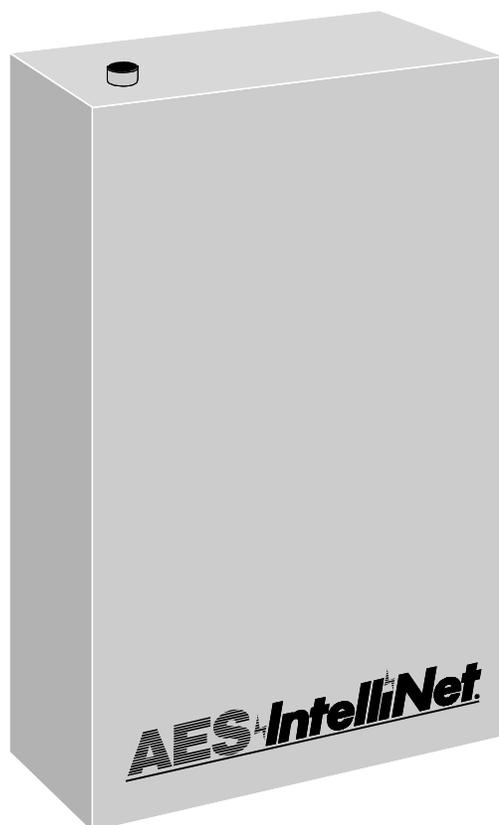# AES Central Station

7099-S, 7099-M Receiver
INSTALLATION & OPERATION MANUAL

AES IntelliNet

AES Corporation
285 Newbury Street • Peabody, Massachusetts 01960-1315 USA
Tel 978-535-7310 • Fax 978-535-7313
Copyright 1998

Table of Contents

Series99 Receivers Overview

There are 2 types of Series99 receivers: System99 and Monitor99. These receivers accept signals from up to 99 AES-IntelliNet Subscriber Units. If your system grows to more than 99 units, you can upgrade to either the 7000 or 7700 Series receivers which can receive from up to thousands of units.

> **IMPORTANT: The Series99 receivers recognize subscriber units ID numbers 9901 to 9999 only!** <u>**No other ID numbers are recognized!**</u> Program the subscriber units with ID numbers between the numerals 9901 and 9999. (Note: units numbered outside of this range will be acknowledged by the receiver, but no data is transferred).
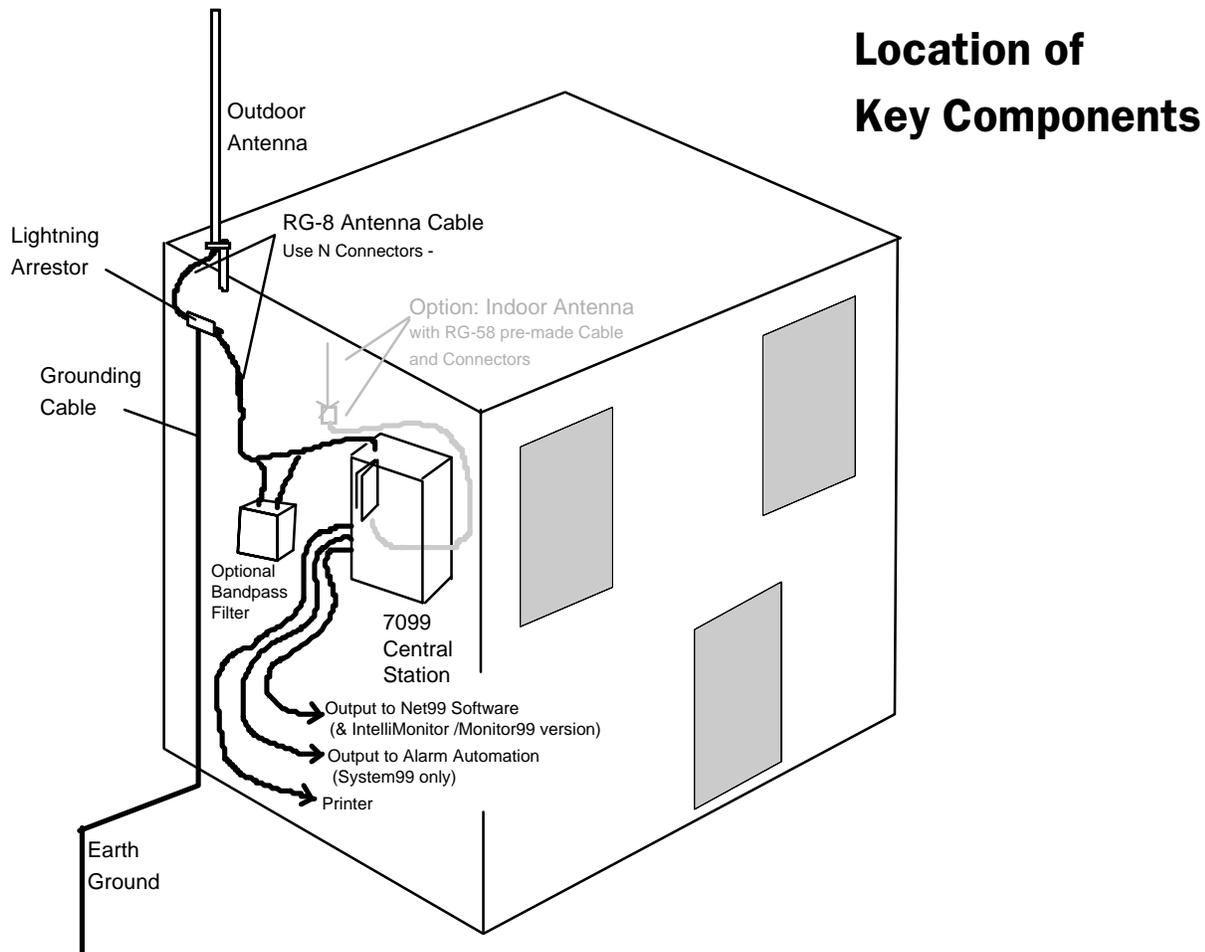

