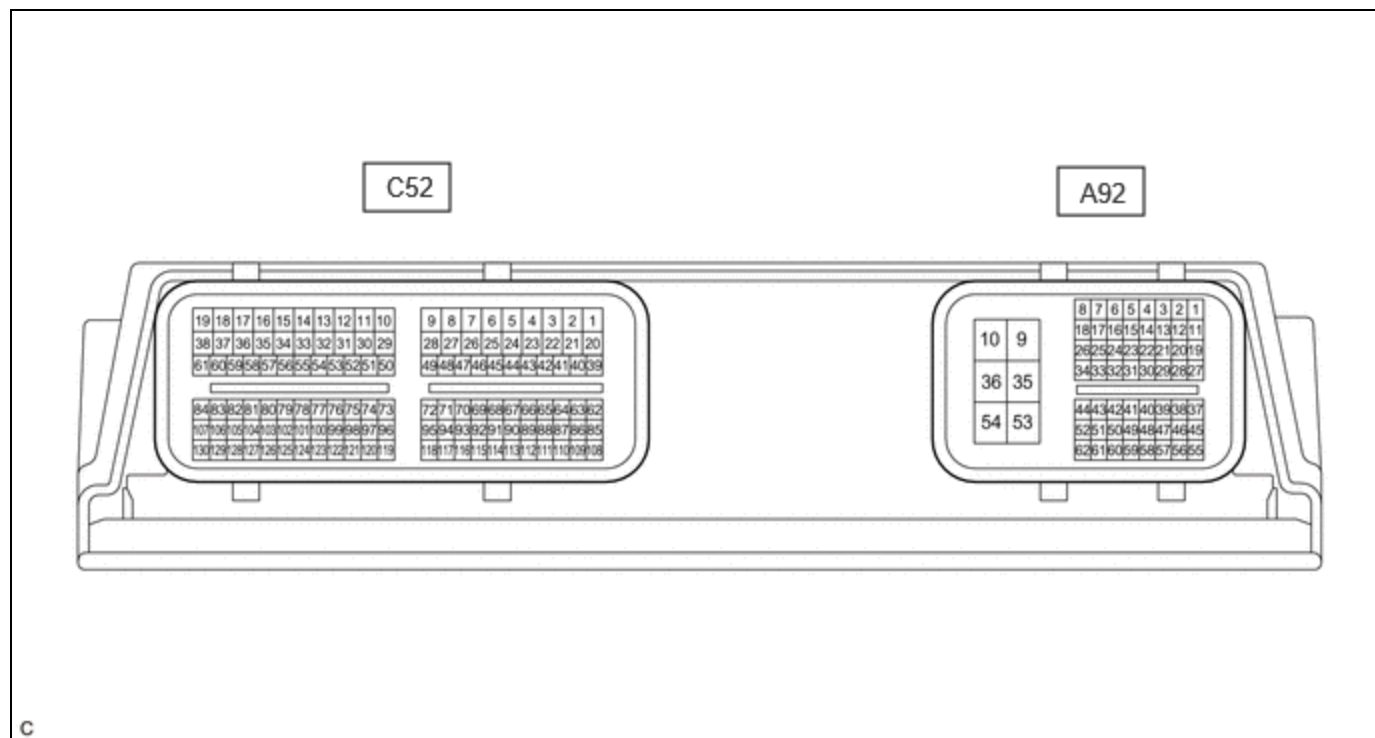


Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM100000002924I
Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: DOOR / HATCH: FUEL LID OPENER SYSTEM: TERMINALS OF ECU; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

TERMINALS OF ECU



CHECK ECM (for M20A-FXS)

HINT:

The standard voltage and waveform between each pair of the ECM terminals are shown in the table below. The appropriate conditions for checking each pair of the terminals is also indicated. The result of checks should be compared with the standard voltage, resistance and waveform for each pair of the terminals as displayed in the Specified Condition column. The illustration above can be used as a reference to identify the ECM terminal locations.

