PACCAR

Programming Guide

PG034-006v13.X

(1/ 21)

2021 Multiplex Electrical System

Version 13.X

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About this Programming Guide

This programming guide is designed to help dealers and technicians understand some of the programming options available for Kenworth and Peterbilt trucks, as well as how to update those parameters.

How to Read This Document

The programming guide is divided into several chapters. Each chapter covers either the parameters that can be programmed, or procedures used to program the parameters.

Each parameter detailed includes an explanation of the parameter, any related or connected parameters, and a table detailing the parameter. The columns in each of these parameter tables are described in the following table.

Table 1: Parameter Table Explanation

Column Name	Explanation
P-Code	Parameter's p-code number
Default Value	Default value entered in the parameter
Minimum Value	Minimum value that can be entered
Maximum Value	Maximum value that can be entered
Unit Type	Unit value of parameter, such as 'mph' or 'seconds'

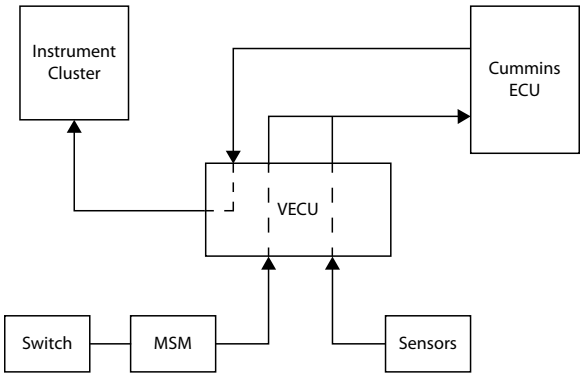
NOTE

Some parameters are visible to customers but cannot be modified by them. These parameters will be noted as either nonprogrammable (cannot be changed) or only modifiable by PACCAR employees.

Cummins Engine Integration on Vehicles with VECU

Vehicle Electronic Control Unit (VECU) BUS communication is different for vehicles with a Cummins engine versus those with an MX engine. On vehicles equipped with a Cummins engine, most engine parameters are controlled by the Cummins *Electronic Control Unit (ECU)*. The *VECU* is not used to control or program these functions. Instead, the *VECU* works as a pass-through router, sending signals from sensors or switches to the Cummins *ECU*, and notifications from the Cummins *ECU* to the instrument panel. The *VECU* does not make any decisions on the signal being sent.

Figure 1: Cummins Integration Block Diagram



Many of the parameters covered in this document are for MX engines only. If your vehicle has a Cummins engine, these settings will not be shown in the *PACCAR Vehicle Pro (PVP)* system, and cannot be modified using *PVP*. For example, *Fast Idle Control (FIC)* must be programmed on the Cummins *ECU* using Cummins INSITE™. However, PTO function has to be programmed using Cummins INSITE™ and *PVP* if the *Power Take Off (PTO)* is air actuated. To setup an air operated *PTO*, the *Multiplex Solenoid Bank (MSB)* would need to be programmed for the air solenoid to assign a function to the solenoid that activates the *PTO*. *DAVIE4* is required to update the software parameters in addition to performing a "switch learn" for the *PTO* switch being assigned for the function.

Please refer to the Cummins manual for information on adjusting these variables.

Chapter 2 | APPLIES TO

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Build Information for Models with VMUX

The *VECU Multiplex (VMux)* architecture utilizes a *VECU* to control various systems on the truck.

Full *CVMux* system installation began October 08, 2018 (although some trucks were built and released before this date) on PACCAR Heavy Duty vehicles and either EPA21 Diesel or EPA18 Natural Gas engines. The tables below may help identify trucks equipped with the *CVMux* system architecture.

Identifying Control Units

Control Units can be identified using any of the methods below:

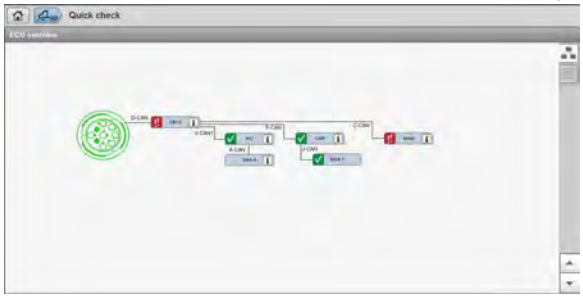
- *Menu Control Switch (MCS)* and Driver Information Center
- *DAVIE4*
- *Electronic Catalog (ECAT)*

NOTE
Using *MCS* is the recommended method for determining the type of control unit in the truck.

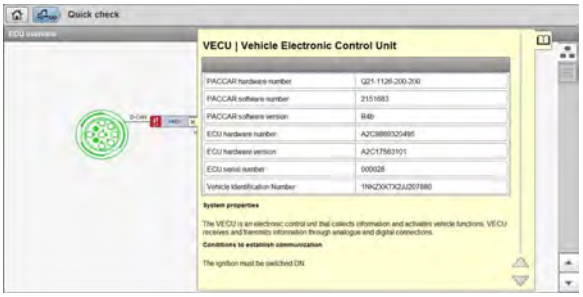
Identifying System Using DAVIE4

1. Connect to the vehicle with *DAVIE4*.
2. Once the truck is identified select **Quick Check**.

If the truck is equipped with a *VECU*, it will be displayed on the *ECU* Overview screen.



3. To view the software and hardware part numbers, click on the *VECU* **i-pane**.


Quick check
ECU overview
VECU | Vehicle Electronic Control Unit
PACCAR hardware number
Q21-1126-200-200
PACCAR software number
2151683
PACCAR software version
R4b
ECU hardware number
A2C3889320495
ECU hardware version
A2C17563101
ECU serial number
000028
Vehicle Identification Number
1NKZXXTX2JJ207880
System properties
The VECU is an electronic control unit that collects information and activates vehicle functions. VECU receives and transmits information through analogue and digital connections.
Conditions to establish communication
The ignition must be switched ON.

Chapter 3 | SPECIAL TOOLS

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Special Tools

You need special tools to program and update the *VECU*.

PACCAR Vehicle Pro (PVP) - Formerly called *PACCAR Engine Pro (PEP)*, *PVP* is a North American software application used for making changes or adjusting engine parameters.

DAVIE4 - DAVIE4 is the diagnostic tool used for programming and troubleshooting the *VECU* and the functions it controls. Connecting to the *VECU* with *DAVIE4* requires content version 18.29.5 or higher and toolset version 6.2.8 or higher. Refer to ePortal for the latest release.

Chapter 4 | PACCAR VEHICLE PRO

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Accessing PACCAR Vehicle Pro

You will need a username and password set up for the *PVP* system.

Use this procedure to access the *PVP* system. The *PVP* system is used to see current settings for a chassis and to make changes to the system.

1. Sign in to ePortal using your ePortal username and password.

The PVP ePortal website is *https://eportal.paccar.com/PVP*.

2. From ePortal, click on the **Service** tab.
3. Click on the **Software** link.

The Software link is found on the left hand menu.

4. Click on the **PACCAR Vehicle Pro** link.
   The Home Page opens to the Chassis Lookup section.

5. Enter the eight character chassis number in the Chassis Lookup field and press **Search**.

The chassis number is the last 8 of the truck's *Vehicle Identification Number (VIN)*.

The *Edit Current Engine Parameters for Chassis* page appears.

If the chassis number entered is not found, the page indicates the chassis number is not found. Check the chassis number entered and try again. If you are still unable to access the chassis, contact your support representative.

Programming Modules on a Truck

WARNING

The vehicle's battery should be fully charged or connected to an external power source before beginning this procedure. Failure to do so could cause the vehicle to lose power during the procedure, which can damage the module.

WARNING

The service computer connected to the diagnostic connector should be fully charged or connected to an external power source before beginning this procedure. Failure to do so could cause the computer to lose power during the procedure, which can damage the module.

NOTE

All parameter changes must be made using *PVP* before beginning this procedure.

NOTE

This procedure does not apply to programming new/blank modules.

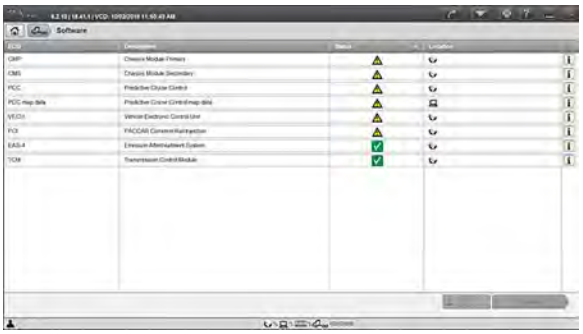
This procedure describes programming a *VECU* as an example, but can be used to program any component listed in *DAVIE4*.

1. Open *DAVIE4* and select **Identify Vehicle**.

2. Click on **Software**.

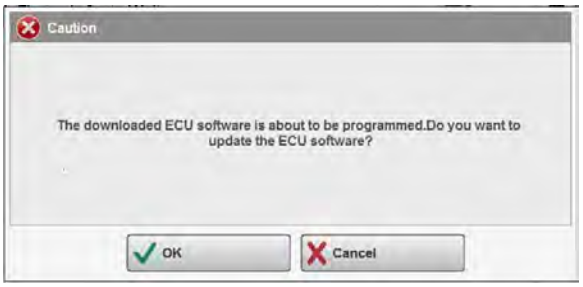
3. Select the module that needs to be programmed, then click **Retrieve Software**.

NOTE
Modules with out of date software will display a yellow triangle in the status column.



The new software downloads. If the download is successful an expiration date displays in the **Location** column to the right of the **Status** column.

4. Select the module, then click **Update**.
5. Confirm that you would like to proceed with programming.



6. Verify that the conditions are fulfilled, then click the arrow to proceed.

7. Follow the instructions on the screen.

Programming is successful. Click the arrow to go back to the software screen. From there you may exit or program another module.

Programming a new Multiplex Switch

1. Turn off the engine and set all switches to OFF.
2. Connect computer to *On Board Diagnostics (OBD)* connector.
3. Login to the *DAVIE4* application.

The username and password for the *DAVIE4* application is the same as for ePortal.

4. Run **Quick Check** before adding a switch to show the current configuration.
5. Select the *Repair Support* tab.
6. Select the *Driver Environment* drop down.
7. Select *Learn Dash Switches*.
8. Cycle the key when prompted by *DAVIE4*.
9. Run *Quick Check* and verify new switch is included in system.
10. Clear any inactive *Diagnostic Trouble Code (DTC)*.

Chapter 5 | ENGINE BEHAVIOR TUNING

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Fuel Density (AE01013)

Fuel Density allows the customer to reprogram the engine controller with a fuel density that more precisely represents the local fuel variation used in their vehicles, which will improve the accuracy of the controller's calculated fuel economy.

NOTE
This parameter is for MX engines only.

Table 2: Fuel Density (AE01013)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01013	855	780	950	g/L

Minimum Speed for High Exhaust Temp Warning (AE01021)

This parameter controls what at what vehicle speed the High Exhaust Temp Warning will trigger.

NOTE
This parameter is for MX engines only.

Table 3: Minimum Speed for High Exhaust Temp Warning (AE01021)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01021	5	5	49	MPH

Engine Idle Speed (AE00002)

This parameter controls base engine idle speed.

NOTE
This parameter is for MX engines only.

Table 4: Engine Idle Speed (AE00002)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE00002	650	550	650	RPM

Chapter 6 | FASTSTOP RECORDER

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Enable Faststop Recorder (AE01019)

This setting enables/disables the Faststop Recorder.

Faststop Recorder allows the engine to trigger a recording event when vehicle deceleration is greater than Faststop Recorder Threshold. The Faststop Recorder will record data 5 seconds before and 5 seconds after the trigger. Three Faststop Recorder events will be stored.

NOTE
This parameter is for MX engines only.

Table 5: Enable Faststop Recorder (AE01019)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01019	1	0	1	FLAG

Faststop Recorder Threshold (AE01020)

This setting controls the Faststop Recorder deceleration threshold at which a Faststop recording will trigger.

NOTE
This parameter is for MX engines only.

Table 6: Faststop Recorder Threshold (AE01020)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01020	8.96	2.24	15.68	MPH/SEC

Chapter 7 | FAST IDLE CONTROL

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Fast Idle Control (FIC)

FIC is a function that allows the operator to increase the engine rpm during stationary operations with the park brake engaged. The function receives input from steering wheel switches, dash switches, cab throttle, service brake and clutch pedal. This function has preprogrammed minimum and maximum values. This allows the driver to adapt to changing engine speed requirements. Examples include:

- Raising engine speed for faster engine warm-up on cold days.
- Raising engine speed to improve *Heating, Ventilation, and Air Conditioning (HVAC)* performance in extreme conditions while parked.
- Improving service operations, such as charging of the batteries or air system.

FIC will become active and allow the operator to control the engine speed with the Set/Accel and Resume/Decel switches once all of the following conditions are met:

- The Cruise Control switch is in the ON position.
- The vehicle is stationary.
- The transmission is in neutral.
- The parking brake is set.

FIC is overridden if the accelerator is pressed down and exceeds the value that is set by the *FIC* setting. *FIC* will automatically deactivate if the clutch pedal or the service brake pedal are depressed and the engine will return to base idle speed.

Fleet managers may find that adjusting some of the *FIC* settings yields better fuel economy when an application requires extended idle operations. The *FIC* module allows a fleet owner to set limits in order to enhance overall operating economy. *FIC* is a standard feature of the engine, but can be disabled to ensure that engine idle speed cannot be altered.

NOTE

The default *FIC* settings are useful for the majority of applications, so modifications of the default settings typically are not necessary. Before changing the default parameters, it is strongly recommended to consult the customer and/or body builder to determine the specific vehicle application.

Maximum Target Engine Speed in Fast Idle Control (AA00042)

This setting controls the maximum engine speed available during *FIC* mode. While engine idle speed can be controlled during *FIC*, engine speed will not exceed the value listed in this setting except if controlled by the accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 7: Maximum Target Engine Speed in Fast Idle Control (AA00042)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00042	1900	550	2000	RPM

Increase in FIC Target Engine Speed on a Long Press of the SET/ACCEL SWITCH (AA01110)

This setting controls the amount engine speed is increased during *FIC* mode when the Set/Accel switch is pressed and held.

NOTE

This parameter is for MX engines only.

Table 8: Increase in FIC Target Engine Speed on a Long Press of the SET/ACCEL SWITCH (AA01110)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01110	250	10	1000	RPM/S

Decrease in FIC Target Engine Speed on a Long Press of the RESUME/DECEL SWITCH (AA01111)

This setting controls the amount engine speed is decreased during *FIC* mode when the Resume/Decel switch is pressed and held.

NOTE

Briefly pressing the Resume/Decel switch reduces engine speed by the amount entered in *Decrease in FIC Target Engine Speed on a Bump of the RESUME/DECEL SWITCH (AA01112)* on page 33.

NOTE

This parameter is for MX engines only.

Table 9: Decrease in FIC Target Engine Speed on a Long Press of the RESUME/DECEL SWITCH (AA01111)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01111	250	10	1000	RPM/S

Decrease in FIC Target Engine Speed on a Bump of the RESUME/DECEL SWITCH (AA01112)

This setting controls the amount engine speed is decreased during *FIC* mode when the Resume/Decel switch is briefly pressed.

NOTE

Pressing and holding the Resume/Decel switch reduces engine speed by the amount entered in *Decrease in FIC Target Engine Speed on a Long Press of the RESUME/DECEL SWITCH (AA01111)* on page 33.

NOTE

This parameter is for MX engines only.

Table 10: Decrease in FIC Target Engine Speed on a Bump of the RESUME/DECEL SWITCH (AA01112)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01112	100	10	1000	RPM

Increase in FIC Target Engine Speed on a Bump of the SET/ACCEL SWITCH (AA01113)

This setting controls the amount engine speed is increased during *FIC* mode when the Set/Accel switch is briefly pressed.

NOTE

Pressing and holding the Set/Accel switch increases engine speed by the amount entered in *Increase in FIC Target Engine Speed on a Long Press of the SET/ACCEL SWITCH (AA01110)* on page 32.

NOTE

This parameter is for MX engines only.

Table 11: Increase in FIC Target Engine Speed on a Bump of the SET/ACCEL SWITCH (AA01113)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01113	100	10	1000	RPM

Enable Fast Idle Control (AA01109)

This setting is used to enable *FIC* functions. FIC allows engine idle speed adjustment within preprogrammable limits. For example, engine idle speed can be increased to improve *HVAC* performance while the vehicle is parked or to speed up engine warm-up in cold weather conditions.

NOTE

This parameter is for MX engines only.

Table 12: Enable Fast Idle Control (AA01109)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01109	1	0	1	FLAG

NOTE

Parameter P071 must be set to "Enabled in VECU" for this parameter to be enabled.

Chapter 8 | MISC

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Miscellaneous Options

This section covers the miscellaneous parameters options available in *PVP*.

Enable Fan-Assist during Regen in PTO Mode (AE01018)

This setting is used to determine if the engine fan will be enabled to assist with DPF Regeneration while in PTO Mode.

Table 13: Enable Fan-Assist during Regen in PTO Mode (AE01018)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01018	0	0	1	FLAG

Enable Regen in PTO Mode (AE01034)

This setting is used to Enable/Disable DPF Regeneration while in PTO Mode.

Regen in PTO Mode allows the engine to perform DPF regenerations while PTO Mode is active and vehicle is stationary, allowing the engine to run continuously without the need to exit PTO Mode to perform a stationary DPF regeneration. This functionality is not California Air Resources Board (CARB) compliant for MX engines manufactured prior to June 2015.

Table 14: Enable Regen in PTO Mode (AE01034)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01034	0	0	1	FLAG

Enable Stationary Regen, Minimum Vehicle Speed Threshold for Regen in PTO (AE01036)

This setting controls the speed threshold where DPF Regeneration in PTO Mode is allowed to occur.

Table 15: Enable Stationary Regen, Minimum Vehicle Speed Threshold for Regen in PTO (AE01036)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01036	0	0	4	MPH

Brake Lamps with Engine Retarder (AA01225)

This setting controls whether the brake lamps activate when the engine retarder is active.

Table 16: Brake Lamps with Engine Retarder (AA01225)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01225	1	0	1	FLAG

Audible Alarm when Door is Open and Park Brake is not set (AA01242)

This setting enables an audible alarm to sound when the driver's side door is opened and the parking brake is not set.

Table 17: Audible Alarm when Door is Open and Park Brake is not set (AA01242)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01242	0	0	1	FLAG

Variable Speed Fan (AA01263)

This setting is used to determine if a variable speed fan is installed on the vehicle.

Table 18: Variable Speed Fan (AA01263)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01263	0	0	1	FLAG

Enables Heated Mirrors if installed (AA01264)

This setting is used to enable heated mirrors if they are installed on the vehicle.

Table 19: Enables Heated Mirrors if installed (AA01264)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01264	0	0	1	FLAG

Driver Seatbelt Detection (AA01265)

This setting is used to determine if a driver seatbelt detection system is installed on the vehicle.

Table 20: Driver Seatbelt Detection (AA01265)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01265	0	0	1	FLAG

Engine fan with Park Brake (AA01276)

Table 21: Engine fan with Park Brake (AA01276)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01276	0	0	1	FLAG

Engine fan with Park Brake and HVAC (AA01277)

Table 22: Engine fan with Park Brake and HVAC (AA01277)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01277	0	0	1	FLAG

Transmission Software Configuration for Starter Interrupt Relay (AA01279)

This setting controls the starter interrupt relay configuration.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 23: Transmission Software Configuration for Starter Interrupt Relay (AA01279)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01279	1	0	1	UBYTE

Advance ABS Installed (AA01285)

This setting controls if the vehicle is equipped with an Advance ABS system.

If the vehicle has hydraulic brakes, this setting must = 0.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 24: Advance ABS Installed (AA01285)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01285	0	0	1	FLAG

Brake Type Switch Signal Source (AA01286)

This setting controls the vehicles brake switch signal source.

1 = Air Brakes
2 = Hydraulic Brakes

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 25: Brake Type Switch Signal Source (AA01286)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01286	1	1	2	DISCRETE

Set ABS Communication for Odometer Vehicle Speed Source (AA01304)

This setting enables/disables ABS messages for Vehicle Speed messages.

Table 26: Set ABS Communication for Odometer Vehicle Speed Source (AA01304)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01304	0	0	1	FLAG

Secondary Fuel Tank (AA01311)

This setting controls whether there is a secondary fuel tank with level sensor installed..

Table 27: Secondary Fuel Tank (AA01311)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01311	0	0	1	FLAG

Radio Auto Mute with Seatbelt Unbuckled (AA01318)

This setting is used to determine if the radio will mute when the seatbelt is unbuckled.

Table 28: Radio Auto Mute with Seatbelt Unbuckled (AA01318)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01318	0	0	1	FLAG

Radio Auto Mute with Collision (AA01319)

This setting is used to determine if the radio will mute when a collision is detected.

Table 29: Radio Auto Mute with Collision (AA01319)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01319	0	0	1	FLAG

Radio Auto Mute with Lane Departure Warning (AA01320)

This setting is used to determine if the radio will mute when a Lane Departure Warning is active.

Table 30: Radio Auto Mute with Lane Departure Warning (AA01320)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01320	0	0	1	FLAG

Radio Auto Mute with Collision Severity Setting (AA01321)

This setting is used to determine the level of audible alert.

Table 31: Radio Auto Mute with Collision Severity Setting (AA01321)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01321	0	0	3	FLAG

Inclement Driving Condition Interlock (AA01324)

This setting enables Inclement Driving Condition Interlock.

NOTE

This parameter is for MX engines only.

Table 32: Inclement Driving Condition Interlock (AA01324)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01324	0	0	1	FLAG

Inclement Driving Condition Interlock Delay Interval (AA01325)

This setting controls the wiper delay for Inclement Driving Condition Interlock.

Possible options for this setting:

- 0 - Off
- 1 - 20 second pause
- 2 - 12 second pause
- 3 - 7 second pause
- 4 - 4 second pause
- 5 - Constant low speed
- 6 - Constant high speed

NOTE

This parameter is for MX engines only.

Table 33: Inclement Driving Condition Interlock Delay Interval (AA01325)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01325	10	0	10	Discrete

Engine Fan Override Dash Mounted Switch Installed (AA01326)

This setting enables the dash mounted engine fan override switch.

Table 34: Inclement Driving Condition Interlock (AA01324)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01324	0	0	1	FLAG

Passenger Occupancy Status (AA01327)

This setting enables Passenger Occupancy detection if installed.

Table 35: Passenger Occupancy Status (AA01327)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01327	0	0	1	FLAG

Fan Type (AA01344)

This setting is used to determine fan type.

Possible options for this setting are:

- 0 - Variable Speed Fan
- 1 - On/Off Fan

Table 36: Fan Type (AA01344)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01344	VARIABLE SPEED FAN	VARIABLE SPEED FAN	ON/OFF FAN	FLAG

Ignition Shutdown Timer Functionality (AA01352)

This setting is used to control the Ignition Shutdown Timer.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

Table 37: Ignition Shutdown Timer Functionality (AA01352)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01352	DISABLED	DISABLED	ENABLED	FLAG

Chapter 9 | SPEED CONTROL MANAGEMENT

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Speed Control Management (SCM)

The *Speed Control Management (SCM)* feature is intended to help encourage fuel-efficient shifting habits by reducing engine acceleration or restricting vehicle speed at elevated engine speeds. Speed Control Management consists of two control strategies: *Progressive Shift (PGS)* and *Gear Down Protection (GDP)*, which may be enabled separately or in combination.

PACCAR offers pre-approved and validated *PGS* and *GDP* settings for most manual and automated-manual transmission powertrain configurations. Upon selection of at least one of the *SCM* features, optimized gear and shift point selections are identified by PACCAR and programmed into the vehicle. These selections are based on the customer's powertrain configuration and requested performance optimization goals.

Standard Feature

- Without *SCM*

Feature Options

- *PGS*
- *GDP*
- *PGS* and *GDP*

Progressive Shift (PGS)

The *PGS* module is typically used to improve fuel economy by encouraging the driver to upshift earlier in lower gears. By shifting earlier, engine speed is reduced, resulting in improved fuel economy. *PGS* is a "soft" RPM limit that restricts engine acceleration when the engine speed is above a predefined engine speed limit. This provides a balance between encouraging a driver to shift at lower engine speeds and the driver's needs to remain in a gear longer to execute a shift under heavy load. The driver's perception of the restricted engine acceleration gives a clear indication to execute an upshift. Along with limiting engine acceleration, PGS also provides a visual notification to the driver to shift via the driver display. Full engine acceleration is restored after the driver executes a shift and the engine speed falls below the customer-defined *PGS* engine speed limit.

The *PGS* module will provide up to two engine speed limits, allowing customers to use a more aggressive limit in lower gears and a less aggressive limit in higher gears. 9 to 13-speed transmissions will receive a two-step engine speed limit, and 18-speed transmissions will receive a single step. The first and last gear in which each progressive shift range is programmed ensuring it is properly configured to the customer's application and for the specified powertrain components.

Minimum gear for PGS Step 1 (AA01173) on page 48 indicates the first gear number in which *PGS* will become active and *Maximum gear for PGS Step 1 (AA01172)* on page 47 indicates the last gear the first *PGS* step will be active. *Maximum gear for PGS Step 2 (AA01170)* on page 47 specifies the last gear that the second step of *PGS* will be active. While *PGS* is active, engine speed will be "soft" limited to *Engine Speed Soft Limit for PGS Step 1 (AA01174)* on page 48 or *Engine Speed Soft Limit for PGS Step 2 (AA01175)* on page 49 depending on the currently selected gear and the defined gear ranges for each step.

Gear Down Protection (GDP)

The *GDP* module encourages the driver to shift into top gear when operating the vehicle at the target operating speed. This is done by restricting the road speed in gears below top gear. When enabled, *GDP* restricts operation of the vehicle at the target operating speed when not in top gear. This effectively prevents engine operation at excessive RPMs and, as a result, helps to improve fuel economy. *GDP* is a "hard" limit. The engine RPM, and therefore vehicle speed, will be limited to a specified value in the specified gears. Along with limiting engine RPM and vehicle speed, this function also provides a visual notification to the driver to shift via the driver display.

The *GDP* module offers a single programmable engine speed limit. Selection of the *GDP* module will automatically set the engine speed limit at one or two gears below top gear depending upon the combination of transmission, rear axle ratio, and equipped tires. Changes to the factory settings can be made post-delivery via a PRS file from the PACCAR Engine Support Center.

Minimum gear to enable GDP (AA01165) on page 46 specifies the first selected gear in which the *GDP* "hard" engine speed limiter will become active, while *Maximum gear for GDP to be enabled (AA01169)* on page 46 specifies the last selected gear that the *GDP* engine speed limiter will remain active.

Application Guidelines

The *SCM* features are intended to be used with manual and automated-manual transmissions while operating in manual mode. The *SCM* feature is not available with 2-speed rear axles, auxiliary transmissions, Allison transmissions, or multi-speed transfer cases. A full list of application guidelines includes:

- Transmissions
  - Available on chassis equipped with Eaton 9, 10, 11, 13, or 18-speed manual transmissions
  - Available on chassis equipped with Eaton Ultrashift automated manual transmissions (while operating in manual mode)
  - Not available on chassis equipped with Allison transmissions
  - Not available on chassis with auxiliary transmissions
- Rear Axle Ratio
  - Available on chassis with 2.53 to 4.33 rear axle ratios
  - Not available on chassis equipped with multi-speed rear axles

Enable the gear down protection feature (AA01257)

This setting enables the gear down protection.

