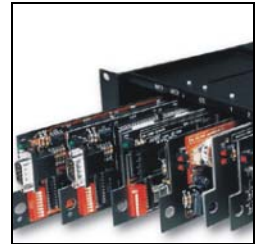




instruction manual

AXB-VOL3

Three-Channel Volume Control



AXlink Bus Controllers

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Product Information

The AXB-VOL3 Three-Channel Volume Control provides three audio volume control channels. Each line-level channel, opto-isolated from system ground, can be configured for balanced or unbalanced line operation. The AXB-VOL3 is programmable for 128 steps of audio level, audio mute, variable ramp speed and level presets. The AXB-VOL3 connects to Access control systems using the 4-wire AXlink data/power bus; it can be used for remote or rack mount applications.

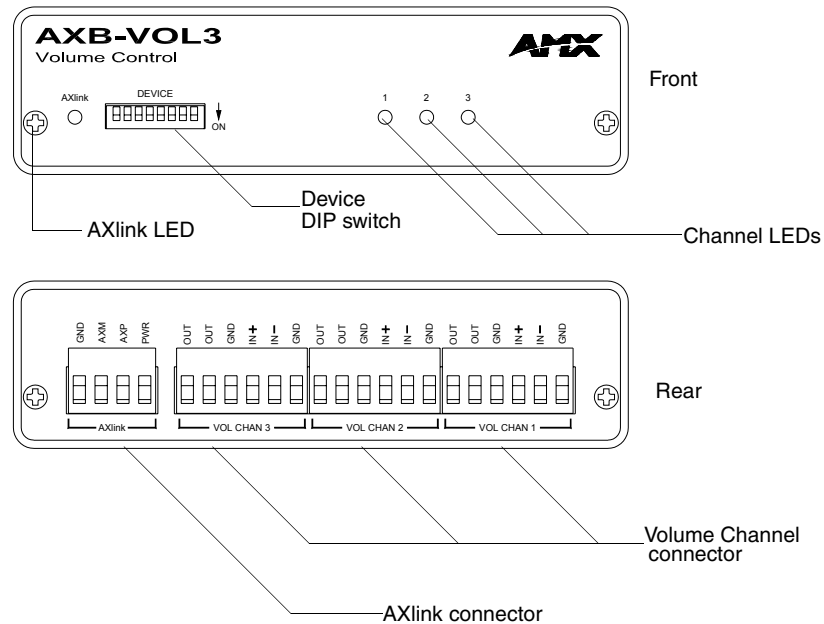


FIG. 1 AXB-VOL3 front and rear panel

Specifications

AXB-VOL3 Specifications	
Three line-level audio control channels:	
Line operation:	Balanced or unbalanced
Audio ground:	Audio ground opto-isolated from system ground.
Nominal input level:	-10 to +4 dBm.
Max. input/output level:	+16 dBm.
Volume level resolution:	128 volume level steps ($\pm .5$ dB per step).
Attenuation:	72 dB at full attenuation (mute).
Total Harmonic Distortion:	THD = <.008%
Frequency Response	20 Hz to 20 kHz +/- 1 dB

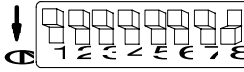
AXB-VOL3 Specifications (Cont.)	
Front Panel Components:	
AXlink LED	AXlink LED (green and blinks to indicate AXlink communication activity and power: <ul style="list-style-type: none"> • Full-Off indicates no power is being received or the controller is not functioning properly. • One blink per second indicates power is active and AXlink communication is functioning. • Full-On indicates there is no AXlink control or activity, but power is On.
Device DIP Switch	An 8-position DIP switch used to set the AXlink device number for the AXB-VOL3.
Channel LEDs	Red channel LEDs 1 - 3. The LEDs individually light indicating a change in channel levels.
Rear Panel Components:	
AXlink connector	4-pin, captive wire connector, receives power and information via the AXlink and AXlink Central Controller.
Volume Channel connectors	6-pin, captive wire connectors that control audio level, audio mute, variable ramp speed and level presets of up to 3 devices.
Enclosure	Metal with black matte finish
Dimensions (HWD)	1.51" x 5.55" x 5.45" (3.84 cm x 14.10 cm x 13.84 cm)
Weight	1.1 lb (0.499 kg)
AXlink Power	12 VDC @ 230 mA

