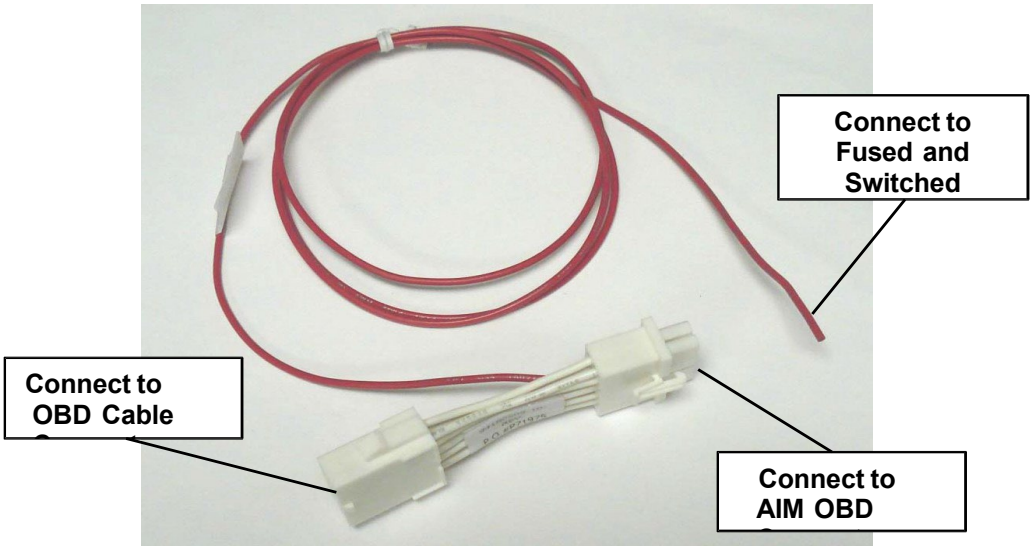
Install 941B0509 AIM Switched Power OBD Adapter

NOTE	This kit only applies to AIM equipped vehicles utilizing OBD connections. The AIM module must be powered during fueling. Use of this wiring solution requires the vehicle ignition switch to be switched to the Accessory position when fueling. If this is not acceptable, other options for removing AIM power must be used. Product Bulletin 143 provides for a similar solution using a Time Delay Relay.

The 941B0509 AIM Switched Power OBD Adapter is an inexpensive, easy to install solution for removing power from AIM modules when the vehicle ignition switch is turned off. As noted above, this solution only applies to vehicles using OBD connections, and the vehicle ignition switch must be switched to Accessory while fueling.



The 941B0509 AIM Switched Power OBD Adapter will only fix problems generated by a power drain through the AIM module. The Sleep Test and Current Draw Test will determine if installation of the adapter is necessary to resolve battery drain problems. Both these tests should be performed before installing the adapter.

Sleep Test

The AIM module will almost certainly drain the battery if it does not go to sleep. When awake and active, the module will draw 150-250mA of current. This typically isn't a problem because the vehicle engine is running and the alternator is charging. When the AIM module goes to sleep, it should be drawing no more than 25-45mA of current. If the AIM module is not within RF range of a powered, passive FMU, the green FMU Connect LED will not be illuminated, and it should go to sleep 2 minutes after the vehicle ignition is turned off, and switch to a low power mode. If it is within RF range of a powered, passive FMU, the green FMU Connect LED will be illuminated, and it should go to sleep 15 minutes after the vehicle ignition is turned off.

To determine if the AIM module is going to sleep, observe the LEDs. The amber Heartbeat LED will stop pulsing. The yellow OBD/Speed Sensor LED may go out after the ignition is turned

off, or flash for one minute then go out. If the green FMU Connect LED is illuminated, the module will not go to sleep for 15 minutes after the ignition is turned off. Call Syntech's Customer Satisfaction Center (800-888-9136, Ext. 2) to troubleshoot the AIM module not going to sleep. The 941B0509 AIM Switched Power OBD Adapter may be the solution for some problems where the AIM module does not go to sleep.

