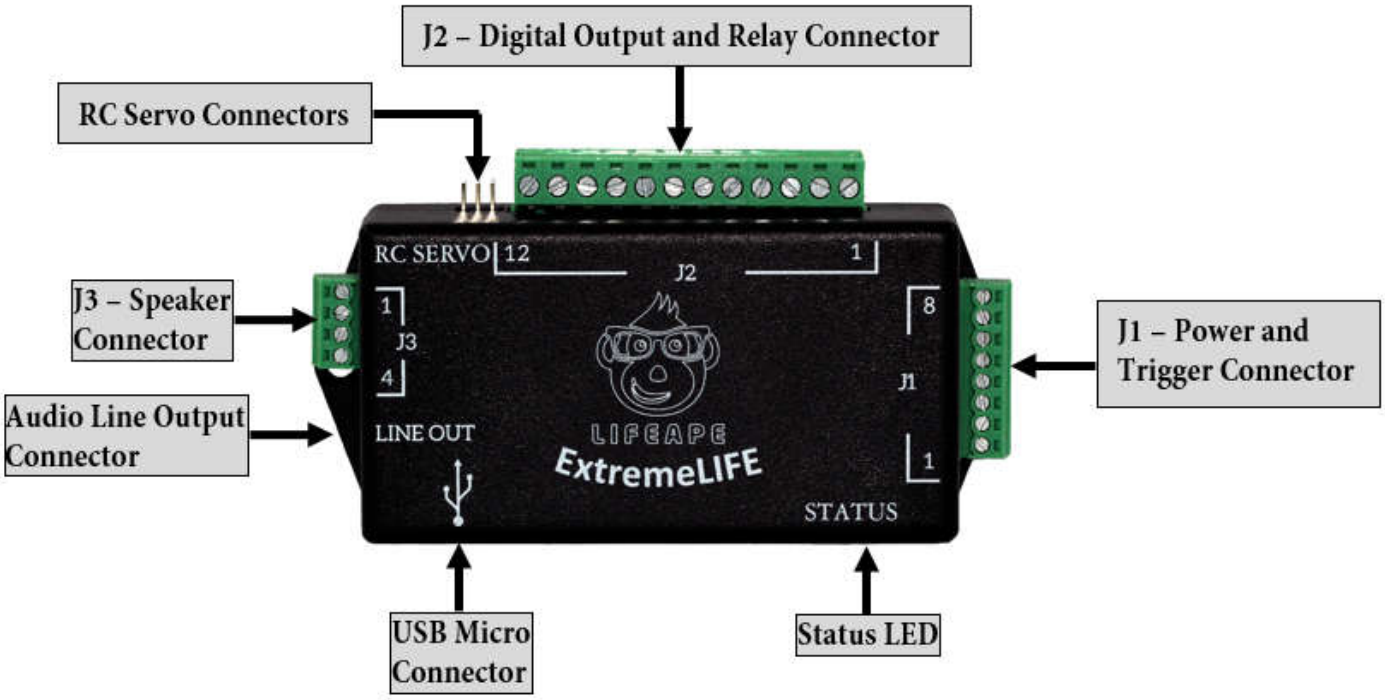
Getting to Know the ExtremeLIFE Controller

The ExtremeLIFE animatronics controller provides:

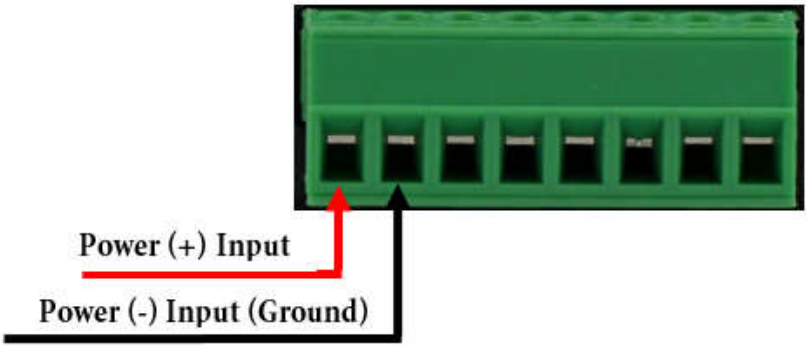
- **Simple programming using the LifeApe SceneBuilder application**
- **Standard USB micro connector**
- **8 programmable digital outputs**
- **7.5 minutes of MP3 digital audio storage (no SD Card needed)**
- **On-board 30W audio amplifier for unpowered speakers**
- **Line level audio output for powered speakers**
- **1 Trigger input compatible with 5 V, 12 V, or 24 V devices**
- **9 V to 28 V power supply input range**
- **Fully enclosed box with no electrical components exposed**
- **Removable screw terminals and mounting tabs for easy installation**



