

GTWY805-A

2010-2011 Ford F 650/750

2010-2011 Freightliner M2

2010-2011 International 3200

Contact InterMotive for additional vehicle applications.

Introduction

The Gateway GTWY805-A module represents the next generation of Fast Idle, Lift Interlock and Input/Output capabilities from InterMotive Vehicle Controls. The GTWY805-A provides a number of benefits for the installer and user. Easy, fast installation, with a LED panel which integrates **both** Fast Idle and Lift Interlock functions and requires less dashboard area.

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.



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

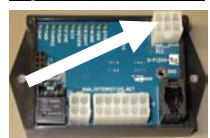
Remove the lower dash panel below the steering column and find a suitable location to mount the module. Do not actually mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module. It is recommended the module be mounted with two screws, however 2-sided foam tape may also be used. Be careful to route the harnesses such that a 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.

J1939 Data Link Harness

- **Important:** On the following wires use solder and electrical tape to make all of the connections.
- Locate the vehicle's J1939 Connector. It is usually mounted below the lower left dash panel. Remove the J1939 connector from the mounting bracket.
- Locate Pin A (Black wire) of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Black wire from the GTWT805 Data Link Harness.
- Locate Pin B (Red wire) of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Red wire from the GTWT805 Data Link Harness.
- Locate Pin C (Yellow wire) of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Yellow wire from the GTWT805 Data Link Harness.
- Locate Pin D (Green wire) of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Green wire from the GTWT805 Data Link Harness.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the GTWY805-A module.
- Secure the GTWY805-A Data Link harness so that it does not hang below the lower dash panel.



Back of the connector



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 GTWY805-A module.
- 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 GTWY805-A Module's 4-pin connector.
- 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.
- See System Operating Instructions pages for descriptions of LED meanings



Door Ajar Display Panel

- If the optional Door Ajar Display Panel is used, the green wire included with the panel should be inserted into the GTWY805-A 12 pin connector Pin #5, to allow connection to a passenger door switch.
- Attach the green wire to the door switch wire that provides a ground when the door is open.

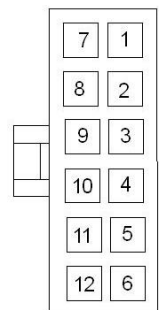
Control Outputs, Input, and Lift Inhibit Connections - 12-pin I/O Connector

The GTWY805-A provides three ground side configurable outputs and one configurable input/output. The outputs can provide vehicle information 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.

A 12 pin mating connector and seven terminals (two extra) are provided. To use any of these outputs, properly crimp a provided connector terminal to an installer supplied wire using the correct crimping tool (Molex Part# 11-01-0197), and insert into the correct connector pin housing. The pin MUST be properly oriented for it to fully seat and click into place. The largest wire that can be used with these terminals is 16 AWG. Snap this connector into the GTWY805-A module's 12-pin connector.

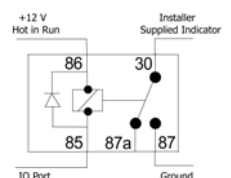
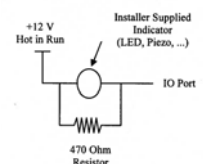
12-pin connector pin out definition

- Pin #1 - Orange - Buzzer 12V Output
- Pin #2 - Yellow - Range Inhibit Output (optional connection to transmission)
- Pin #3 - I/O Port Pin #2 - Configured Low True 1/2A Output (Default: RPM>400)
- Pin #4 - I/O Port Pin #3 - Configured Low True 1/2A Output (Default: Park Brake Input)
- Pin #5 - Green - Door Ajar Input (Only with Door Ajar Panel Option)
- Pin #6 - Not Used
- Pin #7 - Red - From Pin #12
- Pin #8 - Blue - Vehicle Lock 12V 1/2A Output
- Pin #9 - I/O Port Pin #1 - Configured Low True 1/2A Output (Default: VSS>70mph)
- Pin #10 - I/O Port Pin #4 - Configured I/O Pin (Default: Fast Idle Request)
- Pin #11 - Vehicle Lock Request Input. Active Low (gnd) locks shifter or Park Brake
- Pin #12 - Red - To Pin #7



Back of the Connector

Note: When using the I/O outputs to drive installer supplied low current devices, such as LED's or Piezo buzzers, a small amount of leakage current when the pin is inactive may cause the external low current device to activate. This is indicated by the LED turning on dimly or the Piezo buzzer sounding faintly when the output is inactive (Conditions not met). To correct this, install a 470 Ohm 1W resistor across the low current device.



