User Manual

iAC
Installation Power Amplifier

AMC®

Safety instructions

When using this electronic device, basic precautions should always be taken, including the following:

1 Read all instructions before using the product.

2 Do not use this product near water (e.g., near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool etc). Care should be taken that objects do not fall into liquids and liquids would not be spilled on the device.

3 Use this device when you are sure that it has a stable base and it is fixed securely.

4 This product, in combination with loudspeakers may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult with otorhinolaryngologist.

5 The product should be located away from heat sources such as radiators, heat vents, or other devices that produce heat.

6 Note for power connections: for pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

7 The power supply should be undamaged and never share an outlet or extension cord with other devices. Never leave device plugged into the outlet when it is not being used for a long period of time.

8 Power disconnection: when the power cord connected to the power grid is connected to the machine, the standby power is turned ON. When the power switch is turned ON, the main power is turned ON.The only operation to disconnect the power supply from the grid, unplug the power cord.

9 Protective Grounding - An apparatus with class I construction shall be connected to a power outlet socket with a protective grounding connection.
Protective Earthing - An apparatus with class I construction shall be connected to a mains socket outlet with a protective earthing connection.

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

11 The exclamation mark 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.

12 There are some areas with high voltage inside, to reduce the risk of electric shock do not remove cover of the device or power supply.
The cover should be removed by the qualified personnel only.

13 The product should be serviced by qualified service personnel if:
 – The power supply or the plug has been damaged.
 – Objects have fallen into or liquid has been spilled on the product.
 – The product has been exposed to rain.
 – The product has been dropped or the enclosure damaged.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

To reduce the risk of electric shock, do not remove screws. No user-serviceable parts inside. Refer servicing to qualified service personnel. To reduce the risk of fire, electric shock or product damage, do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

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Specifications

Before you start

iAC amplifiers with Dante input card, integrated signal processor are designed for 100 V and low impedance background music systems. The model line consists of single-channel and two-channel amplifiers. They all have an RS 232 control port for integration amplifier with third-party automation systems. Balanced Phoenix and stereo RCA input with audio link connection for easy installation, multiple voltage output suitable for 4 Ω, 70 V, and 100 V speaker lines.

FEATURES

- Dante input card

- Integrated signal processors

- RS232 control port

- for 100 V and low impedance music systems

- Ability to control treble, middle, and bass tones

- Stereo RCA AUX input

- Muting function

- Locking function

- Stand-by mode

- Supports 4 Ω, 70 V and 100 V speaker installations
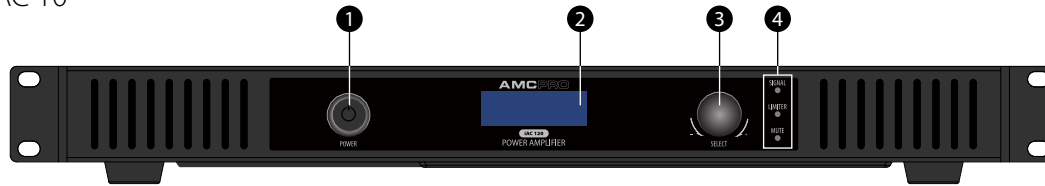
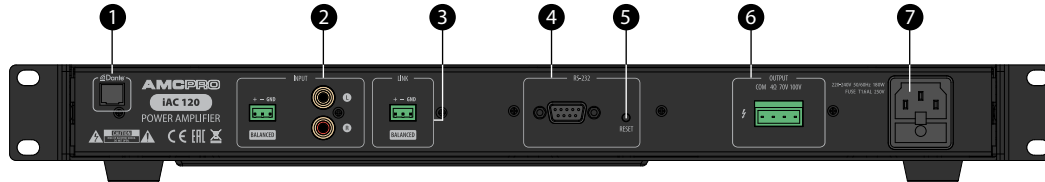USER MANUAL | **iAC** Installation Power Amplifier

