A PACCAR COMPANY

PG034-007

(05/ 19)

Programming Guide

Body Builder PTO Module

Version 1.0

Contents

Chapter 1 | INTRODUCTION

In this Chapter:

About this Programming Guide

This programming guide is designed to help dealers and technicians understand the programming options available for 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
Sel Code	Parameter's sel 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.

Chapter 2 | APPLIES TO

In this Chapter:

Build Information for Models with Body Builder PTO Modules

The *Body Builder Module (BBM)* architecture includes both a *Cab Electronic Control Unit (CECU)* and the new *BBM* to control various systems on the truck.

The *BBM* is available on MX-powered Peterbilts, Model Year 2019 and 2020 1.9m vehicles and 520 models. The *BBM* provides additional features to the vocational market for *PTO Mode Control (PMC)*, and *PTO Speed Control (PSC)*. These features include additional presets, enhanced interlock functionality, a customer interlock, and dual location support.

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)*
- *Electronic Service Analyst (ESA)*

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

Chapter 3 | SPECIAL TOOLS

In this Chapter:

Special Tools

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

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

DAVIE4 - *DAVIE4* is the diagnostic tool used for programming the *BBM* and the functions it controls. Connecting to the *BBM* with *DAVIE4* requires content version 19.13.x or higher and toolset version 6.2.8 or higher. Refer to ePortal for the latest release.

Chapter 4 | PACCAR VEHICLE PRO

In this Chapter:

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

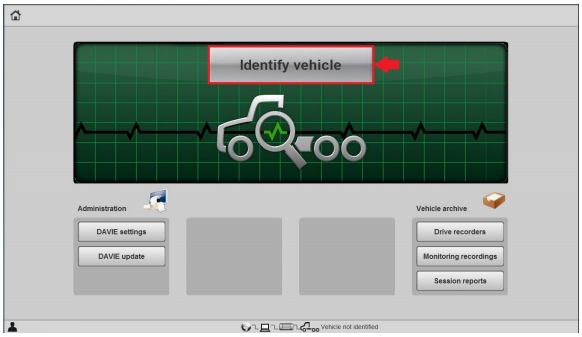
All parameter changes must be made using *PVP* before beginning this procedure.

NOTE

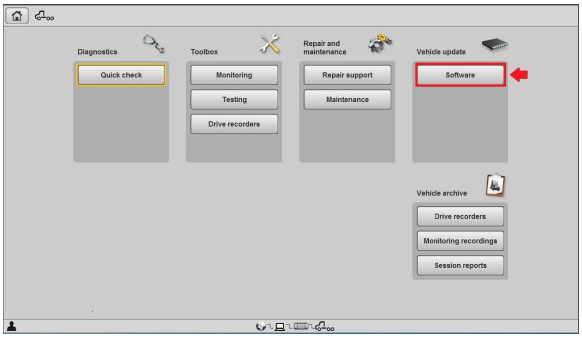
This procedure does not apply to programming new/blank modules.

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

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

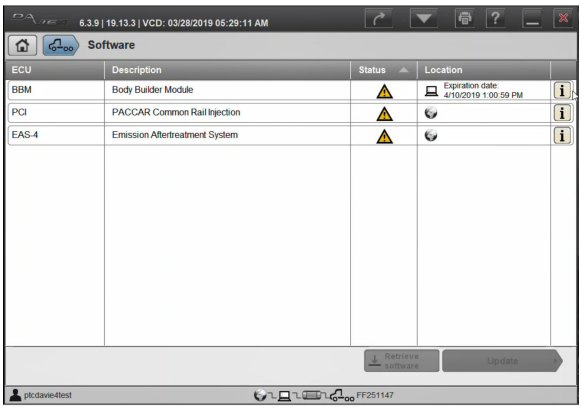


2. Click on **Software**.



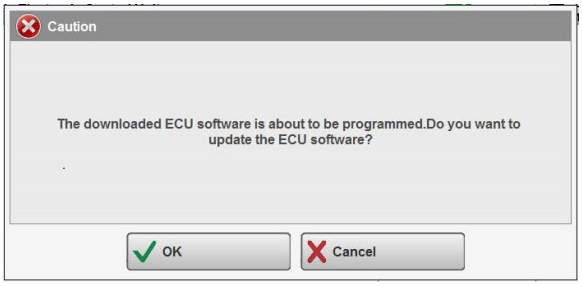
3. Select the module that needs to be programmed, and then click **Retrieve Software**.

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

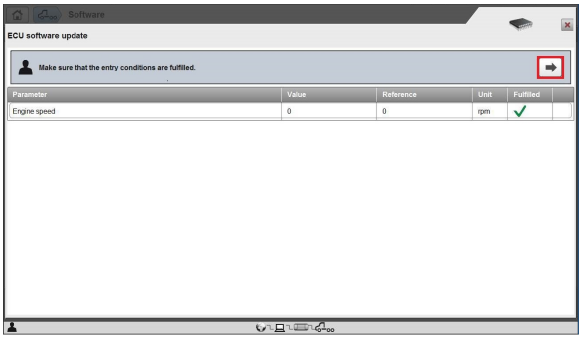


The new software downloads. If the download is successful, an expiration date displays in the **Location** column to the right of the **Status** column.

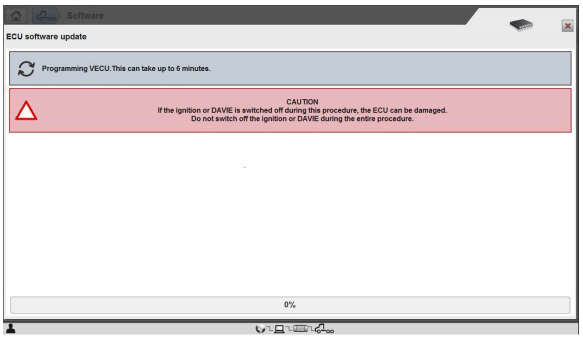
4. Select the module, and then click **Update**.
5. Confirm that you would like to proceed with programming.



