

MK CONTROLS



- sensitivity +



*Lightning Bug
Plus*

LIGHTNING BUG PLUS™

FIRMWARE VERSION 1.7

INSTRUCTION MANUAL

Please remember that your safety is much more important than getting the shot.

Being safe should always be your primary concern. Lightning can be lethal.

Be sure to seek shelter if a storm is too close!

Please note: MK Controls, Inc. is not liable for any damage or injury associated with the use of the Lightning Bug Plus™.

Lightning Bug™ and Lightning Bug Plus™ are trademarks of MK Controls, Inc.



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Introduction

The Lightning Bug Plus™ – Engineered for your imagination.

The Lightning Bug Plus™ is based upon the science of lightning. There are two components of lightning; the bright white flash everyone wants to capture and the unseen infrared light that always precedes it. The Lightning Bug Plus™ uses a high-speed phototransistor sensor optimized to sense the infrared burst that occurs just before a lightning strike. This infrared light comes from the vaporization of air and particles in the air. The Lightning Bug Plus™ acts as a lookout for your camera, watching for a change in infrared light. When a significant change of infrared light over a very short period of time is detected, it trips the camera shutter to capture the visible lightning bolt.

The Lightning Bug Plus™ can also be used to take photos of fireworks, cannon shots, virtually anything that produces a fast-acting rise of infrared light formed by a high-temperature event.

The Lightning Bug Plus™ exclusive sensitivity adjustment circuitry allows the photographer to customize the unit's operation to any shooting situation. This gives the photographer full control over when to take the picture. If you only wanted to capture the brightest and closest lightning bolts you would decrease the sensitivity. If you wanted to capture lightning over the city or mountains from a long distance, just increase the sensitivity. Only the Lightning Bug Plus™ gives you this level of control.

The Lightning Bug Plus™ has, as standard, premium features not found in simpler lightning detectors. The user can limit the number of possible exposures per second to between 1 and 10. This feature allows you to capture repeated lightning strikes successfully, up to the maximum frame rate of your camera.

When trying to capture weather events, your photography gear can get wet; we've designed the Lightning Bug Plus™ to withstand exposure to rain. The design incorporates weather resistant soft touch buttons.



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The hot shoe mount included on the Lightning Bug Plus may have an external flash PC port, or a ¼-20 mount, depending on when it was purchased. The hot shoe mount incorporates a standard threaded mounting port. Some hot shoes may have a PC port and switch, these are non-functional.

To help you get the most out of your purchase please take a few minutes to read this manual. If you still have questions about using your Lightning Bug Plus™, feel free to email our technical support team at support@mkcontrols.com. We'll be happy to assist.

For examples of the kinds of images that can be taken using the Lightning Bug Plus™, please look at our gallery website page:

<http://www.mkcontrols.com/gallery>

Here are a few images created using our legacy product the Lightning Bug™.



Mike Lenoard Photo ©



Bill Lea Photo ©



Susan Candelario Photo ©



Bill Long Photo ©



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Lightning Bug Plus™ Features

- 26 Levels of sensitivity adjustment.
- Automatic or manual operation of the camera's meter.
- Auto-meter Off feature to help preserve your camera battery during long sessions.
- Exclusive Fireworks delay mode – allows a delay between the initial detected burst, and the actual shutter release. The delay can be adjusted from 0 to 2.25 seconds in 1/4 second increments.
- Attaches to your camera via an industry standard hotshoe mount. Cables are available to fit a wide range of cameras.
- Three simple buttons control all of the features.
- Allows limiting of frames per second – can be adjusted from 1 to 10 FPS.
- Allows adjustment of post-trigger delay to improve capture percentage when using with 'fast' or 'zero lag-time' cameras.
- Water resistant overlay with soft-touch controls protects the Lightning Bug Plus™ from inclement weather, and ensures that it won't be accidentally turned on or off.
- Highly visible orange LED display shows at a glance the current configuration settings.
- Bright yellow LED flashes when the unit detects an event within its field of view.
- Allows testing of your camera connection.
- Retains user settings, even with battery removed.
- Power saving mode to prolong battery life.
- Battery can be removed or replaced without removing the Lightning Bug Plus™ from your camera.
- Power On Self-Test (POST) insures that the unit is operational every time you turn it on.
- Electrical isolation between the unit and your camera via MOSFET technology to protect the camera's electronics.
- Internal firmware is field-updateable via a standard USB-C connector (cable included with the product).



