



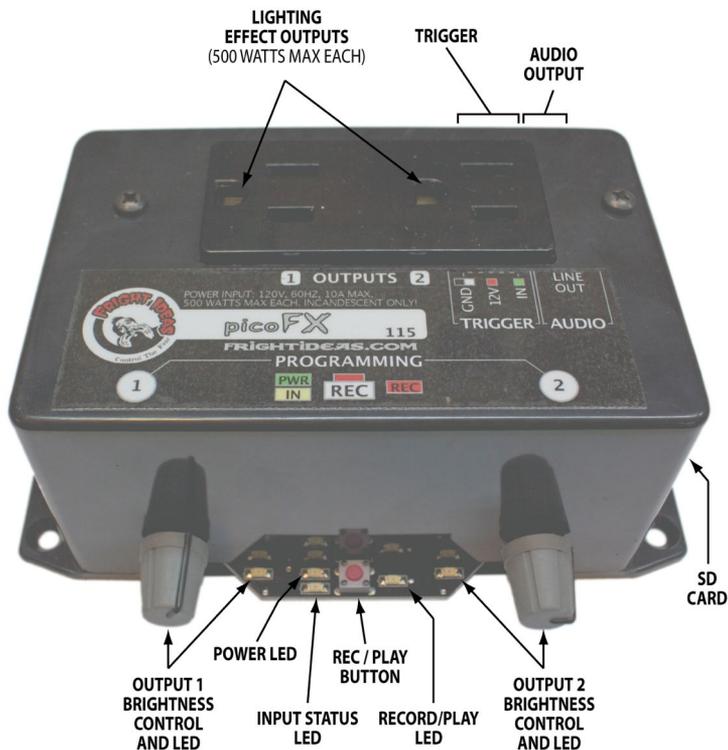
# PicoFX

OPERATING MANUAL  
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## Getting Familiar with your PicoFX



### CONNECTIONS AND CONTROLS

Lighting Effect Outputs	Plug your lights into one of these outlets. Incandescent lights only, 500 watts maximum per outlet. See <i>Settings</i> for more output options.
Trigger	3 pin pluggable terminal block for optional trigger.
Audio Output	3.5mm stereo audio jack for connection to speakers or audio amplifier.
Output x Brightness Control and LED	Brightness control and indicator for the corresponding outlet.
Power LED	Indicates power.
Input Status LED	Indicates when the trigger input is active.
Record/Play Button	Tap this button to play the scene, or hold for 3 seconds to record.
Record/Play LED	Indicates solid red when recording, flashes red while playing.
SD Card	Socket for standard SD card. Push to eject. Cards sizes 32MB and higher are supported, including SDHC cards (4GB and higher).

**Operation**

The PicoFX powers up in Ambient mode. In this mode it will loop through the sounds and any lighting effects located in the AMBIENT folder. Once triggered, the PicoFX will play one of the sound and lighting sequences from the INPUT1 folder. When the sequence is finished, it returns to Ambient mode.

**Examples**

Your SD card includes some example programs that demonstrate different aspects of the PicoFX. See the FI-115 README.TXT on the SD Card for more detailed descriptions and instructions on how to try them.

EXAMPLES ON THE SD CARD	
STORM1, STORM2, STORM3	A variety of thunderstorm lighting and sound effects.
PEPPER'S GHOST	Actor-controlled Pepper's Ghost transformation.
PEPPER'S GHOST LOOP	Traditional Pepper's Ghost repeating over and over.
ELECTRIC CHAIR	Actor-controlled electric chair lighting and sound.
POWER FAILURE	A power failure in a child's bedroom followed by an air cannon.

Audio

**Connecting Speakers**



The PicoFX's internal MP3 player outputs the standard line-level audio signal typically expected by most audio amplifiers. Amplified speakers, computer speakers, and AV Receivers are a few examples of amplifiers that will work great with your PicoFX.

