Fire Neural Network FNN32323 High Risk Lightning Detector User Manual

FIRE NEURAL NETWORK

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FNN32323 High Risk Lightning Detector

Fire Neural Network Lightning Detecto
User Manual

Thank you for choosing Fire Neural Network's lightning detection services, the most advanced and reliable for detecting and locating High-Risk-Lightning™ strikes and subsequent fire ignitions. This user manual will guide you through the features and function, as well as provide some safety tips and troubleshooting advice.

Important Safety Warnings:

FCC Part 15.19 Warning Statement
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
FCC Part 15.21 Warning Statement-
NOTE:THEGRANTEEIS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.
FCC Part 15.105(b) Warning Statement
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning

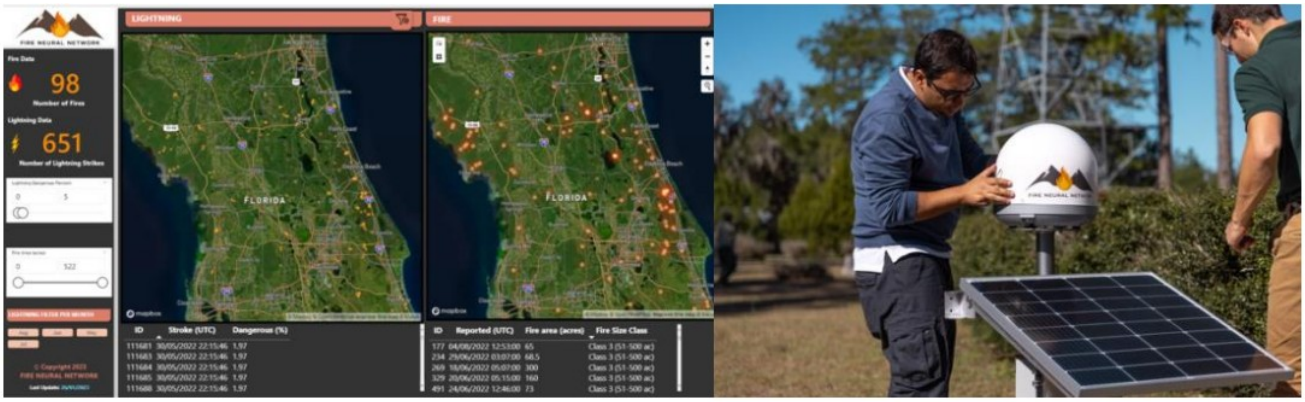
the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

General Safety Information:

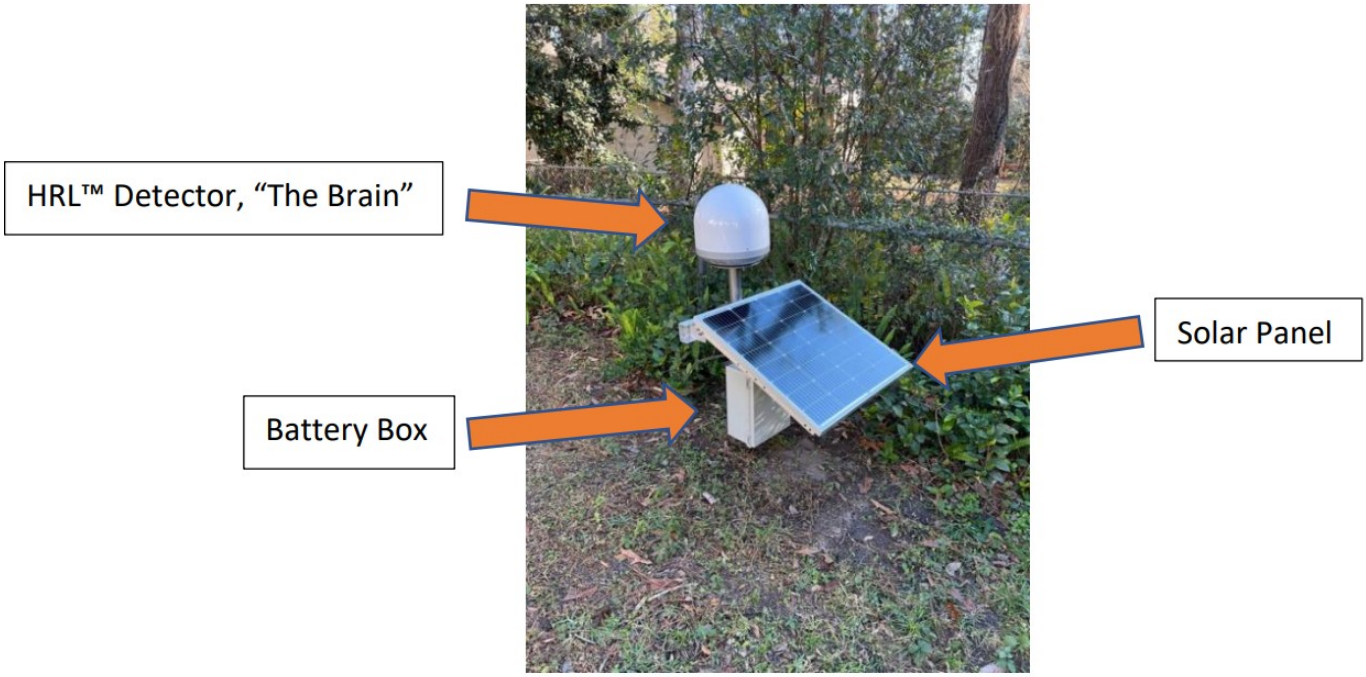
- Please read all the instructions in this manual before beginning installation and/or use.
- Do not attempt to disassemble or repair without proper communication with Fire Neural Network.
- Be certain there is adequate ventilation.
- Wear safety glasses and gloves when working on installations.

Features and Functions:

Fire Neural Network's High-Risk-Lightning™ detector is an autonomous device that uses artificial intelligence to analyze the electromagnetic signals from lightning activity. It can detect lightning strikes up to 40 km away and transmit the location of lightning-initiated fires to a situational awareness dashboard within 40 seconds for users to interpret provided information.



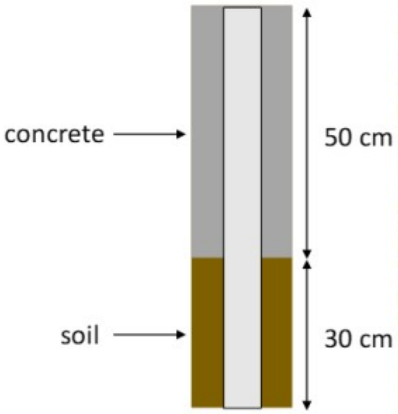
Parts Identification:



Installation Steps:

Step 1 – Pole Installation
ENSURE THAT HOLES ON THE POLE ARE FACING SOUTH

1. Use an 8” diameter auger to dig a 50 cm (~2ft) deep hole.
   Attach a 3D level to the pole to keep the pole straight for the next operation.
2. Use a hammer and a plastic/wooden plate on top of the pole to hammer down the pole 30cm (1ft).
3. Pour 25kg (50 lbs.) of pre-mixed concrete into the hole.
4. Water the concrete twice a day for the next two days.