Resistor: Digikey Part # 470WCT-ND

Or, drive a relay with the I/O output to switch ground to the low current device.

Relay: Digikey Part # PB682-ND

Warning Indicator Beeper

- Choose a location accessible to the driver to mount the warning indicator beeper.
- Drill a 1 1/8 inch hole to mount the beeper, being careful not to damage anything behind the dashboard.
- Attach the beeper Black wire eyelet to a ground source.
- Secure the beeper into the hole with the supplied nut and rubber washer.
- The beeper bezel can be rotated to control the volume.



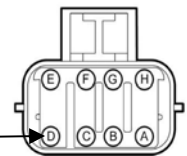
Range Inhibit Output

The GTWY805-A can operate in conjunction with the Allison transmission Range Inhibit feature. This feature allows the GTWY805-A to control the transmission's ability to shift into gear during wheel chair lift operation. The GTWY805-A must be connected to the Allison Transmission Control Module for the function to operate. These connections are described below.

F650/750

- Locate the C314 Transmission Body Builder connector.
- Attach the GTWY805-A 12 pin connector Pin#2 Yellow wire to an installer supplied wire, that runs through the firewall, that is connected to the C314 Transmission Body Builder connector Pin D Gray/Yellow wire.

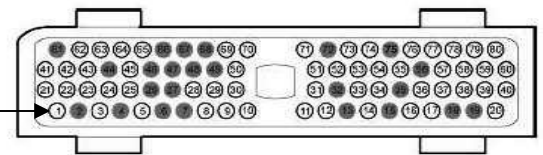
Front of the
C314 Transmission
Body Builder Connector



Freightliner M2 Series

- Locate the Allison Transmission Control Module connector.
- Attach the GTWY805-A 12 pin connector Pin #2 Yellow wire to an installer supplied wire that runs to the Transmission Control Module. Attach the wire to the Allison Transmission Control Module connector Pin #1 Gray/Yellow wire.

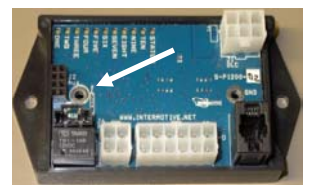
Front of the Allison Transmission
Control Module Connector



Allison Range Inhibit Feature

A functional change was made to the GTWY805-A starting with firmware v1.10. The module no longer automatically configures the Allison transmission to support the Range Inhibit input & Park output features. These functions can still be enabled by GTWY805-A, by the following procedure:

1. With module installed, turn the key to "RUN", and wait for the panel to prove out.
2. Set the Park Brake.
3. Put the module in Test mode by jumping a ground source to the circular silver ring on top side of the module labeled "TEST". If the procedure was successful, several of the LEDs on the module will start to flash.
4. Now press and fully release the Service Brake 5 times within 10 seconds.
5. Immediately tap the accelerator pedal once.



If the above sequence was correctly executed, the green Lift Power LED will flash on the panel. This indicates that the transmission features are now enabled. If the red Park LED flashes, then the transmission was not successfully programmed. If no LED's flash, then the sequence was not recognized and should be re-attempted after waiting 10 seconds.

Vehicle Lock Output

GTWY805-A requires the installation of an installer or OEM supplied vehicle locking mechanism (i.e. a Park Brake Lock solenoid or Shift Lock solenoid). This device must allow GTWY805-A to keep the vehicle **locked** and prevented from moving when the wheel chair lift door is open. This can be done by either locking the Park Brake so it can NOT be released, or locking the shifter so it can NOT be shifted out of Park. Note that vehicles which do not provide a locking Park position must provide a Park Brake locking mechanism.

