AM 50 Series

50 Watt Amplifiers

Product Installation Document

CAUTION 1: STATIC SENSITIVE EQUIPMENT:
THIS EQUIPMENT IS SENSITIVE TO STATIC ELECTRICITY. IT MAY BE DAMAGED IF NOT PROPERLY HANDLED. TRANSPORT THIS UNIT IN A STATIC-SHIELDING BAG.
FAILURE TO OBSERVE THIS REQUIREMENT COULD CAUSE LATENT DAMAGE TO THE EQUIPMENT WHICH MIGHT NOT MANIFEST ITSELF UNTIL AFTER THE EQUIPMENT IS PLACED IN SERVICE.

WARNING: AM-50 SERIES AMPLIFIERS NODE RESTRICTION:
THE INI-VGX CAN SUPPORT UP TO FOUR AM-50 SERIES AMPLIFIERS WITH THE SAME OUTPUT VOLTAGE. YOU CANNOT WIRE AN AM-50-25 AMPLIFIER AND AN AM-50-70 AMPLIFIER TO THE SAME INI-VGX VOICE GATEWAY NODE.

CAUTION 2: DISCONNECT ALL POWER:
REMOVE ALL SOURCES OF POWER BEFORE YOU REMOVE OR INSTALL ANY UNITS.

Section 1: Description

The AM-50 Series amplifiers are the amplifiers used for the combined E3 Series® Fire Alarm and Mass Notification Systems. The amplifiers include either an AM-50-25 or an AM-50-70 amplifier. Each AM-50 Series amplifier includes two, supervised audio outputs and an auxiliary audio input that can be used for a backup amplifier connection. The amplifiers provide 50 watts of audio transmitted through two, integral Class A/B speaker circuits. Each amplifier's supervised output can drive up to 50 watts. Both amplifiers are a Class D switching type amplifier. The ARCNET communication circuits are wired in a Class X configuration. The following are the standard voltage for each AM-50 Series amplifier:

- The AM-50-25 amplifier's standard voltage for audio output is $25V_{RMS}$.
- The AM-50-70 amplifier's standard voltage for audio output is 70.7 V_{RMS}.

Up to four AM-50 Series amplifiers are controlled by an INI-VGX (First/Second/Third Generation) Voice Gateway. The primary audio input and control signals originate from the INI-VGX-FO or INI-VGX-UTP (First/Second Generation) or INI-VGX (Third Generation) via a ribbon cable connected into J1.To connect more than one amplifier to the INI-VGX (First/Second/Third Generation), connect a ribbon cable from J2 of one amplifier to J1 of the next amplifier.

Figure 1.1 shows the AM-50-25 amplifier.

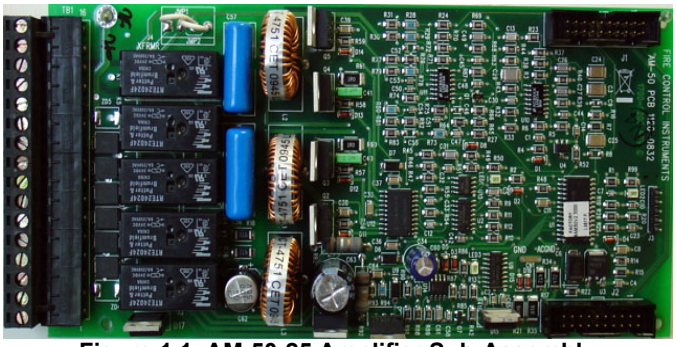


Figure 1.1 AM-50-25 Amplifier Sub-Assembly

Figure 1.2 illustrates the AM-50-70 amplifier.

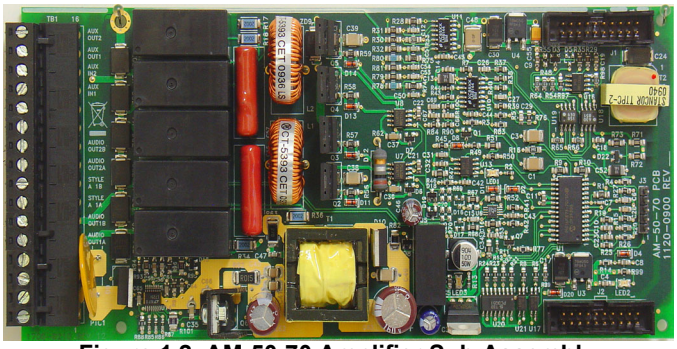


Figure 1.2 AM-50-70 Amplifier Sub-Assembly

1.1 Mass Notification System (MNS)

The Gamewell-FCI, Mass Notification System (MNS) is a Combination In-Building Fire and Mass Notification System. It comprises the E3 Series Broadband Emergency Voice Evacuation and the E3 Series Broadband Networked Fire Alarm Systems. This design allows a wide range of configurations to form an integrated, distributed fire alarm system in combination with the audio evacuation for both Fire and Mass Notification functions as desired. The design also allows for its use as a dedicated standalone Mass Notification System without the fire alarm service. The network communication conveys all Fire Alarm and Mass Notification control functions, audio evacuation, voice paging, and fire fighter communications over a single pair of wires or fiber-optic cable. The modular design offers several configurations to accommodate the following audio components:

- Autonomous Control Unit (ACU), (Main Command Center)
- Local Operating Console (LOC), (Remote Command Center)
- E3 Series Broadband Voice Evacuation System

Table 1.1.1 lists the E3 Series sub-assemblies that can be used in the Gamewell-FCI, MNS (Mass Notification System).