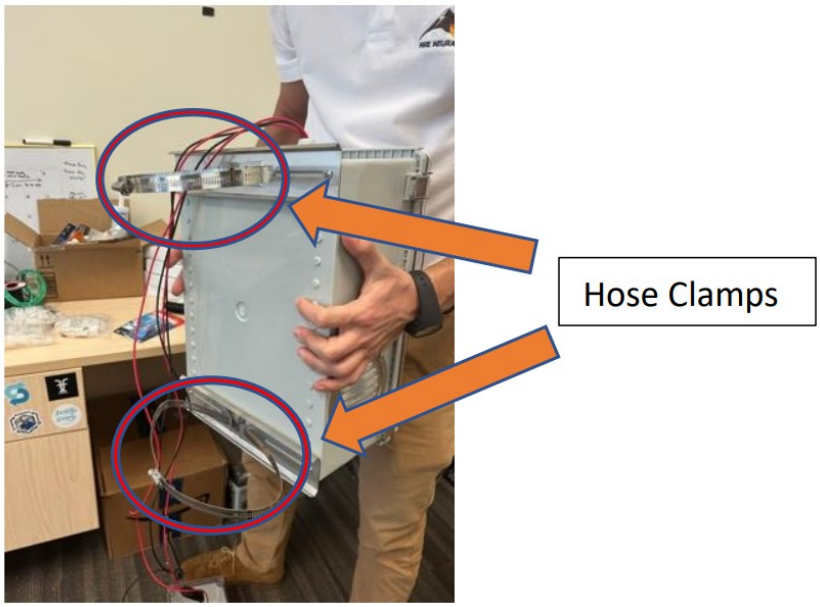


– After digging the hole with the auger, use an anvil to get the remaining soil out of the hole
– Measure the depth of the hole with a straight ruler (should be 24” deep)
– Check the post level periodically while hammering the post down
– Use the straight ruler to measure the above-ground portion of the pole
– When mixing the concrete, add ample water and mix well
– Avoid any soil getting into the hole while pouring the concrete into it

Step 2 – Attach the Battery Box
A battery is attached to the pole to allow the detector to be fully autonomous. Placed inside a ventilated box, all that is needed, following attachment to the pole, is properly connecting wires detailed in following steps.

Battery Box Attachment:
Following the poles installation, attach the battery box . . .

1. Attach hose clamps provided to the battery box, screw in place in the four corners of the box



2. Put hose clamps around the pole, with the battery box being just the under the hole opening on the pole. Tighten hose clamps to secure the battery box in place. The connection wires should be extending out from the TOP of the battery box. Ensure extending wires are not tangled, these will be connected to “The Brain” and solar panel in following steps.

   *Recommended to use a power drill with a 7mm bolt for this, but hose clamps can be tightened manually as well

Step 3 – Attach the Solar Panel
A solar panel is attached to charge the battery throughout the day to ensure use during periods of shade and night.
Solar Panel to Frame Attachment:
If not pre-attached, use the following steps to attach the solar panel to its frame.

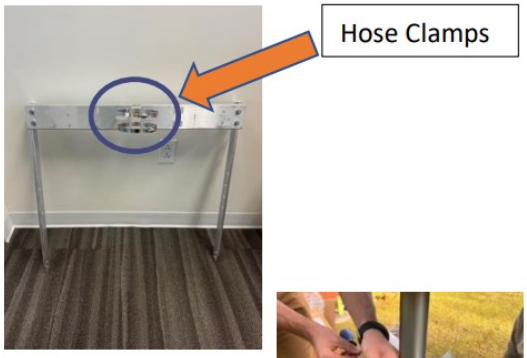





1. Lay solar panel face down on the foam sheet provided in packaging
2. Align the frame with the edges of the solar panel, secure by inputting screws with nuts/washers on either side to the four open holes on the solar panel.
3. For transportation, tighten the nuts/washers present on the top corners of the frame to limit movement of the frame arms

Frame to Pole Attachment:

1. Loosen hose clamps attached to the solar panel frame
2. Put hose clamps around the pole just above the hole opening on the pole. Tighten hose clamps to secure the solar panel in place.






