



START HERE

To install your Flashing Sign System components

Your guide to install and maintain most components including...

- **TC-Remote Connected Systems**
- **Intelligent Controllers**
- **Intelligent Collaborators**
- **LED Flasher Rings**
- **RRFBs**
- **LED Flashing Chevrons**
- **Pedestrian Push Buttons**
- **Radar Detectors**
- **Crosswalk Illuminator**
- **And more!**



For Any Further Assistance
Please Call our Technical Service
Department at: 855-738-2722

NOTICE: TrafficCalm's commitment to continuous improvement of products may mean the content of this document and specifications may change without notice. Please contact TrafficCalm to check for updates before installation.

If you are unsure about any part of this installation or of the potential hazards, please contact TrafficCalm Technical Support 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 on page 3) before installing the system equipment.

The following designations signal critical information contained in this manual.

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 judgment 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.

Warnings and Information

Liability Statement

Important Note: TrafficCalm Flashing Signs are not a safety device. TrafficCalm, 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 equipment malfunction whatsoever.

DANGER!

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

CAUTION!

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.

CAUTION!

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.

CAUTION!

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.

NOTICE

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.

Introduction- From the ground up

Flashing Sign Systems are an LED Sign Enhancement designed and engineered to serve a variety uses and applications on your streets.

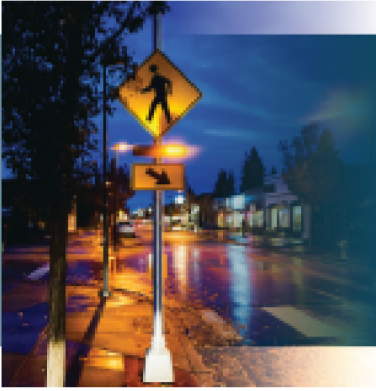
TraffiCalm makes no reference or recommendation to the mounting infrastructure to be used. It is highly advised that a local engineer consultation be part of the installation plan. Given the added weight and surface area of our devices, a suitable pole or mounting method is going to be more substantial than that typically used for signs alone. It is imperative that localized weather information be considered when selecting a mounting solution.

Understanding The Flashing Sign "System"

Flashing Sign *Basic* Systems are designed to flash a single sign without any wireless collaboration between signs or remote input devices.

Flashing Sign *Intelligent* Systems are comprised of one Controller (marked with a Blue label) used by itself, or in conjunction with at least one Collaborator (marked with a Red label). Different types of systems can exist alongside each other, but each system must have a Controller.

The "device to device" grouping of a Controller and Collaborator(s) by way of integrated radios results in synchronized flashing of many warning devices. In combination with a bevy of available accessories, the system provides extensive application flexibility. Here are few examples...



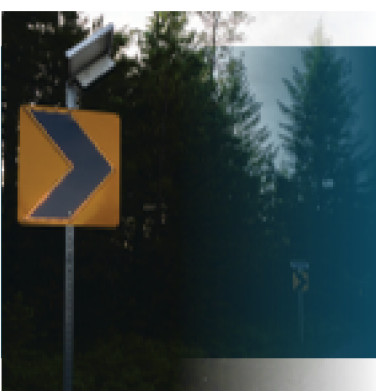
Push 2 Cross Pedestrian Safety System

- Typically Consists of:
- 1 Controller with a solar panel
- 1 Collaborator with a solar panel
- 2 Push Buttons (Audible or Standard)
- 2 LED Flashing Warning Signs, or 4 if installed back to back
- 2 Flashing LED RRFB, or 4 if installed back to back



Wrong Way Warning System Powered by Collaborative Detection

- Typically Consists of:
- 1 WWCTL Controller with a solar panel
- 1 Collaborator with a solar panel
- 2 Radar Detectors
- 2 LED Flashing Wrong Way Signs
- Note: system must be ordered as Collaborative Detection for this function



Sequentially Flashing Curve Warning System

- Typically Consists of:
- 1 Controller with a solar panel
- Up to 16 Collaborators with a solar panel
- 1 or 2 Radar Detectors
- 1 LED Flashing Curve Ahead Sign
- Up to 16 LED Flashing Chevron Signs per direction

Planning a Flashing Sign System

It is important to consider juxtaposition of every component of a system in three regards...

1. Placement of flashing devices can dramatically impact conspicuity to drivers.
2. Conforming to placement requirements based on sign type and location of installation is critical. For instance, follow ADA guidelines when installing a pedestrian push button in the United States of America.
3. Should the need arise, will certain placement prohibit maintenance of the device(s)?

With the site and pole location planned, it is best to familiarize yourself with each component on each pole. Shown at right, this Push-2-Cross pole features the basic building blocks of many Flashing Sign Systems-

1. **Controller (or Collaborator) integrated with a 20W solar engine**
2. **Static sign with LED Flashing Ring (back to back in this case)**
3. **Rectangular Rapid Flashing Beacon (RRFB)**
4. **Informational static sign**
5. **ADA Pedestrian Push Button**

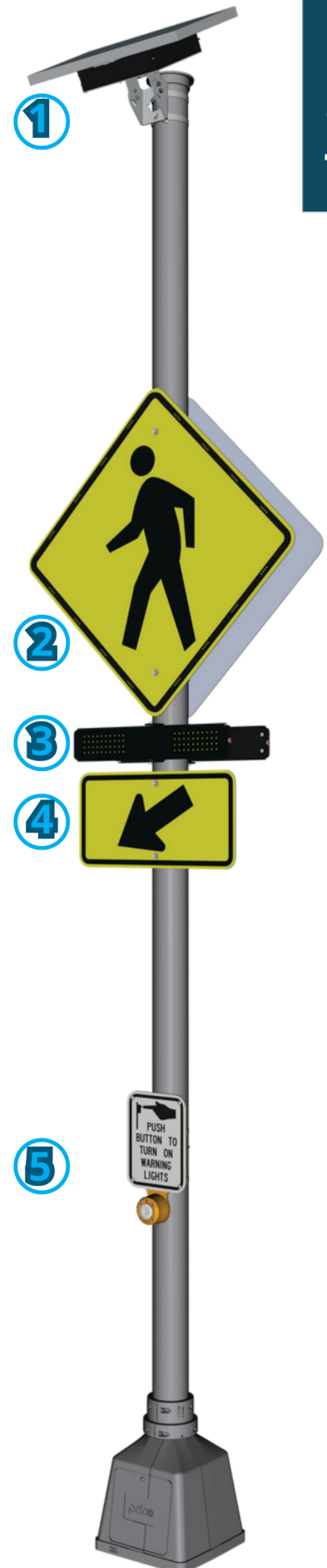
Other components could include-

- A radar detector
- Larger solar panel and battery box options
- Environmental Sensors
- Other Flashing LED Sign Rings, such as a chevron
- LED Beacons

This concept introduces you to your final goals- a super clean installation of quality parts that will provide trouble-free operation for many years.

There a lot of details here you don't want to leave to the moment you're standing road-side. For instance- a cable that isn't long enough because you cut it before realizing the sign goes above the RRFB.

In the following chapters, we'll discuss each component in detail, and how everything goes together.



Introduction to Intelligent Controllers and Collaborators

Applies to: All Device Types

CTL & CLB

Con-trol-ler (ie. CTL)

noun

A thing that directs or regulates something

Col-lab-o-ra-tor (ie. CLB)

noun

a thing that works jointly on activity or project



Gen. 4 Controller Identifier sticker. located on outside or inside of box.



