

INSTALLATION AND MAINTENANCE INSTRUCTIONS
FOR
JLX SERIES LED JET® LIGHT BARS WITH ROC™ TECHNOLOGY

SAFETY MESSAGE TO INSTALLERS
OF
FEDERAL SIGNAL LIGHT SYSTEMS



People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install a light assembly: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- A light system is a high current device. In order for it to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is to be used.
- Locate light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- This product contains high intensity LED devices. To prevent permanent eye damage, DO NOT stare into the light beam at close range.
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or re-installing the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

I. UNPACKING

After unpacking the light bar, inspect it for damage that may have occurred in transit. If the unit has been damaged, file a claim immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

II. INSTALLATION

The basic light bar is completely wired at the factory and does not require any additional internal wiring. All the conductors necessary for control of any and all basic and optional functions are contained in the cable. Installation of options will require additional wiring in the light bar.

A user supplied control assembly must control the basic light functions of the unit.

Before proceeding, ensure that the light bar has been installed on the vehicle roof in accordance with the instructions packed with the mounting kit. Route the light bar cable as described below.



Light system controls must be located so that VEHICLE and CONTROLS can be operated safely under all driving conditions.



When installing equipment inside air bag equipped vehicles, the installer MUST ensure that the equipment is installed ONLY in areas recommended by the vehicle manufacturer.

Failure to observe this warning will reduce the effectiveness of the air bag, damage the air bag, or potentially damage or dislodge the equipment, causing serious injury or death to you or others.

A. Route the control cable into the vehicle and under the dash, near the eventual location of the user-supplied control head.

B. For proper light operation, the control cable must be properly terminated inside the user-supplied control head. Switch current capacities should be at least 10 amps.

NOTE

Any of the light bar functions can be activated by applying 12VDC to the appropriate control line.

CAUTION

The light bar WILL NOT light up or flash if improperly grounded. Be sure that the device is attached to a good vehicle ground.

C. Connect the black lead to a good battery/chassis ground.

WARNING

If wires are shorted to the vehicle frame or each other, high current conductors can cause hazardous sparks resulting in electrical fires and molten metal.

Verify that no short circuits exist before connecting to the Positive (+) battery terminal.

DO NOT connect this system to the vehicle battery until ALL other electrical connections are made and mounting of all components is complete.

Failure to observe this WARNING will result in fire, burns and blindness.

D. Connect the light bar's red power lead to a switch or relay rated at 10 amperes. Connect the other side of the fuse /circuit breaker to the +12VDC supply.

NOTE

The light bar is internally fused with a fuse rated at 10 amperes located on the PC board next to the power terminals.

E. *Electrical Control Wires.*

WARNING

To provide safe operation, the user-supplied power control switch and wiring must be capable of handling the rated current of the fuse at the source.

This light bar has all light bar controls integrated into the ROC PC board. Units can be manufactured with either a 6-conductor cable or a cigarette plug adapter.

1. Light Bar Control via 6-Conductor Cable.

See figure 1. The 6-conductor cable controls the light bar as follows:

RED	+12V – Turns the light bar on in Primary Mode.
BLACK	GND (-) Connect to a good battery/chassis ground.
BROWN/WHITE	PROGRAM – Applying +12V will increment the light bar to the next pattern. (See table 1.)

YELLOW

WHITE LIGHT CUTOFF
– Used only in lights that have white light in the front 3 positions. White lights flash with the rest of the bar when +12V is applied to the Yellow wire. White lights are cutoff when disconnected/power is taken away.

BLUE

MODE SELECT
– Applying +12V changes the pattern of the bar from to the pattern selected for secondary mode. Only active if light is normally flashing in Primary Mode.

BROWN

Not Used

2. Light Bar Control via Cigarette Plug Adapter.

Power is applied to the light bar through the cigarette plug. Power is switched on and off via the switch on the back of the plug. Secondary Mode cannot be activated with a model equipped with a cigarette plug. To change the flash pattern of a light bar with a cigarette plug, see paragraph F (Changing the Flash Pattern) below.

