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# Speed Sentinel™ SS750-A
## (A-SS750-A) 2013-2017 Ram 1500-5500
## (E-SS750-A) 2018-2023 Ram 1500-5500
**(Max Speed Setting = 25 MPH)**
**Contact InterMotive for Additional Information**

## System Overview

Speed Sentinel is a programmable road speed limiter which limits maximum vehicle speed, but does not limit maximum engine output.

Speed Sentinel interfaces with the vehicle through the use of "Plug & Play" connectors that plug directly into the vehicle's factory OEM connectors. This method of installation reduces the installation time and improves reliability.

Speed Sentinel has been designed with internal safeguards to ensure the safe operation of the vehicle. If it senses any unsafe or unusual condition, it automatically reverts full control back to the driver.

Speed Sentinel provides numerous options, including single or dual speed operation, operation in reverse, or when a particular piece of equipment is in use. Another option allows overriding the system when an input goes active. An optional 'Passing Mode' allows a temporary override for a predetermined number of seconds.

For selecting options, contact InterMotive and ask for the Speed Sentinal II Customer Configuration Spec.

**IMPORTANT—READ BEFORE 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. Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

## Installation Instructions

**Disconnect vehicle battery before proceeding with the installation.**

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

## Speed Sentinel Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the Speed Sentinel module. Locate the module in an area away from any external heat sources (engine heat, heater ducts, etc.), Do not mount the module until all wire harnesses are routed and secure. The last step of installation is to mount the module.

**Accelerator Pedal T– Harness** (Plug & Play)

**Note: The following procedure will set a wrench light and invoke 'limp home' mode if done with "key on" and battery connected.**

1. Unplug the OEM harness at the accelerator pedal assembly.
2. Plug the OEM harness into the Speed Sentinel Accelerator Pedal T-harness.
3. Plug the Speed Sentinel Accelerator Pedal Harness into the OEM pedal assembly.
4. Ensure all connectors are secure. If connectors are equipped with Red locking tabs, ensure the tabs are in the locked position.
5. Plug the 12-Pin Speed Sentinel Pedal harness connector into the "Pedal" connector on the SS750-A module.

## LED Display Panel (Optional)

The display panel provides system status and indicates if SSII is actively limiting vehicle speed. Note: SSII part number SS750-AX does not include the Display Panel.

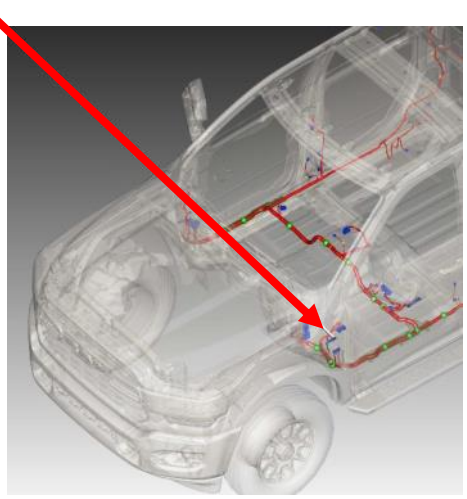
1. Locate a suitable position on the dashboard, within view of the driver, for the mounting of the display panel. It must be within 36 inches of the module and allow room for the harness installation.
2. Drill a ¾" hole in the dashboard where the center of the display will be located. Plug the 10-pin connector of the harness in connector cavity labeled "Display" on the SS750-A control module.
3. Run the other end of the harness under the dash and out through the ¾" hole. Plug the 6-pin connector of the display harness into the display panel. Ensure that the panel is level and secure using the supplied screws.

