

section II

installation

2.1 GENERAL

This system contains all information necessary to install the MKR-350, MKL-350/351, AUD-250/250H/251H, and AMR-350/350H units into an aircraft, and to ensure their operational readiness after installation.

2.2 UNPACKING AND INSPECTING EQUIPMENT

Unpack the equipment carefully and make a careful visual inspection of each unit for possible shipping damage. All claims for damage should be filed with the transportation company involved. If claims for damage are to be filed, save the original packing carton and materials. If no defects can be detected, replace packing materials in the shipping container and save for future uses such as storage or reshipment.

2.3 SPECIAL INSTRUCTIONS

2.3.1 MKR-350, MKL-350/351, AUD-250/250H, and AMR-350/350H

There are no special instructions to be followed when installing the MKR-350, MKL-350/351, AUD-250/250H, or AMR-350/350H units. Refer to paragraph 2.4 for installation procedures.

2.3.2 AUD-251H

The AUD-251H contains independent speaker and headphone amplifiers and two independent regulating power supplies. For fail-safe operation, connect J101 pin 2 and J101 pin 10 to the aircraft power bus through separate circuit breakers. Following this procedure ensures full use of all avionics equipment in the event of an amplifier failure.

2.4 INSTALLATION PROCEDURES

The following installation procedures must be performed as described to ensure proper operation and performance. Any deviation from these instructions may result in reduced performance and/or damage to the equipment.

2.4.1 MKR-350 and MKL-350/351

The installation kits supplied with the MKR-350 and MKL-351 are required for unit installation. Refer to figures 2-1, 2-2, and 2-3.

Both the MKR-350 and MKL-350 are panel-mounted units that may be positioned horizontally or vertically. If vertical mounting is desired, the lens provided in the installation kit (CPN 628-7561-002) must be substituted. No alterations to the equipment are necessary for conversion to the vertical lens.

- a. Refer to figures 2-4, 2-5, and 2-6 for outline and mounting dimensions of the MKR-350, MKL-350, and MKL-351.
- b. After location is determined, make the panel cutout using the outline and mounting drawings as reference.
- c. Secure the MKR-350 and MKL-350 to the aircraft instrumentation panel using four #4-40 screws. The MKL-351 is secured in position using two #4-40 screws.

2.4.2 AUD-250/250H/251H Audio Panel

The AUD-250/250H/251H Audio Panel is a panel-mounted unit that is rigidly attached to the aircraft instrumentation panel. The installation kit (CPN 628-7633-001) supplied with the AUD-250/250H/251H is required for installation. Refer to figure 2-7. If the AUD-250/250H is to be used in a 27.5-volt installation, an adapter kit (CPN 628-7990-001) is required. Operation of the AUD-251H in a +27.5-V system also requires two power conversion kits. If required, order CPN 628-7990-001.

- a. Figure 2-9 is the outline and mounting drawing of the AUD-250/250H/251H Audio Panel. Using the dimensions provided, make the panel cutout and drill the four holes needed to secure the equipment cover (mounting tray) to the aircraft panel mounting brackets. Use four #6 screws to secure the tray in position.
- b. After the equipment cover has been installed, slide the AUD-250/250H/251H into position and secure in place by tightening the locking screw. A 5/64-inch Allen wrench is required for locking.

Note

The following steps pertain to the AUD-251H only.

- c. If independent control of headset audio is desired, connect a 500-ohm L-pad between the AUD-251H and the headset. The L-pad constant impedance side should be connected to the AUD-251H, and the nonconstant to the headset. One L-pad should be used on each headset.
- d. Aircraft microphone switching must be planned carefully to ensure connection is made to ICS microphone input only when an ICS switch is actuated. This is especially important in a boom microphone installation in which keying switches are located in the yoke. Switches should be plainly labeled.

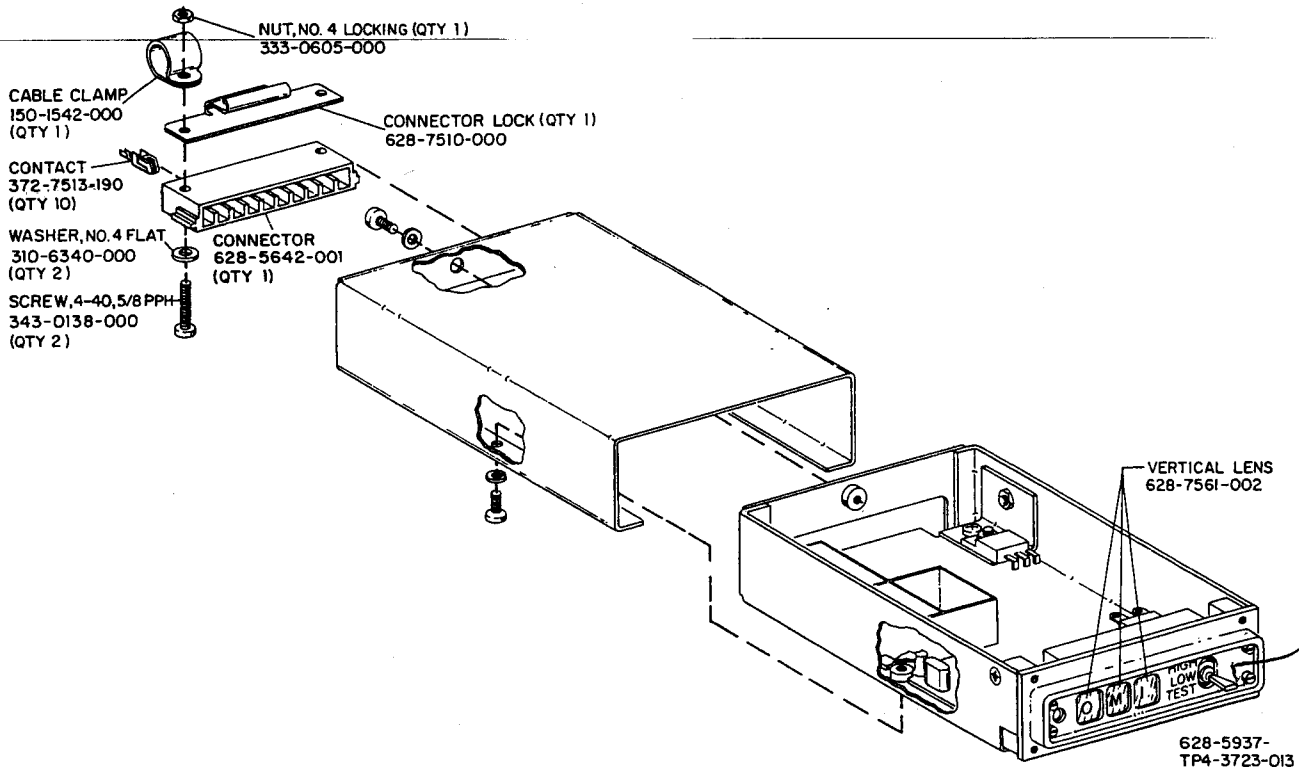
2.4.3 AMR-350/350H Audio/Marker Panel

- a. The AMR-350/350H is a panel-mounted unit that is rigidly attached to the aircraft instrumentation

STEC PN 690211

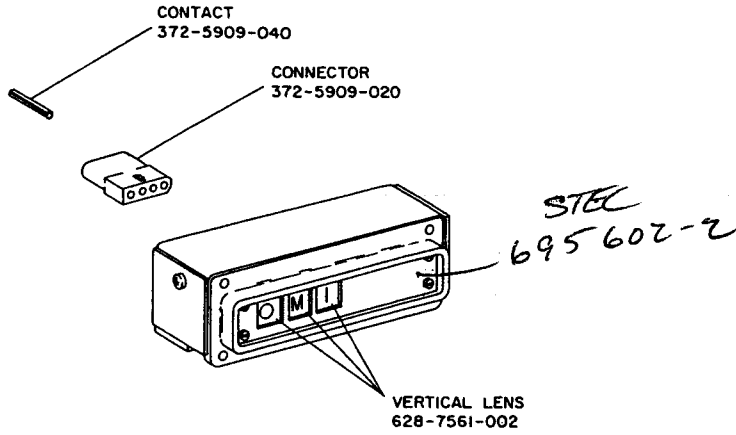
panel. The installation kit (CPN 628-7633-001) supplied with the AMR-350/350H is required for installation. Refer to figure 2-8. If the AMR-350/350H is to be used in a +27.5-volt installation, an adapter kit (CPN 628-7990-001) is required. Using the materials included in the kit, attach the power resistor to a bulkhead or convenient location away from radios. If a suitable location cannot be found, attach the conversion kit to the mounting tray. The resistor is connected in series with the primary power input line.

- b. Figure 2-9 is the outline and mounting drawing of the AMR-350/350H. Using the dimensions provided, make the panel cutout and drill the four holes needed to secure the equipment cover (mounting tray) to the aircraft panel mounting bracket.
- c. After the equipment cover has been installed, slide the AMR-350/350H into position and secure in place by tightening the locking screw. A 5/64-inch Allen wrench is required for locking.



