

The new 930-BF600 bus flasher is an advanced solution for school bus installations requiring flashing of headlights in addition to the amber school bus warning lights. Using intelligent sensing and switching techniques, the bus flasher can be configured to flash either the low beam or high beam headlights in many types of vehicle. Special fail-safe circuitry ensures that normal headlight operation is ensured even in the event of a unit malfunction. Automotive relays provide stable low loss switching.

Four solid state outputs control the school bus warning lights. Failure detection is enabled on each output, along with visual fault indication for the operator.

The alternating bus flasher is available in 12V and 24V configurations and is compatible with vehicles using high-side (positive), low-side(negative) or dual-side (positive and negative) headlight switching. The rugged aluminium casting with fully encapsulated electronics provide a high degree of environmental protection.

A number of different wiring harnesses are available to simplify the installation into common vehicle types, most of which require minimal, if any, modification to the existing vehicle wiring harness. This document contains installation instructions for each available harness type.

SPECIFICATIONS

Part Number	886-012	886-013
Voltage	12V	24V
Input Voltage Range	10-16V	20-30V
Operating Temperature Range	-20° to + 85° Celsius	
Load Per Headlamp	75W Max	
Optional Auxiliary Outputs	4 x 35W Max	
Flash Rate	140 fpm	
Flash after doors are closed - All other	20 Seconds	



WARNING!

Failure to install or use this product according to manufacturer's recommendations may result in property damage, serious bodily/personal injury, and/or death to you and those you are seeking to protect!



Do not install and/or operate this safety product unless you have read and understand the safety information contained in this manual.

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of you and those you are seeking to protect.
2. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation are vital to the performance of this warning device. Install this product so that output performance of the system is maximised and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. It is the responsibility of the vehicle operator to ensure during use that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
6. The use of this or any other warning device does not ensure all drivers can or will observe or react to a warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes.
7. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding warning signal devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

INSTALLATION & MOUNTING

Before installation, examine the unit for transit damage. Do not use damaged or broken parts.

Important! This unit is a safety device and it must be connected to its own separate, fused power source to assure its continued operation should any other electrical accessory fail.

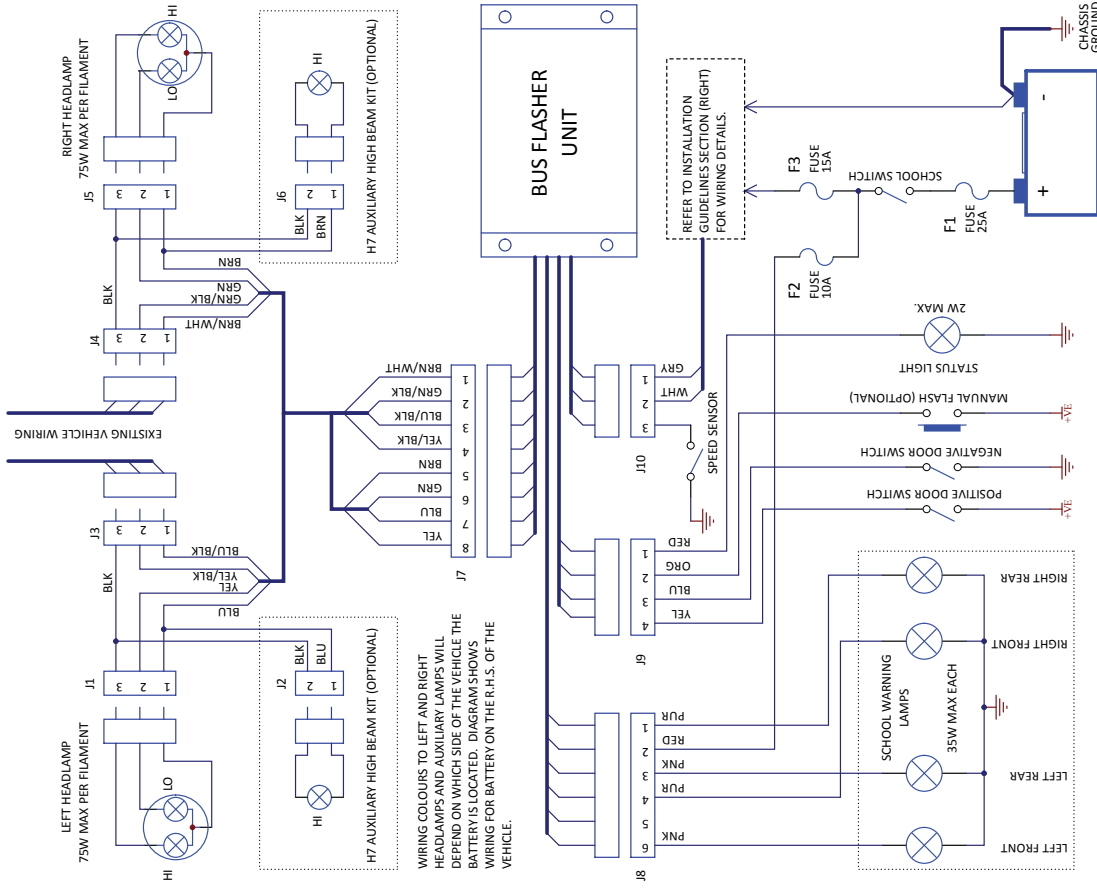
Caution: When drilling into any vehicle surface, make sure the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged.

