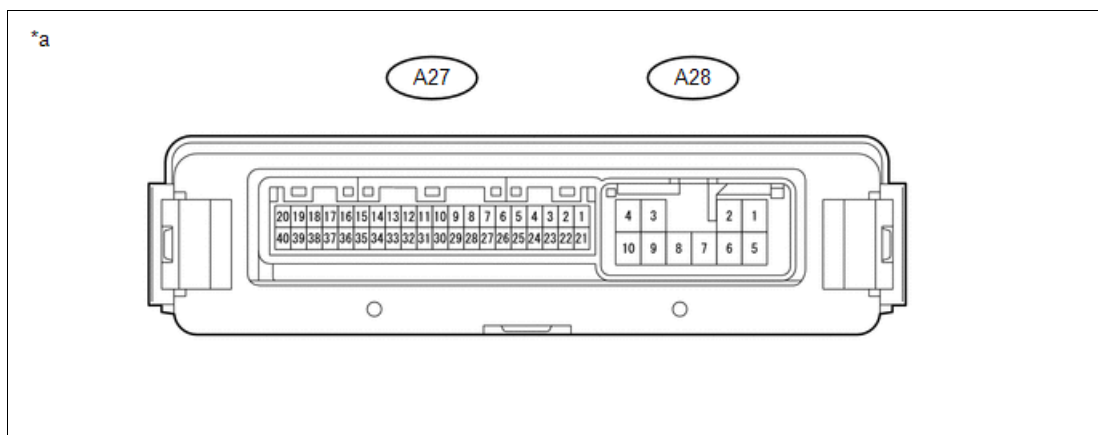


Last Modified: 12-21-2017	6.8:8.0.48	Doc ID: RM100000000T2ZX
Model Year Start: 2016	Model: LX570	Prod Date Range: [09/2015 -]
Title: JF2A TRANSFER / 4WD / AWD: TRANSFER SYSTEM: TERMINALS OF ECU; 2016 - 2018 MY LX570 [09/2015 -]		

TERMINALS OF ECU

1. CHECK 4 WHEEL DRIVE CONTROL ECU



Text in Illustration

*a	Component with harness connected (4 Wheel Drive Control ECU)	-	-
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(a) Measure the voltage and resistance according to the value(s) in the table below.

