Traffic Logix®
SafePace® Evolution 12FM Installation Manual

Radar Sign Installation

SafePace® Evolution 12FM Installation Manual

This document is supplied as a guide for the SafePace Evolution 12FM product. Reasonable care has been taken in preparing the information it contains. However, it is possible that this document contains omissions, technical inaccuracies, or typographical errors. Product specifications are subject to change without notice and should not be considered commitments by Traffic Logix Corporation. Traffic Logix Corporation does not accept responsibility of any kind for customers' losses due to the use of this document.

Trademarks

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Chapter 1

INTRODUCTION

Description

The SafePace EV12FM sign is a compact, lightweight, entry-level radar speed sign intended for private communities or local roads. It has a bright full matrix three-digit speed display. It also offers speed activated digit color changes to alert speeders.

Sign Portability and Add-Ons

The SafePace EV12FM radar sign is a fairly lightweight sign. When used in conjunction with the optional Universal Mounting Bracket, it is quite portable, easy to transport and can be mounted in minutes.

Portable Speed Control Option

The SafePace EV12FM radar sign can also be mounted to the SafePace Cruiser LT. A speed limit sign with changeable numbers ensures that your SafePace Cruiser LT is ready to slow motorists, no matter what the speed limit.

Figure 1: SafePace Cruiser LT

School Zone Option

The SafePace EV12FM sign can also be combined with the SafePace Beacons to create a complete School Zone System.

Figure 2: Complete School Zone System

For more information on the above options, please contact your Sales representative or call Technical Support.

About this Manual

This manual describes the installation of the SafePace EV12FM sign, along with an optional solar panel, to the side of a pole. This manual also describes the wiring specifications for solar and battery powered configurations.

Documentation Conventions

This document uses the following formatting conventions:

Format	Description
Bold Gray	Used in procedures to indicate menu commands, interface controls and dialog box options.
Italics	Used to place emphasis on certain words.
`Monospace text`	Used for code samples and any information that the user enters.
`Italicized monospace text`	Used to indicate text that you should replace with your own. For example: In the Save As text box, enter c:*`filename.ext`* where *`filename.ext`* is the name of the file you want to save.
>	Used to indicate a sequence of commands (and sub commands) to be carried out in the displayed order. For example **File > Exit** means to open the File menu then choose the Exit command. This applies to menus from the main menu bar, context menus that appear when you right-click on the interface, and tiles in a tiled interface.

NOTE: Notes are used as reminders or to provide information of interest that supplements or emphasizes important points of the main text.

TIP: Tips are used to suggest alternative methods, workarounds and/or shortcuts that are not essential but that you may find useful in a given situation.

CAUTION: Cautions are used to advise users of specific actions that could result in a loss of data.

WARNING: Warnings are used to advise users of specific actions that could result in personal physical injury or damage to equipment.

Using Additional Customer Resources

The following topics give you more information about additional resources available to our customers:

- *Online Customer Area* below
- *Contacting Technical Support* below

Online Customer Area

Visit the Online Customer Area at (https://trafficlogix.com/customer-area/) to gain access to a range of resources including product documentation, software downloads and support videos, that will allow you to get up to speed with your Traffic Logix product.

NOTE: The Customer Area is password protected so you may need to apply for a password if you haven't already obtained one.

Software Downloads

Provides convenient access to the latest versions of our software applications and utilities.

Support Videos

Provides access to several videos that can help you get up to speed with your Traffic Logix product.

Product Documentation

Provides access to the most recent versions of our product documentation. If you are unable to access our online documentation, please contact our Technical Support Department to discuss alternatives.

Contacting Technical Support

If you have questions or comments regarding this document or SafePace Evolution 12FM, please feel free to contact our technical support center by phone: 1 (866) 915-6449, or by email: support@trafficlogix.com

Chapter 2

INSTALLING THE SAFEPACE EV12FM

There are several methods and hardware options available for the installation of the SafePace EV12FM sign.

Selecting a Site for the Sign

The site you select for the sign may vary with the application in which the SafePace EV12FM radar sign is being used. However, you should generally adhere to the following guidelines:

» Choose a location where the line of sight from the radar sign to the vehicle will be uninterrupted. Give consideration to how the location may develop with time. The following types of questions should be considered:

- Will any trees grow directly in the line of vision?
- Is it likely that road traffic signs will be erected in a position that could obstruct the field of view?
- For solar-powered signs, are the solar panels likely to be blocked by any trees or other structures?

