

Important Information

FLASHING SIGN SYSTEMS

Your guide to install and
connect a TrafficCalm Top
of Pole Solar Panel Kit

Applies to:

M75-SPTOP-060W

M75-SPTOP-100W

M75-SPTOP-150W



**TRAFFICALM™
SYSTEMS**

5676 E. Seltice Way

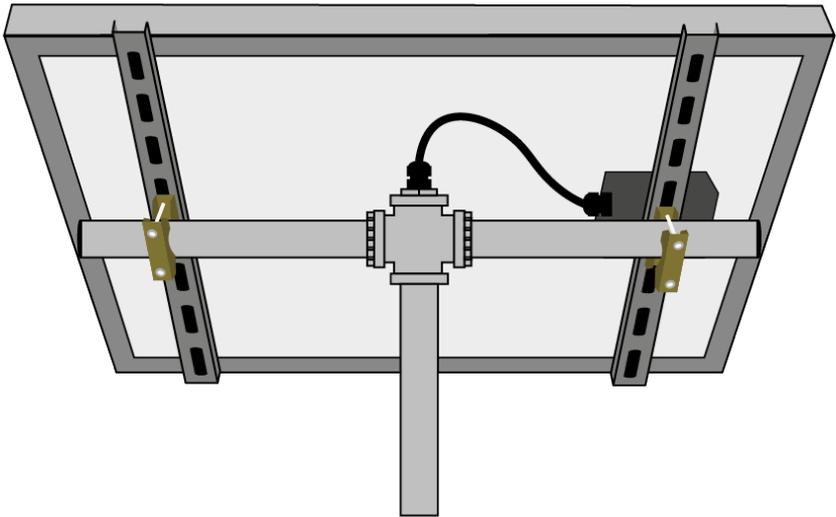
Post Falls, Idaho 83854

1.855.738.2722 | www.trafficalm.com

<Intro>

Fast Facts - *If you read one thing, let this be it.*

- The covered Top of Pole Kits are designed to integrate with our Slimline Controller and Collaborators. They ARE NOT a standalone solution and cannot be installed individually.
- The 100 and 150 Watt kits include a solar charge controller. This module is designed to mount inside the Slimline cabinet and handle the power produced by these large panels.
- The solar panel kits covered in this manual do not include a battery. The battery must be purchased as part of the Slimline assembly.
- The supplied bracket provides a tremendous amount of flexibility to maximize solar exposure. It is recommended the installer be up to speed on best practices for solar panel aiming. Every installation has its own challenges, bear this in mind when aiming the solar panel.



What's included?

- A 60W, 100W, or 150W solar panel (depending on what was ordered)
- qty 1 NPT/SAE threaded 1-1/2" post extension
- qty 2 single threaded 1-1/2" support pipes
- qty 1 x-pipe fitting
- qty 2 Pelco end caps
- qty 1 x-pipe threaded cap (aluminum)
- qty 2 standard drilled channel brackets
- qty 3 NPT threaded lock rings
- qty 2 serrated pipe clamp assemblies
- Assorted assembly hardware
- Wiring harness, panel to controller
- qty 2 weather tight wiring seals
- Solar Controller (applies to 100 and 150 Watt models only)

<Assemble Bracket>

Before Assembly...

Ensure all set screws and lock rings are loosened or removed. Irreparable thread damage can occur if set screws are left exposed in the thread.

They will all be used later, so don't dispose of them!

Assemble the Post Top Bracket

1. On all three pipe extensions install lock rings to the straight cut threads (SAE), as seen below



2. Fully thread the two single threaded pipes to the x-pipe fitting, directly across from one another
3. Fully thread the straight threaded (SAE) side of the double threaded pipe to the x-pipe fitting at a 90° angle to the pipes assembled in step 1
4. Across the bracket from this pipe, install the x-pipe threaded cap, fully seat it in the x-pipe



5. It is now okay to tighten the lock rings and set screws on this assembly, no further adjustment will be required

This assembly provides the structural support to the solar panel. It is important that all parts be tightened sufficiently.

<Prep Panel>

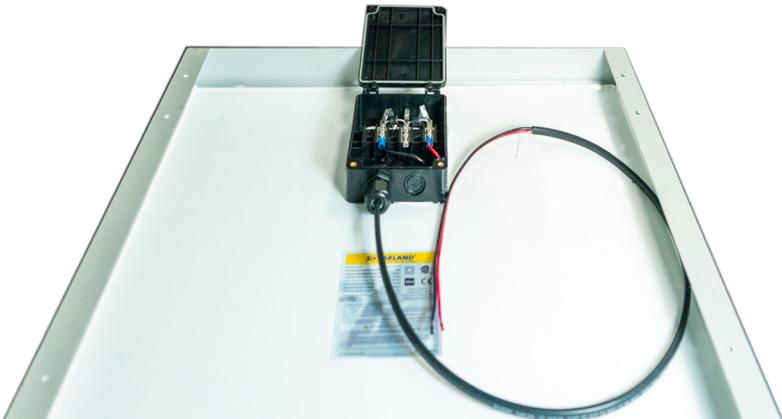
Before Assembly...

Following this sequence is critical. There are components that cannot be accessed past other install steps if done out of order.

Assemble the Panel Wiring Harness

The panel harness features a single cable consisting of two wires- red and black. The wiring harness features fast connections at the panel end to expedite installation.

1. Unless already done, remove one full tapout from the bottom of the junction box with a flat screwdriver and hammer, as shown below
2. Open the panel's junction box to access the wiring location terminals
3. Install one (of two supplied) wiring seals to the junction box. Route the cable harness through this seal
4. Each panel is different, and suppliers change th connection methods regularly. But in general connect the black wire as far left as possible, and the red wire as far right as possible. Supplemental guides will be provided where needed
5. Allow the harness to hang loosely and proceed

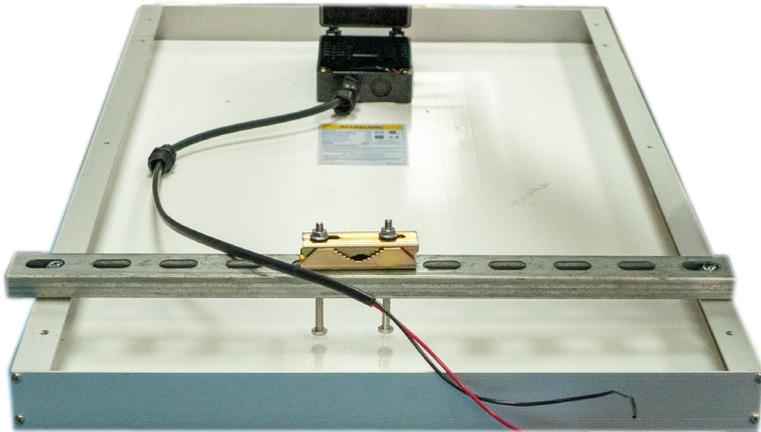


<Prep Panel>

Assemble the mounting structure to the panel

The mounting structure features basic hardware components assembled to the panel's frame, and integrates the frame for support.

