

International® S13 Integrated (2024)

Overview: *Vehicle Speed Limiting*

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General Overview: Vehicle Speed Limiting (VSL)

VSL limits maximum vehicle speed on a level road and can be set for a blend of fuel economy and performance.

Description and Operation

NOTE: Refer to the vehicle operation and maintenance manual, as well as the S13 engine operation and maintenance manual, for additional information on operation and indications.

This feature limits the maximum vehicle speed controlled by the accelerator pedal. If your engine reaches a speed and feels like it should have more power to travel faster, you are probably traveling at the governed maximum speed limit.

VSL Override

This feature raises the vehicle speed limit provided by the VSL feature to a customer programmable speed when the driver identifies a passing situation.

The operator control of the feature consists of the accelerator pedal.

The following text messages in the cluster may be used by this feature.

- **Active** – Indication which informs the operator that the accelerator vehicle speed limit is actively increased.
- **Expiring** – Indication which informs the operator that the vehicle speed override is about to expire.

To activate the VSL Override feature

Activate the VSL Override feature by double-pumping the accelerator foot pedal. This is done by starting at the full throttle position. Next, release the accelerator pedal completely and then return it back to full throttle, release it again and then return to full throttle once again.

If successful, VSL Override is enabled. The message “Active” will appear. The double-pumping of the accelerator foot pedal should be started when the vehicle speed has reached the normal accelerator vehicle speed limit.

VSL override may work while cruise is enabled, but VSL override operation does not depend on cruise control. The VSL override does not change the current cruise set speed or the cruise maximum set speed.

After the vehicle speed is currently being maintained above the normal accelerator vehicle speed limit, if the vehicle speed drops below the normal accelerator vehicle speed limit, VSL override is automatically deactivated. The operator must repeat the double-pump action to reactivate the feature.

The operator may be warned by the “Expiring” message any time that the vehicle speed limit increase is about to expire.

Additional Information

Activating VSL override does not deactivate cruise control if it is on when the passing event begins. Once the vehicle has passed the other vehicles and VSL override has deactivated, the cruise control takes over again automatically.

The customer can program the duration of allowed vehicle speed limit increase. In addition, the customer can choose whether the duration is based on real time (if equipped with a real-time clock) or based on engine hours.

Feature Interaction

Global VSL is the maximum vehicle speed. No features can increase this limit.

- Cruise Control Maximum VSL - This can be increased/decreased using driver reward/penalty.
- Accelerator VSL - Can be influenced using driver reward, VSL override, and the accelerator vehicle speed limiter switch.
- In gears lower than top gear, Gear Down Protection (GDP) or ProShift will likely limit the vehicle speed less than the Global VSL setting.

Programmable Parameters

The following programmable parameters, in the PIM and CEM are required for VSL operation. These parameters should be programmed to the operation which will best suit the vehicle conditions expected.

Parameters indicated as Customer Programmable can be adjusted differently than the production assembly plant setting to meet the customer's needs. If the parameter is indicated as non-customer programmable, the parameter setting is preset from the factory and cannot be changed without authorization.

VSL Parameters

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
(PIM) Maximum Vehicle Speed Limit (MVSL) (B103 00A)	<p>This parameter sets the maximum accelerator controlled forward vehicle speed. The engine will not power the vehicle faster than this value. This parameter can be used to encourage driver behavior.</p> <p>For fuel economy, it is recommended to set parameter Max Vehicle Speed Limit (B103 00A) less than Cruise Control Vehicle Speed High Limit (B101 002) parameter.</p> <ul style="list-style-type: none"> • For passing opportunities, it is recommended to set parameter (B103 00A) higher than the Cruise Control Vehicle Speed High Limit (B101 002) parameter. The limits should be programmed as follows: $(B10C\ 005 + B103\ 00A) > (B103\ 00A + B10C\ 001)$ <p>Note: (B10C 005) is part of driver reward. Ignore this from the calculation if driver reward is not in the vehicle configuration.</p>	0 - 132 (MPH)	YES	<p>Customer Chosen</p> <p>Note: Must be set to a value less than the Max Global Vehicle Speed Limit (B105 000) parameter setting.</p>

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
(CEM1) Vehicle Speed Limit in Reverse (LR) (1045 000)	This parameter sets the accelerator controlled reverse vehicle speed. The engine will not power the vehicle faster than this value. This parameter can be used to encourage driver behavior.	0 – 100 (MPH)	Dealer	
(PIM) AESC Engine Speed Limit with VSS Fault (B10F 014)	This parameter sets the maximum engine speed allowed when an active vehicle speed sensor (VSS) fault exists, and PTO engine speed control is active. This parameter might be useful in preventing the operator from exceeding the Max Vehicle Speed Limit (B103 00A) parameter setting by tampering with the vehicle speed sensor	700 to 5,000 RPM	YES	This parameter should be set to match the Max Vehicle Speed Limit (B103 00A) parameter setting.
(PIM) Maximum Vehicle Speed Limit - (MVSLG) Global (B105 000)	This parameter sets the maximum allowed road speed.	30 to 130 MPH	NO	This parameter sets the maximum road speed allowed.
(PIM) Greenhouse Gas Vehicle Speed Limit (B10C 007)	This parameter sets the maximum accelerator controlled forward vehicle speed.	0 – 65 (MPH)	NO	Customer Chosen
(PIM) Greenhouse Gas Vehicle Speed Limit Enable (B10C 00A)	This parameter determines if the Greenhouse Gas Vehicle Speed Limit is enabled or not.	0: Disabled 1: Enabled	NO	Customer Chosen