The end of the audio cable that connects to the PicoFX should be a 3.5mm stereo jack, same as a set of headphones. The other end will have to match the input of your amplifier. A 3.5mm stereo jack, or red and white RCA jacks, are the most typical inputs for these devices.

## Changing the Audio

To change the audio on your PicoFX you must replace the MP3 audio file(s) located in the \FI-115\AMBIENT\ and \FI-115\INPUT1\ folders. Sound files must be in MP3 format. See *Sound Filenames* below for more information on naming sound files.

### Downloading MP3 Audio Files

A lot of ready to use MP3 files can be easily downloaded from the internet. Try websites such as [www.findsounds.com](http://www.findsounds.com) or <http://www.sounddogs.com> to search for sound files.

### Creating an MP3 from a CD Track

The easiest way to do this is to use the free iTunes software available from [www.apple.com](http://www.apple.com). The default audio file created by iTunes is AAC, which will not work. After you install iTunes change the import format to MP3. To do this open the Preferences, click on General, then Import Settings, select MP3 Encoder. Import the track from the CD by clicking on the CD in the left column and then clicking import. Once that's done, go to your Music Library and find the new song, then drag it to the SD card.

### Creating or Editing MP3 Audio Files

To create or edit an MP3 audio you'll need an audio editor. A free program Audacity is available from [audacity.sourceforge.net/](http://audacity.sourceforge.net/). You'll also need to install the Lame MP3 Encoder listed on their site so you can save as MP3.

## SD Card Layout

The PicoFX has one main device folder named "FI-115" under which all other files and folders are kept. In addition to the sound files, there are a few files that the PicoFX uses to get firmware updates or save animation. See the table below for details.

The PicoFX uses two folders to organize the sounds according to when you want them played. There is an ambient folder for the sounds that loop while the unit is idle. As well as one for the sounds that play when the unit is triggered.

SD CARD FOLDER LAYOUT	
FOLDER	DESCRIPTION
\FI-115\	<b>Main Device Folder</b>
FI115FRM.BIN	Firmware (May or may not exist)
\FI-115\AMBIENT\	<b>Folder for Ambient Sound</b>
000.MP3	Ambient sound file
\FI-115\INPUT1\	<b>Folder for Input 1 Sound</b>
000.MP3	Trigger input sound file
000.BIN	Trigger input animation file.

### Sound Filenames

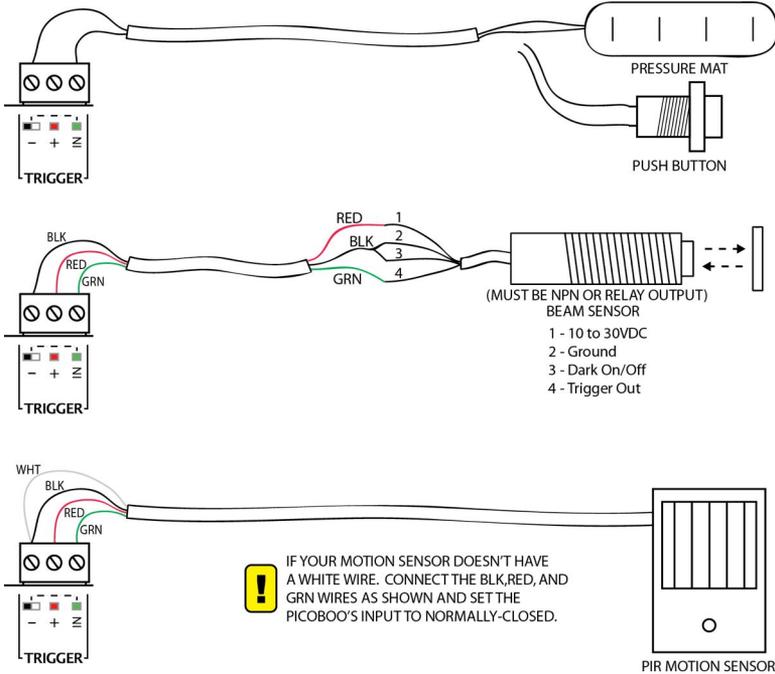
If you only have one sound in a folder then the filename can be anything as long as it's an .MP3. If you are using more than one sound file and aren't recording lighting effects for each sound then filenames can still be anything. However, if you have multiple sound files and will be recording lighting effects for each sound, then the sounds must be named with a three digit number starting with "000.MP3". See *Advanced Recording* for more information on multiple sounds with lighting.