Gen. 4 Collaborator Identifier sticker. located on outside or inside of box.

It is important to understand the relationship of our two core device types- Controllers and Collaborators.

A Controller exists to command a group of Collaborators (or a “system”). It is the wi-fi hosting device communicated with to configure the system. It is the device that handles all the output logic for the system when inputs occur. Without a Controller, the Collaborators are completely useless. Controllers cannot act as Collaborators, though, and each system can only utilize one Controller.

Collaborators are input/output devices that rely on the Controller to perform tasks. Between the two device types is a proprietary *mesh-net* radio system that serves Milliseconds response between devices.

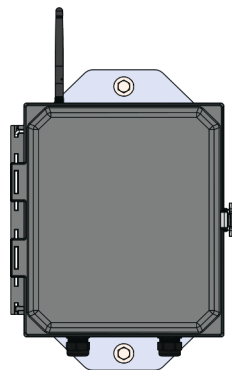
To accommodate the vast array of environmental inputs and user expectations on today's roads, we have developed several power scenarios that dictate how Controllers and Collaborators appear, install, and operate. See below for a visual of the variations.

Here's the kicker- apart from labels, the Controllers and Collaborators look identical, as seen below.

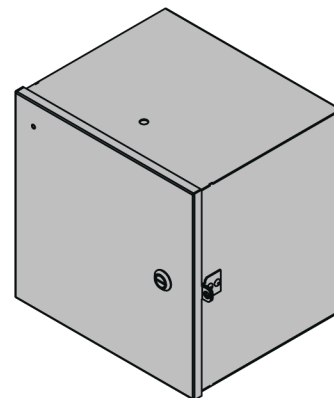
Modem Sold Separately



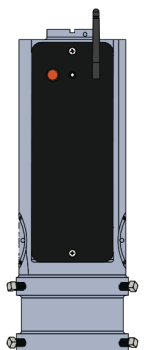
M75-TCR00-CTL2
M75-TCR00-CTL3
M75-SA300-CTL2
M75-SA300-CTL3
M75-SA30M-CTL2
M75-SA30M-CTL3
M75-SA300-CLB2
M75-SA300-CLB3
M75-SA30M-CLB2
M75-SA30M-CLB3



M75-TCR00-CTLE
M75-TCR00-CTLA
M75-SA300-CTLE
M75-SA300-CLBE
M75-SA300-CTLA
M75-SA300-CLBA
M75-DE0TS-CTLE
M75-DE0TS-CTLA



M75-TCR00-CTLS
M75-SA300-CTLS
M75-SA300-CLBS
M75-DE0TS-CTLS



M75-SA300-CTLZ
M75-SA300-CLBZ

Installing a Solar Integrated Controller or Collaborator

Applies to: CTL2, CTL3, M-CTL2, M-CTL3, CLB2, CLB3, M-CLB2, M-CLB3, models

1. The applicable Controller or Collaborator, an 20W or 30W solar panel, and mounting bracket ship as a complete assembly, ready to band or bolt to most standard post types. Note that banding material is not included.

2. The integrated mounting bracket accommodates mounting to the side of a round post (using banding) or square post (using bolts drilled on 1" centers. ie. Telespar). Note that the device must be mounted at the topmost part of the post to maximize solar exposure.

Note: Optional top of post kits are available to accommodate nearly any installation requirement.

3. Allow 4 – 6 inches of post above any sign to prevent shadowing at midday (if using the standard bracket).

4. The solar panel must be aimed **south-facing** to ensure optimal charging. The solar bracket can be angled according to standard solar aiming practice for the geography of the installation (step 7, below).

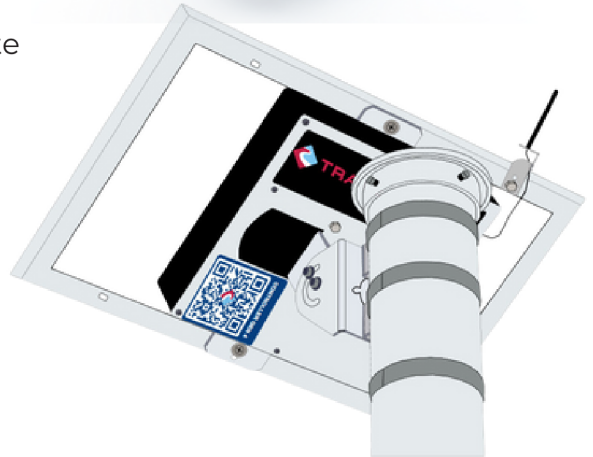
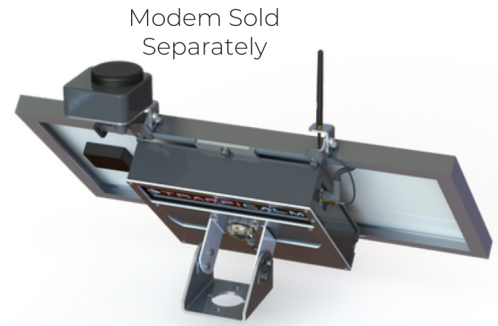
5. If true-south facing cannot be achieved (Obstructed), mount facing as near as possible to true south.

6. Affix the assembly to the post with (2) 3/8" bolts or banding.

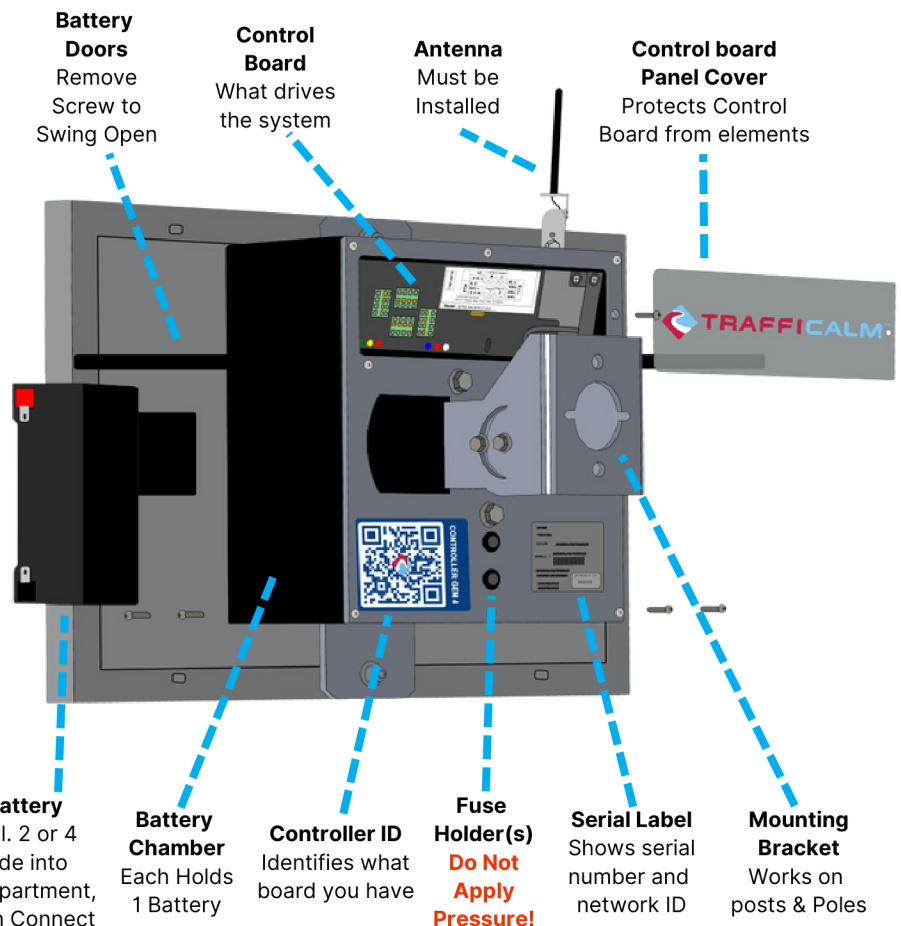
7. Loosen bolts on the side of the standard bracket (see image at left) and decline the solar panel so that it is $15^\circ +$ installation latitude below the zero axis and tighten to secure solar panel in place. Additional declination can be added to prevent snow buildup.