## Data Link Harness (6-Pin Connector)

1. Locate the vehicle OBDII Data Link Connector. It's a White 16 pin connector located below the panel near the drivers left knee.
2. Use a flat screwdriver to remove the OEM OBDII connector. There are tabs on the sides of the connector that allow it to snap into place. Press the tabs and push the connector out of its bracket. The SS750 kit includes a Data Link harness (see picture). Plug the red connector into the vehicle's OBDII connector. Ensure the connection is fully seated and secured with the supplied wire tie.
3. Mount the white connector from the SS750 Data Link Harness in the former location of the vehicle's OBDII connector by snapping it into place.
4. Do not plug the 6 pin connector into the SS750 module at this time.

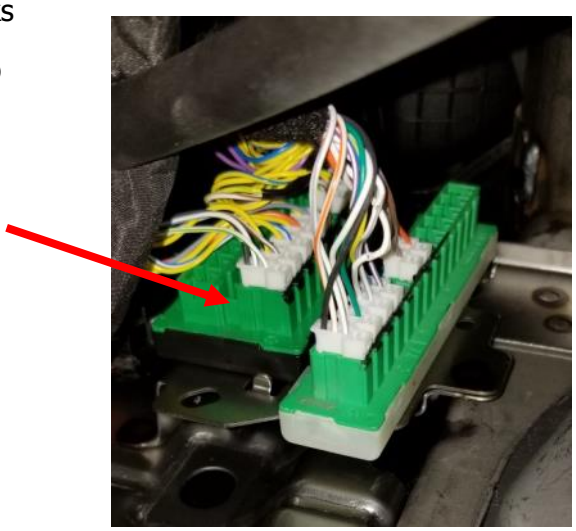
SS750 Data Link harness "T's" into OBDII connector.

5. Locate the STAR connector bank in the location shown (next to the Park Brake).



**RAM 2500– RAM 5500**

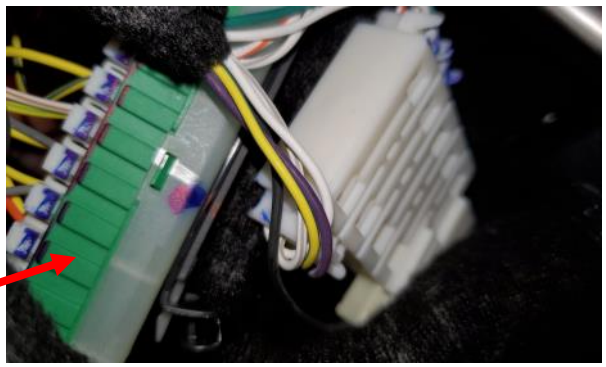
1. There are multiple banks of Star connectors. One of the banks has a White base and the other has a Black base.
2. Plug the 2-pin connector with **Yellow and Brown wires** into one of the unused ports with the **Black base**.



**RAM 1500** (Classic)

1. There are multiple banks of Star connectors. Located above the parking brake. One of the banks has a Green and White base and the other a solid white base.

2. Plug the 2-pin connector with **Yellow and Brown wires** into one of the unused ports with the **Green base**.



## **Optional** System Override Input

SS750 can be set up to only limit speed when certain vehicle equipment is in use, such as a PTO.

1. Connect the SS750 Auxiliary harness connector Pin #7 Blue wire to the equipment output that will provide either ground or 12V when the equipment is activated. SS750 must be properly set up at the factory to support this option.
2. Insert the 8-pin Auxiliary connector into the module in the cavity labeled "Auxiliary".

## Setting Vehicle Speed Limit(s)

Speed Sentinel can be set up for single or dual speed limiting.

### Single Speed Settings:

The rotary switch inside the module sets the speed limit per the table. Switch position 0 will use an optional internal limit speed per customer request. **(Initial SS750 release uses fixed 25mph setting. Rotary switch is inop).**

### Dual Speed Settings

Dual Speed mode uses input J3/Pin 7 blue wire to determine which limit speed is active. Grounded or floating selects Speed #1 (rotary switch). 12Vdc on this pin selects Speed #2 (internally set per customer request).

