

Stop Alert Flasher with G-Force sensor

Stop Alert module creates brake light flashing effect to catch attention of the drivers behind to avoid dangerous rear end collision. The flasher module is a state of the art microprocessor-based circuit combined with accelerometer sensor and multiple configuration options. Built-in accelerometer senses vehicle brake g-force levels and activates appropriate flashing sequence. Module has two adjustable braking g-force levels (*medium* and *hard* braking) as well as ability to flash as soon as brakes are engaged. It works on both LED and incandescent bulbs. Flashing configurations are highly customizable with possibility of different light patterns during initial power up and two levels of braking g-force. Unique re-activation delay can be activated to minimize annoyance of brake light flashes when brakes are used in heavy traffic.

Supply voltage: 12 - 14V

Max current: 8 amp or 100 watt bulb.

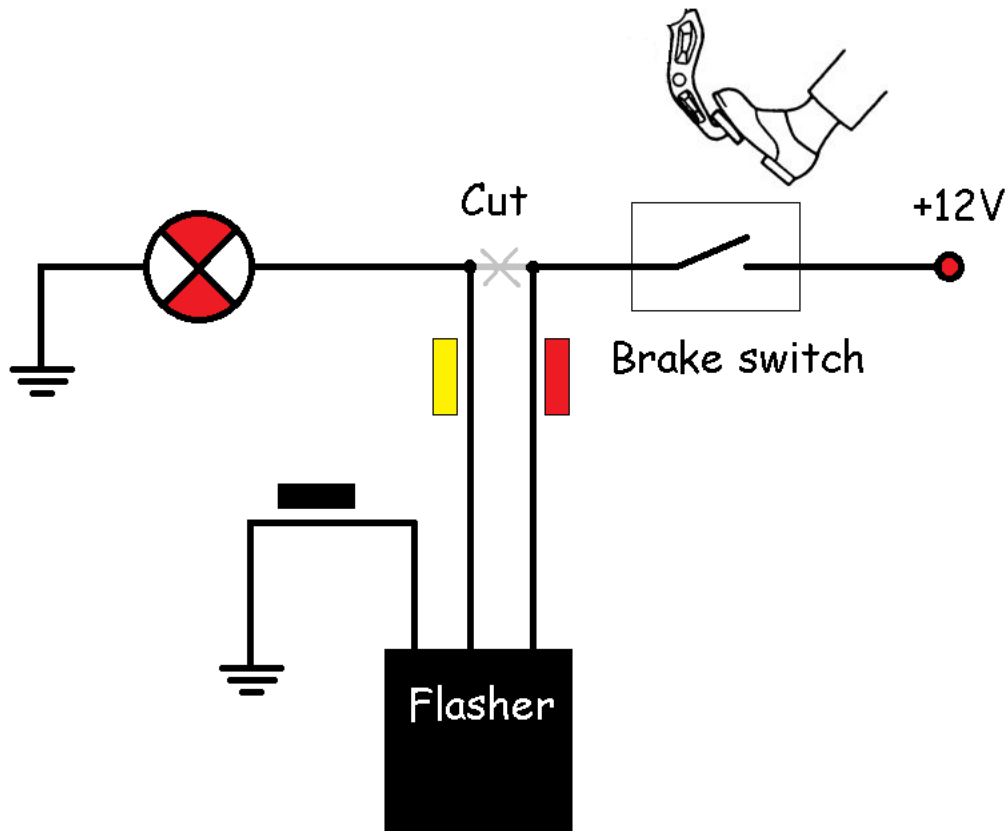
Works on both LED and incandescent bulb.

Tools required for installation: Wire crimper tool (found in any auto / home improvement store).

Installation

*** For up to date installation instructions and videos visit www.3rdbrakeflasher.com

1. Please read the entire manual before connecting, mounting and configuring Stop Alert Flasher.
2. Find 3rd brake light assembly, remove the cover to get access to wires. Find two wires leading to the bulb: ground and power. Use voltmeter or refer to the vehicle wiring diagram to correctly identify those wires.
3. Cut the power wire and connect provided male bullet connector to the end leading to the brake light bulb. Connect female bullet connector to other end leading to the brake switch. Attach male bullet connector to flasher's red wire and plug it into female end leading to the brake switch.