Operation

Front Panel | iAC 10

1. Power button | 2. LCD display | 3. Rotary encoder | 4. Signal, limiter & mute indicators

Rear Panel | iAC 120

1. Dante input card | 2. Stereo RCA & balanced Phoenix inputs | 3. Link output | 4. RS232 serial interface | 5. Reset button | 6. Main output
7. Main power connector

Operation

Front Panel | iAC 240, iAC 360

1. Power button | 2. LCD display | 3. Rotary encoder | 4. Signal, limiter & mute indicators

Rear Panel | iAC 240, iAC 360

1. Stereo RCA & balanced Phoenix inputs | 2. Link output | 3. RS232 serial interface | 4. Reset button | 5. Dante input card | 6. Main output
7. Main power connector

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Operation

Front Panel | iAC 2X240

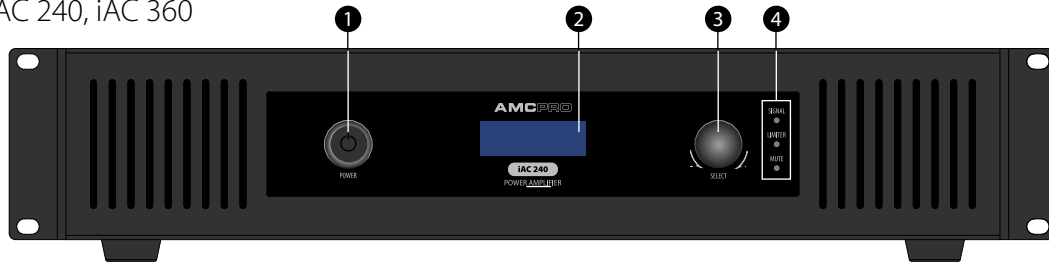1. Signal, limiter & mute indicators | 2. Power button | 3. LCD display | 4. Rotary encoder

Rear Panel | iAC 2X240

1. Mode switch | 2. Stereo RCA & balanced Phoenix inputs | 3. Link outputs | 4. RS232 serial interface | 5. Reset button | 6. Dante input card
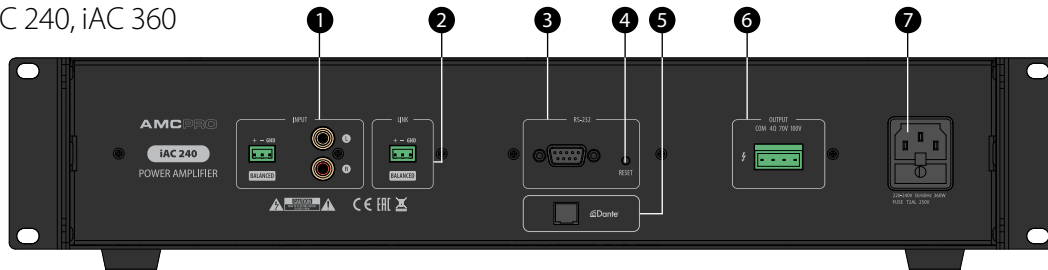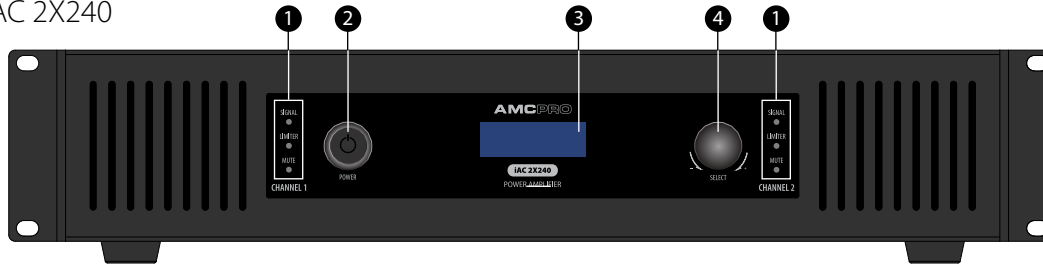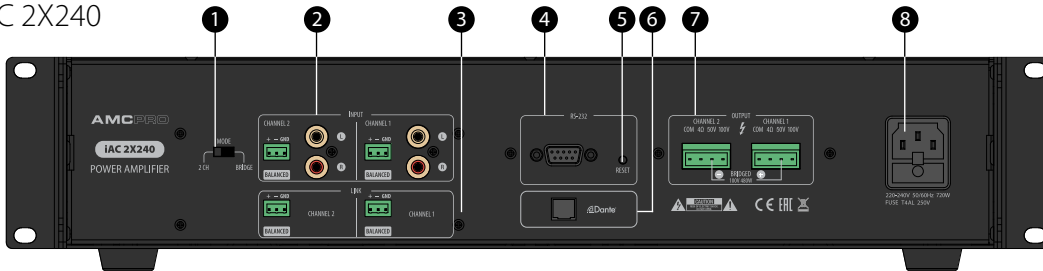7. Main output | 8. Main power connector

