

Table of Contents

Table of Contents	2
1.0 Warnings and Precautions	3
2.0 Introduction.....	4
2.1 About the AV-200	4
2.2 System Overview	5
2.3 Options.....	6
3.0 Installation & Configuration	6
3.1 Tools Required	6
3.2 Installation.....	7
3.3 Configuration	12
4.0 Commissioning Checklist.....	12
5.0 Maintenance and Care Guide	12
6.0 Troubleshooting	13
7.0 Replacement Instructions.....	13
8.0 Replacement Hardware	14
9.0 Return Merchandise Authorization (RMA) & Support.....	14
10.0 AV-200-SW – Optional Radar Trigger Kit	15

1.0 Warnings and Precautions

Battery Safety

Batteries arrive fully charged and can be dangerous if not handled properly. They can cause short circuits, which may lead to fires or injury. **Always remove metal jewelry** (like bracelets and watches) before handling batteries to avoid electrical shocks.

Solar Panel Safety

Solar panels produce electricity when exposed to light, which can cause shocks or burns. To stop them from generating power, either **move them out of direct sunlight** or **cover the front with something solid and opaque**.

Lifting Heavy Equipment

Before lifting any heavy equipment, **make sure all parts are secure** to prevent shifting. Only lift if you can do so safely without hurting your back or losing your grip. Some installations may **require more than one person** to lift safely.

Power Safety During Installation

To prevent electrical shocks, **turn off all power before installing or wiring the system**.

Check Wiring Before Turning On

Before powering on the system, **double-check all wiring** to ensure everything is connected correctly and the polarity is right.

Sharp Edges & Moving Parts

Some parts of the system **may have sharp edges or move unexpectedly**, which could cause injuries. Be careful when handling them.

Traffic Beacon Compatibility

This system **does not work with other flashers**.

Warranty Notice

This manual explains the features, operating standards, and installation steps for Aailed's AV-200. **Not following the instructions for use, storage, maintenance, installation, or placement may void the warranty.**

2.0 Introduction


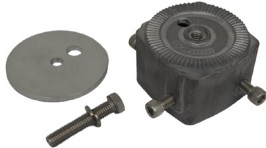



2.1 About the AV-200

The Aailed AV-200 is a solar-powered, LED enhanced traffic sign designed to improve road safety by increasing the visibility and conspicuity of regulatory and warning signs.



2.2 System Overview

The AV-200 system components are as follows:

Component	Description	Image
Solar engine	Self-contained solar engine. Includes system controller, solar charge controller, sign, solar panel, and wiring.	
Top of post mount	<ul style="list-style-type: none"> 2" square post 2.38" round post 	
Other mounts	<ul style="list-style-type: none"> U-channel 4.5" round post Side of post 	
Battery	<p>One 12 V sealed lead-acid battery with .250" terminals:</p> <ul style="list-style-type: none"> 7 Ah 9 Ah 12 Ah 	
LED sign	System can support up to one Aailed LED enhanced sign.	
Hardware	Solar engine bracket screws and solar engine door screws.	

2.3 Options

The AV-200 has an optional radar trigger kit, known as the AV-200-SW. For more information See [Section 10](#).



3.0 Installation & Configuration

3.1 Tools Required

The following tools are required for installation:

- Fish tape
- Pen or tape for marking
- Tape measure
- 1/4" Hex key
- #1 and #2 Philips screw drivers
- Drill and drill bits
- 5/16" wrenches

NOTE

Make sure the installation site has a **clear, unobstructed view of the sun** throughout the day. Objects like trees or buildings can block sunlight, reducing the amount of energy the solar panel collects. This can shorten the system's battery life and affect performance.

NOTE

Assembly is easier on the ground or on a table. Once assembled, then proceed with installing the assembled post.

