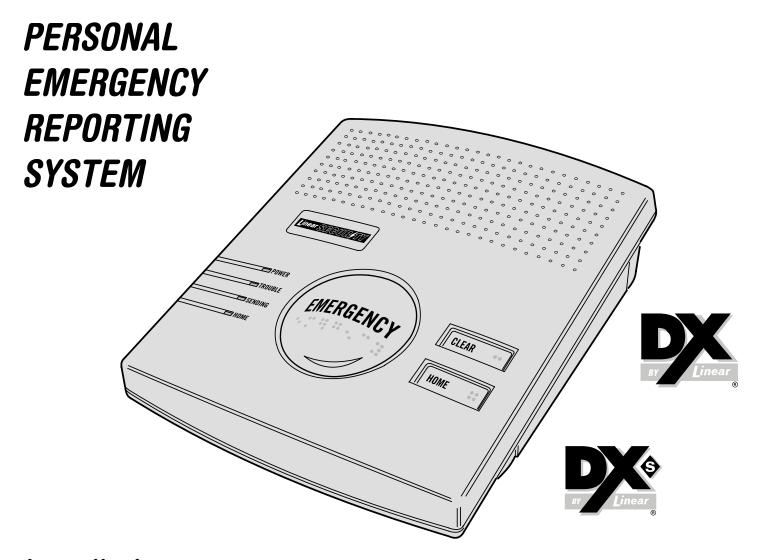


PERS-2400A



Installation, and Operation Instructions



(760) 438-7000 • FAX (760) 438-7043 USA & Canada (800) 421-1587 & (800) 392-0123 Toll Free FAX (800) 468-1340 www.linearcorp.com

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PRODUCT DESCRIPTION

The PERS-2400A Console is a supervised wireless emergency reporting product designed for medical alert applications. The table-top or wall-mount Console provides "pushbutton" emergency assistance to anyone who desires additional security and peace of mind. For the visually impaired, each button on the Console is molded with braille characters to identify the button's function.

The Console receives signals from up to 16 Linear wireless transmitters. Activating a transmitter causes the Console's digital communicator to send the appropriate alarm report to the central monitoring station via the standard telephone network. In addition to the central station report, audible and visual indications occur and the alarm relay energizes during an emergency activation.

The emergency alarm can be triggered by the large EMERGENCY button on the face of the Console or with a wireless transmitter. The fire alarm can be triggered by wireless smoke alarms.

The optional *activity timer* can be set for 8, 12 or 24 hour operation. The emergency alarm will trigger automatically if the time set elapses before an activity transmitter is triggered or the Console's HOME button is pressed.

If the optional Model VB-4 voice board is installed, the Console will "talk" to the user. The digitized voice, will sound "emergency", "fire", "timer done soon", and other system operation, setup, and supervisory prompts from a 38 word vocabulary. In addition, the voice board supports 2-way automatic, 2-way manual, and 1-way listen-only audio communications with central station monitoring personnel using the Console's built-in high-sensivity microphone and speaker.

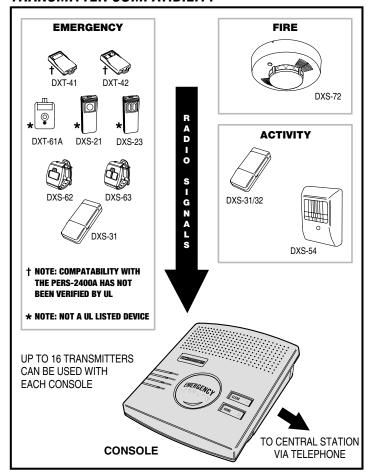
The Console can be programmed to act as a remote controlled "speakerphone". With the speakerphone mode enabled (Model VB-4 voice board required) the Console will monitor the telephone line for an incoming call. Activating any emergency transmitter (or the Console's EMERGENCY button) while the telephone is ringing will cause the Console to seize the line and begin full duplex voice communications. Activating any emergency transmitter (or EMERGENCY button) during the call will disconnect the line. The Console will auto-disconnect after 15, 30, or 60 minutes (programmable).

