Alliance

AL-111X Arming Station
Installation and Programming Instructions

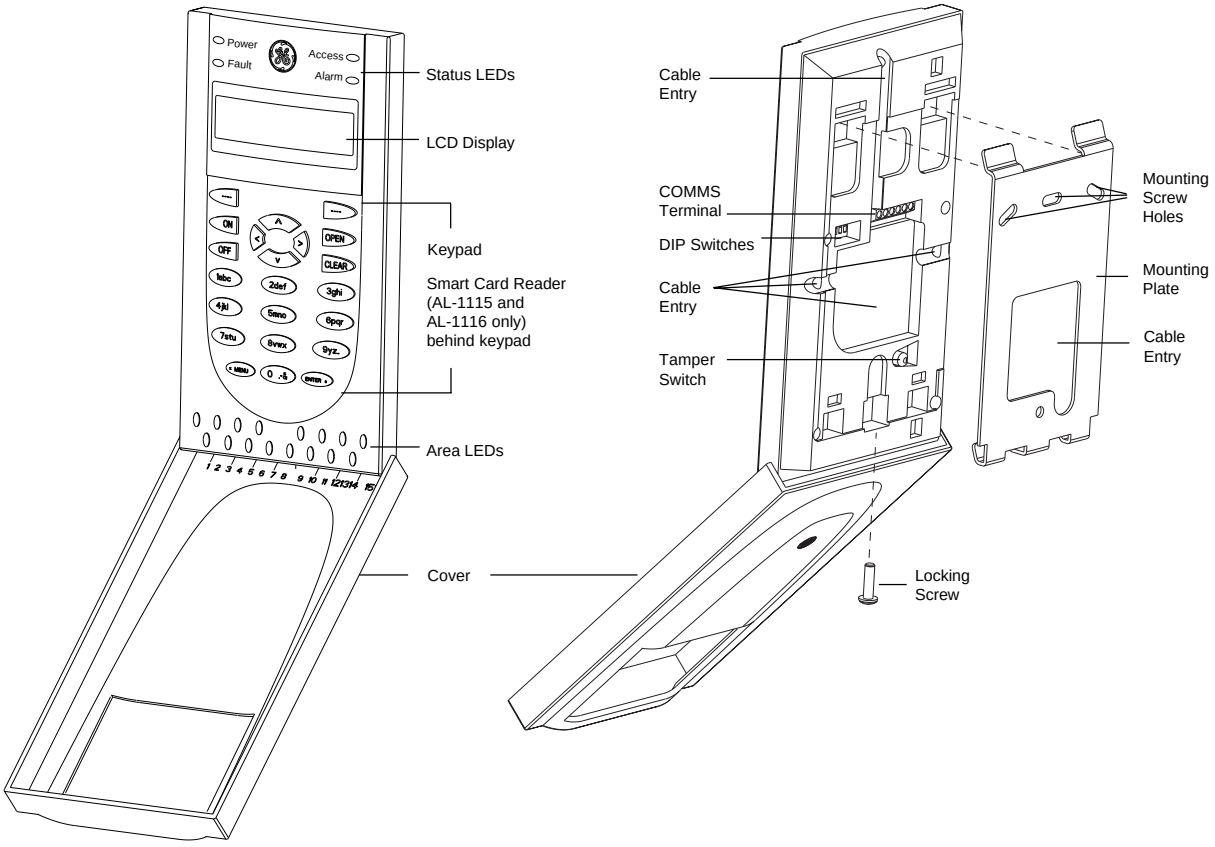


Figure 1.

Product Summary

Models:

AL-1110 - two-line LCD

AL-1111 - four-line LCD

AL-1115 - two-line LCD with Smart Card reader

AL-1116 - four-line LCD with Smart Card reader

Used with Alliance control panels, AL-111X Series RAS are used for controlling security system alarm and access functions. Product features include:

- Beeper
- Integrated tamper switch
- Two- or four-line Liquid Crystal Display (LCD)
- Multiple text formats for four-line LCD models (AL-1111 and AL-1116)
- Embedded Smart Card Reader (AL-1115 and AL-1116)
- Access and system status Light Emitting Diodes (LED)
- The RAS may be used up to 5,000 feet (1.5 km) from the control panel or four-door controller DGP.
- One open collector output is provided to drive a small relay, LED, etc. One input is provided for an egress function.
- Plastic hinged cover

Removing the Cover and Mounting Plate

The RAS 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 (see Figure 1). The cover may be fully removed by gently prizing one of the pins away from the body of the RAS and pulling.

