



BooBox 8+

OPERATING MANUAL

v0.20 (Oct 14, 2009)



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Getting Started

Connect the included power supply to the BooBox 8, then use the included patch cable to connect the BooBox 8's programmer port to the ScareMaster's "To Controller" port. The ScareMaster does not need a power supply, it will get power from the BooBox 8.

Selecting a Scene

On the screen you should see the current scene you are editing in the bottom-left corner. "In-0" is input 1 scene 0. To select another scene hold the PLAY button for a few seconds then use the A slider to scroll through the available scenes. Use the B slider to scroll through the sub-scenes, this is usually left at 0. The current length of the scene is shown in the bottom-right corner as you scroll through. Let go of PLAY when you see the scene you'd like to edit.

Recording a Scene

Press REC to start recording, whatever you do on the outputs will be recorded. Press REC again to stop recording.

Playing a Scene

Press PLAY to view the scene.

Erasing a Scene

Make sure all 8 outputs and both sliders are enabled, then just tap REC twice. Essentially what you are doing is recording a very short empty scene.

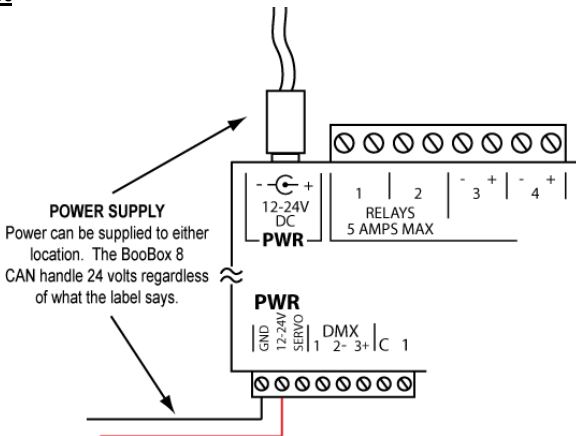
Recording Complicated Scenes

You can hold ENABLE and tap the output buttons to disable various outputs from recording. This way you don't have to program all the outputs at once. Once you are finished recording an output, disable it, then on the next recording pass it will play back rather than record.

Uploading Your Scenes

When you are done editing your scenes on the ScareMaster you must upload them to the BooBox. To upload the scenes into the BooBox's memory, hold ENABLE and tap REC. The ScareMaster can now be disconnected and your scenes are safely stored in the BooBox 8's internal memory.

Power Input



Sounds

Choosing Your Sounds

Sound files can be saved in many different formats, the BooBox 8 uses the popular format known as MP3. If the sound you want to use is saved in a different format, or is on a CD, you'll need to convert it. The quality of an MP3 file is judged mainly by its bitrate. The bitrate is measured in kilobits per second, and determines how much information will be saved for each second of sound. Bitrates of 128Kbps – 160Kbps are pretty standard for MP3's, anything higher will likely not be noticed and just be a waste of card space.

Ambient 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 ambient sound. Try and use a sound of at least 30 seconds in length, short sounds will loop too often, and unless the looping point is perfect, it may sound choppy. Also, use sound editing tools to fade your sound in and out at the looping point to avoid clicks and pops.

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.

Designing Scenes Without Sound

There are times when an ambient or scare scene is better off with no sound at all. In these cases simply remove the appropriate sound file from the flash card.

Adjusting Volumes

The BooBox allows you to adjust the playback volume individually for each scene in its Device Menu accessible through the ScareMaster. This way you can set the ambient sound to play back softly, while having the scare sound play loud. This feature is very useful, generally this would have required changing the sound file with a waveform editor.

You can also adjust the volume separately for the left and right channels. If you are using the same speakers for each channel then for the most part these will be kept the same. If you want to get really creative and use a horn speaker on one channel to belt out screams, while using a standard speaker on the other for music, the volumes may need to be set differently.

Copying Sounds to the BooBox

The BooBox can play sound files directly from an SD card or also from the internal memory. The internal memory option is only available on BooBoxes shipped after Oct 8th, 2009. These models identify themselves as FI-209 when connected to a ScareMaster.

