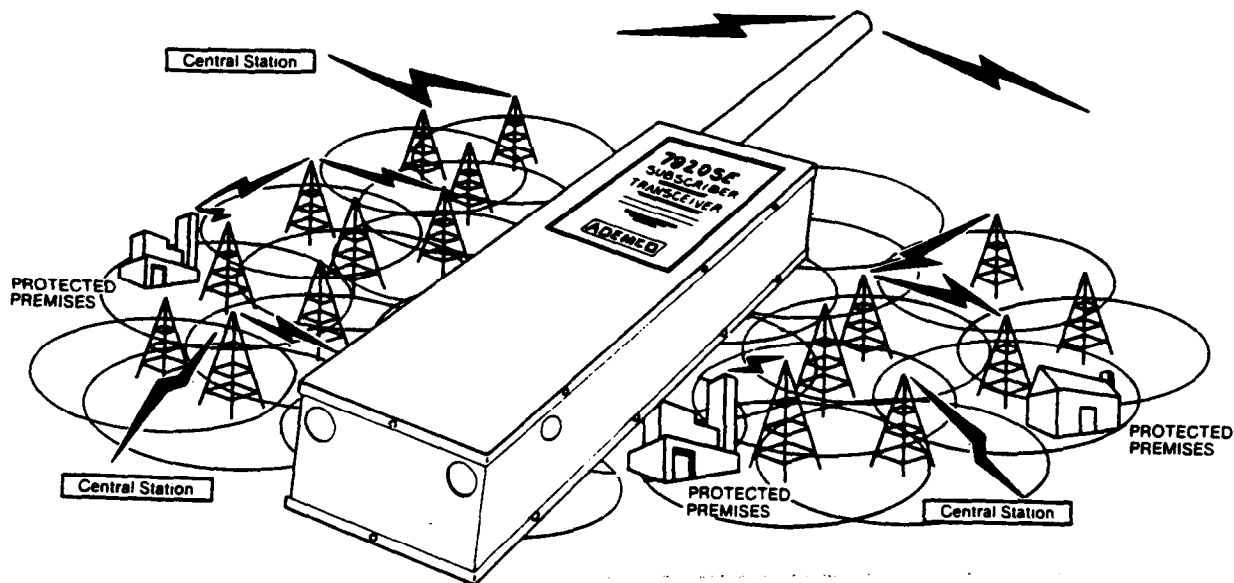


MARGIN LINES INDICATE PRINCIPAL CHANGES IN THIS ISSUE →

GENERAL INFORMATION**NOTE: THIS PRODUCT IS APPROVED BY THE NEW YORK CITY BOARD OF STANDARDS AND APPEALS UNDER CALENDAR NUMBER 865-89-SA.**

The 7920SE Transceiver is a self-contained, two-way polled radio, intended for use with an ADEMCO Long Range Radio security communication network. The 7920SE serves as a Subscriber's link to the radio security network, and is comparable to a digital communicator used in a system which communicates with a Central Monitoring Station by telephone line. The 7920SE can monitor either 6 traditional channel trigger inputs, or can process serial data received from selected Ademco Control/Communicators which follow the Ademco Communication Protocol (herein referred to as ACP. *Note that not all Ademco Control/Communicators are compatible with ACP data format (ex. 4160 & 4180 systems are NOT compatible).*)

**TABLE OF CONTENTS**

<u>SECTION</u>	<u>PAGE</u>	<u>SECTION</u>	<u>PAGE</u>
GENERAL INFORMATION.....	1	FAST MODE OPERATION.....	11
SYSTEM FEATURES.....	2	GENERAL INFORMATION.....	11
FUNCTIONAL DESCRIPTION.....	3	UPLINK/DOWNLINK MONITORING.....	11
GENERAL OPERATION.....	3	FAST MODE DISPLAYS.....	11
COMMUNICATION.....	3	MOUNTING THE 7920SE.....	12
ASYNCHRONOUS TRANSMIT OPTION.....	3	GENERAL INFORMATION.....	12
LED INDICATORS.....	4	MOUNTING THE NO. 7625 ANTENNA.....	12
INTERFACE BOARD JUMPERS.....	4	INSTALLING TAMPER SWITCHES.....	13
PROGRAMMING THE 7920SE.....	5	MOUNTING THE TRANSCEIVER.....	13
CONNECTING A COMPUTER.....	5	WIRING THE 7920SE.....	13
PROGRAM MODE SELECTION.....	5	POWERING THE SYSTEM.....	14
USING A PORTABLE COMPUTER.....	5	SPECIAL UL INSTRUCTIONS.....	15
PASSWORD PROTECTION.....	6	TESTING THE SYSTEM.....	15
GENERAL PROGRAMMING NOTES.....	6	ADVANCED DIAGNOSTICS.....	16
CENTRAL STATION MENU.....	7	NO. 685 DIGITAL RECEIVER MESSAGES.....	19
SUBSCRIBER SETUP MENU.....	9	CONNECTION DIAGRAM.....	20, 21
		SPECIFICATIONS.....	22

SYSTEM FEATURES

WIRELESS REPORTING

Alarm and status messages are transmitted to the security network by radio, providing faster and more secure reporting than that typically achieved by conventional telephone line reporting.

COMPATIBILITY

The 7920SE is compatible with installations using standard alarm control panels with alarm trigger outputs or Ademco equipment that conforms to the Ademco Communication Protocol (ACP) for serial data output. The 7920SE may be used with digital communicators on the same system, each serving as a backup to the other. (Use an Ademco No. 659EN Line Fault Monitor connected to a 7920SE telco fault input to report a line cut as a system backup to the control/communicator). The 7920SE can also serve as a stand-alone alarm reporting device in applications where remote sensors are continuously armed.

PROGRAMMABLE FEATURES

The 7920SE utilizes EEPROM (Electrically Erasable PROM) technology, which allows the 7920SE to be programmed with a computer terminal. The programming options include channel assignments for Telco fault input, inverted trigger inputs, delayed reporting channels (16 second delay, if selected), open/close/restore reporting channels, and auxiliary control output programming.

CHANNEL TRIGGER INPUTS

The 7920SE provides monitoring of up to 6 traditional channel triggers, with any channel capable of being programmed for triggering on inverted inputs. Channel inputs are activated by 4.5-12VDC voltage inputs, or by the application or removal of dry contact closures.

INPUT FOR SERIAL DATA

The 7920SE has provision for the transmission of serial type data, via a 4 wire cable, when used in conjunction with Ademco Communication Protocol (ACP) compatible control/communicators.

BUILT-IN LEDS

The 7920SE Interface Board has four LED indicators which indicate message reception, message transmission, messages waiting to be transmitted, and the execution of a control function. The No.7920SE also provides output terminals for connection to remote LEDs. The remote LED outputs can also be programmed to serve as Central Station controlled outputs.

POWER SUPPLY

The 7920SE features a self-contained power supply, requiring only an 18VAC power input, which can be provided by an Ademco No. 1349 transformer plugged into a 120VAC, 60 Hz, 0.5 amp continuous AC power source. A battery provides backup operating power in the event of a primary power failure.

LOW BATTERY MONITORING

The system notifies the Central Station of the condition of the battery with every periodic status message and alerts the Central Station whenever the battery level drops below 11.2V ($\pm 5\%$). In addition, the relative condition of the battery can be displayed on a computer terminal connected to the 7920SE when monitoring network radio activity (see ADVANCED DIAGNOSTICS section).

SELF DIAGNOSING TRANSCEIVER

The 7920SE has self-checking features which provide central station notification in the event of a radio failure. Should a continuous transmit malfunction occur, the 7920SE will notify the Master Stations with a special alarm message. Immediate action should then be taken to remedy the fault. The "High Security Self-Check" feature (described separately) supervises non-transmit functions and signals faults at terminal 7 of TB2 (Radio OK output), which can be used to locally annunciate the fault or to communicate the condition to the central station via phone link. Receiver operation is checked by two programmable timeout periods: Receiver Trouble Timeout and Poll Timeout. The "Receiver Trouble Timeout" triggers a fault at the "Radio OK" terminal (TB2-7) if the receiver does not hear normal network radio activity within a programmable time period. The "Poll Timeout" will transmit a poll timeout message to the network if the Transceiver is not polled within a programmable time period. In addition, the Master Stations continuously collect diagnostic data from each Subscriber in the network, and will notify the Central Station if a particular 7920SE is malfunctioning.

HIGH SECURITY SELF-CHECK

The high security test verifies that the antenna cable is intact by sensing reflected power levels (VSWR test) of periodically transmitted signals, and serves as antenna tamper protection. The test interval is programmable from once every 15 seconds to once every 255 seconds. Failure of this test results in a fault signal (low output) at the "Radio OK" output terminal. The 7920SE normally performs this check when transmitting messages.

**TELCO LINE FAULT
INDICATOR**

When selected, this feature will report the failure of a monitored telephone line to the Central Station. Terminal 5 of TB2 is the telco fault input terminal when operating in ACP serial data mode. For zone trigger operation, any of the 6 input channels may be designated the Telco fault input.

**CHASSIS TAMPER
PROTECTION**

For UL "AA" installations, chassis tamper switches (Ademco No. 945WH or No. 945BR) must be added to trigger an alarm whenever the chassis cover is removed, thus protecting against unauthorized access to the 7920SE.

