INSTALLATION MANUAL AND OPERATING INSTRUCTIONS

DMA 2015B - 15 Watt RMS
DMA 2030B - 30 Watt RMS
DMA 2060B - 60 Watt RMS
DMA 2120B - 120 Watt RMS
DMA2260B - 260 Watt RMS

IMPORTANT NOTE: THIS OPERATING MANUAL IS PROVIDED AS AN INSTALLATION AND AS AN OPERATING AID. PASO SOUND PRODUCTS, INC. DOES NOT ASSUME ANY RESPONSIBILITY AS TO ITS ACCURACY AND SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING FROM THE INSTALLATION, USE OR INABILITY TO USE THIS PRODUCT.

POWER OUTPUT:
DMA2120B 15 Watt RMS
DMA2060B 30 Watt RMS
DMA2030B 60 Watt RMS
DMA2260B 120 Watt RMS
DMA2260B 260 Watt RMS

FREQUENCY RESPONSE: 20 Hz - 30 kHz ± 3 dB
DISTORTION: 0.01% THD at 1 kHz

INPUTS
INPUT 1 - MIC/TEL with RVC - UNMUTE - ALC
INPUT 2 - MIC/LINE with RVC - UNMUTE - ALC
INPUT 3 - MIC/LINE with RVC - ALC
INPUT 4 - MIC/LINE with RVC - ALC
INPUT 5 - MODULE PORT (for optional Module)
INPUT 6 - Telephone Paging Input (unbalanced)

ALC - Auto Level Control/COMPRESSOR
Note: The ALC/COMPRESSOR operates only on AUX

PHANTOM POWER - Inputs 1, 2, 3, 4 Selectable
INPUT ATTENUATOR - Inputs 1, 2, 3, 4 Independent
REMOTE VOLUME: RVC on Inputs 1, 2, 3, 4
MASTER REMOTE VOLUME: Master Volume Control

HUM & NOISE: Mic -70 db, Aux -75 db
SENSITIVITY & 2 - MIC: 1.5 mV - 250 ohm balanced
TEL - 100 mV - 800 ohm Transformer balanced
TEL IN: 50 K - 50 Mohm unbalanced
LINE - 150 mV - 47 Kohn
MODULE: 1 Volt - 47 Kohn - Front Panel Control
TONE CONTROLS:
Low & Treble ± 12 dB at 100 Hz and 12 kHz

EQ LINK: Preamp Out, Power Amp In with External/External EQ Switch
LINE OUTPUT: Line Out 600 ohm - 1.5 V loaded
MIX BUS: IN/DOUT with Remote Control Defeat Relay
TONE BYPASS: On/Off Switch
UNMUTE Feature: On Inputs 1, 2

MODULE PORT: Accepts Standard Module
INTERNAL EQ SOCKET ACCEPTS:
PMEM16B Equalizer Card for BOSE® Model 16
PMEM32B Equalizer Card for BOSE® Model 32

INTERNAL UTILITY SOCKET ACCEPTS: AC1B/DMS Chime Card

AUTO VDX RELAY: NO/NC Contacts, VDX Activated by V1 and /or V2 - Contacts Rating 30 VDC - 7A
AUXILIARY POWER SUPPLY: 24 VDC - 500 mA regulated

CONTROLS:
Front Panel: Inputs 1 - 4 Volume, Bass, Treble, Module Volume

Rear Panel: Inputs 1 - 4 Attenuator, VDX1 & VDX2 Sensitivity - M1/MUTE Delay ZONE 1: MOH and Zone 1 Level Control. ZONE 2: Output Level Control

CAT 5 CABLE SOCKET: For PASO Multi Source Inputs Controller Model PRMS4

SPECIFICATIONS

POWER & Muting:
VDX BUS: 1: On all Inputs via Dip Switch
VDX BUS: 2: On all Inputs via Dip Switch
MUTE BUS: 1: On all Inputs via Dip Switch
MUTE BUS: 2: On all Inputs via Dip Switch
VDX 1 and 2: Independent Adjustable Sensitivity Controls
MUTE 2 DELAY: Adjustable 0-60 Sec. (rear panel)
DIRECTION: Mute 1 and Mute 2

