First Alert
PROFESSIONAL SECURITY SYSTEMS®

FA270RF
Keypad/Transceiver

INSTALLATION AND SETUP GUIDE

About the FA270RF

The FA270RF Keypad/Transceiver is a combination unit incorporating the functions of the following units:

- FA270KP Fixed Addressable Keypad
- 5881M RF Receiver
- 5800TM Transmitter Module
- Normally-open relay output.

The FA270RF Keypad/Transceiver may also be used on any control panel that supports the FA260KP keypad.

Features of the FA270RF

Wireless Features

- Supports up to eight wireless keys locally (programmed directly into FA270RF) without occupying any zones supported by the control panel.
- Supports button-type transmitters (5804 and 5804BD) for local operation.
- Supports a maximum of 16 transmitters programmed into any 5800 Series-supported control panel.
- Provides low-battery indications for the local wireless keys.
- Supports wireless keys with (high-security) (5804E).
- Provides a nominal range of 200' for the RF transmitters (some transmitters have a shorter range).
- Supports RF jam detection when the receiver is enabled.
- Provides wireless key support for control panels that do not support RF themselves (e.g., FA110C).

UL | The following 5800 series transmitters are not intended for use in UL installations: 5802, 5802MN, 5802MN2, 5804, 5804BD, 5804BDV, 5804E, 5804WATCH, 5814, 5816TEMP, 5819, 5819BRS, 5819WHS, and 5850.

Programming Features

- Provides an Auto Enroll mode for programming of the wireless keys.
- Provides a method for deleting a serial number and re-enrolling a new one in its place.
- Provides default settings for the functions of the wireless keys.

Additional Features

- Sends status signals (Armed, Ready, etc.) to bi-directional units such as 5804BDV.
- Operates the on-board relay in conjunction with the receiver (for example, to trip a garage door opener). Note: This particular feature is not intended for UL installations.
- Can activate relays programmed into the control panel.
- Provides an End User mode to enable/disable local wireless keys (for example, if a user accidentally loses a wireless key). Refer to the FA270RF User Guide for this procedure.

Application Guidelines

Use the following guidelines when planning an installation:

- Local wireless keys are programmed directly into the FA270RF and may be used regardless of whether the RF receiver is enabled or disabled.
- If using bi-directional devices, be sure to enable the transmitter module in the FA270RF.
- If transmitters are programmed into the control panel, be sure to enable the receiver. (Make sure you do not exceed the number of receivers supported by the control panel.)
- If a local wireless key is programmed to arm/disarm or to trigger a relay on the control panel, a user code must be entered into the FA270RF.
- You must set the House ID only if you are using RF keypads and/or bi-directional devices AND the House ID source is the FA270RF (Local).

