

TOMAR

Operational & Programming **Instructions Manual**

930L

Lightbar Series

IS0930L-03
8.4.2005

Programming Warning Modes Using The 940-DCP Digital Control Panel or The Lightbar Control Cable

The 930L Lightbar flash patterns may be custom programmed by using the Lightbar Control Cable, or by using either the TOMAR 940-DCP Digital Control Panel or the TOMAR 940-Siren Amp & Control Panel.

The 930L Lightbars have a wide variety of Flash Patterns built into the 930L-24 Flasher memory. The 930L-24 Flasher can independently control 24 channels of LED or Halogen lamps. Using EEPROM flash memory, the 930L-24 Flasher can be reprogrammed many times. The 930L-24 programs have been designed to allow independent programming of the Front, Rear and Corner/End Lamps. Factory default patterns and a complete list of available patterns are detailed in Appendix A for the type of 930L Lightbar you have ordered.

EEPROM

EEPROM (electrically erasable programmable read-only memory) is user-modifiable read-only memory (ROM) that can be erased and reprogrammed (written to) repeatedly through the application of programming commands. Unlike EPROM chips, EEPROMs do not need to be removed from the lightbar to be modified.

A special form of EEPROM is flash memory, which uses normal PC voltages for erasure and reprogramming.

The following pages detail the method used to change the 930L-24 Flasher factory default programming to an alternative available flash pattern using a TOMAR 940 Digital Controller or the lightbar control cable.

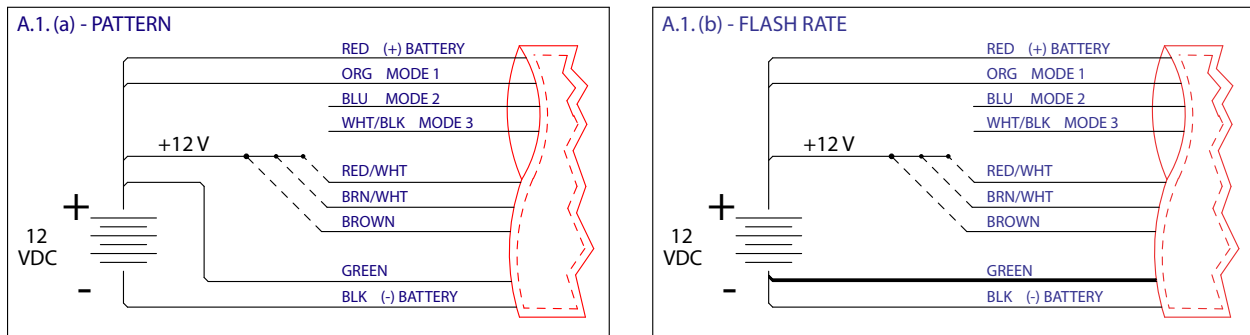
CAUTION: REMOVE POWER FROM THE LIGHTBAR BEFORE CONNECTING THE 940-DCP. FAILURE TO DO SO WILL DAMAGE THE 930L-24 FLASHER.

Programming Warning Modes Using The Lightbar Control Cable (Reference Drawing (Appendix B))

There are two ways to control the 930L lightbar. The first method is to control the lightbar by using a progressive slide switch. The second method is to control the lightbar using independent rocker or on/off switches. Section A details the procedure for programming the lightbar for use with a progressive slide switch. Section B details the procedure for programming the lightbar for use with independently controlled switches. The last pattern programmed becomes the operational default.

A. Programming For Use With A Progressive Slide Switch.

1. Programming Mode 1: Activate the lightbar programming mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Orange** control wire.