- Attach the GTWY805-A 12 pin connector Pin #8 Blue wire to the installer supplied wire that runs to the vehicle locking mechanism. The GTWY805-A will provide 12V 1/2A to this wire when the vehicle needs to be locked from moving.
- GTWY805-A will flash the Vehicle Lock icon on the LED panel if it detects this output is not connected to a load. This is a safety feature to alert the driver that the vehicle may not be properly "locked."

Lift Connector 4-pin

This 12" harness contains the circuits listed below. One end plugs into the GTWY805-A module and the other end provides a Molex MLX connector which is intended to plug into the wheel chair lift harness. A mating harness can be fabricated by the installer. The mating connector is Molex Part # 0050841040. The mating terminals are Molex Part # 0002081003. We recommend using Molex terminal extractor tool Part # 0011010168 and Molex hand crimp tool # 0638116800.

- Vehicle Secure / Lift power Circuit (output) - Connect the Vehicle Secure Orange wire from pin #1 of the white 4-pin Lift 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 8A (see lift manufacturers installation instructions). **Note:** Do not power any other loads (ie: lights, motors, etc.) from this circuit which might increase the current draw to greater than 8A.
- Ignition Circuit (input) – Connect the Yellow wire from pin #2 of the white 4-pin Lift connector to an appropriately fused ignition power source (Hot only with ignition on). The fuse should support a current draw of 8A.
- Lift Inhibit (input) - Since this circuit generally does not connect to the wheel chair lift, no wire is provided in the lift harness. A lift inhibit (or lift enable) switch can be connected to this connector location by crimping one of the provided Molex terminals to a wire and inserting it into the empty pin 1 cavity of this connector. Connecting this wire to a grounding switch will prevent GTWY805-A from supplying power to the Vehicle Secure Output, thus disabling the lift.
- Lift Door Circuit – Locate the vehicle's lift door switch circuit. Connect the Gray wire from pin #4 of the white 4-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. Finally, plug the White 4-pin connector from the Lift Harness into the GTWY805-A module.

Post Installation Testing Check List

Lift Interlock Testing

- Reconnect the battery to enable system testing.
- With the transmission in Park, start the engine, noting the GTWY805-A LED panel. **Note:** In vehicles without Park use Neutral.
- 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/Neutral, 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. The optional Door Ajar Display panel will illuminate in red when the lift door is open, and flash red when the passenger door alone is open.
- With the vehicle in Park, Park Brake set, Lift Door open, Lift Inhibit not grounded, verify that the Vehicle Secure/Lift Power LED (lightening icon) is on, and that the Lift operates. If the Lift does not operate, check the GTWY805-A LIFT connector J6. Pin 4 Yellow wire should have 12V (Lift power input), and pin 2 Orange wire should have 12V (Vehicle Secure/Lift Power output).
- Confirm that with the vehicle in Park, Park Brake set, Lift Door open, Lift Inhibit not grounded, the vehicle can NOT be moved. Either the transmission can not be shifted from Park, or the Park Brake can not be released. Do not rely solely on the Range Inhibit function of the transmission, as this can allow the vehicle to be shifted into Neutral, allowing the vehicle to roll with the lift deployed.
- Note that at this stage, as a safety feature, closing the lift door does NOT release Vehicle Lock. The Park Brake must be released and the Service Brake must be applied to release Vehicle Lock.

Do not place vehicle in service without the Lift 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 and an 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 1200 RPM.
- Press the Service Brake for 1 second. Fast idle must temporarily ramp down anytime the Service Brake is pushed, but will automatically re-engage after approximately 2 seconds once the Service Brake 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 up to a minute. Do not activate any vehicle controls during this time (windows, mirrors, doors, etc.)



The AFIS option of GTWY805-A is properly installed only if it passes all of the above steps.

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



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GTWY805-A System Operating Instructions

2010-2011: Ford F650/750, Freightliner M2, International 3200

Gateway 805 Operation:

Gateway 805 is a wheel chair lift interlock system which is intended to prevent driving the vehicle when the wheel chair lift is deployed. GTWY805-A also optionally provides an engine Fast Idle system. An LED display panel, usually mounted on the dashboard provides system status.