Compatibility of AES-IntelliNet components:

	AES Receivers			
	System99	Monitor99	7000/2	7700/UL
Subscriber Units				
7050	Yes*	Yes*/8 zns	Yes	Yes
7050-E	Yes*	Yes*/8 zns	Yes	Yes
7050-E+IntelliTap	Yes*	No	Yes	No
7750/UL	Yes*	No	Yes	Yes
7050-Napco	Yes*	No	Yes	No

	AES Receivers			
	System99	Monitor99	7000/2	7700/UL
Receiver Software				
Net99	Yes	Limited ***	No	No
IntelliMonitor99	No**	Yes	No**	No
Net7K	No	No	Yes	No
Net77/UL	No	No	No	Yes

* Subscriber unit ID numbers 9901 to 9999 only.

** Available for special orders / proprietary systems

*** Part time software, used for initial programming of subscribers, limited troubleshooting)

Location of
Key Components

Outdoor
Antenna

RG-8 Antenna Cable
Use N Connectors -

Lightning
Arrestor

Option: Indoor Antenna
with RG-58 pre-made Cable
and Connectors

Grounding
Cable

Optional
Bandpass
Filter

7099
Central
Station

Output to Net99 Software
(& IntelliMonitor /Monitor99 version)

Output to Alarm Automation
(System99 only)

Printer

Earth
Ground

System99 Key Components:

 • RF Receiver, 7099-S, with Acknowledge Switch / Alarm Buzzer

 • RF Network Interface and Net99 software disk. Minimum PC required: DOS 6.2, 486/50, 8M
Ram, 10M disk space. (See Net7K manual for operation).

 • Output for Alarm Automation choose Radionics 6500 or Ademco 685 emulation
   (automation software not supplied)

 • Event Printer and Cable

 • External Antenna, Cable, Connector, Lightning Suppressor (requires expert RF installation)

 • (Option - Internal Antenna, Pre-Assembled Cable & Connectors, - may be user installed)


Monitor99 Key Components:

 • RF Receiver, 7099-M,

 • RF Network Interface - disks provided for both Monitor99 and Net99. Minimum PC required:
DOS 6.2, 486/50, 8M Ram, 30M disk space. The Monitor99 program provides monitoring
functions; the Net99 software is used only for initial programming of subscribers and limited
operations.

 • Event Printer and Cable

 • External Antenna, Cable, Connector, Lightning Suppressor (requires expert RF installation)

 • (Option - Internal Antenna, Pre-Assembled Cable & Connectors, - may be user installed)

7099 Series Central Station

Typical Antenna Configurations:

• **External Antenna -** *Recommended -* For best performance, the 7099 receiver includes a 9db antenna, lightning suppressor, 100 feet of low-loss RF cable and "N" connectors. This setup provides the best performance, particularly if you are planning to upgrade in the future. The system operator can install the cable, but **a certified RF technician must install and test connectors and antenna.**

• **Internal Antenna** - the receiver also includes a 5db antenna for indoor use and a pre-made cable. This antenna can be installed indoors - ideally as high in the building as possible for "good" performance for close range / proprietary systems. This setup can be installed by user without special RF tools. However, the radio range could be reduced.
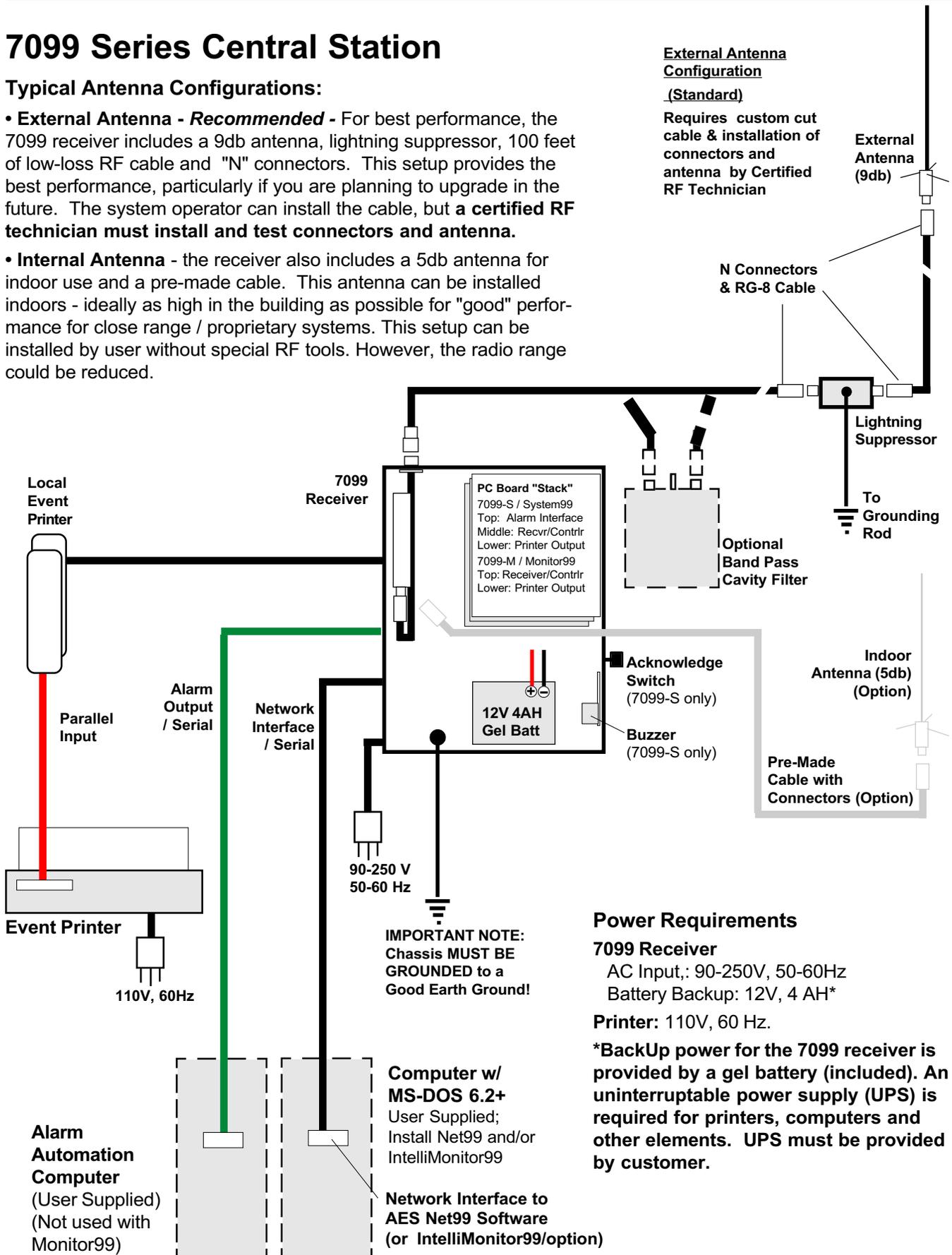
External Antenna Configuration

