FEDERAL SIGNAL
Safety and Security Systems

Model 605010

DOT Flasher

Installation Instructions

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Safety Messages for Installers of Warning Lights

⚠ WARNING

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 and the original product. In addition, listed below are some other important safety instructions and precautions you should follow:

- To be an effective warning device, an emergency warning system produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into the lights at a close range or permanent damage to your eyesight may occur.
- To properly install the flasher 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. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes.
- This flasher is a high-current device. For it to function properly, a separate ground connection must be made. It must be attached to a solid metal body or chassis part that will provide an effective ground path.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram which is available from the vehicle manufacturer. Insure that your installation will not effect vehicle operation or mandated safety functions or circuits. Always check the vehicle for proper operation after installation.
- Locate the controls so that the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

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

Introduction

The Model 605010 DOT LED electronic flasher can flash eight circuits on four locations (zones) on the vehicle with two alternating circuits for each zone. Every zone has a total current capacity of up to 7.5 A (maximum) with 30 A for the total system. The flasher is designed to operate at 12 Vdc (negative ground). It operates as a high-side switch that switches one side of the load to positive voltage. The flasher is housed in a polycarbonate housing and is potted. It is supplied with the necessary hardware for mounting in a variety of locations. User-supplied switches and fuses are required to activate the flasher.

Unpacking the Flasher

After unpacking the flasher, 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 in the Kit Contents List are included in the package. Disposal of all shipping materials must be carried out in accordance with national and local codes and standards. 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).

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Service Department
Hours: Monday - Friday, 7 am - 5 pm CST
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Fax: 1-800-343-9706

Mounting the Flasher

IMPORTANT: Plan all cable routing before the installation.

⚠ 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.

⚠ WARNING

MISWIRING/BRAKE FAILURE: DO NOT connect the flasher to the brake light circuit of ANY vehicle. Connecting aftermarket electrical equipment into this circuit may interfere with the brake shift interlock. Miswiring the flasher in this way may cause the vehicle to unexpectedly move forward, resulting in possible property damage, injury or death.

⚠ WARNING

MISWIRING/HEADLIGHT MALFUNCTION: DO NOT connect the flasher to the headlight circuit of any vehicle. Miswiring the flasher in this way will disable the headlights, resulting in possible property damage, injury or death.

NOTICE

DRILLING PRECAUTION: When drilling holes, check the area you are drilling into to be sure you do not damage vehicle components. All drilled holes should be deburred 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.

NOTICE

HEAT DAMAGE: To prevent the flasher from overheating, never mount it in the vehicle engine compartment. Install the flasher either in the cab, a console, or in the trunk of the vehicle. Failure to heed this notice will damage the flasher.

To mount the flasher:

1. Find a suitable mounting location for the flasher.
2. Using the flasher as a template, scribe drill-position marks on the mounting surface.
3. Drill a 0.136 in (#29 drill) mounting holes at the scribed drill-position marks.

NOTE: If the flasher is mounted to a fully flat surface, pass the wires through the U-shaped openings.

Wiring the Flasher

⚠ 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.

To connect power and ground:

1. Connect the terminal labeled **GROUND** on the power connector **JP3** to a good vehicle ground. Size the wire to handle the entire lighting load controlled by the flasher.
2. Connect the positive ignition-controlled power source to the terminal labeled **+12 VDC**. This connection should be a power source as direct to the battery as possible.
3. Fuse the connection for the total load. Install the fuse after the wiring is completed and ready to test. Determine the size of the fuse by multiplying the system amperage by 1.25 using this equation: fuse = (total amperage) x 1.25.

NOTE: The 12 Vdc terminal on **JP3** labeled **VOUT** can be used to power additional devices. If you use **VOUT**, up to 5 additional amperes can be drawn before the load on the flasher is reduced. For example, a 30-ampere load on the flasher plus a 5-ampere load on **VOUT** equals a 35-ampere total. A 25-ampere on the flasher and 10-ampere load on **VOUT** equals a total of 35 amperes. The supply fuse must be sized for the new total load.

VOUT can be used to power the inputs on **JP1**. If you want the main power feed to activate the flasher directly, pass one wire from **VOUT** to **JP1**. If you are connecting multiple positions on **J1** to **VOUT**, make the double-wire connections on **J1**, and use a single wire to connect to **VOUT**.

Connections on JP1

JP1 has 8 connections. Applying a switched 12 Vdc to any one of the connectors activates the function associated with the connector.

MODE 1 is the first selectable flash pattern.