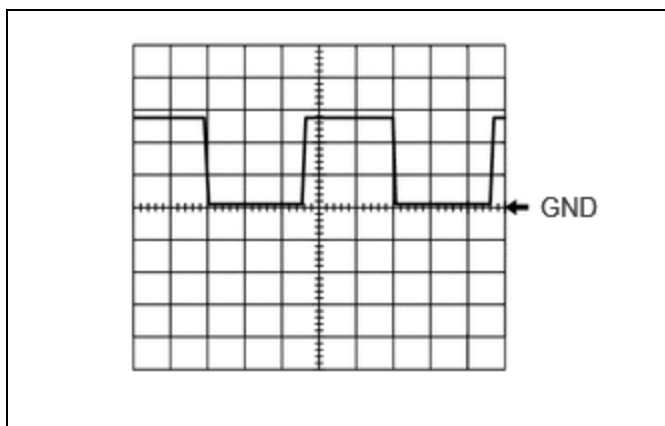
TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A92-31 (LIDO) - A92-10 (E1)	Fuel lid with motor lock assembly (fuel lid courtesy switch) signal	Fuel lid closed	Below 1 V
		Fuel lid open	11 to 14 V
A92-38 (FUEL) - A92-10 (E1)	Fuel lid opener switch signal	fuel lid opener switch pressed	Below 1 V
		fuel lid opener switch not pressed	11 to 14 V
A92-41 (LSTM) - A92-10 (E1)	Fuel lid operation signal for combination meter assembly	"Close Fuel Lid" displayed on multi-information display	Pulse generation (see waveform 1)
		"Ready to Refuel" displayed on multi-information display	Pulse generation (see waveform 2)

TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
		"Please Wait Fuel Door Opening" displayed on multi-information display	Pulse generation (see waveform 3)
A92-44 (FREL) - A92-10 (E1)	Fuel lid with motor lock assembly operation signal	Fuel lid with motor lock assembly operating	Below 1 V
		Fuel lid with motor lock assembly not operating	11 to 14 V

(a) Using an oscilloscope, check waveform 1.

Waveform 1 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	A92-41 (LSTM) - A92-10 (E1)
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Close Fuel Lid" displayed on multi-information display



HINT:

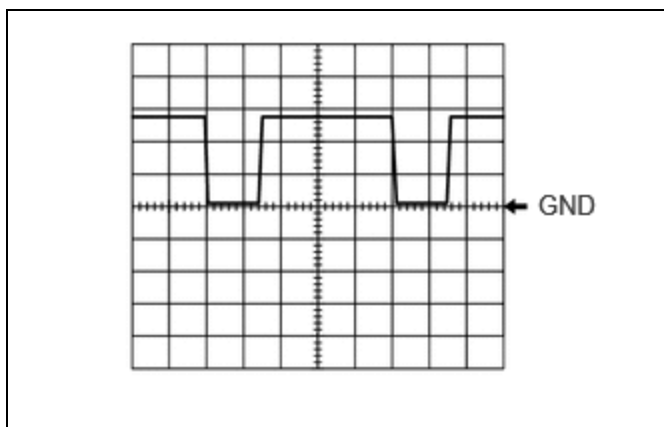
This waveform is output when the fuel lid opener switch is operated if the fuel lid is open and any of the following conditions are met:

- The vehicle has been driven for 1 km (0.6 mile) or more at a speed of 50 km/h (31 mph) or more.
- 30 minutes or more have elapsed since the fuel lid opener switch was operated.

(b) Using an oscilloscope, check waveform 2.