GTWY805-A initializes when the vehicle ignition is turned on. During initialization, the LED display panel performs a prove-out for 2 seconds. After the initialization, the system collects vehicle data by monitoring the J1939 data port. It uses this information to perform all of its control logic. When the GTWY805-A 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 anywhere from several seconds to a minute.

Lift Operation

Wheel chair lift operation will only be allowed when all of the following conditions are met:

- Vehicle transmission range in Park (or Neutral if the vehicle lacks a Park position)
- The Park Brake is applied.
- The vehicle ignition is on.
- The Lift Door is open.
- Lift inhibit is not activated. (Optional control input).

Once the wheel chair lift door is open, GTWY805-A will not allow the vehicle to be driven. If the vehicle is not in a secure state, GTWY805-A will not allow the lift to be operated.

LED Panel

The LED panel provides the following vehicle status (left to right) when the key is on.

- **Fast Idle Engage button**-push for 1/4 second to manually engage Fast Idle
- **Fast Idle Engaged status** - indicates when GTWY805-A is commanding engine Fast Idle
- **Vehicle Secure** – (lightening Icon) Illuminates green when lift is enabled. All conditions for lift operation have been met.
- **Door Open** - (not available on "Door Ajar" panels)- Illuminates red when lift door open.
- **Park Brake** – Solid Red when Park Brake set. Flashes when not set & Lift door open.
- **Park** - Solid Red when in Park (neutral w/o a Park option). Flashes when not set & lift door open.
- **Vehicle Lock** - Illuminates in Red when the Lift Door is open and the Park Brake and or transmission shifter is locked. It can also be illuminated from other systems in the vehicle. If the Vehicle Lock LED is illuminated, the driver will not be able to drive or move the vehicle. Flashes when output is not properly connected. Vehicle must be serviced asap.
- **Door Ajar** - (Door Ajar Panel only) - Solid Red when the lift door is open, flashes when the passenger door alone is open.

The lower backlit Icons on the panel will remain illuminated whenever GTWY805-A is awake. The module will stay awake for several minutes after the ignition is turned off.

InterMotive Inc.
13395 New Airport Rd. Suite A
Auburn, CA 95602

Phone: (530)-823-1048
Fax: (530)-823-1516

www.intermotive.net
products@intermotive.net
GTWY805-02-OP

GTWY805-A

System Operating Instructions

2010-2011: Ford F650/750, Freightliner M2, International 3200

(continued)

BEEPER

The warning beeper will sound when attempting to operate the wheel chair lift when one of the safety conditions is not met, such as opening the lift door while not in Park (neutral if no Park), or not having the Park Brake set, or if vehicle motion is detected (rolling). Beeper volume can be adjusted by rotating the bezel on the beeper. Beeper location is determined by bus manufacturer.

ADVANCED FAST IDLE OPTION

Fast Idle is an *automatic* system that increases the engine's idle speed under certain circumstances. This is never done when the transmission is in Drive, only when the vehicle is stopped in Park/Neutral. This may be done to "Charge Protect" the vehicle batteries, or to enhance the vehicle's air conditioning, etc. Fast Idle can only occur when all of the following 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 (or Neutral with the Park Brake applied, if vehicle lacks a Park position)

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 Button. The green LED will illuminate when Fast Idle is in progress. In addition to coming on automatically, Fast Idle can be manually engaged by pushing the Yellow ENGAGE button

Manual Fast Idle Start Triggers:

Manual Engage Switch - press for 1/4 second.

Merlin Multiplex Network Command. (If vehicle equipped with Merlin system)

Fast Idle Input – Other vehicle systems may request Fast Idle, such as rear Coach air conditioning.

Fast Idle Disengagement Triggers:

Service Brake pressed.

Merlin Multiplex Network Command.

Vehicle moving (speed > 0 MPH).