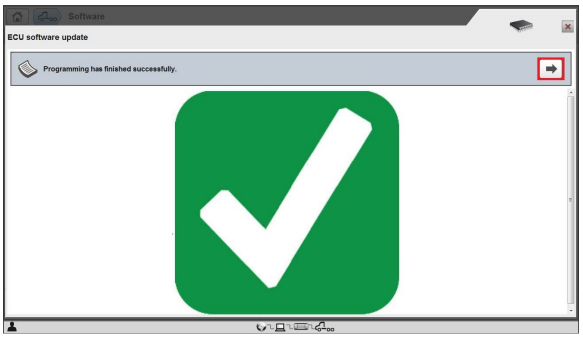
6. Verify that the conditions are fulfilled, and then click the arrow to proceed.



7. Follow the instructions on the screen.



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



Chapter 5 | POWER TAKE OFF (PTO)

In this Chapter:

What is Power Take Off (PTO) Mode?

Power Take Off (PTO) Mode is a PACCAR specific function to provide PACCAR MX speed controls to meet the needs of many different vehicle applications.

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.

PTO Mode consists of two systems, *PMC* and *PSC*.

What is PTO Mode Control (PMC)?

PMC is active when the feedback from the *PTO* device is received or the *PMC* switch is active. When engaged, *PMC* applies all *PTO* limits and safeties. At this stage only the cab and/or remote accelerator pedals are able to control the engine, if enabled.

There are two locations/stations: CAB and REMOTE, which have the following inputs available in each. When one station is active, inputs from the inactive station are ignored. Pin 3 on the *J197Q* on page 19 connector is used to change between stations.

CAB	REMOTE
Cab Accelerator	Cab Accelerator
Cab Set/Accel Switch	Remote Accelerator *
Cab Res/Decel Switch	Remote Set/Accel Switch *
Preset +/- Switch *	Remote Res/Decel Switch *
Custom Preset #1, #2, #3 Switches *	Preset +/- Switch *
	Custom Preset #1, #2, #3 Switches *
*denotes a customer installed switch	

What is PTO Speed Control (PSC)?

PSC, when active, provides *Engine Speed Control (ESC)* from the Cab switches, and body switch inputs. *PSC* requires *PMC* to be active, and therefore the limits defined in *PMC* are applied in *PSC*.

PSC will be Disabled when *PMC* is disabled or *PMC* is active and the cruise control ON/OFF switch or the Remote *PTO* ON/OFF switch is **OFF**, dependent on which station is active.

PSC will be Enabled when *PMC* is active and the cruise control ON/OFF switch or the Remote *PTO* ON/OFF switch is **ON**, dependent on which station is active.

PSC will be Active when *PMC* is active and the cruise control ON/OFF switch or the Remote *PTO* ON/OFF switch is **ON**, dependent on which station is active, and a speed command from the switches is received which activates *PSC*. These switches can include the dash switches, or body input switches.

If an interlock becomes Active, while *PSC* is Active, *PSC* will become Enabled, and the engine speed will return to the minimum speed configured for the active location. Remote throttle will be ignored during active interlock, and the cab throttle can be optionally configured to be ignored.

Engine Idle Shutdown Timer (EIST) may also be disabled in *PTO* Mode to allow for extended operations with the engine at idle, please refer to the MX programming guide for *EIST* settings. 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 include:

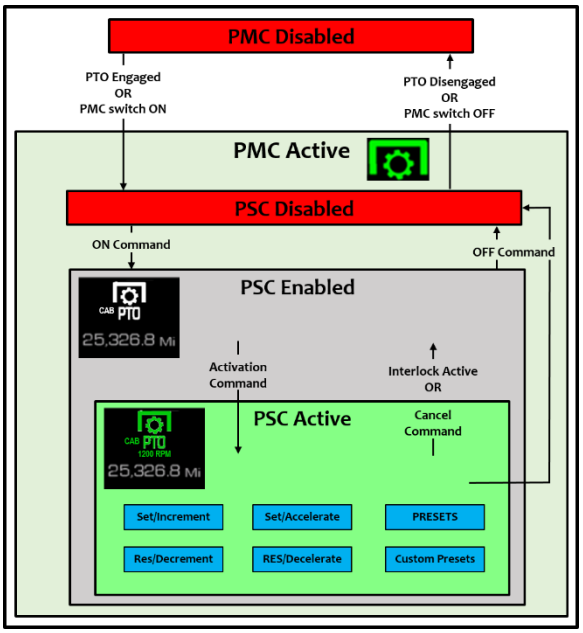
- Engine Speed
- Engine Speed Ramp-Up/Ramp-Down Rates
- Engine Torque Output
- Vehicle Speed
- Engine Idle Time
- Safety Interlocks

The *PTO* Mode programming features and capabilities are described below.

- *PTO Controls* on page 18 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 21 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 30
   - *PTO: Cab Station Presets* on page 31
   - *PTO: Cab Station Limits* on page 26
   - *PTO: Cab Station Engine Speed Control Interlocks* on page 28
   - *PTO: Cab Station Custom Presets* on page 33
2. Remote Station - These parameters are for controls that are external to the cab.
   - *PTO: Remote Station Limits* on page 36
   - *PTO: Remote Station Engine Speed Control Interlocks* on page 38
   - *PTO: Remote Station Engine Speed Control Options* on page 40
   - *PTO: Remote Station Presets* on page 41
   - *PTO: Remote Station Custom Presets* on page 43
3. Cab and/or Remote Station - These parameters change the behavior of both CAB and REMOTE stations.
   - *PTO: Cab And/Or Remote Station: Engine Speed Control Interlocks* on page 45
4. Advanced Parameters
   - *PTO: Advanced Settings* on page 46

Figure 1: PMC and PSC flow chart



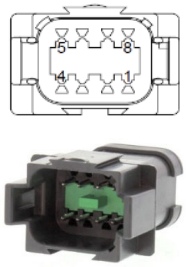
Additional transmission configuration may be necessary depending on the equipped transmission and/or transfer case. PACCAR recommends consulting the transmission manufacturer for information related to specific wiring harnesses and transmission programming requirements for proper *PTO* functionality.

