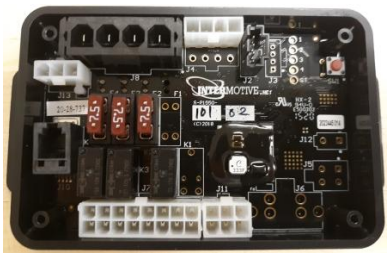
An ISO 9001:2015 Registered Company

ILISP900-B Shift Interlock
2019 - 2022 Mercedes Benz Sprinter



Introduction

The ILISP900 is a system for controlling wheelchair lift operation. Lift operation will only be allowed when the vehicle ignition power is off and the Parking Brake is applied.

The ILISP900 also will not allow the engine to be started if the lift is not fully stowed. When the lift door is opened, the ILISP900 LED panel will prove out (all 5 LED's will turn on for approximately 2 seconds). After prove out, only the lower LED's should remain illuminated. These LED's are backlit icons that will be illuminated anytime the module is not in "sleep" mode. When the wheelchair lift is stowed and ignition power is not present for 5 minutes, the ILISP900 will enter a low current "sleep" mode of operation. To wake up from "sleep" mode open any door or press unlock button on the key fob.

IMPORTANT—READ BEFORE INSTALLATION

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.

Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

CAUTION

All electronic products are susceptible to damage from Electrostatic Discharge or ESD. Ground yourself before handling or working with the module and harnessing by first touching chassis ground, such as the barrel of the cigarette lighter.

Installation Instructions

Disconnect vehicle battery before proceeding with installation.

A-ILISP900 Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the module so that the module's Diagnostic LED's can be viewed with the lower dash panel removed. Locate the module in an area away from any high heat sources (engine heat, heater ducts, etc.). Do not actually mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

Accessing the OBDII and Start/Stop Button Connectors

(The instructions below may differ depending on the specific trim level of the vehicle. All should be similar.)

1. Remove the center cup holder using a plastic trim removal tool.

2. Remove the 4 screws securing the underdash.

3. Remove the trim panel to the left of the headlight switch using a plastic trim removal tool. It will be necessary to remove the rubber seal from the door frame.

Accessing the OBDII and Start/Stop Button Connectors (Continued)

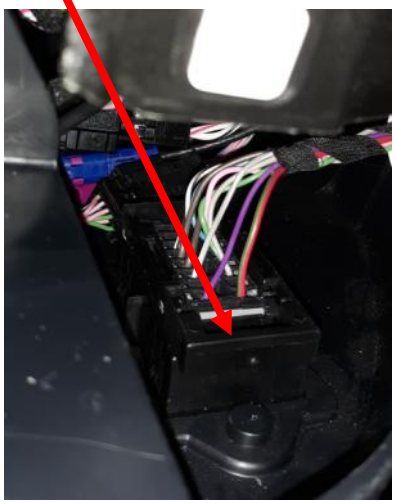
4. Remove the 2 screws securing the underdash.

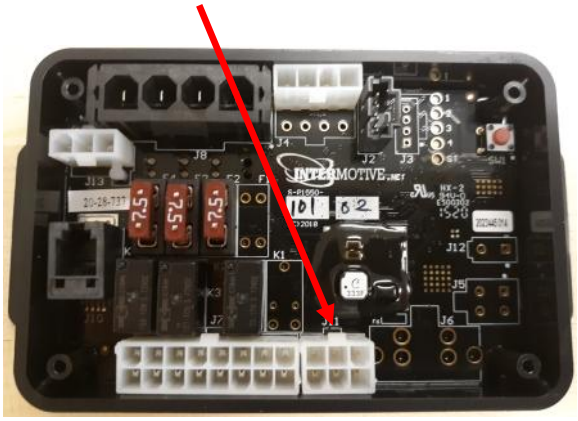
5. Remove the underdash using a plastic trim removal tool.

6. Remove the headlight switch assembly by pushing in on the 4 silver tabs on the back of the switch. Remove the connector from the back of the switch.

Data Link Harness Installation

1. Locate the vehicle OBDII Data Link Connector, mounted below the lower left dash panel.
2. Remove the OBDII connector from the dash panel by sliding the lock tab forward.
3. Plug the Red connector from the ILISP900 Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secure with the supplied wire tie.
4. Mount the Black pass through connector from the ILISP900 Data Link Harness in the former location of the vehicle's OBDII connector and slide the locking tab to secure it.
5. Attach the Red wire to a constant +12V using solder and heat shrink.
6. Secure the A-ILISP900 Data Link harness so that it does not hang below the lower dash panel.
7. Plug the free end of the Data Link harness into the mating 6-pin connector on the A-ILISP900 module.