3.2 Installation

Follow the instructions below for installation of the AV-200:

Wiring

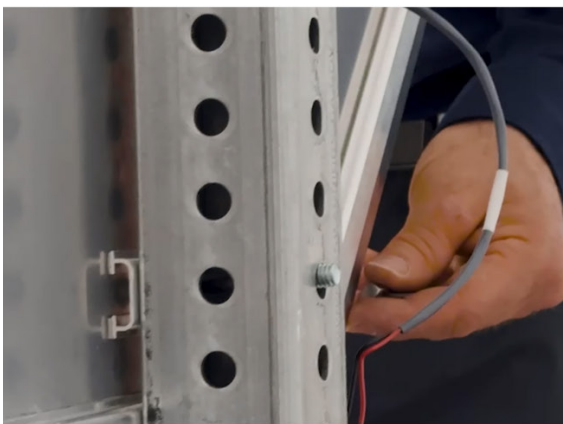
1. Prepare the wire hole – measure and mark where the wire hole for the LED sign should go (8" to 36" down from the top of the post).
 - a. If mounting the sign further than 36" from the solar engine, additional wiring is required (not supplied).
 - b. If the post is not perforated (like a Telespar post), drill a ½" hole.
2. Use fish tape – insert fish tape into the wire hole for the LED sign and push it up until it reaches the top of the post.
3. Secure the solar engine – hold the solar engine in place while carefully guiding the LED sign wire harness down the post.
 - a. The wire hole through the (3" x 3/16") washer must align with the hole thru the top of the post mount in order to feed wires down the post. Use a screwdriver (or pen) to keep the holes aligned while tightening the bolt.
4. Pull the LED sign wire through solar engine/mount assembly. Attach the loose end of the LED wire to the fish tape. Then, pull it down through the post until it comes out at the LED sign location.
 - a. Create a drip loop – make a small loop with the wire inside the post at the exit point. This helps prevent water from running along the wire into the LED sign junction box.

NOTE

If you need to extend wire harnesses, use the same gauge and color scheme. Watertight butt splices within the solar engine are recommended.

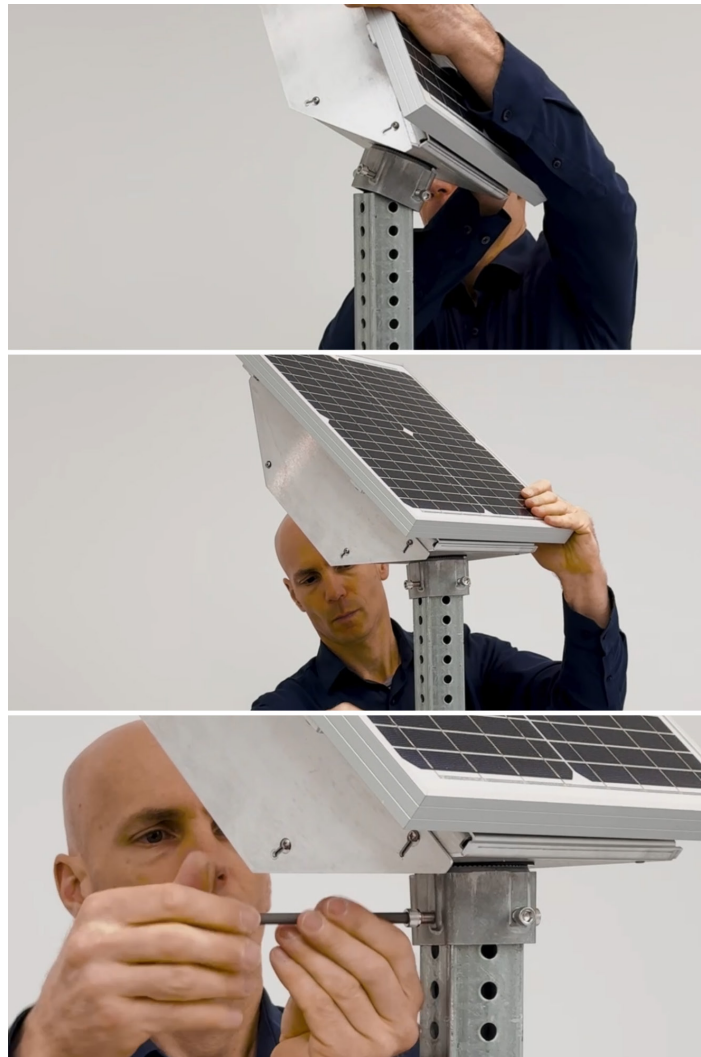
NOTE

If installing the AV-200-SW solar engine, refer to the additional wiring instructions in [Section 10](#).