FUNCTIONAL DESCRIPTION

GENERAL OPERATION

The 7920SE is a digitally synthesized FM transceiver that converts conventional alarm system messages to radio messages, enabling an alarm control panel, or control/communicator, to communicate with the Central Station via the radio security network Master Stations. Once a radio communications channel is programmed, the 7920SE automatically and continuously fine tunes its frequency to that of the security network Master Stations. This frequency is then stored in EEPROM and will be the initial frequency of the 7920SE upon power-up and reset.

The 7920SE utilizes a No.7625 antenna which is an omni-directional antenna, that may be mounted indoors, connected directly to the transceiver, or may be mounted outdoors, using pre-assembled coaxial cable available from Ademco. (Choice of cable lengths: 5 feet, 12 feet, or 25 feet).

COMMUNICATION

The network communication scheme is based on a polling process, whereby the network Master Stations regularly poll each of the No.7920SE Transceivers entered in the network database, and will alert the central station if a particular Transceiver has not acknowledged repeated poll messages within a Master Station programmable time period. This, in addition to the Transceiver's "poll timeout" feature, which alerts the Master Station if it has not received a poll within a programmable time period, provides full Transceiver supervision. To further ensure that the Transceivers are periodically heard from, each Transceiver regularly transmits asynchronous "I'm OK" messages to the Master Stations.

When the 7920SE receives an alarm from the alarm control panel (zone trigger or serial data), it first waits a brief period of time (6-12 seconds) for a network poll. If the 7920SE does not receive a poll within that time, it transmits "alarm waiting" messages, waiting a brief period between transmissions to receive network acknowledgment. When the transceiver is polled, or the Master Station acknowledges the "alarm waiting" status of the 7920SE, the Master Station opens a time slot for the 7920SE to transmit the actual alarm message. When the alarm message has been transmitted, it is relayed through the Master Station network to the Central Station, where it is processed by the No. 685 Digital Receiver. The 7920SE then reports the alarm as a previously reported event in subsequent polls, for as long as the alarm condition exists.

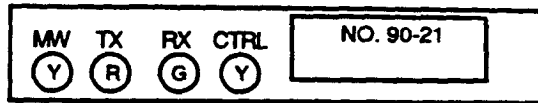
ASYNCHRONOUS TRANSMIT OPTION

The 7920SE provides a programming option (Async Transmission selection) which allows it to transmit actual alarm messages to the Master Station in the event it does not receive "alarm waiting" acknowledgments. If the Async Transmission option is selected, the 7920SE will send three "alarm waiting" messages (at 1 second intervals) upon alarm, and will wait 3-6 seconds for the Master Stations to acknowledge the "alarm waiting" status. If the 7920SE is acknowledged within that time, the Master Stations will relay the alarm through the polling process described above. If an acknowledgment is not received, the 7920SE will immediately begin transmitting the actual alarm message as if it were a one-way, asynchronous subscriber radio, up to the programmed repeat count number (normally set for 60 repeats). If this option is not programmed, the 7920SE will continue to transmit "alarm waiting" messages until it is polled and acknowledged by a network Master Station.

OLD ALARM TIMEOUT: If programmed for Async Transmissions, the Transceiver will normally report all asynchronously transmitted alarms as new events when it is eventually polled by the network. If desired, the 7920SE can be programmed to report the asynchronously transmitted alarm as a previously reported event after a set time period (10 minutes - 42 hours). Note that this feature is available only when the Async Transmission option is enabled.

LED INDICATORS

There are four LED indicators, located on the Interface Board (located beneath the chassis's removable cover), which indicate the following functions of the 7920SE:



LED INDICATORS

Message

Waiting (MW): Yellow LED lights solid when the 7920SE has an alarm message to transmit to the Master Stations.

Transmitting (TX): Red LED flashes when the 7920SE is transmitting a message, either alarm or status, to the Master Stations.

Receiving (RX): Green LED flashes when the 7920SE is receiving messages from the Master Stations.

Control (CTRL): Yellow LED flashes when a downlink command is received.*

Upon initial power-up, the MW, TX & RX LEDs will blink for 8 seconds, after which they will begin flashing in accordance with their functions. These LEDs should be observed to verify proper communication with the security radio network (the red and green LEDs should flash relatively frequently). Provision is also made for connection to remote LEDs, if desired. These remote LED outputs can also be used as auxiliary control outputs.*

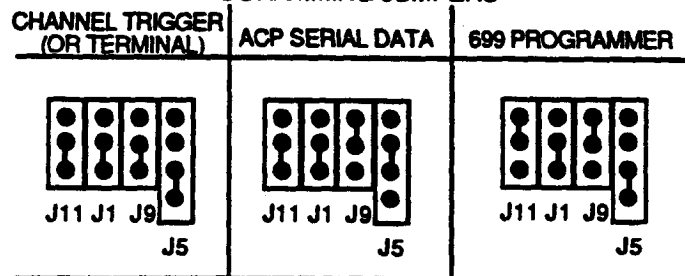
*Note that if more than one control output is being used, the LEDs will NOT flash according to their radio function described above. They will light in accordance with their Control Output programming.**

***CAUTION:** When using control outputs, note that transceiver power resets (as when entering Program Mode) can affect the state of any device connected to the control outputs, and that appropriate measures such as time delays, should be taken to avoid undesirable results due to the device's change of state.

INTERFACE BOARD JUMPERS

The Interface Board has 4 Programming jumpers (J11, J1, J9, J5) which are used to set the operating mode of the 7920SE as follows:

PROGRAMMING JUMPERS



INSTALLATION PROCEDURES

To install the 7920SE, the following tasks must be performed:

1. Program the unit's system parameters using a standard or laptop computer terminal, No. 699 Programmer, or 7720P Programming Tool.
2. Determine a suitable antenna location using the FAST mode of operation.
3. Install the optional tamper switches, if desired.
4. Mount the unit and antenna.
5. Complete wire connections.
6. Test the system.

PROGRAMMING THE 7920SE

CONSOLE DISPLAYS SHOWN IN THIS SECTION HAVE BEEN CHANGED IN THIS ISSUE

INTRODUCTION

NOTE: These programming instructions apply only to units with software version 7.0 or higher.

Before installing the 7920SE, the unit must be programmed by using either a 7720P Programming Tool, No. 699 programmer with 695-79 programming cartridge installed (see No. 695-79 Installation Instructions for procedures), or by using a standard or laptop ASCII, RS232C computer terminal. Programming is accomplished by answering questions to two sets of programming menus: Central Station parameters and Subscriber parameters. Ideally, the Central Station parameters should be programmed by an authorized Central Station representative prior to the unit's delivery to the installation site.

CONNECTING A COMPUTER

1. Set the computer terminal to the following parameters:

Auto Return	Disabled
Baud rate:	9600
Parity	none
Data bits	8
Stop bits	1
Connector	RJ11 telephone plug (male) connected to a DB25 (standard computer) or DB9 (for Laptop computers) wired as follows:

Wiring Table for connecting the 7920SE to a Computer Terminal

7920SE TRANS. (RJ11)	STANDARD COMPUTER (DB25)	LAPTOP COMPUTER (DB9)	COLOR	FUNCTION
1	--		Yellow	Not Used
2	7	5	Green	Circuit Ground
3	3	2	Red	Receive Data
4	2	3	Black	Transmit Data

Note: Be sure the Interface Board jumpers are set for channel trigger or ACP serial data operation when programming with a computer terminal.

2. Remove the Interface Board cover from the 7920SE and connect the RJ11 plug from the 7720P or computer terminal to the J2 telephone jack. Turn on the computer.

PROGRAMMING MODE SELECTION

Power up (or "X" key reset) the 7920SE (see "POWERING THE SYSTEM" section). The red, green and yellow LEDs will blink on and off (if 4 control lines are programmed, console will beep once/second) for 8 seconds, during which time the operating mode can't be selected. Press one of the following letters to select mode:

F - FAST mode, for determining antenna location.
S - Subscriber Setup mode, for setting user options.
C - Central Station mode, for setting Central Station settings and passwords.

Once the mode is selected, a password prompt will appear (if programmed). If a password is not assigned, the "7720P(Y/N)" question (described later) will appear. Refer to the descriptions following for programming procedures. If selection is not made within 8 seconds from power up (or reset), the unit will automatically enter normal mode. To reset the 7920SE at any time, press "X" (SHIFT-X for 7720P).

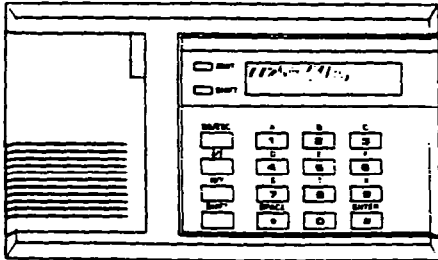
To exit programming mode, press "N" in response to the "CHANGE OPT(Y/N)" question.

GENERAL PROGRAMMING NOTES

- For the purposes of this manual, the symbol █, shown in the display windows, represents a flashing cursor that appears on the actual computer screen or 7720P display.
- Each menu displays a series of questions which can be answered by pressing "Y" for yes, "N" for no, or the RETURN key for no change to the parameter. When a numerical entry is required, type the appropriate value, then press the RETURN (ENTER) key to display the next question.
- Enter zero (0) to clear previously assigned option values.
- When more than one zone is being assigned a particular option, type all zone numbers consecutively. Do not use any spaces or punctuation between the numbers. Unless otherwise noted, leading zeroes are not required in numerical entries.
- If the "Four Control Outputs" option is programmed, a beep will sound once per second for the duration of the eight second mode selection time in lieu of the blinking LEDs.

