RevE

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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**.

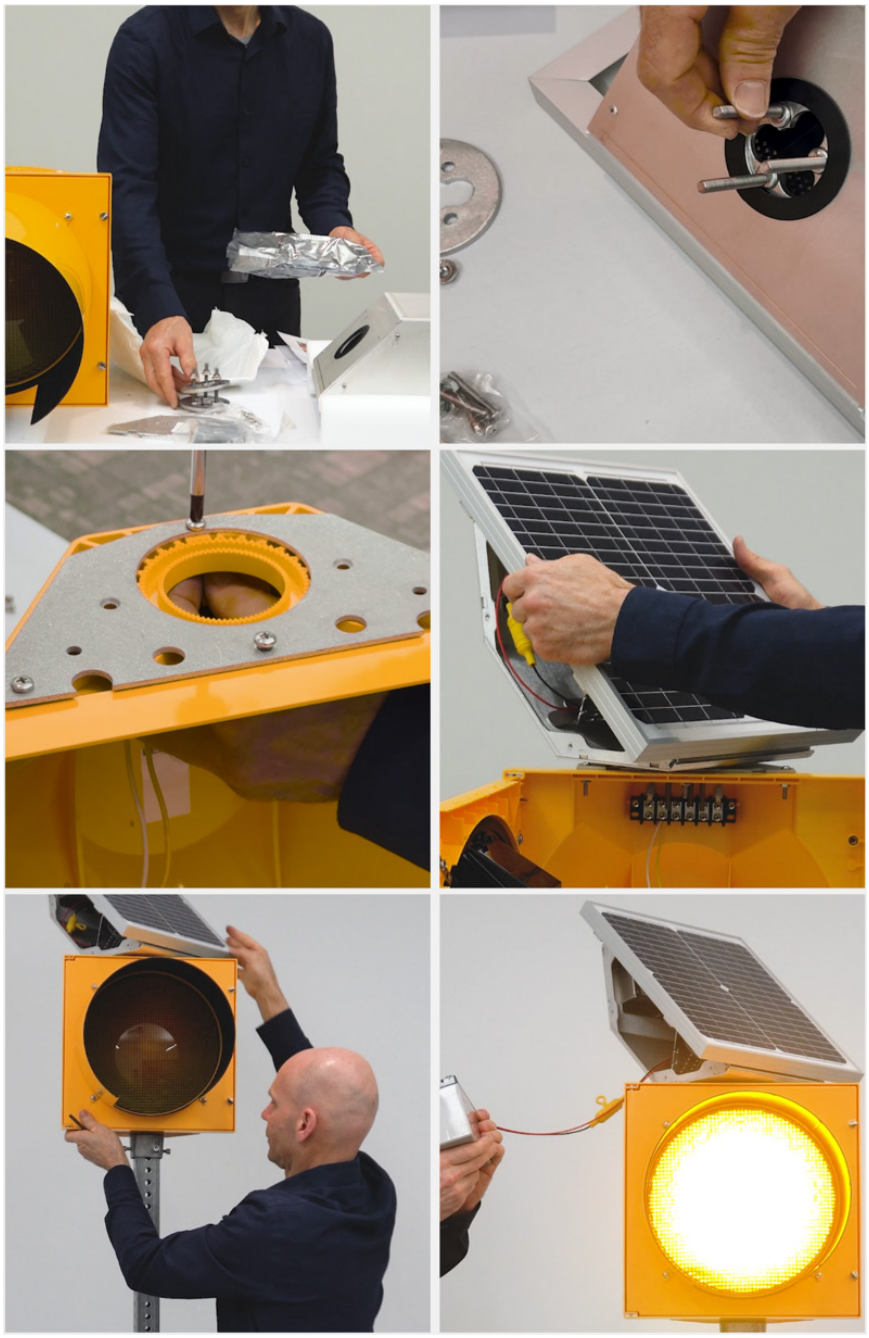
Warranty Notice

This manual explains the features, operating standards, and installation steps for Availed's AV-240. **Not following the instructions for use, storage, maintenance, installation, or placement may void the warranty**.

2.0 Introduction

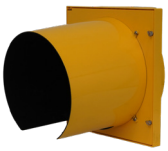
2.1 About the AV-240

The Availed AV-240 is a solar-powered flashing beacon designed to improve road safety by increasing the visibility and conspicuity of regulatory and warning signs.