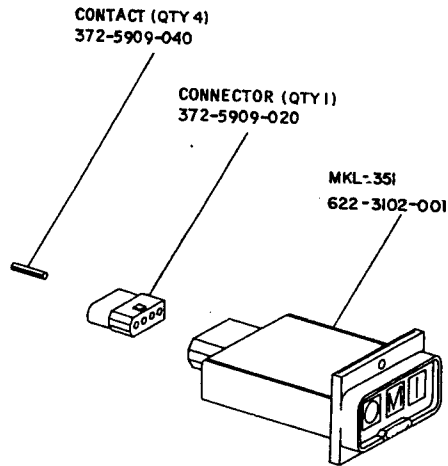
STEC 695602-2

MKR-350 Marker Receiver, Installation Kit
Figure 2-1



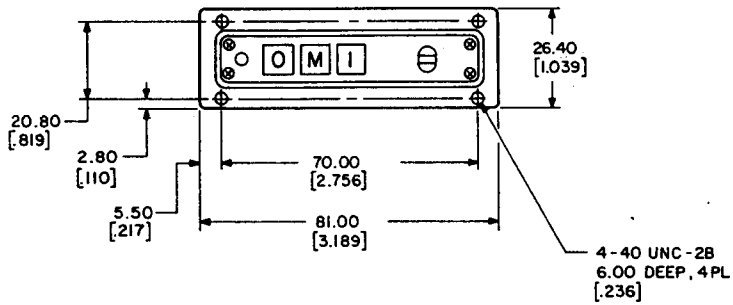
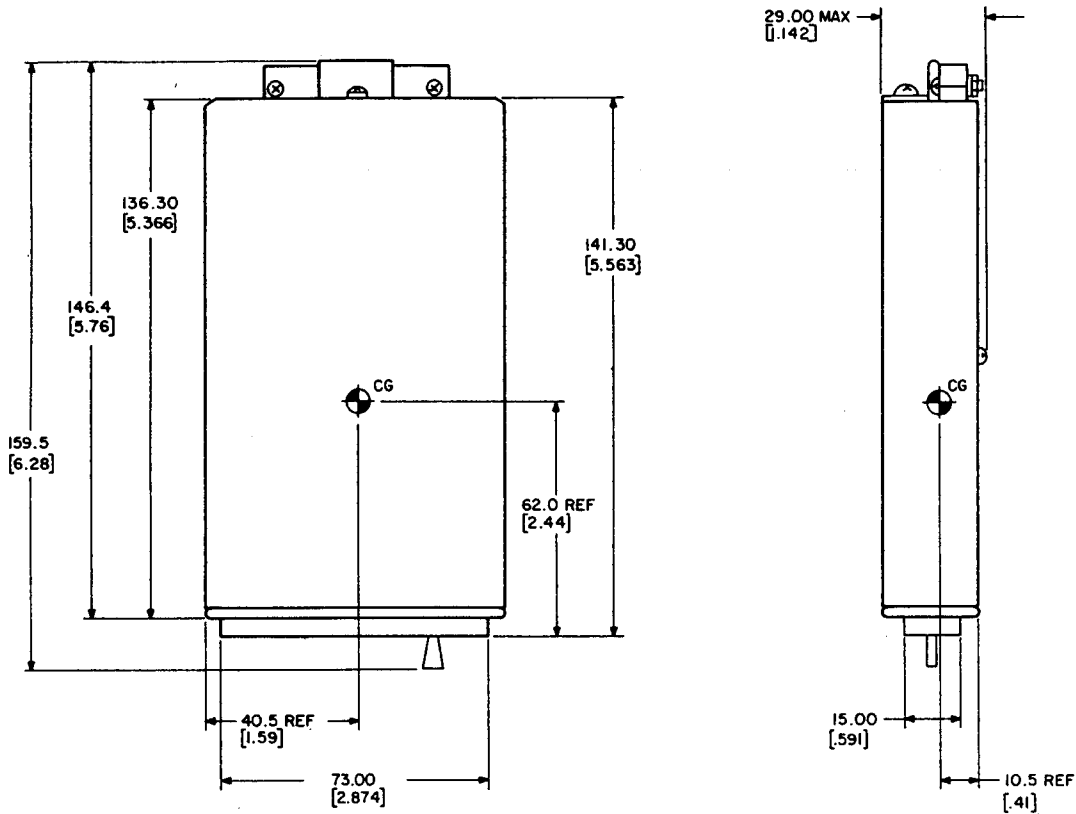
628-5936
TP4-3722-013

MKL-350 Remote Marker Lights, Installation Kit
Figure 2-2

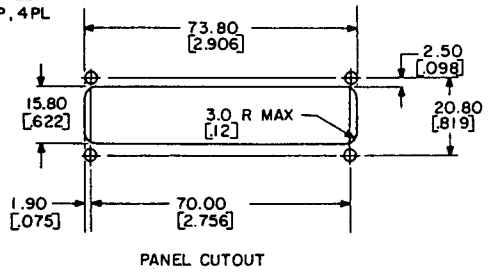


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TP4-5163-013

MKL-351 Remote Marker Lights, Installation Kit
Figure 2-3



MKR-350	
MATING CONNECTOR	CPN 628-5642-001
CONNECTOR CONTACTS	CPN 372-7513-190



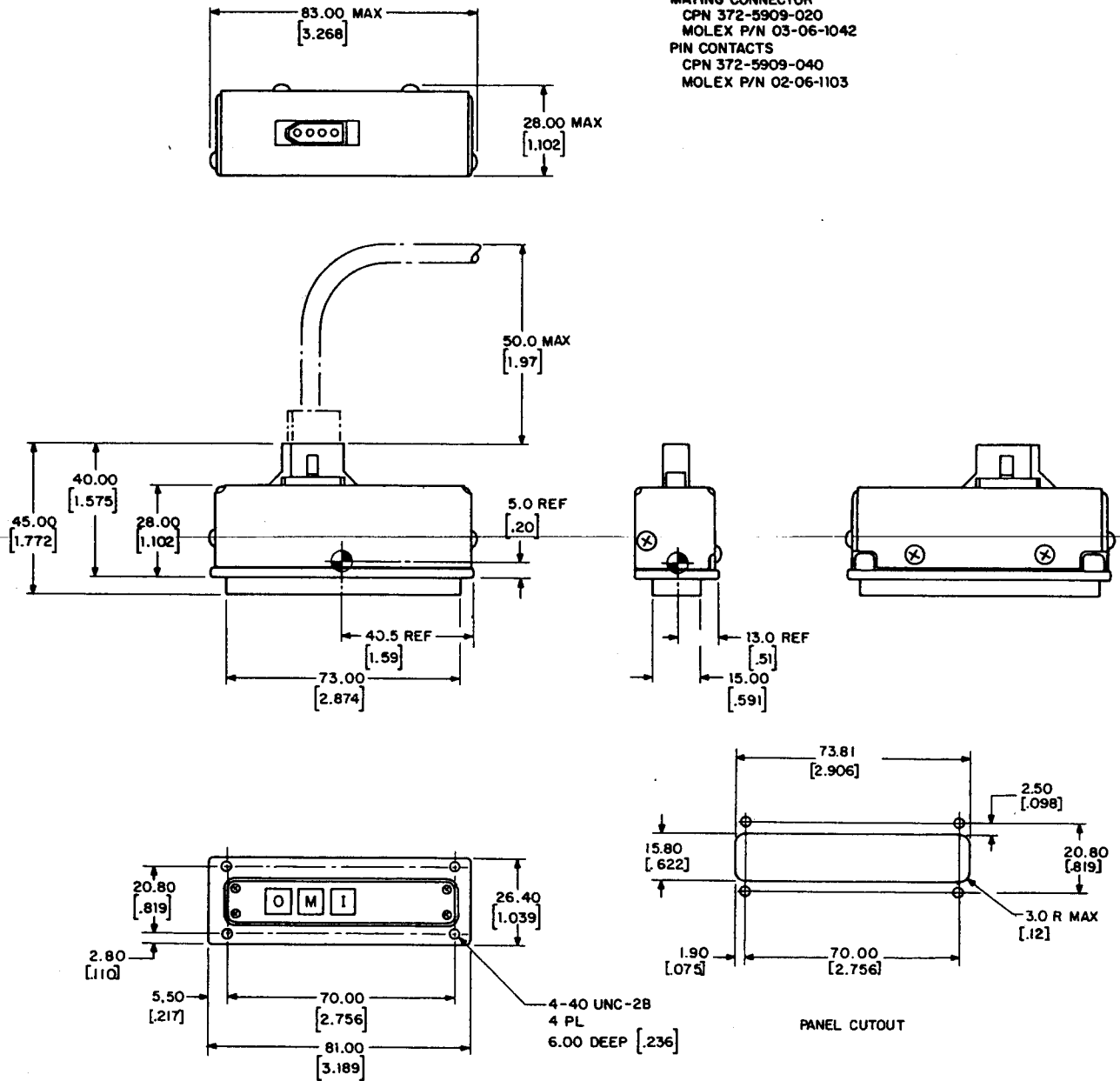
- NOTES:
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN mm [INCHES].
 2. WEIGHT: 0.30 kg MAX [65 LBS].

628-5704
TP4-2079-014

MKR-350 Marker Receiver, Outline and Mounting Dimensions
Figure 2-4

NOTES:

1. DIMENSIONS ARE IN MILLIMETRES, [INCHES].
2. UNIT WEIGHT: 0.113 kg, MAX; .250 LBS, MAX.
3. CONNECTOR INFORMATION:
 CPN 372-5909-430
 MOLEX P/N 03-06-2041
 PIN CONTACTS
 CPN 372-5909-070
 MOLEX P/N 02-06-2132
 MATING CONNECTOR
 CPN 372-5909-020
 MOLEX P/N 03-06-1042
 PIN CONTACTS
 CPN 372-5909-040
 MOLEX P/N 02-06-1103



628-5702
 TP4-2077-014

MKL-350 Remote Marker Lights, Outline and Mounting Dimensions
 Figure 2-5

2.5 CABLING

Figures 2-10 through 2-14 illustrate the interconnecting wiring diagrams for the MKR-350, MKL-350/351, AUD-250/250H, AUD-251H, and AMR-350/350H respectively. Mating connector part numbers are shown on the outline and mounting diagrams. Figures 2-15 through 2-19 are the mating connector pin assignments for the MKR-350, MKL-350/351, AUD-250/250H, AUD-251H, and AMR-350/350H.

During preparation of the interconnect wiring cables, observe the following precautions:

- a. Bond and shield all parts of the aircraft electrical system, such as generator and ignition systems.
- b. Keep the interconnect cables away from circuits carrying heavy current, pulse transmitting equipment, and other sources of interference.
- c. Make all external connections of the equipment through the designated connectors listed on the interconnect wiring diagram.
- d. Leave slack in cables to allow for movement due to vibration.
- e. After installation of the cables in the aircraft and before installation of the equipment, check to ensure that aircraft power is applied only to the pins specified.
- f. Remove and install connector contacts in accordance with steps g through i. Table 2-1 lists the special tools required to perform the following steps.
- g. When preparing the mating connector, the connecting wire must be crimped in the contact so that the crimped portion of the contact can enter the connector shell.
- h. Insert the contact into the proper connector shell hole and press until locked.
- i. During removal of a contact, use the extraction tool to unlock the contact, and pull the contact out of the connector from the rear.

Table 2-1. Special Tools.

