

Global Series Model G-LED LED Beacon For Use in Hazardous Locations



Ex d Surface Mount



Ex de Surface Mount

Installation and Maintenance Instructions

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



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Safety Messages to Installers and Users

⚠ WARNING

It is important to follow all instructions shipped with this product. This beacon is to be installed by a trained electrician who is thoroughly familiar with and will follow all applicable national and local codes in the country of use.

This beacon should be considered a part of the warning system and not the entire warning system.

The selection of the mounting location for the beacon, its controls and the routing of the wiring are 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.
- To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.
- 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.
- Do not connect this beacon to the system when power is on.
- After installation, ensure that all threaded joints are properly tightened.
- Keep the unit tightly closed when in operation.
- After installation, test the beacon system to ensure that it is operating properly.
- After testing is complete, provide a copy of this instruction sheet to all personnel.
- Brass inserts have the potential to store charge when they are not plugged. Consideration should be taken to prevent these from becoming a sparking hazard.

- The lens guard has the potential to store charge. Consideration should be taken to prevent this from becoming a sparking hazard.
- Establish a procedure to routinely check the beacon system for proper activation and operation.
- Maximum flash frequency is 90 FPM.
- This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G; Class III or non-hazardous locations only.
- **WARNING: EXPLOSION HAZARD** — Do not disconnect the equipment unless power has been switched off or unless the area is known to be non-hazardous.
- **WARNING: EXPLOSION HAZARD** — Do not remove or replace the fuse when energized.

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

With respect to the potential electrostatic charging hazard as mentioned in the certificate “Specific Conditions of Use”, under normal conditions of use, these devices are for fixed installations and not generally in contact with people. The risk of ignition is low. In addition, maintenance, cleaning, and extreme environmental factors (ex. high velocity dust laden atmospheres or high pressure steam) should be taken into account by the end user, using local Explosive Atmosphere (Ex) Electrical installations design, selection, inspection, and maintenance Codes and Standards. Cleaning of the devices should only be done with a damp cloth.

Certification

Certificate Nos.:	ATEX Cert No.: Baseefa15ATEX0153X IECEX Cert No.: IECEX BAS 15.0102X ATEX coding:  II 2 G D
Protection:	II 2 GD Ex db op is IIC T6 Gb or II 2 GD Ex db e op is IIC T6 Gb Ex op is tb IIIC T85°C Db IP66 (Tamb= -50°C to + 58°C) II 2 GD Ex db op is IIC T5 Gb or II 2 GD Ex db e op is IIC T5 Gb Ex op is tb IIIC T100°C Db IP66 (Tamb= -50°C to + 70°C)
Standards:	EN60079-0: 2012 + A11:2013, EN60079-1:2014 EN60079-7: 2007, EN60079-28: 2007, EN60079-31:2014, IEC60079-0: 6 th Ed., IEC 60079-1 7 th Ed., IEC 60079-7: 4 th Ed., IEC60079-31: 2 st Ed, IEC 60079-28:2006

Specific Conditions of Use:

1. The Modular Visual LED has external non-metallic surfaces which may provide a potential electrostatic charging hazard.
See the manufacturer's instructions for further information.
2. The Modular Visual LED has metallic components in the non-metallic walls of the enclosure which can store electrical charge and therefore may provide a potential electrostatic charging hazard. The metallic brass inserts have a capacitance of 14 pF. The metallic guard has a capacitance of 18 pF. See the manufacturer's instructions for further information.

cULus Zone Certifications:

Models that contain the Ex e increased safety (E-box) are not cULus Zone certified and not suitable for use in Class, Zone locations. Only the following models are certified: G-LED-DC-D-x, G-LED-DC-T-x, G-LED-AC-D-x, and G-LED-AC-T-x. Please disregard any references to the E-box when using these instructions for Class, Zone locations.

These models use protections:

Class I, Zone 1, AEx db IIC T3

Zone 21, AEx tb IIIC T3/200°C IP66 (Tamb= -55°C to +70°C)

Ex db IIC T3

Ex tb IIIC T3/200°C IP66 (Tamb= -55°C to +70°C)