PTO Controls

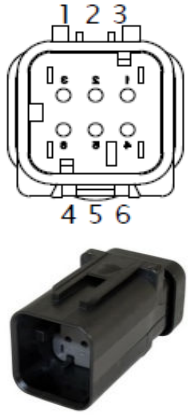
Default OE Installed PTO Controls

The *BBM* comes pre-programmed with both CAB and Remote stations enabled, and requires feedback from the *PTO* on *J195A* on page 19 Pin 2 or a customer installed switch on *J197Q* on page 19 Pin 2 to activate PMC. *J197Q* on page 19 Pin 3 is used to switch between the two locations, open circuit will enable CAB and therefore CAB is the default, while grounding the pin will enable Remote. Only the CAB dash switches ON/OFF and SET/RES are factory installed. The *PMC* switch, *PMC* Location switch, Preset switches, and remote station controls are left for the customer to install and customize to their needs.

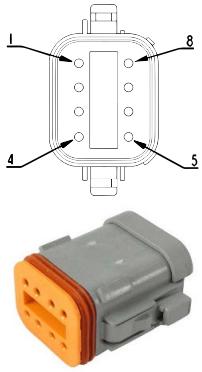
J197Q

J197Q Connector Pin-Out	Pin	Description	Activation	
	1	Engine Ground	—	WHT1513-10, 0.8
	2	PMC Switch	GND	GRA3511-7, 0.8
	3	PMC Location Switch	Open = CAB , GND = Remote	GRA3991-1, 0.8
	4	CAB Preset Increment SW.	GND	GRA3986-1, 0.8
	5	CAB Preset Decrement SW.	GND	GRA3987-1, 0.8
	6	CAB PTO Preset SW. #1	GND	GRA3988-1, 0.8
	7	CAB PTO Preset SW. #2	GND	GRA3989-1, 0.8
	8	CAB PTO Preset SW. #3	GND	GRA3990-1, 0.8

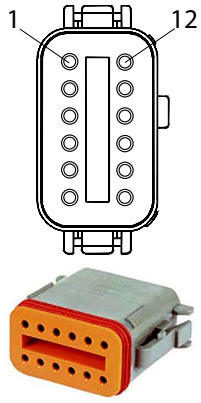
J195A

J195A Connector Pin-Out	Pin	Description	Activation	
	1	Body Ignition Power (+12v)	—	ORN1229-6, 1.0
	2	PTO #1 Engaged Signal	GND	GRA3511-5, 0.8
	3	Engine Ground	—	WHT1513-5, 0.8
	4	Pump Mode / Rear Axle De-Clutch	GND	GRA3511-6, 0.8
	5	PMC Active Lamp	+12v output when Active	GRA4356-3, 0.8
	6	Interlock Active	+12v output when Active	GRA4355-2, 0.8

P197N

P197N Connector Pin-Out	Pin	Description	Activation	
	1	Body Ignition Power (+12v)	—	ORN1229-5, 1.0
	2	Customer Interlock SW.	GND	GRA3518-1, 0.8
	3	Remote PTO Preset SW. #3	+12v	GRA3983-1, 0.8
	4	Remote PTO Preset SW. #2	+12v	GRA3982-2, 0.8
	5	Remote PTO Preset SW. #1	+12v	GRA3981-1, 0.8
	6	Remote PTO Preset (+)	+12v	GRA3984-2, 08
	7	Remote PTO Preset (-)	+12v	GRA3985-1, 0.8
	8	Engine Ground	—	WHT1513-6, 0.8

P197C

P197C Connector Pin-Out	Pin	Description	Activation	
	1	Remote RES/DECEL SW.	+12v	GRA3163-1, 0.8
	2	Remote SET/ACCEL SW.	+12v	GRA3162-1, 0.8
	3	Remote Throttle Return	—	GRN3144-1, 0.8
	4	Remote Throttle Signal	Variable Voltage (*Figure 2: Remote Throttle signal conversion* on page 21)	BLU3144-1, 0.8
	5	PTO #1 Engaged Signal	GND	GRA3511-2, 0.8
	6	Remote PTO ON/OFF	+12v	GRA3992-1, 0.8
	7	Body Ignition Power (10A)	—	ORN1229-3, 1.0
	8	Engine Ground	—	WHT1513-4, 1.0
	9	—	—	
	10	Remote Throttle Supply (+5V)	—	VIO3144-7, 0.8
	11	Engine Power MX	—	ORN1229-11, 1.0
	12	—	—	

PMC Remote Station Accelerator

Remote Station Accelerator is a customer installed device which sends a variable voltage for speed requests. The Remote Station Accelerator will provide continuously variable *ESC* when Remote *PTO* Mode is Active. The Remote Station accelerator pedal will be ignored when an interlock is active or when Cab *PTO* Mode is Active. Before the Remote Station Accelerator can be utilized the signal must be returned to between 0.3v and 0.75v or “0%”. This is a safety requirement to ensure there are no sudden jumps when entering Remote *PTO* Mode or once interlocks are cleared.

