



Lytx® ER-SV2 Kenworth Connection Guide

Last Updated: March 20, 2018

This document is to be used in addition to the Lytx® ER-SV2
Installation Instructions – Heavy Duty Vehicles.

Lytx, Inc.

THE DEVICE SHOULD BE INSTALLED AND MAINTAINED BY QUALIFIED TECHNICIANS. Only a properly qualified technician should install and maintain the ER-SV2. Any electrical work should be performed only by an ASE (minimum T6 & L2), MECP or equivalent certified technician with an expertise in installing and troubleshooting advanced vehicle onboard components including multiplexed circuits. Lytx, Inc. disclaims all responsibility for any damages arising from improper installation and maintenance of the ER-SV2.

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Attention!

This is not a standalone document. It is only intended to be used in conjunction with the ER-SV2 Installation Instructions – Heavy Duty Vehicles (“ER-SV2 HDV Guide”). If you do not have the ER-SV2 HDV Guide, do NOT proceed with installation until you also obtain and read the ER-SV2 HDV Guide from Lytx, Inc. U.S. Technical Support Center at 866.910.0403 or support@lytx.com

Note: Always check to make sure you have the most current guide from Lytx® before beginning any installation work. If you are installing the ER-SV2 on a model vehicle that is not covered by this guide or a model vehicle that has new connection options not shown in this guide, please contact Lytx US Technical Support Center at 866.910.0403 or email support@lytx.com and obtain the necessary guides before beginning installation.

Note: If you find any updates to recommend for this guide or an option available for use on other models or years of vehicles, please email installfeedback@lytx.com.

SAFETY INSTRUCTIONS

Installation Safety Warnings

This Connection Guide is a supplement to the ER-SV2 HDV Guide. All instructions, precautions, and warnings in the ER-SV2 HDV Guide must be followed when using this supplement. Read and follow the instructions and precautions in the ER-SV2 HDV Guide, this Connection Guide, and all documents referenced therein when installing the ER-SV2.

Read and follow the instructions and precautions in this guide and all documents referenced in this guide when installing this device. Always refer to the vehicle manufacturer's service manual for proper installation and wiring of any aftermarket devices, including the Lytx device. Failure to do so may result in property damage and/or personal injury.

WARNING: Park the vehicle on a level surface before beginning any maintenance or installation. Block the wheels to prevent the vehicle from moving. Never work under a vehicle supported only by jacks as jacks can slip and fall over.

EXPLOSION HAZARD: Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

WARNING: Substituting or supplementing components may impair suitability and performance. If you are missing any components contact Lytx Technical Support Center at 866.910.0403 or email support@lytx.com.

WARNING: Wear safe eye protection to prevent serious eye injury when you perform vehicle maintenance or service.

THIS GUIDE IS NOT A SUBSTITUTE FOR A QUALIFIED TECHNICIAN.

THE DEVICE SHOULD NOT INTERFERE WITH THE VEHICLE'S COMPUTER SYSTEMS. The Lytx device interfaces with the vehicle's computer systems to capture data for safety analysis. However, it should not interfere with any of the vehicle's computer systems. If there is a malfunction of the vehicle's computer systems after installation, contact Lytx Technical Support Center at 866.910.0403 or email support@lytx.com immediately. Lytx recommends that you do not drive the vehicle until the malfunction is resolved. Lytx, Inc. disclaims all responsibility for any damages arising from improper installation and maintenance of the device.

WARNING: Some countries/regions have adopted laws that restrict locations where objects can be attached to the vehicle windshield. Always refer to any applicable federal, state, provincial and local laws that concern mounting devices on vehicle windshields or other locations in a vehicle before choosing a mounting location.

Driver Safety Warnings

WARNING: In order to reduce the potential danger of injuries, the driver and front passenger must always be correctly seated with seat belts correctly fastened when operating the vehicle.

DISCLAIMER: The Lytx Event Recorder is a driver aid only, not a substitute for a safe, conscientious driver. The Lytx Event Recorder cannot compensate for a driver who is distracted, inattentive or impaired by fatigue, drugs or alcohol. Whether or not the Lytx Event Recorder is in use, it is always the responsibility of the driver to take appropriate corrective action. Never wait for the device to provide a warning before taking measures to avoid an accident. Failure to do so can result in serious personal injury or death or severe property damage.

Always, it is the driver's responsibility to:

- Use safe driving techniques
- Exercise proper judgment
- Maintain a safe speed and distance between vehicles
- Take measures to avoid an accident
- Comply with all applicable laws and regulations

WARNING: In certain conditions, including inclement weather, low visibility, certain road conditions (including poor lane markings, construction zones, dirt roads, heavy or complicated traffic, and curvy and winding roads), the Lytx Event Recorder may have limited to no functionality. The Lytx Event Recorder may not detect certain objects such as motorcyclists, bicyclists or pedestrians even in the most ideal conditions. Always keep the lens and view of the Lytx Event Recorder unobstructed and properly calibrated so as not to inhibit function. Driving in certain conditions or any interference with the Lytx Event Recorder can result in false, few or no warnings. The driver must always monitor traffic and surroundings and take measures to avoid an accident; failure to do so can result in serious personal injury or death or severe property damage.

WARNING: If the Lytx Event Recorder is not functioning properly at any time, please contact your supervisor and have the device inspected immediately to correct the issue. Whether or not the Lytx Event Recorder is functioning, it is the driver's responsibility to maintain vehicle control; failure to do so can result in serious personal injury or death or severe property damage.

Adherence to Applicable Local, State and Federal Laws

WARNING: Some jurisdictions have adopted, or may in the future adopt, laws that prohibit objects from being mounted on a vehicle's windshield or other locations in a vehicle. You are responsible for complying with such laws, and Lytx, Inc. does not accept responsibility for your failure to do so.

USA Federal Communications Commission (FCC) Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications to this product not expressly approved by Lytx, Inc. could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

It is recommended that the antenna must not be co-located or operating in conjunction with any other antenna or radio transmitter.