LED Display Panel Mounting - Black 4-pin connector

Locate a suitable position on the dashboard, within view of the driver to mount the LED Display Panel. Ensure there is open space behind the dash where the panel is mounted. The harness is 40" in length, which is the maximum distance the display can be from the module.

Vehicle Secure/Lift Enable, Lift Deployed, Park Brake, Park, Ignition Off

1. Drill a 5/8" hole in the dash where the center of the display will be located.
2. Attach the Black 4-pin connector of the LED display panel harness to the module.
3. Run the other end of the harness under the dash and out through the 5/8" hole.
4. Attach the end to the LED Display Panel.
5. Ensure the panel is level and secure using supplied screws.

Start Stop Button Harness Installation

1. Remove the dash panels to get to the Start stop button (pages 2 and 3).
2. Find the Stop/Start harness shown in picture.
3. Cut the **Blue/Violet** wire so there is enough slack to work with.
4. Take the **Blue/White** wire in the four pin pigtail and solder and heat shrink it to the BCM side of the **Blue/Violet** wire.
5. Take the **Blue** wire in the four pin pigtail and solder and heat shrink it to the switch side of the **Blue/Violet** wire.
6. Cut the **Blue/Red** wire so there is enough slack to work with.
7. Take the **Green/White** wire in the four pin pigtail and solder and heat shrink it to the BCM side of the **Blue/Red** wire.
8. Take the **Green** wire in the four pin pigtail and solder and heat shrink it to the switch side of the **Blue/Red** wire.
9. Cut the **Brown/Black** wire so there is enough slack to work with.
10. Take the **Brown/White** wire in the four pin pigtail and solder and heat shrink it to the BCM side of the **Brown/Black** wire.
11. Take the **Brown** wire in the four pin pigtail and solder and heat shrink it to the switch side of the **Brown/Black** wire.
12. Plug the other side of the harness into the mating connectors on the A-ILISP900 module.

Stop/Start Pigtails

Lift Power Installation

The A-ILISP900 provides 2 ground side inputs and one 12V, 7.5 amp output.

Refer to the A-ILISP900 CAD drawing as reference when reading these instructions.
Lengthen the following wires appropriately, using solder and heat shrink tubing or tape.

The blunt-cut harness provides for control connections to the vehicle as follows:

**** Optional Plug & Play Lift Harness ****

Orange – This output provides 12V @ 7.5 amp when it is safe to operate the lift. Cut the wire to the correct length and attach one of the pins provided using a crimping tool and insert pin into the correct cavity.

Ricon lifts**:** Connect Orange wire to pin #2 of the connector.
Braun lifts**:** Connect to pin #6 of the 9-pin connector.

Black - This input will be connected to the Lift Stowed Switch. It must have a ground signal with the lift stowed.

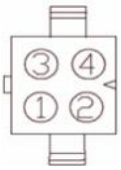
Ricon lifts: Connect Black wire to pin #4 of the 4-pin lift adapter connector.
Braun lifts: Connect Black wire to pin #9 of the 9-pin lift adapter connector.

Yellow - Connect this wire to external 12V to supply power to the lift.

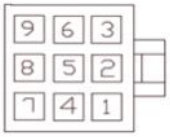
Gray (optional) – Wake up input — Braun Only

Braun Lift : Connect the Gray wire (lift wake up (GND) input to pin #1 of the 9 pin lift adapter connector.

Ricon



Braun



Connect Mating connectors to ILISP900 module

Lift Harness

Ignition OFF sticker

Place ignition off sticker to the right of the start stop button.

Ensure all the harnesses are properly connected and routed.

Post Installation / Check List

A-ILISP900 (Electric Lift Door)

The following checks must be made after installation of the system, to ensure correct and safe operation of the lift. If any of the checks do not pass, do not deliver the vehicle. Recheck all connections as per the installation instructions.
Begin the checklist with the vehicle in the following state:

- Lift stowed
- Park Brake set (PB)
- Transmission in Park (P)
- Ignition off (Key off). Wait until the module goes into "Sleep" mode (all panel LEDs OFF) which takes approximately 5 minutes.