Figure 2: Remote Throttle signal conversion

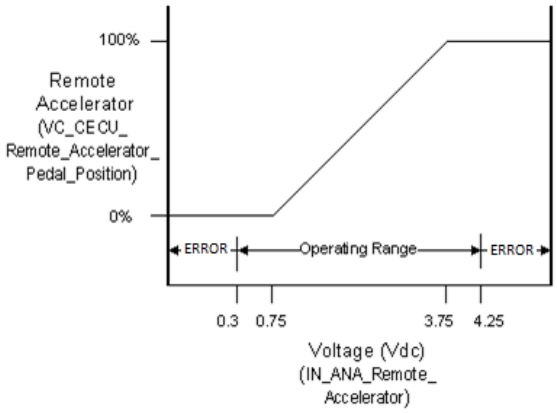


Table 2: Remote Throttle Conversion Table

Input Voltage (Vdc)	Remote Throttle Position (%)
< 0.30 V	ERROR
0.30 V <= Input < 0.75 V	0 %
0.75 V <= Input < 3.75 V	Remote Throttle (%)= (Analog_Input– 0.75 V)/30
3.75 V <= Input <= 4.25 V	100%
> 4.25 V	ERROR

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
- Vehicle Speed Sensor
- Engine Speed Sensor

PTO: PTO Mode Control Configurations

PTO Governor Responsiveness (AJ01065)

This setting adjusts how aggressively the engine will respond to speed changes while in *PTO* mode. A more aggressive setting will have reduced stability at low engine loads. Lower values are less aggressive.

Table 3: PTO Governor Responsiveness (AJ01065)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01065	1	1	8	FACTOR

Cab Accelerator Pedal Type in PTO Mode (AJ01025)

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

Cab Accelerator Active in Cab Station PMC (AJ01026) on page 22 must be enabled for this setting to be changed.

The possible values for this setting are:

0 - Torque Pedal
1 - Speed Pedal

NOTE

A torque pedal is the typical automotive-style pedal that is used in cars and trucks for normal driving.

Table 4: Cab Accelerator Pedal Type in PTO Mode (AJ01025)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01025	0	0	1	FLAG

Cab Accelerator Active in Cab Station PMC (AJ01026)

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 (AJ01025)* on page 22.

Table 5: Cab Accelerator Active in Cab Station PMC (AJ01026)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01026	YES	NO	YES	FLAG

Cab Accelerator Active in Remote Station PMC (AJ01054)

This setting enables using the accelerator pedal while the vehicle is in remote *PTO* Mode.

Table 6: Cab Accelerator Active in Remote Station PMC (AJ01054)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01054	NO	NO	YES	DISCRETE

Remote Pedal Active in Remote Station PMC (AJ01055)

This setting is used to enable remote pedal inputs during *PTO* mode. This option must be enabled to allow pedal input from remote locations.

Table 7: Remote Pedal Active in Remote Station PMC (AJ01055)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01055	Enabled	Disabled	Enabled	DISCRETE

Preset Increment/Decrement Switch Type (AJ01024)

This setting controls the type of presets available while in CAB and while in Remote *PTO* mode.

In Toggle (6 Presets) Mode, pressing the "+" key repeatedly will cause the engine speed to jump to Preset 1, then Preset 2, Preset 3, etc. Pressing "-" repeatedly, will cause the engine to jump downward through the Presets until Preset 1 is reached. In Toggle Mode, while controlling engine speed with the accelerator pedal, there is also the ability to "capture" the next-highest or next-lowest engine speed preset using the +/- switches

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:

- CAB Station Presets
  - *Preset 1 (AJ01012)* on page 31
  - *Preset 2 (AJ01013)* on page 32
  - *Preset 3 (AJ01014)* on page 32
  - *Preset 4 (AJ01015)* on page 32
  - *Preset 5 (AJ01016)* on page 33
  - *Preset 6 (AJ01017)* on page 33
- REMOTE Station Presets
  - *Preset 1 (AJ01042)* on page 41
  - *Preset 2 (AJ01043)* on page 41
  - *Preset 3 (AJ01044)* on page 42
  - *Preset 4 (AJ01045)* on page 42
  - *Preset 5 (AJ01046)* on page 42
  - *Preset 6 (AJ01047)* on page 43

If using option 2, the presets are adjusted using:

- CAB Station Presets
  - *Preset 1 (AJ01012)* on page 31

- *Preset 2 (AJ01013)* on page 32
- REMOTE Station Presets
  - *Preset 1 (AJ01042)* on page 41
  - *Preset 2 (AJ01043)* on page 41

Table 8: Preset Increment/Decrement Switch Type (AJ01024)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01024	2	0	2	DISCRETE

PTO: PTO Mode Control Configurations

PTO Governor Responsiveness (AJ01065)

This setting adjusts how aggressively the engine will respond to speed changes while in *PTO* mode. A more aggressive setting will have reduced stability at low engine loads. Lower values are less aggressive.

Table 9: PTO Governor Responsiveness (AJ01065)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01065	1	1	8	FACTOR

Cab Accelerator Pedal Type in PTO Mode (AJ01025)

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

Cab Accelerator Active in Cab Station PMC (AJ01026) on page 22 must be enabled for this setting to be changed.

The possible values for this setting are:

0 - Torque Pedal
1 - Speed Pedal

NOTE

A torque pedal is the typical automotive-style pedal that is used in cars and trucks for normal driving.

Table 10: Cab Accelerator Pedal Type in PTO Mode (AJ01025)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01025	0	0	1	FLAG

Cab Accelerator Active in Cab Station PMC (AJ01026)

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 (AJ01025)* on page 22.

Table 11: Cab Accelerator Active in Cab Station PMC (AJ01026)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01026	YES	NO	YES	FLAG

Cab Accelerator Active in Remote Station PMC (AJ01054)

This setting enables using the accelerator pedal while the vehicle is in remote *PTO* Mode.

Table 12: Cab Accelerator Active in Remote Station PMC (AJ01054)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01054	NO	NO	YES	DISCRETE

Remote Pedal Active in Remote Station PMC (AJ01055)

This setting is used to enable remote pedal inputs during *PTO* mode. This option must be enabled to allow pedal input from remote locations.

Table 13: Remote Pedal Active in Remote Station PMC (AJ01055)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01055	Enabled	Disabled	Enabled	DISCRETE

Preset Increment/Decrement Switch Type (AJ01024)

This setting controls the type of presets available while in CAB and while in Remote *PTO* mode.