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Specifications

Front overhang from center of camera shoe:	3.51" / 89.15 mm
Rear overhang from center of camera shoe:	0.74" / 18.80 mm
Overall Height not including shoe mount:	1.13" / 28.70 mm
Overall Height including shoe mount:	2.10" / 53.34 mm
Overall Length:	4.25" / 107.95 mm
Overall Width:	2.60" / 66.04 mm
Weight without battery:	2.96 oz / 83.9 g
Weight with battery:	4.48 oz / 127.0 g
Camera connector port~:	2.5mm Stereo
Battery*:	Standard 9 Volt

~Please contact MK Controls, Inc. Technical Support for more information if you intend to make your own cables.

* The Lightning Bug Plus™ will operate with all 9V battery technologies, including rechargeable.



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Battery Installation/Removal

The Lightning Bug Plus™ case incorporates a battery compartment at the rear of the unit. A small latch unlocks a removable battery compartment door.

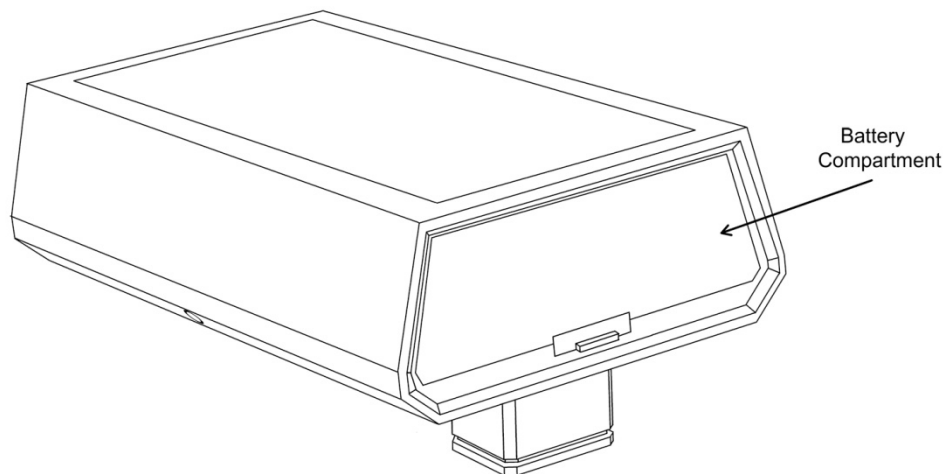
A 9 Volt battery is required for operation. To insert it, gently pull the 9V connector wires out from the compartment and attach a battery. The leads will only allow the battery to be connected in one direction, and snap the leads in place.

After installation of the battery, the compartment door should be replaced – it snaps into position with an audible click.

To remove the battery, reverse the process.

Please note:

MK Controls, Inc. does not recommend leaving the battery in place during long storage periods. There is a slight current draw whenever the battery is installed, and after a period of months the battery may no longer have sufficient operating power if left in the Lightning Bug Plus™ during long-term storage. In addition, batteries can, on occasion, leak electrolytes. This fluid is corrosive, and can damage the circuitry of the Lightning Bug Plus™, in addition to the battery connector. The Lightning Bug Plus™ Warranty does not cover damage due to a leaking battery.



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Camera Connection

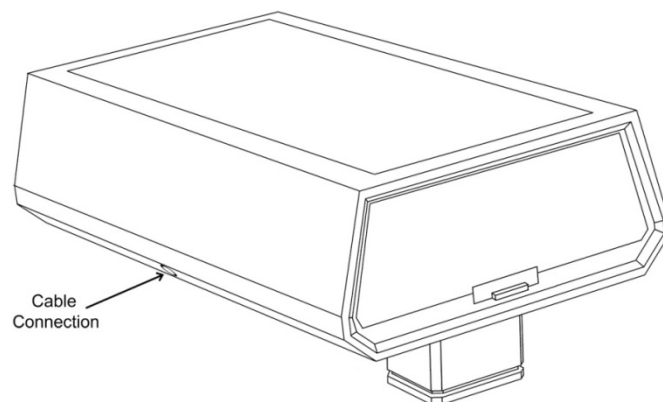
Each Lightning Bug Plus™ purchased includes one cable for connection to your camera. Additional and/or replacement cables are available from MK Controls, Inc.

