

# *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



**TRAFFICALM<sup>®</sup>**

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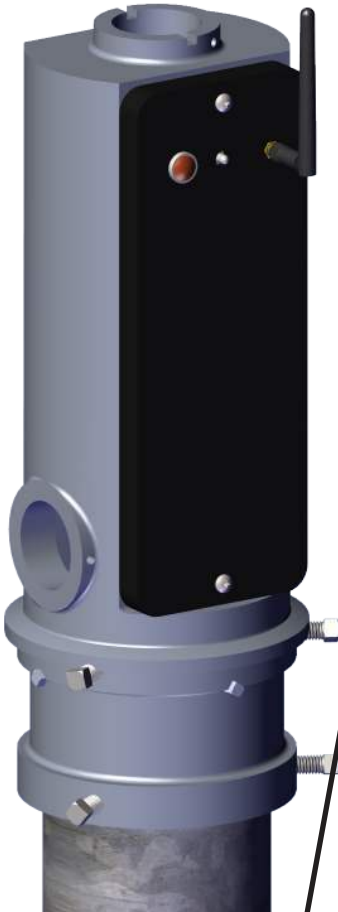
## <Intro>

### *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”***

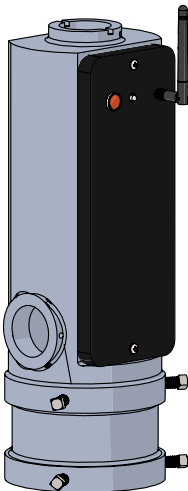
The Slimline Hub is covered in a separate manual, but in short, mounting its housing (aka Hub) is the preceding step. Here is a brief summary

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:**

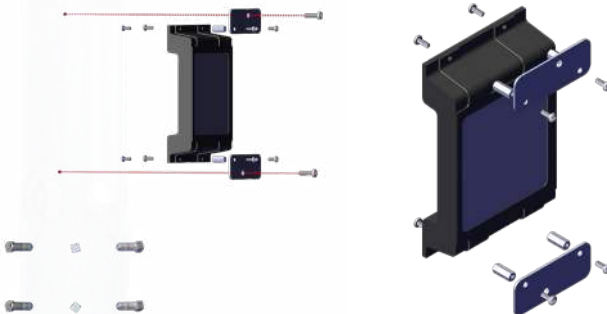
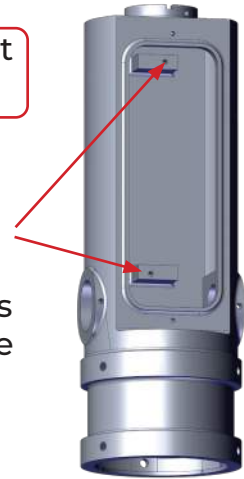
The solar charge controller includes a labeled “pigtail” that extends the connections from the back of the controller to a position more easily accessible.

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)

**Warning!** You must disconnect light sensor on Solar Powered units

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

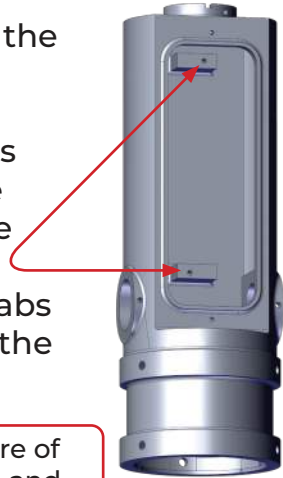
The AC powered Pole top solar kits (sold separately) include a standalone AC to DC converter that is installed in the Hub as follows.

### **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



**Notice!** On AC units, connect either wire of the light sensor to the battery + terminal and the other to the solar + terminal



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	<p>Check for cleanliness of the solar panel surface and clean as necessary.</p> <p>Check fuse, check all power connections and output and verify at least 12VDC</p> <p>Make sure the solar panel face is directed in a southern direction.</p> <p>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.</p>
Several LEDs are not working	Call TrafficCalm Technical Support
AC system will not power on	<p>Check Fuse</p> <p>Check PCT (Power Connection Terminal)</p> <p>Check Connections to LED Rings / Beacons</p> <p>Check Power Source</p>
LEDs are very dim	<p>Check the "Brightness Settings" in TC Connect.</p> <p>Refer to the TC Connect manual</p>
Push-Button not working	<p>Make sure "Push 2 Cross" is the Operating Mode selected in TC Connect. Refer to the TC Connect manual.</p> <p>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</p>
Radar activated system is flashing 24/7	<p>The radar is not connected properly or leads are not captured correctly</p> <p>If the radar is malfunctioning, the controller will revert to 24/7 flashing operation</p>

# <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.
- TraffiCalm 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 TraffiCalm equipment and third party devices are substituted without prior written approval from TraffiCalm.

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.