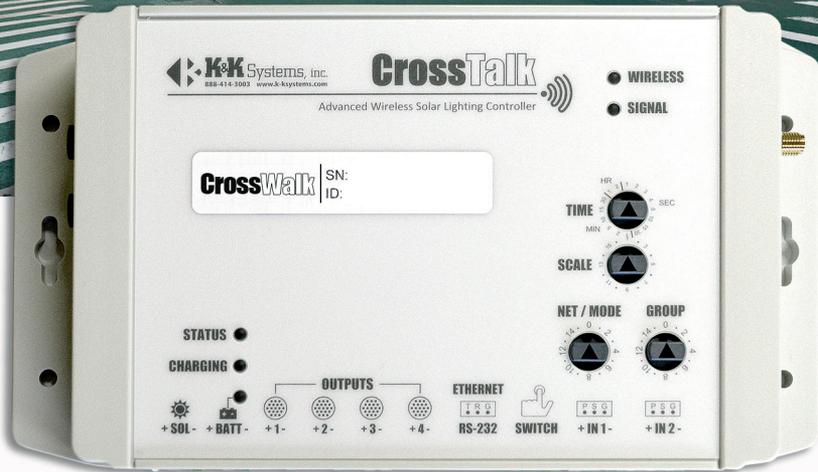
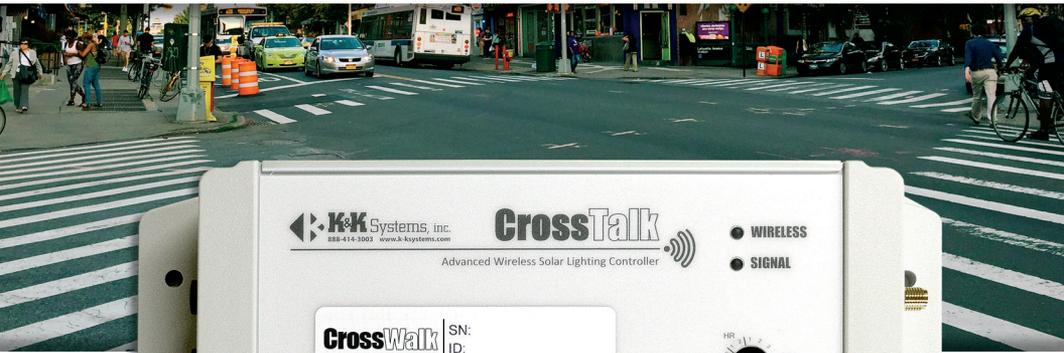




K&K Systems, inc.
Traffic Safety Products Manufacturer



CROSSTALK

CROSSWALK

OPERATING MANUAL



TABLE OF CONTENTS

Thank You 3

Introduction: What is the CrossTalk CrossWalk..... 4

Functions 5

Mode Settings 6-7

Description of CrossTalk Cross Walk Controls 8-9

Control Cabinet and Components..... 10

Safety/Warnings/Precautions 11

Fuse Location and Replacement 12-13

Troubleshooting..... 14-15

Wiring Diagram 16-17

Warranty..... 18



Thank you for your business!

To Our Valued Customer,

K&K Systems, Inc. is excited that you have purchased our product.

Our company has been serving the traffic industry since 1997. Since that time we have risen to become a leader in the traffic industry. We offer a complete line of traffic safety products that include message boards, arrow boards, radar speed monitors, solar school zone flashers, solar 24-hour flashers and many other quality products that serve our industry today.

At K&K Systems, Inc., we strive to improve the quality of our products. We are dedicated to the concept that our customers are our most valuable resource. We strive to serve our customers as we would want to be served.

Tim Keith,
President





INTRODUCTION

WHAT IS THE CROSSTALK CROSSWALK

The CrossTalk CrossWalk is an Advanced, Solar-Powered Lighting Controller. Designed for multiple applications, CrossTalk CrossWalk controller is used for a variety of traffic & safety applications including school zone safety systems, crosswalk/pedestrian systems, speed/radar systems and more. Utilizing solar power and short-range wireless connectivity, CrossTalk CrossWalk applications can be setup quickly and provide more functionality and flexibility than traditional “wired” systems.