F. *Changing the Flash Pattern.*

The light bar will normally flash in a preselected flash pattern. The preselected flash patterns are to be chosen from the 26 factory programmed patterns provided with each light bar. It is recommended that the preselected flash pattern for both Primary Mode and Secondary Mode be determined and programmed during installation.

The default pattern for the light bar in Primary Mode is Pattern 1, Alternating Quad Flash 76QFPM. The default pattern for the light bar in Secondary Mode is Pattern 24, FEDPULSE 150. The JLX ROC light bar has 26 flash patterns to choose from. Table 1 describes the available flash patterns.

Changing the flash pattern of the JLX ROC can be performed in either local or remote mode.

1. Local Mode.

There is a two-position programming header that is accessed by removing the end cap of the light bar.

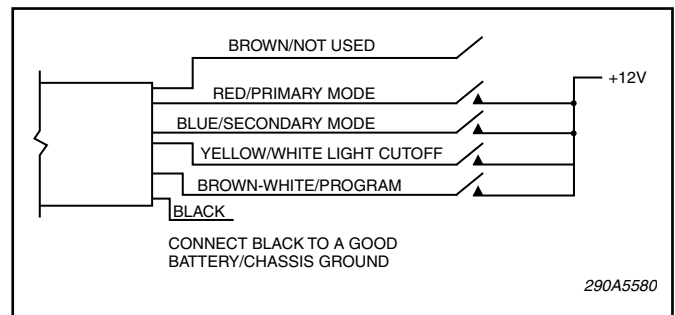


Figure 1.

Table 1.

JLX ROC FLASH PATTERN	DESCRIPTION
Pattern 1	Alternate Quad Flash – 76QFPM *
Pattern 2	2@60 FPM 4 Pulse Alternating 2@60 FPM 2 Pulse Alternating
Pattern 3	Alternating Triple Flash 102TFPM *
Pattern 4	Overlapping Penta Flash 87PFPM *
Pattern 5	Alternating Single Flash 120FPM *
Pattern 6	Alternating Single Flash 240FPM *
Pattern 7	Simultaneous/Overlapping Triple/Nine
Pattern 8	Alternating Single
Pattern 9	Overlapping Alternate 95 Patterns/Min *
Pattern 10	Rotate 4 Heads Left – Rotate 4 Heads Right
Pattern 11	Quad Flash Alternating Heads *
Pattern 12	Continuous Flash
Pattern 13	Rotate In/Out – Quad Rotate Left
Pattern 14	Rotate Double Heads
Pattern 15	Rotate Single Heads
Pattern 16	Rotate Quad Heads
Pattern 17	Quad Rotate Left/Right – Quad Flash
Pattern 18	Increase rate Rotate Left/Right
Pattern 19	Rotate Inside to Out
Pattern 20	Rotate Inside to Out – Quad Flash
Pattern 21	Rotate 4 Heads Left – Rotate Inside to Out
Pattern 22	Alt Quad Flash followed by Full Quad Flash
Pattern 23	FEDPULSE 150 *
Pattern 24	FEDPULSE 75 *
Pattern 25	Rotate Group of 3 Heads
Pattern 26	Steady (Test Pattern Only)

* Denotes Pattern is SAE Compliant

Remove the end strap and two end dome screws to remove the end cap. After the end cap is removed, apply power to flash the light in Primary Mode. Change the pattern by shorting the two pins together on the programming header together with a small screwdriver or needle nose pliers as shown in figure 2. The lightbar will turn off momentarily and begin to flash the next pattern. After the light bar's pattern changes, remove the screwdriver for a few seconds and observe the light bar's new pattern. If another pattern is desired, short the two pins together until the light bar again changes patterns. This can be repeated until the desired flash pattern is achieved. Allow the pattern to run for 15-seconds and it is now programmed to flash that pattern.

Secondary Mode can also be programmed. Apply +12VDC to both the Primary (RED) and Secondary (BLUE) Mode wires to activate the light in Secondary Mode. Program the Secondary Mode Pattern the same way the Primary Mode was programmed as described above.