Unpacking the Beacon

WARNING

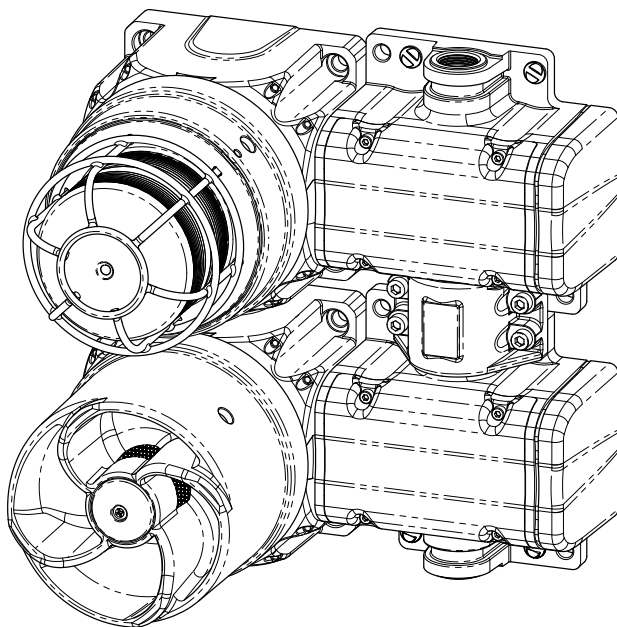
EXPLOSION HAZARD: A damaged lens can lead to explosions, causing serious injury or death. If a lens is damaged, it must be replaced.

After unpacking the beacon, examine it for damage that may have occurred in transit. If it 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 discarding them. Disposal of all shipping materials must be carried out in accordance with national and local codes and standards. If any parts are missing, please call Federal Signal Customer Support at +1 708-534-4756 or +1 877-289-3246.

Creating Combination Fixtures in the Field

The Federal Signal Global Series Ex de products can be connected together in the field using interchangeable E-box end caps and a proprietary coupling system. The proprietary coupling system allows for simple and cost effective, wiring from product to product, often eliminating the need for expensive Ex wiring practices and Ex rated glands.

Figure 1 Beacon and sounder combination fixture



The E-box is available only when factory installed on an Ex d unit or when used as a E-box spacer adjoining an existing E-box. Refer to the accessories listed on page 26 for available options. When creating certain fixture combinations, it is necessary to replace the E-box end caps before mounting the product. If you are creating combination fixtures, refer to instruction manual 25500259 for specific instructions and details.

A note about combination fixtures: If the product is Ex db marked, it is for use in gas atmospheres. If the product is Ex db e marked, it uses increased-safety terminal enclosures and is for use in gas atmospheres. The product is Ex tb marked for use in dust atmospheres.

Mounting the G-LED Beacon

⚠ WARNING

ATTACH THE BEACON SECURELY: To prevent injury, this apparatus must be securely attached to the mounting surface in accordance with the installation instructions. Use installer-supplied fasteners suitable for the mounting surface.

The mounting method and the installer-supplied mounting hardware depend on which of the two G-LED models you are installing:

Mounting the Surface-Mount Ex d Beacon

Mount the beacon to a flat surface using the four 8.5 mm mounting holes. Use installer-supplied fasteners suitable for the surface to which the device will be mounted.

Figure 2 Front view of Ex d beacon

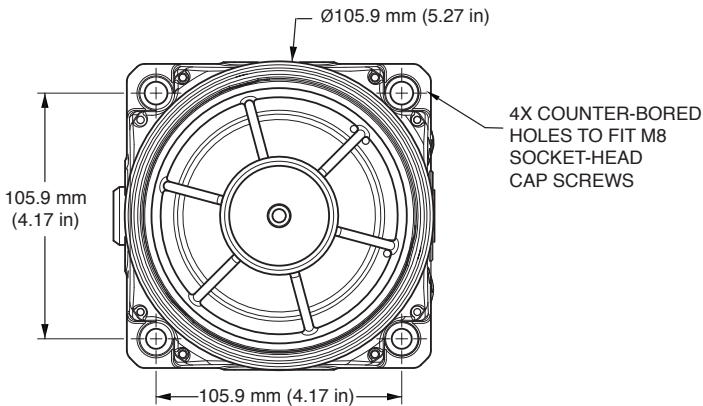
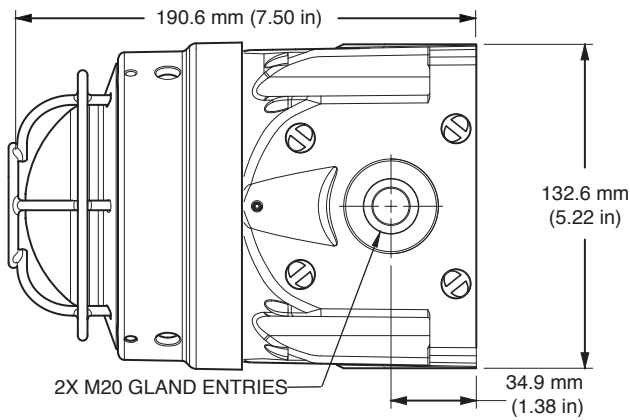


Figure 3 Side view of Ex d beacon



Mounting the Ex de Surface-Mount Beacon

Mount the beacon to a flat surface using the six 8.5 mm mounting holes. Use installer-supplied fasteners suitable for the surface to which the device will be mounted.