The CrossTalk CrossWalk device is a rugged, integrated unit which provides a built-in solar controller with Maximum Power-Point Tracking (MPPT), battery management with low-voltage disconnect (LVD), short-range wireless (900MHz), multi-function programmable lighting control, support for up to (4) beacons, auto-dimming, and a scheduler all-in-one compact enclosure.



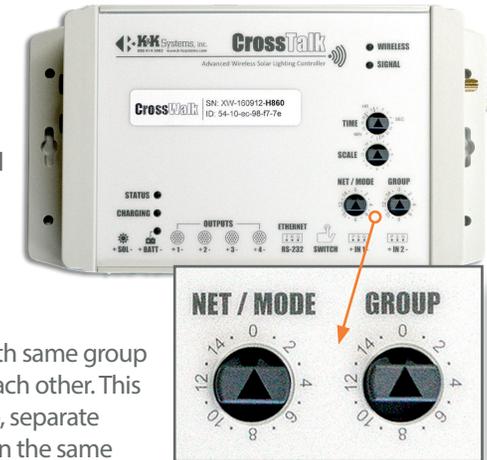
FUNCTIONS

NET/MODE

Each crosswalk unit comes preprogrammed with 15 different light modes. These modes are used for a variety of different applications and K&K products. Your unit will come preset for its intended use.

GROUPING

A single CrossTalk Crosswalk controller can monitor and control up to 15 additional CrossTalk units (for a total of 16 units in a “group”). Each CrossTalk unit has a GROUP switch (0-15) which allows CrossTalk units to be “grouped” together. All devices with same group number can communicate with each other. This grouping function allows multiple, separate CrossTalk applications to operate in the same general location (e.g. multiple cross-walks or schools on the same street) yet provide independent control of each CrossTalk “group”. In most school lighting applications, there is a designated “primary” CrossTalk unit (the unit typically equipped with a cellular modem) and one or more “secondary” CrossTalk units. Set the GROUP switch to the same setting for all units being used in the same location or system.



TIMER

CrossTalk Crosswalk units have a built in timer, that is manually adjustable. This timer controls how long the lights flash based on the mode. This timer is not applicable to modes that are preset to a 24/7 flash pattern. To set the timer, first set your top dial. The top dial is your base time. It ranges from 1 second, up to 1 hour. Next, set your Scale dial. The scale is a multiplier for the Time dial. It multiplies the time by the factor on the dial. For example, if your top dial is set to 15 sec, your Scale dial to 3, your final run time is 45 sec. This is to give the customer a range of times to use for their specific application.



MODE SETTINGS



MODE 0 and MODE 1 -- 50/50 - 90/10 --
 -- Outputs 1%2 => 50/50 Mode --
 -- Outputs 3%4 => 90/10 Mode --
 ModeSW 0 : Always ON; Wireless control ENABLED
 ModeSW 1 : On with button press/release; ON for TIME x SCALE settings



MODE 2 and MODE 3 -- 50/50 - 90/10 - WigWag
 -- Outputs 1 => 50/50 Mode --
 -- Outputs 2 => 90/10 Mode --
 -- Outputs 3&4 => WigWag --
 ModeSW 2 : Always ON; Wireless control ENABLED
 ModeSW 3 : On with button press/release; ON for TIME x SCALE seconds



MODE 4 -- WigWag
 -- Outputs 1&2 => WigWag --
 -- Outputs 3&4 => WigWag --
 ModeSW 4 : On with button press/release; ON for TIME x SCALE seconds

MODE 5 -- WagWag
 -- Outputs 1&2 => WagWag --
 -- Outputs 3&4 => WagWag --
 ModeSW 5 : On with button press/release; ON for TIME x SCALE seconds

MODE 6 -- 50/10 WW+S (wig-wig + simultaneous)
 -- Outputs 1 => 50/50 Mode --
 -- Outputs 2 => 90/10 Mode --
 -- Outputs 3&4 => WW+S --
 ModeSW 6 : On with button press/release; ON for TIME x SCALE seconds

MODE 7 - WW+S (wig-wig + simultaneous)
 Outputs 1&2 => WW+S --
 Outputs 3&4 => WW+S --
 ModeSW 7 : On with button press/release; ON for TIME x SCALE seconds




