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Availability: ISIS, FleetISIS, Body Builder, IsSIR

Major System: ELECTRICAL SYSTEM

Current Language: English

Other Languages: NONE

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Coding Information

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Title: ProStar with feature code 0008TSJ Auto Start Stop Troubleshooting

Applies To: ProStar with 08TSJ Auto Start Stop

Change Log

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

02/28/2018 - Removed LT from this article. IK0800563 is for LT with Auto Start Stop. This article applies to ProStar only.
 07/06/2017 - Updated article to include LT model.
 06/28/2017 - Added J1939 Multiplexing parameters to Cummins parameter list.
 02/04/2015 - Added parameter list for Cummins ISX engine and the Body Controller.

Description

Feature code 0008TSJ for auto start stop is a feature that will allow you to preset values in the body controller to allow the truck to start when the battery voltage or engine oil temperature reaches the preset value. The engine will then run for a preset time after battery voltage is within programmed value (if the engine started for low voltage) or the engine will run until oil temperature reaches a programmed value (if the engine started for oil temperature).

Interlocks (Conditions must be met to allow engine cranking)	Factory settings for starting due to low voltage	Factory settings for starting due to low engine oil temperature
<ul style="list-style-type: none"> Transmission is in neutral Shifter is in neutral Parking brake is set Clutch is not depressed (for transmissions with clutch pedal) Hood is closed (hood switch) Vehicle Speed is less than 2 mph (3 km/h) Ignition switch is in the OFF position Auto Start Stop switch is turned ON within 30 seconds of key OFF 	<ul style="list-style-type: none"> Low voltage threshold is 12.1v After battery voltage is under 12.1v for 30 seconds, the horn will chirp and the engine will start 5 seconds after the engine starts, the engine speed will increase to 1000rpm Once battery voltage is 12.7v for 70 minutes continuously, the engine will return to idle The engine will idle for 90 seconds before engine shutdown 	<ul style="list-style-type: none"> Low engine oil temp threshold is 50F After engine oil temp is under 50F for 15 minutes, the horn will chirp and the engine will start 5 seconds after the engine starts, the engine speed will increase to 1000rpm Once engine oil temp is 100F for 1 minute continuously, the engine will return to idle The engine will idle for 90 seconds before engine shutdown

Troubleshooting

- Auto Start/Stop Troubleshooting for ProStar® and LoneStar® (S08358) [Click Here](#).
- Auto Start/Stop Troubleshooting for ProStar® and LoneStar® (S08358 PDF) [Click Here](#).

NOTE:

System Description is Chapter 7

Troubleshooting is Chapter 8

- Below are updated ECM and Body Controller Auto Start Stop Default Settings, these settings provide optimal performance.

- If the customer has Idle Shutdown Enabled, then Idle Shutdown With Parking Brake Set and In PTO must be set to Disable
- If Idle Shutdown shuts the engine off during an Auto Start event, the Auto Start/Stop system will be disabled.
- The Diamond Logic Builder (DLB) Parameter list is designed for optimal battery life.
- Changing the parameters below may result in poor system performance or shortened battery life.

ProStar with Cummins ISX 15L Auto Start Stop Parameters		
Cummins INSITE		
Idle Shutdown	Enable	
• Idle Shutdown Coolant Temperature Threshold	30	°F
• Percent Engine Load	90	Percent
• Time Before Shutdown	00:05:00	HH:MM:SS
• Ambient Temperature Override	Disable	
• Greenhouse Gas Idle Shutdown	Disable	
• Idle Shutdown With Parking Brake Set	Disable	
• In PTO	Disable	
• Manual Override	Disable	
• Shutdown Accessory Relay	Not Installed	
• Warning Period	Disable	
PTO	Enable	
• PTO Speed 1 Device	0	
• PTO Speed 2 Device	0	
• PTO Speed 3 Device	0	
• PTO Speed 4 Device	0	
• PTO Speed 5 Device	0	
• PTO Speed 6 Device	0	
• PTO Speed 7 Device	0	
• PTO Speed 8 Device	0	
• Additional Switch Speed	1000	RPM
• Maximum Engine Load	800	Ft*Ib
• Maximum Speed ¹	1800	RPM
• Maximum Vehicle Speed	6	Mph
• Minimum Speed	500	RPM
• Ramp Rate ²	100	Rpm/s
• Resume Switch Speed ³	1000	RPM
• Set Switch Speed ⁴	650	RPM
SAE J1939 Multiplexing		
• PTO On/Off Switch	Enable	
↳	Source Address	33 - Body Controller
• PTO Set/Resume Switch	Enable	
↳	Source Address	33 - Body Controller
1. Set 'Maximum Speed' to 1800 RPM so the ECM is not governed at 1000 RPM. <ul style="list-style-type: none"> • This allows the engine to run at 1000 RPM or above, resulting in consistent engine speed when running in Auto Start Stop. 		

