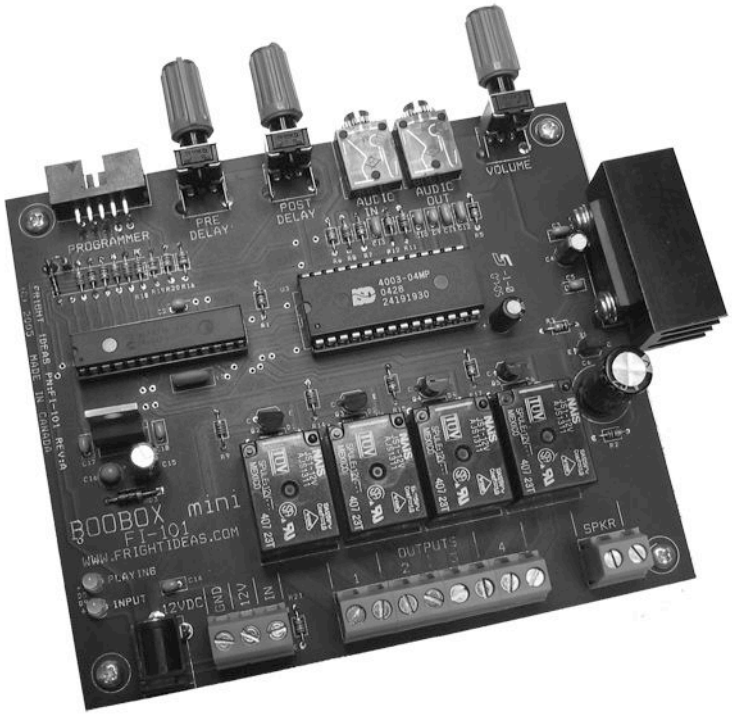

BOO BOX mini

OPERATING MANUAL

Control The Fear

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Contents

Section 1 – Read This First

Getting Started

Thank you for purchasing a BooBox mini. Your BooBox mini has come pre-loaded with some sample sounds so you can start getting a feel for the system right out of the box. Just connect a speaker or external amp and you can get started right away.

When you first plug in your BooBox mini it will begin looping the Ambient sound. Triggering the input by connecting the “IN” terminal to “GND” will start the scare scene. Ambient mode will start again once the scare scene has finished.

Connect the Real-Time Programmer to program your own scene. Press record, the scare sound will start playing so you can synchronize the outputs to the sound. When you’re done press record again, then press play to preview what you’ve programmed.