The metal mounting plate at the back is held by a locking screw (see Figure 1). To remove the mounting plate, loosen the screw by at least 8mm (0.315 in.), slide the mounting plate down, and then pull the bottom of the mounting plate away from the body of the RAS.

Mounting the RAS

1. Attach the mounting plate to the mounting surface using the three screws provided.
2. Ensure that the back tamper switch (see Figure 1) can rest on a flat surface flush with the back of the mounting plate (avoid rough or non-flat surfaces).
3. If rear cable entry is used (through the mounting plate), cut a hole in the mounting surface for cable access.
4. Set the RAS address using DIP switches 1 through 4 (see *DIP Switch Settings*).
5. Set the COMMS (System BUS) termination switch using DIP switch 5, if required.
6. Terminate the COMMS (System BUS) cabling.

   Note *All power should be turned off to the control panel before wiring the RAS.*
7. Insert plastic cable entry blanking plugs (provided) into the back of the RAS to blank any unused cable entry channels (see Figure 1).
8. Place the RAS onto the mounting plate and lock in place by moving the unit down by about 0.3 inches (8mm).
9. Tighten the locking screw at the base of the RAS till firm. Do not over-tighten.

Tamper Switch

The back tamper switch (see Figure 1) must be sealed for the system to work correctly. Make sure that the tamper switch rests on a surface so that it remains depressed when the RAS is mounted. If the unit is tampered with the tamper switch should spring open.

In operation, the LCD display will show “RAS Tamper” when not sealed.

DIP Switch Settings

DIP switches are located on the back of the RAS (see Figure 1) and are used for setting the RAS address and the System BUS termination (TERM) condition.

RAS Address Switches

Use switches 1 to 4 to set the RAS address (as well as the reader address for AL-1115 and AL-1116). See Figure 3.

TERM Switch

Use switch 5 (see Figure 2) to set the TERM (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 guide for details about the use of TERM switches or links.

All switches shown in the OFF position

Figure 2. DIP Switches

Switch toggles are indicated as black.
Example: RAS 1 = Off, Off, Off, Off

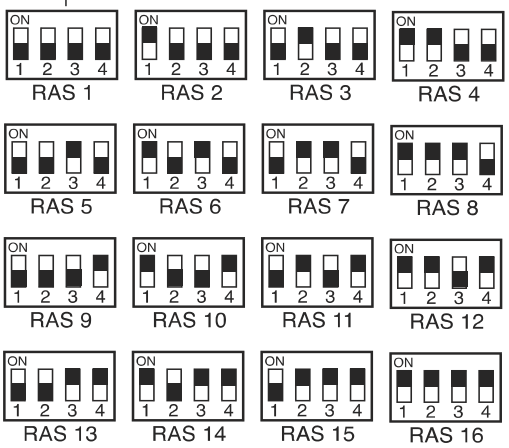


Figure 3. RAS Address DIP Switch Settings

Connections

A terminal block on the back of the RAS (see Figure 1) is used for the COMMS (System BUS) connection.

System BUS Connection (D+ and D-)

The RAS is connected to the Alliance panel via the RS-485 System BUS, up to 5,000 feet (1.5 km) from the control panel or the four-door controller DGP. It is recommended to use a 2-pair twisted, shielded data cable (Beldon 8723).

The shield of any System BUS cable must be connected to system ground at one end only. The AL-111X RAS is not provided with an Earth connection for this purpose. If the System BUS is "daisy-chained" to the RAS, ensure that the shield of the cable is jointed to provide continuity of data cable shield.

- D+ is the data positive connection of the System BUS.
- D- is the data negative connection of the System BUS.

Power Supply (+12 and 0V)

Powered by the control panel

The RAS can be powered using the System BUS "+" and "-" power from the control panel, if the distance between the RAS and the control panel does not exceed 328 feet (100 m).

Powered by separate power supply

The RAS can be powered by AUX PWR from a DGP, or by an auxiliary power supply.

When using an auxiliary power supply:

- Connect the "+" of the local power supply to the "+12" terminal of the RAS. Do not connect the "+" power of the System BUS to the RAS.
- Connect the "-" of the local power supply to the "0V" terminal of the RAS and to the "-" power of the System BUS.
- For optimal performance, adjust the power supply to 13.8 VDC.

