ADEMCO 5881EN Series
RF Receiver

Installation and Setup Guide

INTRODUCTION

The 5881EN RF Receiver is designed for use with control panels that support an RF receiver connection via the keypad terminals.

- The 5881EN Series Receivers recognize alarm, status, and keypad control messages from wireless transmitters operating at 345MHz.
- One or two individually identified receivers can be employed, depending on the control used. Connection of multiple receivers to a control can provide redundant coverage or extend coverage in large area.
- The 5881EN features a Spatial Diversity system that virtually eliminates the possibility of "Nulls" and "Dead Spots" within the coverage area.
- The 5881EN uses ADEMCO's High Security technology, and can be used in commercial fire installations.
- The 5881ENHC receiver contains front and back tamper that permits its use in commercial burglary and fire installations.

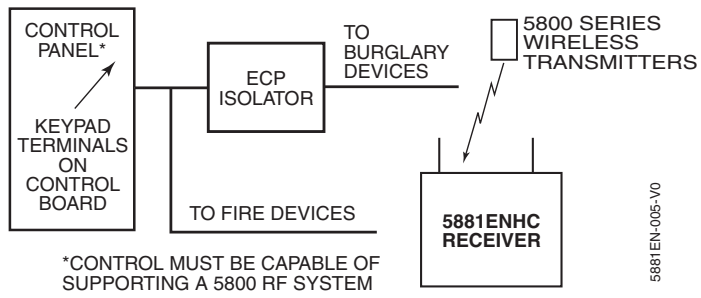


Figure 1. 5881EN Receiver System Overview

UL

For 5881ENHC Receivers:

- In commercial fire applications, the receiver can only be used with control panels that are approved for use in Commercial Fire Installations. When the 5881ENHC is used in commercial fire applications, DIP switch 5 must be in the ON position.
- In commercial burglary applications, the 5881ENHC can only be used with control panels that are approved for use in Commercial Burglary Installations.
- In commercial fire applications, a keypad must be connected to Keypad Port 2 in the control. The keypad must be mounted on the control or within 3 feet of the control with the wiring encased in conduit.
- All power-limited wiring must be separated from non-power limited and high-voltage wiring by ¼" (6.4mm).

UL Commercial Fire Applications

NOTE: For UL-864 Fire installations, ECP Isolator (PN ECP-ISO) is required.

Each receiver supports the number of zones shown below.

5881ENL up to 8 zones
5881ENM up to 16 zones
5881ENH *see below
5881ENHC *see below

* The number of zones that the 5881ENH receiver can support depends on the control with which it is used. See the control panel's instructions for specific details.

If a receiver is connected to a system in which more than the permitted number of wireless zones have been programmed, a "SET UP ERROR" message (on alpha keypads) or an "E4" or "E8" message (on fixed-word keypads) will be displayed on the system's keypad, and none of the zones will be protected.

The instruction manual that accompanies the control includes recommendations regarding receiver and transmitter locations, the types of wireless zones that can be programmed (e.g., ENTRY/EXIT, PERIMETER, INTERIOR, etc.) and the procedure for programming the receivers.

These receivers should not be installed in an area subject to environmental extremes of below freezing (such as an unheated warehouse) or extremely high temperatures (such as an attic).

INSTALLATION

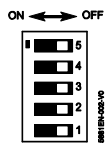
With some controls, a receiver may be mounted directly inside the control's cabinet (receiver circuit board only, without its plastic housing) instead of remotely (in its own housing). In both cases, avoid mounting the receiver antennas against a metal surface.

NOTE: You may only mount the 5881ENHC its own plastic housing. If you attempt to mount it in the control's cabinet, the receiver reports a continuous tamper condition.

