Manuals+ — User Manuals Simplified.

**api ASM164
Rackmount
Analog Summing
Mixer I**

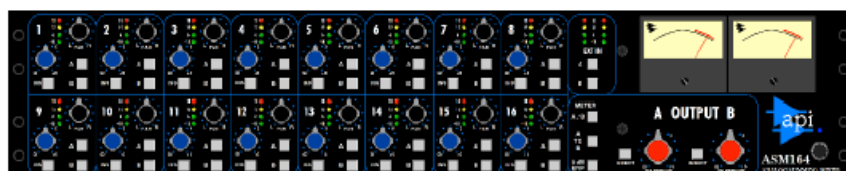# api ASM164 Rackmount Analog Summing Mixer Instruction Manual

api ASM164 Rackmount Analog Summing Mixer

About this Manual

This manual covers the user operation of the API ASM164 Analog Summing Mixer.
Most sections are useful to all users and itÕs recommended that the manual be read thor-oughly before purchase and delivery. Experienced engineers may get up and running quick-ly, but if you are new to API equipment, itÕs recommended that you read the entire manual at least once and keep it handy while recording, editing, and mixing.

Legend:

- UPPER-CASE BOLD = SWITCHES, BUTTONS, POTENTIOMETERS
- UPPER-CASE = REAR PANEL CONNECTIONS
- Manual Revision History: YYYY-MM-DD format
- Original: 2024-07-17

Important Safety Instructions

1. Please read these instructions
2. Keep this information in a safe place
3. Do not use this device near water
4. Clean only with a dry cloth
5. Do not block any ventilation openings
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices that produce heat
7. Do not defeat the safety purpose of the polarized or grounding-type AC plug
8. Protect the AC power cord from being walked on or pinched
9. . Use only attachments/accessories specified by the manufacturer
10. Unplug this device during lightning storms or when unused for long periods of time
11. Refer all service to qualified personnel

ATTENTION: Exposure to extremely high noise levels may cause permanent hearing loss or damage. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise (this may include music) for a period of time. Be safe.
WARNING Ð To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
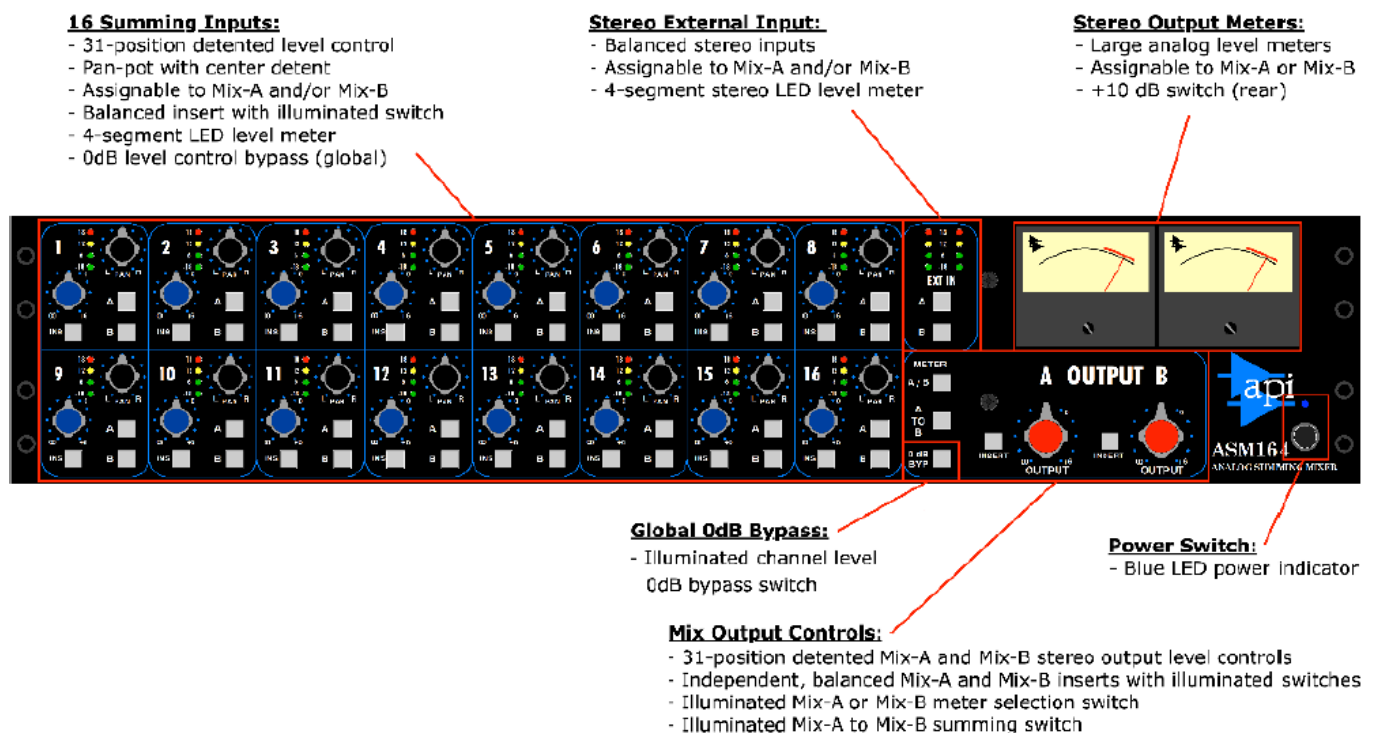
Overview and Features

Building on API's rich heritage of extremely high-quality recording consoles, we introduce the "ASM164," a 16-channel analog summing mixer that is intended to provide API summing performance in a smaller rackmount format. This is conceived from many user requests when looking at the API console lineup, specifically the summing side of the API The BOX audio production console. The result is a feature-rich rackmount mixer designed for professional project studios, home studios, and production facilities of all kinds. Most importantly, the "ASM164" provides the legendary "discrete" API sound in an efficient, cost-effective package.

Features of the ASM164

- Sixteen (16) summing inputs, each with:
- Balanced, line-level, low-impedance DB-25 connector

- API 2510 input opamp (same as ÒThe BOXÓ)

- Balanced insert send and return with illuminated switch

- 4-segment LED level meter

- Assignable to Mix-A and/or Mix-B stereo program buses

- Continuously variable pan-pot with center detent

- 31-step detented level control

- Global 0dB channel level control bypass

- Two (2) stereo program buses (Mix-A and Mix-B), each with:

- Independent balanced insert send and return with illuminated switches

- Independent 31-step detented level controls

- Balanced, line-level, low-impedance stereo XLR outputs

- Balanced stereo external inputs, assignable to Mix-A and/or Mix-B stereo buses

- Mix-A to Mix-B summing for flexible routing and parallel processing

- API 2520 opamp and transformer mix output circuits

- Analog stereo output level VU meters with A/B mix selection and a +10dB switch

- Comprehensive rear panel connections with balanced inputs and outputs

- External power supply

- Legendary discrete API sound

Front Panel Controls

16 Summing Inputs:
- 31-position detented level control
- Pan-pot with center detent
- Assignable to Mix-A and/or Mix-B
- Balanced insert with illuminated switch
- 4-segment LED level meter
- 0dB level control bypass (global)

Stereo External Input:
- Balanced stereo inputs
- Assignable to Mix-A and/or Mix-B
- 4-segment stereo LED level meter

Stereo Output Meters:
- Large analog level meters
- Assignable to Mix-A or Mix-B
- +10 dB switch (rear)