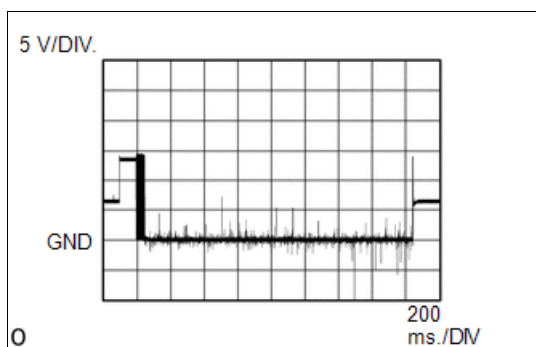
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A27-1 (P1) - A28-10 (GND)	LG - W-B	Center differential lock detection switch input	Engine switch on (IG) Center differential free	10 to 14 V
			Engine switch on (IG) Center differential lock	Below 1.5 V
A27-5 (TT) - A27-25 (TGND)*	G - P	Temperature sensor	Engine switch on (IG)	0 to 5 V
A27-6 (HL3) - A28-10 (GND)	R - W-B	High-low transfer limit switch input	Engine switch on (IG) Shift lever in N Transfer high	10 to 14 V
			Engine switch on (IG) Shift lever in N Switching between transfer high and low	Below 1.5 V
			Engine switch on (IG) Shift lever in N Transfer low	10 to 14 V
A27-7 (HL2) - A28-10 (GND)	P - W-B	High-low transfer limit switch input	Engine switch on (IG) Shift lever in N Transfer high	10 to 14 V
			Engine switch on (IG) Shift lever in N Switching between transfer high and low	10 to 14 V ↔ Below 1.5 V
			Engine switch on (IG) Shift lever in N Transfer low	Below 1.5 V
A27-8 (HL1) - A28-10 (GND)	BE - W-B	High-low transfer limit switch input	Engine switch on (IG) Shift lever in N Transfer high	Below 1.5 V
			Engine switch on (IG) Shift lever in N Switching between transfer high and low	Below 1.5 V ↔ 10 to 14 V
			Engine switch on (IG) Shift lever in N	10 to 14 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	Transfer low CONDITION Engine switch on (IG) Center differential free	SPECIFIED CONDITION Below 1.5 V
A27-9 (TL3) - A28-10 (GND)	W - W-B	Center differential lock limit switch input	Engine switch on (IG) Switching center differential between free and lock	Below 1.5 V
			Engine switch on (IG) Center differential lock	10 to 14 V
			Engine switch on (IG) Center differential free	10 to 14 V
A27-10 (TL2) - A28-10 (GND)	B - W-B	Center differential lock limit switch input	Engine switch on (IG) Switching center differential between free and lock	Below 1.5 V
			Engine switch on (IG) Center differential lock	Below 1.5 V
			Engine switch on (IG) Center differential free	10 to 14 V
A27-13 (LO) - A28-10 (GND)	P - W-B	Transfer position switch input	Engine switch on (IG) Transfer position switch H4	10 to 14 V
			Engine switch on (IG) Transfer position switch L4	Below 1.5 V
A27-14 (DL) - A28-10 (GND)	L - W-B	Center differential lock switch input	Engine switch on (IG) Center differential lock switch not pressed	10 to 14 V
			Engine switch on (IG) Center differential lock switch pressed and held	Below 1.5 V
A27-16 (L4) - A28-10 (GND)	R - W-B	L4 output signal	Engine switch on (IG) Transfer high	10 to 14 V
			Engine switch on (IG) Transfer low	Below 1.5 V
A27-20 (CANH) - A27-40 (CANL)	P - W	CAN communication line	Engine switch off Cable disconnected from negative (-) battery terminal	54 to 69 Ω
A27-21 (+B) - A28-10 (GND)	R - W-B	ECU power supply	Always	11 to 14 V
A28-2 (HM1) - A28-10 (GND)	B - W-B	High-low transfer shift motor output	Engine switch on (IG) Shift lever in N Transfer position switch switched from H4 to L4 (Switching from transfer high to low)	Below 1.5 V or pulse between 11 to 14 V and below 1.5 V (waveform 1)
			Engine switch on (IG) Shift lever in N Transfer position switch switched from L4 to H4 (Switching from transfer low to high)	10 to 14 V
A28-4 (IG) - A28-10 (GND)	V - W-B	ECU and actuator power supply	Engine switch on (IG)	11 to 14 V
A28-6 (HM2) - A28-10 (GND)	BR - W-B	High-low transfer shift motor output	Engine switch on (IG) Shift lever in N Transfer position switch switched from H4 to L4 (Switching from transfer high to low)	10 to 14 V
			Engine switch on (IG) Shift lever in N Transfer position switch switched from L4 to H4 (Switching from transfer low to high)	Below 1.5 V or pulse between 11 to 14 V and below 1.5 V (waveform 1)
A28-7 (TM2) - A28-10 (GND)	W - W-B	Center differential lock shift motor output	Engine switch on (IG) Center differential lock switch pressed to switch from free to lock (Switching center differential from free to lock)	Below 1.5 V or pulse between 11 to 14 V and below 1.5 V (waveform 2)
			Engine switch on (IG)	

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
			Center differential lock switch pressed to switch from lock to free (Switching center differential from lock to free)	
A28-8 (TM1) - A28-10 (GND)	R - W-B	Center differential lock shift motor output	Engine switch on (IG) Center differential lock switch pressed to switch from free to lock (Switching center differential from free to lock)	10 to 14 V
			Engine switch on (IG) Center differential lock switch pressed to switch from lock to free (Switching center differential from lock to free)	Below 1.5 V or pulse between 11 to 14 V and below 1.5 V (waveform 2)
A28-10 (GND) - Body ground	W-B - Body ground	GND	Always	Below 1 Ω