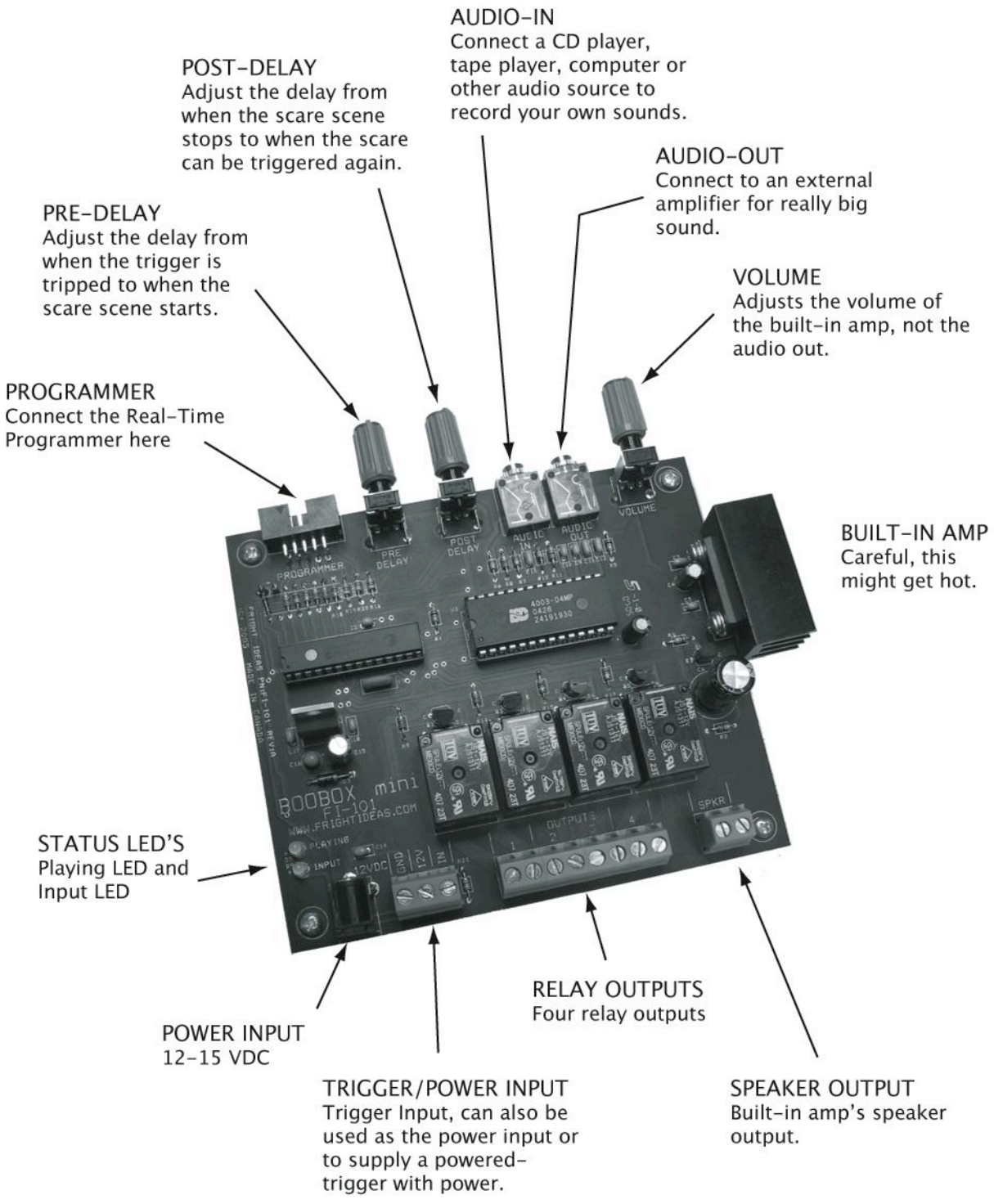
Before you get started you’ll need …

- BooBox mini Programming Kit – The Programming Kit includes the Real-Time Programmer as well as the cables you need to record your own sounds. You will only need one of these, no matter how many BooBox mini’s you own.

- Trigger - Unless you're planning on using the BooBox mini’s built-in timer to trigger the scene at preset intervals you'll need to choose a trigger. Any normally-open or closed trigger can be used, including powered triggers such as beam sensors and motion sensors.

- Speaker or External Amp - If you'd like your BooBox mini to be heard you'll need at least one speaker. If all you're playing is high pitched sounds such as screams then a horn speaker will do fine. If you're playing music with a little more bass, a mid-range speaker will sound much better. You can also use the audio out to connect the mini to a more powerful amp.

Connections and Controls



Section 2 – Sounds

Choosing Sounds

The BooBox mini can hold a total of 2 minutes of sound, this space can be divided between the ambient sound and scare sound in any proportion. Since the ambient sound is always looping, it's usually best to give it most of the sound space, leaving just enough for the scare.

Ambient sounds, and in some modes scare sounds, are continuously being looped. To help the looping point sound clean there are a few things to keep in mind while choosing or making your sound. Try and use a sound of at least 30 seconds in length, longer is even better. Short sounds will loop too often, and unless the looping point is perfect, it may sound choppy or pop at the loop point.

The length of the scare sound is a little more forgiving, its play length is dictated by the length of the scare, not the length of the clip itself. For example, you could record a 20 second sound clip of a scream, but if you only record 5 seconds of output actions for the scare, the sound will only play for 5 seconds. In most operating modes the scare sound will not be looped, if you record a scene longer than the audio clip the remainder of the scene will be silent.

Sound Recording Tips

For the best results, there are a few things to keep in mind when recording sound:

- If you are recording from a headphone jack, start with the source volume set to 50 percent. Setting the volume too high will result in a distorted recording, setting it too low will cause the sound to lose its detail and also may not allow the mini to amplify it loud enough. Experiment with different volume settings to get the best results.
- If you want your scare sound to be louder than your ambient sound then this must be done during the recording process. Using the previous point as a guide, find the highest source volume setting that records without distortion, record the scare sound at this volume. When recording the ambient sound record it at a reduced volume.
- Turn off any bass boosters on the source, too much bass will result in a distorted recording.
- If the source has a line-level output use it, this will ensure a clean recording with minimal distortion.
- Never connect the BooBox mini's audio-in to a speaker output!

Recording Sounds

To begin recording you will need the following connected to the BooBox mini:

- A speaker connected to speaker out, or an external amp connected to audio-out, do not connect headphones to the audio-out.
- An audio source such as a CD player, tape player, computer, connected to audio-in
- The Real-Time Programmer

Once the above is connected try pressing play on the audio source, you should be able to hear the sound through the speaker or external amp.

The ambient sound must always be recorded first, once you are happy with how it sounds you may move on to recording the scare sound, the scare sound can then be recorded and re-recorded as needed. If the ambient sound is ever changed the scare sound will have to be re-recorded, even if it doesn't need to be changed.

To record the ambient sound hold "1" and press "REC", press "REC" again to stop recording.
To record the scare sound hold "2" and press "REC"
To preview the sound, make sure you stop the source if it's playing, then hold the appropriate number and press "PLAY", press "PLAY" again to stop playback.

There are various techniques to time the recording start point perfectly. The easiest is probably to rewind the source to a point about 10 seconds before where you want recording to start. Then start the source and listen for the start point while waiting to press "REC" on the mini.

Turning Off the Ambient Sound

There are some situations where the ambient sound may not be needed. To turn off the ambient sound make sure an audio-source is connected to the audio-in. Hold "1" and press "REC" twice within 3 seconds. If the ambient sound is less than three seconds long the mini will not play it.