*Recommended to use a power drill with an 8mm bolt for this, but hose clamps can be tightened manually as well

Panel Adjustments:

1. The angle at which the solar panel should be set depends on location. This can be calculated based off your zip code and time of year.
   SOLAR PANEL TILT CALCULATOR
2. Loosen bolts for solar panel arms to allow user to adjust the angle of the solar panel based off the angle determined by location/time.
   When loosening, ensure solar panel is supported, do not let the loose arms drop to the ground.
3. Once angle is determined, tighten bolts to secure the angle.



Panel Connection:
There are four wires extending from the battery box, two with clip-in adaptors for the solar panel, and two combined into one connector for “The Brain”.

1. Under the solar panel, two wires with clip-in adapters are present, connect these to ones extending from the battery box

Step 4 – “The Brain” Attachment
“The Brain” is the housing component for the HRL™ Detectors hardware.
Pre-Work, Wiring Set-Up:
There are four wires extending from the battery box, two with clip-in adaptors for the solar panel, and two combined into one connector for “The Brain”.

1. Lead the combined wires, not the solar clip-in adaptors, through the hole in the pole just above the battery box, feed through to the top of the pole

Pre-Work, Grounding:
“The Brain” is attached to the pole via three screws, where the fourth one present acts as a grounding agent for electrical current.

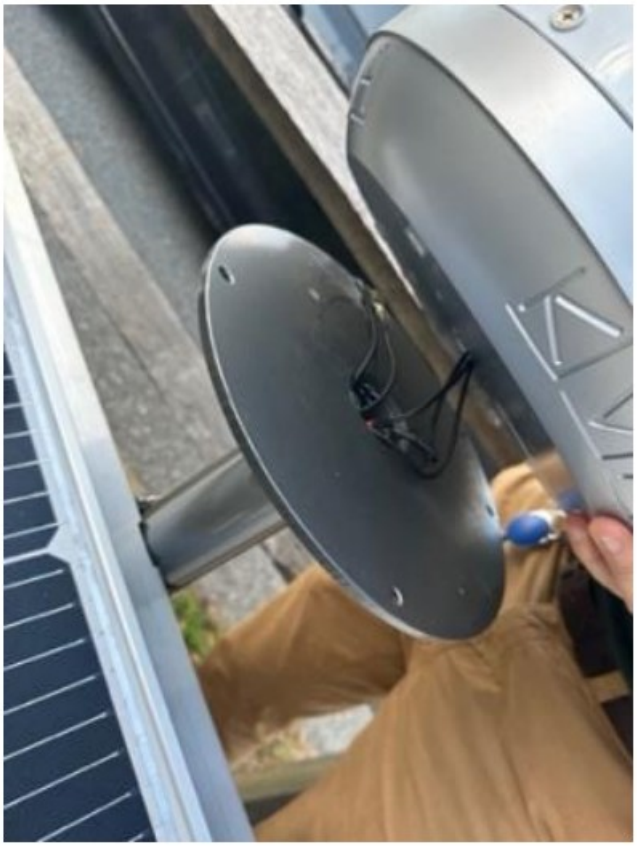
1. Using sandpaper, remove the power coating of the area where the screw hole designated for grounding is.

“The Brain” Attachment Part 1 – Wire Connections:
Extruding from the bottom of “The Brain” are two sets of wiring, one to connect the grounding agent to the pole, and the other to connect “The Brain” to the battery box.