NOTE

This parameter is for MX engines only.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 38: Enable the gear down protection feature (AA01257)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01257	NONE	NONE	ON	FLAG

Enable the progressive shift feature (AA01258)

This setting enables the progressive shift feature.

NOTE

This parameter is for MX engines only.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 39: Enable the progressive shift feature (AA01258)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01258	NONE	NONE	ON	FLAG

Minimum gear to enable GDP (AA01165)

This setting controls the minimum gear the vehicle can be in to enable *GDP*.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 40: Minimum gear to enable GDP (AA01165)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01165	9	0	18	GEAR

GDP Engine Speed Limit (AA01166)

This setting controls the engine speed limit when the vehicle is in *GDP*.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 41: GDP Engine Speed Limit (AA01166)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01166	1680	1330	1930	RPM

Maximum gear for GDP to be enabled (AA01169)

This setting controls the maximum gear the vehicle can be in to enable *GDP*.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 42: Maximum gear for GDP to be enabled (AA01169)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01169	9	0	18	GEAR

Maximum gear for PGS Step 2 (AA01170)

This setting controls the maximum gear the vehicle can be in for *PGS* step 2.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 43: Maximum gear for PGS Step 2 (AA01170)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01170	8	0	18	GEAR

Minimum gear for PGS Step 2 (AA01171)

This setting controls the minimum gear the vehicle can be in for *PGS* step 2.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 44: Minimum gear for PGS Step 2 (AA01171)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01171	7	0	18	GEAR

Maximum gear for PGS Step 1 (AA01172)

This setting controls the maximum gear the vehicle can be in for *PGS* step 1.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 45: Maximum gear for PGS Step 1 (AA01172)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01172	6	0	18	GEAR

Minimum gear for PGS Step 1 (AA01173)

This setting controls the minimum gear the vehicle can be in for *PGS* step 1.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 46: Minimum gear for PGS Step 1 (AA01173)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01173	2	0	18	GEAR

Engine Speed Soft Limit for PGS Step 1 (AA01174)

This setting controls the "soft" engine speed limit when the vehicle is in *PGS* step 1.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 47: Engine Speed Soft Limit for PGS Step 1 (AA01174)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01174	1500	0	4000	RPM

Engine Speed Soft Limit for PGS Step 2 (AA01175)

This setting controls the "soft" engine speed limit when the vehicle is in *PGS* step 2.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 48: Engine Speed Soft Limit for PGS Step 2 (AA01175)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01175	1500	0	4000	RPM

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Driver Reward

The Driver Reward feature is designed to improve fuel economy by providing incentive for drivers to meet customer-defined goals for fuel economy and idle time. The vehicle speed limit may be lowered when goals are not met, or increased to reward drivers for meeting the goals.

> NOTE
>
> The Driver Reward feature is only available vehicles equipped with PACCAR MX engines manufactured after June 2015, and is not compatible with vehicles equipped with early model year 2015 or prior engines.

Standard Feature

- Without Driver Reward

Feature Options

- Fuel Economy Evaluation
- Idle Time Evaluation

The Driver Reward feature provides the driver with increased vehicle speed for meeting customer-defined fuel consumption and idle time goals. The customer has the option of evaluating driver performance based on Fuel Economy, Idle Time Percentage, or both. *Offset Mode (AA00013)* on page 57 may also be configured to apply vehicle speed rewards to the cruise control vehicle speed limit, the accelerator pedal vehicle speed limit, or both.

The Fuel Economy option allows the engine to monitor and compare actual fuel economy to *Fuel consumption threshold for EXPECTED driver reward state (AA01055)* on page 54, which is the threshold at which neither a reward nor penalty will be imposed on the driver. The *Maximum Vehicle Speed Bonus (AA00009)* on page 53 will be applied if the measured fuel economy is greater than or equal to *Fuel consumption threshold for BONUS driver reward state (AA01054)* on page 54. The *Maximum Vehicle Speed Penalty (AA00010)* on page 53 will be applied if the measured fuel economy is less than or equal to *Idle percentage threshold for PENALTY driver reward state (AA01059)* on page 56. As the driver improves the measured fuel economy, the maximum vehicle speed will increase with the driver's performance, until the*Maximum Vehicle Speed Bonus (AA00009)* on page 53 has been reached. As the driver decreases the measured fuel economy, the vehicle speed penalty will gradually increase with the driver's performance, until the *Maximum Vehicle Speed Penalty (AA00010)* on page 53 has been reached.

The Percent Idle Time option allows the engine to monitor the percentage of engine idle time and compare it to *Idle percentage threshold for EXPECTED driver reward state (AA01058)* on page 56, which is the threshold at which neither a reward nor penalty will be imposed on the driver. The *Maximum Vehicle Speed Bonus (AA00009)* on page 53 will be applied if the recorded percentage of idle time is less than or equal to *Idle percentage threshold for BONUS driver reward state (AA01057)* on page 55. The *Maximum Vehicle Speed Penalty (AA00010)* on page 53 will be applied if the recorded percentage of idle time is greater than or equal to *Idle percentage threshold for PENALTY driver reward state (AA01059)* on page 56. As the driver decreases the recorded percentage of idle time, the maximum vehicle speed will increase until the *Maximum Vehicle Speed Bonus (AA00009)* on page 53 has been reached. As the driver decreases the recorded percentage of idle time, the vehicle speed penalty will gradually increase until the *Maximum Vehicle Speed Penalty (AA00010)* on page 53 has been reached.

If Fuel Economy and Percent Idle Time are both enabled, the Driver Reward performance criteria are evaluated individually and the overall vehicle speed bonus or penalty will be determined from the lowest individual bonus or penalty.

On Greenhouse Gas (GHG) compliant vehicles, *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 will limit the overall maximum speed of the vehicle, until the *Vehicle Speed Limiter (VSL)* expiration distance has been exceeded. The *VSL* expiration distance is available in the chassis information within *PEP*, and may not be changed. For vehicles which have exceeded the *VSL* expiration distance, the *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 will be ignored. In order to provide a speed bonus on vehicles subject to the GHG *VSL*, the *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 or *Maximum Cruise Control Target Speed (AA00003)* on page 69 must be lower than *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90.

The six parameters which control the bonus, expected, and penalty thresholds of fuel economy and idle time evaluations are configurable using ONLY the *PVP* interface, and the default values listed in Programmable Parameters will be applied automatically during the ordering process. As the engine progresses in mileage or changes duty-cycles, these parameters may be altered to more appropriately fit the engine's expected behavior.

Driver Reward Averaging Distance (AA01229)

This setting controls the distance used to determine the operator's performance for both the Fuel Economy and Freight Fuel Consumption metrics for Driver Reward.

> NOTE
>
> This parameter is for MX engines only.

Table 49: Driver Reward Averaging Distance (AA01229)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01229	596.51	6.21	621.37	MILES

Maximum Vehicle Speed Bonus (AA00009)

This setting controls the maximum speed bonus that can be applied through the Driver Reward system.

> NOTE
>
> This parameter is for MX engines only.

Table 50: Maximum Vehicle Speed Bonus (AA00009)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00009	5	0	10	MPH

Maximum Vehicle Speed Penalty (AA00010)

This setting controls the maximum speed penalty that can be applied through the Driver Reward system.

> NOTE
>
> This parameter is for MX engines only.

Table 51: Maximum Vehicle Speed Penalty (AA00010)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00010	-5	-10	0	MPH

Enable the Driver Fuel Efficiency part of the Driver Reward Speed Limiter (AA01247)

This setting enables the Driver Reward system to use fuel efficiency as a control for increasing or decreasing maximum vehicle speed.

NOTE

This parameter is for MX engines only.

Table 52: Enable the Driver Fuel Efficiency part of the Driver Reward Speed Limiter (AA01247)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01247	Disabled	Disabled	Enabled	FLAG

Fuel consumption threshold for BONUS driver reward state (AA01054)

This setting controls the MPG at which the maximum vehicle speed bonus is applied. The vehicle speed limit is gradually increased as the MPG approaches this limit.

NOTE

The *Enable the Driver Fuel Efficiency part of the Driver Reward Speed Limiter (AA01247)* on page 54 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 53: Fuel consumption threshold for BONUS driver reward state (AA01054)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01054	6.49	0	63	MPG

Fuel consumption threshold for EXPECTED driver reward state (AA01055)

This setting controls the expected mpg of the vehicle for the Driver Reward system. This is the fuel economy at which no vehicle speed bonus or penalty is applied.

NOTE

The *Enable the Driver Fuel Efficiency part of the Driver Reward Speed Limiter (AA01247)* on page 54 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 54: Fuel consumption threshold for EXPECTED driver reward state (AA01055)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01055	6	0	63	MPG

Fuel consumption threshold for PENALTY driver reward state (AA01056)

This setting controls the MPG at which the maximum vehicle speed penalty is applied. The vehicle speed limit is gradually decreased as the MPG approaches this limit.

NOTE

The *Enable the Driver Fuel Efficiency part of the Driver Reward Speed Limiter (AA01247)* on page 54 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 55: Fuel consumption threshold for PENALTY driver reward state (AA01056)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01056	6	0	63	MPG

Enable the Vehicle Idle Time Percentage (AA01248)

This setting enables the Driver Reward system to use the percentage of vehicle idle time as a control for increasing or decreasing maximum vehicle speed.

NOTE

This parameter is for MX engines only.

Table 56: Enable the Vehicle Idle Time Percentage (AA01248)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01248	None	None	Enabled	FLAG

Idle percentage threshold for BONUS driver reward state (AA01057)

This setting controls the idle time percentage at which the maximum vehicle speed bonus is applied. The vehicle speed limit is gradually increased as the idle time percentage approaches this limit.

NOTE

The *Enable the Vehicle Idle Time Percentage (AA01248)* on page 55 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 57: Idle percentage threshold for BONUS driver reward state (AA01057)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01057	5	0	100	%

Idle percentage threshold for EXPECTED driver reward state (AA01058)

This is the idle time percentage at which no vehicle speed bonus or penalty is applied.

NOTE

The *Enable the Vehicle Idle Time Percentage (AA01248)* on page 55 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 58: Idle percentage threshold for EXPECTED driver reward state (AA01058)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01058	10.00	0	100	%

Idle percentage threshold for PENALTY driver reward state (AA01059)

This setting controls the idle time percentage at which the maximum vehicle speed penalty is applied. The vehicle speed limit is gradually decreased as the idle time percentage approaches this limit.

NOTE

The *Enable the Vehicle Idle Time Percentage (AA01248)* on page 55 setting must be enabled for this setting to be used.

NOTE

This parameter is for MX engines only.

Table 59: Idle percentage threshold for PENALTY driver reward state (AA01059)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01059	15.00	0	100	%

Offset Mode (AA00013)

This setting controls whether the bonuses and penalties from the Driver Reward system apply to driving using pedals, cruise control, or both.

The possible values for this setting are:

NONE - No Reward
PEDAL - Pedal
CRUZ - Cruise
BOTH - Both

NOTE

This parameter is for MX engines only.

Table 60: Offset Mode (AA00013)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00013	BOTH	NONE	BOTH	DISCRETE

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Driver Shift Aid

Driver Shift Aid (DSA) helps reduce engine fuel consumption by informing the driver to upshift in order to reduce engine speed. It provides visual notifications through the driver display, encouraging the operator to perform upshifts at predefined engine speeds. *DSA* is compatible with vehicles equipped with manual transmissions or automatic transmissions operating in manual mode.

Enables driver shift aid functionality (AA01249)

This setting enables *DSA* functionality.

NOTE
This parameter is for MX engines only.

Table 61: Enables driver shift aid functionality (AA01249)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01249	NONE	NONE	ON	FLAG

Minimum Driver Shift Aid Vehicle Speed (AA00015)

This setting controls the minimum vehicle speed needed to enable *DSA*. DSA will not activate unless the vehicle is traveling at or above the speed entered in this option.

NOTE
This parameter is for MX engines only.

Table 62: Minimum Driver Shift Aid Vehicle Speed (AA00015)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00015	3	0	124	MPH

Driver Shift Aid Lowest Active Gear (AA00016)

This setting indicates the lowest transmission gear available to maintain active *DSA*. If the current gear is lower than the entry in in this setting, then DSA is not active.

NOTE
This parameter is for MX engines only.

Table 63: Driver Shift Aid Lowest Active Gear (AA00016)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00016	10	1	30	DISCRETE

Driver Shift Aid Highest Active Gear (AA00017)

This setting indicates the highest transmission gear available to maintain active *DSA*. If the current gear is higher than the entry in in this setting, then DSA is not active.

NOTE

This parameter is for MX engines only.

Table 64: Driver Shift Aid Highest Active Gear (AA00017)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00017	1	1	30	DISCRETE

Trans gear ratio (AA01250)

This setting determines the gear number for the vehicle's top gear. For example, on trucks with 16 gear speeds this would be the 16th gear, while on trucks with 10 speeds this would be the 10th gear.

NOTE

This parameter is for MX engines only.

Table 65: Trans gear ratio (AA01250)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01250	1	1	18	GEAR

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Enable Application Road Speed Limiter (AA01280)

This setting enables or disables Application Road Speed Limiter functionality.

NOTE
This parameter is for MX engines only.

Table 66: Enable Application Road Speed Limiter (AA01280)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01280	0	0	1	FLAG

Configures Polarity of ARSL switch input (AA01281)

This setting controls polarity for the Application Road Speed Limit switch.

NOTE
This parameter is for MX engines only.

Table 67: Configures Polarity of ARSL switch input (AA01281)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01281	1	0	1	FLAG

ARSL Speed Limit #1 (AA01282)

This setting controls the #1 Speed limit when Application Road Speed Limiter is enabled.

NOTE
This parameter is for MX engines only.

Table 68: ARSL Speed Limit #1 (AA01282)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01282	3.73	0	55.3	MPH

Determines source of ARSL Switch Signal (AA01284)

This setting controls Application Road Speed Limiter switch source.

NOTE
This parameter is for MX engines only.

Table 69: Determines source of ARSL Switch Signal (AA01284)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01284	2	2	4	DISCRETE

Chapter 13 | CRUISE CONTROL

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Cruise Control (CC)

The *Cruise Control (CC)* feature allows the operator to set and maintain a target vehicle speed, as well as adjust it when necessary, within programmable limits. This allows the driver to keep the vehicle at a constant vehicle speed, but still easily adapt to changing vehicle speed requirements. The *CC* module also allows a fleet owner to set preprogrammed limits in order to enhance overall operating economy.

NOTE

CC is a standard feature of the engine, and the default *CC* settings are useful for a majority of applications. Before changing the default parameters, it is strongly recommended to consult the customer and/or body builder to review the *CC* options.

CC is controlled using the:

- ON/OFF switch.
- Set/Accel switch.
- Resume/Decel switch.

The ON/OFF switch is used to activate and deactivate *CC*. When the switch is in the ON position, the operator can use the Set/Accel switch and Resume/Decel switch to control *CC* functions. When the switch is in the OFF position, *CC* is deactivated and the engine does not automatically maintain an operator-desired vehicle speed.

When *CC* is on, the Set/Accel switch allows the operator to activate *CC* and assign the current vehicle speed as the Cruise Control target speed. While *CC* is active, the operator is free from having to control the vehicle speed using the accelerator pedal. While *CC* is actively controlling vehicle speed, the Set Accel switch can be used two ways:

1. Briefly pressing the Set/Accel switch will cause the vehicle speed to increase by the value in the *Increment step for brief operation of switch (AA01002)* on page 69 setting.
2. Pressing and holding the Set/Accel switch accelerates vehicle speed until the switch is released or the speed entered in the *Maximum Cruise Control Target Speed (AA00003)* on page 69 setting is reached.

When *CC* is on, the Resume/Decel switch allows the operator to activate *CC* and resume maintaining a previously set vehicle cruise speed. The stored target vehicle speed is reset with an ignition key cycle. While *CC* is actively controlling vehicle speed, the Set/Resume switch can be used two ways:

1. Briefly pressing the Resume/Decel switch will cause the vehicle speed to decrease by the value in the *Decrement step for brief operation of switch (AA01001)* on page 68 setting.
2. Pressing and holding Resume/Decel switch decreases vehicle speed until the switch is released or the speed entered in the *Minimum Speed to Enable Cruise Control (AA00004)* on page 69 setting is reached.

Decrement step for brief operation of switch (AA01001)

This setting controls the amount vehicle speed is decreased during *CC* mode when the Resume/Decel switch is briefly pressed.

NOTE

Pressing and holding the Resume/Decel switch reduces vehicle speed by the amount entered in *Large decrement step for the cruise target speed (AA01004)* on page 70.

NOTE

This parameter is for MX engines only.

Table 70: Decrement step for brief operation of switch (AA01001)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01001	1	0.62	6.21	MPH

Increment step for brief operation of switch (AA01002)

This setting controls the amount vehicle speed is increased during *CC* mode when the Set/Accel switch is briefly pressed.

NOTE

Pressing and holding the Set/Accel switch increases vehicle speed by the amount entered in *Large increment step for the cruise target speed (AA01005)* on page 71.

NOTE

This parameter is for MX engines only.

Table 71: Increment step for brief operation of switch (AA01002)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01002	1	.62	6.21	MPH

Maximum Cruise Control Target Speed (AA00003)

This setting controls the maximum vehicle speed available during *CC* mode.

NOTE

For vehicles with Cummins engine, the default value for this setting is 100.04 mph.

NOTE

This setting cannot be higher than the maximum vehicle speed.

Table 72: Maximum Cruise Control Target Speed (AA00003)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00003	64	25	100	MPH

Minimum Speed to Enable Cruise Control (AA00004)

This setting controls the minimum speed required to activate *CC*. If the vehicle is not traveling at or above this speed, then CC mode cannot be activated.

> **NOTE**
>
> This parameter is for MX engines only.

Table 73: Minimum Speed to Enable Cruise Control (AA00004)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00004	10	10	40	MPH

Enable the Dynamic Cruise Control function (AA00005)

This setting is used to enable *Dynamic Cruise Control (DCC)*. *DCC* helps improve fuel economy on uphill grades by lowering the cruise control set speed and reducing the amount of torque applied before the vehicle reaches its steady-state climbing speed. *DCC* performs a similar function to *Predictive Cruise Control (PCC)* on uphill grades, except all of the cruise control speed adjustments are made without any 'predictive' knowledge of the road ahead.

> **NOTE**
>
> This parameter is for MX engines only.

Table 74: Enable the Dynamic Cruise Control function (AA00005)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00005	OFF	OFF	ON	FLAG

Large decrement step for the cruise target speed (AA01004)

This setting controls the amount vehicle speed is decreased during *CC* mode when the Resume/Decel switch is pressed and held.

> **NOTE**
>
> Briefly pressing the Resume/Decel switch reduces vehicle speed by the amount entered in *Decrement step for brief operation of switch (AA01001)* on page 68.

> **NOTE**
>
> This parameter is for MX engines only.

Table 75: Large decrement step for the cruise target speed (AA01004)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01004	1	0	6.21	MPH

Large increment step for the cruise target speed (AA01005)

This setting controls the amount vehicle speed is increased during *CC* mode when the Set/Accel switch is pressed and held.

NOTE

Briefly pressing the Set/Accel switch increases vehicle speed by the amount entered in *Increment step for brief operation of switch (AA01002)* on page 69.

NOTE

This parameter is for MX engines only.

Table 76: Large increment step for the cruise target speed (AA01005)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01005	2	0	6.21	MPH

Enable or disable the corrective braking functionality (AA01006)

This setting controls whether corrective braking functionality is enabled during *CC* mode. Corrective braking allows the driver to apply the service brakes while above the current cruising speed, without canceling cruise control.

NOTE

This parameter is for MX engines only.

Table 77: Enable or disable the corrective braking functionality (AA01006)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01006	Disable	Disable	Enable	FLAG

Engine brake uninterrupted if cruise control is 'set' while engine brakes are active (AA01209)

This setting determines whether the engine brake is interrupted if the vehicle's cruise control setting is on and a cruise speed is set.

NOTE

This parameter is for MX engines only.

Table 78: Engine brake uninterrupted if cruise control is 'set' while engine brakes are active (AA01209)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01209	1	0	1	FLAG

TSC1 Checksum Enable for P2 Cruise (AA01226)

This setting enables the *Torque Speed Control Message (TSC1)* P2 (Cruise) message checksum. The checksum is used to determine if an error occurred during the transmission of the P2 message from one *ECU* to another.

CAUTION

This parameter is for internal use only and should not be changed.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 79: TSC1 Checksum Enable for P2 Cruise (AA01226)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01226	Disabled	Disabled	Enabled	FLAG

Adaptive Cruise Control System Type (AA01238)

This setting indicates what version of the *Adaptive Cruise Control (ACC)* system is used on the vehicle.

The possible values for this setting are:

0 - Fusion 2.1 or earlier
1 - Fusion 2.2
3 - Fusion 2.9

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 80: Adaptive Cruise Control System Type (AA01238)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01238	0	0	3	DISCRETE

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PACCAR Engine Brake

The PACCAR Engine Brake is a fully integrated engine compression brake that provides braking forces through the driveline. It reduces wear on the service brakes and improves vehicle control in deceleration events when active. The PACCAR Engine Brake operates using a *Right Hand Stalk (RHS)* , and is customizable to meet the requirements of the driver or fleet.

Standard Feature

- PACCAR Engine Brake *RHS*
- Manual Mode (both with *CC* turned ON and OFF)

The PACCAR Engine Brake *RHS* allows the driver to turn retarder ON and OFF.

The default setting for the PACCAR Engine Brake is Manual Mode. Manual Mode allows the engine to provide braking when the PACCAR Engine Brake *RHS* is in the ON position, the engine is not being fueled, and the *CC* is inactive. The driver may use the *RHS* to select from three or four levels of braking power: Low (33%), Medium (66%), High (100%), and Max Mode (100%) (AMT ONLY).

When the PACCAR Engine Brake *RHS* is in the ON position, the driver will be notified by an indicator on the driver display.

Feature Options

- Engine Brake Engagement Delay
- Engine Brake Behavior When *CC* is ON:
  - Manual Mode
  - Coast Mode
  - Latch Mode
- *Downhill Speed Control (DSC)* (Auto-Retard in *CC*)
- *Downhill Speed Limiter (DSL)*

The customer has the option to select from three operating modes for the PACCAR Engine Brake when the PACCAR Engine Brake *RHS* is ON and *CC* is ON and inactive. The three operating modes are mutually exclusive of one another:

- Manual Mode is the default setting for the PACCAR Engine Brake when the PACCAR Engine Brake *RHS* is ON and *CC* is ON and inactive. It behaves the same way as the Manual Mode described in Standard Features portion of this section.
- Coast Mode allows the engine to provide braking when the PACCAR Engine Brake *RHS* is ON, the *CC* is ON and inactive, and the service brake is applied. The PACCAR Engine Brake will deactivate in Coast Mode when the service brake pedal is released or *CC* is activated.
- Latch Mode allows the engine to provide braking when the PACCAR Engine Brake *RHS* is ON, *CC* is ON and inactive, and the service brake pedal is applied. Latch Mode will continue to provide braking after the service brake pedal is released and will deactivate when the accelerator pedal is applied or *CC* is activated.

The engine can be programmed to delay the activation of the engine brake, if needed, using *Time Delay for Retarder Activation (AA00039)* on page 76. For example, the driver may wish to deactivate *CC* by quickly pressing the brake pedal without activating the engine brake when using Coast or Latch mode. Specifying a delay would allow this to occur, but still provide engine braking when the driver presses the brake pedal for a prolonged period during a braking event.

DSC allows the engine to provide braking when the PACCAR Engine Brake *RHS* is ON, *CC* is active and the vehicle speed exceeds the *CC* target speed plus the *Auto-Retarder Target Vehicle Speed Offset (AA00038)* on page 76. A lower offset value in *Auto-Retarder Target Vehicle Speed Offset (AA00038)* on page 76will cause the engine brake to activate sooner and more often than a larger offset value. For example, truck A and truck B both have the same *CC* target speed. Truck A has an offset value of 4 MPH, and truck B has an offset value of 6 MPH. Once the offset value is reached the engine brakes will be engaged. Truck A will activate the engine brakes more often than truck B. A lower offset value is recommended for vehicles operating in steep terrain.

DSC will deactivate when the vehicle speed has been reduced to the *CC* target speed or when *CC* is deactivated. *DSC* will function independently of all other PACCAR Engine Brake parameters.

The *DSL* allows the engine to provide braking when the PACCAR Engine Brake *RHS* is ON and the vehicle speed exceeds the *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 plus the *Downhill Speed Limiter Vehicle*

Speed Offset (AA00037) on page 75. The *DSL* will function independently of all other PACCAR Engine Brake parameters.

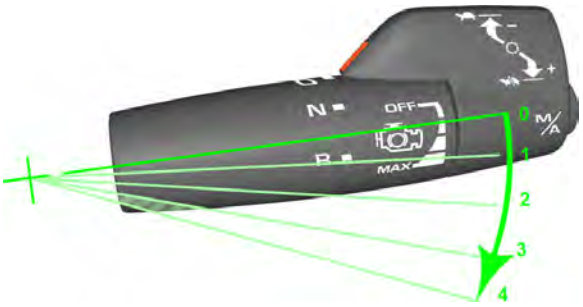
In Manual Mode, the *DSL* will activate if the vehicle speed exceeds the *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 plus the *Downhill Speed Limiter Vehicle Speed Offset (AA00037)* on page 75. If the *DSL* is already active, the PACCAR Engine Brake power will be increased, but if the *DSL* is already at maximum capacity, the *DSL* will have no effect on the PACCAR Engine Brake. The *DSL* will automatically deactivate when the vehicle speed has been reduced to the *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90.

There are two versions of the *RHS*, depending on the transmission configuration.

The *RHS* for Automated Manual Transmission Configurations has five vehicle retarder positions. They are defined as:

- Position 0 is retarder OFF (0% requested retarder).
- Position 1 is retarder ON and 33% requested retarder.
- Position 2 is retarder ON and 66% requested retarder.
- Position 3 is retarder ON and 100% requested retarder.
- Position 4 is retarder ON and Max Mode, or the maximum amount of engine retarder torque (100% requested retarder)

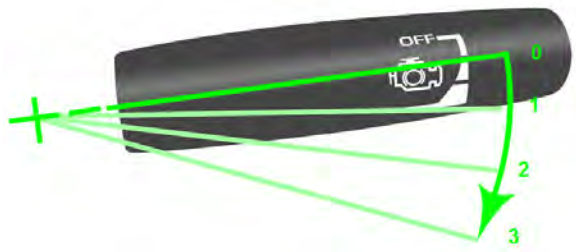
Figure 2: AMT RHS Retarder Positions



The *RHS* for Manual and Allison Transmission Configurations has four retarder positions. They are defined as:

- Position 0 is retarder OFF (0% requested retarder).
- Position 1 is retarder ON and 33% requested retarder.
- Position 2 is retarder ON and 66% requested retarder.
- Position 3 is retarder ON and 100% requested retarder.

Figure 3: Manual and Allison RHS Retarder Positions



Downhill Speed Limiter Vehicle Speed Offset (AA00037)

This settings controls the vehicle offset speed for the *DSL* system.