 (Standard)

Requires custom cut cable & installation of connectors and antenna by Certified RF Technician

External Antenna (9db)

N Connectors & RG-8 Cable

Lightning Suppressor

To Grounding Rod

Local Event Printer

7099 Receiver

PC Board "Stack"
7099-S / System99
Top: Alarm Interface
Middle: Recvr/Contrlr
Lower: Printer Output
7099-M / Monitor99
Top: Receiver/Contrlr
Lower: Printer Output

Optional Band Pass Cavity Filter

Parallel Input

Alarm Output / Serial

Network Interface / Serial

12V 4AH Gel Batt

Acknowledge Switch (7099-S only)

Buzzer (7099-S only)

Indoor Antenna (5db) (Option)

Pre-Made Cable with Connectors (Option)

Event Printer

110V, 60Hz

90-250 V 50-60 Hz

IMPORTANT NOTE: Chassis MUST BE GROUNDED to a Good Earth Ground!

Power Requirements

7099 Receiver
   AC Input,: 90-250V, 50-60Hz
   Battery Backup: 12V, 4 AH*

Printer: 110V, 60 Hz.

*BackUp power for the 7099 receiver is provided by a gel battery (included). An uninterruptable power supply (UPS) is required for printers, computers and other elements. UPS must be provided by customer.

Alarm Automation Computer (User Supplied) (Not used with Monitor99)

Computer w/ MS-DOS 6.2+ User Supplied; Install Net99 and/or IntelliMonitor99

Network Interface to AES Net99 Software (or IntelliMonitor99/option)

Installation

Guidelines for a Successful Installation

**The central receiving site is a critical element of the AES•*IntelliNet* system. Every installation is unique, with consideration given for location, structure, geography and other factors. *This section is intended as a guide only, to assist you in planning for your installation.*

• **Read the manual! Familiarize yourself with all elements of the installation.**

• **You have 2 choices for antennas installations:**

- An indoor 5db antenna for a "basic" installation, such as those used in a proprietary application (such as a campus) can use an easily installed 5 db antenna connected to the transceiver by a pre-assembled cable. The antenna should be located as high in the building as possible, ideally an attic location. In general, a person with good technical skills can install this antenna.

- An outdoor 9 db antenna, "professionally" installed, is required for applications where the nearest subscriber units may be miles away. This is the "best" choice in terms of performance. It is a requirement for a commercial operator (such as an alarm dealer) who is growing a network to cover a large area. For a professional installation, you can install the major components and run the required cables, and then **retain a qualified radio technician to perform the RF (radio freq) part of the installation:**

• Outdoor Antenna, Mounts and Connectors
• *All* RF Connectors / Terminations
• RF Lightning Suppressor / Grounding
• Final Check to assure that your installation is getting maximum performance.

Contact the radio technician BEFORE you begin any part of the installation!
There is no substitute for experience in radio installation, which is a unique mix of science and art. The knowledge you gain from a solid central receiver installation will serve you well as you install the transceiver / repeaters that will become your network.

Installation of Antenna, Transceiver, Cables (See illustrations)

Typical Tool Requirements:

• SWR Meter	• Weatherproof Tape	• Silicone Grease
• Large Wire Cutters	• 11/16" Wrench	• Silicone Sealant
• Soldering Iron	• 5/8" Wrench	• RG8/U Coax Strippers
• Wire Strippers 18-22 AWG	• Adjustable Wrench	

• Install antenna(s) on top of building, at a minimum of 10 feet away from any electrical lines and/or metal objects.   Install the antenna as high as possible for maximum range. A extra few feet of antenna height at the central station can provide *miles* of added range.

• Install suitable grounding for lightning surge suppression in compliance with National Electric Code 810-20/57 and all applicable building codes.

• Install the Surge Arrestor at the point where the coax cable enters the building. Connect the ground lug of Surge Arrestor to ground using proper grounding strap or cable. If surge arrestor is located outside, it must be housed in a weathertight enclosure - select a box that allows minimal wire bends.

• If used, install optional Bandpass Cavity Filter as close to the 7099 receiver as possible. **NOTE**: Bandpass Cavity must be located in a climate controlled area, avoiding extremes of heat or cold.

• Mount the 7099 Receiver to a suitable, strong surface, using proper fasteners. It must be located in a climate controlled area, avoiding extremes of heat or cold. Position the unit near the computer(s) that will be connected for automation and running Net99 or IntelliMonitor99 software.

• Run the RG8/U cable from the antenna to the 7099 Receiver. Do not make bends of less than 6" in radius. Leave 5 to 10 feet of extra cable at each end. **NOTE: MAXIMUM ANTENNA CABLE LENGTH IS 100 FEET.** If cable is longer than 100 feet, use a low loss cable. Contact AES for more information.