Figure 4 Front view of Ex de surface mount

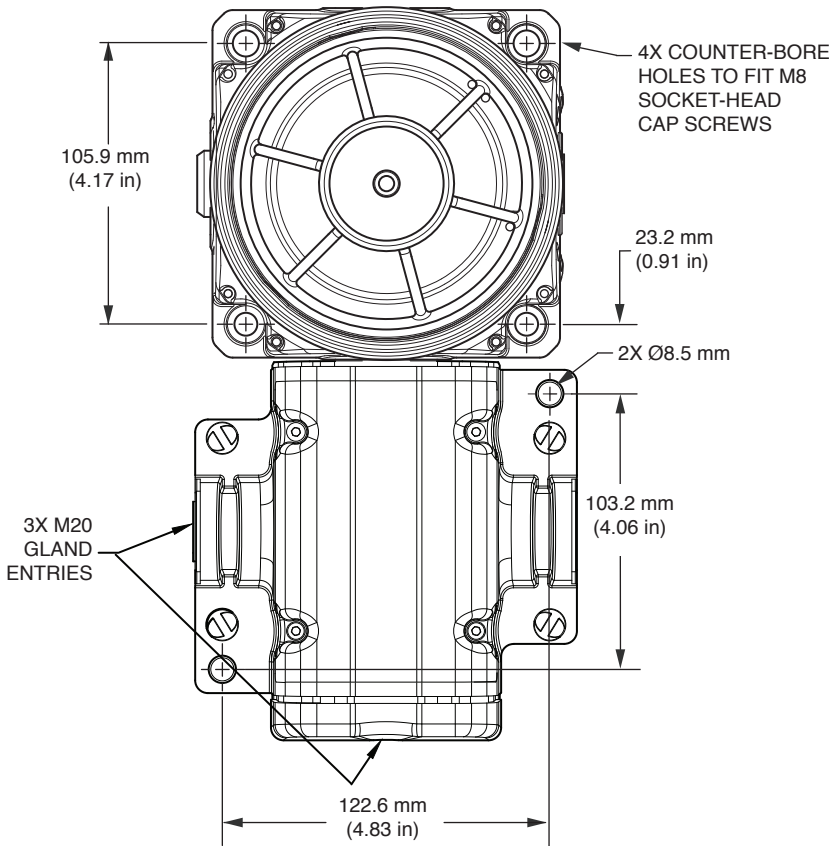
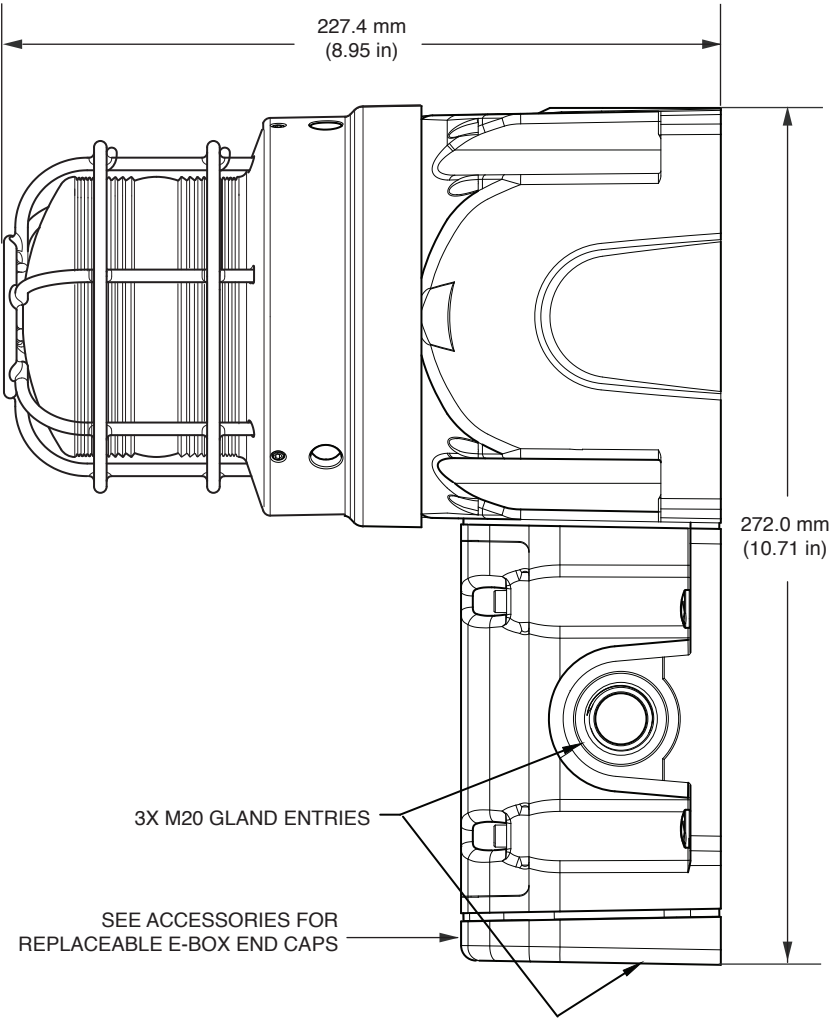