MODE 8 - "Tupelo" Mode WALK/DON'T WALK sign with lights

LED1	LED2	LED3	LED4	TIME
(Red 1&2)	(Yellow)	(Hand)	(Man)	
OFF	OFF	ON*	OFF	Default state
OFF	50/50	ON	OFF	4-8s or 1/2 user
OFF	ON	ON	OFF	4-8s or 1/2 user
ON	OFF	ON	OFF	4-8s or 1/2 user
ON	OFF	OFF	ON	1/2 User setting (knob setting)
Wig/Wag	OFF	50/50	OFF	1/2 User setting (knob setting)
Wig/Wag	OFF	ON	OFF	4-8s or 1/2 user

ModeSW 8 : On with button press/release; ON for TIME x SCALE seconds (see above)





MODE 9 - Same as Mode 8* (Tupelo Mode), but Hand (LED3) Flashes 50/50 default
 -- MODE 10 - Same as Mode 8* (Tupelo Mode), but Hand (LED3) OFF from NIGHT_START to NIGHT_END

MODE 11 - WRONG WAY SIGN mode -- 50/50 - 90/10
 -- ALARMS sent to web server (if cell equipped and ALARMS enabled)
 -- Outputs 1%2 => 50/50 Mode --
 -- Outputs 3%4 => 90/10 Mode --
 ModeSW 11 : On with button press/release; ON for TIME x SCALE settings



ModeSW 12 - WRONG WAY SIGN mode -- 50/50 - 90/10 - WigWag
 -- ALARMS sent to web server (if cell equipped and ALARMS enabled)
 -- Outputs 1 => 50/50 Mode --
 -- Outputs 2 => 90/10 Mode --
 -- Outputs 3&4 => WigWag --
 ModeSW 12 : On with button press/release; ON for TIME x SCALE settings



MODE 13 - RRFB
 -- 75 flash cycles per minute using the following sequence:
 -- LED1 on for 50 mS
 -- both OFF for 50 mS
 -- LED2 on for 50 msec,
 -- both OFF for 50 mS
 -- LED1 on for 50 mS
 -- both OFF for 50 mS
 -- LED2 on for 50 msec,
 -- both OFF for 50 mS
 -- LED 1&2 on for 50 msec,
 -- both OFF for 50 mS
 -- LED 1&2 on for 50 msec,
 -- both OFF for 250 mS
 ModeSW 13 : On with button press/release; ON for TIME x SCALE settings