Canada – Industry Canada Notice

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To prevent radio interference to the licensed service, this device must be operated indoors only and should be kept away from windows to provide maximum shielding.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil est conforme aux normes RSS exemptes de licence d'Industrie Canada. Son utilisation est soumise aux deux conditions suivantes: (1) Cet appareil ne doit pas causer d'interférences nuisibles et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.

Pour éviter les interférences à des services radio autorisés, cet appareil doit être utilisé uniquement à l'intérieur et doit être tenu à l'écart des fenêtres afin de fournir un blindage maximal.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Wiring Safety Warnings

WARNING: Only approved wire connection methods are recommended. Refer to the vehicle manufacturer's service manual to determine if soldering, sealing crimp connections, Add-A-Circuit, Posi-Tap, sealing butt connections, or OEM connections to open connection ports are approved. Never use plier tap products such as insulation displacement connectors (i.e. ScotchLoc connectors) when installing the Lytx event recorder.

WARNING: Never wire the Lytx event recorder in a manner that shares a connection with another aftermarket product in the vehicle. Independent connections should always be used.

WARNING: All wires that carry electrical current to the Lytx device must be fused. Failure to fuse the power, ground, and ignition wires can lead to serious personal injury and/or property damage. If any wires or cables containing fuses/fuse boxes need to be cut or otherwise shortened, always be certain to replace such fuses/fuse boxes or install new ones.

WARNING: Wire Protection: Take all necessary measures to protect all wire runs through a metal surface with a grommet or other device and all wire runs outside the vehicle cab with a loom. Always protect against wire fatigue and harness abrasion by properly attaching wires at closely spaced intervals, while avoiding contact with sharp edges or doing anything else that might result in exposed wires. All wires should be secured with tie wraps at least every one foot (30 cm/300 mm) or less. Do not over-tighten any tie wraps.

WARNING: Cable Routing: Make certain that neither the cable nor your installation activities interferes with any airbag-related mechanisms or otherwise risks affecting airbag deployment. Consult the vehicle manufacturer for the location of any airbag sensors and systems and restrictions that may apply.

WARNING — ALWAYS test the other vehicle components on the power circuit of the ER-SV2 to confirm their functionality, especially if the circuit is shared. All active faults in the vehicle system, other devices, and the ER-SV2 must be resolved prior to completing the installation.

Base Unit Installation

See the ER-SV2 HDV Guide for details on selecting a mounting location and mounting the ER-SV2. Below are some options for mounting locations that have been used, including installing the Base Unit under the passenger seat, under the driver seat, or within the dashboard of the vehicle.

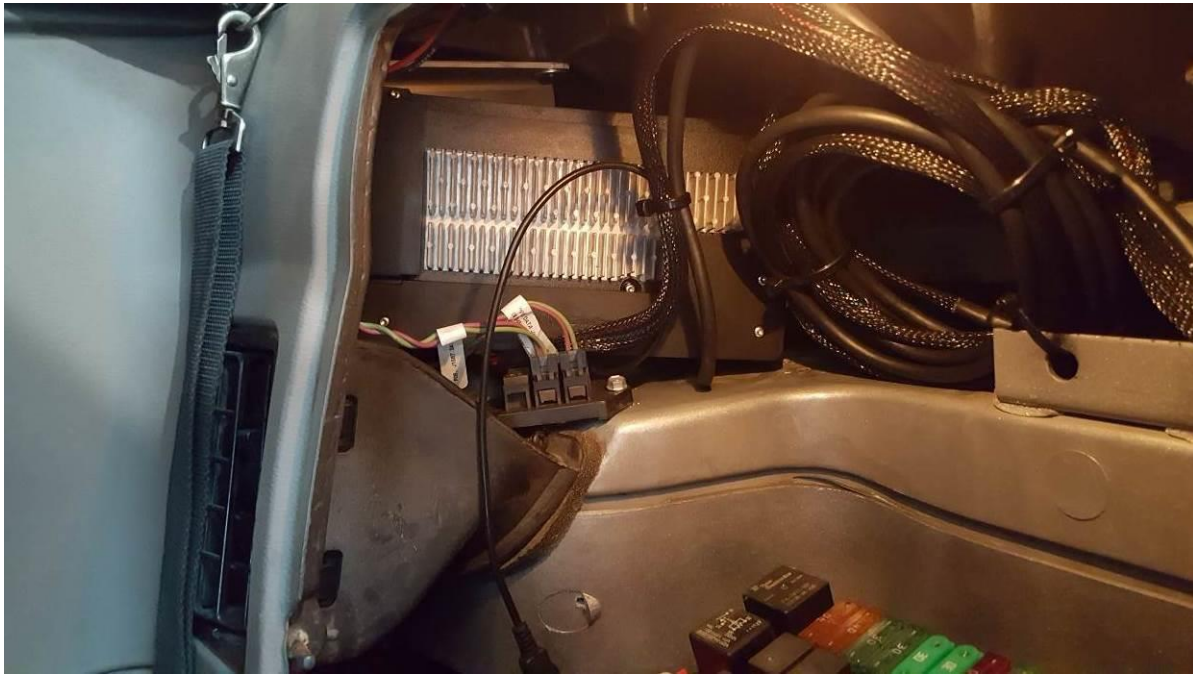
1. **2011-2017 T680 & 660:** Under the center of the dash.



2. **2016 T370:** Behind the gauge cluster.



3. **2007 T2000 & 2011-14 T700:** Behind the dash, to the left of the glove box.



4. **2007 T600:** Mounted behind the gauge cluster secured with tie wraps to the large wiring harness.



- 5. **2012-2016 T880:** Mounted behind the center dash.