DESCRIPTION	MANUFACTURER AND TYPE	COLLINS PART NUMBER
MKR/MKL/AUD/AMR crimping tool (pliers)	Molex 11-01-0015	372-0065-020
MKR/MKL/AUD/AMR crimping tool (ratchet)	Molex 11-01-0008	372-0065-010
MKR/AUD/AMR extraction tool	Molex 11-03-0004	372-0065-030
MKL extraction tool	Molex 11-03-0009	372-0065-040

NOTES:

1. DIMENSIONS ARE IN MILLIMETRES.
DIMENSIONS IN [] ARE IN INCHES.
2. UNIT WEIGHT: 0.07 Kg [0.150 LBS.], ESTIMATED.

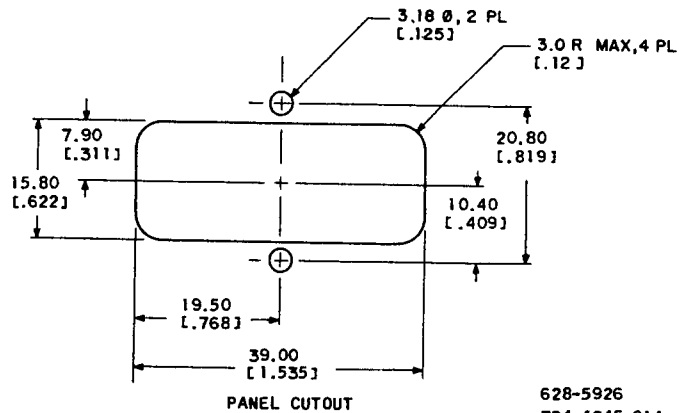
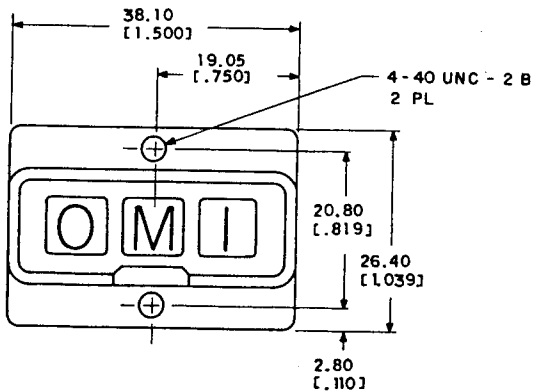
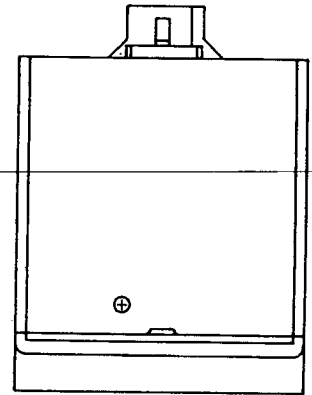
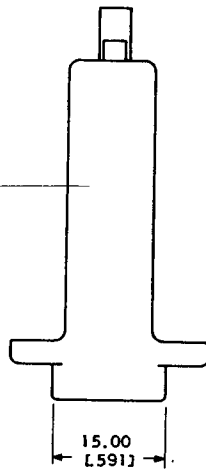
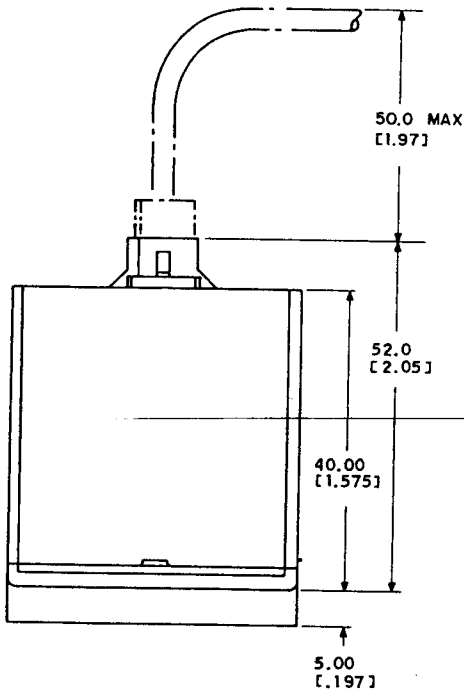
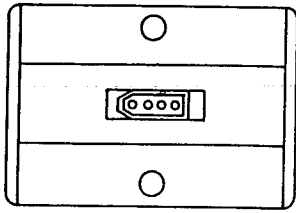
3. CONNECTOR INFORMATION:

UNIT CONNECTOR
 CPN 372-5909-430
 MOLEX P/N 03-06-2041

CONTACTS
 CPN 372-5909-070
 MOLEX P/N 02-06-2132

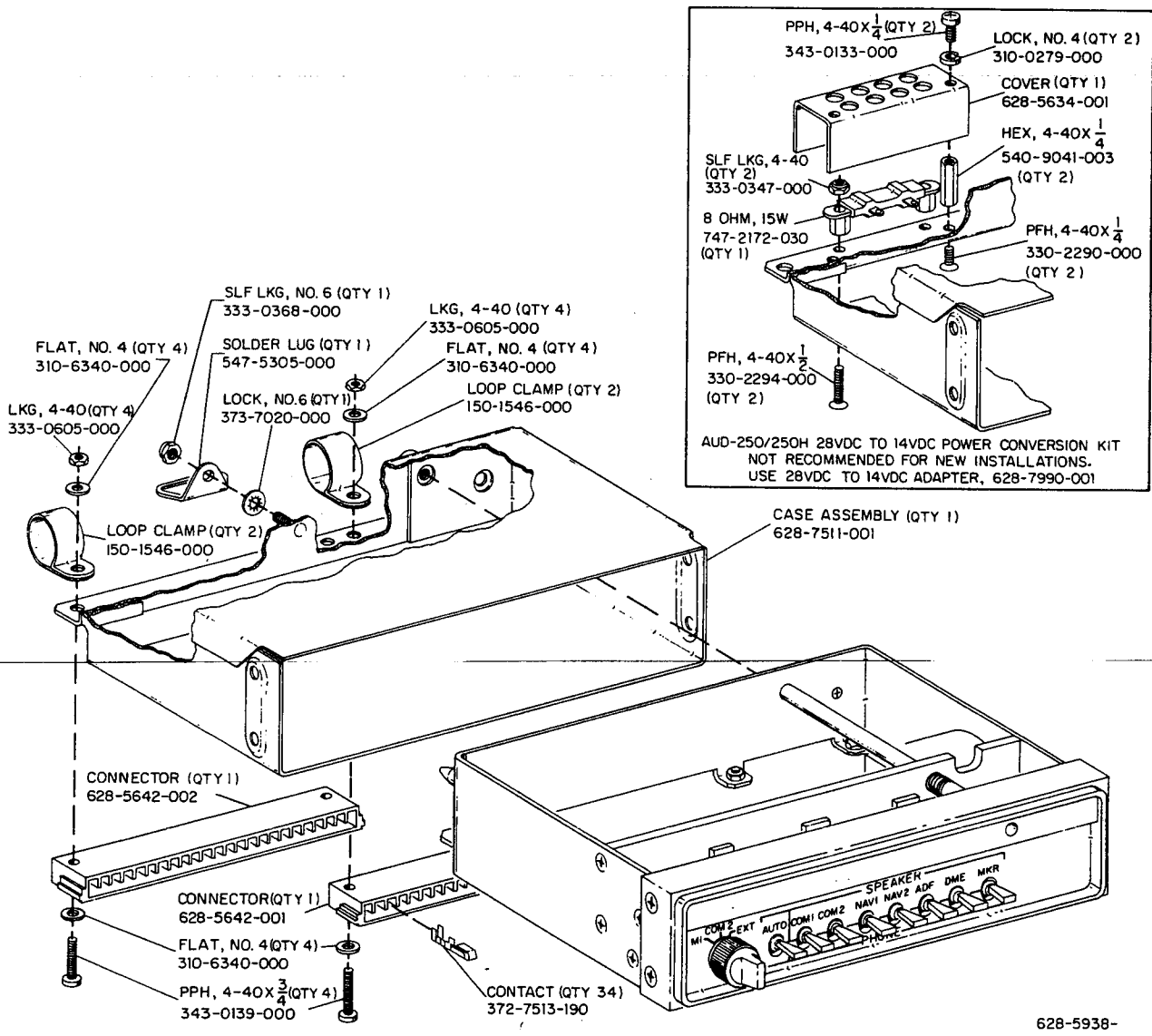
MATING CONNECTOR
 CPN 372-5909-020
 MOLEX P/N 03-06-1042