» Install the radar sign directly adjacent to the lane of traffic being targeted since an interfering lane of traffic may cause inaccurate speed readings.

» Mount the radar sign to a stable and firm structure. Avoid structures that are likely to be affected by wind or rain. We suggest that you use a 4-inch to 5-inch diameter circular metallic pole, ideally, or a 4-inch × 4-inch wooden pole. For 'Telespar' poles, we strongly recommend that you use the 2-inch variety.

Choosing a Position for the Sign

Similar to other road signs, the SafePace EV12FM radar sign should be installed near the closest lane of traffic, although off the actual road. The recommended height of the lower edge of the radar speed sign is approximately 7 feet above the surface of the road. The display should be turned towards oncoming traffic so that it is clearly visible to approaching drivers.

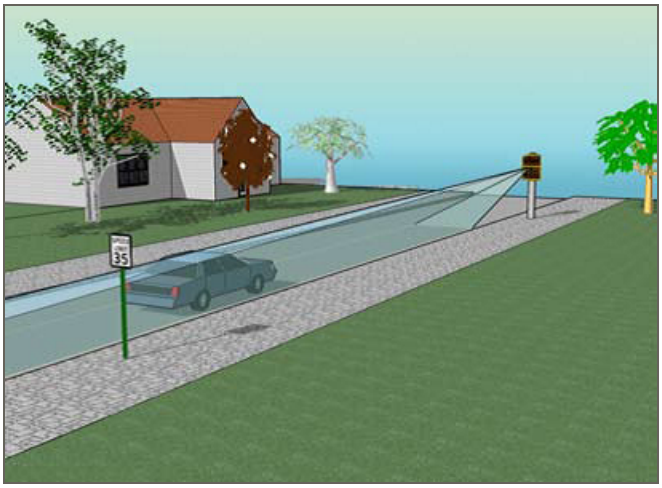


Figure 3: Example of Sign Location

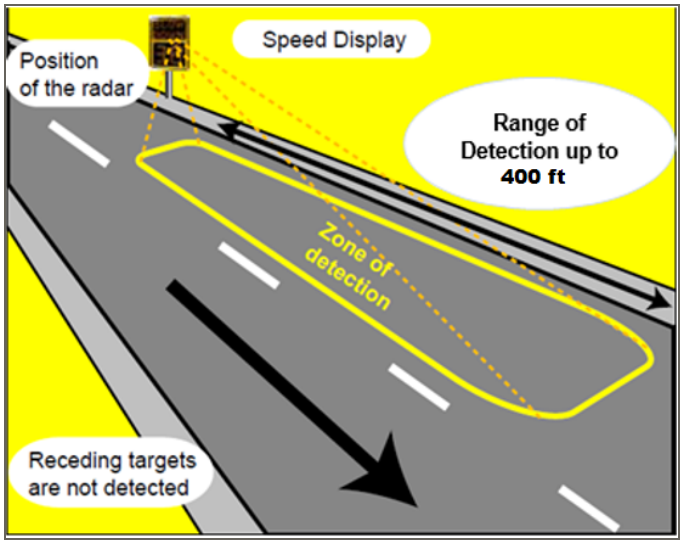


Figure 4: Zone of Detection

Mounting the Sign

The SafePace EV12FM sign and optional solar panel should optimally be mounted on a 12-foot to 14-foot pole. You can install the sign using either of the following methods and hardware options:

» Standard Pole Banding Mounting

» Universal Mounting Bracket System

Using the Standard Pole Banding Mounting

The SafePace EV12FM sign comes with a Standard Pole Banding Mounting system. As this is a standard type of mounting it requires no special knowledge to easily install the sign.

NOTE: The banding straps included are long enough for use with a 5-inch pole. If you want to use a larger pole, you will need to obtain longer banding straps.

To install the sign using the standard pole banding mounting system:

1. Attach the supplied banding brackets to the top and bottom of the rear of the sign with the supplied tamper-proof, M6 security screws as shown below.