Current Draw Test

A Current Draw Test is performed to measure vehicle current draw with and without an AIM module connected. The test will determine if any battery drain problems are being generated by AIM. A multimeter capable of measuring DC milliamps (mA) will be required. Although the measurements taken in steps 4 and 9 are all that are required to determine if the current draw is excessive, the other measurements should be taken as they may isolate the cause to an unserviceable AIM module or defective vehicle electrical system. Perform the following:

> ***NOTE*** To ensure correct measurements, it is critical the battery is not disconnected from the vehicle during this procedure. If the current measurement method requires disconnection from the battery, do so before the procedure is started. Also, ensure the green (enumerated) FMU Connect LED on the AIM module never illuminates during the test. If it does, move away from, or power down any nearby FMU before restarting the test.

1. Start with the vehicle off, and AIM disconnected.
2. Turn the vehicle key to the ON position (not back towards ACCESSORY, but forward one position-- DO NOT start the vehicle). Wait 20 seconds.

> ***NOTE*** High current accessories (i.e., headlamps and interior or underhood lamps) should be turned off during the current draw test both with and without the AIM module connected.
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> If test conditions are not identical for both portions of the test, the test results will not be accurate.

3. Turn the vehicle off and monitor the current for 10 minutes. Ensure the battery does not become disconnected from the vehicle during this time.
4. After 10 minutes, current should have dropped considerably and stayed constant for the last several minutes. Take and record the current reading: Without AIM, current reading: (A). This current reading may vary from vehicle to vehicle. Factory specifications for the vehicle should be consulted to determine an acceptable range.
5. While continuing to monitor the current reading, reconnect the AIM module to the OBD port. The current draw should increase, and may fluctuate some.
6. Turn the key to the on position. Watch the AIM module and wait for the yellow OBD Connect LED to illuminate (the one next to the pulsing amber Heartbeat LED).
7. Without disconnecting the AIM module from the vehicle, turn the key to off. The AIM will remain awake. Take and record the current reading: With AIM awake, current reading: _____
8. After approximately 2 minutes, the AIM module should go to sleep (all of the LEDs will be off). When this occurs, the current draw should decrease. It may fluctuate some.

When the AIM module has gone to sleep, take and record the range (low to high): With AIM asleep, initial current range: _____ to _____.

9. Leave the vehicle off and continue to monitor the current for 10 minutes. After 10 minutes, the current draw may have decreased even more. Take and record the current reading: With AIM asleep, final current reading: _____(B).
10. Subtract (A) from (B): _____. This is the amount of additional current draw AIM is causing when it is sleeping. If this amount is greater than 25 to 45 mA (milliamps), there is a problem which may be "draining the battery," and the 941B0509 AIM Switched Power OBD Adapter should be installed.

Installation

Before installing a 941B0509 AIM Switched Power OBD Adapter (see page 1), verify it is necessary by performing the preceding Sleep Test and Current Draw Test. If the correct results are not obtained in these tests, nothing will be gained by installing the adapter.

This installation procedure assumes the AIM module has already been installed and performing satisfactorily when the vehicle ignition switch is turned on. Perform the following to install the 941B0509 AIM Switched Power OBD Adapter:

1. Locate the vehicle fuse box. Find a fuse position that is powered with 12VDC when the ignition switch is switched to Accessory and has no power when the ignition switch is off.
2. Verify the vehicle ignition switch is turned off.
3. Disconnect the OBD-to-AIM cable from the AIM module.
4. Plug the OBD-to-AIM cable male connector into the female end of the 941B0509 adapter, and the male end of the 941B0509 adapter into the AIM module.

NOTE If a source other than the vehicle fuse box is used to obtain switched power for the adapter, install the included inline fuse holder with a 3-amp fuse on the input power end of the 941B0509 adapter red wire.

5. Route the red wire of the 941B0509 adapter to the fuse position or wire found in step 1.
6. Using a suitable connector for the application, connect the red wire to the switched power source found in step 1. If an inline fuse is not present, install the provided inline fuse holder and 3-amp fuse on the input end of the red wire.
7. Test the connection. With the ignition switch turned off, check for no AIM indicator lights. Turn the ignition switch to the Accessory position. Check for amber Heartbeat and yellow OBD/Speed Sensor light.

TIP If any questions arise, contact Syntech Systems, Inc.'s Customer Satisfaction Center (CSC) at 1-800-888-9136, ext. 2, or email support@myfuelmaster.com.