Multi-Colored Quick Stick Arrow Board

DLQSMC-ARO
DLQSMC-ARO2

WARNING! These lights utilize high-intensity LEDs. Do not stare directly into the light while it is on, as momentary blindness and/or permanent eye damage may occur.
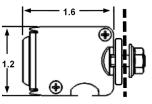
Mounting Instructions

Prior to mounting the light, determine the path your cable will take. The cable should exit the left side when you are facing the lights on the arrowstick mounted on the rear of the vehicle.

1. There is a slot along the length of the back of the arrowstick that should be used to facilitate mounting. Insert the heads of the two enclosed #10 carriage bolts into the hole in the slot.

2. Slide them along the channel to the desired location and mark the locations for your mounting holes on the mounting surface.

3. Drill your holes and mount the light using the enclosed washers and nuts.

We also include two L-Brackets to facilitate mounting. These are optional and do not need to be used.
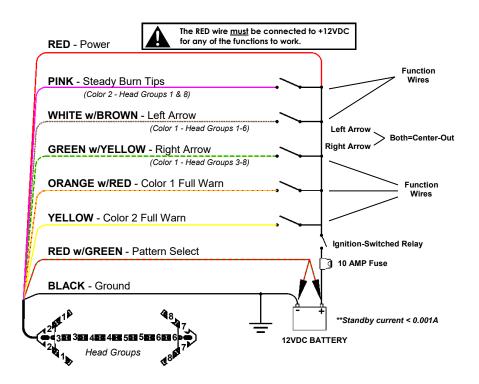
1.6

1.2

Electrical Connections

This wiring diagram below applies to the <u>default programming of this light</u>. There are several additional advanced features that, if used, will affect the wire functions shown below. Most applications will not require this reprogramming, but you can find these options described in detail under the **Advanced Programming** section.

Use standard On/Off switches rated for 5 amps and make your connections according to the wiring diagram below.

Default Wiring Setup (Wire Setup 1)

⚠ The RED wire <u>must</u> be connected to +12VDC for any of the functions to work.

RED - Power

PINK - Steady Burn Tips
(Color 2 - Head Groups 1 & 8)

WHITE w/BROWN - Left Arrow
(Color 1 - Head Groups 1-6)

GREEN w/YELLOW - Right Arrow
(Color 1 - Head Groups 3-8)

ORANGE w/RED - Color 1 Full Warn

YELLOW - Color 2 Full Warn

RED w/GREEN - Pattern Select

BLACK - Ground

Function Wires

Left Arrow
Right Arrow

Both=Center-Out

Function Wires

Ignition-Switched Relay

10 AMP Fuse

**Standby current < 0.001A

12VDC BATTERY

Head Groups

Note: The wires are shown above in order of Priority. Higher priority wires will override the patterns on any lower priority wires for the heads that are enabled.

HIGHEST PRIORITY   LOWEST PRIORITY

Pink > White w/Brown > Green w/Yellow > Orange w/Red > Yellow

Standard Programming

- Pattern Selection (both Warn and Traffic Directing Patterns)
- Resetting the Factory defaults

Pattern Selection

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.

2. Activate the function you wish to program by connecting the corresponding wire to +12VDC.

3. Touch and release the Pattern Select wire to +12VDC to scroll through the patterns shown in the corresponding list.

   Note: At any time you can shortcut to the patterns with the asterisks by holding the pattern select wire to +12VDC for the indicated time.

4. Repeat for each function you wish to program.

Patterns for Traffic Director

Left, Right, and Center Out functions all use the same pattern

1 Standard *
2 Standard with Constant End Flash
3 Standard with End Blink
4 Two-Head Traveling
5 Fast †
6 Ultra-Fast †
7 Four Head Traveling †
8 Snake †
9 Pop
10 Singleflash † ** *(factory default)*

   *   Shortcut to Pattern #1 (3 sec/1 flash)
  ** Shortcut to Pattern #10 (6 sec/2 flashes)
  †   SAE Approved Pattern

Warn Patterns

1 Flicker *   *(factory default)*
2 Quadflash †
3 Short Singleflash †
4 Long Singleflash
5 Slow Doubleflash †
6 Fast Doubleflash †
7 Slow Tripleflash †
8 Fast Tripleflash †
9 Quintflash †
10 Tripleflash w/Post Pop †
11 Quadflash w/Post Pop
12 Quintflash w/Pre Pop
13 Doubleflash
14 Quadflash
15 Singleflash Flicker
16 Doubleflash Flicker
17 Single, Quad w/Post Pop, Flicker
18 Dual Color Single, Quad, Flicker
19 Dual Color Quad, Post Quint
20 Dual Color Flicker
21 Delta-Omega
22 Slowest Singleflash (-CON) **
23 Slower Singleflash (-CON)
24 Slow Singleflash (-CON)
25 Fast Singleflash (-CON)
26 Random 1 ◄
27 Random 2 ◄
28 Random 3 ◄
29 Flashing Bounce ◄
30 Full Bounce ◄
31 Split Bounce ◄
32 Half Bounce ◄
33 Bounce w/End Pop ◄
34 Search Lights ◄
35 Eyeballz ◄
36 Fade Invert ◄
37 Moving Out ◄
38 Triple In/Triple Out ◄
39 Two Speed ◄
40 Random 4 ◄

