safehub

Safehub SEB-2001
Installation Guide

The Safehub SEB-2001 building-movement sensor device provides clients with real-time, building-specific earthquake damage information to expedite emergency response and recovery. Using easy-to-install, affordable sensor devices combined with advanced data analytics, Safehub calculates damage estimates for individual buildings and portfolios within minutes after an earthquake. Through the cloud-based Safehub Global Platform, building owners have immediate access to actionable data, via text/email alerts and a web dashboard, that enable them to prioritize building assessments, focus resources, and resume operations as quickly as possible.

This installation guide provides information on how to install a Safehub ground-movement sensor device into a building. Prior to installation, clients should discuss with Safehub, or the client's engineer, the appropriate number of devices to be installed in a building and the optimal device locations.

This guide outlines the steps required to install a single Safehub device.

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What's in the Box

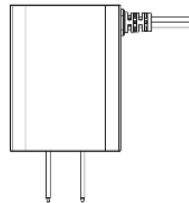The Safehub device ships with the following components:
- Safehub SEB-2001 device (1)
- SEB-2001 installation guide (1)
- Mounting bracket (1)
- 3/16" drill bit (1)
- Mounting screws (2)
- AC/DC power adapter (1) — International versions will also include four different plug adapters for the different international outlet configurations.
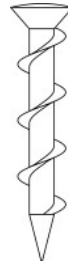

SEB-2001 Device
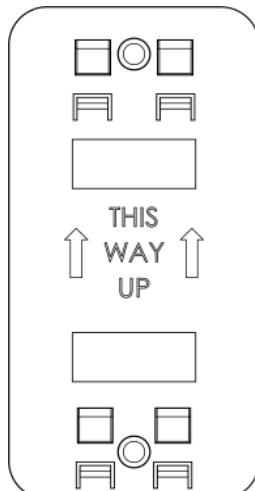
Mounting Bracket

AC/DC Adapter

Screws (2)

Drill Bit

Device Placement

NOTE: Be prepared to inform Safehub of the locations of all installed devices, including: the floor, the height above floor level, and any other description indicating device location for the client's reference. For example, "In the third floor hallway across from CEO's Office Suite" would be an appropriate location description. Send this information to a Safehub representative according to provided instructions.

Prior to installation, clients will discuss with Safehub, or the client's engineer, the appropriate number of devices to be installed in a building and the optimal device locations. In general, for one- and two-story buildings, one device should be installed at the lowest point of the building that has sufficient cellular service. For buildings with three stories and above, Safehub recommends installing two or more devices. In buildings over three stories, at a minimum, one device should be installed at the lowest point of the building that has sufficient cellular service and one should be placed on the highest floor possible.

Safehub recommends using the following guidelines when placing the device.

- The preferred location for each device is on a structural element (e.g. weight bearing column).
- Place each device next to a power outlet, preferably an outlet that is NOT controlled by a switch. Once the location is selected, see the section titled "Test the Cellular Connection" to determine the cellular signal strength of the selected location.
- It is recommended that, if possible, the device be plugged into an outlet connected to emergency power (red colored outlet).
- Multiple devices should be lined up to the extent possible, meaning that they are installed at similar locations on each floor.
- It is *required* that the device is installed in the vertical position.

Hardware Installation Procedure

Open the box and remove the contents. Verify all the contents are present as defined in the 'What's in the Box' section.

1. Test the Wall Outlet

Prior to installing the mounting bracket, test the wall outlet by plugging one end of the AC/DC adapter into the plug on the left side of the device and the other end into the wall outlet. There are three lights on the device. The right-most light should be white in color to indicate power has been applied to the device. If the light does not illuminate, refer to the Troubleshooting section.

2. Test the Cellular Connection

Check the cellular connection strength at the desired location using your cell phone. (Safehub's devices can access multiple networks to provide reliable coverage; however, Verizon is not supported as of January 2022).