Depending on the settings of your operating system, you may or may not see the .MP3 portion of the filename. If you don't see it then don't add it. This will result in a file named "000.MP3.MP3" which will not work.

The .BIN files are animation files, and can be copied to other folders or SD cards to clone shows.

## Wiring the Trigger

The PicoFX is designed to work with low-voltage sensors or contact closures only. DO NOT use typical outdoor motion sensors found at local hardware stores. The PicoFX will trigger when the IN terminal is connected to the GND terminal. As illustrated below, this can be accomplished in several ways.



### Using PIR Motion Sensors

Some motion sensor's outputs are normally-closed, meaning it connects the IN to GND when there's no motion, and disconnects it when there is. If this is the case, you must set the PicoFX's input to normally-closed. See the *Settings* section on the next page for details on how to do this.

If you are unsure if your motion sensor is normally-open or normally-closed, connect it using the third diagram above. Power up the PicoFX, wait a few minutes for the motion sensor to warm up. Trip your sensor as you watch the yellow input light on the PicoFX. If the yellow light turns ON when the motion sensor activates, it's normally-open. If it turns off, it's normally-closed. If it does nothing there is a wiring problem.

## Outputs

### Connecting the Outputs



As shipped the PicoFX can only be used to control incandescent lights. Plugging fluorescent lights, solenoid valves, relays, or other non-dimmable devices into these outputs may damage the PicoFX and your device. See the *Settings* section for instructions on setting an output to ON/OFF so it can be used to control these types of devices.

The outlet receptacle on the PicoFX is split into two separate outputs. Brightening output 1 will turn on the left side, while brightening output 2 will turn on the right. You can use power bars and extension cords to connect as many lights as you want as long as the total wattage for each outlet is 500 watts or below.

The PicoFX is internally fused at 1000 watts. Keep the total wattage at or below this value or the fuse will blow.



### Recording the Lighting Effects

#### Standard Recording

1. Hold the REC button for 3 seconds until the REC LED turns on.
2. Let go of the REC button. The PicoFX will now count down 3, 2, 1, GO, by blinking the REC LED.
3. The REC led will turn on and the sound will start playing. Use the knobs to brighten and dim the lights in sync with the sound.
4. When you're done press REC again to stop the recording.
5. Tap REC or activate the trigger input to play back the scene.

This process will always play the audio of the first sound file in the INPUT1 folder. For more advanced setups where ambient lighting effects or multiple sound files are required please see *Advanced Recording*.

#### Advanced Recording

The recording process works in the INPUT1 folder, playing the first sound file, and recording animation to the 000.BIN file. By doing some file renaming along the way, it's possible to record multiple lighting effects for your ambient or input scene, each with their own sound. It's best to use numbered filenames such as 000.MP3, 001.MP3, etc, when using this technique.

Because recording always uses the INPUT1 folder. If you'd like some lighting effects for your ambient sound, then inside the INPUT1 folder...

1. Make a copy of the 000.BIN file and rename it INPUT.BIN.
2. Rename the 000.MP3 file to INPUT.MP3.
3. Move your ambient sound into the INPUT1 folder and rename it 000.MP3.
4. Record using the *Standard Recording* method above. Repeat until satisfied with the result.
5. Move both the 000.MP3 and 000.BIN files into the AMBIENT folder.
6. Rename the INPUT.MP3 and INPUT.BIN files back to 000.MP3 and 000.BIN.

If you'd like additional scenes with lighting effects for either ambient mode or the trigger. Then inside the INPUT1 folder...