Figure 5: Attaching the banding bracket to the sign

Figure 6: Standard banding brackets mounted directly to a sign with M6 tamper-proof screws

2. Insert the stainless steel banding strap into the bracket and fasten the sign to the pole.

3. Tighten the strap with a nut driver until secure. See *Figure 7: below*.

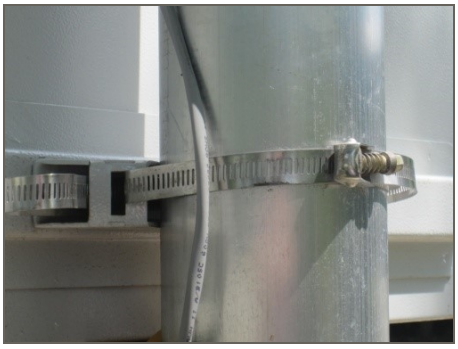


Figure 7: Sign Secured to a Pole with Banding Strap

Using the Universal Mounting Bracket System (Optional)

An optional Universal Mounting Bracket System is available with your SafePace EV12FM sign. This mounting bracket allows you to quickly and easily mount the sign to virtually any type of pole or surface in a secure manner.

There are two parts to the bracket: one for the sign (the sign bracket) and the other (the pole bracket) for the pole. The sign bracket needs to be attached to the back of the sign. Attach the pole bracket to the pole or structure where you want to mount the sign. This allows you to easily slide the sign onto the pole bracket where it can be locked into place with the included key. You can just as easily remove it from the bracket once it is unlocked.

The quick mount and dismount feature of this bracket allows you to easily move the sign from one location to another with relative ease and convenience.

Installing the Sign Bracket

To install the Sign Bracket:

» Attach the Sign Bracket to the backside of the sign using the included hardware.

Figure 8: Attaching the sign bracket.

Figure 9: Backside of sign bracket attached.

Installing the Pole Bracket

The Pole Bracket can be secured to any type of standard pole or Telespar type pole by a choice of banding straps, lag screws, or bolts and nuts.

TIP: We recommend that you install the bracket on a 2-inch Telespar pole.

Figure 10: Pole bracket mounted to a circular pole

Figure 11: Pole bracket mounted to a 2-inch Telespar pole

To install the Pole Bracket on a Telespar Pole:

» Use the supplied 2.5-inch stainless steel security bolts and nuts to secure the Pole Bracket to the 2-inch Telespar pole.

NOTE: It is very important that the head of the bolt be placed on the Telespar pole (see *Figure 12: below*) and that the nuts be placed on the inside part of the bracket (see *Figure 13: below*).

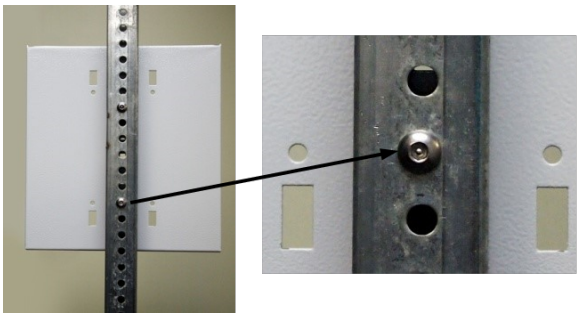


Figure 12: Pole bracket with bolts on the Telespar pole

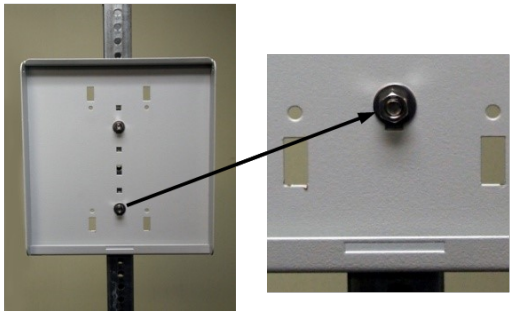
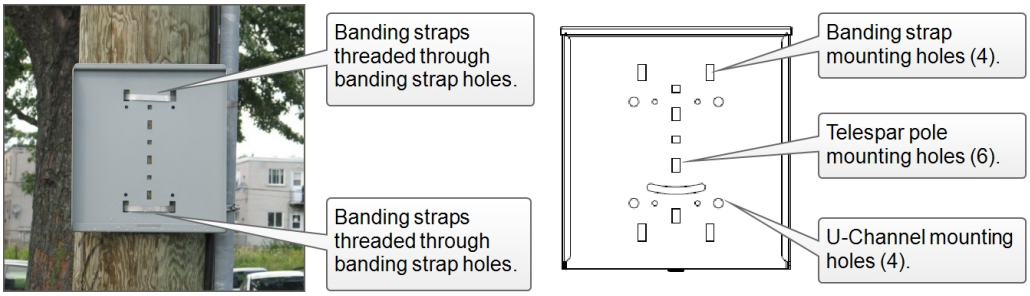


Figure 13: Pole bracket with nuts placed on the inside of the sign bracket

To install the Pole Bracket using the supplied banding straps:

1. Thread the banding straps through the banding strap holes as shown.

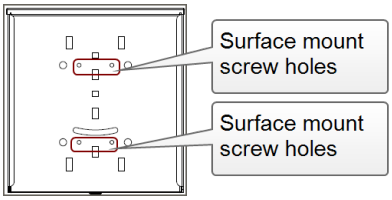


NOTE: The banding straps included are long enough for use with a 5-inch pole. If you want to use a larger pole, you will need to obtain longer banding straps.