CONTACTS
 CPN 372-5909-040
 MOLEX P/N 02-06-1103

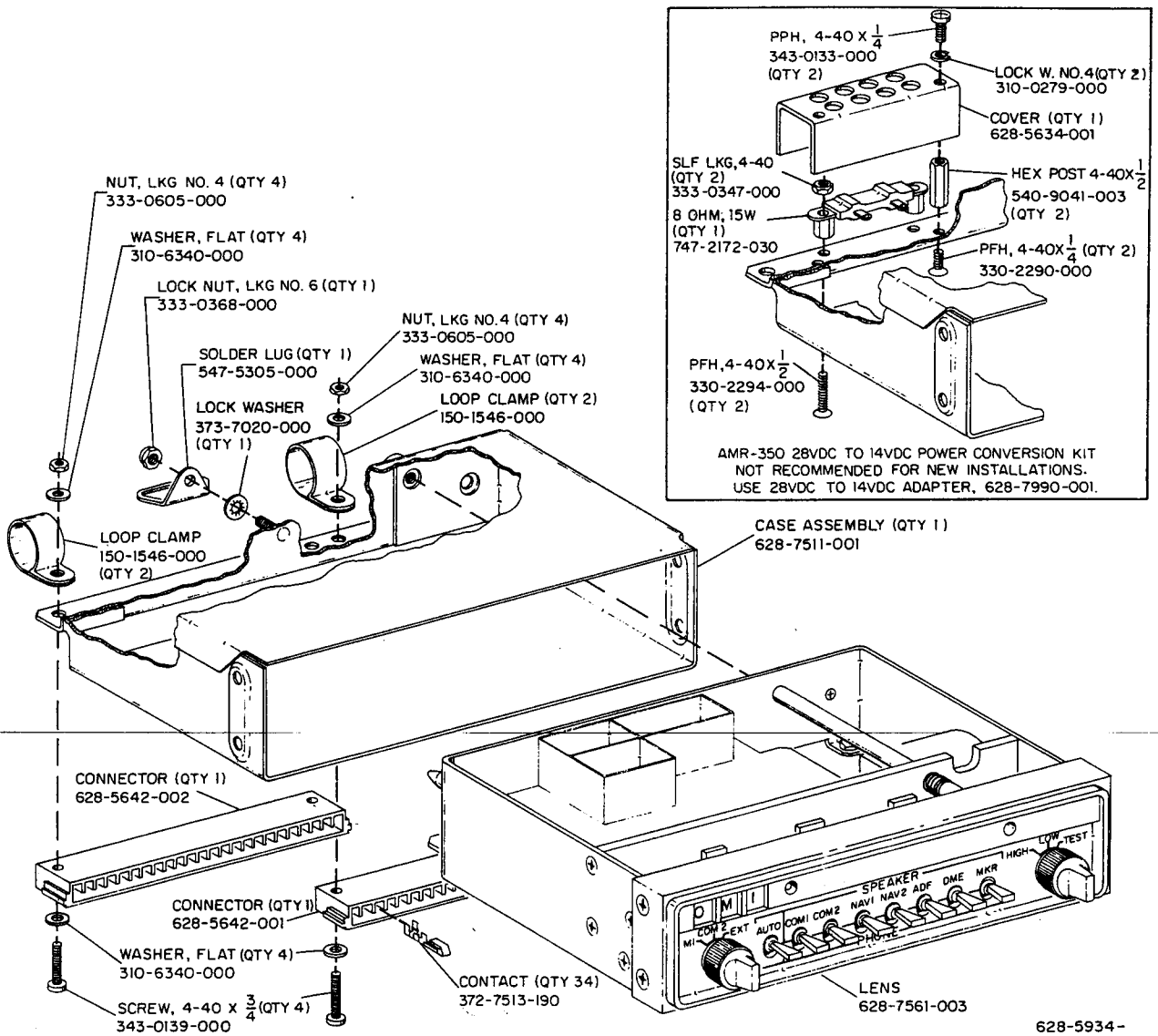


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MKL-351 Remote Marker Lights, Outline and Mounting Dimensions
 Figure 2-6



AUD-250/250H/251H Audio Panel, Installation Kit
Figure 2-7



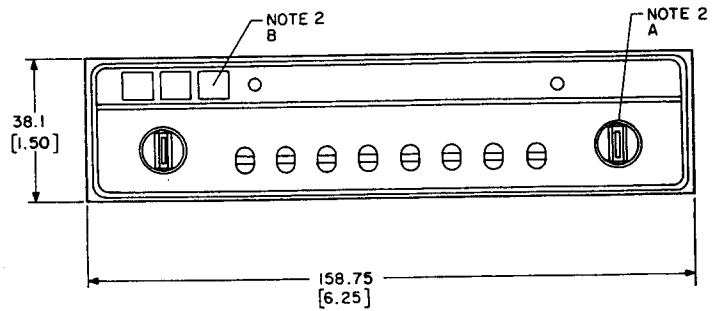
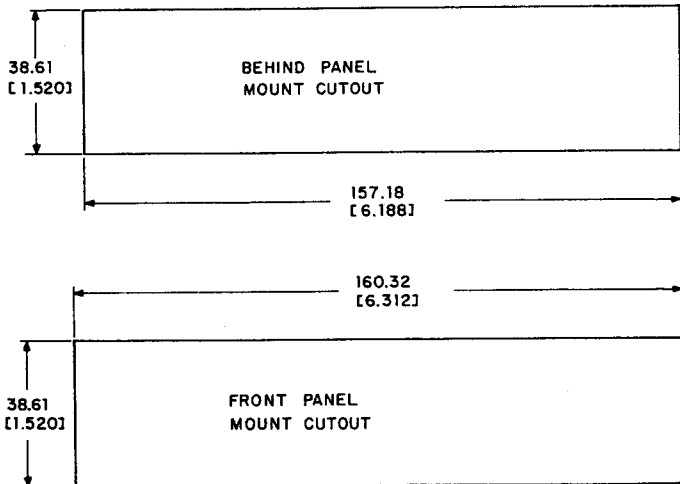
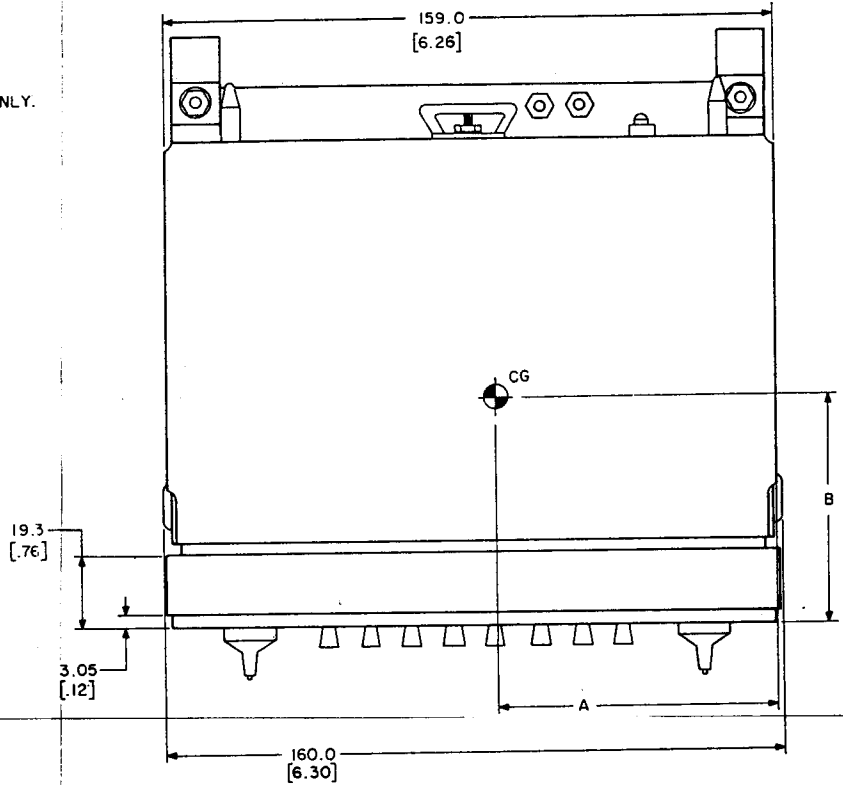
AMR-350/350H Audio/Marker Panel, Installation Kit
 Figure 2-8

NOTES:

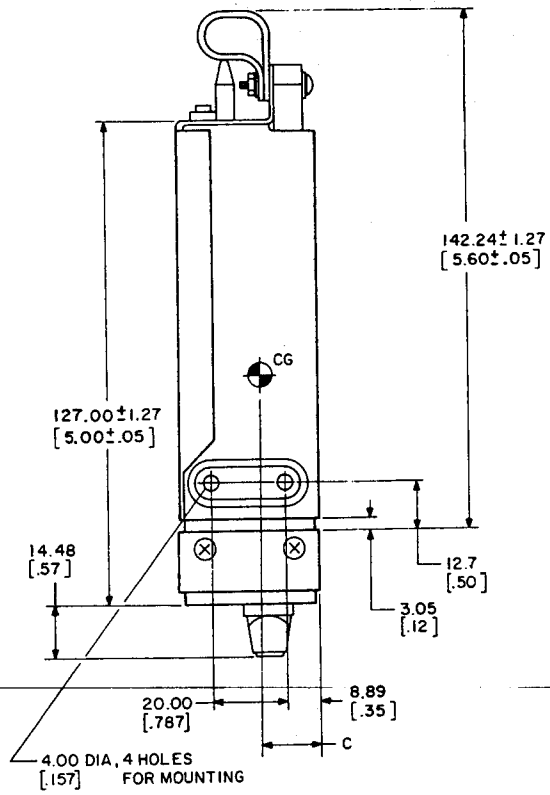
1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN mm, [INCHES].
2. KNOB 'A' IS ON AMR-350, AMR-350H, AUD-251H, AND AUD-250H ONLY. LIGHTS 'B' ARE ON AMR-350 AND AMR-350H ONLY.
3. USE NO. 6 SCREWS FOR MOUNTING TRAY.

TYPE NO.	WEIGHT	
	kg	LBS
AUD-250	0.68	1.5
AUD-250H	0.68	1.5
AMR-350	0.82	1.8
AMR-350H	0.82	1.8
AUD-251H	0.68	1.5

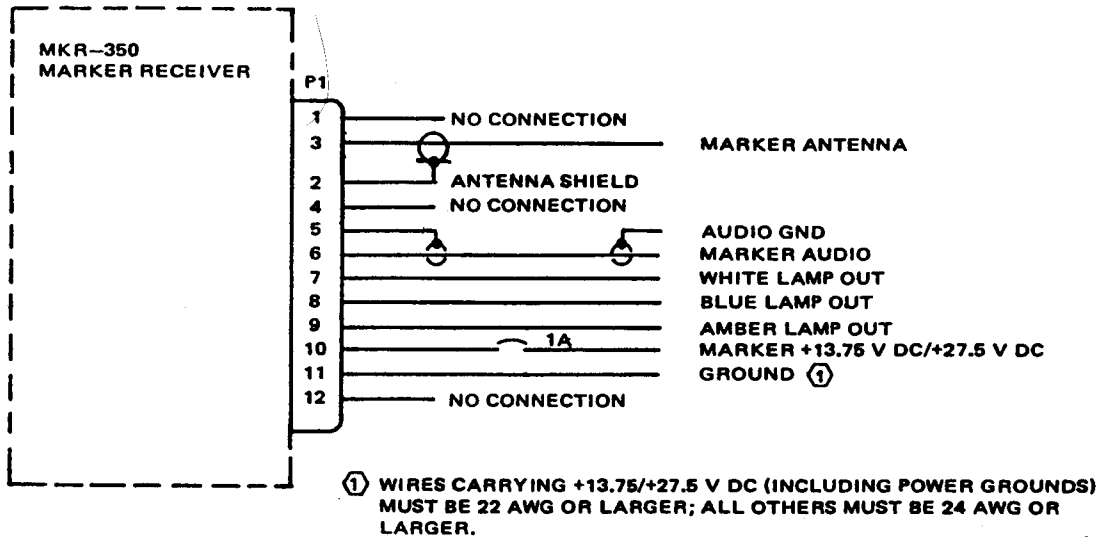
TYPE NO.	CG DIM CHART					
	A		B		C	
	mm	IN	mm	IN	mm	IN
AUD-250	71.0	2.80	61.2	2.41	15.2	.60
AUD-250H	71.0	2.80	61.2	2.41	15.2	.60
AMR-350	74.0	2.90	62.5	2.46	16.5	.65
AMR-350H	74.0	2.90	62.5	2.46	16.5	.65
AUD-251H	82.5	3.25	60.3	2.38	16.0	.63