USING A 7720P PROGRAMMING TOOL

7720P(Y/N)■



The 7720P is powered by the 7920SE and can be used to program the 7920SE, as well as be used to monitor FAST mode displays. After connecting the cable to the 7920SE, hold down the [#] key (ENTER) while powering up the 7920SE. This will set the baud rate to 9600.

Each key of the 7720P has two functions, normal and SHIFT functions.

KEY	NORMAL KEY FUNCTION	SHIFT KEY FUNCTION
BS/ESC	[BS]: Press to delete entry	[ESC]: Not used with 7920SE
↓/↑	[↓]: Not used with 7920SE	[↑]: Not used with 7920SE
N/Y	[N]: Press for "NO" answer. Also used to display Node Table.	[Y]: Press for "YES" answer
SHIFT	Press before pressing a SHIFT key function. Will light SHIFT LED. LED goes out once a key is pressed. Must press again for each SHIFT function desired.	
1/A	[1]: For entering the number 1	[A]: AlarmNet channel A select
2/B	[2]: For entering the number 2	[B]: AlarmNet channel B select
3/C	[3]: For entering the number 3	[C]: Central Station menu select
4/D	[4]: For entering the number 4	[D]: FAST mode downlink command
5/E	[5]: For entering the number 5	[E]: Not used with 7920SE
6/F	[6]: For entering the number 6	[F]: FAST mode select
7/S	[7]: For entering the number 7	[S]: Subscriber menu select
8/T	[8]: For entering the number 8	[T]: FAST mode transmit command
9/X	[9]: For entering the number 9	[X]: Press to reset 7920SE
/SPACE	[]: Not used with 7920SE	[SPACE]: Not used with 7920SE
0	[0]: For entering the number 0	No SHIFT function
#/ENTER	[/ENTER]: Press to accept variable entries	No SHIFT function

Once the password is accepted (if programmed), the 7920SE asks which type of computer is being used. Press SHIFT-Y if using a 7720P Programming Tool. The 7720P uses the same procedure as a standard terminal except that the CURRENT PARAMETERS screen is not displayed. The current settings are displayed on the second line of each programming question however.

PASSWORD PROTECTION

CS PROGRAMMING
CHNG PWRD(Y/N)■

SELECT 1 OR 2■

PWRD 1
■

VERIFY
■

PWRD N/G
■

PWRD OK
SVE NU PWRD(Y/N)■

NU PWRD DISCRD

Both the Central Station setup menu and the Subscriber setup menu can be programmed for password protection, if desired, and each of these menus can be assigned a different password, which provides additional security. Passwords are programmed using the Central Station Setup Menu. Upon entering this menu (pressing "C" within 8 seconds of power up or "X" key reset), and answering the "7720P(Y/N)" question, this series of questions appears:

Press "Y" to assign a password for either the Subscriber or Central Station menus. If "N" is pressed, the display goes directly to the current parameters display shown in the "CENTRAL STATION SETUP MENU" section. If "Y" is pressed, the following is displayed:

Press "1" to assign a password for the subscriber programming menu. Press "2" to assign a password for the central station programming menu. The following is displayed:

Enter any four characters (must be four characters) and press RETURN. Note that for added security, the characters are not displayed while typing.

Reenter the same four characters. If the new characters do not match the first entered characters, the following is displayed:

The characters entered did not match the first entered characters. Enter the password characters desired and press RETURN. The VERIFY message will again be displayed.

Press "Y" to install the new password. Press "N" if the entry is to be discarded. The screen displays:

When password programming is completed, the screen displays the current system parameters with the CHNG OPT (Y/N) question. Refer to the "CENTRAL STATION SETUP MENU" section for Central Station programming instructions.

CENTRAL STATION SETUP MENU

INTRODUCTION

Prior to installation, the 7920SE must be programmed with Central Station parameters. To enter this programming mode, press "C" at the terminal within 8 seconds of power-up or "X" key reset. A password prompt will appear (if previously programmed). This password must be entered correctly on the first try. If not, the unit must be powered off, then on, and the mode selection repeated. When the password is accepted, the "CHANGE PASSWORD?" question appears (described earlier). When password programming is completed (or bypassed by answering "N"), and the "7720P(Y/N)" question is answered "N", the current system parameter settings are displayed:

CENTRAL STATION SETUP PARAMETERS

CS PROGRAMMING
CHNG OPT(Y/N)█
7720P DISPLAY

(S) ID #	FFFF
(C) O/E	ODD
(C) ALARMNET*	YES A
(C) CS*	FF
(C) CHNL**	(XX)
(S) ROUTING**	(X)
(C) ASYNC ALRMS	YES
(C) REPEAT #	60
(C) REC TIMEOUT	600 SECONDS
(C) HS TEST	255 SECONDS
(C) OLD ALARM	1 X 10 MINUTES
(S) TELCO ZONE	NONE
(S) INVERT ZONES	NONE
(S) DELAY ZONES	NONE
(S) O/C ZONE	NONE
(S) REST ZONES	NONE
(S) SUPERV ZONES	NONE
(S) CNTL LINE(S)	1L
(C) POL TIME-OUT	30 MINUTES
(C) RADIO FLT	LATCHED

CHNG OPT(Y/N)

COMPUTER TERMINAL DISPLAY

Values shown are the default values for the 7920SE

The letters "C" and "S" in parenthesis indicate the programming menu used to set that parameter, where:

C = Central Station Setup Mode and S = Subscriber Setup Mode. The "X" is a numerical value.

**These two lines appear only if the Subscriber is an AlarmNet customer.*

***These two lines appear only if the Subscriber is a Private System customer.*

If changes are desired, or the unit is being programmed for the first time, press "Y", which will begin a series of questions. Press "N" when programming is complete. This will reset the unit (as if powered off/on) and allow entry into another programming mode. The unit will return to Normal mode if no entry is made within the 8 seconds.

SUBSCRIBER'S NETWORK OPTIONS

ODD(Y/N)
(ODD)█

Press "Y" if the security radio network is using an odd flag. "N" if the system is using an even flag.

AlarmNet(Y/N)
(ALARMNET CS#11)█

Press "Y" if the subscriber is part of the AlarmNet security system. Press "N" for Private System subscribers. Note that the Subscriber Menu "VERIFY" question must be answered before the unit will operate. AlarmNet users answer the following:

CHAN A OR B
(A)█

Enter the assigned channel designation.

CS#(01-7F)
(11)█

Enter the assigned central station ID number. Use Leading zeroes.

Chnl #(1-14)█

For Private System users, enter the assigned channel number. This message does not appear for AlarmNet users.

SUBSCRIBER'S SUPERVISORY OPTIONS

Async Alrms
(60)Y/N#

Press "Y" if async transmissions (see "FUNCTIONAL DESCRIPTION" section) are desired. If this option is not selected, the 7920SE will always wait until it receives a poll acknowledgment before sending an alarm message. If selected, the following is displayed:

Repeat #(10-75)
->#

Enter the number of times the alarm message should be transmitted asynchronously

RxT/O(200-65533)
(600)Y/N#

Press "Y" if the 7920SE is to signal a fault at the "Radio OK" terminal (TB2-7) if network messages are not heard within a programmed time period, indicating a possible receiver problem. Enter the number of seconds to elapse without hearing network messages, after which time a fault is generated (default = 600 seconds). To convert hours to seconds, simply multiply the seconds by 3600. (Ex. 8 hours = 8 X 3600 or 28,800 seconds)

HS Test? (15-255)
(30)Y/N#

Press "Y" if the 7920SE is to check its antenna cable integrity and transmitter operation at programmed intervals. Failure of this test results in a fault output at the "Radio OK" terminal. Enter the number of seconds to elapse between the transmit tests (default = 255 sec).

Old Air (1-255)
(1x10)Y/N#

Press "Y" if the 7920SE is to clear asynchronously transmitted alarms after a programmed timeout period. Enter the timeout period after which the 7920SE is to clear asynchronously transmitted alarms. Multiply the entered amount by 10 minutes for the actual time period. If this option is not programmed, the 7920SE will report the asynchronously transmitted alarm as a new event the next time it is polled, regardless of the actual time elapsed since the original alarm.

Poll-T/O(5-255)Y/N
(30)Y/N#

Press "Y" if a "Poll Timeout" report is desired. This message indicates that the unit has not been polled by the network within a programmed time period and takes the form: 5515 5555 6. Enter the number of minutes to elapse without a poll, after which time the unit sends the Poll Timeout alarm (default = 30 minutes).

Fit Latched (Y/N)
(LATCH)#

Press "Y" if the fault output to the "Radio OK" terminal (pin 7) is to remain latched low. Pressing "N" results in a momentary ("PULSE") low trigger on faults. When this question is answered, the display again lists all system parameters as shown at the beginning of this section.

SUBSCRIBER SETUP MENU

IMPORTANT! Be sure that the Central Station setup parameters have been programmed (see Central Station Setup Menu) before proceeding with these procedures. The unit will not operate otherwise.

