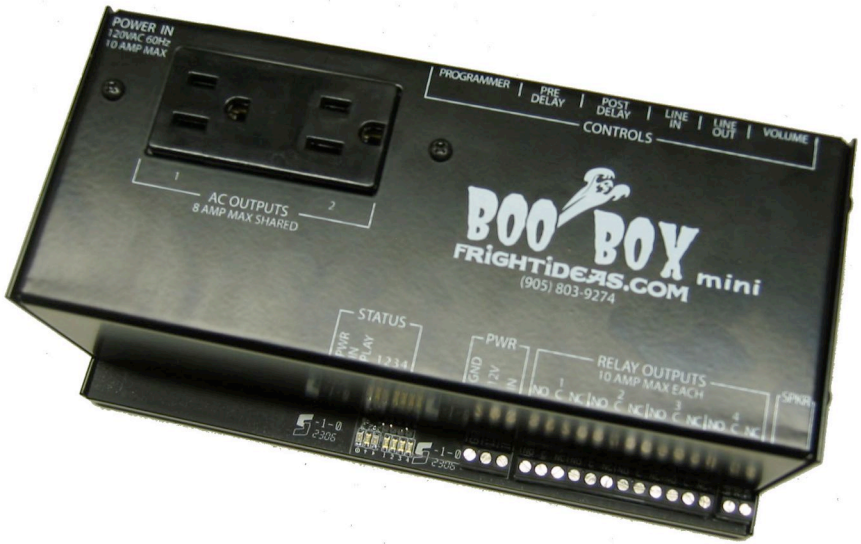

BOO BOX mini

OPERATING MANUAL

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Recording Sounds

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

- A powered speaker or speakers connected to the mini's Line-Out OR a standard speaker connected to the speaker output.
- An audio source such as a CD player or computer connected to Line-In. Make sure the source is not amplified.
- A stereo audio cable to connect your audio source to the mini's Audio Line-In
- The mini's programmer connected to the programmer port

Once the above is connected try pressing play on the audio source, you should be able to hear the sound faintly through the connected speaker. Do not turn up the source volume so your speakers are really loud! Use this sound only as a guide so you know when to start and stop recording. Once the sound is recorded and the mini plays it back it will be much louder than it is now.

You will have to experiment with the volume of your sound source to see what gives you the best recorded sound quality. If the source is too loud the recording will sound distorted, if it's too low you may not be able to turn the sound up loud enough even with your speakers at full volume. Do a few test recordings, keep adjusting the source volume and then previewing the sound from the mini until you're happy with the quality and volume level.

Volume Levels for Common Sources	
Source	**Volume Level**
Computer	20% to 40%
iPod or Portable CD Player	75%

The ambient sound must always be recorded first, once you are happy with how it sounds you can 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 does not need to be changed.

Sound Length
Record as long an ambient sound as possible, this sound will be looped while the mini waits to be triggered. The looping point will be heard less often if this sound is long, just make sure you leave enough room for your scare sound, you have 4 minutes total space for your sounds. Your scare sound length is less critical, just make sure it's long enough to play for the entire length of the animation you want to record.

Recording and Previewing
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 is playing, then hold either "1" for the ambient sound or "2" for the scare sound and then press "PLAY". Pressing "PLAY" again will stop the sound.

Turning Off Ambient Sound
To turn off the ambient sound make sure an audio source is connected to the audio-in, hold "REC" and press "1". Then within 3 seconds, press "REC" again.

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.

Connecting Speakers
There are two options for connecting speakers to the BooBox mini. You can either connect an amplifier or pair of powered speakers up to the mini's Line Out, or use the mini's internal 22 watt amplifier with a 4 or 8 ohm speaker.

Recording Animation

Once you have your sounds recorded into the mini you can begin recording the scare scene's outputs. **Make sure you have removed the audio cable from the mini's line-in jack before proceeding.**

It's also much easier to record the animation with the trigger removed and the mini at its default settings, this is especially true when using a motion sensor for a trigger. If you have changed the input to normally-closed or changed the mode to something other than 1 then you'll probably be better off changing back to a normally-open trigger mode and an operating mode of 1 before attempting to record.

Turn the delay knobs all the way counter-clockwise before programming.

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.

NOTE: For BooBox mini's shipped before May 17, 2007, these units will ignore the delay knobs and the trigger may seem to act funny while in programming mode. To take the unit out of programming mode so it responds to triggers normally hold the play button for about 3 seconds, the scare will play and once it is done the ambient sound will begin.