(a) Selecting Flash Pattern: Select the Mode 1 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Mode 1 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

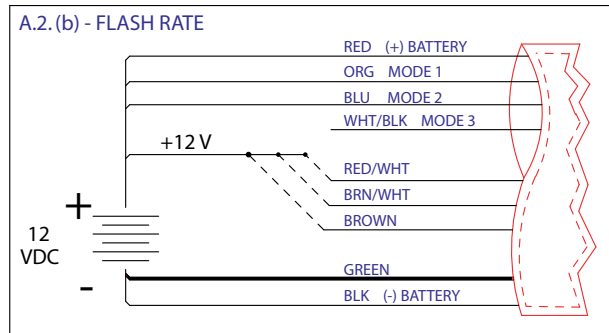
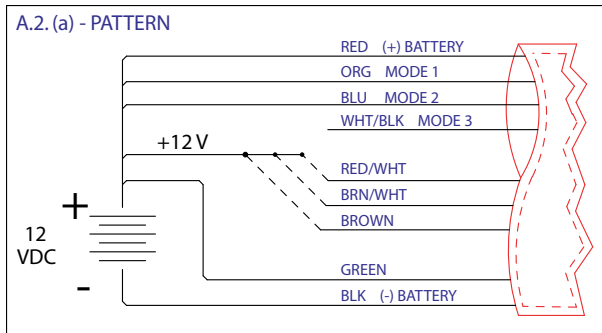
Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

Tapping the **Brown** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Mode 1.
(Orange)

2. Programming- Mode 2: Activate the lightbar programming mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Orange & Blue** control wires.



(a) Selecting Flash Pattern: Select the Mode 2 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Mode 2 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

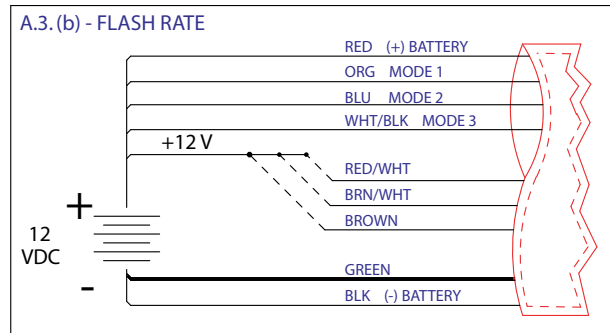
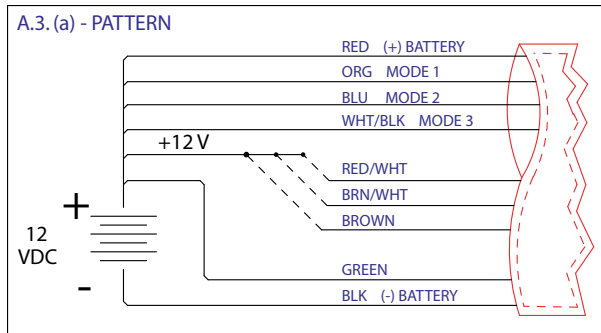
Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

Tapping the **Brown** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Mode 2.
(Orange & Blue)

3. Programming Mode 3: Activate the lightbar program mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Orange & Blue & White/Black** control wires.



(a) Selecting Flash Pattern: Select the Mode 3 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Mode 3 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

Tapping the **Brown** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Mode 3.

(Orange, Blue & White/Black)

4. Programming Traffic Direction Mode: Activate the lightbar program mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Red/White** control wire.

(a) Selecting Flash Pattern: Select the Rear warning lamps associated with the Traffic Direction Modes by applying and removing (tapping) +12vdc to **Brown** wire. Each tap advances the pattern one step. Continue until the desired pattern is selected.