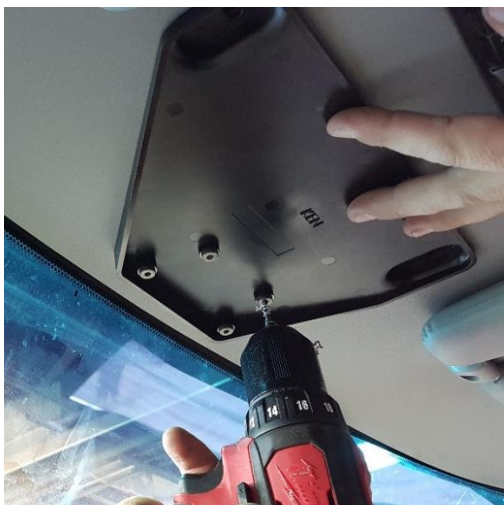
Window Unit Placement

See the ER-SV2 HDV Guide for critical information on Window Unit mounting prior to mounting the Window Unit. The Window Unit is typically mounted near the center of the windshield on the passenger's side, with the bottom of the bracket placed in the "allowed" locations as described in the ER-SV2 HDV Guide. The road-facing camera must have a view through the wiper path to operate properly. The interior-facing lens must not interfere with or be able to be blocked by sun visors. Below are examples, including models where Window Unit placement is critical due to the specifics of the vehicle.

1. Typical Window Unit Placement.



- 2014-2017 T680 (Overhead Option):** If desired, an overhead mounting template can be used. The center visor must be removed and the template put in place to drill pilot holes. The template is then removed and the bracket is screwed into the headliner. Overhead mounting may be preferable to windshield mounting if the windshield is likely to be replaced.

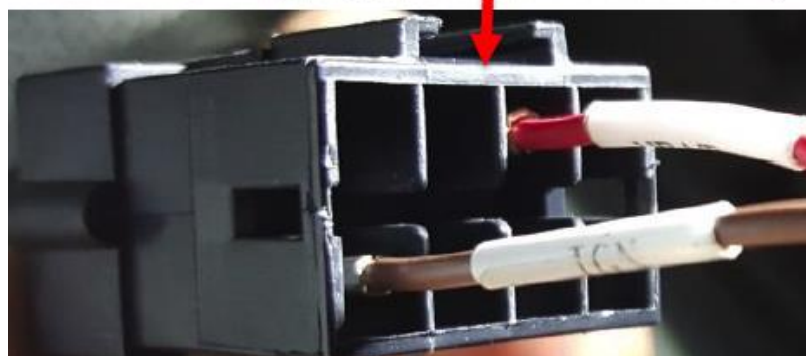
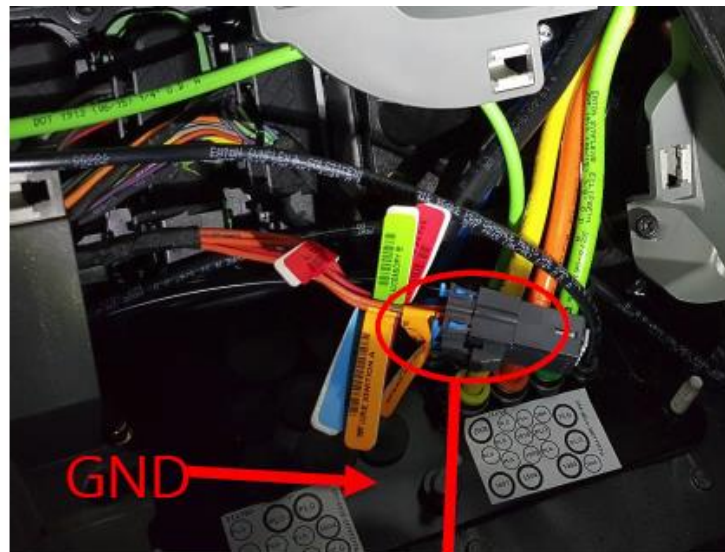


Wiring Installation

WARNING — Only a properly qualified technician should install and maintain the ER-SV 2. Any electrical work should be performed by an experienced technician that has the ability to install and troubleshoot advanced vehicle onboard components including multiplexed circuits. **Always test connections with a meter.** The following photos show the locations where the connection points have been found on various models. Where applicable, we have identified the model year vehicle. Other model year vehicles may have similar installation points.

Power, Ground and Ignition Locations

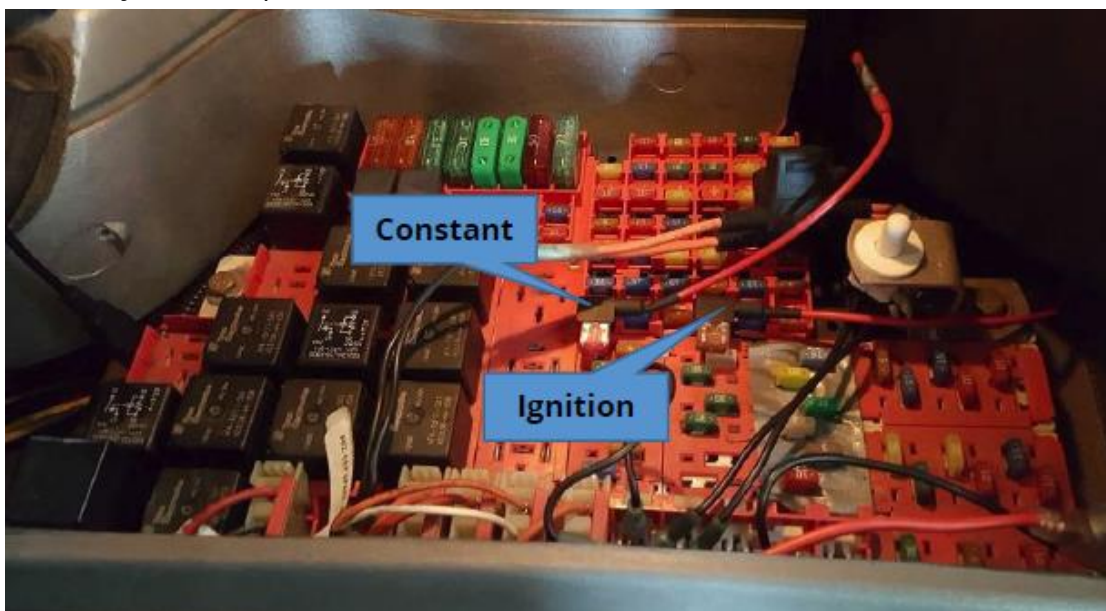
1. **2014-2017 T680:** Connection points are located in the drivers footwell on the left. Use the Kenworth Vehicle Interconnect Harness, which is pre-pinned to fit in the spare plug. The Constant Power (Red) wire should be connected to the **Spare Battery A** location, and will require a 5-amp fuse in the G10 slot of the fuse panel if a fuse is not already in the panel at this location. The Ignition (Brown) wire should be connected to the **Spare Ignition B** located in the corner of the plug, and will require a 5 amp fuse in the K-13 slot of the fuse panel, if a fuse is not already in the panel at this location. Ground is connected with a heat shrink ring terminal to the ground stud. Always test connections with a meter.



