

Illuminated School Bus Sign (ISBS) Type A Bus Models

Closed Cavity (Replace Decal) Installation Instructions



FIRST LIGHT
SAFETY PRODUCTS

QUICK STEPS

1. Please read the instructions thoroughly.
2. Identify all parts and hardware.
3. Review the required tools.

1. Use mounting hole template to mark holes
2. Drill holes and install threaded inserts
3. Prepare electrical connections
4. Mount sign unit and fasten mounting hardware
5. Turn on sign unit(s) and test operation

NEED PRODUCT SUPPORT?

Our technical support team is available Monday to Friday, 8 a.m. to 5 p.m. CST

Please have the following information ready:

Serial Number | Date of Purchase | Dealer of Purchase

- Contact us:**
- www.firstlightsafety.com
 - techsupport@firstlightsafety.com
 - toll-free in North America 866.216.2605

Find additional support documents on our website:
<https://www.firstlightsafety.com/document-library/>



Scan the QR code to see the
Installation Instruction video

WARNING!

IMPORTANT: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING. FAILURE TO DO SO MAY CAUSE PERSONAL INJURY OR DAMAGE TO PRODUCT AND/OR PROPERTY.

This manual has been created for basic informational purposes only. The activities described herein can be dangerous unless proper safety precautions are taken. If you are not comfortable or are inexperienced with the processes and tools described in this manual, you should not attempt to install the product. These instructions do not purport to cover all details or variations in the equipment and do not claim to provide for every possible contingency met in connection with the installation. Installation of this product should always be performed by a qualified technician and in accordance with safe work procedures. First Light Safety Products (a division of Smartrend Manufacturing Group (SMG), Inc., hereinafter "First Light Safety Products") shall not be held responsible for any errors or omissions respecting installation as they are the responsibility of the installing technician and/or the customer. First Light Safety Products does not make any representation, warranty, guarantee or condition respecting third-party installation or any other service provided by a third-party, and any such representations perceived by the reader/customer are hereby fully disclaimed. Any reliance on this manual is solely at the risk of the customer/reader. First Light Safety Products assumes no responsibility for other's use of this manual and hereby expressly disclaims any and all liability to any party for any direct, indirect, implied, punitive, special, incidental or other consequential damages arising directly or indirectly from any improper or incorrect use of this manual.

Have Questions?

866.216.2605 | techsupport@firstlightsafety.com

Type A Bus Models Closed Cavity (RD)

October 2023

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RECOMMENDED TOOLS

1. Ladder
2. Masking Tape
3. Marker
4. Center Punch
5. 1/8" Allen Key
(Mounting Screws)
6. Fish Tape
7. Multimeter
8. Drill Bits and Drill
 - Stepper Bit recommended up to final size
 - Sign Power Cable (3/4" Pilot Hole)
 - Rivet Nuts (25/64" Pilot Hole)
 - Plus Nut (11/32" Pilot Hole)
 - Low Profile Rivet Nuts (A/C) (7/16" Pilot Hole)
9. Threaded Insert Tool (Manual)
 - 7/8" Wrench
 - 11/16" Wrench or Socket
 - 5-32 Allen Key

* Rivet Nut Installation Tool is available for purchase Part Number: **100521**

CLOSED CAVITY - REPLACE DECAL (Type A Bus Models)

PART NUMBER	DESCRIPTION	FITS MODEL YEAR	SIGN-FRONT	SIGN-REAR	MOUNTING TEMPLATE	FRAME HARDWARE KIT	FRAME HARDWARE KIT AC	RIVNUTS	RIVNUTS LP AC	PLUS NUTS	SIGN POWER HARNESS	FRONT LEG HARNESS	BACK LEG HARNESS	MAIN LEG HARNESS	JUMPER CABLE
			REFERENCE	A1	A2	B1 / B2	C1 / C2	D1 / D2	E1 / E2	F1 / F2	G1 / G2	H1 / H2	I1 / I2	J1 / J2	K1 / K2
102125	TBB DRW	2006 - PRESENT	1	1	1	2	-	-	-	10	2	1	1	1	-
102127	TBB SRW	2006 - PRESENT	1	1	1	2	-	-	-	10	2	1	1	1	-
103151	MICROBIRD	2022 - PRESENT	1	1	2	2	-	-	-	10	-	1	1	1	-
103269	TRANS TECH	2022 - PRESENT	1	1	2	2	-	-	-	10	2	1	1	1	2

SETS INCLUDE 2 BOXES

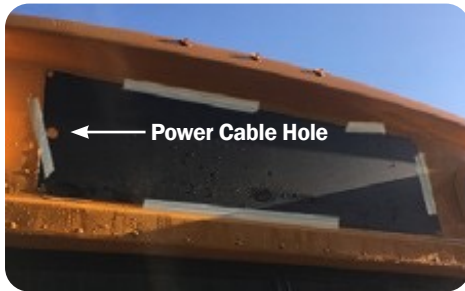
Box 1

- Sign Unit Front (A1)
- Template (B1)
- Frame Hardware Kit (C1-D1)
- Threaded Inserts (E1-F1-G1)
- Sign Power Harness (H1)
- Main Leg Harness (K1)
- Front Leg Harness (I1)
- Jumper Cable (L1), if required