- Maximum Speed cannot be less than 1200 RPM
- 2. Set 'Ramp Rate' to 100 rpm/s for a smoother transition of engine speed while ramping.
- 3. Set 'Resume Switch' Speed to 1000 RPM
 - If the momentary press for engine PTO does not happen, the ECM will still ramp the engine speed to 1000 RPM
- 4. Set 'Set Switch Speed' to 650 RPM so the initial set message from the BCM to ECM does not cause a sudden increase in engine speed.

International Diamond Logic Builder (DLB) - ProStar Only

BC PROG, AUTO START STOP with Switch Control	0595BNR - ProStar	Installed
• 2530 - Wait To Start Bypass (Figure 1 below)	Checked - Cummins Only	On/Off
• 2536 - Battery Low Trip Point	12.1	V
• 2537 - Battery Run Time	70	min
• 2538 - Engine Idle Delay	90	s
• 2541 - Engine Ramp Delay	5	s
• 2571 - Low Battery Time	30	s
• 2674 - Auto SS Horn Enable	Checked	On/Off
• 2742 - Engine Run Time	5	min
• 2743 - Battery High Trip Point	12.7	V
• 2774 - Auto SS Acc Pwr Fuse	10	A
• 2775 - Auto SS Ign Pwr Fuse	10	A
• 2776 - Auto SS Iso Pwr Fuse	10	A
• 2777 - Auto SS Starter Pwr Fuse	10	A
• 2778 - Auto SS AC Pwr Fuse	10	A
• 2779 - Auto SS Heat Pwr Fuse	10	A
• 2825 - Eng Oil Temp Enable	Checked	On/Off
• 2829 - Auto SS Start Temperature	50	F
• 2830 - Auto SS Stop Temperature	100.4	F
• 2836 - Cruise Control Set Param	500	ms
• 2837 - Cruise Control Enable Param	1000	ms
• 2838 - Cruise Control Resume Param	1500	ms
• 2839 - Key Chk Time	30	s
• 2861 - Low Temperature Time	15	min
• 2862 - High Temperature Time	1	min
• 2863 - Auto SS Engine CAP Delay	120	s
• 3031 - Auto SS Engine CAP Speed	1000	RPM
• 3032 - Auto SS Ambient Temp CAP	56.019	F

Figure 1 - ProStar ISX Parameter



Description - Auto Start/Stop Engine Shuts Down Prematurely - ProStar

The customer may state the auto start stop will start the engine and then within a few minutes the engine will shut down. They may also mention the "Idle shutdown light" in the gauge cluster comes on just before the engine shuts down. The engine may not ramp to 1000RPM when auto start is engaged (idles only).

If the vehicle in question has feature code 595BVG in the body controller follow the below repair procedure to install feature code 595BNR.

Repair Procedure

If the customer has the above concern, perform the repair procedure.

- [Feature change procedure](#)

If feature code 595BNR is installed and the customer complains of extended runtime, follow the parameter change procedure to change the battery high voltage trip point.

- [Parameter change procedure](#)

Description - ProStar ISX units with Auto Start/Stop Turn on after 15mins

This issue is specific to **ISX Engine** ProStar. The customer complaint may state that when in no-idle mode the engine will start after 15 mins, but will not shut down after the 70 minute programmed time out. This could be due to a missing ZVR circuit between the oil temp sensor and the body controller. This results in the body controller sensing engine oil temperature is very cold, and will keep the engine running even though the timer threshold is met.

Part #	Description	Qty
3535424C1	Seal/Sleeve	2
3535303C1	Terminal	2
Source locally	18 gauge wire	Cut to length

Repair Procedure

Verify Customer concern of the Auto Start / Stop system stays running. If the concern is verified, check with DLB for the engine oil temperature reading. If it reads -40F, perform the following repair procedure.

- [Rework instructions](#)

After performing the rework instructions, verify proper system operation.

Other Resources

- [Master Service Information Page](#)

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