

MACKENZIE

DMR-PD-006

Installation & User's Manual

UL A1100
99-20-010

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1. INTRODUCTION

The DMR-PD-006 provides the following features:

1. START(S) (multiple inputs for random access), STOP and TEST functions.
2. Audio Message - Through the Mackenzie Vocalizer circuitry, the digitally stored voice data is converted to an audio message. Each message is a high quality life-like reproduction of the actual speaker's voice.
3. Message repeats - switch selectable setting allows each message to be played up to four times per contact closure.
4. Pauses - switch selectable pauses between message repeats, set above, in various increments up to 30 seconds.
5. Built-in test message.
6. A relay closure (PLAYING) indication.
7. Auto test of both program and audio memory.
8. Supervision (ERROR/FAIL) relay closure to verify that:
 - A. Power is available to unit.
 - B. Microprocessor (CPU) is operational.
 - C. Audio memory is in place and able to provide an intelligible message.
 - D. Through the use of the VOICECHECK circuitry, the board verifies that the audio circuits are operational.

2. FEATURE DESCRIPTIONS

2.1. START COMMANDS

There is a total of 6 START inputs available. Each START COMMAND requires a momentary (250 ms minimum) contact closure for the program to recognize the command. The commands will be stored in a first-in, first-out(FIFO) manner. Multiple closures, after the first recognition of the command, will be executed in order as they were recognized by FIFO after the completion of the first command. If the command is "latched" ON the message will repeat until the contact closure is removed.

2.2. STOP/RESET COMMAND

A momentary (250 ms minimum) contact stops (terminates) the message that is playing. All messages in FIFO will be aborted. All active inputs have to be reactivated for normal operation. (See SUPERVISION for additional use.)

2.3. TEST COMMAND

When TEST COMMAND is maintained for at least 250 ms before the START #1 COMMAND is provided, the built-in test message is played. The TEST COMMAND must be maintained until the playing cycle is complete or the ERROR/FAIL relay will indicate a malfunction. Thus, the TEST feature may be used to play the built-in test message for a check of the entire public address system or to TEST the unit's ERROR/FAIL function.

2.4. BUILT-IN TEST MESSAGE

The TEST MESSAGE is stored within the program EPROM which is a basic part of the PD-006 board circuitry.

The test message says, "This is an audio system test".

2.5. AUDIO MESSAGE

Message storage is provided by up to four on board EPROMS. Total message time available is 30.0 seconds at a bandwidth of 3.4KHz. Shorter memory time, 7.5, 15.0 and 22.5 seconds may be ordered. The sum of the time of the individual messages determines the total time required. EPROMs are provided in carriers to make field insertion simple and damage proof.

Note: Message EPROMs are ordered separately.

2.6. MESSAGE MEMORY:

The memory is made up of non-volatile memory chips (EPROMS). They are supplied with carriers for protection against damage during field installation. The audio messages are digitized at the factory using customer supplied audio recordings or scripts. Messages may be in various length, but the total length cannot exceed the unit's capacity (1 to 6 messages with maximum total playing time/length of 30 sec.)

2.7. MESSAGE PLAYING

When either the TEST message or an audio message is playing, the unit provides a PLAYING contact closure. The PLAYING contacts stay closed during message repeats and pauses and opens only when the play sequence is completed.

2.8. **ON-BOARD SWITCH OPTIONS**

All options are controlled by an 8-position DIP switch.

- a) **Message Repeats - S1, S2** - The basic operation of the unit is to Play and then Pause. Switches allow multiple plays (up to 4 plays per command): the sequence is Play, Pause, Play, etc., for the requisite number as provided by the switches. There will always be a Pause between the Plays.
- b) **Pauses - S3, S4, S5** - Switches 3-5 select the nominal pause time between successive message plays. The pause period can be set for 1, 3, 5, 7, 10, 15, 20 or 30 seconds.
- c) When On, Switch 6 is used to inhibit the VOICECHECK functions.
- d) When On, Switch 7 is used to inhibit the AUTO TEST functions. (See 9, Auto Test below.)
- e) If Switch 8 is placed in the ON position, in the event of an error, the system will automatically reset after a one minute delay. If Switch 8 is left in the OFF position, the ERROR/FAIL indication will continue. The unit must be manually reset by a STOP/RESET command.