NOTE
This parameter is for MX engines only.

Table 81: Downhill Speed Limiter Vehicle Speed Offset (AA00037)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00037	4	2	6	MPH

Auto-Retarder Target Vehicle Speed Offset (AA00038)

This setting controls the vehicle offset speed for the *DSC* system.

NOTE

This parameter is for MX engines only.

Table 82: Auto-Retarder Target Vehicle Speed Offset (AA00038)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00038	2	2	6	MPH

Time Delay for Retarder Activation (AA00039)

This setting controls the time delay from when the driver engages the engine brakes and when the brakes activate.

NOTE

This parameter is for MX engines only.

Table 83: Time Delay for Retarder Activation (AA00039)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00039	0.1	0.1	3	SEC

Engine Retarder Mode (AA01255)

This setting controls the retarder mode type when cruise control is turned on but not being actively used.

The possible values for this setting are:

0 - Manual Retarder Control
1 - Coast Retarder Mode
2 - Latch Retarder Mode

NOTE

This parameter is for MX engines only.

Table 84: Engine Retarder Mode (AA01255)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01255	0	0	2	DISCRETE

Enable Downhill Speed Limit (AA01046)

This setting enables/disables Downhill Speed Limiter.

The possible values for this setting are:

0 - Disable
1 - Enable

NOTE

This parameter is for MX engines only.

Table 85: Enable Downhill Speed Limit (AA01046)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01046	0	0	1	FLAG

NOTE

Parameter P012 must be set to "Enabled in VECU" to enable this parameter.

Enable Auto-Retarder (AA01178)

This setting enables/disables Auto-Retarder.

The possible values for this setting are:

0 - Disable
1 - Enable

NOTE

This parameter is for MX engines only.

Table 86: Enable Auto-Retarder (AA01178)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01178	0	0	1	FLAG

NOTE

Parameter P011 must be set to "Enabled in VECU" for this parameter to be enabled.

Primary Retarder Disable Threshold Speed (AE01008)

This setting controls at which speed the Retarder will disengage.

> NOTE
>
> This parameter is for MX engines only.

Table 87: Primary Retarder Disable Threshold Speed (AE01008)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AE01008	2	2	29	MPH

> NOTE
>
> Parameter P011 must be set to "Enabled in VECU" for this parameter to be enabled.

Engine brakes activation during open driveline (Manual Only) (AE00001)

This setting enables/disables Auto-Retarder.

The possible values for this setting are:

0 - Engine Brakes enabled while Driveline Open
1 - Engine Brakes disabled while Driveline Open

> NOTE
>
> This parameter is for MX engines only.

Table 88: Engine brakes activation during open driveline (Manual Only) (AE00001)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00001	1	0	1	FLAG

> NOTE
>
> Parameter P011 must be set to "Enabled in VECU" for this parameter to be enabled.

Chapter 15 | ENGINE IDLE SHUTDOWN TIMER

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Enable Engine Idle Shutdown Timer (AA01251)..... 80
EIST w/ Park Brake Released (AA01096)..... 80
EIST in PTO mode (AA01253)..... 80
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Engine Idle Shutdown Timer (EIST)

The *Engine Idle Shutdown Timer (EIST)* allows fleet owners to impose limits on engine idling time for MX-powered vehicles. EIST initiates when engine speed is constant, the vehicle is stationary or at standstill, and the accelerator pedal is motionless. EIST has several customizable options to meet the needs of any application, including:

- Overruling EIST by fuel, engine coolant, and/or oil temperatures, allowing uninterrupted engine warm-up intervals.
- Overruling EIST during low battery voltage, allowing uninterrupted battery recharging.
- Separate timer intervals depending on if the parking brake is engaged or not.
- Separate timer intervals during, or completely disabling EIST, while engine is in *PTO* mode.

Enable Engine Idle Shutdown Timer (AA01251)

This setting is used to enable *EIST*.

NOTE
This parameter is for MX engines only.

Table 89: Enable Engine Idle Shutdown Timer (AA01251)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01251	ENABLED	DISABLED	ENABLED	FLAG

EIST w/ Park Brake Released (AA01096)

This setting is used to enable *EIST* when the parking brake is not set. If this setting is enabled, then EIST mode can be activated when the parking brake is not set. Otherwise, the parking brake must be set for EIST mode to be activated.

NOTE
This parameter is for MX engines only.

Table 90: EIST w/ Park Brake Released (AA01096)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01096	Enabled	Disabled	Enabled	FLAG

EIST in PTO mode (AA01253)

This setting is used to enable *EIST* during *PTO* mode. If this setting is enabled, then EIST can be activated while the vehicle is in PTO mode.

NOTE
This parameter is for MX engines only.

Table 91: EIST in PTO mode (AA01253)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01253	DISABLE	DISABLE	ENABLE	FLAG

EIST w/ Park Brake Engaged (AA01101)

This setting enables the parking brake to be used to start the *EIST* timer. When enabled, the *EIST* Park Brake Timer will activate when the vehicle is stationary and the barking brake is engaged.

NOTE

This parameter is for MX engines only.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 92: EIST w/ Park Brake Engaged (AA01101)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01101	Enabled	Disabled	Enabled	FLAG

Idle time in PTO mode (AA00025)

This setting controls the maximum engine idle time when the vehicle is in *PTO* Mode.

NOTE

This parameter is for MX engines only.

Table 93: Idle time in PTO mode (AA00025)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00025	5	1	1092	MINUTE

Idle Time w/Park Brake Engaged (AA00026)

This setting controls the maximum engine idle time when the vehicle is in *EIST* mode and the parking brake is set.

NOTE

This parameter is for MX engines only.

Table 94: Idle Time w/Park Brake Engaged (AA00026)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00026	5	1	1092	MINUTE

Idle Time w/Park Brake Released (AA00027)

This setting controls the maximum engine idle time when the vehicle is in *EIST* mode and the parking brake is not set.

NOTE

The *EIST w/ Park Brake Released (AA01096)* on page 80 setting must be enabled to allow engine idle operation when the parking brake is not set.

NOTE

This parameter is for MX engines only.

Table 95: Idle Time w/Park Brake Released (AA00027)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00027	5	1	1092	MINUTE

Time remaining to shutdown from the moment of EIST warning (AA01097)

This setting is used to set how long after an *EIST* shutdown warning message is displayed before the engine shuts down. When a shutdown warning message is sent from *EIST*, the engine will continue operating for the amount of time entered in this setting unless an *EIST* override occurs.

For example, if the value entered in this setting is '60,' then the engine will shut down 60 seconds (1 minute) after a shutdown warning timer begins. If an *EIST* override occurs during this time, then the timer returns to the value entered in this setting until the override disappears.

Shutdown override conditions include:

- Ambient air temperature
- Battery *State of Charge (SoC)*
- Coolant temperature
- Engine Load Interrupt
- Fuel temperature
- Oil temperature
- *PTO* Mode Interrupt

NOTE

This parameter is for MX engines only.

Table 96: Time remaining to shutdown from the moment of EIST warning (AA01097)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01097	60	30	255	SEC

EIST Ambient Temp Override (AA01252)

This setting is used to enable the air temp idle timer override for *EIST*. When enabled, the engine will continue operation whenever the air temperature is below the setting in *EIST High Ambient Temp Threshold (AA00023)* on page 83 or above the setting in *EIST Low Ambient Temp Threshold (AA00024)* on page 84. Additionally the timer will continue to count down until *Time remaining to shutdown from the moment of EIST warning (AA01097)* on page 82 is reached and pause there.

NOTE

This parameter is for MX engines only.

Table 97: EIST Ambient Temp Override (AA01252)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01252	NONE	NONE	ENABLE	FLAG

EIST High Ambient Temp Threshold (AA00023)

This setting is used to set the maximum ambient air temperature needed to override *EIST*. If the *EIST Ambient Temp Override (AA01252)* on page 83 setting is enabled, then the EIST is overridden whenever the ambient air temperature is above the value entered in this setting.

NOTE

The value entered in this setting must be above the value entered in *EIST Low Ambient Temp Threshold (AA00024)* on page 84.

NOTE

This parameter is for MX engines only.

Table 98: EIST High Ambient Temp Threshold (AA00023)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00023	80	-41	490	FAHRENHEIT

EIST Low Ambient Temp Threshold (AA00024)

This setting is used to set the minimum ambient air temperature needed to override *EIST*. If the *EIST Ambient Temp Override (AA01252)* on page 83 setting is enabled, then the EIST is overridden whenever the ambient air temperature is below the value entered in this setting.

NOTE

The value entered in this setting must be below the value entered in *EIST High Ambient Temp Threshold (AA00023)* on page 83.

NOTE

This parameter is for MX engines only.

Table 99: EIST Low Ambient Temp Threshold (AA00024)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00024	40	-41	490	FAHRENHEIT

EIST Override from Engine Load (AA00030)

This setting is used to override *EIST* if the load on the engine exceeds the value entered in the *EIST Engine Load Override Threshold (AA01095)* on page 86. Engine shutdown is delayed by the amount of time entered in *Time remaining to shutdown from the moment of EIST warning (AA01097)* on page 82.

NOTE

If the *EIST Reset from Engine Load (AA00029)* on page 86 setting is enabled, then this setting must be disabled.

NOTE

This parameter is for MX engines only.

Table 100: EIST Override from Engine Load (AA00030)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00030	Disabled	Disabled	Enabled	FLAG

Battery State of Charge Overrule (AA01254)

This setting allows *EIST* to be overridden when the vehicle's batteries need to be recharged. When enabled, if the vehicle is in engine idle mode and the vehicle's batteries have a low level of charge, the vehicle will stay idling to help recharge the batteries. It will also delay engine shutdown by the amount of time entered in *Time remaining to shutdown from the moment of EIST warning (AA01097)* on page 82.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 101: Battery State of Charge Overrule (AA01254)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01254	NONE	NONE	ON	FLAG

EIST PTO Override (AA00035)

This setting is used to allow *EIST* to be overridden during *PTO* mode. When this setting is enabled, *EIST* timers will interrupt while *PTO* mode is active.

If both this setting and *EIST Override from Engine Load (AA00030)* on page 84 are true, both conditions must be met before the interrupt occurs. This combined setting allows fleet managers to prevent mis-use of the PTO interrupt by also requiring a specific engine load to also be met.

NOTE

This parameter is for MX engines only.

Table 102: EIST PTO Override (AA00035)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00035	Enabled	Disabled	Enabled	FLAG

EIST Enable Park brake reset (AA00019)

This setting enables using the parking brake as a reset timer for *EIST*. If this setting is enabled, the timers are reset when switching from Park to Standstill or vice versa.

NOTE

This parameter is for MX engines only.

Table 103: EIST Enable Park brake reset (AA00019)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00019	ON	OFF	ON	FLAG

EIST Engine Load Override Threshold (AA01095)

This setting is used to determine the maximum engine load before *EIST* can be reset. If the engine load exceeds the value entered in this setting, then the engine idle timer will either reset if *EIST Reset from Engine Load (AA00029)* on page 86 is enabled, or EIST will be overridden if *EIST Override from Engine Load (AA00030)* on page 84 is enabled.

NOTE
This parameter is for MX engines only.

Table 104: EIST Engine Load Override Threshold (AA01095)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01095	664	0	1903	LB-FT

EIST Reset from Engine Load (AA00029)

This setting enables using the engine load as a reset timer for *EIST*. When this setting is enabled and engine load exceeds the value entered in *EIST Engine Load Override Threshold (AA01095)* on page 86, then EIST is reset and engine shutdown is delayed by either *Idle time in PTO mode (AA00025)* on page 81, *Idle Time w/Park Brake Engaged (AA00026)* on page 81, or *Idle Time w/Park Brake Released (AA00027)* on page 82 dependent on park brake status and PTO status.

NOTE
If the *EIST Override from Engine Load (AA00030)* on page 84 setting is enabled, then this setting must be disabled.

NOTE
This parameter is for MX engines only.

Table 105: EIST Reset from Engine Load (AA00029)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00029	Enabled	Disabled	Enabled	FLAG

EIST Accelerator Pedal Reset (AA00032)

This setting enables using the accelerator pedal as a reset timer for *EIST*. If this setting is enabled, depressing the accelerator pedal will reset to base timer of *Idle time in PTO mode (AA00025)* on page 81, *Idle Time w/Park Brake Engaged (AA00026)* on page 81, or *Idle Time w/Park Brake Released (AA00027)* on page 82.

NOTE
This parameter is for MX engines only.

Table 106: EIST Accelerator Pedal Reset (AA00032)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00032	Enabled	Disabled	Enabled	FLAG

EIST Service Brake Reset (AA00033)

This setting enables using the foot brake as a reset timer for *EIST*. If this setting is enabled, depressing the foot brake will reset to base timer of *Idle time in PTO mode (AA00025)* on page 81, *Idle Time w/Park Brake Engaged (AA00026)* on page 81, or *Idle Time w/Park Brake Released (AA00027)* on page 82.

NOTE

This parameter is for MX engines only.

Table 107: EIST Service Brake Reset (AA00033)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00033	Enabled	Disabled	Enabled	FLAG

EIST Clutch Pedal Reset (AA00034)

This setting enables using the clutch pedal as a reset timer for *EIST*. If this setting is enabled, depressing the clutch pedal will reset to base timer of *Idle time in PTO mode (AA00025)* on page 81, *Idle Time w/Park Brake Engaged (AA00026)* on page 81, or *Idle Time w/Park Brake Released (AA00027)* on page 82.

NOTE

This parameter is for MX engines only.

Table 108: EIST Clutch Pedal Reset (AA00034)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00034	Enabled	Disabled	Enabled	FLAG

Resets EIST on PTO change (AA01100)

This setting controls whether *EIST* resets when the vehicle either enters into or leaves *PTO* Mode.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 109: Resets EIST on PTO change (AA01100)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01100	NON GHG CHASSIS	GHG CHASSIS	NON GHG CHASSIS	FLAG

Chapter 16 | VEHICLE SPEED LIMITER - GHG

Vehicle Speed Limiter (VSL).....90
Maximum Accelerator Pedal Vehicle Speed (AA00086).....90
Standard Maximum Speed Limit (LSL) (AA00088).....90
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VSL Offset to enable the torque limit (AA01228).....91

Vehicle Speed Limiter (VSL)

The *VSL* is designed to improve fuel economy by reducing the maximum vehicle speed.

Standard Feature

- Without *VSL*

The speed of the vehicle will be limited to the maximum value of *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 or *Maximum Cruise Control Target Speed (AA00003)* on page 69.

Feature Options

- *VSL*

On Greenhouse Gas (GHG) compliant vehicles, *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 will limit the overall maximum speed of the vehicle. For example, if *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 is set to 55 mph, *Maximum Cruise Control Target Speed (AA00003)* on page 69 is set to 70 mph, and *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 is set to 64 mph, the vehicle can be driven to a maximum speed of 55 mph with the pedal. If *CC* is enabled the vehicle speed may be increased to a maximum of 64 mph, as the vehicle will not exceed the value of *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 when the engine is fueled.

For non-GHG compliant vehicles, *Standard Maximum Speed Limit (LSL) (AA00088)* on page 90 is ignored, allowing *Maximum Accelerator Pedal Vehicle Speed (AA00086)* on page 90 and *Maximum Cruise Control Target Speed (AA00003)* on page 69 to determine the overall maximum speed of the vehicle.

Maximum Accelerator Pedal Vehicle Speed (AA00086)

This setting controls the top vehicle speed using the accelerator pedal. When driving using the accelerator pedal, the vehicle will not go faster than the speed entered in this setting.

NOTE

For vehicles with Cummins engine, the default setting for this value is 155.34 mph.

Table 110: Maximum Accelerator Pedal Vehicle Speed (AA00086)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00086	64	25	155	MPH

Standard Maximum Speed Limit (LSL) (AA00088)

This setting controls the *Legal Speed Limit (LSL)*. The LSL is the vehicle's normal maximum speed, except in special circumstances, such as speed bonuses received through the Driver Reward system.

NOTE

For vehicles with Cummins engine, the default setting for this value is 155.34 mph.

NOTE

This parameter may be locked if the GHG mileage has not expired. Contact your Vehicle Support Representative for more information.

Table 111: Standard Maximum Speed Limit (LSL) (AA00088)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00088	64	0	155	MPH

TSC1 Checksum Enable for P4 Speed Limiter (AA01227)

This setting enables the *TSC1* P4 (Speed Limiter) message checksum. The checksum is used to determine if an error occurred during the transmission of the P4 message from one *ECU* to another.

CAUTION

This parameter is for internal use only and should not be changed.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 112: TSC1 Checksum Enable for P4 Speed Limiter (AA01227)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01227	Disabled	Disabled	Enabled	FLAG

VSL Offset to enable the torque limit (AA01228)

This setting controls the offset amount from the *VSL* that enables engine torque limit while the vehicle speed is increasing.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 113: VSL Offset to enable the torque limit (AA01228)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01228	1.86	1.25	4.34	MPH

Chapter 17 | ELECTRIC OVER AIR

Air Solenoids....94
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Air Solenoids

Air solenoids are the devices that translate the electrical signal into physical change that controls the air pressure in various circuits. The air solenoids are mounted to a *MSB* in the frame rail. The solenoids are designed to stack on each other so that they share a common air supply rail which reduces the amount of air lines on the vehicle.

Table 114: Air Solenoid Types

Type	Description
Latching (*MSB*)	Requires a signal voltage to close or open a solenoid. Will remain in position if power is disconnected.
Non-latching	Requires 12v to change a valve from its normal position. Will revert back to its normal position if power is disconnected.

For safety reasons, certain circuits are designed with non-latching type solenoids. Since the *MSB* only contains latching solenoids, all non-latching air solenoid functions are not controlled by the *MSB*. These circuits include but are not limited to Lift Axles, Tag Axle Lock, *Engine Over-speed Air Shutdown (EOAS)*, Inside/Outside Air Intake and *Hill Start Aid (HSA)*.

Multiplexed Solenoid Bank (MSB) System

The *MSB* are *Controller Area Network (CAN)* driven modules mounted either in passenger side frame rail behind the cab, or on the rearward crossmember behind the cab. It communicates to the *Chassis Module Primary (CMP)* via *J-CAN* to control the multiplexed air solenoids. This reduces the amount of wires needed to run up to 6 air solenoids per bank. The air supply connects directly to the *MSB*, distributing air to each solenoid.

NOTE

Solenoid functions and positions are assigned through PACCAR Vehicle Pro (PVP), then programmed using *DAVIE4*.

The Multiplexed Air Solenoids are mounted directly to the *MSB*. When commanded, the solenoids apply or remove air pressure from its respective circuit. All multiplexed solenoids are latching solenoids, meaning they require signal voltage to open or close a solenoid. The solenoid will remain in position if power is disconnected.

Figure 4: MSB Identification

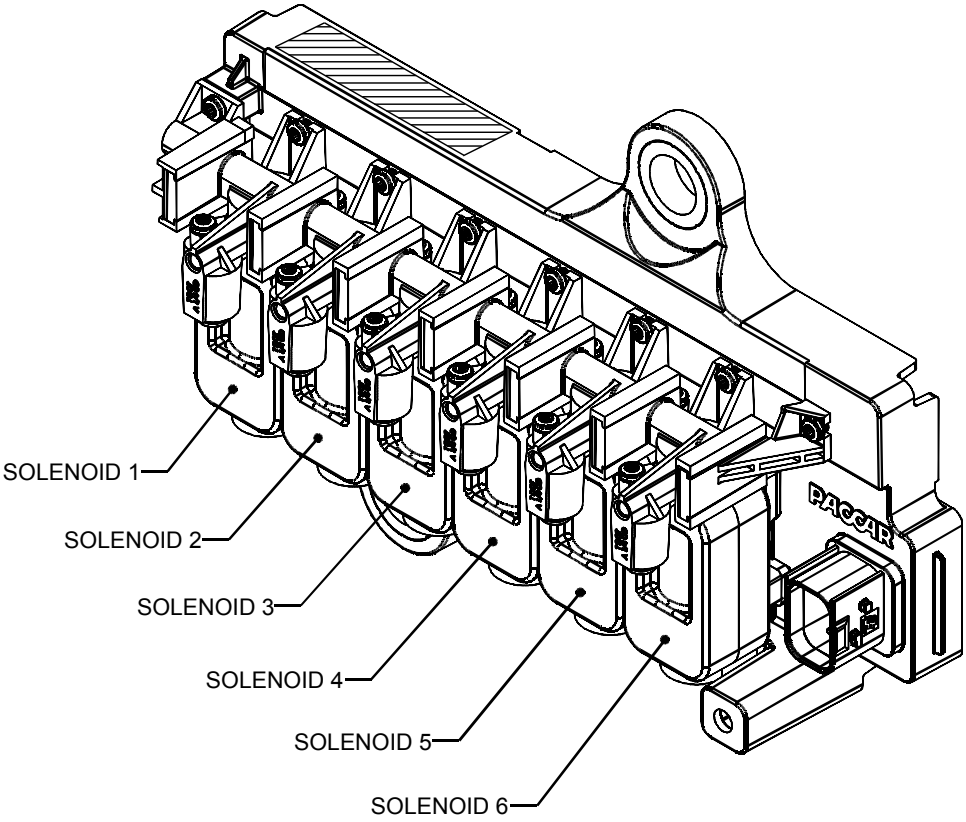


Figure 5: Multiplex Solenoid Bank Architecture

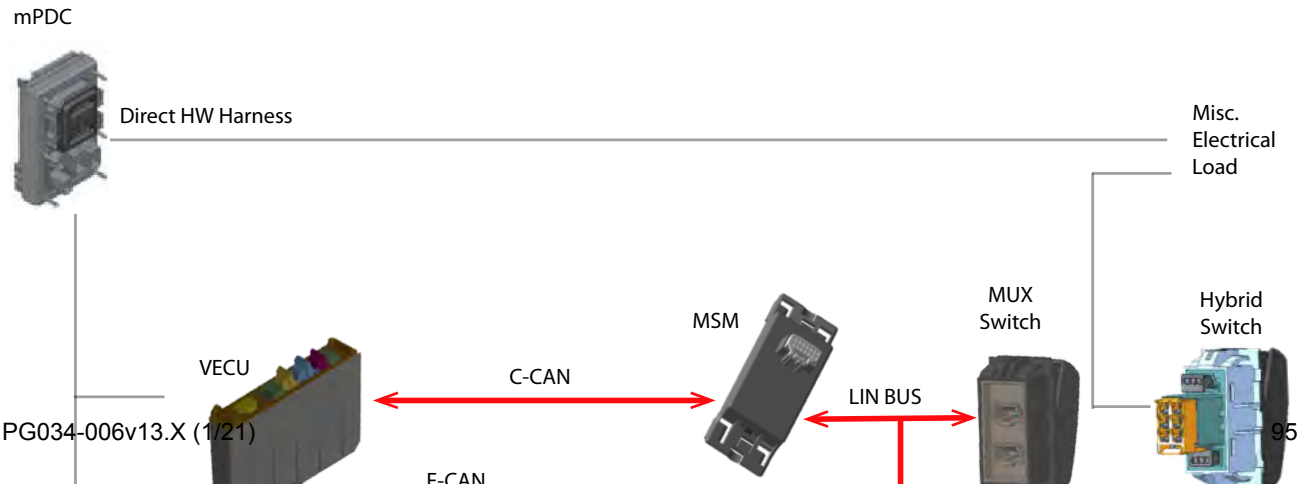
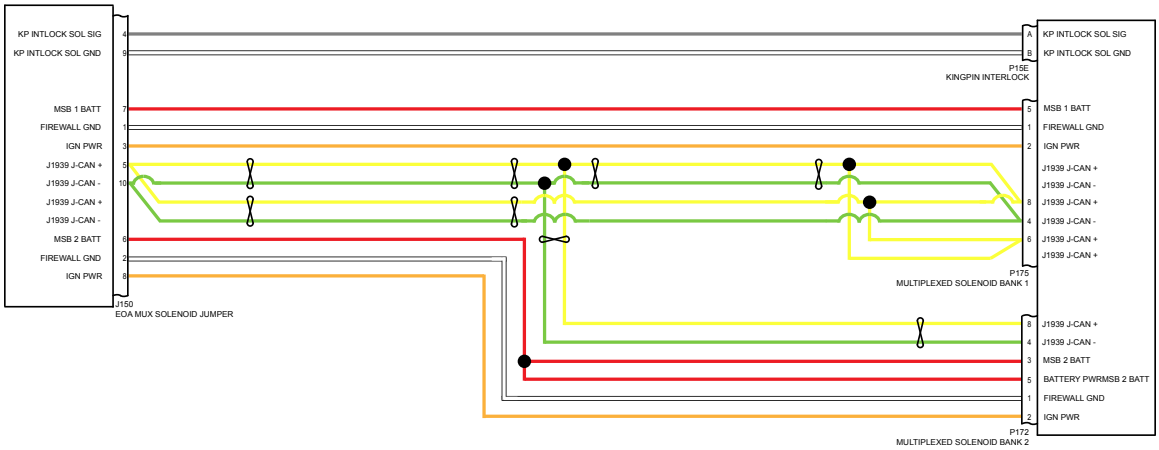


Figure 6: MSB Harness Schematic



Multiplex Solenoid Bank (MSB) Functions

The following section details the *Electric Over Air (EOA)* parameters related to the *MSB*.

Defines the function assignment for bank 1 valve 1 (AA01114)

This setting controls what option is assigned to *EOA* function 1. EOA function 1 is located at *MSB* 1, valve 1.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 115: Defines the function assignment for bank 1 valve 1 (AA01114)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01114	0	0	113	DISCRETE

Defines the function assignment for bank 1 valve 2 (AA01115)

This setting controls what option is assigned to *EOA* function 2. EOA function 2 is located at *MSB* 1, valve 2.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 116: Defines the function assignment for bank 1 valve 2 (AA01115)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01115	0	0	113	DISCRETE

Defines the function assignment for bank 1 valve 3 (AA01116)

This setting controls what option is assigned to *EOA* function 3. EOA function 3 is located at *MSB* 1, valve 3.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 117: Defines the function assignment for bank 1 valve 3 (AA01116)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01116	0	0	113	DISCRETE

Defines the function assignment for bank 1 valve 4 (AA01117)

This setting controls what option is assigned to *EOA* function 4. EOA function 4 is located at *MSB* 1 valve 4.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 118: Defines the function assignment for bank 1 valve 4 (AA01117)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01117	0	0	113	DISCRETE

Defines the function assignment for bank 1 valve 5 (AA01118)

This setting controls what option is assigned to *EOA* function 5. EOA function 5 is located at *MSB* 1 valve 5.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 119: Defines the function assignment for bank 1 valve 5 (AA01118)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01118	0	0	113	DISCRETE

Defines the function assignment for bank 1 valve 6 (AA01119)

This setting controls what option is assigned to *EOA* function 6. EOA function 6 is located at *MSB* 1 valve 6.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 120: Defines the function assignment for bank 1 valve 6 (AA01119)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01119	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 1 (AA01120)

This setting controls what option is assigned to *EOA* function 7. EOA function 7 is located at *MSB* 2 valve 1.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 121: Defines the function assignment for bank 2 valve 1 (AA01120)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01120	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 2 (AA01121)

This setting controls what option is assigned to *EOA* function 8. EOA function 8 is located at *MSB* 2 valve 2.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 122: Defines the function assignment for bank 2 valve 2 (AA01121)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01121	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 3 (AA01122)

This setting controls what option is assigned to *EOA* function 9. EOA function 9 is located at *MSB* 2 valve 3.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 123: Defines the function assignment for bank 2 valve 3 (AA01122)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01122	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 4 (AA01123)

This setting controls what option is assigned to *EOA* function 10. EOA function 10 is located at *MSB* 2 valve 4.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 124: Defines the function assignment for bank 2 valve 4 (AA01123)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01123	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 5 (AA01124)

This setting controls what option is assigned to *EOA* function 11. EOA function 11 is located at *MSB* 2 valve 5.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 125: Defines the function assignment for bank 2 valve 5 (AA01124)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01124	0	0	113	DISCRETE

Defines the function assignment for bank 2 valve 6 (AA01125)

This setting controls what option is assigned to *EOA* function 12. EOA function 12 is located at *MSB* 2 valve 6.