INTRODUCTION

SUBSCRIBER PRG
CHNG OPT(Y/N)¶
7720P DISPLAY

To enter the Subscriber Setup Menu, press "S" within 8 seconds of power-up. When "S" is selected, a password prompt will appear (if programmed). The password must be entered correctly on the first try. If not, the unit must be powered off, then on again, and the mode selection procedure repeated. When the password is accepted, the question "7720P (Y/N)" will appear. Press "Y" or "N" according to the terminal being used. The list of current parameters will then be displayed, as shown in the beginning of the CENTRAL STATION SETUP MENU section. Press "Y" to begin the series of Subscriber Setup questions. When all questions have been answered, the screen will again display the list of current parameters and offer the opportunity to make changes or exit the programming mode (by pressing "N"). When "Y" is pressed, the following questions appear one at a time:

CENTRAL STATION INFORMATION

ID #(0001-9999)
(0525)->¶

Enter the customer's four-digit ID number, using leading zeroes if required, and press RETURN.

{CS} or {Pvt Chan}
VERIFY¶

This entry is used as a verification to prevent unauthorized users from altering parameters. AlarmNet users enter the Central Station ID number, Private System users enter the assigned channel number. Once the verification is accepted, this question will no longer appear, unless the central station number or private channel is changed in the central station menu, in which case this question must be answered before the unit will operate. An incorrect entry displays the following:

{CS# ERROR} or {Pvt Chan Error}
Did Not Verify
7920 NOT RUN
Until Re-Prgd

If this message appears, programming can still be completed, but the unit will not return to Normal mode when finished. Rather, it will display this error message again. To clear the error, the correct ID or channel number must be entered.

Routing (0-7)
(0)->¶

Enter the Private System routing code (if used). Refer to the No. 7610 Master Station manual for routing code information. This message does not appear for AlarmNet users.

ZONE OPTIONS

Telco Zone (1-6)
(2)->¶

Enter the Telco fault input zone number. Do not program this zone for Open/Close option.

Inverted Zone (1-6)
(NONE)->¶

Enter the zone number(s) for all zones which are to trigger on low inputs or relay contact openings.

Delay Zone (1-6)
(NONE)->¶

Enter the zone numbers for which it is desired to permit a 16 second delay before reporting an alarm.

O/E Zone
(NONE)->¶

Enter the zone number for the zone which is to report openings and closings after a 16 second delay. Do not program this zone as the Telco fault input channel. Only one zone can be an open/close zone.

Rst Zone (1-6)
(123456)->¶

Enter the zone which are to report restored conditions. Note that the Telco Fault zone will always report a restore, and need not be programmed for this option.

Ademco Supv
(NONE)->¶

Enter the zone numbers which have Ademco Mode supervision (an option in VECTOR 3000, for example).

CONTROL OUTPUT OPTIONS

4 Cntrl lins
(1L)Y/N

The 7920SE provides one control output terminal (TB1-2), with the option to program three additional control outputs. Press "N" if no additional control outputs are required and skip to the last question. If additional control outputs are required, press "Y". The display then asks:

Norm hl (1-4)

Control outputs are normally low but can be programmed to be normally high. Enter the control outputs which are to be at a normally high output level (refer to the Summary of Connections diagram for identifying the control output terminals). When entered, the display again lists all current parameters, as shown at the beginning of this section.

IMPORTANT! If "Four Control Outputs" is selected, the LEDs WILL NOT flash according to their radio functions described earlier. They will light in accordance with their Control Output programming."

Note that if Control Outputs are used, the keyboard will beep to indicate return to Normal mode, rather than light the LEDs. If the transceiver cannot return to Normal mode (ex. a parameter set incorrectly), the keyboard will beep rapidly.

***CONTROL OUTPUT CAUTION: When using control outputs, note that transceiver power resets (as when entering Program Mode) can affect the state of any device connected to the control outputs, and that appropriate measures, such as time delays, should be taken to avoid undesirable results due to the device's change of state.**

1 norm hl
(Y/N)

Press "Y" if the control output provided (TB1-2) is to be at a normally high output level. Press "N" if the control output is to be normally low. If this option is not required, this question can be bypassed by pressing RETURN. Note that if the "4 Cntrl lins (Y/N)" question is answered with a "Y", this question is omitted. If changing from 4 control lines back to only one (answering "N" to the "4 Cntrl Lins" question), this question must be answered with "Y" or "N". Pressing RETURN (instead of "Y" or "N") will retain the previously programmed control lines settings. When "Y" or "N" is pressed, the display returns to the list of current parameters shown at the beginning of this section.

FAST MODE OPERATION

FAST MODE OPERATION

NOTE: The 7920SE must be completely programmed before it will operate in the FAST mode.

FAST mode is used to find antenna locations that provide the strongest radio links with the network master stations. When activated, the 7920SE operates as a signal strength indicator, and will display two lines of numbers on a computer screen or the 7720P display. The upper numbers identify the Master Stations in the network (in hexadecimal notation) and the lower numbers indicate the signal strength at which uplink or downlink messages (depending on which display is activated; see next paragraph) are being received. Signal strength is measured on a scale of 0 to 10 (10 is displayed as hexadecimal A), where 10 is the strongest, and 0 is the minimum receivable signal strength. By moving the antenna to various sites, and observing these displays, the Installer can easily determine the best location for mounting the antenna.

The 7920SE can also be used to monitor one-way subscriber radios for determining how well the network is hearing them. By answering "Y" to the 1-WAY FAST (Y/N) question (described later) and entering the subscriber number for the one-way radio you wish to monitor, the 7920SE will listen for and display network or FAST messages sent from that subscriber on the 7720P or computer screen.

To use FAST mode, attach the 7625 antenna to one end of an antenna extension cable, and connect the other end of the cable to the chassis antenna connector. Connect a computer terminal as described in the PROGRAMMING section. Apply power to the Transceiver, and press "F" within 8 seconds of power up or "X" key reset. The following will be displayed:

1-WAY FAST (Y/N)

To listen to a specific one-way subscriber radio, press "Y", then enter the 4-digit subscriber number for that subscriber radio. Otherwise, press "N" to this question.

Uplink/Downlink Monitoring

When FAST Mode is selected, the lower line of the display shows the signal strength at which the 7920SE is receiving downlink signals from the network Master Stations. Uplink communication (how well the Master Stations hear the 7920SE, or selected one-way subscriber) can be monitored by pressing "T", which activates the 7920SE test message transmission, or, if 1-WAY FAST was selected, will display FAST messages sent from the selected one-way subscriber. When activated, the lower numbers represent the signal strength at which the network Master Stations are receiving the test or FAST messages. The test message transmission ends after about 5 minutes. To return to the downlink display before this time, press "D".

NOTE: The 7920SE will not transmit any messages if 1-WAY FAST mode is selected.

FAST Mode Displays

The two-line FAST Mode display appears as follows:

*123456789ABCDEF
• A7290

Typical AlarmNet display

*0123456789ABCDE
• 34A79900000A

Typical Private System display

IMPORTANT!: To ensure optimum communication with the network Master Stations, downlink field strength levels must consistently read 7 or higher and uplink levels must read 3 or higher.

The caret mark indicates whether the display is for uplink (upward pointing caret) or downlink (downward pointing caret) messages. The bouncing asterisk indicates radio activity is being heard. Note that the scale 0-10 does not represent the same values for both the uplink and downlink displays (i.e. 5 on the uplink display is actually a stronger signal than a 5 on the downlink display).

Installer judgment should be used when determining acceptable antenna locations. Since these readings are real-time measurements, a sporadic high reading does not necessarily mean reception will always be good. Move the antenna to various locations, checking the readings each time. Allow about 20 seconds of viewing for downlink signals and about 30 or more seconds for uplink signals to get a more accurate display of radio activity. Mount the antenna at the location which gives the most number of consistently high readings when the 7920SE is transmitting test messages (T mode), and when receiving downlink polls from the network (D mode).

Summary of FAST mode functions

- To select, press F within 8 seconds of power up.
- To transmit 7920SE test messages, or listen to selected 1-way FAST messages, press T.
- To return to the downlink display, press D.
- To exit FAST Mode, press X.

MOUNTING THE 7920SE

GENERAL INFORMATION

The 7920SE should be mounted indoors, in an area where it will be undisturbed. To facilitate system testing and to enhance its reliability, the transceiver should also be mounted in an easily accessible area. Before mounting though, it is important that the installer first examine the alarm site to verify that the radio will be able to communicate with the Master Station network. To determine the best antenna location, the FAST mode of operation is used. Refer to the FAST Mode section for instructions in its use. Once a good antenna location has been found, the antenna can be mounted. Follow the instructions below for the appropriate antenna mounting being used.

IMPORTANT! Although the specifications state an operating range of 4°F to 140°F (-20°C to 60°C), it is recommended that these temperature extremes be avoided. The

No. 7625-3dB and No. 7674 Antennas

In the event that acceptable signal strength cannot be achieved using the No. 7625 antenna, the optional No. 7625-3dB high gain or No. 7674 YAGI antenna may be used. The No. 7625-3dB adds about 3dB gain when compared to the standard No. 7625, and mounts in exactly the same way.

The No. 7674 antenna mounts outdoors in a suitable location, using the bracket supplied (the No. 7670 bracket is not required), has directional characteristics, and must be aimed in the direction which provides the strongest signal. Once this direction has been determined, the antenna should be permanently mounted in precisely the same position. Connect the antenna to the 7920SE using the shortest of the available fifty ohm coaxial cables which will reach. Tape all connections with a good quality insulating tape.

