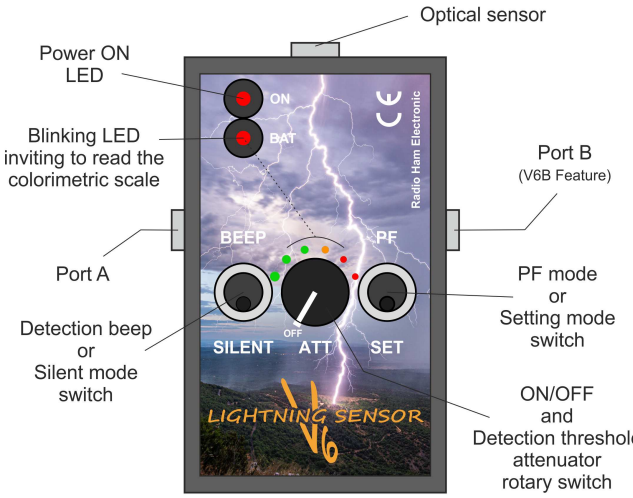
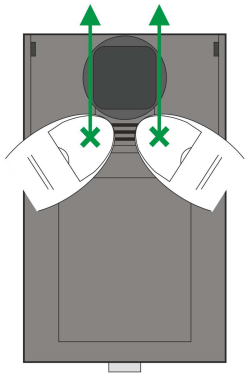
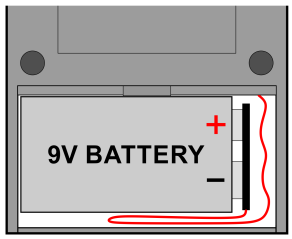
HIGH QUALITY TRIGGER FOR LIGHTNING PHOTOGRAPHY
LIGHTNING SENSOR V6™
Radio HAM Electronic Exclusivity

USER MANUAL





Battery compartment opening : Press with both thumbs on the areas indicated by the crosses, then, softly push forward



Battery and power wires correct positioning

Thank you for your purchase of the Lightning Sensor V6.
This high performance trigger has been optimized for full daytime, back light, twilight, and night-time lightning detection.

⚠ **Chasing thunderstorms and photographing lightning flashes is a high-risk activity. It is the responsability of anyone practicing this activity to take all the necessary precautions to ensure its safety, the one of people accompanying them, as well as the employed equipment. Radio HAM Electronic declines all responsability in the event of an accident during the practice of this activity or for any damage caused by the use of the Lightning Sensor V6. In no case the responsability of Radio HAM Electronic can get involved.**

POWER SUPPLY : Power supply must be done with a 9V standard **alkaline battery**, 6LR6 model (Duracell Pro battery supplied).

⚠ **BATTERY CORRECT POSITIONING : The battery door, fit with its shoe, holds the Lightning Sensor V6 on the camera. To get a reliable, consistent holding, it is very important to place correctly the battery and power wires as described below, so as not to create strain or warping. When the battery and power wires are correctly positioned, the battery door is easily put in place and clips without having to force it.**

Before connecting the battery, always check that your Lightning Sensor V6 is switched OFF (ATT rotary switch to OFF position).

The battery door is located in the back side, under the case. Place the thumbs as shown in the picture above, press lightly and slide back to open. There is limited space inside the battery compartment due to the shoe mount system nut : to avoid any thickness that could interfere with closing, **once connected, place the battery first at the bottom of the compartment, positive terminal upward, then insert the wires along its lower side as shown in the figure above** (i.e. do not place the wires either under or above the battery to avoid any risk of pinching, cruching, or interfering while closing). Place the door on the lateral guides and slide forward until the click.

Do NOT use rechargeable 9V battery, as their real 8.4V voltage is insufficient for optimal sensing operation.

COUPLING THE CAMERA : Fix the Lightning Sensor V6 to the flash mount of your camera. It comes with an ISO518 shoe (JJC brand, MSA-3) compatible with most camera brands. Old Sony cameras need an optional adapter (Sony>>ISO518, not supplied).

Insert the release cable plug into the Remote Control port of the camera. Make sure your camera is turned OFF during this step.