Mounting

1. Remove the receiver's cover by inserting a screwdriver blade in the slot at the center of the cover's lower edge.
2. **If the receiver is to be mounted within the control's cabinet** (refer to Figure 2):
   a. Remove the receiver's circuit board from its base by bending back the two flexible plastic tabs that hold the board's lower edge.
   b. In the control's cabinet, unfasten and move the control circuit board downward (if already installed).
   c. Hang two mounting clips (provided with the receiver) on the raised cabinet tabs, as shown in Detail B of Figure 2.
   d. Insert the top of the receiver board between the rows of slots at the top of the cabinet, as shown in Detail A.
   e. Position the base of the receiver board onto the mounting clips and secure to the cabinet using the screws supplied. See Detail B.
   f. Hang two mounting clips (supplied with control board), on the raised cabinet tabs see Detail C in Figure 2.
   g. Insert the top of the control board into the slots of the mounting clips secured in step e above.
   h. Position the lower end of the control board into place on the mounting clips and secure both to the cabinet with the two supplied screws.
   i. Insert both grounding lugs (supplied with the receiver) through the top of the cabinet into the *left-hand* terminals of the antenna blocks (located on the upper edge of the receiver board), and secure them to the cabinet with the screws provided, as shown in Detail D.
   j. Insert the receiver's antennas through the top of the cabinet, into the blocks' *right-hand* terminals, and tighten the screws.
   k. Affix the receiver's Summary of Connections label to the inside of the control's cabinet door.
   l. Discard the receiver's unused plastic cover and base.
3. **If the receiver is to be located remotely** from the control in its own plastic enclosure (not in a cabinet) you will not need the circuit board mounting clips, grounding lugs and screws included with the receiver.
   a. If concealed wiring is to be used, route it through the rectangular opening at the rear of the base before mounting. For surface wiring entry, a thin breakaway area is provided along the base's right edge.
   b. Mount the receiver in the selected location. For greatest security, use all four mounting holes (two key slot holes and two round holes) provided in the plastic base.
   c. If installing a 5881ENHC, install a flat-head screw (supplied) in the case tamper tab as shown in Figure 3. When the receiver is pried from the wall, the tamper tab will break off and remain on the wall. This will activate a tamper switch in the receiver and cause generation of a tamper signal. Note that this signal will also be generated when the receiver's front cover is removed.
   d. Affix the receiver's Summary of Connections label to the inside of the housing cover.
4. Setting the DIP switches (All Receivers):
   a. Set the receiver's DIP switch (#2 through #4) to identify the receiver's address (refer to the DIP switch chart in the Summary of Connections Diagram below).
   b. Verify that DIP switch #1 is in the OFF position.
   c. Set DIP switch #5 according to the following chart.

DIP SWITCH #5	
For . . .	**Set to . . .**
Commercial Fire Applications	**ON**
Non-commercial Fire Applications	**OFF**



NOTES:

- If multiple receivers are used on one control, DIP switch #5 must be set to the same position on all receivers.
- DIP switch #5 reduces sensitivity during supervision message reception. For commercial fire applications, DIP switch #5 **must** be in the ON position.

5. Insert the wiring plug (with 4 flying leads) into the mating socket on the receiver (see Summary of Connections Diagram below for socket location). Connect the 4 wires to the control's corresponding keypad terminals (see "Interface Wiring" in the *SPECIFICATIONS* section below).
6. Install the antennas in the *right-hand* terminals of the two terminal blocks at the upper edge of the circuit board, one into each block's right-hand terminal, and tighten the screws to secure them.
   Caution: Avoid mounting the receiver antennas against a metal surface.
7. Replace the unit's front cover using the supplied screw to secure it.
8. Proceed with any programming of the control that may be necessary for RF operation, and the installation of the system's wireless transmitters, as described in the control's installation and setup guide and the transmitter's installation instructions.
   NOTES:
   - The receiver can support up to 16 high security (encrypted) wireless transmitters (keys). The total quantity of wireless keys (encrypted and unencrypted) that can be used is determined by the control panel.
   - Wireless key buttons must be enrolled to zones in the control panel via zone programming first. If the wireless key is to be used for arming and disarming the VISTA-40 and up, a user number must then be assigned to the wireless key via user programming. If it is not done in this order, you will be unable to respond successfully to the RF button zone number prompt in user programming.
   - If more than one receiver is being used and you are using encrypted wireless keys, we recommend that you (a) enter the GO/NO GO mode, (b) disconnect one receiver, (c) enroll all encrypted keys into the connected receiver, (d) reconnect the disconnected receiver, (e) exit the GO/NO GO mode, and then (f) repeat (a) through (e) for the receiver that was disconnected.
   - The RED LED located on the receiver's circuit board should be used as an indicator of strong local radio frequency interference. If this LED is continuously illuminated, the receiver should be relocated.
   - After a successful enrollment of an encrypted (high security) key into the receiver, the GREEN LED blinks the number of spaces that are free for additional encrypted key enrollment.
9. Replace the receiver's cover.