Supervised transmitters regularly send status reports to the Console and low battery reports when their batteries are low. When the Console receives a low battery report, the TROUBLE indicator flashes. If the Console fails to receive a status report from a transmitter for a period of 24 hours, the TROUBLE indicator will light. All supervisory conditions can sound a local annunciation and be reported to the central station.

The Console's digital communicator can route calls to three telephone numbers: primary, secondary, and supervisory. General reporting codes and individual sensor reporting codes are programmable for the 4x2 format. Alternately, Ademco Contact ID may be selected for the communicator reporting format.

Powered by a low voltage plug-in transformer, the Console has provisions for a rechargeable backup battery for operation during AC power outages. A power switch allows for out-of-service storage of the Console without discharge of the battery. The battery is recharged and supervised by the Console. If the backup battery becomes low the POWER light will flash and the condition can be reported to the central station. The Console is programmed using Linear's RA-2400 remote access software. Refer to the software's built-in help file for programming details.

TRANSMITTER COMPATIBILITY



OPERATION SUMMARY

A variety of Linear's supervised DXS and non-supervised DX format transmitters can be used with the Console. Transmitters can be assigned to the following three functions:

EMERGENCY

Portable, supervised and non-supervised, pendant, belt-clip, or wristband type transmitters (Models DXT-41, DXT-42, DXT-61A, DXS-21, DXS-23, DXS-62, DXS-63) and stationary, supervised Model DXS-31 transmitters are used for medical alert applications. When a medical alert transmitter is triggered, the Console sounds a two-tone siren and an emergency report is sent to the central station. The emergency alarm can also be triggered by pressing the Console's EMERGENCY button.

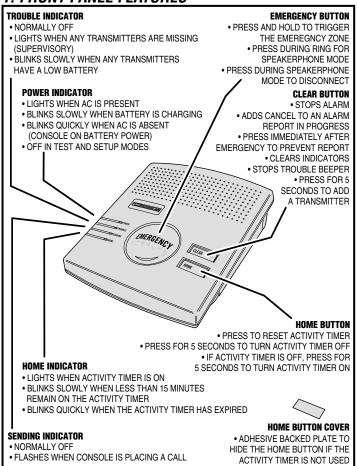
FIRE

Supervised Model DXS-72 wireless photoelectric smoke alarms trigger the fire alarm. When the fire alarm is activated, the Console sounds a repeated series of three beeps and a fire report is sent to the central station.

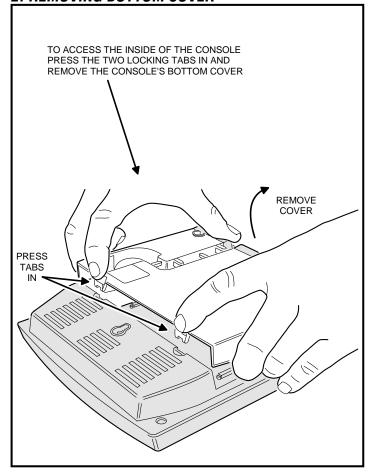
ACTIVITY

Supervised, switch or motion triggered transmitters (Models DXS-31/DXS-32 and DXS-54) can be used for ensuring human activity. The DXS-54 motion detector will monitor room activity. The DXS-31 and DXS-32 transmitters can be wired to a pushbutton or switch for manual activity monitoring. As long as a signal is received at least once every 8, 12, or 24 hours (programmable) an alarm will **not** be triggered. 15 minutes before the programmed time expires, the HOME indicator will start blinking and a low pitched beep will sound every ten seconds. The activity timer can be reset with a signal from one of the activity transmitters or by pressing the HOME button on the Console. Failure to reset the activity timer within the programmed time period will cause the Console to sound the two-tone emergency siren and send an inactivity report to the central station. The activity timer can be turned on or off at the Console or through programming.