• **ALL CABLES MUST BE RUN IN ACCORDANCE WITH UL REQUIREMENTS, NATIONAL ELECTRIC CODES AND LOCAL BUILDING CODES.**

COAX / RF Cable Installation and Test

> **IMPORTANT NOTE: Final connections should only be made by a qualified RF technician. Coaxial connectors and cable are CRITICAL to system performance, and should only be made by an experienced technician.** The procedure and diagrams here is provided for reference.

• Terminate the RG-8/U N-type connectors at the COAX end that connects to the Antenna, the Surge Arrestor (check for correct direction if applicable), the Bandpass Cavity (if used) and the 7099 Receiver.

• Run ground cable from Surge Arrestor to good earth ground in accordance with local codes.

• Make a small patch cable (1-2') from the RG8/U with a N-type connector on both ends.

• Connect the patch cable to the Antenna. Connect the power meter to the RG8/U coax, making sure that the orientation of the power meter is correct. Connect cables to the (optional) bandpass cavities and transmitter.

• **To Test Cables and Connectors,** set the Power Meter to "Power".

• Connect power to the Series99 Central Receiver.

• To activate the transmitter: Connect the "Network Interface" serial cable to your PC/DOS computer (COM2 suggested).

  • Install "Utilities" per "Software Installation" section of this manual.

  • Run Telix. Enter the command "Netcom" to link up with the network board in the receiver.

  • Press the Reset button on the Network PC Board (see 7099 Series Central Station diagram):
    on the 7099-S receiver, this is the middle PC board of the "stack", at the top edge;
    on the 7099-M receiver, this is the top PC board of the "stack", at the top edge.

  • Activate the "Caps Lock" and type "TEST 7 <Enter>". This will cause the transmitter to operate for about 7 seconds. *WARNING:* DO NOT transmit longer than 10 seconds.

• On the Power Meter watch for a reading of at least 1.6 watts of power (the transmitter produces 2 watts - expect lesser power depending on cable length.)

• If Power is too low: check that power input is at 13.8VDC; check all cable terminations.

• Change the Power Meter setting to "Reflected Power" and watch for a reading of 0 - .3 watts of reflected power.

• If Reflected Power is too high: check the connectors and re-terminate if necessary.

• After testing, press ALT-X to exit Telix. Disconnect power and meter, and reconnect antenna.

• Apply silicone sealant on all "N" type threads to prevent water damage. Cover all coax connectors tightly with weatherproof tape.

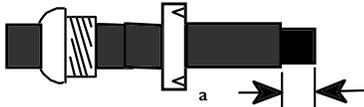

**COAX Cable Run Diagram
for External Antenna**
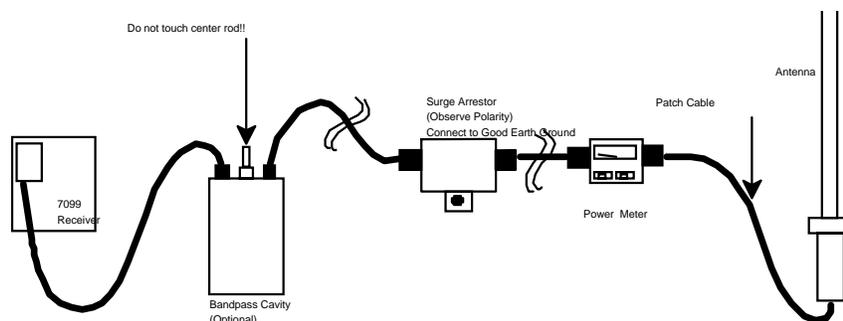
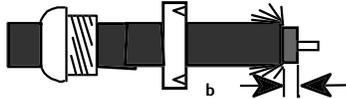"N" Type assembly instructions (Clamp Type)   # Installation of N-type Connectors

Clamp

Nut   Gasket   Pin   Plug Body
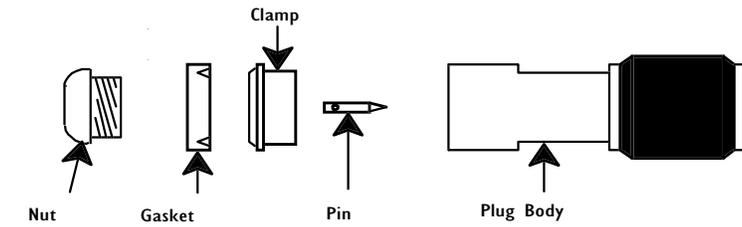
Step 1

Step 1)   Place nut and gasket, with "V" groove
                  toward clamp, over cable and cut off jacket dimension a.

a

Step 2
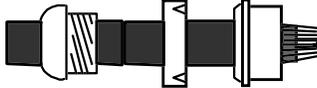
Step 2)   Comb out braid and fold back. Cut off cable dielectric to
                  dimension b.

b

Step 3)   Pull braid wires forward and taper toward center conductor.
                  Place clamp over braid and push back against cable jacket.

Step 3

Step 4)   Fold back braid wires as shown, trim braid to proper length
                  and form over clamp as shown. Solder pin to center conductor.

                  Use adequate heat to flow solder. Defects in solder will adversely affect performace.
                  Make sure no braid, or lose pieces of braid, are shorted to center pin.