2.2 System Overview

The AV-240 system components are as follows:

Component	Description	Image
Solar engine	Self-contained solar engine. Includes system controller, solar charge controller, solar panel, and wiring.	
Top of post mount	• 2" square post • 2.38" round post	
Other mounts	• U-channel • 4.5" round post • Side of post	
Battery	One 12 V, 12 Ah sealed lead-acid battery with .250" terminals.	
LED beacon	System can support up to one Availed LED beacon.	
Hardware	Solar engine bracket screws and solar engine door screws.	

2.3 Options

The AV-240 has an optional radar trigger kit, known as the AV-240-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
- ¼" Hex key
- #1 and #2 Philips screw drivers
- 9/16" socket
- Drill and drill bits
- ½" deep socket

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-240:

Solar Engine to Signal Head

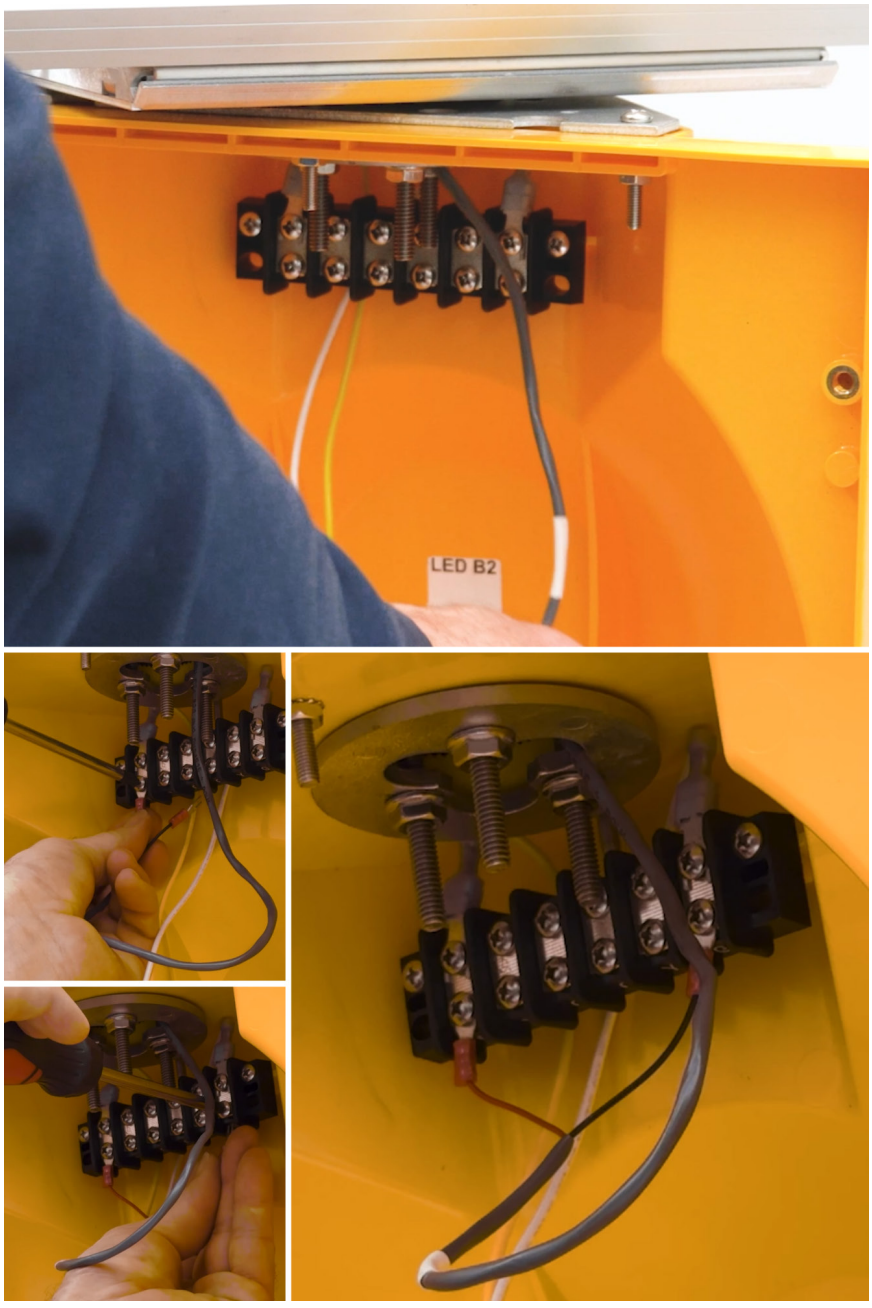
1. Install the tri-stud washer/bolt assembly inside the base of the solar engine.
2. Thread the LED wire through the tri-stud and out of the solar engine.
3. Position solar engine over signal housing.
4. Fit the studs thru the second tri-stud washer signal housing and loosely install the lock washers and nuts.
5. Rotate the solar engine so it will face south when installed.
6. Ensure the rubber gasket is centered on the serrated hole of signal housing, then tighten the bolts.

