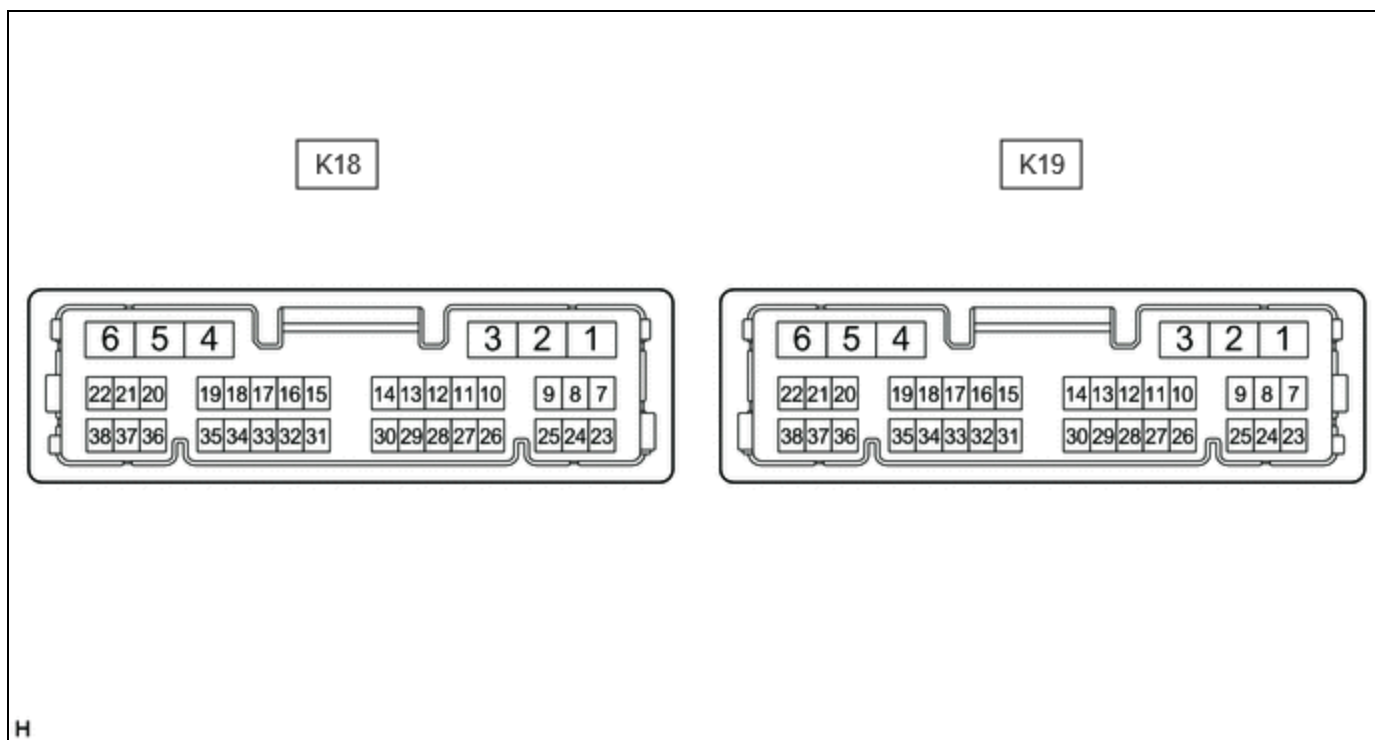


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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: METER / GAUGE / DISPLAY: METER / GAUGE SYSTEM: TERMINALS OF ECU; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

TERMINALS OF ECU

COMBINATION METER ASSEMBLY



(a) Measure the voltage and resistance and check for pulses according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
K18-1 (EP) - Body ground	Ground	Always	Below 1 Ω
K18-2 (ES) - Body ground	Ground	Always	Below 1 Ω
K18-5 (B) - Body ground	Power source for auxiliary battery	Ignition switch off	11 to 14 V
K18-6 (IG+) - Body ground	Power source for IG relay	IG OFF \rightarrow IG ON	Below 1 V \rightarrow 11 to 14 V
K18-8 (+S) - Body ground	Vehicle speed output signal	Ignition switch ON, wheel being rotated	Pulse generation (See waveform 1)
K18-9 (OILW) - Body ground	Engine oil level sensor signal	Ignition switch ON, engine oil level not low \rightarrow low	Below 1 V \rightarrow 11 to 14 V
K18-12 (HZSW) - Body ground	Hazard warning signal switch signal	Hazard warning signal switch off \rightarrow on	11 to 14 V \rightarrow Below 1 V