How to Create Your Own Sounds

Getting a sound just right may require some editing. Programs known as waveform editors allow you to modify every aspect of a sound. If you've never tried using one before it can actually be quite fun, and when you're done with the sound it will be exactly what you wanted.

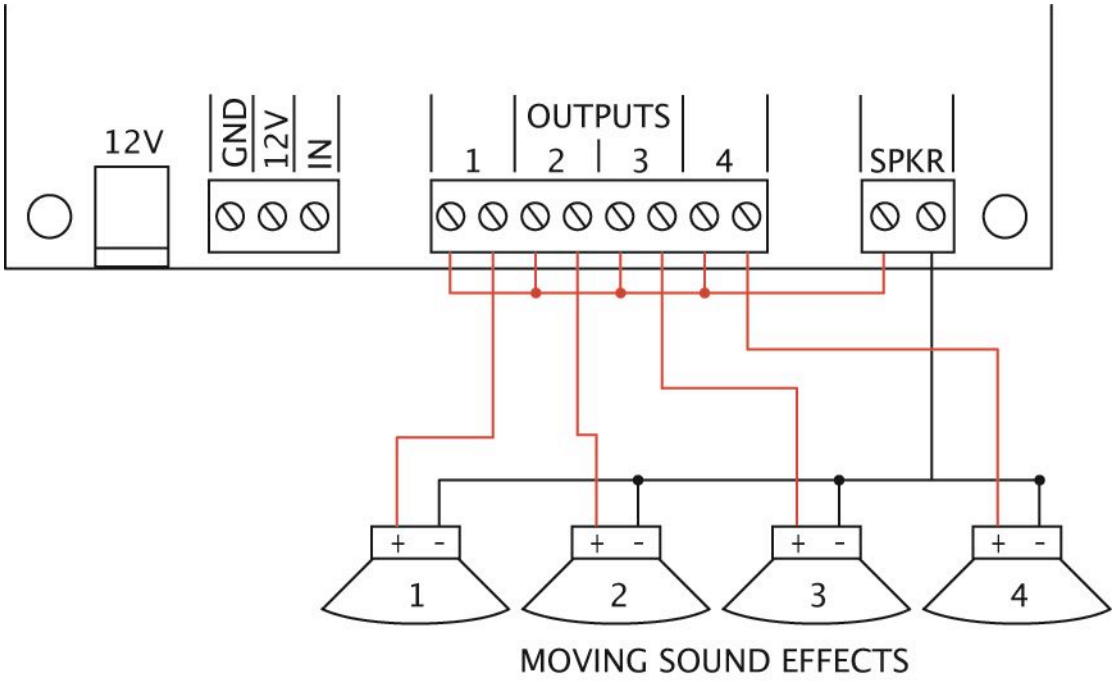
Visit the FAQ page in our website's support section, we'll maintain links to popular sound editing software and conversion tools.

Using the Built-in Amplifier

The BooBox mini's amplifier is quite powerful and more than adequate for most situations. To use the amplifier you will need at least a 12 VDC, 25 watt power supply. If you bought the upgraded power supply when you purchased your mini then you're all set. Otherwise you'll need to order it from us or supply one yourself.

To get the most power out of the amplifier use a 4 ohm speaker, an 8 ohm speaker will work fine too but will not be as loud.

Moving Sound Between Speakers



Up to four speakers can be connected to the relay outputs. Using this technique may require some creative sound file editing. Choose the sounds you'd like to have moving around the room – glass breaking, doors closing, voices saying "I'm over here" or "I can see you", are examples of these.

When you're ready to synchronize the outputs to the sound you'll have to turn on the appropriate relay to route the sound effect to the correct speaker. In the wiring diagram below, turning on relay 1 would route sound to speaker 1, relay 2 to speaker 2, etc.

When you're recording the scene and waiting for your cue to enable a certain speaker you won't be able to hear the sound unless one of the relays are turned on. Some simple scenes may be easy to program this way, most are not. For more difficult scenes, connect an external amplifier to the audio-out so you can hear the entire sound clip while you're programming.

IMPORTANT: Only switch speakers when the audio clip is at a silent point, and never turn on more than one relay at a time.

If less than four speakers are required for your setup, do not connect the extra relays to the SPEAKER OUT. This way the relay contacts can still be used to trigger other devices.

Section 3 – Outputs

Connecting Outputs

The outputs are simple contact closure's, by default they are in the off position. The outputs do not supply voltage, if you would like them to you must wire voltage into one of the terminals. If you plan to use 120 volts then it is your responsibility to take the appropriate safety precautions with wiring and enclosing the BooBox mini.

Each relay can handle 10 amps @ 125 volts.

Setting Outputs to Normally-Closed

Any of the outputs can be set to act as normally-closed contacts. This is done in software, the relay itself will remain energized when idle, and will de-energize when activated. This is only a concern if the mini is running from a battery as this will reduce battery life.

