

IPX6 IMPAXX[®] Light Heads



Installation and Maintenance Manual

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

Safety Messages to Installers and Service Personnel of Warning Light Equipment

NOTICE

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. Listed below are some other important safety instructions and precautions you should follow:

Before Installation or Service

Qualifications

- To properly install or service this equipment, you must have a good understanding of automotive mechanical and electrical procedures and systems, along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle service manuals when performing equipment installations on a vehicle.

Light Hazards

- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.
- Do not install the light system in an area that would block, impair or blind the driver's vision. Ensure that the light system is mounted in a position that is outside the driver's field of vision so the driver can safely operate the vehicle.
- Federal Signal power supplies and light heads are designed to work together as a system. Combining light heads and a power supply from different manufacturers may reduce the warning effectiveness of the lighting system and may damage the components. You should verify or test your combination to ensure that the system works together and meets federal, state and local standards or guidelines.

Electrical Hazards

- Strobe systems present a shock hazard because they use high voltage to operate. Do not handle strobe cables, the power supply, or bulbs or remove the lens while the equipment is connected. Strobe systems can also hold their charge even after they have been turned off. After disconnecting power to the unit, wait five minutes before handling any parts of the strobe system.
- A light system is a high current system. For the system to function properly, a separate negative (–) connection and positive (+) connection must be made. All negative connections should be connected to the negative battery terminal, and a suitable fuse should be installed on the positive battery terminal connection as close to the battery as possible. Ensure that all wires and fuses are rated to handle the device and system amperage requirements.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation or mandated safety functions or circuits. Always check the vehicle for proper operation after installation.
- The lighting system components, especially light bulbs, strobe tubes, LEDs, and the outer housing, get hot during operation. Disconnect power to the system and allow the system to cool down before handling any components of the system.
- Halogen light bulbs and strobe tubes are pressurized and, if broken, can burst and result in flying glass. Always wear gloves and eye protection when handling these components.
- Do not mount a radio antenna within 18 inches (45.7 cm) of the lighting system. Placing the antenna too close to the lighting system could cause the lighting system to malfunction or be damaged by strong radio fields. Mounting the antenna too close to the lighting system may also cause

the radio noise emitted from the lighting system to interfere with the reception of the radio transmitter and reduce radio reception.

- Do not attempt to wash any unsealed electrical device while it is connected to its power source.

During Installation and Service

- DO NOT get metal shavings inside the product. Metal shavings in the product can cause the system to fail. If drilling must be done near the unit, place an ESD-approved cover over the unit. Inspect the unit after mounting to ensure that there are no shavings present in or near the unit.
- DO NOT connect this system to the vehicle battery until ALL other electrical connections are made, mounting of all components is complete, and you have verified that no shorts exist. If the wiring is shorted to the vehicle body or frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- DO NOT install equipment or route wiring (or the plug-in cord) in the deployment path of an air bag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer, if the seat needs to be recalibrated for proper airbag deployment.
- Before mounting any components, check the manual to make sure that the component you are installing is suitable for use in that area of the vehicle. Many components are not suitable for use in the engine compartment or other extreme environmental exposure areas.
- Before drilling into a vehicle structure, ensure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes. Ensure that the mounting screws do not cause electrical or mechanical damage to the vehicle.

Safety Messages

- Refer to the manual packed with the lighting system for proper electrical connections, additional precautions and information.
- Locate the light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.

After Installation or Service

- After installation, test the light system to ensure that it is operating properly.
- Test all vehicle functions, including horn operation, vehicle safety functions and vehicle light systems, to ensure proper operation. Ensure that the installation has not affected the vehicle operation or changed any vehicle safety function or circuit.
- Scratched or dull reflectors, mirrors, or lenses will reduce the effectiveness of the lighting system. Avoid heavy pressure and use of caustic or petroleum-based products when cleaning the lighting system. Replace any optical components that may have been scratched or crazed during system installation.
- Do not attempt to activate or deactivate the light system controls while driving in a hazardous situation.
- Frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- After installation and testing are complete, provide a copy of these instructions to instructional staff and all operating personnel.
- 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.

