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General Information

This service bulletin describes heating, ventilation, and air conditioning (HVAC) controller software updates released on January 4, 2022 that affect the 47X and 49X HVAC system. This software update provides resolutions to the following three conditions.

- Sleeper vehicles with Battery Powered HVAC System (BPHS) do not turn on the engine fan when using the engine air conditioner compressor.
- Sleeper vehicles with optimized idle (O/I) blows hot air when parked.
- When running in full A/C mode, economy (ECO) mode automatically turns on after 45 minutes.

Only the forward control unit (FCU) and axillary control unit (ACU) software changes are affected. For reference, the parked control unit (PCU) software update is included in [Table 1](#). These software changes are available for service updates and are backwards compatible.

DiagnosticLink Software Updates			
Controller	FCU	ACU	PCU
SW Version	21.28.01	21.28.01	20.35.1
SW Part Number	001 448 09 28 ZGS 001	001 448 12 28 ZGS 001	000 448 70 28 ZGS 007

Table 1, DiagnosticLink Software Updates

This version of the HVAC controller software contains three changes that affect HVAC operation. See [Table 2](#).

HVAC Operation Changes			
Item	Symptom	Conditions of Occurrence	Resolution
Affected vehicles: 49X Sleeper vehicles with BPHS running under very specific conditions do not turn on the engine fan when using the engine A/C compressor.	A/C cooling is diminished when running in this condition.	Specific conditions when the engine fan does not engage include the following. * <ul style="list-style-type: none"> • Engine running in parked HVAC and A/C request coming from ACU • Not in Optimized Idle (O/I) • Parking brake is set • FCU not in A/C request mode (A/C or defrost) 	FCU and ACU software updates listed in Table 1 correct this issue and allows the engine fan to turn on with an ACU A/C request.
Affected vehicles: 49X Sleeper vehicles with O/I blows hot air when parked.	When the HVAC is running in O/I in comfort mode, if programmed for auto elevate feature and auto elevate activates, the HVAC blows hot air.	Engine is in auto elevate with CPC software version 20.1 or earlier and O/I is running in comfort mode.	FCU and ACU software updates described in Table 1 correct this issue and eliminates auto elevate from blowing hot air when running in O/I comfort mode.

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HVAC Operation Changes			
Item	Symptom	Conditions of Occurrence	Resolution
Affected vehicles: 47X and 49X LED display located in the FCU A/C button turns from blue to green after 45 minutes of operation. Figure 1 shows the LED in full A/C mode.	When selecting full A/C mode (maximum cooling), the system automatically reverts to ECO mode after 45 minutes, causing cabin temperature to possibly increase.	Occurs after the center A/C button is pressed.	With the release of the FCU software 21.28.01, parameter A0174479928-002 Manual ECO MODE allows the driver to maintain full A/C mode without the system automatically placing the controller back into ECO mode after 45 minutes.

* A/C logic provided by FCU software turns off the A/C clutch if pressure is too high

Table 2, HVAC Operation Changes

Figure 1 shows the A/C compressor LED illuminated in full A/C mode (blue). When ECO mode is engaged, the LED illuminates green.



Fig. 1, AC Compressor LED Display

Figure 2 shows the Par_HVAC_Controller_ECO_MODE parameter (A0174479928-002 Manual ECO Mode) used to turn off automatic ECO mode.

Migration Plausibility		Optimized Idle		Progressive Shift		PTO		Speed
All Parameters	Compare Parameters	Compare Server Data	Cruise Control	Engine Protection	EWMA Reset	Fan	Fleet Management	Global Variant Coding
Parameter				Part		Value		Units
+	CPC501T - Common Powertrain Controller 5							
+	MCM21T - Motor Control Module 2.1							
+	TCM01T - Transmission Control Module MY2013							
+	ABS02T - Antilock Braking System							
+	IPPC01T - Integrated Predictive Powertrain Control							
+	ICUC01T - Instrument Cluster							
-	HVAC_F01T - HVAC Front							
+	Par_HVAC_Controller_CoolPmp_Type			A0174478128-001		Single Speed Coolant Pump		
+	Par_HVAC_Controller_Crank			A0174478228-001		FCU to consider sSAM key pos message		
+	Par_HVAC_Controller_ECO_MODE			A0174479828-001		4479828-001 Auto ECO Mode		
+	Par_HVAC_Controller_Fan_Type			A0174477428-001		A0174479828-001 Auto ECO Mode		
+	Par_HVAC_Controller_Hi_Temp_Set			A0174478828-001		A0174479928-002 Manual ECO Mode		
+	Par_HVAC_Controller_Hysteresis			A0174479028-001		A0184470028-001 ECO Mode Disabled		one half deg F
+	Par_HVAC_Controller_Lo_Blo_Spd			A0174478328-001		Std HVAC and OI min blower speed is 4		
+	Par_HVAC_Controller_Lo_Temp_Set			A0174478928-001		Std HVAC and OI min temp is 60 deg F		
+	Par_HVAC_Controller_LVD			A0174476428-001		FCU to consider sSAM LVD message		
+	Par_HVAC_Controller_LVD_Inv			A0174475428-001		PNM LVD level at which FCU will shed non FCU loads equals 3		

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Fig. 2, Par_HVAC_Controller_ECO_MODE Parameter

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Warranty

This is an informational bulletin only. Warranty does not apply.