Operation

Front panel functions

LED INDICARTORS
THE SIGNAL INDICATOR illuminates when indicates an audio signal in the amplifier's input.
LIMITER INDICATOR - the amplifier has a built-in audio signal limiter in order to limit output power. In case if input audio signal exceeds the maximum amplitude needful to achieve maximum power, the audio limiter reduces the audio signal level to a safe value and indicates activity using LIMIT LED.
MUTE INDICATOR illuminated when mute function is activated. The red LED indicates muted channel.

POWER BUTTON
Switch amplifier power ON or OFF.

LCD DISPLAY
LCD screen displays main information about amplifiers: volume level, tone controls levels, muting, locking, stand by status or sync settings.

ROTARY ENCODER
Designated to adjust amplifier parameters. Rotate the encoder to adjust parameters and push it to enter the menu or sub-menu. Press and hold for a second to return the default screen. Push rotary encoder shortly to select CH1 or CH2, hold it to activate the selected channel menu. In order to disable LOCK mode press and hold the encoder for 5 seconds. Turn or press knob to get back device from standby mode.

Rear panel functions

MODE SWITCH (iAC 2X240)
Amplifier can be set to operate in 2 modes: 2 controllable channels or single channel mode. Both selections can operate in 100 V line.
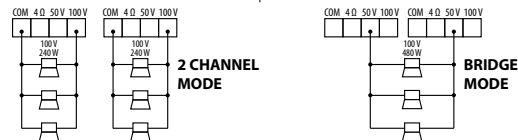
STEREO RCA & BALANCED PHOENIX INPUTS
RCA input for line level audio.

AMPLIFIER OUTPUTS
Audio outputs for 4 Ω, 70 V, and 100 V speaker lines. Only one output can be used at the time. Operating amplifier with more than one output may cause damage the amplifier or connected speakers.

RS232 SERIAL INTERFACE
Designed to control main function of iAC aplifiers by using serial interface. RS232 protocol is listed in page 8.

DANTE INPUT CARD
Fully-functional Dante interfaces, with all the features you'd expect from Dante networking.

RESET BUTTON
This button resets all amplifier parameters to default values. To activate this function, press and hold button for two seconds.

MAIN POWER CONNECTOR
Power connector for mains power.

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Operation

One Knob To Control Everything
iAC serie features a graphic LCD display and a single rotary/push encoder allowing easy control of all device parameters.

```
Volume▸CH1 -48dB
       CH2 -18dB
```

Menu system
In normal operating mode, LCD shows the volume of each channel. Push the rotary encoder to enter the other channel or back to the previous mode.