2.9. **AUTO TEST**

The DMR-PD-006 is programmed to self test approximately once a minute. If any malfunction is detected in the microprocessor, audio memory or audio circuits, the ERROR/FAIL relay contacts will open.

2.10. SUPERVISION (ERROR/FAIL Relay)

- a) If power is available to the unit,
- b) **and if** the Microprocessor is operational,
- c) **and if** the audio memory is in place and able to provide intelligible audio,
- d) **and if** audio circuits are operational,
- e) **then** the ERROR/FAIL relay will remain active **(closed)**. If any one of the above is in an ERROR/FAIL condition, the relay contacts will **open**.

NOTE: To reset the ERROR/ FAIL relay to normal (closed) operation, actuate the STOP command momentarily or use Auto-Restart function (switch #8), or use the "Reset" pushbutton.

In the case of a software failure, the system will have to be reset using the reset pushbutton on the side of the unit.

3. TECHNICAL SPECIFICATIONS

Model: Digital Message Repeater, Model DMR-PD-006.

Plays: One to six messages of digitized audio stored in EPROM memory (ordered separately).

Playing time: Maximum total audio message playing time of either 7.5, 15.0, 22.5 or 30.0 seconds.

Message
Memory: Maximum playing time of 7.5 sec per EPROM @
3.4 KHz and a maximum of 4 EPROMs per unit.

<u>Model</u>	<u>Length</u>	<u># of EPROM</u>
DMR-ME6-73*	7.5 sec	1
DMR-ME6-153*	15.0 sec	2
DMR-ME6-223*	22.5 sec	3
DMR-ME6-303*	30.0 sec	4

Bandwidth: 50Hz to 3.4 KHz

Controls: STOP, TEST and multiple START inputs. Simple
dry contact closures or open collector TTL type to
Ground (0.0 V).

Audio
Output: 600 ohm transformer isolated line-level. Factory
preset to -5dbm (Odb peak).

Supervision
outputs: ERROR/FAIL: Relay, form A, dry contact (.75 amp
24V non-inductive load) closed when in non-failure
mode.

Size: Enclosure 7.100 x 6.125 x 1.800 inches.

Power: External 24VDC @ 250 ma nominal (300 ma peak).

Input/Output

Connectors: Two connectors. One is a 20 position double row contact housing pre-assembled at factory with pig tail 10 position used for controlling all input commands. The other is a plug-in terminal strip used for control commands and audio functions.)

All inputs are optical-coupled.

* NOTE: Not interchangeable with any other type of DMR-PD EPROM messages.

4. USER SELECTABLE OPTIONS

(Ref. Drawing E1091)

Settings for On-Board Switch (SW-1)

All options are controlled by an 8-position DIP switch, SW-1.

4.1. *Message Repeats - S1, S2*

The basic operation of the unit is to Play and then Pause. Switches allow multiple plays, up to 4 plays per command. The sequence is Play, Pause, Play, Pause, etc., for the requisite number as provided by the switches. There will always be a Pause between the Plays.

<u>S1</u>	<u>S2</u>	<u>Number of Repeats</u>	<u>Total Plays</u>
off	off	0	1
off	on	1	2
on	off	2	3
on	on	3	4

4.2. Pauses - S3, S4, S5

Switches 3-5 select the nominal pause time between successive message plays. The pause period can be set for 1, 3, 5, 7, 10, 15, 20 or 30 seconds.

S3	S4	S5	Pause between messages
off	off	off	1 second
off	off	on	3 seconds
off	on	off	5 seconds
off	on	on	7 seconds
on	off	off	10 seconds
on	off	on	15 seconds
on	on	off	20 seconds
on	on	on	30 seconds

4.3. VOICECHECK - S6

When On, Switch 6 is used to inhibit the VOICECHECK functions.

4.4. AUTO TEST - S7

When On, Switch 7 is used to inhibit the AUTO TEST functions.

4.5. Reset - S8

If Switch 8 is placed in the ON position, the system will automatically reset one minute after delay.

If switch 8 is left in the OFF position, the ERROR/FAIL indication will continue. The unit may be manually reset by a STOP/RESET command.