4. Attach female bullet connector to flasher's yellow wire and connect it to wire leading to the brake bulb. Used provided quick splice and connect terminal to attach flasher's black wire to vehicle ground wire or chassis.
5. **Alternative installation:** Follow above steps but instead of connecting flasher to 3rd light or dedicated light assembly, make the connection at the brake switch near the pedal. This way all vehicle brake lights will be controlled by flasher module (make sure total wattage of brake lights does not exceed 100 watts).
6. Electrical connection is complete. Now secure the module in its final position. Make sure vehicle is on flat, horizontal surface. Built-in accelerometer measuring axis has to be aligning with vehicle body to accurately measure deceleration g-force. With default factory configuration flasher module has to be mounted with its wires pointing towards the front of the vehicle, see Pic.2 below (position #1). Module can either be mounted vertically or horizontally, but is has to be positioned parallel to the surface vehicle is parked on. Make sure you can reach flasher configuration wires (two white wires) once module is secured in place. Alternatively you can configure flasher and then mount it once configuration is complete. Module has to be securely attached to the vehicle hard surfaces. Do not attach module to moving parts, vehicle motion will not be accurately transferred to module internal accelerometer sensor. There are three additional mounting positions in case the flasher module cannot be mounted with wires pointing towards the front of the vehicle. See Pic.2 for alternative mounting positions. Flasher can be rotated over it measuring axis as show in the Pic.2. Once final position is determined it needs to be set in flasher configuration. Improperly mounted flasher module would not be able to pickup deceleration g-force.

Light flashing configuration options:

Flasher comes with preprogrammed factory flashing configuration but configuration could be customized by the user. It is accomplished by setting up parameters listed below.