Egress Contol and Open Collector (IN and OUT)

Terminals IN and OUT are optionally used for egress control and door relay operation:

- **IN** - An egress botton (normally open, momentary push-button switch) can be connected across the "IN" and "0V" terminals (see Figure 5). 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 type of control panel. Use the first output control assigned to the RAS. Refer to the control panel programming manual for details.

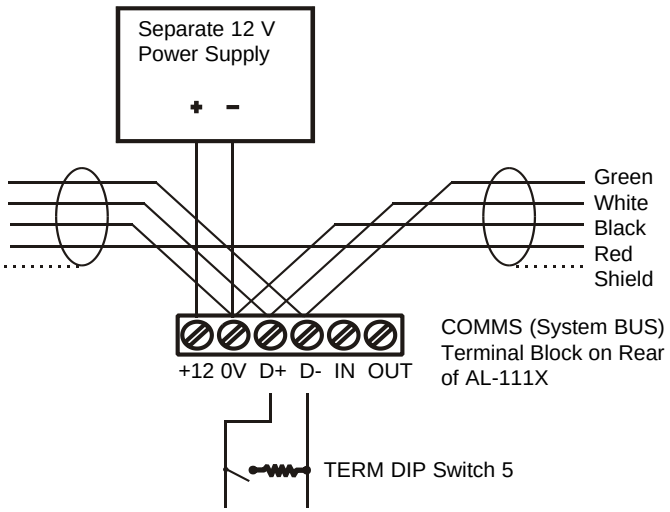


Figure 4. Connections for Powering the RAS from a Separate Power Supply

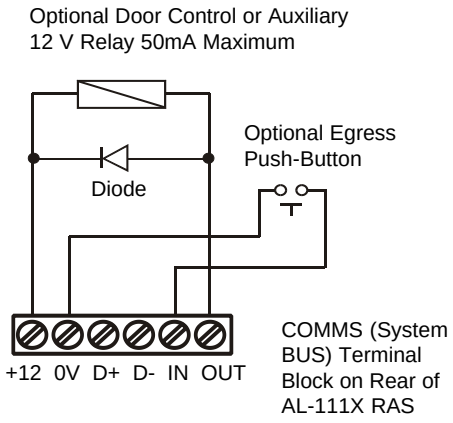


Figure 5. Optional IN and OUT Terminal Application

Status LED Indications

AL-111X RAS have four status LEDs above the LCD panel (see Figure 1):

- **Power** - The **Green** LED illuminates when the control panel is powered by the AC supply.
- **Fault** - The **Yellow** LED illuminates to indicate detection of a system fault.
- **Access** - The **Blue** LED flashes when access to an area assigned to the RAS is granted. It also flashes once when a card is badged at an AL-1115 or AL-1116 (subject to Valid Card Flashing Programming).
- **Alarm** - The **Red** LED illuminates when there is a system tamper or an area assigned to the RAS is in alarm state. The area may be identified by viewing the 16 area LEDs visible when the RAS cover is open or removed.

Area LED Indications

When the RAS cover is opened or removed, 16 red area LEDs are visible at the bottom of the RAS (see Figure 1). Each LED represents an area, and the indications are as follows:

- The LED illuminates when its corresponding area is armed.
- The LED flashes slowly when a fault is detected in its corresponding area.
- The LED flashes quickly when an alarm occurs in its corresponding area.

Operating Features

Keyboard Backlight and Night Light

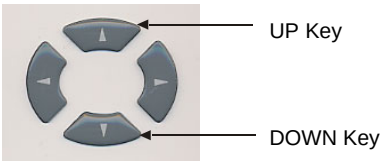
The default keyboard backlight and night light settings are as follows:

- Keyboard backlight on (bright) for approximately 4 1/4 minutes following a key press.
- Night light on (dim).

These functions can be changed from the RAS menu. See *Menu Options*.

LCD Contrast

The LCD contrast may be adjusted by pressing and holding the [*MENU] key while momemtarily pressing the [UP] or [DOWN] keys to change the display contrast. The default setting is 12.



LCD Backlight

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

Beeper Tone

The beeper tone may be adjusted by pressing and holding the [CLEAR] key while momentarily pressing the [UP] or [DOWN] keys to change the beeper tone. The default setting is 16.