Autonomous Control Unit (ACU) (Main Command Center)	E3 LOC Remote Command Center	E3 Broadband System (Distributed System)
AM-50 Series Amplifiers	AOM-TELF/AOM-2SF	AM-50 Series Amplifiers
ANU-48 (Remote Annunciator)	ASM-16 (Addressable Switch Module)	ANU-48 (Remote Annunciator)
ASM-16 (Addressable Switch Module)	INI-VG Series (First/Second/Third Generation) (Intelligent Network Interface Voice Gateway)	ASM-16 (Addressable Switch Module)
ILI-MB-E3 (Intelligent Loop Interface-Main Board)	INCC-MIC (Microphone)	ILI-MB-E3 (Intelligent Loop Interface-Main Board)
ILI-S-E3 (Intelligent Loop Interface-Expansion Board)	NGA (Network Graphic Annunciator)	ILI-S-E3 (Intelligent Loop Interface-Expansion Board)
ILI95-MB-E3 (Intelligent Loop Interface-Main Board)	INCC-TEL (Telephone)	ILI95-MB-E3 (Intelligent Loop Interface-Main Board)
ILI95-S-E3 (Intelligent Loop Interface95-Expansion Board)		ILI95-S-E3 (Intelligent Loop Interface95-Expansion Board)
INCC-MIC (Microphone)		INCC-MIC (Microphone)
INCC-TEL (Telephone)		INCC-TEL (Telephone)
INI-VG Series (First/Second/Third Generation) (Intelligent Network Interface Voice Gateway)		INI-VGC (First/Second/Third Generation) Intelligent Network Interface Voice Gateway
NGA (Network Graphic Annunciator)		INI-VGX, (First/Second/Third Generation) (Intelligent Network Interface Voice Gateway)
PM-9/PM-9G (Power Supply)		NGA (Network Graphic Annunciator)
RPT-E3 (Communication Circuit)		PM-9/PM-9G (Power Supply)
		RPT-E3 (Communication Circuit)

NOTE: In the E3 Series, Mass Notification System, the LCD-E3, LCD-SLP and LCD-7100/RAN-7100 display panels are not used.

Table 1.1.1 E3 Series Modules Used in an MNS System

1.1.1 Mass Notification System - Documentation

The following MNS System information is available in the Gamewell-FCI, *Mass Notification System (MNS) Installation/Operation Manual, Part Number:LS10013-000GF-E*.

- System Configurations
- Cabinets Installations
- Class 2 & 3 Power-Limited Requirements
- Wiring
- System Operation
- Testing/Maintenance

1.1.2 Mass Notification System Cabinet Options

You can use the AM-50 Series amplifiers for voice messaging in the Autonomous Control Unit (ACU), Main Command Center and the E3 Series Broadband Voice Evacuation Systems. Table 1.1.2.1 lists the systems and cabinets that use the AM-50 Series amplifiers.

ACU Main Command Center	E3 Broadband Voice Evacuation System
• Cabinet C, E3 INCC-CAB-C	• Cabinet B, INX-CAB-B
	• Cabinet C, INX-CAB-C
	• Cabinet D, INX-CAB-D

Table 1.1.2.1 MNS Cabinet Options for the AM-50 Series Amplifiers

Section 2: Installation

2.1 Standards

These modules comply with the following Standards:

National Fire Protection Association

- AHJ — Authority Having Jurisdiction
- NFPA 70 — National Electrical Code
- NFPA 72 — National Fire Alarm Code
- NFPA 101 — Life Safety Code

UL Standards UL 864 9th and 10th Edition

- Per the UL Continuing Certification Program, UL 864 9th edition fire alarm control equipment will retain certification after the rollout of UL 10th edition (12/2/2018).
- Installations of UL 864 10th Edition certified equipment are permitted to use UL864 9th Edition certified equipment when approved by the local Authority Having Jurisdiction (AHJ).

  For product compliance, refer to the UL listing cards located on the UL online certification directory.
  https://iq.ulprospector.com

2.2 Installation Requirements

1. Installations are to be indoors only, in dry locations, protected from rain, water, and rapid changes in temperature that could cause condensation. Equipment must be securely mounted on rigid, permanent walls.
2. Remove the unit from its static-shield bag, observing proper static protection measures.
3. Inspect the unit for visible damage.

   If any components are damaged, notify the shipping carrier immediately. Report missing components to the Gamewell-FCI Customer Service.
4. Use the hardware kit provided with the unit.
5. Use the INI-VGX (First/Second/Third Generation) (Rev. I or higher) and the AC Filter Kit (P/N: 90521) to support the AM-50-70 amplifier.

NOTE: COLD WATER/EARTH GROUND STANDARD:
Per Article 760 of the National Electrical Code, the following terminal blocks must be connected to an Earth Ground connection:
- Terminal TB3-3 on the ILI-MB-E3/ILI95-MB-E3
- Terminal TB3-3 on the INI-VG Series (First/Second Generation)
- Terminal TB1-5 on the INI-VG Series (Third Generation)

Failure to make a proper earth ground connection from a metallic cold water pipe or driven ground rod to this terminal will result in loss of lightning protection, reduce the tolerance of the system to transients, and will adversely affect the operation of the system. Panel neutral or conduit ground is not acceptable; minimum wire size is 14 AWG.

2.3 AM-50 Series Amplifiers Installation

The AM-50 Series amplifiers can be installed in several types of E3 Series cabinet configurations. Up to four AM-50 Series amplifiers can be installed in the following E3 Series cabinets and mounting plates.

- Cabinet B, INX
- Cabinet B, INX CAB-B
- Cabinet C, E3-INX-C Plate
- Cabinet D, E3-INX-D Plate

Table 2.3.1 lists the cabinets, cabinet and mounting plate part numbers that can house the AM-50 Series amplifiers.

Cabinet	Cabinet Part Number	Mounting Plate Part Number
INX	1100-0460B, 1100-0460R	INX CAB-B
INX CAB-B	INX CAB-B	INX CAB-B
Cabinet C	E3BB-BC/INX, E3BB-RC/INX	E3-INX-CPLATE
	E3BB-BC/INCC, E3BB-RC/INCC	AM-50 Extender Plate
Cabinet D	E3BB-BD/INX, E3BB-RD/INX	E3-INX-D PLATE
	E3BB-BD/INCC, E3BB-RD/INCC	AM-50 Extender Plate

Table 2.3.1 AM-50 Series Amplifiers Cabinet and Mounting Plate Options

1. Identify the cabinet and mounting plate configuration you require for the AM-50 Series amplifiers.
2. To determine the AM-50 Series amplifiers installation configuration that you require and for information on how to install the AM-50 Series amplifiers to the mounting plates and cabinets in either the E3 Series, Fire Alarm and/or Mass Notification Systems, refer to the following documents:
   - *E3 Series® Cabinets B, C, D, Retrofits, DR-C4/DR-D4 and EQ Cabinets Installation Instructions, P/N:LS1082-000GF-E*
   - *E3 Series Remote Annunciators Cabinets Installation Instructions, P/N:LS1083-000GF-E*
   - *Mass Notification System (MNS) Installation/Operation Manual, P/N: LS10013-000GF-E*

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2.4 AM-50 Series Amplifiers Connection to the INI-VGX

The INI-VGX provides the distributed audio for the AM-50 Series amplifiers. Use the AM-50 Series amplifier ribbon cable (provided in the Hardware Kit) to connect the amplifier to the INI-VGX. Section 2.4.1 thru Section 2.4.4 describe how to connect up to four, AM-50 Series amplifiers to the INI-VGX.