2. Use additional screws and/or bolts to further prevent theft and vandalism.

To install the Pole Bracket on a flat surface:

1. Use the appropriate screws for the surface in question (for example: wood vs. concrete) and the necessary anchors if required.
2. Drill 4 holes on the surface in question, to match the surface mount holes on the pole bracket.



3. If necessary insert the anchors in the holes.
4. Position the pole bracket and secure it to the surface with the screws.

Mounting and Dismounting the Sign

After you install the mounting brackets, you can easily mount the SafePace EV12FM sign by sliding it down onto the Pole Bracket. When the sign is mounted, you should lock it into place.

To mount the sign:

1. Position the sign above the bracket.

2. Slide the sign down the bracket.

3. Use the supplied key to lock the sign in place.

To dismount the sign:

1. Unlock the sign.
2. Slide the sign up and off of the Pole Bracket.

Chapter 3

Power Options for your Sign

The SafePace EV12FM sign is offered in several powering models. Depending on what model you have purchased, powering the sign will vary. The available power options are as follows:

- Solar powered (uses one or more rechargeable batteries for backup)
- Battery powered (includes one or more rechargeable batteries)

Note: The warranty on the batteries is limited to 1 year — please contact Technical Support for more details (see *Contacting Technical Support* on page 9).

AC Power

The SafePace EV12FM sign is equipped to accept 100-240 volts of AC power. For these signs (standard model), the regulated power supply comes already pre-wired, and your sign is ready to operate once it is mounted and wired to the incoming power supply. The Line (BLACK) and Neutral (WHITE) wires of the incoming power supply should be connected to the marked terminals. The Ground wire should be connected to the GREEN/YELLOW terminal (see *Figure 15: below*).

Figure 14: AC power supply terminal block

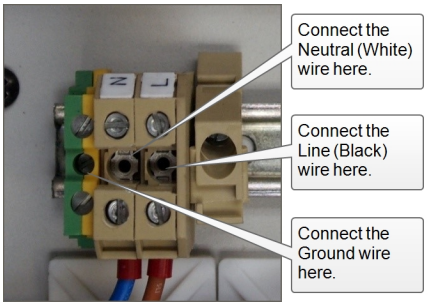


Figure 15: Close-up view of AC power connectors

WARNING: ELECTRICAL SHOCK HAZARD. To avoid serious injury or even death, all electrical wiring should be performed by a qualified and professional electrician in accordance with local electrical codes. Mishandling of electrical wiring may also result in damage to the unit and may void product warranty.

WARNING: Should you need to drill holes in the sign for the AC power wiring, drill from the inside/out as opposed to outside/in. This is to reduce the possibility of metal filings damaging the internal components of the sign.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

Solar Power

The Solar powered model of the SafePace EV12FM sign includes a solar panel and mounting bracket, one or more rechargeable batteries, and a solar charger. The solar panel powers the sign when exposed to sunlight while at the same time charging the batteries to provide a power backup for night-time and cloudy day use. The solar panel is quick to install and should suffice in most installations.

Figure 16: Solar panel

Mounting the Solar Panel

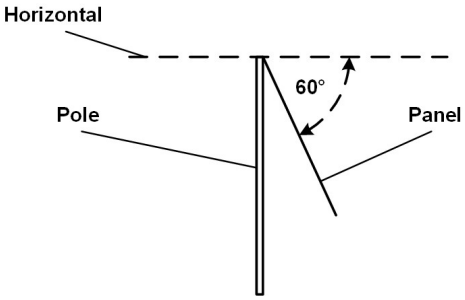
You need to mount the solar panel at the highest point on the pole, optimally 10-12 feet high. Use the supplied solar panel bracket (see *Figure 17: below*) and follow the instructions provided by the manufacturer (included in the bracket's packaging).

Figure 17: Solar panel mounting bracket

The two-part bracket allows for full adjustment in order to best position the panel towards the sun. It is optimal to position your solar panel towards due Solar South (not magnetic South), if you are in the northern hemisphere and towards due Solar North (not magnetic North) if you are in the southern hemisphere.