Notes:

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors).
2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. High ambient temperatures (e.g., under-hood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should only be made to substantial chassis components, preferably directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

INSTALLATION FOR VEHICLES WITH H4 + H7 HEADLAMPS AND ACCESS TO THE GLOBE CONNECTIONS

WIRING DIAGRAM



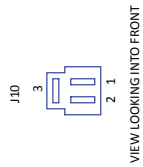
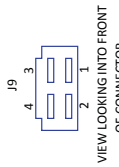
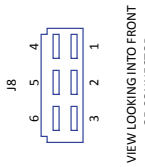
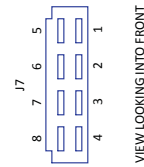
IMPORTANT! THE BUS FLASHER SHOULD BE SECURELY MOUNTED ON THE SAME SIDE OF THE VEHICLE AS THE VEHICLE BATTERY IN A LOCATION THAT WILL MINIMISE THE POSSIBILITY OF BOTH CORROSION TO THE UNSEALED CONNECTORS AND EXPOSURE TO EXCESSIVE TEMPERATURES. DO NOT CONNECT THE BUS FLASHER TO THE LOOM UNTIL ALL OF THE CONNECTIONS HAVE BEEN MADE TO THE VEHICLE.

COLOUR (MAIN / TRACE)

1. BROWN / WHITE
2. GREEN / BLACK
3. BLUE / BLACK
4. YELLOW / BLACK
5. BROWN
6. GREEN
7. BLUE
8. YELLOW

CONNECTS TO BUS FLASHER

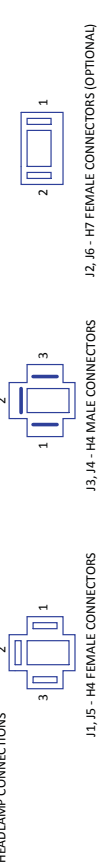
1. PURPLE RIGHT REAR SCHOOL FLASH FEED
2. RED RIGHT REAR SCHOOL FLASH FEED
3. PINK LEFT REAR SCHOOL FLASH FEED
4. PURPLE RIGHT FRONT SCHOOL FLASH FEED
5. (NC) LEFT FRONT SCHOOL FLASH FEED
6. PINK LEFT FRONT SCHOOL FLASH FEED



INSTALLATION GUIDELINES

1. Unplug the original vehicle connectors at the rear of the H4 headlamps and H7 headlamps (if fitted).
2. Plug the H4 connectors (J1, J3, J4 and J5) of the ALTBUS loom between the headlamp and the existing vehicle harness on both sides of the vehicle, as shown in the wiring diagram opposite.
3. Plug the H7 connectors (J2 & J6) of the ALTBUS loom to the H7 high beam headlamp, if fitted. Insulate and protect the original vehicle H7 sockets to prevent damage.
4. Connect the GREY and WHITE wires from loom connector J10 as detailed in the section above.
5. Connect the bus flasher unit to the headlamp harness via the 8-way connector J7.
6. THOROUGHLY TEST THE INSTALLATION BEFORE THE VEHICLE IS USED. The vehicle headlamps should still operate as they did before the installation.