AM-50-70 RIBBON CABLE REQUIREMENT:

CAUTION: AM-50-70 FERRITE CLAMP REQUIREMENT:
YOU MUST ATTACH THE FERRITE CLAMP ONTO EACH RIBBON CABLE CONNECTING FROM THE AM-50-70 AMPLIFIER. DO NOT USE THE FERRITE CLAMP ON THE RIBBON CABLE FOR THE AM-50-25 AMPLIFIER.

2.4.1 Connecting One AM-50 Series Amplifier to the INI-VGX

If you require one amplifier to be connected to the INI-VGX, do the following:

1. Position the AM-50 Series amplifier on the mounting plate located directly below the INI-VGX sub-assembly.
2. Secure four, screws (4-40 x 1/4" (.635 cm) L SEMS PHPD) (provided in the Hardware Kit) in the four-hole mounting pattern on the mounting plate.

Ribbon Cable Connection

3. Connect the 20-pin ribbon cable leading from J1 of the first AM-50 Series amplifier to J16 of the INI-VGX. (See Location 1 of Figure 2.4.1.1).
4. If you use an AM-50-70 amplifier, attach the ferrite clamp on the ribbon cable as shown in Location 1 of Figure 2.4.1.1

NOTE: Always attach the ribbon cable from J1 of the first AM-50 Series amplifier to the J16 cable leading from the INI-VGX.

Figure 2.4.1.1 illustrates one AM-50 Series amplifier connected to the INI-VGX.

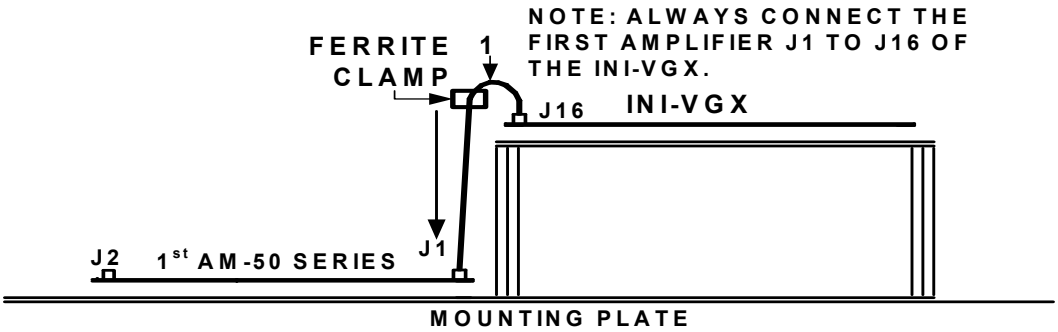


Figure 2.4.1.1 One AM-50 Series Amplifier Connected to the INI-VGX

2.4.2 Connecting Two AM-50 Series Amplifiers to the INI-VGX

If you require two amplifiers to be connected to the INI-VGX, do the following:

1. Install the first amplifier as described in the instructions in Section 2.4.1.
2. Position the second AM-50 Series amplifier directly below the first amplifier on the mounting plate.
3. Secure four, screws (4-40 x 1/4" (.635 cm) SEMS PHPD) (provided in the Hardware Kit) in the four-hole mounting pattern on the mounting plate.

Ribbon Cables Connection

4. Connect the 20-pin ribbon cable leading from J1 of the first amplifier to J16 of the INI-VGX.(See Location 1 in Figure 2.4.2.1)

NOTE: Always attach the ribbon cable from J1 of the first AM-50 Series amplifier to the J16 cable of the INI-VGX.

5. Connect the 20-pin ribbon cable leading from J1 of the second amplifier to J2 of the first amplifier. (See Location 2 in Figure 2.4.2.1).
6. If you use an AM-50-70 amplifier, attach each ferrite clamp to each ribbon cable as shown in Locations 1 and 2 in Figure 2.4.2.1.

Figure 2.4.2.1 illustrates the two AM-50 Series amplifiers connected to the INI-VGX.

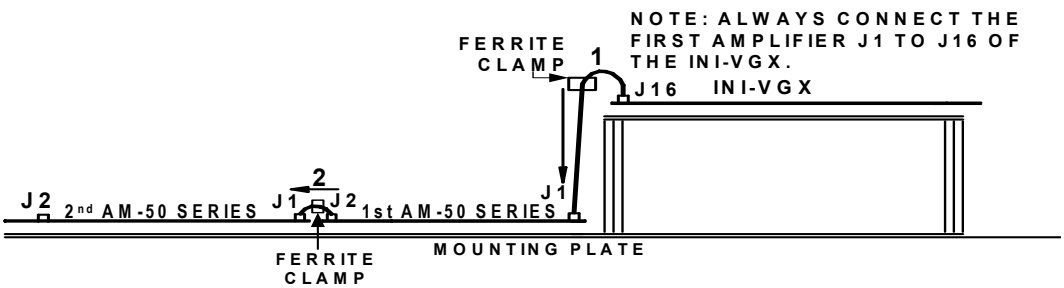


Figure 2.4.2.1 Two AM-50 Series Amplifiers Connected to the INI-VGX

2.4.3 Connecting Three AM-50 Series Amplifiers to the INI-VGX

When three or four amplifiers are required in a single cabinet enclosure, the AM-50 Series amplifiers are mounted in two tiers. The bottom two amplifiers mount directly to the standoffs on the mounting plate. The top two amplifiers mount directly above the bottom two amplifiers.

