



Guardian II Commercial Lift Interlock (GRD502-B) Installation Instructions

Ford Econoline 2009-2010

It is not necessary to cut any Ford wires during the installation of the Guardian II wire harnesses. Always disconnect the battery before installing any electrical devices. *It is imperative that each harness be installed into the correct module connector, or damage to the module will result. The connections are color coded to assist with proper installation.*

Identify each harness connector before installation into the Guardian module.

- **Do not** simply match up the number of pins in a harness connector with the number of pins in a module connector receptacle. **There are several connectors on the harness and module that if swapped, may cause permanent module or vehicle damage.**
- The harness will have a colored tape on the module connector end that will identify which module receptacle to plug into. The color of the tape on the harness must be matched up to the color of the lettering that identifies the connector receptacles on the module.

CONTROL/LED DISPLAY PANEL

Locate a suitable position on the dashboard, within view of the driver for the mounting of the **Control/LED Display Panel**. The length of the display harness is 40". This is the maximum distance the display can be from the Control Module. Drill a 3/4" hole in the dashboard where you wish the center of the display to be. Attach the 8 pin connector of the **LED harness** to the Control Module in the (**Black Connection**) labeled "**LED**". Run the other end of the harness under the dash and out through the 3/4" hole. Attach the 6 pin connector of the display harness to the **LED Display Control Panel**. Ensure panel is level, and secure using the supplied screws.

DATA LINK HARNESS (White 6-Pin Connector) (Black 6-Pin Connector)

Locate the vehicle **Data Link Connector**. It will be mounted below the lower dash panel on the driver's side. (See photo). Remove the 2 mounting screws for the Data Link Connector. Plug the red connector from the **Guardian II Data Link Harness** into the vehicle **Data Link Connector**. Ensure the connection is fully seated and secure with the supplied wire tie. Mount the black connector from the **Guardian II Data Link Harness** where the vehicle Data Link Connector



originally was. Secure the Data Link Harness such that it does not hang below the lower dash panel.

WHITE 6 PIN DATA LINK 1

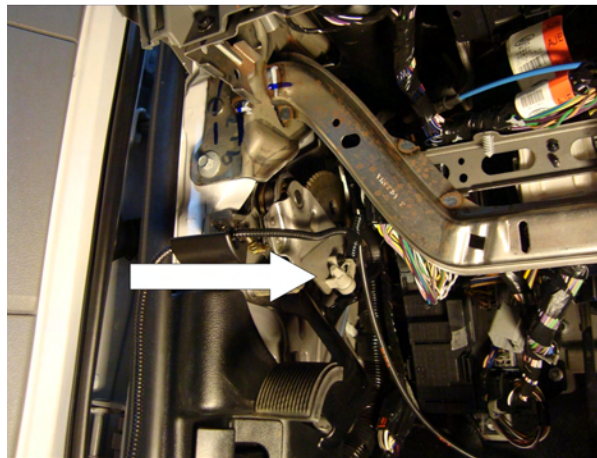
Plug the **White 6 pin Data Link 1** connector from the Data Link Harness into the “**Data Link 1**” (**Red Connection**) on the Control Module.

BLACK 6 PIN DATA LINK 2

Plug the **Black 6 pin Data Link 2** connector from the Data Link Harness into the “**Data Link 2**” connector on the Control Module.

PARKING BRAKE CIRCUIT

Disconnect the black Ford connector from the Parking Brake switch. Plug the female side of the connector from the **Park Brake Harness** to the parking brake switch. Install the male side of the connector on the **Park Brake Harness** to the female connector in the Ford harness. Plug the **White 4 pin Park Brake** connector from the **Park Brake Harness** into the “**Park Brake**” (**Orange Connection**) on the Control Module.



LIFT HARNESS

This harness contains the **Battery Power, Vehicle Secure, and Lift Door Switch Circuits**.

- **Battery Power Circuit** – Connect the **RED** wire with **7.5 amp** in line fuse from **pin # 3** of the **white 6-pin LIFT connector** to a battery power source (Hot at all times). **Note: This connection must be to a battery power source (Hot at all times), or the lift threshold warning will not operate with the ignition off.**
- **Vehicle Secure Circuit** – The lift must be power-side switched. Connect the **RED** wire (Vehicle Secure) from **pin # 2** of the **white 6-pin LIFT connector** to the lift power relay. The Vehicle Secure circuit must only activate the lift power relay/solenoid and must not draw more than 8.0 Amps. Make all open-ended wire connections by stripping the insulation, soldering, and taping.