To test the cellular connection of the device, press the power on/off button at the back of the device for approximately two seconds to turn on the device. The left-most light on the device should turn green once a good cellular connection has been established. If the light remains red/orange after being allowed time to establish connection, it is recommended to find another location for the device. Repeat this process until the left-most light turns green.

Disconnect the device from power before proceeding with the mounting steps

3. Prepare for Mounting

Select a location about 3 inches to the right of the power outlet.

4. Position Mounting Bracket

Insert the 3/16" drill bit (included) into a drill (not included). Holding the mounting bracket against the wall at the desired location, locate the screw holes at the top and bottom of the mounting bracket. These holes will be used to drill into the wall.

Holding the bracket firmly in place, drill through the top and bottom holes into the wall.

Drill Mounting Bracket Holes
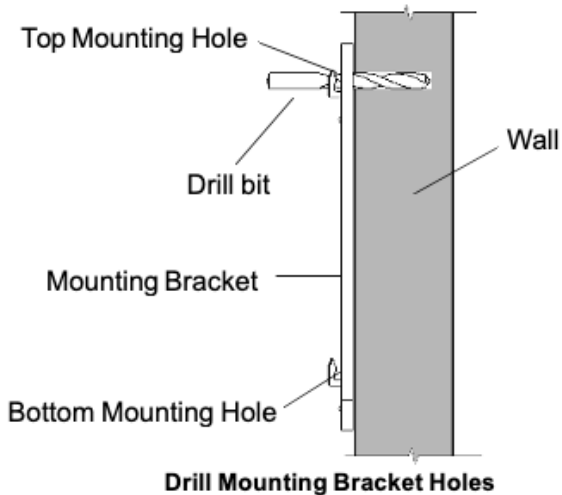
If the mounting surface prohibits drilling into the wall, Safehub recommends using an epoxy to adhere the mounting plate to the wall.

5. Secure Mounting Bracket to Wall

Make sure the "This Side Up" arrows on the bracket are facing up and the bracket is oriented straight up and down. Using the two mounting screws (included) and a Phillips-head screwdriver (not included), secure the mounting bracket to the wall using the previously- drilled holes at the top and bottom of the bracket. See below.


Screwdriver

Mounting screw

Mounting Bracket

Wall

Install Top Screw   Install Bottom Screw
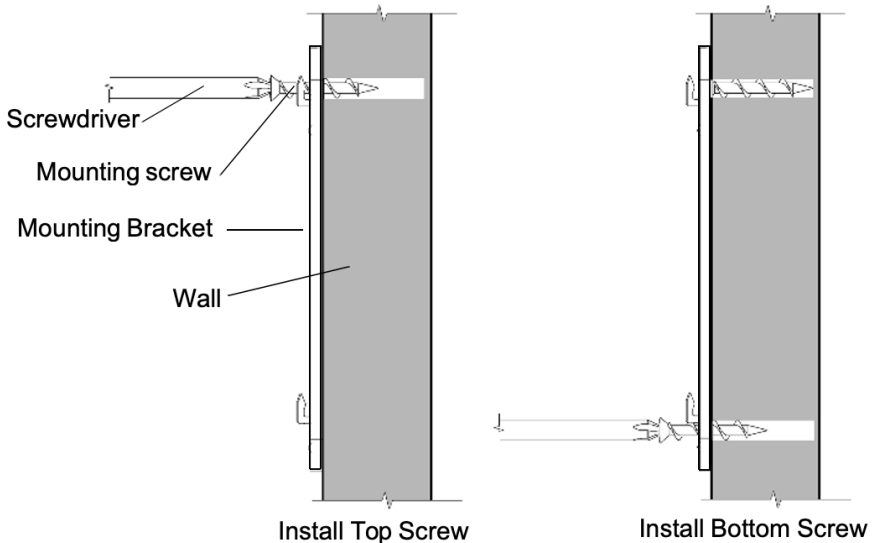
Secure Mounting Bracket to Wall

6. Attach the Device to the Mounting Bracket

Place the mounting holes on the back of the Safehub device into the tabs on the mounting bracket and slide the device downward until it is firmly in place. You should hear a "click" when the device is secured.