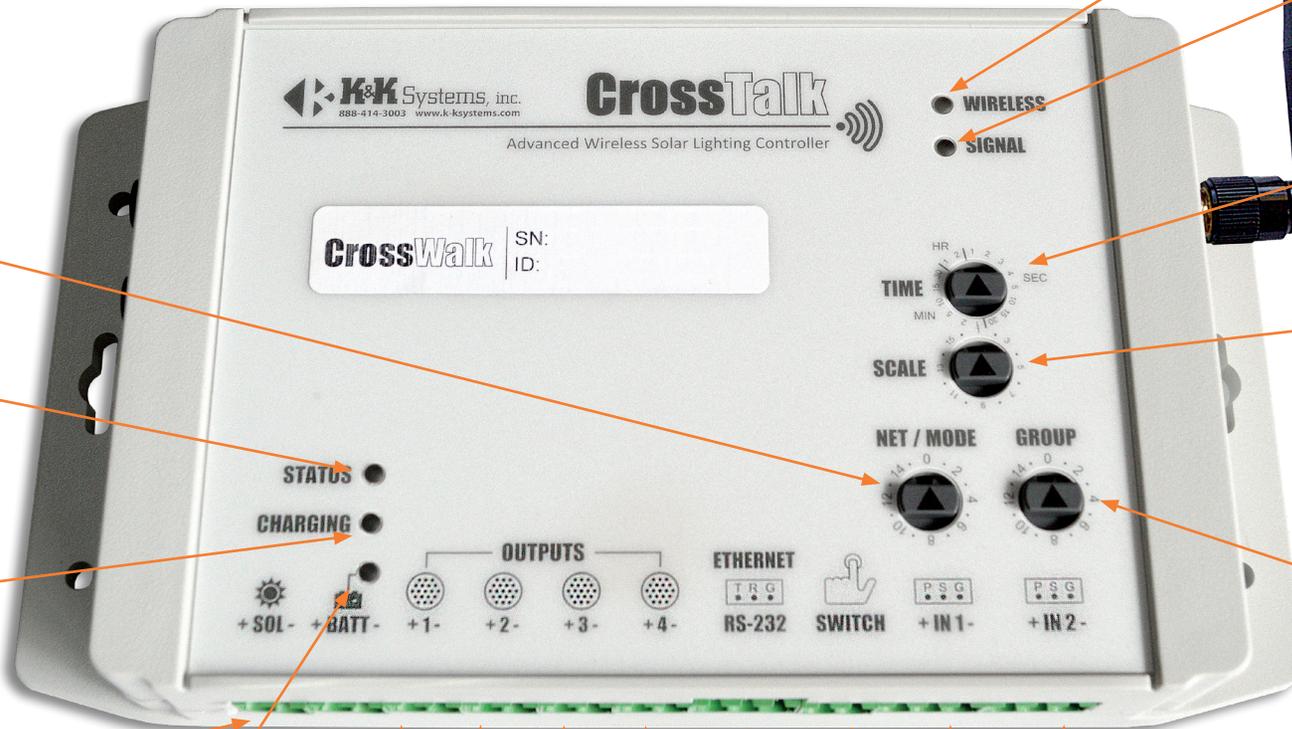


MODE MODE 14
 -- Outputs 1&2&3 => WIRELESS CONTROL (50/50F) --
 -- Outputs 4 => WIRELESS CONTROL (ON/OFF) --
 ModeSW 14 : Remotely controlled by wireless commands - CELL / XBee

MODE 15
 -- Outputs 1&2 => WIRELESS CONTROL (ON/OFF) --
 -- Outputs 3&4 => WIRELESS CONTROL (ON/OFF) --
 ModeSW 15 : Remotely controlled by wireless commands - PUSH BUTTON / RADAR



DESCRIPTION OF CROSSTALK CROSS WALK CONTROLS



Net/Mode Setting
Unique address setting for each unit in a group

Status Light
The status light flashes in sequence with the first output to indicate the flasher is active and flashing rate.

Charging Light
Solar controller status indicator shows when the battery is being charged:
Green = Charged
Amber = Charging

Solar Port
Solar connection port

Battery Light
Battery status light for safe accurate connections:
Green = Good connection

LED Outputs 1,2,3,4
Load: 12V LED/DC flasher outputs/ switches (x4).
Maximum load 50W per output. Output changes based on the CrossTalk Mode Settings.

Ethernet RS-232
Communication Port / Laptop Connection

Switch Attachment
Sensor connection port. Connect any sensor for use in conjunction with sign alerts.
Sensor options:
• Push Button
• Moisture Sensor
• Water Level Sensor
• Motion Sensor
• Overspeed Sensor

900 MHz Antenna
Wireless Light
When lit, indicates that a wireless device is connected

Signal Light
Indicates the strength of wireless signal during communication

Time
Set the amount of time that lights flash in hours, minutes, and seconds

Scale
Multiplies time setting meaning:
TIME x SCALE = run duration

Group Setting
All devices with the same GROUP setting can communicate with each other.

In 1 / In 2
Digital input range 5-24V DC for radar, advance warning, and more



CONTROL CABINET AND COMPONENTS

CONTROL CABINET

The control box is steel fabricated with lockable rotary latches and hinged at the top to protect the batteries and the controller. Mounting hardware for lower heights for easier access is available.



POWER SOURCE

Our products incorporate a battery pack wired for 12V operation, depending on the requirements of the design. The battery bank is regulated by and protected by a solid-state charge controller/low voltage disconnect. This prevents gassing and over discharging of the batteries, which can result in premature failure. A thermal compensation and related circuitry adjusts the charge rate of the system with variances in temperature.

SOLAR PANELS

During operation, keep the solar panel clean of excessive dirt and debris by using soapy water and a soft cloth or sponge only. Periodically check the integrity of wiring connections in the junction box. Inspect for signs of damage to the solar panel glass or frame.



SAFETY / WARNINGS / PRECAUTIONS

The following are K&K Systems' recommendations for the safe and responsible use of pole units.

PRECAUTIONS

INSPECT ALL EQUIPMENT BEFORE INSTALLING ON LOCATION. Occasionally during transport, wires become loosened and parts break. Please inspect all components and test before erecting the pole. The system arrives ready to run. Connect the batteries and test the unit before installation for convenient working conditions.