NOTE

See *EOA Parameter Options* on page 101 for the list of options available for this parameter.

NOTE

Entries in the 12 *EOA* functions (*Defines the function assignment for bank 1 valve 1 (AA01114)* on page 96 through *Defines the function assignment for bank 2 valve 6 (AA01125)* on page 100) must all have different values entered. There cannot be any duplicate parameter options entered.

Table 126: Defines the function assignment for bank 2 valve 6 (AA01125)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01125	0	0	113	DISCRETE

EOA Parameter Options

Kenworth EOA Parameter Options

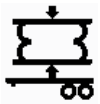
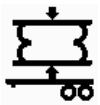
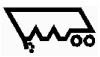
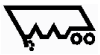
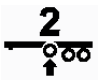
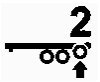
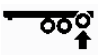
This table includes the options available for *EOA* parameters for Kenworth trucks.

Table 127: EOA Functions

Function Description	Function Number	Icon
2 (Two) Speed Rear Axle	10	
2 (Two) Speed Rear Axle With Park Brake Interlock	9	
2 (two) Speed Rear Axle With Speed Interlock	112	
3 (three) Position Transfer Case Low Valve	108	
3 (three) Position Transfer Case Nuetral Valve	109	
3 (three) Position Transfer Case High Valve	110	
Air Accessory Control 1	62	
Air Accessory Control 1 With Park Brake Interlock	63	
Air Accessory Control 2	92	
Air Accessory Control 2 With Park Brake Interlock	93	
Air Accessory Control 3	94	
Air Accessory Control 3 With Park Brake Interlock	95	

Function Description	Function Number	Icon
Air Accessory Control 4	96	
Air Accessory Control 4 With Park Brake Interlock	97	
Air Suspension Dump With Park Brake Interlock	1	
Air Suspension Dump With Speed Interlock	2	
Air Suspension Overinflation With Speed Interlock	8	
Air Suspension Overinflatin With Park Brake Interlock	113	
Auxiliary Transmission 3 (Three) Position Control (High)	35	
Auxiliary Transmission 3 (Three) Position Control (Neutral)	86	
Auxiliary Transmission 3 (Three) Position Control With Park Brake Interlock (High)	17	
Auxiliary Transmission 3 (Three) Position Control With Park Brake Interlock (Neutral)	87	
Fifth Wheel Slide With Speed Interlock	11	
Front Drive Axle Declutch With Speed Interlock	12	
Interaxle *Differential lock (Diff lock)* With Speed Interlock	13	
Interaxle *Differential lock (Diff lock)* With Speed Interlock and Auto Engagement	111	
Kingpin Release With Park Brake Interlock	14	
PTO #1	37	

Function Description	Function Number	Icon
PTO #1 With Park Brake Interlock	20	
PTO #2	38	
PTO #2 With Park Brake And *PTO* #1 Interlock	79	
PTO #2 With Park Brake Interlock	21	
PTO #2 With *PTO* #1 Interlock	80	
PTO #3	104	
PTO #3 with Park Brake Interlock	105	
PTO #4	106	
PTO #4 with Park Brake Interlock	107	
PTO Speed High Low	91	
PTO 2 (Two) Position (Fwd/Rev) (Valve 1)	36	
PTO 2 (Two) Position (Fwd/Rev) (Valve 2)	90	
PTO 2 (Two) Position (Fwd/Rev) With Park Brake Interlock (Valve 1)	19	
PTO 2 (Two) Position (Fwd/Rev) With Park Brake Interlock (Valve 2)	89	

Function Description	Function Number	Icon
Rear Axle Declutch With Park Brake Interlock (Valve 1)	15	
Rear Axle Declutch With Park Brake Interlock (Valve 2)	88	
Trailer Air Suspension Dump With Park Brake Interlock	4	
Trailer Air Suspension Dump With Speed Interlock	3	
Trailer Belly Dump Gate (Forward) With Speed Interlock	24	
Trailer Belly Dump Gate (Rear) With Speed Interlock	25	
Trailer Dump Gate	39	
Trailer Dump Gate (Forward)	41	
Trailer Dump Gate (Rear)	42	
Trailer Dump Gate With Speed Interlock	22	
Trailer Lift Axle (Forward)	6	
Trailer Lift Axle (Rear)	7	
Trailer Lift Axle (Single)	5	
Trailer Tow / Pintle Hook	43	
Transfer Case (Hi/Low) With Speed Interlock	16	
Truck Dump Gate	44	
Truck Dump Gate With Speed Interlock	26	
Wheel *Differential lock (Diff lock)* (Ctr Rear)	47	

Function Description	Function Number	Icon
Wheel *Differential lock (Diff lock)* (Ctr Rear) With Speed Interlock	29	
Wheel *Differential lock (Diff lock)* (Ctr Rear) With Two Speed Interlock	100	
Wheel *Differential lock (Diff lock)* (Dual Rear)	49	
Wheel *Differential lock (Diff lock)* (Dual Rear) With Speed Interlock	31	
Wheel *Differential lock (Diff lock)* (Dual Rear) With Two Speed Interlock	102	
Wheel *Differential lock (Diff lock)* (Front Axle)	50	
Wheel *Differential lock (Diff lock)* (Front Axle) With Speed Interlock	32	
Wheel *Differential lock (Diff lock)* (Front Axle) With Two Speed Interlock	103	
Wheel *Differential lock (Diff lock)* (Fwd Rear)	46	
Wheel *Differential lock (Diff lock)* (Fwd Rear) With Speed Interlock	28	
Wheel *Differential lock (Diff lock)* (Fwd Rear) With Two Speed Interlock	99	
Wheel *Differential lock (Diff lock)* (Rr Rear)	48	
Wheel *Differential lock (Diff lock)* (Rr Rear) With Speed Interlock	30	
Wheel *Differential lock (Diff lock)* (Rr Rear) With Two Speed Interlock	101	

Function Description	Function Number	Icon
Wheel *Differential lock (Diff lock)* (Single Rear)	45	
Wheel *Differential lock (Diff lock)* (Single Rear) With Speed Interlock	27	
Wheel *Differential lock (Diff lock)* (Single Rear) With Two Speed Interlock	98	

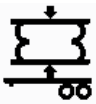
Peterbilt EOA Parameter Options

This table includes the options available for *EOA* parameters for Peterbilt trucks.

Table 128: EOA Functions

Function Description	Function Number	Icon
2 (Two) Speed Rear Axle	10	
2 (Two) Speed Rear Axle With Park Brake Interlock	9	
2 (two) Speed Rear Axle With Speed Interlock	112	
3 (three) Position Transfer Case Low Valve	108	
3 (three) Position Transfer Case Nuetral Valve	109	
3 (three) Position Transfer Case High Valve	110	
Air Accessory Control 1	62	
Air Accessory Control 1 With Park Brake Interlock	63	
Air Accessory Control 2	92	
Air Accessory Control 2 With Park Brake Interlock	93	
Air Accessory Control 3	94	

Function Description	Function Number	Icon
Air Accessory Control 3 With Park Brake Interlock	95	
Air Accessory Control 4	96	
Air Accessory Control 4 With Park Brake Interlock	97	
Air Suspension Dump With Park Brake Interlock	1	
Air Suspension Dump With Speed Interlock	2	
Air Suspension Overinflation With Speed Interlock	8	
Air Suspension Overinflatin With Park Brake Interlock	113	
Auxiliary Transmission 3 (Three) Position Control (High)	35	
Auxiliary Transmission 3 (Three) Position Control (Neutral)	86	
Auxiliary Transmission 3 (Three) Position Control With Park Brake Interlock (High)	17	
Auxiliary Transmission 3 (Three) Position Control With Park Brake Interlock (Neutral)	87	
Fifth Wheel Slide With Speed Interlock	11	
Front Drive Axle Declutch With Speed Interlock	12	
Interaxle *Differential lock (Diff lock)* With Speed Interlock	13	
Kingpin Release With Park Brake Interlock	14	
PTO #1	37	

Function Description	Function Number	Icon
PTO #1 With Park Brake Interlock	20	
PTO #2	38	
PTO #2 With Park Brake And *PTO* #1 Interlock	79	
PTO #2 With Park Brake Interlock	21	
PTO #2 With *PTO* #1 Interlock	80	
PTO #3	104	
PTO #3 with Park Brake Interlock	105	
PTO #4	106	
PTO #4 with Park Brake Interlock	107	
PTO 2 (Two) Position (Fwd/Rev) (Valve 1)	36	
PTO 2 (Two) Position (Fwd/Rev) (Valve 2)	90	
PTO 2 (Two) Position (Fwd/Rev) With Park Brake Interlock (Valve 1)	19	
PTO 2 (Two) Position (Fwd/Rev) With Park Brake Interlock (Valve 2)	89	
Trailer Air Suspension Dump With Park Brake Interlock	4	
Trailer Air Suspension Dump With Speed Interlock	3	

Function Description	Function Number	Icon
Transfer Case (Hi/Low) With Speed Interlock	16	
Wheel *Differential lock (Diff lock)* (Ctr Rear)	47	
Wheel *Differential lock (Diff lock)* (Ctr Rear) With Speed Interlock	29	
Wheel *Differential lock (Diff lock)* (Ctr Rear) With Two Speed Interlock	100	
Wheel *Differential lock (Diff lock)* (Dual Rear)	49	
Wheel *Differential lock (Diff lock)* (Dual Rear) With Speed Interlock	31	
Wheel *Differential lock (Diff lock)* (Dual Rear) With Two Speed Interlock	102	
Wheel *Differential lock (Diff lock)* (Front Axle)	50	
Wheel *Differential lock (Diff lock)* (Front Axle) With Speed Interlock	32	
Wheel *Differential lock (Diff lock)* (Front Axle) With Two Speed Interlock	103	
Wheel *Differential lock (Diff lock)* (Fwd Rear)	46	
Wheel *Differential lock (Diff lock)* (Fwd Rear) With Speed Interlock	28	
Wheel *Differential lock (Diff lock)* (Fwd Rear) With Two Speed Interlock	99	
Wheel *Differential lock (Diff lock)* (Rr Rear)	48	
Wheel *Differential lock (Diff lock)* (Rr Rear) With Speed Interlock	30	

Function Description	Function Number	Icon
Wheel *Differential lock (Diff lock)* (Rr Rear) With Two Speed Interlock	101	
Wheel *Differential lock (Diff lock)* (Single Rear)	45	
Wheel *Differential lock (Diff lock)* (Single Rear) With Speed Interlock	27	
Wheel *Differential lock (Diff lock)* (Single Rear) With Two Speed Interlock	98	
Work Brake (Winch Brake)	53	
Work Brake (Winch Brake) With Speed Interlock	52	

Dump Functions

The following section details the *EOA* truck and trailer dump parameters.

Defines the speed threshold for Truck Dump Gate function (AA01126)

This setting controls the maximum speed the vehicle can be traveling and still allow the truck dump gate to be engaged. If the vehicle is traveling faster than the speed listed in this setting, then the truck dump gate cannot be engaged.

Table 129: Defines the speed threshold for Truck Dump Gate function (AA01126)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01126	24.85	0	40.39	MPH

Defines the speed threshold for Trailer Dump Single function (AA01127)

This setting controls the maximum speed the vehicle can be traveling and still allow the trailer dump single function to be engaged. If the vehicle is traveling faster than the speed listed in this setting, then the trailer dump single function cannot be engaged.

Table 130: Defines the speed threshold for Trailer Dump Single function (AA01127)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01127	24.85	0	40.39	MPH

Defines the speed threshold for Trailer Dump Forward function (AA01128)

This setting controls the maximum speed the vehicle can be traveling and still allow the trailer dump forward function to be engaged. If the vehicle is traveling faster than the speed listed in this setting, then the trailer dump forward function cannot be engaged.

Table 131: Defines the speed threshold for Trailer Dump Forward function (AA01128)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01128	24.85	0	40.39	MPH

Defines the speed threshold for Trailer Dump Center function (AA01129)

This setting controls the maximum speed the vehicle can be traveling and still allow the trailer dump center function to be engaged. If the vehicle is traveling faster than the speed listed in this setting, then the trailer dump center function cannot be engaged.

Table 132: Defines the speed threshold for Trailer Dump Center function (AA01129)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01129	24.85	0	40.39	MPH

Defines the speed threshold for Trailer Dump Rear function (AA01130)

This setting controls the maximum speed the vehicle can be traveling and still allow the trailer dump rear function to be engaged. If the vehicle is traveling faster than the speed listed in this setting, then the trailer dump rear function cannot be engaged.

Table 133: Defines the speed threshold for Trailer Dump Rear function (AA01130)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01130	24.85	0	40.39	MPH

Differential Lock Functions

Defines the speed threshold for Inter Axle Diff Lock function (AA01146)

This setting controls the vehicle's speed threshold for the axle *Differential lock (Diff lock)* function.

Table 134: Defines the speed threshold for Inter Axle Diff Lock function (AA01146)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01146	39.77	0	70	MPH

High Speed Threshold for Inter Axle Diff Lock (AA01232)

This setting controls the highest speed the vehicle can travel with the inter axle differential lock engaged.

Table 135: High Speed Threshold for Inter Axle Diff Lock (AA01232)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01232	25	11	70	MPH

Speed Threshold for 3 position transfer case (AA01233)

This setting controls the maximum vehicle speed when using a three-speed transfer case.

Table 136: Speed Threshold for 3 position transfer case (AA01233)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01233	6.21	0	158.44	MPH

High Speed Threshold for Disengagement of Front Drive Axle Declutch (AA01234)

This setting controls the maximum speed the vehicle can be traveling when disengaging the transfer face from the front drive axle.

Table 137: High Speed Threshold for Disengagement of Front Drive Axle Declutch (AA01234)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01234	24.99	10.99	69.99	MPH

Defines the speed threshold for Wheel Differential Lock Front Axle function (AA01147)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the front axle.

Table 138: Defines the speed threshold for Wheel Differential Lock Front Axle function (AA01147)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01147	24.85	0	70	MPH

Defines the speed threshold for Wheel Differential Lock Single Rear Axle function (AA01148)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on a single rear axle.

Table 139: Defines the speed threshold for Wheel Differential Lock Single Rear Axle function (AA01148)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01148	24.85	0	70	MPH

Defines the speed threshold for Wheel Differential Lock Forward Rear Axle function (AA01149)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the forward rear axle.

Table 140: Defines the speed threshold for Wheel Differential Lock Forward Rear Axle function (AA01149)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01149	24.85	0	70	MPH

Defines the speed threshold for Wheel Differential Lock Center Rear Axle function (AA01150)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the center rear axle.

Table 141: Defines the speed threshold for Wheel Differential Lock Center Rear Axle function (AA01150)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01150	24.85	0	70	MPH

Defines the speed threshold for Wheel Differential Lock Rear Rear Axle function (AA01151)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the rear rear axle.

Table 142: Defines the speed threshold for Wheel Differential Lock Rear Rear Axle function (AA01151)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01151	24.85	0	70	MPH

Defines the speed threshold for Wheel Differential Lock Dual Rear Axle function (AA01152)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on a dual rear axle.

Table 143: Defines the speed threshold for Wheel Differential Lock Dual Rear Axle function (AA01152)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01152	24.85	0	70	MPH

Speed Threshold for Disengagement of Front Drive Axle Declutch (AA01235)

This setting controls the minimum speed the vehicle can be traveling when disengaging the transfer face from the front drive axle.

Table 144: Speed Threshold for Disengagement of Front Drive Axle Declutch (AA01235)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01235	24.99	0.00	69.99	MPH

Model of Transfer Case Equipped (AA01230)

This setting indicates the model of transfer case equipped on the vehicle.

The possible values for this setting are:

0 - None
1 - SPRING_HIGH_DUAL_LOW
2 - SPRING_HIGH
3 - FULL_AIR_CONTROL

Table 145: Model of Transfer Case Equipped (AA01230)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01230	0	0	15	DISCRETE

Defines the speed threshold for the work brakes function (AA01153)

This setting controls the vehicle's speed threshold for the work brakes function.

Table 146: Defines the speed threshold for the work brakes function (AA01153)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01153	3.11	3.11	6.21	MPH

Defining the PTO 1 type (AA01154)

This setting controls where *Electric Over Hydraulic (EOH) PTO* is installed, if the truck has it.

The possible values for this setting are:

0 - Not Electric Over Hydraulic
1 - Electric Over Hydraulic
2 - Electric Over Hydraulic with Park Brake
3 - Electric Over Hydraulic with Pump Mode

Table 147: Defining the PTO 1 type (AA01154)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01154	0	0	3	DISCRETE

Defining the PTO 2 Type (AA01156)

This setting controls where *EOH PTO* 2 is installed, if the truck has it.

The possible values for this setting are:

0 = Not Electric Over Hydraulic
1 = Electric Over Hydraulic
2 = Electric Over Hydraulic with Park Brake
3 = Electric Over Hydraulic with Pump Mode

Table 148: Defining the PTO 2 Type (AA01156)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01156	0	0	3	DISCRETE

Configuration of Trailer Tow Hook (AA01206)

This setting controls whether the vehicle has a trailer tow hook or not.

Table 149: Configuration of Trailer Tow Hook (AA01206)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01206	0	0	1	FLAG

Determines if Suspension Dump is required (AA01155)

This setting controls whether *PTO* triggers a suspension dump when a *PTO* engagement interlock occurs.

Table 150: Determines if Suspension Dump is required (AA01155)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01155	NONE	NONE	AUTO SUSP DUMP W/PTO ENGAGEMENT INTERLOCK	DISCRETE

Defines the speed threshold for fifth wheel slide (AA01157)

This setting controls the vehicle's speed threshold for the fifth wheel slide function.

Table 151: Defines the speed threshold for fifth wheel slide (AA01157)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01157	6.84	0	9.94	MPH

Defines the speed threshold for Air Suspension Dump (AA01158)

Table 152: Defines the speed threshold for Air Suspension Dump (AA01158)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01158	4.35	0	158.45	MPH

Defines the speed threshold for trailer suspension dump function (AA01159)

This setting controls the vehicle's speed threshold for the trailer suspension dump function.

Table 153: Defines the speed threshold for trailer suspension dump function (AA01159)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01159	4.35	0	158.45	MPH

Defines the speed threshold for air over inflation function (AA01160)

This setting controls the vehicle's speed threshold for the air over-inflation function.

Table 154: Defines the speed threshold for air over inflation function (AA01160)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01160	15.53	0	158.45	MPH

Defines the high speed threshold for Wheel Differential Lock Center Rear Axle function (AA01210)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the center rear axle.

Table 155: Defines the high speed threshold for Wheel Differential Lock Center Rear Axle function (AA01210)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01210	25.00	11.00	70.00	MPH

Defines the high speed threshold for Wheel Differential Lock Dual Rear Axle function (AA01211)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on a dual rear axle.

Table 156: Defines the high speed threshold for Wheel Differential Lock Dual Rear Axle function (AA01211)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01211	25.00	11.00	70.00	MPH

Defines the high speed threshold for Wheel Differential Lock Front Axle function (AA01212)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the front axle.

Table 157: Defines the high speed threshold for Wheel Differential Lock Front Axle function (AA01212)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01212	25.00	11.00	70.00	MPH

Defines the high speed threshold for Wheel Differential Lock Forward Rear Axle function (AA01213)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the forward rear axle.

Table 158: Defines the high speed threshold for Wheel Differential Lock Forward Rear Axle function (AA01213)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01213	25.00	11.00	70.00	MPH

Defines the high speed threshold for Wheel Differential Lock Rear Rear Axle function (AA01214)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on the rear rear axle.

Table 159: Defines the high speed threshold for Wheel Differential Lock Rear Rear Axle function (AA01214)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01214	25.00	11.00	70.00	MPH

Defines the high speed threshold for Wheel Differential Lock Single Rear Axle function (AA01215)

This setting controls the vehicle's speed threshold for the wheel *Differential lock (Diff lock)* function on a single rear axle.

Table 160: Defines the high speed threshold for Wheel Differential Lock Single Rear Axle function (AA01215)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01215	25.00	11.00	70.00	MPH

Chapter 18 | LIFT AXLE FUNCTIONS

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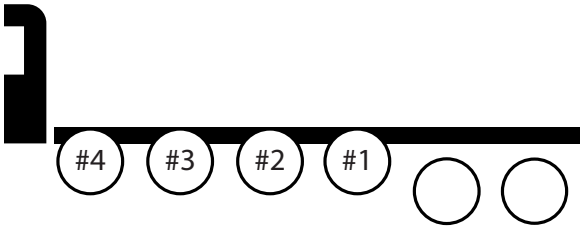
Trailer Lift Axles

Trailer lift axles can be controlled by either the electrical or the air systems. Trailer lift axles that are controlled by the electrical system are programmed with the electric trailer options. Trailer lift axles that are controlled by the air system are programmed with the *EOA Parameter Options* on page 101.

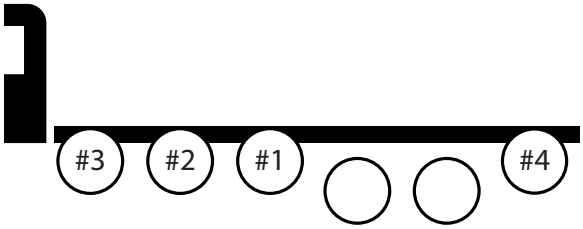
Chassis Lift Axles

Chassis lift axles are controlled by a signal output from a chassis module.

Lift axles are numbered as follows:



When a lift axle is behind the drive axles, it is referred to as a tag axle.



There are three types of chassis lift axles offered.

1. Steerable lift axle without park brake
2. Non-steerable lift axle without park brake
3. Non-steerable lift axle with park brake

Table 161: Steerable lift axle without park brake

Raise Condition Logic	Lower Condition Logic
Lift axle switch is inactive OR	Lift axle switch is active AND
Park brake is engaged OR	Park brake is NOT engaged AND
In reverse gear OR	Not in reverse gear AND
Ignition is OFF	Ignition is ON

This type of lift axle must have the following calibration settings:

Control type = 1
Behavior = 0

Table 162: Non-steerable lift axle without park brake

Raise Condition Logic	Lower Condition Logic
Lift axle switch is inactive OR	Lift axle switch is active AND

Raise Condition Logic	Lower Condition Logic
Park brake is engaged OR	Park brake is NOT engaged AND
Ignition is OFF	Ignition is ON

This type of lift axle must have the following calibration settings:

Control type = 1
Behavior = 1

Table 163: Non-steerable lift axle with park brake

Raise Condition Logic	Lower Condition Logic
Lift axle switch is inactive AND	Lift axle switch is active OR
Park brake is not engaged AND	Park brake is engaged OR
Ignition is ON	Ignition is OFF

This type of lift axle must have the following calibration settings:

Control type = 2
Behavior = 2

Lift Axle 1 control type (Closest to Drive Axle) (AA01138)

This setting documents what type of controller is on lift axle 1.

The possible values for this setting are:

0 - No lift axle installed
1 - Normally closed (without park brake)
2 - Normally opened (with park brake)

Table 164: Lift Axle 1 control type (Closest to Drive Axle) (AA01138)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01138	0	0	2	DISCRETE

Lift Axle 2 control type (AA01139)

This setting documents what type of controller is on lift axle 2.

The possible values for this setting are:

0 - No lift axle installed
1 - Normally closed (without park brake)
2 - Normally opened (with park brake)

Table 165: Lift Axle 2 control type (AA01139)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01139	0	0	2	DISCRETE

Lift Axle 3 control type (AA01140)

This setting documents what type of controller is on lift axle 3.

The possible values for this setting are:

0 - No lift axle installed
1 - Normally closed (without park brake)
2 - Normally opened (with park brake)

Table 166: Lift Axle 3 control type (AA01140)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01140	0	0	2	DISCRETE

Lift Axle 4 control type (Tag or 4th Pusher) (AA01141)

This setting documents what type of controller is on lift axle 4 or tag.

The possible values for this setting are:

0 - No lift axle installed
1 - Normally closed (without park brake)
2 - Normally opened (with park brake)

Table 167: Lift Axle 4 control type (Tag or 4th Pusher) (AA01141)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01141	0	0	2	DISCRETE

Lift Axle 1 behavior (Closest to Drive Axle) (AA01142)

This setting controls the behavior of lift axle 1.

The possible values for this setting are:

0 - Lift Axle Up When Park Brake Applied Or In Reverse
1 - Lift Axle Up When Park Brake Applied, No Reverse Response. This is valid only when lift axle control type is 1 Normally closed (without park brake)
2 - Lift Axle Down When Park Brake Applied, No Reverse Response

Table 168: Lift Axle 1 behavior (Closest to Drive Axle) (AA01142)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01142	0	0	2	DISCRETE

Lift Axle 2 behavior (AA01143)

This setting controls the behavior of lift axle 2.

The possible values for this setting are:

0 - Lift Axle Up When Park Brake Applied Or In Reverse
1 - Lift Axle Up When Park Brake Applied, No Reverse Response. This is valid only when lift axle control type is 1 Normally closed (without park brake)
2 - Lift Axle Down When Park Brake Applied, No Reverse Response

Table 169: Lift Axle 2 behavior (AA01143)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01143	0	0	2	DISCRETE

Lift Axle 3 behavior (AA01144)

This setting controls the behavior of lift axle 3.

The possible values for this setting are:

0 - Lift Axle Up When Park Brake Applied Or In Reverse
1 - Lift Axle Up When Park Brake Applied, No Reverse Response. This is valid only when lift axle control type is 1 Normally closed (without park brake)
2 - Lift Axle Down When Park Brake Applied, No Reverse Response

Table 170: Lift Axle 3 behavior (AA01144)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01144	0	0	2	DISCRETE

Lift Axle 4 behavior (Tag or 4th Pusher) (AA01145)

This setting controls the behavior of lift axle 4 or tag.

The possible values for this setting are:

0 - Lift Axle Up When Park Brake Applied Or In Reverse
1 - Lift Axle Up When Park Brake Applied, No Reverse Response. This is valid only when lift axle control type is 1 Normally closed (without park brake)
2 - Lift Axle Down When Park Brake Applied, No Reverse Response

Table 171: Lift Axle 4 behavior (Tag or 4th Pusher) (AA01145)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01145	0	0	2	DISCRETE

Lift Axle Control Switch Configuration (Does Not Apply to Trailer) (AA01136)

This parameter configures the lift axle control switches. It allows one switch to operate multiple lift axles.

