



**FEDERAL SIGNAL**

## **MODEL 154XST**

**INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL 154XST  
STROBE LIGHT FOR USE IN HARSH ENVIRONMENTS/  
HAZARDOUS LOCATIONS**

# INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL 154XST STROBE LIGHT FOR USE IN HARSH ENVIRONMENTS/HAZARDOUS LOCATIONS

## SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow the NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- Do not connect this light to the system when power is on.
- After installation, ensure that the set screw is properly tightened and that threaded joints are fully engaged.
- After installation, test the light system to ensure that it is operating properly.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the light installation for integrity and proper operation.

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

## I. GENERAL.

The Model 154XST Strobe Light is a UL listed visual signal for hazardous and marine locations and has been investigated by UL as meeting Type 4X (water tight and corrosion resistant) enclosure requirements. It provides about 80 high-intensity flashes per minute. The effective candlepower (ECP) of the light is 165 with a clear globe installed. The unit is available for 12 through 24VDC.

## II. INSTALLATION.

### A. Unpacking.

#### WARNING

Damaged globes can lead to explosions which could result in serious injury or death.

After unpacking the Model 154XST, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it, file a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

### B. Mounting.

#### CAUTION

To reduce the risk of fire or explosion, do not install in a hazardous location if the operating temperature (see table 1) exceeds the hazardous atmosphere's ignition temperature.

Before proceeding, use table 1 as a guide and determine that the unit's operating temperature DOES NOT exceed the hazardous atmosphere's ignition temperature.

For marine applications, all wiring including supply wire must be stranded wire and meet the USCG (CFR46) Sections (110-113).

The Model 154XST has provisions for mounting to 3/4" pipe and may be mounted in any position. Before mounting, ensure that mating threads are clean. To prevent the ingress of water and dust, apply conductive sealant to the conduit threads prior to mounting. If non-conductive sealant is used, the enclosure must be earthed via the provided internal grounding wire/grounding screw to ensure proper grounding continuity. In high-humidity environments when units are

mounted dome down, condensation may occur in the conduit system. Use properly rated conduit seals/drains to prevent moisture from entering the fixture. Thread the fixture onto the 3/4" pipe and secure with the set screw.

The dome guard (Part #K8449090) may be used as an accessory. It is mounted on the 154XST using the two supplied #8-32 screws. Adjust the tension on the screws until the dome guard is square with the housing.

### **C. Electrical Connections.**

#### **WARNING**

This is a four-wire device, and when installed, all four wires must be terminated. Failure to terminate both red and both black wires will result in a shock or fire hazard.

The 154XST unit is provided with four leads; two red, and two black. To achieve electrical supervision, connect one red (+) lead to the positive side of the incoming power source and the other red (+) lead to the outgoing power source. Likewise, connect one black (-) lead to the negative side of the incoming power source, and the other black (-) lead to the negative side of the outgoing power source.

If required, the green screw in the housing is provided for connection to an earth ground (see figure 1). To gain access to the screw, the power supply assembly can be removed. Globe removal is described in paragraph III.A.1.

#### **NOTE**

This unit is polarity sensitive, and may be damaged by incorrect electrical hookup. Polarity must be observed for proper operation. In addition, damage will result if the voltage rating is exceeded.

### **III. MAINTENANCE.**

#### **WARNING**

To prevent ignition of hazardous atmospheres, disconnect the fixture from the supply circuit before opening. Keep tightly closed when in operation.

#### **SAFETY MESSAGE TO MAINTENANCE PERSONNEL**

Listed below are some important safety instructions and precautions you should follow:

- Read and understand all instructions before operating this system.
- Any maintenance to the light system must be done with the power turned off.
- Any maintenance to the light system must be performed by a trained electrician in accordance with NEC Guidelines and local codes.
- Never alter the unit in any manner. Safety in hazardous locations may be endangered if additional openings or other alterations are made in units specifically designed for use in these locations.
- The nameplate, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of housings used in hazardous locations are painted.
- Broken globes can lead to explosions which could result in serious injury or death. If the globe is damaged in any way, the complete globe assembly **MUST** be replaced.
- The only electrical components to be replaced by the customer are the flash tube and the circuit board assembly.

#### **A. Flash Tube Replacement.**

As strobe lights are used, the flash tubes begin to darken, causing the light output to decrease. This darkening is characteristic of flash tubes. Darkening will begin near the base of the tube and progress upward. Also, as flash tubes age, they may have a tendency to misfire (not fire periodically).

After extended operation, occasionally check for flash tube degradation. Should the flash tube misfire, have a noticeable decrease in light output, glow continuously or darken to a point beyond that shown in figure 2, it should be replaced.

### **WARNING**

High voltages are present inside the light assembly. Wait at least 5 minutes after shutting off the power before servicing this unit.

To change the flash tube, proceed as follows:

1. To remove the globe assembly, grasp the metal ring attached to the globe and turn it counter-clockwise. If the globe assembly will not unscrew, place a screwdriver blade against one of the four bosses on the metal ring attached to the globe. Gently tap the screwdriver handle to loosen the globe assembly from the base casting.

### **WARNING**

To maintain effectiveness of hazardous location enclosure, do not damage globe or threads while disassembling or reassembling unit. Lubricated threaded joints exposed for long periods of time may attract small particles of dirt or other foreign materials. Body and cover joints should be reassembled immediately, with all threads fully engaged.