Connect batteries and test components before erecting the pole system.



Check cardinal directions with a compass to ensure the solar panel is **facing South** for proper charging.

MAINTENANCE

- Periodically inspect the poles. This includes but is not limited to the solar panel, battery, signs, and boxes.
- Check that the solar panel is clean, over time they build up grime that reduces their efficiency. Common household glass cleaner can be used to clean the panels.
- Check your battery every 6 months to ensure its health. If below 12.3V, charge to keep power reserves high, check solar system.
- Check sign mounting to ensure it's tight and has not shifted as the solar panel may shift direction over time. Ensure the panel pointing South.
- Check system a few days after installation to ensure its charging and still operational.



FUSE LOCATION & REPLACEMENT

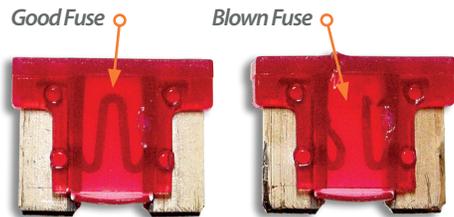
Access the CrossTalk components by removing the CrossTalk from the control box. Turn the CrossTalk onto the face to reveal 4 screws on the backside of the housing on the corners. Loosen each screw until the face cover easily separates from the back of the housing. The screws will remain in the housing.

Carefully lay the cover over as to not to break the connection of the aerial wire.

Locate the 10 amp Low Profile Mini Fuse at the bottom left of the control panel.

Remove the fuse by grasping with fingers and gently rocking the fuse side to side.

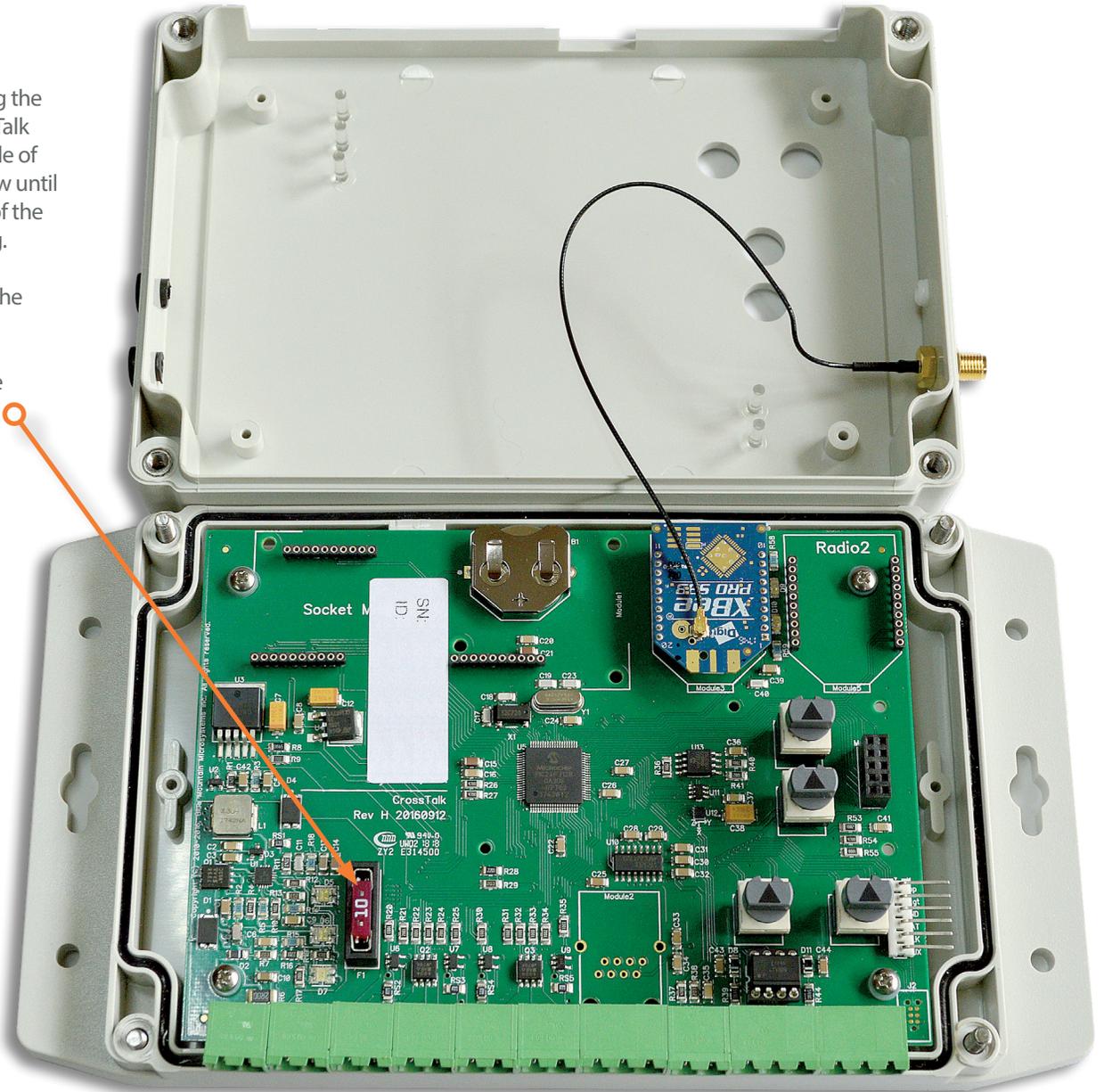
Inspect the fuse by looking through the translucent housing at flat wire in the center. If the wire is solid, the fuse is good. In a blown fuse, the wire will be broken.