8. Install batteries (up to 4) into the CTL or CLB cabinet and connect to the integrated harness. Red is 12V positive, black is negative. As it should be.

9. Finally, connections between devices are covered on page 18



CTL & CLB



Installing a Fiberglass Enclosed Controller or Collaborator

Applies to: all CTLE, CLBE, CTLA, CLBA

CTL & CLB

Whether AC or Solar powered CTLs and CLBs enclosed in a fiberglass box install to the side of a post with bands or bolts. An install kit is supplied that covers many of the components needed such as bolts and banding brackets. Banding material, however, is not included.



To plan the installation of the box, consider the following:

- All peripheral devices' cabling route into the bottom of the cabinet
- The AC line or the Solar Panel cable route into this cabinet
- The antenna needs a clear view to the next device's antenna, and, ideally, a clear view to the Controller



The enclosure features simple mounting provisions- two centered holes drilled on 1" spacing (for direct application to a Telespar style pole).

This box can be mounted anywhere on the pole. We recommend that it be out of human reach to deter vandalism. Ideally, it could be mounted behind the sign to obscure it's visibility to approaching drivers. Remember, though, cable runs will limit where components can be located.

Within the cabinet you will find a single 12 volt battery (for "E" models) or an AC supply (for "A" models), straight out of the box, no assembly required.



Accompanying the integrated power supply is the ubiquitous I/O panel with four 4-pin connectors and a blade fuse attached. All the connections from external devices will terminate at these connectors, and is covered on page 18.

Component Call Out

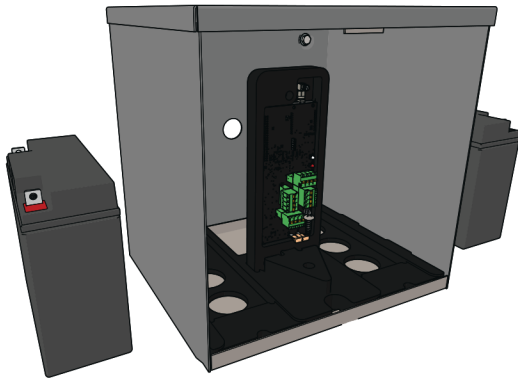
1. Mounting Tabs
2. 12V Battery
3. Battery Plate
4. Antenna
5. Status LEDs
6. Connection Terminals

Installing an "S" Controller or Collaborator

Applies to: all CTLS and CLBS models

Designed to operate under more demanding requirements, the "S" box family of devices incorporate increased battery capacity. Both install to the side of any post with bands or bolts

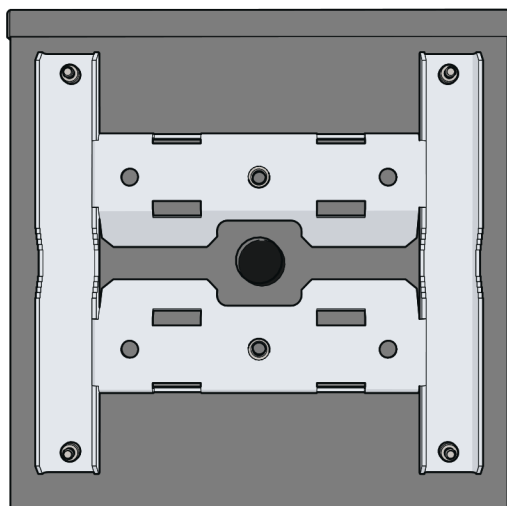
IMPORTANT! This cabinet features two small weep holes in the bottom tray, ensure these are unobstructed to allow the draining of water should it accumulate.



Open "S" Box with Batteries Removed

To plan the installation of the box, consider the following:

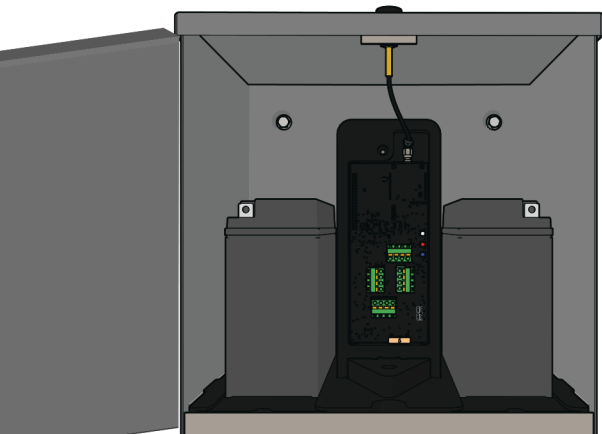
- All peripheral devices' cabling route into the back of the cabinet, often from within the pole
- The Solar Panel cable routes into this cabinet
- The external antenna needs a clear view to the next device's antenna, and, ideally, a clear view to the Controller



Back of "S" Box

The enclosure's mounting bracket features several mounting options, such as 3/8" threaded holes placed on 1" spacing (for direct application to a Telespar style pole). To utilize banding, the bracket will have to be turned 90° from the orientation shown below.

This box can be mounted anywhere on the pole. We recommend that it be out of reach to deter vandalism. Ideally, it could be mounted behind the sign to obscure it's visibility to approaching drivers. Remember, though, cable runs will limit where components can be located.



Guts of "S" Box, Assembled

Within the cabinet you will need to place two 12V batteries and the I/O tray. Instructions for this process are detailed in a separate manual included with the device.

Accompanying the battery is our ubiquitous I/O panel with four 4-pin connectors and a blade fuse attached. All the connections from external devices will terminate at the these connectors.

Connections are covered in detail on page 18.

Installing an LED Chevron Plate

Applies to: all sizes of LED Chevron Plates

Chevrons

Differing from other TrafficCalm LED sign rings, the Chevron Plate installs using shared mounting bolts with the sign.

Very simply, use the supplied extended 3/8" bolts, washers, and nuts to secure both the plate and sign to the pole.

Hardware to accommodate banding is also supplied in the included 012-SA300-OKIT hardware kit, though banding material is not included.

We advise that the cable from the Chevron Plate exit at the top edge to ensure vandal deterrence. It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.



A Note on Determining Flasher Output A or B

The following is very important to achieve successful sequencing operation...

There is only (1) Controller in any Curve Warning System. All other sign post locations in the system will be powered by Collaborators.