VSL Override Parameters

Parameter Value	Description	Possible Values	Cust Pgm?	Recommended Settings
(PIM) Momentary Road Speed Limit Override Enable (MRSLOE) (B10C 000)	Set this parameter to enable the Vehicle Speed Limit Override Feature.	0: Disabled 1: Enabled	YES	Customer Choice
(PIM) Momentary Road Speed Limit Override Vehicle Speed Increment (MRSLOVSI) (B10C 001)	This parameter selects the amount of vehicle speed that is allowed above the Road Speed Limiting - Maximum Vehicle Speed (B103 00A) when this feature is enabled. The limits should be programmed as follows: (B10C 005 + B103 00A) > (B103 00A + B10C 001) Note: (B10C 005) is part of driver reward. Ignore this from the calculation if driver reward is not in the vehicle configuration.	0 - 132 MPH	YES	5 MPH
(PIM) Vehicle Speed Limit Override Time Reset Source (VSLOTRS) (B10C 00C)	This parameter selects whether the VSLO Duration (B10C 003) parameters is reset based on engine hours or real-time clock time.	0: Engine Hours 1: SART NOTE: A 0-setting of 0 (Engine Hours) will work for most applications. A 1-setting of 1 (SART) will work for fleets with driver rotations. Real time Clock will run even when the engine is turned off.	NO	Customer Choice
(PIM) Vehicle Speed Limit Override Maximum Time Duration (VSLOMTD) (B10C 003)	This parameter selects the maximum amount of time that VSL Override feature can be used, by the driver, during the interval set by parameter Road Speed Limiting - Time Interval to Reset Vehicle Speed Limit Override (B10C 005).	0 - 1000 minutes	NO	30 minutes
(PIM) Vehicle Speed Limit Override Time Interval to Reset (VSLTOTR) (B10C 005)	This parameter selects the vehicle time interval after which the Road Speed Limiting - Vehicle Speed Limit Override Duration (B10C 003) parameter is automatically reset, and the feature is deactivated. Note: The time can be based on engine hours or real-time clock hours.	0 - 24 hours	YES	8 hours
(PIM) GHG Vehicle Speed Limit Override Speed Increment (B10C 002)	Greenhouse Gas Vehicle Speed Limit Override Speed Increment	0 - 131 MPH	NO	5 MPH

Parameter Value	Description	Possible Values	Cust Pgrm?	Recommended Settings
(PIM) Greenhouse Gas Vehicle Speed Limit Override Maximum Time Duration (B10C 004)	This parameter selects the maximum amount of time that Greenhouse Gas Vehicle Speed Limit Override feature can be used, by the driver, during the interval set by parameter Road Speed Limiting - Time Interval to Reset Vehicle Speed Limit Override (B10C 006).	0 - 18 minutes	NO	Customer Choice
(PIM) Greenhouse Gas Vehicle Speed Limit Override Time Interval to Reset (B10C 006)	This parameter selects the vehicle time interval after which the Greenhouse Gas Vehicle Speed Limit Override Maximum Time Duration (B10C 004) parameter is automatically reset, and the feature is deactivated. Note: The time can be based on engine hours or real-time clock hours.	0 - 1440 minutes	NO	Customer Choice

Parameter Setup

This section briefly describes one example of VSL configuration and operation.

Please review the description and operation section and the programmable parameters for a better understanding of how the various VSL parameters might be best configured for your vehicle.

EXAMPLE A - VSL Configuration, with VSL Override, and VSL Anti-Tampering

In this example, the customer requires vehicle speed limiter operation with a blend of fuel economy and performance. In addition, this customer requires adjustable VSL at 35MPH, VSL Override increase of 5MPH, and Anti-Tampering functionality.

Adjust parameters as follows:

Parameter Name	Action Required
Momentary Road Speed Limit Override Enable (MRSLOE) (B10C 000)	Set to enable
Momentary Road Speed Limit Override Vehicle Speed Increment (MRSLOVSI) (B10C 001)	Set to 5 MPH
Vehicle Speed Limit Override Maximum Time Duration (VSLOMTD) (B10C 003)	Set to 30 minutes
Vehicle Speed Limit Override Time Reset Source (VSLOTRS) (B10C 00C)	Set to 0
Vehicle Speed Limit Override Time Interval to Reset (VSLTOTR) (B10C 005)	Set to 8 hours

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition
CEM1	Engine Control Module
GDP	Gear Down Protection
PIM	Powertrain Integration Module
VSL	Vehicle Speed Limiter
VSS	Vehicle Speed Sensor
PIM	Powertrain Interface Module