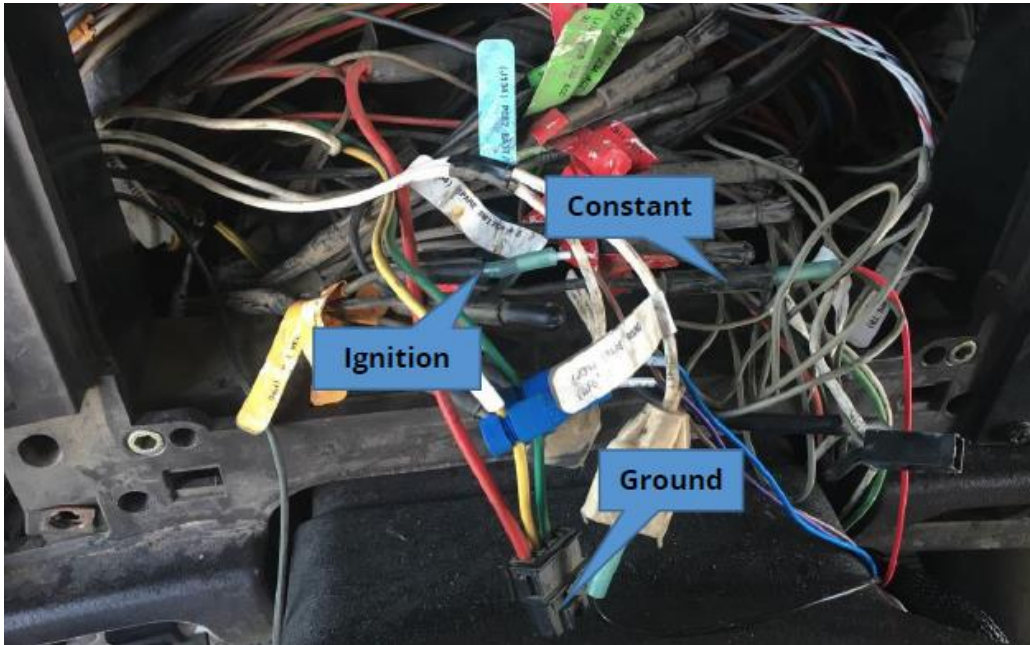
- 2016 T370:** Connection points are located on the right side of the dash panel in the fuse block. Constant is F3, Ignition is F66 and an Add-A-Circuit is used. A 5-amp fuse is used for both Ignition and Constant Power connections. Ground is secured with a self-tapping screw and ring terminal into bare metal by the firewall area, behind the gauges.



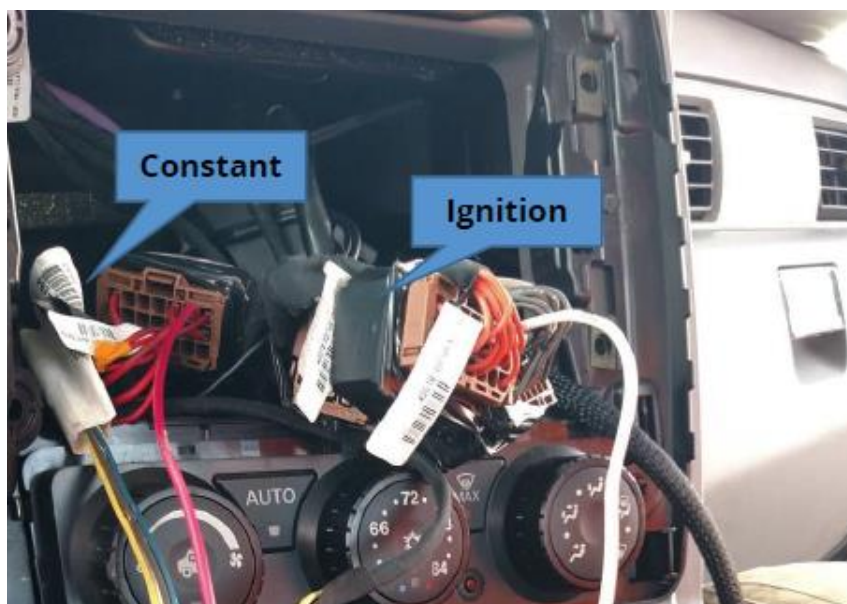
- 2007 T200 & 2011-14 T700:** Connection points are made in the fuse panel with Add-A-Circuit connectors and 5-amp fuses. The Ground connection is made with a ring terminal to the ground bolt by the fuse panel.



4. **2007 T600:** Connection points are made via Kenworth Bullet Connectors which can be connected to spare BATT/IGN/GND wires, respectively. These are located behind the speedometer. Install 5 amp fuses in the associated fuse locations.