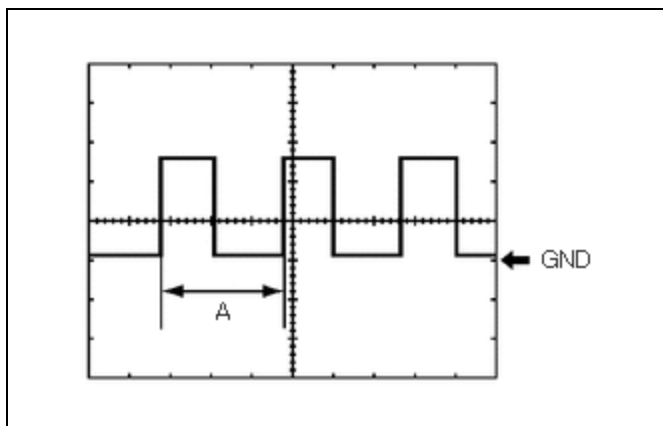
TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
K18-25 (SI) - Body ground	Vehicle speed input signal	Ignition switch ON, wheel being rotated	Pulse generation (See waveform 1)
K18-28 (LST1) - Body ground	Fuel lid status signal	Ignition switch OFF	11 to 14 V
		The following message (interrupt display) being displayed on the multi-information display: "Ready to Refuel"	Pulse generation (See waveform 4)
		The following message (interrupt display) being displayed on the multi-information display: "Close Fuel Lid"	Pulse generation (See waveform 5)
K18-29 (BKL) - Body ground	Driver seat belt buckle switch signal	Ignition switch ON, driver seat belt unfastened → fastened	Below 1 V → 11 to 14 V
K18-32 (CXPI) - Body ground*1	CXPI communication signal	-	-
K19-2 (B) - Body ground	Power source for auxiliary battery	Ignition switch off	11 to 14 V
K19-5 (LL) - Body ground	Front/side turn signal flasher signal (LH side)	Turn indicator light (LH) blinking	11 to 14 V ↔ Below 1 V
		Turn indicator light (LH) off	Below 1 V
K19-6 (LR) - Body ground	Front/side turn signal flasher signal (RH side)	Turn indicator light (RH) blinking	11 to 14 V ↔ Below 1 V
		Turn indicator light (RH) off	Below 1 V
K19-7 (FR) - K19- 25 (FE&B)	Fuel level signal	Ignition switch ON, fuel receiver gauge indicates F → E (fuel level warning light on)	Pulse generation (See waveform 2)
K19-12 (MSTI) - Body ground	Steering pad switch without touch detection function signal	Ignition switch ON, up, down, left and right switches on steering pad switch not pushed	4.8 to 5.2 V
K19-13 (ODO) - Body ground	ODO/TRIP switch signal	Ignition switch ON, ODO/TRIP switch not pushed	4.8 to 5.2 V
K19-14 (CANL)	CAN communication signal	-	-
K19-15 (TX-)	Local bus communication signal	-	-
K19-20 (S) - Body ground*2	Engine oil pressure signal	Engine started → not started	11 to 14 V → Below 1 V
K19-21 (TRNR) - Body ground	Rear turn signal flasher signal (RH side)	Turn indicator light (RH) blinking	11 to 14 V ↔ Below 1 V
		Turn indicator light (RH) off	Below 1 V

TERMINAL NO. (SYMBOL)	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
K19-22 (TRNL) - Body ground	Rear turn signal flasher signal (LH side)	Turn indicator light (LH) blinking	11 to 14 V ↔ Below 1 V
		Turn indicator light (LH) off	Below 1 V
K19-23 (FV) - Body ground	Power source for fuel sender gauge	Ignition switch ON	Pulse generation (See waveform 3)
K19-25 (FE&B) - Body ground	Ground for fuel sender gauge	Always	Below 1 Ω
K19-26 (SW3) - Body ground	Ground for trip switch	Always	Below 1 Ω
K19-28 (TR) - Body ground	Light control rheostat switch signal	Ignition switch ON, light control rheostat up and down switches not pushed	4.8 to 5.2 V
K19-29 (MSM+) - Body ground	Steering pad switch without touch detection function signal	Ignition switch ON, OK and back switches on steering pad switch not pushed	4.8 to 5.2 V
K19-31 (CANH)	CAN communication signal	-	-
K19-32 (TX+)	Local bus communication signal	-	-
K19-36 (WLVL) - Body ground*3	Washer fluid level signal	Ignition switch ON, washer fluid level not low → low	11 to 14 V → Below 1 V

- *1: w/ Multiplex Network Steering ECU
- *2: for 2ZR-FXE
- *3: w/ Washer Fluid Level Warning

Waveform 1:

ITEM	CONDITION
Tester connection	<ul style="list-style-type: none"> o K18-8 (+S) - Body ground o K18-25 (SI) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	Ignition switch ON, wheel being rotated

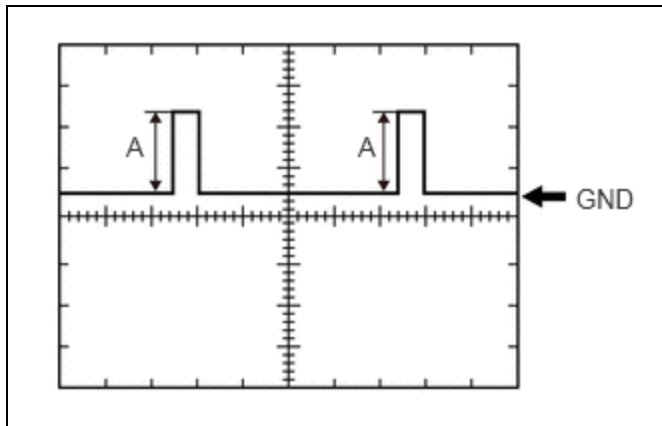


HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

Waveform 2:

ITEM	CONDITION
Tester connection	K19-7 (FR) - K19-25 (FE&B)
Tool setting	2.5 V/DIV., 20 ms./DIV.
Condition	Ignition switch ON, fuel receiver gauge indicates F → E (fuel level warning light on)



HINT:

The magnitude of the voltage (A) changes as shown in the following tables.

except 4WD Model:

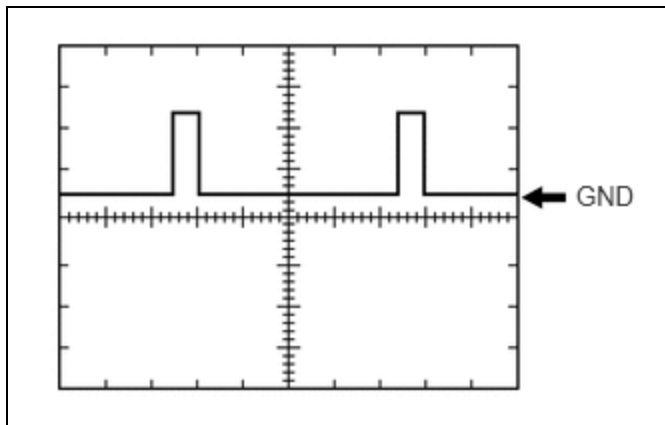
TERMINAL NO. (SYMBOL)	CONDITION	SPECIFIED CONDITION
K19-7 (FR) - K19-25 (FE&B)	Ignition switch ON, fuel receiver gauge indicates F	3.9 to 4.6 V
	Ignition switch ON, fuel receiver gauge indicates below 1/2	2.2 V
	Ignition switch ON, fuel receiver gauge indicates E (fuel level warning light on)	0.3 to 0.9 V

for 4WD Model:

TERMINAL NO. (SYMBOL)	CONDITION	SPECIFIED CONDITION
K19-7 (FR) - K19-25 (FE&B)	Ignition switch ON, fuel receiver gauge indicates F	3.9 to 4.6 V
	Ignition switch ON, fuel receiver gauge indicates below 1/2	2.1 V
	Ignition switch ON, fuel receiver gauge indicates E (fuel level warning light on)	0.3 to 0.9 V

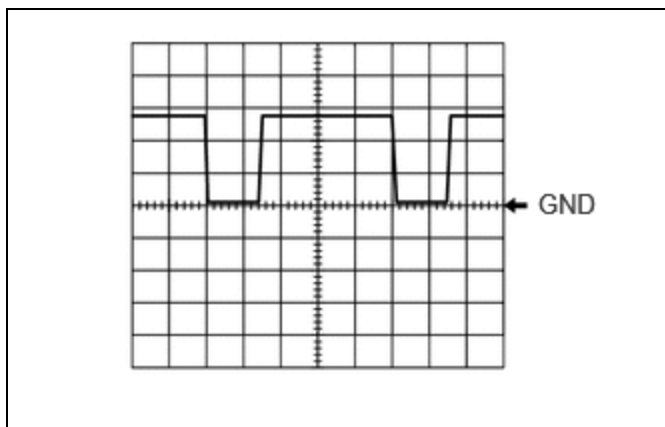
Waveform 3:

ITEM	CONDITION
Tester connection	K19-23 (FV) - Body ground
Tool setting	2.5 V/DIV., 20 ms./DIV.
Condition	Ignition switch ON
Specified Condition	4.5 to 5.5 V



Waveform 4:

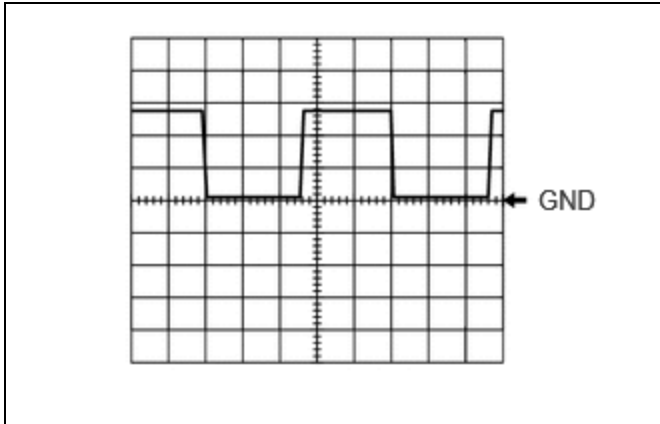
ITEM	CONDITION
Tester connection	K18-28 (LST1) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	The following message (interrupt display) being displayed on the multi-information display: "Ready to Refuel"



Waveform 5:

ITEM	CONDITION
Tester connection	K18-28 (LST1) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.

ITEM	CONDITION
Condition	The following message (interrupt display) being displayed on the multi-information display: "Close Fuel Lid"

**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.