If you require three amplifiers to be connected to the INI-VGX, do the following:

1. Position the second amplifier directly below the INI-VGX on the mounting plate.
2. Secure four standoffs (1/4" (.635 cm) HEX, 4-40 x 1 3/4" (4.4 cm)) (provided in the Hardware Kit) to the four mounting studs on the mounting plate.
3. Position the third amplifier directly below the second amplifier on the mounting plate.
4. Secure four standoffs (1/4" (.635 cm) HEX, 4-40 x 1 3/4" (4.4 cm)) to the four mounting studs on the mounting plate.
5. Place the first amplifier on top of the second amplifier.
6. Secure four screws (4-40 x 1/4" (.635 cm) SEMS PHPD) to the standoffs on the second amplifier.

Ribbon Cables Connection

7. Connect the 20-pin ribbon cable leading from J1 of the first amplifier to J16 of the INI-VGX. (See Location 1 of Figure 2.4.3.1).

NOTE: Always attach the ribbon cable from J1 of the first AM-50 Series amplifier to the J16 cable of the INI-VGX.

8. Connect the 20-pin ribbon cable leading from J2 of the second amplifier to J1 of the third amplifier. (See Location 2 of Figure 2.4.3.1).
9. Connect the 20-pin ribbon cable leading from J1 of the second amplifier to J2 of the first amplifier. (See Location 3 of Figure 2.4.3.1).
10. If you use an AM-50-70 amplifier, attach each ferrite clamp to each ribbon cable as shown in Locations 1, 2 and 3 in Figure 2.4.3.1.

Figure 2.4.3.1 illustrates the three AM-50 Series amplifiers connected to the INI-VGX.

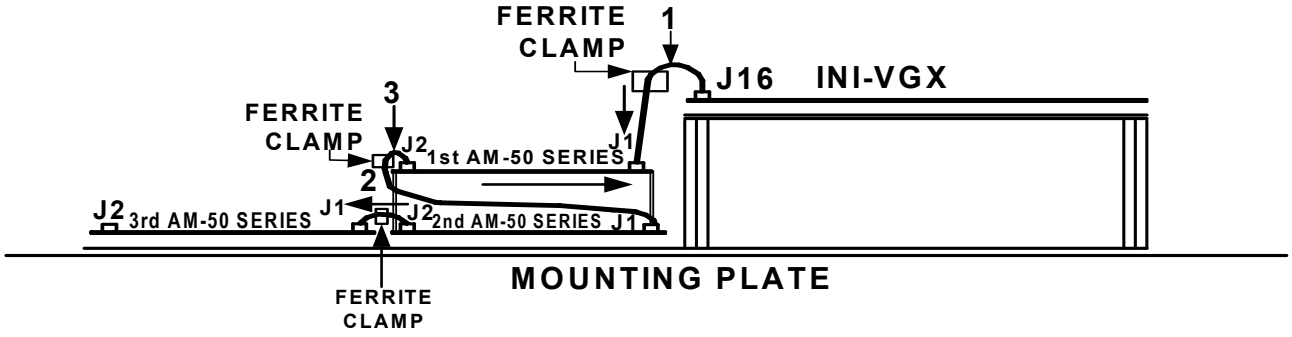


Figure 2.4.3.1 Three AM-50 Series Amplifiers Connected to the INI-VGX

NOTE: For additional information on the INI-VGX, refer to the following documents:
- INI-VG Series Installation Instructions, P/N: 9000-0549
- INI-VG Series (Third Generation) Installation Instructions, P/N: LS10218-000GF-E
- Mass Notification System Installation/Operation Manual, P/N: LS10013-000GF-E

2.4.4 Connecting Four AM-50 Series Amplifiers to the INI-VGX

If you require four amplifiers to be connected to the INI-VGX, do the following:

1. Position the second amplifier directly below the INI-VGX on the mounting plate.
2. Secure four standoffs (1/4" (.635 cm) HEX, 4-40 x 1 3/4" (4.4 cm)) (provided in the Hardware Kit) to the four mounting studs on the mounting plate.
3. Position the third amplifier directly below the second amplifier on the mounting plate.
4. Secure four standoffs (1/4" (.635 cm) HEX, 4-40 x 1 3/4" (4.4 cm)) to the four mounting studs on the mounting plate.
5. Place the first amplifier on top of the second amplifier.
6. Secure four screws (4-40 x 1/4" (.635 cm) SEMS PHPD) to the standoffs on the second amplifier.
7. Place the fourth amplifier on top of the third amplifier.
8. Secure four screws (4-40 x 1/4" (.635 cm) SEMS PHPD) to the standoffs on the third amplifier.

Ribbon Cables Connection

9. Connect the 20-pin ribbon cable leading from J1 of the first amplifier to J16 of the INI-VGX.
   (See Location 1 of Figure 2.4.4.1).

NOTE: Always attach the ribbon cable from J1 of the first AM-50 Series amplifier to the J16 cable of the INI-VGX.

10. Connect the 20-pin ribbon cable leading from J2 of the second amplifier to J1 of the third amplifier.
    (See Location 2 of Figure 2.4.4.1).
11. Connect the 20-pin ribbon cable leading from J1 of the second amplifier to J2 of the first amplifier.
    (See Location 3 of Figure 2.4.4.1).
12. Connect the 20-pin ribbon cable leading from J2 of the third amplifier to J1 of the fourth amplifier.
    (See Location 4 of Figure 2.4.4.1).
13. If you use an AM-50-70 amplifier, attach each ferrite clamp to each ribbon cable as shown in Locations 1, 2, 3 and 4 in Figure 2.4.4.1.

Figure 2.4.4.1 illustrates the four AM-50 Series amplifiers connected to the INI-VGX.