2. Remote Mode.

A BROWN/WHITE striped PROGRAM conductor is also available in the 6-conductor cable. The pattern is changed by applying +12V to the BROWN/WHITE wire. After the light bar's pattern changes, remove the BROWN/WHITE wire for a few seconds and observe

light bar's new pattern. If another pattern is desired, again apply +12V to the BROWN/WHITE wire until the light bar again changes patterns. This can be repeated until the desired flash pattern is achieved. Allow the pattern to run for 15-seconds and it is now programmed to flash that pattern.

Secondary Mode can also be programmed. Apply +12VDC to both the Primary (RED) and Secondary (BLUE) Mode wires to activate the light in Secondary Mode. Program the Secondary Mode Pattern the same way the Primary Mode was programmed as described above.

III. BASIC MAINTENANCE

A. *Cleaning the Plastic Domes.*

Ordinary cleaning of the plastic domes can be accomplished by using mild soap and a soft rag. Should fine scratches or a haze appear on the domes, they can ordinarily be removed with a non-abrasive, high quality, automotive paste wax.

The most effective product you can use for cleaning, protecting, and polishing clear and colored plastics is Plexus. Plexus is available through Federal Signal Corporation, Emergency Products in either 7-ounce cans (PX7) or 13-ounce cans (PX13).

Over time, exposure to heat, sunlight, smog, etc. will cause plastic to fade, discolor, scratch, or become brittle. Plexus seals the pores of the plastic making the domes easier to clean, improving scratch resistance, and increased product longevity.



The use of other materials such as strong detergents, solvents, petroleum products, etc. can cause crazing (cracking) of the plastic domes.

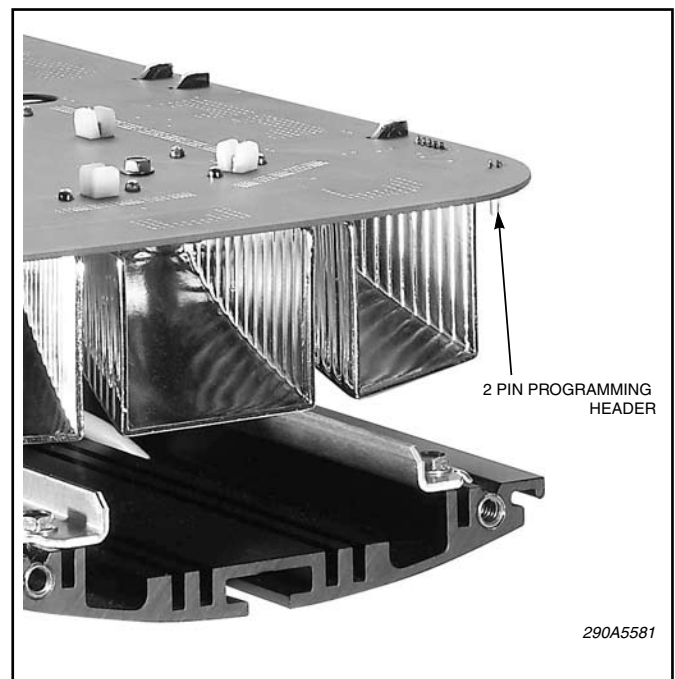


Figure 2.

B. *Cleaning J LX ROC Reflectors.*

Use a soft tissue to clean the reflector. Avoid heavy pressure and the use of caustic or petroleum base solvents, which will scratch or dull the surface.

C. *Service.*

The Federal factory will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by Return Material Authorization. This R.M.A. can be obtained from a local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested, or the nature of the malfunction, should be provided.

IV. MODEL J LX2100S-NYPD1

The section describes how to properly wire and control this special model, which has custom software. The lightbar control wires operate as described below:

RED	+12 V—Applies power to the lightbar
BLACK	—GND—Connects to a good battery/ chassis ground
BROWN/WHITE	Not used—No function
YELLOW	WHITE LED TAKEDOWN— Applying +12 V activates the front center WHITE LED TAKEDOWN head
BLUE	MODE SELECT—Applying +12 V activates the heads to flash in an al- ternating pattern of 120 flashes per minute
BROWN	Not used—No function

The Model J LX2100S-NYPD1 is designed to flash in only one flash pattern with the heads flashing in an alternating pattern of 120 flashes per minute. The flash patterns in this special model cannot be changed.

Address all communications and shipments to:

Federal Signal Corporation
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