The possible values for this setting are:

0 – Each switch controls a single lift axle. (Not Installed or Disabled)
1 - One switch controls a group of lift axles. (Installed or Enabled) This setting is valid only for Kenworth vehicles.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 172: Lift Axle Control Switch Configuration (Does Not Apply to Trailer) (AA01136)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01136	0	0	1	DISCRETE

Lift Axle Switch Location and CAN Configuration (AA01137)

This parameter configures where the lift axle control switches are located.

The possible values for this setting are:

0 – Dash Installed
1 – Rocker Panel/BOC Switch

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 173: Lift Axle Switch Location and CAN Configuration (AA01137)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01137	0	0	1	DISCRETE

Chapter 19 | ELECTRIC TRAILER OPTIONS

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Electric Trailer Options

Options in this section control how the truck interacts with a connected trailer.

ETO Spare Circuit 1 Function Option (AA01131)

This setting controls what function is sent through pin #1 of the ISO 3731 trailer electric connector.

The possible values for this setting are:

0 - Not Installed
1 - (2) Dump Gates w/ 3m coil BOC LH rail (FWD)
2 - ISO 3731 switch 1 ID trailer floodlight
3 - ISO 3731 switch 1 ID trailer dump gate (Single)
4 - ISO 3731 switch 1 ID trailer air suspen
5 - ISO 3731 switch 1 ID trailer 3rd lift axle
6 - ISO 3731 switch 1 ID trailer Hotline
7 - 2-SP CKT THRU ABS ISO 3731 CONN
8 - ADD 7-WAY RECPT W/TRAC KIT WIRED TO 3 DASH SW & BKUP LAMP SW
9 - ADD 7-WAY RECPT TO EOF WIRED TO 3 DASH SW & BKUP LAMP SW
10 - ADD 4-WAY RECPT TO BOC WIRED TO 3 DASH
11 - (2) Dump Gates w/ 3m coil BOC LH rail (FWD) with Speed Interlock
12 - ISO 3731 switch 1 ID trailer dumpgate (Single) with Speed Interlock
13 - ISO 3731 switch 1 ID trailer air suspen with Speed Interlock
14 - ISO 3731 switch 1 ID trailer air suspen with Park Brake Interlock

Table 174: ETO Spare Circuit 1 Function Option (AA01131)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01131	0	0	14	DISCRETE

ETO Spare Circuit 2 Function Option (AA01132)

This setting controls what function is sent through pin #2 of the ISO 3731 trailer electric connector.

The possible values for this setting are:

0 - Not Installed
1 - (2) Dump Gates w/ 3m coil BOC LH rail (REAR)
2 - ISO 3731 switch 2 ID trailer floodlight
3 - ISO 3731 switch 2 ID trailer dumpgate (Single)
4 - ISO 3731 switch 2 ID trailer air suspen
5 - ISO 3731 switch 2 ID trailer 3rd lift axle
6 - ISO 3731 switch 2 ID trailer Hotline
7 - 2-SP CKT THRU ABS ISO 3731 CONN
8 - ADD 7-WAY RECPT W/TRAC KIT WIRED TO 3 DASH SW & BKUP LAMP SW
9 - ADD 7-WAY RECPT TO EOF WIRED TO 3 DASH SW & BKUP LAMP SW
10 - ADD 4-WAY RECPT TO BOC WIRED TO 3 DASH
11 - (2) Dump Gates w/ 3m coil BOC LH rail (REAR) with Speed Interlock
12 - ISO 3731 switch 2 ID trailer dumpgate (Single) with Speed Interlock
13 - ISO 3731 switch 2 ID trailer air suspen with Speed Interlock

14 - ISO 3731 switch 2 ID trailer air suspen with Park Brake Interlock
15 - Trailer Beacon Light

Table 175: ETO Spare Circuit 2 Function Option (AA01132)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01132	0	0	15	DISCRETE

ETO Spare Circuit 3 Function Option (AA01133)

This setting controls what function is sent through pin #3 of the ISO 3731 trailer electric connector.

The possible values for this setting are:

0 - Not Installed
1 - (1) Trailer Dump Gate w/ 3m coil BOC (Single)
2 - (1) Trailer Dump Gate w/ 3m coil BOC (Center)
3 - (1) Truck Dump Gate w/ 3m coil BOC
4 - ADD 7-WAY RECPT W/TRAC KIT WIRED TO 3 DASH SW AND BKUP LAMP SW
5 - ADD 7-WAY RECPT TO EOF WIRED TO 3 DASH SW AND BKUP LAMP SW
6 - ADD 4-WAY RECPT TO BOC WIRED TO 3 DASH
7 - (1) Trailer Dump Gate w/ 3m coil BOC (Single) with Speed Interlock
8 - (1) Trailer Dump Gate w/ 3m coil BOC (Center) with Speed Interlock
9 - (1) Truck Dump Gate w/ 3m coil BOC with Speed Interlock
10 - Trailer Air Suspension
11 - Trailer Air Suspension with Speed Interlock
12 - Trailer Air Suspension with Park Brake Interlock

Table 176: ETO Spare Circuit 3 Function Option (AA01133)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01133	0	0	12	DISCRETE

J560 Center Pin (#7) Function Option (AA01134)

This setting controls what function is sent through the configurable pin of the J560 connector pin.

The possible values for this setting are:

0 - Not Installed
1 - 7-Way switch, Trailer flood light
2 - 7-Way switch, Hotline
3 - 7-Way switch, Trailer air suspension
4 - 7-Way switch, Overfill
5 - 7-Way switch, 3rd Axle Lift
6 - 7-WAY SW: DUMPGATE /GUARD (Single)
7 - 7-WAY SW: DUMPGATE /GUARD (Single) with Speed Interlock
8 - Trailer Air Suspension with Speed Interlock
9 - Trailer Air Suspension with Park Brake Interlock

Table 177: J560 Center Pin (#7) Function Option (AA01134)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01134	0	0	9	DISCRETE

Trailer Hotline Switch (AA01135)

This setting enables single switch control of lift axles.

The possible values for this setting are:

0 - Not Installed
1 - Trailer Hotline IGN switched
2 - Trailer Hotline IGN switched w/Alarm

Table 178: Trailer Hotline Switch (AA01135)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01135	2	0	2	DISCRETE

Chapter 20 | BACKUP ALARM

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Backup alarm parameters

A vehicle backup alarm is controlled by the vehicle control unit, through the chassis module, as a multiplex signal. The parameters enable the backup alarm function and has a separate parameter for a switch to mute the alarm if needed.

Enable Backup Alarm (AA01244)

This setting controls whether the vehicle has a backup alarm system or not.

Table 179: Enable Backup Alarm (AA01244)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01244	NONE	NONE	BACKUP ALARM	FLAG

Backup Alarm Mute Switch (AA01205)

This setting controls whether the vehicle has a backup alarm mute switch.

Table 180: Backup Alarm Mute Switch (AA01205)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01205	OFF	OFF	ON	FLAG

Chapter 21 | DRIVELINE PROTECTION & MULTI TORQUE

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PACCAR Driveline Protection

The PACCAR Driveline Protection feature allows the engine to reduce the maximum torque output in order to protect driveline components when the drivetrain reduction is calculated to be above a calibrated ratio. This functionality provides the rated torque in all conditions, and only reduces torque output if one or both of the following conditions are met:

- The vehicle has an auxiliary transmission with gear ratio greater than 1.0:1
- Vehicle has a transmission in a forward or reverse gear with a gear ratio equal to or greater than 13.0:1

Driveline protection is automatically included within the programming for all multi-torque engine ratings, as it utilizes the same software functions to enable the higher torque values of the multi-torque rating. Driveline protection on also includes a clutch dump protection that limits the engine speed while the vehicle is stationary and the clutch is depressed. This function applies to trucks with manual transmissions only.

Multi Speed Rear Axle Type (AA01246)

This setting indicates if the input is fitted and therefore will be processed.

The possible values for this setting are:

0 - Single Speed Rear Axle
1 - Two Speed Rear Axle Is Equipped (Must Set Secondary Rear Axle Ratio Parameter And DLP Parameters If Enabled)

Table 181: Multi Speed Rear Axle Type (AA01246)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01246	0	0	1	FLAG

No multi torque (AA01245)

This setting controls whether the vehicle has multi torque or not.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 182: No multi torque (AA01245)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01245	OFF	OFF	ON	FLAG

Multi-torque Configuration (AA00006)

This setting controls if multi-torque is available only when cruise control is active or at all times.

The possible values for this setting are:

0 - Multi-Torque enabled with and without cruise control active
1 - Multi-Torque enable only while cruise control active

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE
This parameter is for MX engines only.

Table 183: Multi-torque Configuration (AA00006)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00006	0	0	1	FLAG

Enable Driveline Protection (AA01236)

This setting is used to enable driveline protection.

NOTE
This parameter is for MX engines only.

Table 184: Enable Driveline Protection (AA01236)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01236	1	0	1	FLAG

Maximum driveline torque limit. Engine torque is limited to control driveline torque to this upper limit. (AA01237)

This setting controls the maximum driveline torque limit. The engine torque is limited to keep the driveline torque to at or below this value. This parameter is not intended to be customer programmable, but will be selected automatically based on how the truck was ordered.

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE
This parameter is for MX engines only.

Table 185: Maximum driveline torque limit. Engine torque is limited to control driveline torque to this upper limit. (AA01237)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01237	16595.1	3687.8	36878.1	FT-LB

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Exterior lighting parameters

This group of parameters provide functionality with exterior lighting depending on specific application of the vehicle in motion or stationary.

Flood Lights During Reverse (AA01179)

This setting turns the vehicle's flood light on when the vehicle is in reverse.

The possible values for this setting are:

0 - Lights can turn ON in all cases
1 - Lights can turn ON ONLY with key OFF OR while in reverse
2 - Lights can turn ON ONLY with key OFF OR while park brake applied
3 - Lights can turn ON ONLY with key OFF OR while park brake applied OR while in in reverse

Table 186: Flood Lights During Reverse (AA01179)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01179	0	0	3	DISCRETE

Beacon Lamp DTC - On/Off (AA01216)

This setting enables *DTC* monitoring of the beacon lamp.

Table 187: Beacon Lamp DTC - On/Off (AA01216)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01216	0	0	1	FLAG

Spot Lamp DTC - On/Off (AA01217)

This setting enables *DTC* monitoring of the spot lamp.

Table 188: Spot Lamp DTC - On/Off (AA01217)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01217	0	0	1	FLAG

Sleeper Dome Lamp DTC - On/Off (AA01218)

This setting enables *DTC* monitoring of the sleeper dome lamp.

Table 189: Sleeper Dome Lamp DTC - On/Off (AA01218)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01218	0	0	1	FLAG

Work Lights or Flood Lamps 2 DTC - On/Off (AA01219)

This setting enables *DTC* monitoring of the work lights or flood lamps 2.

Table 190: Work Lights or Flood Lamps 2 DTC - On/Off (AA01219)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01219	0	0	1	FLAG

Work Lights or Flood Lamps 3 DTC - On/Off (AA01220)

This setting enables *DTC* monitoring of the work lights or flood lamps 3.

Table 191: Work Lights or Flood Lamps 3 DTC - On/Off (AA01220)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01220	0	0	1	FLAG

Work Lights or Flood Lamps 1 DTC - On/Off (AA01221)

This setting enables *DTC* monitoring of the work lights or flood lamps 1.

Table 192: Work Lights or Flood Lamps 1 DTC - On/Off (AA01221)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01221	0	0	1	FLAG

Parameter needed for DRL (AA01266)

Table 193: Parameter needed for DRL (AA01266)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01266	0	0	1	FLAG

Activation of DRL head lamps (AA01271)

This setting enables the head lamp Daytime Running Lamp (DRL) on the vehicle.

Table 194: Activation of DRL head lamps (AA01271)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01271	0	0	1	FLAG

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Head lamp Type (AA01272)

This setting determines the types of head lamps installed on the vehicle.

The possible values for this setting are:

- 0 - REPLACEABLE
- 1 - HID
- 2 - LED
- 3 - LED w/ PWM (PB 520 only)

NOTE

1 (HID) is not applicable to vehicles with VMUX architecture.

Table 195: Head lamp Type (AA01272)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01272	0	0	3	FLAG

Turn Lamp DRL (AA01273)

This setting enables turn lamp Daytime Running Lamp (DRL) on the vehicle.

Table 196: Turn Lamp DRL (AA01273)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01273	0	0	1	FLAG

PB Driving Lamp installed (AA01274)

This setting enables driving lamps on the vehicle, if they are installed.

Table 197: PB Driving Lamp installed (AA01274)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01274	0	0	1	FLAG

NOTE

This parameter is only applicable on Peterbilt HD models.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Cornering lamps installed (AA01275)

This setting enables cornering lamps on the vehicle, if they are installed.

Table 198: Cornering lamps installed (AA01275)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01275	0	0	1	FLAG

NOTE

This parameter is only applicable on Peterbilt HD models.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Marker Lamp Switch Configuration (AA01278)

This setting determines configuration of the marker lamp switch.

0 - Single Lamp Control Switch
2 - Seperate Marker Lamp Control Switch

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 199: Marker Lamp Switch Configuration (AA01278)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01278	0	0	2	FLAG

Enables DRL Activation to Illuminate Fog Lamps in Bumper to Meet DRL Height Requirements (AA01305)

This setting enables/disables DRL functionality utilizing the fog lights.

Table 200: Enables DRL Activation to Illuminate Fog Lamps in Bumper to Meet DRL Height Requirements (AA01305)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01305	0	0	1	FLAG

Automatic Headlamps (AA01310)

This setting enables/disables automatic headlight activation.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 201: Automatic Headlamps (AA01310)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01310	0	0	1	FLAG

Fog Lamp Configuration (AA01312)

When this setting is enabled, the fog lights function as driving lights.

Possible values for this setting are:

- 0 - Fog Lamp
- 1 - Driving Lamp

Table 202: Fog Lamp Configuration (AA01312)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01312	0	0	1	FLAG

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Override DRL with Turn Signal (AA01313)

When this setting is enabled, the corrosponding DRL will deactivate when the turn signal is activated.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

Default Values:

- Kenworth T880, T880S, W990 and T680 Next Gen = 1
- Peterbilt 579 Next Gen and *Head lamp Type (AA01272)* on page 138 set to 2 = 1
- Medium Duty and *Head lamp Type (AA01272)* on page 138 set to 0 = 1

Table 203: Override DRL with Turn Signal (AA01313)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01313	DISABLED	DISABLED	ENABLED	FLAG

Turn Lamp DRL DTC - On/Off (AA01207)

When this setting is enabled, fault detection for turn lamp DRL will be active.

Default settings are as follows:

- Medium Duty = 1

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 204: Turn Lamp DRL DTC - On/Off (AA01207)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01207	0	0	1	FLAG

Turn Side DTC - On/Off (AA01208)

When this setting is enabled, fault detection for side turns will be active.

Default settings are as follows:

- Kenworth T680, T880 and W990 = 0
- Peterbilt 567 and 579 = 1

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 205: Turn Side DTC - On/Off (AA01208)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01208	0	0	1	FLAG

Enable Dedicated DRL (AA01256)

This setting enables dedicated DRLs.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

Default values:

- Kenworth T680 Classic, T880 and W990 = 0
- Kenworth T680 Next Gen and Medium Duty = 1
- Peterbilt 567 = 0
- Peterbilt 579 and Medium Duty = 1

Table 206: Enable Dedicated DRL (AA01256)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01256	DISABLED	DISABLED	ENABLED	FLAG

Tail lamps with DRLs (AA01328)

This setting determins if the tail lamps illuminate with DRLs. This parameter is enabled for Canadian vehicles.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 207: Tail lamps with DRLs (AA01328)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01328	0	0	1	FLAG

DRL Inhibit Switch Type (AA01329)

This setting determines the type of switch used to inhibit DRLs.

Possible values for this setting are:

- 0 - Latching
- 1 - Momentary
- 2 - None

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 208: DRL Inhibit Switch Type (AA01329)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01329	1	0	2	DISCRETE

Intensity of Low Beam DRL (AA01335)

This setting determines the brightness of DRLs when *Activation of DRL head lamps (AA01271)* on page 138 is enabled.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 209: Intensity of Low Beam DRL (AA01335)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01335	60	0	100	%

Enable Headlamp Flash to Pass (AA01336)

This setting enables flash to pass utilizing the headlamps.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 210: Enable Headlamp Flash to Pass (AA01336)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01336	0	0	1	FLAG

DRL Override when speed is greater than 7MPH (AA01345)

This setting determines if the DRL's will automatically turn on above 7MPH if an optional DRL disable switch has been used to turn them off.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

NOTE
This parameter only applies to Heavy Duty applications

Table 211: DRL Override when speed is greater than 7MPH (AA01345)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01345	DISABLED	DISABLED	ENABLED	FLAG

Chapter 23 | VEHICLE PARAMETERS

Vehicle Parameters....146
Tires (AA01262)....146
Rear Axle Ratio (AA01259)....146

Vehicle Parameters

Parameters in this section control basic functions related to the vehicle.

Tires (AA01262)

This setting contains the circumference of the vehicle's tires. The circumference of the tire is used to determine vehicle speed and distance traveled.

NOTE
This parameter is for MX engines only.

Table 212: Tires (AA01262)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01262	314	200	1000	REV/KM

Rear Axle Ratio (AA01259)

This setting controls the vehicle's rear axle ratio.

Table 213: Rear Axle Ratio (AA01259)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01259	3.36	1	20	RATIO

Chapter 24 | DISPLAY CONFIGURATION

Dual Drive Digital Display Configuration (AA01340).....148
Right-Hand Standup Digital Display Configuration (AA01341).....148

Dual Drive Digital Display Configuration (AA01340)

This setting enables a 2nd Digital Display for dual driving positions.

Possible values for this setting are:

- 0 - Disable
- 1 - Enable

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 214: Dual Drive Digital Display Configuration (AA01340)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01340	0	0	1	FLAG

Right-Hand Standup Digital Display Configuration (AA01341)

This setting enables a 2nd Digital Display for Right-Hand Standup position.

Possible values for this setting are:

- 0 - Disable
- 1 - Enable

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 215: Right-Hand Standup Digital Display Configuration (AA01341)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01341	0	0	1	FLAG

Chapter 25 | POWER TAKE OFF (PTO)

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Power Take Off (PTO)

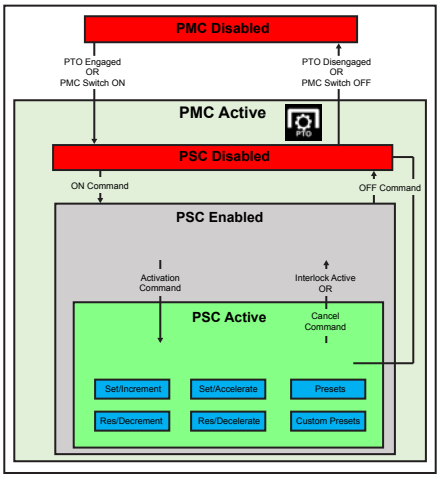
PTO mode is a PACCAR specific function offered on MX powered vehicles with *VECU* control units, which provides PACCAR MX speed controls to meet the needs of various vehicle applications.

PTO Mode consists of two systems, *PTO Mode Control (PMC)* and *PTO Speed Control (PSC)*. *PMC* becomes active when the physical *PTO* is engaged or the *PMC* switch is active. When active, *PMC* displays the green telltale and allows for all *PTO* limits and safeties to be applied. However, *PMC* only allows for engine speed control from the CAB or Remote throttle, control from the switches is not allowed at this stage.

PSC becomes enabled once the cruise control set to ON switch is set to ON, and the white icon is shown on the display. *PSC* becomes active when the set/resume button or presets are activated. *PSC* allows speed control of the engine via switches, body inputs or *CAN*. When a cancel command is issued from an interlock, *PSC* is still enabled but not active. The only way to fully disable *PSC* is to press the cruise control ON/OFF switch or stop requesting via CAN, although *PMC* may remain active until both the *PMC* switch is turned off and/or the *PTO* is disengaged.

PTO Mode is fully customizable with multiple programmable operator input functions, engine speed controls, vehicle speed parameters, and safety interlocks. Interlocks can make the operation of *PTO*-driven equipment safer and more convenient for the driver, and can protect both the chassis drivetrain and *PTO*-driven auxiliary equipment from misuse and potential damage. When an interlock is active, *PSC* will transition from active to enabled, and engine speed will reduce to the minimum *PMC* speed for the selected control location.

Figure 7: PMC and PSC Interaction Diagram



EIST may also be disabled in *PTO* Mode to allow for extended operations with the engine at idle. The engine is also capable of logging time and fuel consumption in *PTO* Mode separately from non-*PTO* operation.

While the engine is in *PTO* mode, many different limitations can be imposed by software in the vehicle controller. These limitations may include:

- Engine Speed
- Engine Speed Ramp-Up/Ramp-Down Rates
- Maximum Engine Torque Output
- Vehicle Speed
- Engine Idle Time
- Safety Interlocks

The purpose of this section is to describe the *PTO* Mode programming features and capabilities.

- *PTO Controls* on page 151 is intended to provide an overview of how control switches can be wired and integrated to the truck.
- *PTO: PTO Mode Control Configurations* on page 153 begins to list all the parameters that define *PTO* Mode. Once these parameters are defined, more parameters are presented that customize how the operator will control the *PTO* Mode function.

1. Cab Station - These parameters are for switches and controls located inside the cab.

- *PTO: Cab Station Engine Speed Control Options* on page 161
- *PTO: Cab Station Presets* on page 162
- *PTO: Cab Station Limits* on page 156
- *PTO: Cab Station Engine Speed Control Interlocks* on page 158
- *PTO: Cab Station Custom Presets* on page 167

2. Remote Station - These parameters are for controls that are external to the cab.

- *PTO: Remote Station Limits* on page 170
- *PTO: Remote Station Engine Speed Control Interlocks* on page 172
- *PTO: Remote Station Engine Speed Control Options* on page 175
- *PTO: Remote Station Presets* on page 176

3. Cab and/or Remote Station - These parameters are dedicated to applications that use a combination of cab and/or remote station controls.

- *PTO: Cab And/Or Remote Station Custom Presets* on page 180
- *PTO: Cab And/Or Remote Station: Engine Speed Control Interlocks* on page 184

4. Advanced Parameters

- *PTO: Pedal* on page 185
- *PTO: Remote CAN Control* on page 186
- *PTO: Advanced Settings* on page 187

Additional transmission configuration may be necessary depending on the equipped transmission and/or transfer case. PACCAR recommends consulting the transmission manufacturer for information related to specific wiring harnesses and transmission programming requirements for proper *PTO* functionality.

PTO Controls

Default OE Installed PTO Controls

Enabling and controlling the engine for *PTO* Mode can be performed via a signal sent directly from a driver operated electric switch in dash (or from steering wheel switches, if equipped). Driver *PTO* Mode request options are usually installed at the factory for dash switches or for steering wheel switches.

The control hardware required for this feature is usually factory installed. Refer to *Figure 8: Cab Station Dash Switches* on page 152 for information on how the dash switches are implemented and *Figure 9: Cab Station Steering Wheel Switches* on page 152 for information on how the steering wheel switches are implemented.

Figure 8: Cab Station Dash Switches

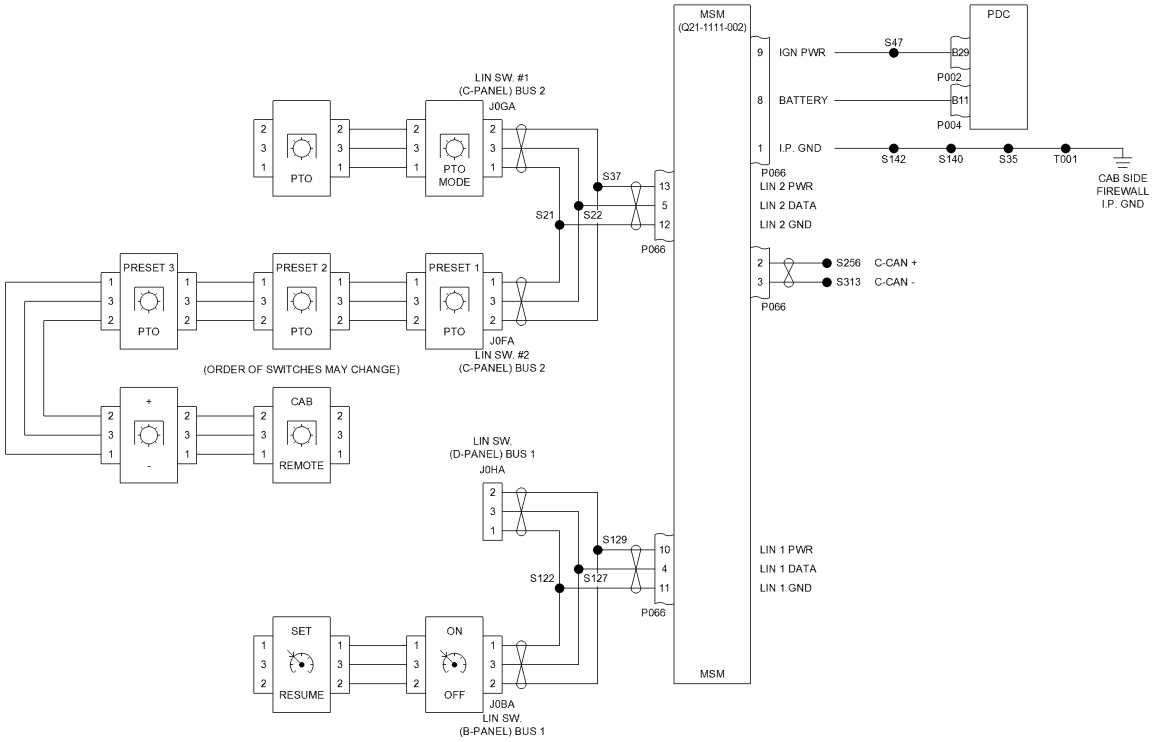
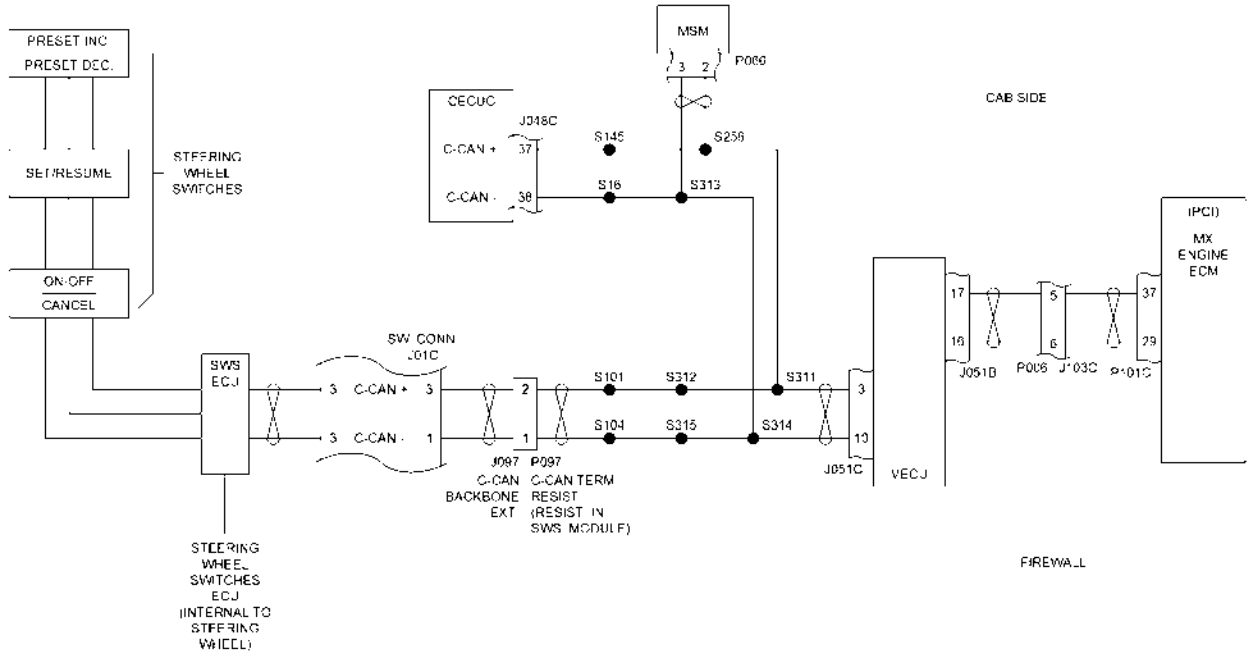


Figure 9: Cab Station Steering Wheel Switches



Factory OE Dash Controls for Aftermarket Air Operated PTO

Aftermarket air actuated *PTO*'s may be installed and be controlled by the factory driver controls inside the cab. The signal is processed through the *VECU* unit to the multiplex solenoid bank to operate that assigned air solenoid. The VECU can be customized to require a feedback signal (such as the *PTO* engagement indicator lamp on the dash) before increasing engine speed.