Global 0dB Bypass:
- Illuminated channel level
  0dB bypass switch

Power Switch:
- Blue LED power indicator

Mix Output Controls:
- 31-position detented Mix-A and Mix-B stereo output level controls
- Independent, balanced Mix-A and Mix-B inserts with illuminated switches
- Illuminated Mix-A or Mix-B meter selection switch
- Illuminated Mix-A to Mix-B summing switch

Input Channels 1-16
The ASM164 is equipped with 16 summing inputs, each with the following features:

- Balanced, line-level, low-impedance input

- Balanced insert with illuminated switch
- 31-position detented level control
- 0dB level control bypass (globally assigned)
- Pan-pot with center detent
- 4-segment LED level meter
- Illuminated Mix-A and Mix-B assignment switches
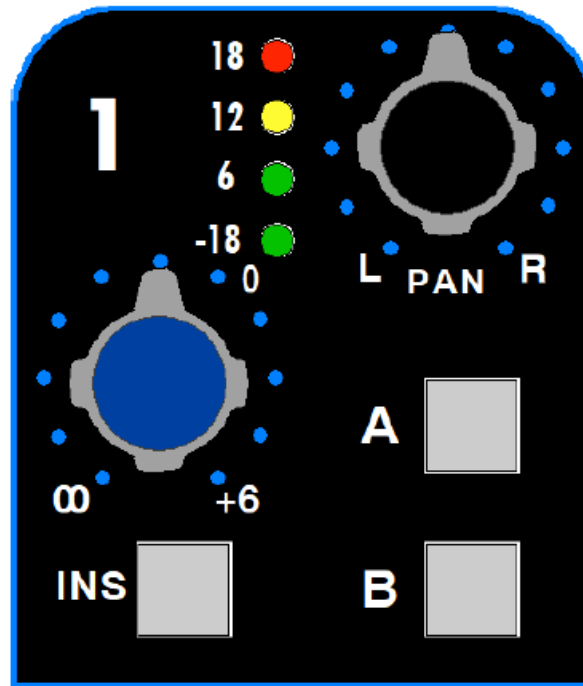
Input channels 1-16 are designed to accept any external balanced, line-level, low-impedance analog audio signal from the rear panel DB25 connectors and assign them to the Mix-A and/or Mix-B stereo buses. A balanced, line-level, low-impedance analog audio insert is provided via the INS switch and rear panel connectors.

Input Channel Signal Flow
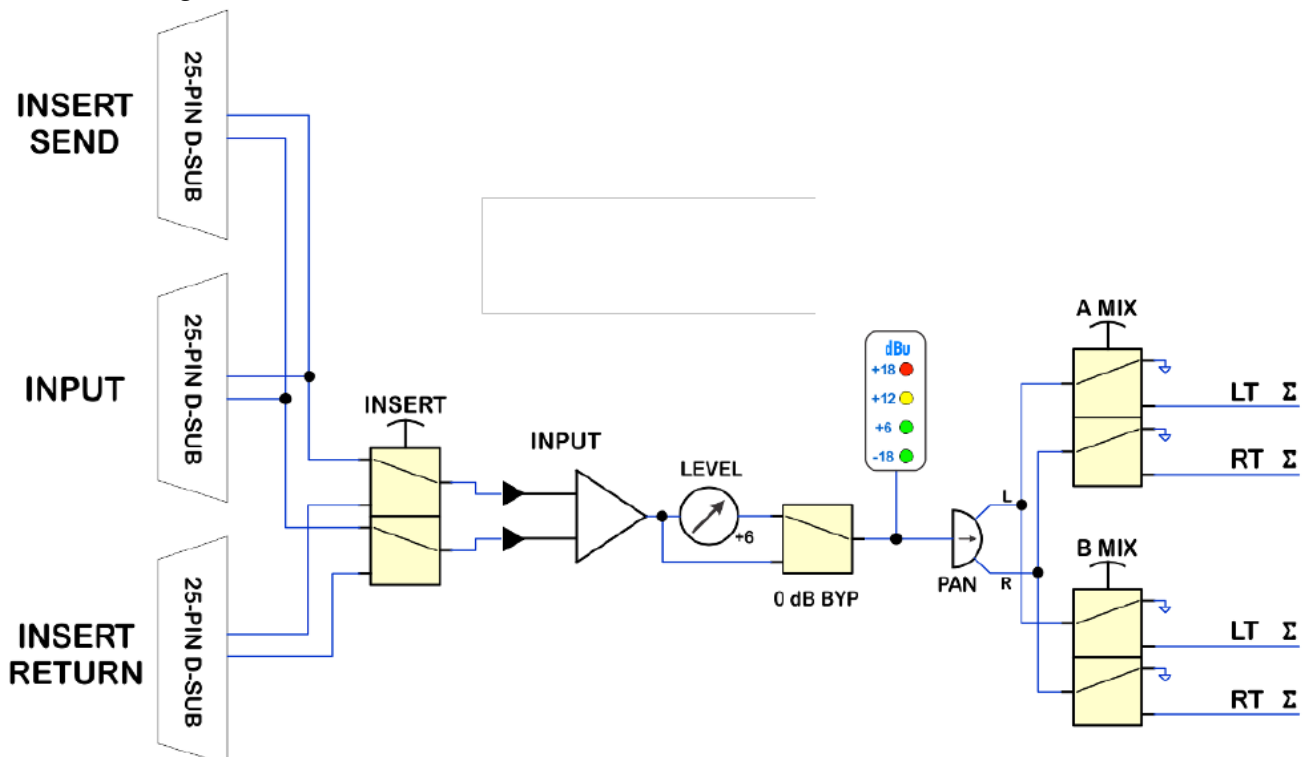
Input Channel Controls

INS (Insert): Routes the channel insert return into the channel signal path when engaged

- Balanced, line-level, low-impedance
- 25-pin, D-sub rear panel connector
- Illuminates in green when engaged

Level Control: Controls the output level of the channel to the assigned mix buses 31-step detented potentiometer for accurate recall

- -∞dB to +6dB range
- 0dB is unity gain
- Bypassed and level set to unity gain when the 0dB BYP switch is engaged
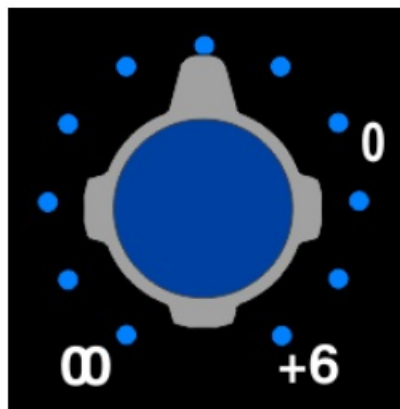
dB BYP (Bypass): Bypasses the channel level control and sets the channel levels to unity gain on all input channels when engaged

- Located in the A-B bus control section
- Illuminates in white when engaged

Level Meter: Indicates the level of the channel output

- 4-segment LED level meter
- -18dB, +6dB, +12dB, and +18dB indications
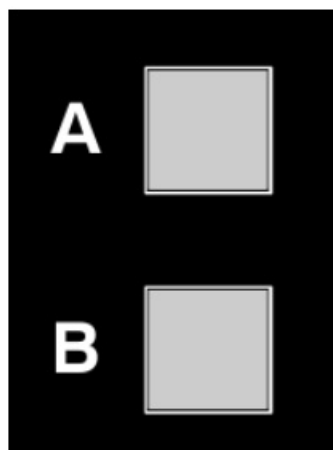
Pan-pot: Controls the left-right stereo image contribution from the channel to the assigned mix buses