OPERATING GUIDE :

- Check your Lightning Sensor V6 is turned OFF (**ATT** rotary switch to **OFF** position), as well as the camera
- Put the PF/SET switch to **SET** position (Setting mode) *Memo : tilted toward you, because you are in control of settings*
- Insert the Lightning Sensor V6 into the flash mount of your camera. Tighten the blocking ring moderately
- Connect the supplied release cable to your camera's Remote Control port, then to the port A (or B) of the Lightning Sensor V6(B)
- Point your system towards the storm
- Switch ON the Lightning Sensor V6 by slowly turning the **ATT** rotary switch **clockwise**
- **Just after the "click"**, the ON red LED lights on, the buzzer makes a continuous beep :
  Wait a little second before you keep turning the ATT knob to see if the beep stops by itself or not
  > If it stops by itself, the trigger self-calibrated (bright situation), **do not turn the ATT knob further ***
  > If the beep carries on, in that case, keep **turning slowly the ATT knob clockwise until the beep stops**

This specific ATT position, matching with the optimal sensing, will be called hereinafter "Beep stop".
- Your Lightning Sensor V6 is now ready to operate
- Switch your camera ON and set the shooting parameters (See camera setting section below)
- When the shooting parameters have been set, put the PF/SET switch to **PF** mode (PreFocused mode) *Memo : tilted toward the storm because all is ready for shooting*

As soon as the electromagnetic characterisitc of a lightning stepped leader is detected, your camera is triggered.

The trigger interface lagtime of your Lightning Sensor V6 is about 1.6 microsecond. The optimal lagtime of a camera is between 20 and 115 milliseconds, according to the model and its age. A lightning event usually lasts from about 80 milliseconds to more than 1 second.

When you want to switch OFF your Lightning Sensor V6, switch OFF the camera first : this will avoid untimely camera triggering during Lightning Sensor V6 power OFF.

*** In bright situation, the beep stops by itself, as soon as the Lightning Sensor V6 has been powered ON.**
The « Beep stop » threshold position (= optimal sensing) is therefore located right after the power ON « click ».

PF/SET SWITCH : The **PF** mode (PreFocused) as the same effect as a half pressing on the shutter release. When enabled, the PF mode **appreciably reduces the lagtime of most camera**s (each saved millisecond is important in lightning photography!), **and is even necessary** with **Nikon or Sony** cameras to allow triggering. When the PF mode is enabled, you cannot get access anymore to some camera setting menus. Pictures displaying becomes impossible as well. This is normal. You must switch the PF/SET selector to **SET** mode when you want **to get access to the menus or check your pictures**.

BEEP/SILENT SWITCH : You can choose between a **detection with alert beep** (BEEP/SILENT selector switched to **BEEP**) or a **silent** one (BEEP/SILENT selector switched to **SILENT**). SILENT mode offers good battery saving.

DETECTION THRESHOLD ATTENUATOR : Your Lightning Sensor V6 has a very high dynamic range of detection. When the **ATT** knob is set at « **Beep stop** » (as described above), sensing is **optimal**. Set in that way, your Lightning Sensor V6 will be able to detect the first stepped leaders (very useful to get beautiful branched ligthning pictures) as well as intra-cloud lightning still invisible to the eye (very useful to watch incipient convection and alert you that an electrical activity is developing. Select BEEP mode to hear the detection beep). **To reduce the sensitivity** and only favor flashes and lightning strike visible to the eye, simply turn the **ATT knob clockwise** accordingly (Mind, stepped leaders taking place before lightning will be less detected, and some branching might then be lost).

