

MIL ON DTC P0A7A With Information Code 122

Service Category Engine/Hybrid System

Section Hybrid/Battery Control System

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2012 - 2016	Avalon HV, Camry HV, RAV4 HV	

REVISION NOTICE

May 23, 2019 Rev1:

- The Applicable Warranty has been updated.
- Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2012 – 2016 model year Avalon Hybrid, Camry Hybrid, and RAV4 Hybrid vehicles may exhibit a MIL ON condition with Diagnostic Trouble Code (DTC) P0A7A (Generator Inverter Performance) and information code 122 generator inverter fail signal detection (overcurrent due to system malfunction). Follow the Repair Procedure in this bulletin to address this condition.

NOTE

This Service Bulletin applies ONLY if information code 122 is present.

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Warranty Information

OP CODE	DESCRIPTION	MODEL	TIME	OFF	T1	T2
EL1911	R & R Hybrid Inverter With Converter Assembly and Hybrid Transaxle Assembly	Avalon HV	8.1	G92A0-33020	8A	74
		Camry HV	8.1	G92A0-33020		
		RAV4 HV	7.8	G92A0-42050		

APPLICABLE WARRANTY

- This repair is covered under the Toyota Hybrid System Warranty. This warranty is in effect for 96 months or 100,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.
- For California Specification Camry HV vehicles sold, registered, and operated in California, Arizona (2012 model year only), Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont, warranty is in effect for 180 months or 150,000 miles, whichever occurs first, from the vehicle's in-service date.

Parts Information

MODEL	PART NUMBER		PART NAME	QTY
	PREVIOUS	NEW		
Avalon HV	G92A0-33020	G92A0-33021	Inverter W/Converter Assembly	1
	30900-33051	30900-33053	Hybrid Transaxle Assembly	1
Camry HV	G92A0-33020	G92A0-33021	Inverter W/Converter Assembly	1
	30900-33040	30900-33030	Hybrid Transaxle Assembly	1
RAV4 HV	G92A0-42050		Inverter W/Converter Assembly	1
	30900-48121		Hybrid Transaxle Assembly	1
-	00272-SLLC2		Super Long Life Coolant (SLLC)	1

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Required Tools & Equipment

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Insulated Glove Set, Rubber With Leather Protectors*	01413-00072 (Medium)	1
	01413-00073 (Large)	
	01413-00074 (Extra Large)	

*Essential SST.

CAUTION

Always inspect the insulated gloves before use for cracks, ruptures, tears, pinholes, or damage. Do NOT wear if damaged.

NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVi*	ADE	TSADVUNIT	1
Techstream 2.0*		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

*Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 14.10.028 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

Repair Procedure

- Using Techstream, check for the following DTC and information code:
 - DTC P0A7A – Generator Inverter Performance.
 - Information code 122 – generator inverter fail signal detection (overcurrent due to system malfunction).

Are DTC P0A7A and information code 122 present?

- **YES** — Continue to step 2.
- **NO** — If ANY other DTCs are present or the information code is NOT present, this Service Bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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Repair Procedure (continued)

2. Using the available freeze-frame data for DTC P0A7A-122 (there will be freeze-frame available for this information code), confirm the values of the following data list parameters:
 - Generator (MG1) Rev
 - MG1 Control Mode

Confirm Generator (MG1) Rev is out of range between 6,000 – 10,000 AND MG1 Control Mode is 1 or 2. (Refer to Figures 1 and 2 for examples of the freeze-frame data.)

Are the freeze-frame values within the specified targets?

- **YES** — Continue to step 3.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

Figure 1.

DTC Code: P0A7A		Information Code: 122				
Info Code / Freeze Frame Data		Export to CSV				
Parameter	Units	-3.0	-2.0	-1.0	0.0	1.0
Motor Temp No1	F	144	144	144	144	144
Power Resource VB	V	279.0	282.0	283.0	276.0	297.0
Boost Ratio	%	44.0	43.0	40.0	45.0	34.0
Engine Run Time	s	540	541	541	541	542
+B	V	14.31	14.31	14.31	14.31	14.33
M(MG2) Trq Exec Val	Nm	72.25	65.00	61.62	0.00	-14.75
Generator(MG1) Rev	rpm	7666	7712	7576	9554	10168
G(MG1) Trq Exec Val	Nm	-36.88	-33.88	-40.50	-0.13	-23.75
Inverter Temp-(MG2)	F	117	117	115	109	108
Engine Rev (Sensor)	rpm	3063	3119	3135	3619	3850

Figure 2.

Request Power	W	51880	52560	52450	0	53250
Target Engine Rev	rpm	3111	3146	3143	3196	3532
Master Cylinder Ctrl Trq	Nm	0.0	0.0	0.0	0.0	0.0
MG1 Control Mode		2	2	2	0	2
MG1 Carrier Frequency	kHz	5.00	5.00	5.00	5.00	5.00
MG2 Control Mode		0	0	0	0	0
Shift Sensor SW - D		ON	ON	ON	ON	ON
Inhaling Air Temp	F	79.7	79.7	79.7	79.7	79.7
Auxiliary Battery Vol	V	14.26	14.26	14.26	14.22	14.28

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Repair Procedure (continued)

3. Replace the inverter assembly and transaxle assembly.

Refer to TIS, applicable model and model year Repair Manual:

- 2013 Avalon HV:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control:
 Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”
- 2014 Avalon HV:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control:
 Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”
- 2015 Avalon HV:
Engine/Hybrid System – Hybrid/Battery Control System Service – “Hybrid/Battery Control:
 Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle(When Not Using the Engine Support Bridge):
[Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle(When Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
- 2016 Avalon HV:
Engine/Hybrid System – Hybrid/Battery Control System Service – “Hybrid / Battery Control:
 Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle(When Not Using the Engine Support Bridge):
[Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle(When Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
- 2012 Camry HV:
Engine/Hybrid System – Hybrid/Battery Control System Service – “Hybrid / Battery Control:
 Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle:
 Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”

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Repair Procedure (continued)

- 2013 Camry HV:
Engine/Hybrid System – Hybrid/Battery Control System Service – “Hybrid / Battery Control: Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”
- 2014 Camry HV:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Inverter With Converter [08/2013 – 12/2013]: [Removal](#) / [Installation](#)”
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Inverter With Converter [12/2013 - Current]: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”
- 2015 Camry HV:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle (When Not Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle (When Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
- 2016 Camry HV:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid / Battery Control: Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle (When Not Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle (When Using the Engine Support Bridge): [Removal](#) / [Installation](#)”
- 2016 RAV4 HV:
Engine/Hybrid System – Hybrid/Battery Control System Service – “Hybrid / Battery Control: Inverter With Converter: [Removal](#) / [Installation](#)”
Drivetrain – Hybrid Transmission/Transaxle – “P314 Hybrid Transmission / Transaxle: Hybrid Vehicle Transaxle: [Removal](#) / [Installation](#)”

4. Clear the DTCs and test-drive the vehicle to confirm the repair.