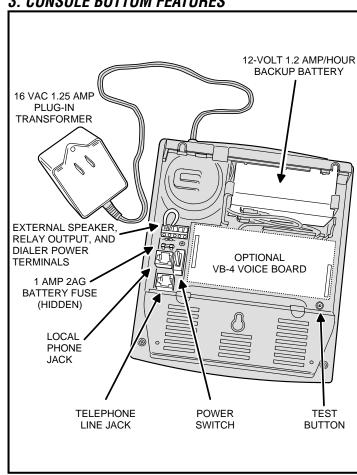
1. FRONT PANEL FEATURES

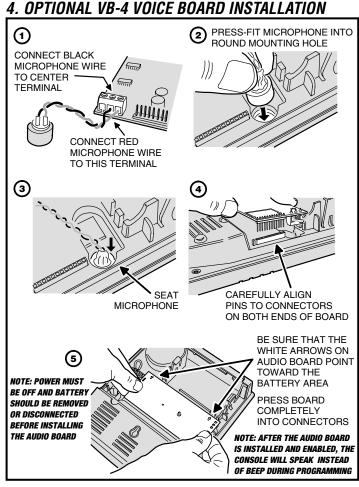


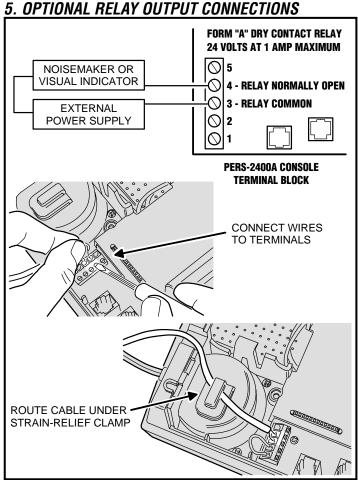
2. REMOVING BOTTOM COVER



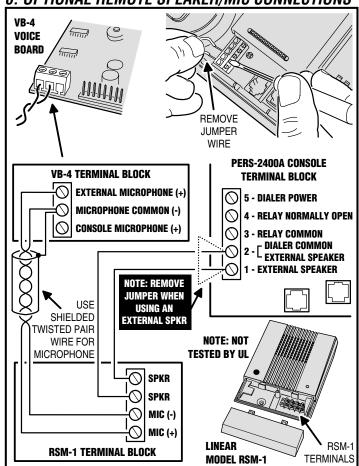
3. CONSOLE BOTTOM FEATURES



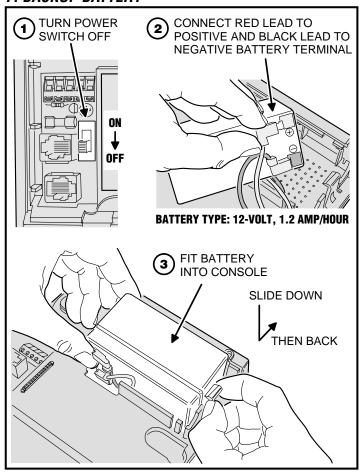




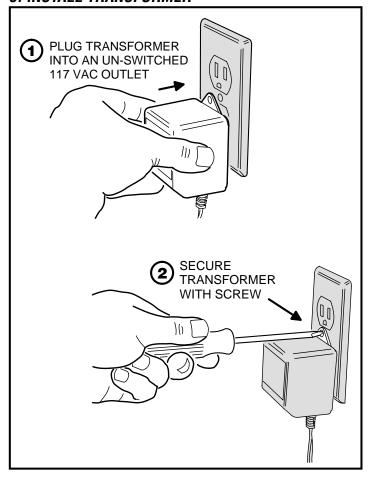
6. OPTIONAL REMOTE SPEAKER/MIC CONNECTIONS



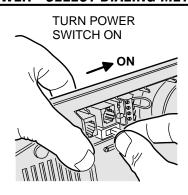
7. BACKUP BATTERY



8. INSTALL TRANSFORMER



9. APPLY POWER - SELECT DIALING METHOD



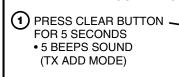
NOTE: THE DEFAULT DIALING METHOD IS TONE DIALING