3 Plays, 5 Second Pause (Maintained Closure):

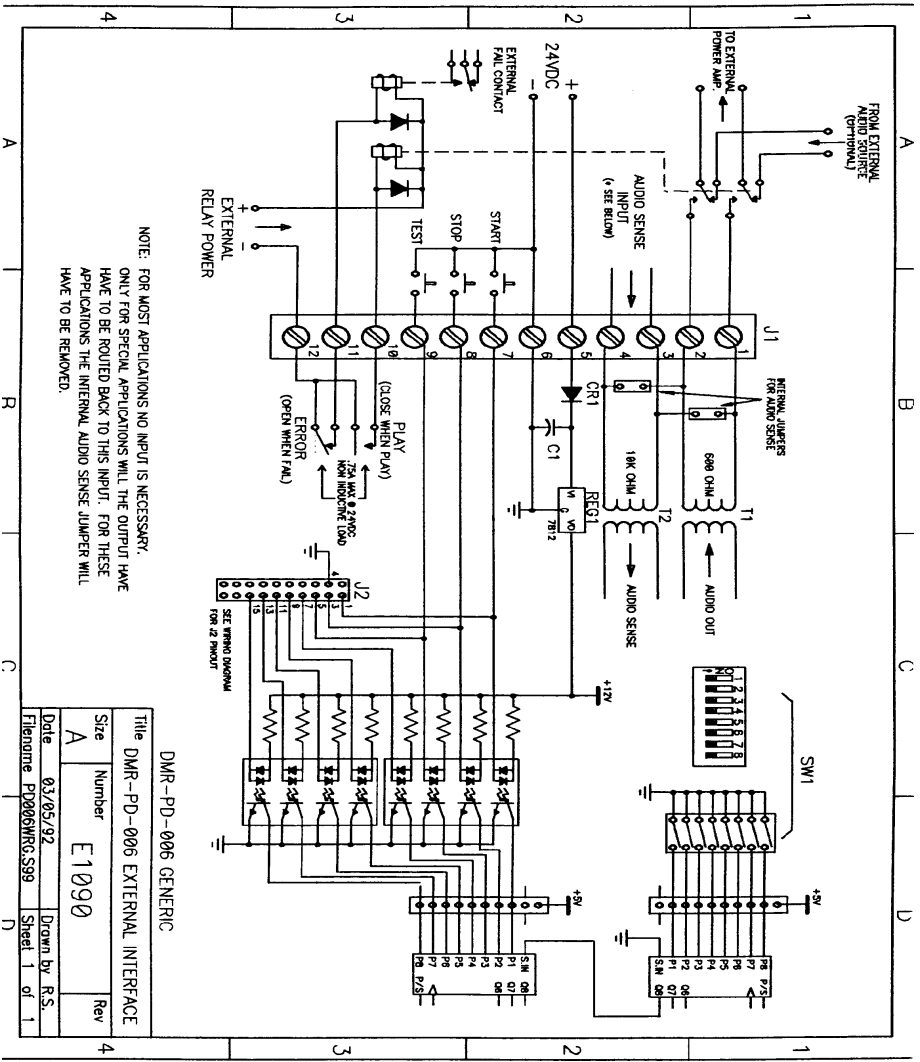
(1) (2) (3) (1) (2) (3)
Play 5 Sec Play 5 Sec Play Play 5 Sec Play 5 Sec Play etc.....

5. AUX CONNECTOR WIRING(J2)

<u>Pin #</u>	<u>Color</u>	<u>Function</u>
1	Blue	Start 1
3	Orange	Stop
4	Black	OV
5	Green	Test
7	Brown	Start 2
9	Slate	Start 3
11	Yellow	Start 4
13	Violet	Start 5
15	White	Start 6

All start commands are done by providing a contact closure to Pin #4 (OV). Use J1 connector for power, audio out, and play relay.