LCD Text Format

AL- 1111 and AL-1116 RAS have a 4 line x 16 character LCD and may display text in the following three alternative 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 formats, press and hold the [0] (zero) key while momentarily pressing the [UP] or [DOWN] keys. This option is not available on AL-1110 or AL-1115 RAS with 2 line x 16 character LCD.

Card Reader (AL-1115 and AL-1116 only)

AL-1115 and AL-1116 RAS are fitted with a Smart Card reader which uses the address of the RAS to communicate with the panel and so does not need to have its own System BUS address.

The Smart Card reader is located behind the keypad with the number 2 key being the approximate center (see Figure 1). The sensitivity of the reader is dependent on the environment on which it is mounted (large metal surfaces will reduce the reader's sensitivity).

Power Up

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

Programming

Introduction

The AL-111X Series has a number of options that are programmable at the time of installation to help integrate the keypad into the local environment.

In particular, the AL-1115 and AL-1116 RAS are fitted with a Smart Card reader. If used in the default “secure” mode, the reader **must be configured via a reader configuration card before it can be used**. The reader configuration card must be programmed using the Alliance software management application in conjunction with a TS0870P Smart Card Programmer.

The setting for the Smart Card reader can be changed to “unsecured” via menu option 7-Security Mode, in which case the card’s unique serial number is used. Unsecured mode requires the use of an expanded memory (IUM-equipped) system.

Accessing the RAS Main Menu

The programming menu of the AL-111X Series RAS is structured into two sections:

- Menus 1 to 6 are common to all AL-111X Series RAS.
- Menus 7 to 12 apply only to AL-1115 and AL-1116 RAS (with Smart Card reader).

The AL-111X Series menu system works in the same manner as all other remote units on the System BUS.

1. With all areas disarmed, press [*MENU], [*installer code*], [ENTER#].
2. Press [19], [ENTER#], [*MENU], [28], [ENTER#].
3. Press [2], [ENTER#] to access the RAS menu.
4. Press [*RAS address*], [ENTER#].
5. You are now in the RAS main menu, and the text displays similar to the following:

   GE Security, RAS111x.Vxx

   0-Exit, Menu:_

   (111x is the product name and Vxx is the firmware revision number)

Navigating the RAS Main Menu

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

- Press [ENTER#] to scroll forward through the main menu options. Press [*MENU] to scroll backward through the main menu options.
- Each menu option has an associated option number. To select a menu option and open its sub-menu, press [*option number*], [ENTER#].
- Press [0, -&], to exit the RAS main menu.

Navigating the RAS Sub-Menus

Sub-menus typically offer a choice between two options, a default setting and an alternative setting. Sub-menus are used in the following manner:

- Press [ENTER#] to accept the currently displayed setting and to return to the main menu.
- Press [*MENU] to select the alternative setting.

Menu Option	Description
1 - Access LED	Controls the blue Access LED (enabled by default). The blue Access LED may be disabled if not required.
2 - Night Light	A dimly lit keypad backlight provides the night light to easily locate the keypad in dark locations (enabled by default). The night light may be disabled if not required.
3 - Keypad Backlight	The keypad backlight turns on bright for night-time illumination of the key labels (enabled by default). The keypad backlight may be disabled if not required.
4 - Egress Control	The RAS is fitted with an Egress (Exit) control port (IN) on the wiring connector. When connected to a simple push button (see Egress Control and Open Collector), the OUT (open collector terminal) may be used to control a door relay. There are three options to choose from: • **Egress Only** - This option requires a simple push button to be connected to the IN terminal. A press of the button will release the door lock relay. Used for a quick exit from an area (enabled by default). • **Egress + Arm/Disarm** - This option is used to arm and disarm areas. See the control panel programming manual for details. • **Egress Disabled** - When the IN terminal is not used, it is recommended that it be disabled.
5 - Reserved	Menu 5 is reserved for future development.
6 - Factory Defaults	This option returns all RAS settings to the following factory defaults (as applicable): 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 — Wiegard format 10. Card Beep — Enabled 11. Option Card — Enabled

Note *Menu options 7 through 12 apply only to Smart Card reader (AL-1115 and AL-1116) RAS.*