Low Profile Mini Fuse

Replace the blown fuse with a new one by inserting into the port and firmly pressing it into place.

Align the covers and twist the screws until the covers are snug. Remount the CrossTalk to control box.





TROUBLESHOOTING GUIDE

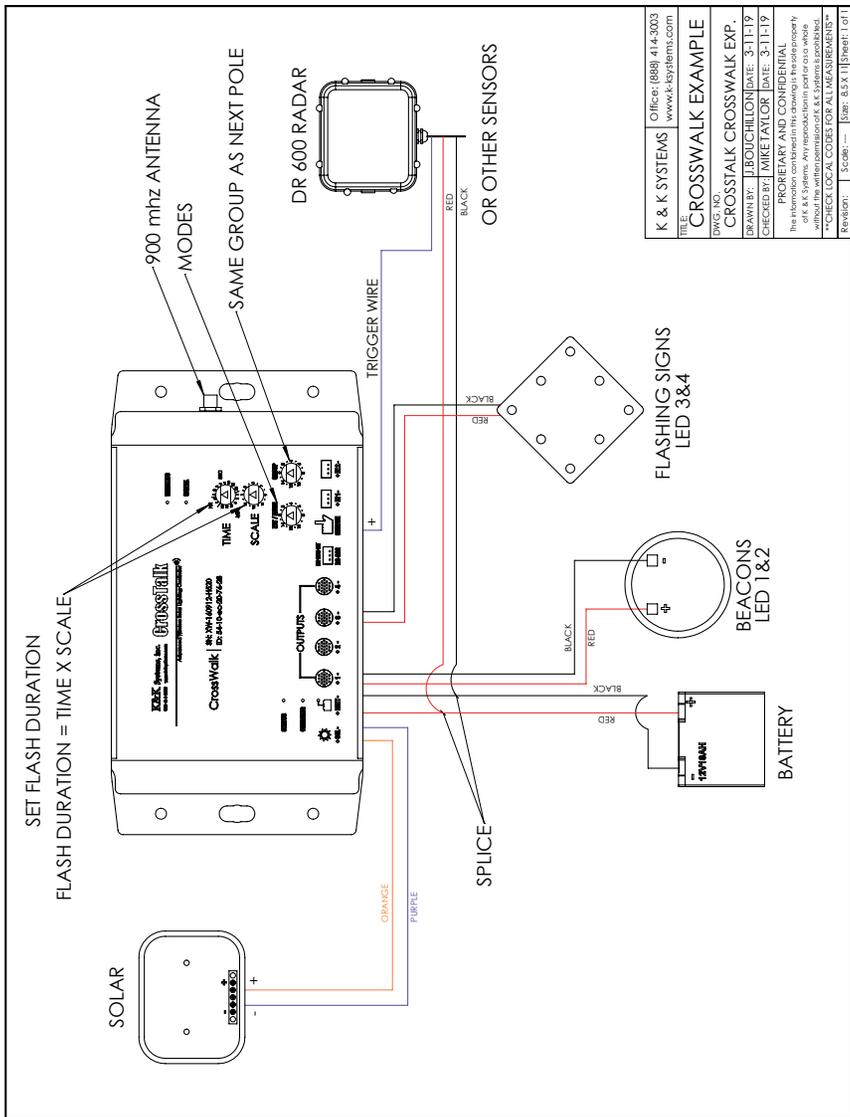
Please call 888-414-3003 for Tech Support if this guide does not solve your issue.

