SPK1 User Guide

Automatic Amp/Speaker Selector

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The Bobwire SPK1 is a high-power handling two channel (stereo) speaker level A/B switch. The SPK1 will automatically switch between two audio amplifiers and send the audio signal on to one pair of speakers (2 IN & 1 OUT). The Mode switch determines whether the SPK1 will operate by audio sensing or by a 12V trigger input. An alternative setup would have a single audio amplifier and the SPK1 will switch between two pairs of speaker outputs (1 IN & 2 OUT) but this is only possible in 12V trigger mode. The double thick copper circuit board traces and the highest quality gold contact relays ensure the purest audio signal path. The ultra-sensitive audio detection circuit is 100% analog & remains out of the signal path at all times.

Audio Sensing Mode (2 IN & 1 OUT)

When the Mode switch is set to "Audio Sensing" the SPK1 will automatically switch from the A input to the B input when audio is detected at the B input. The B input will always have priority as long as an audio signal remains at the B input. An audio trigger sensitivity adjustment is provided for setting how loud the audio signal needs to be to activate the switch (trigger threshold). Depending on the setting of the Reset Delay control, the device will switch from B back to A anywhere between 1 second to 180 seconds after the audio signal at input B has stopped. If the Reset Delay is set too short, the device may switch back to the A input between audio tracks or during very quiet sections of a song/movie. The SPK1 has an extremely sensitive audio detection circuit, even a tiny amount of inaudible noise may cause the device to switch to the B input. The most sensitive setting (5mV) will sometimes not be the best choice. Experiment with the Audio Trigger Sensitivity and Reset Delay time to determine the best settings for your particular audio system & application.

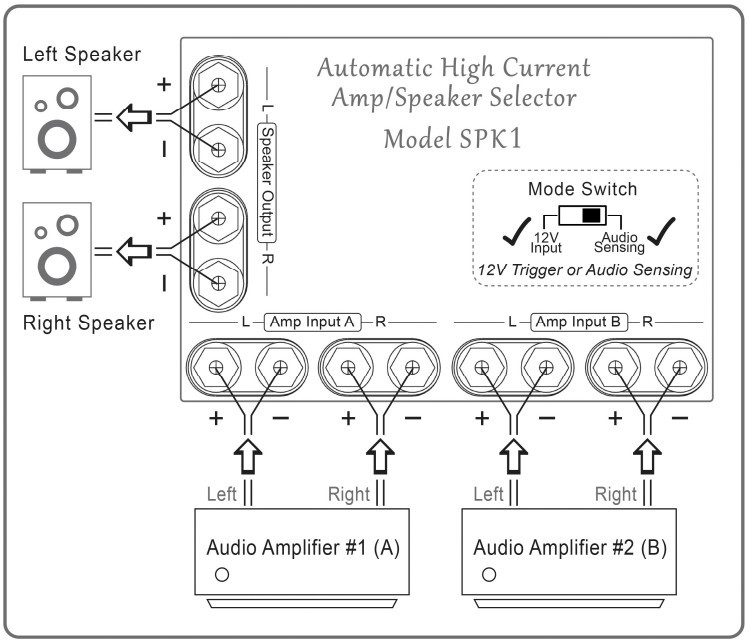
12 Volt Trigger Input Mode (2 IN & 1 OUT)

When the Mode switch is set to "12V Input" the SPK1 will only switch by using a 12V trigger supplied by another device. When 12 volts is present at the 12V Input jack, the B input will be selected. As soon as the 12 volts at this jack is removed, Input A will immediately be selected again (the reset delay function is deactivated). When using multiple BobWire devices, it is best to have only one of the devices set to audio sensing and the additional devices controlled by 12V trigger so that they all switch at the same time. This trigger input is compatible with any voltage from 3 to 15 VDC but 12V is the most common for stereo equipment. This is a 3.5mm "mono" (2 conductor) jack.