Safety Message to Operators of Warning Lights

NOTICE

People's lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:

- Do not attempt to activate or deactivate the light system control while driving in a hazardous situation.
- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue to drive cautiously.
- Situations may occur that obstruct your warning signal when natural and man-made objects are between your vehicle and others, such as raising your hood or trunk lid. If these situations occur, be especially careful.
- All effective sirens and horns produce loud sounds that may cause, in certain situations, permanent hearing loss. You and your passengers should consider taking appropriate safety precautions such as wearing hearing protection.
- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range, or permanent damage to your eyesight may occur.
- The effectiveness of an interior mounted warning light depends on the clarity, the tinting, and the angle of the glass it is being placed behind. Tinting, dirt, defects and steeply angled glass reduce the light output of the warning light. This may reduce the effectiveness of the light as a warning signal. If your vehicle has dirty, tinted, or steeply angled glass, use extra caution when driving your vehicle or blocking the right of way with your vehicle.
- It is important that you fully understand how to safely operate this warning system before use.

Unpacking the Product

- Operate your vehicle and its light/sound system in accordance with your department's Standard Operating Procedures.
- If a selected function does not perform properly or if any of the lamps remain illuminated when the control is off, disconnect the power connector from the control unit and contact the nearest service center.
- At the start of your shift, ensure that the entire warning light system and the siren system is securely attached and operating properly.

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

Unpacking the Product

After unpacking the product, inspect 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 damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts listed in Table 1 are included in the package. If you are missing any parts, contact Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

Table 1 Package contents

Qty.	Description	Part Number
2	Screw, #10 Type B, Six-Lobe, Black, SS	7011246-08
2	Screw, Thrd Frm, #8-32, Six-Lobe, Blk, SS	70000143-06
1	Bezel, Black, Polycarbonate	8652239
1	Gasket, Rubber	8652240

An Overview of the IPX600 Series

The IPX600 Series LED Light Heads are fully sealed, low current warning lights that can be mounted on the inside or outside of the vehicle. IPX600 uses SOLARIS® LED reflector technology to provide a bright and effective secondary warning signal. IPX600 models have 6, 12, or 18 LEDs that can be ordered in

various combinations of amber, blue, green, red, or white with a clear lens. The IPX600 can also be ordered with colored lenses matching the LED color (for single-color lights only).

LEDs are available in enhanced horizontal and vertical off-axis or focused configurations. The IPX600 has an internal flashing circuit with 25 selectable flash patterns, including a steady burn pattern for use with an external flasher. Patterns are selected by briefly touching a pattern-selection wire to ground (–GND).

Light heads can be set to synchronize, synchro-shift, or both. The synchronize/synchro-shift feature is fully compatible with the Federal Signal Viper® S2, Viper EXT and IMPAXX® warning lights. The Model IPX600 also has several floating-synch pattern sets that are within one flash per minute of each other (Table 3 on page 24). If one light is set at 74 FPM and another at 75 FPM, for example, the lights appear to migrate in and out of synchronization. IPX600 lights have the ability to have an external switch/controller or controller steady burn override a single color by applying +BAT to the OPTION wire. This allows a light head to be used as auxiliary steady burn light when needed as in white area lighting, but also be used as a flashing head when the steady burn is not needed. If more than one color is ordered in a single light head and one of them is white, the IPX600 can be set to flash white with the pattern.

By default, white is used as a steady burn color only if there are more than two LED colors in one light head. Instead of controlling a steady burn color, the OPTION wire can be changed to allow white to flash with another color when +BAT is applied. When +BAT is removed, the light stops flashing white.

Light heads can also be set to flash only one color.

All IPX600 models are designed for use with all Federal Signal switch controllers. The IPX600 light head is supplied with a black polycarbonate bezel, a rubberized gasket, and mounting hardware for surface mounting. An optional chrome plated bezel, IPX600M-1, is available.

The IPX600 has an operating temperature of -22°F to +176°F (-30°C to +80°C).

Installing the IPX600 LED Light Heads

WARNING

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

Before installing the IPX600, read all instructions and plan all wiring and cable routing. To secure and protect the wiring, use grommets, wire ties, looms, and cable mounts (installer-supplied) as needed.