Vehicle Transmission Range in not in Park

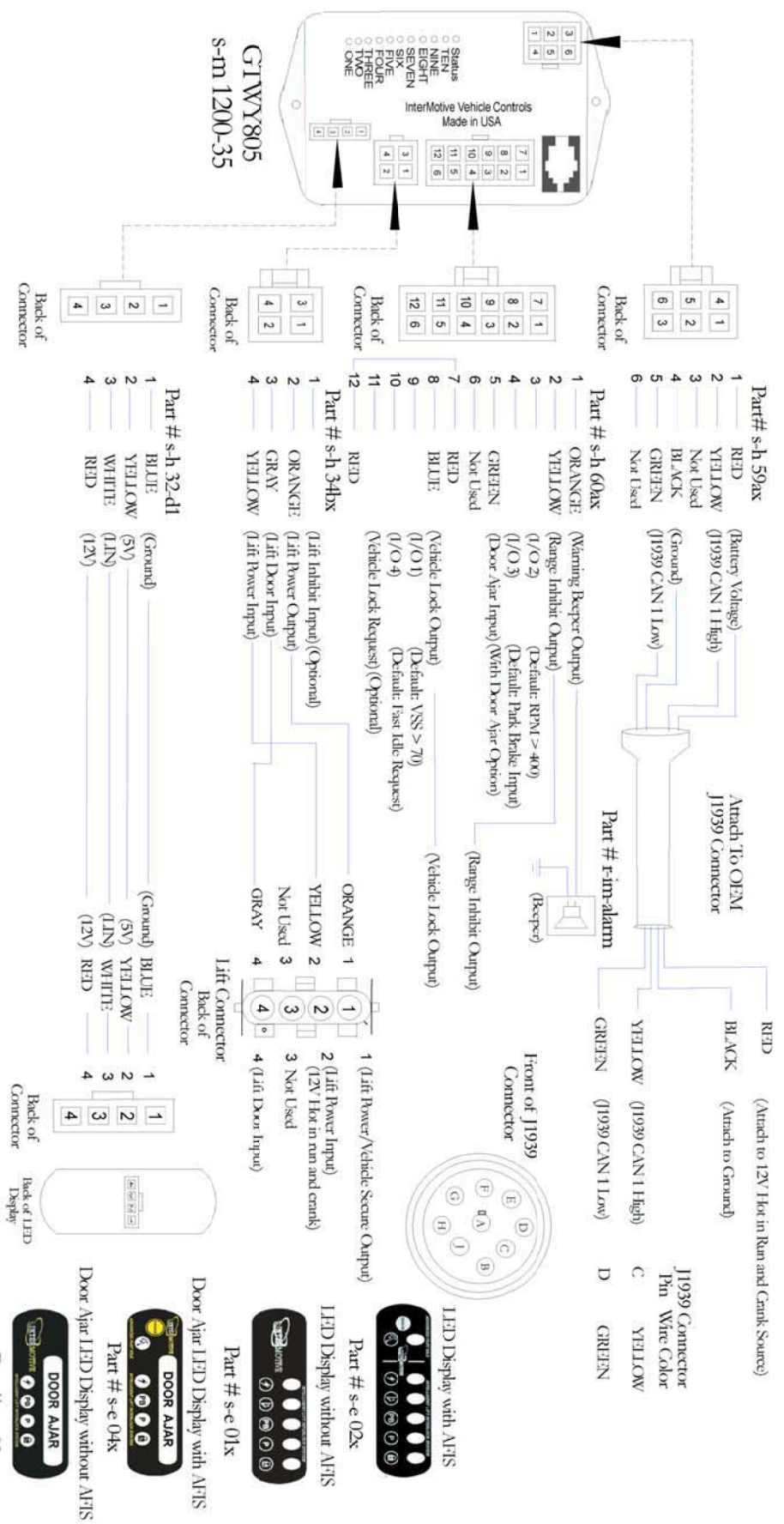
(or not in Neutral with the park brake applied, if vehicle lacks a Park position)

RPM above safe operating range.

Transmission Fluid Temperature above 250° F.

Engine Coolant Temperature above 230° F.

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



Submit product registration at www.intermotive.net

If the GTWY805-A fails any step in the Post Installation Test, review the installation instructions and check all connections. If necessary, call

InterMotive technical support @ (530) 823-1048.

GTWY805-02-CAD