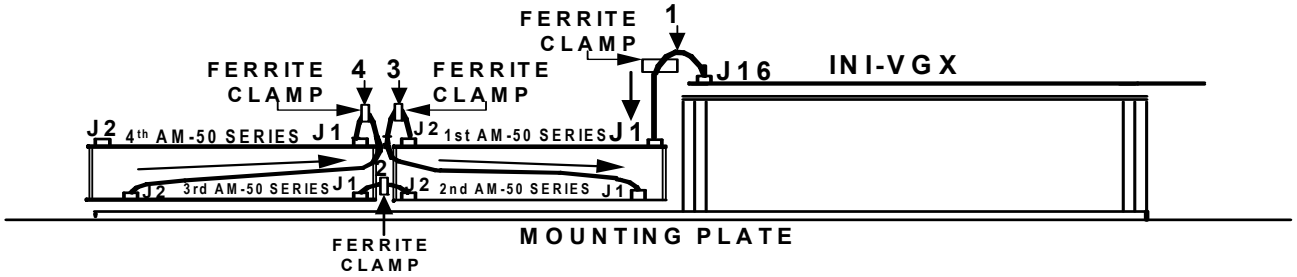


Figure 2.4.4.1 Four AM-50 Series Amplifiers Connected to the INI-VGX

2.5 AM-50 Series Amplifiers, Ferrite Clamp Installation

WARNING: EMI REGULATIONS:
DUE TO THE MANDATORY INTERNATIONAL ELECTROMAGNETIC INTERFERENCE (EMI) REGULATIONS, ALL ELECTRICAL AND ELECTRONIC PRODUCTS MUST COMPLY WITH SPECIFIC EMI LIMITS. EMI IS THE RADIATION TRANSMITTED FROM THE COMMON-MODE (CM) CURRENT FLOWING ON THE POWER CORD AND THE INTERFACING CABLES OF THE EQUIPMENT. FERRITE CORES HAVE BEEN USED EXTENSIVELY TO SUPPRESS THE CM CURRENT ON THESE ATTACHED CABLES.

All Gamewell-FCI fire alarm products have FCC Approved Ferrite cores. The Ferrite cores are required to reduce Electrical Magnetic Interference (EMI) on all cables originating from the control panels. An EMI Kit (P/N:90521) is available for the AM-50 Series amplifier installations.

The Ferrite Round Clamp is a round, snap-on cable filter. Use the Ferrite Round Clamp when the AM-50 Series amplifiers are installed in the following Gamewell-FCI, E3 Series® cabinets and plates:

- Cabinet B, INX
- Cabinet B, INX CAB-B
- Cabinet C, E3-INX-C Plate
- Cabinet D, E3-INX-D Plate

To comply with the EMI regulations, use the Ferrite Round Clamp to reduce the Electrical Magnetic Interference (EMI) emissions from the AM 50 Series (25 V_{RMS} and 70.7 V_{RMS}) amplifiers.

To connect the Ferrite Clamp to the AM-50 Series amplifiers, do the following:

1. Insert the shielded wire into the ferrite clamp and snap the clamp closed. (See Location 1 in Figure 2.5.1.1).
2. To open the ferrite clamp, insert the key (provided with the unit) in the key holes.
3. Pull the key from the keyholes, the ferrite clamp snaps open, and remove the wires from the ferrite clamp.
4. If you use an AM-50-70 amplifier, attach each ferrite clamp to each ribbon cable as shown in Figure 2.5.1 and as shown in Location 6 of Figure 2.5.1.1.

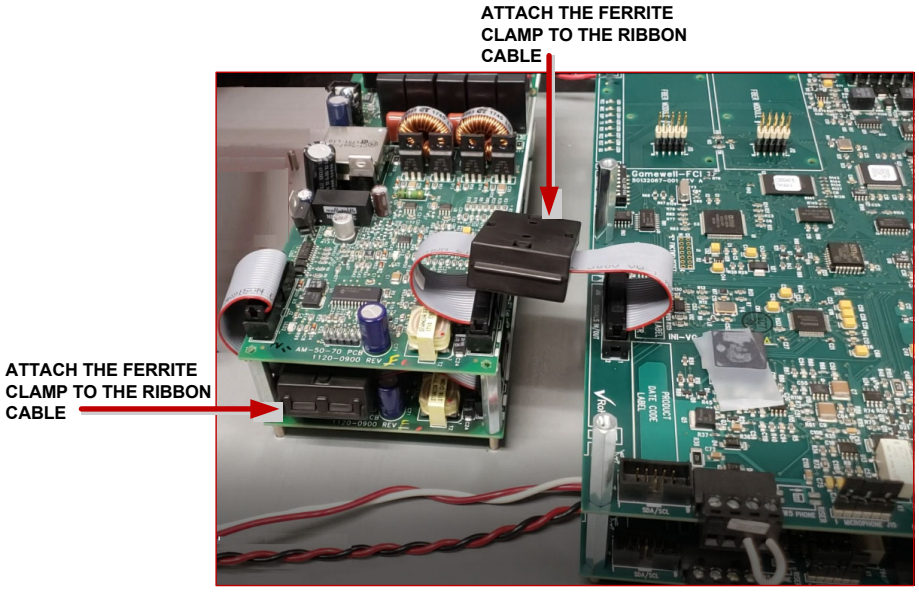


Figure2.5.1 Ferrite Clamp to Ribbon Cable Installation

2.5.1 EMI Filtering for the AM-50 Series Amplifiers

Figure 2.5.1.1 illustrates the EMI Filtering for the AM-50 Series, INI-VG Series (First/Second Generation) module and the PM-9/PM-9G sub-assemblies.

NOTE: If you use the INI-VG Series (Third Generation) module, the EMI Filtering is the same as shown in Figure 2.5.1.1.