The control hardware required for this feature is usually factory installed.

CAN Based PTO Mode Request

PTO Mode requests can be initiated when a signal is sent through a *CAN* network connection.

This setup requires a customer-provided *CAN* based controller.

Remote Station PMC

Remote Station *PMC* includes the following possible setups:

1. Remote Station Switches
2. Remote Station Accelerator
3. Remote Station *CAN* Based Controls
4. Remote Station *TSC1* Controls

PMC Remote Station Accelerator

Remote Station Accelerator is generally a customer installed accelerator typically installed outside the cab. The accelerator can be used to implement *Engine Speed Control (ESC)* in Remote *PTO* Mode, if fitted. Remote Station accelerator will provide continuously variable *ESC* in a similar manner as the ordinary cab mounted accelerator used to drive the truck.

PMC Remote Station Accelerator requires additional programming and aftermarket parts to access and control this feature. With appropriate hardware and software, this feature may be combined with any of the following *PMC*:

1. *PTO* Mode Activation for one of the following options:
   - Remote Station Switches *ESC*
   - *CAN* based *ESC*
2. Factory installed Sensors that interact with Engine *PTO* (any/all of the following, depending on programming):
   - Service Brake Switch
   - Parking Brake Switch
   - Clutch Switch
   - Neutral Position Signal from Transmission (Not applicable to manual transmissions)
   - Vehicle Speed Sensor
   - Engine Speed Sensor

PTO: PTO Mode Control Configurations

Type of PTO Controls - Cab/Remote/Both (AA01009)

This setting determines whether *PTO* controls are for cab station, remote station, or both cab and remote stations. The options available for this setting are:

NONE
PTO MODE CONTROL - REMOTE STATION
PTO MODE CONTROL - CAB & REMOTE STATION
PTO MODE CONTROL - CAB STATION

NOTE

The vehicle must have a multiplexed Cab/Remote selection switch in the dash to use the CAB & REMOTE STATION option.

NOTE

This parameter is for MX engines only.

Table 216: Type of PTO Controls - Cab/Remote/Both (AA01009)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01009	NONE	NONE	*PTO* MODE CONTROL	FLAG

PTO Governor Responsiveness (AA01008)

This setting adjusts the engine's response to speed or torque changes during *PTO* mode.

NOTE

This parameter is for MX engines only.

Table 217: PTO Governor Responsiveness (AA01008)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01008	1	1	8	FACTOR

Cab Accelerator Pedal Type in PTO Mode (AA00067)

This setting controls whether the accelerator pedal is used to change engine torque or engine speed while using the cab accelerator pedal in *PTO* Mode. This setting allows operators to use the accelerator pedal in the way best suited for their vehicle operation.

NOTE

Enable Cab Accelerator Active in Cab Station PMC (AA00068) on page 155 must be enabled for this setting to be changed.

The possible values for this setting are:

Torque Pedal
Speed Pedal

NOTE

A torque pedal is the typical automotive-style pedal that is used in cars and trucks for normal driving.

NOTE

This parameter is for MX engines only.

Table 218: Cab Accelerator Pedal Type in PTO Mode (AA00067)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00067	Torque Pedal	Torque Pedal	Speed Pedal	FLAG

Enable Cab Accelerator Active in Cab Station PMC (AA00068)

This setting enables using the accelerator pedal while the vehicle is in cab station *PTO* Mode.

NOTE

This setting must be enabled to allow changes to the *Cab Accelerator Pedal Type in PTO Mode (AA00067)* on page 154 setting.

NOTE

This parameter is for MX engines only.

Table 219: Enable Cab Accelerator Active in Cab Station PMC (AA00068)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00068	Enabled	Disabled	Enabled	FLAG

Enable Cab Accelerator Active in Remote Station PMC (AA01038)

This setting enables using the accelerator pedal while the vehicle is in remote *PTO* Mode.

NOTE

This parameter is for MX engines only.

Table 220: Enable Cab Accelerator Active in Remote Station PMC (AA01038)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01038	Disabled	Disabled	Enabled	DISCRETE

Enable Remote Pedal in Remote Station PMC (AA00069)

This setting is used to enable remote pedal inputs during *PTO* mode. This option must be enabled to allow pedal input from remote locations.

NOTE

This parameter is for MX engines only.

Table 221: Enable Remote Pedal in Remote Station PMC (AA00069)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00069	Enabled	Disabled	Enabled	DISCRETE

Fan On in PTO Mode: CAB and REMOTE Station (AA01180)

This setting turns engine fan on when PTO mode is active.

NOTE
This parameter is for MX engines only.

Table 222: Fan On in PTO Mode: CAB and REMOTE Station (AA01180)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01180	Disabled	Disabled	Enabled	FLAG

PTO: Cab Station Limits

Maximum Engine Speed - Accelerator Controlled (AA00061)

This setting controls the maximum speed the engine can achieve when in cab station *PTO* Mode using the accelerator pedal. The engine will not exceed this speed when being controlled by the accelerator pedal, regardless of pedal position. This setting is initially equal to *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

NOTE
This parameter is for MX engines only.

Table 223: Maximum Engine Speed - Accelerator Controlled (AA00061)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00061	2000	550	2200	RPM

Maximum Engine Speed - Switch Controlled (AA00062)

This setting controls the maximum speed the engine can achieve when in cab station *PTO* Mode using the cab switches. The engine will not exceed this speed when being controlled by the steering wheel or dash switches.

NOTE
This parameter is for MX engines only.

Table 224: Maximum Engine Speed - Switch Controlled (AA00062)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00062	2000	550	2200	RPM

Maximum Vehicle Speed (AA00063)

This setting controls the vehicle speed limit while in cab station *PTO* mode. The vehicle will no longer accelerate when this limit has been reached, while PTO mode is active. This setting affects all input methods of increasing vehicle speed.

NOTE

This parameter is for MX engines only.

Table 225: Maximum Vehicle Speed (AA00063)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00063	6	6	158	MPH

Maximum Rate of Engine Speed INCREASE (AA01012)

This setting controls the rate of engine speed increase in cab station *PTO* mode. The value entered in this setting limits the rate of engine speed increase to a maximum number of rpm/s for any in-cab controls.

NOTE

This parameter is for MX engines only.

Table 226: Maximum Rate of Engine Speed INCREASE (AA01012)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01012	1000	10	2000	RPM/S

Maximum Rate of Engine Speed DECREASE (AA01013)

This setting controls the rate of engine speed decrease in cab station *PTO* mode. The value entered in this setting limits the rate of engine speed decrease to a maximum number of rpm/s for any in-cab controls.

NOTE

This parameter is for MX engines only.

Table 227: Maximum Rate of Engine Speed DECREASE (AA01013)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01013	1000	10	2000	RPM/S

Maximum Engine Torque Output (AA01016)

This setting controls the engine torque limit when the vehicle is in cab station *PTO* mode. The engine torque output will not exceed this value while in PTO mode.

> NOTE
>
> This parameter is for MX engines only.

Table 228: Maximum Engine Torque Output (AA01016)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01016	1903	148	1903	LB-FT

Minimum Engine speed (AA00064)

This setting controls the minimum speed the engine will operate at while in cab *PTO* mode. The engine will retain this minimum speed if no other commands occur to increase the engine speed.

> NOTE
>
> This parameter is for MX engines only.

Table 229: Minimum Engine speed (AA00064)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00064	650	550	2200	RPM

> NOTE
>
> If *Maximum Vehicle Speed (AA00063)* on page 157 is greater than 6.2 MPH, then the value entered in this setting cannot be greater than 800 RPM.

PTO: Cab Station Engine Speed Control Interlocks

Clutch Interlock (AA00055)

This setting controls if the clutch pedal will be used as a speed control interlock in cab station *PSC*.

The possible values for this setting are:

0 - Clutch Interlock Disabled, *PSC* may remain active.
1 - Clutch Interlock Enabled, clutch pedal cancels *PSC*.
2 - Clutch Interlock Enabled, clutch pedal cancels *PSC* and disables accelerator pedal.

> NOTE
>
> If the vehicle has an automatic transmission, this setting must be set to Disabled.

NOTE

This parameter is for MX engines only.

Table 230: Clutch Interlock (AA00055)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00055	1	0	2	DISCRETE

Custom Interlock (AA00056)

This setting controls how *PSC* operates when a custom interlock is active.

The possible values for this setting are:

0 - Custom Interlock Disabled, *PSC* may remain active.
1 - Custom Interlock Enabled, cancels *PSC*.
2 - Custom Interlock Enabled, cancels *PSC* and disables accelerator pedal.

NOTE

This setting should be set to 0 (Disabled) if there is no *Chassis Module Secondary (CMS)* installed on the vehicle.

NOTE

This parameter is for MX engines only.

Table 231: Custom Interlock (AA00056)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00056	0	0	2	DISCRETE

Neutral Interlock (AA00057)

This setting controls how *PSC* operates when the vehicle is not in neutral.

The possible values for this setting are:

0 - Neutral interlock is disabled, *PSC* may remain active when vehicle is not in neutral.
1 - Neutral interlock is enabled, cancels *PSC* when vehicle is not in neutral.
2 - Neutral interlock is enabled, cancels *PSC* when vehicle is not in neutral and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 232: Neutral Interlock (AA00057)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00057	1	0	2	DISCRETE

Park Brake Interlock (AA00058)

This setting controls how *PSC* operates when the parking brake is not set.

The possible values for this setting are:

0 - Park Brake Interlock is disabled, *PSC* may remain active when disengaging park brake.
1 - Park Brake Interlock is enabled, disengaging park brake cancels *PSC*.
2 - Park Brake Interlock is enabled, disengaging park brake cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 233: Park Brake Interlock (AA00058)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00058	1	0	2	DISCRETE

Service Brake Interlock: Pressed Equals No PTO Speed Control (AA00059)

This setting controls how *PSC* operates when the service brake is pressed.

The possible values for this setting are:

0 - Service Brake Interlock disabled, *PSC* may remain active.
1 - Service Brake Interlock enabled, brake pedal application cancels *PSC*.
2 - Service Brake Interlock enabled, brake pedal application cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 234: Service Brake Interlock: Pressed Equals No PTO Speed Control (AA00059)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00059	1	0	2	DISCRETE

NOTE

If the entry in *Maximum Vehicle Speed (AA00063)* on page 157 is greater than 30 MPH, then this setting must be enabled.

Service Brake Interlock: NOT Pressed Equals No PTO Speed Control (AA01023)

This setting controls how *PSC* operates when the service brake is not pressed.

The possible values for this setting are:

0 - Service Brake Interlock disabled, *PSC* may remain active.
1 - Service Brake Interlock enabled, releasing brake pedal cancels *PSC*.
2 - Service Brake Interlock enabled, releasing brake pedal cancels *PSC* and disables accelerator pedal.

NOTE

If the entry in *Service Brake Interlock: Pressed Equals No PTO Speed Control (AA00059)* on page 160 is a 1 or 2, then the entry in this field must be a 0.

NOTE

This parameter is for MX engines only.

Table 235: Service Brake Interlock: NOT Pressed Equals No PTO Speed Control (AA01023)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01023	0	0	2	DISCRETE

PTO: Cab Station Engine Speed Control Options

Engine Speed Ramp-up w/ long press of SET/ACCEL (AA01010)

This setting controls the engine acceleration rate from in-cab controls during cab station *PTO* mode. This setting affects the acceleration rate of all in-cab switch-based controls.

NOTE

This parameter is for MX engines only.

Table 236: Engine Speed Ramp-up w/ long press of SET/ACCEL (AA01010)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01010	250	10	1000	RPM/S

Engine Speed Ramp-down w/ long press of RES/DECEL (AA01011)

This setting controls the engine deceleration rate from in-cab controls during cab station *PTO* mode. This setting affects the deceleration rate of all in-cab switch-based controls.

NOTE

This parameter is for MX engines only.

Table 237: Engine Speed Ramp-down w/ long press of RES/DECEL (AA01011)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01011	250	10	1000	RPM/S

Engine Speed Increase with bump of SET/ACCEL (AA01014)

This setting controls the amount the engine speed is increased with the short press of the Set/Accel switch. This setting is closely connected with *Maximum Rate of Engine Speed INCREASE (AA01012)* on page 157.

> NOTE
>
> This parameter is for MX engines only.

Table 238: Engine Speed Increase with bump of SET/ACCEL (AA01014)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01014	50	10	1000	RPM

Engine Speed Decrease with bump of RES/DECEL (AA01015)

This setting controls the amount the engine speed decreases when the operator short presses the Resume/Decel switch. This setting is closely connected with *Maximum Rate of Engine Speed DECREASE (AA01013)* on page 157.

> NOTE
>
> This parameter is for MX engines only.

Table 239: Engine Speed Decrease with bump of RES/DECEL (AA01015)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01015	50	10	1000	RPM

Set/Res Enabled (AA01044)

This setting is used to enable cab *PTO* controls using the Set/Resume switch in the cab. If this setting is enabled, cab PTO functions can be activated using the Set/Resume switch on the cab's dashboard or steering wheel (if installed).

> NOTE
>
> This parameter is for MX engines only.

Table 240: Set/Res Enabled (AA01044)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01044	Enabled	Disabled	Enabled	FLAG

PTO: Cab Station Presets

Preset Increment/Decrement Switch Type (AA00060)

This setting controls the type of presets available while in cab *PTO* mode.

In Toggle Mode, up to 6 Presets are available. Pressing the "+" key will cause the engine speed to jump to the next highest configured Preset until the last preset is reached. Pressing "-", will cause the engine to jump to the next lowest Preset through the Toggle Presets stopping at Preset 1.

Note that the presets must be configured sequentially. Preset 1 < Preset 2 < ….. Preset 6, however undesired presets can be set to 0, if all 6 are not required. Example:. Preset 1 = 900, Preset 2 = 1000, Preset 3 = 1150, Preset 4,5,6 = 0.

In Dedicated (2 Presets) Mode, pressing "-" will cause the engine speed to jump to Dedicated Preset 1, and pressing "+" will cause the engine speed to jump to Dedicated Preset 2.

The possible values for this setting are:

0 - Preset engine settings disabled
1 - Enable Toggle (6 presets)
2 - Enable Dedicated (2 presets)

If using option 1, the presets are adjusted using:

- *Toggle Preset 1 (AA01017)* on page 163
- *Toggle Preset 2 (AA01018)* on page 164
- *Toggle Preset 3 (AA01019)* on page 164
- *Toggle Preset 4 (AA01020)* on page 165
- *Toggle Preset 5 (AA01021)* on page 165
- *Toggle Preset 6 (AA01022)* on page 165

If using option 2, the presets are adjusted using:

- *Dedicated Preset 1 (AA00065)* on page 166
- *Dedicated Preset 2 (AA00066)* on page 166

NOTE
This parameter is for MX engines only.

Table 241: Preset Increment/Decrement Switch Type (AA00060)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00060	2	0	2	DISCRETE

Toggle Preset 1 (AA01017)

This setting controls the cab pre-programmed speed 1 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)", otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE
This parameter is for MX engines only.

Table 242: Toggle Preset 1 (AA01017)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01017	800	1	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If there is an entry in *Toggle Preset 2 (AA01018)* on page 164, then the entry in this field must be less than that value.

Toggle Preset 2 (AA01018)

This setting controls the cab pre-programmed speed 2 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 1 (AA01017)* on page 163, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 243: Toggle Preset 2 (AA01018)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01018	900	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 1 (AA01017)* on page 163 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If there is an entry in *Toggle Preset 3 (AA01019)* on page 164, then the entry in this field must be less than that value.

Toggle Preset 3 (AA01019)

This setting controls the cab pre-programmed speed 3 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 2 (AA01018)* on page 164, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 244: Toggle Preset 3 (AA01019)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01019	1000	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 2 (AA01018)* on page 164, and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If there is an entry in *Toggle Preset 4 (AA01020)* on page 165, then the entry in this field must be less than that value.

Toggle Preset 4 (AA01020)

This setting controls the cab pre-programmed speed 4 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 3 (AA01019)* on page 164, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

> NOTE
>
> This parameter is for MX engines only.

Table 245: Toggle Preset 4 (AA01020)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01020	1100	0	2200	RPM

> NOTE
>
> The value entered in this variable must be greater than the entry in *Toggle Preset 3 (AA01019)* on page 164 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If there is an entry in *Toggle Preset 5 (AA01021)* on page 165, then the entry in this field must be less than that value.

Toggle Preset 5 (AA01021)

This setting controls the cab pre-programmed speed 5 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 4 (AA01020)* on page 165, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

> NOTE
>
> This parameter is for MX engines only.

Table 246: Toggle Preset 5 (AA01021)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01021	1200	0	2200	RPM

> NOTE
>
> The value entered in this variable must be greater than the entry in *Toggle Preset 4 (AA01020)* on page 165 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If there is an entry in *Toggle Preset 6 (AA01022)* on page 165, then the entry in this field must be less than that value.

Toggle Preset 6 (AA01022)

This setting controls the cab pre-programmed speed 6 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00060)* on page 162 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 5 (AA01021)* on page 165, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 247: Toggle Preset 6 (AA01022)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01022	1300	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 5 (AA01021)* on page 165 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

Dedicated Preset 1 (AA00065)

This setting controls the cab dedicated speed 1 variable. This speed is set by pressing the decrement (-) button on the increment/decrement (+/-) switch. This option is only available if *Preset Increment/Decrement Switch Type (AA00060)* on page 162 is set to "Enable Dedicated (2 Presets)", otherwise this parameter must = 0. The value entered must be less than or equal to the value in *Dedicated Preset 2 (AA00066)* on page 166.

NOTE

This parameter is for MX engines only.

Table 248: Dedicated Preset 1 (AA00065)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00065	800	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

Dedicated Preset 2 (AA00066)

This setting controls the cab dedicated speed 2 variable. This speed is set by pressing the increment (+) button on the increment/decrement (+/-) switch. This option is only available if *Preset Increment/Decrement Switch Type (AA00060)* on page 162 is set to "Enable Dedicated (2 Presets)" and there is a value entered in *Dedicated Preset 1 (AA00065)* on page 166, otherwise this parameter must = 0. The value entered must be greater than or equal to the value entered in *Dedicated Preset 1 (AA00065)* on page 166.

NOTE

This parameter is for MX engines only.

Table 249: Dedicated Preset 2 (AA00066)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00066	900	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

PTO: Cab Station Custom Presets

Custom Preset 1 Functionality (AA00049)

There are up to six custom preset switches available. The switches can control engine speed during cab station *PTO* or remote station *PTO*. Remote Custom Presets can be configured to be used when in Cab station.

This setting controls how custom preset switch 1 is used to control engine speed during cab station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

NOTE

Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 1 sets the engine speed to the value defined in *Custom Preset 1 (AA00050)* on page 167.

NOTE

This parameter is for MX engines only.

Table 250: Custom Preset 1 Functionality (AA00049)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00049	Momentary	Momentary	Latch	FLAG

Custom Preset 1 (AA00050)

There are up to three custom preset switches available in the cab. The switches can control engine speed during cab station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 1 is used for vehicles with cab station *PTO*.

NOTE

Refer to *Custom Preset 1 Functionality (AA00049)* on page 167 for information on the available settings to use custom preset switch 1.

NOTE

This parameter is for MX engines only.

Table 251: Custom Preset 1 (AA00050)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00050	750	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

Custom Preset 2 Functionality (AA00051)

There are up to six custom preset switches available. The switches can control engine speed during cab station *PTO* or remote station *PTO*. Remote Custom Presets can be configured to be used when in Cab station.

This setting controls how custom preset switch 2 is used to control engine speed during cab station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

NOTE

Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 2 sets the engine speed to the value defined in *Custom Preset 2 (AA00052)* on page 168.

NOTE

This parameter is for MX engines only.

Table 252: Custom Preset 2 Functionality (AA00051)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00051	Momentary	Momentary	Latch	FLAG

Custom Preset 2 (AA00052)

There are up to three custom preset switches available in the cab. The switches can control engine speed during cab station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 2 is used for vehicles with cab station *PTO*.

NOTE

Refer to *Custom Preset 2 Functionality (AA00051)* on page 168 for information on the available settings to use custom preset switch 2.

NOTE

This parameter is for MX engines only.

Table 253: Custom Preset 2 (AA00052)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00052	850	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

Custom Preset 3 Functionality (AA00053)

There are up to six custom preset switches available. The switches can control engine speed during cab station *PTO* or remote station *PTO*. Remote Custom Presets can be configured to be used when in Cab station.

This setting controls how custom preset switch 3 is used to control engine speed during cab station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

NOTE

Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 3 sets the engine speed to the value defined in *Custom Preset 3 (AA00054)* on page 169.

NOTE

This parameter is for MX engines only.

Table 254: Custom Preset 3 Functionality (AA00053)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00053	Momentary	Momentary	Latch	FLAG

Custom Preset 3 (AA00054)

There are up to three custom preset switches available in the cab. The switches can control engine speed during cab station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 3 is used for vehicles with cab station *PTO*.

NOTE

Refer to *Custom Preset 3 Functionality (AA00053)* on page 169 for information on the available settings to use custom preset switch 3.

NOTE

This parameter is for MX engines only.

Table 255: Custom Preset 3 (AA00054)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00054	950	0	2200	RPM

NOTE

The value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156.

PTO: Remote Station Limits

Maximum Engine Speed - Cab and Remote Accelerator Controlled (AA00074)

This setting controls the maximum speed the engine can achieve when in remote *PTO* Mode using the accelerator pedal or from the remote accelerator. The engine will not go faster than the maximum speed entered no matter how much the accelerator pedal is depressed.

NOTE

This parameter is for MX engines only.

Table 256: Maximum Engine Speed - Cab and Remote Accelerator Controlled (AA00074)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00074	2000	550	2200	RPM

Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)

This setting controls the maximum speed the engine can achieve when in remote *PTO* Mode using the switches or request sent via CAN. The engine will not go faster than the maximum speed entered no matter how much the switch is depressed or *TSC1* message sent.

NOTE

This parameter is for MX engines only.

Table 257: Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00075	2000	550	2200	RPM

Maximum Vehicle Speed (AA01026)

This setting controls the vehicle speed limit while in remote *PTO* mode. This setting affects all input methods of increasing vehicle speed.

> NOTE
>
> This parameter is for MX engines only.

Table 258: Maximum Vehicle Speed (AA01026)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01026	0	0	158.45	MPH

Maximum Rate of Engine Speed INCREASE (AA01027)

This setting controls the rate of engine speed increase in remote station *PTO* mode. The value entered in this setting limits the rate of engine speed increase to a maximum number of RPMs for any remote station controls. This setting is closely connected with *Engine Speed Increase with bump of SET/ACCEL (AA01029)* on page 176.

> NOTE
>
> This parameter is for MX engines only.

Table 259: Maximum Rate of Engine Speed INCREASE (AA01027)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01027	1000	10	2000	RPM/S

Maximum Rate of Engine Speed DECREASE (AA01028)

This setting controls the rate of engine speed decrease in remote station *PTO* mode. The value entered in this setting limits the rate of engine speed decrease to a maximum number of RPMs for any remote station controls. This setting is closely connected with *Engine Speed Decrease with bump of RES/DECEL (AA01030)* on page 176.

> NOTE
>
> This parameter is for MX engines only.

Table 260: Maximum Rate of Engine Speed DECREASE (AA01028)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01028	1000	10	2000	RPM/S

Maximum Engine Torque Output (AA01031)

This setting controls the engine torque limit when the vehicle is in remote *PTO* mode. The engine torque rate will not go higher than the value entered.

NOTE

This parameter is for MX engines only.

Table 261: Maximum Engine Torque Output (AA01031)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01031	1903	148	1903	LB-FT

Remote: Minimum Engine Speed (AA00076)

This setting controls the minimum speed the engine will operate at while in remote station PTO Mode. The engine will retain this minimum speed if no other commands occur to increase the engine speed.

NOTE

This parameter is for MX engines only.

Table 262: Remote: Minimum Engine Speed (AA00076)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00076	650	550	2200	RPM

PTO: Remote Station Engine Speed Control Interlocks

Clutch Interlock (AA00070)

This setting controls if the clutch pedal will be used as a speed control interlock in remote station *PSC*.

The possible values for this setting are:

0; Disabled - Clutch Interlock is disabled, remain in Remote *PSC* when clutch is pressed.
1; Enabled - Clutch Interlock is enabled
2; Enabled w/ Cab Accelerator Disabled - Clutch Interlock is enabled, clutch pedal cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 263: Clutch Interlock (AA00070)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00070	2	0	2	DISCRETE

Custom Interlock (AA00071)

This setting controls if remote *PTO* mode is enabled when a custom interlock input is active.

The possible values for this setting are:

0; Disabled - Custom Interlock is disabled, remain in Remote *PSC* when custom interlock is active.
1; Enabled - Custom Interlock is enabled.
2; Enabled w/ Cab Accelerator Disabled - Custom Interlock is enabled, cancels *PSC* and disables accelerator pedal.

NOTE

This setting should be set to 0 (Disabled) if there is no *CMS* installed on the vehicle.

NOTE

This parameter is for MX engines only.

Table 264: Custom Interlock (AA00071)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00071	0	0	2	DISCRETE

Neutral Interlock (AA00072)

This setting controls if remote *PTO* mode is disabled when the vehicle is not in neutral.

The possible values for this setting are:

0; Disabled - Neutral Interlock is disabled, stay in Remote *PSC* when vehicle is not in neutral.
1; Enabled - Neutral Interlock is enabled.
2; Enabled w/ Cab Accelerator Disabled - Neutral Interlock is enabled, cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 265: Neutral Interlock (AA00072)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00072	2	0	2	DISCRETE

Park Brake Interlock (AA01039)

This setting controls if remote *PTO* mode is disabled when the parking brake is set or not.