Application Guide

Below is a guide that outlines how to program the wireless keys, RF receiver, and the House ID in the FA270RF for your particular installation.
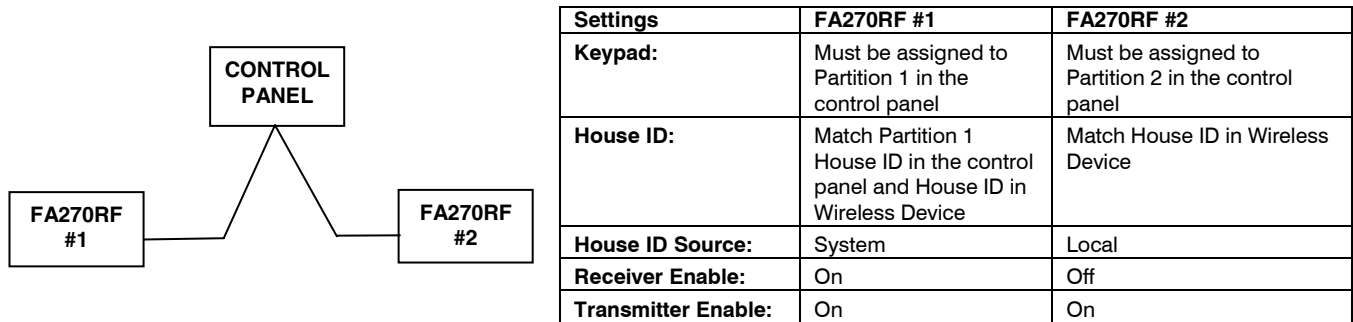
Control Panel	Are you using			Program Wireless Keys Into	FA270RF Programming Options	
	RF keys beyond system's capacity?	RF receivers beyond system's capacity?	RF keypads and/or Bi-directional devices on more than 1 partition?		Receiver Enable	House ID Source***
FA110C, FA120C	N/A	N/A	N/A	FA270RF	OFF	Local [0]
FA142C, FA148C, FA148CP	NO	NO	N/A	System	ON [1]	System [1]
	YES	NO	N/A	FA270RF	ON [1]	System [1]
	YES	YES	N/A	FA270RF	OFF [0]	Local [0]
FA162C, FA168CPS FA168C	NO	NO	NO	System	ON [1]	System [1]
	YES	NO	NO	FA270RF	ON [1]	System [1]
	YES	YES	NO	FA270RF	OFF [0]	Local [0]
	NO	YES	YES*	System	OFF [0]	Local [0]
	YES	YES	YES*	Local	OFF [0]	Local [0]
FA1220CV, FA1340C	NO	NO	NO**	System	ON [1]	System [1]
	YES	NO	NO**	FA270RF	ON [1]	System [1]
	YES	YES	NO**	FA270RF	OFF [0]	Local [0]
	NO	YES	YES	System	OFF [0]	Local [0]
	YES	YES	YES	FA270RF	OFF [0]	Local [0]

*   Two FA270RFs are needed for this application. One connected to partition 1's keypad terminals and one connected to partition 2's.
** If using an RF keypad on only one partition, the FA270RF's partition assignment must match the partition set in field 1*48.
*** If set for Local on a partition control, the FA270RF's partition assignment must match the partition programmed in the BD device.

An example of an installation using two FA270RF Keypad/Transceivers with 2-Way Wireless Devices on two partitions is shown below.

Settings	FA270RF #1	FA270RF #2
Keypad:	Must be assigned to Partition 1 in the control panel	Must be assigned to Partition 2 in the control panel
House ID:	Match Partition 1 House ID in the control panel and House ID in Wireless Device	Match House ID in Wireless Device
House ID Source:	System	Local
Receiver Enable:	On	Off
Transmitter Enable:	On	On

Installing the FA270RF

Locate the FA270RF in an area and at a height where it is convenient for users to operate the system. The FA270RF must be at least ten feet from the control panel to ensure proper operation of the RF receiver.
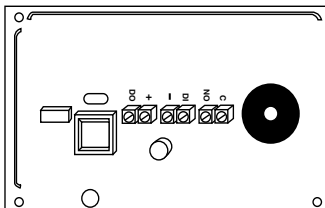

Figure 1: FA270RF Wiring Connections

Wiring Table

Keypad	Control Panel	Wire Color
DI	Data In	Green
–	– Aux Pwr (GND)	Black
+	+ Aux. Pwr	Red
DO	Data Out	Yellow

To install the FA270RF, refer to *Figure 1 and the Wiring Table* for wiring connections and perform the following steps:

Step	Action
1	Remove the case back by pushing down the two snaps along the FA270RF's bottom edge and pulling the case apart.
2	Route the wiring from the control panel through the opening in the case back. (See the control panel's instructions for proper wire run lengths.)
3	Mount the case back directly to a wall or electrical gang box.
4	Connect the power and data wires from the control panel to the terminals on the FA270RF as indicated in the wiring table adjacent to Figure 1 above.
5	Connect the wires for the relay output (if used) to the terminals on the FA270RF's PC board.
6	Reattach the keypad to its case back.
7	Remove the clear protective films from the LCD display and install the keypad labels, as required.

Note: Upon power-up or exit of the Program Mode, the FA270RF alternately flashes "Ad" and the 2-digit keypad address and the 2-digit receiver address on the display. Press any key to display the system status.