Installation

DIP Switch Settings

Use the device DIP switch to set the AXB-VOL3 AXlink device number. You can set it as one of 255 devices in an Access control system. Set the device number with the total of all ON (down) switches. As an example, the DIP switch below defines Device 128.

Device DIP Switch Settings								
Position	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128



The device number takes effect only upon power-up. If you later change the device number, remove and reconnect the AXlink connector to enter the new device number into memory. AMX standard device numbers are assigned as follows:

- Cards are 1 through 25.
- Boxes are 96 through 127.
- Panels are 128 through 255.

The AXB-PCCOM emulates a touch panel when set in the panel range.

Wiring

Preparing and connecting captive wires

1. Strip 0.25 inch of wire insulation off all wires.
2. Insert each wire into the appropriate opening on the connector according to the wiring diagrams and connector types described in this section.
3. Tighten the screws to secure the wires. Do not tighten the screws excessively; doing so may strip the threads and damage the connector.

Wiring guidelines

The interface requires a 12 VDC power to operate properly. The interface uses a PSN2.8 power supply. The Central Controller supplies power via the AXlink cable or external 12 VDC power supply. The maximum wiring distance between the Central Controller and interface is determined by power consumption, supplied voltage, and the wire gauge used for the cable. The table below lists wire sizes and maximum lengths allowable between the VOL3 and Central Controller. The maximum wiring lengths for using AXlink power are based on a minimum of 13.5 volts available at the Central Controller's power supply.

Wiring Guidelines at 230 mA	
Wire Size	Maximum Wiring Length
18 AWG	510.31 feet (155.54 m)
20 AWG	371.29 feet (113.17 m)
22 AWG	201.29 feet (61.35 m)
24 AWG	126.88 feet (38.67 m)

AXlink connector

Install the AXlink data/power bus wiring as shown in FIG. 2.



FIG. 2 AXlink data/power connections

Volume channels 1 - 3 connectors

Volume channels 1 - 3 can be wired for unbalanced or balanced line operation, as shown in FIG. 3.

Optional 600 ohm resistor can be added for impedance matching, if required

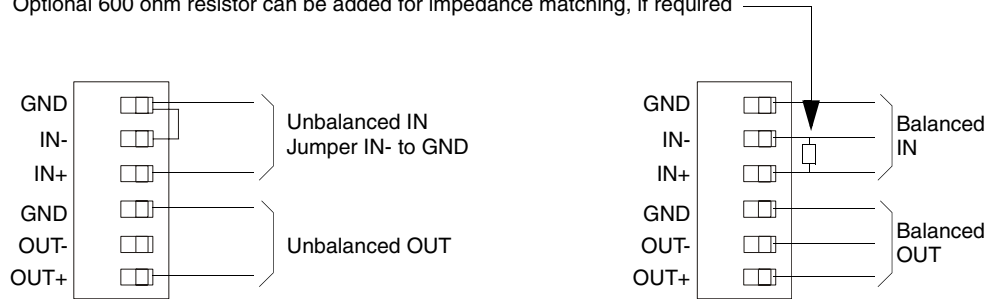


FIG. 3 Volume Channels 1 - 3 Connector wiring diagrams

Programming

The following sections list Access programming commands used with the AXB-VOL3.

Channel Settings Commands

Use the AXB-VOL3 channel settings listed for ramp up, ramp down and mute operations..

