



An ISO 9001:2000 Registered Company

# Speed Sentinel II<sup>®</sup>

## Programmable Road Speed Limiter

SS601-A, SS601-AX, SS601-AND  
Chevy 610 G Van 6.0L 2008-2010

### USER GUIDE



- ◆ Vehicle speed can be set from 10-80 mph. **(16-128.5 kph)**
- ◆ Maximum engine output up to set speed.
- ◆ Flexible – speed setting can be changed.
- ◆ "Plug & Play" installation – installs in a few minutes.
- ◆ Dynamic Load Response – adjusts for varying road terrains.
- ◆ Optional Engine Idle Function – forces engine to stay in idle mode as a theft deterrent.
- ◆ Available electronic override for Emergency Vehicles.

Engineered and Manufactured in the USA  
PATENT PENDING

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## 1. System Overview

Speed Sentinel II<sup>®</sup> is a programmable road speed limiter for Chevrolet vehicles. Speed Sentinel II<sup>®</sup> is a micro-processor controlled unit that limits maximum vehicle speed but does not limit maximum engine output. Speed Sentinel II<sup>®</sup> 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 the connection reliability. Speed Sentinel II<sup>®</sup> has been designed with internal safeguards to insure the safe operation of the vehicle. If it senses any unsafe or unknown condition it automatically reverts back to full driver control.

## 2. Installation Instructions

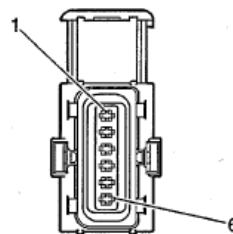
Remove the lower dash panel below the steering column area and find a suitable location to mount the Speed Sentinel II<sup>®</sup> module. Do not mount the module until all wire harnesses are routed and secure (last step of installation is to mount the module).



### 2.1. Accelerator Pedal T- Harness

- To prevent setting a check engine light, the battery must be disconnected.
- Locate the accelerator pedal. Remove the OEM connector by sliding back the red safety lock.
- Cut the OEM accelerator pedal connector from the OEM Accelerator Harness.
- Solder and heat shrink the Speed Sentinel II<sup>®</sup> Accelerator Pedal harness onto the cut OEM harness.
- Make sure to connect the correct wire colors shown on the harness labeling.
- Attach the Speed Sentinel II<sup>®</sup> Accelerator Pedal Harness to the pedal assembly.
- Ensure that the red sliding lock is fully seated in the locked position on both connectors.
- Attach the 8-Pin connector from the Pedal harness to the Control Module in the cavity labeled "Pedal".

Speed Sentinel II Harness	OEM Harness	Pin #
Tan	Tan	Pin #1
White/Black	White/Black	Pin #2
Dark Blue	Dark Blue	Pin #3
Brown	Brown	Pin #4
Purple	Purple	Pin #5
Light Blue	Light Blue	Pin #6



## 2.2. LED Display Panel (SS601-A and SS601-AND systems only)

- Locate a suitable position on the dashboard, within view of the driver, for the mounting of the LED display panel. It must be within 36 inches of the module and allow room for the LED harness installation.
- Drill a  $\frac{3}{4}$ " hole in the dashboard where the center of the display will be mounted. Plug the 10-pin connector of the LED harness in connector cavity labeled "Display" on the control module.
- Run the other end of the harness under the dash and out through the  $\frac{3}{4}$ " 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.



**Note: The SS601-AX Does not include the LED Display Panel.**

## 2.3. Data Link Harness (SS601-A and SS601-AX systems only)

- Locate the vehicle OBD II Data Link Connector. It will be mounted below the lower dash panel.
- Remove the mounting screws for the OEM Data Link Connector. Plug the red connector from the Speed Sentinel II<sup>®</sup> Data Link T-Harness into the OEM Data Link Connector. Ensure the connection is fully seated and secure with the supplied wire tie.
- Mount the black connector from the Speed Sentinel II<sup>®</sup> Data Link Harness in the former location of the OEM connector.
- Secure the Data Link Harness so that it does not hang below the lower dash panel.
- Plug the 6-pin connector from the Data Link Harness into the Control Module in the cavity labeled "Data Link".