Copying Sounds to an SD Card

Each scene has its own folder on the card where it's output data and sound file is stored. To change a sound file, just replace the existing file with the new file. The new file must have the exact same filename as the original file for it to work.

BOOBX 8+ SOUND FILES		
FOLDER	FILENAME	DESCRIPTION
\\FI-208\\AMBIENT\\	000.MP3	Sound file for Ambient Mode
\\FI-208\\INPUT1\\	000.MP3	Sound file for Input 1 Scare
\\FI-208\\INPUT2\\	000.MP3	Sound file for Input 2 Scare
etc...		

Copying Sounds to the Internal Memory

Copying sounds to the internal memory is done using the ScareMaster. The sounds must be placed in a show folder located inside the FI-SHOWS folder on the ScareMaster's SD card. The total size of all your sounds must be less than 4 megabytes when using the internal memory.

On the ScareMaster's SD card is a folder named FI-SHOWS which contains all the show files. To create a new show it's best to duplicate one of the existing show folders and just rename it to the name of your new show. Right-click on one of the existing show folders, select Copy, then right click anywhere else in the window and click Paste. You should now see a duplicate of the show folder you copied. Click on the name to rename it. NOTE: When renaming, use a name of 8 characters or less.

Open your new show folder, inside you'll see nine folders, one for each scene. Inside the scene folder is where you put the sound file. The sound file must be in MP3 format, and must be named "000.MP3". You'll notice there are also eight 00x.BIN files in each scene folder, leave these files untouched, they are used by the ScareMaster to store the animation.

Have a look in the other scene folders and delete and sound files that were from the previous show. For example, if the show you originally copied had an Ambient sound, and this one doesn't, make sure you go into the Ambient folder and delete the 000.MP3 file.

If you want more than one sound per scene you can add up to seven more. They must be named in sequence from 001.MP3 up to 007.MP3. Each time the BooBox is triggered it will play the next scare sound in the list. You also have to program animation for these sounds, do that by selecting the appropriate scene on the ScareMaster. For example if you wanted to program animation for Input 1 Scene 1, select scene IN1-1.

FI-SHOWS FOLDER SOUND FILES		
FOLDER	FILENAME	DESCRIPTION
\\FI-SHOWS\\SHOW\\AMBIENT\\	000.MP3	First sound file for Ambient Mode
\\FI-SHOWS\\SHOW\\INPUT1\\	000.MP3 001.MP3	First sound file for Input 1 Scare Second sound file for Input 1 Scare
\\FI-SHOWS\\SHOW\\INPUT2\\	000.MP3	First sound file for Input 2 Scare

Uploading the Sounds to the Internal Memory

To upload the sounds from the ScareMaster's SD card to your BooBox 8 go into your ScareMaster's Device Menu, then into the Show Menu, then into Upload Sounds. You will be presented with a list of show folders. Scroll down the list until you have found the show folder where you put the sounds. Press enter, the sounds will be uploaded into your ScareMaster.

DMX – Dimming Lights

The new BooBox 8+ uses DMX lights or dimmer packs to dim lights rather than doing it inside the box like the original BooBox. This gives you the flexibility to dim much more than two lights, or if dimming lights isn't of interest to you, then you didn't have to pay for all the unused circuitry. DMX is an industry standard control protocol used to control lights, strobes, fog machines, and many other exciting stage and theatre products.

DMX Primer

DMX uses a single cable to transmit up to 512 channels of control information to many DMX devices at once. Think of the DMX cable as a TV cable, a single TV cable has many TV channels running down the wire at the same time, it's up to your TV to tune into the one you want to watch and ignore the rest. Same with DMX, each DMX device must be told which channels you want it to listen to.

The BooBox 8 in this case is the transmitter, it's broadcasting lighting and control information down the DMX cable. The first two DMX channels, 1 & 2, are reserved for BooBox control information so the first channel available for lighting information is channel 3. Different DMX devices can tune into more than one channel at a time, for example our 4 Channel DMX Dimmer Pack listens to four DMX channels, one DMX channel for each light outlet. More sophisticated DMX devices listen to even more channels depending on how many options they allow you to control. Color, Brightness, Position, Rotation, etc, can all be controlled through DMX if the fixture supports it.