- Center detented potentiometer

Mix-A and Mix-B Bus Assignment: Assigns the channel to the Mix-A and/or Mix-B stereo program buses when engaged
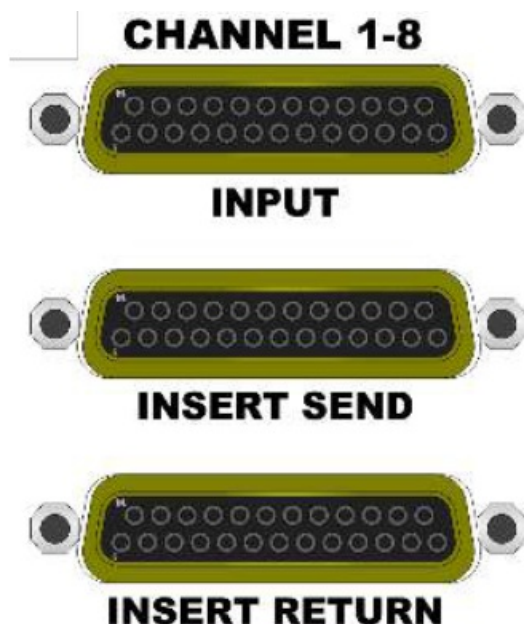
- Assignable to none, Mix-A, Mix-B, or both stereo program buses
- Illuminates in white when engaged

Input Channel Rear Panel Connections 1-16

All 16 input channel connections are balanced, line-level, low-impedance signals on DB25 connectors, using the standard 8-channel pin-out.
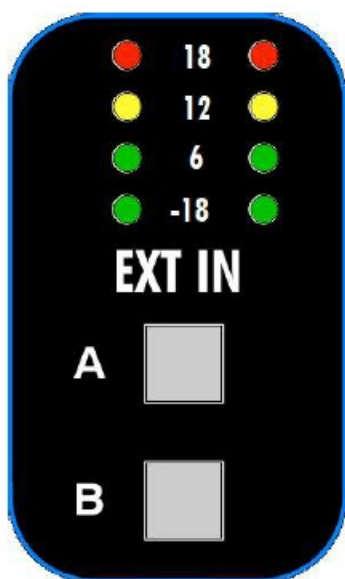NOTE: Only the connections for channels 1 thru 8 are shown below.

- Channel Input: Channel input connections 1-16

- Channel Insert Send: Channel insert send connections 1-16 The channel input signal is always present at the insert send connection

- Channel Insert Return: Channel insert return connections 1-16 Audio present at this connector is inserted into channel signal flow when the channel INS switch is engaged

NOTE: Because 25-pin Dsub connectors are used for all I/O, there is no possibility for normalling the INSERT RETURN. So, if a channel INS switch is engaged and no signal connected to the INSERT RETURN, the audio on that channel will be interrupted.
NOTE: Because 25-pin Dsub connectors are used, connection to a professional patch bay is recommended. Alternately, 25-pin Dsub fantails with standard 8-channel pin-out and XLR or ¼Ó TRS connectors can be used.
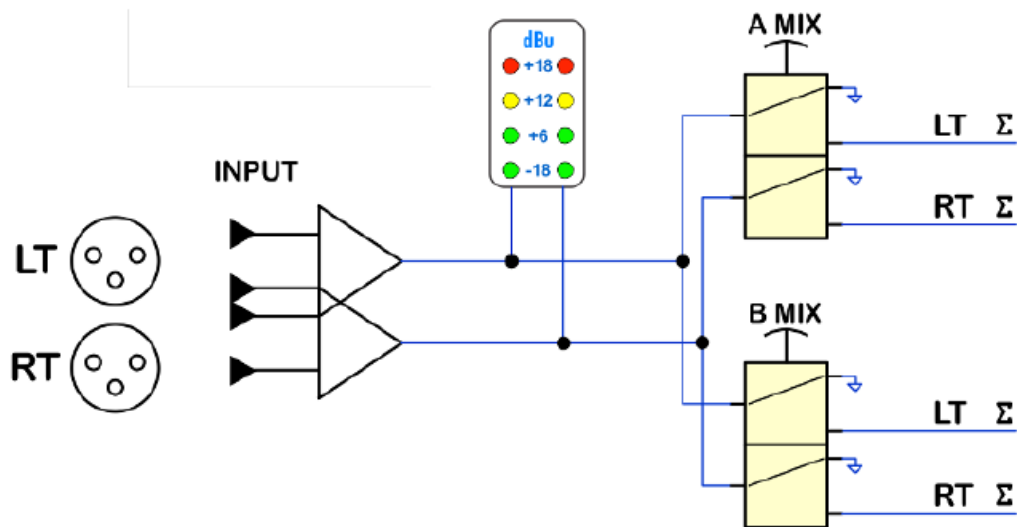
External Input (EXT IN)

The ASM164 is equipped with a stereo External Input (EXT IN) with the following features:

- Balanced, line-level, low-impedance stereo unity gain input
- Stereo 4-segment LED level meter
- Illuminated Mix-A and Mix-B bus assignment switches

The External Input (EXT IN) is designed to accept any external balanced, line-level, low-impedance stereo analog audio signal from the rear panel XLR connectors and assign them to the Mix-A and/or Mix-B stereo buses at unity gain (0dB).
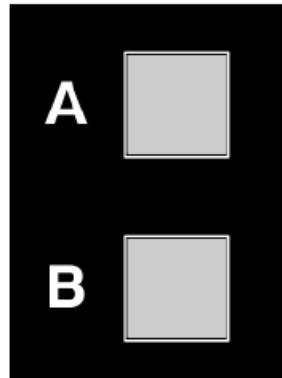
External Input (EXT IN) Signal Flow

External Input (EXT IN) Controls

Stereo Level Meter: Indicates the level of the signals arriving at the EXTERNAL INPUT LT and RT connectors

- 4-segment LED level meter
- -18dB, +6dB, +12dB, and +18dB indications

A and B Bus Assignment: Assigns the external input (EXT IN) to the Mix-A and/or Mix-B stereo program buses when engaged
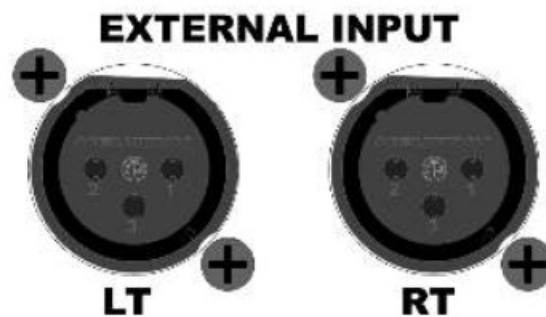
- Assignable to none, Mix-A, Mix-B, or both stereo program buses
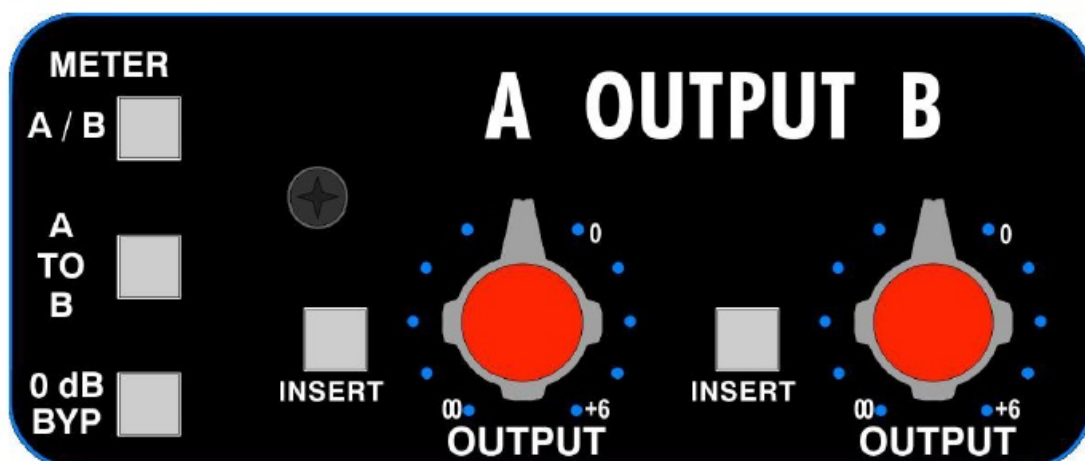- Illuminates in white when engaged