AUD-250/250H/251H and AMR-350/350H, Outline and Mounting Dimensions
Figure 2-9

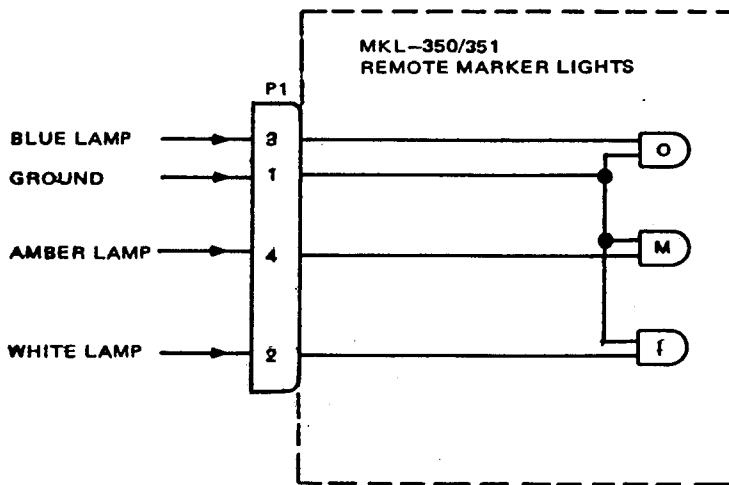


628-5703



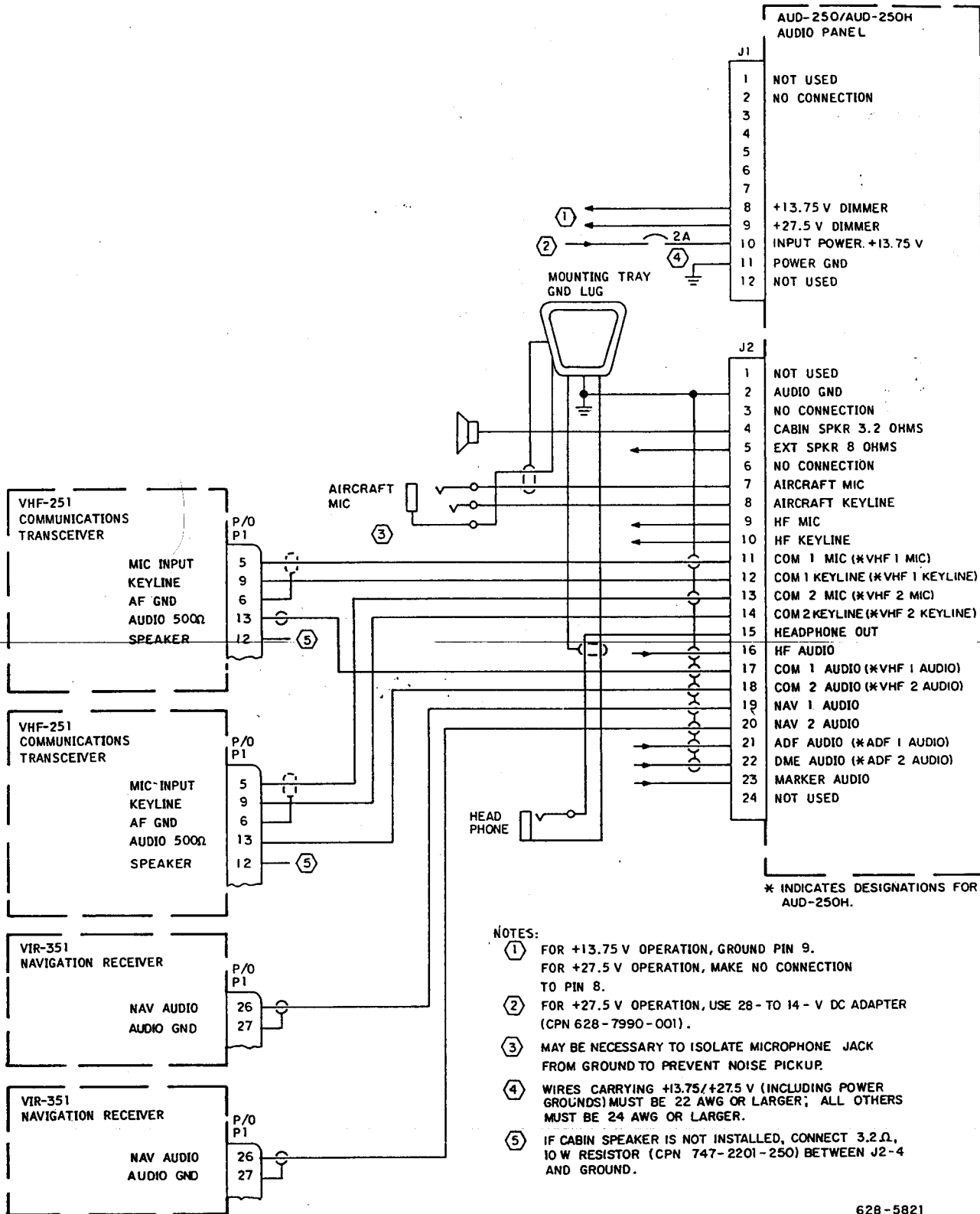
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MKR-350 Marker Receiver, Interconnecting Wiring Diagram
Figure 2-10