1. Make a copy of the 000.BIN file and rename it 001.BIN.
2. Rename the 000.MP3 file to 001.MP3.
3. Put the additional sound into the INPUT1 folder and rename it 000.MP3.
4. Record using the *Standard Recording* method above. Repeat until satisfied with the result

For additional scenes simply repeat the above steps, renaming 001.BIN and 001.MP3 in steps 1 and 2 to 002, 003, etc., each time. If you want the scenes to be in the ambient folder, simply move them there and rename the INPUT1 files back to their original names.

Triggering the PicoFX will play the 000 files the first time, 001 the second, 002 third, etc.

## Settings

The PicoFX has some hidden features that can be enabled by creating empty folders with special names. See the tables below for a list of settings that can be enabled. To enable the setting, simply create the folder in the location shown.

GLOBAL SETTINGS	
FOLDER NAME	DESCRIPTION
\FI-115\_NODIM1	<b>Output 1 Dimming Disable</b> This will set output 1 to an ON/OFF only output, preventing it from dimming. This is required for controlling fluorescent lights, strobe lights, solenoid valves, or other devices that will be damaged, or damage the PicoFX if they are dimmed.
\FI-115\_NODIM2	<b>Output 2 Dimming Disable</b> Same as above but for output 2.
\FI-115\_PROTECT	<b>Write Protect</b> Use this option to write-protect your animation. The REC button will no longer start a record sequence if it's held for 3 seconds. It can however still be used to start playback.

SCENE SETTINGS	
FOLDER NAME	DESCRIPTION
\FI-115\INPUT1\_NCINPUT	<b>Normally-Closed Input</b> Use this option to set the trigger input to normally-closed. Required for some PIR motion sensors.
\FI-115\INPUT1\_MOMENT	<b>Momentary Input</b> Use this option if you want the input scene to play only for as long as the trigger is active. This is useful for some actor-controlled scares where the actor needs to control the length of the scene.
\FI-115\INPUT1\_LENSND or \FI-115\AMBIENT\_LENSND	<b>Scene Length = Sound Length</b> Use this option if you want the particular scene length to be exactly the same as your sound. Using this will stop scene recording and playback when the sound is finished playing.

### Example

To Set the trigger input to normally-closed. Create a folder named `_NCINPUT` inside the `FI-115\INPUT1` folder.

## Troubleshooting

TROUBLESHOOTING TABLE	
Problem	Solution
The IN LED blinks on power up.	- The trigger input is set to normally-closed and the PIR sensor is warming up. Wait for the sensor to warm up.
The unit is plugged in but the PWR LED is not on	- Check that the power cord is inserted firmly into the back of the unit. - The fuse may be blown. Replacement details in the specifications table below.
Holding the REC button does not start recording	- The unit may be write-protected. See the <i>Settings</i> section.
No Sound	- Make sure the audio file is in MP3 format and it is correctly named. See <i>SD Card Layout</i> .

Certain SD card errors will trigger an error code which is indicated by blinking the error number using the REC LED. Count the number of blinks, then see the chart below for the cause.

REC LED ERROR CODES	
Blinks	Error Description
1	No SD Card
2	No FI-115 folder
3	No FI-115\INPUT1 folder
4	No 000.BIN file in the FI-115\INPUT1 folder
5	Error writing to the SD card
13	SD card format error. Card format is not FAT16 or FAT32.

## Specifications

SPECIFICATIONS TABLE	
<b>Audio</b>	
Capacity	Depends on size of SD card
Quality	160kbps MP3
<b>Physical</b>	
Length	5.75"
Width	3.25" enclosure only, 4.25" including connectors
Height	2.5"
Weight	1.1 Lbs (0.5Kg) including power cable
<b>Electrical</b>	
Operating Voltage	120 VAC
Power Consumption	10 amps max. (1200 watts)
Power Cable	6 feet long
AC Outputs	500 watts each
Internal Fuse	10 amp Fast Blow 5x20mm