IF REQUIRED. CHANGE THE DIALING METHOD BY PRESSING AND HOLDING THE HOME & CLEAR BUTTONS WHILE SWITCHING THE POWER ON



- 7 BEEPS SOUND FOR PULSE DIALING
- 8 BEEPS SOUND FOR TONE DIALING

11. INSTALLING SINGLE TRANSMITTERS





(2) ACTIVATE TRANSMITTER • 1 BEEP SOUNDS (TX ADDED) CONSOLE REVERTS TO OPERATE MODE



NOTE: IF THE CONSOLE'S MEMORY IS FULL. ONE LONG BEEP SOUNDS WHEN TRYING TO ADD A TRANSMITTER



(3) REPEAT STEPS 1 & 2 FOR ADDITIONAL TRANSMITTERS (UP TO 16 TOTAL)

NOTE: PRESS CLEAR BEFORE TRANSMITTING TO RETURN TO OPERATE MODE WITHOUT ENTERING A TRANSMITTER

- 2 BEEPS SOUND WITH ACTIVITY TIMER ENABLED
- 3 BEEPS SOUND WITH ACTIVITY TIMER DISABLED

THE CONSOLE WILL RETURN TO OPERATE MODE **AUTOMATICALLY AFTER 30 SECONDS**

10. TRANSMITTER INSTALLATION OPTIONS

FOR ALL TWO-BUTTON TX'S EXCEPT DXS-63



WHEN IT IS **INSTALLED** WITH THE LEFT BUTTON



IT WILL **ACTIVATE USING EITHER** BUTTON



WHEN IT IS **INSTALLED** WITH THE **RIGHT BUTTON**



IT WILL ONLY **ACTIVATE USING BOTH BUTTONS**

FOR DXS-31 STATIONARY TRANSMITTERS

WHEN IT IS INSTALLED WITH THE JUMPER SET FOR DELAY





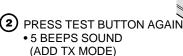
DXS-21

FOR MODEL DXS-32: CUT JUMPER (INSTANT TX) FOR USE AS AN ACTIVITY TX. SEE DXS-32 INSTALLATION INSTRUCTIONS

12. INSTALLING MULTIPLE TRANSMITTERS

ADDS MULTIPLE TRANSMITTERS

(1) PRESS TEST BUTTON 4 BEEPS SOUND (TEST MODE)





(3) ACTIVATE TRANSMITTER • 1 BEEP SOUNDS (TX ADDED)

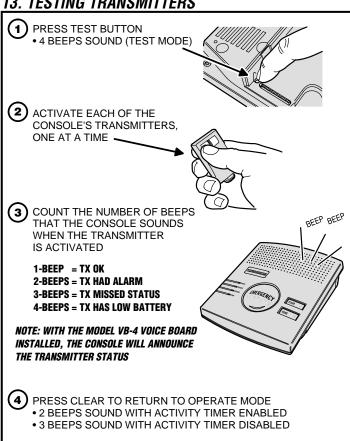
> **NOTE: IF THE CONSOLE'S MEMORY** IS FULL, ONE LONG BEEP SOUNDS WHEN TRYING TO ADD A TRANSMITTER



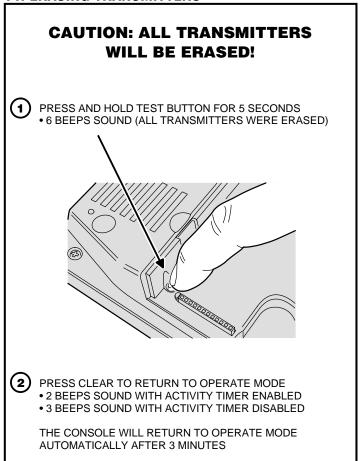
- (5) PRESS CLEAR TO RETURN TO OPERATE MODE 2 BEEPS SOUND WITH ACTIVITY TIMER ENABLED
 - 3 BEEPS SOUND WITH ACTIVITY TIMER DISABLED

