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## ILIS Activation Kit (ILIS501-H5) - Installation Instructions

### Ford Econoline 2009-2010 Ford F-Series 5.4L, 6.4L, 6.8L - 2010

To aid in installation, first gain access to the connection points. Remove the lower dash panel below the steering column. Also gain access to the lift door switch circuit (usually accessible in the front control panel). It is not necessary to cut any Ford wires during the installation of the ILIS Activation Kit. Always disconnect the battery before installing any electrical devices.

**LED Display Panel** - Locate a suitable position on the dashboard, within view of the driver for the mounting of the ILIS LED Display Panel. The length of the display harness is 40". This is the maximum distance the display can be from the Gateway<sup>AI</sup> control module. Drill a 1" hole in the dashboard where you wish the center of the display to be. Attach the 8-pin end of the LED harness to the Gateway<sup>AI</sup> control module in the connector labeled "ILIS LED". Run the 10-pin end of the harness under the dash and out through the 1" hole. Attach the 10-pin end of the display harness to the ILIS LED Display Panel. Ensure panel is level, and secure using the supplied screws.

**CAN Harness** - Connect the white 2-pin connector to the Gateway<sup>AI</sup> Data Link Harness. Connect the black 6-pin connector to the Gateway<sup>AI</sup> module connector labeled "Merlin". (See photo).



**ILIS Harness** - This harness contains the battery power, vehicle secure, and lift door circuits. The mating harness is to be fabricated by the installer. The recommended mating connector is Molex Part # 0050841040. The recommended mating terminals are Molex Part # 0002081003. The recommended terminal extractor tool is Molex Part # 0011010168. The recommended hand crimp tool is Molex # 0638116800.

- **Battery Power Circuit** – The lift must be power-side switched. Connect the Yellow wire (Power) from pin # 2 of the white 4-pin connector to a fused battery power source (Hot at all times). **Note: This connection must be made to battery power (Hot at all times) or the lift threshold warning will not operate with the ignition off.**
- **Vehicle Secure Circuit** - Connect the Orange wire (Vehicle Secure) from pin # 1 of the white 4-pin connector to the vehicle secure input on the lift. The Vehicle Secure circuit must only activate the vehicle secure input on the lift and must not draw more than 8.0 Amps (see lift manufacturers installation instructions). Make all open-ended wire connections by stripping the insulation, soldering, and taping. **Note: Do not power any other loads (ie: lights, motors, etc.) off this circuit that increase the current draw to greater than 8.0 amps.**
- **Lift Door Circuit** – Locate the lift door switch circuit. Connect the Gray wire from pin # 4 of the white 4-pin 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.**

Finally, plug the White 6-pin connector from the ILIS Harness (yellow tape) into the "ILIS" connector (colored in yellow) in the Gateway<sup>AI</sup> control module. **Note: Ensure the harness is in the correct connector. Installing into the incorrect connector can damage the module.** Reconnect the vehicle battery. Check for proper lift interlock operation (see Post-Installation Testing sheet). Secure the wiring harnesses and replace the lower dash panel.



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## **Lift Enable Switch Installation (Optional) – Gateway with ILIS501H5**

A lift enable switch may be installed on Gateway modules with the ILIS501-H5 option.

1. If installing a Gateway equipped with the DuraTrans or BrakeMax option, the AUX I/O port will have a green wire in pin-2 and the lift enable (switch) circuit will be inserted into pin-1 of the same connector. Pin-1 will be marked in black for easy reference.
2. Attach one side of a latching switch to a wire and crimp the other end of the wire to one of the provided terminals. Only one terminal is needed, one extra is provided. This is a logic level circuit that will draw only milliamps, a 20 Gauge wire is more than adequate.
3. Insert the crimped terminal into pin-1 of the 4-pin connector (if not using DuraTrans or BrakeMax) use the supplied 4-pin connector supplied in the ILIS501-H5 kit. Pin-1 will be marked black for easy reference. Attach the other side of the switch to a known good ground point.
4. Insert the 4-pin connector into the header on the Gateway module marked “Aux I/O” (white). Do not insert it into the header marked “I/O Port” (green) or damage to the module can occur.

### **The Lift Enable switch operation will then be as follows:**

With the lift switch open (no ground); the lift, will be enabled if all other interlock safety conditions are met.

With the lift switch closed (grounded) the lift, will be disabled even if all other interlock safety conditions are met.

Note: The lift can also be enabled/disabled by the InterMotive Merlin Multiplex System, if equipped.



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## **ILIS Activation Kit (ILIS501-H5) - Post Installation Testing**

### **THE FOLLOWING PROCEDURE MUST BE PERFORMED TO VERIFY PROPER INSTALLATION:**

1. Set Park Brake, place transmission to Park position, and close lift door. Turn ignition to the "Run" position. Do not start vehicle.
2. Verify LED prove-out on LED Status Panel
3. All five (5) upper LEDs should illuminate for approximately two seconds upon initial power on. The lower Icon LED's are backlit and should remain illuminated whenever the Gateway<sup>AI</sup> module is awake.
4. Verify that the Park LED, the Park Brake LED and the Shift Lock LED remain illuminated.
5. Place foot on service brake and attempt to shift out of Park. Shift lever must not be allowed to shift out of the Park position.
6. Place wheel chocks under the vehicle tires. Release Park Brake. Verify Park Brake LED and the Shift Lock LED on the LED Status panel are no longer illuminated. Remove foot from service brake and attempt to shift out of Park. Shift lever must not be allowed to shift out of the Park position.
7. With Park Brake still released, place foot on service brake and attempt to shift out of park. Shift lever should now be allowed to shift out of Park position. Verify that all upper LEDs are not illuminated with transmission out of Park.
8. Place shift lever back to the Park position and verify that the Park LED on the LED Status Panel is illuminated.
9. With Park Brake still released, have an assistant open the lift door(s). Verify that the Lift Door LED and the Shift Lock LED on the LED Status Panel are now illuminated. Place foot on service brake and attempt to shift out of Park. Shift lever must not be allowed to shift out of "Park" position. **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.**
10. Set Park Brake. Verify that the Park Brake LED on LED Status Panel is again illuminated. Verify that the Vehicle Secure LED on the LED Status Panel is also now illuminated. All five (5) upper LEDs on the LED Status Panel should now be illuminated. The lift should now be operational. Stow lift, when complete.
11. Lift stowed, leave lift doors open, Park Brake applied, and vehicle in Park. Turn off ignition key. Verify that the lift lamps and /or lift buzzer cycle on and off and that the Lift Door LED flashes rapidly. Close lift doors and verify that all upper LED's turn off and that the lift lamps and /or buzzer also turn off. The lower backlit icons will stay on for several minutes.
12. Turn ignition back to on, release Park Brake. Verify that the Park Brake LED and Vehicle Secure LED on the LED Status Panel are not illuminated. Have assistant attempt to operate lift. The lift must not be operational.
13. Set Park Brake. Stow lift and close lift door(s). Turn ignition off.
14. Fill out online warranty registration card at [www.intermotive.net](http://www.intermotive.net) and return to InterMotive Vehicle Controls.
15. If any irregular operational issues persist, contact InterMotive at 530-346-1801 for technical assistance.



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## **Gateway<sup>AI</sup> with ILIS Activation Kit (ILIS501-H5) - Operating Instructions**

The Intelligent Lift Interlock System option (ILIS501-H5) of the Gateway<sup>AI</sup> 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 vehicle ignition is on.
4. The lift door is open.
5. Lift inhibit is not activated.

The Intelligent Lift Interlock System (ILIS) will not allow the vehicle to be shifted out of park if the lift door is open. As an added feature, it also will not allow the vehicle to be shifted out of park when the parking brake is applied. This feature eliminates excessive parking brake wear due to driving with the parking brake applied. The shift lock can also be activated through pin 4 of the I/O port if the proper configuration is installed or through a command by the InterMotive Merlin Multiplex system, if equipped. **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 vehicle is first started, or if the key is turned to the "Run" position, the five upper LED's on the display panel will illuminate for 2 seconds as a prove out of the LED's. The lower Icon LED's are backlit and should remain illuminated whenever the Gateway<sup>AI</sup> module is awake. The module will stay awake for several minutes after the ignition is turned off. After prove out, the operation of the LED panel is as follows:

- Vehicle Secure – Illuminates in green if the lift is enabled. This means that all conditions for lift operation have been met and the lift has been supplied a vehicle secure signal.
- Park Brake – Illuminates in red when the parking brake is applied.
- Park - Illuminates in red when the vehicle transmission is in the park range.
- Door Open - Illuminates in red when the lift door is open.
- Shift Lock - Illuminates in amber when the lift door is open and/or the parking brake is applied. It can also illuminate from an external command through pin 4 of the I/O port if the proper configuration is installed, or through a command by the InterMotive Merlin Multiplex system, if equipped. If illuminated, the driver will not be allowed to shift out of park.

*Note: If the center three LED's flash on and off in unison, this indicates an over current condition in the vehicle secure output circuit.*

### **Additional features**

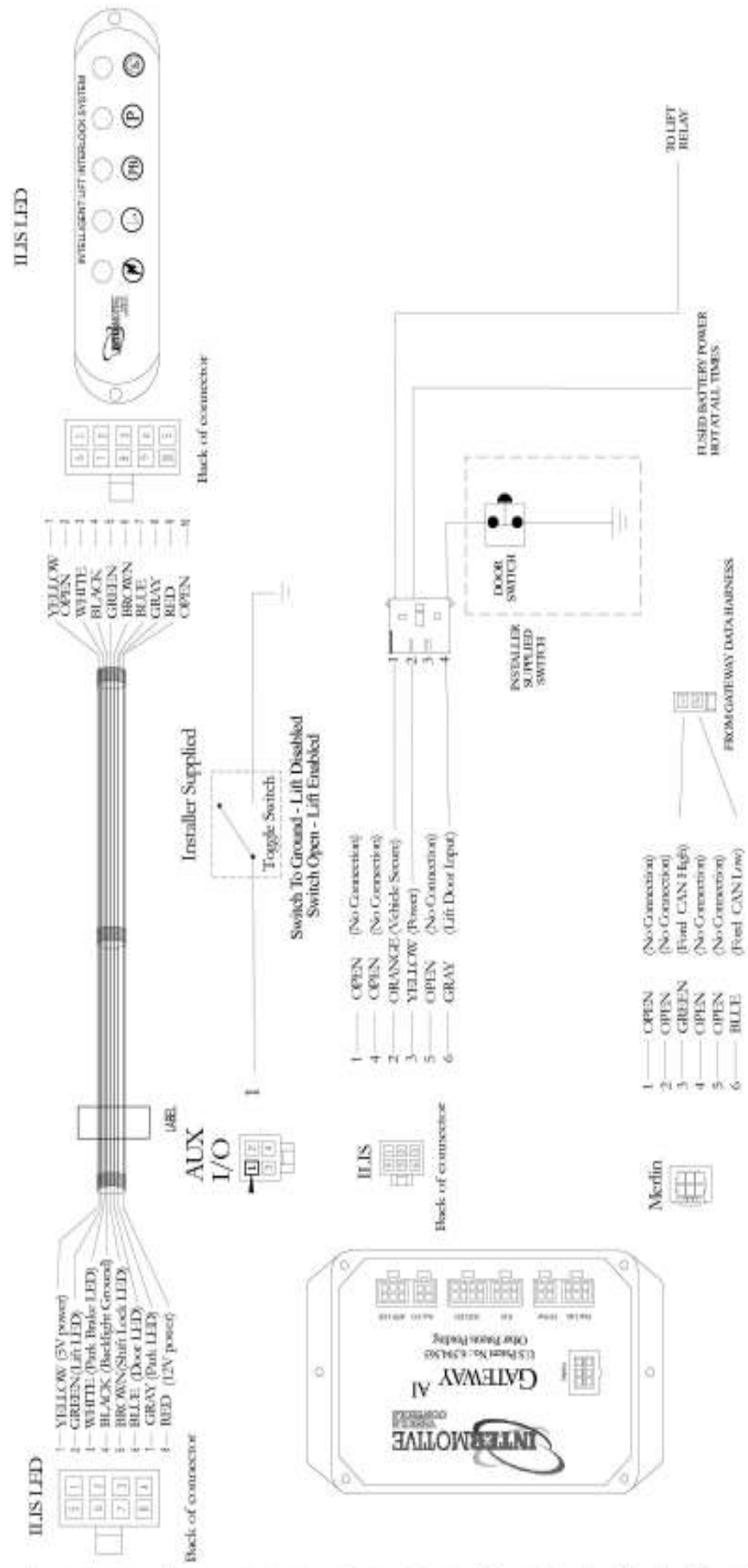
**Threshold warning system operation – (2009 Model year vehicles only!)** If the lift door is left open when the ignition is turned off, the Gateway Module will remain on and the lift lamps and /or lift buzzer will cycle on and off. The Lift Door LED on the ILIS Display will also flash rapidly. If the lift is not stowed, the threshold warning system on the lift will also be operational. The driver must turn the ignition back to run, stow the lift, close the lift door, then turn the ignition to off. This feature is intended to ensure that the lift is stowed and the lift doors are closed when the vehicle is not being used.

**Confirmation Signal – (2009-2010 Model year vehicles.)** 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 Ford Econoline controller.

**REVISIONS**

DATE: CHANGE:

# Intelligent Lift Interlock System



PRODUCT:



**GATEWAY AI**

DRAWN BY: BRUCE HOOGE  
DATE DRAWN: 09/29/08  
CHECK BY: K THOMAS  
DATE CHECKED: 09/29/08

PART NO: ILLIS01-HS  
DATE CHECKED: 09/29/08