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-240-SW solar engine, refer to the additional wiring instructions in Section 10.

Solar Engine to LED Wiring

1. Fasten the LED wires to the LED beacon terminal block:
    a. Red wire from solar engine → yellow/red terminal
    b. Black wire from solar engine → white terminal

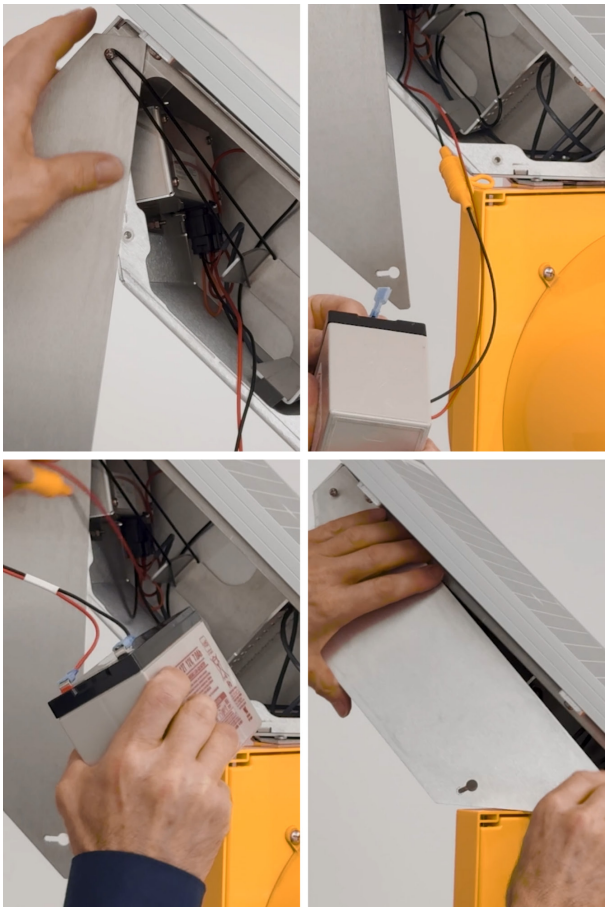


Post Mount to Signal Head

1. Fasten the post mount to the bottom of the signal head.
    a. For square post and U-channel post align the bracket to the desired orientation towards the oncoming vehicle lane(s).

Battery

1. Loosen the solar engine door screws and swing the door open.
2. Connect the battery – carefully attach the quick-connect battery wires to the battery terminals. The beacon 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 without terminals first (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.



NOTE Depending on the orientation of the signal housing it may interfere with the door. Further loosening of the screw that the door swings on allows the door to move outwards. In some cases, the door will need to be removed.

CAUTION **DO NOT reverse the battery polarity.**

3.3 Configuration

The AV-240 is factory programmed and does not have any user adjustable settings. The system is designed to flash one Availed LED beacon continuously.

4.0 Commissioning Checklist

After installing the AV-240, use this checklist to make sure everything is working correctly:

- ☐ Flashing check – LED beacon is flashing as expected (continuously; 0.5s on, 0.5s off).
- ☐ Beacon position – LED beacon 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 beacon stops flashing.

5.0 Maintenance and Care Guide

The AV-240 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 lens 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 beacon not flashing	• Fuse is blown • Battery voltage is too low (<10 V) • Loose wiring connection • LED beacon 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: Littlelfuse 0312003.HXP: 3 A fast blow fuse
Battery	Manufacturer Part Number: Enersys Genesis NP12-12T: 12 V, 12 Ah SLA battery with 0.250 FASTON terminals
Post mount bolt	Stainless steel hex bolt 3/8"-16 x 2"
Mounting bracket set screw	Stainless steel cup-point set screw ½"-20 x 1"
Two conductor wire harness	20 AWG, red/black

9.0 Return Merchandise Authorization (RMA) & Support

The Availed AV-240 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 Availed has a self-serve product support model. Please use the Product Support Center at support.availedtechnologies.com.

