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## Gateway<sup>AI</sup> (GTWY401-A1) – Diagnostics for AFIS Option

<p><b>Ford Econoline – 2005-2006</b> <b>GM/Chevy 560/610 6.6L Diesel – 2006</b></p>
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Before beginning diagnostics make sure the technician has thoroughly reviewed the Gateway<sup>AI</sup> installation instructions as well as the Gateway<sup>AI</sup> operating instructions. Both are available on [www.intermotive.net](http://www.intermotive.net) or by contacting InterMotive at 530-346-1801.

### **LED's don't proveout on initial start-up.**

- Ensure LED harness is fully seated in Gateway<sup>AI</sup> module.
- Ensure 6-Pin Data Link Connector is fully seated in the Gateway<sup>AI</sup> module.
- Ensure Data Link Harness Connector is fully seated to the vehicle Data Link (below dash panel).

### **LED's flash alternately and fast idle does not operate.**

- No CAN communication with vehicle. Ensure 6-Pin Data Link Connector is fully seated in the Gateway<sup>AI</sup> module. Ensure Data Link Harness Connector is fully seated to the vehicle Data Link (below dash panel).
- Vehicle does not have a valid VIN # in the powertrain control module (PCM). PCM must have proper VIN programmed in by OEM Dealer.

### **LED's proveout but vehicle will not enter, or does not complete Fast Idle mode**

- Verify all safety conditions are met.
- Check for Diagnostic Trouble Codes.

To display Diagnostic Trouble Codes on the Red LED, the technician must turn off the vehicle ignition, continuously press the manual engage switch while turning the ignition back on. Keep the switch pressed until the red and green LED's turn on and then off. The switch can now be released and codes can be retrieved. A 2-digit code is displayed by flashing the first digit, waiting one second, flashing the second digit, and then waiting four seconds before another code is displayed. For example, if the status code was 2-4, the Red LED would flash two times, be off for one second, flash four times, and then be off for four seconds. Codes in *Italics* are functional only if the associated option is included in the Gateway<sup>AI</sup> calibration. If codes are received check all connections in the Gateway<sup>AI</sup> system. These codes and their meanings are summarized in Table 1 on the next page. These codes are real time codes and may change due to changes on the vehicle.

<b>Code</b>	<b>Meaning</b>
1-1	Safety Conditions Met, Ready for First Fast Idle
1-2	Safety Conditions Met, Fast Idle Complete due to Vehicle Speed
1-3	<i>Safety Conditions Met, Fast Idle Complete due to Timeout</i>
1-4	Safety Conditions Met, Fast Idle Complete due to Transmission Fluid Temperature
1-5	<i>Safety Conditions Met, Fast Idle Complete due to Parking Brake</i>
1-6	Safety Conditions Met, Fast Idle Complete due to RPM
1-7	Safety Conditions Met, Fast Idle Complete due to Gear \ Clutch Position
1-8	Safety Conditions Met, Fast Idle Complete due to Service Brake
1-9	Safety Conditions Met, Fast Idle Complete due to Engine Coolant Temperature
1-10	Safety Conditions Met, Fast Idle Complete due to Battery Voltage > 13 V while in Charge Protection
1-11	Safety Conditions Met, Fast Idle Complete due to Cab A/C Commanded OFF while in Cab A/C Boost
1-12	<i>Safety Conditions Met, Fast Idle Complete due to Coach A/C Commanded OFF while in Coach A/C Boost</i>
1-13	Safety Conditions Met, Fast Idle Complete due to ECT > 190° F while in Heater Boost
1-14	Safety Conditions Met, Fast Idle Complete due to Merlin Command.
1-15	<i>Safety Conditions Met, Fast Idle Complete due to Open or Battery voltage on I/O Pin 4 Fast Idle input</i>
2-1	Fast Idle In Progress Due to Manual Engage Switch
2-2	Fast Idle In Progress Due to Merlin Command
2-3	<i>Fast Idle In Progress Due to PTO Command</i>
2-4	Fast Idle In Progress Due to Charge Protection (Battery Voltage < 11.5 V)
2-5	Fast Idle In Progress Due to Cab A/C Boost (Ford A/C ON with IAT > 70° F)
2-6	<i>Fast Idle In Progress Due to Coach A/C Boost (Coach A/C ON with IAT &gt; 70° F)</i>
2-7	Fast Idle In Progress Due to Heater Boost (ECT < 170° F and IAT < 70° F)
2-8	<i>Fast Idle In Progress Due to grounded input on I/O Pin 4 (IF ENABLED AS A FAST IDLE INPUT)</i>
3-1	RPM too Low for Fast Idle
3-2	RPM too High for Fast Idle
3-3	Gear / Clutch Position Incorrect for Fast Idle
3-4	Vehicle Speed Incorrect for Fast Idle
3-5	Service Brake Incorrect for Fast Idle
3-6	Transmission Fluid Temp too High for Fast Idle
3-7	<i>Park Brake Incorrect for Fast Idle</i>
3-8	Engine Coolant Temperature too High for Fast Idle
5-3	Valid VIN not detected
6-1	Ford CAN Network Communication Failure
9-1	Scan Tool Detected, Module Temporarily Disabled

**Table 1: Diagnostic Trouble Codes**

## Vehicle intermittently drops out of Fast Idle mode, but currently works properly

- Check for Fast Idle Stop Codes.

To aid in troubleshooting intermittent concerns, the Gateway<sup>AI</sup> system stores the last five Fast Idle Stop Codes in non-volatile memory. Thus if a Fast Idle operation terminates unexpectedly, the technician can determine the cause. To initiate this feature, turn on vehicle ignition, wait until LED's proveout, and then press and hold the manual-engage switch continuously for at least five seconds. The red and green LED's will flash after 5 seconds. Release the switch and the five most recent stop codes will be read sequentially from the most recent to the oldest. A code is displayed by flashing the first digit, waiting one second, flashing the second digit, and then waiting four seconds before another code is displayed. For example if the Fast Idle Stop Code was 18, the green LED would flash one time, be turned off for one second, flash eight more times, and then remain off for four seconds. After the codes have been displayed, the LED's flash and normal operation resumes. If codes are received check all connections in the Gateway<sup>AI</sup> system. Codes in *Italics* are functional only if the associated option is included in the Gateway<sup>AI</sup> calibration. The Fast Idle Stop Codes are listed in Table 2.

Code	Meaning
1-2	Fast Idle Complete due to Vehicle Speed
1-4	Fast Idle Complete due to Transmission Fluid Temperature
1-6	Fast Idle Complete due to RPM
1-7	Fast Idle Complete due to Gear \ Clutch Position
1-8	Fast Idle Complete due to Service Brake
1-9	Fast Idle Complete due to Engine Coolant Temperature
1-10	Fast Idle Complete due to Battery Voltage > 13 Volts while in Charge Protection
1-11	Fast Idle Complete due to Cab A/C Commanded OFF while in Cab A/C Boost
1-13	Fast Idle Complete due to ECT > 170° For Air Temp > 70° F while in Heater Boost
1-14	Fast Idle Complete due to Merlin Command.
1-15	<i>Fast Idle Complete due to Open or Battery voltage on I/O Pin 4 Fast Idle input</i>

Table 2: Stop Codes

If further assistance is required, contact InterMotive at (530) 346-1801. Be sure to write down any Diagnostic Trouble Codes or Fast Idle Stop Codes received so that you can provide them to the InterMotive Engineer.