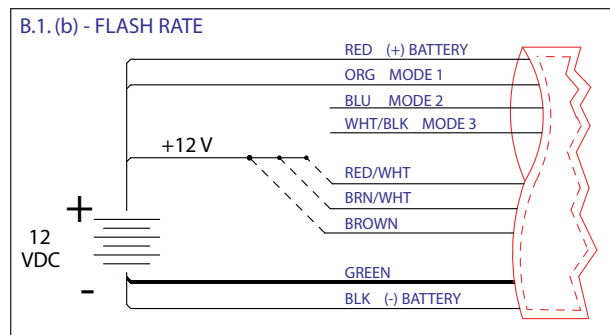
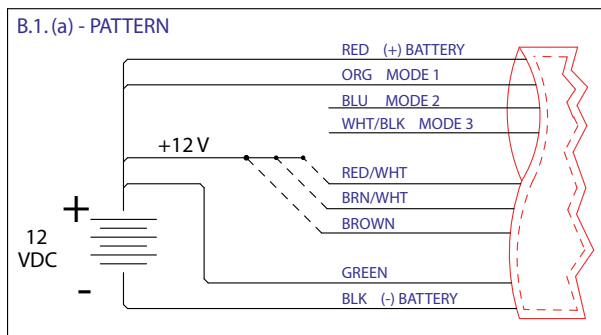
(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select arrow flash rate by applying and removing (tapping) +12vdc to the **Brown** wire. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

(c) Remove power from all wires. Flash pattern and rate are now set for Traffic Direction Modes.

Note: It is only necessary to set the Traffic Direction Mode in one direction. The program selected then becomes the default for all directions.

B. Programming For Use With Independently Controlled Switches.

1. Programming Switch 1: Activate the lightbar program mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Orange** control wire.



(a) Selecting Flash Pattern: Select the Switch 1 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Switch 1 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

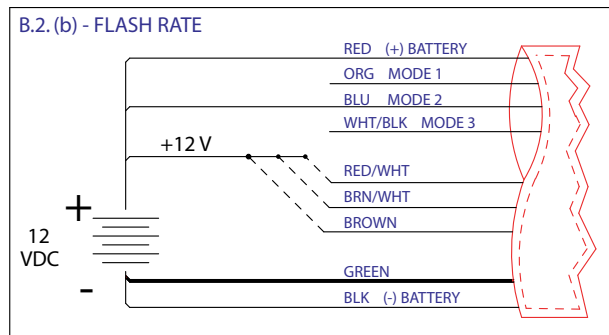
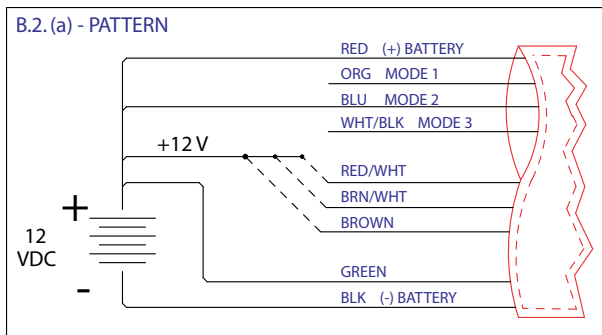
Tapping the **Brown** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Switch 1.

(Orange)

2. Programming Switch 2: Activate the lightbar program mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & Blue** control wire.



(a) Selecting Flash Pattern: Select the Switch 2 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Switch 2 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

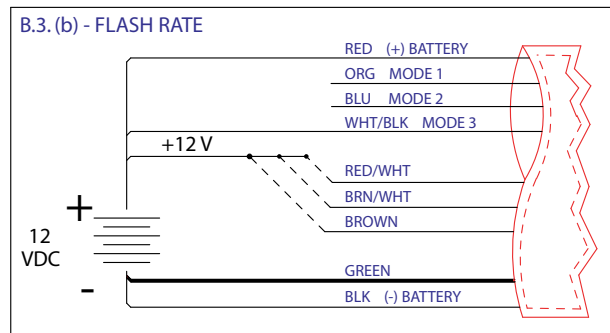
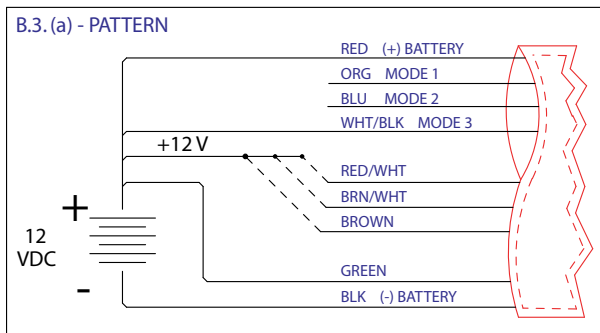
Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

Tapping the **Brown/White** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Switch 2. (Blue)

3. Programming Switch 3: Activate the lightbar program mode by GROUNDING the **Black** input wire and then apply +12vdc to the **Red** input wire and the **Green & White/Black** control wire.