THE CONSOLE WILL RETURN TO OPERATE MODE AUTOMATICALLY AFTER 3 MINUTES

13. TESTING TRANSMITTERS



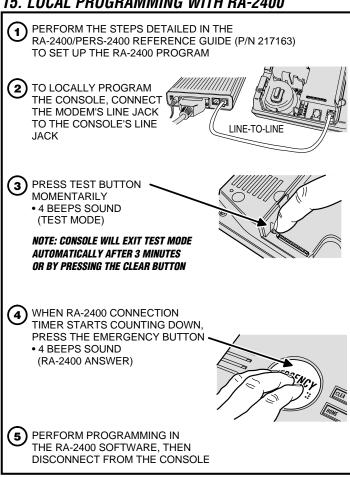
14. ERASING TRANSMITTERS



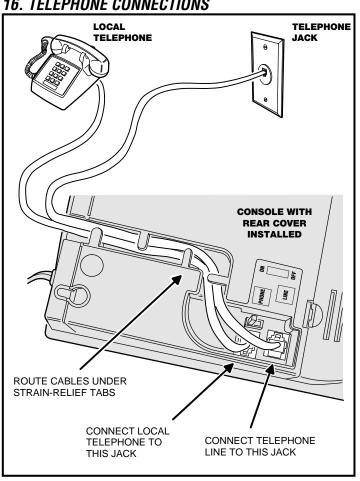
15. LOCAL PROGRAMMING WITH RA-2400

AUTOMATICALLY AFTER 3 MINUTES

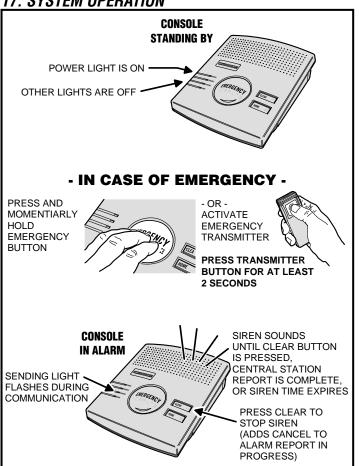
THE CONSOLE WILL RETURN TO OPERATE MODE



16. TELEPHONE CONNECTIONS



17. SYSTEM OPERATION



19. AUDIO BOARD OPERATION

- PROGRAM THE CONSOLE FOR THE DESIRED AUDIO MODE:
 - LISTEN-ONLY
 - 2-WAY MANUAL
 - 2-WAY FULL DUPLEX
- 2 AFTER THE CENTRAL STATION OPERATOR ACKNOWLEDGES THE COMMUNICATOR'S REPORT, THE CONSOLE WILL STOP ITS SIREN AND SWITCH TO THE AUDIO MODE FOR 90 SECONDS
- (3) CENTRAL STATION OPERATOR:

USE THESE KEYS ON A TELEPHONE SET CONNECTED TO THE CENTRAL STATION LINE TO CONTROL THE AUDIO MODULE

ALL AUDIO PRESS "9" TO DISCONNECT THE CALL



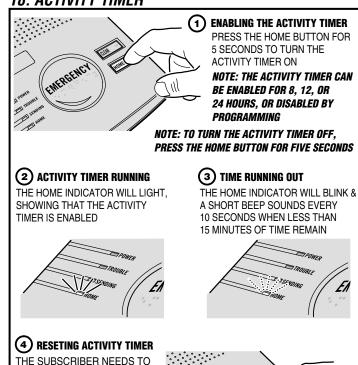
THE "1" AND "3" KEYS ARE NOT USED IN LISTEN-ONLY AUDIO MODE

THE "1" AND "3" KEYS CAN BE USED IN FULL DUPLEX MODE. THE MODULE WILL SWITCH TO 2-WAY MANUAL MODE. PRESSING "8" RESTORES FULL DUPLEX MODE.