Connecting Power to the ExtremeLIFE

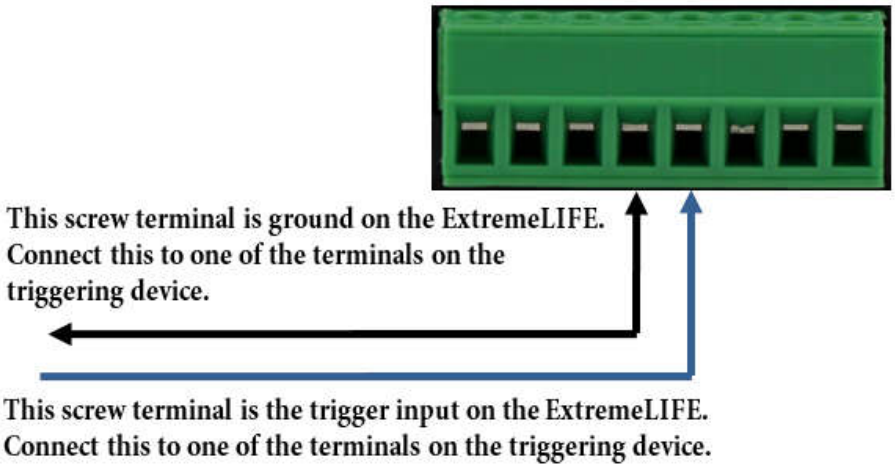
The ExtremeLIFE can be powered by either a +12 VDC or +24 VDC power supply. If you plan to use the on-board 30W audio amplifier it is highly recommended to use a 3 Amp or higher power supply.

Connect power to the ExtremeLIFE as shown. Once power is provided the status LED will flash green.