Press REC on the RTP, the scare sound will start playing. Press the output buttons to record them in sync with the sound. You can press the buttons as many times as you want and hold them for as long as you want. Whatever you do with those buttons will be recorded for up to 4 minutes. 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 4 minutes 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:

1. Hold the REC button for a few seconds, the REC light will begin blinking
2. While still holding the REC button, hold down the buttons of the outputs you'd like to record
3. 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.

Connecting 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 Types			
Trigger	**Pros**	**Cons**	**Contact**
PIR Motion Sensor	- Very affordable - Unaffected by fog machines - Easily installed	- Triggering time can vary a bit	Normally Closed
Beam Sensor	- Triggering time is instant and consistent	- Can be a bit pricey - Installation can be tricky at first - Affected by fog machines	Normally Open
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	Normally Open
Pushbutton	- Actor can judge best time to trigger	- Need an actor	Normally Open

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.

Determining your Trigger's Contact-Type
If you are unsure of what contact-type your trigger is then you can figure it out quite easily. Connect your trigger/sensor using the diagrams in this manual. Power up the mini, if your trigger is a motion sensor wait a few minutes for it to warm up. Trip your sensor/trigger as you watch the yellow input light on the mini, if the yellow light turns ON it's a N.O. contact, if it turns off it's N.C., if it does nothing there is a wiring problem.

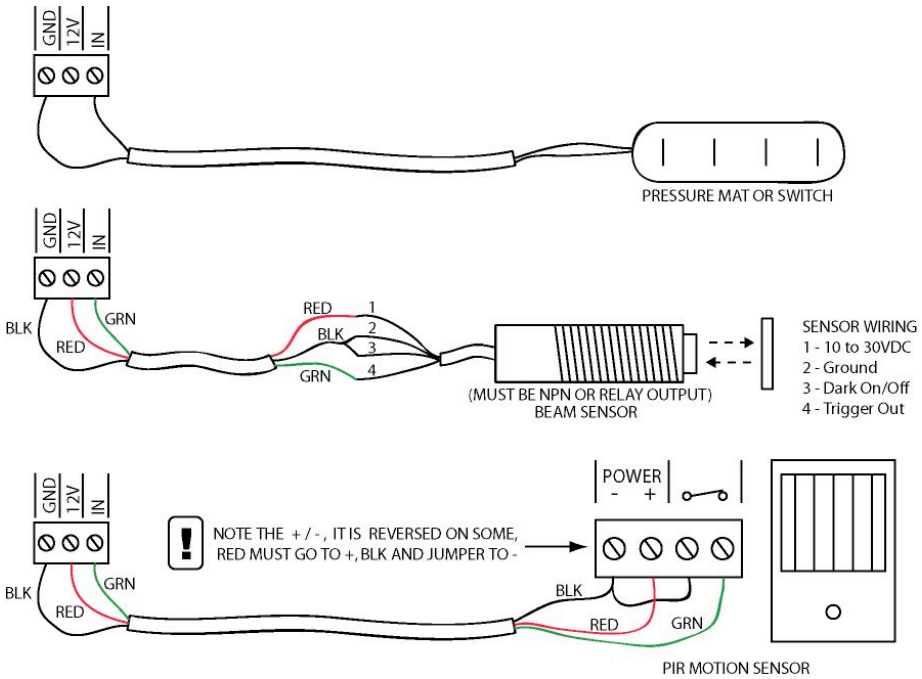
Setting the Contact Type to Normally-Closed (N.C.) or Normally-Open (N.O.)
1. Power down the BooBox mini, wait about 15 seconds
2. Connect the Real-Time Programmer
3. Hold the "REC" AND "PLAY" buttons to set to N.C. or just the REC button to set to N.O.
4. Power up the BooBox mini while holding the button(s)
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.

Trigger 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 "PLAY" light to indicate it's delaying.

Trigger 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 "PLAY" light will blink during the delay.

Trigger Wiring Diagrams



Connecting Terminal Block 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

Outputs 1 & 2 can be set to act as normally-closed contacts, this allows the 120 volt outputs to be used to turn things off rather than on. This can be useful to turn lights off when a scare begins. This is done in software, the relay itself will remain energized when idle, and will de-energize when activated. 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.