**Note: The SS601-AND Does not include the Data Link Harness.**

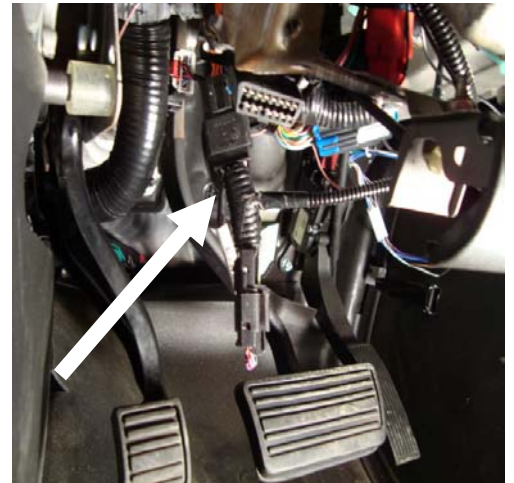
**The Dual Data GTWY/SSII Harness must be used with the SS601-AND.**

## 2.4. Dual Data GTWY/SSII Harness (SS601-AND system only)

- Unplug the 6-Pin Gateway "Data Link" connector from the Gateway Module.
- Plug the 6-Pin Gateway Data Link connector into the 6-Pin Female connector on the Dual Data GTWY/SSII Harness.
- Plug the 6-Pin Male connector (Short Lead) on the Dual Data GTWY/SSII harness into the Gateway Control Module in the cavity labeled "Data Link".
- Plug the 6-pin Male connector (Long Lead) from the Data Link Harness into the Speed Sentinel II<sup>®</sup> Control Module in the cavity labeled "Data Link".

## 2.5. Auxiliary Power Harness

- Locate the Chevrolet connector X221 on the brake switch harness on the left side of the instrument panel above the parking brake pedal.
- Separate brake switch harness connector X221 and connect the InterMotive Auxiliary Power T-Harness to it.
- Connect the InterMotive Auxiliary Power T-Harness to the brake switch side of the harness.
- Attach the black wire eyelet from the Auxiliary Power T-harness to a known good chassis ground.
- Plug the 8-pin Auxiliary Power T-harness connector into the Speed Sentinel II<sup>®</sup> Control Module in the cavity labeled "Auxiliary".

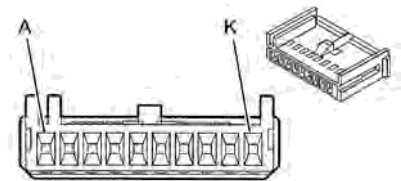


## 2.6. Without Cruise Control Inhibit (Vehicle not equipped with cruise control)

- If the vehicle does not have cruise control, continue to step 2.8.

## 2.7. Cruise Control Inhibit (Vehicle equipped with cruise control)

- Remove the upper steering column covers and locate the 10-pin connector at the Inflatable Restraint Steering Wheel Module Coil.
- Locate the Gray wire in Pin - K of the 10-pin connector. This circuit is the Chevrolet cruise control switch signal (circuit 1884).
- Locate the brown wire in the Auxiliary Power T-Harness and parallel tap it to the gray cruise control circuit.
- Solder and heat shrink the parallel tap for enhanced circuit integrity.



Inflatable Restraint Steering Wheel  
Module Coil Connector

## 2.8. Optional Switch Controlled Settings (Preprogrammed by InterMotive)

- Optional Forced Engine Idle Function – Flip an operator installed switch and Speed Sentinel II<sup>®</sup> forces the engine to stay in idle mode as a theft deterrent.
- System controlled electronic override of Speed Sentinel II<sup>®</sup> is available for Emergency Vehicles when in code 3 mode.

Contact InterMotive for the installation and activation of:

- Forced Idle Function (Forces engine to stay at idle during vehicle theft).
- Electronic Override (For emergency vehicles when operating in Code 3 mode).

## 2.9. Setting Vehicle Speed Limit

- Remove the lid of the Speed Sentinel II<sup>®</sup> module. With power disconnected from the module, locate the rotary switch and adjust the speed limit according to the chart shown below.