AXB-VOL3 Channel Setting Commands			
Channel	Description	Channel	Description
1	Ramps channels 1 and 2 up.	7	Ramps channel 2 up.
2	Ramps channels 1 and 2 down.	8	Ramps channel 2 down.
3	Mutes channels 1 and 2.	9	Mutes channel 2.
4	Ramps channel 1 up.	10	Ramps channel 3 up.
5	Ramps channel 1 down.	11	Ramps channel 3 down.
6	Mutes channel 1.	12	Mutes channel 3.



NOTE

Ramping a volume channel while the mute channel is on will NOT automatically turn off the mute channel (will not restore) but the ramping will still occur and the volume change will be noticed when the mute channel is turned off. For setting ramp rates and presets, see SEND_COMMAND programming instructions below. For reading current volume levels and displaying bargraphs see CREATE_LEVEL and SEND_LEVEL programming instructions. Volume channels 1 through 3 use levels 1 to 3 respectively.

When controlling levels, such as with an active bargraph, there is no LED indication of volume changes.

Levels

- 1 = Output #1
- 2 = Output #2
- 3 = Output #3

Send_Commands

System Send_Commands are stored in the Access Control System.

AXB-VOL3 Send_Commands	
PLT	<p>Ramps specified channel(s) from current level to a specified preset level or percentage at the current rate or optionally in a specified amount of time.</p> <p>Syntax: <code>SEND_COMMAND VOL, 'P<output channel 0-3>L<level 0-255 0-100%>[T<Time 0-255 in tenth second increments>]'</code></p> <p>Variables: Output Channel = Channel numbers 1, 2 or 3. Output channel 0 = both channels 1 and 2. Level = Level number (0-255) or percentage (0-100 percent). Level 0 is lowest volume (same as mute) and 255 or 100% is maximum volume. Time = Optional ramp time (0-255) in tenths of a second.</p> <p>Example 1: <code>SEND_COMMAND VOL, 'P0L50%'</code> Ramps both channels to 50% mid level volume at the current ramp rate.</p> <p>Example 2: <code>SEND_COMMAND VOL, 'P1L255T20'</code> Ramps channel 1 to highest level volume in 2 seconds.</p>
PR	<p>Sets the ramp rate of the specified channel(s) where the time is the time to ramp the full range both down to up and up to down or optionally just down to up or just up to down.</p> <p>Syntax: <code>SEND_COMMAND VOL, 'P<output channel 0-3>R<ramp rate 0-255 in tenth seconds>[U D]'</code></p> <p>Variables: Output Channel = Channel numbers 1, 2 or 3. Output channel 0 = both channels 1 and 2. Ramp Rate = Sets ramp rate (1-255) for channel commands in tenth second increments. U = Optional character sets rate for ramp up. D = Optional character sets rate for ramp down.</p> <p>Example 1: <code>SEND_COMMAND VOL, 'P0R50'</code> Sets ramp rate of channels 1 and 2 to 5 seconds full range from down to up and up to down.</p> <p>Example 2: <code>SEND_COMMAND VOL, 'P3R50D'</code> Sets ramp rate of channel 3 to 5 seconds full range from up to down only.</p>

AXB-VOL3 Send_Commands (Cont.)**PP**

Syntax:

```
SEND_COMMAND VOL, 'P<Channel> = P<Channel>'
```

Variable:

Channel = Enter channel number.

Examples:

```
SEND_COMMAND VOL, 'P1 = P2'
```

Sets channel 1 level to the same as channel 2.

```
SEND_COMMAND VOL, 'P1 = P3'
```

Sets channel 1 level to the same as channel 3.

```
SEND_COMMAND VOL, 'P2 = P1'
```

Sets channel 2 level to the same as channel 1.

```
SEND_COMMAND VOL, 'P2 = P3'
```

Sets channel 2 level to the same as channel 3.

```
SEND_COMMAND VOL, 'P3 = P1'
```

Sets channel 3 level to the same as channel 1.

```
SEND_COMMAND VOL, 'P3 = P2'
```

Sets channel 3 level to the same as channel 2.

Note: You cannot use 'P0' with these commands.



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