Step 4
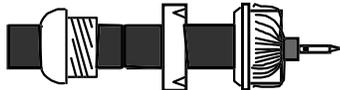
Step 5)   Insert cable and parts into connector body. Make sure sharp
                  edge of clamp seats properly in gasket. Tighten nut.
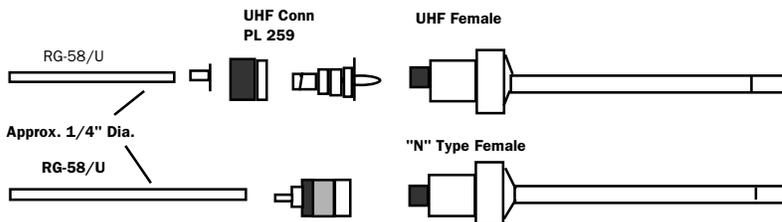
Step 5
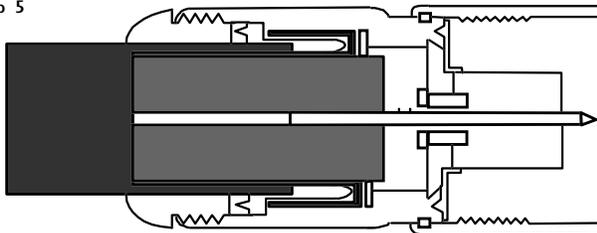
Amphenol Number: 82-202
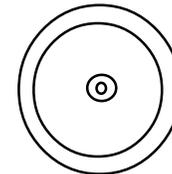
Connector Type: N Plug

Dimension a: .359"(9.1mm)
Dimension b: .234"(6.0mm)

Installation of Antennas with UHF-type Connectors

<u>**1) If you are using RG-58/U cable**</u>

UHF Conn   **UHF Female**   **"N" Type**
PL 259

RG-58/U

Approx. 1/4" Dia.

RG-58/U   **"N" Type Female**

<u>**2) If you are using Belden 9913 cable**</u>

"N" to   **UHF Female**   **UHF Type**
UHF plug

Belden 9913

Approx. 1/2" Dia.
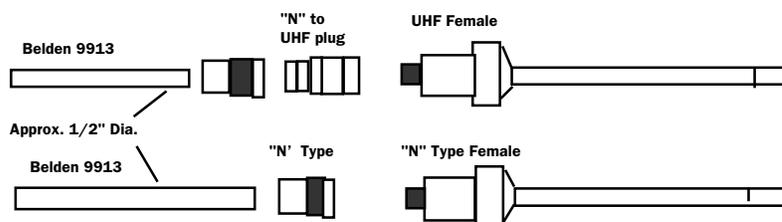
Belden 9913   **"N' Type**   **"N" Type Female**
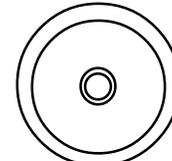
Install Software

• Install the receiver and computer(s) as described in preceding sections.

NET99 Software
• Insert the Net99 disk into your PC/DOS computer.
• Type A:INSTALL and follow instructions on screen to install from correct drive.
• Net99 software will be installed on the computer
• **REFER TO THE NET7K MANUAL** - Net99 is actually a full featured version of Net7K, specially configured to work with the System99 or Monitor99 receiver. It's operation is the same - please refer to the Net7K manual provided for operation.

IntelliMonitor99 Software, with Part Time Net99 program (Monitor99 systems only)
• Insert the IntelliMonitor99 disk into your PC/DOS computer.
• Type A:INSTALL and follow instructions on screen to configure the correct serial ports.
• IntelliMonitor99 software will be installed on the computer
• **REFER TO THE IntelliMonitor MANUAL** supplied with this system.

NOTE TO IntelliMonitor99 Users:
IntelliMonitor is an alarm monitoring program that uses the data from the AES receiver's network interface and displays it in an easy to use format. It is expected that this software will run 24 hours per day for the purposes of security.

WARNING: Anytime you are not running IntelliMonitor - such as when you are running the Net99 program - alarms can only be received on the printer connected to the 7099 receiver.

You can exit the IntelliMonitor99 program to run Net99, the AES system software that makes programming the subscribers, but only on a part-time basis.

Configure Alarm Output for Automation (System99 Receivers only)
• You can choose between Radionics 6500 and Ademco 685. Refer to Appendix B for Configuring Alarm Automation.

Appendix A
Set System Cipher / Dealer Code

Version 1.72

Procedure for Changing System Cipher (Dealer Code) in the 7099 Receiver using the Net99 Software and 7100 Controller (or Equivalent Computer)

For your convenience, you may have the system cipher/dealer code programmed at the factory.
<u>If your cipher was already set at the factory, skip this section.</u>

The System Cipher (also known as the Dealer Code) is a unique 4 digit hex number that must be coded into every radio data device in your network. Choose and record this number carefully: this is the security code for your network.

The dealer code is programmed and stored in the microprocessor chips that are part of every AES•*IntelliNet* radio, both the subscriber units and the central receiver. In the 7099-S central receiver there are <u>two</u> (2) circuit cards that must be programmed with the system cipher.   In the 7099-M central receiver only one circuit card must be programmed

After Installing the 7099 and the Net99 software on a compatible computer, follow these steps to change the dealer codes for the central station:

1. Receiver should be powered and operational.

2. Insure cables from that side are connected to the Computer with Net99 running:
   The 9 pin "Network Interface" cable from the 7099 is connected to COM2 of the computer
   The 9 pin "Alarm Output" cable from the 7099 is connected to COM1 on the computer.

3. To change the dealer code for the Alarm Output Board (not on 7099-M), change to the TELIX directory at the DOS prompt. This is done by typing CD \TELIX. The type ALMCOM to use telix as configured for the alarm board. You may get some meaningless gibberish which you can ignore. Type ! (shift-1) twice quickly and there will be a prompt asking for a password, type PEABODY (note: the password must be in capital letters). If done correctly, there will be a prompt for dealer code, then automation receiver number, and then finally the automation output mode (refer to <u>Procedure for Setting Automation Output Boards</u> for detailed information). Press ALT-X to exit Telix.

4. To change the dealer code for the Network Controller Board (7099-S and 7099-M), note that there are two methods to change the dealer code for the network controller board.
  A. From the telix directory type NETCOM to use telix as configured for the network controller board. (Note: all commands will need to be in capital letters) There should be an AES prompt (AES>) on the terminal. If not, press ENTER to get an AES prompt. At the prompt type SET CODE XXXX, where the dealer code is substituted for XXXX. Press ALT-X to exit telix.
  B. From the AES directory (i.e. CD \net99) type NET99 to run Net99. Press CTRL-D and there will be a pop-up window with a prompt asking for a password. Type PEABODY, and there will be a prompt for the dealer code. Press ALT-X to exit Net7k.