Regardless of whether you are in the northern or southern hemisphere, Solar North/South is the position of the sun in the sky at exactly the midpoint between sunrise and sunset.

The solar panel should be angled 15 degrees above the latitude of the installation site. For example, if the latitude of the installation site is 45 degrees then the solar panel should be installed at an angle of 60 degrees, as shown.



You can easily obtain the latitude of the installation site from mapping software or for free by doing an internet search for "latitude *your_city*" where *your_city* is the name of the city or region where the panel is being installed.

Wiring the Solar Panel to the Sign

As shown in the following images, the solar panel and the sign come pre-wired with connectors that allow for a simple installation. The red (male) and black (female) connectors from the sign need to be connected to corresponding connectors on the solar panel.

Figure 18: Solar panel wires and connectors on the back of the solar panel

Figure 19: Wires and connectors from the sign enclosure.

WARNING: To prevent damage to the solar charger, connect the battery connectors *before* connecting the Solar Panel to the sign.

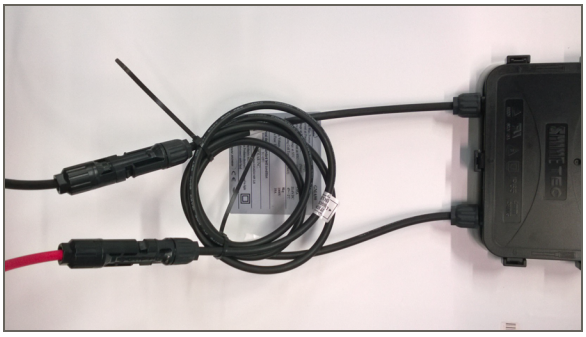
To wire the solar panel to the sign:

1. Open the sign and make sure that any battery connectors are properly connected and the sign is powered on.
2. Close the sign.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

3. Insert the connectors from the sign into the corresponding connectors from the solar panel as shown below.

4. Slide the connectors together until you hear a click and you can no longer slide them apart easily. Once connected the cables should look like the following:



Battery Power

Battery powered signs come with one or more rechargeable batteries. Depending on your preferences these batteries will be either lithium or lead acid. Though they are shipped with the sign, typically, the batteries are not installed in the sign. When you receive the sign, you need to remove the batteries from their packaging and install them in the sign.

Charging the Batteries

We strongly recommend that you charge the batteries fully before the initial use. The supplied battery charger is equipped with a charge indicator which shows when the battery is fully charged and ready for use.

To charge the batteries:

1. Connect the charger to the battery.
2. Plug the charger into the wall.

   When the charger indicates that the battery is fully charged, the battery is ready for use.
3. Unplug the charger from the wall *before* you disconnect the battery.

Installing Lithium Batteries in SafePace Evolution signs

Your SafePace EV12FM sign holds up to two rechargeable lithium batteries. Each battery should be placed with care into the battery holder inside the sign and secured in place with the included velcro straps.

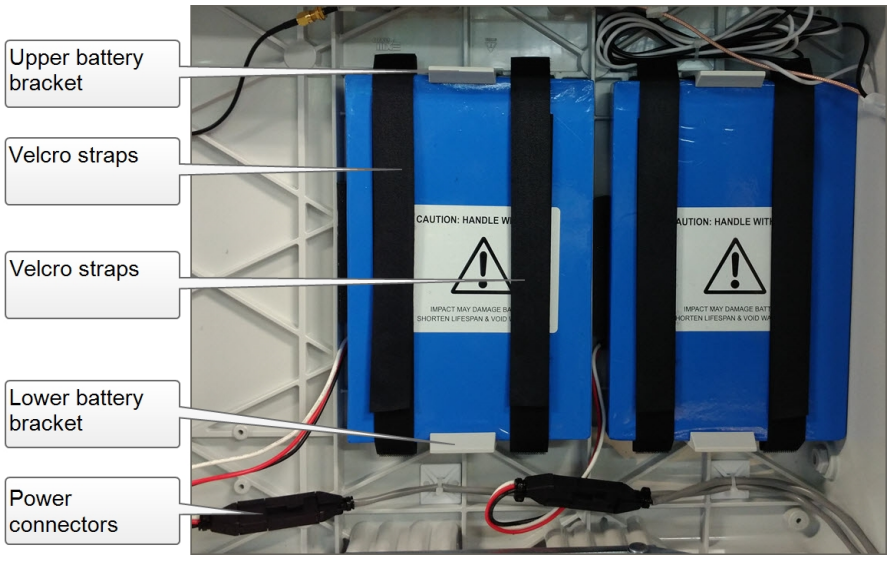


Figure 20: Lithium battery inserted and connected

NOTE: This image is for illustrative purposes only and the number of batteries in your sign may be different from that shown.

