

MIL "ON" P0A7A with Information Code 122

Service Category Engine/Hybrid System

Section Hybrid/Battery Control System

Market USA

Lexus Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2013 - 2016	ES300H, GS450H, NX300H	

Introduction

Some 2013 – 2016 model year ES 300h, GS 450h and NX 300h vehicles may exhibit a MIL "ON" condition with DTC P0A7A with information codes 122 (Generator Inverter Fail Signal Detection). Follow the procedure in this bulletin to address this condition.

NOTE

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

Warranty Information

OP CODE	DESCRIPTION	MODEL	YEAR	DRIVETRAIN	TIME	OFP	T1	T2
EL1622	R & R Hybrid Inverter with Converter Assembly & Hybrid Transaxle Assembly	ES 300h	2013 –2016	2WD	9.6	G92A0-33021	8A	74
		GS 450h			11.6	G92A0-30021		
		NX 300h			9.0	G92A0-42040		
			2015 – 2016	4WD	9.0	G92A0-42050		

APPLICABLE WARRANTY

- This repair is covered under the Lexus 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.

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Parts Information

MODEL	DRIVETRAIN	PART NUMBER		PART NAME	QTY
		PREVIOUS	NEW		
ES 300h	2WD	G92A0-33021		Inverter w/ Converter Assembly	1
		30900-33050 30900-33051	30900-33053	Hybrid Transaxle Assembly	1
G92A0-30021		Inverter w/ Converter Assembly	1		
G1240-30051		Bracket Assembly, Inverter Motor Cable	1		
30910-30090				30910-30110	
GS 450h (early 2013 – 201304)		30910-30090	30910-30110	Hybrid Transaxle Assembly	1
GS 450h (201305 – current)		G92A0-78020	G92A0-42040	Inverter w/ Converter Assembly	1
NX 300h		30900-78010	30900-78011	Hybrid Transaxle Assembly	1
	4WD	G92A0-78030 G92A0-58020	G92A0-42050	Inverter w/ Converter Assembly	1
		30900-48120	30900-48121	Hybrid Transaxle Assembly	1
	–	–	00272-SLLC2		Super Long Life Coolant (SLLC)

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Required Tools & Equipment

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Engine Support Bar*	00002-ESUPPT-01	1
Safety Support Strap*	00002-2SUPP	2
Electrical Insulating Gloves*	01413-00072 (Medium)	1
	01413-00073 (Large)	
	01413-00074 (XL)	

CAUTION

Always inspect Electrical Insulating 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 2.0*	ADE	TS2UNIT	1
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

* Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 11.20.019 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

Repair Procedure

- Confirm if the following DTC and information code is present:
 - P0A7A – Generator Inverter Performance
 - Information code 122 – Generator inverter fail signal detection (overcurrent due to system malfunction)

If ANY other DTCs are present or the information code is NOT present, this Service Bulletin does NOT apply. Continue diagnosis per Repair Manual procedures.

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Repair Procedure (Continued)

2. Using the available freeze frame data for DTC P0A7A – 122 (there will ALWAYS 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. If either of the freeze frame values are NOT within the specified targets, this Service Bulletin does NOT apply. Continue diagnosis per Repair Manual procedures.

See the screen shots below for an example of the freeze frame data:

Figure 1.

DTC Code: P0A7A

Information Code: 122

[Export to CSV](#)

Info Code / Freeze Frame Data

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 the Technical Information System (TIS), applicable model, and model year Repair Manual.

- 2013 ES 300h:

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 ES 300h:

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](#)”

- 2015 ES 300h:

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](#)”

- 2016 ES 300h:

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](#)”

- 2013 GS 450h:

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)

- 2014 GS 450h:

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](#)”

- 2015 GS 450h:

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](#)”

- 2016 GS 450h:

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](#)”

- 2015 NX 300h:

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](#)”

- 2016 NX 300h:

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.