1. Assemble qty 4 toothed clamps to universally drilled cross supports with four 3" long x 1/4" bolts and four 1/4" nuts.
2. Assemble the qty 2 universally drilled supports across the height of the panel as shown below



3. The cross support bolts can be fully secured to the solar panel frame. The nuts are sprung to assist with assembly, so ensure the spring is fully compressed and the bolt is tightened sufficiently to prevent loosening by hand.
4. Do not assemble the panel to the support structure yet.

A Note Before Proceeding...

We recommend that as much assembly be accomplished on the ground before hoisting the assembly up on the pole. We have determined that at this point the solar panel is ready to be mated to the SlimLine Controller or Collaborator already installed on the pole. If circumstances would benefit from more assembly before mating to the pole, proceed at your own discretion.

Mating the mounting structure to the pole top hub (Controller or Collaborator)

The mounting structure is supported by the double-threaded pipe assembled on page 4. This will thread into the pole top hub. As mentioned before, loosen the set screw on the hub before affixing the structure.

Thread the assembly to the hub as much as possible. The result will appear as seen below. Do not tighten the set screw just yet.



<Assemble To Post>

Mating the solar panel to the mounting structure

1. With the serrated clamps fully assembled, but loose, slide one side onto one side of mounting structure as shown below

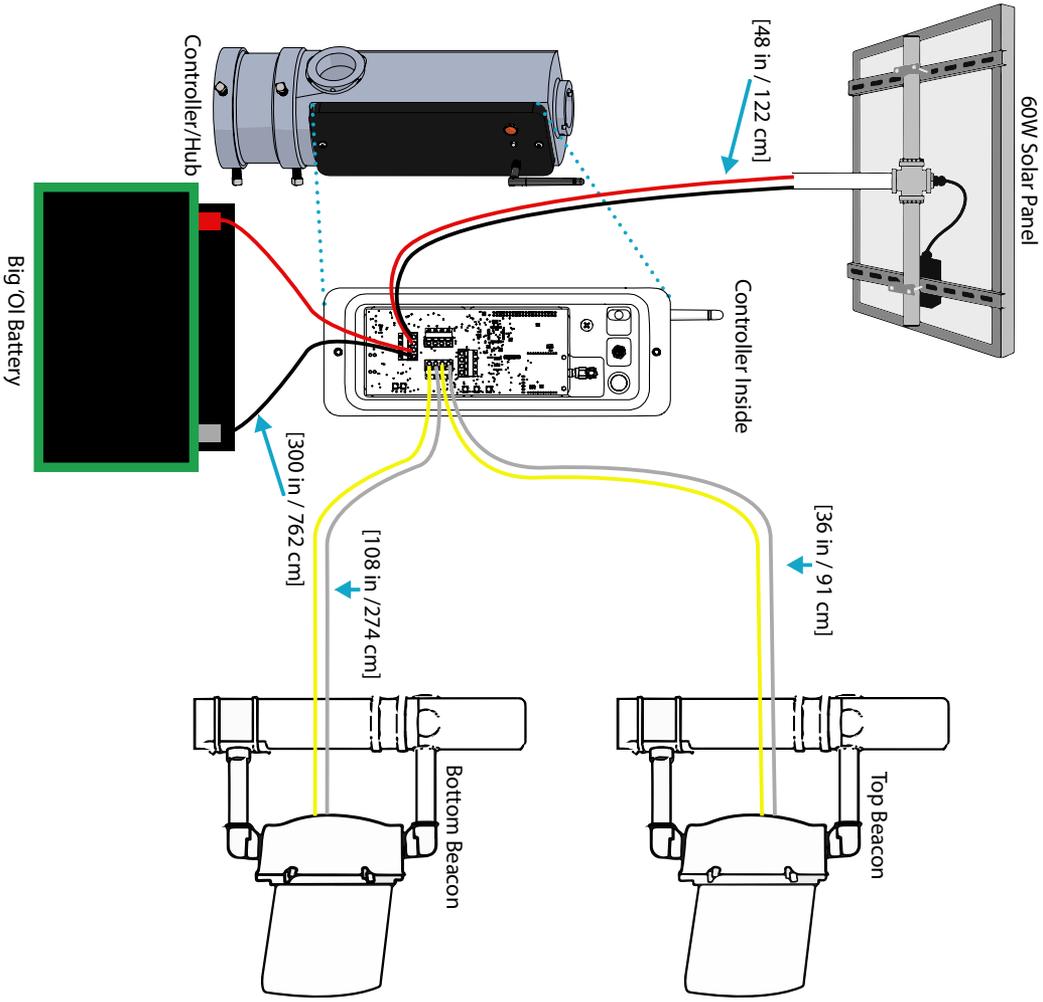


2. Slide the panel the opposite direction to capture both serrated clamps on the mounting structure's horizontal pipes
3. Tighten all bolts just tight enough to allow for adjustment, but not slack.
4. To maximize solar panel aiming consider the following best practices
 - The angle of the panel should equal the geographical latitude of the installation
 - The panel should face geographical (not magnetic) south
 - If heavy snow cover is expected a steeper angle may be more effective beyond matching the latitude
 - If shadowing is expected throughout the day, rotating the panel toward the best exposure to sunlight is advisable.