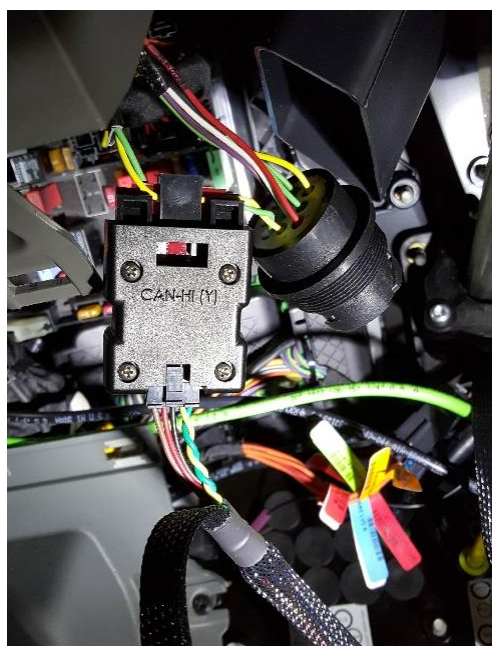
5. **2012-2016 T880:** Connections are made behind the dash. The Red wire (constant power) should be connected via factory pin to the power distribution block. The Brown wire (ignition) should be connected via factory pin to the ignition distribution block. Note these factory pins are identical to Cascadia pins. The Black wire (ground) should be connected with a ring terminal and a zip screw to metal behind the gauge cluster.



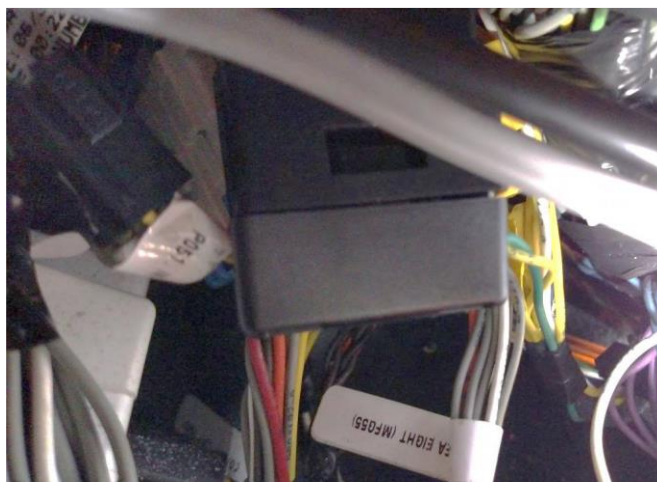
Vehicle Data Bus Connection

Class 8 vehicles 2008 and newer will have J1939 standard vehicle data bus (green and yellow twisted pair) which is read via the CAN bus coupler. Some 2006 and 2007 vehicles will also have J1939 available, but must be tested for engine speed with the Lytx Installation Tool. Vehicles 2007 and older will have J1708 vehicle data bus and must be physically tapped into. See the ER-SV2 HDV Guide for further information. For J1939 vehicles, after the CAN bus coupler is in place, use the Lytx Installation Tool to test for brake signal over the vehicle bus. If present, the physical brake signal connection will not be required.

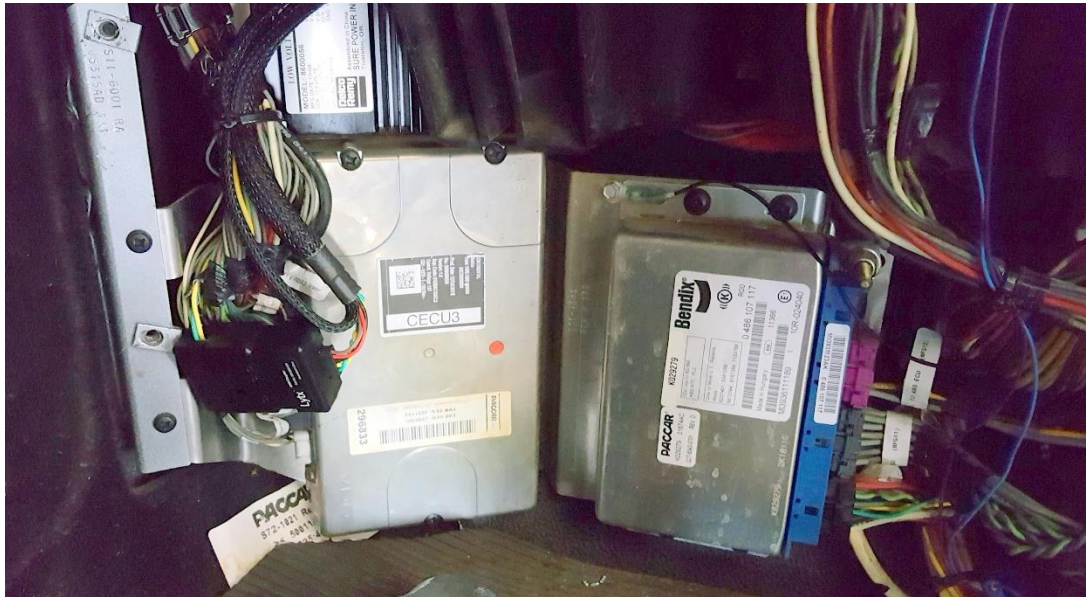
1. **2014-2017 T680:** The J1939 backbone is available in the area directly above the fuse panel, near where the driver's left knee would be located. It's also available behind the gauge cluster.



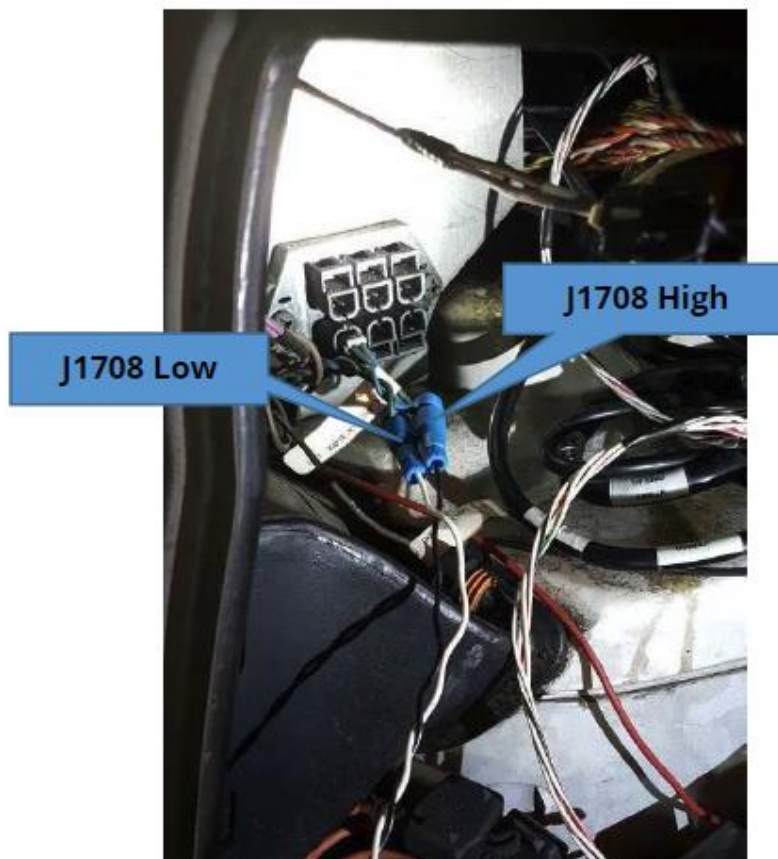
2. **2016 T370:** The J1939 backbone is available behind the gauge cluster.