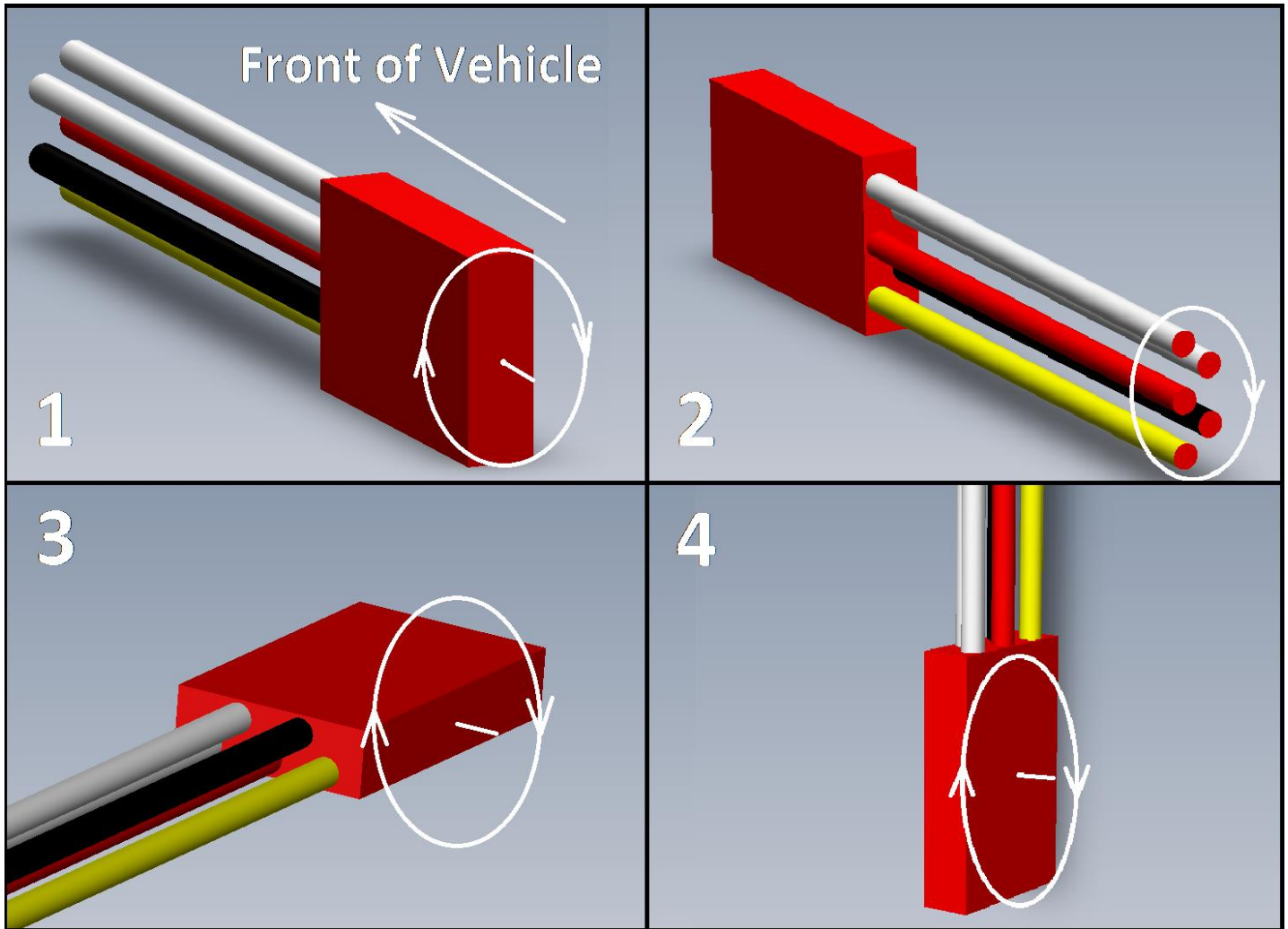
	Parameter	Value	Description
1	Module position	1 – Position #1 2 – Position #2 3 – Position #3 4 – Position #4	See picture Pic.2. Position #1 is default.
2	Operating Mode	1 – Normal 2 – Active 3 – Restore Default 4 – Position Calibration	Normal – Normal operation. Light is ON between flashing modes. Active – Light is initially OFF but turns ON during flashing operation and stays ON while power is applied. (This mode is primary designed for motorcycles with additional brake light when it is desired for light to come ON only during flashing operation and then stay ON as long as brakes are engaged). Restore Default – By selecting this mode all configuration parameters are restored to default factory settings. Position Calibration – Steady light indicates proper horizontal mounting position. Blinking light – module is not in horizontal position.
3	Lockout Configuration	1 – No lockout 2 – Dynamic mode #1 3 – Dynamic mode #2 4 – 3 seconds 5 – 6 seconds 6 – 9 seconds 7 – 15 seconds 8 – 25 seconds 9 – 35 seconds	Lockout period is used to temporary disable flashing operation during high frequency brake engagement. It helps minimize annoyance of brake flashing in the heavy traffic. Lockout period determines for how long flashing will be disabled after the initial flashing pattern is displayed. For example with 6 seconds time out the flashing pattern is played the first time brakes are engaged. If the brakes are disengaged and reengaged in less than 6 seconds the light will be steady ON. Dynamic mode #1 – The longer the brakes are activated the longer lockout period is going to be. Max 25 seconds. For example if brakes are applied for 5 second then Lockout period is going to be around 5 seconds. Dynamic mode #2 – The longer the brakes are activated the shorter lockout period is going to be. Max 25 seconds. For example if the brakes are engaged for 25 seconds Lockout period expires and

			brake light will flash as soon as brakes are reapplied. If brakes are engaged for just 1 second the Lockout does not expire for another 24 seconds. If brakes are reapplied in the next 24 seconds the light will be steady ON.
4	Brake Force / Activation Period	1 – Initial Power applied 2 – Power applied during Lockout period. 3 – Medium Braking Force. 4 – High Braking Force.	Select the period you want to configure flashing pattern for. Each period has its own flashing configuration which is configured with parameters following this one. #1 to configure flashing pattern when the power is just applied. #2 is to configure flashing pattern when power is applied and flasher is still in Lockout period. #3 to configure flashing pattern during Medium Braking. #4 during High Braking force.
5	Braking Force configuration for select mode above	1 – 5 Levels for Medium Braking Force (0.25 to 0.50 G). 2 – 10 Levels for High Braking Force (0.25 to 0.8G).	Select G Force threshold levels for Medium and High Braking. If previous selected parameter was #3 then you are working with Medium g-force.
6	Light Flashing mode	1 – Steady rate flash. 2 – Normal rate flashing followed by slow flashing. 3 – Continues change of flashing rate from normal to slow. 4 – Flashing is Disabled.	#1 Standard mode flashes light with preset rate. #2 Light flashes with preset rate and then repeat but with rate three times slower than initial rate. #3 Light starts flashing with preset rate and rate will decrease with each cycle. #4 Flashing is disabled. Steady light.
7	Quantity of light flashes	From 1 to 20	Number of flashing cycles.
8	Light flashing rate	30 different rates, from very fast to very slow	Flashing rate.
9	Continues mode	1 – Disabled 2 – Repeat after 4 sec 3 – Repeat after 8 sec 4 – Repeat after 12 sec 5 – Repeat after 16 sec 6 – Continues flashing without delay.	With continues mode selected light will cycle through flashing pattern with preset delay. With mode set to #1 and brakes continuously engaged light will cycle through flashing sequence, pause for 6 seconds and repeat. In mode #5 repeat of the flashing pattern does not happen until vehicle brakes are disengaged. With Continues mode enabled Lockout timeout is automatically disabled.