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TP4-2150-011

MKL-350/351 Remote Marker Lights, Interconnect Wiring Diagram
Figure 2-11

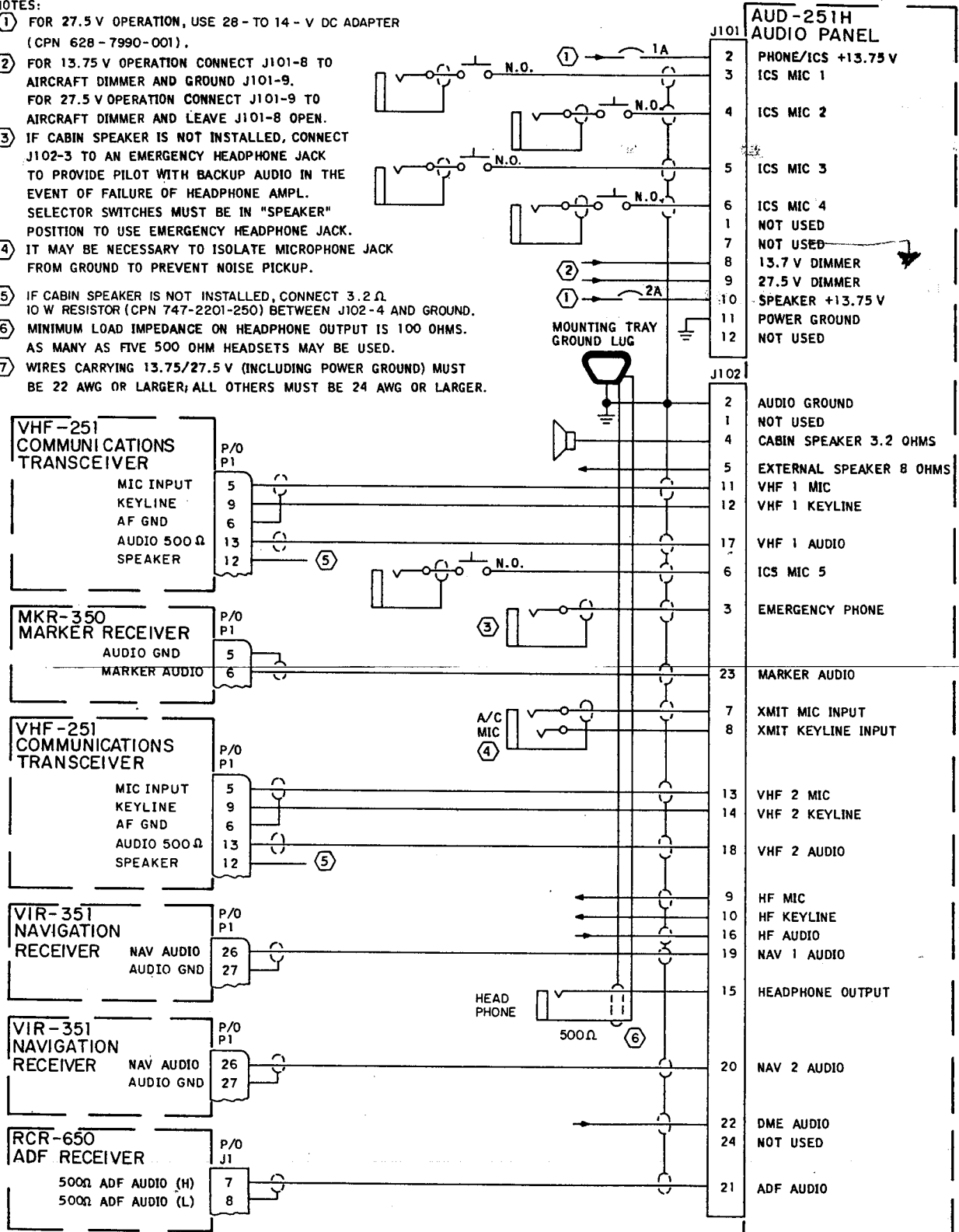


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TP4-3067-014

AUD-250/250H Audio Panel, Interconnect Wiring Diagram
Figure 2-12

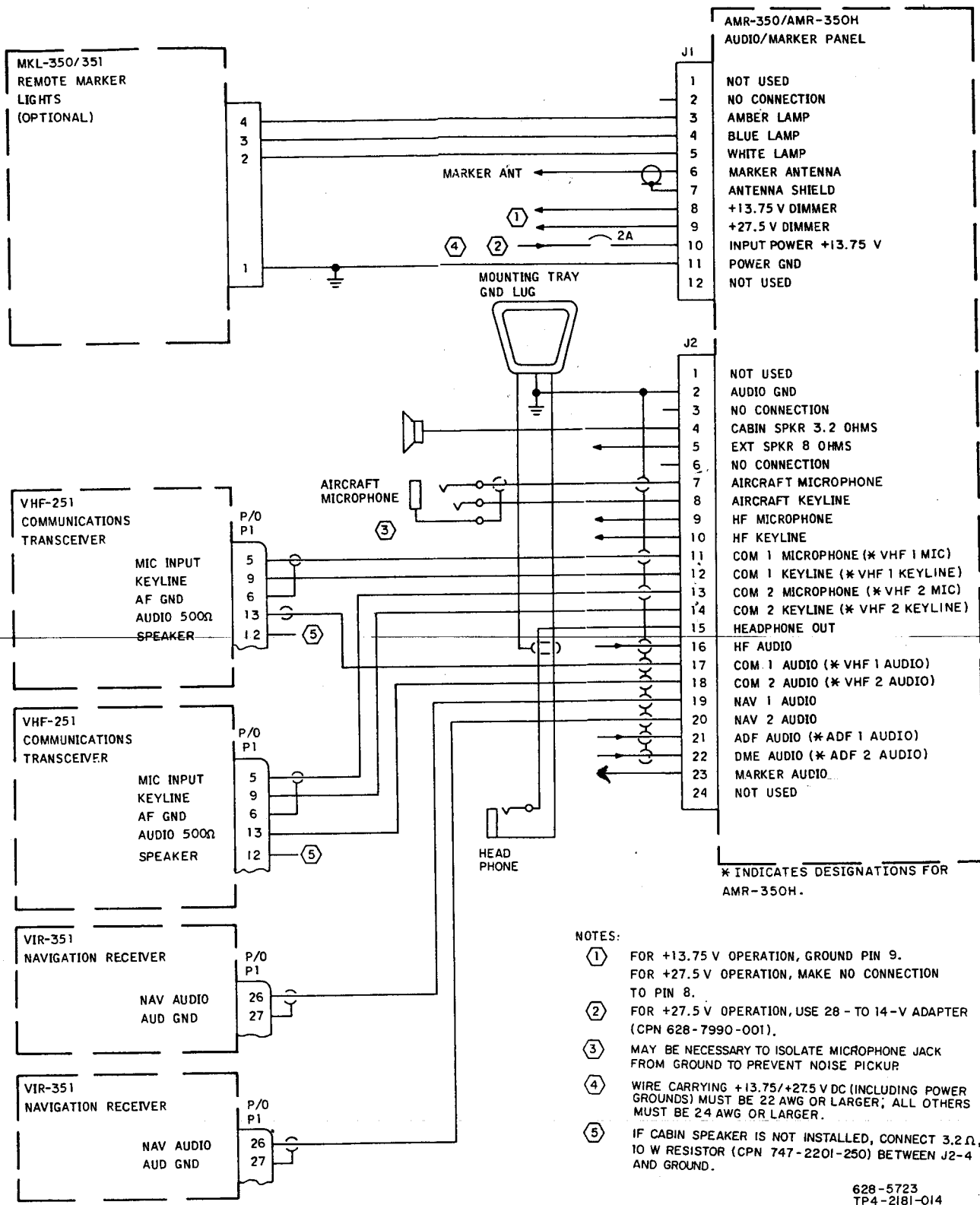
NOTES:

- ① FOR 27.5 V OPERATION, USE 28 - TO 14 - V DC ADAPTER (CPN 628 - 7990 - 001).
- ② FOR 13.75 V OPERATION CONNECT J101-8 TO AIRCRAFT DIMMER AND GROUND J101-9. FOR 27.5 V OPERATION CONNECT J101-9 TO AIRCRAFT DIMMER AND LEAVE J101-8 OPEN.
- ③ IF CABIN SPEAKER IS NOT INSTALLED, CONNECT J102-3 TO AN EMERGENCY HEADPHONE JACK TO PROVIDE PILOT WITH BACKUP AUDIO IN THE EVENT OF FAILURE OF HEADPHONE AMPL. SELECTOR SWITCHES MUST BE IN "SPEAKER" POSITION TO USE EMERGENCY HEADPHONE JACK.
- ④ IT MAY BE NECESSARY TO ISOLATE MICROPHONE JACK FROM GROUND TO PREVENT NOISE PICKUP.
- ⑤ IF CABIN SPEAKER IS NOT INSTALLED, CONNECT 3.2 Ω 10 W RESISTOR (CPN 747-2201-250) BETWEEN J102-4 AND GROUND.
- ⑥ MINIMUM LOAD IMPEDANCE ON HEADPHONE OUTPUT IS 100 OHMS. AS MANY AS FIVE 500 OHM HEADSETS MAY BE USED.
- ⑦ WIRES CARRYING 13.75/27.5 V (INCLUDING POWER GROUND) MUST BE 22 AWG OR LARGER; ALL OTHERS MUST BE 24 AWG OR LARGER.

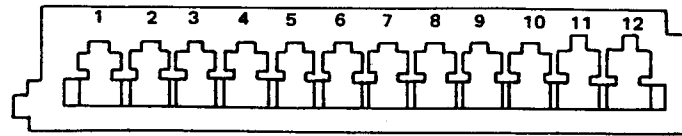


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AUD-251H Audio Panel, Interconnect Wiring Diagram
Figure 2-13



AMR-350/350H Audio/Marker Panel, Interconnect Wiring Diagram
Figure 2-14



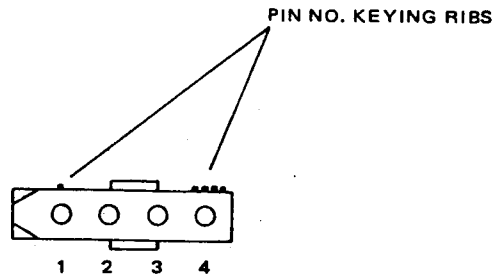
MKR-350 MATING CONNECTOR PIN ASSIGNMENTS

PART NO. 628-7640-001
MOLEX PART NUMBER 09-01-1121

- | | | | |
|----|----------------|-----|-----------------------------|
| 1. | GROUND | 7. | WHITE LAMP |
| 2. | ANTENNA SHIELD | 8. | BLUE LAMP |
| 3. | MARKER ANTENNA | 9. | AMBER LAMP |
| 4. | GROUND | 10. | MARKER +13.75 OR +27.5 V DC |
| 5. | GROUND | 11. | GROUND |
| 6. | MARKER AUDIO | 12. | GROUND |

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TP4-2147-012

MKR-350 Marker Receiver, Mating Connector Pin Assignments
Figure 2-15



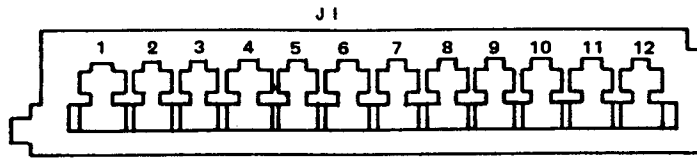
MKL-350/351 MATING CONNECTOR PIN ASSIGNMENTS

PART NUMBER 372-5909-020
MOLEX PART NUMBER 03-06-1042

- | | |
|----|------------|
| 1. | GROUND |
| 2. | WHITE LAMP |
| 3. | BLUE LAMP |
| 4. | AMBER LAMP |

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MKL-350/351 Remote Marker Lights, Mating Connector Pin Assignments
Figure 2-16

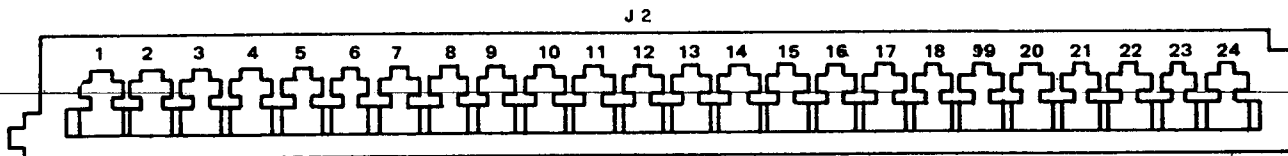


FRONT VIEW

PART NUMBER 628-5642-001
MOLEX PART NUMBER 09-01-1121 (MODIFIED)

- | | |
|------------------|----------------------------|
| 1. NOT USED | 7. NO CONNECTION |
| 2. NO CONNECTION | 8. +13.75 V DIMMER |
| 3. NO CONNECTION | 9. +27.5 V DIMMER |
| 4. NO CONNECTION | ① 10. INPUT POWER +13.75 V |
| 5. NO CONNECTION | 11. POWER GROUND |
| 6. NO CONNECTION | 12. NOT USED |

① FOR +27.5 V OPERATION 28 TO 14 VOLT POWER CONVERSION KIT, PART NUMBER 628-5633-001, MUST BE USED.