The steps in installing the lights are as follows:

1. Optionally set a light head to control the flash patterns of one or more light heads in the IPX600 system. See "Converting a Light Head from Controller to Follower and Vice Versa" on page 13.
2. For light heads with more than one color, one of which is white, select whether the white LEDs flash with the pattern and/or the function of the OPTION wire. This step is optional. See "Configuring Multicolor Light Heads" on page 15.
3. Mount the IPX600 system to the vehicle. See "Mounting the IPX600 Light Head to a Vehicle" on page 18 or the instructions for the mounting bracket included with the light head.
4. Wire the IPX600 system to the vehicle. See "Wiring the IPX600 Light Head in the Vehicle" on page 21.
5. Choose a flash pattern for the controller light head. See "Selecting a Flash Pattern" on page 21.

Converting a Light Head from Controller to Follower and Vice Versa

Several IPX600 light heads can be controlled through the selected flash pattern of one controller light head. All IPX600 light heads are shipped as controllers. Before installation, determine which light head will be the controller and which light head or heads will be followers.

⚠ WARNING

LEDs AND LENS COLORS: *The LED color and lens color must match. Either use a clear lens or match the color of the lens with the LED. Using a lens that is a different color than the LED will greatly reduce the light output and reduce the effectiveness of the light for emergency signaling purposes. Failure to follow this warning may result in personal injury or death.*

NOTICE

SET ONLY ONE CONTROLLER: *When putting together systems of IPX600 light heads ensure there is only one controller light head. If more than one light head in a system is a controller, the follower light heads will malfunction.*

Converting a Light Head from Controller to Follower

To convert a light head to follower:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Hold the green pattern-selection wire to ground (–GND) until the light head goes out then flashes three times. This procedure takes approximately 3 seconds to complete. Remove the green wire from –GND shortly after the three flashes stop. Do not hold the green wire to ground (–GND) much longer after the three flashes or you may change a different feature. If the light flashes four times, you have held the green wire too long.

Changing from controller to follower resets all features to the default settings. See Table 2 for the defaults. The light head will shortly go to a low-power steady burn with all LEDs regardless of which color lights up. Low power mode continues until the light head is connected to a controlling light head.

The patterns for the light head are now ready to be controlled by another controller light head.

Converting a Light Head from Follower to Controller

To convert a light to a controller:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Hold the green pattern-selection wire to ground (–GND) until the light head goes out and then flashes three times. This procedure takes approximately 3 seconds. Remove the green wire from –GND, shortly after the three flashes complete. Do not hold the green wire to ground (–GND) much longer after the three flashes, as you may change a different feature. If the light flashes four times, you have held the green wire too long. Changing from follower to controller resets all features to the default (Table 2).

The light head has now been placed into Pattern 2, which is 79 FPM Power Quad. To achieve subsequent flash patterns, tap the green pattern-selection wire to ground (–GND). For information about available flash patterns, see "Selecting a Flash Pattern" on page 21.

Table 2 IPX600 controller default settings

Option	Default Setting
Pattern Number	2
OPTION wire mode	Steady burn
White LEDs in multicolor light head	Do not flash with pattern
Flashing color(s)	All available

Configuring Multicolor Light Heads

The IPX600 can be ordered in various color combinations, which flash differently, depending on what colors are ordered. By default, the OPTION wire is set to steady burn a single color by applying 12 Vdc (+BAT) to it. The OPTION wire can be changed to instead control white LED flashing instead of steady burn. The light head can also be set up to always flash white and use the OPTION wire to steady burn white.

To set the OPTION Wire Mode:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Set the light head to be a controller or follower. See "Converting a Light Head from Controller to Follower" on page 13.
4. Apply 12 Vdc (+BAT) to the white wire from the light head.
5. Hold the green pattern-selection wire to ground (–GND) until the light head goes out and then flashes four times. This procedure takes approximately 6 seconds. Remove the green wire from –GND shortly after the four flashes complete. Changing from follower to controller resets all features to the default. See Table 2 on page 14.

The OPTION wire now enables the white LEDs to flash with the pattern.

Setting the White LEDs to Always Flash

By default white LEDs do not flash; they are only activated by the OPTION wire (steady burn or flash enable). The Model IPX600 light head can be changed to always flash white. To do this you must set the OPTION wire mode for steady burn. If you try to change the IPX600 to flash always white while the OPTION wire mode is not set for steady burn, the change will be ignored.

