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Title: Cummins Engine Remote Engine Speed Control with Feature 12XAT

Applies To: Cummins engines with feature code12XAT

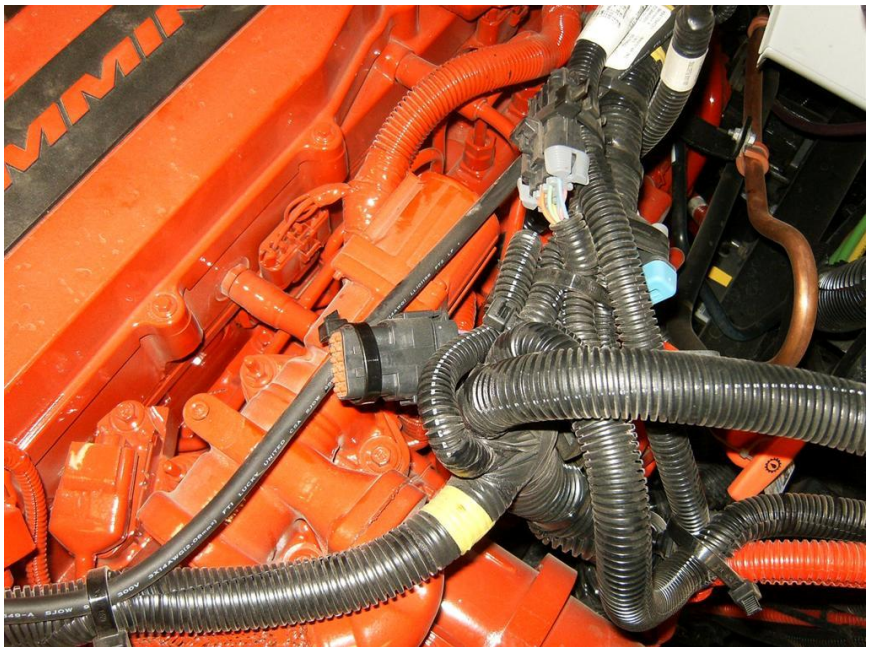
Change Log

Please refer to the change log text box below for recent changes to this article:

07/26/2016 - Removed irrelevant information.
12/08/2015 - Added note for Vehicle Speed Signal
12/07/2015 - Changed pin number descriptions, Under the Basic Remote Engine Speed Control Section, to signal names to allow the wiring instructions to be used for both truck models
11/02/2015 - Added table for WorkStar pin outs. Labeled tables to show the difference between DuraStar and WorkStar chassis pin outs.
07/15/2015 - Added CHANGE LOG and WARRANTY information
07/15/2015 - Changed 2.a. to read pin 6, to pin 10. Was from pin 6, to pin 11

Description

Feature code 12XAT provides an engine interface connector (7207) to facilitate remote engine speed control with Cummins engines.



Connector 7207 Location (Center of picture)

NOTE: This interface connector does not provide a Vehicle Speed Signal circuit. A vehicle Speed Signal is available at the TCM connector, on trucks with automatic transmissions. Refer to the circuit diagrams for connector and pin information. A separate Vehicle Speed Sensor or a sensor with 2 pigtails may need to be installed on trucks with a manual transmission, if a Vehicle Speed Signal is required.

Pin to Circuit Cross Reference

DuraStar Chassis			
7207 cavity	**Circuit Number**	**ECM 6000 Pin**	**Signal Function**
2	KR46A	19	Cruise Control/PTO Resume Switch
4	KR46B	12	Cruise Control/PTO Set Switch
5	KR97AR	30	Tachometer Signal
6	KC9C/KC9A	62	Signal Return
7	KP6C/KP6A	8	5 Volt Supply
8	KR99A	63	Remote Accelerator Pedal Signal
10	KR99B	90	Control PTO On/Off Switch
11	KR99C	94	Remote PTO On/Off Switch
12	KR99F	67	Remote Accelerator On/Off Switch

WorkStar Chassis			
7207 cavity	**Circuit Number**	**ECM 6000 Pin**	**Signal Function**

1	K99C	94	Remote PTO On/Off Switch
2	K46A	19	PTO Resume Switch
3	K99F	67	Remote Accelerator Enable Switch
4	K46B	12	PTO Set Switch
5	K97AR	30	Tachometer Signal
6	K97XG	66	Max Operating Speed / Governor Type Switch
7	Plug		
8	AB6C / AB6A	8	5v Supply
9	Plug		
10	KC9C-G / KC9A-G	62	Signal Return
11	K97XC	70	Brake Pedal Position Switch 2 / Rear Axle Ratio Switch
12	K99A	63	Remote Accelerator Pedal Signal

Service Parts Information

- Connector 7207 Terminal - 2503295C1 (Male Terminal)
- Connector 7207 Terminal - 2503296C1 (Female Terminal)

Tachometer Signal

Connector 7207 Pin 5 provides the tachometer signal, from the ECM, on both chassis models.

Basic Remote Engine Speed Control

There are 3 basic engine speed control configurations that use these circuits, Remote PTO, Remote Station PTO, and Remote Accelerator.

1. Remote PTO uses a ground input on one circuit to control up to 5 preset speeds.
    a. If the "Remote PTO" parameter is enabled, with INSITE, using a switch to apply a ground, from the "Signal Return" pin, to the "Remote PTO On/Off Switch" pin, of the 7207 connector, will make the engine ramp to the first preset.
    b. As determined by the value of the "Remote PTO Number of Speed Settings" parameter, set with INSITE, each successive toggle of the switch will increase the ramp to the next programmed preset speed.
    c. Flipping the switch off, therefore removing the ground, will return the engine speed to idle.

2. Remote Station PTO uses ground inputs on several circuits to control up to 3 preset speeds or provide variable ramping. This mimics the cruise switch functionality in the cab.
    a. If the "Remote Station PTO" parameter is enabled, with INSITE, using a switch to apply a ground, from the "Signal Return" pin, to the "Control PTO On/Off Switch", of the 7207 connector, will enable the remote engine speed control.
    b. Using a 3 position center stable switch to apply a momentary ground to the "Cruise Control/PTO Resume Switch" pin or the "Cruise Control/PTO Set Switch" pin, of the 7207 connector, will make the engine ramp up or down.

c. The engine ramping will step through the three presets or ramp variably, depending on the parameters settings, configured with INSITE. The Cruise switches and Hardwired "SET" and "RESUME" inputs will ramp variably, if the "Alternate PTO" setting is enabled.

3. Remote Accelerator
   a. If the "Remote Accelerator" parameter is enabled, with INSITE, using a switch to apply a ground, from the "Signal Return" pin, to the "Remote Accelerator On/Off Switch" pin , of the 7207connector, will enable the remote accelerator.
   b. The remote pedal or potentiometer has to be connected to the "Signal Return" pin, the "5 Volt Supply" pin and the "Remote Accelerator Pedal Signal", in the appropriate configuration, to provide a varying voltage, to the "Remote Accelerator Pedal Signal" pin, that increases as the pedal is pressed or the potentiometer is turned.
   c. If the remote accelerator is enabled, by the signal at the "Remote Accelerator On/Off Switch" pin, the engine speed should respond to the increase in voltage at the "Remote Accelerator Pedal Signal" pin.

Other Resources

Contact Cummins Support for additional assitance.

Warranty Information

Warranty Claim Coding:

Group:	08524 - Remote Engine Speed Control
Noun:	940 - Harness, PDM Distribution

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