Figure 5 Side view of Ex de surface mount



Safety Messages for Wiring

When installing and operating flame-proof electrical equipment, the relevant national regulations for installation and operation (e.g., EN60079-14, IEC Wiring Regulations and NEC/CEC) must be observed.

- To maintain the flame-proof integrity of the enclosure, **DO NOT** damage the LED lens cover or threads while disassembling or reassembling unit.
- To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.
- Painting and surface finishes, other than those applied by Federal Signal Corporation, are not permitted.
- Cable termination should be in accordance with specifications applying to the application. Federal Signal recommends that all cables and cores should be fully identified.
- Ensure that only the correct equipment-certified glands are used and that the assembly is shrouded and correctly earthed. Gland entries are M20-1.5 6H with an option for the M25 entry on the end of the increased safety box models. See Table 3 on page 28 for choosing the correct cable entry devices for Equipment in Potentially Explosive Atmospheres.
- Because of space limitations, ensure the cable cores within the unit are not too slack.
- In all countries, the wiring must comply with all national and local codes and standards.
- Ensure that all nuts, bolts, and fixings are secure.

Preparing to Wire the Ex d Flameproof Models

⚠ WARNING

SHOCK HAZARD: To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.

NOTICE

CIRCUIT BOARD DAMAGE: The DC beacons are polarity sensitive, and **MAY BE DAMAGED** by incorrect electrical hookup. When connecting the DC beacon to the voltage supply lines, **POLARITY MUST BE OBSERVED**. In addition, damage will result if the voltage rating of the particular model is exceeded by more than 10 percent.

This section has wiring instructions for the two flameproof models:

- G-LED 24 Vdc
- G-LED 120-240 Vac

Ex d units are supplied with a six position PCB mounted screw terminal block. The maximum wire gauge is 4 mm² (12 AWG). The wire must be rated 85 °C or higher. Use only stranded cable to terminate the beacon. The cross-sectional area of the primary earth (ground) must equal the cross-sectional area of the phase conductor.

Cable termination for these models should be in accordance with specifications applying to the application. It is recommended that all cables and cores should be fully identified. Use the appropriate cable gland for the application. Gland entry threads are M20-1.5 x 6H.

Tools needed:

- 1.5 mm A/F hexagon key
- 2 mm flat-tip screwdriver
- No. 1 Phillips screwdriver
- Wire stripper

Wiring the Ex d Models

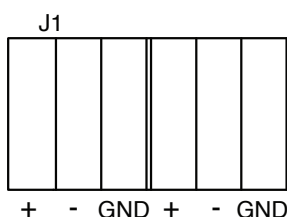
To wire the Ex flameproof beacon:

1. Unscrew the M3 hex set screw on the side of the housing one full turn.
2. Remove the lens cover from the housing by turning the cover counter-clockwise. Three 120-degree spaced reliefs are provided for a 3/8 in spanner wrench if needed. If the cover will not unscrew, back out the set screw a few additional turns.
3. Loosen the captive Phillips screw retaining the printed circuit board (PCB).
4. Slide out the PCB until the terminals clear the housing. Strip the wire insulation 8 mm (0.31 in). Maximum screw tightening torque is 0.6 Nm (5 in-lb).

24 Vdc Models

- a. See Figure 6. Connect the positive (+) power source wire to the terminal-block screw marked **+**.
- b. Connect the negative (–) power source wire to the terminal block screw marked **–**.
- c. Connect the earth ground wire to the terminal block pole marked **-GND**

Figure 6 IN/OUT PCB connections for Ex d 24 Vdc

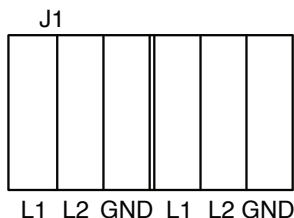


120-240 Vac Models

To wire the Ex d Vac flameproof beacon:

- a. See Figure 7 on page 16. Connect the line (hot) power source wire to the terminal block screw marked **L1** on the PCB.