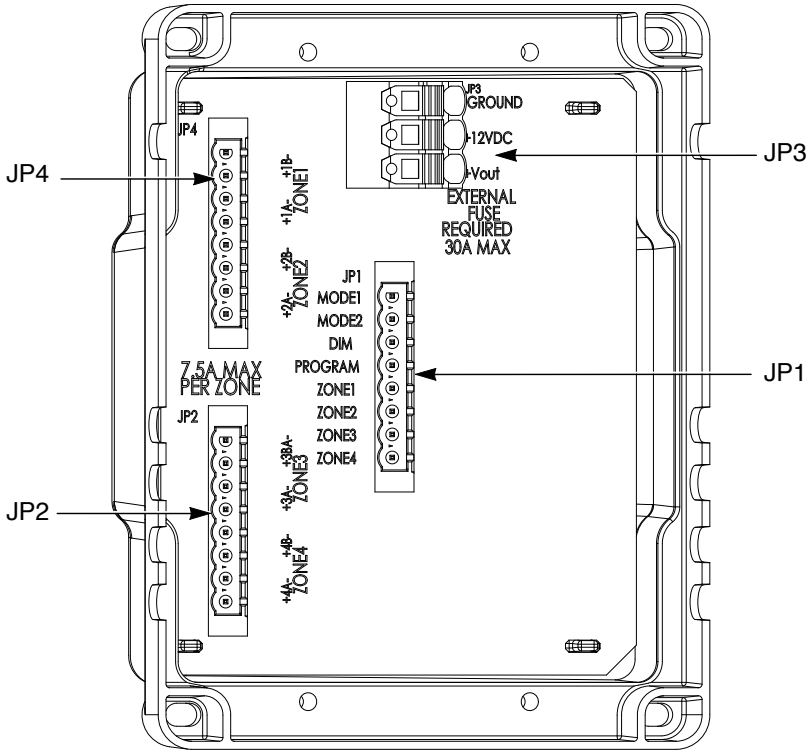
MODE 2 is the second selectable flash pattern. **MODE 2** overrides **PATTERN 1** if power is applied to **MODE 1** at the same time. **MODE 2** can be activated independently of **MODE 1**.

DIM activates Low Power Mode, which significantly reduces the light output. Not all lightheads are compatible with this function.

⚠ WARNING

DIM PRECAUTION: Enabling DIM in the warning lights causes the light output to fall below the current light output standards and guidelines for warning lights. Use extreme caution when using this mode. Ensure that the ambient light conditions are low enough that you are seen, and that the reduction of glare from the lights is safer than full light output in the situation. Failure to heed this warning may result in serious injury or death.

Figure 1 Control board



PROGRAM enables you to change the flash pattern of the active flash mode. See "Selecting a Flash Pattern" on page 11.

ZONE 1 through **ZONE 4** activate each zone individually in the pattern selected **MODE 1**. If you select a zone while a mode is active, the flasher overrides and activates only the enabled zones and disables non-selected zones.

Connections on JP2 and JP4

Terminals **JP2** and **JP4** are output terminal blocks. **JP2** controls **ZONE 3** and **ZONE 4**. **JP4** controls **ZONE 1** and **ZONE 2.** There is a positive and negative terminal for each output channel. Run a cable to each lighthead and apply power according the instructions included with the light. Some lightheads may have to be set to Steady Burn to be operated by the flasher.

Wiring the 8-Pin Terminal Block

Each terminal accepts one 12 AWG, two 16 AWG, or three 18 AWG wires. Do not mix wire gauges.

To wire the terminal block:

1. Strip the wires 1/4 in to 5/16 in.
2. Insert the wires into the corresponding terminal position, and tighten the clamp screw.
3. Torque the screws to 4.5 in-lb to 5.3 in-lb.
4. Ensure there is no exposed conductor that can short against others.

Wiring the 3-Conductor Terminal Block

Each terminal accepts one 10 AWG wire or a maximum of two 14 AWG wires.

To wire the terminal block:

1. Lift the locking tab and insert the wire.
2. Close the tab until it clicks in place.
3. Ensure that the top of the orange lever is flush with the green square.
4. Ensure there are no exposed wires that can short against others.

⚠ 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 close range. Do not stare directly into the lights at a close range or permanent damage to your eyesight may occur.

5. Install the main fuse and test the operation of the lights.

Selecting a Flash Pattern

All patterns are SAE J845 compliant, including the Random pattern.

If the zones are activated individually, the **MODE 1** pattern is displayed.

To set the active flash patterns:

1. Power the flasher in **MODE 1**.
2. Apply and remove +12 Vdc to the program pin until you see the pattern you want. The pattern is automatically stored in memory.
3. If needed, repeat the procedure for **MODE 2**.

NOTE: Applying +12 Vdc to the Program pin for 3.5 seconds sets the Mode to Pattern 1.

Table 1 Flash patterns

Flash Pattern	Description
Pattern 1	Action Flash (2 x QuadFlash, 80 FPM, 4 x Single Flash, 60 FPM (factory default pattern **MODE 1**)
Pattern 2	7 x Flash 60 FPM
Pattern 3	Random (factory default pattern **MODE 2**)
Pattern 4	FedPulse 75 FPM
Pattern 5	DoubleFlash 70 FPM
Pattern 6	QuadFlash 75 FPM
Pattern 7	Single Flash 240 FPM
Pattern 8	Single Flash 130 FPM
Pattern 9	Single Flash 75 – Alternating (Split)
Pattern 10	Chopped Double Flash 81 FPM
Pattern 11	TripleFlash 60 FPM
Pattern 12	5 x Flash “A Channels” Alternate with SingleFlash “B Channels” 75 FPM
Pattern 13	7 x Flash “A Channels” Alternate with SingleFlash SingleFlash “B Channels” 70 FPM
Pattern 14	Rotating Zone 1 & 2 Clockwise, Zone 3-4, Zone 3-4 Counterclockwise 120 FPM

Getting Technical Support and Service

Federal Signal Corporation will service your equipment or provide technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization number. The RMA number can be obtained from your local distributor or Federal Signal. Please provide a brief explanation of the service requested or the nature of the malfunction. For replacement parts, contact your local dealer/distributor, or contact the Federal Signal Service Department 7 a.m. to 5 p.m., Monday through Friday, Central Time) at:

Service Department
Federal Signal Corporation
2645 Federal Signal Drive
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http://www.fedsig.com/support/service