**⚠ WARNING ⚠**

**Remove power by unplugging the 6 pin connector when changing rotary switch settings.**

| | |
|---|---|
| **0* = factory set (user specified)** | **8 = 45mph** |
| **1 = 10mph** | **9 = 50mph** |
| **2 = 15mph** | **A = 55mph** |
| **3 = 20mph** | **B = 60mph** |
| **4 = 25mph** | **C = 65mph** |
| **5 = 30mph** | **D = 70mph** |
| **6 = 35mph** | **E = 75mph** |
| **7 = 40mph** | **F = 80mph** |

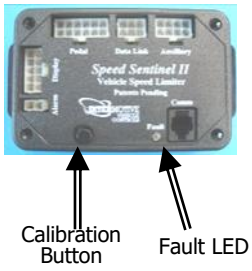
## Reconnect vehicle battery

**Accelerator Pedal Calibration (required)**

**Note:** Accelerator pedal calibration has changed from previous instructions. Use the following calibration technique for all Speed Sentinel modules with firmware versions 1.2.0.0 and higher.

**Prior to calibration, ensure the following:**

- Speed Sentinel pedal harness is installed
- Speed Sentinel Data Link 6 pin connector is disconnected from module
- Key on, engine off




1. Hold down the Black calibration button on the Speed Sentinel module and plug in the 6 pin Data Link connector.
2. When Red fault light LED illuminates continuously, release the calibration button.
3. When Red LED flashes off and back on, press and hold accelerator pedal to the floor.
4. When Red LED goes off, calibration is complete and pedal can be released.

If the Red fault LED starts flashing, the calibration was unsuccessful. Repeat Steps 1-4.

**NOTE: Pushing ignition start button or keying up the vehicle with any part of the accelerator pedal harness disconnected will set DTC's, the check engine light, and may put the chassis into 'Limp Home Mode'. Key off, ensure harness is properly connected and key the vehicle back up and it should be fully functional. You may need to clear DTC's with a scan tool.**

**SS750 Module Mounting**

Ensure all harnesses are properly connected and routed, and are not hanging below the dash area. Mount the Speed Sentinel module using screws or double sided tape. Reinstall all removed panels.

## Post Installation Instructions

**The following checks must be performed prior to releasing the vehicle.**

**Note:** If module is set for dual-speed mode, Speed Sentinel operation must be checked at each speed as described below.

1. Test drive the vehicle to verify proper Speed Sentinel operation. The Speed Sentinel must limit vehicle speed at the preset speed limit and pass the following steps:
2. When Speed Sentinel engages (green LED will illuminate in module - lid removed-or on display) and the vehicle speed is limited, press the accelerator pedal to wide-open throttle and verify that vehicle speed has been limited.
3. Ensure that the preset speed is set to the desired limit. (See Setting Vehicle Speed Limits).
4. Check passing mode (optional setting) operation by going from wide-open throttle to closed throttle three times in a five-second span. The Speed Sentinel passing mode (if enabled) will allow a temporary override of speed limiting. The override lasts for 10 to 30 seconds (configurable) then resumes limiting vehicle speed. If enabled, the green LED will flash once after prove out. If equipped with system override input, verify the Speed Sentinel activates when chosen equipment is activated.
5. Verify that the check engine light has not been set. (Turning the ignition switch to the "on" position with the accelerator pedal unplugged during installation will set a check engine light).

If the Speed Sentinel fails any step in the post installation test, review the installation instructions and check all connections. If necessary, call InterMotive Technical Support at (530) 823-1048.

**Submit product registration at www.intermotive.net**

## Diagnostic Trouble Codes

- If Speed Sentinel has a stored fault code, the "fault" LED (on SSII module or panel - if installed) will blink twice a second and codes can be retrieved by entering diagnostic mode.
- If the Speed Sentinel requires calibration with the vehicle, the "fault" LED will blink on for two seconds and off for a half second. Call InterMotive for assistance.
- If the Speed Sentinel has an internal programming fault, the "fault" LED will blink on/off rapidly. Call InterMotive for assistance.