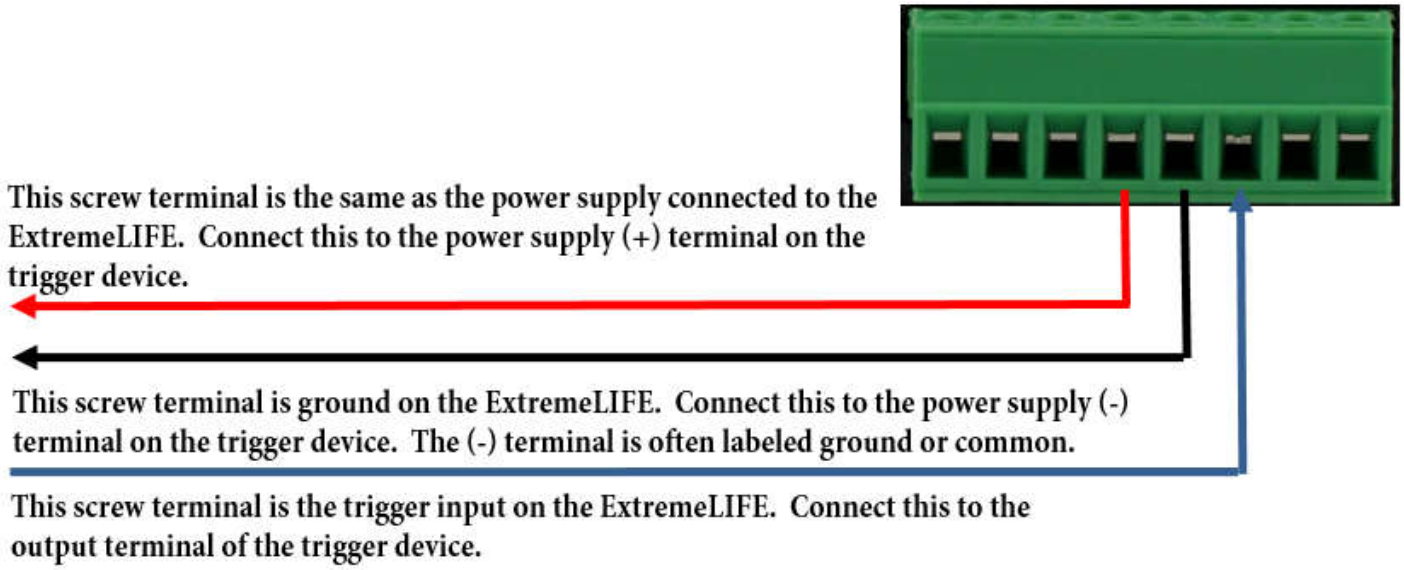


Connecting Trigger Devices

The ExtremeLIFE can be triggered from any device or sensor such as a pressure mat, IR beam sensor, proximity sensor, motion detector, hand trigger, and many others. The ExtremeLIFE is triggered when the controller is in Live mode and the trigger input on the *Power and Trigger Input Connector* is connected to ground or common. Many trigger devices, such as a pressure mat, close an internal switch that connects its input wires together. To connect to devices like a pressure mat you need to wire a ground connection and the trigger input from the ExtremeLIFE to the trigger device as shown here.



Other triggering devices require an external power supply, such as an Infrared (IR) Beam Sensor. Triggering devices that require a power supply typically have an output terminal that connects to the trigger input terminal on the ExtremeLIFE.

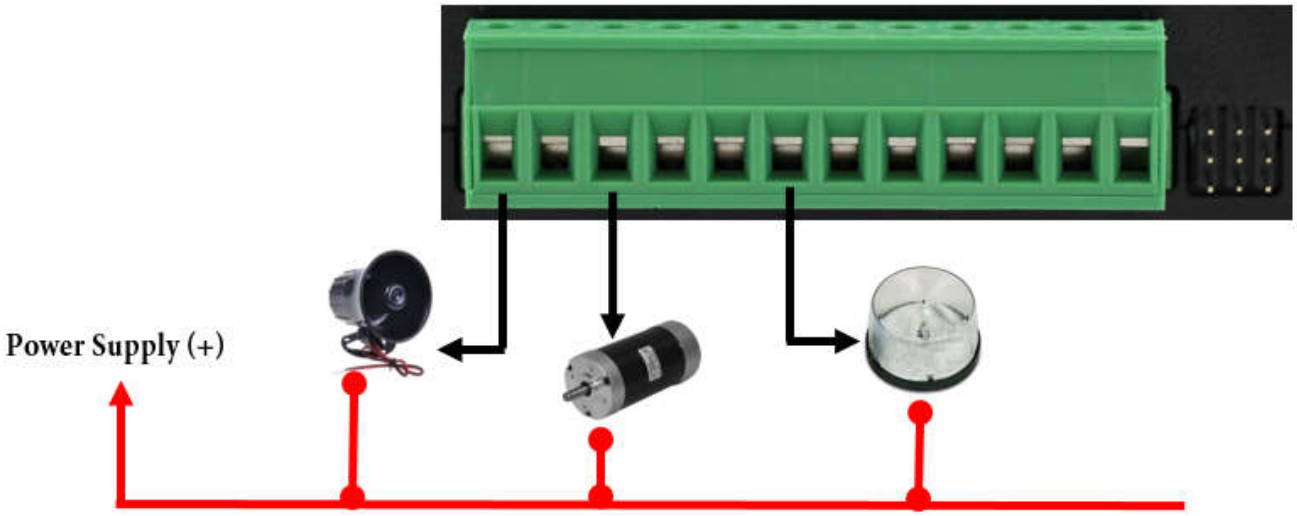


NOTE: The trigger input is used only when the ExtremeLIFE is in Live mode.

Connecting Devices to the Digital Outputs

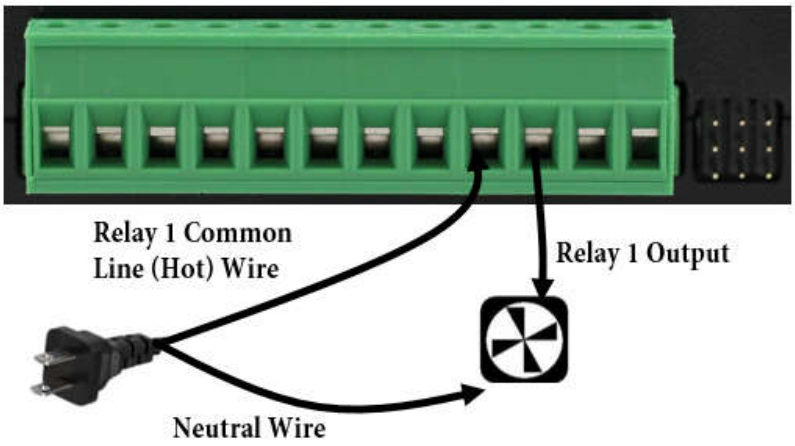
Digital outputs 1-6 are referred to as sinking outputs. A sinking output provides a connection to ground when turned on and is disconnected (open circuit) when turned off. These outputs are only compatible with DC powered devices such as solenoids, pneumatic valves, DC motors, LED lighting, horns, and many others. They provide built-in flyback diode protection for controlling inductive loads. If you aren't sure what that means – don't worry. Just understand there is protection built inside the ExtremeLIFE to connect with any DC powered device you want.