To determine which Flasher output to use (A or B) at each location, consider the following:
Connect Chevrons flashing away from the Controller to Output A (this is normal operation)
Connect Chevrons flashing toward the Controller to Output B

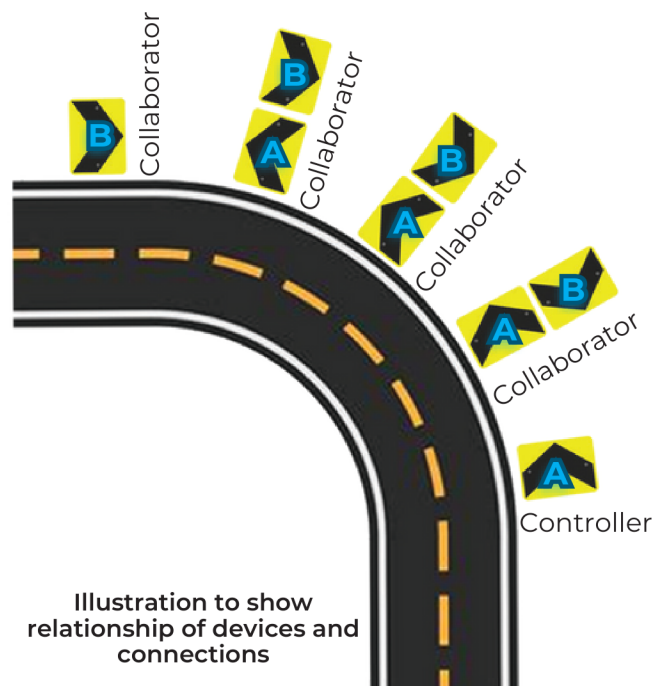


Illustration to show relationship of devices and connections

System Setup Notes

Curve Warning Systems can be setup in a variety of flexible configurations to best suit the curve it is installed on.

Options Include:

- Bi-directional, independent sequencing to warn drivers in both directions (see note above for setup tips).
- Radar activation from either direction independently fires sequencing away from the driver.
- Advanced Warning signs can be added at the entrance to curve.

Reference the included Software Guide for specific setup details while configuring the system.

Installing an LED Chevron Plate (Cont.)

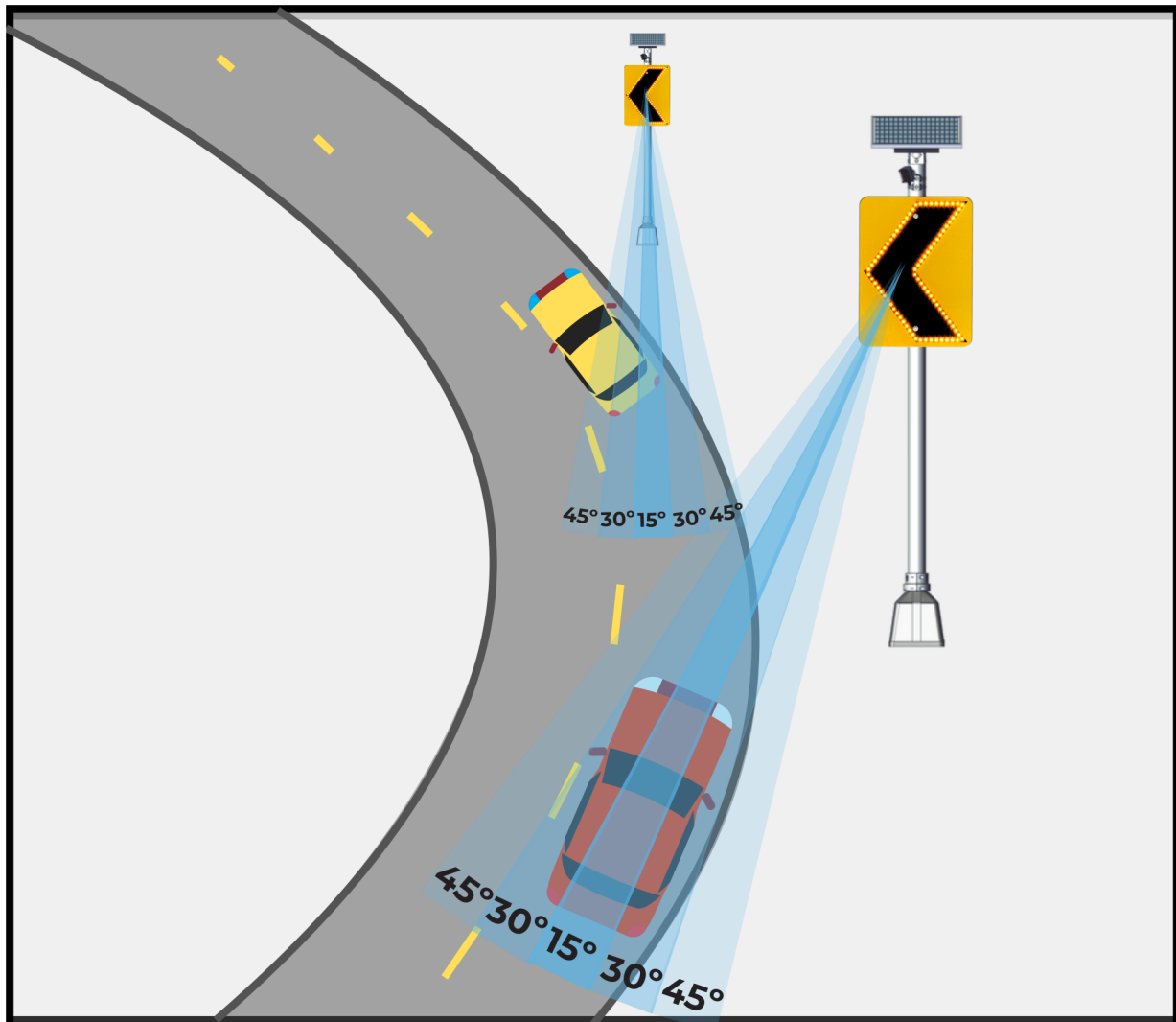
Applies to: all sizes of LED Chevron Plates

Viewing Angles of LED Chevron Plates

Proper Installation of the Sign is necessary for optimal viewing of the Flashing LEDs.

Each LED has a viewing angle of 15 degrees. When viewed outside of this field, the LEDs appear dim or "off". Follow proper installation per your local authority and adjust sign as needed for a 15 degree field of view.

See Figure 1 Below for a visualization of the sign with the field of view. It is strongly recommended to drive the site after installing to ensure the angle of the sign is correct for the oncoming traffic.



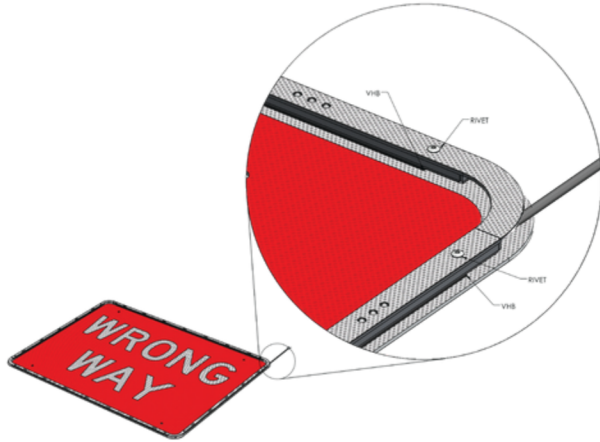
Note: Figure 1 - Viewing angle of curve warning set-up

Installing an LED Sign Ring

Applies to: all LED sign ring appliques (excludes Chevrons and Rail Crossing)

TraffiCalm Flashing Sign System LED Sign Rings provide unmistakable warning to approaching drivers. Designed for most signs including stop, warning, speed, school zone, pedestrian crossing, and much more, the LED sign ring is quick to apply and completely compatible with any Controller or Collaborator.