Solar Engine

1. Position the solar engine – place the solar engine on top of the post, making sure the solar panel is facing south.
2. Lower the solar engine – slide the solar engine down over the post so the edge of the post fits into the post mount slot.
3. Secure the post mount – tighten the post mount set screw (or bolt) to hold the solar engine in place. Tighten the jam nut.
4. Adjust the solar panel – loosen the post mount carriage bolts, rotate the solar engine until the solar panel is directly facing south, then tighten the bolts again to lock it in place.



NOTE

If you're using a round post, you don't need to rotate the post mount bracket on the solar engine. The whole assembly can turn on the post instead.

LED Sign

1. Attach the LED sign to the post – secure the sign to the post using the provided sign mounting hardware, or customer supplied hardware as appropriate. Typically, this involves:
 - a. Positioning the sign at the correct height directly below the solar engine.
 - b. Ensuring the sign is level and fully tightened so it doesn't shift.
2. Connect the wiring:
 - a. Remove the cover from the sign junction box.
 - b. Take the wire from the solar engine labeled "Sign" and feed it through the junction box opening.
 - c. Connect the wires to the correct terminals:
 - i. Red wire from the solar engine → Wago with red wire in junction box
 - ii. Black wire from the solar engine → Wago with black wire in junction box
 - d. Make sure the connections are secure.
3. Close the junction box – once all wires are properly connected, reattach the sign junction box cover to protect the wiring.



Battery

1. Open the solar engine door – loosen the door screws and swing the door open.
2. Connect the battery – carefully attach the quick-connect battery wires to the battery terminals. The sign will start flashing once the battery is connected.
 - a. Red wire from solar engine → battery positive terminal
 - b. Black wire from solar engine → battery negative terminal
3. Place the battery in the solar engine – slide the battery onto the battery shelf inside the solar engine. Insert the battery so that the terminals are on the door side of the house (terminals towards you).
4. Secure the battery – fasten the black battery strap over the battery to hold it in place.
5. Close the solar engine door – swing the door shut and tighten the door screws to secure it.



DO NOT reverse the battery polarity.

3.3 Configuration

The AV-200 is factory programmed and does not have any user adjustable settings. The system is designed to flash one Availed LED sign continuously.

4.0 Commissioning Checklist

After installing the AV-200, use this checklist to make sure everything is working correctly:

- ☐ Flashing check – LED sign is flashing as expected (continuously; 0.25s on, 0.75s off).
- ☐ LED sign position – LED sign is securely tightened and facing oncoming traffic.
- ☐ Solar panel and engine secure – solar panel is pointing south, and the solar engine is tightly secured without any movement.
- ☐ Clear sky access – system has a clear, unobstructed view of the sky.
- ☐ Future shading check – look for nearby trees or other objects that might block sunlight over time. If shading is possible, set a reminder to inspect it later.
- ☐ Battery voltage – use a voltmeter to check the battery. It should be at least 12.0 V for proper operation. Once voltage drops below 10 V the sign stops flashing.

5.0 Maintenance and Care Guide

The AV-200 is designed to run for **3 to 5 years** before the battery needs to be replaced. However, extreme heat can shorten battery life. If the solar panel is partially shaded, the battery may also wear out faster.

To keep the system working at its best:

- Trim or remove any vegetation that blocks sunlight from reaching the solar panel.
- Clean the solar panel and LED housings **once a year** to maintain peak performance.