ZONE 1:
MUSIC ON: HOLD OUT: 800 Ohm Transistor Balanced
with Level Control
21 Power Output: 3 Watt, 8 Ohm with Level Control
21 Input Source Selectors: AUX 1, 2, 3 and Module
ZONE 2:
22 Power Output: 3 Watt, 8 Ohm, 70 V with Control
22 Input Source Selectors: AUX 1, 2, 3 and Module

SPEAKER OUTPUTS:

MODULE:
DMA2015B 15 Watt
DMA2030B 30 Watt
DMA2060B 60 Watt
DMA2120B 120 Watt

OUTPUT IMPENDANCE: 8 ohm, 25 and 70 Volt line

MODEL
DMA2260B 260 Watts
70 Volt line Output Only

OUTPUTS RCA JACK
PRE OUT 47 Kohn
LINE OUT 800 Ohm
TERMINATIONS: Phoenix Connectors, RCA Jacks
PROGRAMMING: By Dip Switches on Rear Panel
RACK MOUNTING: Optional 19" Rack Mounting Kit

Model 27/3500

INTERNAL COOLING FAN: Variable Speed, Thermally Controlled On MODELS: DMA2060B

PROTECTION: Power Surge, Overload and Thermal Protection

POWER REQUIREMENT: 117 Volt, 50-60 Hz
POWER CONSUMPTION AC: DMA2015B = 570 VA
DMA2030B = 900 VA
DMA2060B = 1200 VA
DMA2120B = 850 VA
DMA2260B = 330 VA

AC ACCESSORY OUTLET: 117 v - 500 W Max. Unswitched
DIMENSIONS: 10.75" W, 11" D, 4" H. with feet. 3.5" less feet (276x280X102 mm) (88 mm)

NET WEIGHT:
DMA2015B = 10 lbs (4.5 Kg)
DMA2030B = 12 lbs (5.5 Kg)
DMA2060B = 13 lbs (6.0 Kg)
DMA2120B = 15 lbs (6.9 Kg)
DMA2260B = 10 lbs (4.5 Kg)

HOUSING FINISH: Black
SAFETY PRECAUTIONS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

RACK MOUNTING INSTRUCTIONS

A) Procure the optional accessory Rack Mount Kit Model 27/3500.
B) Turn amplifier up side down and remove the four rubber feet by unscrewing the four holding screws.
C) Remove the bottom front screws on each side of the amplifier holding the amplifier cover.

IMPORTANT SAFETY INSTRUCTIONS

BEFORE OPERATING THE AMPLIFIER, BE SURE YOU FULLY UNDERSTAND ALL INSTRUCTIONS AND FEATURES OF THE UNIT.

1) Read these instructions carefully.
2) Keep these instructions.
3) Heed all Warnings.
4) Follow all instructions.
5) DO NOT use this apparatus near water.
6) Clean ONLY with a damp cloth.
7) DO NOT block any of the ventilation openings. Install in accordance with the instructions provided.
8) DO NOT install near any heat sources such as radiators, stoves, or other apparatus (including amplifiers) that produce heat.
9) DO NOT mount amplifier into a container or a closed unventilated closet while operating.
10) DO NOT place any object or accessory equipment such as Tuners, Mixers, Cassette Decks, etc. on top of the amplifier. Obstructing or closing the cabinet ventilation openings may cause overheating.
11) DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade and/or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12) Use only the attachments and accessories specified in this manual.
13) If a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14) Unplug this apparatus during lightning storms or when unused for long periods of time.
15) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
16) DO NOT replace fuses unless the power cord is removed from the AC wall outlet.
17) DO NOT install accessories unless the power cord is removed from the AC wall outlet.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.
DMA2015B - DMA2030B - DMA2060B - DMA2120B - DMA2260B
FRONT/REAR PANEL

HIGH PERFORMANCE DIGITAL MUSIC AMPLIFIER

INPUT 1 MIC/TEL
INPUT 2 MIC/AUX 1
INPUT 3 MIC/AUX 2
INPUT 4 MIC/AUX 3
MODULE
BASS
TREBLE
POWER

MOH LEVEL
ZONE 1 LEVEL
ZONE 2 LEVEL

MIC/TEL
MIC/AUX 1
MIC/AUX 2
MIC/AUX 3

VOL TO 0
MUTE 1 OFF
MUTE 2 OFF
MUTE 3 OFF
MUTE 4 OFF

SELECT CAT
INPUT FOR PASO
CONTROLLERS ONLY

PRE OUT
MIX BASS
INPUT 2 (AUX 1)
INPUT 3 (AUX 2)
INPUT 4 (AUX 3)

