

Off Road Engineering
(949) 581 2991
HIC900 Throttle Controller
For 2005 and newer FORD vehicles

Overview

The HIC900 Throttle Controller is designed to interface with the Stationary Elevated Idle Control (SEIC) built into the vehicle's PCM. SEIC is standard on all 2005+, Ford Super Duty F-Series light trucks F-250/350/450/550, E-Series Vans E-250/350/450, over-8500 lb. GVWR, all powertrains.

The HIC900 interfaces with the Ford SEIC blunt cut wires via .25 inch blade connectors.

On F-Series the blunt cut wires are located in the cabin, tagged and bundled above the parking brake pedal assembly. On E-Series the blunt cut wires are located in the engine compartment, tagged and bundled with the large harness running below the windshield/cowl.

The HIC900 provides 5 modes of operations:

- Three user adjustable fast idle presets, RPM1, RPM2, RPM3, activated by a 12V signal
- Charge protect mode for Gas and Diesel engines, BCP, activated by a 12V signal
- Variable speed input, VAR, using a 10K 10 turn potentiometer

The modes are prioritized as follows:

1. RPM1
2. RPM2
3. RPM3
4. VAR (Variable RPM)
5. BCP (Battery Charge Protect)

A corresponding LED will indicate which mode is active.

The HIC900 provides stable RPM levels for both Gas and Diesel engines, due to its unique voltage regulation method. This means that the RPM level will not fluctuate when applying high electrical demands, such as aftermarket inverters or generators. RPM ranges are as follows:

- Diesel engines: 1200 RPM to 2400 RPM
- Gasoline engines: 900 RPM to 2250 RPM

The Battery Charge Protect (BCP) feature can be used on gas and diesel engines. Idle speed will elevate to the RPM3 set point when the battery voltage is sensed below 13.0V for 5 seconds and will turn off after 5 minutes if sensed above 13.7V. If the voltage is below 13.7V after the 5 minutes, the elevated idle will remain on and repeat the cycle. Elevated idle can be turned off prior to the 5 minute interval if the voltage is above 13.0V by depressing the service brake. The *BCP* LED on the controller indicates a low voltage condition by flashing. Engine idle is only elevated when low battery voltage is sensed, eliminating unnecessary engine revving.

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Operation

Engine speed may be controlled by one of the 5 operating modes of the HIC900 Throttle Controller. The desired mode may be selected by use of a switch or relay contact. A corresponding LED indicates which mode is active.

- RPM1, RPM2, RPM3: Activated by a +12V signal, RPM is adjusted by corresponding trim pot.
- BCP: Battery Charge Protect, activated by a +12V signal, RPM level is adjusted with the RPM3 trim pot. The “BCP” LED will flash when low battery voltage is sensed.
Engine idle is only elevated when low battery voltage is sensed, eliminating unnecessary engine revving.
Idle speed will elevate to the RPM3 set point when the battery voltage is sensed below 13.0V for 5 seconds and will turn off after 5 minutes if sensed above 13.7V. If the voltage is below 13.7V after the 5 minutes, the elevated idle will remain on and repeat the cycle. Elevated idle can be turned off prior to the 5 minute interval if the voltage is above 13.0V by depressing the service brake.
- VAR: Variable RPM mode, activated by turning a 10K 10 turn potentiometer to zero resistance, then increasing resistance to increase the RPM level. To disable variable mode, the potentiometer must be disconnected (with a switch), or the controller can be turned off. Do not connect +12V to the VAR terminal.

RPM ranges are as follows:

- Diesel Engines: 1200 RPM to 2400 RPM
- Gasoline Engines: 900 RPM to 2250 RPM

The following vehicle conditions must be met to enable elevated idle:

- Parking brake applied
- Foot off of service brake
- Vehicle in PARK (automatic trans.)
- Foot off clutch (manual trans.)
- Foot off of accelerator pedal
- Vehicle speed is 0 mph (stationary)
- Brake lights functional
- Engine at a stable base idle speed
- Engine temperature above 140 degrees F (gasoline engine only)

The elevated idle will also be disabled when the transmission oil temperature exceeds 240 degrees F., the engine coolant temperature exceeds its limit, or the catalyst temperature exceeds its limit.