In Toggle (6 Presets) Mode, pressing the "+" key repeatedly will cause the engine speed to jump to Preset 1, then Preset 2, Preset 3, etc. Pressing "-" repeatedly, will cause the engine to jump downward through the Presets until Preset 1 is reached. In Toggle Mode, while controlling engine speed with the accelerator pedal, there is also the ability to "capture" the next-highest or next-lowest engine speed preset using the +/- switches

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:

- CAB Station Presets
  - *Preset 1 (AJ01012)* on page 31
  - *Preset 2 (AJ01013)* on page 32
  - *Preset 3 (AJ01014)* on page 32
  - *Preset 4 (AJ01015)* on page 32
  - *Preset 5 (AJ01016)* on page 33
  - *Preset 6 (AJ01017)* on page 33
- REMOTE Station Presets
  - *Preset 1 (AJ01042)* on page 41
  - *Preset 2 (AJ01043)* on page 41
  - *Preset 3 (AJ01044)* on page 42
  - *Preset 4 (AJ01045)* on page 42
  - *Preset 5 (AJ01046)* on page 42
  - *Preset 6 (AJ01047)* on page 43

If using option 2, the presets are adjusted using:

- CAB Station Presets
  - *Preset 1 (AJ01012)* on page 31
  - *Preset 2 (AJ01013)* on page 32
- REMOTE Station Presets
  - *Preset 1 (AJ01042)* on page 41
  - *Preset 2 (AJ01043)* on page 41

Table 14: Preset Increment/Decrement Switch Type (AJ01024)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01024	2	0	2	DISCRETE

PTO: Cab Station Limits

Maximum Engine Speed - Accelerator Controlled (AJ01002)

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 (AJ01003)* on page 26.

Table 15: Maximum Engine Speed - Accelerator Controlled (AJ01002)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01002	2000	650	2200	RPM

Maximum Engine Speed - Switch Controlled (AJ01003)

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 dash switches, and customer installed preset switches.

Table 16: Maximum Engine Speed - Switch Controlled (AJ01003)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01003	2000	650	2200	RPM

Maximum Vehicle Speed (AJ01006)

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.

Table 17: Maximum Vehicle Speed (AJ01006)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01006	6	6	158.45	MPH

Maximum Rate of Engine Speed INCREASE (AJ01007)

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.

Table 18: Maximum Rate of Engine Speed INCREASE (AJ01007)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01007	1000	10	2000	RPM/S

Maximum Rate of Engine Speed DECREASE (AJ01008)

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

Table 19: Maximum Rate of Engine Speed DECREASE (AJ01008)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01008	1000	10	2000	RPM/S

Maximum Engine Torque Output (AJ01011)

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.

Table 20: Maximum Engine Torque Output (AJ01011)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01011	1903	148	1903	LB-FT

Minimum Engine Speed (AJ01062)

This setting controls the minimum speed the engine will operate at while in remote *PTO* mode. The engine will retain this minimum speed if no other commands occur to increase the engine speed.

Table 21: Minimum Engine Speed (AJ01062)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01062	650	650	2200	RPM

NOTE

If *Maximum Vehicle Speed (AJ01006)* on page 27 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 (AJ01027)

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.

Table 22: Clutch Interlock (AJ01027)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01027	1	0	2	DISCRETE

Custom Interlock (AJ01028)

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.

Table 23: Custom Interlock (AJ01028)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01028	0	0	2	DISCRETE

Neutral Interlock (AJ01029)

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

Table 24: Neutral Interlock (AJ01029)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01029	1	0	2	DISCRETE

Park Brake Interlock (AJ01030)

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 park brake is disengaged.
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.

Table 25: Park Brake Interlock (AJ01030)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01030	1	0	2	DISCRETE

Service Brake Interlock (AJ01031)

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 cancels *PSC*.
2 - Service Brake Interlock enabled, brake pedal cancels *PSC* and disables accelerator pedal.

Table 26: Service Brake Interlock (AJ01031)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01031	1	0	2	DISCRETE

NOTE

The setting in *Service Brake Interlock State (AJ01068)* on page 30 determines whether the interlock will be active with brake application, or active without brake application. If the entry in *Maximum Vehicle Speed (AJ01006)* on page 27 is greater than 30 MPH, and the entries in both *Neutral Interlock (AJ01029)* on page 29 and *Park Brake Interlock (AJ01030)* on page 29 are 0, then this setting must be enabled.

Service Brake Interlock State (AJ01068)

This setting controls how the *Service Brake Interlock (AJ01031)* on page 29 behaves.

The possible values for this setting are:

0 - Service Brake Interlock active with brake pedal released.
1 - Service Brake Interlock active with brake pedal active.

Table 27: Service Brake Interlock State (AJ01068)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01068	0	0	1	FLAG

NOTE

The setting in *Service Brake Interlock (AJ01031)* on page 29 must be greater than zero for this parameter to change the Service Brake Interlock behavior. If the entry in *Maximum Vehicle Speed (AJ01006)* on page 27 is greater than 30 MPH, and the entries in both *Neutral Interlock (AJ01029)* on page 29 and *Park Brake Interlock (AJ01030)* on page 29 are 0, then this setting will be set to 0; Interlock active with brake application.

PTO: Cab Station Engine Speed Control Options

Accelerate Ramp Rate (AJ01004)

This setting controls the engine acceleration rate from in-cab controls during cab station *PTO* mode. This setting affects the acceleration rate for long presses of the CAB SET/ACCEL switch.

Table 28: Accelerate Ramp Rate (AJ01004)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01004	250	10	1000	RPM/S

Decelerate Ramp Rate (AJ01005)

This setting controls the engine deceleration rate from in-cab controls during cab station *PTO* mode. This setting affects the deceleration rate for long presses of the CAB RES/DECEL switch.

