WILDLIFE ACOUSTICS

Song Meter Surge Suppressor User Guide

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1 | Overview

The Song Meter Surge Suppressor protects SM4, SM4BAT, SM3, and SM3BAT recorders from power surges due to electrostatic discharge or electrical storm activity that could travel down the microphone cable and damage the recorder.

Note: The suppressor is not designed to protect against a direct lightning strike.

The Surge Suppressor is installed between a microphone cable and the recorder and includes a grounding lug which is connected to a good earth ground. This ensures that an electric surge traveling down the microphone cable is shunted to ground before damaging the recorder. This accessory should be used wherever microphones are mounted at height.

The Surge Suppressor kit includes the following:

- Surge suppressor (White box with three cable connectors)
- Connector cable (3 meter cable, 5 conductors, L-shape plug at one end, straight plug with ferrite at other end)
- 1 Ferrite (to be connected to microphone cable)
- 1 Zip tie (to secure ferrite)

2 | Configure the Surge Suppressor for Your Song Meter Model

The suppressor is shipped ready to be used with SM4 or SM4BAT recorders. You can use an internal switch to configure it for use with SM3 or SM3BAT recorders.

1. Loosen the 4 Philips screws at the corners of the enclosure.
2. Gently open the enclosure lid in the direction of the grounding lug, taking care not to pull on the internal wires.

3. In the center of the circuit board, use the switch to select the appropriate Song Meter model:
   - The switch's default position is **SM4**. Select this for any of the following recorder models:
     - SM4
     - SM4TS
     - SM4BAT FS
     - SM4BAT ZC
   - Set the switch to **SM3** for any of the following recorder models:
     - SM3
     - SM3BAT
4. Close the lid and re-tighten the four enclosure screws just until snug. Do not over-tighten.

3 | Mount the Surge Suppressor

The enclosure should be secured to prevent movement in wind. A zip tie can be used to secure it to a structure. There are also four mounting holes directly under the lid screws. The lid must be removed to access them. They are .18" in diameter and accept a size 8 or smaller screw. The screw should have a flat head, such as pan-head. A tapered screw like a wood screw or drywall screw tends to tear through the plastic and ruin the mounting hole. The wall of plastic is not thick so take care not to overtighten.

4 | Attach Ferrite to Cable

The included snap-on ferrite must be connected to the cable that connects the suppressor to the Song Meter, as close to the Song Meter as possible.

1. Create a loop in the cable near the straight connector and snap the ferrite shut over the doubled portion of cable.
2. Use the included zip tie to fasten the ferrite shut.

5 | Connect the Surge Suppressor to the Song Meter and Microphone

The Surge Suppressor kit includes a cable that runs from the suppressor to the recorder.

The two cable ports on the ends of the Surge Suppressor are labeled **Microphone** and **Recorder**. To ensure the Song Meter can detect the connected microphone, connect the Song Meter recorder and the microphone to the corresponding ports on the suppressor.

1. Connect the L-shaped plug to the **Microphone** connector on the surge protector by aligning the port and rotating the locking ring clockwise..
2. Connect the straight plug to the Song Meter.
   This will ensure the ferrite near the end of the cable is as close to the recorder as possible.
3. Use another Song Meter microphone cable to connect the **Microphone** port on the suppressor to a microphone.
   The microphone cable should have its own ferrite installed near the microphone.

6 | Ground the Surge Suppressor

The Surge Suppressor can only provide protection if it is electrically grounded. This allows the suppressor to divert electric discharge directly to ground when it would otherwise damage the Song Meter.

In order to create a low-resistance path to ground, you must use a sufficiently thick wire with no more than 2 meters of wire between the suppressor and a grounded structure.

You will need the following:

- Electrical grounding wire, 12 AWG (2.053 mm diameter) or thicker
- Hex wrench, 9/16″ or 14 mm

1. Use a wrench to loosen the outermost nut on the Surge Suppressor's grounding lug.
2. Loop the grounding wire around the grounding lug in between the two nuts, ensuring the bare metal of the grounding wire contacts the grounding lug.
3. Tighten the outermost nut on the grounding lug to clamp the grounding wire between the two nuts.
4. Connect the other end of the wire to the metal frame of a grounded structure with an electrically strong, low-resistance connection.
   There should be no more than 2 meters of wire between the suppressor and the connection to a grounded structure.
5. If you are powering a Song Meter using external power, connect the ground/negative conductor of the power source to earth ground.
   This prevents electrical surges from entering the Song Meter from the power supply side.
6. Connect the microphone to earth ground.
   This provides an additional layer of protection to the Song Meter and provides some protection to the microphone.

- For microphones with metal bodies, clamp a grounding wire to the microphone and connect it to a grounded structure.
- For the SMM-U2 microphone, which has a plastic body, attach the SMM-U2 Grounding Bracket to the microphone, and connect the grounding bracket to earth ground.

7 | Song Meter Surge Suppressor Specifications

Length	5.1 in. (130 mm)
Width	3.1 in. (79 mm)
Depth	2.0 in. (51 mm)
Enclosure	Waterproof polycarbonate housing
Testing Certification	IEC 61000-4-5 at 1 kV (Level 2)
Compatible Recorders	- SM3 - SM3BAT - SM4 - SM4BAT FS - SM4BAT ZC