INPUT 1 MIC/TEL
INPUT 2 MIC/LINE
INPUT 3 MIC/LINE
INPUT 4 MIC/LINE

PORT ACCEPTS
STANDARD MODULE

CAUTION: REMOVE POWER CORD FROM AC OUTLET PRIOR TO INSTALLING MODULE
**REFERENCE MANUAL - INPUT 1 CONFIGURATION**

**INPUT 1 BLOCK DIAGRAM**

**INPUT 1 - WIRED FOR A MICROPHONE**

**INPUT 1 - WIRED FOR BALANCED PHONE PAGING**

**INPUT 1 - WIRED FOR UNBALANCED PHONE PAGING**

**INPUT 1 - VOX V1 ACTIVATED**

**ANY INPUT VOX AND MUTING FUNCTION**

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**Fig 1A**

**Fig 1B**

**Fig 1C**

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**Fig 1A**

**Fig 1B**

**Fig 1C**

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**ANY INPUT VOX AND MUTING FUNCTION**

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**Fig 1A**

**Fig 1B**

**Fig 1C**

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**REFERENCE MANUAL - CD AND SATELLITE MUSIC WITH MIC PRIORITY**

**MIC/LINE AND INPUT 1 DIP SWITCH PROGRAMMING**
- INPUT 1 = SET AS MIC
- INPUT 3 = SET AS LINE (AUX 2)
- INPUT 4 = SET AS LINE (AUX 3)

**VOX 1 SENSITIVITY CONTROL SETTING**
- VOX BUSS V1 IS ACTIVATED
- SWITCH 1V1 IS ON
- VOX 1 SENSITIVITY CONTROL:
  - Turn music on and
  - While music is playing generate a page from the microphone.
  - While talking turn VOX 1 SENS
  - Control slowly clockwise until the music is muted.

**INPUTS 3 - 4 DIP SWITCH PROGRAMMING**
- INPUT 1 IS PRESET AS MICROPHONE
- WHEN ACTIVATED, INPUT 1 (MIC) WILL MUTE INPUT 3 AND 4 (MUSIC)

**INPUT 1 - WIRED FOR A MICROPHONE**
- INPUT 1 = MIC/TEL SWITCH
- VOX BUSS V1 = MIC/TEL SWITCH 1V1 IS ON
- INPUT 1 - LINE
- A = INPUT ATTENUATOR
- MIC = ATTENUATOR
- HOT = MIC/TEL
- G = COM
- NOT = NOT
- RVC = RVC

**INPUT 3 - WIRED AS AUX 2**
- INPUT 3 = AUX 2
- MUTE BUSS M1 IS ACTIVATED
- SWITCH 3M 3 IS ON
- INPUT 3 = AUX 2
- MUTE BUSS M1 IS ACTIVATED
- SWITCH 12 3M 3 IS ON

**INPUT 4 - WIRED AS AUX 3**
- INPUT 4 = AUX 3
- MUTE BUSS M1 IS ACTIVATED
- SWITCH 4M 3 IS ON
- INPUT 4 = AUX 3
- MUTE BUSS M1 IS ACTIVATED
- SWITCH 12 3M 3 IS ON

**Fig 4A**
- INPUT 1 - MIC/TEL SWITCH
- VOX BUSS V1 = MIC/TEL SWITCH 1V1 IS ON
- INPUT 3 - AUX 2
- MUTE BUSS M1 = MIC/TEL SWITCH 12 3M 3 IS ON

**Fig 4B**
- INPUT 1 - MIC/TEL SWITCH
- VOX BUSS V1 = MIC/TEL SWITCH 1V1 IS ON
- INPUT 3 = AUX 2
- MUTE BUSS M1 = MIC/TEL SWITCH 12 3M 3 IS ON

**Fig 4C**
- INPUT 4 - AUX 3
- MUTE BUSS M1 = MIC/TEL SWITCH 12 3M 3 IS ON
- INPUT 4 = AUX 3
- MUTE BUSS M1 = MIC/TEL SWITCH 12 3M 3 IS ON

**RM 004**
The Vox relay trigger selector is set on M1. When the Vox V1 is activated, the Vox relay will switch on.

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The 24 volt regulated utility power supply can power external modules and other accessories.

