depends on the mounting environment (large metal surface will reduce the reader's sensitivity).

**Power up.** Upon initial power-up, the beeper will sound two beeps indicating that the internal nonvolatile memory is okay. All of the area LEDs may illuminate, indicating that the system is armed. All areas must be disarmed in order to enable access to the installer programming menu options.

**Text scrolling speed.** You can change the text scrolling speed (for all LCD RAS in the system). Refer to the Alliance programming manual for details.

## Programming

The AL-1116 is fitted with a Smart card reader. You can use an LCD RAS on the system data bus or a reader configuration card to configure (change from the default settings) smart card readers. The method you use depends on the reader's mode setting in menu option 7, Security Mode. The modes are:

**Unsecured mode (default setting).** The reader is ready for use with unprogrammed or blank smart cards in IUM-equipped systems. You may use either an LCD RAS or a reader configuration card to configure the reader, if required.

**Secured mode.** You must configure the reader via a reader configuration card before it can be used. The reader will recognize only programmed smart cards, in either IUM or non-IUM systems.

If used, the reader configuration card is programmed using Alliance management software in conjunction with the AL-1623 Smart Card Programmer.

### Main menu

The programming menu is structured in two sections:

- Menus 1 to 6 are common to both AL-1111 and AL-1116 models.
- Menus 7 to 12 apply only to the AL-1116 model.

To access the main menu, do the following:

1. With all areas disarmed, press **Menu, installer code, Enter**.
2. To access the installer programming menu, press **19, Enter, Menu, 28, Enter**.
3. To access the RAS menu, press **2, Enter**.
4. Enter the *RAS address* and press **Enter**.

You are now in the RAS main menu and the text display should be similar to the following:

```
GE Security, RAS111X, Vxx
0-Exit, Menu:
```

In the sample, *111X* is the product name and *Vxx* is the firmware revision number.

### Navigation

The navigation sequence varies depending on where you are in the menu. Navigate the main menu in the following manner:

- Press **Enter** to scroll forward and **Menu** to scroll backward through the menu options.
- Each menu option has an associated option number. To select a menu option and open its submenu, enter the option number and press **Enter**.
- Press **0, Enter** to exit the RAS main menu.

Submenus typically offer a choice between a default setting and alternative settings. Navigate the submenus in the following manner:

- Press **Enter** to accept the currently displayed setting and to return to the main menu.
- Press **Menu** to scroll to an alternative setting.

### Menu options

The RAS menu provides numbered options. Options 7 to 12 apply only to the AL-1116 Smart Card reader RAS.

#### 1. Access LED

Use this option to enable (default) or disable the blue access LED.

#### 2. Night light

A dimly lit keypad backlight provides a night light to easily locate the keypad in dark locations. Use this option to enable (default) or disable the night light.

#### 3. Keypad backlight

The keypad backlight turns on bright for night time illumination of the key labels. Use this option to enable (default) or disable the keypad backlight.

#### 4. Egress control

The unit is fitted with an egress (exit) control port (IN) on the wiring connector. When connected to a simple push button (*Figure 7* on page 3), the OUT (open) collector terminal may be used to control a door relay.

Choose one of the following settings:

**Egress only (default).** This setting requires you to connect a simple push button to the IN terminal. A press of the button will release the door lock relay. Used for a quick exit from an area.

**Egress disabled.** When the IN terminal is not used, we recommend that you use the egress disable setting.

#### 5. Reserved

Menu 5 is reserved for future development.

#### 6. Factory defaults

Use this option to return all settings to factory defaults (if applicable) shown in *Table 1*.

Table 1. Factory defaults

Menu option	Default setting
1. Access LED	Enabled
2. Night light	Enabled
3. Keypad backlight	Enabled
4. Egress control	Egress only
7. Security mode	Secured mode
8. Valid card flash	Enabled
9. Protocol options	Wiegand format
10. Card beeps	Enabled
11. Option card	Enabled

#### 7. Security mode

Use this option to select the type of user card the AL-1116 reader will recognize. The reader will recognize configuration and default cards in both mode settings.

**Secured mode.** Only cards programmed on AL-1623 programmers will be recognized in this mode. The 4-byte security password is used.

**Unsecured mode.** The reader will recognize blank or unprogrammed cards only, by using the card's unique serial number. The 4-byte security password is not used. Unsecured mode (default) requires an expanded memory system.

#### 8. Valid card flash

Use this option to enable (default) or disable the blue LED flash when a valid card is badged at the AL-1116 reader.

## 9. Protocol options

Use this option to select the method the AL-1116 reader sends data to the panel.

**Wiegand.** Smart Card data is transmitted in the Wiegand protocol (default). When user cards are programmed, the AL-1623 programmer sets the number of bits (26 or 27).

**Magnetic stripe.** The reader sends data to the panel in a 32-bit magnetic stripe card format.

## 10. Card beep

Use this option to enable (default) or disable the beep sounded when a card is badged at the reader.

## 11. Option card

Use this option to enable (default) or disable the use of reader configuration cards at the AL-1116 reader. If you wish to prevent modification of the reader setup by configuration card, you should disable this option.

## 12. Last card

Use this option to display the number of the last card badged at the AL-1116 reader. The format shows the facility code and the ID number.

## Offline mode

If the unit has power available, but loses communication with the panel, the unit will go into offline mode. In this mode, all LEDs will flash at the slow rate and the LCD will display `System Fault`. This condition may be caused by the following:

- The unit is set to an address that is not polled by the panel or 4 door/elevator controller DGP.
- The D+ or D- wire is disconnected.

## FCC compliance (AL-1116 only)

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC ID: CGGATS111X

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet or a circuit different than that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Specifications

Supply voltage	9 to 14 VDC
Maximum operating current	270 to 300 mA
Normal operating current	
AL-1111	26 mA at 13.8 VDC
AL-1116	35 mA at 13.8 VDC
Dimension with cover (W x H x D)	3.6 x 6.5 x 1.0 in. (92 x 165 x 25 mm)
Operating temperature	32 to 122°F (0 to 50°C)
Maximum humidity	95% noncondensing
Listings	UL 264, the Standard for Access Control System units UL 365, the Standard for Police Station Connected Burglar Alarm Units and Systems UL 609, the Standard for Local Burglar Alarm Units and System UL 1610, the Standard for Central Station Burglar/Alarm Units UL 1635, the Standard for Digital Alarm Communicator System Units

### Technical support

**Toll-free:** 888.GESECURity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada).  
Outside the toll-free area: Contact your local dealer.