(dealrco3.doc w/99 mod's)

Appendix A, continued

Procedure for Changing Dealer Code on 7099 Using Handheld Terminal

**For your convenience, you may have the system cipher/dealer code programmed at the factory.
If your cipher was already set at the factory, skip this section.**

1. The handheld terminal can be attached to P2 on the automation output board (the top board on a 7099-S). P2 can be found near the reset button (see figure).

2. The baud rate of the handheld terminal must be changed to 1200. Press <CTRL - SHIFT - F1> keys simultaneously. BAUD = 4800 should appear at the top of the display. Press <F1> repeatedly until BAUD = 1200 is displayed. If you press <F4> then the setting will only last as long as the terminal has power. If you press <F5> then the setting is saved even if power is removed (remember to set the baud rate back to 4800 when you are done with this procedure)

3. Type ! (shift-G) twice quickly and there will be a prompt asking for a password, type PEABODY. If done correctly, there will be a prompt for dealer code, then automation receiver number, and then finally the automation output mode (refer to Procedure for Setting Automation Output Boards for detailed information).

4. The handheld terminal can be attached to P2 on the network controller board as well, but since the network controller board is below the automation board, it is much more difficult. It is important that the connector is oriented correctly because it can be forced the wrong way, causing damage to the hand held terminal and the board.

5. The baud rate of the hand held terminal must be 4800. Refer to step 2.

6. There should be an AES prompt (AES>) on the terminal. If not, press ENTER to get an AES prompt. At the prompt type SET CODE XXXX, where the dealer code is substituted for XXXX.

7. Both boards must have the proper dealer code.

dealtcod.doc

Appendix B
Set Automation / Alarm Output (7099-S only)

Procedure for Setting Automation Output Boards
• System Cipher / Dealer Code
• Automation Output Type
• Receiver Number

For your convenience, you may have the system cipher/dealer code programmed at the factory.

To select from the various alarm automation formats, start by initiating the procedure to change the dealer code on the alarm board.

1. Press "!" twice, rapidly in succession. The 7099 output board will respond with:
ENTER PASSWORD :

2. Respond with "PEABODY", and board will respond with:
ENTER Cipher CODE :

3. Enter your dealer code, and the board will respond with **"OK"** and:
FORMAT-RADIONICS_MIX (default)
ENT FORMAT(0,1,2,cr)
ADEMCO, RADIONICS,
MIX,NO CHANGE :

4. Enter
 • 0 to change to Ademco 685 compatible format,
 • 1 to change to Radionics 6500 compatible format,
 • 2 to change to Radionics mode for AES inputs and Ademco mode for 4x2 and Contact ID inputs (this mode is the default factory preset).
The board will respond with **"OK"** and:
ENTER REC # :

5. Enter the receiver number of the AES receiver, and the board will respond with **"OK"** and if the alarm format has been changed to 1 or 2, the receiver will send the Radionics text message:
301 AES 7000 Vxxx

Notes:
1. If the alarm board sends a response of **"OK"** then that feature has been programmed.
2. If the return or enter key is pressed without first typing in a number or illegal characters (non - hexadecimal characters) are typed then the board with interpret the entry as zero.
3. To avoid typing in an entry press the "ESC" key before typing any characters and that entry will be bypassed.
4. If the alarm board sends **"TIMEOUT"**, then that entry will not be programmed, but all previous responses of **"OK"** have been programmed.
5. If the receiver number is larger than two characters then only the last two characters will be accepted. If the board has been programmed for formats 0 or 2 and more than one character is typed then the board will respond with **"REC # TOO LARGE"** and only the last number typed will be used.

almset.doc

Appendix C
Automation Output Specification

Revision 6

In central station version V1.72 AES will support three different output formats. All three formats will be at 1200 bps, 7 data bits, Odd parity, 2 stop bits and will use DSR/DTR connection hardware handshaking. The types of output provided are a pure Ademco 685 compatible format, a Radionics 6500 only compatible format, and a mixed Radionics format with Ademco outputs.

Mode 0 - Ademco 685

This mode will provide the output of 3 line cards; AES (1), Contact ID (3), and 4x2 (4).

LineCard # 1 - AES:

<LF>11sACCTs18sEEEEs00sCNNNs<CR>

Subscriber Reporting Codes

E140	Alarm reported in NNN (decimal number)
P140	Alarm still active in check-in or status report
R140	Restoral of Alarm
E370	Zone Trouble reported in NNN (decimal number)
P370	Trouble still active in check-in or status report
R370	Trouble Restoral
E307	Diagnostic Fault in NNN (reported as 80N where fault code is shown below)
P307	Diagnostic fault reported during check-in
R307	Restoral of all diagnostic faults (NNN = 800)
E602	Automatic check-in
E305	Watchdog or Pushbutton Reset (NNN = 901)
E305	Power on Reset (NNN = 902)
R356	Acknowledge Delay (NNN = 903)
E351	IntelliTap phone line cut (NNN = 905 or 000, note: dependent on intellitap version)
R351	Restoral of phone line cut (NNN = 905 or 000, note: dependent on intellitap version)

Receiver Reporting Codes (0000 is in the ACCT field)

E307	Diagnostic Fault in NNN (reported as 80N where fault code is shown below)
E302	Low Battery
R302	Low Battery Restore
E301	AC Failure (not sent at this time)
R301	AC Restore (not sent at this time)
E308	Standby Mode
R308	Primary Mode
E336	Printer offline (not sent at this time)
R336	Printer Restore (not sent at this time)
E300	Net7k offline (not sent at this time)
E300	Net7k online (not sent at this time)
E333	Alarm board fault (not sent at this time)
R333	Alarm board restore (not sent at this time)
E353	Multiple central controllers active detected
E354	Unknown message revision (invalid report)

LineCard # 3 - Contact ID
<LF>13sACCTs18sEEEEsGGsNNNNs<CR>
This information is passed through, receiver and linecard number are set appropriately

LineCard #4 - 4x2
<LF>14sACCTsCC<CR>
This information is passed through, receiver and linecard number are set appropriately

Inputs:
In this mode the AES receiver will respond to three inputs
S   reply will be - <LF>00sOKAYs@<CR>
<0x06>   receiver considers last message acknowledged
<0x15>   receiver will re-send last message (if not acknowledged)

Mode 1 - Radionics 6500
This mode will provide the output of 4 line cards; AES (1), SIC (2), Contact ID (3), and 4x2 (4).