External Input (EXT IN) Rear Panel Connections

EXTERNAL INPUT LT and RT (EXT IN): External input stereo connections

- Balanced, line-level, low-impedance
- 3-pin, female XLR connectors (1=G, 2=+, 3=-)

Mix-A and Mix-B Outputs

As previously noted, the ASM164 is equipped with two (2) stereo summing buses, Mix-A and Mix-B, with the following features:

- Independent balanced, line-level, low-impedance stereo outputs, MIX-A and MIX-B
- Independent, balanced, line-level, low-impedance stereo inserts on each bus
- Assignable stereo output level VU meters (Mix-A or Mix-B)
- Mix-A to Mix-B bus summing
- XLR MIX-A and MIX-B connectors and ¼Ó TRS bus insert connectors
- The Mix-A and Mix-B stereo program buses are designed to sum the mixed left and right stereo audio signals from the 16 input channels and the unity gain external input (EXT IN) as independently assigned. A stereo insert can be routed and engaged individually before each mix output for external processing (EQ, compression, etc.) and other routing possibilities.
- A key feature of the ASM164 is Mix-A output to Mix-B bus summing capability (A TO B). This provides flexible mix routing options including stereo parallel processing. When the A TO B switch is engaged, the output of Mix-A is summed into the Mix-B inputs, along with other Mix-B assignments from channels and possibly the external input (EXT IN). Please refer to the following sections for detailed information regarding this feature.
- The output of either Mix-A or Mix-B can be routed to the analog output level VU meters using the Meter A/B switch.
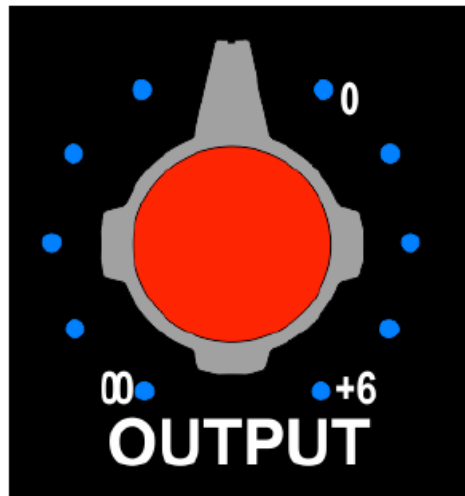
Mix-A and Mix-B Signal Flow
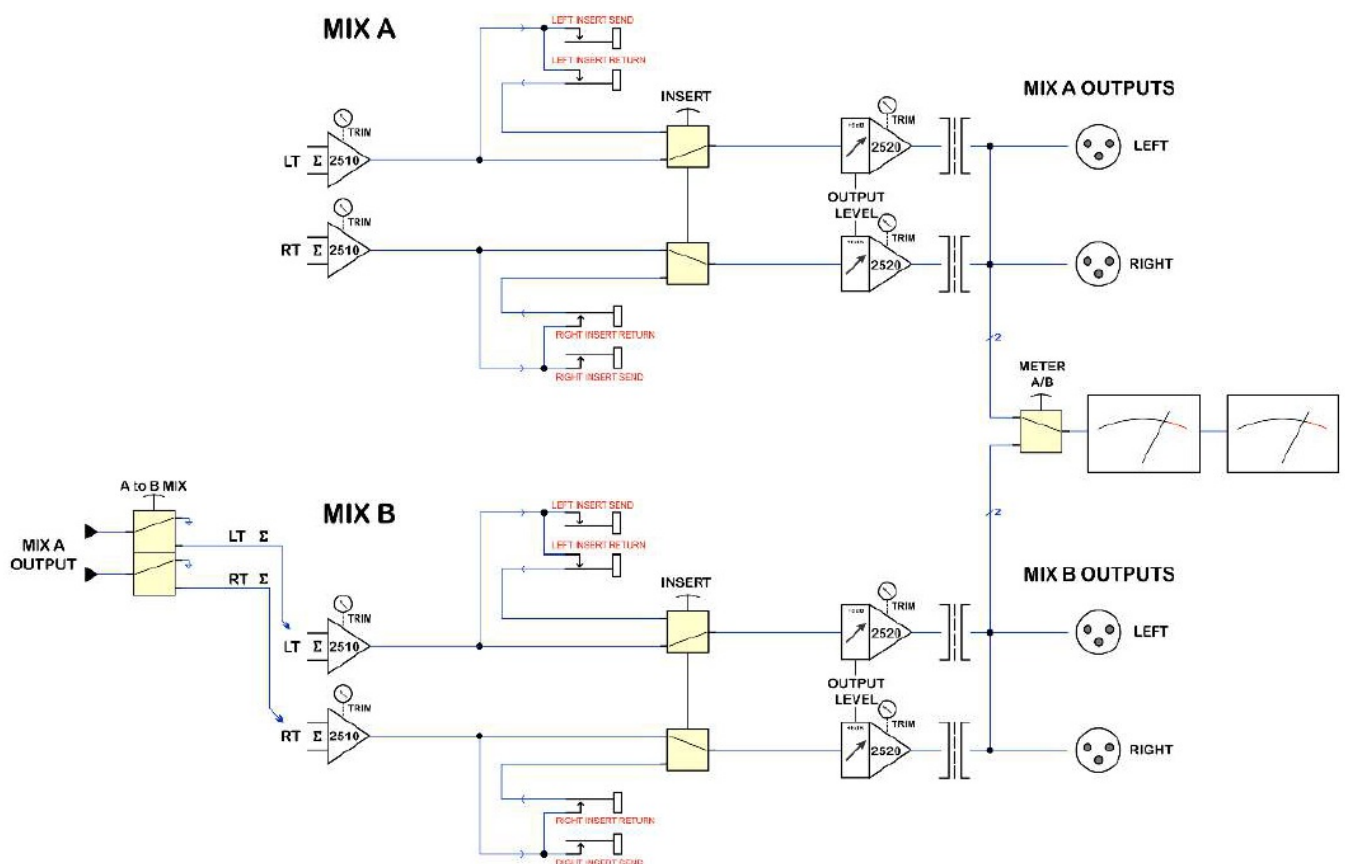
Mix-A and Mix-B Controls

Mix Output Level Control (Mix-A and Mix-B): Controls the associated Mix-A and Mix-B output levels

- 31-step detented potentiometer for accurate recall
- -∞dB to +6dB range
- 0dB is unity gain
- Feeds stereo output VU meters as assigned
- Feeds the associated LT and RT MIX-A and MIX-B
- XLR output connectors on the rear panel

INSERT (Mix-A and Mix-B): Routes the associated stereo mix bus insert return (A or B) into the Mix-A and Mix-B signal flow when engaged

