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ILIS701-D Intelligent Lift Interlock System 2002—2008 INTERNATIONAL 3200 AND Freightliner MB55 Contact InterMotive for additional applications

Introduction

The Intelligent Lift Interlock System (ILIS) is a microprocessor driven system for controlling wheelchair lift operation. Lift operation will only be allowed when certain conditions are met and will not allow the vehicle to be shifted out of park if the lift door is open. As an added feature, the vehicle cannot be shifted out of park anytime the parking brake is applied. This feature eliminates excessive parking brake wear due to driving with the parking brake applied.

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.

Installation Instructions

Disconnect vehicle battery before proceeding with installation



WARNING
Disconnect the battery to
prevent setting a check engine
light.

ILIS701-D Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the ILIS701 module. Locate the module in an area away from any high heat sources (engine heat, heater ducts, etc.). Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

To aid in installation, first gain access to the connection points. Gain access to the lift power switch, shifter park brake/park switch, shift lock solenoid, and the lift door switch circuits.

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 ILIS control module.

1. Drill a 1" hole in the dashboard where the center of the display will be located.
2. Attach the 6-pin end of the LED harness to the ILIS control module.
3. Run the 10-pin end of the harness under the dash and out through the 1" hole.
4. 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.

The two blunt cut wires (red and black) are for optional backlighting of the lower icons. There are three installation options:

- Connect the black wire to ground and the red wire to a 12V ignition switched power source. This will allow the lower icons to be backlit with the ignition in the "on" position.
- Connect the black wire to ground and the red wire to a 12V headlamp switched power source. This will allow the lower icons to be backlit only when the headlamps are on.
- Do not connect the wires. The display will function properly, but the lower icons will not be backlit.

Main Harness

Position the main harness such that the 12-pin connector is in position to be installed into the control module. The connector should not be installed into the module until the main harness is fully installed. All connections must be made with ignition power OFF. The connection points to be made for the installation of the main harness are listed below.

Power Circuit: Locate a power source that is "hot" with the ignition in the "Run" position. **Do not use a source that is hot in "Run & Crank" positions.** Attach the Red wire from the main harness to this source.

Ground Circuit: Locate a ground source near the control module. Attach the Black wire from the main harness to this source.

Park Circuit: This connection will vary based on the transmission shifter. Attach the Black/White wire from the main harness to the park switch circuit (typically on the transmission shifter). The park switch must provide a ground signal when in Park.

Shift Lock Circuit: Locate the shift lock solenoid (typically on the transmission shifter). This solenoid will pull a large current, so a relay must be used. Attach the **Blue** wire from the main harness to one of the coil terminals of a standard automotive relay. Attach the other coil terminal on the relay to ground. This blue wire will provide 12V when shift lock is commanded (Lift Door open). Next the normal operation of the vehicle's shift lock solenoid must be determined. There are two possible operating modes: 1. Powering the solenoid locks the shifter, or 2. Powering the solenoid unlocks the shifter. For operating **mode 1**, attach the relay common terminal to a fused ignition 12V source. Attach the normally open (NO) terminal in parallel to the shift lock solenoid power wire. For operating **mode 2**, cut the power wire to the shift lock solenoid. Attach one of the cut ends to the relay common terminal. Attach the other cut end to the normally closed (NC) terminal.

After installation, verify that the shift lock solenoid still locks in Park until the brake pedal is depressed.

Lift Power Circuit: Locate the lift power switch. Disconnect the circuit from the switch that goes to the lift relay. This must be a power switch, not a grounding switch. Connect this circuit to the Blue/White wire from the main harness with a spade terminal. Connect the Yellow wire from the main harness to the power switch using a spade terminal. The lift power circuit must only activate the lift power relay/solenoid and must not draw more than 7.0 Amps. **Do not power any other loads** (i.e.: lights, motors, etc.) off this circuit.

Parking Brake Circuit: Attach the Brown wire from the main harness to the park brake switch (typically the same switch used to designate "Park"). This must provide a ground signal when the park brake is engaged.

Lift Door Circuit: Locate the lift door switch circuit. The door switch must provide a ground with the door open. A switch that provides power with the door open will not operate correctly. Connect the Red/White wire from the main harness to this wire by stripping the insulation, soldering, and taping.

Park Output Circuit: This is an optional circuit that provides a ground in Park gear only. This circuit is useful if the operator needs to activate or deactivate an accessory only in Park (ie: power operated front door). Attach the White wire from the main harness to the ground side of the accessory. If this option is not desired, cut the wire at the 12-pin connector and discard the wire.

Note: This output can only carry low current loads such as a relay primary coil. Higher loads can cause damage to the control module. The current of the load must first be determined and can not exceed 500 milliamps continuous load. This wire must not be attached directly to power without a load, or damage to the control module will result!

ILIS701 Module

Connect the 12-pin connector of the main wire harness into the control module, ensuring the connector is fully seated. Ensure all harness are properly connected and routed, and are not hanging below the dash area. Mount the ILIS701D module using screws or double sided tape. Reinstall the lower dash panel.

Post Installation Checklist

The following procedure MUST BE PERFORMED TO VERIFY PROPER INTERLOCK INSTALLATION AND FUNCTION:

1. Set Park Brake, place transmission to Park position, close lift doors, and turn Lift Power Switch to the off position. Turn ignition to the "Run" position. Do not start vehicle.
2. Verify LED prove-out on LED Status Panel. All five (5) LEDs will illuminate for approximately one (1) second upon initial power on. Verify that the Park LED and the Park Brake LED remain illuminated.
3. 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 also 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 shift lever is allowed to move, check for loose connections at all connection points.
4. Turn on Lift Power Switch. Verify that the Lift Power LED on the LED Status Panel is now illuminated. All five (5) LEDs on the LED Status Panel will be illuminated. Have assistant verify lift operation. Lift will now be operational.
5. Release Park Brake. Verify that the Park Brake LED and Lift Power LED on the LED Status Panel are not illuminated. Have assistant attempt to operate lift. Lift must not operate.
6. Reset Park Brake, Close lift doors. Verify that the Lift Power, Door Open and Shift Lock LED's turn off. Attempt to operate lift. Lift must not operate.
7. Attempt to shift out of Park without stepping on the service brake (engine not running). Shifter must remain locked. Step on service brake and attempt to shift into neutral. You should now be able to shift. Have assistant open lift doors. The Park Brake, Lift Door and Shift Lock LED's should be illuminated. Have assistant attempt to operate lift. Lift must not operate.

If any irregular operational issues persist, contact InterMotive at 530-823-1048 for technical assistance.

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The Intelligent Lift Interlock System (ILIS) is a microprocessor driven system for controlling wheelchair lift operation. Lift operation will only be allowed when all of the following conditions are met:

The vehicle is in "Park"
The parking brake is applied.
The vehicle ignition is on.
The lift power switch is on.
The lift door is open.

The Intelligent Lift Interlock System (ILIS) also 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 anytime the parking brake is applied. This feature eliminates excessive parking brake wear due to driving with the parking brake applied.

When the vehicle is first started, or if the key is turned to the "Run" position the five LED's on the display panel will illuminate for 1-2 seconds as a prove out of the LED's. After prove out, the operation of the LED's are as follows:

Lift Power – Illuminates in green if power is available to the lift. This means that all conditions for lift operation have been met.

Park Brake – Illuminates in red when the parking brake is applied.

Park - Illuminates in red when the vehicle is in park range.

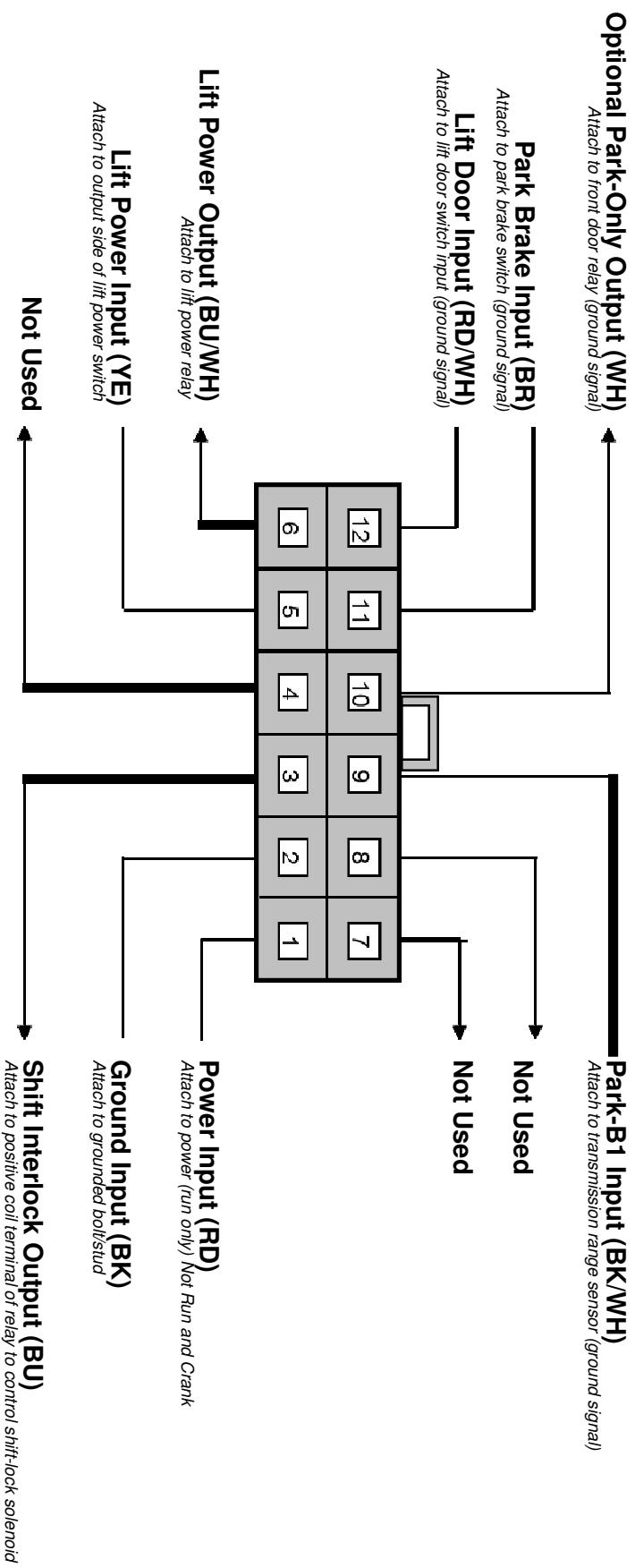
Door Open - Illuminates in red when the lift door is open.

Shift Lock - Illuminates in amber when the lift door is open and/or the parking brake is applied. If illuminated, the driver will not be allowed to shift out of park.

All five LED's must be illuminated for the lift to operate.

The LED's can also be used for diagnostic purposes. For example, if the Door Open LED is not illuminated when the lift door is open, the lift will not operate. This means that the ILIS module does not detect that the door is open. The lift door switch and its circuit should be inspected.

12 Pin connector schematic



Submit product registration at www.intermotive.net

If the ILIS701D 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.