LineCard # 1 - AES:
1011ssssssACCTEEsNNN<0x14>
        note: the value of NNN (or N2 N1 N0 as used for this example) is computed as follows:
               value = N2 * 16 + (N1 * 10 + N0) (example: A 101 means zone 17 is in alarm)
Subscriber Reporting Codes
A nnn   Alarm reported in zone nnn (computed as above)
SA nnn   Alarm still active in check-in or status report
T nnn   Zone Trouble in zone nnn (computed as above)
ST nnn   Zone Trouble still active in check-in or status report
R nnn   Restoral of Alarm or Trouble
Y 80n   Diagnostic Fault in n (reported fault code is shown below)
SY 80n   Diagnostic fault reported during check-in
Y 800   Restoral of all diagnostic faults (n = 0)
A 000   Automatic check-in
T 901   Watchdog or pushbutton reset
T 902   Power on Reset
R 903   Acknowledge Delay
T 905   IntelliTap phone line cut
R 905   Restoral of phone line cut
Receiver Reporting Codes (spaces, ssss in ACCT field)
Y 80n   Diagnostic Fault in n (reported fault code is shown below)
X 11   Low Battery
X 12   Low Battery Restore
X 13   AC Failure (not sent at this time)
X 14   AC Restore (not sent at this time)
X 810   Standby Mode
X 811   Primary Mode
X 20   Printer offline (not sent at this time)
X 19   Printer Restore (not sent at this time)
X 812   Multiple central controllers active detected
X 26   Unknown message revision (invalid report)

LineCard # 2 - SIC:
1012ssssssACCTEEsNNN<0x14>
        note: the value of NNN (or N2 N1 N0 as used for this example) is computed as follows:
               value = N2 * 16 + (N1 * 10 + N0) (example: A 101 means zone 17 is in alarm)
The explanation of SIC messages (used in Optex Morse Genesys 824 Alpha) will be described in a later publication.

LineCard # 3 - Contact ID:

1013ssssssACCTEEsNNN<0x14>

Contact ID Event Codes with numbers E1XX and E2XX will be reported as:

A NNN   where NNN is the Contact ID zone number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers P1XX and P2XX will be reported as:

SA NNN   where NNN is the Contact ID zone number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers R1XX and R2XX will be reported as:

R NNN   where NNN is the Contact ID zone number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers E3XX, and R3XX with non-zero zone information will be reported as:

T NNN   where NNN is the Contact ID zone number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers P3XX with non-zero zone information will be reported as:

ST NNN   where NNN is the Contact ID zone number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers E3XX, and R3XX with zone information with a value of zero will be reported as:

Y 3XX   where 3XX is a copy of the event code

Contact ID Event Codes with numbers P3XX with zone information with a value of zero will be reported as:

SY 3XX   where 3XX is a copy of the event code

Contact ID Event Codes with numbers E4XX will be reported as:

O NNN   where NNN is the Contact ID user number (number is a direct copy from Contact ID)

Contact ID Event Codes with numbers R4XX will be reported as:

C NNN   where NNN is the Contact ID user number (number is a direct copy from Contact ID)

All other Contact ID Event Codes will be reported as:

Y XXX   where XXX is a copy of the event code.

SY XXX   when PXXX is the event and where XXX is a copy of the event code

      Note: AES does not recommend using 6500 mode messages to report Contact ID.

LineCard # 4 - 4x2:

1014ssssssACCTsAssNN<0x14>

All 4x2 messages will be reported as follows:

A NN   where NN is a direct copy of the 4x2 report code

Inputs:

In this mode the AES receiver will respond to two inputs

<0x06>   receiver considers last message acknowledged

<0x15>   receiver will resend last message (if not acknowledged)

Other Messages:

301ssAESs7000sVX.XXs<0x14>

X.XX   this reports the version number of the firmware

Mode 2 - Radionics 6500 mixed with Ademco 685 outputs
This mode will provide the output of 4 line cards; AES (1), SIC (2), Contact ID (3), and 4x2 (4).

LineCard # 1 - AES:
1011ssssssACCTEEsNNN<0x14>
(Codes are the same as in mode 1)

LineCard # 2 - SIC:
1012ssssssACCTEEsNNN<0x14>
(Codes are the same as in mode 1)

LineCard # 3 - Contact ID
<LF>13sACCTs18sEEEEsGGsNNNN<0x14>
(Codes are the same as in mode 0, note the different termination character)

LineCard #4 - 4x2
<LF>14sACCTsCC<0x14>
(Codes are the same as in mode 0, note the different termination character)

Inputs and Other Messages are the same as Mode 1

Fault Codes in Y 80N and E307 Events (Zone information = 80N)
0   None (R307 in Mode 0), Restoral of all faults
1   Low Battery - Voltage is less than 11.0V
2   Ram Data
3   NV Memory Fault (SGS Memory 7050, 7050E)
4   ADC\Ext Equip (7050E only)
5   No Modem
6   CPU Timing
7   Ram Chip
8   Modem Loopback Failed
9   AC Mains Fault (7050E)