INSTALLING CHASSIS TAMPER SWITCHES

If chassis cover tamper protection is desired, mount Ademco No. 945WH or No. 945BR tamper switches to both chassis covers, wiring them in series with the "+" lead of the first switch connected to TB1-5, and the outgoing lead of the last switch connected to one of the six channel input terminals (TB2 pins 1-6). For ACP operation, this lead *must* be connected to TB2-4. When mounting these switches, do not exceed a gap of 7/8" between the contact and the magnet. *Note that tamper protection is required for UL "AA" rated installations.*

MOUNTING THE TRANSCEIVER

The 7920SE must be mounted indoors. Secure the transceiver bracket, using #10 screws that are screwed into wall studs, not sheetrock. Failure to mount into wall studs may result in the unit dislodging from the sheetrock.

FIRE INSTALLATIONS

If the 7920SE is being used for fire alarm signaling, a separate Battery Cabinet (No. 7920SEBB) must be used and special UL considerations must be followed. Refer to the SPECIAL INSTRUCTIONS FOR UL INSTALLATIONS section and the FIRE INSTALLATIONS diagram in this manual for detailed information.

WIRING THE 7920SE

Remove the Interface Board chassis cover to access the terminal blocks for wiring connections. Connect the 7920SE to the alarm control panel, routing the wires through the chassis knockout hole, as follows. Use either shielded or twisted pair 22 AWG wire.

WARNING!

FOR SAFETY, BE CERTAIN THERE IS NO POWER CONNECTED TO THE SYSTEM WHEN WORKING WITH THE COVER REMOVED.

TB2 Terminals

For traditional channel trigger operation, terminals 1-6 represent channels 1-6 respectively, and can be connected to the appropriate control panel zone trigger outputs. Any channel can be used as the Telco fault input. Each channel is normally at a low voltage, with faults triggered by voltage inputs (4.5-12VDC) or by dry contact closures (open circuit contact). These terminals can also be individually programmed for inverted operation (i.e. normally high input, with triggering on loss of voltage or on dry contact openings).

For ACP serial data operation, terminals 1-6 are connected to the ACP format compatible control/communicator data output terminals as follows:

- Terminal 1: Serial Data Input
- Terminal 2: Communicator Clear to Send
- Terminal 3: Control Request to Send
- Terminal 4: Tamper switch input (if used)
- Terminal 5: Telco fault input
- Terminal 6: Serial Data Output
- Terminal 7: Radio OK output (connect to LED or Dialer)
- Terminal 8: Remote Messages Waiting LED output (connect to anode of LED, using a 390 ohm current limiting resistor wired in series) or Control Output 4, if programmed.
- Terminal 9: Remote Transmitting LED output (connect to anode of LED using a 390 ohm current limiting resistor wired in series) or Control Output 3, if programmed.
- Terminal 10: No connection

TB1 Terminals

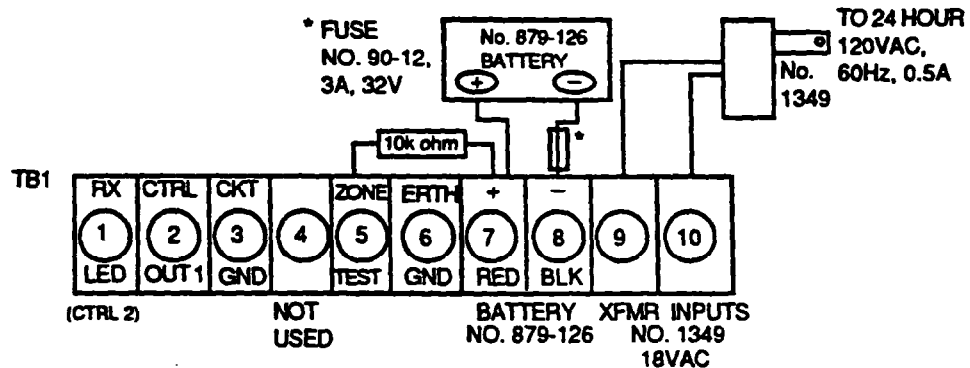
- Terminal 1: Remote Receiving LED output (connect to anode of LED using a 390 ohm current limiting resistor wired in series) or Control Output 2, if programmed.
- Terminal 2: Control Output 1 for Central Station control of subscriber premises relay activated device.
- Terminal 3: Circuit ground connection
- Terminals 4&5: No connections
- Terminal 6: Earth ground connection
- Terminal 7: 12VDC positive (+) battery connection
- Terminal 8: Negative (-) battery connection
- Terminals 9&10: 18VAC transformer connections

POWERING THE SYSTEM

CONNECTIONS

The 7920SE has a self-contained, battery backed-up power supply, requiring only an 18VAC input, which can be provided by an Ademco No. 1349 Transformer. The battery (not supplied) is Ademco No. 879-126, 12VDC, 6AH battery. A battery fuse (No. 90-21, 3 amps) protects against inadvertent polarity reversal.

1. Connect the battery to the wires hanging from TB1 terminals 7 (red +) and 8 (black -).
2. Verify that the battery and battery fuse is operational by measuring the voltage at TB1 terminals 7 & 8 (see CAUTION). It should measure +13.5 to 13.8VDC. If not, check the battery fuse (No. 90-21). Note that the battery fuse must be visually inspected, as the 7920SE does not provide indication for a blown battery fuse.
3. Connect wires from the transformer output to TB1 terminals 9 & 10, routing the wires through the chassis knockout hole.
4. Plug the No. 1349 transformer into a 24 hour, unswitched, continuous 120VAC, 0.5 amp power source, securing it so it cannot be inadvertently unplugged.
5. When power is applied, observe the Interface Card LEDs. They should blink for about 8 seconds (operating mode selection time), then flash according to their specific functions.



CAUTION: If terminal 7 is shorted to ground, damage to the radio may result. Shorting can occur if a wire that is connected to terminal 7 (i.e. for channel triggering tests) accidentally touches the chassis. Therefore, always use the zone test lead attached to terminal 5 for trigger tests.

LOW BATTERY/AC LOSS MONITORING

The 7920SE monitors the battery voltage and will transmit Low Battery and AC Loss messages at specific voltage levels as follows:

AC Loss triggered when battery voltage is less than 12.5VDC.

AC Loss restore is reported when voltage remains above 13.0VDC for about 6 minutes.

Low Battery triggered when battery voltage is less than 11.5VDC.

Low Battery restore is reported when battery voltage remains above 12VDC for about 6 minutes.

SPECIAL INSTRUCTIONS FOR UL INSTALLATIONS

Installation must be in accordance with the National Electric Code and UL681.

IMPORTANT

GRADE AA INSTALLATIONS

GRADE A INSTALLATIONS

GRADE BB INSTALLATIONS

*NOTE

NFPA 71 FIRE ALARM SIGNALING APPLICATIONS

The ACP serial data operation for the 7920SE Transceiver has not been tested by UL and cannot be used for UL operation at this time. The 7920SE can be used in systems listed by Underwriters Laboratories for Grade AA, Grade A and Grade BB Central Station Mercantile Burglary if the following additional requirements are observed:

A) The 7920SE with a UL Listed Digital Dialer and a No. 659EN Line Fault Monitor may be used when polling occurs at least every 6 minutes. Six minute polling can be used only when both receiver and transmitter circuits are functionally monitored*. Openings and closings may be done using the digital communicator and not via the 7920SE. Channel inputs must be supervised by Ademco mode supervision.

B) The 7920SE must be polled at least every 200 seconds when connected with a UL Listed Digital Dialer and a No. 659EN Line Fault Monitor when only the transmitter output is monitored*. Openings and closings may be done using the digital communicator and not via the 7920SE. Channel inputs must be supervised by Ademco mode supervision.

The 7920SE is used in conjunction with a UL Listed Digital Dialer and a No. 659EN Line Fault Monitor. Channel inputs must be supervised (either inverted or Ademco mode supervision required).

The 7920SE must be polled every 90 seconds without a Digital Alarm Communicator. Ringback capability is not required. Channel inputs must be supervised (either inverted or Ademco mode supervision is required).

Receiver circuits are monitored at terminal 7 of TB2 (Radio OK) when the "Receiver Trouble Timeout" option is programmed. Transmitter circuits are also monitored at terminal 7 of TB2 when the "High Security Test" option is selected. Refer to the Programming section of this manual for programming information.

The NFPA 71 standard requires 24 hours of battery backup for subscriber fire alarm signaling equipment. This requires the use of three 6 amp hour 12 volt batteries connected in parallel. One battery is mounted in the 7920SE chassis. The other two batteries must be mounted in the 7920SEBB Battery Cabinet and connections to the 7920SE must be closed-rippled. In addition, the 7920SEBB Battery Cabinet tamper switch must be connected to one of the zone inputs of the 7920SE. The 7620TR Transformer must also be used for providing AC power to the 7920SE, and must be mounted inside the 7920SEBB Battery Cabinet. Refer to the FIRE INSTALLATIONS section in this manual for mounting and wiring details.

TESTING THE SYSTEM

STEP 1

Connect a computer terminal to the Transceiver as described in the "PROGRAMMING" section and turn the computer on. Power up the Transceiver. After about 8 seconds, the unit will automatically enter Normal mode.

STEP 2

Observe the red and yellow LEDs on the Interface board. Upon initial power up, the 7920SE transmits five consecutive poll timeout messages (displayed as 551555556). The red LED will flash as these messages are transmitted, and the yellow LED will light steady (message waiting). The network Master Stations recognize these messages from newly installed transceivers and adjust their polling responsibilities accordingly. For Private System users, these messages are used during the Master Station "AUTO LEARN" process (refer to the No. 7610 Master Station manual for "Auto learn" information). The yellow LED should extinguish after a brief period of time indicating that the network Master Stations have acknowledged the new Transceiver. *Note that the poll timeout messages are used by the network only, and are not transmitted to the Central Station monitoring receiver.*

STEP 3

In a short time after the yellow LED is extinguished, various network messages should appear on the computer terminal screen, indicating that the unit is receiving network radio signals. Refer to the Advanced Diagnostics section for the specific messages that should be observed.