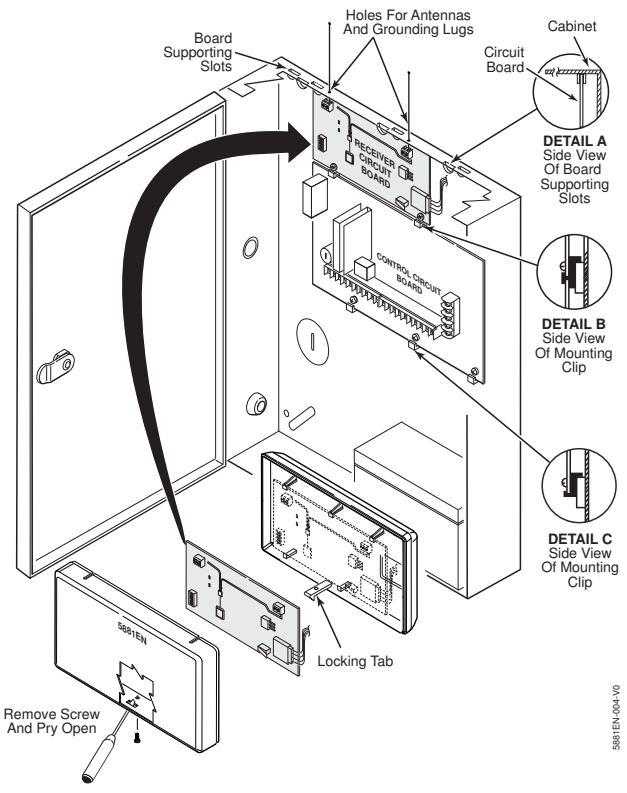


Figure 2. Installing the Receiver Board in Control's Cabinet

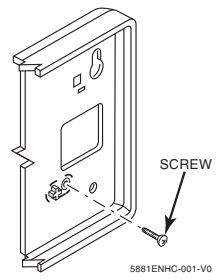


Figure 3. Tamper Protection

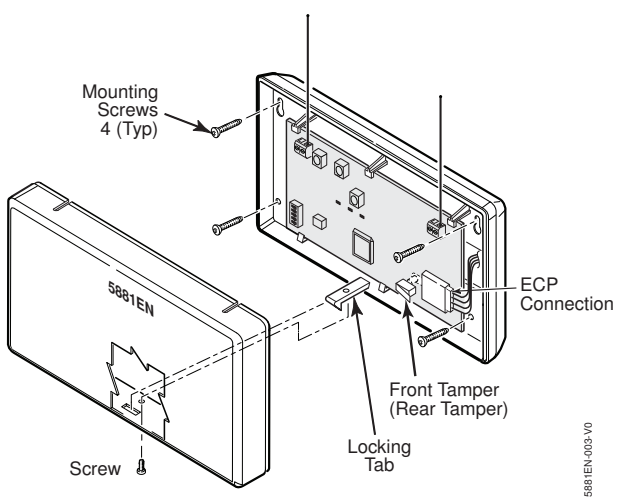


Figure 4. 5881EN Remote Mounting

UL Commercial Fire Installation

For UL864 Commercial Fire Installations, you will need to purchase separately the "5800BOX" (in which the circuit board will be installed). Follow the instructions below and refer to Figure 5.

1. Mount the rear half of the 5800BOX directly to the wall in the selected location, hinged side up. Secure using the 4 screws provided and insert screw in tamper tab, refer to *Installation*, step 3c and Fig. 3.
2. Thread the ECP wire through the conduit and feed through the opening at the side of the box rear.
3. Remove the circuit board from the 5881EN case and discard case. Install the circuit board into the 5800BOX and secure using the 4 screws provided. Install each antenna, refer to *Installation*: Step 6.
4. Connect the ECP terminals as shown.
5. Insert slots on top of box cover into hinges on top of box back and secure using 2 cover securing screws.