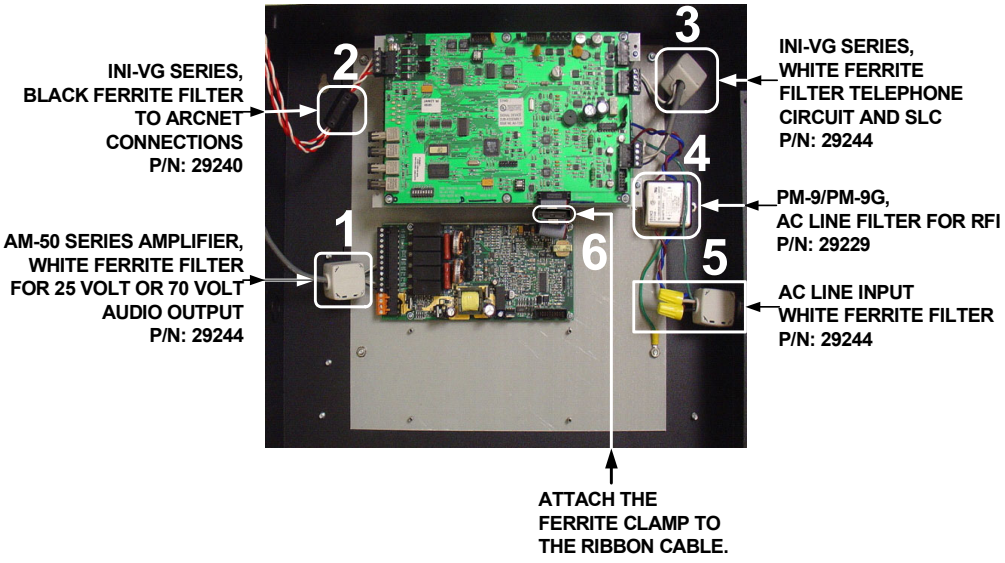


Figure 2.5.1.1 EMI Filtering for the AM-50 Series Amplifiers

NOTE: For additional information on the wiring installation, refer to the following documents:
- *INI-VG Series Intelligent Network Interface Installation Instructions, P/N: 9000-0549*
- *INI-VG Series Intelligent Network Interface-Third Generation Installation Instructions, P/N: LS10218-000GF-E*
- *PM-9 Power Supply Installation Instructions, P/N: 9000-0548*
- *PM-9G Power Supply and Battery Charger Installation Instructions, P/N: 9001-0055*

Section 3: AM-50 Series Amplifiers Wiring Connections

Figure 3.1 illustrates the AM-50-25 amplifier sub-assembly. Figure 3.2 illustrates the AM-50-70 amplifier sub-assembly.

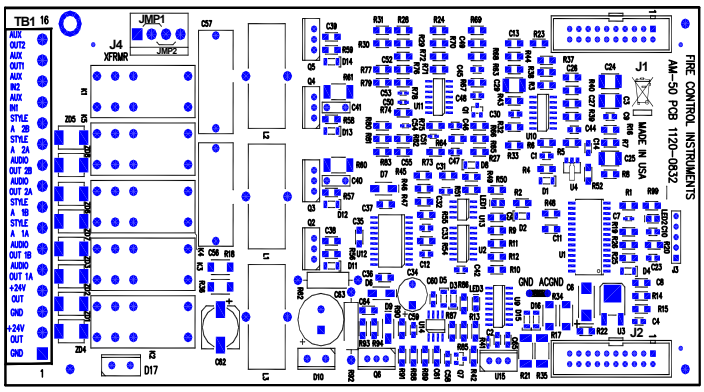


Figure 3.1 AM-50-25 Amplifier Sub-Assembly

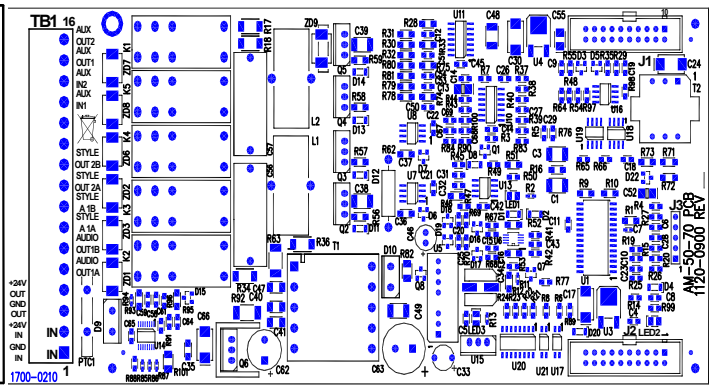


Figure 3.2 AM-50-70 Amplifier Sub-Assembly

Table 3.1 lists the wiring connections for the AM-50 Series amplifiers.

Terminal	Description	Comments
Connector Block 1		
TB1-1	Ext Pwr IN (-)	Connect to the PM-9/PM-9G TB4 "GND" terminal
TB1-2	Ext Pwr IN (+)	Connect to the PM-9/PM-9G TB4 "24V OUT" terminal
TB1-3		Not used
TB1-4		Not used
Connector Block 2		
TB1-5	1st Spkr Ckt Audio OUT (+)	1st Speaker Ckt audio output, Class B
TB1-6	1st Spkr Ckt Audio OUT (-)	1st Speaker Ckt audio output, Class B
TB1-7	1st Spkr Ckt Class A RETURN (+)	1st Speaker Ckt audio output, Class A RETURN
TB1-8	1st Spkr Ckt Class A RETURN (-)	1st Speaker Ckt audio output, Class A RETURN
TB1-9	2nd Spkr Ckt Audio OUT (+)	2nd Speaker Ckt audio output, Class B
TB1-10	2nd Spkr Ckt Audio OUT (-)	2nd Speaker Ckt audio output, Class B
TB1-11	2nd Spkr Ckt Class A RETURN (+)	2nd Speaker Ckt audio output, Class A RETURN
TB1-12	2nd Spkr Ckt Class A RETURN (-)	2nd Speaker Ckt audio output, Class A RETURN
TB1-13	Aux IN 1	Connect to the back-up amplifier TB1-5, TB1-9
TB1-14	Aux IN 2	Connect to the back-up amplifier TB1-6 or TB1-10
TB1-15	Aux OUT 1	Connect to the next main amplifier TB1-13 (if any)* (See Note)
TB1-16	Aux OUT 2	Connect to the next main amplifier TB1-14 (if any)* (See Note)
J1		Connect to the INI-VGX J16 of the 1st amplifier or J2 of the previous amplifier.
J2		Connect to J1 of the next amplifier (if any).
J3		Factory use
J4		Factory use
LED 1	(GREEN)	Lights steady upon activation.
LED 2	(GREEN)	AM-50 Series amplifiers Standby Indicating LED.
LED 3	(GREEN)	Speaker Circuit Active Indicating LED.

NOTE: If there are no additional main amplifiers to be backed up, then either install an EOL resistor across TB1-15 and TB1-16 or connect back to the backup amplifier's Class A RETURN for the channel (to provide aux audio input).

Table 3.1 AM-50 Series Amplifiers Wiring Designations

3.1 AM-50 Series Amplifiers Ribbon Cable Connections

1. Route the ribbon cable on the AM-50 Series amplifier to the INI-VGX (fiber-optic plug-in module-Third Generation) as shown in Figure 3.1.1.

NOTE: If you use the INI-VGX (First/Second Generation) module, you can route the ribbon cable in the same way as shown in Figure 3.1.1.