(a) Selecting Flash Pattern: Select the Switch 3 warning pattern by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the pattern one step. Continue until the desired pattern is selected.

Tapping the **Red/White** wire advances the **Rear Warning Lamps**

Tapping the **Brown/White** wire advances the **Corner & End Warning Lamps**

Tapping the **Brown** wire advances the **Front Warning Lamps**

(Note: May be done in any order)

(b) Selecting Flash Rate: With the lightbar still energized remove the **Green** wire from +12vdc and connect to ground. Select the Switch 3 flash rate by applying and removing (tapping) +12vdc to the appropriate wire as listed below. Each tap advances the flash rate one step. Continue until the desired flash rate is selected.

Tapping the **Red/White** wire advances the **Rear Flash Rate**

Tapping the **Brown/White** wire advances the **Corner & End Flash Rate**

Tapping the **Brown** wire advances the **Front Flash Rate**

(Note: May be done in any order)

(c) Remove power from all wires. Flash pattern and rate are now set for Switch 3.
(White/Black)

Note: To program Traffic Direction Modes, reference Section 4 - A above.

NOTE: If two or more independently controlled switches are to be activated simultaneously, the wire combination must be programmed as well.

Programming Warning Modes Using The 940-DCP Digital Control Panel or the 940-Siren Amp & Control Panel

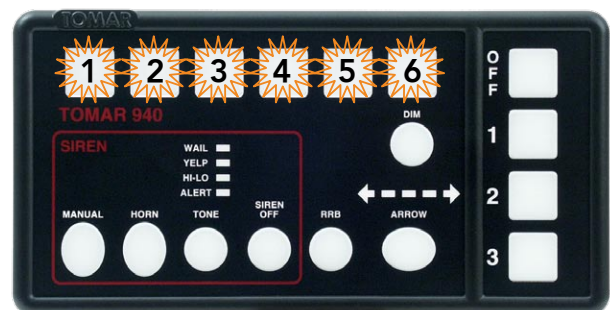
Connecting to the 930L-24 LED Flasher: REMOVE POWER. Unscrew the lamp at the rear passenger side of the Lightbar. Locate the LED Flasher and connect the DB9 receptacle of the TOMAR DB9-RJ45 Cable. Then connect the RJ-45 modular plug directly to the 940-DCP, or the 940-Siren Amp & Control Panel via the Slave RJ-45 port on the rear panel. If any Lightbar control wires are connected by any other method than the 940-Siren Amp & Control Panel -- **DO NOT** activate any while in programming mode. Apply and maintain main power to the Lightbar.

A. Activate Lightbar Programming Mode

1. Activate the Lightbar Program Mode by simultaneously pressing the TONE + SIREN OFF + OFF switches and hold for 2 seconds.



2. Programming switches 1-6 will blink 3 times to indicate successful activation of programming mode.



B. Programming Mode Switches

1. Program Mode 1 :

Begin programming the Mode 1 warning pattern by pressing mode Switch 1.



(a) Selecting Flash Pattern: Select the Mode I warning pattern by pressing the appropriate switch as listed below. Each press advances the pattern one step. Continue until the desired pattern is selected.

Pressing **Programming Switch 1** advances the **Front Warning Lamps**

Pressing **Programming Switch 3** advances the **Rear Warning Lamps**

Pressing **Programming Switch 5** advances the **Corner & End Warning Lamps**

(b) Selecting Flash Rate: Select the Mode 1 flash rate by pressing the appropriate switch as listed below. Each press advances the flash rate one step. Continue until the desired flash rate is selected.