- 3. **2011-14 T700:** The J1939 backbone is available near the passenger compartment foot well, near where a passenger's left foot would be.



- 4. **2007 T2000:** The J1708 connection points are behind the dash, to the left of the glove box. Refer to the ER-SV2 HDV Guide for J1708 testing information.



- 5. **2007 T600:** The J1939 backbone can be found near the dash gauge cluster, right behind the steering wheel.



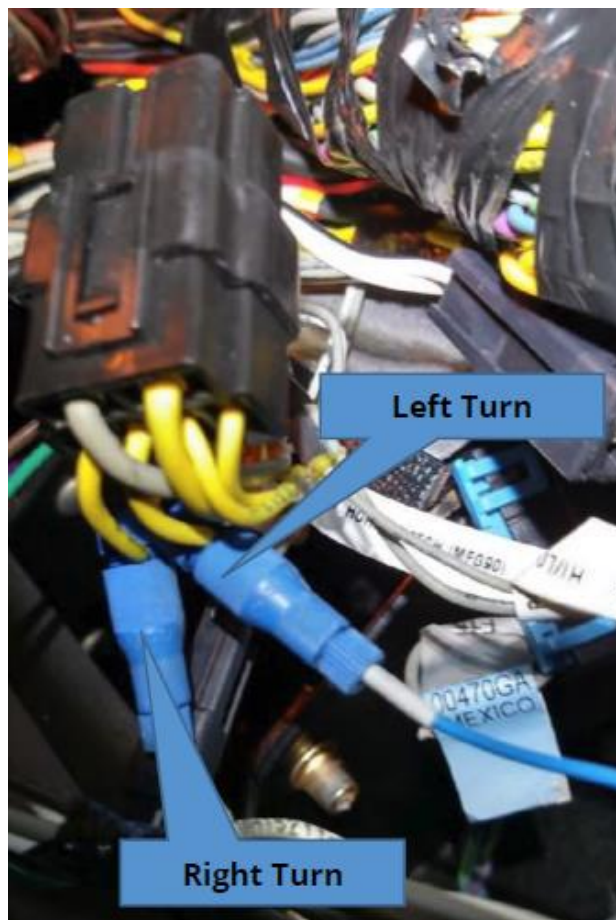
- 6. **2012-2016 T880:** The J1939 backbone can be found left of the gauge cluster, right above the ignition key.



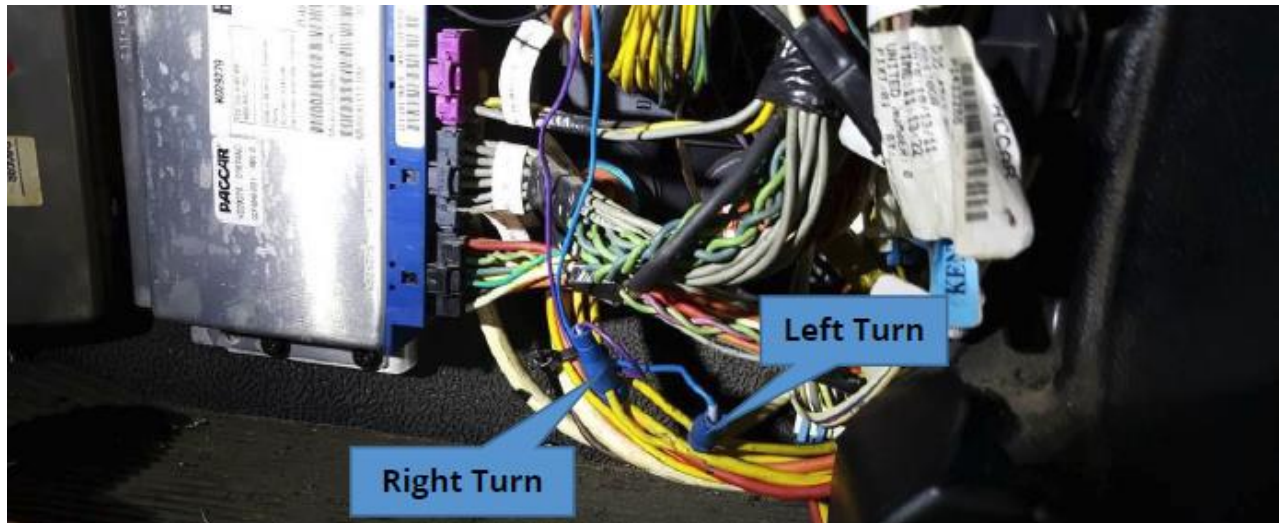
Turn Signal Connections

Turn signal connections are made from the input wires to a turn signal wire on the vehicle that cycles between 0V and 12V/24V when activated. **Always test connections with a meter.** The following photos show the locations where turn signals have been found on various models. Where applicable, we have identified the model year vehicle. Other model year vehicles may have similar installation points. Turn signal wires can always be found at the lights under the hood as a last resort.