6. EXTERNAL WIRING

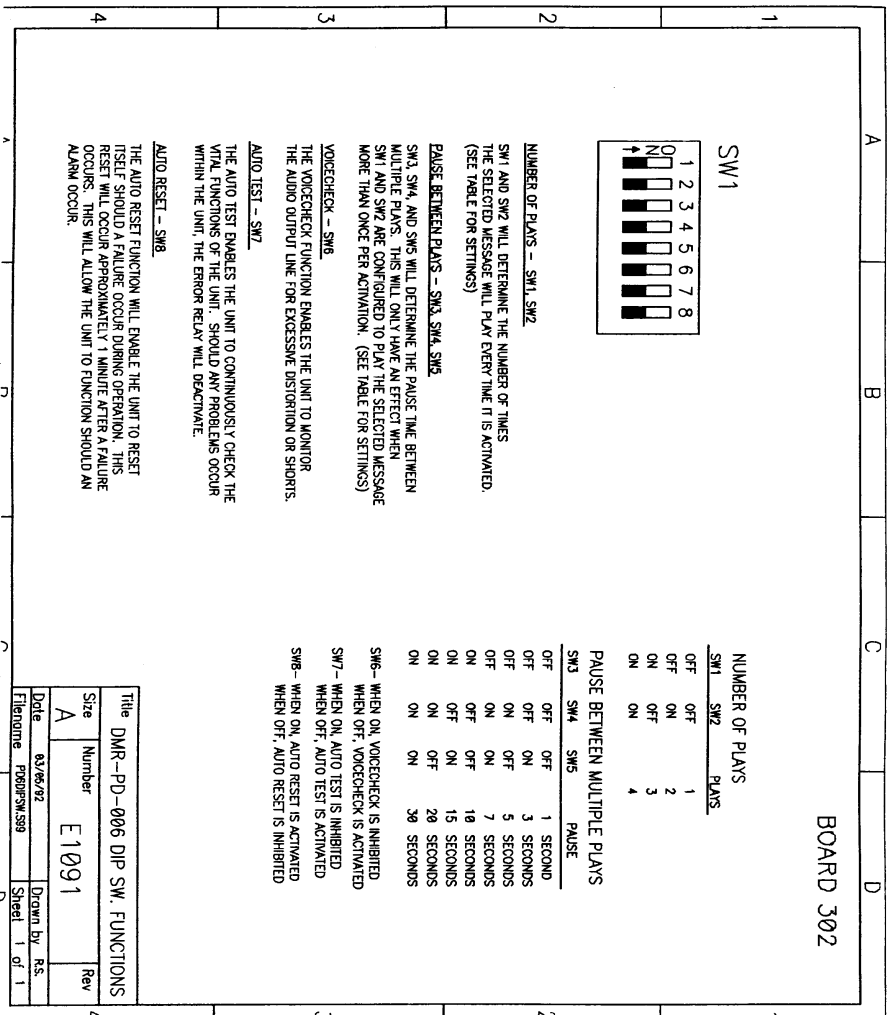


NOTE: FOR MOST APPLICATIONS NO INPUT IS NECESSARY.
 ONLY FOR SPECIAL APPLICATIONS WILL THE OUTPUT HAVE
 HAVE TO BE ROUTED BACK TO THIS INPUT. FOR THESE
 APPLICATIONS THE INTERNAL AUDIO SENSE JUMPER WILL
 HAVE TO BE REMOVED.