Setting	mph	kph	Setting	mph	kph
0*	55	88.5	8	45	72.5
1	10	16	9	50	80.5
2	15	24	A	55	88.5
3	20	32	B	60	96.5
4	25	40	C	65	104.5
5	30	48	D	70	112.5
6	35	56.5	E	75	120.5
7	40	64.5	F	80	128.5



**WARNING**



The Speed Sentinel II<sup>®</sup> control module must be disconnected from the vehicle battery power during rotary switch adjustment.



- \* Factory default setting. Speed Limit can be adjusted in 1 mph (1.6 kph) increments. Please contact InterMotive for programming information.

## Reconnect the Battery!!

### 3. Accelerator Pedal Calibration (Must be performed!)

- Accelerator pedal must be in the idle position.
- Hold down the calibration button, located on the control module while keying on the ignition. ("KOEO" key on engine off) The red fault LED will briefly illuminate, then turn off. Continue holding the button down until the red fault LED illuminates continuously.
- Release the calibration button. Press the accelerator pedal all the way to the floor and hold the throttle in the wide-open position.
- Press and release the calibration button. Release the accelerator pedal.
- If the red fault LED stays on for 2 seconds and then goes off, the calibration was successful, continue to Section 4 (Final Steps).
- If the red fault LED starts flashing, the calibration was unsuccessful and must be restarted.



Calibration Button

Fault LED

### 4. Final Steps

- Connect a scan tool and check for diagnostic trouble codes (DTC's). If codes are present, document the codes and clear all DTC's prior to delivery of vehicle.
- Mount and secure the Speed Sentinel II<sup>®</sup> module, reinstall all removed panels, and perform post installation test.

## 5. Post Installation Instructions

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

- Test drive the vehicle to verify proper Speed Sentinel II<sup>®</sup> operation. The Speed Sentinel II<sup>®</sup> must limit vehicle speed at the preset speed limit and pass the following steps:
- When the Speed Sentinel II<sup>®</sup> engages (green LED will illuminate) and the vehicle speed is limited, press the accelerator pedal to wide-open throttle and verify that vehicle speed has been limited.
- Ensure that the preset speed is set to the desired limit. (See Section 2.9 of the installation instructions for the adjustment procedure).
- Check passing mode operation by going from wide-open throttle to closed throttle three times in a three-second span. The Speed Sentinel II<sup>®</sup> passing mode will allow a temporary override of speed limiting. The override lasts for 10 seconds then resumes limiting vehicle speed. If enabled, the green LED will flash once after prove out. Passing mode is optional and may be removed by contacting InterMotive Technical Support.
- If the vehicle has cruise control, check the cruise control operation and inhibit. Verify that cruise control is operational when vehicle speed is below the limited speed and not operational during speed limiting.
- 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).

### **Submit product registration at [www.intermotive.net](http://www.intermotive.net)**

If the Speed Sentinel II<sup>®</sup> fails any step in the post installation test, review the installation instructions and check all connections. If necessary, call

**InterMotive technical support @ (530) 346-1801.**

## 6. Speed Sentinel II<sup>®</sup> Operating Instructions

The Speed Sentinel II<sup>®</sup> 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 II<sup>®</sup> will maintain the preset speed. The Speed Sentinel II<sup>®</sup> 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 II<sup>®</sup> does not apply the vehicle brakes.

When the Speed Sentinel II<sup>®</sup> 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.

The Speed Sentinel II<sup>®</sup> has an optional passing mode, which allows for a short-time override of the limited speed (use in passing at critical moments). Verify that the Speed Sentinel II<sup>®</sup> is or is not programmed with passing mode. 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 three second span. The override lasts for 10 seconds then resumes limited vehicle speed.

The Speed Sentinel II<sup>®</sup> 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 II<sup>®</sup> is limiting vehicle speed. To remove Speed Sentinel II<sup>®</sup> from this mode: Release and reapply the accelerator pedal to reactivate control of the accelerator pedal.