LED Rings



Unlike other solutions on the market, our rings apply to existing static signs of the correct size. If the LED ring is not factory mounted to a sign, there are two options for application.

Option 1: Pre-applied Double Sided Tape (VHB) provides secure mounting to most signs. It is important to **note that signs treated with anti-graffiti laminate** will not adhere to VHB tape.



VHB Tape, adhesive exposed



Sign area to clean and prep highlighted

Option 1 Process:

1. Prep the LED ring by exposing approx. 2" of adhesive at the end of each run. Crease the red masking to stick out past the ring edge, you'll see why at stage 5
2. Treat the mounting surface on the sign by cleaning with the supplied alcohol wipe, then apply the tube of 3M Primer 94 to only the surface the ring applies to
3. **WARNING!** VHB tape is extremely sticky, so be intentional while lining up the ring to the sign.
4. With the ring as centered as possible, very gently press the corners to the sign surface
5. Pull one edge of red masking out at a time, slowly progressing around the ring and applying some pressure while centering the ring.

Option 2 Process: Self-tapping screws are supplied to use in addition to, or in place of, the VHB Tape. This method provides the option to dismount the ring in the event the sign is damaged

1. Locate the mounting holes in each corner of the ring, if necessary clear reflective sheeting from these holes so that screws can pass through easily
2. Optionally, expose a few small sections of VHB tape to hold the ring in place while applying screws
3. Using a power drill and the correct size Phillips bit, carefully screw the ring to the sign face
4. Exposed screws at the back of the sign may be dangerous; correctly sized rivets may be used, but are not supplied

Now you're ready to bolt the sign to the post, just like any other sign.

It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.

Installing an LED Rectangular Rapid Flashing Beacon (RRFB)

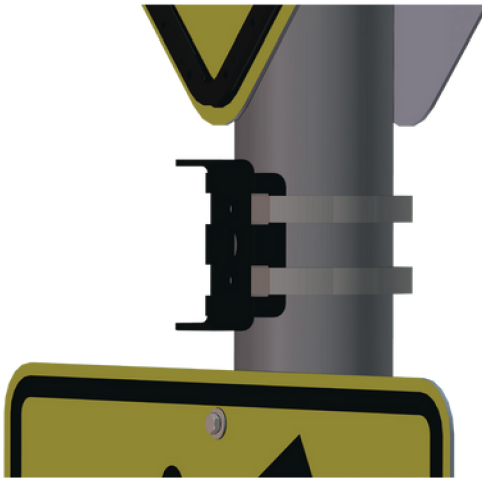
Applies to: M75-SA328-0000, M75-SA328-0004, M75-SA328-5000, M75-SA328-R000



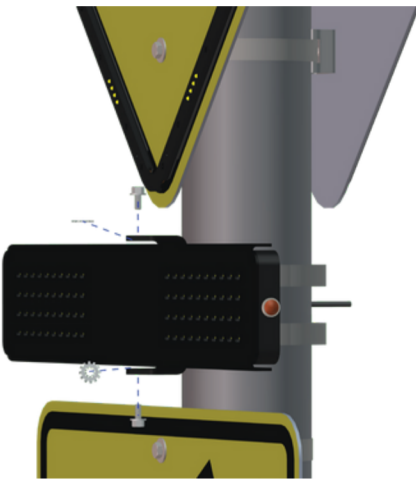
Components Call out

1. Qty 2 Star Washers to lock rotation
2. RRFB Assembly
3. Universal Mounting Bracket
4. QTY 2 Bolts to secure Assembly to Bracket

RRFB



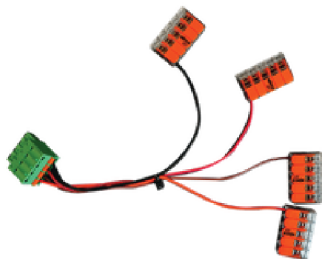
Step 1. Secure the universal mounting bracket to the pole. The brackets accommodate banding (material not supplied) or bolting. Where bolting is to be used, the bracket is drilled on 1" centers to accommodate mounting to Telespar-type posts.



Step 2. Using the supplied top and bottom bolt, loosely secure the RRFB assembly to the bracket, ensure the star washer is placed *between* the assembly and the bracket, as shown.

Step 3. Aim the RRFB- it is important that the RRFB's illumination be aimed squarely at oncoming traffic to maximize visual impact. It may be necessary to angle the RRFB laterally.

Step 4. Fully secure the RRFB to the bracket. Recommended torque is 30 in/lbs for the mounting bolts.



Step 5. Connect the RRFB. Our RRFB's come with a special wiring harness to accommodate the excess of wiring required to connect the device. To use this harness, remove the existing green connector from the output terminals of your Controller or Collaborator and replace it with the RRFB harness. Connect all RRFBs and any flashing rings to the orange tabbed connectors. See page 18 for connection details.

It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.

Installing a Radar Detector

Applies to: all TrafficCalm radar detectors

Introduction- Flashing Sign Radar Detectors are different than any you've seen before. Designed to be light, affordable, and easy to use. Our radar units provide a fast path to active flashing based on the real-time presence of vehicles.

Note: Radar detectors are compatible and interchangeable with all Flashing Sign Basic and Intelligent Controllers and Collaborators.

Step 1- Planning

The radar works best when it has a clear view of the roadway. Ensure the radar's "view" is unobstructed for as far out as possible, this may include being blocked by large signs. Additionally, radar aim may play a critical role in accuracy, ensure the radar can rotate on its bracket's axes

Step 2- Mounting

The Radar Detector ships as a complete assembly, either bolt or band the assembly as high on the post as possible via the articulating bracket (#1).

Height provides an aiming advantage in both range, and omission of potential blocking by unexpected, parked vehicles.

Note that banding material is not supplied, but adapter brackets are included in the 012-SA300-OKIT ship kit.

Step 3- Aiming

The face of the radar (#2) should be aimed as flat and level to traffic as possible. Use the two-axis bracket (#3) to aim the radar off of it's neutral position. In some instances where more refined detection of specific lanes or entry points, it is advised to aim the radar downward and in toward the middle of the street.

To conceptualize the radar's detection range, imagine a 30° cone emitting from the face into infinity. Aimed high and flat, the cone will cover a broad area. Aimed down and in, the radar will detect a shorter section of the roadway.

