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Guardian GRD502-A Adapter Matrix

Note: Based on vehicle age and transmission code, it may be necessary to use one of the adapters listed below along with the GRD501 or GRD502 part number.

Adapter	Application
GRDP1	Ford Econoline – 2005-2006 Transmission Code A, F, or Q
	Ford Econoline – 2004 w/Gasoline or CNG Engines Only
GRDP2	Ford Econoline – 2003 Gas Engine with Transmission Code E or 9 only
GRDP3	Ford Econoline – 2003 Gas Engine with Transmission Code U only
GRDP4	Ford Econoline – 2003 Diesel Engine All Transmission Codes
GRDP5	Ford Econoline – 2003 Ford 5.4L CNG Engine All Transmission Codes
GRDP6	Ford Econoline – 1997-2002 Gas Engine with Transmission Code E or 9 only
GRDP7	Ford Econoline – 1997-2002 Gas Engine with Transmission Code U only
GRDP8	Ford Econoline – 1997-2002 Diesel Engine All Transmission Codes
GRDP9	Ford Econoline – 1997-2002 Ford 5.4L CNG Engine All Transmission Codes
GRDP10	Ford Econoline – 2007-2008 Gas Engine with Transmission Code Q only

**Guardian II Commercial Lift Interlock
(GRD502-A)
Installation Instructions**

Applications

Ford Econoline – 2005-2008 Transmission Code B or T
Ford Econoline – 2005-2006 Transmission Code A, F, or Q*
Ford Econoline – 2007-2008 Transmission Code Q**
Ford Econoline – 2004 w/Gasoline or CNG Engines Only*

*** Requires 16 Pin Park Harness (Part # GRDP1)**

****Requires 10 Pin Park Harness (Part # GRDP10)**

GUARDIAN II MODULE - Remove the lower dash panel below the steering column. The Guardian II Module should be positioned behind the metal knee bolster bracket below the steering column. It can be secured using self tapping screws, adhesive foam tape, or wire ties. Do not secure the module until all harnesses are installed and proper lift operation has been verified.

LED DISPLAY PANEL – This harness can be identified by the blue tape near the 6-pin connector. Locate a suitable position on the dashboard, within view of the driver for the mounting of the LED Display Panel. The length of the display harness is 40". This is the maximum distance the display can be from the Guardian II module. Drill a 3/4" hole in the dashboard where you wish the center of the display to be. Snap the blue taped end of the LED display harness into the Guardian II Module in the connector labeled in blue "Display". Run the other end of the harness under the dash and out through the 3/4" hole. Snap the end of the display harness into the LED Display Panel. Ensure panel is level, and secure using the supplied screws.



LIFT HARNESS - This harness can be identified by the green tape near the 6-pin connector. Attach the red wire with the inline fuse to the vehicle battery positive post. There is a large eyelet taped to the fuse holder that can be used for this purpose. Attach the black wire with the eyelet to a good ground point. Run the gray cable back towards the lift. The black wire in the gray cable will attach to the lift door switch. This switch must provide a ground only when the lift door is **open**. Attach the red wire in the gray cable to the interlock input to the lift. This wire will provide 12V to the lift when all interlock conditions are met. Maximum current for this circuit is 8A. The interlock inputs on FMVSS 403/404 compliant lifts are as follows:

Ricon – Red wire to Pin 7 of 9-pin connector (Ricon Part # 32753).

Braun –Red wire to Pin 6 of 9-pin connector (Grey/Red wire).

Maxon –Red wire to white/red wire on Maxon lift.

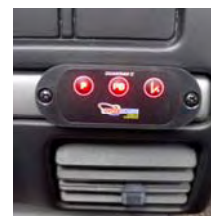
For non FMVSS 403/404 compliant lifts, consult the lift manufacturer for proper hookup.

Finally, snap the green-taped end of the harness into the connector labeled in green “Lift” on the Guardian II Module.



Before continuing installation, the following check must be performed:

Verify that the vehicle ignition is off and the lift door is fully closed for at least 5 minutes. This will ensure the Guardian II module is in sleep mode. Open the lift door. All three indicators on the LED Display Panel should briefly illuminate as a prove-out after the module wakes up. If they do not, check to make sure each harness is connected to the proper Guardian II Module connector as outlined in the above steps. Only proceed to the next step if the indicators illuminate. Otherwise, damage can occur to the module.



VEHICLE 1 HARNESS

This harness can be identified by the orange tape near the 6-pin connector. Disconnect the black Ford connector from the Parking Brake. Plug the female side of the connector from the Brown wire on the Vehicle 1 harness to the parking brake. Install the male side of the connector to the female connector in the Ford harness.

2005-2008 Econoline with B or T Transmission Code only

Locate the Ford OEM Blunt cut wire for “Park”. This wire is located under the hood in the cowl area. On gas engines, it is a White/Orange wire labeled “Park Out”. On diesel engines, it is a Yellow/White wire labeled “TRO_P”. Verify that this wire provides ground in Park only. The orange wire from the Vehicle 1 harness will be run through the vehicle bulkhead. Drill a 5/8” hole in the bulkhead. Feed the orange wire into the engine compartment. Secure the grommet on this wire in the drilled hole. The grommet can be moved along the harness for a custom fit. Trim wire to proper length and connect to the Ford OEM Blunt cut wire for “Park” by soldering the wires and sealing the connection with heat shrink tubing. Secure the harness with wire ties.



Snap the Vehicle 1 Harness into the Guardian II Module connector labeled in orange “Vehicle 1”.

2005-2008 Econoline with A, F, or Q Transmission Code or 2004 Econoline with Gasoline or CNG Engine only

These applications will not have a Ford OEM Blunt cut wire for “Park”. An auxiliary Park Harness (Part # GRDP1 for 2004-2006) or (Part # GRDP10 for 2007-2008) will be needed and the Vehicle 1 Harness will need to be modified. Cut the Orange wire near the connector. Save the grommet, and discard the Orange wire. Locate the Ford black 16-pin (2004-2006) or black 10-pin (2007-2008) connector located above the transmission bell housing. Separate the connector halves and connect the black “T” harness connectors from the optional Park Harness between them. Drill a 5/8” hole in the bulkhead flange for the engine cover (see picture). Feed the two green wires through the hole from the engine compartment. Slide the saved grommet onto the harness and secure in the hole. The grommet can be moved along the harness for a custom fit. Install the two Green wire terminals into the Vehicle 1 Harness connector in the two empty slots next to where the orange wire was. Either Green wire can be installed in either slot. Ensure that the metal pins securely lock into the 6-pin connector. Secure the harness with wire ties



Snap the Vehicle 1 Harness into the Guardian II Module connector labeled in orange “Vehicle 1”.

VEHICLE 2 HARNESS - Locate the Ford shift lock solenoid on the steering column and disconnect the black 3-pin connector. Be careful not to break the plastic tab on the connector. Insert the black female 3-pin connector from the Vehicle 2 harness into the shift lock solenoid. Ensure that it is fully seated into the solenoid. Insert the black male 3-pin connector from the Vehicle 2 harness into the connector that was originally installed in the shift lock solenoid. **It is imperative that these connectors mate with the tabs on the same side. Use the supplied small wire tie to secure the two tabs together. These connectors must not be allowed to separate!**



Snap the Vehicle 2 Harness into the Guardian II Module connector labeled in white “Vehicle 2”

Secure the Guardian II Module in its final location and test for proper operation. (See Post Installation Check List).



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Guardian II Commercial Mobility Lift Interlock (GRD502/602-A)

Post Installation Check List

The following checks must be made after installation of the InterMotive Guardian GRD502 or GRD602 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.
2. Attempt to deploy the lift. The lift must not deploy.
3. 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.
4. Attempt to deploy the lift. The lift must not deploy.
5. Attempt to shift the transmission out of park. The transmission shift lever must not be able to shift.
6. Set the park brake. All three icons should now be illuminated.
7. Attempt to deploy the lift. The lift should deploy.
8. With the lift deployed, attempt to shift the transmission out of park. The transmission shift lever must not be able to shift.
9. Stow the lift and close the lift access door. The Lift Access Door Open icon should now be off.
10. Turn off ignition.
11. Wait approximately 5 minutes for the module to enter "sleep mode." This is verified when all LED's turn off.
12. 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.
13. Stow the lift and close the lift access door. Installation is complete.



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Guardian II Commercial Lift Interlock (GRD502/602-A)

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. 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:

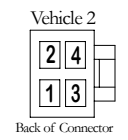
- "P" - Illuminates in red if vehicle is in Park range.
- "PB" - Illuminates in red when the parking brake is engaged. If illuminated, the driver will not be allowed to shift out of park.
- "Lift Door Open Icon" – Illuminates in red when the lift door is open. If illuminated, the driver will not be allowed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

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

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.

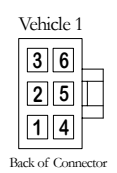
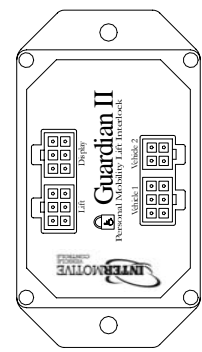
REVISIONS

DATE:	CHANGE:
11/9/07	Rev B



- Vehicle 2
- 1 — RED (Ignition Power)
 - 2 — BLUE (Shift Lock Output)
 - 3 — WHITE (Shift Lock Input)
 - 4 — OPEN (Not Used)

Attach to Shift Lock Solenoid.



- Vehicle 1
- 1 — BROWN (Park Brake Input)
 - 2 — ORANGE (Park Input)
 - 3 — GREEN (Park Input)
 - 6 — GREEN (Park Input)

For Torqueshift Transmission (5 speed)

Attach to Ford park blunt cut wire under the hood.

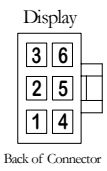
Attach to Park Brake Switch

Auxillary Part # GRDP1

For 4R70/75 Transmission (4 speed)

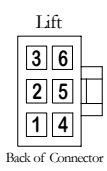
Attach to connector at the transmission bell housing

Insert pins into open cavities



- Display
- 1 — YELLOW (5 V)
 - 2 — WHITE (Door Open LED)
 - 3 — BLACK (Park Brake LED)
 - 4 — BROWN (Not Used)
 - 5 — BLUE (Park LED)
 - 6 — RED (Not Used)

Mount on Dashboard



- Lift
- 1 — RED (Lift Power Out-12V)
 - 2 — BLACK (Lift Door In - GRN)
 - 3 — YELLOW (Battery Power)
 - 4 — BLACK (Ground)
 - 5 — OPEN (Not Used)
 - 6 — RED (Battery Power)

Attach to Ground

7.5 AMP FUSE

Attach to Battery

(Black) Attach to Door Switch
(Red) Attach to Lift



PRODUCT:

Ford Guardian II

DRAWN BY:

Bruce Hodge

PART NO:

GRD502-A

DATE DRAWN: 6/6/2005

CHECK BY:

Ed Prokopik

DATE CHECKED:

6/6/05