HEADLAMP CONNECTIONS



APPROVALS	DATE	DATE CREATED	01/02/2010
DESIGNER	ML	DESIGNER	2010-05-03
CHECKED	SM	VARIANT NAME	Variant name is not interpreted unit output
ELEC. ENG.		SHEET	1 of 1
		SHEET SIZE	A3
		PROJECT	HP0805
Description: BUS FLASHER H4+ H7			
Drawing #:			

INSTALLATION INSTRUCTIONS

Important! The unit should be securely mounted on the same side of the vehicle as the vehicle battery in a location that will minimise the possibility of both corrosion to the unsealed connectors and exposure to excessive temperatures. Do not connect the unit to the loom until all of the connections have been made to the vehicle.

For ease of use install the school (isolation) switch and the manual flash switch within easy reach of the bus driver. The status light should also be easily viewed from the drivers position.

If the bus is fitted with a speed sensor connect this to the speed sense input of the flasher unit as a secondary measure to ensure the headlights stop flashing while the bus is in motion. Newer vehicles may not allow the doors to be open when the bus is in motion.

For detailed wiring instructions please refer to the wiring diagram on the previous page

OPERATION INSTRUCTIONS

To activate the flasher, turn on the school (isolation) switch during the required school zone operation times. Flashing of the school warning lights and headlights should be automatic once the inputs have all been wired correctly and the school (isolation) switch is turned on. When the vehicle stops and the doors are open, the low beam headlights will flash in addition to the amber school bus lights. These will continue to flash while the doors are open.

When the doors close, the low beam headlights will stop flashing but the amber school warning lights will continue to flash for a further 20 seconds.

In certain states, the amber school warning lights are required to flash prior to the vehicle stopping. A momentary 'manual' switch can be installed to allow for this additional feature – please refer to the wiring diagram.

Note: while the doors are open and the vehicle is stopped, the flasher unit will have control of both the high beam and low beam headlights but will flash only the low beam. Once the doors are closed, the vehicle will have full control over the headlights and they should operate as normal.

Thoroughly test the installation before the vehicle is used. The vehicle headlamps should still operate as they did before the installation.

TROUBLESHOOTING:

All products are thoroughly tested prior to shipment. However, should you encounter a problem during installation or during the life of the product, follow the guide below for troubleshooting and repair information. If the problem cannot be rectified using the solutions given below, additional information may be obtained from the manufacturer – contact details are at the end of this document.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Fuse blows ¹	Unit overloaded	Check headlamp load is in specification
	Shorted wiring	Check wiring for short circuits
	Faulty unit	Call customer service and arrange to send the unit back for replacement
Unit not flashing lights	Incorrect wiring	Check wiring is correct
	Incorrect voltage	Check vehicle voltage suits units specified voltage
One side of vehicle not flashing	Incorrect wiring	Check wiring is correct
	Relay contacts sticking	Call customer service and arrange to send the unit back for replacement
Headlights not flashing	Speed sensor wiring	Check wiring into the bus speed sensor or ground the wire if the bus is not fitted with a speed sensor
Aux lights not flashing	Incorrect wiring	Check wiring is correct
	Faulty unit	Call customer service and arrange to send the unit back for replacement
Lights keep flashing when headlights should be on	Incorrect wiring	Check park light wiring is connected
	Faulty unit	Call customer service and arrange to send the unit back for replacement
Lights are dim	Incorrect wiring	Check wiring is correct
	Poor connection	Check for voltage drop over connectors

¹ Note: Always replace the fuse with the same value that was originally used.

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