Step 4- Connection

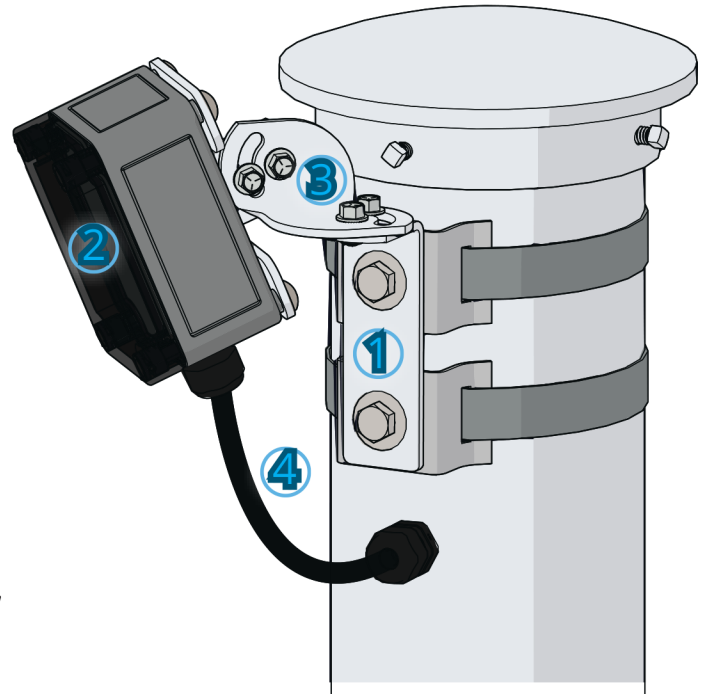
The radar has 4 color coded wires enclosed in its UV-rated outdoor cable harness (#4). These land per the wiring diagram covered later in this manual. Note that you must connect the radar before powering on the system to access the radar configuration settings in the user interface. *It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.*

Step 5- Refining Aim

Once connected and powered on, the radar will flash two LED indicators. Green indicates that power is applied. Red indicates a detection. When refining aim, a large object (Vehicle) moving at the minimum speed will activate the radar. A person or hand wave will **NOT** trigger the radar.

Step 6- Lock it down

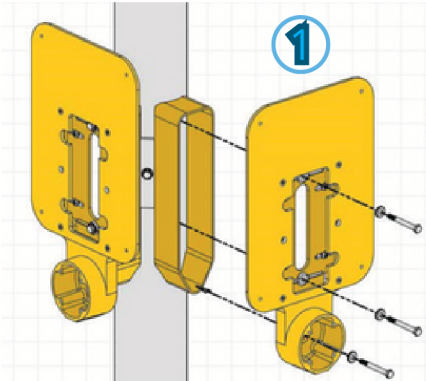
Tighten all fasteners sufficiently to ensure your aiming is kept even through inclement weather.



Installing a Push Button

Applies to: Standard and Audible Push Buttons Supplied by TrafficCalm

Introduction- TrafficCalm Systems does not, at the time of publication, manufacture push button solutions. However, we supply various industry- adopted push buttons we consider natively compatible with Flashing Sign Systems. Available options include:

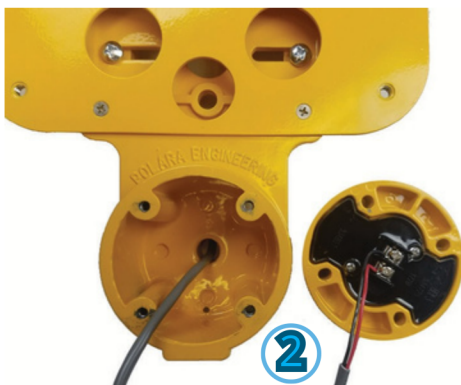


Ped-Safety Guardian APS
Ped-Safety Guardian Wave
Polarax INX
Polarax Bulldog

Each device type installs differently, and supplier installation guides are included with your purchase.

Here are a few suggestions to get started...

Consult local governances, ADA recommendations, and MUTCD guidelines to properly place the button on the pole.

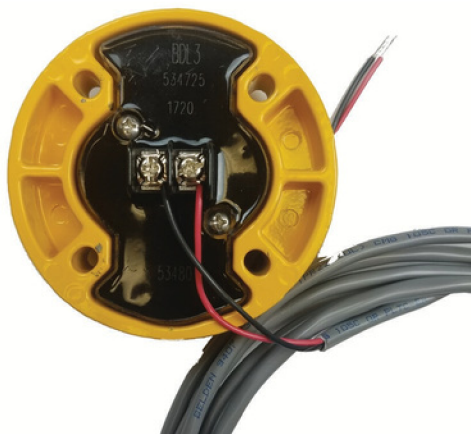


All button types include a mounting frame (#1) that must be installed on the post before installing the button. Frames may include various adapters to work on a variety of mounting surfaces.

The button frame dictates the button location and wiring entrance into the pole. It is advised that the cable harness be run before installing the frame.

With the frame securely fastened and cabling exiting the mounting location, it can be wired to the button (#2). Wiring terminations are different for each button type, as shown below. A diagram is provided with Audible buttons to correlate connections into the controller or Collaborator.

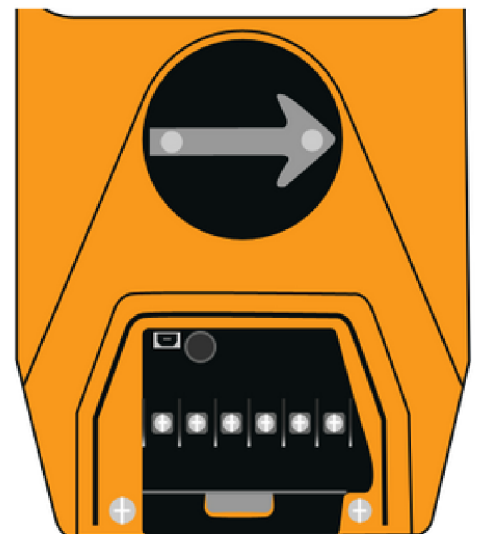
Note: Audible buttons require an increase in available power over standard button types. If an existing Controller or Collaborator is being refit, contact TrafficCalm Customer Support to ensure proper voltage and solar.



Bulldog Button Terminals



INX Button Terminals



Guardian Button Terminals

Installing a Water Presence Detector

Applies to: M75-SENSR-S00W Accessory

Note: the sensitive components within the Detector are hermetically sealed to provide substantial corrosion prevention.

Step 1- Planning

The sensor's metallic buttons (#1) should be placed at the exact height that would cause a hazard to drivers. Also, consider cable routing and landing the finite cable into the Controller or Collaborator cabinet (#2).

Step 2- Mounting

The Detector provides multiple mounting options to accommodate mounting to the back of a flood gauge sign, to a post or pole, or to a pedestal base. A bracket (#3) is supplied to accommodate mounting to a Telespar-style post. For all other mounting methods use supplied hardware and through holes in the housing to securely fasten the Detector.

Do not allow the metallic buttons to come into contact with metal!

Step 3- Connection

The detector has two wires within its rugged, outdoor rated cable harness (#2). These land (per the wiring diagram covered in detail on page 18) at INPUT 2.

Note that you must connect the detector before powering on the system to access its configuration settings in the user interface.



Installing a Crosswalk Illuminator

Applies to: M75-SA314-0000 Accessory

Step 1- Planning

The LED Illuminator consists of three main components:

1. LED Module
2. Terminal housing
3. Articulated mount

The final assembly should appear as seen at right. It is important to consider the aim of the Illuminator, and its subsequent illumination of the crosswalk or intended target before mounting the device to the post.

Step 2- Mounting

The articulated mount included with the Illuminator accommodates the appropriate aim of the device. However, it is important that the bracket be mounted to the correct side of the post, pole, or mounting surface.

Step 3- Connection

The illuminator has two that connect to a harness inside the terminal housing. From the housing, the harness routes to the associated Controller or Collaborator and connects to the Radar Red and Radar Black terminals.