Routine Inspections

Availed recommends checking the solar panel regularly to make sure nothing is blocking sunlight, such as:

- ☐ Dirt and dust – wipe off any buildup.
- ☐ Snow – clear off any snow covering the panel.
- ☐ Leaves and debris – remove fallen leaves or other obstructions.
- ☐ New shade – look for nearby trees or plants that may have grown and started blocking sunlight.

The inspection schedule depends on your location and weather conditions, but a yearly visual check is usually enough. The system is designed to be low-maintenance, but keeping the LED lenses and solar panel clean will ensure maximum performance.

6.0 Troubleshooting

For the most up to date troubleshooting information visit support.availedtechnologies.com.

Component	Description
LED sign not flashing	<ul style="list-style-type: none"> Fuse is blown Battery voltage is too low (<10 V) Loose wiring connection Sign is damaged Controller is damaged

7.0 Replacement Instructions

Battery Replacement

Follow the instructions in [Section 3.2](#) in reverse order. Battery performance varies by manufacturer. Only use the battery type listed in [Section 8](#).



DO NOT reverse the battery polarity.

Fuse Replacement

The battery harness inside the solar engine has a 3 A fuse to protect the system. If there is a short circuit during installation or maintenance, the fuse may blow and need to be replaced.

To replace the fuse, follow these steps:

1. Disconnect the battery – always disconnect the battery before working on the fuse.
2. Inspect the wiring – check all wires and connections for any damage or loose connections that might have caused the fuse to blow.
3. Check the fuse – open the fuse holder and look at the fuse to see if it is damaged or blown.
4. Replace the fuse – If the fuse is blown, replace it with a new 3 A fuse of the same type.

Before reconnecting the battery, double-check all connections to prevent another short circuit.

8.0 Replacement Hardware

Component	Description
Fuse	Manufacturer Part Number: Littelfuse 0312003.HXP: 3 A fast blow fuse
Standard battery	Manufacturer Part Number: Energys Genesis NP7-12T: 12 V, 7 Ah SLA battery with 0.250 FASTON terminals
Optional high capacity batteries	Manufacturer Part Number: <ul style="list-style-type: none"> Energys Genesis NP9-12T: 12 V, 9 Ah SLA battery with 0.250 FASTON terminals Energys Genesis NP12-12T: 12 V, 12 Ah SLA battery with 0.250 FASTON terminals
Post mount bolt (2" mount only)	Stainless steel hex bolt 3/8"-16 x 2"
Mounting bracket set screw	Stainless steel cup-point set screw 1/2"-20 x 1"
Two conductor wire harness	20 AWG, red/black

9.0 Return Merchandise Authorization (RMA) & Support

The Aailed AV-200 comes with limited warranties for both the product and its battery. If you're experiencing an issue, refer to the following:

- Troubleshooting ([Section 6](#) and [Section 7](#))
- Replacement hardware ([Section 8](#))
- Warranty RMA request and support articles – support.availedtechnologies.com
- Contact sales for replacement parts or system – sales@availedtechnologies.com

NOTE

Aailed has a self-serve product support model. Please use the Product Support Center at support.availedtechnologies.com.

10.0 AV-200-SW – Optional Radar Trigger Kit

The AV-200-SW solar engine is the same as the AV-200, with an additional two sets of radar trigger wires pre-installed.

Follow the wiring and installation steps from [Section 3](#) with these additional steps:

1. Prepare the wire hole – measure and mark where the radar wire hole for the radar should go. If the post is not perforated, drill the hole.
2. Use fish tape – insert fish tape into the radar wire hole and push it up until it reaches the top of the post.
3. Secure the solar engine – hold the solar engine in place while carefully guiding the radar wires down the post.
 - a. Pull these wires down the post and out the radar wire hole: switch wire and battery wire.
4. Create a drip loop – make a small loop with the wires inside the post at the exit point.
5. Follow the radar manufacturer's installation instructions.
6. Wire the radar:

Wire From Solar Engine	Radar Terminal
Switch Black (negative)	#1 GND
Switch Red (positive)	#7 OD1
Battery Red (positive)	#11 VN
Battery Black (negative)	#12 GND