- Post bus summing, pre level control signal flow location
- Balanced, line-level, low-impedance
- ¼Ó TRS rear panel connectors
- Illuminates in green when engaged

A TO B: Routes the output of Mix-A to the input of Mix-B when engaged, along with other sources assigned to Mix-B (channelsand/or external inputs)
Illuminates in white when engaged
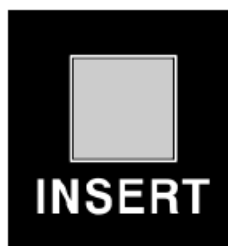
Mix Output VU Meters
The ASM164 is equipped with high-quality VU level meters that can be selected to indicate the output levels of Mix-A or Mix-B.
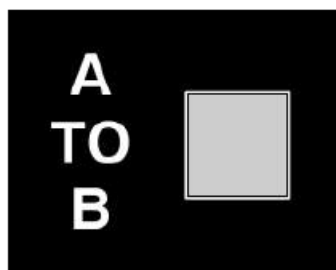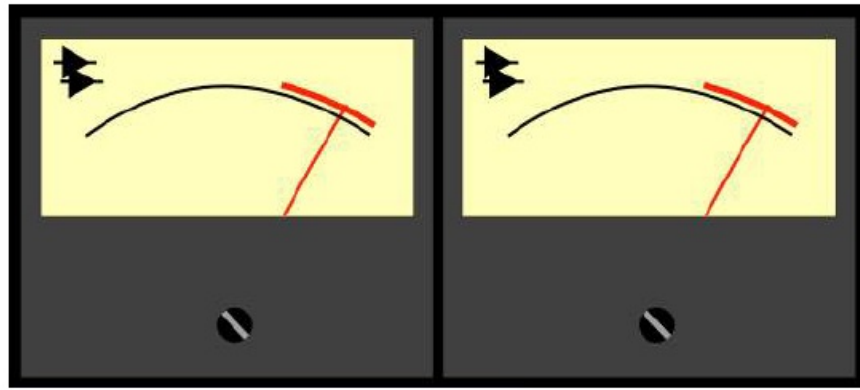
- METER A/B: Routes the output of Mix-A or Mix-B to the analog level meters when engaged
- Only one mix can be routed to the VU meters at a time
- Illuminates in white when engaged
- METER +10: Shifts the level to the meter where 0VU equals +10VU when engaged
- Located on the rear panel
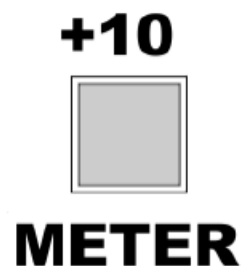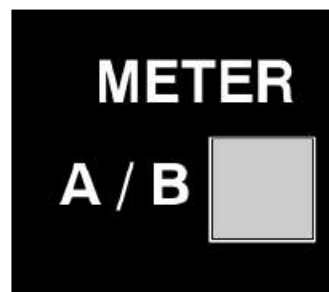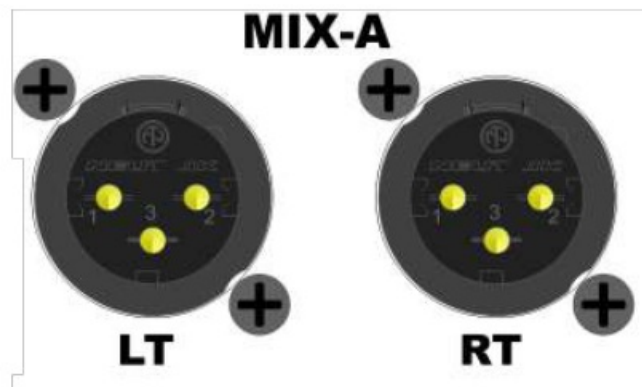

Mix-A and Mix-B Rear Panel Connections
The Mix-A and Mix-B insert connections are balanced, line-level, low-impedance signals on ¼Ó TRS connectors.
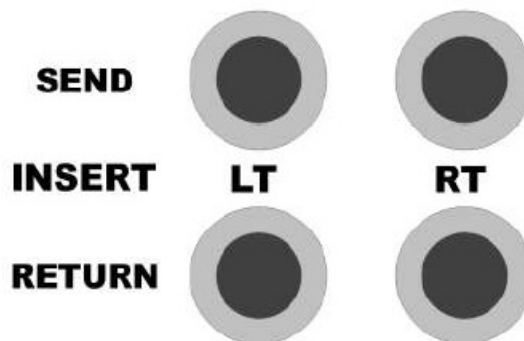
Mix LT – RT INSERT SEND: Stereo insert send connections for Mix-A and Mix-B

- The summed mix signal is always present at the insert send connections

- Mix LT – RT INSERT RETURN: Stereo insert return connections for Mix-A and Mix-B
- Audio present at these connectors is inserted into mix signal flow when the associated mix INSERT switch is engaged

MIX-A and MIX-B LT and RT: Left and Right Mix-A and Mix-B stereo output connections

- Balanced, line-level, low-impedance
- 3-pin, female XLR connectors (1=G, 2=+, 3=-)

Rear Panel Connections

The ASM164 provides a comprehensive set of rear panel connections.
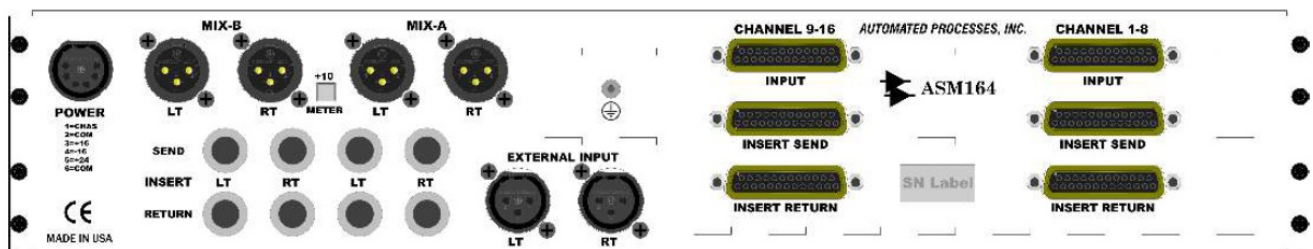
Power Connector
The ASM164 is powered by an external power supply unit that is included with your mixer.
POWER: 6-pin female DIN external power connector
Threaded, locking connector
IMPORTANT NOTE: Connect only the API power supply that came with this unit or API provided replacement.
Failure to comply may result in damage to the unit and will void the factory warranty.

POWER
1=CHAS
2=COM
3=+16
4=-16
5=+24
6=COM

Channel Audio Connections
All 16 input channel connections are balanced, line-level, low-impedance signals on DB25 connectors, using the standard 8-channel pin-out. Only the connections for channels 1 thru 8 are shown below.