Warning! Do not power any other loads (lights, motors, etc.) off the Vehicle Secure circuit that increase the current draw to greater than 8.0 amps.

- **Lift Door Circuit** – Locate the lift door switch circuit. Connect the **Black** wire from **pin # 6** of the **white 6-pin LIFT connector** to this circuit. **Note: the door switch must provide a ground with the door open. A switch that provides power with the door open will not operate correctly.**

Plug the **White 6 pin LIFT connector** from the **Lift Harness** into the **“LIFT” (Yellow Connection)** on the Control Module.

IGNITION POWER HARNESS

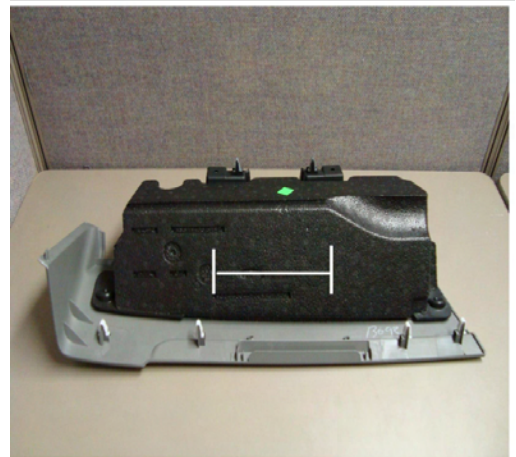
Connect the **RED** wire from **Pin #4** of the **Ignition Power Harness** to **a fused, hot in run and start, ignition power source.**

VERY IMPORTANT!
MUST HAVE 12 VOLTS AT RED WIRE PIN #4 IN RUN AND START ONLY!

Plug the **White 6 pin Ignition Power connector** from the **Ignition Power Harness** into the **“Ign Power” (Blue Connection)** on the Control Module.

Guardian 502-B Module Suggested Mounting – 2009 Ford

- **Mount Gateway module above the foam knee bolster within area defined by white line.**
- **Secure the control module using 2-sided foam tape.**
- **Verify that wires are routed such that the tilt steering column will not contact the wires in the full down position.**
- **Check for proper operation (see Post-Installation Instructions).**





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Guardian II Commercial Lift Interlock (GRD502-B) Post Installation Check List

The following installation check must be performed after installation of the InterMotive Guardian GRD502-B 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
- Transmission in park
- Ignition off
- All Guardian LED's not illuminated (sleep mode)
- Lift access door closed

- 1) Turn on the ignition. Verify that all three LED's prove out and the Park (P) and Park Brake (PB) icons remain illuminated. Attempt to deploy the lift. The lift must not deploy.
2. Release the park brake and open the lift access door. The Park Brake (PB) icon should now be off and the lift access door icon should be illuminated. Attempt to deploy the lift. The lift must not deploy.

If the vehicle has Daytime Running Lights they will be activated when the Lift Door is Open and/or the Park Brake is On and the Ignition key is On.

- 3) Attempt to shift the transmission out of park. The transmission shift lever must not be able to shift.
- 4) Set the park brake. All three icons should now be illuminated. Attempt to deploy the lift. The lift should deploy.
- 5) With the lift deployed, attempt to shift the transmission out of park. The transmission shift lever must not be able to shift.
- 6) Stow the lift and close the lift access door. The Lift Access Door Open icon should now be off.
- 7) Turn off ignition. Wait approximately 5 minutes for the module to enter "sleep mode." This is verified when all LED's turn off.
- 8) Open the lift access door. The module should prove-out all three LED's and the LED's should remain illuminated. The lift should be able to deploy. Deploy the lift.
- 9) Stow the lift and close the lift access door. Installation is complete.

Confirmation Signal – The vehicle lamps and radio will cycle briefly when the ignition is on and the lift door is initially closed. This is a confirmation signal sent from the 2009 Ford Econoline controller.



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Guardian II Commercial Lift Interlock (GRD502-B)

Operating Instructions

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

1. The vehicle is in "Park".
2. The parking brake is applied.
3. The lift door is open.

The Guardian II also will not allow the vehicle to be shifted out of park if the lift door is open or the parking brake is engaged.

The Guardian II will operate with the vehicle ignition on or off. When the ignition is turned on or the lift door is opened, the LED panel will prove out by illuminating the three red indicators briefly.