FA270RF Programming

The FA270RF is shipped with pre-programmed default values. Below is a chart showing these values. Later in these instructions are diagrams showing the wireless keys' loops and their default functions. Regardless of which wireless key you use (even if it is one not shown), loops 1-4 are defaulted for all eight devices as shown. These values may be changed to suit the installation.

Entering Program Mode

Press the [1] and [3] keys simultaneously for a few seconds within 30 seconds after applying power or within 30 seconds after removing the case back. The keypad beeps three times, and two dashes and two zeroes flash alternately in the upper left-hand corner of the display. If any other numbers or letters flash in the display, press the [✱] key.

> Pressing the [1] and [3] keys **30 seconds or more after** applying power allows you to enter the **User mode**. This mode provides a means to enable and disable individual local wireless keys (useful if, for example, a user accidentally loses a wireless key). Refer to the FA270RF User Guide for procedural instructions.

Programming Operations

Once you have entered the Program mode, you may move to any program address simply by entering the program address number. The FA270RF will automatically exit the Program mode if no keys are pressed for 90 seconds. While in the Program mode:

- Pressing the [✱] key stores the information displayed, then moves you to the next prompt, and the keypad beeps twice.

- Pressing the [#] key erases the current information and moves you back so you may enter the correct information.

Enter a program address (for example, press **[1]** for Keypad Address; **[2]** for Receiver Address) to set the parameters in the FA270RF. The following chart lists the program addresses, the keypad display and the choices.

Program Address	Description	Display	Choices	Default
1	Keypad Address	cA	01-31	31
2	Receiver Address	rA	00-30	00
3	House ID	hl	01-31	10
4	House ID Source	hS	1 = System 0 = Local	1 System
5	Wireless Key Editing	d-	Enter Existing Device Number	
6	Receiver Enable	r-	1 = On 0 = Off	1 On
7	Transmitter Module Enable	tE	1 = On 0 = Off	1 On
8	Wireless Key Auto Enroll	d-	Enter Serial Number	
8 then 2	Wireless Key User Code	u4	Enter 4-Digit User Code	
8 then 4	Wireless Key Loop Function	Ln	Enter Loop Number then Function (See *Wireless Key Function Chart*)	Loop 2 1 (Disarm) Loop 3 2 (Arm Away) Loop 4 3 (Arm Stay)
8 then 5	Wireless Key On-Board Relay Assignment	o-	Enter Loop Number then Relay Action	Loop 1 Close for 2 Seconds
9	Restore Defaults	EE	1 = Restores Defaults Any Other Key = Does Not Restore Defaults	
0	*High-Security Mode	En	1 = Enable; 0 = Disable	0 Disable

> ***** When operating the system in High-Security mode, non-encrypted wireless keys will still function. If you want only the encrypted wireless keys to operate, be sure to delete all non-encrypted keys from the system.

Defaulting the FA270RF

To restore the FA270RF to the default values, perform the following steps:

Step	Action
1	Enter the Program mode by pressing the [1] and [3] keys simultaneously for a few seconds within 30 seconds after applying power. The keypad alternately flashes "00" and two dashes.
2	Press the [9] key. The display flashes "EE."
3	Press the [1] key to restore the default values, or press any other key to exit without restoring the default values. If you pressed [1], the keypad beeps 3 times and returns to alternately flashing "00" and two dashes. If you pressed any other key, the keypad does not beep, and returns to alternately flashing "00" and two dashes.
4	Press [✶] to exit the FA270RF Program Mode.

Programming Procedure

This section is divided into two parts.

- **Programming for an installation WITHOUT local wireless keys.**

- **Programming for an installation WITH local wireless keys.**

    Using this programming procedure is necessary only if you plan to use wireless keys beyond the control panel's capacity, or on a system that does not support 5800 Series wireless. Refer to the FA270RF Application Guide on page 2 for installations that require these settings.

    Note: See the control panel's installation instructions for the acceptable keypad and receiver addresses.