WARNING: Lithium batteries come with a protective wrap on the outside of the unit. this protective wrap *should never* be removed as doing so damages the batteries and creates a

potential hazard. The Lithium batteries supplied with the SafePace EV12FM sign are stable and safe when handled and used properly. Do not bend the batteries or attempt to puncture them with sharp objects as this could cause a fire and/or explosion.

To install the battery in the battery bracket:

1. Make sure that the battery has been removed from its packaging, then open the sign enclosure.
2. Make sure the velcro straps on the battery enclosure are separated.
3. Place the battery into the lower bracket then push the battery flat against the enclosure. You should hear it snap into place.
4. Use the velcro straps to secure the battery in place in the enclosure.
5. When the battery is secured in place, connect the battery and sign power connectors to power on the sign.

Installing Lead Acid Batteries in SafePace Evolution Signs

The battery should be placed with care into the battery bracket inside the sign. There are two parts to the battery bracket: the upper bracket and the lower bracket. You need to remove the upper bracket, install the battery, then replace the upper bracket to keep the battery in place.

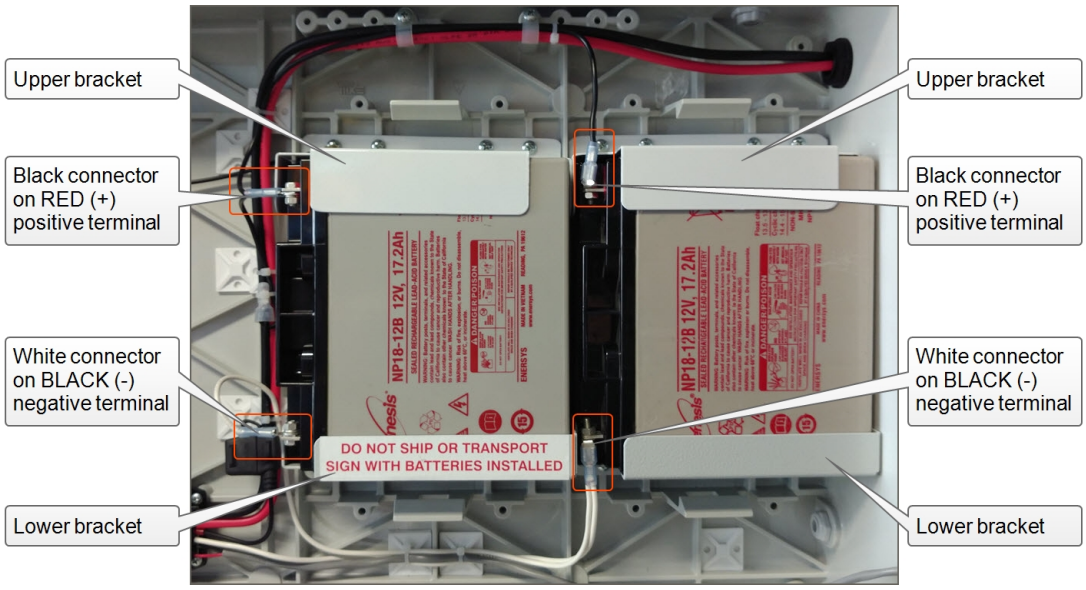


Figure 21: Lead acid battery inserted and connected

NOTE: This image is for illustrative purposes only and the number of batteries in your sign may be different from that shown.

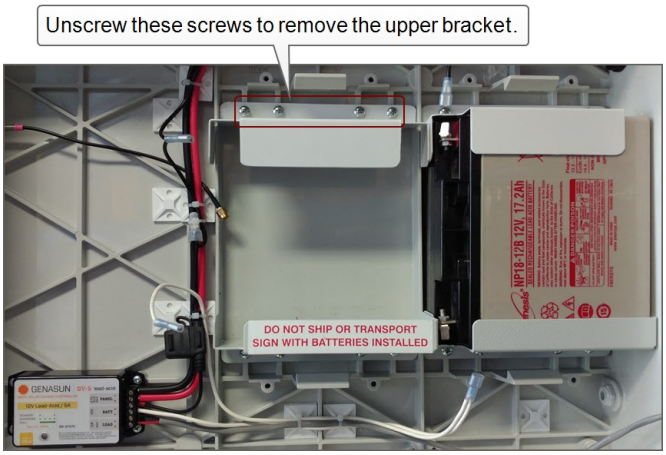
WARNING: Proper battery care and maintenance is required. Improper care and maintenance of batteries may void the product warranty. We strongly recommend that you do the following:

- Replace the batteries every TWO years, in order to prevent damage to the sign.