Figure 7 IN/OUT PCB connections for Ex d 120-240 Vac



- b. Connect the neutral (common) power source wire to the terminal block screw marked **L2**.
 - c. Connect the ground wire to the terminal block clamp marked **GND**.
5. Insert the PCB into the enclosure and fully tighten the PCB captive screw.
6. Place the cover on the housing and tighten it by turning it clockwise.
7. To ensure O-ring compression, the cover must be fully seated against the housing when the threads are tightened. Turn the M3 set screw on the side of the housing until the screw contacts the housing.
8. Ensure that the unused wire entries are sealed with the provided brass M20-1.5 x 6 g stopping plug (equipment-certified).
9. Test the beacon for proper operation.

Preparing to Wire the Ex de Increased Safety Models

⚠ WARNING

SHOCK HAZARD: To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.

This section has wiring instructions for the two increased safety models:

- G-LED 24 Vdc
- G-LED 120-240 Vac

Ex de units are supplied with a six-pole spring tension clamp style terminal block. The maximum wire gauge is 4.0 mm² (12 AWG). The wire must be rated 85 °C or higher. Use only stranded cable to terminate the beacon. The cross-sectional area of the primary earth (ground) must equal the cross-sectional area of the phase conductor.

Cable termination should be in accordance with specifications applying to the application. It is recommended that all cables and cores should be fully identified. Use the appropriate cable gland for the application. Gland entry threads are M20-1.5 6H.

Conductive metalwork, including cable glands, must be a minimum of 5 mm away from the terminals.

Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1 mm of the metal of the terminal throat.

The G-LED terminal block is supplied with two conductors per pole. The terminal block allows for easy supply-in and loop-out wiring to connect beacons in series.

Tools needed:

- 3.0 mm hexagon key
- No. 1 Phillips screwdriver
- Wire stripper

Wiring the Ex de Models

NOTICE

CIRCUIT BOARD DAMAGE: The DC beacons are polarity sensitive, and MAY BE DAMAGED by incorrect electrical hookup. When connecting the DC beacon to the voltage supply lines, POLARITY MUST BE OBSERVED. In addition, damage will result if the voltage rating of the particular model is exceeded by more than 10 percent.

To wire the Ex de beacon:

1. Unscrew the four M4 socket-head cap screws and remove the terminal box cover.
2. Strip the wire insulation 8 mm to 9 mm (0.33 in).

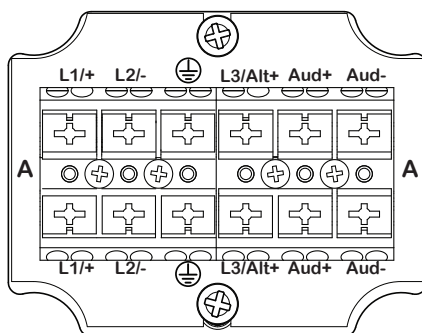
NOTE: When using more than one single or multiple strand lead, the connection into either side of any terminal must be joined in a suitable manner, e.g. two conductors into a single insulated crimped bootlace ferrule.


3. To connect wires, depress the pushbutton on the terminal block with a Phillips screwdriver and insert the wire into the round opening. Release the pushbutton to make connection.

24 Vdc Models


- a. See Figure 8. Connect the positive (+) power source wire to the terminal block pole marked **L1/+**.
- b. Connect the negative (–) power source wire to the terminal block pole marked **L2/-**.

Figure 8 Connections for DC or AC Ex de beacons



- c. Connect the earth ground wire to the terminal block pole marked .

120-240 Vac Models

- a. See Figure 8. Connect the line (hot) power source wire to the terminal block screw marked **L1/+**.
 - b. Connect the neutral (common) power source wire to the terminal block pole marked **L2/-**.
 - c. Connect the earth ground wire to the terminal block pole marked .
4. Secure the cover on the terminal box with the four M4 screws. Ensure that the gasket is properly seated to maintain the IP rating. **Do not overtighten the cover screws.**
 5. Test the beacon for proper operation.

Changing the Flash Pattern

⚠ WARNING

LIGHT HAZARD: *To be an effective warning device, the beacon produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into the light at close range or permanent damage to your eyesight may occur.*

⚠ WARNING

EXPLOSION HAZARD: *To prevent ignition of hazardous atmosphere, disconnect the device from the supply circuit before opening it. Do not open the device in the presence of explosive gases in the atmosphere.*

⚠ CAUTION

BURN HAZARD: *The LED emitter gets hot enough to burn you. Always allow the emitter to cool before handling it.*

The Model G-LED Series beacon has eight flash patterns that are selected by setting a DIP switch on the PCB. See Figures 9 and 10 on page 20.