The camera connector has a 2.5mm stereo male plug on one end, and the appropriate connector for your camera on the other. The 2.5mm female socket is located at the lower right on the unit. When inserting the cable, please make sure it is fully seated for proper operation.

The camera connector is specific for the model camera you're using – please follow manufacturer's recommendations for insertion of this connector.

When the Lightning Bug Plus™ is powered on, it will automatically activate your camera's meter (on cameras that support this feature). Turning the unit 'off' automatically will release the meter. There is also a feature that allows your meter to always remain deactivated until the shutter is tripped – please see the 'Additional Features' section for more information.

The Lightning Bug Plus™ is designed to fit an industry standard shoe mount, and is self-explanatory. For some older SONY cameras, a hotshoe adapter may be required.



WARNING – Do NOT leave the cable inserted in the Lightning Bug Plus™ during storage – this may damage to the connector. The Lightning Bug Plus™ Warranty does not cover this type of damage.



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Operation

Mounting the Lightning Bug Plus™ on a Camera

First, make sure that both the Lightning Bug Plus™ and your camera are powered off. Attach the unit to your camera's hotshoe, and then install the shutter cable. You can then power both units on – either can be turned on first.

Point your camera, and then let the Lightning Bug Plus™ do the rest!

Basic User Controls

The Lightning Bug Plus™ has three 'soft-touch' buttons that are used to operate all of the features:



On/Off



Decrease Sensitivity (or Delay in Fireworks Mode)



Increase Sensitivity (or Delay in Fireworks Mode)

Standard Mode vs. Fireworks Mode

While powering on the Lightning Bug Plus™, the unit will start in Standard Mode (suitable for Lightning photography) or Fireworks Mode (allows for delayed shutter release) depending on which buttons are held down during startup.

To start the unit in **Standard Mode**, press and hold the On/Off button for approximately 2 seconds.

To start the unit in **Fireworks Mode**, press and hold the On/Off button, and the Increase Sensitivity button (the rightmost button) simultaneously for approximately 2 seconds, then release both buttons.



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When the Lightning Bug Plus™ is first turned on, it will display the current firmware version by illuminating the LED's. This version information will remain displayed until the power button is released. This manual describes firmware version 1.7, which will be displayed as shown here:



After releasing the power button, the unit will then execute a Power On Self-Test (POST), which will light up all of the LED's and perform an internal function verification. It will also send a signal to trip your cameras shutter. If during the POST you notice that any LED's fail to illuminate, please contact MK Controls, Inc. Technical Support for troubleshooting.

During power on, the Lightning Bug Plus™ monitors the ambient incoming light, and automatically makes internal adjustments to the current light conditions. This process only takes about 1 second – while making adjustments, the yellow LED will flash quickly.

The Lightning Bug Plus™ remembers important settings including the Frames per Second, the Meter On/Off Mode, and the Sensitivity; these all will load at startup.

To help preserve your camera battery, the Lightning Bug Plus™ will automatically turn your meter off after approximately 15 minutes of inactivity.



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Standard Operating Mode



Decrease Sensitivity

Press this button to decrease the sensitivity of the Lightning Bug Plus™. When this button is pressed, the bargraph display (orange LED's) will show the current sensitivity level. There are a total of 26 levels of available sensitivity. The factory default setting is level 12.



Increase Sensitivity

Press this button to increase the sensitivity of the Lightning Bug Plus™. When this button is pressed, the bargraph display (orange LED's) will be show the current sensitivity level.

Determining the Current Sensitivity

The orange LEDs on the top of the Lightning Bug Plus™ will always display the current sensitivity level whenever the unit is powered on. See Table 1 for more details.