Box 2

- Sign Unit Rear (A2)
- Template (B2), if required
- Frame Hardware Kit (C2-D2)
- Threaded Inserts (E2-F2-G2)
- Sign Power Harness (H2)
- Back Leg Harness (J2)
- Jumper Cable (L2), if required

STEP 1 - USE MOUNTING HOLE TEMPLATE TO MARK HOLES



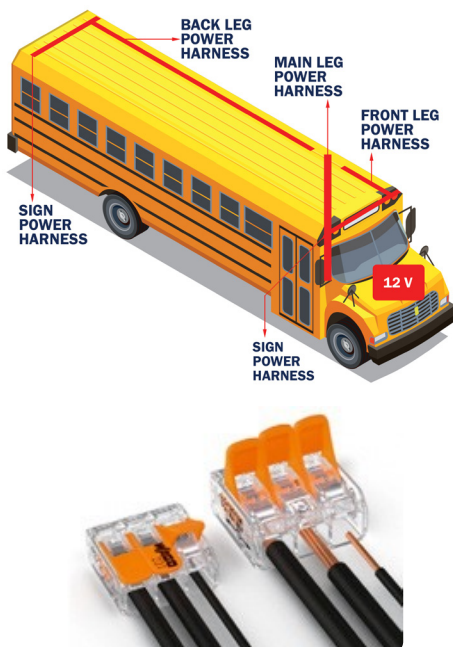
- Position the mounting hole template (B) at the desired location and secure in place with masking tape.
- Ensure the template is oriented with the middle power cable hole on the left side.
- Mark the hole locations with a marker and remove the template.
- Indent hole locations with center punch for ease of drilling step.

STEP 2 - DRILL HOLES AND INSTALL THREADED INSERTS



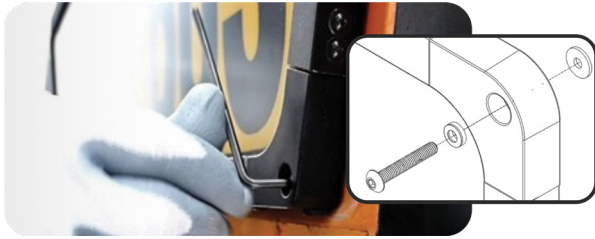
- Drill pilot holes for the mounting locations and power cable. It is recommended to increase the hole sizes incrementally for best results. If an A/C (air conditioning) unit is present, disconnect support screws and shift A/C unit forward before drilling to avoid any damage.
- Use proper pilot hole drill bit for the perimeter corner mounting holes. Refer to tools list for drill bit size depending on type of threaded insert being used.
- Use 3/4" drill bit for the power cable hole.
- Install threaded inserts (E/F/G) using manual tool or equivalent electronic or pneumatic options.
- Ensure installation is secure and flange is seated to the surface of the bulkhead. Refer to rivet nut installation guide available at www.firstlightsafety.com/document-library/ for more detail.

STEP 3 - PREPARE ELECTRICAL CONNECTIONS



- Locate the electrical fuse compartment above the driver and identify the **IFH** (ignition fuse holder) or **IGN** (ignition) stud terminal.
 - For **IFH**, insert a 10A fuse into a free slot open in the box. There may be multiple **IFH** boxes, but any open slot is sufficient. Connect the spade terminal of the main leg wire harness (K) to the selected **IFH** slot output.
 - For **IGN** stud, connect the main leg wire harness (K) (inline fuse) to the stud.
- Locate a ground terminal to connect the ground fork of the main leg to the vehicle.
- Run each power harness section through the required locations and connect them together to the main leg using the supplied Wago quick connectors.
- The harnesses with the Delphi MP150 connectors must terminate in the bulkheads and connect to the sign units.

STEP 4 - MOUNT SIGN UNIT AND FASTEN MOUNTING HARDWARE



- a. Assemble the mounting hardware (C/D) into the frame as shown on the packaging label (10-32 screw, bonded washer and sealing washer).
- b. Connect the Delphi MP150 connector between the sign unit (A) and the sign power harness (H).
- c. Ensure the power cable grommet is seated into the 3/4" hole and the cable is pushed into the bulkhead as the sign is positioned for mounting.
- d. Start to thread each mounting screw before fully tightening to the recommended torque (25-40 in-lbs).

STEP 5 - TURN ON SIGN UNIT(S) AND TEST OPERATION



- a. Restore electrical power to the vehicle. Turn on the vehicle and verify the sign illuminates and operates properly.
- b. ISBS power requirements:
 - 12 Volts and 3.5 Amps (max)
 - White wire (Power) and Black wire (Ground)

TROUBLESHOOTING

1. Ensure the vehicle engine is running.
2. Use a multimeter to test circuit wiring.
3. Inspect fuse.
4. Check the polarity between the sign and the power harness.