Push and hold the rotary encoder to enter the main menu and access more controls of parameters.

```
Bass    CH1  +4dB
-............||||||..........+
```
```
Middle CH1    0dB
-.............||..............+
```
```
Treble CH1 +10dB
-.............|||||||||||....+
```

3 band EQ
EQ adjustments can be made for each channel individually.

```
Mute   CH1
```

Muting
Each channel can be individually muted.

```
Sync Settings
       CH1 ▸ CH2
```

Sync Settings
The function allows to link both channels and copy settings from one channel to another in order to control both amplifier channels at once.

```
Lock
```
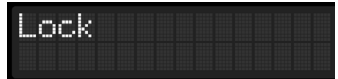
Lock
This function locks front panel control in order to prevent unauthorized access to the amplifier control menu or volume adjusting. To disable the function press and hold the rotary encoder for 5 seconds. Lock function affects front panel control only, serial control and reset functions are not free of locking. Lock mode can be also enabled or disabled by using RS232 command.

```
Stand By
```

Active stand by mode
Mutes amplifier and turn off LCD display in order to save power. This mode is indicated by the red color LED inside the power button. In order to disable standby mode turn or push the rotary encoder. The standby mode also can be enabled or disables by using the RS232 command.

Operation

COM Port Settings

Baud Rate: 9600
Parity: None
Data Bits: 8
Stop Bits: 1
Flow Control: No

RS232 codes | Send Sequences
RS232 codes are listed in HEX

For iAC 120/240/360 models

Vol +
69 41 43 55 01 02 01 01 AA
Vol -
69 41 43 55 01 02 01 02 AA
Mute
69 41 43 55 01 02 01 A1 AA
Unmute
69 41 43 55 01 02 01 A0 AA
Treble +
69 41 43 55 01 06 01 01 AA
Treble -
69 41 43 55 01 06 01 02 AA
Middle +
69 41 43 55 01 11 01 01 AA
Middle -
69 41 43 55 01 11 01 02 AA

Bass +
69 41 43 55 01 05 01 01 AA
Bass -
69 41 43 55 01 05 01 02 AA
Stand By Off
69 41 43 55 0D 10 01 00 AA
Stand By On
69 41 43 55 0D 10 01 01 AA
Lock On
69 41 43 55 0D 11 01 01 AA
Lock Off
69 41 43 55 0D 11 01 00 AA
Status
69 41 43 55 0D FA 01 00 AA
Firmware Version
69 41 43 54 01 FF 01 00 AA

For iAC 2X240 model

Vol + Ch1
69 41 43 55 01 02 01 01 AA
Vol - Ch1
69 41 43 55 01 02 01 02 AA
Mute Ch1
69 41 43 55 01 02 01 A1 AA
Unmute Ch1
69 41 43 55 01 02 01 A0 AA
Treble + Ch1
69 41 43 55 01 06 01 01 AA
Treble - Ch1
69 41 43 55 01 06 01 02 AA

Middle + Ch1
69 41 43 55 01 11 01 01 AA
Middle - Ch1
69 41 43 55 01 11 01 02 AA
Bass + Ch1
69 41 43 55 01 05 01 01 AA
Bass - Ch1
69 41 43 55 01 05 01 02 AA
Vol + Ch2
69 41 43 55 02 02 01 01 AA
Vol - Ch2
69 41 43 55 02 02 01 02 AA
Treble + Ch2
69 41 43 55 02 06 01 01 AA
Treble - Ch2
69 41 43 55 02 06 01 02 AA
Middle + Ch2
69 41 43 55 02 11 01 01 AA
Middle - Ch2
69 41 43 55 02 11 01 02 AA
Bass + Ch2
69 41 43 55 02 05 01 01 AA
Bass - Ch2
69 41 43 55 02 05 01 02 AA
Mute Ch2
69 41 43 55 02 02 01 A1 AA
Unmute Ch2
69 41 43 55 02 02 01 A0 AA
Sync/Copy Ch1 To Ch2
69 41 43 55 01 01 01 01 AA