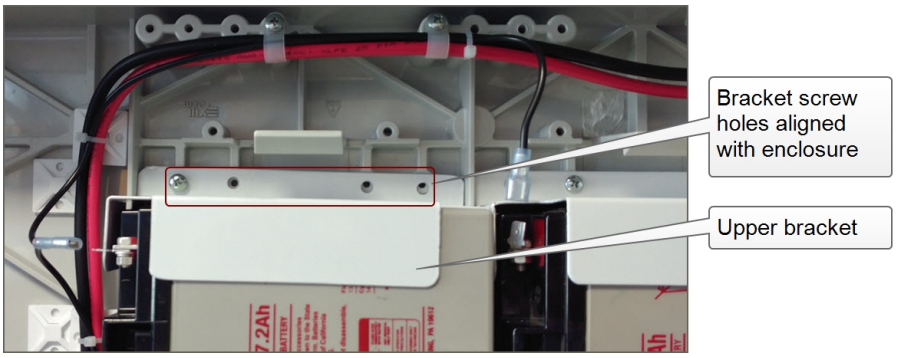
- Remove the batteries whenever you need to transport the sign, in order to prevent internal damage to the sign.

To install the battery in the battery bracket:

1. Make sure that the battery has been removed from its packaging, then open the sign enclosure.
2. Use a screwdriver to remove the screws holding the upper bracket in place.



3. Gently place the battery, on its side in the lower bracket and lay the battery flat against the enclosure. Make sure that the RED (+) positive terminal is at the top and the BLACK (-) negative terminal is at the bottom.
4. Place the upper bracket on top of the battery and align the screw holes in the bracket with the screw holes in the enclosure.



5. Use the included screws to screw the bracket into place. Make sure not to over tighten the screws.
6. When the battery is secured in the battery bracket, slide the battery connectors onto the battery terminals as follows:
   - Slide the black connector onto the RED (+) positive terminal.

- Slide the white connector onto the BLACK (-) negative terminal.

TIP: The signs have been wired so that each connector should only be able to reach the nearest terminal. As as long as the batteries are properly positioned, there should be no issues with making the proper connections.

7. When you are finished, you can close, and latch, the sign enclosure.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

Chapter 4

Sign Operation and Maintenance

Opening and Closing the Sign Latches

Your SafePace Evolution sign comes with several over-center draw type latches. These latches help to protect the internal components of the sign from vandalism as well as water infiltration. As shown in the following illustration the important components of these latches are the lever, the hook and the slot.

Figure 22: Components of the latches

The following procedures provide details on how to use these components to properly open and close the latches on the signs.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

To open the latch:

1. If necessary, unlock the latch, with the supplied key.
2. Raise the lever then lift the tip of the hook out of the slot.

To close the latch:

1. Insert the tip of the hook into the slot as shown in the following image.

2. Lower the lever until flat against the surface of the enclosure as shown in the following image.

3. If applicable, use the supplied key to lock the latch.

Operating Your Sign

After your sign is mounted and powered, you can connect to and manage it via Bluetooth with our easy to use SafePace® Pro application. You can also manage your sign remotely using SafePace® Cloud, if you purchased that option.

For more information on operating your sign with SafePace® Pro, refer to the *SafePace® Pro User Manual*. For more information on operating your sign with SafePace® Cloud, refer to the *Web Director User Guide*.

TIP: You can get the latest version of all manuals at: http://www.trafficlogix.com/customerarea/customerdownloads.