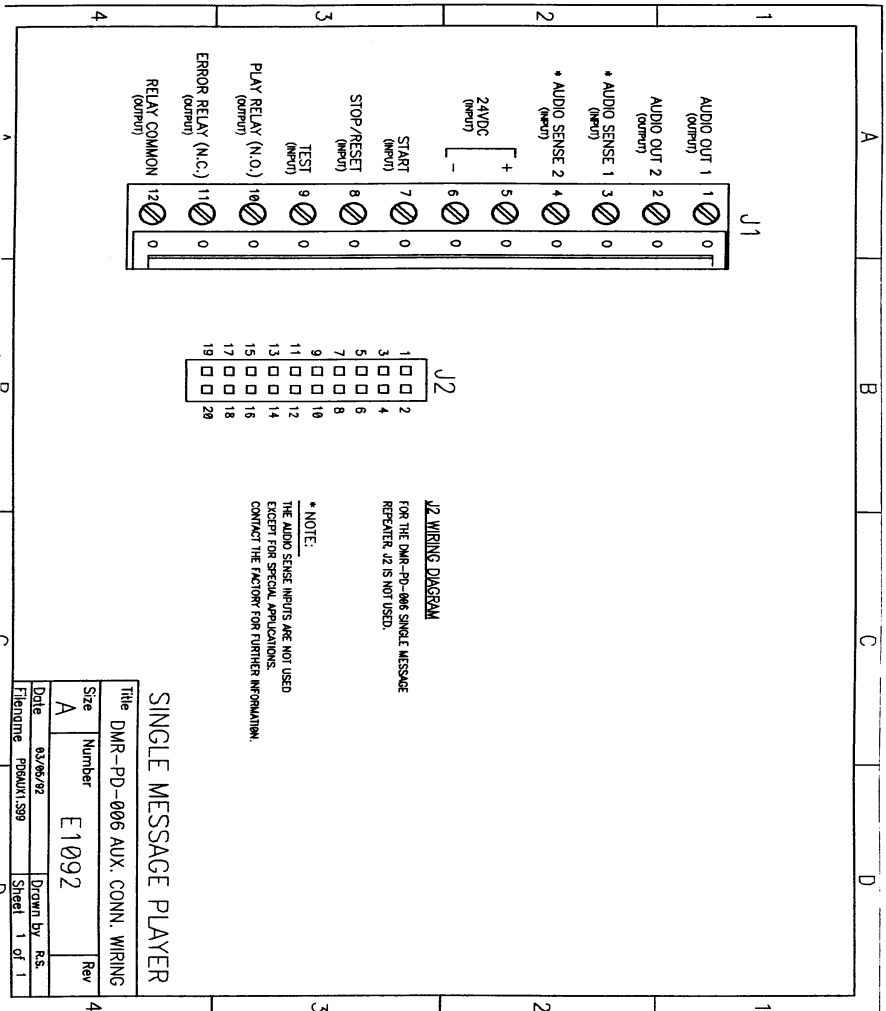
DMR-PD-006 GENERIC

Title		DMR-PD-006 EXTERNAL INTERFACE	
Size	Number	Rev	
A	E1090		
Date	03/05/92	Drawn by R.S.	
Filename	PD006NRG.S99	Sheet 1 of 1	