CHANNEL 1-8

INPUT

INSERT SEND

INSERT RETURN

- Channel Input: Channel input connections 1-16
- Channel Insert Send: Channel insert send connections 1-16 The channel input signal is always present at the insert   send connection
- Channel Insert Return: Channel insert return connections 1-16 Audio present at this connector is inserted into channel   signal flow when the channel INS switch is engaged
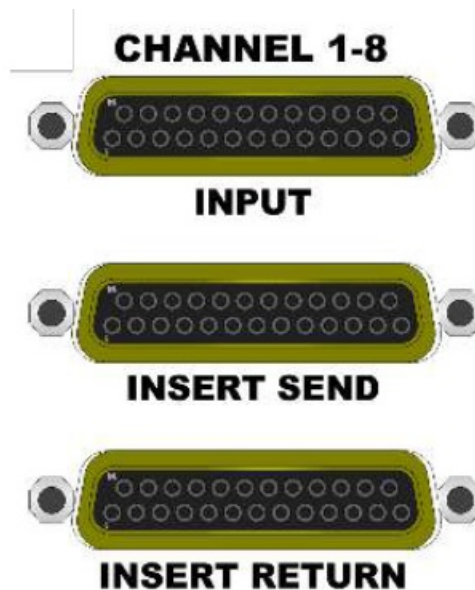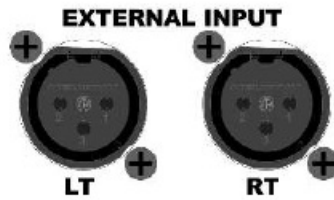 NOTE: Because 25-pin Dsub connectors are used for all
- I/O, there is no possibility for normalling the INSERT RETURN.So, if a channel INS switch is engaged and no signal connected to the INSERT RETURN, the audio on that channel will be interrupted.
- NOTE: Because 25-pin Dsub connectors are used, connection to a professional patch bay is recommended. Alternately, 25-pin Dsub fantails with standard 8-channel pin-out and XLR or ¼Ó TRS connectors can be used.

External Input (EXT IN) Rear Panel Connections
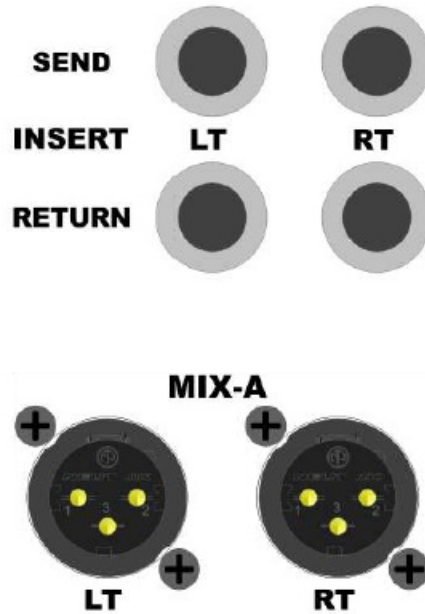EXTERNAL INPUT LT and RT (EXT IN): External input stereo connections

Balanced, line-level, low-impedance
3-pin, female XLR connectors (1=G, 2=+, 3

EXTERNAL INPUT

LT   RT

Mix-A and Mix-B Rear Panel Connections
The Mix-A and Mix-B insert connections are balanced, line-level, low-impedance signals on RS connecto

SEND

INSERT   LT   RT

RETURN

MIX-A

LT   RT

Mix LT – RT INSERT SEND: Stereo insert send connections for Mix-A and Mix-B

- The summed mix signal is always present at the insert send connections
- Mix LT – RT INSERT RETURN: Stereo insert return connections for Mix-A and Mix-B
- Audio present at these connectors is inserteB into mix signal flow when the associated mix INSERT switch is engaged

MIX-A and MIX-B LT and RT: Left and Right Mix-A and Mix-B stereo output connections
Balanced, line-level, low-impedance
3-pin, female XLR connectors (1=G, 2=+, 3=-)

Application Guide
If you've read this far, you can tell that the API ASM164 is a well-conceived, professional line-level audio mixer that can provide valuable mixing capabilities in almost any workflow where high-quality precision mixing is needed. It's dual stereo buses, inserts, and blending capabilites offer flexible functionalities that make creative processes easy and innovative signal routing possible. While it would be impossible to cover every production scenerio, a couple basic applications are provided in this section.

Getting Started
(Parallel Processed Drum Stem) This scenerio is basic set-up and mixing of a drum stem for a heavy rock song to stereo with parallel processing.

1. While adhering to the use and safety precautions listed in this manual, set-up your ASM164 by connecting the power supply.

2. Connect the multitrack source with the drum tracks to the channel audio inputs: All audio inputs require balanced, line-level, low-impedance signals via the CHANNEL 1-8 and 9-16 INPUT 25-pin, D-sub connectors.
   NOTE: The ASM164 audio inputs are designed to accept balances line-level signals only. Direct output from most microphones, musical instruments (unbalanced, high-impedance), and consumer equipment is not appropriate unless proper preamplication and/or signal conditioning is applied before connection to the ASM164.
   NOTE: Because 25-pin Dsub connectors are used, connection to a professional patch bay is recommended. Alternatelty, 25-pin Dsub fantails with standard 8-channel pin-out and XLR or ¼" TRS connectors can be used.
3. Connect the MIX-B outputs to a pair of console channels using 3-pin XLR cables and route to the rest of the mix as needed.
4. Connect any needed external line-level signal processors to the channel inserts as needed (perhaps API 527 compressors and 550b EQs).
5. Connect an external, line-level signal processors such as a stereo compressor (perhaps an API 529) and a stereo EQ (such as two API 550As) to the Mix-A insert send and return.
6. Connect an external, line-level signal processors such as a stereo compressor (perhaps an API 2500+) and a stereo EQ (such as a API 5500) to the Mix-B insert send and return.
7. Assign input channels to Mix-A and Mix-B.
8. Set the Mix-B OUTPUT level control to 0dB for starters. This should leave adequate headroom for the sum of the channel contributions. Use the OUTPUT controls to trim you mix levels as needed as work progresses.
9. Set the Mix-A OUTPUT level control to fully counterclockwise (-∞dB) for now.
10. Do not engage either mix INSERT switch for now.
11. Create a good sounding drum mix on the Mix-B using the ASM164 channel level controls, pan-pots, inserts and perhaps some effects processing from your console.
    This will be the cleaner, less compressed, less EQÕed, more polite part of the drum stem.
12. Disengage the channel assignments to Mix-B while you work on the Mix-A drum mix.
13. Set the Mix-A OUTPUT level control to 0dB.
14. Engage the A to B switch. This will route the Mix-A OUTPUT to the Mix-B bus inputs.
15. Engage Mix- A INSERT switch.
16. The same processing, panning, and mix that you sent to Mix-B from the channels will also be sent to Mix-A. We will use Mix-A to create a dirtier, grittier, much more heavily processed mix of the drum stem. This will be the ÒattitudeÓ portion of the drum stem.
17. Apply heavy and aggressive processing to Mix-A using the inserted Mix-A stereo processors. This shouldnÕt be pretty as youÕre looking to create some Òedgy colorÓ to an otherwise safe and pretty drum sound. Keep in mind that this will only be blended with the primary drum stem on Mix-B, so it doesnÕt have to sound good by itself, but will add some life to the less processed drum mix.
18. Set the Mix-A OUTPUT level control back to fully counterclockwise (-∞dB) for now.
19. Reengage the channel assignments to Mix-B
20. Play your mix and slowly add Mix-A to Mix-B until the desired balance to clarity and edge is achieved.

Cascading Multiple ASM164 Mixers For More Channels
When 16 channels of mixing isnÕt enough, two or more ASM164 mixers can be ÒcascadedÓ together to create an extremely cost effective, high-quality line-level mixing system of 32, 48, 64 channels, or more.

1. Connect inputs and inserts as described above.

2. Connect the MIX-B LT and RT OUTPUTS of the first ASM164 to the LT and RT EXTERNAL INPUTs on the second ASM164.

3. Assign the external inputs (EXT IN) on the second ASM164 to Mix-A or Mix-B to link the two mixers together to create a 32-channel mixing system.