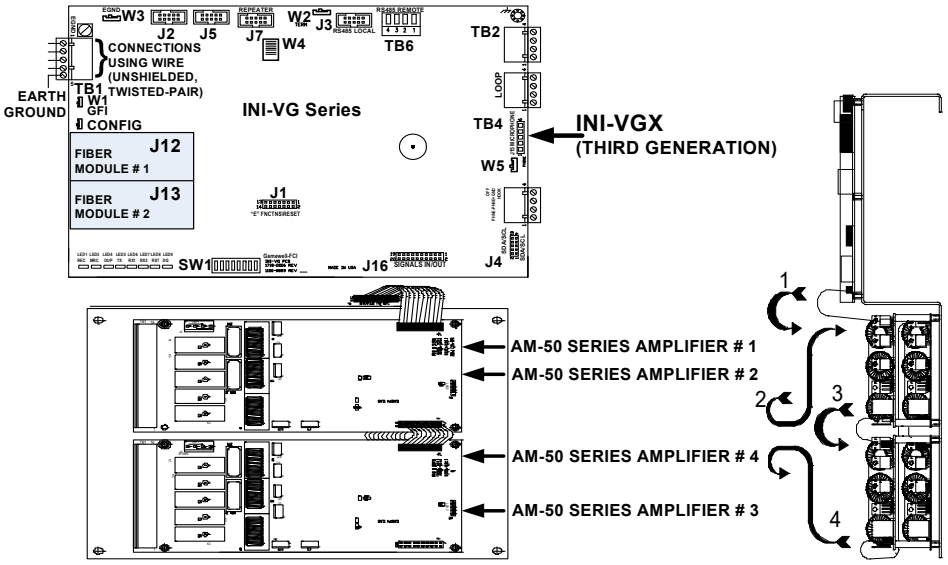


Figure 3.1.1 Routing the Ribbon Cable on the AM-50 Series Amplifiers

2. Figure 3.1.2 shows the wiring for the four AM-50 Series amplifiers, providing three output circuits and one backup amplifier. Use shielded cable to wire audio circuits. All individual shielded cables are to be wired to system negative or earth ground, for noise suppression, ground one point only. Maintain shield integrity throughout the entire length of the audio circuit.
3. After the PM-9/PM-9G is installed, to complete the installation, install the sub-chassis into the INX or INX CAB-B enclosure and plug the terminal strips into the connectors on each of the AM-50 Series amplifiers.
4. Install the INI-VGX to the sub-chassis if this has not already been done. Make the final connections to the INI-VGX.
5. When the remainder of the system is ready, connect the AC power and the batteries.

NOTE: For additional information on the AM-50 Series amplifiers installation and terminal connections, refer to the following documents: - PM-9 Installation Instructions, P/N: 9000-0548, - PM-9G Installation Instructions, P/N: 9001-0055
- INI-VG Series Installation Instructions, P/N: 9000-0549
- INI-VG Series Intelligent Network Interface-Third Generation Installation Instructions, P/N: LS10218-000GF-E.
- Mass Notification System Installation/Operation Manual, P/N: LS100013-000GF-E
- NetSOLO® Broadband Installation/Operation Manual, P/N: 9000-0552 (use INI-VG Series (First/Second Generation)

Figure 3.1.2 illustrates the AM-50 Series amplifiers wiring.

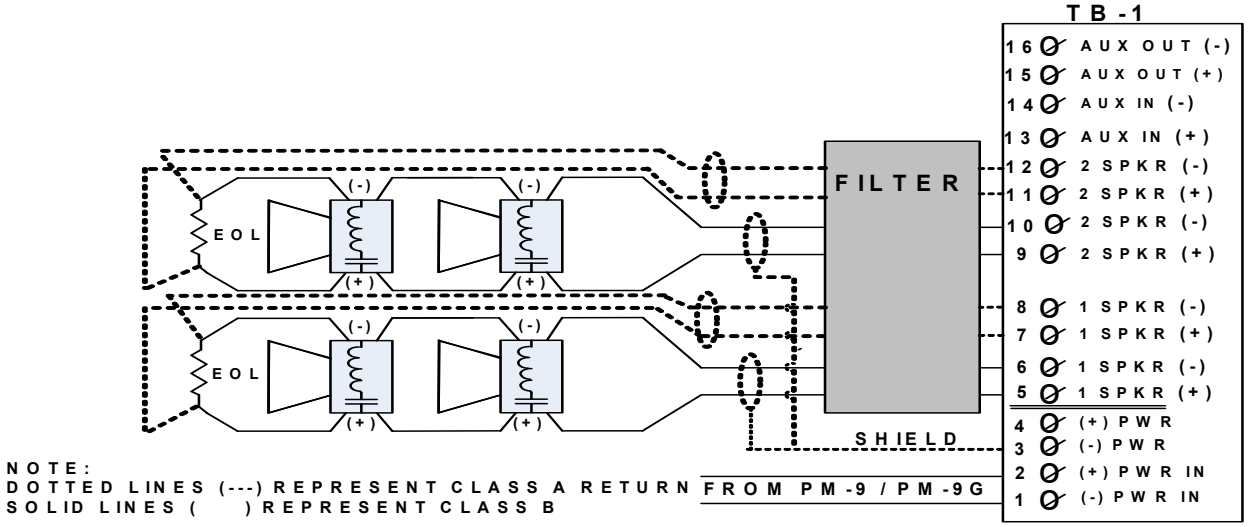


Figure 3.1.2 AM-50 Series Amplifiers Wiring

3.2 AM-50 Series Amplifiers Speaker Circuit Connections

Each AM-50 Series amplifiers provide two separately programmable, loudspeaker circuits that may be wired Class “B” or Class “A”. The following subsections provide the wiring requirements for each amplifier.

3.2.1 AM-50-25 Speaker Circuit Wiring

Table 3.2.1.1 can be used as a guide to determine the wiring requirements for each 25-V_{RMS} speaker circuit.

Wire Gauge (AWG)	18	16	14	12	10
Cable Ohms @ 1,000 ft.	12.8	8	5.1	3.2	2
Load Power Watts	**ft**	**ft**	**ft**	**ft**	**ft**
50	55	87	138	218	349
25	109	173	275	436	697
10	272	433	688	1090	1741

Table 3.2.1.1 AM-50-25 Wiring Requirements

3.2.2 AM-50-70 Speaker Circuit Wiring

Table 3.2.2.1 can be used as a guide to determine the wiring requirements for each 70.7V_{RMS} speaker circuit.