Setting DMX Channels

If you were using our 4 Channel DMX Dimmer Pack, you'd want to set it to listen to channels 3,4,5, and 6. Any additional dimmer packs would be set to the next available channels, which in this example would be 7,8,9, and 10. You don't have to use all 4 channels if you don't want, use the minimum you need to get the job done. If you only have two lights you want to dim then you'd only want be using channels 3 and 4.

The dip switches on DMX fixtures allow you to set the starting address. In our example above you'd want the starting address of the first dimmer pack to be channel 3, and the second dimmer pack to be channel 7. Each little switch has a binary value, the first switch has a value of 1, second is 2, third is 4, fourth is 8, fifth is 16, etc.

So to set the first pack to DMX channel 3, you need to turn on the switches that add up to the number 3, that would be switches 1 & 2 (1+2=3). To set the second pack to address 7, you'd need to turn on switches 1, 2, & 3 (1+2+4=7).

DMX Wiring

You'll need to connect your DMX network to the DMX terminals on the BooBox 8. The easiest way to do this is to cut the appropriate end off a DMX cable, strip it, and connect the wires into the DMX 1, 2, and 3 terminals. Look carefully at the DMX connector on the cable, the pin numbers are marked on each pin, make sure the wires from each pin connect to the appropriate terminals on the BooBox 8.

Enabling DMX

By default the BooBox 8 and ScareMaster are set to broadcast only the 2 control channels. To control any DMX devices you'll need to increase the number of channels. To use DMX lighting you must increase the number of channels to 2 + the number of lights, for example, set it to 4 to control two lights, 6 to control four lights, etc.

To do this hold the REC button for a few seconds. A screen will pop up showing the current number of channels being output, as well as the DMX channels currently assigned to sliders A and B. Press the UP and DN buttons to adjust the number of channels, slide the A and B sliders to change their assigned channel. Once you exit the menu the sliders should be controlling the lights now, make a recording pass to program the first two channels. If you have more than two channels, hold REC again switch the A-B channels to 5 and 6 to program the other two lights.

Outputs 1 & 2

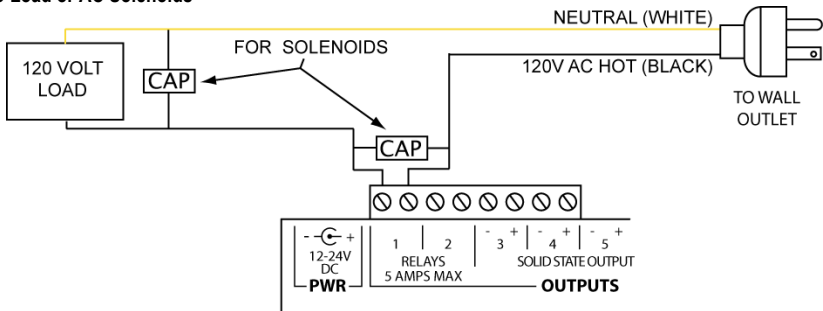
These outputs are simple contact closures, they do not supply voltage, if you would like them to you must wire voltage into one of the terminals. If you plan to use 120 volts then it is your responsibility to take the appropriate safety precautions with wiring. Each relay can handle 5 amps @ 125 volts.

Controlling Solenoids or Large Relays

Solenoids and Large Relays create a lot of interference, 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. For AC solenoids you need to use a capacitor, 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.

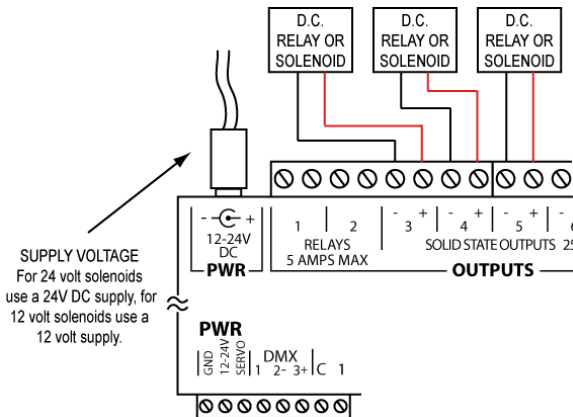
Some Radio Shack part numbers for capacitors are 272-1053 or 272-1051.