4. Repeat as many times as need necessitates and budget allows.

5. Connect the MIX-B outputs of the last ASM164 to a pair of console channels, stereo recorder, and/or external monitoring system using 3-pin XLR cables and route as needed.

Appendix

- A1 ASM164 Technical Specifications
- A2 ASM164 Housekeeping
- A3 ASM164 Block Diagrams
- A3.1 Input Channel Block Diagram
- A3.2 External Input Block Diagram
- A3.3 Mix-A and Mix-B Block Diagram
- A4 ASM164 Recall Sheet
- A5 API Limited Warranty and Service Information

A1 ASM164 Technical Specifications

- Input Connectors: Channels: 25-Pin D-Sub (standard pinout)
- External Input: XLR Female
- Output Connections: Mix Outputs: XLR Male, Impedance
- Inserts: ¼Ó Balanced
- Input Impedance: 30K Ohms, Balanced
- MIX Output Impedance: 75 Ohms, Transformer Coupled, Balanced
- Maximum Input Level: +28dBu
- Maximum output Level: +28dBu
- Frequency Response: +/- 0.5 dB from 20Hz to 40KHz
- THD+N: < 0.02% @+4dBu, 1KHz
- Signal to Noise Ratio: -112dBr
- Power Requirement: 30 Watts, External PSU, 951-0365
- Size: 19Ó x 3.5Ó (2U) x 11.25Ó deep
- Size (boxed for shipping) 21Ó x 8Ó x 14.5X
- Actual Weight: 12 lbs. (5.5 Kg)
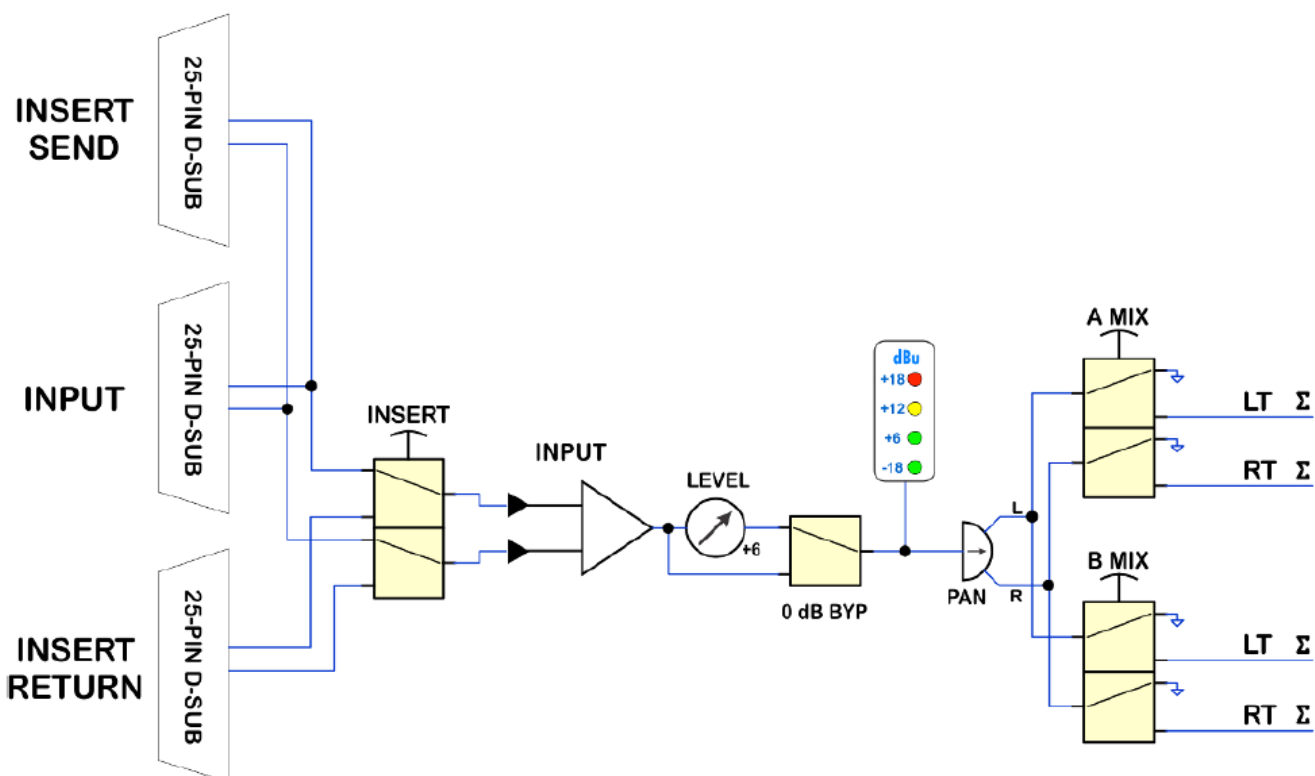- Shipping Weight: 17 lbs. (7.7 Kg)