To set the white LEDs to always flash:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Hold the green pattern-selection wire to ground (–GND) until the light head goes out and then flashes four times. This procedure takes approximately 6 seconds. Remove the green wire from –GND, shortly after the four flashes complete. Changing from follower to controller resets all features to default. See Table 2 on page 14 for defaults. The light head has now been placed into Pattern Number 2, which is 79 FPM Power Quad.
4. Repeat the above procedure to disable white LEDs from always flashing with the pattern

If the OPTION wire is set for steady burn and there is more than one color in a light head, you can change which color steady burns when the OPTION wire is active.

Setting the Steady-Burn Color

To change the steady-burn color:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Set the light head to be controller or follower. See "Converting a Light Head from Controller to Follower and Vice Versa" on page 13.
4. Apply 12 Vdc (+BAT) to the white wire from the light head.
5. Hold the green pattern-selection wire to ground (–GND) until the light head goes out and then flashes three times. This procedure takes approximately 3 seconds. Remove the green wire from –GND shortly after the three flashes complete. The selected steady burn color will flash three times.

Setting a Multicolor Light Head to Flash One Color

To change the from multicolor to one color:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Hold the green pattern-selection wire to ground (–GND) until the light head goes out and then flashes five times. This procedure takes approximately 15 seconds. Remove the green wire from –GND, shortly after the five flashes complete. The multicolor light head now flashes one color.

Changing the Follower Power-Up Color

To change the power-up color for a follower:

1. Connect the black wire from the light head to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the light head.
3. Set the light head to be a follower. See "Converting a Light Head from Controller to Follower" on page 13.
4. Tap and remove the green pattern-selection wire from the controller light head to ground (–GND) to display the color you want on power up. The light head will flash three times in the color in which it will power up.

Mounting the IPX600 Light Head to a Vehicle

⚠ WARNING

ROOF SUPPORT STRUCTURE: *There is a roof support piece that spans the distance between the driver side and passenger side. DO NOT DRILL THROUGH THIS PIECE! Adjust any hole locations until the holes can be drilled without going through this support. Failure to follow this warning will weaken the roof of the vehicle and may lead to an increased chance of bodily injury or death in a rollover accident.*

⚠ WARNING

LOCATING OPERATOR CONTROLS: *The controls for the light system must be located so that the VEHICLE and CONTROLS can be operated safely under all driving conditions.*

⚠ WARNING

AIRBAG DEPLOYMENT: *Do not install equipment or route wiring in the deployment path of an airbag. Failure to observe this warning will reduce the effectiveness of the airbag or potentially dislodge the equipment, causing serious injury or death.*

NOTICE

VISION OBSTRUCTION: *Do not install the light in a location that will obstruct or impair the driver's vision. Locate the light out of direct view of the driver, and test the system to make sure excessive stray light from this light does not impair the driver's vision. Minimize both direct light and reflected light from the driver's vision. Failure to follow this warning could result in injury or death.*

Mounting the Light Head with the Bezel

To mount the IPX600 to the vehicle (with the included bezel or with the optional chrome bezel):

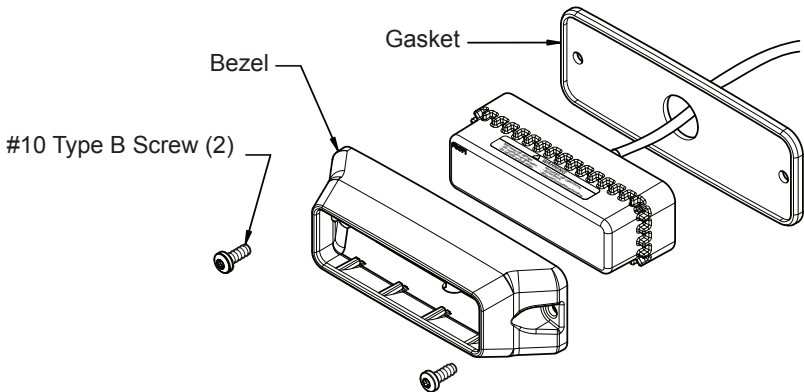
1. Determine the mounting location for the IPX600.
2. Using the bezel as a template, scribe the mounting-hole locations on the mounting surface.
3. Scribe a wire routing hole location on the mounting surface in the center of the bezel.

NOTICE

DRILLING PRECAUTIONS: When drilling holes, check the area you are drilling into to ensure that you do not damage vehicle components while drilling. All drilled holes should be de-burred, and all sharp edges should be smoothed. All wire routings going through drilled holes should be protected by a grommet or convolute/split loom tubing.