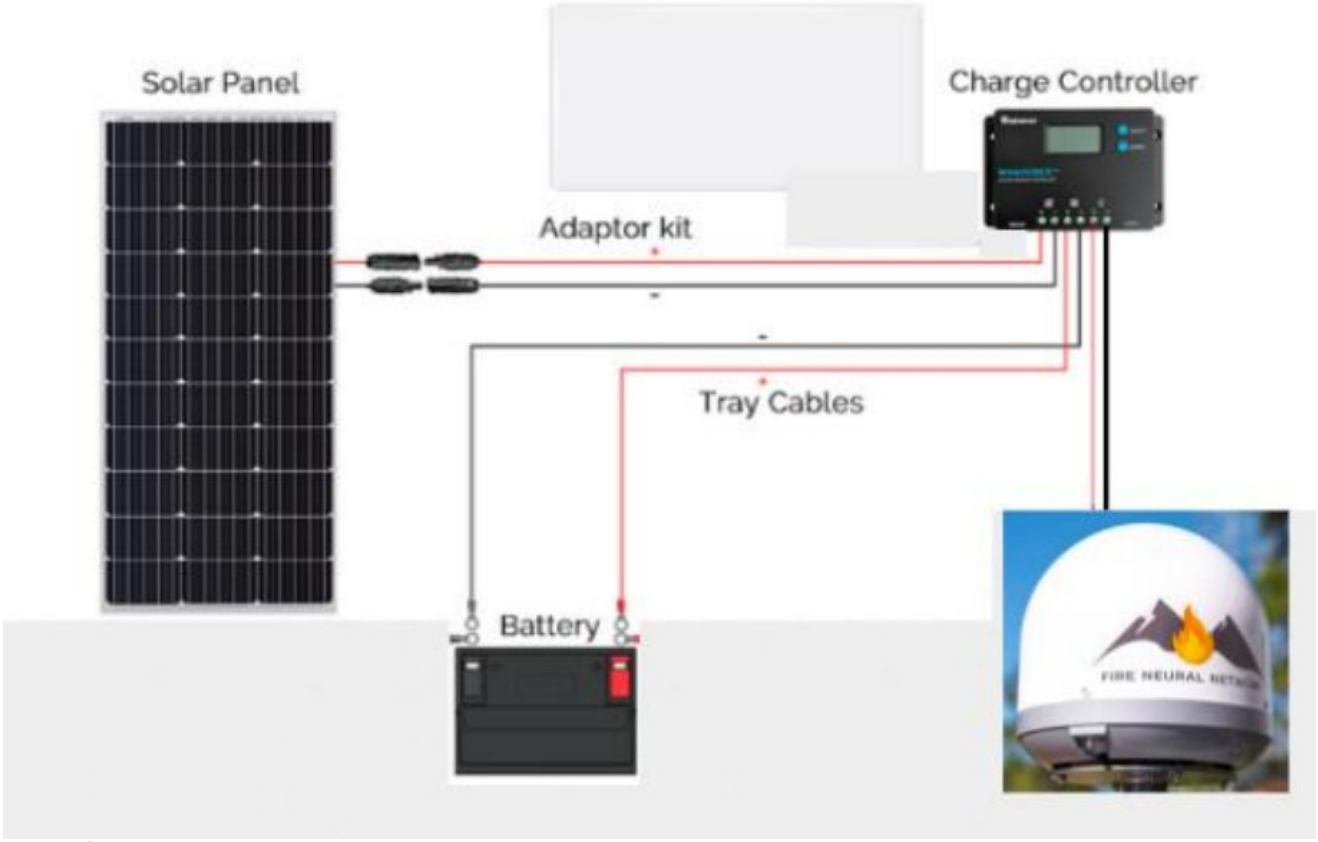
1. Using the wiring fed through the pole, connect to the wiring hanging out from “The Brain” via the present adapters
2. The grounding agent is a screw attached to “The Brain”, also hanging out from the bottom. Insert the screw into the area that has been stripped of power coating, tighten nuts and bolts to secure in place.

“The Brain” Attachment Part 2 – Attach to Pole:
“The Brain” sits on top of the pole, attached via the screws extruding from the bottom of it.

1. Align the screws from “The Brain” with the holes on the pole. Once secured, tighten in place with a washer/nut.
   Note that one of these screw holes will have the grounding agent screw already attached from previous steps.



Power / Server Connection
Each FNN™ HRL™ Detector can be reached remotely, having GPS and internet capabilities. There are two routers that make this possible – one inside “The Brain” already provided and connected, and one router placed inside a close by structure at most 10 meters away.