*: w/ Temperature Sensor

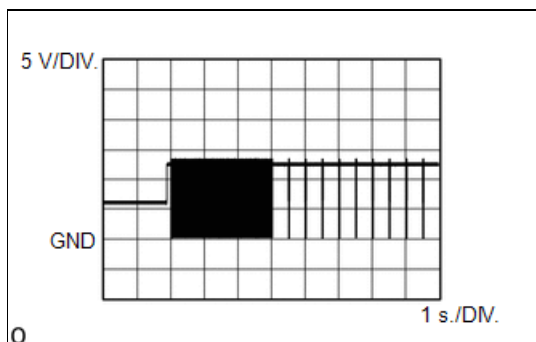
(b) Waveform 1



(1) When a gear is engaged and switching is performed

ITEM	CONTENT
Tester Connection	A28-2 (HM1) - A28-10 (GND)
Tool Setting	5 V/DIV., 200 ms./DIV.
Condition	Engine switch on (IG) Shift lever in N Transfer position switch switched from H4 to L4 (Switching from transfer high to low)

ITEM	CONTENT
Tester Connection	A28-6 (HM2) - A28-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Engine switch on (IG) Shift lever in N Transfer position switch switched from L4 to H4 (Switching from transfer low to high)



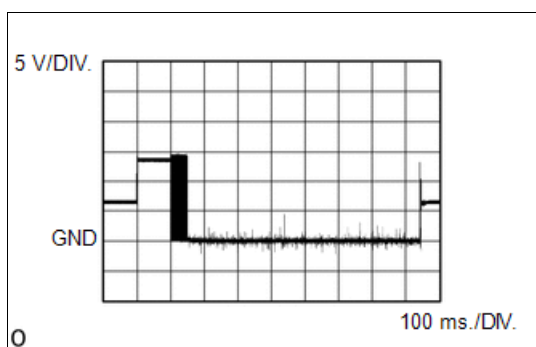
(2) When a gear is not engaged and switching is not performed

ITEM	CONTENT

ITEM	CONTENT
Tester Connection	A28-2 (HM1) - A28-10 (GND)
Tool Setting	5 V/DIV., 1 s./DIV.
Condition	Engine switch on (IG) Shift lever in N Transfer position switch switched from H4 to L4 (Switching from transfer high to low)

ITEM	CONTENT
Tester Connection	A28-6 (HM2) - A28-10 (GND)
Tool Setting	5 V/DIV., 1 s./DIV.
Condition	Engine switch on (IG) Shift lever in N Transfer position switch switched from L4 to H4 (Switching from transfer low to high)

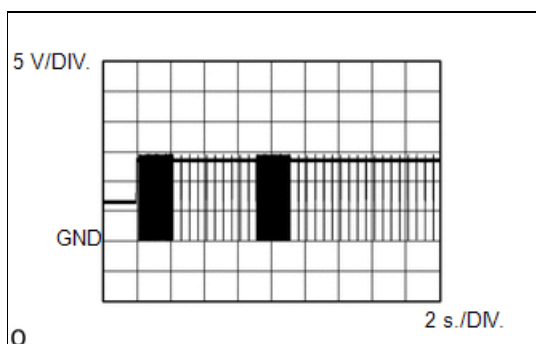
(c) Waveform 2



(1) When a gear is engaged and switching is performed

ITEM	CONTENT
Tester Connection	A28-7 (TM2) - A28-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Engine switch on (IG) Center differential lock switch pressed to switch from free to lock (Switching center differential from free to lock)

ITEM	CONTENT
Tester Connection	A28-8 (TM1) - A28-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Engine switch on (IG) Center differential lock switch pressed to switch from lock to free (Switching center differential from lock to free)



(2) When a gear is not engaged and switching is not performed

ITEM	CONTENT
Tester Connection	A28-7 (TM2) - A28-10 (GND)
Tool Setting	5 V/DIV., 2 s./DIV.
	Engine switch on (IG)

Condition	Center differential lock switch pressed to switch from free to lock
ITEM	CONTENT
	(Switching center differential from free to lock)

ITEM	CONTENT
Tester Connection	A28-8 (TM1) - A28-10 (GND)
Tool Setting	5 V/DIV., 2 s./DIV.
Condition	Engine switch on (IG) Center differential lock switch pressed to switch from lock to free (Switching center differential from lock to free)



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