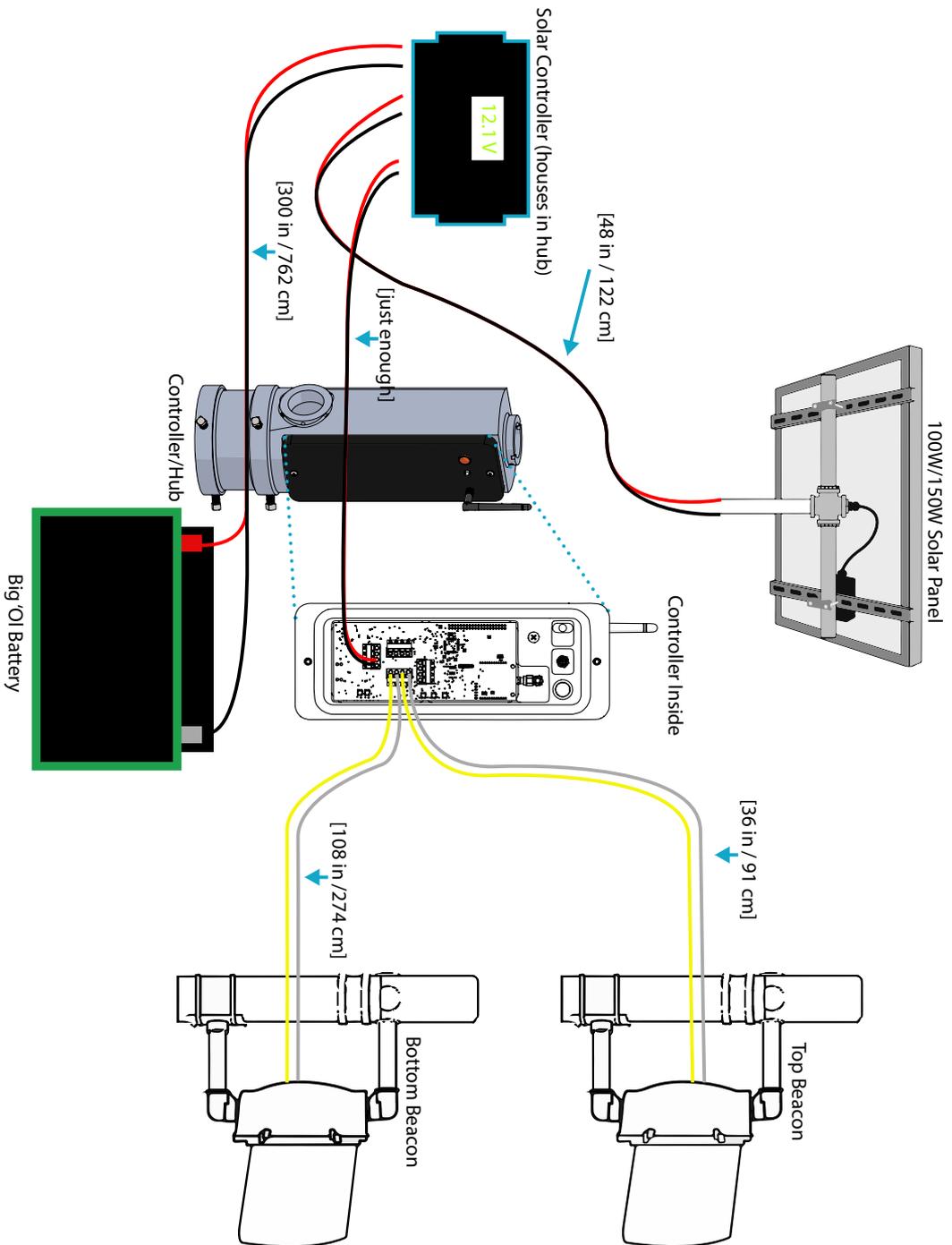
Making sure it performs for years to come...

1. With the panel aimed as best as possible, all the clamps and set screws previously left loose can be tightened to prevent movement, especially consider loosening from wind. All the clamping components are robust, so you can apply a fair amount of torque to ensure tightness; use your best judgment for torquing.
2. Route the solar panel cable down the center tube and into the Slimline Controller or Collaborator hub.
3. For 100 Watt and 150 Watt Kits, install the included stand-alone solar charger inside the Slimline hub as shown below.
4. All connections are made inside the hub and are detailed in the manual included with that assembly.
5. This concludes the assembly and installation of your Top of Pole Solar Panel Kit. Please refer to other literature included with the Controller for further instructions.

<60W Wiring Diagram>



<100W/150W Wiring Diagram>



<Warranty Statement>

TraffiCalm Systems provides the following warranty for its traffic calming solutions whether sold directly by TraffiCalm or by an authorized TraffiCalm distribution partner.

- TraffiCalm Systems warrants this product, excluding batteries, will be free of defect in materials and workmanship for a period of five (5) years beginning on the day the end user receives the product. Warranty is only valid if the product is ineffective for its intended purpose due to defects in materials or workmanship.
- Warranty is only valid if the product is installed, operated and maintained in accordance with the manufacturer's instructions and recommendations (available upon request).
- TraffiCalm's sole responsibility, and the purchaser's and users' exclusive remedy, shall be that TraffiCalm will either repair or furnish replacements for defective parts.
- Replacement parts will carry the unexpired warranty of the parts they replace. Any repairs conducted on out-of-warranty items will carry a 90 day warranty.
- Claims made under this warranty will be honored only if TraffiCalm is notified of a failure within the warranty period, reasonable information requested by TraffiCalm is provided, and TraffiCalm is permitted to verify the cause of the failure.
- TraffiCalm assumes no liability for any incidental or consequential damages, in any way related to the product regardless of the legal theory on which the claim is based.

This warranty does not cover damage resulting from:

- Accidents, vandalism, impact with a foreign object, or acts of God.
- Product modifications made by someone not authorized by TraffiCalm
- Failure of Customer to follow TraffiCalm's published operating instructions,
- Failure to follow TraffiCalm's published site selection and installation instructions,
- Removal or relocation of the unit,
- Electrical work external to the unit, virus/hacker activity, and external computer errors.

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY.

Important Information

FLASHING SIGN SYSTEMS

Your guide to install and setup
an Intelligent Beacon Kit

Applies to:
All TrafficCalm™ Beacon
Assemblies



**TRAFFICALM™
SYSTEMS**

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<Intro>

What's included in a Single Kit?

- Qty 1 LED Beacon Ball*
- Qty 1 Beacon Housing (signal head)**
- Qty 2 support elbows
- Qty 1 wiring harness
- Qty 1 support elbow foot w/ self tapping screw(s)
-

What's included in a Dual Horizontal Kit?