Wiring the Vox relay when using priority attenuators. Both power and control are provided.

The Chime trigger selector is set on M2. If equipped with the optional Chime card, the Chime will sound when M2 is shorted to ground.

Remote control mix buss operation:
For the Mix Buss feature, please refer to the Room Combining system application diagram in this manual.
Control Switches are normally closed. Amplifiers are disconnected from BUSS Line.

Note: When the Control Switch is in the ON Position the MIX BUSS is defeated and the Amplifier is disconnected from the MIX BUSS Line.

MIX BUSS FUNCTION

The MIX BUSS is utilized to combine the inputs of one Amplifier with the inputs of one or more Amplifiers. The diagram shows how the Amplifiers are connected using the MIX BUSS Line.

The MIX BUSS Defeat Feature is used to connect or disconnect one or more Amplifiers to the MIX BUSS Line through ON/OFF Switches as shown in the Diagram.

When the Switch is ON the MIX BUSS Output is defeated on the individual Amplifier.
REFERENCES MANUAL - 3 ZONE PAGING SYSTEM WITH PRIORITY

INPUTS 1 - 2 WIRING DIAGRAM EXAMPLE

AMPLIFIER ZONE 1
- INPUT 1 (MIC/LINE)
- INPUT 2 (MIC/LINE)

AMPLIFIER ZONE 2
- INPUT 1 (MIC/LINE)
- INPUT 2 (MIC/LINE)

AMPLIFIER ZONE 3
- INPUT 1 (MIC/LINE)
- INPUT 2 (MIC/LINE)

MICROPHONE 1 ZONE CONTROL
- MIC NO. 1
- MIC NO. 2
- MIC NO. 3

MICROPHONE 2 ZONE CONTROL
- MIC NO. 1
- MIC NO. 2
- MIC NO. 3

INPUTS 1 - 2 DIP SWITCH PROGRAMMING

INPUT MIC/LINE SWITCH
- MIC ON
- LINE ON

MICROPHONE NO. 1
- PRIORITY
- MIC NO. 1
- MIC NO. 2
- MIC NO. 3

MICROPHONE NO. 2
- PRIORITY
- MIC NO. 1
- MIC NO. 2
- MIC NO. 3

MICROPHONE NO. 3
- PRIORITY
- MIC NO. 1
- MIC NO. 2
- MIC NO. 3

INPUT 4 MUTE BUSS
- MUTE BUSS M1
- MUTE BUSS M2

UNMUTE FUNCTION
When the UNMUTE Switch is activated, the Microphone Input is turned ON when the UNMUTE Terminal is shorted to Ground (G)
**INPUT 1 DIP SWITCH PROGRAMMING**

**INPUT 1 Wiring Diagram Example**

- **VOX BUSS V1 AND V2 ARE ACTIVATED**
  - **SWITCH 1V1 AND 1V2 ARE ON**

**VOX 1 SENSIVITY CONTROL**

**TURN SATELLITE MUSIC ON AND WHILE MUSIC IS PLAYING GENERATE A PAGE FROM THE MICROPHONE. WHILE TALKING TURN VOX 1 SENS CONTROL SLOWLY CLOCKWISE UNTIL THE SATELLITE MUSIC IS MUTED. IF NECESSARY REPEAT ABOVE WHILE THE JUKEBOX IS PLAYING**

**INPUT 2 - 3 DIP SWITCH PROGRAMMING**

**INPUTS 2 - 3 Wiring Diagram Example**

- **VOX BUSS V1 and V2 ARE ACTIVATED**
  - **SWITCH 1V1 AND 1V2 ARE ON**

**VOX 2 SENSIVITY CONTROL**

**TURN SATELLITE MUSIC ON, TURN JUKEBOX ON AND WHILE PLAYING A TRACK TURN VOX 2 SENS CONTROL SLOWLY CLOCKWISE UNTIL THE SATELLITE MUSIC IS MUTED**