Tools needed:

- 1.5 mm A/F hexagon key
- 2 mm blade-tip screwdriver
- No. 1 Phillips screwdriver

To select a pattern:

1. Disconnect power to the beacon.
2. Unscrew the M3 set screw on the side of the housing one full turn.
3. Remove the lens cover from the housing by turning the cover counter-clockwise. Three 120-degree spaced reliefs are provided for a spanner wrench if needed. If the cover assembly will not unscrew, back out the set screw a few additional turns
4. Loosen the captive Phillips screw retaining the printed circuit board (PCB), and slide out the PCB until DIP switch SW1 is accessible.
5. Select a flash pattern by setting the DIP switches on SW1. Steady On is the default.
6. Insert the PCB assembly into the enclosure and fully tighten the captive screw.

7. Place the cover on the housing and tighten it by turning it clockwise. To ensure O-ring compression, the cover must be fully seated against the housing when the threads are tightened.
8. Turn the M3 set screw against the housing until the screw contacts the housing.
9. Reconnect power to the beacon.
10. Test the beacon by applying power and verifying the pattern.

Figure 9 Location of DIP switch for flash patterns

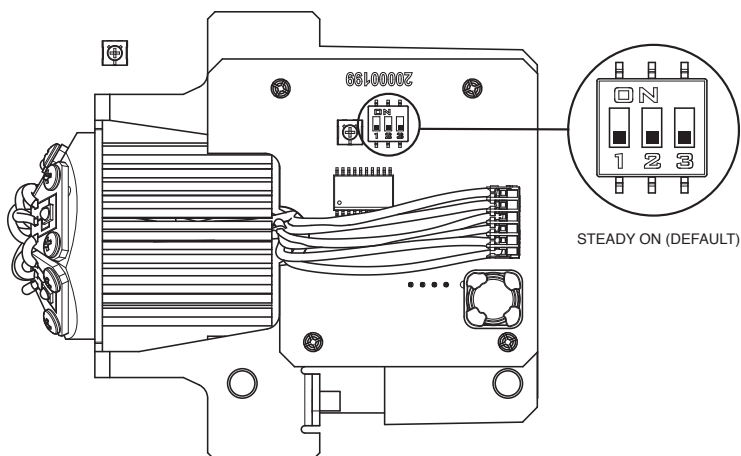
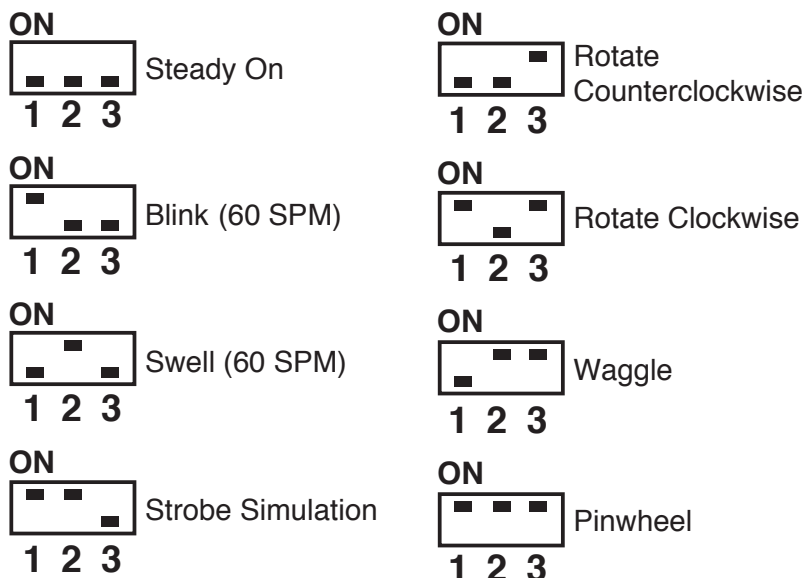


Figure 10 Switch settings for flash patterns



Safety Messages to Maintenance Personnel

⚠ WARNING

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

- Read and understand all instructions before operating this system.
- If you acquired a significant quantity of units, then it is recommended that spares are also made available.
- Any maintenance to the beacon system must be done with power turned off.
- Any maintenance to the beacon system must be performed by a trained electrician who is thoroughly familiar with all applicable national and local codes in the country of use.
- To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.

- Never alter the unit in any manner. Safety of the unit may be affected if additional openings or other alterations are made to the internal components or housing.
- Repair of flamepaths is not intended.
- The nameplate, which may contain cautionary or other information of importance to maintenance personnel, should NOT be obscured in any way. Ensure that the nameplate remains readable.
- After performing any maintenance, test the beacon system to ensure that it is operating properly.