FRONT VIEW

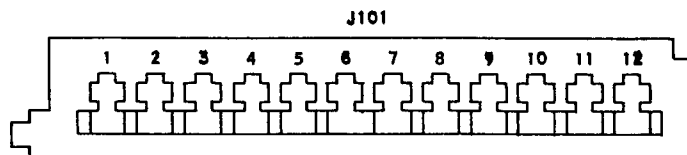
PART NUMBER 628-5642-002
MOLEX PART NUMBER 09-01-2241 (MODIFIED)

- | | |
|------------------------------------|------------------------------------|
| 1. NOT USED | 14. COM 2 KEYLINE (*VHF 2 KEYLINE) |
| 2. AUDIO GROUND | 15. HEADPHONE OUT |
| 3. NO CONNECTION | 16. HF AUDIO |
| 4. CABIN SPEAKER 3.2 OHMS | 17. COM 1 AUDIO (*VHF 1 AUDIO) |
| 5. EXT SPEAKER 8 OHMS | 18. COM-2 AUDIO (*VHF 2 AUDIO) |
| 6. NO CONNECTION | 19. NAV 1 AUDIO |
| 7. AIRCRAFT MICROPHONE | 20. NAV 2 AUDIO |
| 8. AIRCRAFT KEYLINE | 21. ADF AUDIO (*ADF 1 AUDIO) |
| 9. HF MICROPHONE | 22. DME AUDIO (ADF 2 AUDIO) |
| 10. HF KEYLINE | 23. MARKER AUDIO |
| 11. COM 1 MICROPHONE (*VHF 1 MIC) | 24. NOT USED |
| 12. COM 1 KEYLINE (*VHF 1 KEYLINE) | |
| 13. COM 2 MICROPHONE (*VHF 1 MIC) | |

* INDICATES DESIGNATIONS FOR AUD-250H

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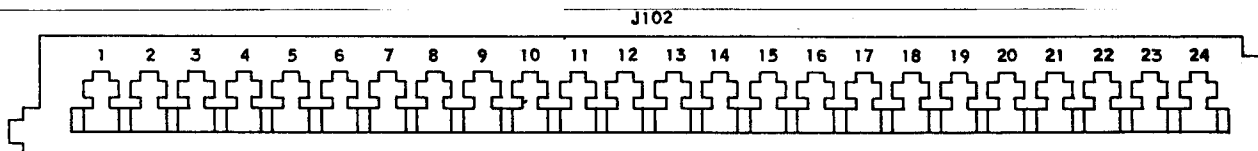
AUD-250/250H Audio Panel, Mating Connector Pin Assignments
Figure 2-17



FRONT VIEW

PART NUMBER 628-5642-001
MOLEX PART NUMBER 09-01-1121 (MODIFIED)

- | | |
|-----------------------|----------------------|
| 1. NOT USED | 7. NOT USED |
| 2. PHONE/ICS +13.75 V | 8. +13.75 V DIMMER |
| 3. ICS MIC 1 | 9. +27.5 V DIMMER |
| 4. ICS MIC 2 | 10. SPEAKER +13.75 V |
| 5. ICS MIC 3 | 11. POWER GROUND |
| 6. ICS MIC 4 | 12. NOT USED |



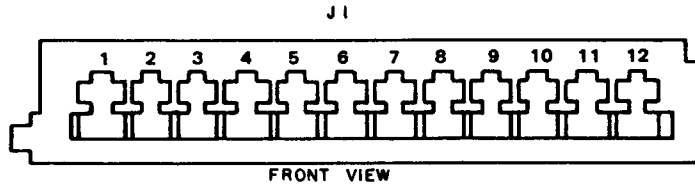
FRONT VIEW

PART NUMBER 628-5642-002
MOLEX PART NUMBER 09-01-2241 (MODIFIED)

- | | |
|---------------------------|----------------------|
| 1. NOT USED | 13. VHF 2 MICROPHONE |
| 2. AUDIO GROUND | 14. VHF 2 KEYLINE |
| 3. EMERGENCY PHONE | 15. HEADPHONE OUT |
| 4. CABIN SPEAKER 3.2 OHMS | 16. HF AUDIO |
| 5. EXT SPEAKER 8 OHMS | 17. VHF 1 AUDIO |
| 6. ICS MIC 5 | 18. VHF 2 AUDIO |
| 7. XMIT MIC INPUT | 19. NAV 1 AUDIO |
| 8. XMIT KEYLINE INPUT | 20. NAV 2 AUDIO |
| 9. HF MICROPHONE | 21. ADF AUDIO |
| 10. HF KEYLINE | 22. DME AUDIO |
| 11. VHF 1 MICROPHONE | 23. MARKER AUDIO |
| 12. VHF 1 KEYLINE | 24. NOT USED |

628-6542

AUD-251H Audio Panel, Mating Connector Pin Assignments
Figure 2-18

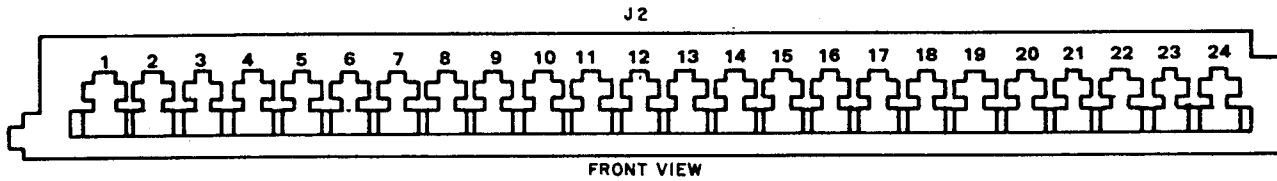


PART NUMBER 628-5642-001
MOLEX PART NUMBER 09-01-1121 (MODIFIED)

- 1. NOT USED
- 2. NO CONNECTION
- 3. AMBER LAMP
- 4. BLUE LAMP
- 5. WHITE LAMP
- 6. MARKER ANTENNA
- 7. ANTENNA SHIELD
- 8. +13.75 V DIMMER
- 9. +27.5 V DIMMER
- 10. INPUT POWER + 13.75 V
- 11. POWER GROUND
- 12. NOT USED

①

① FOR +27.5 V OPERATION, 28 TO 14 VOLT POWER CONVERSION KIT, PART NUMBER 628-5633-001, MUST BE USED.



PART NUMBER 628-5642-002
MOLEX PART NUMBER 09-01-2241 (MODIFIED)

- | | |
|------------------------------------|------------------------------------|
| 1. NOT USED | 13. COM 2 MICROPHONE (*VHF 2 MIC) |
| 2. AUDIO GROUND | 14. COM 2 KEYLINE (*VHF 2 KEYLINE) |
| 3. NO CONNECTION | 15. HEADPHONE OUT |
| 4. CABIN SPEAKER 3.2 OHMS | 16. HF AUDIO |
| 5. EXT SPEAKER 8 OHMS | 17. COM 1 AUDIO (*VHF 1 AUDIO) |
| 6. NO CONNECTION | 18. COM 2 AUDIO (*VHF 2 AUDIO) |
| 7. AIRCRAFT MICROPHONE | 19. NAV 1 AUDIO |
| 8. AIRCRAFT KEYLINE | 20. NAV 2 AUDIO |
| 9. HF MICROPHONE | 21. ADF AUDIO (*ADF 1 AUDIO) |
| 10. HF KEYLINE | 22. DME AUDIO (*ADF 2 AUDIO) |
| 11. COM 1 MICROPHONE (*VHF 1 MIC) | 23. MARKER AUDIO OUTPUT |
| 12. COM 1 KEYLINE (*VHF 1 KEYLINE) | 24. NOT USED |

*INDICATES DESIGNATIONS FOR AMR-350H

628-5721
TP4-2169-031

AMR-350/350H Audio/Marker Panel, Mating Connector Pin Assignments
Figure 2-19

2.6 POSTINSTALLATION CHECKS

After all cabling has been installed and the equipment has been mounted in the aircraft, make the operational checks outlined below to ensure correct operation of the equipment in the aircraft. These tests must be made using the aircraft power with the engines operating.

2.6.1 MKR-350 and MKL-350/351

- a. Select the TEST position on the front of the MKR-350 by depressing and holding the HIGH/LOW/TEST switch. Lights should now be on at maximum intensity.
- b. The MKL-350/351 Remote Marker Lights are tested by switching to the marker receiver TEST position. Lights should come on at maximum intensity.
- c. Raise the whip antenna on the ramp test set and set it directly beneath the marker beacon antenna. Set the ramp tester for a 10,000- μ V output with 90-percent modulation at 3000 Hz. Set the MKR-350 HIGH/LOW/TEST select control to the HIGH position. A 3000-Hz tone should be clearly audible in the aircraft audio system, and the white marker lamp should be brightly lighted.
- d. Change the modulating frequency of the ramp test set to 1300 Hz. A 1300-Hz tone should be audible in the aircraft audio system, and the amber marker lamp should be brightly lighted.
- e. Change the modulating frequency of the ramp test set to 400 Hz. A 400-Hz tone should be clearly audible in the aircraft audio system, and the blue marker light should be brightly lighted. Repeat steps c, d, and e with the HIGH/LOW/TEST select control in the LOW position.
- f. The audio level of the three marker tones may be adjusted to the proper volume using internal audio control resistor R45. This control is preset and ordinarily requires no adjustment.
- b. Apply power to the communications transceivers, navigation receivers, adf, DME, and marker beacon receiver.
- c. Channel communication transceivers to the operating frequency of a known station in the immediate area.
- d. Position the AUTO control switch to the SPEAKER position. Audio received by communication transceiver 1 should now be present in cabin speaker. Position the AUTO control switch to PHONE. Audio received by communications transceiver 1 should be present in the headset.
- e. Press the microphone push-to-talk (ptt) switch and obtain a signal check for transceiver 1.
- f. Turn the COM 1/COM 2/EXT control to COM 2. Audio from transceiver 2 should be present in headset. Switch the AUTO control switch to SPEAKER, and observe audio from transceiver 2 in cabin speaker.
- g. Press microphone ptt switch and obtain a signal check for transceiver 2.
- h. Position COM 1/COM 2/EXT control to EXT. If ramp hailer or passenger address system has been wired, audio directed at the microphone with the ptt switch depressed will be present in these systems. If necessary, adjust audio level control R219.
- i. Set AUTO control switch to its center (off) position.
- j. Set the COM 1 control switch to the SPEAKER position. Audio from transceiver 1 should be present. Switch COM 1 control to PHONE. Audio from transceiver 1 should be present.
- k. Set COM 1 control switch to its center position. Position COM 2 control switch to SPEAKER, then PHONE, and check for audio in both positions. Position COM 2 control switch to its middle position.
- l. Channel both navigation receivers to the operating frequency of a station in the immediate area. Check for audio in both SPEAKER and PHONE positions for each of the two receivers. Position NAV 1 and NAV 2 control switches to their center positions.
- m. Select a station on the adf receiver. Toggle the ADF control to the SPEAKER and PHONE positions. Observe audio in both positions. Reposition the ADF control to its center position.
- n. Channel a navigation receiver to a colocated VOR/DME station. Position the DME control switch to SPEAKER, then PHONE, and check for reception of the DME identification code in each position.

Caution

Do not adjust AGC and sensitivity controls R12, R13, or R26. Proper adjustment of these controls must be made under bench test conditions.

2.6.2 AUD-250 Audio Panel

- a. Position all audio control switches to their center (off) position. Set COM 1/COM 2/EXT control (microphone selector switch) to COM 1.