Connect devices to digital outputs 1-6 by wiring the power supply (+) terminal to the (+) terminal of the device. Wire the digital output from the ExtremeLIFE to the (-) terminal of the device. Below are a few examples showing digital output 1 wired to a horn, digital output 3 wired to a DC motor, and digital output 6 wired to a strobe light.



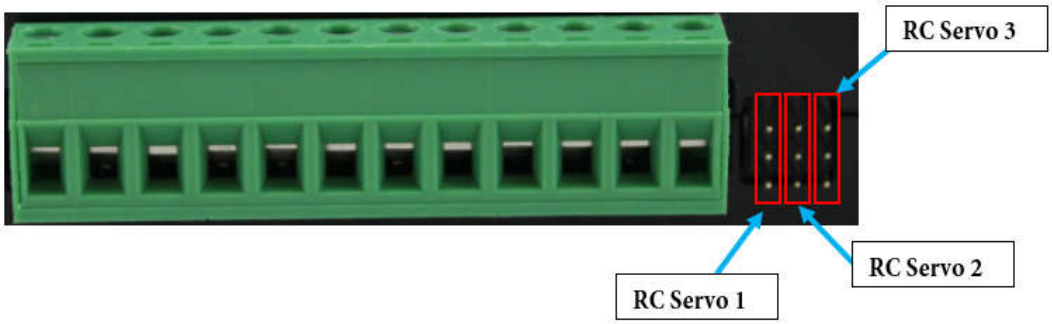
NOTE: Digital outputs 1-6 can each provide a maximum of 200 mA. The majority of devices used for prop control require 100 mA or less. You should never have to worry about not having enough current being supplied to your devices.

Digital outputs 7 and 8 are electromechanical relays. These outputs are used to control AC powered devices. Each relay can switch up to 10 amps at 120 VAC. Both relays are referred to as normally open. This means the relay common and output terminals are not connected by default. When the relay is turned on the switch closes and the relay common terminal is connected to the relay output terminal.



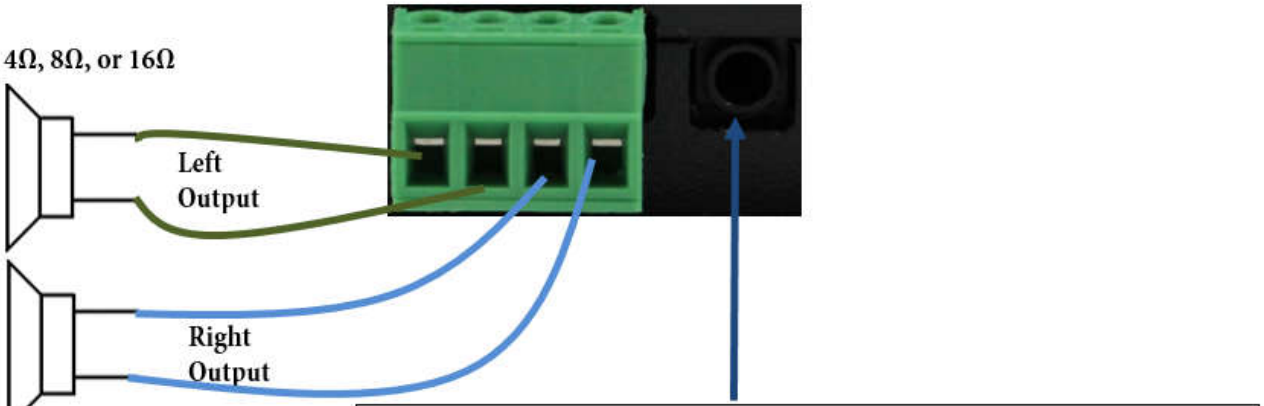
Connecting RC Servo Motors

The ExtremeLIFE controller support up to three RC servo motors. The RC servo motors are numbered as shown below.