## 7. Checking Speed Sentinel II<sup>®</sup> for Diagnostic Trouble Codes

- If the Speed Sentinel II<sup>®</sup> has a stored fault code, the "fault" LED will blink twice a second and codes can be retrieved by entering diagnostic mode.
- If the Speed Sentinel II<sup>®</sup> requires calibration with the vehicle, the "fault" LED will blink on for two seconds and off for a half second. See Section 3 for accelerator pedal calibration.
- If the Speed Sentinel II<sup>®</sup> has an internal programming fault, the "fault" LED will blink on/off rapidly. Call InterMotive for assistance.

**Note: The SS601-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.**



Calibration Button Fault LED

## 8. Entering Diagnostic Mode

- Diagnostic mode is entered by pressing and releasing the yellow "diag" button on the LED display.
- Once in diagnostic mode, all codes will be displayed by the blinking "fault" LED.
- 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 have no 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.

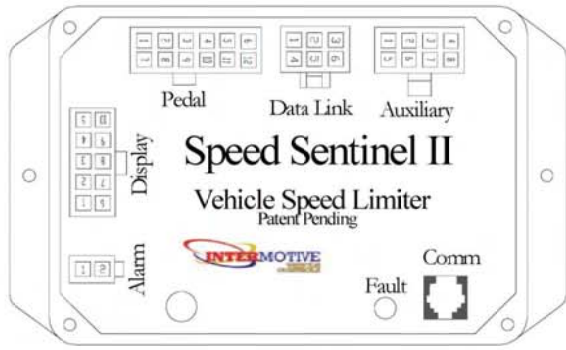
Clearing codes:

- Place the vehicle in Park.
- 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

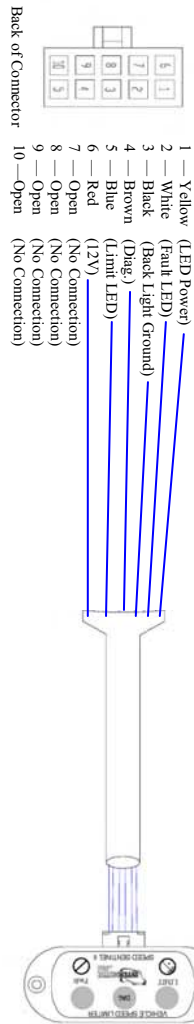
**Contact InterMotive for assistance with codes and diagnostics of the Speed Sentinel II<sup>®</sup>.**

# 9. Schematic

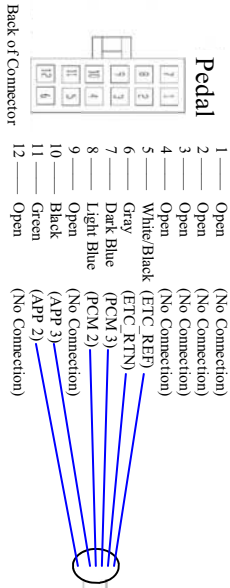


## Display

(SS601-A and SS601-AND Models only)



## Pedal



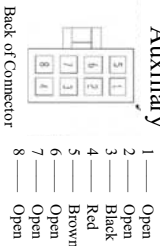
Attach to OEM Harness

## Data Link

- |   |        |                 |
|---|--------|-----------------|
| 1 | Open   | (No Connection) |
| 2 | Open   | (No Connection) |
| 3 | Yellow | (Ford CAN High) |
| 4 | Open   | (No Connection) |
| 5 | Open   | (No Connection) |
| 6 | Brown  | (Ford CAN Low)  |

(Attach to OBD II Connector)

## Auxiliary



(Attach to Good Chassis Ground)

(Attach to Cruise Control Switch Circuit)

- |        |                            |
|--------|----------------------------|
| Pin #1 | Tan to Tan                 |
| Pin #2 | White/Black to White/Black |
| Pin #3 | Dark Blue to Dark Blue     |
| Pin #4 | Brown to Brown             |
| Pin #5 | Purple to Purple           |
| Pin #6 | Light Blue to Light Blue   |

Install At Black 4-Pin Connector