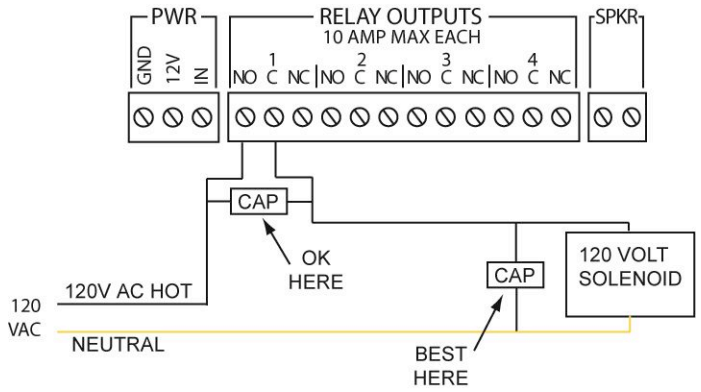
To set the outputs back to normally-open simply repeat the above procedure holding only the "REC" button.

Controlling Solenoids or Large Relays

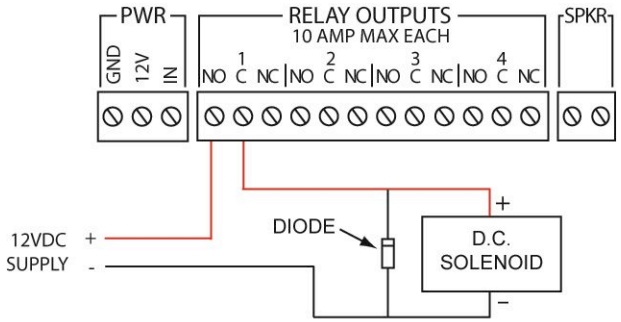
Solenoids and Large Relays create a lot of interference when they are turned off. This can wreak havoc to nearby electronic devices. If you notice the sound is stopping unexpectedly when controlling one of these devices this is most likely your problem. The solution depends on whether you are using AC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

For AC, 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. *Radio Shack part numbers: 272-1053 or 272-1051*
For DC, a standard 1N4001 – 1N4004 diode must be installed next to the solenoid,
Radio Shack part number: 276-1103 or 276-1102

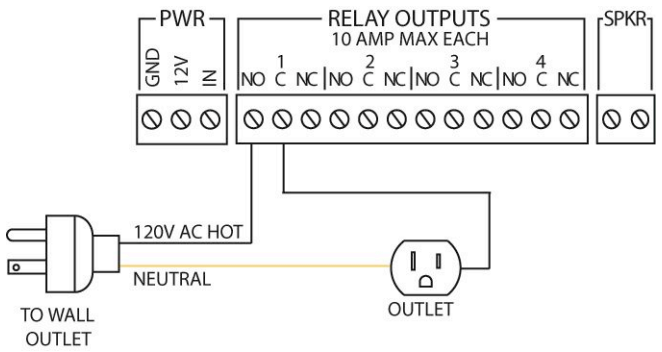
AC Solenoids



DC Solenoids



120 Volt Outlet or Load



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.

Changing Operating Modes

1. Power down the BooBox mini
2. Connect the Real-Time Programmer
3. Hold the buttons from the "Buttons Held" column of the desired mode in the table
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 "PLAY" light will blink x amount of times, where x represents the current mode.

Operating Modes		
Mode	**Description**	**Buttons Held**
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	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.	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.	3,1

Troubleshooting

Troubleshooting Chart	
Problem	**Solution**
- "PLAY" light stays lit when powered up - Motion sensor won't trigger scare	- The motion sensor is warming up, wait 2 minutes - Input is set to normally-closed when it should be normally-open, read "Connecting a Trigger"
- Scare loops after about 2 minutes	- Input is set to normally-open when it should be normally-closed, read "Connecting a Trigger"
- Can't record animation	- Audio source still connected to Line-In, remove it - Might be in wrong mode, change to mode 1 - Change trigger type to normally-open and disconnect it from the input
- Sound cuts out sometimes	- Put diodes/caps on your solenoids, read "Connecting Terminal Block Outputs"
- After triggering "PLAY" light blinks	- Pre-Delay is counting down, turn knob counter-clockwise to reduce
- mini behaves erratically	- It might be in the wrong mode, set it to mode 1
- An output stays on all the time	- Output is set to normally-closed, read "Connecting Terminal Block Outputs"

Resetting the mini

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

1. Unplug the mini, wait about 15 seconds
2. Connect the programmer
3. Hold "1" on the programmer
4. Plug in the mini while still holding the "1" button
5. Wait for the "REC" light on the programmer to blink twice
6. Unplug the mini again, wait about 15 seconds
7. Hold "REC" on the programmer
8. Plug in the mini while still holding the "REC" button
9. Wait for the "REC" light on the programmer to blink twice

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