Sync/Copy Ch2 To Ch1
69 41 43 55 02 01 01 01 AA
Unsync
69 41 43 55 01 01 01 00 AA
Vol + Ch1 and Ch2
69 41 43 54 01 02 01 01 AA
Vol - Ch1 and Ch2
69 41 43 54 01 02 01 02 AA
Treble + Ch1 and Ch2
69 41 43 54 01 06 01 01 AA
Treble - Ch1 and Ch2
69 41 43 54 01 06 01 02 AA
Middle + Ch1 and Ch2
69 41 43 54 02 11 01 01 AA
Middle - Ch1 and Ch2
69 41 43 54 02 11 01 02 AA
Bass - Ch1 and Ch2
69 41 43 54 01 05 01 02 AA
Bass + Ch1 and Ch2
69 41 43 54 01 05 01 01 AA
Mute All
69 41 43 54 02 02 01 A1 AA
Unmute All With Ch2 Vol
69 41 43 54 02 02 01 A0 AA
Unmute All With Ch1 Vol
69 41 43 54 01 02 01 A0 AA

Operation

Receive Sequences

Function	Start	Channel Byte	Functions Bytes	Value Bytes	End
VOLUME	69 41 43 55	02	5D 02	00 (= 0 db), 01 (= 1 db), 02 (= 2 db), 03 (= 3 db), 04 (= 4 db), 05 (= 5 db), 06 (= 6 db), 07 (= 7 db), 09 (= 8 db), 09 (= 9 db), 0A (= 10 db), 0B (= 11 db), 0C (= 12 db), 0D (= 13 db), 0E (= 14 db), 0F (= 15 db), 10 (= 16 db), 11 (= 17 db), 12 (= 18 db), 13 (= 19 db), 14 (= 20 db), 15 (= 21 db), 16 (= 22 db), 17 (= 23 db), 18 (= 24 db), 19 (= 25 db), 1A (= 26 db), 1B (= 27 db), 1C (= 28 db), 1D (= 29 db), 1E (= 30 db), 1F (= 31 db), 20 (= 32 db), 21 (= 33 db), 22 (= 34 db), 23 (= 35 db), 24 (= 36 db), 25 (= 37 db), 26 (= 38 db), 27 (= 39 db), 28 (= 40 db), 29 (= 41 db), 2A (= 42 db), 2B (= 43 db), 2C (= 44 db), 2D (= 45 db), 2E (= 46 db), 2F (= 47 db), 30 (= 48 db)	AA
TREBLE	69 41 43 55	02	5D 06	00 (= -14), 01 (= -12), 02 (= -10), 03 (= -8), 04 (= -6), 05 (= -4), 06 (= -2), 07 (= 0), 0E (= +2), 0D (= +4), 0C (= +6), 0B (= +8), 0A (= +10), 09 (= +12), 08 (= +14)	AA

Function	Start	Channel Byte	Functions Bytes	Value Bytes	End
MIDDLE	69 41 43 55	02	5D 11	00 (= -14), 01 (= -12), 02 (= -10), 03 (= -8), 04 (= -6), 05 (= -4), 06 (= -2), 07 (= 0), 0E (= +2), 0D (= +4), 0C (= +6), 0B (= +8), 0A (= +10), 09 (= +12), 08 (= +14)	AA
BASS	69 41 43 55	02	5D 05	00 (= -14), 01 (= -12), 02 (= -10), 03 (= -8), 04 (= -6), 05 (= -4), 06 (= -2), 07 (= 0), 0E (= +2), 0D (= +4), 0C (= +6), 0B (= +8), 0A (= +10), 09 (= +12), 08 (= +14)	AA
MUTE	69 41 43 55	02	5D 02	3F	AA
MUTE FEEDBACK	69 41 43 55	02	5D 01	FA 3F	AA
SYNC CH2 to CH1 is ON	69 41 43 55	02	5D 01	01	AA

Function	Start	Channel Byte	Functions Bytes	Value Bytes	End
OFF	69 41 43 55	0D	5D 10	01	AA
ON	69 41 43 55		5D 10	00	
LOCKED	69 41 43 55		5D 11	01	
UNLOCKED	69 41 43 55		5D 11	00	
MANUAL ON	69 41 43 55		5D 10	40	
MANUAL OFF	69 41 43 55		5D 10	20	