Do not force the Safehub device into the bracket. If the device does not slide into place easily or no "click" is heard, check device orientation. See the illustration below.
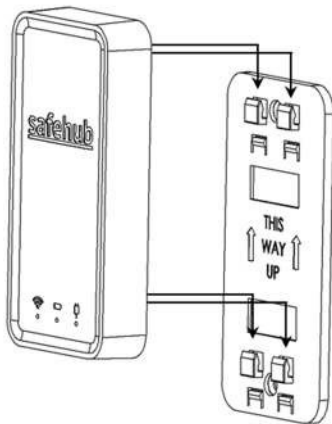
Install the Safehub Device into the Mounting Bracket

7. Connect the Power Adapter

Plug one end of the power adapter into the wall, and the other end into the power plug on the left side of the Safehub device.

The right-most light on the front of the device should turn white instantly, indicating a good power connection.

After a few minutes, the left-most light on the front of the device should turn green, indicating a good cellular connection.

Power LED
Battery LED
Cellular connection LED
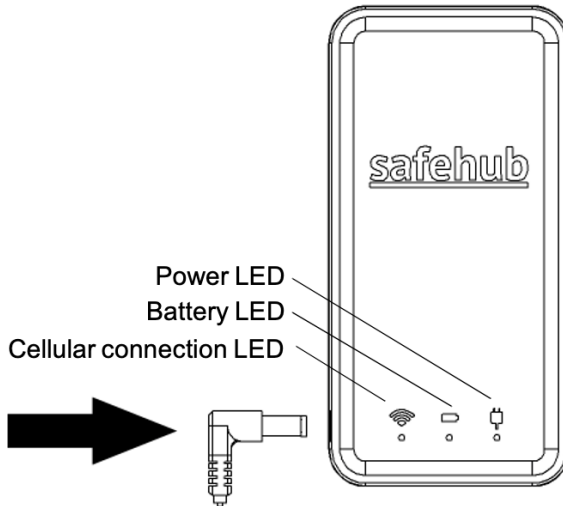
Insert the AC/DC Adapter into the Safehub

Device Go-Live

Once the device is installed and plugged in, the device should power-up and establish a cellular connection automatically. Note that a cellular connection may take several minutes.

If the device is operating correctly, the LED's on the front of the device should look as follows.

- Left-most LED: Cellular connection. This LED should be green.
- Center LED: Battery status. The Safehub device contains an internal rechargeable battery. This battery can be used in situations where power at the outlet is interrupted. When the device is plugged into the wall, the battery is charging. While charging, the color may be red or orange. Initially, it may take a few hours to fully charge. When fully charged, the light is green.
- Right-most LED: Power connection. This LED should be white to indicate a good power connection.

Disconnecting the Device from the Mounting Bracket

In some cases, it may be necessary to disconnect the device to change its location within a building or move it from building to building.

To disconnect the device from the mounting bracket:
1) Disconnect the power adapter from the device.
2) Hold the device from the bottom and push upward until it dislodges from the mounting bracket.
3) Turn the device off. Press and hold the button on the back of the device for approximately two seconds.

Remove the AC/DC adapter and mounting bracket for reinstallation
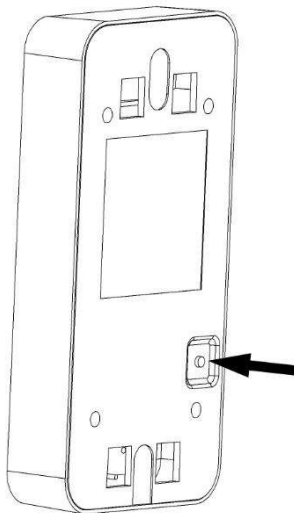
Press and hold until device turns off (~2 sec).

Turning the Safehub Device Off

Troubleshooting

This section describes some troubleshooting tips.

