

SS-3160 FTL M2+ PTO Mode Delay for Split Shaft PTO Operation

Applicable Vehicles

M2+

Symptoms

During split shaft power take-off (SSPTO) operation, the engine speed decreases momentarily to about 300 RPM when going into lock up.

Issue

During split shaft power take-off (SSPTO) operation, if PTO Mode is enabled before 4th gear lock up, engine speed will decrease to 300 RPM before ramping to the speed control set point.

Solution

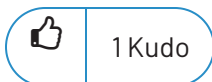
Delay PTO Mode until 4th gear lock up occurs. See attached document for details.

Labels :

M2

Add tags

Attachments



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PTO Mode Delay for SSPTO Operations with Detroit Diesel Engines and Allison Transmissions

ISSUE

During split shaft power take-off (SSPTO) operation, if PTO Mode is enabled before 4th gear lock up, engine speed will decrease to 300 RPM before ramping to the speed control set point.

WORK AROUND

Delay PTO Mode until 4th gear lock up occurs.

GENERAL INFORMATION

By following these instructions, PTO Mode will be delayed until 4th gear lockup has occurred.

This document provides guidelines for configuring the parameters using DiagnosticLink[®]. This solution applies to Freightliner[®] and Western Star[®] vehicles equipped with Detroit[®] engines with Allison transmissions with CEEA+ architecture. This solution requires that an XMC02T (XMC1) is already installed in the vehicle.

[Table 1](#) shows the modules required for this update.

Sales Code Modules	
Module	Description
148	Engine remote interface
48H	Powertrain TEM Interface

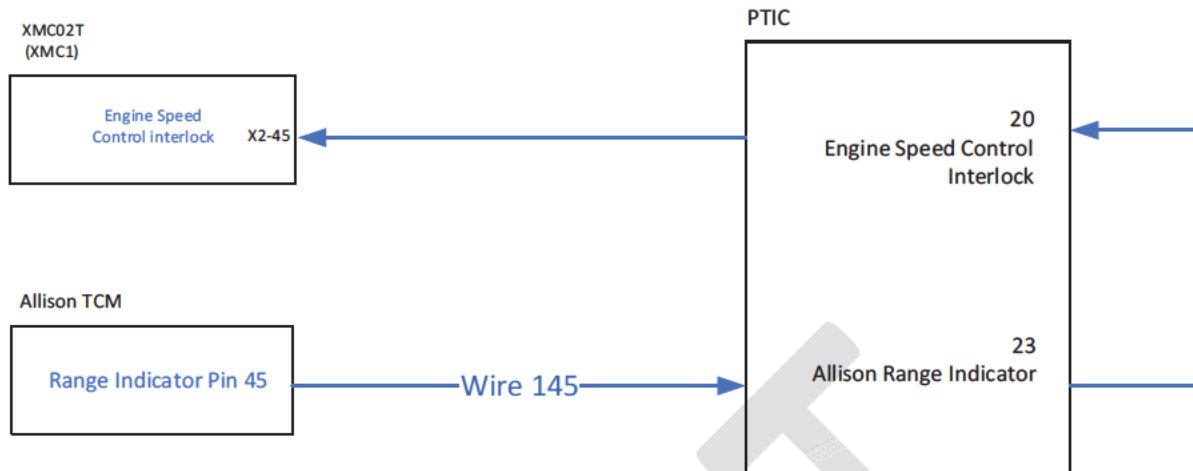
Table 1, Sales Code modules

WORK AROUND OVERVIEW

The 4th gear indicator signal from the Allison Range Indicator feature will cause the following to occur.

- It will satisfy a SSAM speed control interlock and allow PTO Mode to be enabled.

During SSPTO engagement, when 4th gear lockup occurs the Allison TCM switches wire 145 from OPEN to ground. The delay will prevent the SSAM from going into PTO mode before 4th gear lockup. Figure 1 shows how the range indicator signal is connected to the engine speed control interlock in the PTIC.



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Fig 1, PTO Mode delay using engine speed control interlock

PARAMETERS

SSAM AND XMC1 PARAMETERS

The following parameters are required for the PTO Mode delay.

- SSAM
PTC PTO W
TEM Interlock for Speed Control, XMC Input Pin.....Function Available
- SSAM
PTC Nominal Engine Speed Specification
TEM Interlock for Fixed Speed Control, XMC Input Pin.....Function Available
- XMC02T (XMC1)
PTO Pin Extension
Source of speed control TEM Interlock Switch SignalConfigurableDigitalInput0005

ALLISON TRANSMISSION PARAMETERS

Using Allison Doc, the Allison Range indicator needs to be configured to be active low only when in 4th gear.

WIRING

Wiring consists of jumping pins on the PTIC connector to control when speed control is active using the Range Indicator signal.

- Connect the output from cavity 23 to the Engine Speed Control Interlock at cavity 20 in the PTIC.
- See Table 2- PTIC Wiring and Figure 2 – PTIC Wiring.

PTIC Jumper Wiring					
End Point	Cavity	Description	Source ECU	Source Connector - Pin	Active High (AH) or Active Low (AL)
PTIC	23	Allison Range Indicator	Allison TCM	145	AL
PTIC	20	Engine Speed Control Interlock	XMC1	X2-45	AL

Table 2 – PTIC jumper wiring