- Qty 2 LED Beacon Ball*
- Qty 2 Beacon Housing (signal head)**
- Qty 4 support elbows
- Qty 1 wiring harness
- Qty 2 support elbow foot w/ self tapping screw(s)

What's included in a Dual Vertical Kit?

- Qty 2 LED Beacon Ball*
- Qty 2 Beacon Housing (signal head)**
- Qty 4 support elbows
- Qty 1 wiring harness
- Qty 3 support elbow foot w/ self tapping screw(s)
-

What's not included?

- Visor/Hood
- Pole
- Solar Panel
- Slimline Controller/Collaborator
- Banding (not needed unless preferred)

*Selected, at time of purchase, in Red or Amber LEDs

** Selected, at time of purchase, in polycarbonate or aluminum., and painted/molded in Yellow, Green, or Black coloring

<Parts Identified>

Support Elbow



Beacon Housing



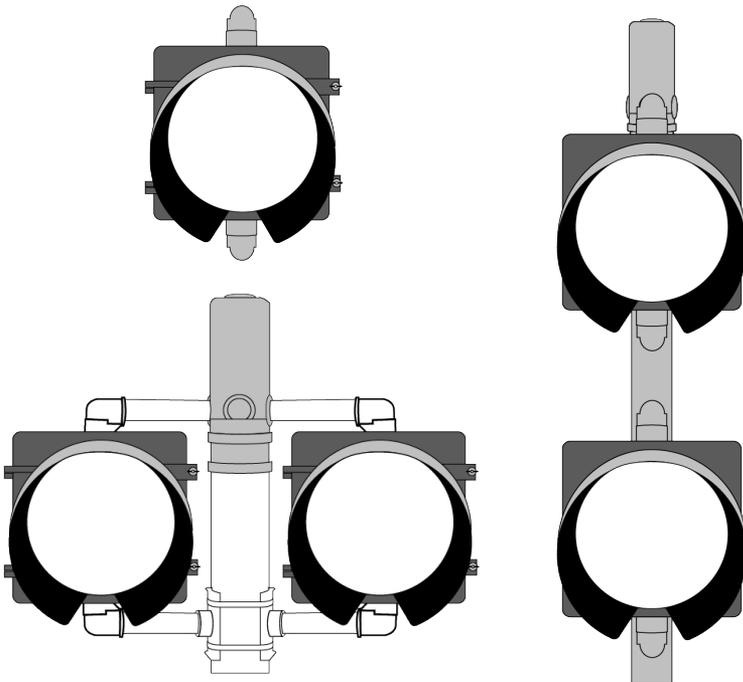
LED Beacon Ball



<Intro>

Fast Facts - *If you read one thing, let this be it.*

- The beacon kit this manual is included with is part of the TrafficCalm Intelligent Beacon Solution. You will have several other assemblies that compliment this kit- including a Slimline Controller or Collaborator, a Solar Panel kit (if not an AC system), and a pole kit. It is not a standalone unit, and will not function without supporting hardware purchased separately.
- Our kits are sold as a single, dual horizontal, or dual vertical layouts. They are unique kits and will require additional components if changing the layout is desired.
- Depending on what sign is being highlighted, the dual vertical kit requires substantial pole height to be installed- a 16' pole kit is recommended.



note that visors, poles, and hubs shown are purchased separately

Start Here...

Unpack all boxes and ensure that all components are accounted for. Often users will discard components mistaken as packaging material. We call them loser users. Don't be a loser, User.

Preparing the Pole For the Beacon Assembly

Planning the system out on the pole can help alleviate fitment issues further along. The main consideration here is placement and spacing- this kit requires an 1/2" to 3/4" hole to be drilled in the pole for the wiring to pass through to the bottom beacon housing. It may be worth planning the placement of this hole at this time.

Preparing the Beacon Ball and Housing

1. Open the housing access door and remove the four Beacon fasteners from the door
2. Carefully affix the beacon into the door of the housing. Two things are important here- The beacon is facing out ***and the side of the beacon marked "TOP" is correctly at the top of the assembly****.
3. Install the included terminal strip within the beacon housing.
4. The molded wire harness off the back of the beacon can now be mated to the terminal block in the housing. Select any two terminals and plug them in, anywhere will work except across from each other.
5. Now, apply the included wiring harness extension to the same terminal strip.
6. The above steps should be duplicated for any additional beacons
7. The wiring extension will pass through the top of the housing and into the pole later on, for now you can coil it up inside and move on.

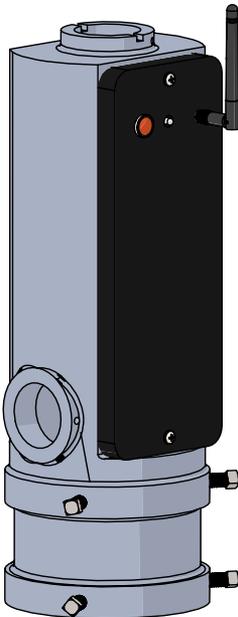
<Prep Work>

Mount the Slimline Controller/Collaborator “Hub”

The Slimline controller is covered in a separate manual, but in short, mounting its housing (aka Hub) is the first step in installing a Beacon kit. Here is a brief summary

1. Loosen all four set screws around the Hub’s collar
2. Set it on top of the pole
3. Position the Hub so that the access panel is facing away from the desired direction of the beacons aim. Check mounting for level.
4. Fasten all four set screws to the pole, firmly securing the hub to the pole while maintaining level.
5. All the cable routing and other assembly processes can happen later.

With the hub mated to the pole, it is now possible to mount the beacon(s).



Shown: Illustrated SlimLine Controller/Collaborator door cover mated to pole top Hub (in silver)

<Single Beacon Attachment>

Assembling A Single Beacon

The Beacon and housing are mounted the post with two support elbows affixed to the top and bottom of the housing per the following instructions:

1. Remove the large nut and gasket from the short end of the support elbows.



2. Thread a support elbow into the front of the Slimline hub, facing toward where the beacon will be facing. Do not tighten the lock bolt just yet.
3. On the other support elbow affix the supplied mounting foot. Using a large nut and gasket removed in step 1, affix the support elbow to the beacon housing.
4. Using the the other large nut and gasket from step 1 affix the beacon housing to the support elbow applied to the hub in step 2. Leave this loose to allow fluid aiming of the beacon.
5. Step 2 through 4 will result in what's seen below.
6. With the beacon now on the post, it is possible to aim and tighten all the brackets assembled in the above steps. See page 10 for aiming notes.
7. Finally, route the cable extension from inside the beacon housing into the Slimline hub.
8. Refer to Slimline manual for further details about connections and configuration.