If an elevated idle disabler occurs the elevated idle is automatically reactivated after 3 to 6 seconds. In BCP mode the elevated idle is automatically reactivated after about 10 seconds once the disabling condition is removed if the battery voltage is below 13.0V.

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Installation

The HIC900 control module should be mounted under the dash using the two mounting holes. **Do not install the unit in the engine compartment.** All connections to the control module are made with .25" blade connectors (included in kit).

- **Power connections:** Connect the +12V terminal to a fused ignition Hot-in-Run circuit.
F-Series: 2005-2007, Circuit 294, wire color White/Lt. Blue, blunt cut wire found on the harness behind the diagnostic link connector. 2008+ circuit CBP44 wire color Purple. 2010 wire color Violet. 2011 circuit CDC64 Yellow/Orange early builds, later builds White Blue.
E-Series: 2005-2007, Circuit 0049, wire color Orange, found at 4-pin connector above the brake master cylinder. 2010 circuit CBP44 wire color Green/Red, also found at above and to the right of parking brake release handle.
Connect the GND terminal to a good chassis ground.
- **Vehicle SEIC wiring:** The HIC900 connects to the Ford SEIC wiring as shown in the wiring diagram.
F-Series: Blunt-cut wires are located at the harness above the parking brake pedal assembly.
E-Series: Blunt cut wires are located at the large harness running below the windshield/cowl. Remove some of the plastic harness tape where the harness exits its plastic support gutter above the engine air induction tube to reveal the blunt cut wires.

Diesel engines: Connect the "Diesel RPM" and "PTO" terminals on the HIC900 module to the SEIC wiring as shown in the wiring diagram.

Connect the "PTO IND" terminal on the HIC900 module to ground.

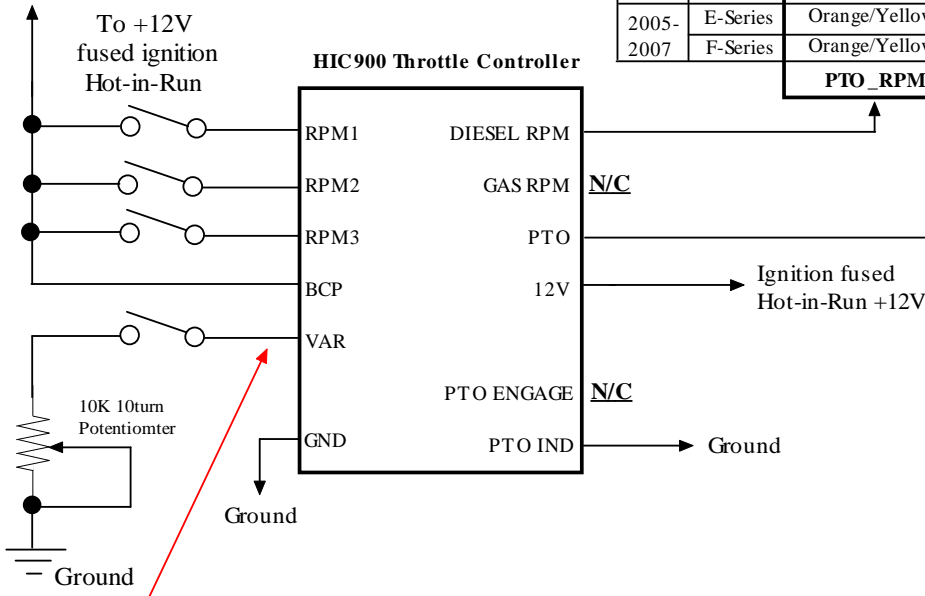
Gasoline engines: Connect the "Gas RPM", "PTO", "PTO Engage", and "PTO IND" terminals on the HIC900 module to the SEIC wiring as shown in the wiring diagram.

