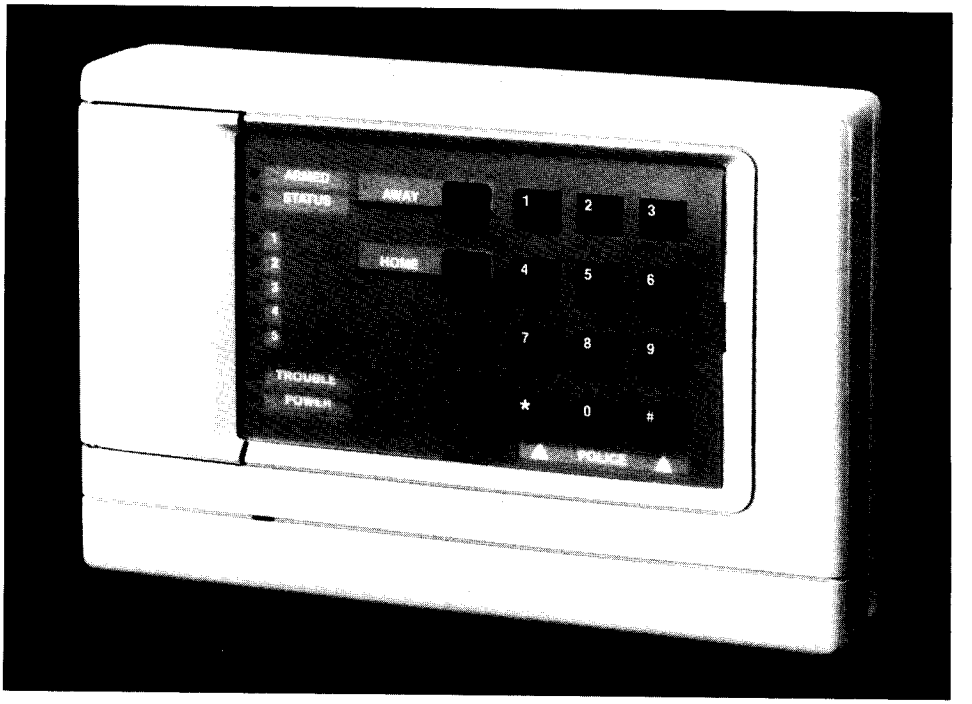
ARITECH



ATENDER® 50 AND 75
INSTALLER'S INSTRUCTIONS

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 THE SECURITY SYSTEM

2.1 System Components 1

2.2 Installing the Security System 2

2.3 Wiring the Security System 2

3.0 INPUT CIRCUITS 4

4.0 SYSTEM PROGRAMMING 5

5.0 SYSTEM OPERATION 7

6.0 TESTING THE SECURITY SYSTEM

6.1 System Test 10

6.2 Diagnostic Self-Test 10

7.0 TROUBLESHOOTING

7.1 Determining Trouble Conditions 11

7.2 System Operating Problems 12

7.3 Troubleshooting the Operating Panel 13

8.0 DIGITAL COMMUNICATOR

8.1 Introduction 13

8.2 Telephone Line Connections 13

8.3 Reporting Formats 15

8.4 Programming the Communicator 16

9.0 LIMITED WARRANTY 20

1.0 INTRODUCTION

Aritech's Attender 50 and 75 Security Systems are completely self-contained, microprocessor-based systems which offer five supervised zones of protection. The systems include an operating panel, control, power supply and standby battery. Space is provided within both units for a standby battery. Attender 75 also contains a built-in four-channel digital communicator capable of reporting to most receivers.

Attender 50 and 75 operate with an EEPROM that retains all programmed data, even in the event of total power loss. A watchdog circuit instantly resets the microprocessor if it is scrambled by an isolated transient.

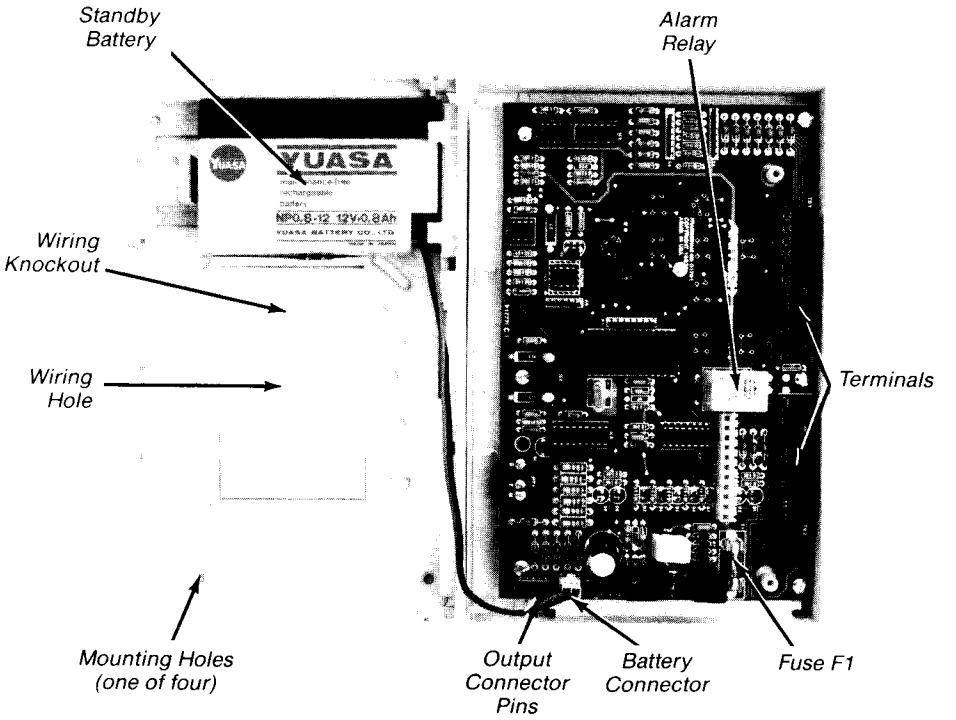
The systems feature a test mode which allows the subscriber to test all zones for proper operation without the risk of a false alarm. A diagnostic self-test mode is also available for the installer. In this mode, indicators and outputs can be checked for proper operation. The system will also check loops for opens or shorts. The diagnostic self-test is checked entirely from the operating panel.