<Dual Horizontal Attachment>

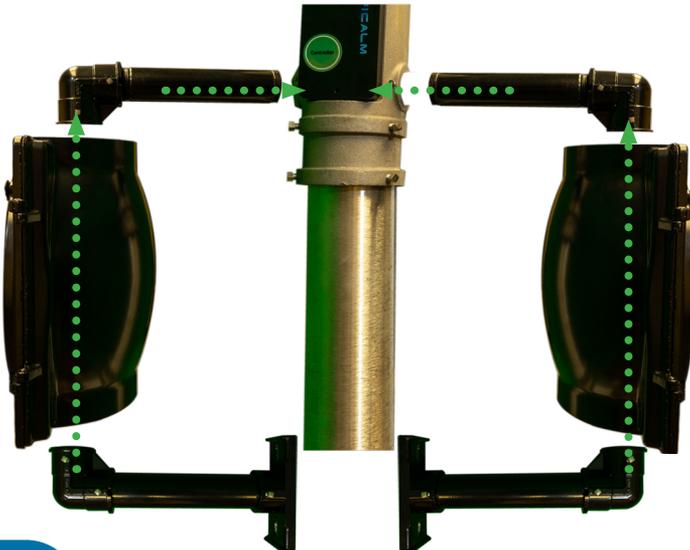
Assembling Dual Horizontal Beacons

The Beacons and housings are mounted the post with four support elbows affixed to the top and bottom of the housing per the following instructions:

1. Remove the large nuts and gaskets from the short ends of the four support elbows.



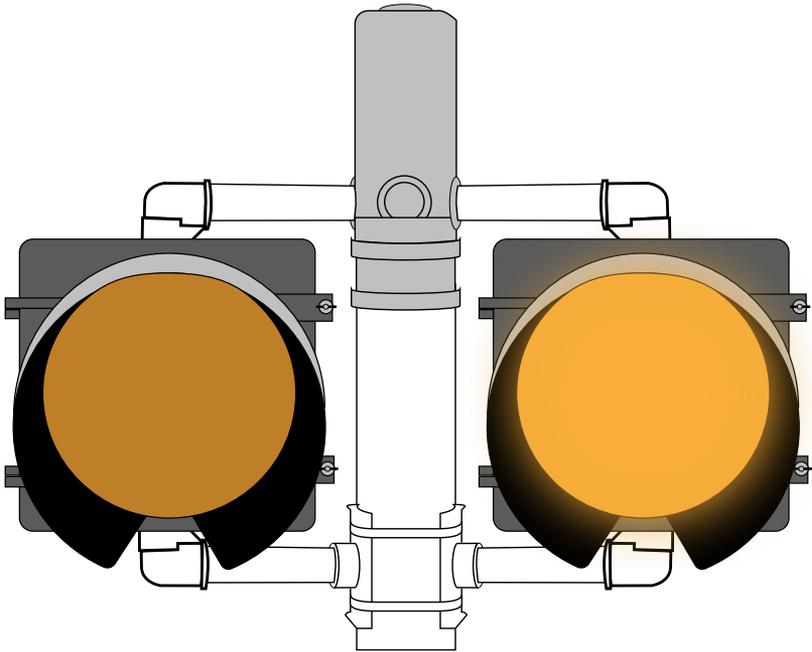
2. Thread two support elbows into the sides of the Slimline hub, facing perpendicular to where the beacon will be facing. Do not tighten the lock ring just yet.
3. Affix the supplied mounting feet on the other two support elbows. Using a large nut and gasket removed in step 1, affix the support elbows to the bottom of the beacon housings (one per).
4. Using the other large nuts and gaskets from step 1, affix the beacon housings to the support elbows applied to the hub in step 2. Leave these loose to allow fluid aiming of the beacons.



<Dual Horizontal Attachment>

Assembling Dual Horizontal Beacons, cont'd...

1. Step 2 through 4 will result in what's seen below.
2. With the beacons now on the post, it is possible to aim and tighten all the brackets assembled in the above steps. See page 12 for aiming notes.
3. Finally, route the cable extensions from inside the beacon housings into the Slimline hub.
4. Refer to Slimline manual for further details about connections and configuration.



<Dual Vertical Attachment>

Assembling Dual Vertical Beacons

The Beacons and housings are mounted the post with four support elbows affixed to the top and bottom of the housing per the following instructions:

1. Remove the large bolts and gaskets from the short ends of the four support elbows.



2. Thread one support elbow into the front of the Slimline hub, facing where the beacons will be facing. Do not tighten the lock bolt just yet.



3. Thread the supplied mounting feet onto the other three support elbows. Using a large bolt and gasket removed in step 1, affix the support elbows to the bottom of one beacon housing, and to the top and bottom of the other housing. Use the supplied self tapping screws or banding to affix the lower beacon to the pole.

4. Using the other large bolt and gasket from step 1, affix one beacon housing to the support elbow threaded to the hub in step 2. Leave this loose to allow fluid aiming of the beacons.



<Dual Vertical Attachment>

Assembling Dual Vertical Beacons, cont'd...

1. Step 2 through 4 will result in what's seen below.
2. With the beacons now on the post, it is possible to aim and tighten all the brackets assembled in the above steps. See page 12 for aiming notes.
3. Finally, route the cable extensions from inside the beacon housings into the Slimline hub.

Finally Assembly Notes, all models...

Aiming Beacons

It is the responsibility of the installer to understand and apply the specific project's, or engineer's, recommended aiming of the system. In short, the successful display of visible light to approaching drivers is contingent on proper aiming. Due to the variation in installations, TrafficCalm™ cannot provide specific recommendations.

Making sure it performs for years to come...