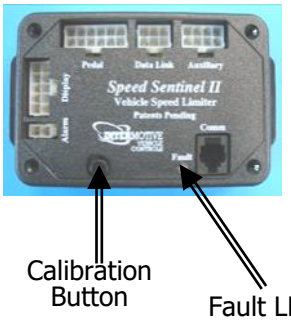

## Entering Diagnostic Mode

- Diagnostic mode is entered by pressing and releasing the Yellow "Diag" button on the LED display or the Calibration Button on the SSII module. Once in diagnostic mode, all codes will be displayed by the blinking "fault" LED (on SSII module or panel - if installed).
- The codes will be displayed as blink codes. For example, if there is 1 blink, a short pause, and then 2 blinks, the code is 1-2. These two sets of blinks are combined to form the code.
- A zero will not blink, so when the vehicle is safe (ready to be active) it will blink once every three seconds. Diagnostic codes will change depending on the safe status of the vehicle.

Clearing codes:

1. Place the vehicle in Park.
2. Press the Yellow "Diag" button and at the same time pump the Service Brake three times.

**Note:** The SS750AX does not include the LED Display Panel. Fault Codes can be read at the module by pressing and releasing the calibration button and reading the Fault LED.




| LED Code | Terminal Code | VSS state | Drive Train state | Service Brake state |
|---|---|---|---|---|
| 1 - 0 | 10 | > 0 | In Drive | Not applied |
| 1 - 1 | 11 | > 0 | In Drive | Applied |
| 1 - 2 | 12 | > 0 | Not In Drive | Not applied |
| 1 - 3 | 13 | > 0 | Not In Drive | Applied |
| 1 - 4 | 14 | = 0 | In Drive | Not applied |
| 1 - 5 | 15 | = 0 | In Drive | Applied |
| 1 - 6 | 16 | = 0 | Not In Drive | Not applied |
| 1 - 7 | 17 | = 0 | Not In Drive | Applied |
| 1 - 8 | 18 | > 0 | In Drive | Not applied |
| 1 - 9 | 19 | > 0 | In Drive | Applied |
| 1 - 10 | 1A | > 0 | Not In Drive | Not applied |
| 1 - 11 | 1B | > 0 | Not In Drive | Applied |
| 1 - 12 | 1C | = 0 | In Drive | Not applied |
| 1 - 13 | 1D | = 0 | In Drive | Applied |
| 1 - 14 | 1E | = 0 | Not In Drive | Not applied |
| 1 - 15 | 1F | = 0 | Not In Drive | Applied |

Contact InterMotive for assistance with codes and diagnostics of the Speed Sentinel.

**LEAVE WITH VEHICLE**
**Speed Sentinel™ SS750-A Operating Instructions**
**2013-2017 Ram 1500-5500**
Contact InterMotive for specific engine applications

The Speed Sentinel is a road speed limiter, which limits maximum vehicle speed to a preset limit. Once the driver attains the limited speed, any additional input on the throttle pedal will not increase the speed of the vehicle. If the throttle is pushed beyond the maximum speed, the Speed Sentinel will maintain the preset speed. The Speed Sentinel will maintain vehicle speed on varying terrain, much like a cruise control. However, while coasting down hills, the vehicle can exceed the limit since Speed Sentinel does not apply the vehicle brakes.

When the Speed Sentinel reaches the limited speed, the green LED (limit) on the LED Display will illuminate to show that maximum speed has been achieved. If the red LED is illuminated, a fault code is present and should be reported to the fleet manager.

Optional passing mode allows for a short-time override of the limited speed (for use in passing at critical moments). To verify passing mode is programmed, an extra "blink" on the green LED during prove out indicates passing mode is programmed. Passing mode is entered by going from wide-open throttle to idle three times in a five second span. The override lasts for 10 seconds then resumes limited vehicle speed. For SS750-AX (no LED panel), the passing mode function has to be performed in order to be verified.