STEP 4

Check the radio communication path to the Central Station by pressing "T" on the terminal keyboard. This forces the 7920SE to transmit a test message, which should be received and displayed at the Central Station's No. 685 Digital Receiver. For Private Systems, the message is 555555559. For AlarmNet users, the "Field Triggered Network Diagnostic Message" (refer to the AlarmNet manual) is transmitted.

STEP 5

Using the zone test lead connected to TB1-5, touch each of the six channel input terminals. The red LED should flash as the unit transmits each alarm, and the Central Station's No. 685 Receiver should display alarm/restore messages for each channel.

STEP 6

Create a system test as described in the control/communicator installation instructions. Choose a system test which is not selected as a disabled report. The 7920SE system will mimic the control/communicator telco transmitted data, within the limits described in this manual.

ADVANCED DIAGNOSTICS

IMPORTANT! Since the 7920SE Transceiver communicates with the network Master Stations much more frequently than one-way transmitters (because it is a polled unit), it is vital that the antenna be placed such that consistently high readings are observed when using FAST Mode (refer to FAST Mode procedures previously described). Failure to achieve minimum field strength values may result in the 7920SE missing poll messages, thus causing unnecessary communication failure messages. If unsure, activate FAST mode and recheck for proper antenna placement.

The 7920SE is a sophisticated device with many built-in diagnostic features. This section explains some of these features and may be helpful when discussing communication problems with authorized service representatives.

To use the diagnostic features, a computer terminal must be connected to the No.7920SE (see PROGRAMMING section).

Note: Diagnostic messages are sent at 9600 baud. Some portable computers may not be compatible with this data rate, and will display garbled messages on the screen.

FAST MODE

FAST Mode was described in a previous section, and is a real-time measurement of signal strength levels. A common cause of communication problems is low signal strength. It is vital that readings for downlink messages are consistently 7 or higher, and uplink levels (messages transmitted by 7920SE or heard from 1-Way subscribers by pressing "T") are 3 or higher. Radio communication can change with varying environmental conditions, and for this reason, these readings must be achieved. If these readings are not achieved, move the antenna to a location that provides these levels of signal strength.

NODE STATUS TABLE

The Node Status Table displays information regarding the network Master Stations, and identifies the Master Stations that are operational, the field strength at which the 7920SE is hearing them, and whether or not the 7920SE was polled. In addition, the battery condition and other internal functional information is displayed.

To activate the Node Status Table, press "L" for long form display, or "N" for one line at time display (for 7720P use), while the 7920SE is in Normal mode. The Table takes the following long form:

N#	ST	FREQ	FS
01 (00)	UP (UP)	0000	
02 (01)	UP (UP)	019C	7
03 (02)	UP (UP)	019F	0
04 (03)	DN (DN)		
05 (04)	DN (DN)		
06 (05)	UP (DN)		
07 (06)	UP (DN)		
08 (07)	UP (DN)		
09 (08)	UP (DN)		
0A (09)	DN (DN)		
0B (0A)	DN (DN)		
0C (0B)	UP (DN)		
0D (0C)	UP (DN)		
0E (0D)	DN (DN)		
0F (0E)	DN (DN)		
AFC DAC 0188			
BATTERY OK			
REV. 7.0			

Both AlarmNet and Private System node numbers and status indications are shown in this representation, with Private System information in parenthesis. Values shown are examples only; actual values will probably be different.

NODE: Every Master Station in a network is assigned a number as shown.

STATUS: For AlarmNet users, this column represents the Master Station status that was included in the network's latest node table. It does not represent what the 7920SE actually hears, which explains why some nodes are reported "UP", though no diagnostic information is displayed. Node tables are routinely sent between Master Stations and indicate overall network status.

For Private System users, "UP" status will appear when the 7920SE has actually heard from a particular node. "DN" status appears if it did not hear a particular node.

- FREQ:** This is a hexadecimal value meaningful only to authorized service personnel.
- FS:** This represents the field strength at which the 7920SE is hearing a particular node at the time the node table was first displayed.
- AFC DAC:** This line of information represents internal circuitry values and is meaningful only to authorized service personnel.
- BATTERY:** The word "OK" will appear as long as the battery voltage is above 11.5 volts. Below that voltage, the word "LOW" will appear.
- REV:** This is the software revision level that is installed in the 7920SE, and should be referred to when discussing Transceiver problems with service representatives.

MONITORING NETWORK MESSAGES

When the 7920SE is in Normal mode, network messages are displayed on the computer terminal screen. These messages are part of the normal Master Station network communication, and should be observed when installing a 7920SE for the first time. While it is not necessary to interpret all the messages that are displayed, the ALARM SENT and various forms of the Poll messages should be checked. The messages displayed can be divided into two sections. The first section is the message that the 7920SE has heard, and the second section, beginning with the "", provides field strength (FS) and frequency error (FE) information. Field strength was explained in the FAST MODE section of this document, and is the field strength at which the 7920SE heard the message. The frequency error is an internal measurement of the received frequency offset compared to the frequency of the 7920SE.

TYPICAL MESSAGES

15 05 ALARM SENT 55155556

This is the initial power up transmission (same as Poll Timeout) message which is transmitted whenever a 7920SE is first turned on. It is used by the network to acknowledge a new subscriber. For other alarm messages, the actual alarm is displayed in Ademco High Speed Format (see No. 685 Digital Receiver Messages section for additional information).

Poll 02 18xxxx* FS A FE -0001

The 7920SE has overheard a poll that was sent from Master Station 02 to a subscriber that is being supervised by Central Station 18. The display will contain many poll messages such as this, since polling is the primary activity of the network.

Poll 02 18xxxx Response OK* FS A FE +0003

The "Response OK" included in the poll message indicates that the 7920SE that is connected to the terminal has responded to a poll from a network Master Station (number 02 in this example), and has indicated that it has no messages waiting to be sent. This is the normal response to a network poll when the 7920SE is in normal, standby operation.

Poll 02 18xxxx Response Msg Waiting* FS 9 FE +0007

The "Response Message Waiting" indicates that the 7920SE that is connected to the terminal is informing Master Station 02 that it has a message to be transmitted. This is the first step in the normal alarm message transmission process, whereby a 7920SE reporting an alarm condition first waits to be polled before sending the alarm message. If, after a brief period of time (6-12 seconds), the 7920SE is not polled, the 7920SE will begin to send asynchronous "Message Waiting" messages.

1F Mag Waiting

The 7920SE is transmitting asynchronous message waiting messages, which indicates that the unit was not polled within 6-12 seconds of receiving an alarm condition from the Control Panel to which it is connected. If programmed for asynchronous transmission, up to 8 of these message waiting reports will be transmitted, after which, the actual alarm message will be transmitted asynchronously. If not programmed for asynchronous transmission, this message will continue to be transmitted until the unit is polled by the network. The hexadecimal number preceding the message is an internal reference number and can be ignored by the viewer.

P Poll 02 18xxxx* FS 9 FE -0002

A Master Station (02 in this example) sends a priority (P) poll to a 7920SE after receiving a "Message Waiting" message. The 7920SE responds by transmitting the actual alarm message.

P Poll 02 18xxxx Response 555155556* FS 9 FE -0002

The 7920SE has responded to the priority poll with the actual alarm message, in this case a Power on Reset message (see 685 Digital Receiver Messages section for an explanation of Ademco High Speed Format).

Freq. updated 0189 * FS A F +0006

The 7920SE routinely adjusts its frequency to that of the network Master Stations, based on the average of the frequency error measurements taken over a period of time.

Disclrm. Callbrated

The 7920SE routinely adjusts its internal circuitry and displays this message when doing so.

C080BE57F6AA1FDE FS A FE OFFF

Garbled data message. When the 7920SE receives partial or distorted data, it simply displays the raw data in hexadecimal form.

TYPICAL PRIVATE SYSTEM MESSAGES

Private Command * FS A FE -0001

A Master Station is transmitting a system command to another Master Station.

Pvt. Map Xfer Mag * FS A FE -0005

A Master Station has transferred mapping information in response to a system command.

Pvt. I am Empty * FS A FE +000C

A Master Station has acknowledged a system poll command, and indicates that the Master Station has completed transmission of all waiting data.

TYPICAL AlarmNet MESSAGES

Net Alarm 02* FS A FE +000b

Master Station 02 is relaying an alarm message to another Master Station.

Net ACK 02* FS A FE +0007

Master Station 02 is relaying an acknowledgment to another Master Station.

Fast 02 000* FS A FE +0004

Master Station 02 is transmitting a FAST Tool message usually in response to a Transceiver which is in FAST Mode. The three-digit number partially identifies the Transceiver in FAST Mode by displaying the 3 most significant digits of the Subscriber number. In addition, the Master Stations routinely transmit FAST Tool messages, which are identified by the number 000 (as in this example).

Time Stamp 0F*FS 8 FE -0008

The network Master Stations routinely transmit time stamp messages which help to synchronize the network. In this example, Master Station 15 (hexadecimal 0F) is sending the time stamp.