1. With the beacon(s) aimed correctly, all the clamps and set screws previously left loose can be tightened to prevent movement, especially consider loosening from wind. All the clamping components are robust, so you can apply a fair amount of torque to ensure tightness; use your best judgment for torquing.
2. Route the solar panel cable down the center tube and into the Slimline Controller or Collaborator hub.
3. For 100 Watt and 150 Watt Kits, install the included stand-alone solar charger inside the Slimline hub as shown below.
4. All connections are made inside the hub and are detailed in the manual included with that assembly.
5. This concludes the assembly and installation of your Top of Pole Solar Panel Kit. Please refer to other literature included with the Controller for further instructions.



<Warranty Statement>

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- TraffiCalm's sole responsibility, and the purchaser's and users' exclusive remedy, shall be that TraffiCalm will either repair or furnish replacements for defective parts.
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- Claims made under this warranty will be honored only if TraffiCalm is notified of a failure within the warranty period, reasonable information requested by TraffiCalm is provided, and TraffiCalm is permitted to verify the cause of the failure.
- TraffiCalm assumes no liability for any incidental or consequential damages, in any way related to the product regardless of the legal theory on which the claim is based.

This warranty does not cover damage resulting from:

- Accidents, vandalism, impact with a foreign object, or acts of God.
- Product modifications made by someone not authorized by TraffiCalm
- Failure of Customer to follow TraffiCalm's published operating instructions,
- Failure to follow TraffiCalm's published site selection and installation instructions,
- Removal or relocation of the unit,
- Electrical work external to the unit, virus/hacker activity, and external computer errors.

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Important Information

FLASHING SIGN SYSTEMS

Your guide to install and setup
any SlimLine Controller Or
Collaborator

Applies to:

M75-SA300-CTLZ

M75-SA300-CLBZ

M75-SA30A-CTLZ

M75-SA30A-CLBZ



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SYSTEMS**

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<Intro>

What's included with solar models?

- Qty 1 Electronics cover/door
- Qty 1 43Ah (or better) eco friendly battery
- Qty 1 battery wiring harness

What's included with AC models?

- Qty 1 Electronics cover/door
- Qty 1 AC to DC Converter



Shown: Slimline cover assembled to post top Hub, ready to integrate to any Flashing Sign System scenario, including flashing LED beacons.

Not shown: large battery mounted in base of pole assembly.

But, it's there, we promise. Otherwise nothing would flash.

What do the pieces look like?

Controller/Collaborator cover



These pieces don't look like much, because they compliment other components supplied with other assemblies.

What's not included?

- Beacon Housing/LED/Visor
- Solar Panel
- Pole Top "Hub" (shown a left in silver)
- Pole and base system

All these must be purchased separately.

<Intro>

Keep it under Control(ler) - What does this thing do?

- The Flashing Sign Controller was developed by TrafficCalm™ to provide intelligent flashing control of roadside signs, beacons, and RRFB's
- The SlimLine variant of the Controller provides the same functionality in a pole top footprint
- The Controller has a built in radio that can "control" multiple Collaborators wirelessly up to 1000 ft / 300 m away.
- What's a Collaborator? It is a "dummy" device that receives wireless inputs from the Controller. Each is identified by a big green or red label, as shown below...



- Upon powering on, the Controller can be logged into with a wi-fi device, which remains active for only 2 hours.
- The Controller and Collaborator housings are a potted assembly- all electronics are completely sealed behind a thick goo of resin. This impermeable layer provides substantial weather proofness. To match that performance, all connections are greased to prevent corrosion; ensure the grease is intact when connections are terminated.

<Prep Work>

Start Here...

Unpack all boxes and ensure that all components are accounted for. Often users will discard components mistaken as packaging material. We call them loser users. Don't be a loser, User.

Installer's Note: Please ensure your system has been configured, designed, and approved by an engineer who considered wind resistance, ice loading, etc.

Preparing the Whole Thing

The whole system- Controller cover, Pole Top Hub, Signs, Beacons, RRFBs, Buttons, Radars, etc. Should be "mapped" out on the post before holes are drilled and components are mounted.

Obviously this involves a great deal of variability, but there are some consistencies.

- The Controller or Collaborator covers is always mounted on the "Hub" at the top of the pole.
- The Hub is included with any beacon assembly, and provides the mounting points for beacon supports and a solar panel.
- All the wiring from all devices route through supports, the base, the pole, and into the Hub. We've supplied ample wiring with all necessary connections to make wiring easy.
- Because they are the most sensitive components, the Controller/ Collaborator, battery, and 16' included harness should all be installed **last**.



So, start by installing the signs, the beacons, the solar panel, and the Hub.

<Prep Work>

Mount the Slimline Controller/Collaborator “Hub”

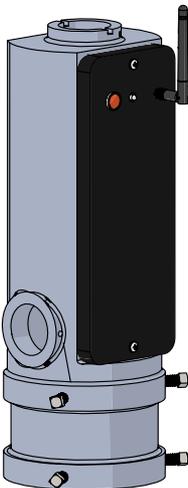
The Slimline Hub is covered in a separate manual, but in short, mounting its housing (aka Hub) is the preceding step. Here is a brief summary

1. Loosen all four set screws around the Hub’s collar
2. Set it on top of the pole
3. Position the Hub so that the access panel is facing away from the desired direction of the beacons aim. Check mounting for level.
4. Fasten all four set screws to the pole, firmly securing the Hub to the pole while maintaining level.

With the Hub mated to the pole, it is now possible to mount the Slimline cover.

Routing Cables

For any given installation you’ll be routing cables from a mixture of beacons, RRFB bars, Flashing Sign rings, Solar panels, push buttons, radars, sensors. The general approach is that all the cables run into the post and up, or down, to the post top Hub. There, all connections can be made. Connections are covered in the next chapter.



Shown: Illustrated SlimLine Controller/
Collaborator cover mated to pole top
Hub (in silver)

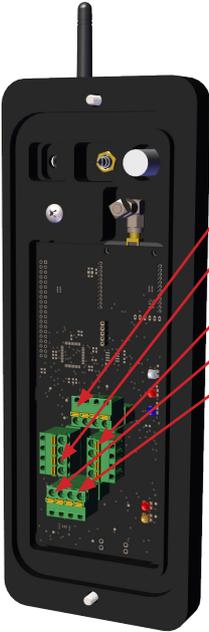
<Installation>

Lanyard and Connections

To ease installation, the cover comes with a lanyard that can be attached from the cover to Hub, allowing the whole setup to hang freely while you make the connections. Here's how...