- If you are using a wireless key in High-Security mode (5804E) in the control panel, it will occupy one of the devices in the FA270RF.

- When operating the system in High-Security mode, non-encrypted wireless keys will still function. If you want only the encrypted keys to operate, be sure to delete all non-encrypted keys from the system.

Programming for an Installation WITHOUT Local Wireless Keys

To program the FA270RF for an installation without any local wireless keys, perform the following steps:

Step	Action	Display
1	Enter the Program mode by pressing the [1] and [3] keys simultaneously for a few seconds within 30 seconds after applying power or within 30 seconds after removing the case back.	Alternately flashes "oo" and two dashes.
2	Enter [1] (Keypad Address). Enter the 2-digit keypad address (01-31). Press the [✶] key to continue.	Alternately flashes "cA" and the 2-digit keypad address.
3	Enter [2] (Receiver Address). Enter the 2-digit receiver address (00-30). Press the [✶] key to continue.	Alternately flashes "rA" and the 2-digit receiver address.
4	Enter [4] (House ID Source). Enter [1] (System) to use the House ID programmed into the control panel, if RF keypad(s) and/or bi-directional device(s): • Are used on the control panel. OR • Neither is used. Enter [0] (Local) to use the House ID programmed into the FA270RF (Program Address 3). ***Note:*** *If the House ID Source is:* • ***System (1)**, RF keypad and bi-directional units **MUST** match the House ID programmed into the control panel.* • ***Local (0)**, RF keypad and bi-directional units **MUST** match the House ID programmed into the FA270RF.* Press the [✶] key to continue.	Alternately flashes "hl" and either "1" or "0."

Step	Action	Display
5	Enter [6] (Receiver Enable). Enter [1] to enable, or [0] to disable. Enable the receiver if RF transmitters or wireless keypads are programmed into the control. ***Note:*** *Make sure the number of receivers set for Enable (1) does not exceed the capacity of the control panel.* Press the [✱] key to continue.	Alternately flashes "r-" and either "1" or "0."
6	Enter [7] (Transmitter Module Enable). Enter [1] to enable, or [0] to disable. Enter [1] if bi-directional devices are being used. ***Note:*** *If the House ID Source is System and more than one FA270RF is used, make sure only one has the Transmitter Module enabled. See Note under* **House ID Source** *step 4.* Press the [✱] key.	Alternately flashes "tE" and either "1" or "0."
7	Enter [0] (High-Security Mode). To put the system into High-Security mode, enter [1]. Enter [0] to disable.	En
8	Press the [✱] key to exit the FA270RF Program mode.	"READY" or "NOT READY"

Note: This is all the FA270RF programming necessary for this application. Upon exiting the Program mode, the FA270RF alternately flashes "Ad," the 2-digit keypad address, and the 2-digit receiver address. If either of these is incorrect, repeat steps 1 through 3.
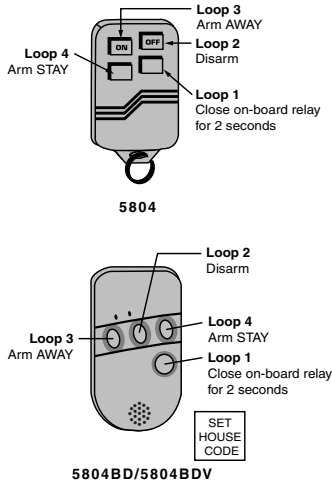
Programming for an Installation WITH Local Wireless Keys

- The FA270RF is supplied with default settings for the functions of the wireless keys. See page 3.
- If, during the programming of the wireless keys, you make a wrong entry and want to reprogram a wireless key, simply press the [✱] key until "d-" is displayed. Then enter the correct information.