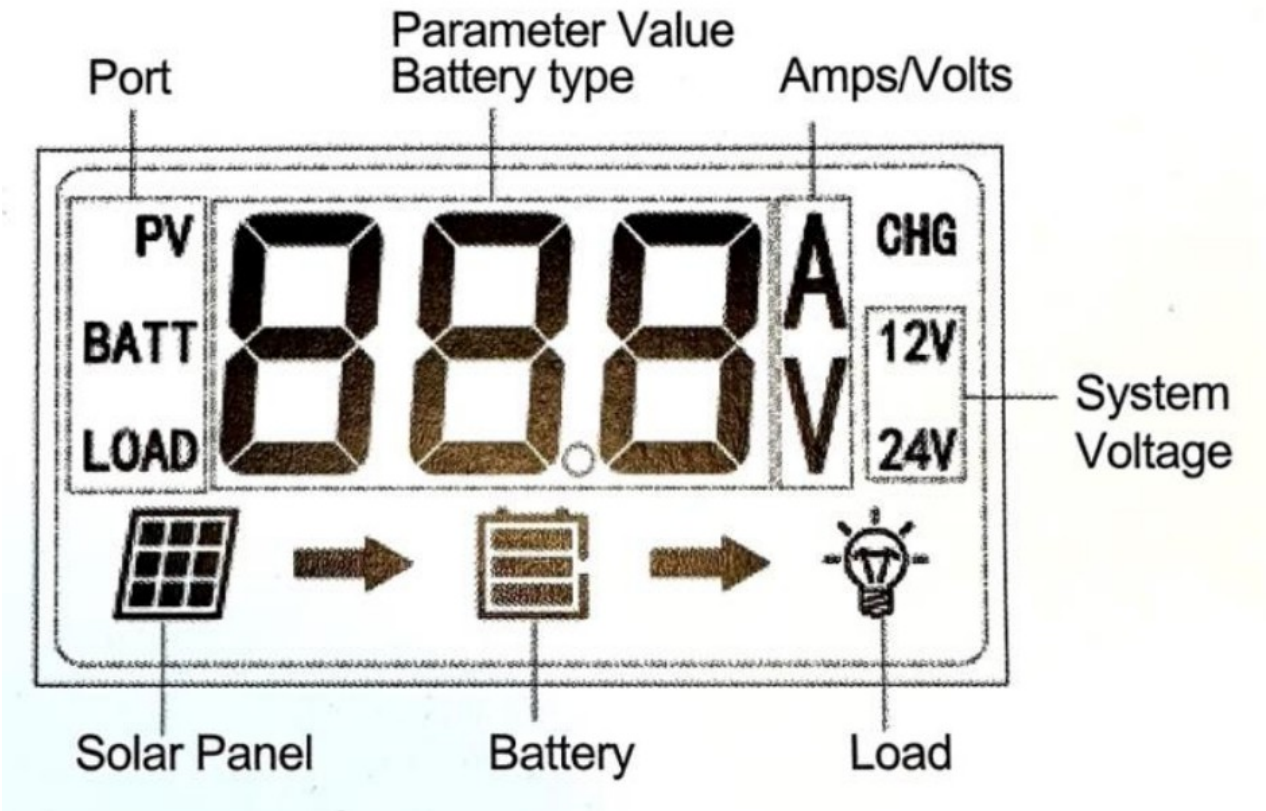


Turning On the Battery:

Open the latches to the battery box, inside is the battery and Wanderer PWA 10A Charge Controller. The Wanderer allows the user to see if the battery is properly connected to the solar panel and “The Brain”.

1. To power on the battery, insert the blue push button chord as seen in the image. A blue hue emitting from the button indicates it is on.

Once on, do NOT come in contact with the battery terminals, this can result in electrical shock
Switching Through Modes to Verify Proper Connection:
The Wanderer PWA 10A Charge Controller LCD Overview . . .