To set outputs to normally-closed:

1. Power down the BooBox mini
2. Connect the Real-Time Programmer
3. Hold the "REC" button as well as the buttons of the output(s) you'd like to be normally-closed
4. Power up the BooBox mini while holding the buttons
5. When the red light on the programmer flashes twice you can let go of the buttons

NOTE: If you are using a normally-closed trigger you must also hold "PLAY" in step 3.

To set the outputs back to normally-open simply repeat the above procedure holding only the "REC" button.

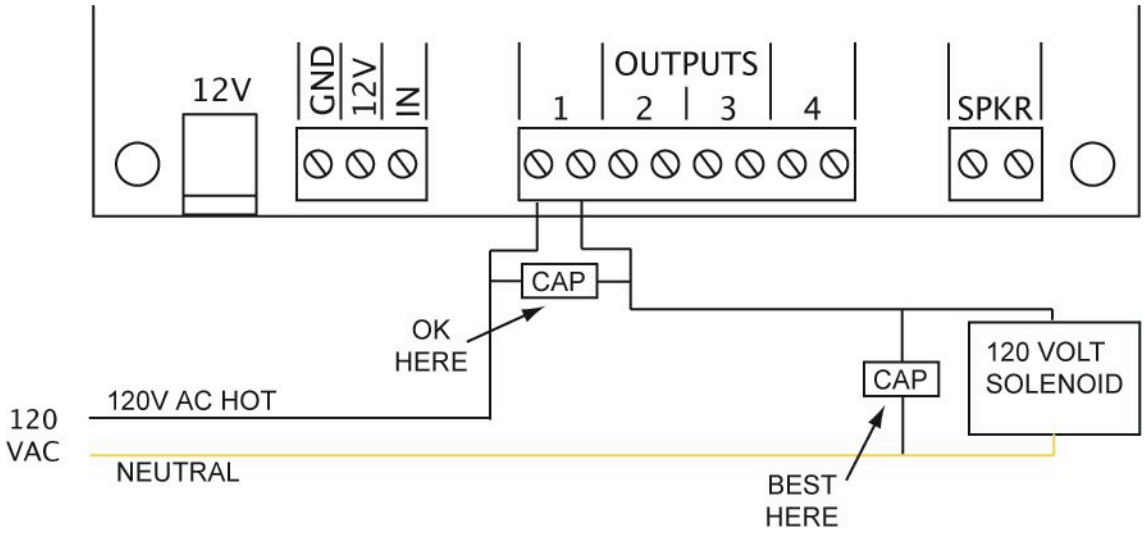
Controlling Solenoids or Large Relays

Solenoids and Large Relays create a lot of interference when they are turned off. This can wreak havoc to nearby electronic devices. If you notice the sound is stopping unexpectedly when controlling one of these devices this is most likely your problem. The solution depends on whether you are using AC or DC solenoids.

AC Solenoids

A high voltage capacitor must be installed to absorb the feedback. The best place to install it is as close as possible to the solenoid, if that's not possible then across the terminal block may work as well.

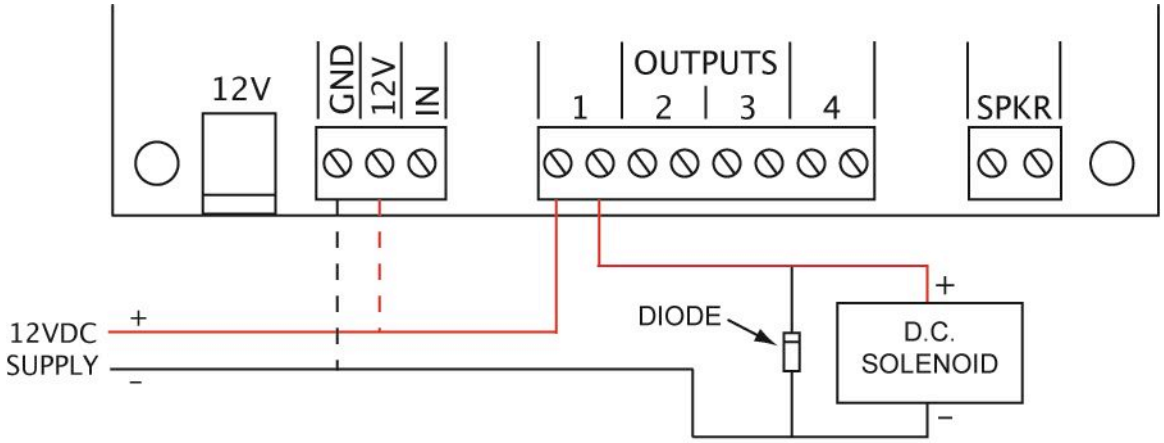
Radio Shack part numbers: 272-1053 or 272-1051



DC Solenoids

A diode must be installed across the solenoid. Note the orientation of the diode, using the line on the one side as a guide. Locate the diode as close to the solenoid as possible. A standard 1N4001 – 1N4004 diode will work fine, available for less than a dollar at your local Radio Shack.