Waveform 2 (Reference)

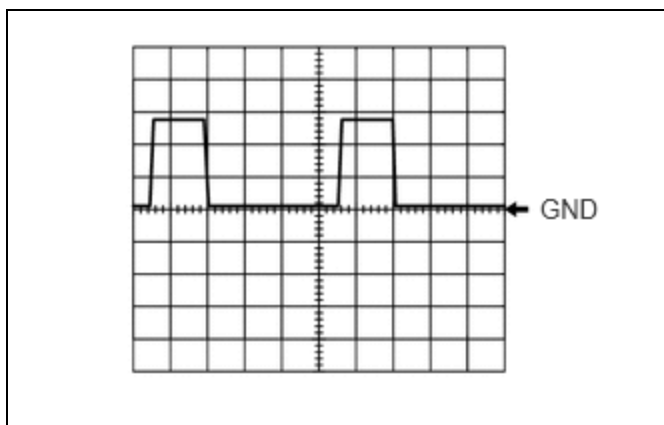
ITEM	CONTENT
Terminal No. (Symbol)	A92-41 (LSTM) - A92-10 (E1)
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Ready to Refuel" displayed on multi-information display



(c) Using an oscilloscope, check waveform 3.

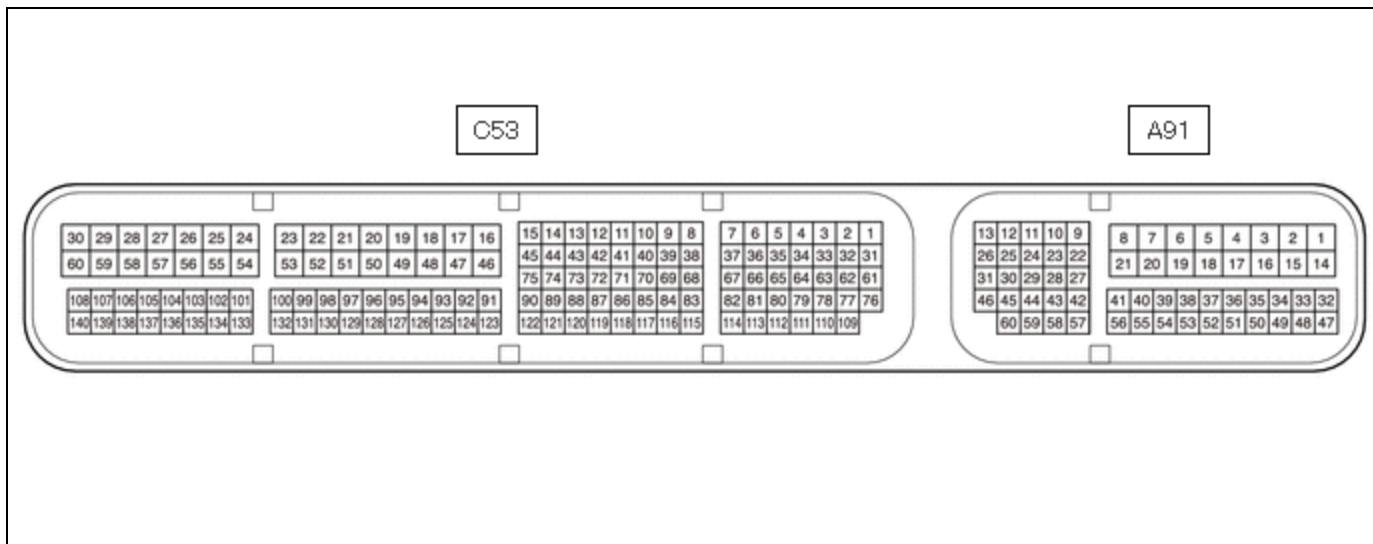
Waveform 3 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	A92-41 (LSTM) - A92-10 (E1)
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Please Wait Fuel Door Opening" displayed on multi-information display



HINT:

This waveform is output when the internal pressure of the fuel tank is higher than the ambient pressure when the fuel lid opener switch is operated.