Table 29: Decelerate Ramp Rate (AJ01005)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01005	250	10	1000	RPM/S

Increment Amount (AJ01009)

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 (AJ01007)* on page 27.

Table 30: Increment Amount (AJ01009)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01009	50	10	1000	RPM

Decrement Amount (AJ01010)

This setting controls the amount the engine speed decreases when the operator short presses the RES/DECEL switch. This setting is closely connected with *Maximum Rate of Engine Speed DECREASE (AJ01008)* on page 27.

Table 31: Decrement Amount (AJ01010)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01010	50	10	1000	RPM

PTO: Cab Station Presets

Preset 1 (AJ01012)

This setting controls the cab pre-programmed speed 1 variable. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1", the preset is reached by pressing the increment/decrement (+/-) switch. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "2", the preset is reached by pressing the decrement (-) switch.

Table 32: Preset 1 (AJ01012)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01012	800	1	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Minimum Engine Speed (AJ01062)* on page 28 and less than the *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Preset 2 (AJ01013)* on page 32, then this entry must be less than that value.

Preset 2 (AJ01013)

This setting controls the cab pre-programmed speed 2 variable. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 1 (AJ01012)* on page 31, then the preset is reached by pressing the increment/decrement (+/-) switch. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "2", the preset is reached by pressing the increment (+) switch.

Table 33: Preset 2 (AJ01013)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01013	900	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 1 (AJ01012)* on page 31 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Preset 3 (AJ01014)* on page 32, then this entry must be less than this value.

Preset 3 (AJ01014)

This setting controls the cab pre-programmed speed 3 variable. This option is only available if *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 2 (AJ01013)* on page 32. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 34: Preset 3 (AJ01014)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01014	1000	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 2 (AJ01013)* on page 32 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Preset 4 (AJ01015)* on page 32, then this entry must be less than this value.

Preset 4 (AJ01015)

This setting controls the cab pre-programmed speed 4 variable. This option is only available if *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 3 (AJ01014)* on page 32. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 35: Preset 4 (AJ01015)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01015	1100	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 3 (AJ01014)* on page 32 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Preset 5 (AJ01016)* on page 33, then this entry must be less than that value.

Preset 5 (AJ01016)

This setting controls the cab pre-programmed speed 5 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 4 (AJ01015)* on page 32. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 36: Preset 5 (AJ01016)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01016	1200	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 4 (AJ01015)* on page 32 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Preset 6 (AJ01017)* on page 33 then this entry must be less than that value.

Preset 6 (AJ01017)

This setting controls the cab pre-programmed speed 6 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 5 (AJ01016)* on page 33. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 37: Preset 6 (AJ01017)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01017	1300	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 5 (AJ01016)* on page 33 and less than the entry for *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26.

PTO: Cab Station Custom Presets

There are up to three custom preset switches available for CAB. The switches can control engine speed during CAB station. The switches can be configured to “Latch” engine speed once the input is removed, or “Momentary” where the

preset speed is canceled and engine speed returns to minimum speed when the switch input is removed. When a Custom Preset switch is active, the engine speed will set to the configured value; no other switches can modify the engine speed. If multiple Custom Preset switches are active, Switch 1 takes priority over Switch 2, and Switch 3 takes priority over Switch 3.

Custom Preset 1 Functionality (AJ01018)

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

Using custom preset switch 1 sets the engine speed to the value defined in *Custom Preset 1 (AJ01019)* on page 34.

Table 38: Custom Preset 1 Functionality (AJ01018)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01018	Momentary	Momentary	Latch	FLAG

Custom Preset 1 (AJ01019)

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 (AJ01018)* on page 34 for information on the available settings to use custom preset switch 1.

Table 39: Custom Preset 1 (AJ01019)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01019	750	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Minimum Engine Speed (AJ01062)* on page 28 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Custom Preset 2 (AJ01021)* on page 35, then this entry must be less than that value.

Custom Preset 2 Functionality (AJ01020)

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

Using custom preset switch 2 sets the engine speed to the value defined in *Custom Preset 2 (AJ01021)* on page 35.

Table 40: Custom Preset 2 Functionality (AJ01020)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01020	Momentary	Momentary	Latch	FLAG

Custom Preset 2 (AJ01021)

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 (AJ01020)* on page 34 for information on the available settings to use custom preset switch 2.

Table 41: Custom Preset 2 (AJ01021)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01021	850	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Custom Preset 1 (AJ01019)* on page 34 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26. If there is an entry in *Custom Preset 3 (AJ01023)* on page 35 , then this entry must be less than this value.

Custom Preset 3 Functionality (AJ01022)

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

Using custom preset switch 3 sets the engine speed to the value defined in *Custom Preset 3 (AJ01023)* on page 35.

Table 42: Custom Preset 3 Functionality (AJ01022)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01022	Momentary	Momentary	Latch	FLAG

Custom Preset 3 (AJ01023)

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 (AJ01022)* on page 35 for information on the available settings to use custom preset switch 3.

Table 43: Custom Preset 3 (AJ01023)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01023	950	0	2200	RPM

NOTE

The value entered for this variable must be greater than the entry in *Custom Preset 2 (AJ01021)* on page 35 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01003)* on page 26.

PTO: Remote Station Limits

Maximum Engine Speed - Cab and Remote Accelerator Controlled (AJ01032)

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.

Table 44: Maximum Engine Speed - Cab and Remote Accelerator Controlled (AJ01032)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01032	2000	650	2200	RPM

Maximum Engine Speed - Switch Controlled (AJ01033)

This setting controls the maximum speed the engine can achieve when in remote *PTO* Mode using the switches. The engine will not go faster than the maximum speed entered no matter how much the switch is depressed.

Table 45: Maximum Engine Speed - Switch Controlled (AJ01033)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01033	2000	650	2200	RPM

Maximum Vehicle Speed (AJ01036)

This setting controls the vehicle speed limit while in remote *PTO* mode. This setting affects all input methods of increasing vehicle speed.