A door on the operating panel conceals labels indicating zone descriptions and individual trouble conditions.

Attender 75's four-channel digital communicator is capable of reporting multiple receiver formats. It can transmit four individual alarm and restore codes to two receivers.

2.0 THE SECURITY SYSTEM

2.1 System Components



2.2 Installing the Security System

The system should be installed within the protected area where it will be accessible for wiring and service. It is recommended that Attender 50/75 be located within 50 feet of a 120 VAC, 24-hour outlet. Do not install the system in locations where the temperature may be below 32°F (0°C) or above 122°F (50°C).

Four mounting holes are located on the back of the operating panel. Separate the two halfs of the operating panel and secure the back half to the wall using the mounting holes. Wiring knockouts are located at the top of the operating panel's back half. Draw wires through these knockouts.

Connect the front half of the operating panel to the back half, already mounted on the wall.

2.3 Wiring the Security System

System Ground

Connect terminal 20 to a clean continuous metal cold water pipe (earth ground).

AC Power

An externally mounted 16.5 V/15 VA transformer supplies AC power to the system and connects to terminals 21 and 22. The input of the transformer should be connected to a non-switched, 110 V/2 A source. The AC power circuit is protected from transients by spark gaps and MOV transients suppressors.

If AC power is interrupted, the power LED will go out, indicating loss of external power.

DC Power

Attender 50/75 may also be operated from an external 12 VDC power supply. In this case, +12 V is applied to terminal 19 and negative to terminal 18. No AC power is required. The power light will come on in the normal manner. The external DC supply should have a current capacity of at least 2 A, and may or may not have its own standby battery.

Auxiliary Power

The 12 V regulated output provides all power for the control electronics, auxiliary power for detectors, annunciator power and charging of the standby battery. The Attender 50 auxiliary power has a maximum capacity of 750 mA for annunciator and accessories (250 mA continuous, plus 500 mA in alarm).

The Attender 75 Auxiliary Power has a maximum capacity of 700 mA for annunciator and accessories (200 mA continuous, plus 500 mA in alarm).

Logic Outputs

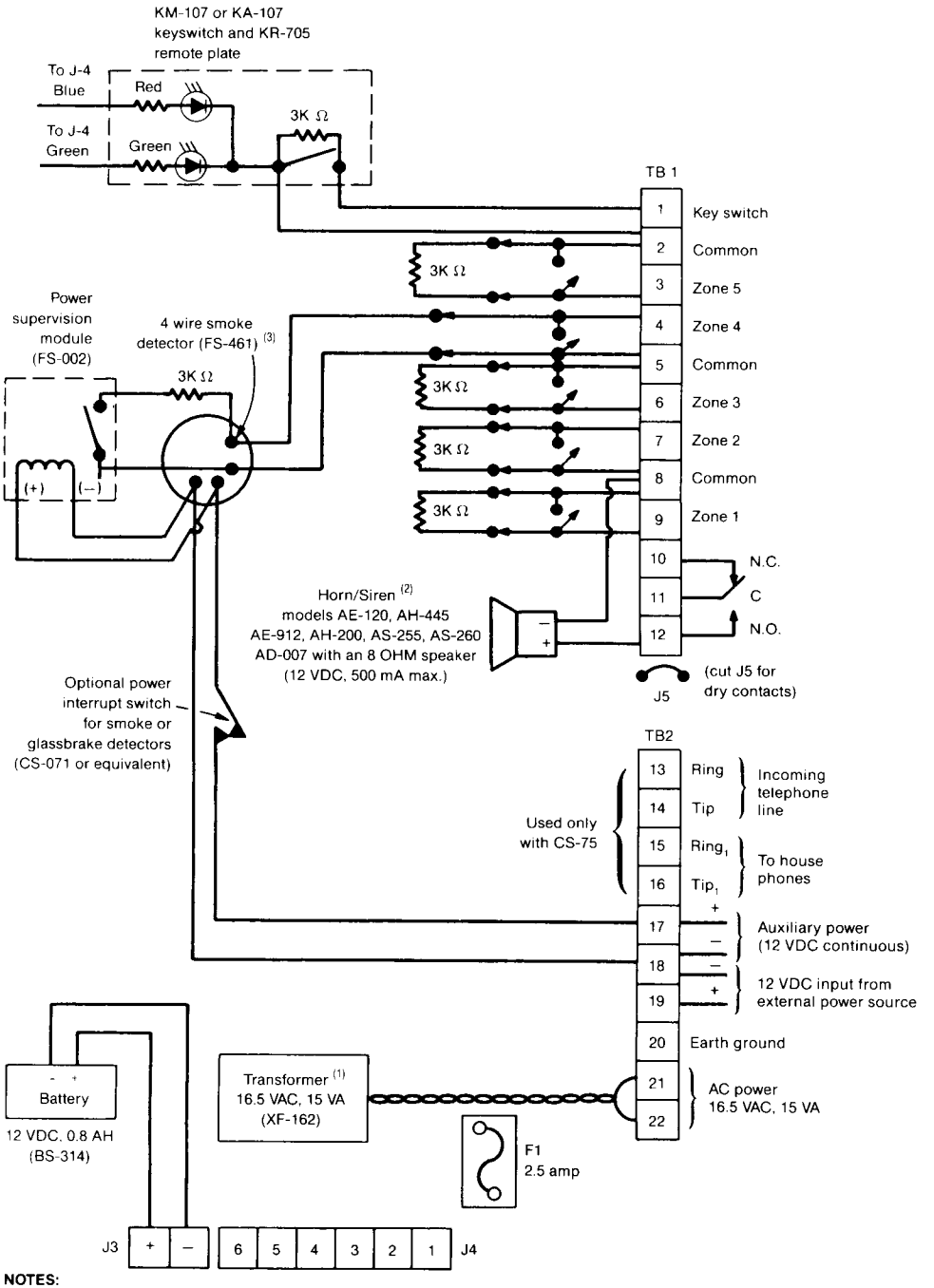
A six-pin connector plugs into J4. The colored wires correspond to the following functions.