BAT BATTERY BLINKING LED : Your Lightning Sensor V6 needs some voltage to offer optimal operation in all circumstances.
The **blinking LED** gives you information about the **battery voltage level** (and therefore, the **quality of detection**).
LED off = maximal battery voltage, detection OK. The LED blinks briefly upon detection = battery voltage lowered a few, detection OK.
The LED permanently blinks = weakened battery, the **« Beep stop » position on the colorimetric scale** tells you what to do :

Green dots area
Detection OK
Keep the battery

Orange dot area
Not optimal detection
Battery replacement recommended

Red dots area
Degraded detection
Replace the battery

V6B OPTIONAL FEATURE : This feature, peculiar to the Lightning Sensor V6B, gives you a second port (port B) to connect a wired remote control (supplied), allowing you to proceed your own manual shooting, while leaving the Lightning Sensor V6 active, ready to trigger your camera if lightning strike. You can connect your own intervallometer to this second port as well (Jack 2.5mm plug). Both ports A and B have the same function and are reversible : useful if the remote control port of your camera is on the right side.
Do not connect two cameras on the A and B ports.

CAMERA SETTING : Set it all manually, and desable any automation because it slows the camera down :

- Mode selector to M
- Continuous shot (High speed burst)
- Preset Exposure and Aperture (Not auto)
- Delighting and noise reducing features desabled
- Silent LV Shoot OFF
- Manual Focus (MF)
- Preset White Balance (Not auto)
- Preset ISO (Not auto)
- Image Review OFF
- LiveView OFF
- Mirrorless/Hybrid : Enabling the EFCS mode (Electronic First Curtain Shutter) allows to reduce the lagtime even more

GUIDELINE FOR DAYTIME LIGHTNING CAPTURE :

- Chose the smallest ISO value you can (50 or 100, according to the camera model).
- Have the slowest exposure speed possible, this to allow you to capture the maximum duration of the lightning flash. Usually, values slower than 1/60 are recommended (i.e. 1/30, 1/10, etc), the theoretical ideal being to get closer to 1/6, or even 1/4.
- Adjust the aperture to get a good exposure of the landscape, even a lightly underexposed one.
- In most cases, an aperture from F/6 to F/14 is well suited to.
- **ISO50 , Exp 1/10 , aperture F/14 is a good start**. Close the aperture (to F/16 , F/18, etc) if needed.
- The use of lens filters (circular polarizing filter, ND8 filter) is not needed, even not recommended.
- Use RAW files to get the optimal dynamic range of your pictures.

TROUBLESHOOTING :

Your Lightning Sensor V6 seems to trigger all the time even though there is no lightning? No worries, its electronics has been strictly checked and tested throughout production, a failure is very unlikely. It may be stepped leaders having aborted. If there is no electrical activity at all, here are the points to check :

- Release cord is correctly, fully inserted on both sides
- ATT knob is correctly set (at Beep Stop, see "Operating Guide" above)
- Battery has sufficient voltage (see "Low Battery Blinking LED" above) and contacts are well tight (otherwise, tighten with a small pliers)
- No cell phone is in the immediate area (Cell phone waves can disturb the electronics)

TECHNICAL SPECIFICATIONS :

Power supply : 9V standard alkaline battery, supplied
Detection spectrum : IR and visible
Trigger interface lagtime : 1.6 µs
Triggering duration : 500 ms

Waterproof (dusts and rain splashes, IP54 standard)
Daytime range : abt 60Km Nighttime range : abt 40Km
Case size (L x l x H): 95 x 59 x 24 mm (3.7 x 2.3 x 1.0 inches)
Weight : 110 g
Predominantly made with automobile/military quality electronic components

WARRANTY

Your Lightning Sensor V6 comes with 10 years of warranty against any construction or electronics defect, within the use for which the unit has been clearly designed in this user manual. (Keep your invoice FA2xxxxx). Warranty does not cover damage due to lightning, hail, power supply fault, modification, impact, crush, misuse, as well as water seepage due to non-replaced, worn out switch protections. Any opening of the unit will cancel the warranty. Battery, power supply cord, release cord, wired remote control, switch protections, are not covered by the warranty. Do not throw in the trash your Lightning Sensor V6 at end of life : Free take-back by us for recycling.

FOR MORE INFORMATION :

Radio HAM Electronic
Mas La Croix
54 Route de Cuzy
71760 ISSY L'EVEQUE
France

e-mail : radiohamelectronic@orange.fr
www.radio-cb-services.com
www.radiohamelectronic.com
Silkscreen picture credit : Gwenael Hagen

HANDCRAFTED
MADE IN FRANCE