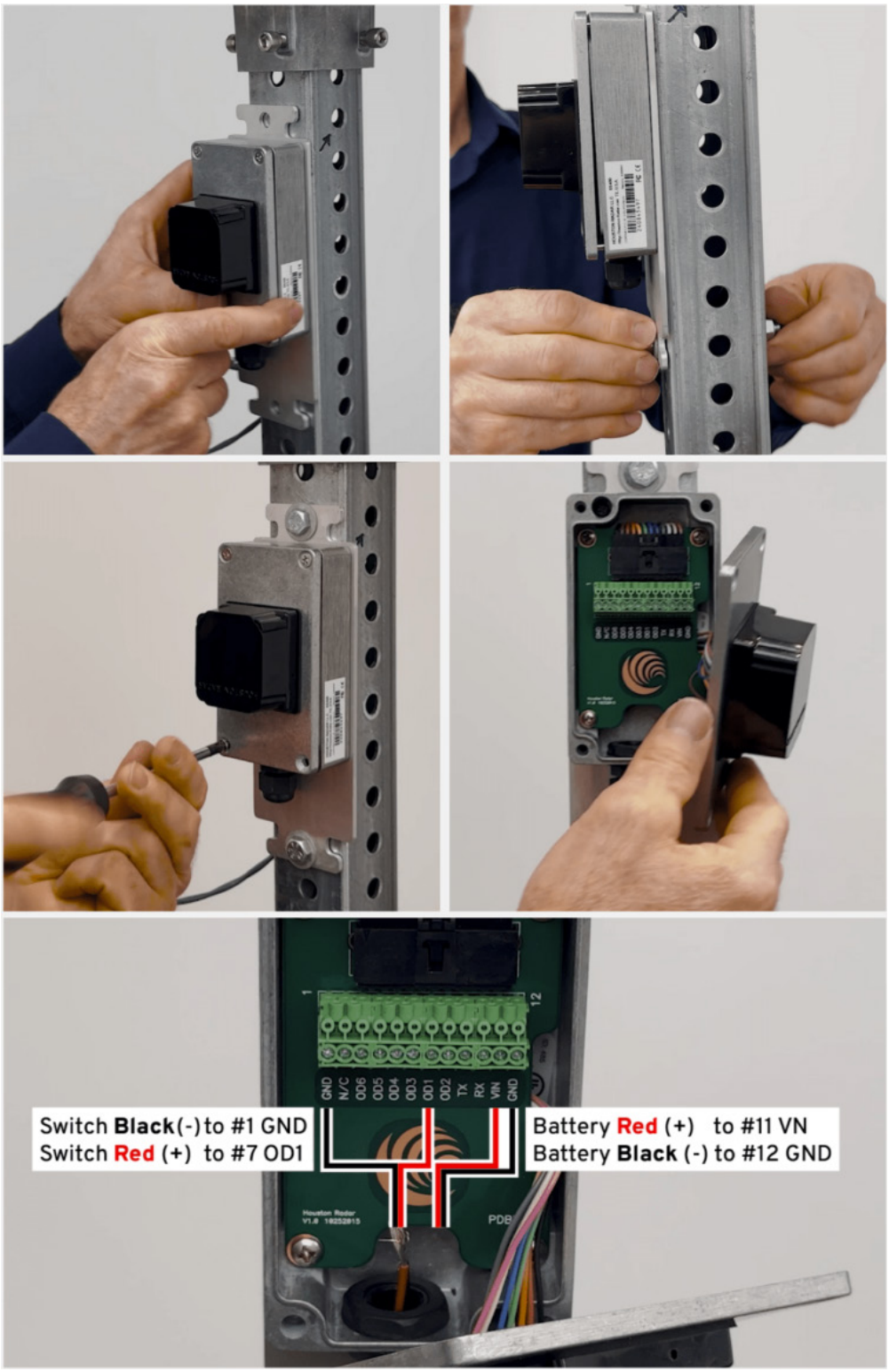
10.0 AV-240-SW – Optional Radar Trigger Kit

The AV-240-SW solar engine is the same as the AV-240, 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


Switch Black(-) to #1 GND
Switch Red (+) to #7 OD1
Battery Red (+) to #11 VN
Battery Black (-) to #12 GND
GND
N/C
OD6
OD5
OD4
OD3
OD1
OD2
TX
RX
VIN
GND
1
12
PDB