2.6.3 AUD-250II Audio Panel

- a. Position all audio control switches to center (off) position. Set HF/VHF 1/VHF 2/EXT control (microphone selector switch) to HF.
- b. Apply power to the communications transceivers, navigation receivers, automatic direction finders, and marker beacon receiver.
- c. Channel the communications transceivers to the operating frequency of a known station in the immediate area.
- d. Position the AUTO control to the SPKR position. Audio received by the hf transceiver should be present in the cabin speaker. Position the control to PHONE. Audio received by the hf transceiver should be present in the headset.
- e. Press the microphone push-to-talk (ptt) switch and obtain a signal check for the hf.
- f. Switch the HF/VHF 1/VHF 2/EXT control to VHF 1. Audio from vhf transceiver 1 should be present in the headset. Switch the AUTO control to SPKR, and observe audio from VHF 1 in cabin speaker.
- g. Press microphone ptt switch and obtain a signal check for VHF 1.
- h. Switch the HF/VHF 1/VHF 2/EXT control to VHF 2. Audio from VHF 2 should be present in cabin speaker. Switch the AUTO control to PHONE, and observe audio from VHF 2 in headset.
- i. Press microphone ptt switch and obtain a signal check for VHF 2.
- j. Position the HF/VHF 1/VHF 2/EXT control to EXT. If ramp hailer or passenger address system has been wired, audio directed at the microphone with the microphone ptt switch depressed will be present in these systems. If necessary, adjust audio level control R219.
- k. Set the AUTO control to OFF.
- l. Set the HF control switch to the SPEAKER position. Audio from the hf transceiver should be present in cabin speaker. Switch HF control to PHONE. Audio from the hf should be present in the headset. Return the HF control switch to its center (off) position.
- m. Repeat the switching procedure of step l for VHF 1, VHF 2, NAV 1, NAV 2, ADF 1, ADF 2, and MKR controls.

2.6.4 AUD-251II Audio Panel

- a. Position all audio control switches to their center (off) position. Set VHF 1/VHF 2/HF/EXT control (microphone selector switch) to VHF 1.
- b. With engines running at a normal in-flight noise level, adjust ICS level control potentiometer R324

- for a comfortable level with one crew member speaking into microphone. If L-pad volume controls are installed on headsets the midrange position should be selected prior to adjustment.
- c. Apply power to the communications transceivers, navigation receivers, automatic direction finder, DME, and marker beacon receiver.
- d. Channel the communications transceivers to the operating frequency of a known station in the immediate area.
- e. Position the AUTO control to the SPKR position. Audio received by the transceiver should be present in the cabin speaker. Position the AUTO control to PHONE. Audio received by the VHF 1 transceiver should be present in the headset.
- f. Press the microphone push-to-talk (ptt) switch and obtain a signal check for VHF 1. Observe side tone level and adjust as necessary to provide a comfortable level (adjustment is made within VHF 1).
- g. Switch the VHF 1/VHF 2/HF/EXT control to VHF 2. Audio from vhf transceiver 2 should be present in the headset. Switch the AUTO control to SPKR, and observe audio from VHF 2 in cabin speaker.
- h. Press microphone ptt switch and obtain a signal check for VHF 2; adjust sidetone as required.
- i. Switch the VHF 1/VHF 2/HF/EXT control to HF. Audio from the HF should be present in cabin speaker. Switch the AUTO control to PHONE, and observe audio from the hf transceiver in the headset.
- j. Press microphone ptt switch and obtain a signal check for the hf transceiver; adjust sidetone as required.
- k. Position the VHF 1/VHF 2/HF/EXT control to EXT. If a ramp hailer or passenger address system has been wired, audio directed at the microphone with the microphone ptt switch depressed will be present in these systems. If necessary, adjust external audio level control R219.
- l. Set the AUTO control to OFF.
- m. Set the HF control to the SPEAKER position. Audio from the hf transceiver should be present in the cabin speaker. Switch the HF control to PHONE. Audio from the hf should be present in the headset. Return the HF control switch to its center (off) position.
- n. Repeat the switching procedure of step 1 for VHF 1, VHF 2, NAV 1, NAV 2, ADF, DME, and MKR controls. When checking marker receiver operation, adjust audio level (within marker receiver) to a comfortable level.
- o. Check for presence of intercom audio in each headset when each intercom microphone is keyed.

2.6.5 AMR-350 Audio/Marker Panel

- a. Select the marker lamp TEST position by turning and holding the MARKER HIGH/LOW/TEST control in the TEST position. Marker lights should now be on at maximum intensity. Remote marker lights, when connected, should also be at maximum intensity.
- b. Raise the whip antenna on the ramp test set and set it directly beneath the marker beacon antenna. Set the ramp tester for a 10,000- μ V output with 90-percent modulation at 3000 Hz. Set the AMR-350 MARKER HIGH/LOW/TEST select control to the HIGH position. A 3000-Hz tone should be clearly audible in the aircraft audio system, and the white marker lamp should be brightly lighted.
- c. Change the modulating frequency of the ramp test set to 1300 Hz. A 1300-Hz tone should be audible in the aircraft audio system, and the amber marker lamp should be brightly lighted.
- d. Change the modulating frequency of the ramp test set to 400 Hz. A 400-Hz tone should be clearly audible in the aircraft audio system, and the blue marker lamp should be brightly lighted. Repeat steps b, c, and d with the MARKER HIGH/LOW/TEST select control set to the LOW position.
- e. The audio level of the three marker tones may be adjusted to the proper volume using internal audio control resistor R45. This control is preset and ordinarily should not require adjustment.

Caution

Do not adjust AGC and sensitivity controls R12, R13, or R26. Proper adjustment of these controls must be made under bench-test conditions.

- f. Position all audio control switches to their center (off) position. Set COM 1/COM 2/EXT control (microphone selector switch) to COM 1.
- g. Apply power to the communications transceivers, navigation receivers, adf, and DME.
- h. Channel communication transceivers to the operating frequency of a known station in the immediate area.
- i. Position the AUTO control switch to the SPEAKER position. Audio received by communication transceiver 1 should now be present in cabin speaker. Position the AUTO control switch to PHONE. Audio received by communications transceiver 1 should be present in the headset.

- j. Press the microphone push-to-talk (ptt) switch and obtain a signal check for transceiver 1.
- k. Turn the COM 1/COM 2/EXT control to COM 2. Audio from transceiver 2 should be present in headset. Switch the AUTO control switch to SPEAKER, and observe audio from transceiver 2 in cabin speaker.
- l. Press microphone ptt switch and obtain a signal check for transceiver 2.
- m. Position COM 1/COM 2/EXT control to EXT. If ramp hailer or passenger address speaker has been wired, audio directed at the microphone with the ptt switch depressed will be present in the speaker. If necessary, adjust audio level control R219.
- n. Set AUTO control switch to its center (off) position. Set COM 1/COM 2/EXT control to COM 1.
- o. Set the COM 1 control switch to the SPEAKER position. Audio from transceiver 1 should be present. Switch COM 1 control to PHONE. Audio from transceiver 1 should be present.
- p. Set COM 1 control switch to its center position. Using the COM 1/COM 2/EXT control, select COM 2. Position COM 2 control switch to SPEAKER, then PHONE, and check for audio in both positions. Position COM 2 control switch to its middle position.
- q. Channel both navigation receivers to the operating frequency of a station in the immediate area. Check for audio in both SPEAKER and PHONE positions for each of the two receivers. Position NAV 1 and NAV 2 control switches to their center positions.
- r. Select a station on the adf receiver. Toggle the ADF control to the SPEAKER and PHONE positions. Observe audio in both positions. Reposition the ADF control to its center position.
- s. Channel a navigation receiver to a colocated VOR/DME station. Position the DME control switch to SPEAKER, then PHONE, and check for reception of the DME identification code in each position.

2.6.6 AMR-350H Audio/Marker Panel

- a. Select the marker lamp TEST position by turning and holding the MARKER HIGH/LOW/TEST control in the TEST position. Marker lights should now be on at maximum intensity. Remote marker lights, when connected, should also be at maximum intensity.
- b. Raise the whip antenna on the ramp test set and set it directly beneath the marker beacon antenna. Set the ramp tester for a 10,000- μ V output with 90-percent modulation at 3000 Hz. Set the AMR-350H MARKER HIGH/LOW/TEST select control

- to the HIGH position. A 3000-Hz tone should be clearly audible in the aircraft audio system, and the white marker lamp should be brightly lighted.
- c. Change the modulating frequency of the ramp test set to 1300 Hz. A 1300-Hz tone should be audible in the aircraft audio system, and the amber marker lamp should be brightly lighted.
 - d. Change the modulating frequency of the ramp test set to 400 Hz. A 400-Hz tone should be clearly audible in the aircraft audio system, and the blue marker lamp should be brightly lighted. Repeat steps b, c, and d with the MARKER HIGH/LOW/TEST select control set to the LOW position.
 - e. The audio level of the three marker tones may be adjusted to the proper volume using internal audio control resistor R45. This control is preset and ordinarily should not require adjustment.

Caution

Do not adjust AGC and sensitivity controls R12, R13, or R26. Proper adjustment of these controls must be made under bench test conditions.

- f. Position all audio control switches to their center (off) position. Set HF/VHF 1/VHF 2/EXT control (microphone selector switch) to HF.
- g. Apply power to the communications transceivers, navigation receivers, and automatic direction finders.
- h. Channel transceivers to the operating frequency of a known station in the immediate area.
- i. Switch the HF switch (toggle) to SPEAKER and observe received signal is present in cabin speaker. Switch the HF control switch to PHONE. Audio from the hf transceiver should not be present in the headset.
- j. Press the microphone push-to-talk (ptt) switch and obtain a signal check for the hf transceiver. Return the HF switch to the center position.
- k. Switch the HF/VHF 1/VHF 2/EXT control to VHF 1. Ensure audio is present in both the SPEAKER and PHONE positions. Obtain a signal check for VHF 1.
- l. Switch the HF/VHF 1/VHF 2/EXT control to VHF 2. Ensure audio is present in both the SPEAKER and PHONE positions. Obtain a signal check for VHF 2.
- m. Switch the HF/VHF 1/VHF 2/EXT control to EXT. If ramp hailer or passenger address speaker has been wired, audio directed at the microphone with the ptt switch depressed will be present in the speaker. If necessary, adjust audio level control R219.
- n. Perform audio checks for NAV 1, NAV 2, ADF 1, ADF 2, and MKR control switches to ensure audio is present in both SPEAKER and PHONE positions.