PROBLEM	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Light will not flash	<ul style="list-style-type: none"> • Check Battery Level, Must be at least 12V. <p>If not:</p> <ul style="list-style-type: none"> • Please charge to proceed with troubleshooting. 	<p>If battery is at 12V:</p> <ul style="list-style-type: none"> • Is the battery light on? <p>If not:</p> <ul style="list-style-type: none"> • Check internal fuse. See pages 12-13 • Check polarity of battery wires. 	<p>If battery light is on:</p> <ul style="list-style-type: none"> • Is the status light flashing? The status light indicates that the bulbs should be flashing. 	<p>If status light is not flashing:</p> <ul style="list-style-type: none"> • Check the mode and timer. Activate any sensor / push button if applicable to test. 	<p>If lights will not flash:</p> <ul style="list-style-type: none"> • Call K&K with questions about mode adjustments and lights not flashing.
Battery keeps dying	<ul style="list-style-type: none"> • Check Battery Level, Must be at least 12V. If not please charge to proceed with troubleshooting. Load test battery. A bad battery will not hold a charge. 	<ul style="list-style-type: none"> • Check your solar power. Pull the solar wires out and test with a voltmeter. On a sunny day it should output 15-21V positive. 	<p>If the solar voltage is negative:</p> <ul style="list-style-type: none"> • The polarity is backwards. Switch the position of the wires and check the polarity again. <p>If voltage is positive:</p> <ul style="list-style-type: none"> • Reinstall wires. 	<p>If voltage is low or none:</p> <ul style="list-style-type: none"> • The voltage may be low depending on the time of day. Dusk and dawn will produce low voltage. • Check voltage at the connection behind the solar panel and at the end of the wires. The voltage must be the same. <p>If voltage is different on both ends of the connection:</p> <ul style="list-style-type: none"> • Replace the wires and retest. 	<p>Is the solar panel facing south? If it is not:</p> <ul style="list-style-type: none"> • Efficiency is diminished and the battery will not charge as fast as it should.
Poles will not flash together	<ul style="list-style-type: none"> • Check Battery Level, Must be at least 12V. If not please charge to proceed with troubleshooting 	<p>Poles work individually but do not work together:</p> <ul style="list-style-type: none"> • Check group knob. Both poles must be on the same group. 	<p>One pole activates the other, but not both:</p> <ul style="list-style-type: none"> • Check for a loose 900mhz antenna. (large antenna) 	<p>If antennas are good:</p> <ul style="list-style-type: none"> • Check timer, if set too short the communication does not have enough time to be sent. the wires are bad. Replace and retest. 	<p>If problem persists:</p> <ul style="list-style-type: none"> • Please call K&K Systems