When making adjustments, the LED will brighten to allow easier visualization of the setting, then dim automatically.

The yellow LED (shaped like a lightning bolt) illuminates whenever the unit has detected an event and has tripped the shutter. When making adjustments to the Meter Mode or Frames per Second Mode, this LED flashes at a rate of approximately 2 times per second.



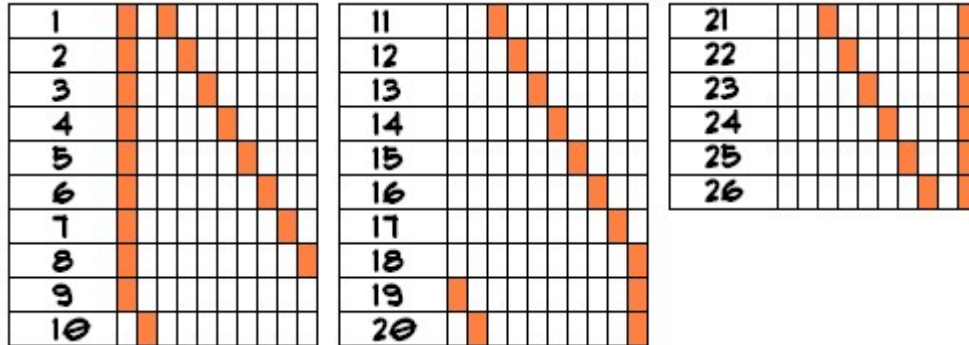
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Table 1: LED Bar graph Display:

Shown below, Level 1 is the LEAST sensitive, Level 26 is the MOST sensitive setting.



It is possible to confused level 8 with level 19. If unsure, increase or decrease the level to verify setting. When adjusting the settings, your camera may trip – this is due to the system making internal changes on the fly. Your camera does not need to be powered on when making adjustments.

Important – if while increasing adjustments the unit begins tripping non-stop, reduce the sensitivity until this stops. The highest sensitivity settings generally are only used for extremely dark environments with lightning a long distance from your location.



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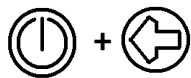
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Additional Features

Adjust Post-Trigger Delay

The Lightning Bug Plus™ allows you to incorporate a slight delay (from 0 to 90 milliseconds*) between when the unit senses lightning, and actual tripping of the shutter. Some newer model cameras, especially those with no mirror, can have zero or near-zero lag time, and consequently, on some occasions, the camera will trigger before the lightning bolt has fully formed.

To make this adjustment, the unit must be powered on. Simultaneously press the On/Off Button and the Decrease Sensitivity Button and hold them for approximately 1 second.



The yellow detection light will flash at a rate of approximately 2 times per second when this mode is correctly entered. The orange bargraph LED will display the current post-trigger delay setting. At the leftmost position, there is no delay, at the rightmost position, the delay is 90 milliseconds. The adjustments are in 10 millisecond increments. For example, to add a 30 millisecond delay, you would increase or decrease the setting until the bargraph looks like this:



Use the Sensitivity Buttons to decrease or increase the delay. The orange LED display will be updated to show the current setting from 1 to 10. If no keystrokes are detected within approximately 3 seconds, the delay setting is stored, and the unit returns to the normal operating mode (the yellow detection light will cease to flash). You can also press the Power Button to immediately exit the adjustment mode and return to normal operation. By default, the Lightning Bug Plus™ is set to no delay.

* A millisecond is 1/1000th of a second.



Adjust Active/Inactive Meter Mode

By default, the Lightning Bug Plus™ will activate your camera's meter anytime the unit is powered on. This functions on most cameras as if the shutter was held down halfway. This greatly reduces the lag between the Lightning Bug Plus™ triggering the camera and the camera actually taking the image.

Powering off the Lightning Bug Plus™ will deactivate the camera meter. This allows easy review of any captured images. In some situations, it may be desirable to have the Lightning Bug Plus™ activate the camera's meter only when the shutter is triggered. This will allow you to review your image on the camera's LCD after the image is captured without turning off the Lightning Bug Plus™, but it may result in missed shots.