The Speed Sentinel also has a mode that will return the engine to base idle if the service brake is applied at the same time as the accelerator pedal. This mode will only activate while the Speed Sentinel is limiting vehicle speed. To remove Speed Sentinel from this mode: release and reapply the accelerator pedal to reactivate control of the accelerator pedal. This can be done anytime after this mode has been activated.

Optional Dual Speed mode allows 2 speeds to be limited by a flip of a switch. For instance, a truck with a snow plow may have a primary speed limited at 55 MPH, but when the plow is down, the vehicle is limited to 20MPH.

**WARNING**

Do NOT press and hold the accelerator pedal all the way to the floor while Speed Sentinel is active and limiting speed. If the Speed Sentinel is disabled for any reason, it will stop limiting speed and the driver will immediately be in control of the accelerator. Sudden acceleration may occur if the pedal is held all the way to the floor, and Speed Sentinel becomes disabled.

## Diagnostic Trouble Codes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- If the Speed Sentinel requires calibration with the vehicle, the "fault" LED will blink on for two seconds and off for a half second. Call InterMotive for assistance.
- If the Speed Sentinel has an internal programming fault, the "fault" LED will blink on/off rapidly. Call InterMotive for assistance.

## Entering Diagnostic Mode

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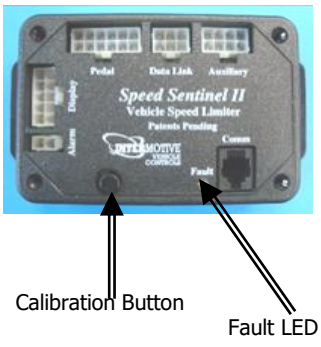
- A zero will not blink, so when the vehicle is safe (ready to be active) it will blink once every three seconds. Diagnostic codes will change depending on the safe status of the vehicle.

Clearing codes:

1. Place the vehicle in Park.
2. Press the Yellow "Diag" button and at the same time pump the service brake three times.

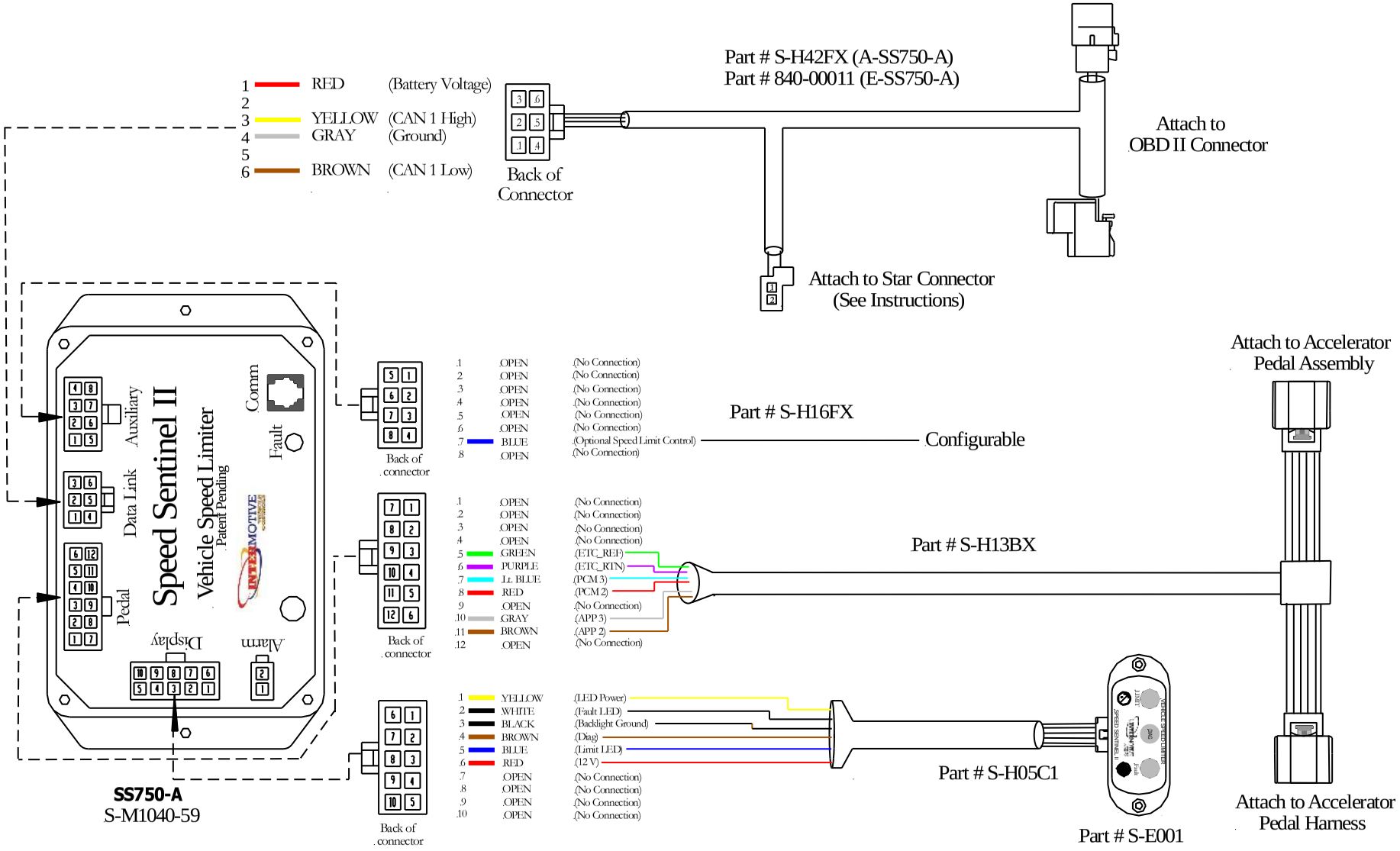
| LED Code | Terminal Code | VSS state | Drive Train state | Service Brake state |
|---|---|---|---|---|
| 1 - 0 | 10 | > 0 | In Drive | Not applied |
| 1 - 1 | 11 | > 0 | In Drive | Applied |
| 1 - 2 | 12 | > 0 | Not In Drive | Not applied |
| 1 - 3 | 13 | > 0 | Not In Drive | Applied |
| 1 - 4 | 14 | = 0 | In Drive | Not applied |
| 1 - 5 | 15 | = 0 | In Drive | Applied |
| 1 - 6 | 16 | = 0 | Not In Drive | Not applied |
| 1 - 7 | 17 | = 0 | Not In Drive | Applied |
| 1 - 8 | 18 | > 0 | In Drive | Not applied |
| 1 - 9 | 19 | > 0 | In Drive | Applied |
| 1 - 10 | 1A | > 0 | Not In Drive | Not applied |
| 1 - 11 | 1B | > 0 | Not In Drive | Applied |
| 1 - 12 | 1C | = 0 | In Drive | Not applied |
| 1 - 13 | 1D | = 0 | In Drive | Applied |
| 1 - 14 | 1E | = 0 | Not In Drive | Not applied |
| 1 - 15 | 1F | = 0 | Not In Drive | Applied |

**Note:** The SS750-AX does not include the LED Display Panel.
Fault Codes can be read at the module by pressing and releasing the calibration button and reading the Fault LED.




Contact InterMotive for assistance with codes and diagnostics of the Speed Sentinel.

U.S. Patent #9,469,261




**If the Speed Sentinel II fails any step in the post installation test, review the installation instructions and check all connections**
**If necessary, call InterMotive Technical Support at (530) 823-1048**