Perform steps 1-6 in the *Programming for an Installation Without Local Wireless Keys* section. Then perform the following steps:

Step	Action	Display
1	Enter [3] (House ID). Enter the 2-digit House ID for the FA270RF (01-31). ***Note:*** *The House ID is needed only if RF keypads and/or bi-directional units are used and House ID source is set for Local. The House ID entered here* **MUST** *match the House ID programmed in the RF keypad and the bi-directional unit.* Press the [✱] key to continue.	Alternately flashes "hl" and a 2-digit number.
2	Enter [8] (Wireless Key Auto Enroll). The FA270RF automatically advances to first available device number. ***Note:*** *If all 8 devices have been enrolled, the FA270RF beeps three times and continues to alternately flash "oo" and "--."*	Alternately flashes "d" with the device number; and "--."
3	Press any button on the wireless key to enroll the serial number. ***Note:*** *If enrolling a wireless key (5804E) in High-Security mode, press all four buttons on the wireless key simultaneously.*	Alternately flashes "d" with the device number; and the serial number.
4	Press the [✱] key to accept the serial number; OR press the [#] key to reject the serial number. If you accept the serial number, the FA270RF beeps twice. If you reject the serial number, the FA270RF returns to the "enroll serial number" prompt. ***Note:*** *A maximum of 8 wireless keys may be enrolled into the FA270RF. These wireless keys* **DO NOT** *occupy any zones supported by the control.* If you are finished programming for now, press [✱] to exit. Otherwise, continue with step 5.	If you accept the serial number, the display flashes the device number and a hyphen. If you reject the serial number, the display alternately flashes "d" with the device number; and "--."
5	Enter [2] (User Code). Enter the 4-digit user code for the wireless key. ***Note:*** *The user code must be a valid code that is programmed in the control panel.* Press the [✱] key to accept the user code. If you are finished programming for now, press [✱] to exit. Otherwise, continue with step 6.	Flashes "u4." Once the 4-digit user code is entered, the display flashes "u4," the first two digits, and then the last two digits of the user code.

Step	Action	Display
6	Enter [4] (Loop Functions). Enter the loop number (1-4). *Note: The FA270RF is shipped with the loop functions pre-programmed. Perform steps 6 through 10 only if it is necessary to change any of the loop functions.* *Loop 1 Close the FA270RF On-Board Relay for two seconds.* *Loop 2 1 (Disarm)* *Loop 3 2 (Arm Away)* *Loop 4 3 (Arm Stay)* *See the Wireless Key Function Chart below for the choices.* **Wireless Key Function Chart** | Function	Entry
---	---
Disarming	1
Arming Away	2
Arming Stay	3
Arming Maximum (Away Instant)	4
Arming Instant	7
Panic Alarm *Produces type of alarm [* & #] programmed in control panel.*	# + 99
Manually Start a Relay Action	# + 7 **(FA142C)** # + 7 + n **(FA148C, FA148CP, FA162C, FA168CP)**
Manually Stop a Relay Action	# + 8 **(FA142C)** # + 8 + n **(FA148C, FA148CP, FA162C, FA168CP)**
Activate Relay as Programmed in Control	# +71 **(FA1220C, FA1220CV, FA1340C, FA1600CA)**
Activate Relay as Programmed in Control	# + 72 **(FA1220C, FA1220CV, FA1340C)**
Activate Access Control Relay for Partition	0 **(FA1220C, FA1220CV, FA1340C)** | n = Device Number programmed in FA162C to be controlled Press the [✱] key.	Flashes "Ln." Once the loop number is entered, alternately flashes "L" with the loop number and the present function. **Default Loop Functions** Loop 3 Arm AWAY Loop 4 Arm STAY Loop 2 Disarm Loop 1 Close on-board relay for 2 seconds **5804** Loop 2 Disarm Loop 4 Arm STAY Loop 3 Arm AWAY Loop 1 Close on-board relay for 2 seconds SET HOUSE CODE **5804BD/5804BDV** **NOTE: If the loop is defaulted with a function (e.g., Arm, Disarm) and also is assigned to activate the on-board relay, the system performs BOTH functions.**
7	Repeat step 6 for the rest of the loops of the wireless key.	
8	To program a button on the wireless key to control the on-board relay, enter [5] (On-Board Relay Assignment).	Flashes "o-."
9	Enter the loop number of the wireless key (1-4). Enter the relay action (0 = no action; 1 = relay off; 2 = relay on; 3 = relay toggles on and off; 4 = relay closes for 2 seconds). **Note:** The relay action must be "0" for UL installations. Press the [✱] key.	Flashes "o" and the loop number. Once the action is entered, displays "o" and alternately flashes the loop number and the relay action.
10	Repeat step 9 for the rest of the loops.	
11	When all loops have been programmed for the wireless key, press the [✱] key.	Flashes "d" followed by the device number.
12	The FA270RF automatically displays the next available device number (one that does not have a serial number). If you want to program additional wireless keys, repeat steps 3 through 10. Otherwise, press the [#] key. This takes you back to the main display, which alternately flashes "oo" and "- -."	
13	Enter [0] (High-Security Mode). To put the system into High-Security mode, enter [1]. Enter [0] to disable	En
14	Press [✱] to exit the FA270RF Program mode.	