The possible values for this setting are:

0; Disabled - Park Brake Interlock is disabled, remain in Remote *PSC* when park brake is not set.
1; Enabled - Park Brake Interlock Enabled
2; Enabled w/ Cab Accelerator Disabled - Park Brake Interlock Enabled, disengaging park brake cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

Table 266: Park Brake Interlock (AA01039)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01039	2	0	2	DISCRETE

Service Brake Interlock, Pressed equals No PTO Speed Control (AA00073)

This setting controls if remote *PTO* mode is disabled when the service brake is pressed.

The possible values for this setting are:

0; Disabled- Service Brake Interlock is disabled
1; Enabled - Service Brake Interlock is enabled, remain in Remote *PSC* when service brake is pressed.
2; Enabled w/ Cab Accelerator Disabled - Service Brake Interlock is enabled, brake pedal application cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

NOTE

If the value in *Maximum Vehicle Speed (AA01026)* on page 171 is greater than 30 MPH and the entries for *Neutral Interlock (AA00072)* on page 173 and *Park Brake Interlock (AA01039)* on page 173 are 0, then this setting must be enabled.

Table 267: Service Brake Interlock, Pressed equals No PTO Speed Control (AA00073)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00073	2	0	2	DISCRETE

Service Brake Interlock, NOT Pressed equals No PTO Speed Control (AA01040)

This setting controls if remote *PTO* mode is disabled when the service brake is not pressed.

The possible values for this setting are:

0; Disabled - Service Brake Interlock is disabled, remain in Remote *PSC* when service brake is not pressed.
1; Enabled - Service Brake Interlock is enabled.
2; Enabled w/ Cab Accelerator Disabled - Service Brake Interlock is enabled, releasing brake pedal cancels *PSC* and disables accelerator pedal.

NOTE

This parameter is for MX engines only.

NOTE

If *Service Brake Interlock, Pressed equals No PTO Speed Control (AA00073)* on page 174 is greater than 0, this parameter must be 0.

Table 268: Service Brake Interlock, NOT Pressed equals No PTO Speed Control (AA01040)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01040	0	0	2	DISCRETE

PTO: Remote Station Engine Speed Control Options

Set/Res Input Enabled (AA01045)

This setting is enables the remote Set/Resume switches for Remote *PTO* use.

NOTE
This parameter is for MX engines only.

Table 269: Set/Res Input Enabled (AA01045)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01045	Enabled	Disabled	Enabled	FLAG

Engine Speed Ramp-up w/ long press of SET/ACCEL (AA01024)

This setting controls the engine acceleration rate during remote PTO mode. This setting affects the acceleration rate of all remote control options.

NOTE
This parameter is for MX engines only.

Table 270: Engine Speed Ramp-up w/ long press of SET/ACCEL (AA01024)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01024	250	10	1000	RPM/S

Engine Speed Ramp-down w/ long press of RES/DECEL (AA01025)

This setting controls the engine deceleration rate during remote PTO mode. This setting affects the deceleration rate of all remote control options.

NOTE
This parameter is for MX engines only.

Table 271: Engine Speed Ramp-down w/ long press of RES/DECEL (AA01025)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01025	250	10	1000	RPM/S

Engine Speed Increase with bump of SET/ACCEL (AA01029)

This setting controls the amount the engine speed is increased when a *PSC* increase command is requested from a remote control. This setting is closely connected with *Maximum Rate of Engine Speed INCREASE (AA01027)* on page 171.

> NOTE
>
> This parameter is for MX engines only.

Table 272: Engine Speed Increase with bump of SET/ACCEL (AA01029)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01029	50	10	1000	RPM

Engine Speed Decrease with bump of RES/DECEL (AA01030)

This setting controls the amount the engine speed is decreased when a *PSC* increase command is requested from a remote control. This setting is closely connected with *Maximum Rate of Engine Speed DECREASE (AA01028)* on page 171.

> NOTE
>
> This parameter is for MX engines only.

Table 273: Engine Speed Decrease with bump of RES/DECEL (AA01030)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01030	50	10	1000	RPM

PTO: Remote Station Presets

Toggle Preset 1 (AA01032)

This setting controls the remote pre-programmed speed 1 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)", otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

> NOTE
>
> This parameter is for MX engines only.

Table 274: Toggle Preset 1 (AA01032)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01032	800	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If there is an entry in *Toggle Preset 2 (AA01018)* on page 164, then the entry in this field must be less than that value.

Toggle Preset 2 (AA01033)

This setting controls the cab pre-programmed speed 2 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 1 (AA01032)* on page 176, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 275: Toggle Preset 2 (AA01033)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01033	900	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 1 (AA01032)* on page 176 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If there is an entry in *Toggle Preset 3 (AA01034)* on page 177, then the entry in this field must be less than that value.

Toggle Preset 3 (AA01034)

This setting controls the cab pre-programmed speed 3 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 2 (AA01033)* on page 177, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 276: Toggle Preset 3 (AA01034)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01034	1000	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 2 (AA01033)* on page 177 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If there is an entry in *Toggle Preset 4 (AA01035)* on page 178, then the entry in this field must be less than that value.

Toggle Preset 4 (AA01035)

This setting controls the cab pre-programmed speed 4 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 3 (AA01034)* on page 177, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 277: Toggle Preset 4 (AA01035)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01035	1100	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 3 (AA01034)* on page 177 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If there is an entry in *Toggle Preset 5 (AA01036)* on page 178, then the entry in this field must be less than that value.

Toggle Preset 5 (AA01036)

This setting controls the cab pre-programmed speed 5 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 4 (AA01035)* on page 178, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 278: Toggle Preset 5 (AA01036)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01036	1200	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 4 (AA01035)* on page 178 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If there is an entry in *Toggle Preset 6 (AA01037)* on page 179, then the entry in this field must be less than that value.

Toggle Preset 6 (AA01037)

This setting controls the cab pre-programmed speed 6 variable. This option is only available if *Preset Increment/Decrement Switch Type (AA00079)* on page 180 is set to "Enable Toggle (6 Presets)" and there is a value entered in *Toggle Preset 5 (AA01036)* on page 178, otherwise this parameter must = 0. The preset is reached by pressing the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 279: Toggle Preset 6 (AA01037)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01037	1300	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Toggle Preset 5 (AA01036)* on page 178 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170.

Dedicated Preset 1 (AA00077)

This setting controls the remote dedicated preset 1 variable. This option is only available if *Preset Increment/Decrement Switch Type (AA00079)* on page 180 is set to "Enable Dedicated (2 Presets)", otherwise this parameter must = 0. The preset is reached by pressing the decrement (-) button on the increment/decrement (+/-) switch. The entry in this setting must be less than or equal to the entry in *Dedicated Preset 2 (AA00078)* on page 179.

NOTE

This parameter is for MX engines only.

Table 280: Dedicated Preset 1 (AA00077)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00077	800	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Dedicated Preset 2 (AA00078)* on page 179.

Dedicated Preset 2 (AA00078)

This setting controls the remote dedicated preset 2 variable. This option is only available if *Preset Increment/Decrement Switch Type (AA00079)* on page 180 is set to "Enable Dedicated (2 Presets), otherwise this parameter must = 0. The preset is reached by pressing the increment (+) button on the increment/decrement (+/-) switch.

NOTE

This parameter is for MX engines only.

Table 281: Dedicated Preset 2 (AA00078)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00078	900	0	2000	RPM

NOTE

The value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170.

Preset Increment/Decrement Switch Type (AA00079)

In Toggle Mode, up to 6 Presets are available. Pressing the "+" key will cause the engine speed to jump to the next highest configured Preset until the last preset is reached. Pressing "-", will cause the engine to jump to the next lowest Preset through the Toggle Presets stopping at Preset 1.

Note that the presets must be configured sequentially. Preset 1 < Preset 2 < ….. Preset 6, however undesired presets can be set to 0, if all 6 are not required. Example:. Preset 1 = 900, Preset 2 = 1000, Preset 3 = 1150, Preset 4,5,6 = 0.

In Dedicated (2 Presets) Mode, pressing "-" will cause the engine speed to jump to Dedicated Preset 1, and pressing "+" will cause the engine speed to jump to Dedicated Preset 2.

The possible values for this setting are:

0 - Preset engine settings disabled
1 - Enable Toggle (6 presets)
2 - Enable Dedicated (2 presets)

If using option 1, the presets are adjusted using:

- *Toggle Preset 1 (AA01032)* on page 176
- *Toggle Preset 2 (AA01033)* on page 177
- *Toggle Preset 3 (AA01034)* on page 177
- *Toggle Preset 4 (AA01035)* on page 178
- *Toggle Preset 5 (AA01036)* on page 178
- *Toggle Preset 6 (AA01037)* on page 179

If using option 2, the presets are adjusted using:

- *Dedicated Preset 1 (AA00077)* on page 179
- *Dedicated Preset 2 (AA00078)* on page 179

NOTE

This parameter is for MX engines only.

Table 282: Preset Increment/Decrement Switch Type (AA00079)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00079	2	0	2	DISCRETE

PTO: Cab And/Or Remote Station Custom Presets

Custom Preset 1 Functionality (AA00043)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls how custom preset switch 1 is used to control engine speed during remote station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

> NOTE
>
> Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 1 sets the engine speed to the value defined in *Custom Preset 1 (AA00044)* on page 181.

> NOTE
>
> *Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203)* on page 187 must be set to ON for this setting to function.

> NOTE
>
> Use *Custom Preset 1 Functionality (AA00049)* on page 167 if the vehicle wants only cab station *PTO* Custom Presets.

> NOTE
>
> This parameter is for MX engines only.

Table 283: Custom Preset 1 Functionality (AA00043)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00043	Momentary	Momentary	Latch	FLAG

Custom Preset 1 (AA00044)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 1 is used for vehicles with remote station *PTO*.

> NOTE
>
> *Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203)* on page 187 must be set to ON for this setting to function.

> NOTE
>
> Refer to *Custom Preset 1 Functionality (AA00043)* on page 181 for information on the available settings to use custom preset switch 1.

> NOTE
>
> This parameter is for MX engines only.

Table 284: Custom Preset 1 (AA00044)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00044	750	0	2000	RPM

NOTE

If the custom preset is used to control cab PTO, the value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If the custom preset is used to control remote PTO, the value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If the custom preset is used to control both cab and remote PTO, the value entered in this variable should be greater than or equal to the lowest value of those two variables.

Custom Preset 2 Functionality (AA00045)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls how custom preset switch 2 is used to control engine speed during remote station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

NOTE

Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 2 sets the engine speed to the value defined in *Custom Preset 2 (AA00046)* on page 182.

NOTE

Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203) on page 187 must be set to ON for this setting to function.

NOTE

Use *Custom Preset 2 Functionality (AA00051)* on page 168 if the vehicle wants only cab station *PTO* Custom Presets.

NOTE

This parameter is for MX engines only.

Table 285: Custom Preset 2 Functionality (AA00045)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00045	Momentary	Momentary	Latch	FLAG

Custom Preset 2 (AA00046)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 2 is used for vehicles with remote station *PTO*.

NOTE

Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203) on page 187 must be set to ON for this setting to function.

NOTE

Refer to *Custom Preset 2 Functionality (AA00045)* on page 182 for information on the available settings to use custom preset switch 2.

NOTE

This parameter is for MX engines only.

Table 286: Custom Preset 2 (AA00046)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00046	850	0	2000	RPM

NOTE

If the custom preset is used to control cab PTO, the value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If the custom preset is used to control remote PTO, the value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If the custom preset is used to control both cab and remote PTO, the value entered in this variable should be greater than or equal to the lowest value of those two variables.

Custom Preset 3 Functionality (AA00047)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls how custom preset switch 3 is used to control engine speed during remote station *PTO*. There are two options available for this setting:

Momentary - Cancels preset engine speed request when switch is released
Latch - Holds preset engine speed request when switch is released

NOTE

Cab custom preset switches installed at the factory are physically latching switches. Programming the switch to be a momentary switch causes the engine speed request to be canceled when the switch is toggled off.

Using custom preset switch 3 sets the engine speed to the value defined in *Custom Preset 3 (AA00048)* on page 184.

NOTE

Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203) on page 187 must be set to ON for this setting to function.

NOTE

Use *Custom Preset 3 Functionality (AA00053)* on page 169 if the vehicle wants only cab station *PTO* Custom Presets.

NOTE

This parameter is for MX engines only.

Table 287: Custom Preset 3 Functionality (AA00047)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00047	Momentary	Momentary	Latch	FLAG

Custom Preset 3 (AA00048)

There are up to three custom preset switches available for remote. The switches can control engine speed during remote station *PTO* or both cab station and remote station *PTO*.

This setting controls the engine's speed when custom preset switch 3 is used for vehicles with remote station *PTO*.

NOTE

Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203) on page 187 must be set to ON for this setting to function.

NOTE

Refer to *Custom Preset 3 Functionality (AA00047)* on page 183 for information on the available settings to use custom preset switch 3.

NOTE

This parameter is for MX engines only.

Table 288: Custom Preset 3 (AA00048)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA00048	950	0	2000	RPM

NOTE

If the custom preset is used to control cab PTO, the value entered in this variable must be greater than the entry in *Minimum Engine speed (AA00064)* on page 158 and less than the entry in *Maximum Engine Speed - Switch Controlled (AA00062)* on page 156. If the custom preset is used to control remote PTO, the value entered in this variable must be greater than the entry in *Remote: Minimum Engine Speed (AA00076)* on page 172 and less than the entry in *Maximum Engine Speed - Switch or TSC1 Controlled (AA00075)* on page 170. If the custom preset is used to control both cab and remote PTO, the value entered in this variable should be greater than or equal to the lowest value of those two variables.

PTO: Cab And/Or Remote Station: Engine Speed Control Interlocks

Custom Interlock Switch Behavior (AA01183)

This setting determines if an open circuit or a ground circuit is treated as an active interlock.

NOTE

This parameter is for MX engines only.

Table 289: Custom Interlock Switch Behavior (AA01183)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01183	Active Ground	Active Open Circuit	Active Ground	FLAG

PTO: Pedal

Enable slew rate limit for speed pedal if configured for speed control (AA01181)

This setting enables the slew rate limit using the accelerator pedal to control engine speed during *PTO* mode.

NOTE

This parameter is for MX engines only.

Table 290: Enable slew rate limit for speed pedal if configured for speed control (AA01181)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01181	Disabled	Disabled	Enabled	FLAG

Enable slew rate limit for torque pedal if configured for torque control (AA01182)

This setting enables the slew rate limit of the cab accelerator pedal, when the accelerator pedal is configured as a torque control pedal.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 291: Enable slew rate limit for torque pedal if configured for torque control (AA01182)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01182	Disabled	Disabled	Enabled	FLAG

CAB Pedal Disablement using PR170A pin 7 (AA01339)

This setting allows cab pedal to be disabled using PR170A pin 7.

NOTE

This parameter is for MX engines only.

Table 292: CAB Pedal Disablement using PR170A pin 7 (AA01339)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01339	Disabled	Disabled	Enabled	FLAG

PTO: Remote CAN Control

Enable Body Control from Source Address 7 (AA01041)

This setting controls use of a remote *PTO* switch from Source Address 7.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 293: Enable Body Control from Source Address 7 (AA01041)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01041	Enabled	Disabled	Enabled	DISCRETE

Enable Body Control from Source Address 33 (AA01042)

This setting controls use of a remote *PTO* switch from Source Address 33.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 294: Enable Body Control from Source Address 33 (AA01042)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01042	Enabled	Disabled	Enabled	DISCRETE

PTO: Advanced Settings

Disables PSC with Stop Lamp Active (AA01007)

This setting disables *PSC* for both cab and remote station controls when Stop Lamp is illuminated.

WARNING

Continued command of engine speed when a stop engine lamp is illuminated may damage the engine.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 295: Disables PSC with Stop Lamp Active (AA01007)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01007	Enabled	Disabled	Enabled	DISCRETE

Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203)

This setting allows remote Custom Presets to control engine speed in CAB *PTO* mode.

NOTE

This parameter is for MX engines only.

Table 296: Allow Remote Custom Presets (AA00044, AA00046, AA00048) in CAB PTO mode (AA01203)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01203	ON	OFF	ON	FLAG

Retarder Interlock (AA01204)

This setting cancels *PSC* when retarders become active.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter is for MX engines only.

Table 297: Retarder Interlock (AA01204)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01204	OFF	OFF	ON	DISCRETE

Changes the SET/RES input on the Remote 12 pin connector to be Preset +/- (AA01342)

This setting changes the SET/RES input on the Remote 12 pin connector to be Preset +/-.

The options available for this setting are:

- 0 - Disable
- 1 - Enable

NOTE

This parameter is for MX engines only.

Table 298: Changes the SET/RES input on the Remote 12 pin connector to be Preset +/- (AA01342)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01342	DISABLE	DISABLE	ENABLE	FLAG

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Chassis Modules (CMP and CMS)

There are two modules for chassis component control; the *CMP* and the *CMS* (Also referred to as the *SCM*, and *Optional Chassis Module (OCM)*, respectively). The *CMP* is standard equipment for all *VECU* system trucks as it controls major functions such as exterior lighting, fuel level, and other options. The *CMS* may be found on trucks built from the factory with certain options such as more than two lift axles, snow plow, or a *Body Builder CAN (B-CAN)*.

Chassis Module Parameters

These parameters will enable or disable fault code monitoring of current and voltage at the chassis module for the assigned device. These parameters could be useful if the device is multiplexed, factory installed, and the specific parameter is enabled to monitor.

Fuel Level Sensor (Secondary) (AC01001)

This setting enables fault code monitoring of the secondary fuel level sensor.

Table 299: Fuel Level Sensor (Secondary) (AC01001)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01001	OFF	OFF	ON	FLAG

Main Transmission Oil Temp (AC01003)

This setting enables fault code monitoring of the main transmission oil temperature.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 300: Main Transmission Oil Temp (AC01003)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01003	OFF	OFF	ON	FLAG

Filter Gauges (fuel filter restriction) (AC01004)

This setting enables fault code monitoring of the filter gauges and fuel filter restriction.

Table 301: Filter Gauges (fuel filter restriction) (AC01004)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01004	OFF	OFF	ON	FLAG

Axle Temp Gauges (Rear Rear) (AC01006)

This setting enables fault code monitoring of the rear rear axle temperature gauges.

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 302: Axle Temp Gauges (Rear Rear) (AC01006)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01006	OFF	OFF	ON	FLAG

Battery Energy Monitoring (via Ammeter) (AC01007)

This setting enables fault code monitoring of the battery energy levels via ammeter.

Table 303: Battery Energy Monitoring (via Ammeter) (AC01007)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01007	OFF	OFF	ON	FLAG

Remote Throttle Input (AC01008)

This setting enables fault code monitoring of the remote throttle input.

Table 304: Remote Throttle Input (AC01008)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01008	OFF	OFF	ON	FLAG

Axle Temp Gauges (Rear Front) (AC01009)

This setting enables fault code monitoring of the rear front axle temperature gauges.

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 305: Axle Temp Gauges (Rear Front) (AC01009)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01009	OFF	OFF	ON	FLAG

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Chassis Modules (CMP and CMS)

There are two modules for chassis component control; the *CMP* and the *CMS* (Also referred to as the *SCM*, and *OCM*, respectively). The *CMP* is standard equipment for all *VECU* system trucks as it controls major functions such as exterior lighting, fuel level, and other options. The *CMS* may be found on trucks built from the factory with certain options such as more than two lift axles, snow plow, or a *B-CAN*.

Chassis Module Parameters

These parameters will enable or disable fault code monitoring of current and voltage at the chassis module for the assigned device. These parameters could be useful if the device is multiplexed, factory installed, and the specific parameter is enabled to monitor.

Auto Start/Stop Hood Tilt Switch (AD01001)

This setting enables fault code monitoring of the auto start/stop hood tilt switch.

Table 306: Auto Start/Stop Hood Tilt Switch (AD01001)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01001	OFF	OFF	ON	FLAG

Axle Temp Gauges (Rear Center) (AD01002)

This setting enables fault code monitoring of the rear center axle temperature gauges.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 307: Axle Temp Gauges (Rear Center) (AD01002)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01002	OFF	OFF	ON	FLAG

Axle Temp Gauges (Steer) (AD01003)

This setting enables fault code monitoring of the steer axle temperature gauges.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 308: Axle Temp Gauges (Steer) (AD01003)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01003	OFF	OFF	ON	FLAG

Fuel Temp Sensor (AD01004)

This setting enables fault code monitoring of the fuel temperature sensor.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 309: Fuel Temp Sensor (AD01004)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01004	OFF	OFF	ON	FLAG

Oil Temp Gauges (Aux Trans) (AD01009)

This setting enables fault code monitoring of the auxiliary transmission oil temperature gauges.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 310: Oil Temp Gauges (Aux Trans) (AD01009)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01009	OFF	OFF	ON	FLAG

Oil Temp Gauges (Split shaft PTO/transfer case) (AD01010)

This setting enables fault code monitoring of the split shaft PTO transfer case oil temperature gauges.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 311: Oil Temp Gauges (Split shaft PTO/transfer case) (AD01010)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01010	OFF	OFF	ON	FLAG

Lift Axle Air PressureGauge (#1) - DTC Enable (AD01005)

This setting enables fault code monitoring of the #1 lift axle pressure gauge.

Table 312: Lift Axle Air PressureGauge (#1) - DTC Enable (AD01005)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01005	OFF	OFF	ON	FLAG

Lift Axle Air PressureGauge (#2) - DTC Enable (AD01006)

This setting enables fault code monitoring of the #2 lift axle pressure gauge.

Table 313: Lift Axle Air PressureGauge (#2) - DTC Enable (AD01006)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01006	OFF	OFF	ON	FLAG

Lift Axle Air PressureGauge (#3) - DTC Enable (AD01007)

This setting enables fault code monitoring of the #3 lift axle pressure gauge.

Table 314: Lift Axle Air PressureGauge (#3) - DTC Enable (AD01007)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01007	OFF	OFF	ON	FLAG

Lift Axle Air PressureGauge (tag) - DTC Enable (AD01008)

This setting enables fault code monitoring of the lift axle pressure gauge.

Table 315: Lift Axle Air PressureGauge (tag) - DTC Enable (AD01008)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01008	OFF	OFF	ON	FLAG

Spare Analog Input DTC Enable (NA-OCM60) (AD01011)

This setting enables NA-OCM60 for fault code monitoring.

Table 316: Spare Analog Input DTC Enable (NA-OCM60) (AD01011)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01011	OFF	OFF	ON	FLAG

Spare Analog Input DTC Enable (NA-OCM61) (AD01012)

This setting enables NA-OCM61 for fault code monitoring.

Table 317: Spare Analog Input DTC Enable (NA-OCM61) (AD01012)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01012	OFF	OFF	ON	FLAG

Spare Analog Input DTC Enable (NA-OCM62) (AD01013)

This setting enables NA-OCM62 for fault code monitoring.

Table 318: Spare Analog Input DTC Enable (NA-OCM62) (AD01013)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01013	OFF	OFF	ON	FLAG

Suspension Load Air Pressure Gauge #2 - DTC Enable (AD01014)

This setting enables fault code monitoring of the suspension load air pressure gauge #2.

Table 319: Suspension Load Air Pressure Gauge #2 - DTC Enable (AD01014)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01014	OFF	OFF	ON	FLAG

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Exterior Notification of Regen

An external signal shall be provided to notify the operator that regeneration is occurring. The intention is that this signal shall drive a relay to power a notification method such as beacon lamps or horns. The parameter can disable the feature or can turn on the exterior device either in any active *PTO* state or only on when the *PTO* is turned on. In any case the function will only turn on when the vehicle is parked and an active regeneration is occurring.

Exterior Notification for Regen Active (AA01243)

This setting controls when exterior notifications occur during active regeneration.

The possible values for this setting are:

0 - OFF
1 - ON with Regen Active and Park Brake
2 - Regen Active with Park Brake and PTO active

NOTE

This parameter is for MX engines only.

Table 320: Exterior Notification for Regen Active (AA01243)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01243	1	0	2	DISCRETE

Exterior Light flash for Regen Required Notification (AA01240)

This setting controls whether the exterior lights flash as part of a notification of active regeneration.

NOTE

This parameter is for MX engines only.

Table 321: Exterior Light flash for Regen Required Notification (AA01240)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01240	0	0	1	FLAG

Vehicle Speed Threshold above which Exterior Notification of Regen required will be disabled in PTO mode (AA01241)

This setting indicates the vehicle speed where notifications of active regeneration are disabled when the vehicle is in PTO mode. When the vehicle is in PTO mode, and the vehicle is traveling at speeds above this threshold, then no notifications of active regeneration are shown.

NOTE

This parameter is for MX engines only.

Table 322: Vehicle Speed Threshold above which Exterior Notification of Regen required will be disabled in PTO mode (AA01241)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01241	6.2	0	158.4	MPH

Chapter 29 | BATTERY MONITORING

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Enables/Disables Low Voltage Disconnect function (AA01268)

This setting enables the *Low Voltage Disconnect (LVD)* function.

The *LVD* will disconnect non-vital battery loads when battery voltage drops below the value set in *Battery voltage threshold at which the LVD bus will be disconnected (AA01270)* on page 204 for 3 minutes and the key switch is in the ACC or OFF position. During the next 30 seconds, the LVD will flash the Battery Disconnect Telltale in the Driver Information Display. As the telltale flashes an audio warning will also sound. During the last 2 minutes the *LVD* will emit a slow audible beep. After 2 minutes of flashing the warning on the Driver Performance Center (DPC), the *LVD* will shut-off any circuit connected through the *LVD* system. Even if the ignition switch is cycled OFF and ON again, the *LVD* will continue to fault until it sees battery voltage at, or above, the value set in *Battery voltage threshold at which the LVD bus will be disconnected (AA01270)* on page 204.

Table 323: Enables/Disables Low Voltage Disconnect function (AA01268)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01268	1	0	1	FLAG

Determines if LVD voltage cutoff threshold is selected by operator on display menu or selectable in PVP (AA01269)

This setting determines if the voltage threshold where the *LVD* function is set.

There are two options available for this setting:

- 0 - Selectable in *PVP*
- 1 - Selectable by driver on display menu

Table 324: Determines if LVD voltage cutoff threshold is selected by operator on display menu or selectable in PVP (AA01269)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01269	0	0	1	FLAG

Battery voltage threshold at which the LVD bus will be disconnected (AA01270)

This setting controls the voltage threshold where the *LVD* function activates. This setting is only used if *Determines if LVD voltage cutoff threshold is selected by operator on display menu or selectable in PVP (AA01269)* on page 204 is set to '0'.

Table 325: Battery voltage threshold at which the LVD bus will be disconnected (AA01270)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01270	12100	11100	12100	mV

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Auto-Desorb

Automatic HC Desorb functionality provides the truck with the ability to perform an HC Desorb (hydrocarbon desorption) automatically during extended idling. This feature is fully integrated into the aftertreatment system and will perform an HC Desorb when the truck is idling, conditions are met, and without any driver inputs, potentially eliminating the need for a Manual HC Desorb.

Prior to Auto HC Desorb functionality, customers had to perform a Manual HC Desorb before driving after idling for an extended amount of time.

Auto HC Desorb functions by periodically increasing engine speed and exhaust temperatures to maintain a low level of HC accumulation in the aftertreatment during extended idle. This operation will maintain a level of accumulated hydrocarbons so that the truck is always safe to be driven and there is minimal risk of aftertreatment damage. Drivers may experience unexpected changes in engine speed when Auto Desorbs occur, sometimes without notification depending on NAMUX version. When the Auto Desorb has completed, engine speed will return to the previous set speed.