Cannot Drill into Wall

Depending on the way the building was constructed, it may not be possible to drill holes into the wall for the mounting bracket.

One option is to use epoxy. On the back of the mounting bracket, squeeze a few drops of epoxy onto the areas shown in the illustration below. Press the mounting bracket into place and hold firmly until the epoxy has set. See the back of the epoxy container for the setting time.

Put epoxy here
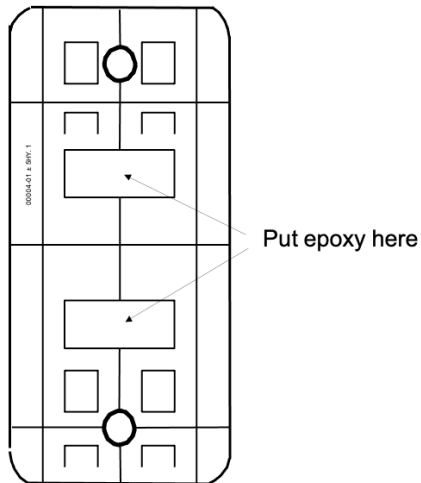
Adhering the Mounting Bracket Using Epoxy

Cannot Insert Device Into Mounting Bracket

The mounting bracket has tabs at the top and bottom that will align with holes on the back of the device. If you are having trouble inserting the Safehub device into the mounting bracket, check the following:

- Check the mounting holes on the back of the device to make sure there is no obstruction.
- Check the tabs on the mounting bracket to ensure they are not damaged.
- Make sure that the screws are fully inserted into the wall and that the head of the screw is properly recessed into the holes of the mounting bracket.

Make sure the mounting bracket tabs are aligned with the mounting holes on the back of the device. Once they are aligned and the back of the device is touching the mounting bracket, gently pull down on the device until the device snaps into place.

Cellular Connection LED is Red

If the installation procedure above was followed and the location of the device had good cellular reception and the LED was initially green, then a red cellular connection LED could mean that the cellular network is down.

To test if this is the case, disconnect the power adapter from the device and remove the device from the mounting bracket. The device should remain powered-on and will run off the battery. Then go to another location in the building to see if the LED changes to green.

Alternatively, test the cell connection at the location using a cell phone.

Battery LED is Not Green

If the battery LED (center LED on the front of the device) is yellow or red, this means that the rechargeable battery is either low on battery (yellow), or out of battery (red). Verify that the right-most power LED is white to ensure there is power to the device.

It is possible that the power outlet is controlled by a switch and that the switch has been turned OFF, causing the Safehub device to operate on battery power. If this is the case, restore power to the outlet by turning on the switch. The battery should charge, and the light will eventually become green.

If you think the battery has malfunctioned, contact Safehub for assistance.

Power LED is Not Illuminated

The power LED is the right-most LED on the front of the device. This LED will either be white in color, or off depending on whether power is being applied.

If the power LED was originally white but is now off, make sure that the outlet is not controlled by a switch that has been turned off. If this occurs, the device will run off the battery and the battery LED will change colors as it gets low on charge. Restore power to the outlet. The right-most LED should turn white.

Note that the device will beep if it is disconnected from the power supply.

Safety Considerations

Adhere to the following safety requirements when installing this product:
- Do not install this product into an environment where it may be exposed to water.
- Do not install this product next to a heat source such as a space heater or heating duct. Do not install this product where it will be exposed to direct sunlight.
- Do not install this product in an electrically noisy environment as it may affect connection to the cellular network.
- This product is meant to be used in indoor environments only. Do not install this product outdoors.
- A person should maintain a distance of a least 20 cm from the Safehub earthquake sensor while it is operating.

Standards Compliance

This product complies with the following standards.