If the vehicle has Daytime Running Lights they will be activated when the Lift Door is Open and/or the Park Brake is On, and the Ignition key is On.

When the lift door is closed and ignition power is not present for 5 minutes, the Guardian II will enter a low current "sleep" mode of operation. To wake up from "sleep" mode, the ignition must be turned on or the lift door must be opened. After prove out, the operation of the indicators is as follows:

- "P" - Illuminates in red if vehicle is in Park range.
- "PB" - Illuminates in red when the parking brake is engaged. If illuminated, the driver will not be allowed to shift out of park.
- "Lift Door Open Icon" – Illuminates in red when the lift door is open. If illuminated, the driver will not be allowed to shift out of park.

The Lift will only operate if all three LED's are simultaneously illuminated.

Confirmation Signal – The vehicle lamps and radio will cycle briefly when the ignition is on and the lift door is initially closed. This is a confirmation signal sent from the 2009 Ford Econoline controller.

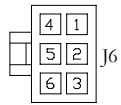
The indicators can also be used for diagnostic purposes. For example, if the Lift Door Open icon is illuminated when the lift door is closed, the driver will not be able to shift out of park. This means that the Guardian II detects that the lift door is open. Thus, a technician should inspect the lift door switch and its circuit for proper operation.

Guardian II

REVISIONS

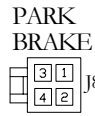
DATE: CHANGE:

IGN POWER



4 - RED ————— Attach to Ignition Power

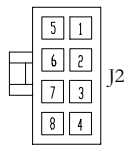
Attach to Park Brake Switch



3 - BROWN (Park Brake Input)

Back of connector

LED

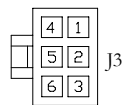


- 1 - YELLOW (5V)
- 2 - OPEN (Not Used)
- 3 - BLACK (Park Brake LED)
- 4 - OPEN (Not Used)
- 5 - OPEN (Not Used)
- 6 - WHITE (Door Open LED)
- 7 - BLUE (Park LED)
- 8 - OPEN (Not Used)

Back of connector

Mount on Dashboard

LIFT



- 1 - OPEN (Not Used)
- 5 - OPEN (Not Used)
- 3 - RED (Battery Power)
- 4 - OPEN (Not Used)
- 2 - RED (Vehicle Secure Signal)
- 6 - BLACK (Lift Door In)

Back of connector

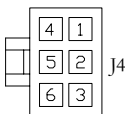
7.5 AMP FUSE

Attach to Battery

(Red) Attach to Lift

(Black) Attach to Door Switch

DATA LINK 1

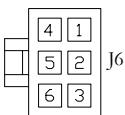


- 1 - RED (Battery Voltage)
- 2 - OPEN (Not Used)
- 3 - YELLOW (Ford CAN High)
- 4 - GRAY (Signal Ground)
- 5 - OPEN (Not Used)
- 6 - BROWN (Ford CAN Low)

Back of connector

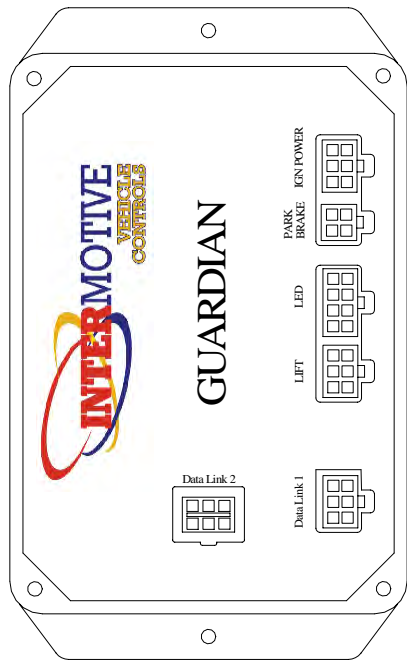
Data Link

DATA LINK 2



- 1 - OPEN (Not Used)
- 2 - OPEN (Not Used)
- 3 - GREEN (Ford CAN High)
- 4 - OPEN (Not Used)
- 5 - OPEN (Not Used)
- 6 - BLUE (Ford CAN Low)

Back of connector



PRODUCT:

GUARDIAN II

DRAWN BY:

BRUCE HODGE

PART NO:

GRD502-B

DATE DRAWN: 8/6/08

CHECK BY:

KEN QUIMBY

DATE CHECKED:

10/16/08