A2 ASM164 Housekeeping
Make sure you register your ASM164 at: **https://service.apiaudio.com/warranty**
Here is a great place to write down the serial number of your ASM164 and your purchase date, just in case you need that information someday in the future.
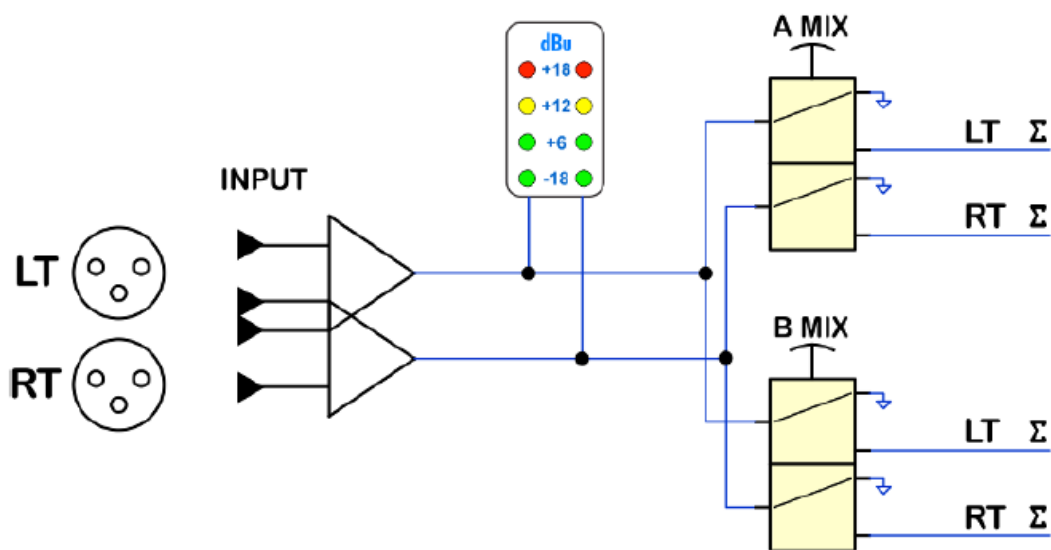ASM164 serial number _____
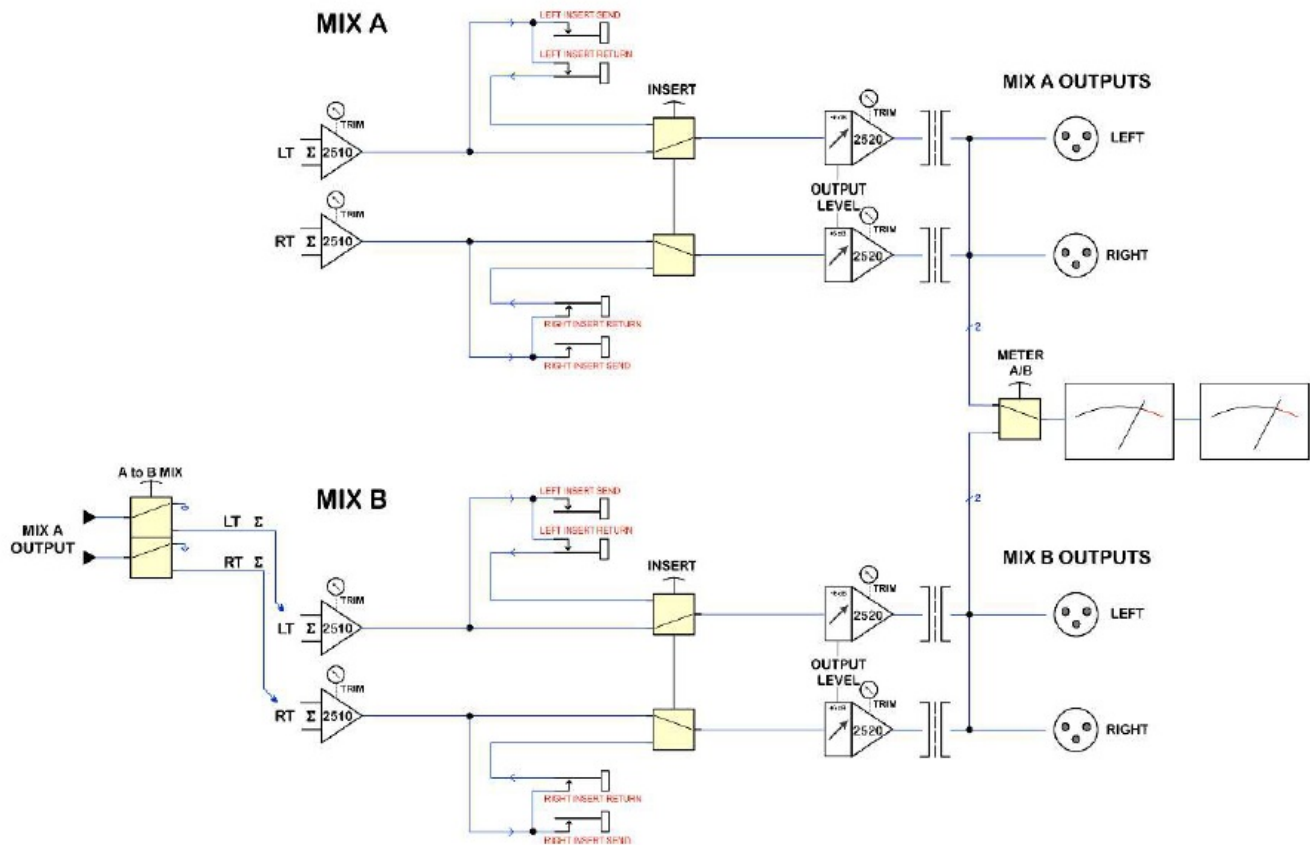Purchase date: _____/_____/_____

ASM1 6 4 Ana lo g Summin g Mi x e r AP I
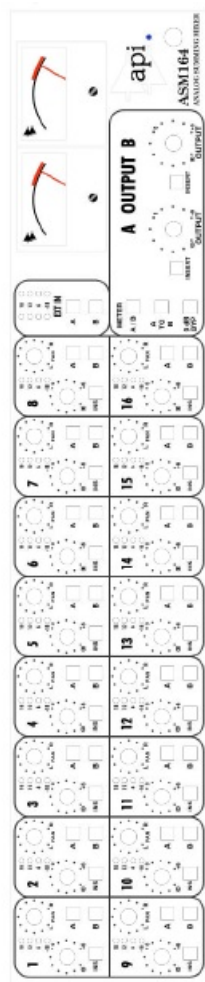
Input Channel Block Diagram

External Input Block Diagram

Mix-A and Mix-B Block Diagram

MIX A

MIX A OUTPUTS

MIX B

MIX B OUTPUTS

MIX A OUTPUT

A to B MIX

A4 ASM164 Recall Sheet

ARTIST: DATE:

ENGINEER: DRAWN BY:

NOTES:

REV -, 7-15-2024

API Limited Warranty and Service Information

- a) Warranty Information: API products carry a one year factory service and five year parts warranty from date of purchase. API (Automated Processes, Incorporated) does not cover claims for damage due to alteration and/or abuse. This warranty is limited to failures during normal use, which are due to defects in material or workmanship. If any defects are found in the materials or workmanship, or if the product fails to function properly during the applicable warranty period, API, at its option, will repair or replace the product.

- PLEASE NOTE: The design or quality of any non-authorized third party service or vendor is beyond the control of API. Therefore, service or modification of any API unit except by an authorized API representative may VOID this warranty.

- API reserves the right to inspect any products that may be the subject of any warranty claims before repair or replacement is carried out. Final determination of warranty coverage lies solely with API.

- This warranty is extended to the original purchaser and to anyone who may subsequently purchase this product within the applicable warranty period. Proof of purchase may be required.

- For questions regarding operation, interfacing or service of your API product, please contact your API dealer from whom you purchased the unit. Many times, your authorized API dealer is the fastest and most cost-effective way to maintain and service your product.

- The below steps are the best way to initiate the repair process or to submit a parts order request:

Repair procedure:

1. Fill out a Return Authorization (RA) form at **service.apiaudio.com**
2. Wait to receive an e-mail from API Audio with an RA#.
3. Use the API original box to package the unit. Write the RA# large and legibly on the box (if the RA# is not clearly visible on the box, the unit may be rejected by our receiving department)
4. Include copy of the RA form with the unit.
5. Ship the product freight prepaid to:

API SERVICE DEPARTMENT
8301 Patuxent Range Road Ð Ste A1 Jessup, MD 20794

Parts Order procedure:

1. ill out online PO form (for parts and parts numbers not listed online please fill out PO form with your name, e-mail, contact phone and shipping address and describe the part you need).
2. Submit online PO form.
3. API will e-mail you back with part numbers and procedure how to order/pay.

- This is your sole warranty. API does not authorize any third party, including any dealer or sales representative, to assume liability on behalf of API or to make any warranty for API.

- THE WARRANTY GIVEN ON THIS PAGE IS THE SOLE WARRANTY GIVEN BY API AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTY GIVEN ON THIS PAGE SHALL BE STRICTLY LIMITED IN DURATION TO FIVE (5) YEARS FROM THE DATE OF THE ORIGINAL PURCHASE

FROM API OR AN AUTHORIZED API DEALER. UPON EXPIRATION OF THE APPLICABLE WARRANTY PERIOD API SHALL HAVE NO FURTHER WARRANTY OBLIGATION OF ANY KIND. API SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM ANY DEFECT IN THE API PRODUCT OR ANY WARRANTY CLAIM.

- This warranty provides specific legal rights and you may have other rights, which vary from state to state.

8301 Patuxent Range Road!Jessup, MD 20794 USA
301-776-7879
http://www.apiaudio.com

Documents / Resources

	api ASM164 Rackmount Analog Summing Mixer [pdf] Instruction Manual ASM164 Rackmount Analog Summing Mixer, ASM164, Rackmount Analog Summing Mixer, Analog Summing Mixer, Summing Mixer, Mixer

References

- ⚡ **API Audio Service Center**
- ⚡ **Home - API: Automated Processes, Inc.**
- ⚡ **Warranty Registration | API Audio**
- **User Manual**