  *   Shortcut to Pattern #2 (3 sec/1 flash)
  ** Shortcut to Pattern #15 (6 sec/2 flashes)
  †   SAE Approved Pattern
  ◄ Single Color only, No Phase options

Resetting To Factory Defaults

If you ever need to reset the entire light to the Factory Default Settings, follow the steps below:

1. Connect only the RED wire to GROUND and the BLACK wire to GROUND.

2. Hold the Pattern Select wire (RED w/GREEN) to **+12VDC** until the unit <u>flashes once</u> (~3 seconds).

Operation

Using your user supplied switches, supply +12VDC to the wires indicated in the wiring diagram on page 2 to activate the desired function.

Please note the following:

- The RED wire MUST have +12VDC applied to it for any of the patterns to work.
- Higher priority wires will override the patterns on any lower priority wires for the heads that are enabled.

  HIGHEST PRIORITY   *LOWEST PRIORITY*
  Pink > White w/Brown > Green w/Yellow > Orange w/Red > Yellow

- Activating the Right and Left patterns together will produce the Center-Out Pattern.

Service

Removing the Quick Stick From the Harness

Please be aware that the Quick Stick is designed with two internal connectors on the harness that can be accessed by removing the two screws securing the endcap and harness. This allows a Quick Stick that needs service to be removed from the vehicle without needing to remove the entire harness.

If you do use this feature, **it is imperative** that the zip tie securing the connection be replaced upon reinstallation to ensure that a good connection is maintained. Because the connectors are inside the light stick, extra care must be taken so that they are reinstalled properly. The installer is fully responsible for any issues that may occur as a result of using the disconnect feature. This includes loose connections and pinched wires.

Advanced Programming Options

- Alternate Wire Setups
- Custom Wire Programming
- Priority Modification
- Head Enable (which heads activate)
- Single Steady Head Programming
- Phase Selection (which heads alternate from one another)

For Advanced Programming options and warranty information, please review the full manual on our website at www.StarSafetyTechnologies.com.

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Programming Summary Chart

The chart below gives a quick overview of many of the programming options.

Pattern Incrementing and the Pattern 1 shortcut are discussed earlier in this manual. The additional modes are described in further detail on the following pages.

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.
2. Connect the function wire that you want to reprogram to +12VDC.
3. Select the option you wish to program and review the corresponding pages.

Hold Red wGreen to +12VDC	# Flashes	Programming Description
1 sec	0	Increments Pattern *(see pages 3-4)*
3 sec	1	Shortcut to Pattern 1 *(see pages 3-4)*
6 sec	2	Shortcut to Pattern 22 *(see pages 3-4)*
9 sec	3	Custom Wire Programming Mode
		→ Touch and release **Red w/Green** to **Ground** to advance to desired options *(see page 8)*
12 sec	4	Color 1 Head Enable Programming Mode
		→ Touch and release **Red w/Green** to **Ground** to scroll through Head Enable options *(see page 9)*
15 sec	5	Color 2 Head Enable Programming Mode
		→ Touch and release **Red w/Green** to **Ground** to scroll through Head Enable options *(see page 9)*
18 sec	6	Phase Programming Mode *(see page 9)*
		→ Touch and release **Red w/Green** to **Ground** to scroll through Phase options *(see page 10)*
21 sec	7	Toggles between Flashing Mode and Work Lights

4. Save your programming by holding the Pattern Select wire to **+12VDC** until the unit flashes once (~3 seconds), then releasing it.

⚠ STOP !!

This section is OPTIONAL. Most applications will not require any Advanced Programming. You should only need to reference this section if you require specialized programming.

Advanced Programming Options

- Alternate Default Wire Setups
- Custom Wire Programming / Priority Modification
  Includes Work Lights (bright steady burn), Cruise Mode (dim steady burn), and Single Head Steady Burn (California Title 13)
- Head Enable (which heads activate)
- Phase Selection (which heads alternate from one another)
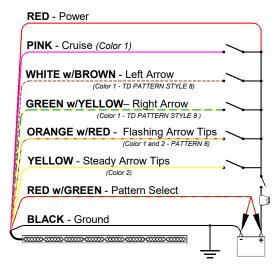
Alternate Default Wire Setups

The default wire setup is shown on page 2 (Wiring Setup 2). For ease of programming, this light has been designed with three additional default setups. Follow the instructions below to reprogram the wires for Setup 2, 3, or 4.