**MUTE 2 DELAY**

The Jukebox Configuration utilizes the VOX/MUTE 2 Buss. In order to prevent the premature JUKEBOXMUSIC SOURCE switching (the Music Source cut-in while the Jukebox is active) a MUTE TIME DELAY TRIMMER is available on the rear panel to increase the MUTE DELAY as necessary. The MUTE DELAY can be adjusted from 3 to 60 Seconds. EXAMPLE: If the Jukebox is playing and the Tuner has a long pause or the long pause while the Jukebox is cycling between CD's it is possible that the Music Source (Background Music) may cut-in causing annoying and unwanted chatter while the Jukebox is still active. To prevent this problem the MUTE TIME DELAY TRIMMER should be adjusted accordingly.
The PRMS4 Controller provides On-Off and Output Level Control for each of the Amplifier inputs either independently or collectively. Each of the illuminated push-button 1-2-3-4 corresponds to the Amplifier inputs 1-2-3-4.

When a push-button is depressed (push to lock) the button is illuminated, the corresponding input is turned on and the Level Control (knob) is activated. More than one pushbutton at the time may be turned on.

The Microphone input may be disconnected from the PRMS4 Switch No. 1 activation by setting the PRMS4 Dip Switch No. 1 to the ON position. In this mode the INPUT 1 link to the PRMS4 via the CATS cable is interrupted allowing the Microphone to be independently operated by the push-to-talk key on the Microphone.
25 VOLT AND 70 VOLT CONSTANT VOLTAGE DISTRIBUTION SYSTEMS - In applications requiring a large number of speakers that are located at a far distance from the amplifier a 25 Volt or a 70 Volt Constant Voltage method is most widely used.

MAIN ADVANTAGES IN USING THE HIGH IMPEDANCE METHOD
1) All speakers are connected in parallel usually on to a single speaker line.
2) The Amplifier Output Voltage is constant over a very wide range of load impedance.
3) The Amplifier Output Voltage remains practically constant if loudspeakers are connected or disconnected from the line.
4) Different acoustic power can be allocated in each area as required by using the power taps on the speaker line transformer.
5) Since the system provides a higher voltage at a lower current, resistive loss in the cable is reduced resulting in a higher efficiency.
6) Calculations of the output power needed and the speaker power requirements are simple and easily accomplished.

INSTALLATION TIPS
1) Determine the amount of speakers required for the installation and their location.
2) Choose the power output needed for each speaker (typically 1.25 Watt for background music applications and 5-10 Watt for paging horns).
3) Add all the speaker taps wattage (see Fig. 03A) and be sure that the total power needed does not exceed the Rated RMS Power Output of the Amplifier.
4) Procure a jacketed, two conductor cable of at least 18 gauge.
5) Carefully route cable starting with the farthest speaker in the system and until all speakers are reached by the cable and terminating at the Amplifier location. The best cable route is determined by the individual application.
6) Connect each speaker in accordance to the power output required by selecting the corresponding Power Tap.
7) Connect the speakers cable to the 25 Volt or 70 Volt and COM output terminals of the Amplifier, turn the system on and balance the various speakers accordingly. The selection of the Constant Voltage (25 Volt or 70 Volt) is determined by the speakers used. All speakers must operate at the same constant voltage and cannot be mixed.

LINE ATTENUATORS
In Installation requiring that one or a group of speakers have an independent level control a Line Attenuator can be utilized. The Fig. 03B shows the use of a PASO model VC20 - 20 Watt Attenuator used to control two speakers simultaneously. The wire colors pertain to the VC20, if other types are used follow the directions supplied with the unit. By turning the stepped switch of the VC20 the level of speakers SPK 1 and SPK 2 can be adjusted, up or down, from 0 (no output) to the maximum output determined by the tap utilized on the speakers (in this example 2.5 Watt max.). Speakers SPK 3 and SPK 4 are not affected.

NOTE: The total power required for all the speaker or speakers to be controlled should not exceed the Power Handling rating of the Attenuator. Example: the maximum load for the VC20 is 20 Watt.