2. With the globe removed, gently pull the flash tube from its socket. A rocking motion is most helpful when installing or removing the tube.
3. Replace the flash tube with Federal Signal Part No. K149122. Ensure that the replacement tube is fully seated in the socket.
4. Replace the globe assembly. Ensure that the globe assembly is seated securely against the gasket.
5. Test the light for proper operation.

### **B. Power Supply Replacement.**

#### **WARNING**

High voltages are present inside the light assembly. Wait at least 5 minutes after shutting off the power before servicing this unit.

1. Remove the globe assembly as described in paragraph III.A.1.
2. Remove and retain the screw which secures the power supply circuit board to the housing.
3. Disconnect the power connector from the old power supply and connect it to the connector on the new power supply.

#### **NOTE**

Ensure that the connector is fully seated on the circuit board connectors.

4. Secure the new power supply to the housing with the previously removed screw.
5. Install the new flash tube in the socket. Ensure that the flash tube is fully seated in the socket.
6. Replace the globe assembly. Ensure that the globe assembly is seated securely against the gasket.
7. Test the light for proper operation.

### **C. Cleaning Enclosure.**

#### **NOTE**

Maintenance procedures sometimes require fixtures to be hosed down for good housekeeping.

The fixture should be cleaned periodically to maintain maximum light output. Only mild, non-abrasive cleaning agents should be used. The water force applied by a hose must not exceed 65 gallons per minute from a 1" diameter hose at a distance of 10 feet. The glass globe should be regularly inspected for scratches and chips, and, if damaged, must be replaced.

### **D. Lubrication.**

Threaded joints should be well lubricated with petroleum or a soap-thickened mineral oil. If corrosive products have accumulated on joints and cannot readily be removed with solvents, the parts should be discarded and replaced.

## WARNING

Never use an abrasive material or file to remove corrosive products from threaded surfaces. In extremely corrosive locations, equipment should be periodically inspected to guard against unusual deterioration and possible porosity, since this may weaken the enclosure structurally.

### E. 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 a Return Material Authorization. This R.M.A. can be obtained from the 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.

Address all communications and shipments to:

#### **FEDERAL SIGNAL CORPORATION**

Industrial Systems

Service Department

2645 Federal Signal Drive

University Park, IL 60484-3167

708-534-4858 (Service)

708-534-3424, extension 5823 (Technical Assistance)

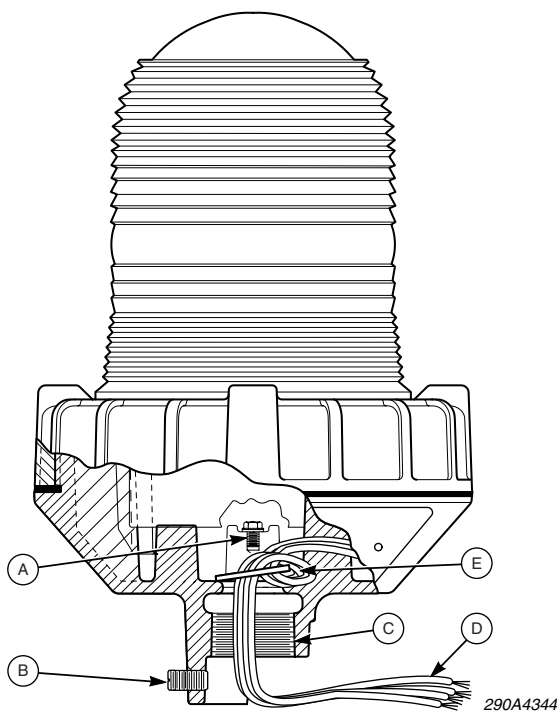
### F. Replacement Parts.

<u>Description</u>	<u>Part Number</u>
Dome Assembly, Red	K8449078
Dome Assembly, Amber	K8449078-01
Dome Assembly, Blue	K8449078-02
Dome Assembly, Green	K8449078-03
Dome Assembly, Clear	K8449078-04
Gasket	K8449080
Power Supply Assy., 12-24VDC	K2001173
Flash Tube	K149122
Dome Guard	K8449090

*Table 1.*

Hazardous Environment	Max. Temperature/UL Temperature Code at 40°C Ambient	Max. Temperature/UL Temperature Code at 66°C Ambient
Class I, Division 2	260°C/T2B	300°C/T2
Class II, Groups E, F, G	100°C/T5	100°C/T5
Class III	100°C/T5	100°C/T5

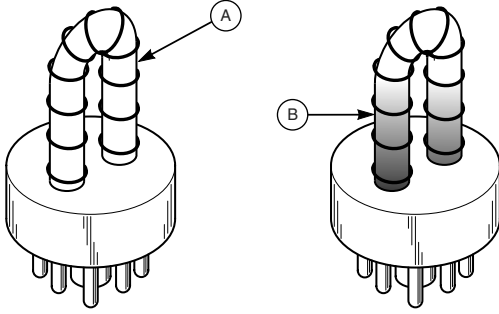
I



**English**

- A. Ground screw (green)
- B. 1/4-20 set screw
- C. 3/4-14 N.P.T.
- D. Field wiring
- E. Wrap power leads once around washer then pull through casting.

2



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**English**

A. New flash tube (K149122)

B. Used flash tube tends to discolor in areas shown, and should be replaced.



Industrial Systems

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