Sync Msg 0F

5FF8 7FFF 1FFE 1BFE ...etc.

The network Master Stations routinely transmit network diagnostic information to other Master Stations, following the transmission of their time stamp message. The data is important only to authorized service representatives.

IMPORTANT!

While the previous list does not list all possible messages, it provides a guide for the more common messages. If some of these messages are not observed after installing the 7920SE, recheck all connections and programming parameters and contact your authorized service representative.

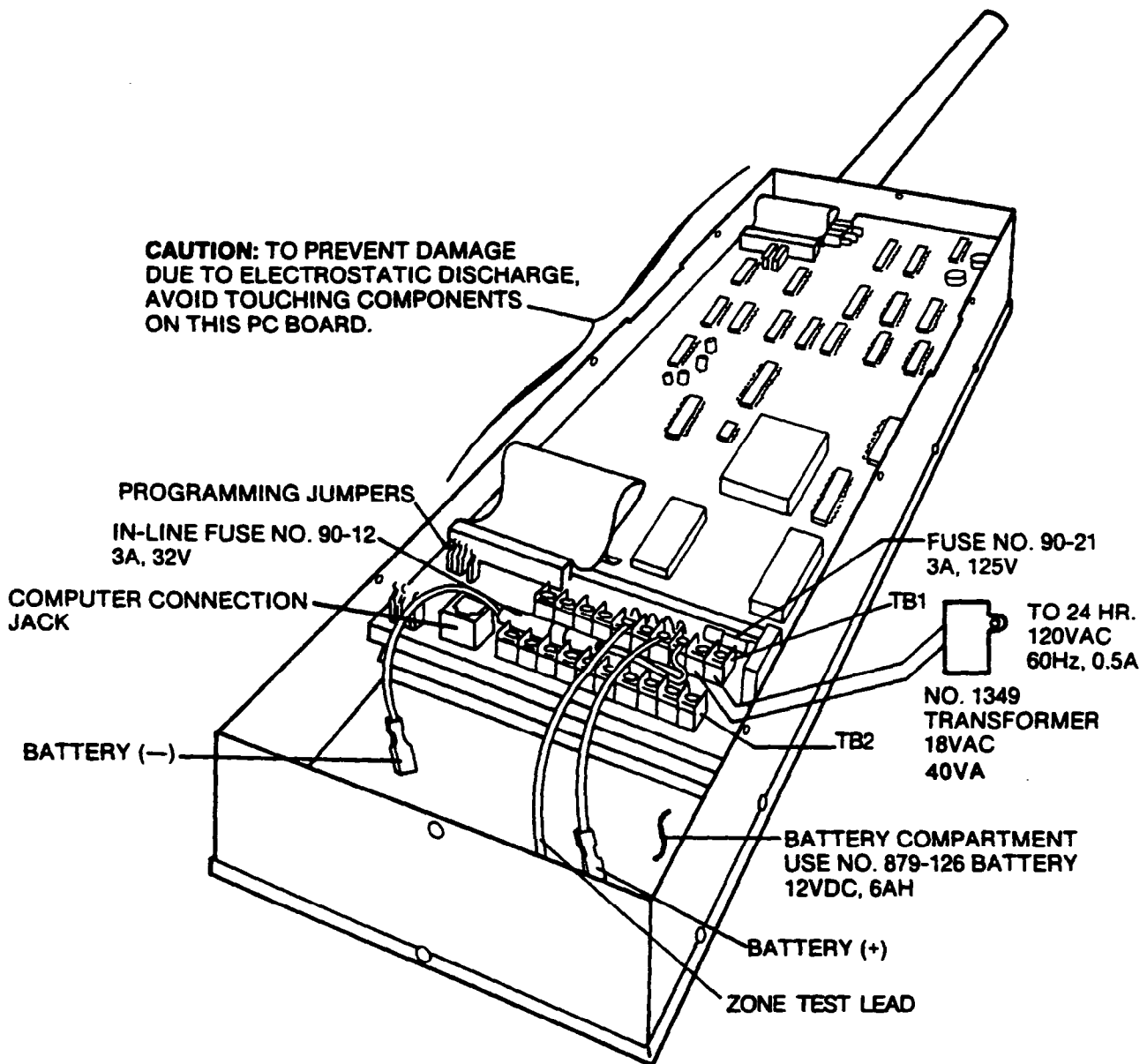
NO.685 DIGITAL RECEIVER MESSAGES

INTRODUCTION

The messages displayed at the Central Station on the Ademco No. 685 Digital Receiver consist of subscriber identification number and nine status channels conforming to Ademco's Extended High Speed communication format. The status of all channels is reported with each transmission. An initial incident will be reported as a NEW EVENT while subsequent reports of that same channel, if not corrected, will appear as a PREVIOUS EVENT. Note that channels 7 and 8 are not used when the 7920SE is set for zone trigger operation. The following table describes code definitions:

CODE DEFINITIONS

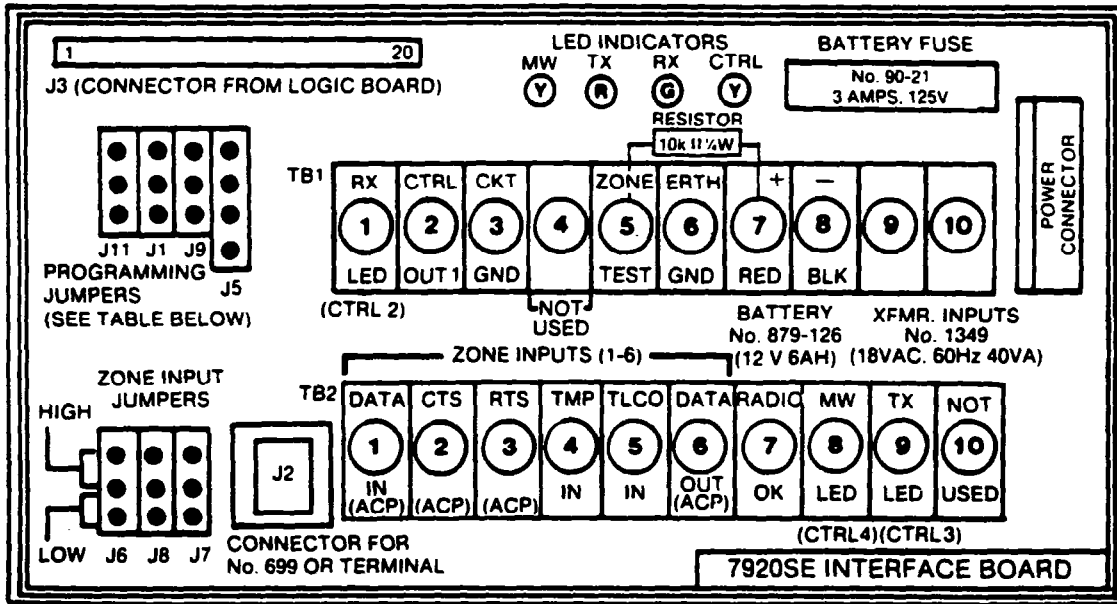
<u>CH.</u>	<u>CODE</u>	<u>EXPLANATION</u>
ONE	1	NEW EVENT (Previously unreported)
TO	2	OPENING (Armed system is disarmed)
SIX	3	RESTORE (Event is restored to normal; channel is normal if option is selected)
	4	CLOSING (Disarmed system is armed)
	5	NORMAL (No event for an armed or disarmed system)
	6	OLD EVENT (A previously reported event still exists)
SEVEN	5	NOT DEFINED (there are no trigger inputs or system troubles for these channels)
EIGHT	5	NOT DEFINED (there are no trigger inputs or system troubles for these channels)
NINE	2	OPEN (Opens are being reported in the first 8 channels)
	4	CLOSE (Closes are being reported in the first 8 channels)
	5	TROUBLE (Zone troubles are being reported in the first 6 channels)
	6	SYSTEM TROUBLE REPORT (System troubles are being reported in the first 6 channels defined as follows:
		WHEN CHANNEL 9 REPORTS A CODE 6:
		<u>CH. CODE</u> <u>EXPLANATION</u>
	ONE	1 AC LOSS (Reported when battery voltage is less than 12.5VDC)
		3 AC LOSS RESTORE
		6 PREVIOUS AC LOSS
	TWO	1 LOW BATTERY (Reported when battery voltage is less than 11.5VDC)
		3 LOW BATTERY RESTORE
		6 PREVIOUS LOW BATTERY
	THREE	1 7920SE Poll Timeout has occurred
	FOUR	1 Watchdog Timer reset or Power ON reset issued
	FIVE	1 FAILURE to receive a status message (Not an alarm message. This is generated by the receiving network when a status message is not received.)
		3 RESTORE
		6 PREVIOUS FAULT
	SIX	1 NEW TELCO FAULT
		3 TELCO FAULT RESTORE
		6 PREVIOUS TELCO FAULT
	7	NORMAL (Zone alarms are being reported in the first 6 channels)
	9	TEST (Indicates a Status Message or a System Test)



No. 7820SE TRANSCEIVER (COVER REMOVED)