Lanyard:

1. The supplied green and yellow lanyard connects to the large screw on the cross section side of the cover, and then to either boss inside the Hub
2. A 100W, 150W, or AC power supply is mounted inside the Hub using the same bosses. Just duplex the power supply and lanyard eyelet to mount the lanyard.



Connections:

In total there are 16 potential terminations on the Slimline board, as follows...

1. qty 1 Radar Detector Input
2. qty 2 Contact Closure Inputs (for buttons, sensors, etc.)
3. qty 2 12V Flashing Outputs
4. qty 1 Solar Panel Input (up to 60W)
5. qty 1 +12V/ Battery input
6. qty 1 120V input at AC converter

Order of Connections

1. All inputs, flashing outputs, radar detector
2. If desired, flashing confirmation LED to Output 1
3. For AC units, 120V input (don't apply power)
4. For solar units, solar panel
5. For solar units, battery (applies power)
6. Apply power
7. See next section for mounting and connecting the external solar controller supplied with a 100W or 150W solar kit and for the AC Model.

<Installation>

For 100W and 150W Solar Kits

The 100W and 150W Pole top solar kits (sold separately) include a standalone solar charge controller that is installed in the Hub as follows.

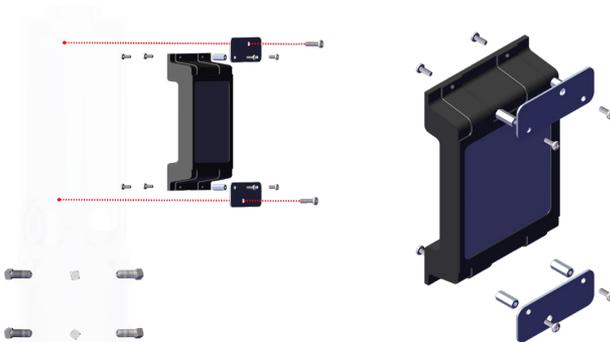
Connections:

The solar charge controller includes a labeled “pigtail” that extends the connections from the back of the controller to a position more easily accessible.

Make connections as follows:

1. Solar panel to solar charge controller
2. Solar charger controller “Load” to +12V/ Battery input on SlimLine board
3. Battery to Solar charge controller (immediately applies power)

With all the connections made, it is now possible to mount the charge controller into the Hub. The charge controller has two metal tabs mounted top and bottom. These tabs mount to the bosses found inside the Hub housing



Shown: Mounting tabs to charge controller and mounting charger controller into Hub

<Installation>

For AC Supplied Systems

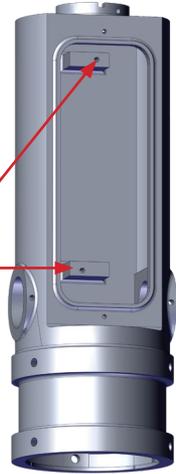
The AC powered Pole top solar kits (sold separately) include a standalone AC to DC converter that is installed in the Hub as follows.

Connections:

The AC to DC converter features two cables assemblies- the AC input and the DC output. Make connections as follows:

1. Connect 2-wire DC output from the converter to the +12V/Battery terminal on the flash controller. Refer to the diagram on the converter itself for pinout instructions
2. Connect the 3 wire AC input to a disconnected AC source.
3. Power can now be applied and the unit powered on.

With all the connections made, it is now possible to mount the charge controller into the Hub. The charge controller has two metal tabs mounted top and bottom. These tabs mount to the bosses found inside the Hub housing



Shown: AC converter mounted inside of the Hub

<Safety and Warnings>

The following designations signal critical information contained in this manual.

READ THESE INSTRUCTIONS

FOLLOW THESE INSTRUCTIONS

DANGER! Indicates a hazardous situation, which, if not avoided will result in serious injury and/or death.

CAUTION! Indicates a potentially hazardous situation, which if not avoided could result in moderate bodily harm and/or property damage.

We provide important safety information and warnings to assist you in understanding and avoiding potential harm to yourself or others, and possible damage to equipment during installation of the Flashing Sign System. Although we have included many of the potential hazards, you may encounter during the installation of this equipment, we cannot predict all of the possible hazards and this list should not be a substitute for your judgement and experience.

If you are unsure about any part of this installation or of the potential hazards mentioned, please call a qualified consultant immediately.

DANGER!

Use appropriate work zone traffic control methods, equipment and procedures.

CAUTION!

An accidental short circuit may instantly heat jewelry, tools and surrounding objects with skin-searing temperatures. To reduce risk when working around batteries, keep conductive objects away from battery terminals.

To reduce the risk of strain or back injury, in addition to damaging equipment, be sure to use proper lifting techniques and adequate help when installing and/or lifting.

To reduce exposure to the risk of RF energy, do not stare in to the radar antenna. Keep a minimum safe distance of 20cm (8in) from display face.

Always use recommended charging systems with this product.

<Safety and Warnings>

Liability Statement

Important Note: TrafficCalm(TM) Solutions are not a safety device. TrafficCalm(TM), its parent company, MOR Manufacturing, and its holding company, Arizona Transformer, along with their employees or owners shall be held harmless and will not be liable for any indirect, special, consequential, or punitive damages arising out of or relating to any traffic or other incident resulting in damage, injury, or death whether or not it is successful in alerting the approaching driver. This includes any type of Sign Alert equipment malfunction whatsoever.

To reduce the risk of electric shock related injury resulting from contacting hazardous AC voltage:

Portions of this equipment derive power from sources that have high voltage levels. These must be serviced by qualified personnel, who have previous training or certification to safely work on high voltage equipment. Consult a Qualified Electrician

This product uses devices that radiate RF energy in the course of normal operation. Radar RF energy can be harmful to the eyes:

To reduce exposure to the risk of RF energy, do not stare into the radar antenna. Keep a minimum safe distance of 20cm (8-inches) from the radar face.

To avoid the possibility of injury due to falling or unstable equipment:

Be certain the equipment is mounted to an appropriately rated pole or equivalent mounting surface.

Use appropriately rated mounting hardware.

Strain or back injury may result from lifting equipment improperly:

To reduce the risk of strain or back injury, use proper lifting techniques and have adequate help available when needed.