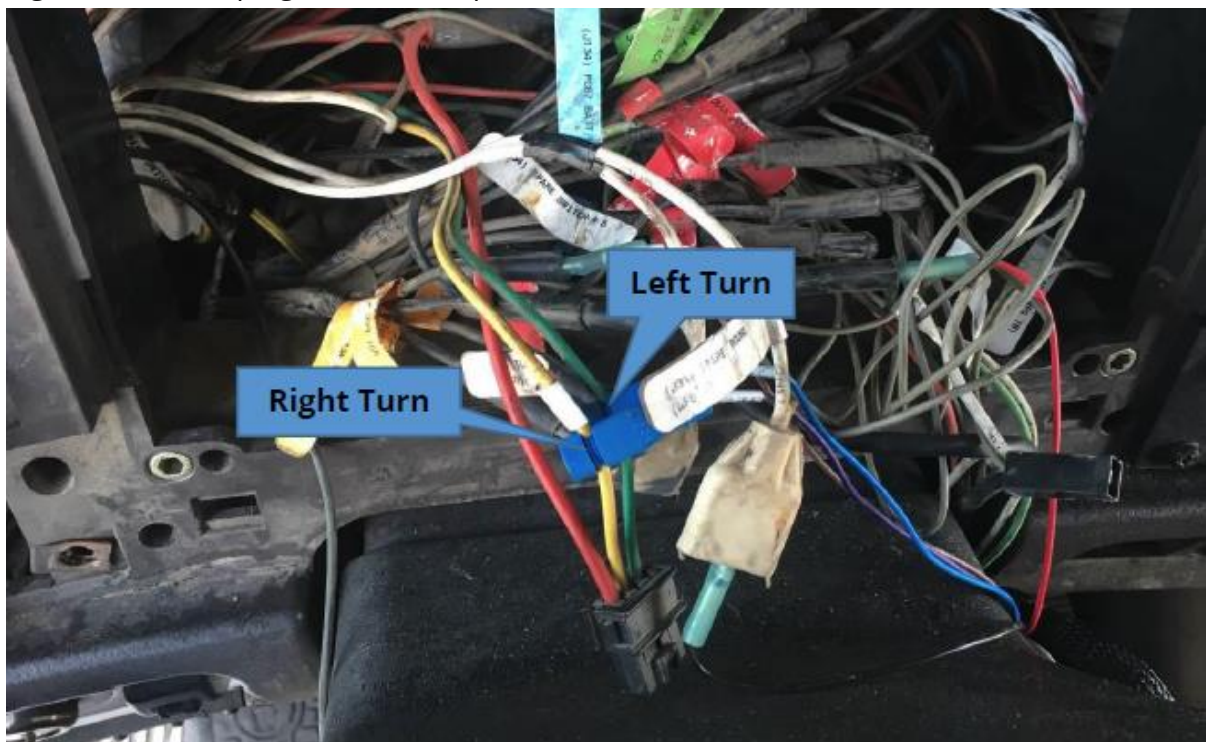
1. **2014-2017 T680:** The left and right turn signal connections are found at the headlights. Connections are made with a heat shrink butt splice connector. Dual core wire is routed through the firewall in an unused grommet location and zip tied along the frame. (Note: Turn signals may also be available behind the gauge cluster.)
2. **2016 T370:** The left and right turn signal connections are found on the connector labeled “turn signals” which can be found behind the dash gauges. The connection method used is Posi-Tap connectors.



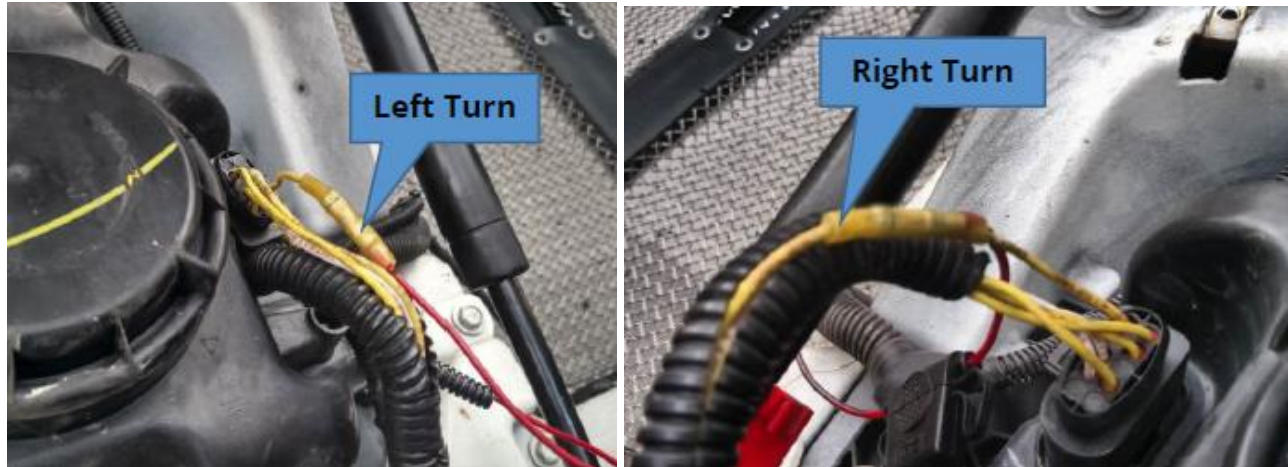
3. **2007 T2000 & 2011-14 T700:** The left and right turn signal connections are made in front of where a passenger's feet would be. Both wires are yellow and must be tested.



4. **2007 T600:** Turn signals are connected with Posi-Taps to the Green wire (left) and Yellow/Black wire (right) on a black plug behind the speedometer.



