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MODEL 350 LIGHTNING DETECTOR

The Model 350 Lightning Detector measures atmospheric static electricity. It keeps a constant count of electrical impulses and interprets them as an indication of approaching thunderstorms or tornadoes. When a certain threshold has been exceeded, a red warning light flashes and a pulsed tone is emitted until reset.

The Model 350 Lightning Detector comes with a 354 Test Generator and a DC 12 Volt trickle charger. An optional external antenna may also be used with this model.

Special Features

Four Ranges: Detector will indicate lightning at these variable distances.
10, 25, 50, 100 mile ranges

Warning Indicator: This will indicate when a storm is severe.

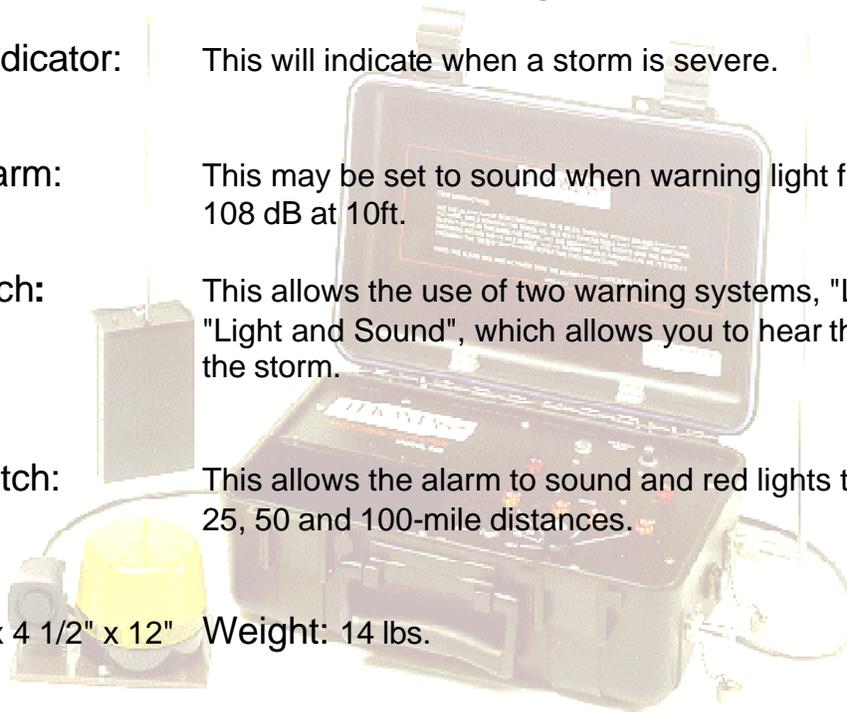
Audible Alarm: This may be set to sound when warning light flashes.
108 dB at 10ft.

Mode Switch: This allows the use of two warning systems, "Light" and "Light and Sound", which allows you to hear the crackle of the storm.

Range Switch: This allows the alarm to sound and red lights to flash on 10, 25, 50 and 100-mile distances.

Size: 13" x 4 1/2" x 12" **Weight:** 14 lbs.

Battery Power: 12 VDC Sealed Lead Acid Rechargeable Battery; includes a 110 VAC to 12VDC battery charger with charge indicator.



Lightning Indicators

There are four lights on the front panel, tuned to approximate distances in miles. As the storm comes within the 100-mile range, the 100-mile light will flash once for each burst of lightning. Then, the 100 and 50-mile lights should begin to flash, slowly at first, and then more frequently as the storm continues to approach. The 25 and then the 10-mile lights will flash for a storm as it passes over. Only the 100-mile light will flash for a storm that has moved out of range, and is no longer a problem.