4. Use a #21 drill bit to drill two 0.159-inch holes at the scribed mounting hole locations.
5. Drill a 3/4-inch hole at the wire-routing location.
6. Prepare the hole for the wires by removing all burrs and sharp edges.
7. Route the cable from the light head through the holes in the gasket and mounting surface (Figure 1). Use grommets, wire ties, looms, and cable mounts (not supplied) as needed to secure and protect the wiring.

Figure 1 IPX600 mounted with bezel



8. Place the mounting bezel over the light head and secure it to the mounting surface with the #10 sheet-metal screws provided.

Mounting the Light Head Without the Bezel

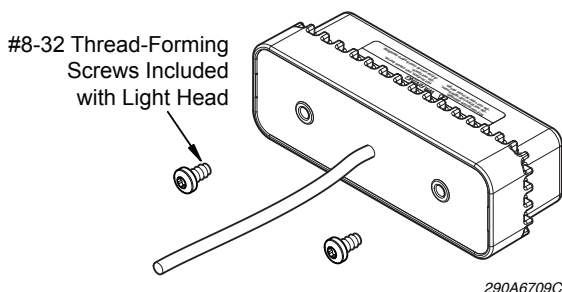
NOTICE

LEAK PATH CREATION: *The use of user-supplied mounting hardware may create a leak path that causes moisture damage to the IPX600 light. An improperly mounted IPX600 is not eligible for the warranty.*

To mount the IPX600 without the bezel:

1. Using the IPX600 as a template, scribe the mounting-hole locations on the mounting surface (2.332 inches center-to-center).
2. Scribe a wire routing hole location on the mounting surface midway between the mounting hole marks.
3. Use an 11/64-inch drill bit to drill two 0.172-inch holes at the scribed mounting-hole locations.
4. Drill a 3/4-inch hole at the wire routing location.
5. Prepare the hole for the wires by removing all burrs and sharp edges.
6. Route the cable from the light head through the hole in the mounting surface. Use grommets, wire ties, looms, and cable mounts (not supplied) as needed to secure and protect the wiring.
7. Secure the IPX600 to the mounting surface with the provided #8-32 thread forming screws.

Figure 2 IPX600 mounted without bezel



Wiring the IPX600 Light Head in the Vehicle

NOTICE

WIRING PRECAUTION: *Never attach both the orange wire AND the yellow wire from the CONTROLLER light head to the same FOLLOWER light head. Connecting both signal wires to the same FOLLOWER will cause the light heads to malfunction.*

NOTICE

REVERSE POLARITY/MISWIRING: *Reverse polarity may damage the siren amplifier. To avoid damage to the siren/amplifier, ensure that the battery voltage is the same voltage as the rating of the light and that the correct polarity is observed.*

NOTICE

FUSE ELECTRICAL SOURCES: *Always fuse current/voltage sources with a fuse connected near the power source. Ensure that the fuse is properly rated to protect the electrical load, the wiring, and the connectors used in the circuit. Failure to follow this notice could result in vehicle or equipment damage.*

Make the connections shown in Figure 3 on page 22 (synched), or in Figure 4 (alternating) and Figure 5 (X-Pattern) on page 23. For single light head applications and applications using alternative flashing control, such as a Federal Signal Intelli-Flash®, cut and seal the orange and yellow IPX600 wires.

IMPORTANT: You must place a fuse in line with the power connection. See Figure 3 on page 22 for the fuse recommendations.

Selecting a Flash Pattern

When the light heads are connected in a configuration, the controller LED light head can be used to control the flash pattern of the entire system. Table 3 on page 24 describes the 25 selectable flash patterns

To select a flash pattern:

1. Tap and remove the green pattern-selection wire from the controller light head to ground (–GND) as many times as needed to display the pattern you want. The light head

Selecting a Flash Pattern

will flash once almost immediately after you tap the green pattern-selection wire; after this flash, remove ground (–GND).

2. To reverse the direction of pattern selection, hold the green wire to ground (–GND) for slightly longer than 1 second but less than 3 seconds. The light head will flash twice after one second. Once the double flash is finished, remove ground (–GND).

Now every time the green pattern-selection wire is tapped, the patterns change in the reverse order.