PRESSING ANY KEY OTHER THAN "9" WILL EXTEND THE AUDIO TIME 90 MORE SECONDS

NOTE: TO USE THE AUDIO MODES, THE MODEL VB-4 AUDIO MODULE MUST BE INSTALLED IN THE CONSOLE

18. ACTIVITY TIMER



20. SPEAKERPHONE OPERATION

PRESS THE HOME BUTTON OR

TRANSMITTER BEFORE THE

TIMER EXPIRES TO PREVENT

PRESSING THE HOME BUTTON

TRIGGER AN ACTIVITY

AN INACTIVITY REPORT

RESTARTS THE TIMER

- 1 PROGRAM THE CONSOLE TO ENABLE SPEAKERPHONE MODE NOTE: SPEAKERPHONE MODE CAN ONLY BE USED ON INCOMING CALLS AND WILL NOT FUNCTION WHEN THE CONSOLE IS OPERATING FROM BACKUP BATTERY POWER. ATTEMPTING TO ANSWER WHILE THE CONSOLE IS ON BACKUP POWER WILL CAUSE AN EMERGENCY ALARM.
- WHILE THE TELEPHONE IS RINGING, ACTIVATING AN EMERGENCY TRANSMITTER OR PRESSING THE EMERGENCY BUTTON WILL SEIZE THE TELEPHONE LINE





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- THE AUDIO BOARD WILL BEGIN 2-WAY FULL DUPLEX MODE FOR AUDIO COMMUNICATIONS
 - WARNING: THE CONSOLE WILL NOT BE ABLE TO REPORT AN EMERGENCY WHILE THE SPEAKERPHONE MODE IS ACTIVE

NOTE: TO REPORT AN EMERGENCY WHEN THE SPEAKERPHONE IS IN USE, PRESS EITHER THE EMERGENCY BUTTON OR THE BUTTON ON AN EMERGENCY TRANSMITTER TO END THE PHONE CALL AND THEN PRESS ONE OF THESE BUTTONS AGAIN TO REPORT THE EMERGENCY.

- THE AUDIO BOARD WILL END AUDIO COMMUNICATIONS WHEN EITHER:
 - THE EMERGENCY BUTTON IS PRESSED
 - ANY EMERGENCY TRANSMITTER IS ACTIVATED
 - THE AUTO-DISCONNECT TIMER RUNS OUT

NOTE: TO USE THE SPEAKERPHONE MODE, THE MODEL VB-4 AUDIO MODULE MUST BE INSTALLED IN THE CONSOLE

21. SUPERVISORY CONDITIONS

TRANSMITTER LOW BATTERY TROUBLE

WHEN A TRANSMITTER SENDS A LOW BATTERY SIGNAL THE CONSOLE'S TROUBLE INDICATOR WILL BLINK SLOWLY.

TRANSMITTER SUPERVISORY TROUBLE

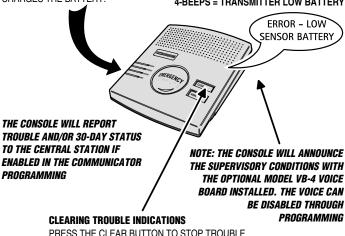
IF A TRANSMITTER PROGRAMMED AS SUPERVISED FAILS TO REPORT STATUS IN A 24 HOUR PERIOD, THE CONSOLE'S TROUBLE INDICATOR WILL LIGHT.

CONSOLE BACKUP BATTERY TROUBLE

THE CONSOLE WILL TEST ITS BACKUP BATTERY EVERY 8 HOURS. IF THE BATTERY TESTS LOW, THE POWER INDICATOR WILL BLINK SLOWLY WHILE THE CONSOLE CHARGES THE BATTERY.