Table 46: Maximum Vehicle Speed (AJ01036)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01036	0	0	158.45	MPH

Maximum Rate of Engine Speed INCREASE (AJ01038)

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 *Increment Amount (AJ01040)* on page 40 .

Table 47: Maximum Rate of Engine Speed INCREASE (AJ01038)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01038	1000	10	2000	RPM/S

Maximum Rate of Engine Speed DECREASE (AJ01039)

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 *Decrement Amount (AJ01037)* on page 40 .

NOTE

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

Table 48: Maximum Rate of Engine Speed DECREASE (AJ01039)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01039	1000	10	2000	RPM/S

Maximum Engine Torque Output (AJ01041)

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.

Table 49: Maximum Engine Torque Output (AJ01041)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01041	1903	148	1903	LB-FT

Remote: Minimum Engine Speed (AJ01061)

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.

Table 50: Remote: Minimum Engine Speed (AJ01061)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01061	650	650	2200	RPM

NOTE

If *Maximum Vehicle Speed (AJ01036)* on page 36 is greater than 6.2 MPH, then the value entered in this setting cannot be greater than 800 RPM.

PTO: Remote Station Engine Speed Control Interlocks

Clutch Interlock (AJ01056)

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 - Clutch Interlock is disabled, *PSC* may remain active.
2 - Clutch Interlock Enabled, clutch pedal cancels *PSC* and disables accelerator pedal.

Table 51: Clutch Interlock (AJ01056)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01056	2	0	2	DISCRETE

Custom Interlock (AJ01057)

This setting controls how *PSC* operates when the custom interlock input is active.

The possible values for this setting are:

0 - Custom Interlock is disabled *PSC* may remain active.
2 - Custom Interlock Enabled, cancels *PSC* and disables accelerator pedal.

Table 52: Custom Interlock (AJ01057)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01057	0	0	2	DISCRETE

Neutral Interlock (AJ01058)

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.
2 - Neutral Interlock Enabled, cancels *PSC* and disables accelerator pedal.

Table 53: Neutral Interlock (AJ01058)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01058	2	0	2	DISCRETE

Park Brake Interlock (AJ01059)

This setting controls how *PSC* operates when the parking brake is set or not.

The possible values for this setting are:

0 - Park Brake Interlock is Disabled, *PSC* may remain active.
2 - Park Brake Interlock Enabled, disengaging park brake cancels *PSC* and disables accelerator pedal.

Table 54: Park Brake Interlock (AJ01059)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01059	2	0	2	DISCRETE

Service Brake Interlock (AJ01060)

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.
2 - Service Brake Interlock Enabled, brake pedal cancels *PSC* and disables accelerator pedal.

Table 55: Service Brake Interlock (AJ01060)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01060	2	0	2	DISCRETE

NOTE

The setting in *Service Brake Interlock State (AJ01069)* on page 39 determines whether the interlock will be active with brake application, or active without brake application. If the entry in *Maximum Vehicle Speed (AJ01036)* on page 36 is greater than 30 MPH, and the entries in both *Neutral Interlock (AJ01058)* on page 38 and *Park Brake Interlock (AJ01059)* on page 39 are 0, then this setting must be enabled.

Service Brake Interlock State (AJ01069)

This setting controls how the *Service Brake Interlock (AJ01060)* on page 39 behaves.

The possible values for this setting are:

0 - Service Brake Interlock active with brake pedal pressed.
1 - Service Brake Interlock active with brake pedal released.

Table 56: Service Brake Interlock State (AJ01069)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01069	0	0	1	DISCRETE

> **NOTE**
>
> The setting in *Service Brake Interlock (AJ01060)* on page 39 must be greater than zero for this parameter to change the Service Brake Interlock behavior. If the entry in *Maximum Vehicle Speed (AJ01036)* on page 36 is greater than 30 MPH, and the entries in both *Neutral Interlock (AJ01058)* on page 38 and *Park Brake Interlock (AJ01059)* on page 39 are 0, then this setting must be enabled.

PTO: Remote Station Engine Speed Control Options

Accelerate Ramp Rate (AJ01034)

This setting controls the engine acceleration rate during remote *PTO* mode. This setting affects the acceleration rate for long presses of the Remote SET/ACCEL switch.

Table 57: Accelerate Ramp Rate (AJ01034)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01034	250	10	1000	RPM/S

Decelerate Ramp Rate (AJ01035)

This setting controls the engine deceleration rate during remote *PTO* mode. This setting affects the deceleration rate for long presses of the Remote RES/DECEL switch.

Table 58: Decelerate Ramp Rate (AJ01035)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01035	250	10	1000	RPM/S

Increment Amount (AJ01040)

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 (AJ01038)* on page 37 .

Table 59: Increment Amount (AJ01040)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01040	50	10	1000	RPM

Decrement Amount (AJ01037)

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 (AJ01039)* on page 37.

Table 60: Decrement Amount (AJ01037)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01037	50	10	1000	RPM

PTO: Remote Station Presets

Preset 1 (AJ01042)

This setting controls the remote pre-programmed speed 1 variable. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1", the preset is reached by pressing the increment/decrement (+/-) switch. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "2", the preset is reached by pressing the decrement (-) switch.

Table 61: Preset 1 (AJ01042)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01042	800	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Remote: Minimum Engine Speed (AJ01061)* on page 37 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36. If there is an entry in *Preset 2 (AJ01013)* on page 32, then this entry must be less than this value.

Preset 2 (AJ01043)

This setting controls the remote pre-programmed speed 2 variable. *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1", the preset is reached by pressing the increment/decrement (+/-) switch. If *Preset Increment/Decrement Switch Type (AJ01024)* on page 23 is set to a value of “2”, the preset is reached by pressing the increment (+) switch.