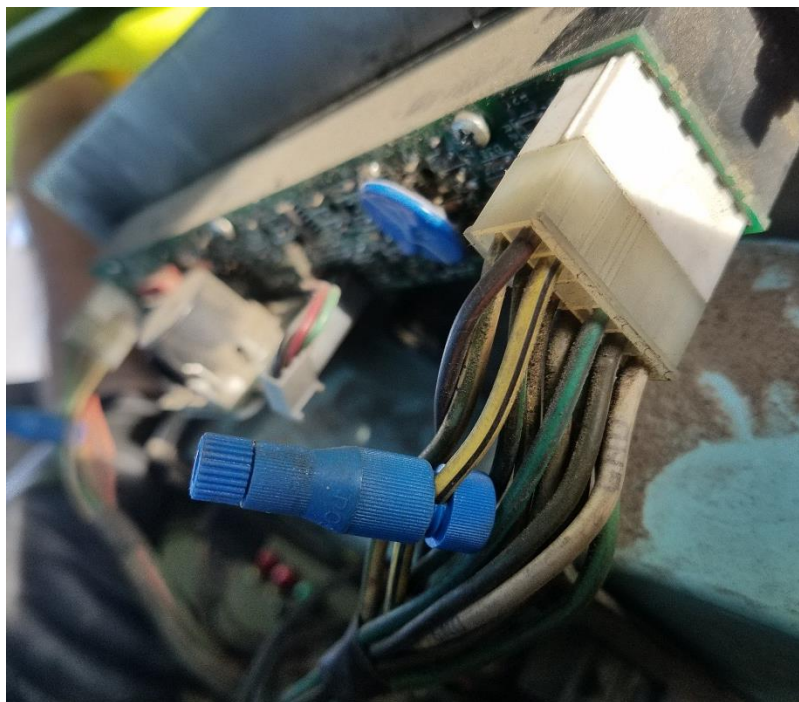
5. **2012-2016 T880:** Turn signals are connected with a heat sealed water tight butt splices to the trigger wire at the headlights. Extra wiring will be needed to extend the harness from inside the cab to the headlights. (Note: Turn signals may also be available behind the gauge cluster.)



6. **2010 W900L:** Turn signals are connected in a similar way to the T600 model, listed above.



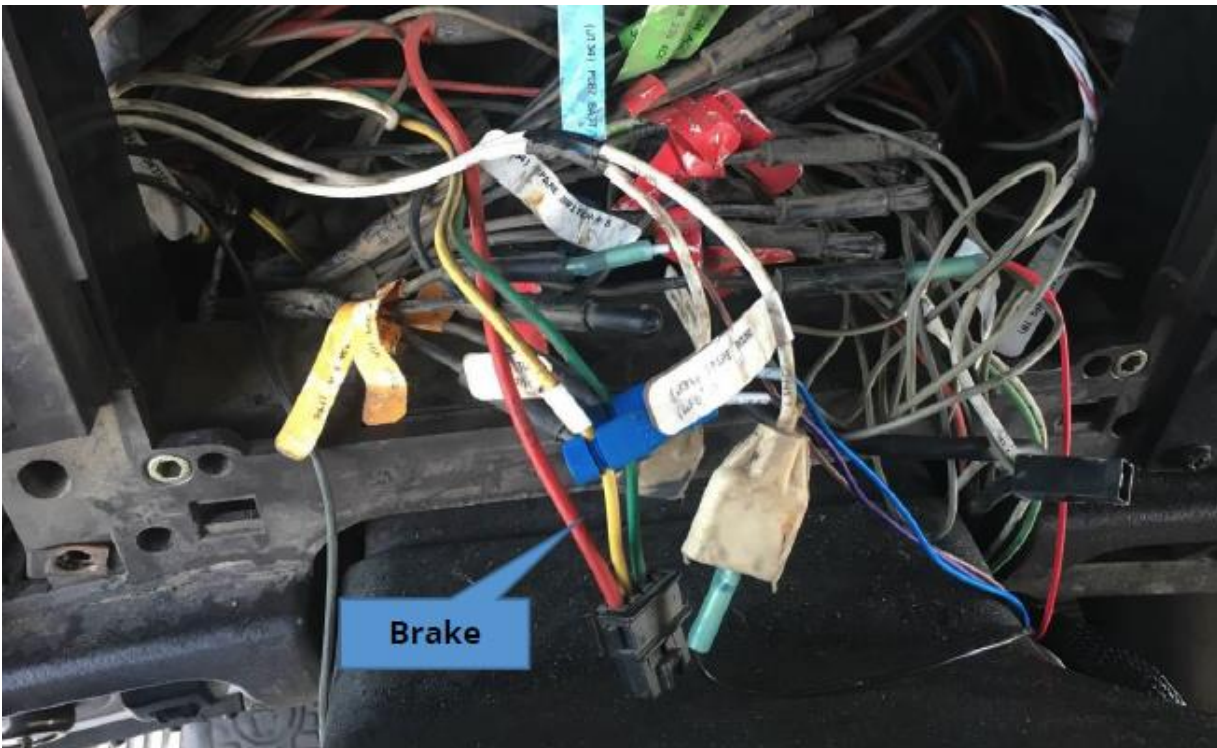
7. **T300:** Left turn - Yellow wire w/black tracer. Left side of left 12-pin plug, second pin from top.
Right turn - Green wire with black tracer. Left side of right 8-pin plug behind gauge cluster, second pin from the bottom.



Brake Signal Connection

The brake signal input is often available over the vehicle data bus for vehicles 2008 and newer. When it is not, it must be physically connected to a discrete brake signal wire. **Always test connections with a meter.** The following photos show the locations where the brake signal connection has been found on various models. Where applicable, we have identified the model year vehicle. Other model year vehicles may have similar installation points.

1. **2014-2017 T680:** Available on J1939 bus. See the Lytx Installation Tool instructions for testing information.
2. **2016 T370:** Available on J1939 bus. See the Lytx Installation Tool instructions for testing information.
3. **2011-2014 T700:** Available on J1939 bus. See the Lytx Installation Tool instructions for testing information.
4. **2007 T2000:** Available on J1708 bus. See the Lytx Installation Tool instructions for testing information.
5. **2007 T600:** Connected via Posi-Tap to the red wire on plug with turn signals.





Note: If you find any updates to recommend for this guide or an option available for use on other models or years of vehicles, please email installfeedback@lytx.com.

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