Step 4- Configuration

The Controller or Collaborator must be configured properly to sustain, rather than flash, output on the Flasher B channel. See accompanying Software Guide for details.



Installing a Modem or Knock Down Sensor

Applies to: M75-TCR00-CH00 (modem w/ knock down) and M75-TCR-TS01 (knock down) Accessories

Note - The TraffiCalm Cell modem features an integrated Knock Down Sensor

Step 1- Purchasing / Planning

The Cell Modem (applies to the Controller) or Knock Down Sensor (applies to Collaborators) must be purchased separately. Additionally, Modem-capable Controllers must be purchased at time of ordering.

Step 2- Installing

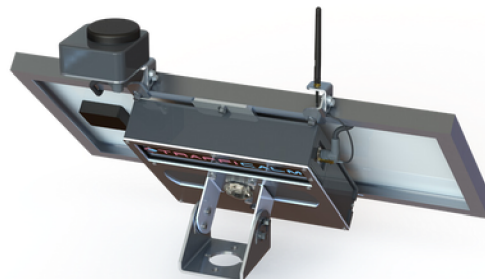
Check for network signal at the site of installation! TraffiCalm will not be held responsible for poor system performance due to signal availability. Please contact Trafficalm for service information.

Out of the box, a portion of the bracket shown below will be affixed to the solar panel, the modem/sensor cable will be attached but need to be screwed to the bracket and positioned correctly. Likewise, MeshNet Antenna bracket will need to be moved into an upright position and exposed.

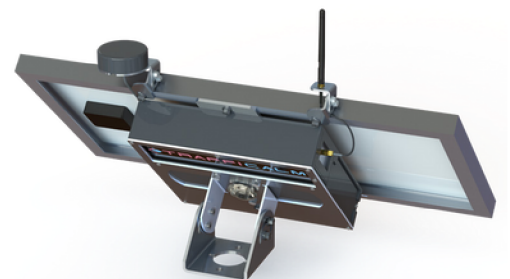
It is critical that the modem and/or knock down center be mounted level to the earth **AFTER** the solar panel is properly positioned. This ensures proper connection and detection of a knocked down state

Step 3- Activation and Use

With power applied, the modem will automatically initiate and connect to its designated TC-Remote account. No additional on-site interaction is required. For info on TC-Remote, refer to literature included with the modem.



Controller with Modem Applied



Collaborator with Sensor Applied

Installing a External Antenna

Applies to: CTL2, CTL3, M-CTL2, M-CTL3, CLB2, CLB3, M-CLB2, M-CLB3, models

Note - Take great care not to touch the inside of the antenna port when installing the external antenna, this may result in decreased signals and or shorting of the connection.

Step 1 - Locate the external antenna. on 20 Watt solar systems, it will be located in the Controller box, on 30 watt solar systems, it will come pre-connected to the external antenna port

Step 2 - Looking at the backside of the solar panel, Locate the attenuating bracket on the right side of the solar panel, position it vertically and tighten the bolt attached to the solar panel. see EA-1

Step 3 - Remove the 2 Smaller bolts on the attenuating bracket. Install the antenna bracket on the outside as show in example EA-2.

Step 4 - Route the cable on the outside of the bracket to prevent a pinch point on the cable as showing in EA-1

Step 5 - If not already attached, connect the antenna cable to the external antenna port. Hand tighten the cable. DO NOT OVER TIGHTEN!!!

Step 6 - Adjust the external antenna to stand vertical and tighten down the bolts on the bracket.



EA-1



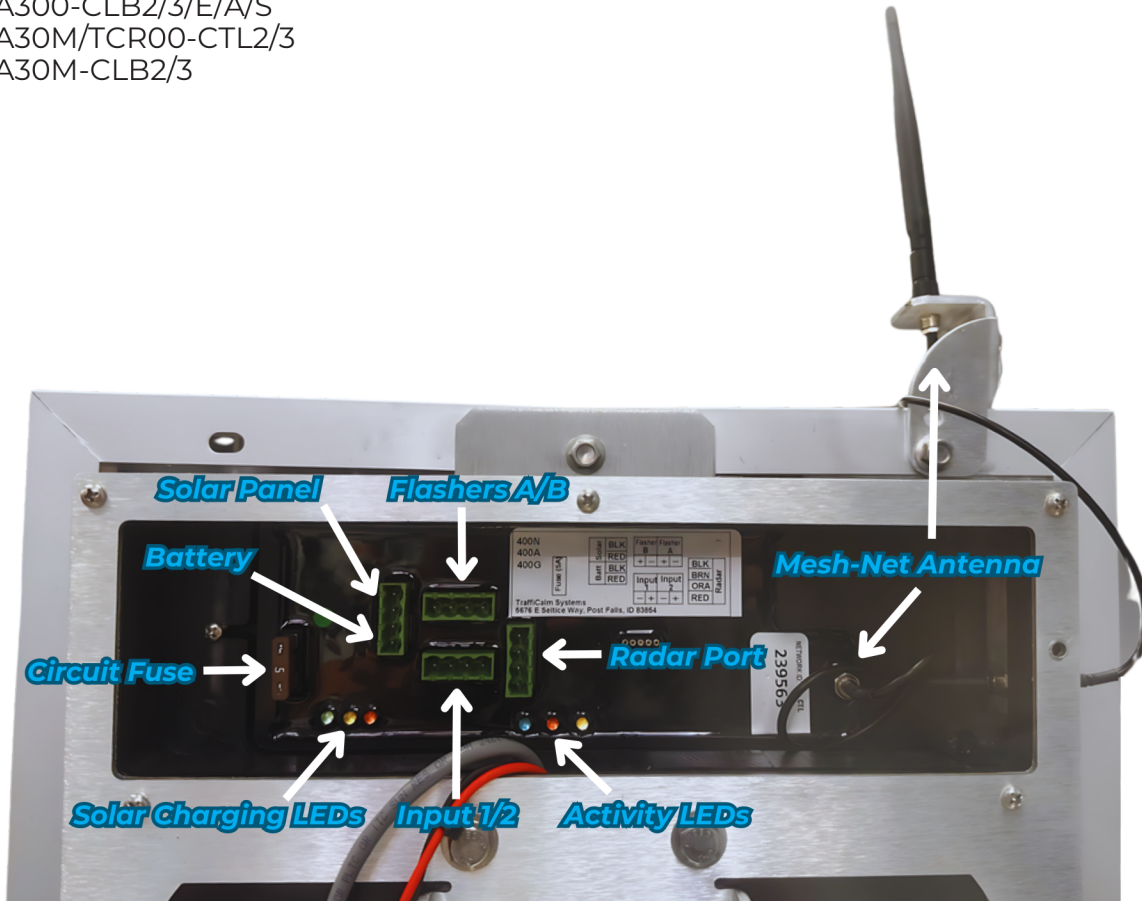
EA-2

Making Connections

Applies to: TrafficCalm Controllers and Collaborators, Excluding "W" Variants

Within the following assemblies, you will find the same basic connections seen below

- M75-SA300/TCR00-CTL2/3/E/A/S
- M75-SA300-CLB2/3/E/A/S
- M75-SA30M/TCR00-CTL2/3
- M75-SA30M-CLB2/3



Terminals Info

Mesh-Net Antenna- must be attached before powering on,
****only applies to Intelligent Controllers and Collaborators**

Activity LEDs- respond per system activity, amber on the far right is charging status, white on far left is Mesh-net activity status

Radar Port- Accepts the four connections from any TrafficCalm Radar Detector

Inputs 1 and 2- provides the positive and negative connections for two input devices (Push Buttons, Water Presence Detector, etc.)