The LCD screen on the Wanderer PWA 10A Charge Controller provides indication of proper connection between the solar panel, battery, and “The Brain”. Each mode can be accessed by pressing the “select” button.

“Batt” on screen, circled above, indicates you are checking the battery connection. A display of “0.0 V” means the battery is not properly connected. Expect to see a range of 12-14 V.

Pressing the “select” button again takes you to the first PV mode, solar panel voltage, indicated by the “V” on the right of the screen. An “A” present in its place, found by pressing “select” again, means you are reviewing the charging current of the battery to solar panel.

General Maintenance:

Fire Neural Network’s™ High-Risk-Lightning™ detectors, placed in outdoor environments, are exposed to various weather conditions. To ensure their optimal functionality, the following nontechnical maintenance techniques are recommended.

Solar Panel Cleanliness:

The accumulation of dust can significantly reduce the effectiveness of solar panels. But, if dust and dirt are the only issues present, a simple solution is to clean the panels by lightly spraying them with a low-pressure hose and allowing them to dry naturally under the sun. It is important to note that the panels should not be scrubbed with rough surfaces such as a rag, as this can cause damage.

If the solar panel is heavily soiled by tree sap, bird droppings, etc., the following steps can be taken to ensure the panel is not damaged when cleaning.

– Fill a bucket with warm water and add a small amount of mild soap. A mild soap is a gentle cleansing agent that is free from harsh chemicals and is safe for use on delicate skin and surfaces.
– Spray down the solar panels with a hose, or with another low-pressure sprayer.
– Using the soapy water and a soft sponge or sponge-like scrubber, gently scrub the panels and clean them of any debris or buildup. Ensure the scrubber used does not have a rough surface.
– Rinse solar panels thoroughly to remove any soapy water.
– Allow panels to dry in the sun.
Please note the solar panel surface becomes quite hot during the day. It is recommended to do these cleanings in the morning. Furthermore, when using a hose to clean off the solar panel, make sure to not directly spray the battery box under the panel.
“The Brain” Cleanliness:
For the most part, users do not need to access the interior of “The Brain.” To keep the exterior clean, a simple method is to use a damp cloth to gently wipe down the dome. This should be sufficient in maintaining its appearance and functionality.

Safety Tips:

Fire Neural Network’s™ High-Risk-Lightning™ detection is designed to help you monitor lightning activity and make informed decisions about your safety. However, it is not a substitute for good judgment. Please follow these safety tips when using your device:
– Always seek shelter in a sturdy building or a hard-topped vehicle when thunderstorms are nearby.
– Avoid open areas, tall objects, metal objects, water bodies, and electronic devices when thunderstorms are nearby. These can attract or conduct lightning.
– If you hear thunder, you are within striking distance of lightning. Seek shelter immediately.
– If you are caught outside in a thunderstorm and cannot find shelter, crouch down low with your feet together and cover your ears. Do not lie flat on the ground or touch anything metal.
– If someone is struck by lightning, call 911 immediately and administer first aid if possible. Lightning victims do not carry an electric charge and can be safely touched.

Troubleshooting:

If your charge controller device is not working properly or displaying an error message, please refer to this troubleshooting guide:
– Error 1: Low battery. Replace or recharge the batteries as soon as possible.
– Error 2: Radio frequency interference.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If none of these solutions work or if you have any other questions or concerns, please contact us at **info@fireneuralnetwork.com** or visit our website at **www.fireneuralnetwork.com.**

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Documents / Resources

	Fire Neural Network FNN32323 High Risk Lightning Detector [pdf] User Manual FNN32323 High Risk Lightning Detector, FNN32323, High Risk Lightning Detector, Risk Lightning Detector, Lightning Detector, Detector

References

- Fire Neural Network
- Fire Neural Network
- Solar Panel Tilt Angle Calculator - Footprint Hero
- User Manual