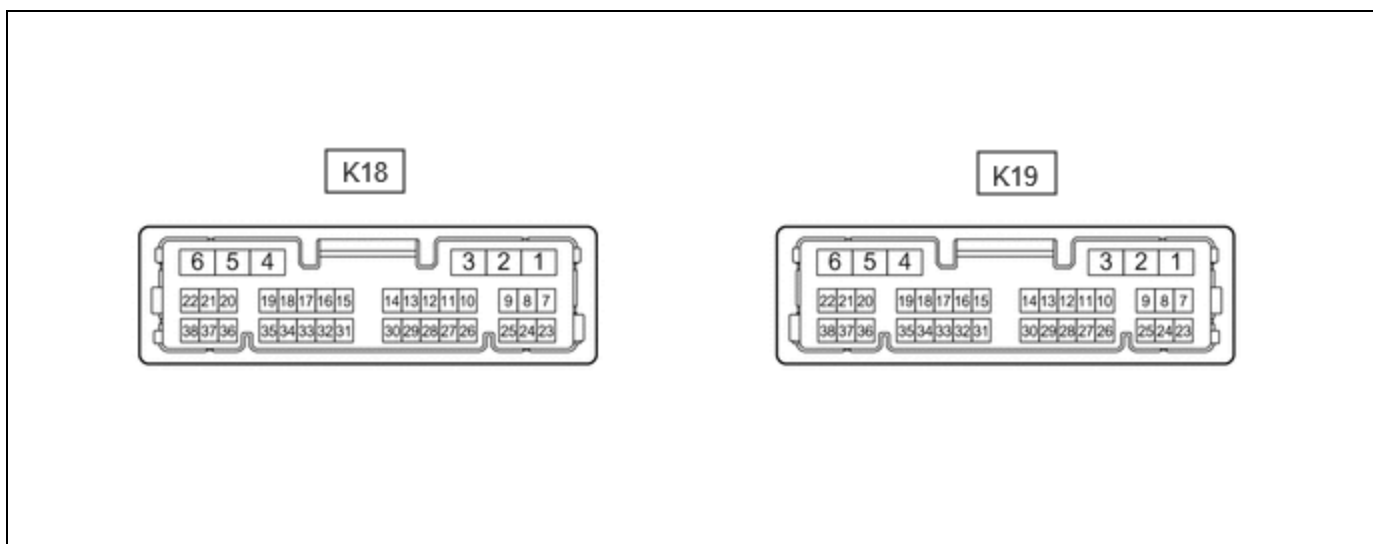
CHECK ECM (for 2ZR-FXE)

HINT:

The standard voltage and waveform between each pair of the ECM terminals are shown in the table below. The appropriate conditions for checking each pair of the terminals is also indicated. The result of checks should be compared with the standard voltage, resistance and waveform for each pair of the terminals as displayed in the Specified Condition column. The illustration above can be used as a reference to identify the ECM terminal locations.

TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A91-60 (FUEL) - A91-17 (E1)	Fuel lid opener switch signal	fuel lid opener switch pressed	Below 1 V
		fuel lid opener switch not pressed	11 to 14 V
A91-28 (FREL) - A91-17 (E1)	Fuel lid with motor lock assembly operation signal	Fuel lid with motor lock assembly operating	Below 1 V
		Fuel lid with motor lock assembly not operating	11 to 14 V

CHECK COMBINATION METER ASSEMBLY (for M20A-FXS)



(a) Disconnect the K18 combination meter assembly connector.

(b) Measure the voltage and resistance according to the value(s) in the table below.

TERMINAL NO.	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
K18-5 (B) - Body ground	Auxiliary battery	Ignition switch off	11 to 14 V
K18-6 (IG+) - Body ground	Ignition switch signal	Ignition switch off	Below 1 V
		Ignition switch ON	11 to 14 V
K18-1 (EP) - Body ground	Ground	Always	Below 1 Ω
K18-2 (ES) - Body ground	Ground	Always	Below 1 Ω

(c) Reconnect the K18 combination meter assembly connector.