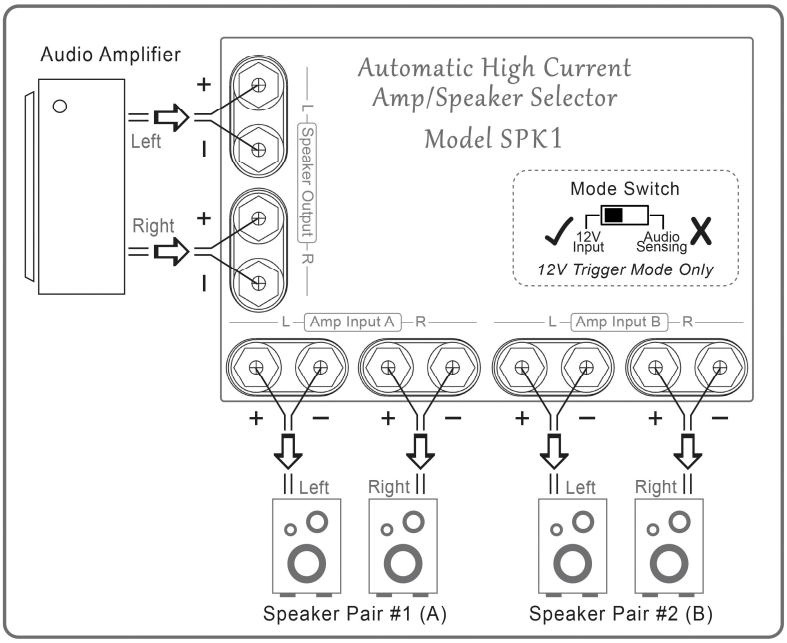
12 Volt Trigger Input Mode (1 IN & 2 OUT)

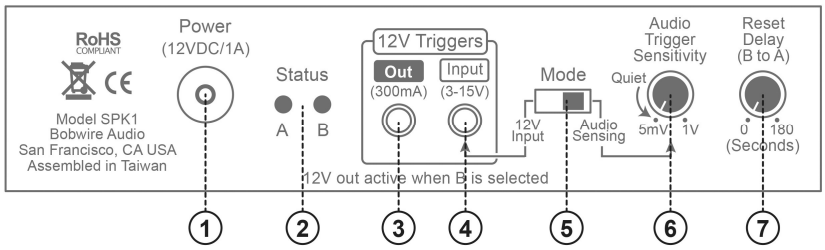
An alternative setup would have a single amplifier and the SPK1 would switch between two speaker pairs (1 IN & 2 OUT). This setup is only possible when using a 12V trigger input. The Mode switch must be set to "12V Input."

Example of "2 IN & 1 OUT" (Audio Sensing or 12V Mode) :



Example of "1 IN & 2 OUT" (12V Trigger Mode Only) :





1. **Power Supply Connection** : Connect the included 12V power supply to this jack.

2. **Status Indicator** : These two LEDs indicate which input is currently selected (A or B).

3. 12V Trigger Output : Whenever input B is selected, 12 volts DC will be present at this output. This is a 3.5mm "mono" (2 conductor) jack. This output can be used to control additional equipment such as more BobWire products.

4. 12V Trigger Input : This Jack is only used when the Mode switch is set to "12V Input". When 12 volts is present at this jack, the B input will immediately be selected. As soon as the 12 volts at this jack is removed, Input A will immediately be selected again. This trigger input is compatible with voltages from 3 to 15 VDC, but 12V is the most common on audio equipment. This is a 3.5mm "mono"(2 conductor) jack.

5. Mode Switch : The Mode switch determines if the device will operate by audio sensing or 12V trigger input.

6. Audio Trigger Sensitivity : The sensitivity adjustment knob determines how loud the audio signal present at the B input needs to be before switching. The range is 5mV (very quiet) to 1V (louder). This function is only active when the Mode switch is set to "Audio Sensing." The SPK1 has an extremely sensitive audio detection circuit, even a tiny amount of inaudible noise may cause the device to switch, therefore the most sensitive setting (5mV) will sometimes not be your best choice. Experiment to determine the best setting.