To modify this setting, the unit must first be powered on. Simultaneously press the On/Off Button and the Increase Sensitivity Button and hold them for approximately 1 second.



The yellow detection light will flash at a rate of approximately 2 times per second when this mode is correctly entered. Press either Sensitivity Button to toggle between the On and Off modes for automatic meter control. When the automatic mode is On, the rightmost orange LED (below the + sign) will be illuminated. When the automatic mode is Off, the leftmost orange LED (below the – sign) will be illuminated. You can also press the Power Button to immediately exit the adjustment mode and return to normal operation.

When the automatic meter control is Off, the meter will remain OFF until the shutter trips. When the automatic meter control is On (factory default), the meter will remain ON whenever the Lightning Bug Plus™ is powered on (and will be turned OFF when the unit is powered off).



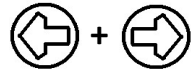
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Verify Shutter Trip

You can verify that the unit is properly tripping your camera's shutter, and also verify the FPS rate, by holding down both the Decrease and Increase Sensitivity Buttons simultaneously.



While holding these buttons, the Lightning Bug Plus™ will continuously trip your camera shutter at the current FPS setting~. Release both buttons to return the unit to the normal operating mode.

~ The Lightning Bug Plus™ is not capable of exceeding your camera capacity for frames per second – this setting reflects the number of times per second that the unit will 'attempt' to trip your shutter. The Lightning Bug Plus™ does not override your camera's exposure settings. If your camera exposure is ½ second, under no circumstance will this be changed.

Adjust Maximum Frames per Second (FPS)

By default, the Lightning Bug Plus™ is setup to trip your camera a maximum of 4 times per second. Note: this setting does not override camera settings – if your exposure is set to 1 second, your camera will not trip at a rate faster than this regardless of settings in our unit.

If desired, you can adjust the maximum frames per second from 1 to 10 FPS via the following sequence:

Power down the Lightning Bug Plus™, then press and hold the On/Off button, and the Decrease Sensitivity button (the leftmost button) simultaneously for approximately 2 seconds, then release both buttons.

The yellow activity light will illuminate and stay on while in this special mode. To exit this mode, you must turn the unit off, then back on again.

The bargraph will display the current frames per second setting.



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Decrease FPS

Press this button to decrease the maximum frames per second.



Increase FPS

Press this button to increase the maximum frames per second.

Firmware Update

The Lightning Bug Plus™ incorporates a microprocessor, which includes software that defines the functioning of the unit, also known as 'Firmware'. The utility and complete instructions for updating firmware in your Lightning Bug Plus™ can be found at <http://www.mkcontrols.com/lightningbug/firmwareupdate> .

Battery Monitor

The Lightning Bug Plus™ checks the condition of the battery about once every 10 minutes. If the battery voltage falls below optimal range, the Lightning Bug Plus™ will flash the orange LED display at a rate of about once per second. Should this occur, please replace (or recharge) your battery immediately.

Reset Factory Settings

The Lightning Bug Plus™ user settings can be reset back to factory defaults by first powering the unit Off, then press and hold the power on button for approximately 10 seconds. The unit will then reset settings and complete the power on sequence.



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Fireworks Mode

When the unit starts in **Fireworks Mode**, the yellow activity light will flash to let you know you're in this special mode. To exit this mode, you must turn the unit off, then back on again. NOTE: Fireworks generate very small amounts of IR light as compared to a lightning bolt; because of this, you must be relatively close to the fireworks to be successful – generally within ½ mile. Local conditions such as humidity, altitude, and ambient temperature can have an effect on how well the Lightning Bug Plus™ will be able to detect fireworks.

The **Fireworks Mode** allows you to choose a delay time between the capture of the 'burst' and the release of the shutter, allowing time for the event to fully bloom before tripping your camera. When in **Fireworks Mode**, the sensitivity is always set to the last sensitivity settings when in **Normal Mode**.

Decrease Delay

Press this button to decrease the time delay. There are a total of 10 levels of available delay, ranging from 0 seconds to 2.25 seconds in 1/4 second increments. The factory default setting is 0 seconds.

Increase Delay

Press this button to increase the time delay.