Pin	Color	Function
1	Orange	Zone 4 violation
2	Yellow	*, # Keys or Zone 5 Violation
3	Green	Status
4	Blue	On/Alarm
5	Violet	Violation (Any alarm of the system)
6	Gray	Trouble

Standby Power

A standby 12 V/0.8 Ah rechargeable, sealed lead-acid battery mounted inside the operating panel provides emergency DC power whenever 110 VAC power to the transformer primary is interrupted. The battery connects to the PCB by means of connector J3 (pin 1 = "+", pin 2 = "-".

Wiring Diagram



NOTES:

(1) In Canada use CSA approved transformers - XF-303 or XF-310

(2) For CSFM Installations only AH-445 or AE-912 can be used and current draw should not exceed 400 ma.

(3) For CSFM Installations a maximum of six (6) smoke detectors.

Specifications

Required Power Input:
16.5 VAC, 15 VA transformer (XF-162) or 12 VDC/400 mA.

Standby Battery:
12 VDC 0.8 AH sealed lead acid (BS-314).

Auxiliary Power:
Attender 50 - 12 VDC 250 mA plus additional 500 mA for bell or siren.

Attender 75 - 12 VDC 200 mA plus additional 500 mA for bell or siren.

Remote Arming:
Momentary keyswitch (EOL supervised).

Outputs:
Relay form C. Contact rating 5A/28 VDC. Supplies 12 VDC 500 mA to bell or siren or optionally dry by cutting a jumper (J5).

Solid state outputs.
High output 12 VDC/40 mA.

Including:
- Zone 4 alarm
- Keypad emergency or zone 5 alarm
- System status (follows STATUS LED)
- Arm/disarm (ARM - high)
- Consolidated alarm - violation
- Consolidated trouble

Inputs:
Five end of line resistors (3K ohm) supervised zones. Emergency keys (* and #) optional. The keyswitch terminals must utilize a 3K resistor even if not used.

Exterior Dimensions of Plastic Surface Mount Enclosure:

8¾" x 5⅝" x 2"
(220 mm x 143 mm x 52 mm)

Color:
Light beige.

Weight:
3.3 lb. (1.5 kg)

Temperature Limits:
Operation: 32°F to 122°F
0°C to 50°C

Storage: -32°F to 168°F
-30°C to 70°C

Specifications for CS-75 Digital Communicator

Ringer Equivalency Number (REN):
0.0 B

Compatible Receiver Formats:
10 PPS Ademco
10 PPS Adcor
10 PPS Silent Knight
20 PPS Franklin
20 PPS Radionics (Fast)
20 PPS Sescoa

3.0 INPUT CIRCUITS

The system features five input circuits, plus keyswitch capability. Each one (including the keyswitch) is supervised with a 3K end-of-line resistor.

Zone 1 - Exit/Entry Delay Zone
Zone 2 - Perimeter Zone
Zone 3 - Interior Zone
Zone 4 - Auxiliary Zone
Zone 5 - Supervisory Zone
Keyswitch (if used)

Zones 1, 2 and 3 (terminals 9, 7 and 6) are considered violated when opened or shorted. They are armed only when the system is armed. An alarm initiated by any of these zones activates the alarm relay, the violation output and the burglar alarm output to the dialer.

Zone 4 (terminal 4) if programmed as a 24 hour auxiliary zone reports an alarm if shorted and a trouble condition when open. An alarm initiated by zone 4 always activates the channel 2 output of the dialer. Zone 4 can also be programmed as a standard burglar alarm zone, which is considered violated when opened or shorted.

Zone 5 (terminal 3) is considered violated when opened or shorted. It can be programmed as a supervisory zone or as an

independent burglar alarm zone. If programmed for supervisory, a violation of zone 5 is considered as an alarm when the system is armed and as a trouble condition when the system is disarmed. If programmed as a burglar alarm zone, a violation of zone 5 while the system is armed will cause an alarm. [An alarm initiated by zone 5 will activate channel 1 or channel 3 output of the dialer, depending on selection of location 17 in programming.]

Keyswitch - The keyswitch loop (terminal 1), when shorted, represents normal operation of the keyswitch, which can be used to arm and disarm the system. An open causes an alarm and prevents operation of the keyswitch. The keyswitch will remain inoperative until it is restored and the access code has been entered.

If a zone with an entry delay is tripped first, all subsequently-tripped zones will automatically have the same entry delay. This feature is designed into the system and is not programmable.

4.0 SYSTEM PROGRAMMING

The table below details programming for Attender 50/75.

FUNCTION NUMBER	DESCRIPTION	POSSIBLE VALUES	DEFAULT VALUE
2	Keypad Panic ("*" and "#")	1 = Silent 2 = Audible	1 (Silent)
3	Keyswitch Arming	1 = Away 2 = Home	1 (Away)
4	Zone 4	1 = 24 Hour 2 = B.A.	1 (24 Hour)
5	Zone 5	1 = Supervisory/B.A. 2 = B.A.	1 (Supervisory/B.A.)
6	Not Used		
7	Not Used		
8	Prealarm and Trouble	1 = Audible 2 = Silent	1 (Audible)
12	Entry/Exit Delay	1 = Disable 2 = Enabled	2 (Enabled)
13	Entry/Exit Time	1 = 20 Seconds 2 = 40 Seconds	2 (40 Seconds)
14	Zone 4 Trips Alarm Relay	1 = No 2 = Yes	2 (Yes)
15	Zone 5 Trips Alarm Relay	1 = No 2 = Yes	2 (Yes)
16	Alarm Cut-off	1 = 3 Minutes 2 = 10 Minutes	1 (3 Minutes)
† 17	Dialer Channel 3 Output	1 = Zone 5 2 = "*" and "#" Keys	1 (Zone 5)
18	Dialer Channel 4 Opening/Closing Reports	1 = Disabled 2 = Enabled	2(Enabled)
Home	User Code	1 to 4 Digits	7-7-7-7
Away	Installer Code	1 to 4 Digits	0-8-5-2

† This selection also applies to Pin 2 on the logic output connector.

NOTE: To disable the "*" and "#" keys, program location 2 to be silent (choice 1) and location 17 to zone 5 (choice 1). If location 2 is programmed to be audible and location 17 is programmed to zone 5, the "*" and "#" keys will report on channel 1 of the dialer along with the BA alarms.

CSFM INSTALLATION NOTES:

1. Function #8 - A value of "1" must be programmed.
2. If a fire zone is desired program function #4 with a value of "1".

To change one of these functions:

1. The system must be disarmed to enter the programming mode. Access the programming mode by entering the installer code (default 0852). Three beeps will sound.
2. Press the "3" and "7" keys simultaneously. Three more beeps will sound, and the Armed light will begin flashing. The system will beep every 30 seconds during the programming mode.

To change functions 2-8 or/and 12-17:

3. Press the "#" key.
4. Press the number which corresponds to the function you would like to change. (See chart on page 5). A zone LED will light to indicate which value is currently in memory for that function.
5. Press the key which corresponds to the new value you would like to program for the function. The zone LED for the new value will light.

To program another function, press the "#" key and then press the key corresponding to the function you would like to change. To exit the programming mode, press the "*" key. The system will also exit the programming mofe automatically 10 minutes after the last keystroke.

To change the user access code or installer code (while in the programming mode):

1. Press the "#" Key.
2. Press the key corresponding to the code you would like to change (Home for user code, Away for installer code).
3. Enter the new code. You must enter four digits. If you would like a code of one to three digits, enter zeros after the desired code (1290 for a code of 129, 5600 for a code of 56).
4. Press the "#" key.
5. Enter the new code again, this will verify the new code is correct. The system will emit one long beep followed by two short beeps to signal that the new code is now stored in the system's memory.

If the new code is not entered identically in steps 3 and 5, a two-second error tone will sound. In this case the code will not be changed, and the system will remain in the programming mode.

To program another function, press the "#" key and then press the key corresponding to the function you would like to change.

The user access code can also be changed during the normal system operation (without entering the installer code).

1. Enter the present user access code. The system will beep three times to indicate a valid code entry.
2. Push the "#" key. The trouble LED will begin to flash. In this case, this does not mean there is a trouble condition.
3. Enter the new user code. If you would like a code of less than four digits, enter zeros after the desired code (1290 for a code of 129, 5600 for a code of 56).
4. Press the "#" key.
5. Enter the new user code again, this will verify the new code is correct. The system will emit one long beep followed by two short beeps to signal that the new code is now stored in the system's memory.

If the new code is not entered identically in steps 3 and 5, a two-second error tone will sound and the code will not be changed. In this case, repeat the procedure.

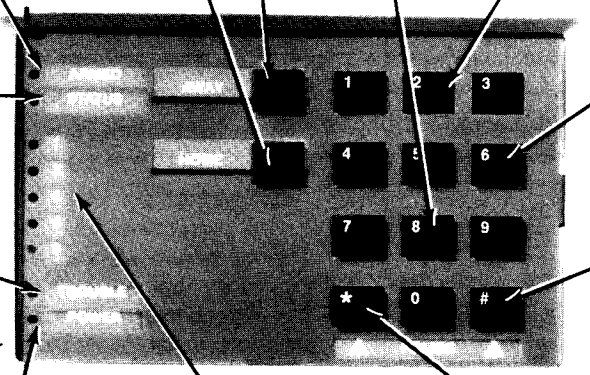
The code changing procedure can be stopped at any point up until the fourth digit of the new code has been entered. To stop the procedure, press the "*" key. The code changing procedure will also automatically stop if no keystroke occurs within 30 seconds.

Returning To Factory Default Values:

To re-program all functions, including the user access and installer's code to factor settings:

1. Remove all power from the system (AC & DC)
2. Depress and hold the "#" key while restoring power.

5.0 SYSTEM OPERATION



The AWAY key programs the system for "off premises" protection. All zones are active for maximum protection.

The HOME key allows arming of the system for "on premises" protection. Bypassing the interior zone allows movement inside the protected area.

When the red ARMED light is off, the burglary protection of the system is not activated. When the light is continuously on, the system is fully armed. The light will blink fast when the exit delay timer is operating and will blink slowly when an active alarm is in memory.

***NOTE:** Even when the ARMED light is off, the area may be partially protected if Zone 4 has been designated as a 24-hour auxiliary zone.*

The green STATUS light indicates when all zones are secure and when a zone is violated.

The amber TROUBLE light indicates normal system conditions or the presence of a trouble condition.

A door on the keypad opens to show labels indicating individual trouble conditions and zone descriptions.

The green power light is on when AC power is being applied to the system. If the system is receiving standby battery power or no power, the power light will be off.

Each red ZONE light indicates whether that zone is secure or violated and shows if there is an alarm for that zone in memory and indicates a specific trouble when the system is placed in the trouble mode.

The "8" key activates the system's test mode. In this mode you can completely test your system without the risk of causing an alarm. You can also test the system's annunciators (lights, sounders), the detectors and switches on every zone and the siren or bell.

When the TROUBLE light is on, pressing and holding down the "2" key will cause the zone light corresponding to the existing trouble to come on steady. Open the operating panel door and look at the label to determine which trouble condition is present.

A programmable one-to-four digit user access code arms and disarms the system and operates any of the operating panel-activated features.

The "#" key allows the changing of the user access code. By using this key, a new user access code can be programmed whenever one is desired. Codes can be continually changed for increased security.

The "" key (RESET KEY) restarts the access code sequence and clears zone violations stored in memory. It also silences the exit delay.*

When pressed simultaneously, the "" and "#" keys activate a visual and/or audible alarm in an emergency.*

***NOTE:** This feature is optional.*

Arming the System

When the system is armed, a violation of any burglar zone except the delay zone, will cause an instant alarm. If the delay zone is violated first, the entry delay period will begin. If the system is not disarmed before the entry delay period expires, an alarm will occur.

To arm the system when the user is leaving the premises — Away mode:

1. Check to see that the Status light is on and the Armed light is off. The system will not arm if a zone is violated.
2. Enter the user access code. The system will beep three times to confirm that a valid code has been entered.

   NOTE: All four digits of the code must be entered within 30 seconds. If they are not, the access code must be re-entered. If an improper access code is entered, press the "*" key to reset the system, then enter the proper code, or wait 30 seconds and enter the proper code.

3. Press the Away key. The Armed light will begin flashing, the system will begin beeping, and the exit delay period will start. The user must leave the premises before the exit delay period expires, or an alarm will occur.

NOTE: If the "*" key is pressed after the Away key, the system will not beep during the exit delay.

4. The user should leave through the normal exit/entry door. The beeping will stop after the exit delay period expires. The system is now armed with all zones protected.

To disarm the system in the Away mode:

1. Enter through the normal exit/entry door. The system will begin emitting a continuous tone to signal that the entry delay has begun. If the system is not disarmed before the entry delay period expires, an alarm will occur.
2. Enter the user access code. The system will beep three times to confirm that a valid code has been entered, the continuous tone will stop, and the Armed light will go out. The system is now disarmed.

To arm the system when the user is not leaving the premises — Home mode:

1. Check to see that the Status light is on, and the Armed light is off. If the Status light is off, and the light for zone 3 is on, the system can still be armed in the Home mode.
2. Enter the user access code. The system will beep three times to confirm that a valid code has been entered.
3. Press the Home key. The Armed light will begin flashing, and the exit delay period will begin. Anyone leaving the premises must do so before the exit delay period expires, or an alarm will occur. The system is now armed with the interior zone (zone 3) bypassed.

To disarm the system in the Home mode:

1. Enter the user access code. The system will beep three times to confirm that a valid code has been entered.
2. The Armed LED will go out. The system is now disarmed.

Keyswitch Operation

A keyswitch can be used to arm or disarm the system in either the Home or the Away mode, but not both. The system comes programmed for keyswitch operation in the Away mode. To use the keyswitch for arming and disarming in the Home mode, follow the instructions given in Section 4.0, System Programming.

Alarm Memory

When an alarm occurs, it will be retained in the system's memory via a flashing Armed light and corresponding zone light. The memory can be cleared by pressing the "*" key.

The chart below summarizes what the lights on the keypad will tell you about the status of your system.

LIGHT	ON	OFF	FLASHING
Status	All zones are secure	A zone has been violated	Test Mode
Armed*	System is armed	System is not armed	Slowly - Active alarm or an alarm in memory. Fast - Delay timer is operating.
Zone lights	Zone is violated	Zone is secure	Alarm for that zone in memory. Also indicates trouble condition.
Trouble	System trouble	System normal	Changing user code.
Power	System normal, operating on AC power.	System operating on emergency battery (no external power) or receiving no power at all.	

***NOTE:** Even when the Armed light is off, partial protection may be provided because zone 4 is always under protection if zone 4 is programmed as a 24-hour zone.

Quick Reference Chart

Condensed Operating Instructions		
FUNCTION	**ACTION**	**RESULT**
Arming System — Away	Input user access code Press Away key	Three beeps Armed light will begin flashing, system will begin beeping to indicate the start of the exit time.
Arming System — Home	Input user access code Press Home key	Three beeps Armed light will begin flashing, and the exit delay period will start.
Disarming System	Input user access code	Three beeps Armed light will go out.
Changing User Access Code	Input current user access code Push "#" key Input new user access code, press "#" key, input new access code again.	Three beeps Trouble light will begin flashing. One long beep followed by two short beeps.
Test Mode	Input user access code Press "8" key Press the "8" key for more than one second. Press "*" key once testing is complete.	Three beeps Status light will begin flashing. System will beep every 30 seconds. Alarm relay will activate. Status light will light steadily. Zone light will go out.
Determining Trouble Conditions	Press "2" key	Corresponding zone light(s) will come on to identify trouble condition.
Clearing a Trouble Condition	Press "*" key	Keypad sounder will stop and Trouble light will go out if trouble is no longer present.

6.0 TESTING THE SECURITY SYSTEM

6.1 System Test

The user or installer can easily test the Attender 50/75 to ensure that it is in proper operating condition and that all sensors and annunciators are functioning. To perform the system test:

1. Enter the user access code. The operating panel will beep three times to indicate that a valid code has been entered.
2. Press the "8" key. This puts the system in the test mode. The Armed light will be off, and the Status light will flash. The system will beep every 30 seconds to remind you that it is in the test mode.
3. Test zones by opening protected doors and windows. The system will emit a continuous tone, while the zone is violated, and the corresponding zone light will come on.
4. If motion sensors are installed, enter the area(s) protected by these sensors. [When you move, the system will emit a steady tone, indicating a zone violation. When you stop moving, the tone will stop.]
5. Return to the security system. The red zone light should be on for every zone that has been tested, and the Status light will remain flashing. If a zone violation has not caused its corresponding LED to light, check the wiring. If keypad panic is enabled, press the "*" and "#" key simultaneously. This will trip the keypad sounder, and a steady tone will sound until the keys are released. Sirens, bells or lights will not be tripped. If annunciators (sirens, bells, lights) are not installed, the system test is now complete.
6. Test annunciators by pressing the "8" key for more than one second. This will activate the alarm relay and the devices connected to it (i.e. sirens, bells, lights) until the "8" key is released.
7. Press the "*" key to exit the test mode. System conditions are now normal if zones are in normal condition.

NOTE: You may exit the test mode at any time during the testing procedure by pressing the "*" key.

6.2 Diagnostic Self-Test

Attender 50/75 will also perform a diagnostic self-test which is initiated from the keypad. This mode allows the installer to check all LEDs, keys and annunciators for proper operation. This mode also enables the installer to test the four dialer channels and check whether the input loops are open or shorted.

To access the diagnostic self-test mode:

1. With the sytem disarmed, enter the installer code. Three beeps will sound to confirm that a valid code has been entered.
2. Enter the sequence: Away, Home, 1, 4, 7, 2, 5, 8, 0, 3, 6, 9, #. While this sequence is being entered, the zone 4 light will begin flashing. Once the entire sequence has been entered, the zone 4 light will stop flashing and three beeps will sound. The system will beep every 30 seconds while it is in the diagnostic self-test mode.

The outputs can then be turned on, one at a time, by pressing the following keys:

When the "1" key is depressed, the armed LED will light.

When the "1" key is released, the following LEDs will light to indicate these input conditions:

INPUT	LIGHT
Loop 5 Shorted	Zone 1
Keyswitch Closed	Zone 2

When the "2" key is depressed, the status LED will light.

When the "2" key is released, the following

LEDs will light to indicate these input conditions:

INPUT	LIGHT
Loop 1 Shorted	Zone 1
Loop 2 Shorted	Zone 2
Loop 3 Shorted	Zone 3
Loop 4 Shorted	Zone 4

When the "3" key is depressed the Zone 1 LED will light.

When the "3" key is released the following LEDs will light to indicate these input conditions:

INPUT	LIGHT
Loop 5 Open	Zone 1
Battery Below 11.2 Volts	Zone 2
Key Loop Open	Zone 3
Battery Below 11.7 Volts	Zone 4

When the "4" key is depressed, the Zone 2 LED will light.

When the "4" key is released, the following LEDs will light to indicate these input conditions:

INPUT	LIGHT
Loop 1 Open	Zone 1
Loop 2 Open	Zone 2
Loop 3 Open	Zone 3
Loop 4 Open	Zone 4

The following keys cause an output condition when depressed.

KEY	OUTPUT
5	Zone 3 LED
6	Zone 4 LED
7	Zone 5 LED
8	Trouble LED
9	Dialer Channel 1
0	Dialer Channel 2
#	Dialer Channel 3
AWAY	Dialer Channel 4
HOME	Alarm Relay
AWAY & 1	Sounder
AWAY & 2	Violation

7.0 TROUBLESHOOTING

7.1 Determining Trouble Conditions

When the Trouble light is on, individual trouble conditions can be determined by following this procedure: Open the operating panel door, press "2" key and keep it pressed. Zone light(s) will come on to indicate trouble condition.

The zone lights correspond to the trouble conditions listed below:

Zone 1 = Keyswitch Trouble
Zone 2 = Low Battery
Zone 3 = Not Used
Zone 4 = Zone 4 Trouble
Zone 5 = Zone 5 Trouble

After trouble condition has been corrected, clear trouble condition by pressing the "*" key.

7.2 System Operating Problems

System Operating Problems		
SYMPTOM	**MOST PROBABLE CAUSE**	**CORRECTIVE ACTION**
System will not arm	You are inputting incorrect access code. Someone has changed or deleted your access code.	Check whether you are inputting correct access code. Press "*" key and begin again. Call installer
System will not arm in Home mode	Door or window open (zone lights will confirm).	Close door or window
System will not arm in Away mode	Door or window open (zone lights will confirm). Defective keyswitch	Close door or window Use operating panel and arm system. Ask installer to check keyswitch.
Trouble light on	System trouble	Open operating panel door. Keep "2" key depressed for more than one second. When zone light(s) come on, call installer and report trouble corresponding to light(s).
Electric Power Problems		
Systems Powered by AC Transformer Combination		
SYMPTOM	**MOST PROBABLE CAUSE**	**CORRECTIVE ACTION**
Power light off	Loss of AC power	Wait for AC power to be restored. System will operate on standby battery.
Power light off and Trouble light on	Loss of AC power for extended period and low battery condition.	Wait for AC power to be restored. Battery will automatically recharge when power is restored.

Systems Powered by External DC Power Supply		
SYMPTOM	**MOST PROBABLE CAUSE**	**CORRECTIVE ACTION**
Power light off	Defective external DC power supply	Check outlet where transformer is plugged in. Check transformer.

7.3 Troubleshooting the Operating Panel

Symptom:
Power LED is off.

Action:
Check outlet where transformer is plugged in. If it is alright, check the transformer. There should be 16.5 VAC at the secondary terminals. If not, replace the transformer.

Symptom:
No auxiliary power output at terminal 17 and/or no alarm relay output.

Action:
1. Check fuse F1. If fuse is alright, go to action 2.
2. Check for 12 VDC from terminals 17 (+) and 18 (-). If alright, check wiring. If wiring is alright, replace main printed circuit board.

8.0 DIGITAL COMMUNICATOR

8.1 Introduction

Attender 75 comes with a plug-in digital communicator installed. No internal connections are required. The module is equipped with a EEPROM chip that is programmed with the communicator's operating functions. Each of the digital communicator's four channels is assigned to a specific alarm output as listed below:

Attender Output	Communicator Channel Assignment
Burglar Alarm Zones 1, 2, 3 and 5	1
Zone 4	2
"*", "#" Alarm Input or Zone 5	3 (1)
Arm/Disarm (closing/opening)	4

Attender 75's digital communicator is compatible with the following formats:

10 PPS Ademco
10 PPS Adcor
10 PPS Silent Knight
20 PPS Franklin
20 PPS Radionics (Fast)
20 PPS Sescoa

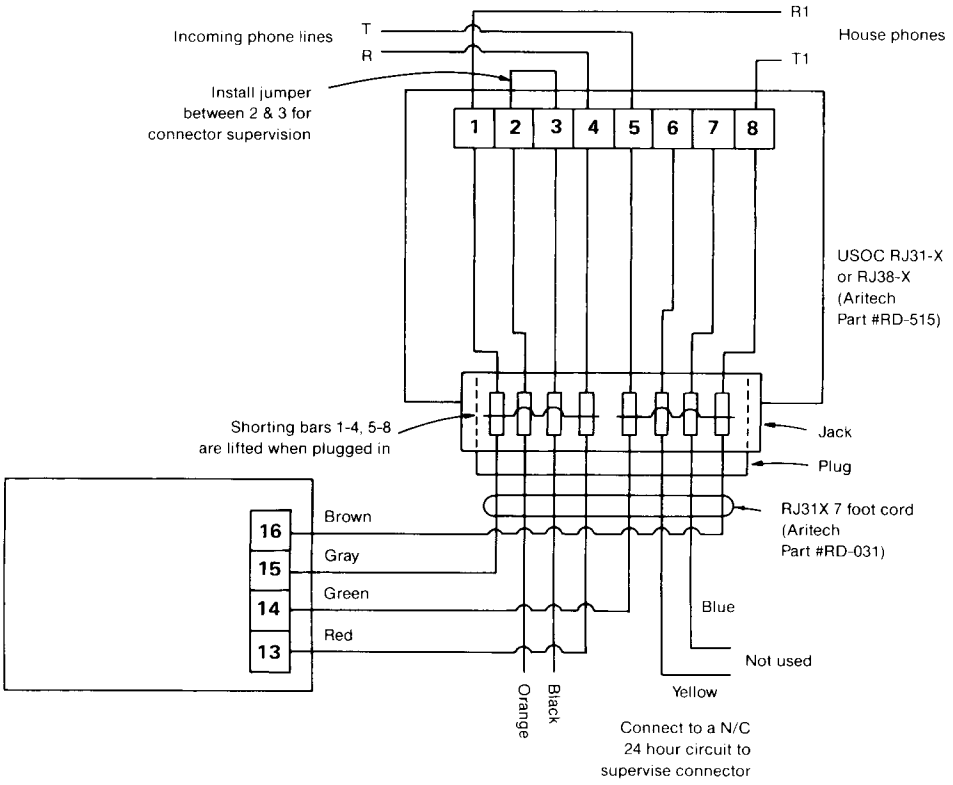
8.2 Telephone Line Connections

The telephone company must be notified before the digital communicator is connected to the telephone line, and when the communicator is permanently disconnected.

Request that an RJ-31X jack be installed at the subscriber's premises. The RJ-31X Jack is available from Aritech (Model RD-515).

(1) **NOTE:** If dialer channel 3 is programmed for zone 5 the "*,#" alarm input will be reported on dialer channel 1 only if the "*,#" alarm input is programmed to be audible.

Interconnection Diagram for Attender 75 Digital Communicator



The communicator complies with Part 68 of the FCC rules. A label located inside the system's plastic housing contains the FCC registration number and ringer equivalence number for Attender 75's digital communicator. You must, upon request, provide the telephone company with this information.

The ringer equivalence number (REN) can determine how many devices you may connect to your telephone, and still have all of the devices which ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five. To be certain of the number of devices you many connect to your line, as determined by the REN, contact your local telephone company.

If your telephone equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. If advance notice isn't practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If such changes are made, you will be notified in advance so that you may have an opportunity to maintain uninterrupted telephone service.

If you experience trouble with the digital communicator, contact Aritech Corp. at

1-800-225-4780 and ask for Technical Services. The telephone company may ask that you disconnect the digital communicator from the telephone network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

The communicator may not be used on coin service provided by the telephone company. Connection to party lines is subject to tariffs.

The telephone company must be notified when the communicator is permanently disconnected.

IMPORTANT: Test communicator operation at the conclusion of the installation. Trigger each channel separately. Verify a successful signal transmission for each channel at the receiver(s).

8.3 Reporting Formats

Attender 75's communicator can report in 3/1 slow format, using a three-digit account code, a one-digit channel code. 1400 Hz kissoff, 1900 Hz data at 10 baud. For Radionics slow with parity, an additional parity digit must be added.

The communicator can report in 3/1 fast format, using a three-digit account code and a one-digit channel code. 2300 Hz kissoff, 1800 Hz data, 20 baud. For Radionics fast with parity, an additional parity digit must be added.

Attender 75's digital communicator can also transmit the following formats: 3/2 slow format, 3/2 fast format, 4/1 slow format, 4/1 fast format, 4/2 slow format and 4/2 fast format.

The communicator has the capability of using two separate account numbers, one for each telephone number.

If a three-digit account number is used, address 000 must be programmed with "255". Program the three-digit account number for addresses 001-003. When using a four-digit account number, all four addresses are used for the four digits of the account number.

One or two telephone numbers can be selected. Each one can be up to 26 digits long, but can only use the digits "000-009", "011" and "255". Digits "000-009" represent the actual digits of the telephone number. A "011" entered between digits will cause a three-second delay when the telephone number is dialed, and the last digit of the telephone number should be followed by "255".

If the communicator is programmed for two telephone numbers, it will dial telephone number 1 first. If unsuccessful, the communicator will then dial telephone number 2. If still unsuccessful, it will redial telephone number 1. This will continue until one of the numbers is reached or until the programmed number of dial attempts is reached.

The number of dial attempts is selectable from one to 255.

Each telephone number has four programmable alarm report codes and four programmable restoral report codes. To program a one-digit reporting code, the digit is entered into the first address of the channel code and a "255" is used in the other two addresses. For a two-digit reporting code, the digits are programmed into the first two addresses of the channel code, and a "255" is used in the other address.

When using Radionics parity, enter the reporting code into the first address of the channel code, enter a "255" in the second address and enter the parity digit in the third address.

Attender 75's digital communicator can be programmed to report individual channels to separate telephone numbers. Programming a "16" as the first address of a reporting code under telephone number 1 will cause the communicator to dial and report only to telephone number 2. If the first digit of the reporting code is programmed as "255", the communicator will not dial either telephone number.

8.4 Programming the Communicator

The communicator can be programmed with the RD-555 programmer. To do this:

1. Attach the programmer to the Attender 75 by means of connector J3 on the communicator board.
2. Apply power to the programmer and the Attender 75.
3. Access the Address Programming mode by pressing the Find key two times and then pressing "Enter". Address 000 will now be displayed.
4. To change information stored in a particular memory location, enter the current address of that location and press "Find". Enter the new information for that location and press "Enter". "Reset" returns you to the option menu.
5. Once programming is complete, you can download the information into the dialer without removing the EEPROM. First, go to Program Remote on the option menu and then press Enter. You will receive a confirmation message of Program Remote Complete.

Reporting Codes

To program a channel 1 alarm code, you must find address 004. For a single digit code, enter the digit in this address and enter "255" in the next two addresses. Press "Enter" to store the digits in memory. For a two-digit code (3/2 or 4/2) formats, enter the first digit in address 004, the second digit in address 005, and "255" in address 006. When using Radionics parity, enter the parity digit in address 006.

Use this method to program alarm and restoral reporting codes in channels 1-4.

Transmission Speed

To program the transmission speed for telephone number 1, find address 036. Do this by entering "036" and pressing "Find". Now enter the transmission speed, "001" for 10 baud and "002" for 20 baud, then press "Enter". To program the transmission speed for telephone number 2, find address 073.

Dial Attempts

To program the number of dial attempts, find address 074. Do this by entering "074" and pressing "Find". Enter the desired number of dial attempts (1-255) and press "Enter".

Telephone Numbers

To program telephone number 1, find address 075. Do this by entering "075" and pressing "Find". Enter the first digit of telephone number 1 in this address and press "Enter". Move to the next address by pressing "Find" and enter the second digit of telephone number 1 in this address. Continue this procedure until the last digit of telephone number 1 has been entered.

Addresses 075-100 are reserved for telephone number 1. If all of these addresses are not needed, enter "255" after the last digit of the telephone number. The hyphen (-) in a telephone number cannot be entered when programming the number. To program telephone number 2, find address 101 and follow the same procedure used for telephone number 1. If telephone number 2 is not used, enter "255" in address 101.

On page 17 is a chart of address numbers and their corresponding functions. When programming these addresses, a value from 000-015 can be entered for any digit.

The first address for each channel alarm or restoral code can be programmed with "016" to switch numbers or "255" to disable the channel.

The second address for each channel alarm or restoral code is used only with two-digit codes. Enter "255" if not used.

The third address for each channel alarm or restoral code is used only with parity digits. Enter "255" if not used.

Telephone Number 1 Codes

Addresses 000-003	Account Code
Addresses 004-006	Channel 1 Alarm Code
Address 007	Not Used
Addresses 008-010	Channel 2 Alarm Code
Address 011	Not Used
Addresses 012-014	Channel 3 Alarm Code
Address 015	Not Used
Address 016-018	Channel 4 Closing Code
Address 019	Not Used
Address 020-022	Channel 1 Restoral Code
Address 023	Not Used
Addresses 024-026	Channel 2 Restoral Code
Addresses 027	Not Used
Addresses 028-030	Channel 3 Restoral Code
Address 031	Not Used
Addresses 032-034	Channel 4 Opening Code
Address 035	Not Used
Address 036	Transmission Speed for Telephone Number 1

Enter 001 for 10 baud, 002 for 20 baud.

Telephone Number 2 Codes

Addresses 037-040	Account Code
Addresses 041-043*	Channel 1 Alarm Code
Address 044	Not Used
Addresses 045-047*	Channel 2 Alarm Code
Address 048	Not Used
Address 049-051*	Channel 3 Alarm Code
Address 052	Not Used
Addresses 053-055*	Channel 4 Closing Code
Address 056	Not Used
Addresses 057-059*	Channel 1 Restoral Code
Address 060	Not Used
Addresses 061-063*	Channel 2 Restoral Code
Address 064	Not Used
Addresses 065-067*	Channel 3 Restoral Code
Address 068	Not Used
Addresses 069-071*	Channel 4 Opening Code
Address 072	Not Used
Address 073	Transmission Speed for Telephone Number 2
Address 074	Dial Attempts

The number of dial attempts can be from 001-255.

Addresses 075-100	Telephone Number 1

Enter one digit in each address. 011 for a three-second delay, 255 after the last digit.

Addresses 101-126	Telephone Number 2

*These locations must be programmed with a "016" if telephone number two is not used. e.g. address 041=016, address 042=255 and address 043=255.

"NOTICE: The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate."

"The **Load Number** (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100. An alphabetic suffix is also specified in the Load Number for the appropriate ringing type (A or B), if applicable.

For example, LN = 20 A designates a Load Number of 20 and an "A" type ringer."

9.0 LIMITED WARRANTY

If this sale is made for commercial purposes, your LIMITED WARRANTY is as follows:

Aritech and Advisor security system products are warranted solely to the purchaser of the product to be free from defects in material and workmanship for a period of twenty-four (24) months from the date of sale. Defective units returned by the buyer at his own expense during this 24-month period will be repaired or replaced, at the option of the manufacturer. The repaired or replaced equipment will then be warranted for the balance of the initial 24-month warranty period or for ninety (90) days, whichever is longer. Repair or replacement will be without charge provided that the equipment has not been misused, repaired or modified without authorization of the manufacturer. Repair or replacement that does not qualify for free warranty service will be charged to the purchaser at the manufacturer's service rates then in effect ($10 minimum). THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER'S EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE REPAIR OR REPLACEMENT AS SPECIFIED ABOVE. MANUFACTURER SHAL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, HOWEVER OCCASIONED, AND IN NO EVENT SHALL MANUFACTURER'S LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT. NO SUIT OR ACTION SHALL BE BROUGHT AGAINST MANUFACTURER MORE THAN ONE (1) YEAR AFTER THE ACCRUAL OF THE CAUSE OF ACTION THEREFOR.

If this sale is made for personal, family or household purposes, your LIMITED WARRANTY is as follows: Aritech and Advisor

security system products are warranted solely to the purchaser of the product to be free from defects in material and workmanship for a period of twenty-four (24) months from the date of sale. Defective units returned by the buyer at his own expense during this 24-month period will be repaired or replaced, at the option of the manufacturer. The repaired or replaced equipment is then warranted for the balance of the initial 24-month warranty period or for ninety (90) days, whichever is longer. Repair or replacement will be without charge provided that the equipment has not been misused, repaired or modified without authorization of the manufacturer. Repair or replacement that does not qualify for free warranty service will be charged to the purchaser at the manufacturer's service rates then in effect ($10 minimum). THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO TWENTY-FOUR (24) MONTHS FROM THE DATE OF SALE. THE PURCHASER'S EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER, SHALL BE REPAIR OR REPLACEMENT AS SPECIFIED ABOVE. MANUFACTURER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, HOWEVER OCCASIONED, AND IN NO EVENT SHALL MANUFACTURER'S LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT. NO SUIT OR ACTION SHALL BE BROUGHT AGAINST MANUFACTURER MORE THAN ONE (1) YEAR AFTER THE ACCRUAL OF THE CAUSE OF ACTION THEREFOR. SOME STATES DO NOT ALLOW LIMITATIONS ON THE DURATION OF AN IMPLIED WARRANTY, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. THEREFOR, THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

No agent, employee or representative of the manufacturer nor any other person is authorized to modify this warranty in any respect.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

part number 64812392, Rev. C
bulletin 3270-IN1 March 1988

ARITECH
25 Newbury St., Framingham, MA 01701
Telephone: (617) 620-0800 Telex: 3748501