7. Reset Delay Time : The Reset Delay knob determines how long the device waits to switch back to the A input after the audio stops. This function is only active when the Mode switch is set to "Audio Sensing" (not 12V mode). If the Reset Delay time is set too short, the device may switch back to A between tracks or during very quiet parts of a song/movie. Experiment to determine the best setting.

Troubleshooting – Audio Sensing Mode

SPK1 Won't Switch to the B Input
- Ensure that the Mode switch is set to "Audio Sensing"
- Lower the Audio Sensitivity setting (counter-clockwise to 5mV)
- Ensure that audio is being played on amp B
- Turn up the volume on amp B
- Ensure the speaker polarity is correct on the B input & amp

SPK1 Won't Switch Back to the A Input (no music on B input)
- Increase the Audio sensitivity setting (clockwise towards 1V)
- Reduce the Reset Delay Time setting (counter-clockwise to 0 sec.)
- Listen to amp B (with speakers) for excessive noise like hum or hiss
- Try swapping amp A & amp B connections (move B to A and A to B)

SPK1 Switches Back to A While Music is Still Playing on B
- Lower the Audio Sensitivity setting (counter-clockwise to 5mV)
- Increase the Reset Delay Time setting (clockwise to 180 sec.)
- Ensure the speaker polarity is correct on the B input & amp

SPK1 Switches to Input B With No Music Playing
- Increase the Audio sensitivity setting (clockwise towards 1V)
- Listen to amp B (with speakers) for excessive noise like hum or hiss
- Try swapping amp A & amp B connections (move B to A and A to B)

Troubleshooting – 12V Trigger Input Mode

SPK1 Won't Switch to the B Input (12V trigger input mode)
- Ensure that the Mode switch is set to "12V Input"
- Verify 12V is present on the trigger cable by plugging it into another device
- Check polarity of the trigger cable, the tip should be positive (use a multimeter)
- Ensure trigger cable is plugged into the 12V Input jack (not the 12V output jack)
- Verify the 12V cable is a mono 2-conductor cable (not a stereo AUX cable)

Specifications

Frequency Response :	*1Hz to 100kHz (+/-0.1dB)*	***Reset Delay Time (B to A) :***	*1-180 seconds (audio mode only)*
Total Harmonic Distortion (THD) :	*less than 0.001%*	***Speaker Binding Post :***	*6-AWG wire/bananas/spades*
Channel Separation (crosstalk) :	*more than 80dB*	***Power Supply Output :***	*12VDC 1A (center pin is positive)*
Signal to Noise Ratio :	*more than 120dB*	***Power Supply Input :***	*100-250 VAC 50/60Hz*
12V Trigger Output :	*12VDC (300mA max)*	***Power Supply Connector Size :***	*5.5mm X 2.1mm*
12V Trigger Input :	*3-15 VDC (5mA draw)*	***Power Draw (self consumption) :***	*1.5 Watts (0.4 watts idle)*
Audio Trigger Sensitivity :	*5mV to 1V (audio signal)*	***Weight (device only/boxed) :***	*1.8lb (0.82kg) / 2.6lb (1.2kg)*
Audio Trigger Detection Frequency :	*20Hz to 10kHz*	***Dimensions (w/ binding posts) :***	*7.7"x5.6"x1.4" (195x142x36mm)*
Power Handling (RMS continuous) :	*600 Watts /ch (8 Ohm speakers)*	***Power Handling (short peak) :***	*1000 Watts /ch (8 Ohm speakers)*
	300 Watts /ch (4 Ohm speakers)		*500 Watts /ch (4 Ohm speakers)*
Amplifier Power Compatibility :	*Amps w/ higher power than these ratings may be used assuming the SPK1 is not switched while operating at such high power levels.*		
Amplifier Type Compatibility :	*All types: single-ended, BTL, push-pull, classD, (vacuum tube amps usually need to be loaded with resistors, check with manufacture).*		
Mounting Options :	*Use the built in mounting "ears" with screws or zip ties to mount to a wall or equipment rack or stick on rubber pads for tabletop use.*		
Included Accessories :	*SPK1 Device, power supply, 3.5mm "mono" 12V trigger cable, tabletop rubber pads.*		