Factory default configuration table

1	Module Position 1 - 4		
1	Operating Mode 1 - Normal 2 - Active (Additional Break Lights only) 3 - Restore Factory Default		
1	Lockout Mode 1 - None 2 - Dynamic Mode #1 3 - Dynamic Mode #2 4 - 3 Seconds 5 - 6 Seconds 6 - 9 Seconds 7 - 15 Seconds 8 - 25 Seconds 9 - 35 Seconds		
	Activation Period		
	1-Initial Power Up	*	
	2-During Lockout Period	*	
	3-Medium Braking Force	2	
	4-High Braking Force	5	
	Brake Force Selection 1 - 5 (0.25 to 0.50 Gs) 2 - 10 (0.25 to 0.80 Gs)		
	Light Flashing Mode 1 – Standard 2 – Fast flashing followed by slow flashing. 3 – Continues change of flashing rate from high to slow. 4 – Flashing is Disabled		
	1	1	
	1	1	
	1	1	
	Number of Flashes 1 - 20		
	16	6	
	Light Flashing Rate Fast to Slow		
	2	8	
	4	8	
	Continues Mode 1 – Disabled 2 – Repeat after 4 sec 3 – Repeat after 8 sec 4 – Repeat after 12 sec 5 – Repeat after 16 sec 6 – Continues flashing		
	1	1	
	1	1	
	1	1	
	1	1	

Pic 2.



Pic 1. Module position and corresponding position number.

Mode changing procedure:

Stop Alert flasher module is configured by programming (changing) parameters described above. Use flasher's white wires to go into programming mode and update configuration parameters. Stop Alert Module comes with factory preset parameters (see Pic.1) and ready for installation. If any parameters need to be changed cut the white wire loop and follow instruction below. If you want to quickly return to factory default configuration without erasing your update configuration simply reconnect white wires as it came from the factory.

To go into programming mode short two white wires together for a brief moment. Once in programming mode, quick (less than 1 sec) shorting of the white wires will increment current parameter, long (greater than 2 sec) shorting of two white wires will save configuration into internal memory and move to the next parameter. Saving of the configuration is confirmed by rapid flashing of the brake lights.

To start over, power off Stop Alert module and repeat programming steps.

Example of configuration steps

1. Push vehicle brake pedal so the brake light is illuminated (ask somebody for help or put something heavy on the brake pedal).
2. The first time brake pedal is pushed brake light will play default flashing pattern. Then the brake light will be steady ON.
3. Quickly short and disconnect two white wires to go into programming mode. Flasher will blink three times and switch OFF vehicle brake light.
4. First setting is orientation of Stop Alert module. After the Stop Alert module put into programming mode it will display *Module Orientation* configuration by blinking. Number of light flashes will correspond to set value. *Module Orientation* is set to 1 from the factory.
5. At this time there are two choices: either change the setting or move on to the next one.
6. To change the setting, quickly short two white wires together and disconnect. Parameter value will increase by one and light will blink according to the changed value. Continue quickly shorting two white wires to increment current parameter.
7. To confirm and save the setting short two white wires and hold it together for about 2 seconds until the light blinks rapidly.
8. Once the parameter is saved into Stop Alert module internal memory the programming will move on to the second parameter which is *Operating Mode*. You can either change it or move on to the next parameter by shorting two white wires together like it was done in the step #7.
9. Continue with flasher configuration changes repeating the steps above.
10. Once you configured flashing pattern for *Initial Power* period (parameter #4) repeat configuration steps above for *Lockout period*, *Medium* and *Hard* braking g-force levels.
11. Once desired parameters have been changed exit settings mode by powering off the Stop Alert module.