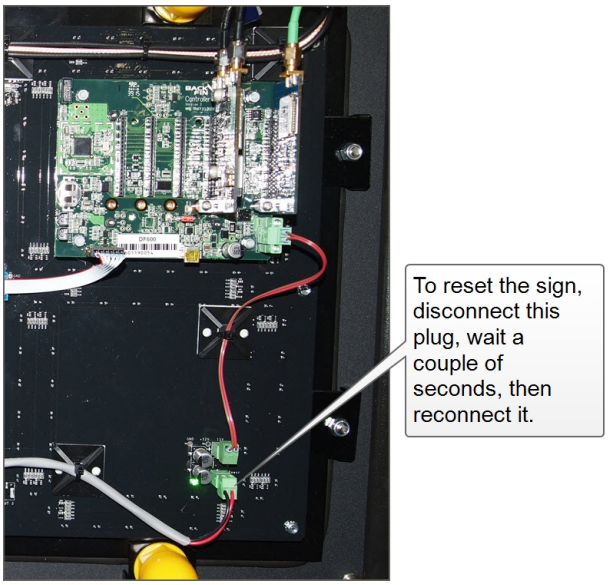
Resetting the Sign

There is no ON/OFF switch supplied with the SafePace EV12FM sign. The sign immediately powers on once the power source is connected. There is also no reset button on the controller card included with this sign. As a result, we recommend that you use the following procedure to turn the sign OFF and ON, or reset the sign.

To reset the sign:

1. Open the sign enclosure.

   On the inside of the front panel you will see the controller card and below it two green plugs. One of these is wired to the controller card, the other is wired to the power source.



2. Disconnect the lower of the two plugs, the one which is wired to the power source. This turns the sign off.
3. Wait a couple of seconds then reconnect the plug. The sign will immediately power on.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

Replacing Key Components

The SafePace EV12FM sign is comprised of the following key electronic components (and respective quantities):

- Controller Card (1)
- Radar Head (1)
- BlueFin Bluetooth Controller (1)
- SIMFin GSM/GPRS Controller (1) - for SafePace® Cloud signs
- Full Matrix Three-Digit Display PCB (1) - includes Ambient Light Sensor and Speed Violator Strobe
- Battery/Solar charger (1) - for battery/solar-powered signs
- AC Power converter (1) - for AC-powered signs

WARNING: Before ever doing any maintenance on a sign, it is critical that the power is first turned off. This will prevent accidental electrical shock that can be fatal and that can also damage electrical components.

WARNING: It is vitally important, whenever you close the sign, that you close and lock *all* of the latches properly to avoid water infiltration as this could damage the sign and void your warranty.

If you suspect that you require a replacement of any of the above-mentioned components, please call Technical Support, see *Contacting Technical Support* on page 9.

WARRANTY

Two Year Warranty

Two year warranty on parts and labor excluding damage related to vandalism, abuse, and/or theft

Subject to the following conditions, Traffic Logix Corporation (“Traffic Logix”) warrants that the SafePace EV12FM sign (the “Product”) is free from defects in materials and workmanship.

This limited warranty begins on the invoice date of your purchase of the Product and extends:

- For TWO (2) calendar years on the sign, and
- For ONE (1) calendar year on the batteries.

This limited warranty extends only to the original purchaser of the Product when purchased either directly through Traffic Logix or through an authorized Traffic Logix distributor and is not assignable or transferable to any subsequent purchaser or end-user. Traffic Logix’s obligation and liability under this warranty are expressly limited to repairing or replacing, at Traffic Logix’s option, defective products. In no circumstances shall Traffic Logix’s liability, whether in contract or tort, under any warranty, in negligence, or otherwise, exceed the amount of the purchase price of the product. Traffic Logix shall not be liable for special, indirect, or consequential damages of any kind. This warranty does not cover damages resulting from normal wear and tear, incorrect installation or operation, use other than for the product’s intended purposes, vandalism, and extraordinary environmental circumstances. Traffic Logix reserves the right to charge for these damages to the product at rates normally charged for repairing such products not covered under this warranty. Damages resulting from any physical changes or alterations made to the product other than Traffic Logix will render this warranty **VOID**. Using any parts or accessories not supplied or approved by Traffic Logix, such as battery chargers, will further render the warranty **VOID**.

Traffic Logix neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale of the Product, and there are no agreements or warranties collateral to or affecting this limited warranty.

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Warranty Replacement Procedure

In order to submit a claim for the repair or replacement of the Product under this limited warranty, proceed as follows:

1. Contact Technical Support. **Do *NOT*** ship your defective product to Traffic Logix prior to contacting Technical Support.
2. A Technical Support Agent will evaluate the Product to determine if it is defective. You may be required to do some troubleshooting as part of this evaluation.
3. If the Product is defective, then you will need to submit your contact information, and proof of purchase (including the date of purchase), in order to obtain repair or replacement parts.
4. The Technical Support Agent will provide you with a Return Materials Authorization number and instructions on how to have the defective parts repaired or replaced.