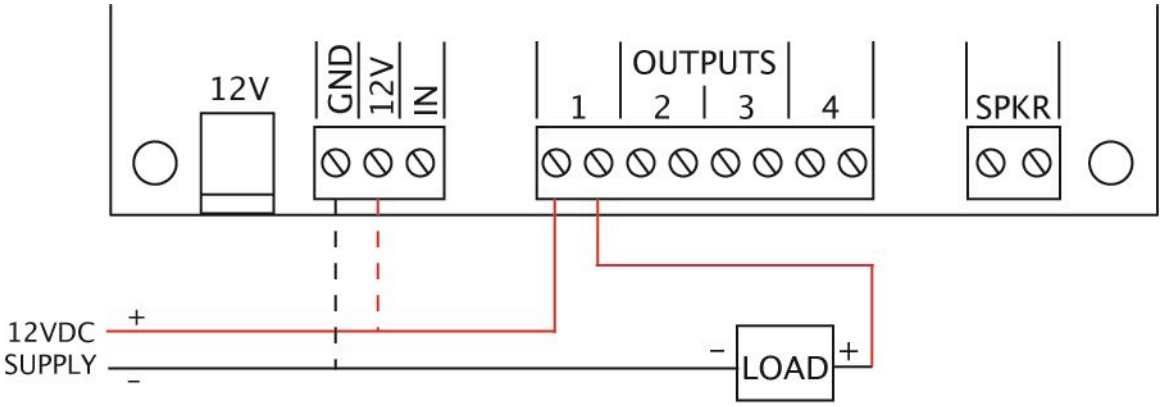
Radio Shack part number: 276-1103 or 276-1102



Output Wiring Examples

Controlling 12 Volt D.C.

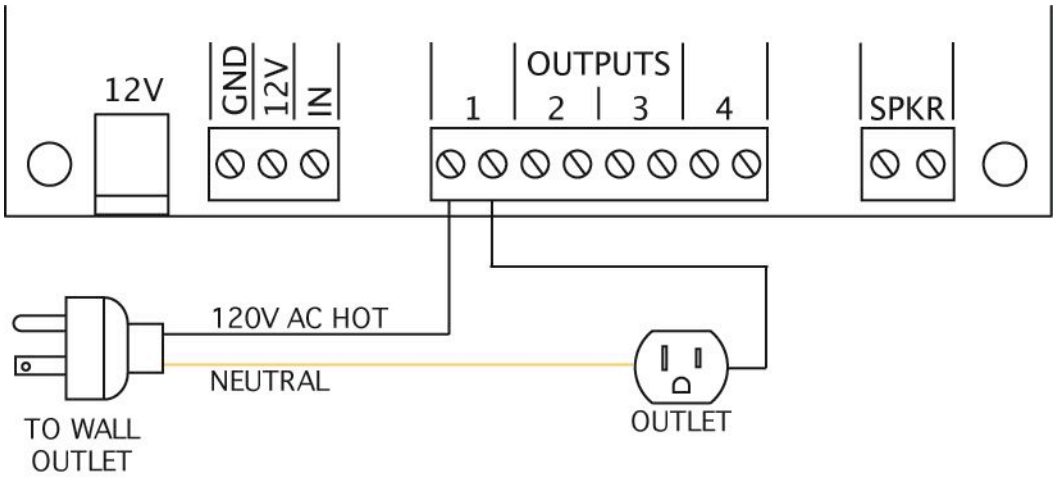
Using the mini to control 12 volts may require an additional power supply. If the load is less than 2 watts or 0.160 amps then you can use the supply included with the mini, connect the load using the dashed lines rather than the ones extending to the supply. If your load is larger than 2 watts then you will need an additional supply, connect it as shown below, ignoring the two dashed lines.



Controlling 120 Volt Outlets

The relays on the mini can be used to control up to 10 amps of current at 120 volts A.C., all you need to do is connect an outlet and a plug. If you just need one outlet, an easy way to do this is to buy an extension cord and cut it in half.

NOTE: Using the mini to control 120 volts will present a shock hazard, it is your responsibility to properly enclose the mini according to your area's electrical standards.