Flashers A and B- provide powered outputs to flashing devices less than 10W per channel (sign rings, RRFBs, Beacons)

Battery and Solar Panel- provides positive and negative connections for 12V battery(s) and 12V solar panels

Circuit Fuse- provides protection for I/O board, batteries fused separately.

AC Power Connections

Applies to: TrafficCalm AC Powered Controllers and Collaborators

CAUTION

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

Within the following assemblies, you will find the same basic connections seen below

- M75-SA300-BSCA
- M75-SA300-CTLA
- M75-SA300-CLBA
- M75-DE0TS-CTLA

Components Explained

AC Supply- All Flashing Sign System Components operate on 12VDC. With AC integrated systems an AC to DC supply is integrated. This supply is UL recognized and CE conforming.

Connections- Easy, tool free terminals provide connection for Line-In power.

Note- All other connections are identical to those seen on page 18.

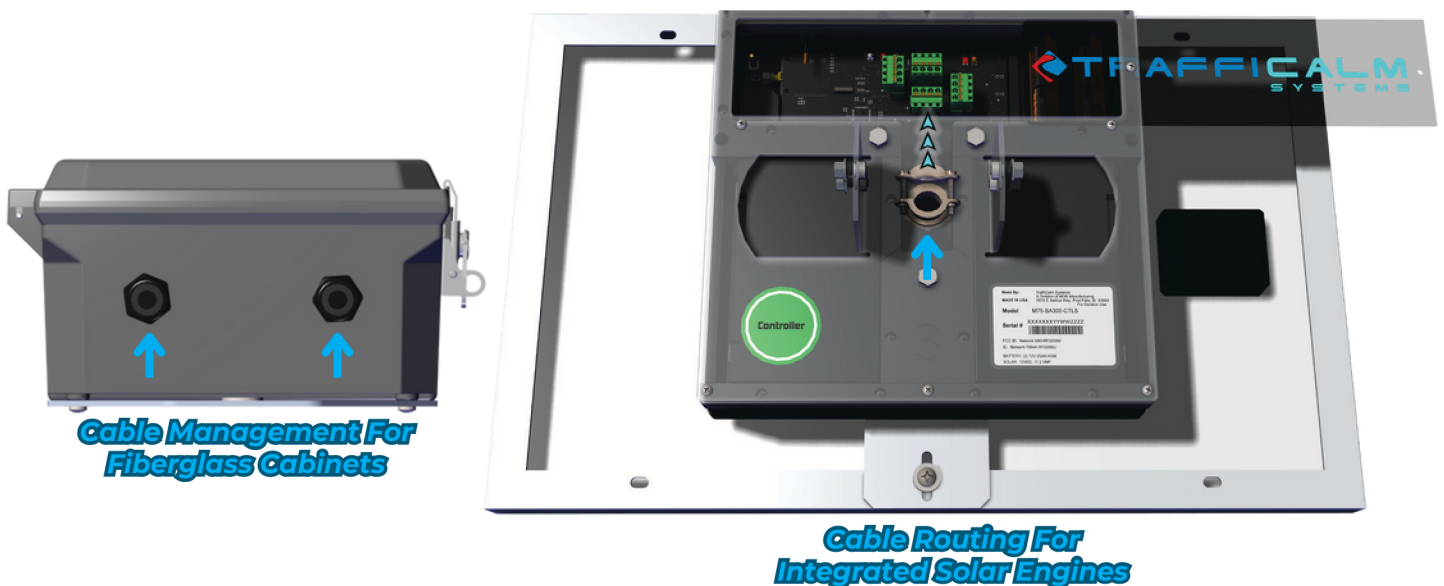


Connections

Cable Management

Applies to: All TrafficCalm Cabinets

Weather tight, strain relief cable management is provided on every cabinet type, as shown below. Fasten seals tightly to prevent moisture entry.



Troubleshooting

Applies to: TrafficCalm Controllers and Collaborators

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

Symptom	Resolution
Solar power system will not power on	<ul style="list-style-type: none"> • 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
Radar equipped system will not activate	<ul style="list-style-type: none"> • 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.
Wi-Fi Connection not functioning	<ul style="list-style-type: none"> • Activate Wi-Fi by removing all power from device. Reference page 18. • Wi-Fi has timed-out. To prevent tampering, the system's Wi-Fi shuts off after 2-hours of operation. To enable Wi-Fi availability, reset power to the device by removing the Power Connection Terminal found within the Controller box, wait 10 seconds and re-insert.
LED Rings / RRFB not working	<ul style="list-style-type: none"> • 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
Collaborator not responding	<ul style="list-style-type: none"> • Check fuse • Check power connections • 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.
Battery not charging	<ul style="list-style-type: none"> • 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.
Sign or RRFB is flashing slowly	<ul style="list-style-type: none"> • This is a fall-back "Zombie" mode to signify radio communication failure
LED appears dim or dull	<ul style="list-style-type: none"> • Check Sign angle for 15 degrees of view • Check software for Brightness settings

Warranty Statement

Applies to: All TrafficCalm supplied Flashing Sign System devices (Excludes Batteries)



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

- TrafficCalm Systems warrants the 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).
- TrafficCalm's sole responsibility, and the purchaser's and users' exclusive remedy, shall be that TrafficCalm 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 TrafficCalm is notified of a failure within the warranty period, reasonable information requested by TrafficCalm is provided, and TrafficCalm is permitted to verify the cause of the failure.
- TrafficCalm 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.
- TrafficCalm Flashing Sign Systems are designed, tested, and warranted to operate as a matched component system. The warranty is voided if all system components for controllers, collaborators, and LED rings are not TrafficCalm equipment and third party devices are substituted without prior written approval from TrafficCalm.

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 TrafficCalm
- Failure of Customer to follow TrafficCalm's published operating instructions,
- Failure to follow TrafficCalm'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.

Build America, Buy America Compliant



At TraffiCalm, we take immense pride in contributing to the development and improvement of America's roadways. Our commitment to the "Build America, Buy America" initiative is unwavering. We're pleased to share that our Radar Speed Signs, Flashing Sign Systems, and Intelligent Warning Systems are not only manufactured in the United States but are also constructed from materials produced substantially within our great nation.

For those seeking further information, services, or inquiries regarding our American-made traffic safety solutions, please do not hesitate to contact us. We're here to support your initiatives and help make America's roadways safer for all.

Thank you for choosing TraffiCalm as your trusted partner in enhancing transportation safety across the United States.

ISO 9001: QUALITY STANDARDS



intertek

ISO 9001 certification signifies TraffiCalm's unwavering commitment to exceptional quality and continual improvement.

It reflects our dedication to delivering outstanding products and services, ensuring customer satisfaction and operational excellence. Our certification is a mark of reliability and consistency, demonstrating our commitment to excellence in the traffic safety industry.



TRAFFICALM

For Any Further Assistance Please Call
our Technical Service Department at:
855-738-2722



Scan For Addition Help

Revision	Reason	Owner/Date
A	Initial release for Gen 4 devices	AP 20220921
B	Added info for LED Angles of view, updated information, ISO & BABA, Add Antenna Mounting instructions	DS 20240806