Enables the Auto HC-Desorb functionality (AE01003)

This parameter enables/disables Auto-Desorb.

NOTE
This parameter is for MX engines only.

Table 326: Enables the Auto HC-Desorb functionality (AE01003)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01003	1	0	1	FLAG

Chapter 31 | CMP - DIGITAL OUTPUT DTCS

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Finding The Digital Output Parameters in PVP

The digital output parameters found in this chapter are located in *PVP* under the section titled **CMP - Digital Output FMI5 (Undercurrent / Open)**.

Chassis Modules (CMP and CMS)

There are two modules for chassis component control; the *CMP* and the *CMS* (Also referred to as the *SCM*, and *OCM*, respectively). The *CMP* is standard equipment for all *VECU* system trucks as it controls major functions such as exterior lighting, fuel level, and other options. The *CMS* may be found on trucks built from the factory with certain options such as more than two lift axles, snow plow, or a *B-CAN*.

Chassis Module Parameters

These parameters will enable or disable fault code monitoring of current and voltage at the chassis module for the assigned device. These parameters could be useful if the device is multiplexed, factory installed, and the specific parameter is enabled to monitor.

Lift Axle #1 Solenoid Undercurrent/Open DTC Control (AC01012)

This setting enables fault code monitoring of the lift axle #2 solenoid.

Table 327: Lift Axle #1 Solenoid Undercurrent/Open DTC Control (AC01012)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01012	OFF	OFF	ON	FLAG

Lift Axle #2 Solenoid Undercurrent/Open DTC Control (AC01013)

This setting enables fault code monitoring of the lift axle #2 solenoid.

Table 328: Lift Axle #2 Solenoid Undercurrent/Open DTC Control (AC01013)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01013	OFF	OFF	ON	FLAG

Electric Over Air Solenoid Kingpin Release (AC01014)

This setting enables *EOA* solenoid kingpin release.

Table 329: Electric Over Air Solenoid Kingpin Release (AC01014)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01014	ON	OFF	ON	FLAG

Direction Indication/Hazard Lights LH Trailer (rear) Undercurrent/Open DTC Control (AC01015)

This setting enables fault code monitoring of the trailer rear left side direction indication/hazard lights.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 330: Direction Indication/Hazard Lights LH Trailer (rear) Undercurrent/Open DTC Control (AC01015)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01015	ON	OFF	ON	FLAG

Direction Indication/Hazard Lights RH Trailer (rear) Undercurrent/Open DTC Control (AC01016)

This setting enables fault code monitoring of the trailer rear right side direction indication/hazard lights.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 331: Direction Indication/Hazard Lights RH Trailer (rear) Undercurrent/Open DTC Control (AC01016)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01016	ON	OFF	ON	FLAG

Daytime Running Lights (DRL) LH (Peterbilt) Undercurrent/Open DTC Control (AC01017)

This setting enables fault code monitoring of the left side daytime running lights.

NOTE

This parameter only applies to Peterbilt trucks.

Table 332: Daytime Running Lights (DRL) LH (Peterbilt) Undercurrent/Open DTC Control (AC01017)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01017	OFF	OFF	ON	FLAG

Daytime Running Lights (DRL) RH (Peterbilt) Undercurrent/Open DTC Control (AC01018)

This setting enables fault code monitoring of the right side daytime running lights.

NOTE

This parameter only applies to Peterbilt trucks.

Table 333: Daytime Running Lights (DRL) RH (Peterbilt) Undercurrent/Open DTC Control (AC01018)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01018	OFF	OFF	ON	FLAG

Fog/Driving Lamps (front) 1st set Undercurrent/Open DTC Control (AC01019)

This setting enables fault code monitoring of the first set of front fog/driving lamps.

Table 334: Fog/Driving Lamps (front) 1st set Undercurrent/Open DTC Control (AC01019)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01019	OFF	OFF	ON	FLAG

Front Tractor Position Lights (Park Lamps) Undercurrent/Open DTC Control (AC01020)

This setting enables fault code monitoring of the front tractor position lights/park lamps.

Table 335: Front Tractor Position Lights (Park Lamps) Undercurrent/Open DTC Control (AC01020)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01020	ON	OFF	ON	FLAG

Main Beam (High Beam) LH Undercurrent/Open DTC Control (AC01021)

This setting enables fault code monitoring of the left side high beam.

Table 336: Main Beam (High Beam) LH Undercurrent/Open DTC Control (AC01021)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01021	ON	OFF	ON	FLAG

Main Beam (High Beam) RH Undercurrent/Open DTC Control (AC01022)

This setting enables fault code monitoring of the right side high beam.

Table 337: Main Beam (High Beam) RH Undercurrent/Open DTC Control (AC01022)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01022	ON	OFF	ON	FLAG

Rear Tractor Position Lamps (Park Lamps) Undercurrent/Open DTC Control (AC01023)

This setting enables fault code monitoring of the rear tractor position lamps/park lamps.

NOTE

The factory default value of this setting is OFF. Vehicles equipped with LED lighting should keep this setting to OFF. Turning this setting to ON on a vehicle with LED lighting can create a fault code error in the system.

Table 338: Rear Tractor Position Lamps (Park Lamps) Undercurrent/Open DTC Control (AC01023)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01023	OFF	OFF	ON	FLAG

Reverse Lamps Undercurrent/Open DTC Control (AC01024)

This setting enables fault code monitoring of the reverse lamps.

Table 339: Reverse Lamps Undercurrent/Open DTC Control (AC01024)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01024	ON	OFF	ON	FLAG

Tractor Direction Indication, Brake and Hazard - RH Rear Lamp Undercurrent/Open DTC Control (AC01025)

This setting enables fault code monitoring of the right side rear tractor direction indication, brake, and hazard lights.

Table 340: Tractor Direction Indication, Brake and Hazard - RH Rear Lamp Undercurrent/Open DTC Control (AC01025)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01025	ON	OFF	ON	FLAG

Tractor Direction Indication, Brake and Hazard - LH Rear Lamp Undercurrent/Open DTC Control (AC01026)

This setting enables fault code monitoring of the left side rear tractor direction indication, brake, and hazard lights.

Table 341: Tractor Direction Indication, Brake and Hazard - LH Rear Lamp Undercurrent/Open DTC Control (AC01026)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01026	ON	OFF	ON	FLAG

Reverse Warning (aka Backup Alarm) Undercurrent/Open DTC Control (AC01027)

This setting enables fault code monitoring of the reverse warning/backup alarm.

Table 342: Reverse Warning (aka Backup Alarm) Undercurrent/Open DTC Control (AC01027)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01027	OFF	OFF	ON	FLAG

Tractor Direction Indication/Hazard/Side Turn Indication RH Front Lamp Undercurrent/Open DTC Control (AC01028)

This setting enables fault code monitoring of the right side front light.

NOTE

The factory default value of this setting is OFF. Vehicles equipped with LED lighting should keep this setting to OFF. Turning this setting to ON on a vehicle with LED lighting can create a fault code error in the system.

Table 343: Tractor Direction Indication/Hazard/Side Turn Indication RH Front Lamp Undercurrent/Open DTC Control (AC01028)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01028	OFF	OFF	ON	FLAG

Tractor Direction Indication/Hazard/Side Turn Indication LH Front Lamp Undercurrent/Open DTC Control (AC01029)

This setting enables fault code monitoring of the left side front light.

NOTE

The factory default value of this setting is OFF. Vehicles equipped with LED lighting should keep this setting to OFF. Turning this setting to ON on a vehicle with LED lighting can create a fault code error in the system.

Table 344: Tractor Direction Indication/Hazard/Side Turn Indication LH Front Lamp Undercurrent/Open DTC Control (AC01029)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01029	OFF	OFF	ON	FLAG

Tractor Direction Indication/Hazard/DRL - RH Front Lamp Undercurrent/Open DTC Control (AC01030)

This setting enables fault code monitoring of the right side front tractor direction indication, hazard, and daytime running lights.

Table 345: Tractor Direction Indication/Hazard/DRL - RH Front Lamp Undercurrent/Open DTC Control (AC01030)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01030	OFF	OFF	ON	FLAG

Tractor Direction Indication/Hazard/DRL - LH Front Lamp Undercurrent/Open DTC Control (AC01031)

This setting enables fault code monitoring of the left side front tractor direction indication, hazard, and daytime running lights.

Table 346: Tractor Direction Indication/Hazard/DRL - LH Front Lamp Undercurrent/Open DTC Control (AC01031)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AC01031	OFF	OFF	ON	FLAG

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Finding The Digital Output Parameters in PVP

The digital output parameters found in this chapter are located in *PVP* under the section titled **CMS - Digital Output FMI5 (Undercurrent / Open)**.

Chassis Modules (CMP and CMS)

There are two modules for chassis component control; the *CMP* and the *CMS* (Also referred to as the *SCM*, and *OCM*, respectively). The *CMP* is standard equipment for all *VECU* system trucks as it controls major functions such as exterior lighting, fuel level, and other options. The *CMS* may be found on trucks built from the factory with certain options such as more than two lift axles, snow plow, or a *B-CAN*.

Chassis Module Parameters

These parameters will enable or disable fault code monitoring of current and voltage at the chassis module for the assigned device. These parameters could be useful if the device is multiplexed, factory installed, and the specific parameter is enabled to monitor.

City Horn Relay Undercurrent/Open DTC Control (AD01015)

This setting enables fault code monitoring of the city horn relay.

Table 347: City Horn Relay Undercurrent/Open DTC Control (AD01015)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01015	OFF	OFF	ON	FLAG

Aftertreatment External Notification Undercurrent/Open DTC Control (AD01016)

This setting enables fault code monitoring of the aftertreatment external notification.

Table 348: Aftertreatment External Notification Undercurrent/Open DTC Control (AD01016)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01016	OFF	OFF	ON	FLAG

Spare Digital Output Undercurrent/Open DTC Control (NA-OCM02) (AD01017)

This setting enables NA-OCM02 for fault code monitoring.

Table 349: Spare Digital Output Undercurrent/Open DTC Control (NA-OCM02) (AD01017)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01017	OFF	OFF	ON	FLAG

Lift Axle #3 Solenoid Undercurrent/Open DTC Control (AD01018)

This setting enables fault code monitoring of lift axle #3 solenoid.

Table 350: Lift Axle #3 Solenoid Undercurrent/Open DTC Control (AD01018)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01018	OFF	OFF	ON	FLAG

Lift Axle #4 Solenoid Undercurrent/Open DTC Control (AD01019)

This setting enables fault code monitoring of the lift axle #4 solenoid.

Table 351: Lift Axle #4 Solenoid Undercurrent/Open DTC Control (AD01019)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01019	OFF	OFF	ON	FLAG

Vehicle Thermal Management Undercurrent/Open DTC Control (NA-OCM69) (AD01020)

This setting enables NA-OCM69 fault code monitoring.

Table 352: Vehicle Thermal Management Undercurrent/Open DTC Control (NA-OCM69) (AD01020)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01020	OFF	OFF	ON	FLAG

Vehicle Thermal Management Undercurrent/Open DTC Control (NA-OCM72) (AD01021)

This setting enables NA-OCM72 fault code monitoring.

Table 353: Vehicle Thermal Management Undercurrent/Open DTC Control (NA-OCM72) (AD01021)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01021	OFF	OFF	ON	FLAG

Trailer Options - Dump Gate/Configurable Output Undercurrent/Open DTC Control (NA-OCM10) (AD01022)

This setting enables NA-OCM10 fault monitoring.

Table 354: Trailer Options - Dump Gate/Configurable Output Undercurrent/Open DTC Control (NA-OCM10) (AD01022)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01022	OFF	OFF	ON	FLAG

Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM25) (AD01023)

This setting enables NA-OCM25 fault monitoring.

Table 355: Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM25) (AD01023)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01023	OFF	OFF	ON	FLAG

Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM26) (AD01024)

This setting enables NA-OCM26 fault monitoring.

Table 356: Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM26) (AD01024)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01024	OFF	OFF	ON	FLAG

Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM33) (AD01025)

This setting enables NA-OCM33 fault monitoring.

Table 357: Trailer Options - ISO 3731/Spare/Aux Trailer Conn/Berg Box Undercurrent/Open DTC Control (NA-OCM33) (AD01025)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01025	OFF	OFF	ON	FLAG

Sky/Aux Lights (Panel) Undercurrent/Open DTC Control (AD01026)

This setting enables fault code monitoring of the sky/auxiliary lights panel.

Table 358: Sky/Aux Lights (Panel) Undercurrent/Open DTC Control (AD01026)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01026	OFF	OFF	ON	FLAG

Work Lamps (Frame Mounted) Undercurrent/Open DTC Control (AD01027)

This setting enables fault code monitoring of frame-mounted work lamps.

Table 359: Work Lamps (Frame Mounted) Undercurrent/Open DTC Control (AD01027)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01027	OFF	OFF	ON	FLAG

Snow Plow Lamp Undercurrent/Open DTC Control (AD01028)

This setting enables fault code monitoring of snow plow mounted lamps.

Table 360: Snow Plow Lamp Undercurrent/Open DTC Control (AD01028)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AD01028	OFF	OFF	ON	FLAG

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Enables AutoStart (AA01287)

This setting enables/disables Autostart.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

NOTE

This parameter may be locked if the GHG mileage has not expired. Contact your Vehicle Support Representative for more information.

Table 361: Enables AutoStart (AA01287)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01287	0	0	1	FLAG

Enables AS popup message (AA01288)

This setting enables/disables Autostart popup message.

0 = Disable
63 = Enable

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 362: Enables AS popup message (AA01288)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01288	0	0	63	DISCRETE

Enables Main Battery AS Monitor (AA01289)

This setting enables/disables Autostart Main battery monitor.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 363: Enables Main Battery AS Monitor (AA01289)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01289	0	0	1	FLAG

Enables Aux Battery AS Monitor (AA01290)

This setting enables/disables Autostart Aux battery monitor.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 364: Enables Aux Battery AS Monitor (AA01290)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01290	0	0	1	FLAG

Main Battery SOC Low Threshold (AA01332)

This setting controls the Main battery's Low State of Charge threshold.

Table 365: Main Battery SOC Low Threshold (AA01332)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01332	50	20	60	%

Main Battery SOC High Threshold (AA01331)

This setting controls the Main battery's high State of Charge threshold.

Table 366: Main Battery SOC High Threshold (AA01331)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01331	80	70	90	%

Aux Battery SOC Low Threshold (AA01291)

This setting controls the Aux battery's low State of Charge threshold.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 367: Aux Battery SOC Low Threshold (AA01291)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01291	20	0	35	DISCRETE

Aux Battery SOC High Threshold (AA01333)

This setting controls the Aux battery's High State of Charge threshold.

Table 368: Aux Battery SOC High Threshold (AA01333)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01333	80	70	90	%

Enable AS High Idle (AA01292)

This setting enables/disables Autostart High Idle.

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 369: Enable AS High Idle (AA01292)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01292	0	0	1	FLAG

AS Target Idle Speed (AA01293)

This setting controls target idle speed when Auto Start is active.

Table 370: AS Target Idle Speed (AA01293)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01293	900	650	1200	RPM

Ignition on with Post Interlock Timer (AA01294)

This setting controls how long.

NOTE
This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Table 371: Ignition on with Post Interlock Timer (AA01294)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01294	1000	0	1000	MIN

Enables Engine Oil Temp AS Monitor (AA01295)

This setting enables/disables the Engine Oil Temperature Auto Start Monitor.

Table 372: Enables Engine Oil Temp AS Monitor (AA01295)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01295	1	0	1	FLAG

Enables Fuel Temp AS Monitor (AA01296)

This setting enables/disables the Fuel Temperature Auto Start Monitor.

Table 373: Enables Fuel Temp AS Monitor (AA01296)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01296	0	0	1	FLAG

Enables Sleeper Thermostat AS Request (AA01297)

This setting enables/disables the Sleeper Thermostat Auto Start Functionality.

Table 374: Enables Sleeper Thermostat AS Request (AA01297)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01297	0	0	1	FLAG

Oil Temp High Threshold (AA01298)

This setting controls the Oil Temperature Threshold where Auto Start will deactivate.

Table 375: Oil Temp High Threshold (AA01298)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01298	100	80	250	°F

Oil Temp Low Threshold (AA01299)

This setting controls the Oil Temperature Threshold where Auto Start will activate.

Table 376: Oil Temp Low Threshold (AA01299)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01299	20	-20	40	°F

Fuel Temp Low Threshold (AA01300)

This setting controls the Fuel Temperature Threshold where Auto Start will activate.

Table 377: Fuel Temp Low Threshold (AA01300)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01300	0	-40	40	°F

AS Door Interlock (AA01301)

This setting enables/disables the Door Interlock for Auto Start.

Table 378: AS Door Interlock (AA01301)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01301	0	0	1	FLAG

Max idle Time for SOC Request (ms) (AA01302)

This setting controls the max idle time when Auto Start has been initiated due to low State of Charge.

Table 379: Max idle Time for SOC Request (ms) (AA01302)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01302	240	60	240	MIN

Max Idle Time for Oil Temp Request (ms) (AA01303)

This setting controls the max idle time when Auto Start has been initiated due to low Oil Temp.

Table 380: Max Idle Time for Oil Temp Request (ms) (AA01303)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01303	240	60	240	MIN

Chapter 34 | ANTI-THEFT

Anti-Theft (AA01346)....230
Anti-Theft Driver Override (AA01347)....230
Anti-Theft Passcode (AA01348)....230

Anti-Theft (AA01346)

This setting enables/disables Anti-Theft functionality.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

Table 381: Anti-Theft (AA01346)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01346	DISABLED	DISABLED	ENABLED	FLAG

Anti-Theft Driver Override (AA01347)

This setting enables/disables the Digital Display menu option for the driver to turn Anti-Theft on or off. When this parameter is disabled, the Digital Display menu option for Anti-Theft will have no effect on functionality.

Possible options for this setting are:

- 0 - Disabled
- 1 - Enabled

Table 382: Anti-Theft Driver Override (AA01347)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01347	DISABLED	DISABLED	ENABLED	FLAG

Anti-Theft Passcode (AA01348)

This setting determines the passcode required to arm/disarm Anti-Theft functionality.

Passcode must be 4 numbers.

Table 383: Anti-Theft Passcode (AA01348)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01348	0000	0000	9999	-

Chapter 35 | LANE KEEP ASSIST

Lane Keep Assist and/or Torque Overlay Steering Installed (AA01307)..... 232

Lane Keep Assist and/or Torque Overlay Steering Installed (AA01307)

This setting controls whether Lane Keep Assist or Torque Overlay Steering is equipped.

0 - Not Fitted
1 - TOS Installed
2 - TOS/LKA Installed W/ Disable Switch
3 - LKA Disabled
4 - LKA W/O Disable Switch

Table 384: Lane Keep Assist and/or Torque Overlay Steering Installed (AA01307)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01307	NOT FITTED	NOT FITTED	LKA W/O DISABLE SWITCH	DISCRETE

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Chapter 36 | RAM

Roll Away Mitigation Configuration (AA01308).....234

Roll Away Mitigation Configuration (AA01308)

This setting controls whether Roll Away Mitigation is equipped and with which interlocks.

0 - RAM Disabled
1 - Standard RAM with Door Interlock
2 - Enhanced RAM with Door and Seat Belt Interlock

Table 385: Roll Away Mitigation Configuration (AA01308)

P-Code	Default Value	Minimum Value	Maximum Value	Unit Type
AA01308	0	0	2	FLAG

NOTE

This parameter must be modified by a PACCAR employee. Contact PACCAR if this parameter needs to be changed.

Glossary

Adaptive Cruise Control - An electronic system that automatically adjusts the speed of a truck in cruise control to a predetermined following distance and/or time. This feature includes a warning system to warn the driver for collision avoidance.

Anti-lock Braking System - A federally mandated anti-skid braking device used on cars and trucks.

Automatic Traction Control - A function within a motor vehicle that can be switched on to help limit tire slip in acceleration on slippery surfaces by limiting engine torque and/or differential braking.

Body Builder CAN - CAN that handles communication between the *CMS* and body builder items such as body controller/PTO and starter battery *SoC*.

Cab CAN - A vehicle bus standard designed to allow microcontrollers and devices to communicate with each other within a vehicle without a host computer. This network is specific to the cab area.

Cab Electronic Control Unit - Cab control located inside the cab on vehicles with Namux 2 architecture and newer, from 2002 to present. It is replaced by the VECU controller that was phased in starting in 2018.

CECU VECU Multiplex - New vehicle multiplex architecture that uses both a *Cab Electronic Control Unit (CECU)* and a *VECU* to handle CAN communication.

Chassis Module Primary - Chassis Module with standard functionality such as exterior lighting and electric-over-air.

Chassis Module Secondary - Chassis Module with optional functionality like different temp sensors and body builder functionality.

Controller Area Network - A vehicle bus standard designed to allow microcontrollers and devices to communicate with each other within a vehicle without a host computer.

Cruise Control - A function within a motor vehicle that can be switched on to maintain a selected constant speed without the use of the accelerator.

DAVIE4 - A diagnostic tool used for programming and troubleshooting *ECU*s on the vehicle.

Diagnostic Trouble Code - These are standard and OEM specific codes that request vehicle data or identify vehicle problems. Typically used with service tools. Technically defined as OBD-II PIDS, or on-board diagnostics parameter IDs.

Diesel Exhaust Fluid - A solution containing urea that is injected in the SCR aftertreatment system.

Differential lock - A device that disables the differential of a motor vehicle in slippery conditions to improve grip.

Downhill Speed Control - System that allows the engine to provide braking when the vehicle speed exceeds pre-determined vehicle speeds when the vehicle is in Cruise Control mode.

Downhill Speed Limiter - System that allows the engine to provide braking when the vehicle speed exceeds pre-determined vehicle speeds when speed is being controlled through pedal input.

Driver Shift Aid - A software module used to communicate the need to execute an upshift event to a customer to improve engine fuel consumption. Also known as DRSA.

Dynamic Cruise Control - System that detects objects in front of the vehicle to adjust the vehicle's speed to accommodate slower moving objects.

Electronic Catalog - System dealers and service personnel use to look up the specific chassis components when a truck comes in for service.

Electronic Control Unit - A device responsible for overseeing, regulating, and altering the operation of the truck's electronic systems.

Electronic Service Analyst - A PC based diagnostic service tool that supports both Kenworth and Peterbilt multiplexed cab electronics. The ESA tool is used in PACCAR factories, at dealership and fleet locations.

Electric Over Air - A term meant to highlight the difference between air system architectures. One is a pure air system that changes states using air valves, while an EOA system uses electrical switches to actuate/control air solenoids.

Electric Over Hydraulic - EOA system that uses electrical switches to actuate/control hydraulic functions.

Engine Idle Shutdown Timer - A function that shuts down the engine after a customer-prescribed amount of time when no overrule conditions are present.

Engine Over-speed Air Shutdown - Provides emergency overspeed shutdown protection for diesel engines and are the most effective way of preventing a runaway situation.

Engine Speed Control - Module used to limit the vehicle's engine speed in cab station or remote station *PTO* mode.

Fast Idle Control - Engine function that controls the idle of the engine when a higher idle is required, such as instances where a Power Take Off is being used or when stationary idling needs more coolant flow.

Frame CAN - FD capable CAN.

G-CAN - Sub CAN off of ABS (Bendix only).

Gear Down Protection - Module that encourages the driver to shift into top gear when operating the vehicle at the target operating speed.

Hill Start Aid - Momentarily prevents vehicle from moving while on a steep grade when brake pedal is released.

HVAC - System to control the temperature of the air inside the cab and the sleeper.

J-CAN - CAN network that handles communications between the *CMP* and the *MSB*.

Legal Speed Limit - The maximum speed the vehicle can normally travel, before modifications from the Driver Reward system and similar functions.

Low Voltage Disconnect - An electronic system that will disconnect or turn off electrical systems when a preset voltage is reached on the batteries caused by too much electrical drain from appliances or heaters inside the sleeper.

Master Switch Module - A smart module that interfaces with all of the multiplexed switches on the dash.

Menu Control Switch - Dash mounted, depressible knob used to control the Driver Information Display, located at the top of the instrument cluster.

Multiplex Solenoid Bank - This is a device with a set of electric over air solenoid connecting electric switches to air operated devices. On occasion this will be shortened to Solenoid Bank. The term Multiplex is added to clarify that the device is multiplexed with the vehicle controller as opposed to a bank of solenoids that are individually wired to the switch.

Multiplexed - Method by which multiple analog or digital signals are combined into one signal over a shared medium.

On Board Diagnostics - The vehicle's self-diagnostic and reporting system.

Optional Chassis Module - See *Chassis Module Secondary* on page 235.

Original Equipment Manufacturer (OEM) - Refers to the company that originally manufactured the product. Often synonymous with the truck makers/truck divisions unless otherwise noted.

Outside Air Temperature - Refers to the ambient temperature outside of the vehicle.

PACCAR Engine Pro - Former North American software application used to make changes or adjust engine parameters. Replaced by *PVP*.

PACCAR Vehicle Pro - North American software application used to make changes or adjust engine parameters.

Power Take Off - A term for methods of taking power from an operating power source, such as a running engine, which can be used to provide power to attachments or separate machines.

Predictive Cruise Control - An optional cruise control function that increases or decreases vehicle speed based on geographical terrain.

Progressive Shift - Module typically used to encourage earlier shifts in lower gears to improve fuel economy.

PTO Mode Control - System that provides configurable interlocks to restrict *PTO* Mode (if required).

PTO Speed Control - System that provides engine speed controls when vehicle is in *PTO* mode.

Right Hand Stalk - Multiplexed Stalk mounted on the right side of the steering column, used to control the engine retarder and transmission gear selection on specific truck configurations.

Selective Catalytic Reduction - An aftertreatment technology that eliminates NOx by using DEF.

Smart Clutch - Horton fan clutch for optional variable speed fan functionality.

Soft Top Speed Limit - The maximum speed the vehicle can travel, after modifications from the Driver Reward system and similar functions.
Solenoid Bank #1 - A J1939 based solenoid bank for controlling electric-over-air functions.
Solenoid Bank #2 - A J1939 based solenoid bank for controlling electric-over-air functions.
Speed Control Management - System designed to help encourage fuel-efficient shifting habits by reducing engine acceleration or restricting vehicle speed at elevated engine speeds.
State of Charge - Measurement of the amount of charge in the vehicle's battery.
Steering Wheel Switches - Switch controls installed on the vehicle's Smartwheel.
System Address 33 - This is the internal identifier for the Body Builder Module on a truck with VECU architecture.
Transmission Control Module - *ECU* that controls the vehicle's transmission.
Telematics - Customer installed 3rd party systems for tracking/monitoring trucks in the field. Also typically called "Communications Units."
Torque Speed Control Message - A CAN message used to handle torque speed control requests.
Vehicle Acceleration Limiter - System designed to improve fuel economy by limiting the maximum vehicle acceleration.
Vehicle Electronic Control Unit - Control unit, computer, installed inside the cab and processes all input and output from the driver controls to the cab and chassis.
Vehicle Identification Number - Unique code, including a serial number, used to identify a vehicle.
VECU Multiplex - New vehicle multiplex architecture that uses a *VECU* to handle CAN communication.
Vehicle Speed Limiter - System designed to improve fuel economy by reducing the vehicle's maximum speed in pre-defined situations.

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