Pressing **Programming Switch 2** switch advances the **Front Flash Rate**

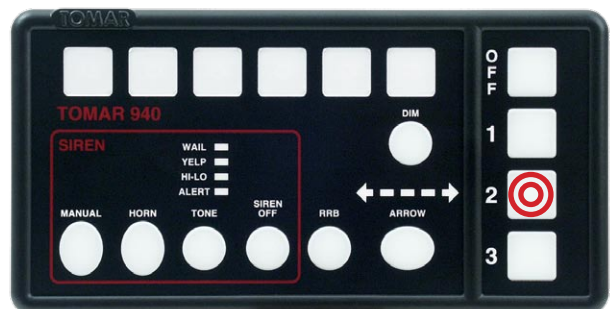
Pressing **Programming Switch 4** switch advances the **Rear Flash Rate**

Pressing **Programming Switch 6** switch advances the **Corner & End Flash Rate**

(c) Flash pattern and rate are now set for Mode 1 when selected.

2. Program Mode 2:

Begin programming the Mode 2 warning pattern by pressing mode Switch 2.



(a) Selecting Flash Pattern: Select the Mode 2 warning pattern by pressing the appropriate switch as listed below. Each press advances the pattern one step. Continue until the desired pattern is selected.

Pressing **Programming Switch 1** advances the **Front Warning Lamps**

Pressing **Programming Switch 3** advances the **Rear Warning Lamps**

Pressing **Programming Switch 5** advances the **Corner & End Warning Lamps**

(b) Selecting Flash Rate: Select the Mode 2 flash rate by pressing the appropriate switch as listed below. Each press advances the flash rate one step. Continue until the desired flash rate is selected.

Pressing **Programming Switch 2** switch advances the **Front Flash Rate**

Pressing **Programming Switch 4** switch advances the **Rear Flash Rate**

Pressing **Programming Switch 6** switch advances the **Corner & End Flash Rate**

(c) Flash pattern and rate are now set for Mode 2 when selected.

3. Program Mode 3 :

Begin programming the Mode 3 warning pattern by pressing mode Switch 3.



(a) Selecting Flash Pattern: Select the Mode 3 warning pattern by pressing the appropriate switch as listed below. Each press advances the pattern one step. Continue until the desired pattern is selected.

Pressing **Programming Switch 1** advances the **Front Warning Lamps**

Pressing **Programming Switch 3** advances the **Rear Warning Lamps**

Pressing **Programming Switch 5** advances the **Corner & End Warning Lamps**

(b) Selecting Flash Rate: Select the Mode 3 flash rate by pressing the appropriate switch as listed below. Each press advances the flash rate one step. Continue until the desired flash rate is selected.

Pressing **Programming Switch 2** switch advances the **Front Flash Rate**

Pressing **Programming Switch 4** switch advances the **Rear Flash Rate**

Pressing **Programming Switch 6** switch advances the **Corner & End Flash Rate**

(c) Flash pattern and rate are now set for Mode 3 when selected.

C. Programming Traffic Direction Modes

1. Program Rear Warning in Traffic

Direction Modes : Select an arrow pattern by pressing the Arrow switch.



(a) Selecting Flash Pattern: Select Rear Warning Pattern while in Traffic Direction Mode by pressing the appropriate switch as listed below. Each press advances the pattern one step. Continue until the desired pattern is selected.

Pressing **Programming Switch 1** advances the **Rear Warning Patterns**

(b) Selecting Flash Rate: Select the Traffic Direction Mode flash rate by pressing the appropriate switch as listed below. Each press advances the flash rate one step. Continue until the desired flash rate is selected.

Pressing **Programming Switch 2** switch advances the **Traffic Direction Flash Rate**

(c) Flash pattern and rate are now set for Traffic Direction Mode when selected.

D. EXIT Programming Mode: Press the OFF switch TWICE, once to disable the Lightbar, once to exit the 940 Program Mode.

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