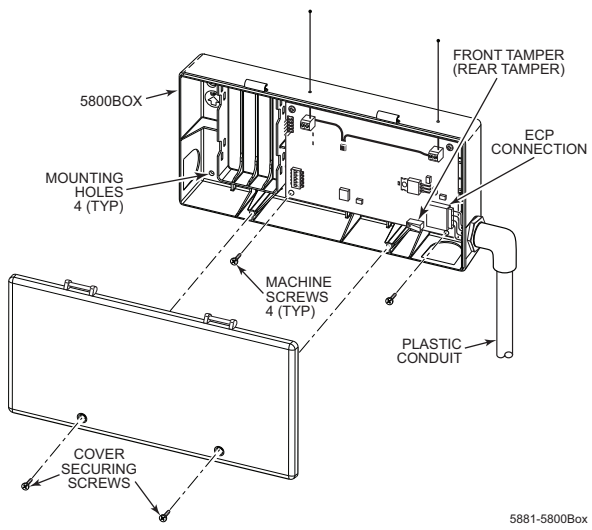


Figure 5. 5881ENHC UL Commercial Fire Installation

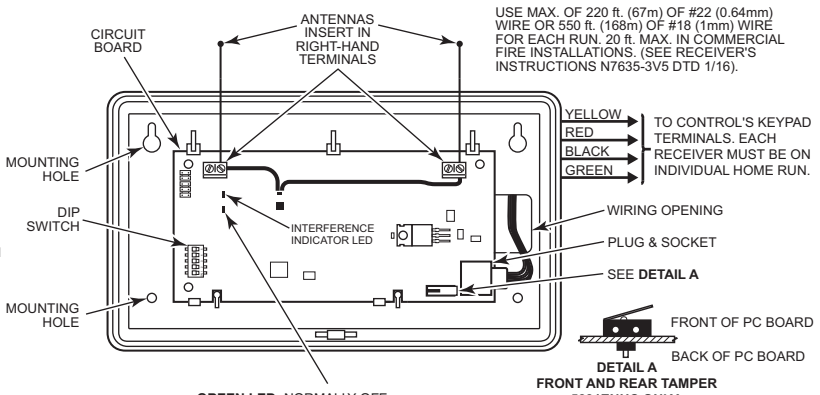
ENCRYPTED KEYS

The receiver can support up to 16 encrypted wireless transmitters (keys) at one time. The GREEN LED located on the receiver's circuit board may be used to determine how many more encrypted keys may be enrolled into the receiver. This LED is also used to indicate when encrypted keys may be deleted. To determine how many more encrypted keys may be enrolled and/or to delete enrolled encrypted keys:

1. Remove power from the receiver and set DIP switch 1 to the ON position.
2. Apply power to the receiver and watch the GREEN LED. You will see one of the following indications:
   a. The GREEN LED blinks the number of spaces that are free for additional encrypted key enrollment and then goes to constantly ON.
   b. The GREEN LED is constantly ON, indicating the receiver is full.
   c. The GREEN LED is OFF, indicating no encrypted keys are enrolled.
3. If you do not want to delete any enrolled encrypted keys, advance to step 4. If you want to delete enrolled encrypted keys, wait until the GREEN LED is constantly ON in step 2 a. or 2 b. above and then:
   a. Record the positions of DIP switches 1 through 5.
   b. Set DIP switches 1 through 5 to the opposite positions of their current settings and wait a few moments.
   c. Set DIP switches 1 through 5 back to their original positions as recorded in step a. All enrolled encrypted keys will be deleted.
4. Place DIP switch 1 back into the OFF position to return to normal receiver operation.

NOTE: WHEN CIRCUIT BOARD IS MOUNTED IN CONTROL'S CABINET, GROUNDING LUGS (2) PROVIDED MUST BE INSERTED IN LEFT-HAND TERMINALS OF ANTENNA BLOCKS AND SECURED TO CABINET (SEE RECEIVER'S AND CONTROL'S INSTRUCTIONS). WHEN BOARD IS MOUNTED IN A SEPARATE CABINET (COMMERCIAL FIRE APPLICATION), DO NOT USE THE GROUNDING LUGS.

TO RELEASE CIRCUIT BOARD, BEND BACK BOTTOM TABS (2). FOR COMMERCIAL FIRE APPLICATION. USE TWO SCREWS (NOT SUPPLIED) WITH INSULATING WASHERS BENEATH THE HEADS. TO MOUNT BOARD IN SEPARATE CABINET. (SEE RECEIVER'S INSTRUCTIONS).



USE MAX. OF 220 ft. (67m) OF #22 (0.64mm) WIRE OR 550 ft. (168m) OF #18 (1mm) WIRE FOR EACH RUN. 20 ft. MAX. IN COMMERCIAL FIRE INSTALLATIONS. (SEE RECEIVER'S INSTRUCTIONS N7635-3V5 DTD 1/16).

NOTES
1. FOR DRY INDOOR USE ONLY.
2. DO NOT INSTALL IN AIR-HANDLING SPACES.
3. ALL CIRCUITS ARE SUPERVISED AND POWER LIMITED.

UL NOTES
1. NO MORE THAN ONE (1) WIRE PER TERMINAL MAY BE CONNECTED.
2. ALL POWER-LIMITED WIRING MUST BE SEPARATED FROM NON-POWER LIMITED AND HIGH-VOLTAGE WIRING BY 1/4" (6.4mm).