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

Maintaining the Beacon

WARNING

EXPLOSION HAZARD: *To prevent ignition of hazardous atmosphere, disconnect the beacon from the supply circuit before opening it. Do not open the beacon in the presence of explosive gases in the atmosphere. Failure to follow this warning may result in serious injury or death.*

During the working life of the beacon, it should require little or no maintenance. The non-metallic housing will resist attack by most acids, alkalis, and chemicals and is as resistant to concentrated acids and alkalis as most metal products. However, if abnormal or unusual environment conditions occur due to plant damage or accident, etc., visual inspection of the beacon is recommended.

Cleaning the Enclosure

The enclosure should be cleaned periodically with a damp cloth to maintain maximum light output. The polycarbonate colored LED lens should be regularly inspected for cracks. If it is damaged, it must be replaced. Refer to the “Certification” section on page 6 for any applicable Specific Conditions of Use.

Replacing the LED Array

WARNING

EXPLOSION HAZARD: *To maintain the flameproof integrity of the enclosure, DO NOT damage the lens cover, or threads while disassembling or reassembling the beacon.*

⚠ WARNING

LIGHT HAZARD: To be an effective warning device, the beacon produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into the beacon at close range or permanent damage to your eyesight may occur.

Federal Signal LED array part No. K859500823-*

⚠ CAUTION

BURN HAZARD: The LED array gets hot enough to burn you. Always allow the array to cool before handling it.

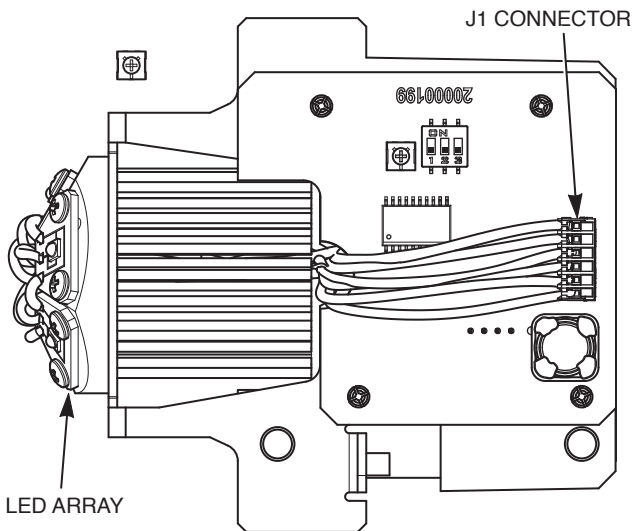
NOTICE

STATIC SENSITIVE DEVICE: The circuitry of the beacon can be damaged by an electrostatic discharge (ESD). Always follow anti-static procedures while servicing the beacon.

Tools and replacement part needed:

- 1.5 mm A/F hexagon key
- No. 1 Phillips screwdriver
- Federal Signal LED array part no. K859500823-*

Figure 11 LED array and connector



Remove the LED Array:

1. Disconnect power to the beacon.
2. Use the hexagon key to unscrew the set screw on the housing one full turn.
3. Remove the cover from the housing by turning the cover counter-clockwise. If the cover will not unscrew, back out the set screw a few additional turns.
4. Loosen the captive Phillips screw retaining the printed circuit board (PCB) and slide the PCB out of the housing,
5. See Figure 11 on page 23. Unplug the J1 connector and remove the three Phillips screws retaining the LED array to the mounting bracket.
6. Remove the LED array.

Install the new the LED Array:

1. Secure the new LED array to the mounting bracket with the three Phillips screws.
2. Reconnect J1 and slide the PCB back into the housing.
3. Tighten the captive Phillips retaining screw.
4. Place the cover on the housing and tighten it by turning it clockwise.
5. To ensure O-ring compression, the cover must be fully seated against the housing when the threads are tightened. Turn the M3 set screw on the side of the housing until the screw contacts the housing.
6. Reconnect power to the beacon.
7. Apply power and verify that the beacon operates properly.

Lubricating the Threaded Joints

A silicone based, non-hardening, chemically compatible grease can be applied if required.

Ordering Replacement Parts and Accessories

⚠ WARNING

EXPLOSION HAZARD: A damaged lens can lead to explosions, causing serious injury or death. If a lens is damaged, it must be replaced.

Replacement parts and accessories are listed in Table 1 below and 2 on page 26. Due to certification, certain component parts are not available for field replacement. Beacons with this type of damage must be either replaced entirely or returned to Federal Signal for service.

Refer to instruction manual 25500259 for accessory and replacement part assembly and operating instructions.

To order, call Federal Signal Customer Support at 708-534-4756 or 877-289-3246.