- **User Interface:** Engine speed may be controlled by one of the 5 operating modes of the HIC900 Throttle Controller. The desired mode may be selected by use of a switch or relay contact.
RPM1, RPM2, RPM3: Using a switch or relay contact, supply +12V (Hot-in-Run) to the desired RPM input terminal on the HIC900 module. A corresponding LED indicates which mode is active.
BCP: (Battery Charge Protect) This input can be hardwired to +12V (Hot-in-Run) for automatic battery charge protect, or a switch or relay contact can be used to activate.
VAR: Variable RPM mode, connect a 10K 10 turn potentiometer to ground. In order to turn the variable mode off, a switch must be connected between the potentiometer and the VAR terminal, or the power to the HIC900 can be switched off. **Do not connect +12V to this terminal.**

Ford Diesel Engine Wiring

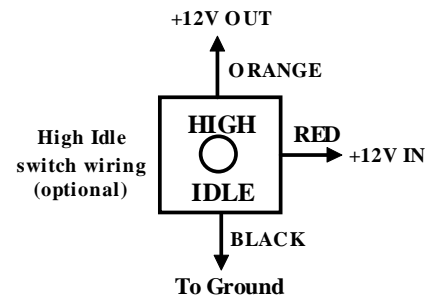
Vehicle SEIC Wiring

User interface



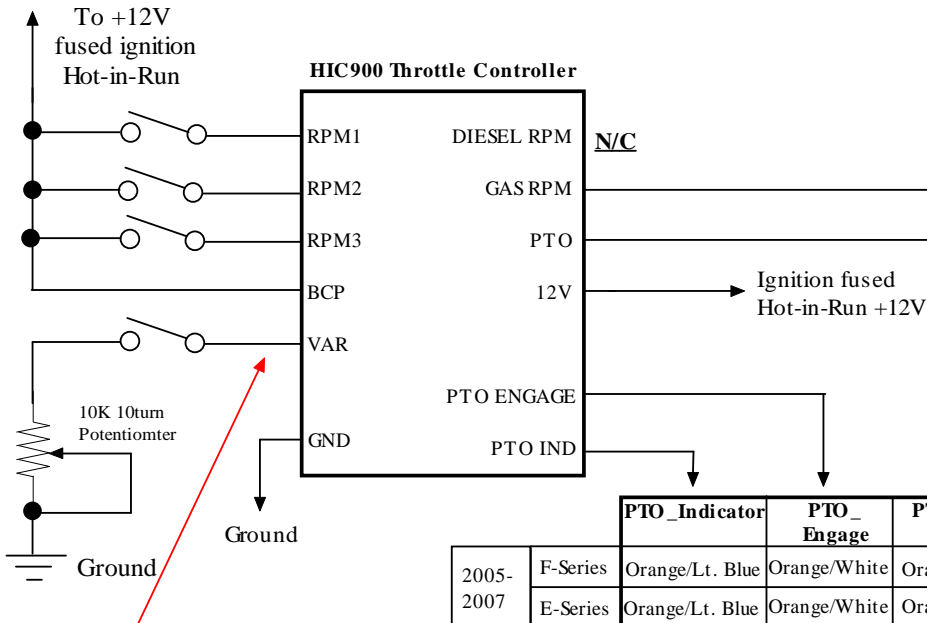
Diesel Engine SEIC wires			
2009+	E-Series	Green	Yellow/Green
2008	E-Series	Orange/Yellow	Purple/Lt. Blue
2008+	F-Series	Green	Yellow/Green
2005-2007	E-Series	Orange/Yellow	Purple/Lt. Blue
	F-Series	Orange/Yellow	Orange
		PTO_RPM	PTO

DO NOT connect 12V to VAR terminal
Connect to ground through 10K pot



User interface

Ford Gasoline Engine Wiring



DO NOT connect 12V to VAR terminal
Connect to ground through 10K pot

		PTO_Indicator	PTO_Engage	PTO_RPM_Select	PTO_Mode
2005-2007	F-Series	Orange/Lt. Blue	Orange/White	Orange/Yellow	Orange
	E-Series	Orange/Lt. Blue	Orange/White	Orange/Yellow	Orange
		PTO OK	PTO Engage	PTO RPM	PTO
2008-2010	F-Series	Blue/White	Blue/Green	Green	Yellow/Green
2008	E-Series	Orange/Lt. Blue	Orange/White	Orange/Yellow	Orange
2009+	E-Series	Blue/White	Blue/Green	Green	Yellow/Green
2011	F-Series	Blue/White	Blue/Orange	Green	Yellow/Green

Vehicle SEIC Wiring →

Gasoline Engine SEIC wiring