ADEMCO

7920SE LONG RANGE RADIO TRANSCEIVER
CENTRAL STATION PROTECTED PREMISES UNIT



PROGRAMMING JUMPERS			LEGEND
ZONE TRIGGER (OR TERMINAL)	ACP SERIAL DATA	699 PROGRAMMER	CTS - DIALER CLEAR TO SEND (ACP) RTS - C-COM REQUEST TO SEND (ACP) TMP - TAMPER INPUT TLCO - TELCO LINE FAULT INPUT TX - REMOTE TRANSMIT LED MW - REMOTE MESSAGE WAITING LED RX - REMOTE RECEIVE LED CTRL - CONTROL OUTPUT CKT - CIRCUIT EARTH - EARTH NOTE: REMOTE LED OUTPUTS CONNECT TO ANODE. USE 390 OHM RESISTORS WIRED IN SERIES.
J11 J1 J9 J5	J11 J1 J9 J5	J11 J1 J9 J5	
SEE INSTRUCTIONS N3365V2 ALARM DEVICE MFG. CO., SYOSSET, N.Y.		LISTED BURGLAR ALARM SYSTEM CONTROL UNIT 966M	

SUMMARY OF CONNECTIONS DIAGRAM

TO THE INSTALLER

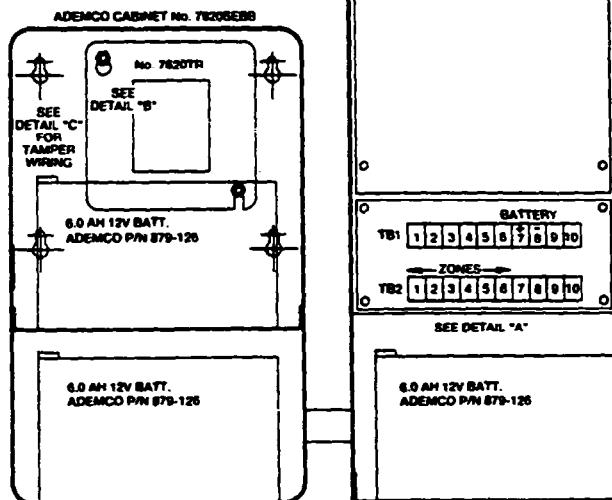
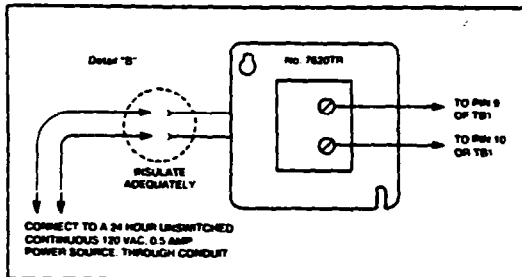
Regular maintenance and inspection (at least annually) by the installer and frequent testing by the user are vital to continuous satisfactory operation of any alarm system. The installer should assume the responsibility of developing and offering a regular maintenance program to the user as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. Recommendations must be included for a specific program of frequent testing (at least weekly) to insure the system's proper operation at all times.

SPECIFICATIONS

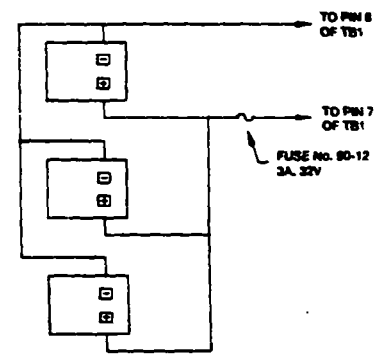
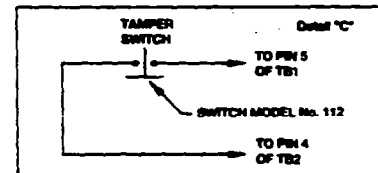
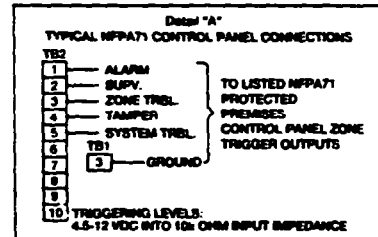
DIMENSIONS: 16.25" H x 6.76" W x 3.38" D
POWER: 12 to 14.5 VDC
CURRENT DRAIN: Standby 500 ma (incl. transmitter)
 Active 2 Amps (incl. transmitter)
BATTERY: Ademco No. 879-126, 12VDC, 6AH, gel type, starved lead acid
BATTERY FUSE : 3 Amps, 125V (Ademco No. 90-21)
IN-LINE FUSE: 3 Amps, 32V (Ademco No. 90-12)
TRIGGERING LEVELS: 4.5-12 VDC into 10K ohm input impedance
RF POWER OUTPUT: Nominal 4 watts
FREQUENCY: 928.0125-928.8375 MHz Transmit;
 952.0125-952.8375 MHz Receive
FREQ. STABILITY: ± 5 PPM
TEMPERATURE: -30°C to 60° C (operating)
 -40°C to 70°C (storage)
HUMIDITY: 95% non-condensing
ELEVATION: 40,000 ft. max. (storage); 10,000 ft. max. (operation)
NO. 7625 ANTENNA TYPE: Omnidirectional INDOOR/OUTDOOR; No ground plane required
CABLE: 50 ohm coaxial; Type "N" connector

FIRE INSTALLATIONS

NFPA Standard 71 (Signaling Systems for Central Station Service) requires 24 hours of battery backup for subscriber fire alarm signaling equipment. This requires the use of three 6 amp hour 12 volt batteries connected in parallel. One battery is mounted in the 7920SE chassis. The other two batteries must be mounted in the 7920SEBB Battery Cabinet and connections to the 7920SE must be closed-nippled. In addition, the 7920SEBB Battery Cabinet tamper switch must be connected to one of the zone inputs of the 7920SE. The 7620TR Transformer must also be used for providing AC power to the 7920SE, and must be mounted inside the 7920SEBB Battery Cabinet.



7920SE TO 7920SEBB WIRING DIAGRAM
 INSTALLATION MUST BE MADE IN ACCORDANCE WITH NFPA71



BATTERY WIRING DIAGRAM

THE LIMITATIONS OF THIS RADIO COMMUNICATIONS SYSTEM

While this 900 MHz Long Range Radio communications system is part of an advanced and sophisticated security system, it does not offer guaranteed protection against burglary or fire, nor does it guarantee communication of burglary or fire warning signals to a central station. Any alarm system, or any communications system, whether commercial or residential, is subject to compromise, or failure to warn, for a variety of reasons. Examples of some of these reasons are:

- Intruders may gain access through unprotected openings or have technical sophistication to bypass an alarm sensor, and then disconnect an alarm communicating radio transmitter.
- Signals sent by 900 MHz radio transmitters may be blocked by metal, mountains, hills, foliage and other natural and man made obstructions before they are received by a master receiving station or sent to a central station. Even a path previously verified as acceptable may periodically change its characteristics.
- Long-range radio communication transmitters will not work without power. Radio transmitters require a battery to work properly in the absence of A.C. power. A weak or dead battery, or improperly installed batteries may prevent these devices from functioning properly if A.C. power is disrupted for any reason.
- Radio communication systems are subject to external interference, natural or man-made, intentional or coincidental, that may keep a signal or group of signals from being successfully received by a master receiving station or a central station. In addition, one-way radio communication devices receive no acknowledgment from a master receiving station that their signals are being successfully received. Signals transmitted may clash with those transmitted from other systems. While statistical estimates predict successful operation, if the guidelines in the system manuals are followed, the operation of this system is still probabilistic in nature and may be subject to random signal failures.
- Radio communication devices may change their characteristics over time. Such parameters as frequency, modulation and power should be properly monitored periodically, with required adjustments made by qualified personnel.
- Radio communication devices must be installed by qualified personnel. Improper installation or selection of a transmitter's location may cause intermittent or unreliable performance.

Any electronic or mechanical device can fail. The most common cause of an alarm system or a radio communications system not functioning properly when an intrusion or fire occurs is inadequate maintenance, maintenance that is intended to find such failures as soon as possible. This alarm and communication system should be tested weekly to be sure all sensors and transmitters are working properly.

Installing an alarm system may make one eligible for lower insurance rates, but an alarm system is not a substitute for adequate insurance. Homeowners, property owners, business owners and renters should continue to insure their property and lives.

"FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT"

This equipment has been tested to FCC requirements and has been found acceptable for use. The FCC requires the following statement for your information:

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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:

- If using an indoor antenna, have a quality outdoor antenna installed.
- Reorient the receiving antenna until interference is reduced or eliminated.
- Move the receiver away from the Transceiver.
- Move the antenna leads away from any wire runs to the Transceiver.
- Plug the Transceiver into a different outlet so that it and the receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user or installer may find the following booklet prepared by the Federal Communications Commission helpful:

"Interference Handbook"

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock No. 004-000-00450-7.

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.

ADEMCO LIMITED WARRANTY

Alarm Device Manufacturing Company, a Division of Pittway Corporation, and its divisions, subsidiaries and affiliates ("Seller"), 165 Eileen Way, Syosset, New York 11791, warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for 18 months from the date stamp control on the product or, for products not having an Ademco date stamp, for 12 months from date of original purchase unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any product which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Ademco factory service. For warranty service, return product transportation prepaid, to Ademco Factory Service, 165 Eileen Way, Syosset, New York 11791.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO CASE SHALL SELLER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, OR UPON ANY OTHER BASIS OF LIABILITY WHATSOEVER, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, fire or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARDLESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER. This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.



N3365V2 8/91

ALARM DEVICE MANUFACTURING CO.
A DIVISION OF PITTWAY CORPORATION
165 Eileen Way, Syosset, New York 11791

Copyright © 1989 PITTWAY CORPORATION