Controlling a Fog Machine

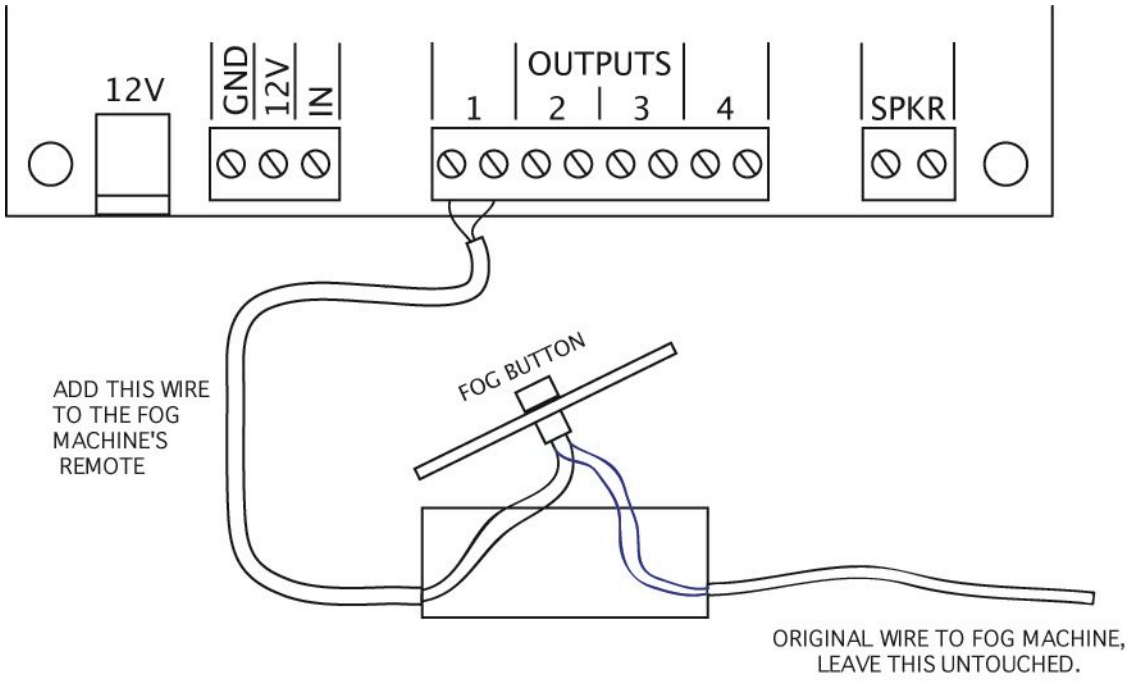
Modifying a fog machine's remote so it can be controlled by the BooBox mini is quite easy. Most fog machine remotes operate with low voltage, however, there are some, especially the cheaper ones, that have a high voltage remote. If the plug on the end of the remote looks like a large headphone jack then it is usually low voltage, otherwise you'll have to check to be sure. Either way, Fright Ideas takes no responsibility for damage you may cause to yourself or your fog machine, proceed with caution.

These instructions are intended as a guide in the right direction, not all fog machines are the same. Some fog machines have a "ready" LED or circuit board inside their remote, these have been left out for the sake of simplicity.

The best way to add BooBox mini control to your fog machine is to add another wire to the existing remote, this way you'll still have manual control of your fogger.

1. Drill a small hole in the remote.
2. Insert a length of two wire cable inside the hole, tie a knot inside the box for strain relief.
3. Connect each of the two wires to either side of the fog button, leaving the existing wires in tact.
4. Reassemble the remote.
5. Connect the two wires on the other end of the cable to one of the BooBox's relay outputs.

Now when the relay is turned on the fog machine will be activated.



Section 4 – Trigger Input

Choosing a Trigger

There are many different types of triggers, choosing the right one for your setup will help make your scare more effective. Below is a quick summary of some popular triggers …

Trigger Pros and Cons		
Trigger	**Pros**	**Cons**
PIR Motion Sensor	- Very affordable - Unaffected by fog machines - Easily installed	- Triggering time can vary a bit
Beam Sensor	- Triggering time is instant and consistent	- Can be a bit pricey - Installation can be tricky at first - Affected by fog machines
Pressure Mat	- Relatively affordable - Simple installation	- Patrons can often spot the mat - Patrons may not step on mat - Hiding and protecting the wire and mat
Pushbutton	- Actor can judge best time to trigger	- Need an actor

Trigger Contact Types

Triggers are generally available in different contact configurations, normally open (N.O.) and normally closed (N.C.). A normally open trigger will keep the BooBox's input circuit open until it is triggered, a normally closed circuit will keep it closed. Below is a list of popular triggers along with their common contact configuration.

Trigger Contact Configurations	
Trigger	Configuration
PIR Motion Sensor	N.C.
Beam Sensor	Both
Pressure Mat	N.O.
Pushbutton	N.O.

In order for the BooBox mini to be able to read your trigger properly you must set the contact type, if your trigger is normally-open then you can skip this step, this is the mini's default setting. If it's normally-closed then you must program the mini accordingly.

Beam Sensors generally have both N.O. and N.C. options available, however they may be termed "Dark On" and "Dark Off". If you are unsure which type of contact your trigger has use the BooBox mini's input LED to help you determine, the LED will be on when the input circuit is closed.

Setting the Contact Type

To set the input to normally-closed:

1. Power down the BooBox mini
2. Connect the Real-Time Programmer
3. Hold the “REC” button as well as “PLAY” button
4. Power up the BooBox mini while holding the buttons
5. When the red light on the programmer flashes twice you can let go of the buttons

NOTE: If you are using normally-closed outputs you must also hold those buttons down in step 3.

To set the input back to normally-open simply repeat the above procedure holding only the “REC” button.

Using PIR Motion Sensors

If you are using a PIR motion sensor for a trigger make sure you set the contact type to normally-closed.

PIR motion sensors have a built-in delay of about 2 minutes when they are powered up. During the delay the BooBox mini’s “Playing” light will stay lit. This is normal, once the sensor is warmed up the mini will begin operating normally.