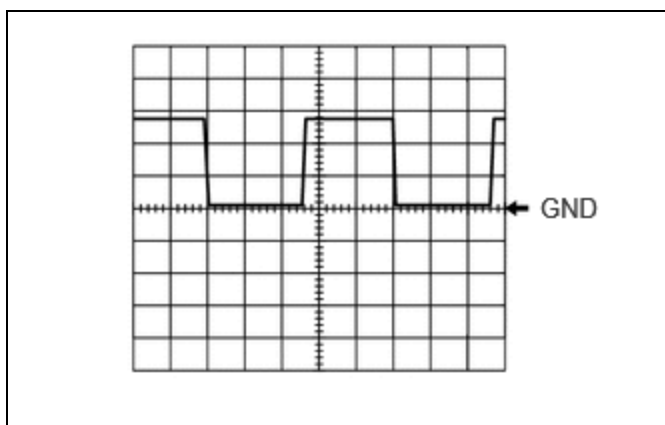
(d) Measure the waveform according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
K18-28 (LST1) - Body ground	Fuel lid operation signal for combination meter assembly	"Close Fuel Lid" displayed on multi- information display	Pulse generation (see waveform 1)
		"Ready to Refuel" displayed on multi- information display	Pulse generation (see waveform 2)
		"Please Wait Fuel Door Opening" displayed on multi-information display	Pulse generation (see waveform 3)

(1) Using an oscilloscope, check waveform 1.

Waveform 1 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	K18-28 (LST1) - Body ground
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Close Fuel Lid" displayed on multi-information display



HINT:

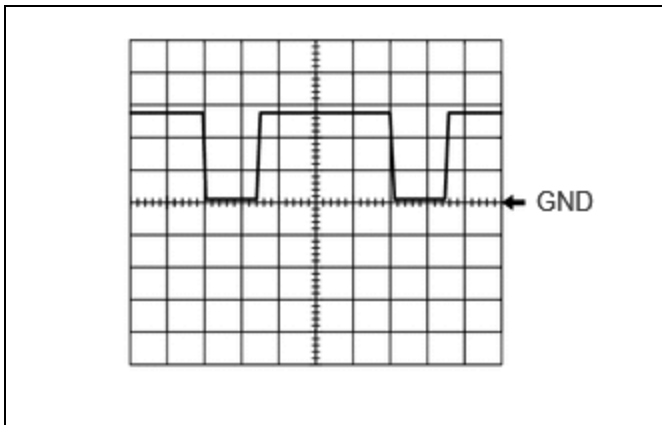
This waveform is output when the fuel lid opener switch is operated if the fuel lid is open and any of the following conditions are met:

- The vehicle has been driven for 1 km (0.6 mile) or more at a speed of 50 km/h (31 mph) or more.
- 30 minutes or more have elapsed since the fuel lid opener switch was operated.

(2) Using an oscilloscope, check waveform 2.

Waveform 2 (Reference)

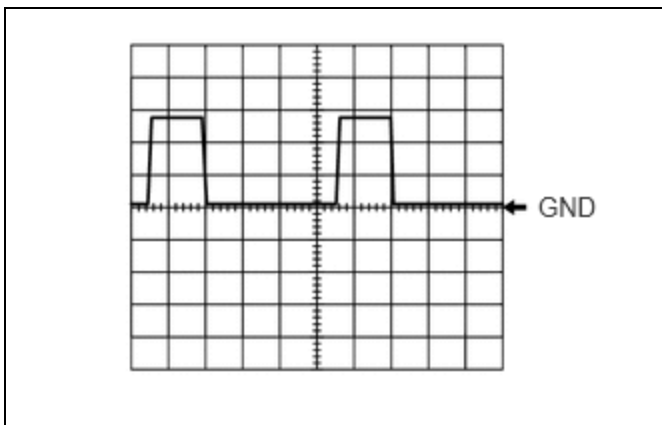
ITEM	CONTENT
Terminal No. (Symbol)	K18-28 (LST1) - Body ground
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Ready to Refuel" displayed on multi-information display



(3) Using an oscilloscope, check waveform 3.

Waveform 3 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	K18-28 (LST1) - Body ground
Tool Setting	5 V/DIV., 20 ms./DIV.
Condition	"Please Wait Fuel Door Opening" displayed on multi-information display



HINT:

This waveform is output when the internal pressure of the fuel tank is higher than the ambient pressure when the fuel lid opener switch is operated.