Operation

Receive Sequences

Function	Start	Channel Byte	Functions Bytes	Value Bytes		End
FIRM-WARE VERSION	69 41 43 55	01	5D FF	32		
VOLUME	69 41 43 55	01	5D 02	00 (= 0 db) 01 (= 1 db) 02 (= 2 db) 03 (= 3 db) 04 (= 4 db) 05 (= 5 db) 06 (= 6 db) 07 (= 7 db) 09 (= 8 db) 09 (= 9 db) 0A (= 10 db) 0B (= 11 db) 0C (= 12 db) 0D (= 13 db) 0E (= 14 db) 0F (= 15 db) 10 (= 16 db) 11 (= 17 db) 12 (= 18 db) 13 (= 19 db) 14 (= 20 db) 15 (= 21 db) 16 (= 22 db) 17 (= 23 db)	18 (= 24 db) 19 (= 25 db) 1A (= 26 db) 1B (= 27 db) 1C (= 28 db) 1D (= 29 db) 1E (= 30 db) 1F (= 31 db) 20 (= 32 db) 21 (= 33 db) 22 (= 34 db) 23 (= 35 db) 24 (= 36 db) 25 (= 37 db) 26 (= 38 db) 27 (= 39 db) 28 (= 40 db) 29 (= 41 db) 2A (= 42 db) 2B (= 43 db) 2C (= 44 db) 2D (= 45 db) 2E (= 46 db) 2F (= 47 db) 30 (= 48 db)	AA

Function	Start	Channel Byte	Functions Bytes	Value Bytes		End
TREBLE	69 41 43 55	01	5D 06	00 (= -14) 01 (= -12) 02 (= -10) 03 (= -8) 04 (= -6) 05 (= -4) 06 (= -2)	07 (= 0) 0E (= +2) 0D (= +4) 0C (= +6) 0B (= +8) 0A (= +10) 09 (= +12) 08 (= +14)	AA
MIDDLE	69 41 43 55	01	5D 11	00 (= -14) 01 (= -12) 02 (= -10) 03 (= -8) 04 (= -6) 05 (= -4) 06 (= -2)	07 (= 0) 0E (= +2) 0D (= +4) 0C (= +6) 0B (= +8) 0A (= +10) 09 (= +12) 08 (= +14)	
BASS	69 41 43 55	02	5D 05	00 (= -14) 01 (= -12) 02 (= -10) 03 (= -8) 04 (= -6) 05 (= -4) 06 (= -2)	07 (= 0) 0E (= +2) 0D (= +4) 0C (= +6) 0B (= +8) 0A (= +10) 09 (= +12) 08 (= +14)	
MUTE	69 41 43 55	01	5D 02	3F		
SYNC CH1 to CH2 is ON	69 41 43 55	01	5D 01	01		

Example:
The following RS232 sequence means that amlifier's Channel 1 volume is set to 10 dB:
69 41 43 55 01 5D 02 0A AA

General Specifications

iAC Installation Power Amplifier

Technical Specifications	iAC 120	iAC 240	iAC 360	iAC 2X240
Output power	1 x 120 W	1 x 240 W	1 x 360 W	1 x 360 W
Power consumption	165 VA	300 VA	410 VA	410 VA
Stand by power consumption	40 VA	40 VA	40 VA	40 VA
Power supply	~ 230 V, 50 Hz			
Outputs	1 x Phoenix power output, 1 x Phoenix audio link			
Inputs	1 x Balanced Phoenix, 1 x Stereo RCA, Dante input card			
Frequency Response	70 Hz - 20 kHz			
THD	< 0.2 %			
S/N ratio	92 dB			
Remote control	RS-232			
Tone control	Bass: ±14 dB at 125 Hz, Middle: ±14 dB at 1 kHz, Treble: ±14 dB at 10 kHz			
Cooling	Convective air cooling	Forced air cooling		
Dimensions (H x W x D) mm	438×200×45	438×375 ×45		
Weight	5 kg	8 kg	9.4 kg	11.5 kg

The specifications are correct at the time of printing this manual. For improvement purposes, all specifications for this unit, including design and appearance, are subject to change without prior notice.

Notes