WHEN TROUBLE EXISTS. THE CONSOLE WILL BEEP EVERY **HOUR UNTIL CLEARED:** 2-BEEPS = CONSOLE LOW BATTERY

3-BEEPS = TRANSMITTER SUPERVISORY 4-BEEPS = TRANSMITTER LOW BATTERY



PRESS THE CLEAR BUTTON TO STOP TROUBLE INDICATORS AND SOUNDERS

NOTE: THE TROUBLE CONDITION WILL LIKELY OCCUR AGAIN UNTIL THE PROBLEM IS FIXED

SPECIFICATIONS

CODING FORMATS

DX CODE 24-BIT A1D PPM 1,048,567 CODES DXS CODE 24-BIT A1D PPM 1,048,567 CODES

POWER REQUIREMENTS

BACKUP SUPPLY

PRIMARY SUPPLY 16 VAC 1.25 AMP PLUG-IN TRANSFORMER 12 VOLT 1.2 AMP/HOUR BATTERY

NORMAL OPERATING CURRENT 80 mA ALARM OPERATING CURRENT 120 mA

BACKUP OPERATION DURATION 32 HOURS MINIMUM BATTERY LIFE EXPECTED 3 YEARS

BACKUP SUPPLY OPERATING CURRENT

RF CHARACTERISTICS

RECEIVER TYPE DUAL-DIVERSITY SUPERHETERODYNE RF SENSITIVITY -100 dBm TYPICAL

RADIO FREQUENCY 315 Mhz

MAXIMUM RANGE 400 FEET LINE-OF-SIGHT, OPEN RANGE

ULLISTED FOR 150'

COMMUNICATOR

COMMUNICATOR FORMATS 4 BY 2 (GENERAL OR POINT-TO-POINT),

ADEMCO CONTACT ID

UL TESTED WITH SURGARD SGMLRG-DG

CENTRAL STATION RECEIVER

DIALING TONE OR PULSE DIALING DELAY 0 OR 15 SECONDS

REMOTE ACCESS PASSWORD 6 DIGITS ACCOUNT NUMBER LENGTH 4 DIGITS PRIMARY TELEPHONE NUMBER 20 DIGITS

SECONDARY TELEPHONE NUMBER 20 DIGITS SUPERVISORY TELEPHONE NUMBER 20 DIGITS

CONSOLE STATUS REPORT OPTIONAL 1, 7 OR 30 DAY REPORT

CONSOLE

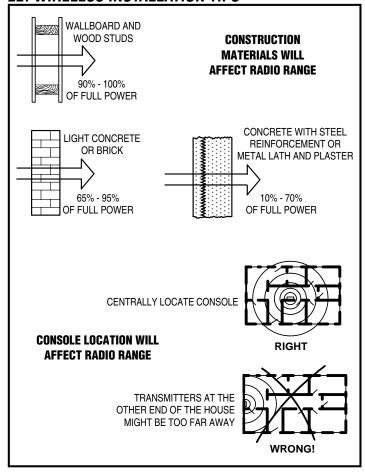
OPERATING TEMPERATURE 32°-100° F (0-50° C) **EMERGENCY ALARM DURATION** 1-30 MINUTES 8, 12, OR 24 HOURS ACTIVITY TIMER PERIOD

AUDIO LISTEN-ONLY, 2-WAY MANUAL, 2-WAY DUPLEX,

SPEAKERPHONE

RELAY OUTPUT N.O. @ 24 VOLT AC/DC 1 AMP MAXIMUM, NEC CLASS II CIRCUITRY

22. WIRELESS INSTALLATION TIPS



LINEAR LIMITED WARRANTY

This Linear product is warranted against defects in material and workmanship for twelve (12) months. The Warranty Expiration Date is labeled on the product. This warranty extends only to wholesale customers who buy direct from Linear or through Linear's normal distribution channels. Linear does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer's warranty, if any. There are no obligations or liabilities on the part of Linear Corporation for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation. All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until Warranty Expiration Date as labeled on the product. This Linear Corporation Warranty is in lieu of all other warranties express or implied.

All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Technical Services at 1-800-421-1587 for an RPA# and other important details.

IMPORTANT WIRELESS INFORMATION

Linear radio controls provide a reliable communications link and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- For U.S. installations only: The radios are required to comply with FCC Rules and Regulations as Part 15 devices. As such, they have limited transmitter power and therefore limited range.
- A receiver cannot respond to more than one transmitted signal at a time and may be blocked by radio signals that occur on or near their operating frequencies, regardless of code settings.
- Changes or modifications to the device may void FCC compliance.
- Infrequently used radio links should be tested regularly to protect against undetected interference or fault.
- A general knowledge of radio and its vagaries should be gained prior to acting as a wholesale distributor or dealer, and these facts should be communicated to the ultimate

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