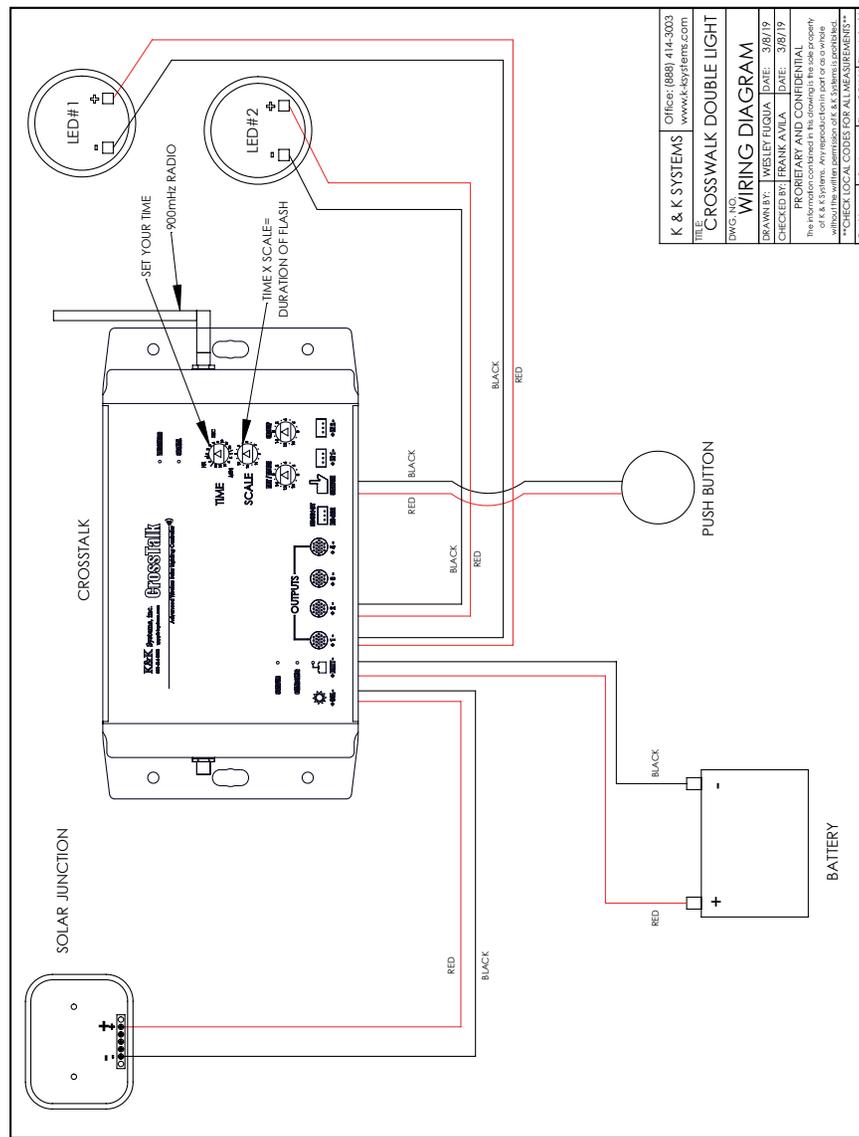
WIRING DIAGRAM

CROSSWALK SINGLE LED ACTIVATION



WIRING DIAGRAM

CROSSWALK DOUBLE LED ACTIVATION





MANUFACTURER'S WARRANTY

1. The manufacturer warrants that all products manufactured by K&K Systems, Inc. will be free from defects in material and workmanship for a period of one (1) year from date of shipment, subject to the conditions and restrictions contained herein.
2. This warranty does not apply to a product that has not been installed or maintained in accordance with the manufacturer's instructions, has been subjected to damage in an accident, abused or neglected during operation, repaired or modified by persons other than manufacturer, its employees or authorized agents, or failed to have normal maintenance.
3. The buyer expressly agrees that the buyer's sole remedy and the manufacturer's sole responsibility, in respect to a warranty claim, is exclusively limited to repair or replacement at the manufacturer's option, of product or a portion thereof found by the manufacturer to be defective. The manufacturer is not responsible for labor or other expended charges by buyer including transportation charges, and shall not be liable for any incidental or consequential damages connected with repair of a product deemed to be defective or with installation or replacement of repaired product. Further, the manufacturer disclaims any liability for any incidental or consequential damages, including lost or duplicated time or expense accruing for any reason, to the owner or user or any products sold by the manufacturer, whether claim is made in contract or in tort or under any theory of warranty, negligence or otherwise.
4. The manufacturer reserves the right to make changes in its products from time to time, without incurring any obligation to incorporate such improvements in any products previously sold or in service.
5. The terms and conditions of the warranty cannot be altered without the written consent of the manufacturer.
6. The foregoing warranty is exclusive and in lieu of all other express, statutory and implied warranties **INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE**. There are no warranties which extend beyond the language in the previous six (6) paragraphs.

If you have any further questions, please feel free to call us at our toll-free number, 888-414-3003, email info@k-systems.com or look us upon the internet at www.k-systems.com.



K&K Systems, inc.
Traffic Safety Products Manufacturer

687 Palmetto Rd.
Tupelo, Mississippi 38801

office: 662.566.2025
fax :662.566.7123
toll-free: 888.414.3003

email: sales@k-systems.com
www.k-systems.com