3. When you are finished, cut and seal the green wire.

Syncing and Alternating Light Heads

If an IPX600 is set to be a follower and has more than one color, you can change which color it will sync to on power up. This provides a basic way to sync or alternate colors. When configured as a follower, the IPX600 changes its color after an off time of 160 milliseconds. Color syncing works best when the light heads that are synced together are of the same LED configuration. For wiring diagrams, see Figure 3 below and Figure 4 on page 23.

Figure 3 Wiring for synchronized lights

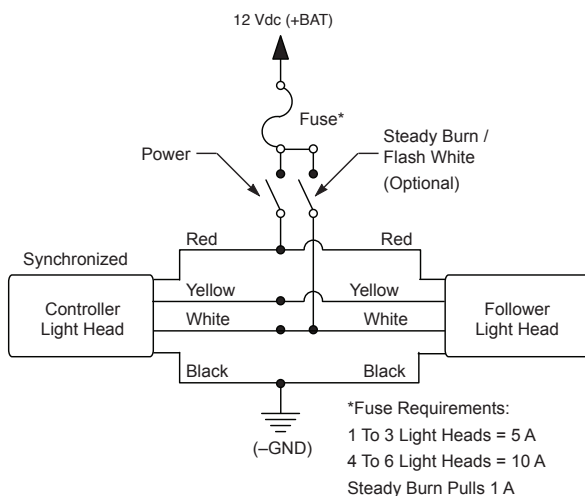
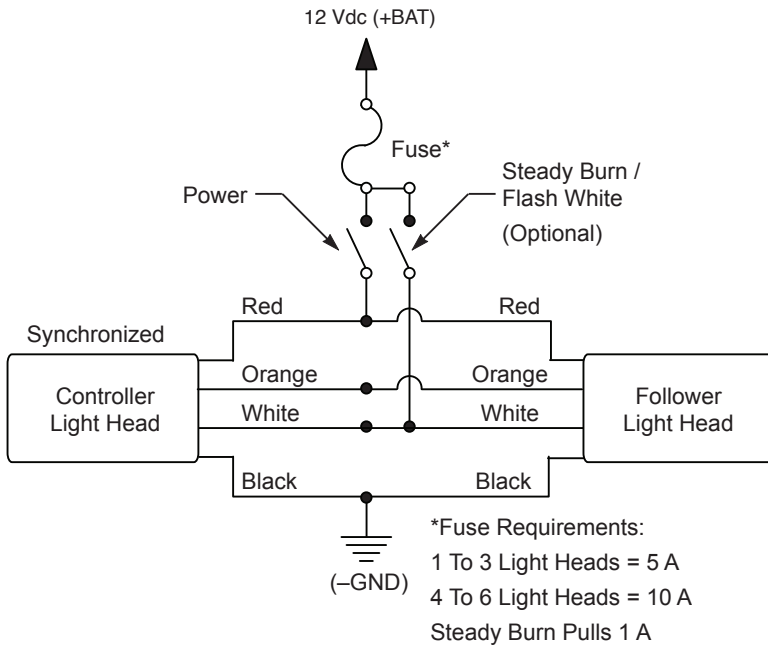


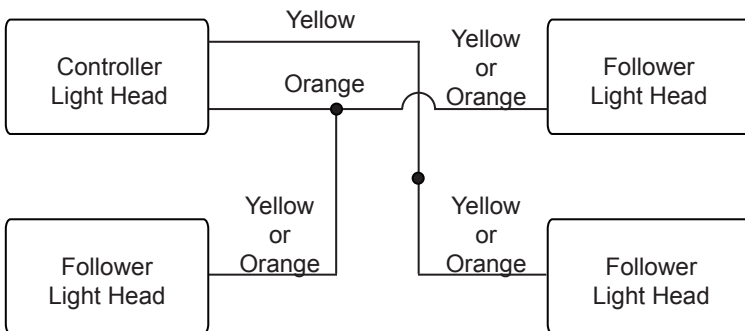
Figure 4 Wiring for alternating lights



Configuring Light Heads for an X Flash Pattern

To create an X pattern, set one light as a controller and three lights as followers. Mount and wire the four lights in the configuration shown in Figure 5. For power, ground, and fusing, see Figure 4.