Explanation of Fault Codes (7050 and Receiver)
0   Restoral of all previous fault or a manual request of status
1   DC voltage has dropped below 11.0V
2   Programmed Parameters and Critical Parameters in memory have been found corrupted
3   Ram battery bad (SGS Thompson part only)
4   Reserved
5   Modem Chip Failed
6   Timing Error between CPU and Modem
7   Ram Read/Write test failed
8   Message Looped back through Modem Failed (Initialization only)
9   Reserved

Explanation of Fault Codes (7050E)
0   Restoral of all previous fault or a manual request of status
1   DC voltage has dropped below 11.0V
2   Programmed Parameters and Critical Parameters in memory have been found corrupted
3   EEPROM not present or EEPROM memory corrupted
4   Analog to Digital Converter Faulted, No Further Reporting of Zone information
5   Modem Chip Failed
6   Timing Error between CPU and Modem
7   Ram Read/Write test failed
8   Message Looped back through Modem Failed (Initialization only)
9   DC voltage Supplied by AC has dropped below 12.0V

Appendix D:
7099-S/-M Connectors Pin-out:

"Network Interface"
Function: RS-232 serial link to the COM port of the PC computer operating the Net99 software.

Location: 9-pin connector on cable from 7099 -

Pin #

7099	Signal	I/O	at 9-pin	at 25-pin
2	Receive Data	I	3	2
3	Transmit Data	O	2	3
6	Data Set Ready	O	6	6
7	Signal Ground	-	5	7
20	Data Term Ready	I	4	20

"Alarm Output" (option for 7099-S only)
Description: RS-232 serial link to the COM port of the PC computer operating Alarm Automation Software.

(See separate section on data format).

Location: 9 pin connector on cable from 7099-S -

Pin #

7099-S	Signal	I/O	at 9-pin	at 25-pin
2	Transmit Data	O	2	3
3	Receive Data	I	3	2
4	Data Term Ready	I	4	20
5	Signal Ground	-	5	7
6	Data Set Ready	O	6	6

NOTE: A custom cable may be required for Alarm Automation. Consult with AES technicians and Automation Software provider for details.

Appendix E
Event Printer Messages, from 7099 Receiver

Message Structure:

<Date - YY-MM-DD> <Time - HH-MM-SS> <Message Type> <Source of Message; Error Code>

<Text Message of Error Type>

```
98-05-08  09:08:52 STATUS CONT 02
        CONTROLLER - AC TROUBLE
```

Messages Regarding Central Station Equipment Status:

Printed Message	Explanation
CONTROLLER - AC TROUBLE	**AC Power Fault - Serious Problem if system relies on Uninterruptable AC source (user supplied)**
CONTROLLER - AC RESTORE	**End of AC Power Fault**
CONTROLLER - NET7000 OFFLINE	**Connection lost between receiver and Computer/ Net99; check cable, check that computer and Net7K program are running**
CONTROLLER - NET7000 ONLINE	**Connection initiated / restored between receiver and Net99**
CONTROLLER - COMM TIMEOUT STATUS MESSAGE NOT ACKNOWLEDGED BY COMPUTER	**Comm link lost between receiver and Net99 software; check that Net99 software is running; check that proper Net99 version is running;**
CONTROLLER - MANUAL ACKNOWLEDGE RECEIVED	**Operator pushed Silence / Acknowledge buttons**

Messages Regarding Subscriber Units:

Printed Message	Explanation
SUPVIS nnnn 00	**Subscriber Unit #nnnn Check-In, No Faults**
<date><time> SUPVIS nnnn 01	**Subscriber Unit check-in after reset switch is pushed**
STATUS - UNIT RESET	**Subscriber Unit Reset**
<date><time> SUPVIS nnnn 02 STATUS - POWER-ON RESET	**Subscriber Unit check-in after power restoral**
<date><time> FAULT nnnn 00 FAULT - NONE	**Reply by Subscriber to Status Request by Operator - All is OK**
FAULT - LOW BATTERY	**Low Battery Detected at Subscriber Unit**
FAULT - MODEM LOOPBACK	**Problem with modem chip, power down & power up, or push RESET switch.**
FAULT - RAM DATA	**Failed RAM Check in Subscriber**
FAULT - RAM BATTERY	**Failed RAM Battery Check by Subscriber**

AES ONE YEAR OWNER WARRANTY

We warrant AES products to be free from defects in material
and workmanship for one (1) full year from date of purchase.

At no cost to the original purchaser for parts or labor, AES will repair or replace any part or
parts which are judged defective under the terms of this Warranty.

Defective products must be returned to AES directly, provided they are properly packed,
postage prepaid. Or exchange may be made through any authorized direct factory represen-
tative for any products which are judged defective under the terms of this Warranty.

This Warranty is in lieu of all other Warranties expressed or implied and of all other
obligations or liabilities on the part of AES. This Warranty does not apply to any product or
any part thereof which has been repaired or altered outside our factory in any way to affect
its stability or reliability, or which has been subjected to misuse, negligence or accident, or
which has had the serial number effaced or removed. Neither shall this Warranty apply to any
product which has not been installed, applied or used in strict accordance with our instruc-
tions.

AES Corporation cannot be aware of, or responsible, for the differing values of property to
be protected by its alarm reporting systems. The above Warranty is given in lieu of all other
Warranties, either expressed or implied, including a Warranty of fitness for a particular
purpose, and manufacturer shall not be liable for any defect, incidental or consequential, loss
or damage arising out of the failure of the product to operate.

Some states do not allow the exclusion or limitation of incidental or consequential damages,
so the above limitation or exclusion may not apply to you.

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

AES·IntelliNet

SERVICE PROCEDURE: Contact AES Corporation at 978-535-7310 (fax 978-535-7313) to receive a Return Authorization
Number. Have the AES part number and serial number ready. Items should be shipped freight prepaid c/o Repair Services, AES
Corp, 285 Newbury Street, Peabody, Massachusetts 01960 USA. Authorized repair service is furnished only by AES Corporation.