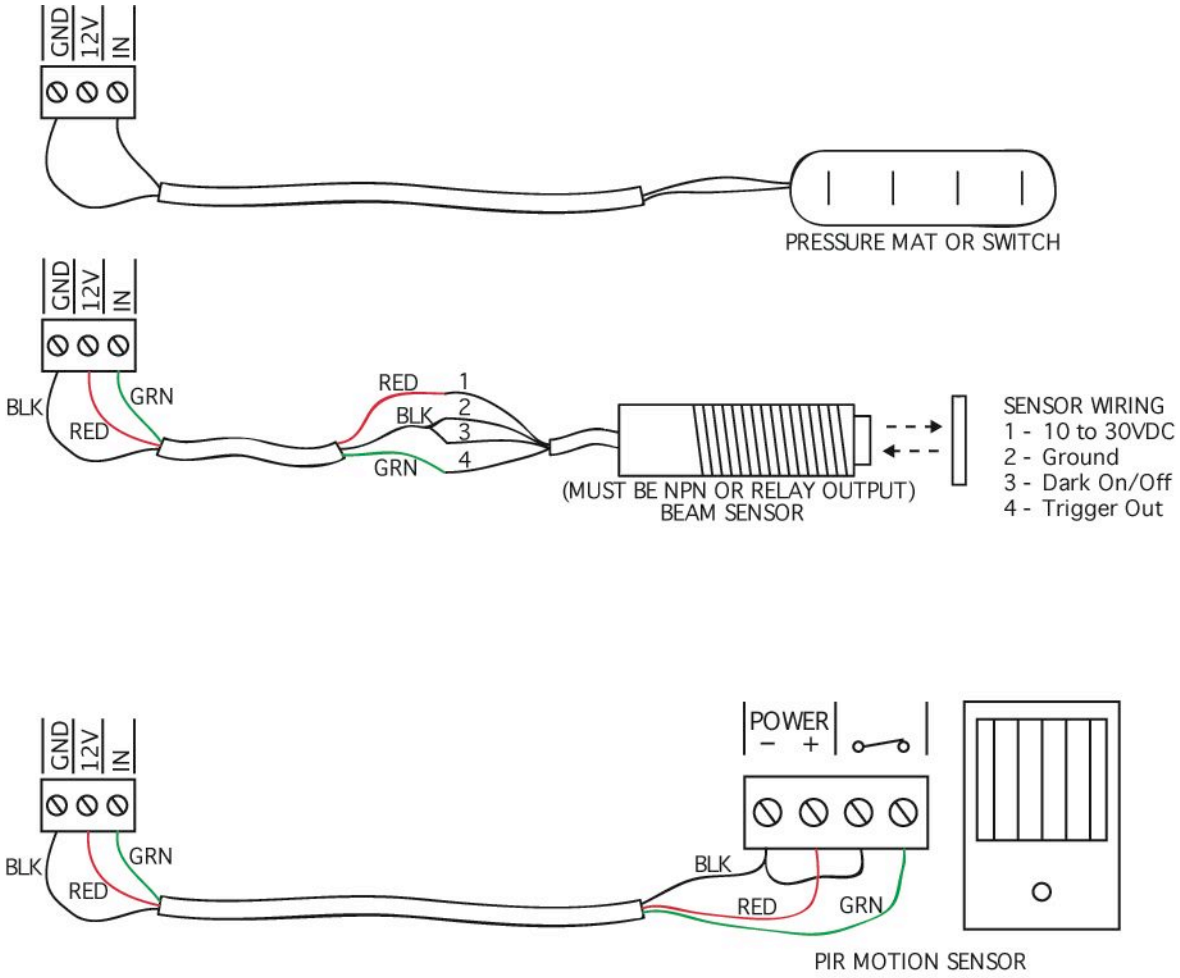
Trigger Delays

The BooBox mini has adjustable pre and post delays. Both delay knobs are logarithmic, meaning the delay will increase faster as the knob gets closer to maximum. This is helpful when adjusting short delays as the knob’s resolution is finer at the start.

Pre Delay
If your trigger can’t be placed in the perfect spot, you may want the mini to delay a bit before starting the scare scene. Adjust the pre-delay anywhere from 0-25 seconds in 0.1 second increments. You’ll notice the mini will blink the “PLAYING” LED to indicate it’s delaying.

Post Delay (Recycle Time)
If you’d like to prevent the mini from triggering right after the end of the scare scene set the post-delay. Also known as a recycle time, this delay can be set anywhere from 0-102 seconds. The “PLAYING” LED will blink during the delay.

Trigger Wiring Examples



Section 5 – Real-Time Programming

About the Real-Time Programmer (RTP)

In addition to the extremely easy real-time programming, the RTP also offers security. Once you're done recording the audio and programming the scene be sure to disconnect the RTP and put it somewhere safe. Since the BooBox mini can only be programmed with the RTP, once it's disconnected your programming is protected from curious staff.

Recording All Outputs at a Time

Once you have your sounds recorded into the mini you can begin recording the scare scene's outputs.

Connect the RTP to the mini and press some of the output buttons. You'll notice the relay outputs will activate in real-time as you press the buttons. You may also notice that the ambient sound has stopped playing, this is so you can focus on programming the scare scene, it will resume once the trigger input has been tripped.