Determining the Current Delay Level

The orange LEDs on the top of the Lightning Bug Plus™ will always display the current delay level whenever the unit is powered on. See Table 2 for more details.

When making adjustments, the LED's will automatically brighten, then dim to allow visualization of the setting. The yellow LED (shaped like a lightning bolt) will always flash twice, then delay, and repeat this sequence approximately once every 2 seconds.



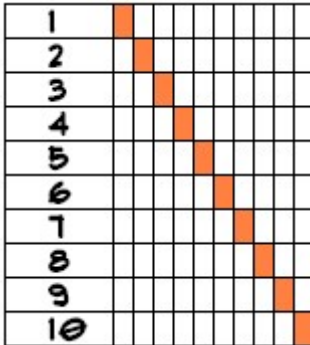
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Table 2: LED Bar graph Display:

Shown below, a setting of 1 is equivalent to NO delay, a setting of 10 is equivalent to a 2.25 second delay.



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Photography Tips

Camera Settings - Day or Night

1. Set your lens to Manual focus. Prefocus on your subject, i.e. a tree, building etc. You can also focus on a distant subject, or set the lens on the infinity setting (∞). With some lenses it helps to place a piece of tape on the focus ring to hold the focus at the proper point.

Note: You can also use the hyperfocal method to ensure there will be enough Depth of Field in your images. If you are unaware of how to use hyperfocal focusing, the Internet is a valuable resource; there is ample information available.

2. Disable live view on cameras that support this feature.
3. Disable mirror lockup on cameras that support this feature.

For day-time use

1. Set the camera to Aperture Priority (A mode). The camera will calculate the proper shutter speed. Set your aperture using the chart below. If the calculated shutter speed is faster than $1/60^{\text{th}}$ of a second, either decrease the ISO, or decrease the aperture (higher numbers). Shutter speeds faster than $1/60^{\text{th}}$ of a second may cause completion of the exposure prior to the formation of the visible portion of the lightning strike.
2. Neutral density filters, or circular polarizing filters may be used as an aid to decrease shutter speed.
3. You can increase or decrease the sensitivity on the Lightning Bug Plus™ based on shooting conditions. The default sensitivity is 12, out of 26 levels. The Lightning Bug Plus™ only triggers your camera's shutter. Changing the sensitivity only changes when the camera captures an image. It does not change the exposure used by the camera during the capture.



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Use the chart below for recommended settings.

Day	Close	Middle	Distant
Very Dim	ISO 100 @ f5.6	ISO 100 @ f4	ISO 200 @ f2.8
Average	ISO 100 @ f8	ISO 100 @ f5.6	ISO 200 @ f2.8
Very Bright	ISO 100 @ f16	ISO 100 @ f11	ISO 200 @ f4

For night-time use

1. Set the camera to Manual Mode (M mode). Set your aperture using the chart below.
2. Set the shutter speed to 1/4 second or longer. When shooting cityscapes, capture several test images. Your exposure should be for the ambient light within your composition.
3. Be sure to experiment with shutter speeds.

Night	Close	Middle	Distant
Very Dim	ISO 200 @ f5.6	ISO 200 @ f4	ISO 400 @ f2.8
Average	ISO 200 @ f8	ISO 200 @ f5.6	ISO 400 @ f2.8
Very Bright	ISO 100 @ f16	ISO 100 @ f11	ISO 200 @ f4



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External Power

The Lightning Bug Plus™ can also be used with an external battery pack via a USB-C connection cable. Using an external power source requires removal of the battery, and the battery compartment hatch.

Accessible inside the battery compartment is a standard female USB-C connector. Any power supply meeting the following conditions can be safely connected to the Lightning Bug Plus™:

- Voltage output between 4.5 and 5.5 volts DC.
- Male USB-C connector.
- External power supply must NOT incorporate charging circuitry (for example, a charger for a phone or other portable device using internal rechargeable batteries)*.
- Must provide a minimum of 500mA of power.

When operating on an external power supply, the battery monitoring circuit is disabled.

* A power supply such as this will fail to operate the Lightning Bug Plus™ due to built-in circuitry monitoring the condition of the batteries it is designed to charge.