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.

2. Hold the Pattern Select wire (RED w/GREEN) to **+12VDC** then release it after the time indicated in the chart to the right.

Wiring Function Setup

Hold Patt. Sel.	# Flashes	Wiring Setup #
3 sec	1	Setup 1
6 sec	2	Setup 2

Wiring Setup 2

RED - Power

PINK - Cruise *(Color 1)*

WHITE w/BROWN - Left Arrow
(Color 1 - TD PATTERN STYLE 8)

GREEN w/YELLOW– Right Arrow
(Color 1 - TD PATTERN STYLE 8)

ORANGE w/RED - Flashing Arrow Tips
(Color 1 and 2 - PATTERN 8)

YELLOW - Steady Arrow Tips
(Color 2)

RED w/GREEN - Pattern Select

BLACK - Ground

Custom Wire Programming and Priority Modification
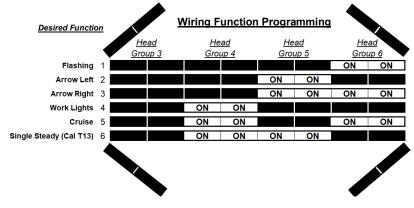
Higher priority wires will override the patterns on any lower priority wires for the heads that are enabled.

HIGHEST PRIORITY   LOWEST PRIORITY

Pink > White w/Brown > Green w/Yellow > Orange w/Red > Yellow

If none of the 4 Wiring setups fits your needs (functions or priority of functions), you can program each of the five input wires (PINK, WHITE w/BROWN, GREEN w/YELLOW, ORANGE w/RED, or YELLOW) for any function *(* Note: The PINK wire cannot be reprogrammed for Flashing)*. Refer to the chart below and proceed as follows:

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.

2. Connect the function wire that you want to reprogram to +12VDC.

3. Hold the Pattern Select wire to **+12VDC** until the unit <u>flashes three times</u> (it will flash once, then twice, then a third time - ~9 seconds), then release it, placing the light into *Custom Wire Programming Mode*.

4. Reviewing the chart below, touch and release the Pattern Select wire to **<u>GROUND (or Battery Neg)</u>** to scroll through the various function options for each head. Use the display of <u>Head Groups 4-6</u> of the lightstick *(see page 2)* to identify which function that function wire is programmed for.

Wiring Function Programming

Desired Function		Head Group 3		Head Group 4		Head Group 5		Head Group 6	
Flashing	1							ON	ON
Arrow Left	2					ON	ON		
Arrow Right	3					ON	ON	ON	ON
Work Lights	4			ON	ON				
Cruise	5			ON	ON			ON	ON
Single Steady (Cal T13)	6			ON	ON	ON	ON		

5. Repeat steps 2-4 for any other function wires desired.

6. Save your programming by holding the Pattern Select wire to **+12VDC** until the unit <u>flashes once</u> (~3 seconds), then releasing it.

Custom Wiring Setup

Use the diagram to the right to record the custom functions that you have programmed.

PINK - _____

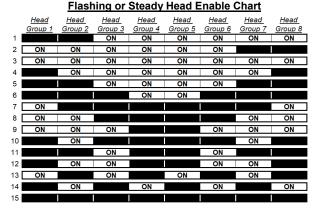WHITE w/BROWN - _____

GREEN w/YELLOW - _____

ORANGE w/RED - _____

YELLOW - _____

Head Enable

This warning stick also has the ability to allow the installer to select which heads are active for any given function. This option is programmed independently for each function and each color.

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.

2. Activate the function you wish to program by connecting the corresponding wire to +12VDC.

3. Place the light in **Head Enable Programming Mode** by holding the Pattern Select wire (RED w/GREEN) to <u>+12VDC</u> for the corresponding amount of time depending upon which color you would like to program:

   Color 1 - <u>4</u> flashes (~12 seconds)
   Color 2 - <u>5</u> flashes (~15 seconds)

4. Scroll through the 13 optional variations below by touching and releasing the Pattern Select wire to <u>GROUND (or Battery Neg)</u>.

   Note: You can shortcut to Option 1 at any time by holding the Pattern Select wire to <u>GROUND (or Battery Neg)</u> until it flashes once (~3 seconds).

   You can shortcut to Option 15 at any time by holding the Pattern Select wire to <u>GROUND (or Battery Neg)</u> until it flashes twice (~6 seconds).

5. Repeat steps 2-4 for each function you wish to program.

6. Save your programming by holding the Pattern Select wire to **+12VDC** until the unit <u>flashes once</u> (~3 seconds), then releasing it.