Vehicle Secure/Lift Enable, Lift Deployed, Park Brake, Park, Ignition Off

1. Press the Lift Deploy Request button on the remote fob (electric door), turn the ignition On, or press button on pendant. Verify the module wakes up and all 5 LED's illuminate for approximately 2 seconds. The lower icon LEDs are backlit and will remain illuminated whenever the module is awake. The fob button may have to be held for 2 seconds or more to wake up the system.
2. With the lift Stowed, Park Brake set, Ignition Off, and transmission in Park, all LED's except Lift Deployed will be illuminated. Attempt to deploy the lift. Verify the lift deploys and all 5 LED's are illuminated.
3. With the Lift deployed and Service Brake applied, verify the vehicle will not start.
4. Stow the lift.
5. Verify that the Vehicle Secure, Park, Park Brake, and the Ignition Off LED remain ON.
6. With the transmission in Park, release Park Brake. Verify that the Park Brake (PB) and Vehicle Secure LED's turn OFF, and attempt to deploy the lift. Verify the lift does not deploy.
7. Set the Park Brake and turn the ignition On. Verify that the Ignition Off and Vehicle Secure LED's turn OFF and attempt to deploy the lift. Verify the lift does not deploy.
8. Turn the ignition off and verify the module goes into "Sleep" mode (all panel LED's OFF) which takes approximately 5 minutes.

Diagnostics Using Module LEDs
The module has 5 on-board LEDs which are used to convey information about the operation of the module. In the normal mode all LEDs are OFF, but they come ON in different situations:

VIN Errors - If there is an error while getting the vehicle VIN during initial installation, LEDs 1-4 will scroll 2 times then another LED will turn on to ID the error as follows:

LED1 ON - Wrong Manufacture (Not Ford)
LED2 ON - Wrong chassis (Not a Transit)
LED3 ON - Wrong engine
LED4 ON - Wrong model year (Not model 2015-2018)
STATUS ON - Bogus VIN (e.g. all characters the same)
No LEDs ON - No VIN response

Status - One can put the module into a diagnostic mode where each LED represents a system status. The module is fully functional in this mode. To enter diagnostic mode, press the Red Test button on the module. There are a total of 4 pages of diagnostics and pressing the button will move though them.

	Page 1	Page 2	Page 3	Page 4
LED 1	Vehicle Secure conditions not met	Reserved	n/a	input 1 active (GND)
LED 2	All conditions met, but start button is not interrupted	Reserved	Slider open	input 2 active (GND)
LED 3	n/a	Reserved	Rear open	input 3 active (+5v)
LED 4	Vehicle Secure	Reserved	n/a	input 4 active (GND)

Leave in Vehicle
A-ILISP900 Shift Interlock Operating Instructions
2019 - 2022 Mercedes Benz Sprinter

A-ILISP900 (Electric Lift Door)

The ILISP900 is a system for controlling wheelchair lift operation. Lift operation will only be allowed when all of the following conditions are met:

1. The vehicle ignition power is off.
2. The parking brake is applied.
3. The lift deploy switch is activated.

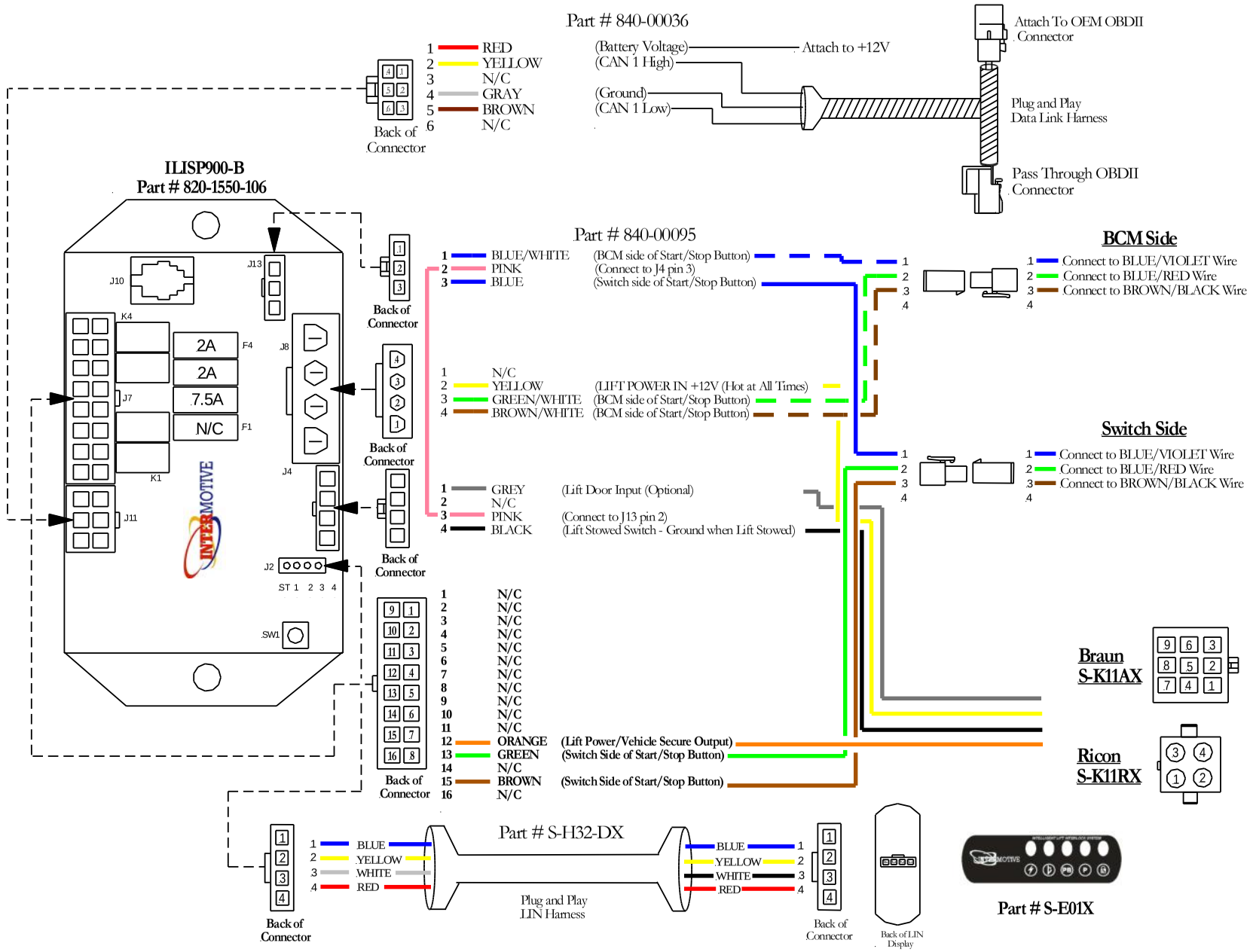
The ILISP900 also will not allow the engine to be started if the lift is not fully stowed.

Vehicle Secure/Lift Enable, Lift Deployed, Park Brake, Park, Ignition Off

1. With the lift Stowed, Park Brake set, Ignition Off, and transmission in Park, all LED's except Lift Deployed will be illuminated. Attempt to deploy the lift. Verify the lift deploys and all 5 LED's are illuminated.
2. With the Lift deployed and Service Brake applied, verify the vehicle will not start.
3. Stow the lift.
4. Verify that the Vehicle Secure, Park, Park Brake, and the Ignition Off LED remain ON.
5. With the transmission in Park, release Park Brake. Verify that the Park Brake (PB) and Vehicle Secure LED's turn OFF, and attempt to deploy the lift. Verify the lift does not deploy.
6. Set the Park Brake and turn the ignition On. Verify that the Ignition Off and Vehicle Secure LED's turn OFF and attempt to deploy the lift. Verify the lift does not deploy.
7. Turn the ignition off and verify the module goes into "Sleep" mode (all panel LED's OFF) which takes approximately 5 minutes.

Start/Stop Inhibit. If the Lift is deployed and the ignition is OFF the module will not allow the vehicle to start. The lift must be stowed to start the vehicle.

Sleep Mode: When the lift is stowed and ignition power (Key) is turned OFF, the vehicle CAN communication traffic will stop after a delay. Around five minutes after this, the system will enter a low current "sleep" mode of operation with all LED's OFF. To wake from "sleep" mode, turn the ignition on, (key on) attempt to deploy the lift, or unlock a door with the key fob. **Note**: If the Lift is deployed and all conditions are met the module will keep the vehicle awake for 1 hour before going to sleep.
All display LEDs will turn ON for approximately 2 seconds as a "prove out". The backlit LEDs remain ON as long as the module is awake.



If the A-ILISP900 fails any step in the Post Installation Test, review the installation instructions and check all connections.
If necessary, call InterMotive Technical Support at (530) 823-1048.