Press REC on the RTP, the scare sound will start playing. Press the output buttons to record them in sync with the sound. Press REC again to stop recording, the scene is automatically saved. Press PLAY on the RTP to preview the scene.

The scene can be up to 136 seconds long, the length of the scare sound has nothing to do with how long a scene you can record. If your scene is shorter than the sound clip the sound will simply be stopped, if it's longer there will be silence once the sound is done.

Recording 1, 2 or 3 Outputs at a Time

For more complex scares it can be easier if you don't have to program all the outputs in one shot. The BooBox mini lets you program as little as one output at a time. The outputs you have finished recording will playback while you record the others so you can see the scene come together.

To choose the outputs you'd like to record:

- Hold the REC button for a few seconds, the REC light will begin blinking
- While still holding the REC button, hold down the buttons of the outputs you'd like to record
- Let go of the REC button

You will notice that only the outputs you have chosen to record will activate relays.

To go back to recording all 4 outputs at once just repeat the above process with all four buttons held.

If you'd like to erase what you have recorded and start from scratch simply enable all outputs for recording and press REC twice, effectively recording nothing.

Section 6 – Operating Modes

About Operating Modes

In addition to programming the outputs and adjusting delays, the mini can also be set to run in a different operating mode. There are a variety of different modes, the mini will operate slightly differently in each one. Read the table below for a description of the differences between each mode to see which one will work best for your application.

Changing Operating Modes

To change the mini's operating mode:

1. Power down the BooBox mini
2. Connect the Real-Time Programmer
3. Hold all the buttons from the "Buttons To Hold" column of the desired mode in the table below
4. Power up the BooBox mini while holding the buttons
5. When the red light on the programmer flashes twice you can let go of the buttons

When the BooBox mini powers up the "Playing" LED will blink x amount of times, where x represents the current mode.

List of Operating Modes

Operating Modes		
Mode	**Description**	**Buttons To Hold**
1	**Normal** – This is the default mode for the mini, it functions as described in this manual. The pre-delay knob is a 0-25 second trigger delay, the post-delay is a 0-102 second recycle timer. The scare will not loop if the trigger is held.	**1**
2	**No Scare Sound** – This mode is the same as the Normal mode with the exception of the scare sound. Rather than the scare sound playing, the ambient sound will continue uninterrupted, looping if necessary. This mode is useful for scenes that don't need a scare sound and would rather the ambient sound just continued.	**2**
3	**Trigger Determines Scare Length** – In this mode the scare sound will be played for as long as the trigger is held, looping if necessary. This mode is useful for scenes that are controlled by an actor, as they can best judge the length of each scare. Both delay knobs are ignored in this mode. For example, the mini could be connected to an electric chair, when the actor throws the switch the mini will run the chair's solenoids/fog machine/sound. The actor can stop the scene at any time by turning the switch off.	**1,2**
4	**Adjustable Scare Length** – This mode is the same as the Normal mode with the exception of the pre-delay knob. Rather than being used as a trigger delay, the pre-delay knob is used to control the length of the scare. Turning the knob to max will play the entire scare, turning it counter-clockwise will reduce the amount of scare that is played. The reduced version of the scare will only play when the input is triggered, pressing PLAY on the RTP will always play the full version. This mode is great for busy nights when you want to temporarily shorten the length of the scare without having to reprogram it.	**3**

5	**Timer Mode** – This mode will repeat the scare at intervals determined by the position of the post-delay knob. The interval can be adjusted from 0 - 15 minutes. If the trigger input is triggered the scare will play immediately and the timer will be reset. The pre-delay knob is ignored in this mode. It is very difficult to record a scene while in this mode. Record the scene in mode 1, then when you are happy with it switch back to timer mode.	**3,1**

Section 7 – Troubleshooting

Troubleshooting Chart

Troubleshooting		
Symptom	Problem	Solution
Sound stops unexpectedly	Controlling Solenoids?	Read section on controlling solenoids.
Mini behaves erratically	In wrong mode?	Set mini to normal mode
An output is always on	Is the output set to normally closed?	Set output to normally open
Playing LED keeps blinking when mini is powered up	Input is set to normally closed	Confirm which type of trigger you are using and set the input accordingly

Resetting the mini

If you are unsure what is going on and would like to reset the mini to its factory defaults.

- Unplug the mini
- Hold “1” on the RTP
- Plug in the mini and wait for the playing LED to blink
- Unplug it again
- Hold “REC” on the RTP
- Plug in the mini and wait for the playing LED to blink

Section 8 – Specifications

Specifications	
Trigger Input	Active Low – Trigger is “triggered” when the IN pin is connected to ground
Outputs	Outputs: 10A, 120VAC Max each
Speaker Output	15W into 4 ohms at 12 volts, 22W at 14.4 volts (10% THD) 7W into 8 ohms at 12 volts, 11W at 14.4 volts (10% THD)
Electrical and Environmental	Voltage: 12 - 15V DC Max Current: 0.5A without using amp, 2.5A using amp Temperature: 10° – 35° C