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Troubleshooting

1. The Lightning Bug Plus™ will not power on

- Try a fresh 9V battery.
- Check that the battery connector is firmly attached to the battery.

2. During the POST (Power On Self-Test), some of the LED's do not light up or appear dim

- Try a fresh 9V battery.
- Check that the battery connector is firmly attached to the battery.

3. There's lightning all around me, but I'm not getting any pictures!

- Try pressing the LEFT and RIGHT buttons simultaneously with the unit powered on and connected to your camera. If your camera takes a picture once per second, the Lightning Bug Plus™ is communicating with your camera.
- Try a fresh 9V battery.

4. My camera takes a picture when I press the LEFT and RIGHT buttons, but I'm still not getting any shots of lightning!

- Watch the yellow lightning bolt on the Lightning Bug Plus - if it lights up, the unit is 'seeing' the lightning flashes. If your camera still isn't taking pictures when the yellow LED lights up the lightning bolt, your camera may not be configured correctly. - Make sure all of your camera settings are set to 'Manual' - the 'Auto' mode will, in many cases, prevent the Lightning Bug Plus™ from correctly triggering your camera.



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5. When I press the LEFT and RIGHT buttons to test the system, nothing happens

- Please verify that your camera to Lightning Bug Plus™ cable is fully inserted, and inserted correctly, into your camera. Some cables, like the Nikon DC2, can inadvertently be plugged in backwards.

6. There's lightning all around me, but the lightning bolt on the Lightning Bug Plus™ never lights up

- Increase the sensitivity of the Lightning Bug Plus™ by pressing the RIGHT arrow.
- Make sure that the Lightning Bug Plus™ is not behind a pane of glass - most modern glass windows in cars and homes block infrared light, which the Lightning Bug Plus™ needs to 'see' in order to function.

7. My camera keeps tripping the shutter whenever the Lightning Bug Plus™ is attached to it

- Decrease the sensitivity of the Lightning Bug Plus by pressing the LEFT arrow.

8. I can't see my pictures on the camera back immediately after a shot is taken

- Change the meter mode function in the Lightning Bug Plus™ to set the meter to 'Always Off' - see the Operations section of this manual for more details.

9. What do I do if none of these suggestions works?

- You can either contact us to discuss the issue, or you can return the unit to us for service - see <http://www.mkcontrols.com/lightningbugplus/rma/> for instructions.



Lightning Safety

Please remember that your safety is much more important than getting the shot. MK Controls, Inc. is not liable for any injuries or damage that may occur while using our products. Being safe should always be your primary concern.

MK Controls, Inc. recommends that you follow all lightning safety tips that can be found at:

<http://www.lightningsafety.noaa.gov/>

<http://www.lightningsafety.com/>

<http://www.ready.gov/thunderstorms-lightning>

Please note: MK Controls, Inc. is not liable for any damage or injury associated with the use of the Lightning Bug Plus™.



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Warranty

MK CONTROLS, INC. LIMITED WARRANTY AND NON-WARRANTY REPLACEMENT POLICY

LIMITED WARRANTY INFORMATION

MK Controls, Inc. (the “Company”) warrants its products against defects in material and workmanship for the lifetime of the product. This limited warranty applies only if you are the original purchaser and the limited warranty is non-transferable. As a condition of warranty service, warranty service requests must be accompanied by a valid proof of purchase, and a full written description of the problem. The Company will, at its sole discretion, repair or replace any defective part or product with a functionally-equivalent, new or factory-reconditioned part or product. Replacement parts and products are warranted to be free from defects in material and workmanship for the lifetime of the product. The Company will have no obligation to repair or replace any part or product until you return the allegedly-defective item to the Company.

In order to submit a valid warranty claim, you must complete the RMA form located at: <http://www.mkcontrols.com/lightningbugplus/rma/> prior to shipping your product back to MK Controls, Inc. Complete instructions are given during the creation of the RMA.