Table 62: Preset 2 (AJ01043)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01043	900	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 1 (AJ01042)* on page 41 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36. If there is an entry in *Preset 3 (AJ01044)* on page 42, then this entry must be less than this value.

Preset 3 (AJ01044)

This setting controls the cab pre-programmed speed 3 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 2 (AJ01043)* on page 41. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 63: Preset 3 (AJ01044)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01044	1000	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 2 (AJ01043)* on page 41 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36. If there is an entry in *Preset 4 (AJ01045)* on page 42, then this entry must be less than this value.

Preset 4 (AJ01045)

This setting controls the cab pre-programmed speed 4 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 3 (AJ01044)* on page 42. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 64: Preset 4 (AJ01045)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01045	1100	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 3 (AJ01044)* on page 42 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36. If there is an entry in *Preset 5 (AJ01046)* on page 42, then this entry must be less than this value.

Preset 5 (AJ01046)

This setting controls the cab pre-programmed speed 5 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 4 (AJ01045)* on page 42. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 65: Preset 5 (AJ01046)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01046	1200	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 4 (AJ01045)* on page 42 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36. If there is an entry in *Preset 6 (AJ01047)* on page 43, then this entry must be less than this value.

Preset 6 (AJ01047)

This setting controls the cab pre-programmed speed 6 variable. This option is only available if *Preset Increment/ Decrement Switch Type (AJ01024)* on page 23 is set to a value of "1" and there is a value entered in *Preset 5 (AJ01046)* on page 42. The preset is reached by pressing the increment/decrement (+/-) switch.

Table 66: Preset 6 (AJ01047)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01047	1300	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Preset 5 (AJ01046)* on page 42 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36.

PTO: Remote Station Custom Presets

There are up to three custom preset switches available for REMOTE. The switches can control engine speed during REMOTE station. The switches can be configured to “Latch” engine speed once the input is removed, or “Momentary” where the preset speed is canceled and engine speed returns to minimum speed when the switch input is removed. When a Custom Preset is active, the engine speed will set to the configured value; no other switches can modify the engine speed. If multiple Custom Preset switches are active, Switch 1 takes priority over Switch 2, and Switch 2 takes priority over Switch 3.

Custom Preset 1 Functionality (AJ01048)

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

Using custom preset switch 1 sets the engine speed to the value defined in *Custom Preset 1 (AJ01049)* on page 43.

Table 67: Custom Preset 1 Functionality (AJ01048)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01048	Momentary	Momentary	Latch	FLAG

Custom Preset 1 (AJ01049)

This setting controls the engine's speed when custom preset switch 1 is used for vehicles with remote station *PTO*.

NOTE

Refer to *Custom Preset 1 Functionality (AJ01048)* on page 43 for information on the available settings to use custom preset switch 1.

Table 68: Custom Preset 1 (AJ01049)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01049	750	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Remote: Minimum Engine Speed (AJ01061)* on page 37 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36.

Custom Preset 2 Functionality (AJ01050)

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

Using custom preset switch 2 sets the engine speed to the value defined in *Custom Preset 2 (AJ01051)* on page 44.

Table 69: Custom Preset 2 Functionality (AJ01050)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01050	Momentary	Momentary	Latch	FLAG

Custom Preset 2 (AJ01051)

This setting controls the engine's speed when custom preset switch 2 is used for vehicles with remote station *PTO*.

NOTE

Refer to *Custom Preset 2 Functionality (AJ01050)* on page 44 for information on the available settings to use custom preset switch 2.

Table 70: Custom Preset 2 (AJ01051)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01051	850	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Remote: Minimum Engine Speed (AJ01061)* on page 37 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36.

Custom Preset 3 Functionality (AJ01052)

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

Using custom preset switch 3 sets the engine speed to the value defined in *Custom Preset 3 (AJ01053)* on page 45.

Table 71: Custom Preset 3 Functionality (AJ01052)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01052	Momentary	Momentary	Latch	FLAG

Custom Preset 3 (AJ01053)

This setting controls the engine's speed when custom preset switch 3 is used for vehicles with remote station *PTO*.

NOTE

Refer to *Custom Preset 3 Functionality (AJ01052)* on page 45 for information on the available settings to use custom preset switch 3.

Table 72: Custom Preset 3 (AJ01053)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01053	950	0	2000	RPM

NOTE

The value entered for this variable must be greater than the entry in *Remote: Minimum Engine Speed (AJ01061)* on page 37 and less than the entry in *Maximum Engine Speed - Switch Controlled (AJ01033)* on page 36.

PTO: Cab And/Or Remote Station: Engine Speed Control Interlocks

Custom Interlock Switch Behavior (AJ01063)

This setting determines if an open circuit or a ground circuit is treated as an active interlock.

Table 73: Custom Interlock Switch Behavior (AJ01063)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01063	Active Ground	Active Open Circuit	Active Ground	FLAG

PTO: Advanced Settings

Disables PSC with Stop Lamp Active (AJ01001)

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.

Table 74: Disables PSC with Stop Lamp Active (AJ01001)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01001	Enabled	Disabled	Enabled	DISCRETE

Retarder Interlock (AJ01064)

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.

Table 75: Retarder Interlock (AJ01064)

SEL Code	Default Value	Minimum Value	Maximum Value	Unit Type
AJ01064	OFF	OFF	ON	DISCRETE

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 and body builder items such as body controller/PTO and starter battery *State of Charge (SoC)*.

Body Builder Module - Controller located on the frame which receives hardwire inputs from the body for *PMC* and *PSC*.

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.

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 *Electronic Control Unit (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.

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.

Legal Speed Limit - The maximum speed the vehicle can normally travel, before modifications from the Driver Reward system and similar functions.

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.

Original Equipment Manufacturer - 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.

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.

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."

Vehicle Identification Number - Unique code, including a serial number, used to identify a vehicle.

Vehicle Speed Limiter - System designed to improve fuel economy by reducing the vehicle's maximum speed in pre-defined situations.

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