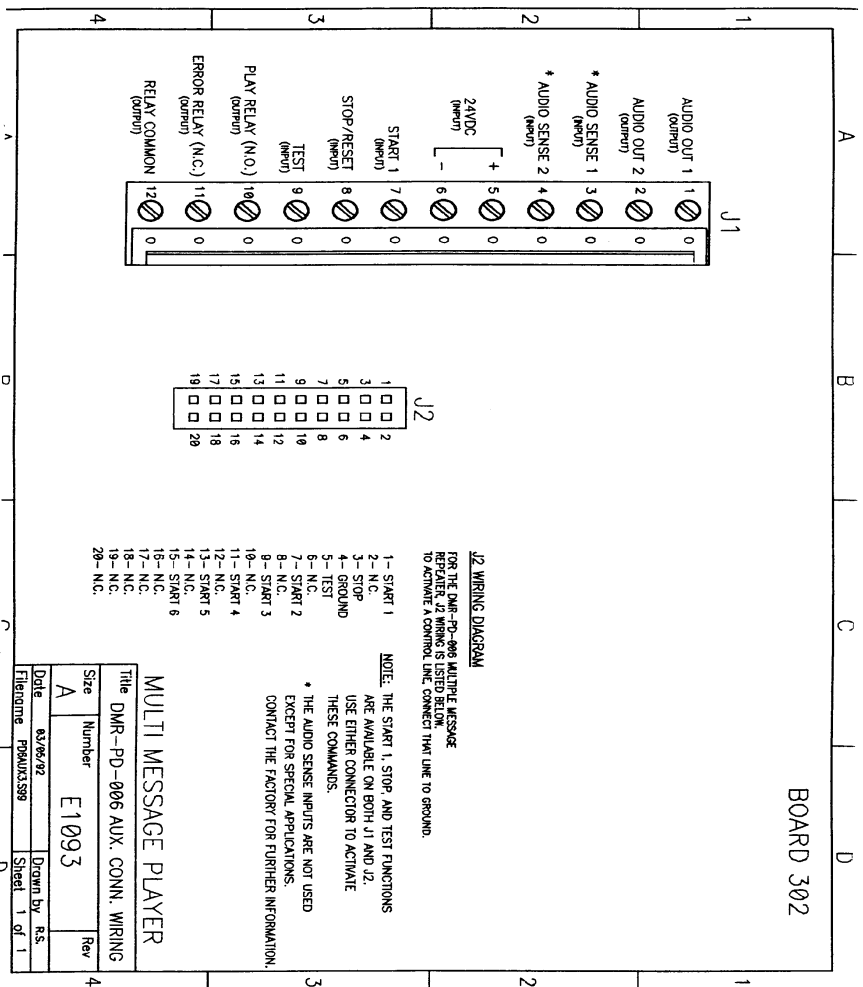
7. SW1



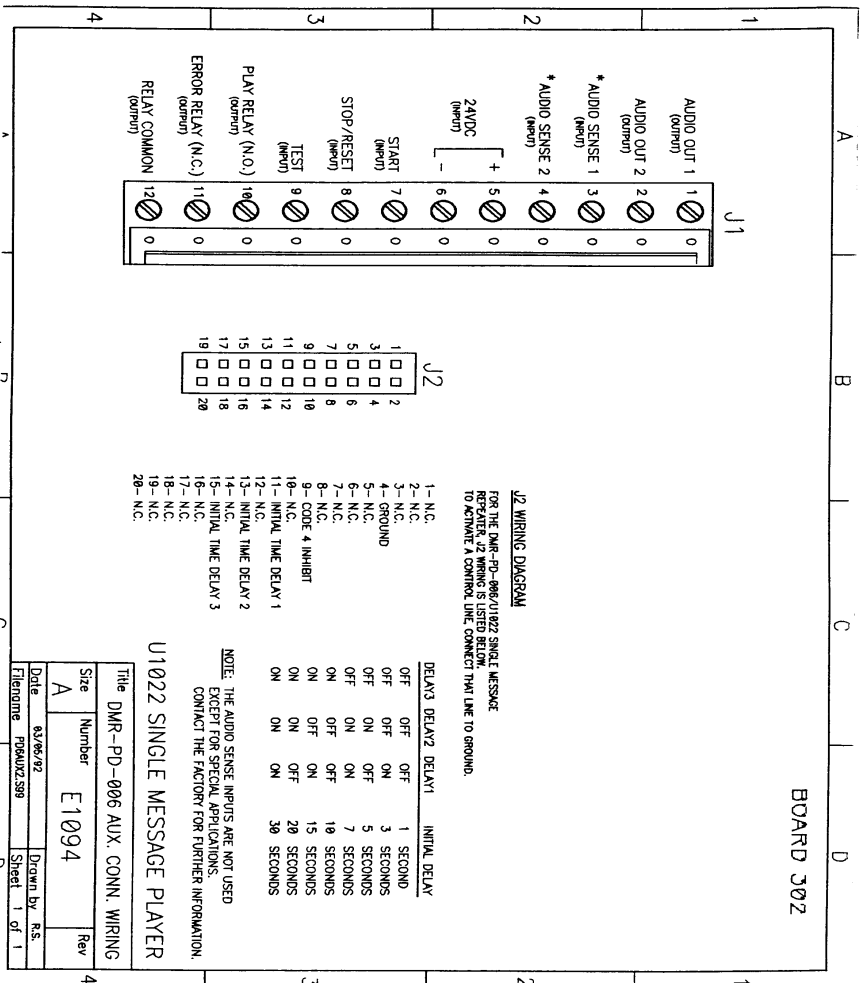
8. AUX. CONNECTOR WIRING SINGLE MESSAGE

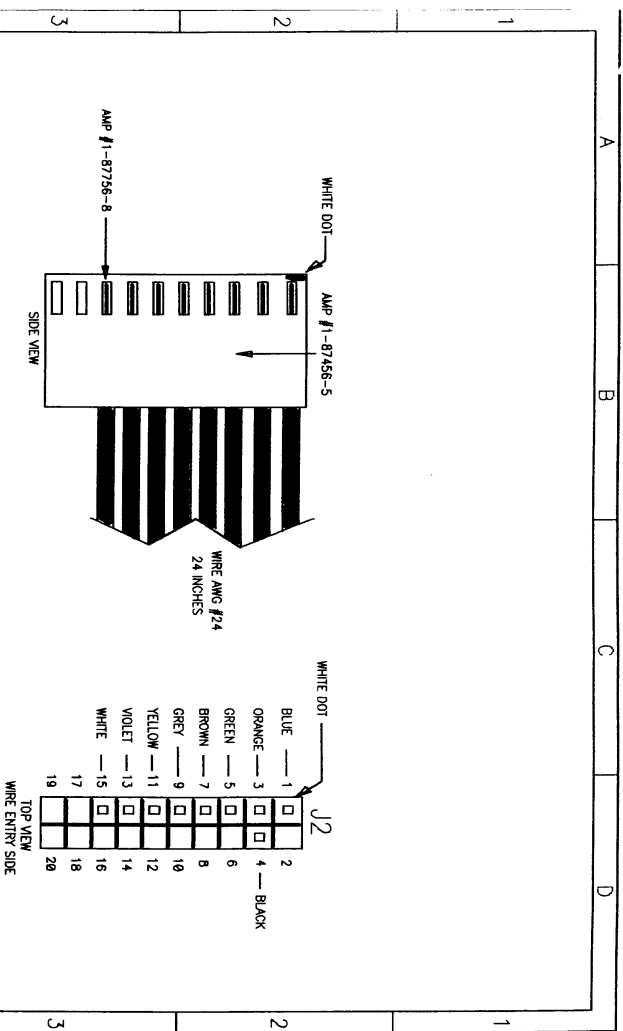


9. AUX. CONNECTOR WIRING MULTIPLE MESSAGE

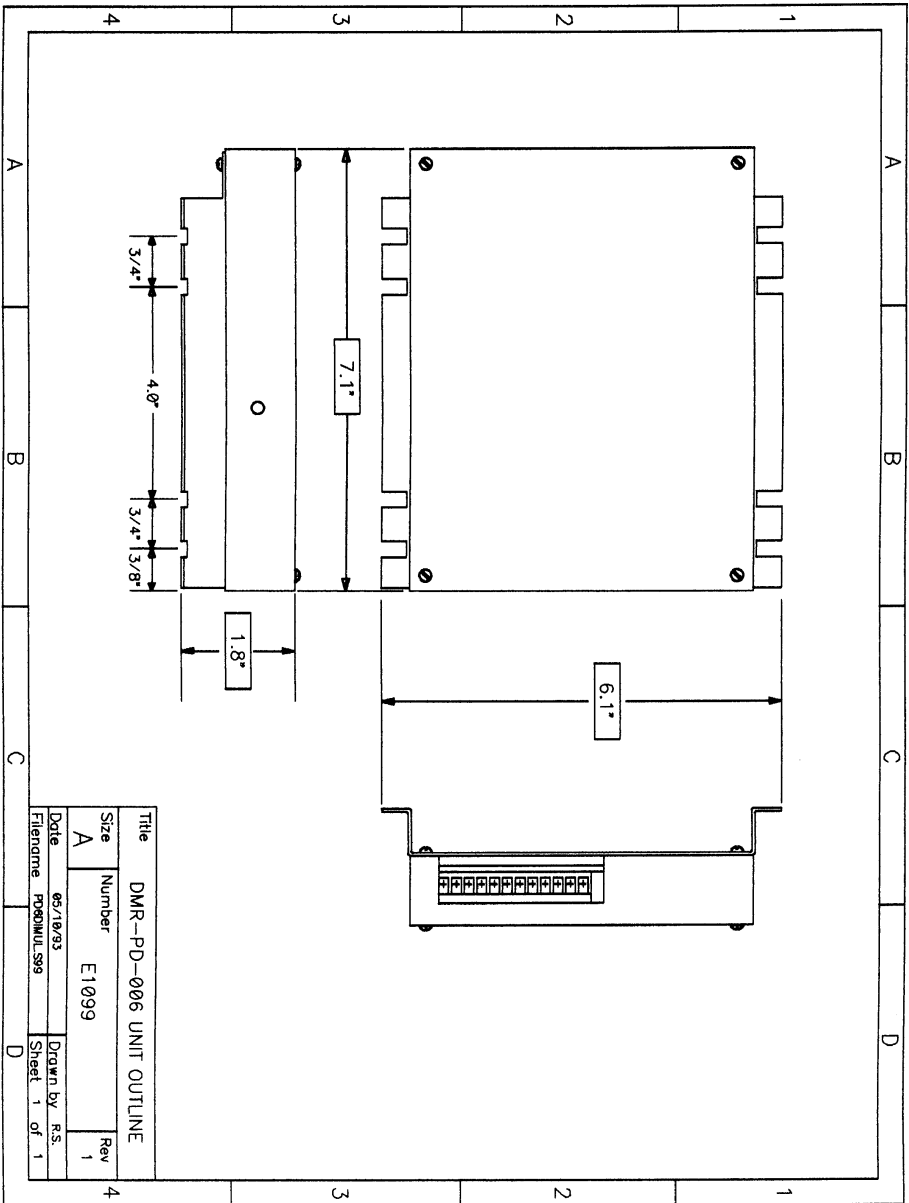


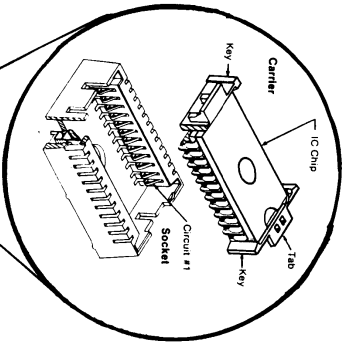
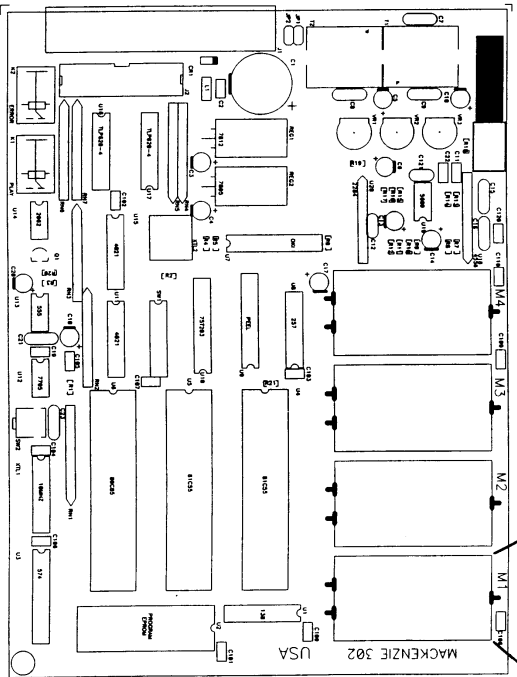
10. AUX CONNECTOR WIRING U1022 SINGLE MESSAGE





Title		DMR-PD-006 AUX. CONN. DETAILS	
Size	Number	Rev	
A	E1101		
Date	63/26/92	Drawn by	R.S.
Filename	PD04UWCS99	Sheet	1 of 1





- TYPICAL FOR M1, M2, M3, M4

NOTE: INSERT '1 OF 'X' INTO M1
 INSERT '2 OF 'X' INTO M2
 INSERT '3 OF 'X' INTO M3
 INSERT '4 OF 'X' INTO M4

Title	DMR-PD-006 EPROM INSERTION		
Size	Number	Rev	
B	E1113		
Date	87/13/92	Drawn by	RS
Filename	E1002EPM.S01	Sheet	1 of 1

**Warranty & Registration Card for the
DMR-PD-006**

Date: _____ Serial No.: _____