Note: Upon exiting the Program mode, the FA270RF alternately flashes "Ad," the 2-digit keypad address, and the 2-digit receiver address. If either of these is incorrect, repeat steps 1 through 3 in the *Programming for an Installation Without Local Wireless Keys* section.

Deleting, Replacing, or Editing Wireless Keys

Use the following procedure to delete, replace, or change any of the programming for a wireless key.

Step	Action	Display
1	Enter the program mode by pressing the [1] and [3] keys simultaneously for a few seconds within 30 seconds after applying power.	Alternately flashes "oo" and two dashes.
2	Enter [5] (Wireless Key Editing). Enter the device number for the wireless key you want to edit. This must be a device that has its serial number programmed in the FA270RF already. To delete the serial number, press [✱], then press [9], then press [✱] again. To exit without deleting the serial number, press the **[#]** key Press the [✱] key to continue.	Flashes the device number and a hyphen. Once the device number is entered, alternately flashes "d" with the device number and the serial number.
3	To change any of the programming for the wireless key, perform one of the following step in the *Programming for an Installation WITH Local Wireless Keys* section. • For the user code, perform step 5. • For the loop functions, perform steps 6 and 7. • For the on-board relay assignment, perform steps 8 to 9.	Alternately flashes "d" with the device number; and "--."
4	When you have completed editing the wireless keys, press the [✱] key twice to exit the Program mode.	

Note: Upon exiting the Program mode, the FA270RF alternately flashes "Ad," the 2-digit keypad address, and the 2-digit receiver address. If either of these is incorrect, repeat steps 1 through 3 in the *Programming for an Installation Without Local Wireless Keys* section.

Troubleshooting

The following error messages cause the FA270RF to produce rapid beeps for 5 seconds. The table below describes the error messages and the corrective actions.

Display	Probable Cause	Corrective Action
Lb	Low battery in the wireless key	1. Replace the battery if the wireless key has a replaceable battery. 2. Replace the transmitter if the wireless key does not have a replaceable battery.
OC	Open circuit	Verify that the Data Out (DO) wire is connected properly.
1C	Incompatible connection	Verify that the control panel is a First Alert control panel.
Check 09	1. FA270RF Receiver is not communicating 2. Another device on the keypad terminals is not communicating to the control panel	1. Verify that the Data In (DI) wire is connected properly. 2. Verify the wiring connections between the control and all other devices.

Specifications

Physical:	6-5/8"W x 4-7/8"H x 1-1/8"D (168.3mm x 123.9mm x 28.6mm)		**Voltage:**	12VDC
Wiring:	Refer to Wiring Table on page 2		**Current:**	Standby 40mA
Range:	200' nominal			Backlighting on and Sounder on......................100mA
Frequency:	345 MHz		**Relay:**	Normally Open, 1A, 28VDC
			Sounder:	Piezo-electric (fire alarm is loud pulsing tone; burglary/audible panic alarm is continuous tone)

FOR DETAILS ON THE LIMITATIONS OF THE ENTIRE ALARM SYSTEM, REFER TO THE INSTALLATION INSTRUCTIONS FOR THE CONTROL PANEL WITH WHICH THIS DEVICE IS USED.

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