Table 1 G-LED Replacement Parts

Description	Part Number
Lens Guard	K859500821-02
Lens, Amber	K859500815
Lens, Blue	K859500815-01
Lens, Clear	K859500815-02
Lens, Green	K859500815-03
Lens, Red	K859500815-04
Lens, Magenta	K859500815-05
Lens, Yellow	K859500815-06
DC LED (24VDC) Internal Sub-Assembly Kits (Include PCBA, bracket, LED light head and mounting screw)	
LED/PCB DC Sub-Assy, Amber	K859501400-A
LED/PCB DC Sub-Assy, Blue	K859501400-B
LED/PCB DC Sub-Assy, White	K859501400-W
LED/PCB DC Sub-Assy, Green	K859501400-G
LED/PCB DC Sub-Assy, Magenta	K859501400-W
LED/PCB DC Sub-Assy, Red	K859501400-R
LED/PCB DC Sub-Assy, Yellow	K859501400-W

G-LED Replacement Parts con't.

AC LED (120-240VAC) Internal Sub-Assembly Kit Includes PCBAs, bracket, LED light head and mounting screw)	
LED/PCB AC Sub-Assy, Amber	K859501401-A
LED/PCB AC Sub-Assy, Blue	K859501401-B
LED/PCB AC Sub-Assy, White	K859501401-W
LED/PCB AC Sub-Assy, Green	K859501401-G
LED/PCB AC Sub-Assy, Magenta	K859501401-W
LED/PCB AC Sub-Assy, Red	K859501401-R
LED/PCB AC Sub-Assy, Yellow	K859501401-W

Table 2 Accessories

Description	Part Number
Indicator Ring/Legend Kit, Black	G-KIT-RP-BK
Indicator Ring/Legend Kit, Blue	G-KIT-RP-B
Indicator Ring/Legend Kit, Green	G-KIT-RP-G
Indicator Ring/Legend Kit, Magenta	G-KIT-RP-M
Indicator Ring/Legend Kit, Red	G-KIT-RP-R
Indicator Ring/Legend Kit, Yellow	G-KIT-RP-Y
E-Box Endcap with M20 Opening	K859500805-02
E-Box Endcap with M25 Opening	K859500805-01
E-Box Cover Assembly (Includes two terminal blocks, mounting plate, retention hardware)	K859501414
In-Line E-Box Coupler Kit	G-KIT-EC180
90-Degree E-Box Coupler Kit	G-KIT-EC90
Extension Box Spacer Kit	G-KIT-EXTB
Single Trunnion Kit	G-KIT-ST
Dual Trunnion Kit	G-KIT-DT
Adapter, M20 Male to 1/2" Female NPT	K231246A
Adapter, M20 Male to 3/4" Female NPT	K231247

Getting Repair Service or Technical Assistance

Products returned for repair require a Return Authorization form from your local distributor or from Federal Signal. To obtain repair service or technical assistance from Federal Signal, call 708-534-4756 or 877-289-3246.

For instruction manuals and information on related products, visit: <http://www.federalsignal-indust.com>.

Returning the Product for Credit

Product returns for credit require a return authorization from your local distributor prior to returning the product to Federal Signal. Please contact your distributor for assistance.

A product is qualified to be returned for credit when the following conditions are met:

- The product is resalable and in the original cartons.
- The product has not been previously installed.
- The product is the current revision.
- The product has not been previously repaired.
- The product is a standard product.
- The product is not a service part.

All returns are subject to a re-stock fee.

Defective products that are returned within the warranty period will be repaired or replaced at Federal Signal's sole discretion. Defective products do not include those products with lamp failure.

Circumstances other than those listed above will be addressed on a case-by-case basis.

Table 3 Choosing cable-entry devices for Equipment in Potentially Explosive Atmospheres

Models	Ex Atmospheres	Cable Entry Devices (cable glands, stopping plugs, etc.
G-LED-XXX-D-X (Ex db surface mount)	Gas	Cable entry devices shall be equipment certified as flameproof. To maintain the ingress protection of the flameproof beacon enclosure, we recommend the cable entry device be IP66 certified.
G-LED-XXX-E-X (Ex db surface mount)	Gas	For the flameproof beacon enclosure, cable entry devices shall be equipment certified as flameproof. To maintain the ingress protection of the flameproof beacon enclosure we recommend the cable entry device be IP66 certified. For the increased safety terminal enclosures (terminal boxes), cable entry devices shall be equipment certified as increased safety and shall maintain an IP rating of IP54.
G-LED-XXX-D-X (Ex db surface mount) G-LED-XXX-E-X (Ex db e surface mount)	Dust	Cable entry devices for the Beacon and terminal enclosures shall be equipment certified as dust protected. To maintain the ingress protection of the beacon and terminal enclosures the cable entry devices shall be IP6X certified.



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