7 - Security Mode	This option selects the type of user card the AL-1115 and AL-1116 reader will recognize. The reader will recognize configuration and default cards in both modes. The modes are as follows: • **Secured Mode** - Only cards programmed on AL-1632 programmers will be recognized in this mode (default setting). The 4-byte security password is used. • **Unsecured Mode** - The reader will recognize blank or un-programmed cards only, by using the card's unique serial number. The 4-byte security password is not used. Unsecured mode requires the use of an expanded memory system.
8 - Valid Card Flash	This option enables (default setting) and disables the blue LED flash when a valid card is badged at an AL-1115 or AL-1116 reader.
9 - Protocol Options	This option selects the method by which an AL-1115 or AL-1116 reader sends data to the panel. The options are as follows: • **Wiegand** - Smart Card data is transmitted in the Wiegand protocol by default. The AL-1632 programmer sets the number of bits (26- or 27-bit) when user cards are programmed. • **Magnetic Stripe** - The reader sends data to the panel in a 32-bit magnetic stripe card format. • **Tecom Smart Card** - This format is not implemented in the panel and should not be selected.
10 - Card Beep	This option enables the beep sounded when a card is badged at the reader (default setting) and disables the beep.
11 - Option Card	This option enables (default setting) and disables the use of reader configuration (option) cards at the AL-1115 and AL-1116 reader. If an installer wishes to prevent the modification of the reader setup by configuration card, this option should be disabled.
12 - Last Card	This option displays the number of the last card badged at an AL-1115 or AL-1116 reader, in the format: Facility Code, ID Number.

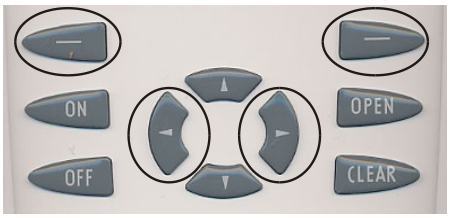
Offline Mode

If the RAS has power available but loses communications with the panel, the RAS 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:

- RAS is set to an address that is not polled by the panel or 4-door controller DGP.
- The D+ or D- wire is dissconnected.

Unused Keys

There are four keys on the keypad reserved for future use. The unused keys are circled in the following illustration.



Text Scrolling Speed

The text scrolling speed may be changed (for all the LCD RAS in the system) in the Alliance Installer Menu, System Options 19.7 (LCD Rotation Display option). Refer to the Alliance programming manual for details.

Troubleshooting

No LED or LCD display:

- Verify the +12 and 0V wire connections on both the RAS and the power supply.
- Verify power output on the DGP or external power supply.

Area and Status LEDs are flashing and the LCD display reads, "-System Fault-":

- Verify the D+ and D- wire connections (they may be reversed or open circuit).
- Verify that the address DIP switches of the RAS are set to the proper address.
- Verity that the control panel or 4-door controller DGP is polling the RAS address.

An AL-1115 or AL-1116 RAS with Smart Card reader does not respond to a Smart Card:

- The RAS may actually be an AL-1110 or AL-1111 type that is not fitted with a Smart Card reader.
- The RAS may not be programmed correctly. See *Programming*.
- The Smart Card may not be programmed (may be blank).

FCC Compliance for AL-1110/AL-1111

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.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance for AL-1115/AL-1116

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.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. 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

Note: 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 communications. 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 from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Specifications

AL-1110 and AL-1111

Supply voltage	9.0 - 14 VDC
Maximum operating current	120mA @ 13.8 VDC
Normal operating current (all areas armed)	26mA @ 13.8 VDC
Dimensions with cover (W x H x D)	3.6" (92 mm) x 6.5" (165 mm) x 1.0" (25 mm)
Operating temperature	32° to 122°F (0° to 50°C)
Humidity	95% non-condensing

AL-1115 and AL-1116 (with Smart Card reader)

Supply voltage	9.0 - 14 VDC
Maximum operating current	165mA @ 13.8 VDC
Normal operating current (all areas armed)	35mA @ 13.8 VDC
Dimensions with cover (W x H x D)	3.6" (92 mm) x 6.5" (165 mm) x 1.0" (25 mm)
Operating temperature	32° to 122°F (0° to 50°C)
Humidity	95% non-condensing

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 Systems
UL 1610 - the Standard for Central-Station Burglar-Alarm Units
UL 1635 - the Standard for Digital Alarm Communicator System Units

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