Wire Gauge (AWG)	18	16	14	12	10
Cable Ohms @ 1,000 ft.	12.8	8	5.1	3.2	2
Load Power Watts	**ft**	**ft**	**ft**	**ft**	**ft**
50	462	737	1170	1855	2962
25	924	1472	2340	3710	5924
10	2310	3680	5848	9274	14808

Table 3.2.2.1 AM-50-70 Wiring Requirements

NOTE 1: MAXIMUM CIRCUIT LENGTH REQUIREMENTS:
The circuit lengths listed in Table 3.2.1.1 and Table 3.2.2.1 may be exceeded if you use the Distributed Loading Calculations to determine the maximum circuit length.

NOTE 2: DISTRIBUTED LOADING CALCULATIONS:
For complex installations, calculations may be obtained from the Honeywell Fire Services Group in Atlanta, Georgia.

Section 4: Specifications

Table 4.1.1 lists the specifications for the AM-50-25 and AM-50-70 amplifiers.

Specifications	AM-50-25 Amplifier	AM-50-70 Amplifier
Input Voltage:	24 VDC (nominal) (from PM-9/PM-9G power supply)	24 VDC (nominal) (from PM-9/PM-9G power supply)
Input Current:	0.086A max. Normal Standby 2.206A max. Alarm	0.157A max;. Normal Standby 2.60A max. Alarm
Output Rating:	25 VAC @ 50W Audio max.	70 VAC @ 50W Audio max.
Operating Temperature:	32° to 120° F (0° to 49° C)	32° to 120° F (0° to 49° C)
Relative Humidity:	0 to 93%, non-condensing at 90° F (32° C)	0 to 93%, non-condensing at 90° F (32° C)
Supervised	Yes	Yes
Class 2 Power-limited	Yes	Yes
End-of-Line (EOL)	4.7 1/2 W	20K 1/2 W

Table 4.1.1 AM-50 Series Amplifiers Specifications

Section 5: Reference Documentation

Table 5.1 lists the UL-Controlled documentation assigned to the S3 Series and E3 Series Systems. If you require detailed installation instructions on cabinetry, wiring and specifications, you can download the following UL-Controlled documents from the ESD site on the Gamewell-FCI Website (gamewell-fci-esd.com).

Part Number	Title
UL Listing Document	
LS10005-051GF-E	S3 Series (Small Addressable Fire Alarm Control Panel) UL Listing Document
LS10080-051GF-E	E3 Series Fire System (Expandable Emergency Evacuation System) UL Listing Document
Manuals	
9000-0575	E3 Series Broadband Installation/Operation Manual
9000-0577	E3 Series Classic Installation/Operation Manual
LS10013-000GF-E	E3 Series Combined Fire and MNS Installation/Operation Manual
Installation Instructions	
9000-0491	LCD-7100 (Remote Serial Annunciator) Installation Instructions
9000-0544	AM-50 Series (50 Watt Amplifiers) Installation Instructions
9000-0545	INX, INX CAB-B, INX CAB-C and INX CAB-D Installation Instructions
9000-0546	INCC Intelligent Network Interface Installation Instructions
9000-0548	PM-9 (Power Supply) Installation Instructions
9000-0549	INI-VG Series Intelligent Network Transponder-Voice Gateway Installation Instructions
9000-0550	ASM-16 (Addressable Switch Module) Installation Instructions
9000-0564	ANU-48 (Remote LED Driver Annunciator) Installation Instructions
9000-0568	NGA (Network Graphic Annunciator) Installation Instructions
9000-0569	ILI-S-E3 (Intelligent Loop Interface - Expansion Board) Installation Instructions
9000-0579	ILI-MB-E3 (Intelligent Loop Interface - Main Board) Installation Instructions
9000-0580	RPT-E3-UTP (Repeater-E3 Unshielded Twisted-Pair) Installation Instructions
9000-0581	DACT-E3 (Digital Alarm Communicator Transmitter) Installation Instructions
9000-0582	LCD-E3 (Liquid Crystal Display-E3) Installation Instructions
9001-0017	ILI95-MB-E3 (Intelligent Loop Interface-95 - Main Board) Installation Instructions
9001-0018	ILI95-S-E3 (Intelligent Loop Interface-95 - Expansion Board) Installation Instructions
9001-0055	PM-9G (Power Supply) Installation Instructions
9001-0064	ANX (Addressable Node Expander) Installation Instructions
9001-0066	RAN-7100 (Remote Alphanumeric Annunciator) Installation Instructions
LS10044-000GF-E	SLC-PM/SLC95-PM (Signaling Line Circuit-Personality Modules Installation Instructions
LS10046-000GF-E	FML-E3/FSL-E3 (Fiber-Optic Multi-Mode/Fiber-Optic Single-Mode) Installation Instructions
LS10058-000GF-E	FLPS-7 (Power Supply) Installation Instructions
LS10082-000GF-E	E3 Series Cabinets B, C, D, Retrofit, DR-C4/DR-D4 and EQ Cabinets Installation Instructions
LS10083-000GF-E	E3 Series, Remote Annunciator Display and Retrofit Cabinets Installation Instructions
LS10218-000GF-E	INI-VG Series (Intelligent Network Transponder-Voice Gateway-Third Generation) Instructions
LS10222-000GF-E	NGA (Network Graphic Annunciator-Second Generation) Installation Instructions
Addendum	
9000-0427-L8	Compatibility Addendum to Gamewell-FCI Installation/Operation Manuals UL File S1869 Vol. 8C
Supplement	
LS10138-151GF-E	E3 Series Control Panel, Releasing Applications Supplement
Frame-Posts	
9000-0583	E3 Series for the LCD-E3 Operating Instructions
LS10056-000GF-E	S3 Series (Small Addressable Fire Alarm Control Panel System), Operating Instructions
LS10121-000GF-E	E3 Series for the LCD-SLP Operating Instructions

Table 5.1 Reference Documentation

Honeywell Gamewell-FCI
12 Clintonville Road
Northford, CT 06472-1610
203.484.7161
www.gamewell-fci.com

9000-0544 | H8 | 12/21
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