Figure 5 X-pattern wiring diagram



Selecting a Flash Pattern

Table 3 Flash patterns for the IPX600 LED light head

Flash Pattern	Description	Flash Pattern	Description
1	Null (off)	14	75 FPM Double
2	79 FPM Power Quad*	15	150 FPM Triple
3	150 FPM Single	16	75 FPM Triple
4	151 FPM Single	17	5 Single at 680 FPM 4 Single at 216 FPM
5	74 FPM Single*	18	4 Single at 570 FPM 3 Single at 246 FPM
6	75 FPM Single	19	3 Single at 460 FPM 2 Quad at 75 FPM
7	240 FPM Single	20	Progressive (flashes start slow and increase in speed)
8	241 FPM Single	21	4 Single at 154 FPM 2 Quad at 75 FPM
9	240 FPM Double*	22	Random
10	241 FPM Double	23	3 quick flashes, then stays in Steady Burn
11	150 FPM Double	24	FedPulse 75
12	151 FPM Double	25	Steady Burn
13	74 FPM Double		

*Conforms to CCR Title 13

NOTE: Single, Double, and Quad refer to the number of flashing intervals.

Maintaining the Light Heads

Periodically cleaning the IPX600 lenses using proper procedures and compatible cleaners will prolong their service life.

There are no user-serviceable parts within the light head. However, you can order replacements for the mounting hardware listed in Table 4 on page 27.

Cleaning the Light Heads

WARNING

CRAZING HAZARD: Crazed, cracked, or faded domes or reflectors reduce the light output and the effectiveness of the lighting system. Tops or reflectors showing this type of aging must be replaced. Failure to follow this warning may result in bodily injury or death to you or others.

WARNING

CLEANING SOLUTION WARNING: The use of cleaning solutions, such as strong detergents, solvents, and petroleum products, can cause crazing (cracking) of the domes and reflectors. Failure to follow this warning can damage the domes and reflectors and may result in bodily injury or death to you or others.

To clean the light heads:

1. Rinse the mounting bezel and lenses with lukewarm water to loosen dirt and debris.
2. Use a mild soap, lukewarm water, and a soft cloth to gently clean the plastic surfaces. To avoid damaging the lenses, do not use heavy pressure or cleaners that are caustic, abrasive, or petroleum-based.
3. Rinse and dry the plastic surfaces with a soft cloth to prevent water spotting.
4. To remove fine scratches and haze, use a specialty plastic cleaner/polish and a soft cloth. You can also use a high quality automotive paste cleaner/wax that is non-abrasive.

Testing the System

WARNING

SOUND HAZARD: All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sounds and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound.

WARNING

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

After the installation, test the emergency warning system to ensure that it is operating properly. Also test all vehicle functions, including horn operation, vehicle safety functions, and vehicle lighting systems to ensure proper operation. Ensure that the installation has not affected the vehicle operation or changed any vehicle safety functions or circuits.

After testing is complete, provide a copy of these instructions to the instructional staff and all operating personnel.

Do not test the sound and light system of the vehicle while driving. Operating the vehicle warning systems may pose a hazard to the operator and other drivers if the systems do not function as expected. Test the vehicle only in a controlled environment.

Getting Technical Support and Service

For technical support and service, please contact:

Service Department
Federal Signal Corporation
Phone: 1-800-433-9132
Email: empserviceinfo@fedsig.com

Getting Repair Service

The Federal Signal factory provides 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 (RMA). Obtain a RMA from a local Distributor or Manufacturer's Representative.

Provide a brief explanation of the service requested, or the nature of the malfunction.

Address all communications and shipments to the following:

Federal Signal Corporation
Service Department
2645 Federal Signal Drive
University Park, IL 60484-3167

Ordering Replacement Parts

To order replacement parts, call Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT) or contact your nearest distributor.

Table 4 IPX600 replacement parts

Qty.	Description	Part Number
2	Screw, #10 Type B, TORX®, Black, SS	7011246-08
1	Bezel, Black, Polycarbonate	8652239
1	Gasket, Rubber	8652240



FEDERAL SIGNAL
Safety and Security Systems

2645 Federal Signal Drive
University Park, Illinois 60484

www.fedsig.com

Customer Support

Police/Fire-EMS: 800-264-3578 • +1 708 534-3400

Work Truck: 800-824-0254 • +1 708 534-3400

Technical Support 800-433-9132 • +1 708 534-3400