Flashing or Steady Head Enable Chart

	Head Group 1	Head Group 2	Head Group 3	Head Group 4	Head Group 5	Head Group 6	Head Group 7	Head Group 8
1			ON	ON	ON	ON	ON	ON
2	ON	ON	ON	ON	ON	ON		
3	ON	ON	ON	ON	ON	ON	ON	ON
4		ON	ON	ON	ON	ON	ON	
5			ON	ON	ON	ON		
6								
7	ON							ON
8	ON	ON					ON	ON
9	ON	ON	ON			ON	ON	ON
10		ON					ON	
11			ON			ON		
12		ON				ON	ON	
13	ON		ON		ON		ON	
14		ON		ON		ON		ON
15								

Traffic Director Head Enable Chart

	Head Group 1	Head Group 2	Head Group 3	Head Group 4	Head Group 5	Head Group 6	Head Group 7	Head Group 8
1	ON	ON	ON	ON	ON	ON	ON	ON
2		ON	ON	ON	ON	ON	ON	
3								

To change the display of your Traffic Director (Arrow) functions, follow the instructions above for the corresponding enable wire and refer to the chart above.

Single Steady Head Programming

If you have programmed one of your function wires for the Single Steady Head option (often used for California Title 13 compliance) as described on the page 8, you can change which head is steady by following the Head Enable instructions on the previous page for either color and the corresponding function wire. Each time you scroll the head will advance one position to the right, then cycle back around.

Phase Selection *(Programmable for Patterns 1-25 only)*

Each head has two Phases, an "On" phase and an "Off" phase (or a "Color 1" Phase and a "Color 2" phase). All of the heads/colors set for Phase 1 will illuminate at the same time and flash opposite from all of the heads/colors set for Phase 2.

Prior to changing the Phase for any functions, please note the following limitations:

- The Phase option is only programmable for the Flash Pattern functions. It is not programmable for the directional functions (Left, Right, or Center-Out).
- There are 10 different Phase options *(shown in the chart below)*, allowing you to customize which heads flash ON together and which are OFF together.
- The Phase option is only compatible with Patterns 1-25. You cannot alter the Phases for patterns 26-40 (the pre-set phase is crucial to the pattern).

1. Connect the RED wire to GROUND and the BLACK wire to GROUND.
2. Connect one of the function wires to +12VDC, to activate that function.
3. Place the light in *Phase Programming Mode* by holding the Pattern Select wire to **+12VDC** and releasing it after the unit flashes six times (~18 seconds - it will flash once, twice, three times, four times, five times, then six times).
4. Scroll through the 10 optional Phase variations *(see chart below)* by touching and releasing the Pattern Select wire to **GROUND**. The stick will display each corresponding Phase pattern as you scroll to it.
   Holding the Pattern Select wire to GROUND for 3 seconds (until it flashes once) will reset the Phase to the default setting.
5. If applicable, repeat Steps 2-4 to program the Phase setting for the other Function wires.
6. Save your programming by holding the Pattern Select wire to **+12VDC** until the unit flashes once (~3 seconds), then releasing it.

		Head 1	Head 2	Head 3	Head 4	Head 5	Head 6	Head 7	Head 8	
Standard	1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	(Def 1 - 3 sec / 1 flash)
Simultaneous	2	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1	
Left/Right	3	Phase 2	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 1	Phase 1	*(Factory Default)*
Alt Pairs	4	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	
Center Two	5	Phase 2	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2	Phase 2	
Inversed Standard	6	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	(Def 2 - 6 sec / 2 flash)
Inversed Simultaneous	7	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	Phase 2	
Right/Left	8	Phase 1	Phase 1	Phase 1	Phase 1	Phase 2	Phase 2	Phase 2	Phase 2	
Inversed Alt Pairs	9	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 2	Phase 2	Phase 1	
Inversed Center Two	10	Phase 1	Phase 1	Phase 1	Phase 2	Phase 2	Phase 1	Phase 1	Phase 1	

Important: This product is used to **direct** traffic. Improper use may result in vehicular collision, personal injury and/or death. Star Safety Technologies and its subsidiaries shall not be held responsible for damages directly or indirectly caused by improper use of this product. Always carefully consider the effect on traffic that the selected light pattern will have before engaging the lights.

Please Note: These instructions are provided as a general guideline only. *Some vehicles may require special mounting, wiring, and/or weather-sealing. This is the sole responsibility of the installer.* Star Safety Technologies assumes no responsibility for the integrity of the installation for this or any of its products.

If a product must be returned for any reason, please contact our Repair Department at (585) 226-9500 to obtain a Returned Materials Authorization number (RMA #) before you ship the product back. Please write the RMA # clearly on the package near the mailing label.

If you have any questions concerning this or any other product, please contact our **Customer Service Department** at (585) 226-9500.

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