Purchaser: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Purchased From: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Return warranty card to Mackenzie Laboratories, Inc.
1163 Nicole Court
Glendora, CA 91740 USA

-or- Email information to registration@macklabs.com

Notes:

Place
Stamp
Here

Return Address

Mackenzie Laboratories, Inc.
1163 Nicole Court
Glendora, CA 91740 USA

MACKENZIE PRODUCT LINES

Message On Hold & Storecasting - Mackenzie's full line of digital Message-On-Hold systems, turn your telephone into a powerful marketing tool. The DYNAVOX series offers maintenance free digital playback with tape, modem or satellite download. Several varieties are available with advanced features such as Music-Thru, individual message enable/disable, message sequencing and night answer.

Digital Message Repeaters - Mackenzie's line of Digital Message repeaters are the ideal audio and video solutions for Information, Amusement, Entertainment, Museum and Exhibit applications. Self contained solid state systems offer unparalleled reliability. A variety of channel, connection, bandwidth and memory configurations are available.

Page Stacker / Feedback Eliminator - Mackenzie's FE series of Digital Page Stacker/Repeater and Feedback Eliminators offer advanced features for the most difficult paging and intercom applications. A unique design makes feedback virtually impossible by recording then repeating pages which opens the loop between the input microphone and speakers. Various models are available to support simple repetition, multiple page stacking and multiple input channels.

Transportation - Mackenzie is making a difference in transit applications with innovative solutions for ADA compliance and Passenger Information Systems. These products address a variety of audio and text messaging requirements and support both in-vehicle and wayside installations.