EXCLUSIONS

This limited warranty does not apply to (1) normal wear from regular use of the product, (2) any product with the serial number (or equivalent) removed, (3) any product that has been operated in a manner inconsistent with its intended purpose, or (5) any part or machine/product if damaged or defective due to: (a) abuse, accidental misuse, improper or inadequate operation, maintenance or calibration or other external causes; (b) failure to properly maintain the product including, but not limited to, damage from battery leakage; (c) software, interfacing parts and supplies not supported by the Company; (d) loss resulting from an act of God; (e) loss or damage in transit; or, (f) modification or service by a party other than the Company.

LIMITATION OF WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THE LIMITED WARRANTY, THE COMPANY MAKES NO WARRANTIES, COVENANTS OR CONDITIONS, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE COMPANY EXPRESSLY DISCLAIMS ALL WARRANTIES, COVENANTS AND CONDITIONS NOT STATED IN THIS LIMITED WARRANTY TO THE MAXIMUM EXTENT PERMITTED BY LAW. ANY IMPLIED WARRANTY THAT MAY BE



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IMPOSED BY LAW IS LIMITED IN DURATION TO THE APPLICABLE LIMITED WARRANTY PERIOD. SOME JURISDICTIONS MAY ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR ON THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGE TO CONSUMER PRODUCTS, OR OF A CONSUMER'S STATUTORY RIGHTS. IN SUCH JURISDICTIONS, SOME EXCLUSION OR LIMITATION OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY, IS APPLICABLE IN ALL JURISDICTIONS AND MAY BE ENFORCED IN ANY JURISDICTION WHERE THE COMPANY OR ITS AUTHORIZED SERVICE PROVIDER OFFERS WARRANTY SERVICE. ALL DISPUTES ARISING UNDER THIS LIMITED WARRANTY SHALL BE RESOLVED BEFORE A COURT OF COMPETENT JURISDICTION IN HAMILTON COUNTY, OHIO.

ANY ACTION FOR BREACH OF WARRANTY OR OTHERWISE AGAINST THE COMPANY SHALL BE LIMITED TO, AND THE SOLE REMEDY AFFORDED BY THE COMPANY SHALL BE, THE REPAIR OR REPLACEMENT OF ANY DEFECTIVE PART OR PRODUCT AS STATED IN THIS LIMITED WARRANTY AND THE COMPANY SHALL HAVE NO LIABILITY FOR CLAIMS, LOSSES, COSTS, LIABILITIES, DAMAGES OR EXPENSES (WHETHER INCIDENTAL, CONSEQUENTIAL OR SPECIAL) ARISING FROM OR IN CONNECTION WITH THE USE OR MISUSE OF ANY PART OR MACHINE/PRODUCT OR FOR BREACH OF WARRANTY, STRICT LIABILITY IN TORT OR OTHERWISE.

THE INFORMATION IN THIS LIMITED WARRANTY IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. IN THE EVENT THAT THERE ARE DIFFERENCES BETWEEN THIS WARRANTY AND THE PROVISIONS OF ANY ADVERTISEMENT, DOCUMENTATION, PRODUCT BROCHURE, OR PACKAGING CARTONS, THE TERMS OF THIS LIMITED WARRANTY WILL PREVAIL.

NON-WARRANTY REPLACEMENT POLICY

In the event that your product is not eligible for the limited warranty listed above, the Company will repair or replace the product for the cost of \$99.00, plus any applicable shipping charges. The non-warranty replacement price is subject to change without notice. To take advantage of the Company's non-warranty replacement policy, please follow the instructions in this link: <http://www.mkcontrols.com/lightningbugplus/rma/> prior to shipping your product back to the Company. Complete instructions are given during the creation of the RMA. If the unit is damaged, we'd like to hear your story of how the damage occurred. We reserve the right to use these stories on our website. Your name will not be revealed. Prior to returning your unit, we will contact you for billing instructions.

We must be able to identify that the pieces were indeed our product; the internal circuit board must be identifiable for us to replace the unit under our replacement policy. Your damaged unit will not be returned. Please note that interface cables are NOT covered under the non-warranty replacement policy.



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Company Information

The Lightning Bug Plus™ is produced and warranted by MK Controls, Inc., an Ohio Corporation. MK Controls, Inc. is based in Harrison, OH, and has manufacturing facilities located in Nashville, GA.

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