United States

FC

Federal Communications Commission (FCC) Class A. This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: 1) This device may not cause harmful interference 2) This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: 1) l'appareil ne doit pas produire de brouillage, et 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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 of the following measures: 1) Relocate the Safehub device 2)Consult the dealer for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The end user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The device is designed to meet the requirements for exposure to radio waves established by the Federal Communications Commission (USA). These requirements set a SAR limit of 1.6 W/kg averaged over one gram of body tissue.

Changes or modifications made to this equipment not expressly approved by Safehub Inc.may void the FCC authorization to operate this equipment.

International

IEC International Electrotechnical Commission (IEC)

This product is designed and tested to comply with the International Electrotechnical Commission (IEC) 60950-1 standard for the safety of Information Technology Equipment. The application of this standard is intended to reduce the risk of injury or damage due to the following hazards: electric shock, energy-related, fire, mechanical and radiation.

The Safehub device is designed to minimize these hazards when it is installed and used according to the instructions in this document and according to commonly observed safety procedures. Follow all warnings in this document while unpacking, installing, operating, servicing, uninstalling, or repacking this device.

This is an Information Technology Equipment (ITE) device, suitable for use in commercial offices, computer rooms, and related commercial facilities. It may not be suitable for other types of facilities including but not limited to selected types of residential, industrial, and medical environments. If there is any doubt about the suitability of the device's use in a particular location, contact Safehub.

EU Regulatory Conformance

CE

Hereby, Safehub declares that the radio equipment type SEB-2001 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: http://aws3.link/TIWEMO

LTE Radio – LTE-Cat. M1

        Bands – B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85

        Fallback – GSM/EDGE

        GSM Bands – 850/900/1800/1900 MHz

        Power Class – 5

        Max. Output Power – +20.4dBm

Sub-GHz Radio – Disabled until further notice

        Frequency – 868MHz (EU and UK), 915MHz (others)

Costa Rica

sutel
00082-2021

Mexico

NOM   IFT #: RTISASE21-0542

La operación de este equipo está sujeta a las siguientes dos condiciones:
(1) es posible que este equipo o dispositivo no cause interferencia perjudicial y
(2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Japan

R 003-200139
T D200116003

Safehub Limited Hardware Warranty

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Safehub Inc. ("Safehub," "we," "our" or "us") warrants that its sensor hardware and incorporated software (the "Products") will be free from defects in materials and workmanship, as set forth in this document and in accordance with Safehub's published user documentation, for three (3) years from the date of delivery (this "Limited Warranty").

This Limited Warranty is only valid and enforceable in locations Products are made available by Safehub and its authorized resellers and will apply only if you purchased Products from Safehub or an authorized reseller. This Limited Warranty does not apply if any Safehub serial number or service label has been eliminated or erased. This Limited Warranty does not guarantee that use of Products will be uninterrupted or error free. Further, this Limited Warranty does not apply to damage or defects arising from normal wear and tear; causes not attributable to defects of manufacture and/or defects of material; servicing other than by persons authorized by Safehub; disassembly; lack of maintenance or service of the Product in accordance with applicable documentation; accidents or negligence in use of the Product; abuse or improper use of the Product; presence of sand, spills from liquid substances, water, burns or any foreign element inside the Product; spikes or drops in voltage in the network or connection of the Product to networks whose voltage does not correspond to that listed in the installation guide; or damage caused by any force majeure event or act of God, and, in general, any event that is outside the reasonable control of Safehub, including, but not limited to damage caused by floods, earthquakes, fires, thunderstorms, electrical storms, shock, or improper transportation.

To make a claim under this Limited Warranty, please contact our customer service department at support@safehub.io and provide your name, contact information and the serial number and service label on your Product. You are required to send the Product to Safehub, to the facility or address provided by Safehub, and Safehub will test the Product and validate the claim. In the case of a validated claim, Safehub will, in its sole discretion and to the extent permitted by law, either repair your Product using new or refurbished parts or replace your Product with a new or refurbished Product at least as functionally equivalent to yours. If Safehub repairs or replaces Products, the repaired or replaced Products will continue to be warranted under this Limited Warranty solely for the remaining time of the original warranty period.

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