AC Load or AC Solenoids



Outputs 3 thru 8

These outputs are solid-state which means they have no moving parts to wear out making them extremely reliable. These outputs can supply voltage directly to solenoids or relays. The voltage output depends on the power supply connected to the BooBox 8, use a 12 volt power supply for 12 volt solenoids, or a 24 volt power supply for 24 volt solenoids.



Servo Outputs

The servo outputs are controlled using DMX channels 3 and 4. You must connect a power supply for your servos to the SERVO pin on the front terminal block. This is generally a 5 volt DC regulated supply.

If your servos support more than 90 degrees of motion then you can turn on the HiRange option. This will usually give up to about 180 degrees of motion. To do use go into the Device Menu of the ScareMaster, then to Device Settings, then set Servo HiRange to YES. Test this carefully when you first turn it on. If your servo motion maxes out in either direction do not move the slider any further, this can damage your servo.

Trigger Inputs

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	<ul style="list-style-type: none">- Very affordable- Unaffected by fog machines- Easily installed	<ul style="list-style-type: none">- Triggering time can vary a bit	4 wires = Normally Open 3 wires = Normally Closed
Beam Sensor	<ul style="list-style-type: none">- Triggering time is instant and consistent	<ul style="list-style-type: none">- Can be a bit pricey- Installation can be tricky at first- Affected by fog machines	Normally Open
Pressure Mat	<ul style="list-style-type: none">- Relatively affordable- Simple installation	<ul style="list-style-type: none">- Patrons can often spot the mat- Patrons may not step on mat- Hiding and protecting the wire and mat	Normally Open
Pushbutton	<ul style="list-style-type: none">- Actor can judge best time to trigger	<ul style="list-style-type: none">- Need an actor	Normally Open

Using PIR Motion Sensors

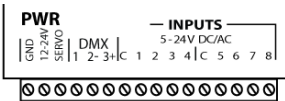
If your PIR Motion Sensor has four wires, it uses a normally-open contact, there is no need to change your contact type for this sensor. These motion sensors also have four wires, the white wire goes in the same terminal as the black one. For most other PIR sensors you'll have to set the contact type to normally-closed.

PIR motion sensors have a built-in delay of about 2 minutes when they are powered up. During this delay the BooBox 8's "1" or "2" input light will blink to indicate it is waiting for the sensor to warm up. This is normal, once the sensor is warmed up the BooBox 8 will begin operating normally.

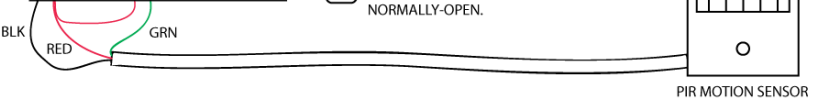
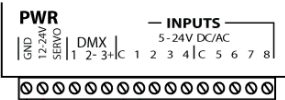
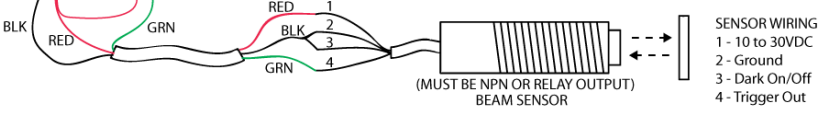
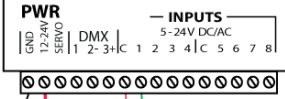
Determining your Trigger's Contact-Type

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 BooBox 8, 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 BooBox 8, 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.

Input Wiring Diagrams



TO USE ANY OF THE DIAGRAMS BELOW FOR INPUTS 2-8, JUST USE TERMINAL 2-8 INSTEAD OF 1. FOR INPUTS 5-8 YOU MUST ALSO CONNECT THE OTHER "C" TERMINAL TO 12-24V.



IF YOUR MOTION SENSOR HAS A WHITE WIRE, PUT IT IN THE GND TERMINAL WITH THE BLACK WIRE. ALSO LEAVE THE CONTACT SET TO NORMALLY-OPEN.