Alarm Range Selector

The main control knob on the front panel sets the trip range of the alarm only. If it is set on 100 miles, a lightning storm will trip the alarm when it is approximately 100 miles away. This will allow at least a full hour to prepare for the storm. If the alarm is set at 50 or 25 miles, the storm must be that close before the warning sounds. The range lights will continue to flash regardless of the alarm range setting. Normally, it is recommended that the alarm be set for 50 miles. This will help prevent false alarms from storms that never reach the area, and still leaves time to prepare for evacuation if the storm does approach.

With the alarm setting turned to "**SPKR**", the alarm will not sound but will instead register a noise burst on the speaker as well as illuminate the yellow range lights. The reset button should be pressed to reset the alarm once it has been activated. This will extend the battery life.

Antenna

A telescoping antenna is included with the Model 350. This antenna should be left fully extended. However, there will be some cases where this will induce too much signal. Shorten the antenna one section at a time, until the Model 350 shows local lightning as described. Any other adjustment is accomplished at the time of manufacture, and should be rechecked annually. In most cases, this will not change since the entire unit is solid state and the tuning controls are sealed at the time of shipment.

Optional External Antenna

A Fifty-foot coaxial cable is supplied with this antenna with mounting bracket. The external antenna should be placed as far away from the Model 350 as possible. If the fifty-foot coaxial cable is too short, since little attenuation occurs in the cable, any amount of extension may be used. Fifty-foot sections of extension cable may be ordered from the factory.

The external antenna must be mounted outside of the building. This eliminates most internal man-made interference sources such as fluorescent lights, motors, and switches. This also eliminates shielding effects caused by metal frameworks, pipes, and electrical wiring. The antenna is supplied with a mounting bracket that holds the antenna at about a 45° angle. This places the antenna in the best position to detect lightning static. Lightning static is either vertically or horizontally polarized, and at 45 degrees, the antenna is able to pick up both types. When lowering the coaxial cable, stay away from potential noise generating areas, and do not run the cable near power lines. It is best to route the cable in a straight line down to the Model 350, but if the straight route is close to power lines, it is better to stay away from them and take a longer route to avoid power line interference. It is recommended to stay outside the building until the cable reaches the level where the Model 350 is to be located.

Thunderstorms

Most thunderstorms, especially severe ones, develop in "cells" along weather frontal systems. Such a storm, moving along a front, may strike or it may miss the area of the Model 350 location entirely. The Model 350 may be located between two severe cells and receive only moderate activity, while towns just 5 miles away on both sides are hard hit. The warning indicator in such cases will activate. If a weather front is sharp enough and is moving quickly, the cells may link up and form a squall line. If this happens, conditions are just right for tornado development. Electrical activity is especially high on such a line, and the warning will sound well in advance of the storm. Other thunderstorms, especially midsummer, develop in late afternoon or evening in a hot and humid air mass. These types are usually less severe with less lightning, but a lot of heavy rain. The Model 350 will indicate the approach of these storms, but the static may not be frequent or strong enough to trip the alarm.

Battery Charger

A battery charger (DC 12V) is included with the Model 350 Lightning Detector. A jack is provided on the side of the unit, so that the battery may be charged when necessary.

12 VDC, Sealed Lead Acid, Rechargeable Battery

Recharge the battery only with the charger supplied with the unit. Other chargers may reduce the battery life.

Lead Acid batteries can stay on the trickle charger until needed.

Note: The reset button should be pressed to reset the alarm once it has been activated. This will extend the battery life.

Testing

Set the alarm range selector switch to 10 miles, and extend the antenna. While holding the 354 Test set 6 feet from the antenna, slowly move in towards the Model 350, observing the lights and the alarm sounding within the 10-mile range. Pressing the "reset" button and repeating the procedure can test all the ranges.

Note: The alarm will not activate with the alarm range switch set to "SPKR".

Strobe Light/Siren

The Model 350 features an external strobe light/siren assembly, which may be used to increase the audio/visual range of the Lightning Detector. This unit comes with a ten-foot cable, which allows the unit to be placed on a vehicle rooftop. The unit has a magnetic base to hold it in place. Longer cables are available by custom order.