Connecting Amplified and Unpowered Speakers

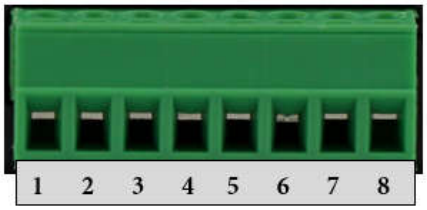
The ExtremeLIFE provides a powerful on-board 30W stereo amplifier for connecting unpowered speakers. It also includes a standard 3.5mm line out stereo jack for connecting amplified speakers. The amplifier can drive car, horn, or other speakers with an impedance of 4Ω, 8Ω, or 16Ω. Using the on-board audio amplifier requires higher current from the input power supply. If your power supply is undersized (not enough current) when using the onboard audio amplifier, you may hear the audio cutting out or the ExtremeLIFE may suddenly turn off.



NOTE: LifeApe strongly recommends using our +12V @ 5A power supply if you plan to use the onboard amplifier.

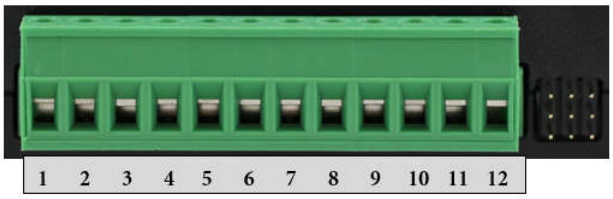
NOTE: You can simultaneously connect powered speakers to the line out connector and unpowered speakers to the speaker connector.

Connector Pinouts



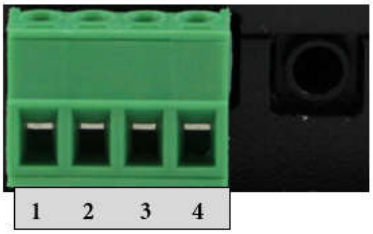
J1 – Power and Trigger Input Connector Pinout

Terminal Number	Name	Description
1	Input Power +	Power Supply (+) Input (9 V to 28 V)
2	Input Power GND	Power Supply (-) Input (GND)
3	Power +	Power Supply + Provided for wiring convenience to external devices
4	GND	Power Supply – (GND) Provided for wiring convenience to external devices
5	Trigger Input	Connect to GND to trigger the HoudiniMAX in Live mode
6	Reserved	Do not connect
7	Reserved	Do not connect
8	Reserved	Do not connect



J2 – Digital Output Connector Pinout

Terminal Number	Name	Description
1	Digital Output 1	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
2	Digital Output 2	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
3	Digital Output 3	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
4	Digital Output 4	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
5	Digital Output 5	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
6	Digital Output 6	Connect the Digital Output to the ground (-) terminal and the power supply + to the power (+) terminal of the device to control
7	Power +	Power Supply + Provided for wiring convenience to external devices
8	GND	Power Supply – (GND) Provided for wiring convenience to external devices
9	Digital Output 7 (Relay 1) Common	Connect the signal that will be switched to the device when digital output 8 (relay 1) is turned on to this terminal
10	Digital Output 7 (Relay 1) Output	Connect this to the device to control with digital output 7 (relay 1)
11	Digital Output 8 (Relay 2) Common	Connect the signal that will be switched to the device when digital output 8 (relay 2) is turned on to this terminal
12	Digital Output 8 (Relay 2) Output	Connect this to the device to control with digital output 8 (relay 2)



J3 – Speaker Connector Pinout

Terminal Number	Name	Description
1	Speaker Left +	These outputs provide left-channel stereo audio from the on-board 30W amplifier on the ExtremeLIFE.
2	Speaker Left -	
3	Speaker Right +	These outputs provide right-channel stereo audio from the on-board 30W amplifier on the ExtremeLIFE.
4	Speaker Right -	

ExtremeLIFE Specifications

Power Supply Input

Input Range…….. 9 to 28 VDC

Animation

Recording Time…….. 60 Minutes

Digital Outputs

Number of Outputs…… 6
Output Current…… 200 mA per output
Output Type…….. Sinking (switches to ground)

Relay Outputs

Number of Outputs…….. 6
Output Current…….. 10 Amps per output
Voltage……... 120 VAC

Audio

Amplifier Output Power…….. 30 Watts
Amplifier Output Type……..…… Stereo Output
Maximum Recording Time…… 7.5 Minutes
Formats Supported…….. MP3

RC Servo

Number of Servos…… 3

Trigger Input

Input Low Voltage…… 1 V
Input High Voltage…….. Up to input power supply

Mechanical

USB Interface…….. Micro-B Connector
Physical Dimensions…… 4.88“ x 2.25“ x 1.50“