DIP SWITCH #5	
ON:	FOR USE IN COMMERCIAL FIRE APPLICATIONS. (SEE THE RECEIVER'S INSTRUCTIONS).
OFF:	USE IN NON-COMMERCIAL FIRE INSTALLATIONS.

DIP SWITCH: WHITE AREAS = SWITCH HANDLES
POSITION 2-4: DETERMINE RECEIVER'S ADDRESS

CONSULT CONTROL'S INSTRUCTIONS FOR ADDRESS TO USE.

DIP SWITCH BELOW SHOWN SET FOR ADDRESS "0".

ON ⟷ OFF	SWITCH POSITION	RECEIVER ADDRESS SETTINGS ("—" means "OFF")							
		0	1	2	3	4	5	6	7
5	5	(SEE TEXT ABOVE)							
4	4	I	ON	I	ON	I	ON	I	ON
3	3	I	I	ON	ON	I	I	ON	ON
2	2	I	I	I	I	ON	ON	ON	ON
1	1	MUST BE IN OFF POSITION							

5881EN-SOC-V8

5881EN SERIES
5881ENL
5881ENM
5881ENH
5881ENHC

SPECIFICATIONS
INPUT VOLTAGE: 12VDC
CURRENT: 60mA

GREEN LED: NORMALLY OFF
DURING ENROLLMENT, THE GREEN LED FLASHES THE NUMBER OF TIMES EQUAL TO THE NUMBER OF REMAINING HIGH SECURITY WIRELESS KEYS THE RECEIVER CAN STILL ENROLL.

NOTES:
WHEN AN ENCRYPTED TRANSMITTER IS SUCCESSFULLY ENROLLED, LED FLASHES THE NUMBER OF TIMES THAT IS EQUAL TO THE SPACE AVAILABLE FOR ADDITIONAL ENCRYPTED KEYS. THE GREEN LED IS ALSO USED WHEN CHECKING ENCRYPTED KEY SPACE AVAILABLE AND PERFORMING DELETIONS.

NFPA-72 COMPLIANT

Summary of Connections Diagram

SPECIFICATIONS

Dimensions: 7-3/8" W x 4-3/8" (10-7/8" w/antenna) H x 1-7/16" D
188mm W x 112mm H (277mm w/antenna) x 37mm D
5800BOX: 10.86 W x 5.41 (11.9 w/antenna) H x 2.24 D
276mm W x 137.5mm H x 57mm D
Input Voltage: 12VDC (from control's keypad terminals)
Current: 60mA (typical)
Operating Temperature: 0-50°C
Interface Wiring: RED: 12VDC input (+) Aux. Power / GREEN: Data Out to Control
YELLOW: Data In from Control / BLACK: Ground (–)

Range: 200ft (60m) nominal indoors from wireless transmitters (the actual range to be determined with the security system in the Test mode).
Receiver Sensitivity & Noise Rejection:
Receiver sensitivity and noise rejection are dynamically adjusted to match ambient conditions. Unacceptably high noise levels or low signal levels are indicated at the control panel. For test procedure, refer to the Installation & Setup Guide for the control panel with which this device is used.
NFPA-72 Compliant

For Limitations of the entire alarm system, refer to the control panel's installation guide with which this device is used.

FEDERAL COMMUNICATIONS COMMISSION (FCC) & INDUSTRY CANADA (IC) STATEMENTS

The user shall not make any changes or modifications to the equipment unless authorized by the Installation Instructions or User's Manual. Unauthorized changes or modifications could void the user's authority to operate the equipment.

CLASS B DIGITAL DEVICE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, as defined by FCC Rules Part 15.105. The Class B Digital Device statement can be viewed at:
https://customer.resideo.com/en-US/support/residential/codes-and-standards/FCC15105/Pages/default.aspx

FCC / IC STATEMENT

This device complies with Part 15 of the FCC Rules, and Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la partie 15 des règles de la FCC et exempt de licence RSS d'Industrie Canada. Son fonctionnement est soumis aux conditions suivantes: (1) Cet appareil ne doit pas causer d'interférences nuisibles. (2) Cet appareil doit accepter toute interférence reçue y compris les interférences causant une réception indésirable.

The product should not be disposed of with other household waste. Check for the nearest authorized collection centers or authorized recyclers. The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health.

Any attempt to reverse-engineer this device by decoding proprietary protocols, de-compiling firmware, or any similar actions is strictly prohibited.

SUPPORT & WARRANTY
For the latest documentation, support and warranty information, please go to:
www.resideo.com

This product manufactured by Resideo Technologies, Inc. and its affiliates.

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N7635-3V5C 1/16 Rev. C