<Safety and Warnings>

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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 or on, the user is encouraged to try to correct the interference by one or more of the following methods:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Consult an experienced radio /TV technician for help.

Caution: Changes or modifications not expressly approved by TrafficCalm could void all product warranties.

NOTICE: Because of TrafficCalm's commitment to continuous improvement the content of these documents and product specifications may change without notice. Please contact your partner or TrafficCalm Technical service to check for updates before planning your installation.

If you are unsure about any part of this installation or of the potential hazards discussed, please contact TrafficCalm Technical Support or, if you have questions about the system, its use, or operation, please contact your local partner or call the TrafficCalm Technical Service department at 1-855-738-2722, in the U.S.A. Technical service hours: Monday through Thursday, 7:00 AM to 5:00 PM and Friday from 7:00 AM to 12:00 PM Pacific Standard Time.

Please read and observe all safety information and instructions in this manual (found in Appendix B) before installing the system equipment. Also, save this installation manual for future reference.

<Troubleshooting>

All Flashing Sign systems are engineered to offer years of reliable and maintenance-free operation. It is advised that periodic review of the system be performed to ensure consistent functionality. Possible points of inspection should include...

Anything obstructing or inhibiting Solar Panel efficiency should be cleared. This may include snow or dirt build-up, leaf coverage, shadowing from nearby structures and overhanging trees/vegetation.

Solar Panel surface should be inspected and cleaned periodically.

Cable harness, external seals, all connections, and mounting hardware should be checked for possible failures and/or disconnections, including those resulting from attempted vandalism.

Additionally, the batteries will need to be tested and replaced as needed. Review the following troubleshooting section before replacing batteries; if normal operation does not resume after troubleshooting, battery operation is suspect.

Please contact Technical Support at 1-855-738-2722 for further information.

For all issues not resolved by the steps outlined below, TrafficCalm Technical Support is available to assist by calling **1-855-738-2722**. Technical Support Hours: 7:00am – 5:00pm PST, Monday through Thursday and 7:00am to 12:00 pm PST on Friday.

<Troubleshooting>

<i>Symptom</i>	<i>Resolution</i>
Solar power system will not power on	<p>Check Fuse Check PCT (Power Connection Terminal) Check Connections to LED Rings / Beacons Check Battery for 12VDC Check Voltage Output of Solar Panel for at least 12V</p>
Radar equipped system will not activate	<p>Make sure green status indicator is on. This is visible from the face of the detector. Ensure proper connections of Radar Detector are secure and in proper terminal locations. (Reference this manual or manual included with detector) Make sure "Radar Operated" is selected as the Operating Mode. This is done through TC Connect. Refer to the TC Connect manual.</p>
WiFi Connection not functioning	<p>Activate WiFi by removing all power from device. Reference pg-9 figure 4 (SOLAR) or pg-11 figure 4.1 (AC) WiFi has timed-out. To prevent tampering, the system's WiFi shuts off after 2-hours of operation. To enable WiFi availability, reset power to the device by removing the Power Connection Terminal found within the Controller box, wait 10 seconds and re-insert. See reference pages noted on line item 1.</p>
LED Rings / RRFB not working	<p>Check connections. Refer to wiring label inside Controller or Collaborator box for proper terminal connections. Check Operating Mode and Flasher Settings in TC Connect. Refer to the TC Connect manual</p>
Collaborator not responding	<p>Check Fuse Check PCT (Power Connection Terminal) Check Connections to LED Rings / Beacons Check Battery for 12VDC Check voltage output of solar panel Check Collaborator Settings in TC Connect. Verify the correct MAC Address is being used. Refer to the TC Connect manual.</p>

<Troubleshooting>

<i>Symptom</i>	<i>Resolution</i>
Battery not charging	Check for cleanliness of the solar panel surface and clean as necessary. Check fuse, check all power connections and output and verify at least 12VDC Make sure the solar panel face is directed in a southern direction. Check for proper solar panel illumination each day. (must have minimum 2 hours unobstructed light each day) A low battery may take 2-5 days to fully recharge depending on hours of good sun received.
Several LEDs are not working	Call TrafficCalm Technical Support
AC system will not power on	Check Fuse Check PCT (Power Connection Terminal) Check Connections to LED Rings / Beacons Check Power Source
LEDs are very dim	Check the "Brightness Settings" in TC Connect. Refer to the TC Connect manual
Push-Button not working	Make sure "Push 2 Cross" is the Operating Mode selected in TC Connect. Refer to the TC Connect manual. Check all connections at the push button and inside the controller or Collaborator. Refer to this manual or the wiring label inside Controller or Collaborator box for proper terminal connections
Radar activated system is flashing 24/7	The radar is not connected properly or leads are not captured correctly If the radar is malfunctioning, the controller will revert to 24/7 flashing operation

<Warranty Statement>

TraffiCalm Systems provides the following warranty for its traffic calming solutions whether sold directly by TraffiCalm or by an authorized TraffiCalm distribution partner.

- TraffiCalm Systems warrants this product, excluding batteries, will be free of defect in materials and workmanship for a period of five (5) years beginning on the day the end user receives the product. Warranty is only valid if the product is ineffective for its intended purpose due to defects in materials or workmanship.
- Warranty is only valid if the product is installed, operated and maintained in accordance with the manufacturer's instructions and recommendations (available upon request).
- TraffiCalm's sole responsibility, and the purchaser's and users' exclusive remedy, shall be that TraffiCalm will either repair or furnish replacements for defective parts.
- Replacement parts will carry the unexpired warranty of the parts they replace. Any repairs conducted on out-of-warranty items will carry a 90 day warranty.
- Claims made under this warranty will be honored only if TraffiCalm is notified of a failure within the warranty period, reasonable information requested by TraffiCalm is provided, and TraffiCalm is permitted to verify the cause of the failure.
- TraffiCalm assumes no liability for any incidental or consequential damages, in any way related to the product regardless of the legal theory on which the claim is based.

This warranty does not cover damage resulting from:

- Accidents, vandalism, impact with a foreign object, or acts of God.
- Product modifications made by someone not authorized by TraffiCalm
- Failure of Customer to follow TraffiCalm's published operating instructions,
- Failure to follow TraffiCalm's published site selection and installation instructions,
- Removal or relocation of the unit,
- Electrical work external to the unit, virus/hacker activity, and external computer errors.

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY.