

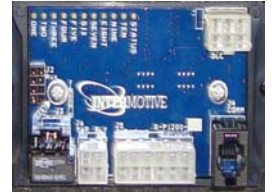


An ISO 9001:2000 Registered Company

GTWY605

Fast Idle, Shift Interlock, I/O
2009-2010 Chevy 610 Van

Contact InterMotive for additional vehicle applications.



Introduction

The Gateway GTWY605 module represents the next generation of Fast Idle, Lift Interlock and Input/Output capabilities from InterMotive Vehicle Controls. The GTWY605 provides a number of benefits for the installer and user. 1/4th the size of its predecessor, easier, faster installation, with a new LED panel which integrates **both** Fast Idle and Lift Interlock functions and requires less dashboard area. Fewer, non-interchangeable connectors simplify installation and help ensure proper connections.



WARNING

Disconnect the battery to prevent setting a check engine light.

Installation Instructions

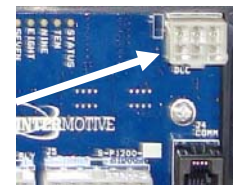
Be sure the vehicle's battery is disconnected before proceeding with installation.

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.

Remove the lower dash panel below the steering column and find a suitable location to mount the module. 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. It is recommended the module be mounted with two screws, however 2-sided foam tape may also be used. Be careful to route the harnesses such that the tilt steering column does not contact them in the full down position. When installing the harnesses, leave several inches of take-out such that the module can be removed if necessary.

Data Link Harness Installation

- Locate the vehicle OBDII Data Link Connector. It will be mounted below the lower left dash panel.
- Remove the mounting screws for the OBDII connector. Plug the Red connector from the GTWY605 Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secure with the supplied wire tie.
- Mount the Black pass through connector from the GTWY605 Data Link Harness in the former location of the vehicle's OBDII connector.
- Secure the GTWY605 Data Link harness so that it does not hang below the lower dash panel.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the GTWY605 module.



LED Display Panel

- Locate a suitable position on the dashboard within view of the driver for mounting the LED Display Panel. The length of the display harness is 40". This is the maximum distance the display can be mounted from the GTWY605 module.



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GTWY605-01-INS

LED Display Panel (Cont.)

- Drill a 5/8" hole in the dashboard where you wish the center of the display to be, being careful not to damage anything behind the dashboard.
- Attach the 4 Pin LED display harness to the GTWY605 Module's 4-pin connector. (Note: on vehicles with Merlin systems, a "Y" harness is provided which also connects to the MIM401-A1 module. See MIM401-A1 instructions).
- Run the free end of the display harness under the dash and out through the 5/8" hole.
- Attach the end of the display harness to the LED Display Panel.
- Ensure panel is level, and secure using the supplied screws.



Control Outputs, Input, and Lift Inhibit Connections - 12-pin I/O connector (optional)

The GTWY605 provides three ground side configurable outputs and one configurable input/output. The outputs can provide vehicle information such as Vehicle Speed, Park, Park Brake, etc., and are configured per customer requirements at InterMotive prior to shipping. These outputs can be used to control upfitter circuits and can sink up to 1/2 amp. The input pin can be connected to a ground side switch to activate Fast Idle or Shift Lock. Grounding the Lift Inhibit pin-2 input will prevent GTWY605 from supplying power on its Wheel Chair Lift Output pin (see below).

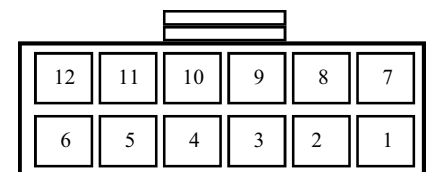
Seven terminals (two extra) are provided. To use any of these outputs, properly crimp a connector terminal provided to the installer supplied wire using the correct crimping tool. (Molex Part# 11-01-0197), and insert into the correct connector pin housing. Make sure the terminals are fully seated in the connector. The largest wire that can be used with these terminals is 16 AWG. Snap this connector into the GTWY605 module's 12-pin connector.

12-pin connector pin out definition

- Pin #1 - Blue - Shift Lock Output
- Pin #2 - Inhibit input - ground to Inhibit Lift
- Pin #3 - I/O Port Pin #2 - Configured output
- Pin #4 - I/O Port Pin #3 - Configured output
- Pin #5 - Green - Door Ajar Input - Ground Signal (Only with Door Ajar Panel Option)
- Pin #6 - Not Used
- Pin #7 - Red - 12V input from Pin #12
- Pin #8 - White - Tow Haul Switch Input (Only with BrakeMax option)
- Pin #9 - I/O Port Pin #1 - Configured output
- Pin #10 - I/O Port Pin #4 - Configured I/O Pin
- Pin #11 - Not Used
- Pin #12 - Red - 12V output to Pin #7



12 Pin I/O Connector



Back of Connector

Lift Connector 4-pin

This harness contains the ignition power, lift 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.

- Ignition Circuit – The lift must be power-side switched. Connect the Yellow wire from pin # 2 of the white 4-pin connector to a fused ignition power source (Hot only with ignition on).
- Lift Power/Vehicle Secure Circuit - Connect the Orange wire (Lift Power/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). **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 4-pin connector from the Lift Harness into the control module.

GTWY 605 System Options

Door Ajar Display Panel - If a Door Ajar Display Panel is used, the green wire included with the panel must be inserted into the GTWY605 12 pin connector Pin #5. Attach the green wire to the door switch wire that provides a ground when the chosen door is open.

GTWY 605-B - Gateway with BrakeMax.

- Pull the OEM TOW/HAUL switch forward to reveal the back of the switch.
- Remove the OEM black, 4-pin connector from the OEM TOW/HAUL switch and connect the GTWY 605 BrakeMax harness 4-pin connector in-series with the OEM connector and the switch.
- Route the wire harness and insert into the GTWY605 12 pin connector Pin #8.

BrakeMax Operation Instructions:

- When the vehicle is started, tow-haul mode is automatically engaged and the tow-haul light will be on.
- To deactivate tow-haul mode, press the tow-haul mode button.
- When vehicle is restarted, tow-haul mode will again be automatically reengaged.

GTWY 605-M - Gateway with Merlin. See LED display panel instructions. (Page 2)

Lift Interlock Post Installation Testing

- Reconnect the battery to enable system testing.
- With the transmission in Park, start the engine, noting the GTWY605 LED panel.
- When the ignition key is turned on, all LED's should turn on for ~2 seconds then back off. The Park LED (P) should illuminate when the transmission is in Park, and the Park Brake LED (PB) should illuminate when Park Brake is set. Verify these LEDs are tracking properly.
- Verify the Lift Door LED illuminates when the Wheel Chair Lift Door is opened. A Door Ajar Display panel will illuminate in red when the lift door is open, and flash in red when the passenger door is open.
- With the vehicle in Park, Park Brake set, Lift Door open, Lift Inhibit not grounded, verify that the Lift Power LED (lightening icon) is on, and that the Lift operates. If the Lift does not operate, check the GTWY 605 LIFT connector. Pin 4 should have 12V (Lift power input), and pin 2 should have 12V (Lift Power/Vehicle Secure output).
- **Confirm that you cannot shift out of Park when the lift door is open. Do not place vehicle in service without the Shift Interlock working properly!**

Fast Idle Post Installation Testing (Fast Idle is an option on some models)

- The Gateway module has several "auto triggers" that will cause it to Fast Idle the engine. These include low battery voltage, air conditioner on, engine cold, and external switch input on I/O connector pin #10.
- Manually engage fast idle by placing the vehicle in Park and press the Yellow Engage button on the LED panel. The Green LED should light and the engine RPM should ramp up to 1500 RPM for gas, 1200 RPM for diesel.
- Press the Service Brake for 1 second. Fast idle must temporarily ramp down anytime the brake pedal is pushed, but will automatically reengage after approximately 2 seconds once the Service Brake pedal is released.
- Exit Fast Idle mode by pressing the Service Brake and the Yellow Manual Engage button together. Fast Idle should cancel and the Green LED should turn off. This will disable Fast Idle until the key or transmission range is cycled.
- Shut down the engine and verify that all LED's turn off, which may take a few minutes. Do not activate any vehicle controls during this time (windows, mirrors, doors, etc.)



**The AFIS option of GTWY605 is properly installed only if it passes all of the above steps.
If any irregular operational issues persist,
contact InterMotive at 530-346-1801 for technical assistance.**



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Gateway 605 Operation:

The Gateway 605 initializes when the vehicle ignition is on. During initialization, LED display panels connected to the Gateway 605 perform prove-out for 2 seconds. After the initialization, the Gateway 605 requests various vehicle data by sending data request messages across the OEM CAN diagnostic data network and all control logic is performed. When the Gateway 605 module has been running and the vehicle ignition is turned to the off or accessory positions, the module goes into a low current consumption "sleep" mode. This may take up to 5 minutes.

The Gateway 605 module obtains data from the onboard vehicle data port. In order to not interfere with a possible scan tool communication, the Gateway 605 will refrain from transmitting CAN messages for 10 seconds if a scan tool CAN communication is detected. If during these 10 seconds another scan tool message is received, an additional 10 seconds will be added to the end of the first 10 second timeout. When no scan tool messages have been received for at least 10 seconds, the Gateway 605 module will restart communication.

ADVANCED FAST IDLE OPTION

The Advanced Fast-Idle System (AFIS) option of the Gateway 605 includes Charge-Protect as well as Fully-Automatic and Manual engage modes. Charge-Protect is a feature that maintains vehicle charging system voltage by increasing and controlling vehicle idle speed when necessary. Whenever charging system voltage falls below a minimum voltage (determined by each bus manufacturer), this AFIS feature will increase idle speed and maintain fast idle until one of the safety conditions is no longer met or the voltage is raised above the minimum level plus .5V. The Fully-Automatic and Manual engage modes also require that all safety conditions are met.

Safety conditions that must be met to engage or maintain Fast Idle operation

Vehicle NOT moving (speed = 0 MPH).
Service Brake NOT pressed.
Vehicle Transmission Range in Park
RPM inside of safe operating range.
Transmission Fluid Temperature below 250° F.
Engine Coolant Temperature below 230° F.

Control/Display Panel:

The left side of the Control/Display Panel consists of one LED and a Manual Engage Switch. The green LED will illuminate when Fast Idle is in progress. When the vehicle's ignition switch is first turned on, the LED will illuminate for 2 seconds as a prove out of proper LED operation. The LED is also used for diagnostic code retrieval by an authorized service technician. The Manual Engage Switch can be used to engage Fast Idle operation if the voltage is above the minimum level and all safety conditions are met.

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GTWY605-01-OP

Fast Idle Operation:

Fast Idle may be initiated by either a manual or automatic Fast Idle trigger. The AFIS strategy can only command elevated idle when certain safety conditions are met (see previous section). Fast Idle operation can be terminated by a safety condition violation, a Merlin Multiplex Network Command, or an automatic Fast Idle disengagement trigger. An automatic Fast Idle disengagement trigger will only act if the vehicle is in the particular type of automatic Fast Idle corresponding with the disengagement trigger. If an automatic Fast Idle is in progress and an automatic Fast Idle disengagement trigger occurs that would cause the Fast Idle to cease, yet there is a different pending automatic Fast Idle trigger, Fast Idle operation will NOT cease. In this case, automatic Fast Idle will continue under the new automatic Fast Idle triggering condition. If a Fast Idle Operation terminates due to an automatic Fast Idle disengagement trigger, automatic Fast Idle is available pending another automatic trigger. If a Fast Idle operation terminates due to a safety condition violation, automatic Fast Idle is unavailable until Park is de-asserted and re-asserted. (Shift out of Park and back into Park). The base Fast Idle RPM level is determined by the type of engine (Gas or Diesel) in the vehicle. For Gas engine vehicles, the idle speed is 1500 RPM and may be increased in increments of 100 RPM by subsequent presses of the manual engage button up to a maximum of 2000 RPM. Diesel applications remain fixed at 1200 RPM.

Manual Fast Idle Start Triggers:

Manual Engage Switch.

Merlin Multiplex Network Command.

Fast Idle Input – ground applied to 12 Pin connector Pin #10 of the Gateway 605 Module, such as an input from Coach AC (OPTIONAL)

Automatic Fast Idle Start Triggers:

Charge Protection - Battery voltage stays below minimum voltage for 2 seconds and engine running for 5 seconds.

Chassis A/C Boost - OEM A/C commanded on with ambient temperature above 70° F and engine running for at least 5 seconds.

Heater Boost – Ambient air temperature below 70° F and Engine Coolant Temperature below 170° F.

Fast Idle Disengagement Triggers:

Safety Condition Violation.

Merlin Multiplex Network Command.

Battery Voltage > 0.5 volts above minimum voltage setting. (Automatic Fast Idle Disengagement Trigger – Active only in Charge Protect mode).

Engine Coolant Temperature > 170° F (Automatic Fast Idle Disengagement Trigger – Active only in Heater Boost mode).

Open or battery voltage on 12 Pin connector Pin #10 while in Fast Idle caused by 12 Pin connector Pin #10 fast idle input. (OPTIONAL)

Transmission Fluid Temperature above 250° F.

Ambient Temperature below 70° F (Only in A/C Boost).

Note: Fast idle will temporarily stop anytime the brake pedal is depressed, but will automatically reengage after approximately 2 seconds once the brake pedal is released. Fast idle may be manually cancelled by depressing the service brake pedal while simultaneously pressing the manual engage switch.

Manual Operation:

To manually engage Fast Idle, the manual engagement switch must be pressed for at least a quarter second and released. The Fast Idle operation will begin when the button is released, not when first pressed. Holding the switch for more than five seconds will initiate a diagnostic routine that displays stored status codes from previous operations. If the driver accidentally enters this routine, it can be exited by cycling the vehicle's ignition off and then back on. To exit Fast Idle operation, the driver can simply depress the service brake pedal while simultaneously pressing the manual engage switch.

Note: When additional electrical or A/C loads are in use, engine RPM may drop. The AFIS feature will then raise the RPM back up to the fast idle speed. When the load is removed, engine RPM will increase. AFIS will then lower the RPM back to the fast idle speed.

GTWY605-01-OP

Lift Operation

The Intelligent Lift Interlock System of the Gateway 605 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 door is open.
Lift inhibit is not activated.

The Gateway 605 will not allow the vehicle to be shifted out of park if the lift door is open. The vehicle can be shifted out of park if only the passenger 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 12 Pin connector Pin #10, 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.

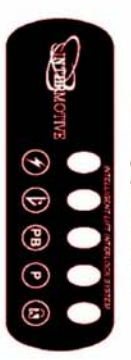
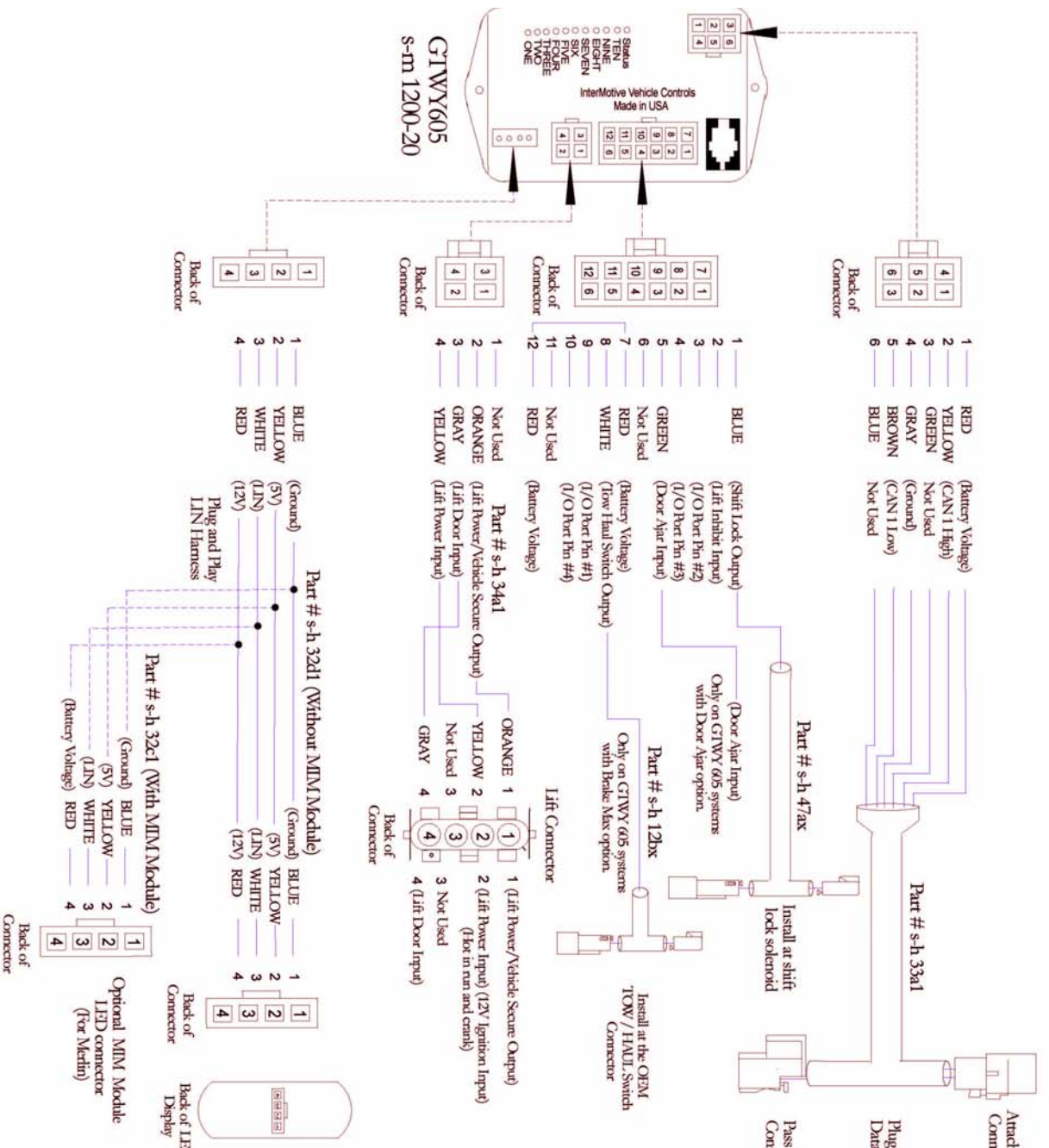
When the vehicle is first started, or if the key is turned to the "Run" position, the five upper LED's on the display panel will illuminate for 2 seconds as a prove out of the LED's. The lower Icon LED's are backlit and should remain illuminated whenever the Gateway 605 module is awake. The module will 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 - Lift Door Display Panel only**- Illuminates in red when the lift door is open.
- **Door Ajar - Door Ajar Display Panel only**- Illuminates in red when the lift door is open, flashes in red when the passenger door is open.
- **Shift Lock** - Illuminates in Red when the lift door is open and/or the parking brake is applied. It can also be illuminated from an external command through the I/O port pin 4 input at Pin #10 of the 12 pin connector, if the proper configuration is installed. Also a command by the InterMotive Merlin Multiplex system, if equipped, will illuminate the shift lock LED. If illuminated, the driver will not be allowed to shift out of park.

If the GTWY605 fails any step in the System Operating Instructions review the instructions.

If necessary, call

InterMotive technical support @ (530) 346-1801.



Submit product registration at www.intermotive.net

If the GTWY605 fails any step in the Post Installation Test, review the installation instructions and check all connections. If necessary, call

InterMotive technical support @ (530) 346-1801.

GTWY605-01-CAD