### 2008MY SAAB OBD II CERTIFICATION

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Parameters	Enable Conditions		MIL	Exti
System	Code	Description	Criteria	Value			Required	Illumin.	Pre
ystem Voltage	P0562	Low Supply	IG voltage	< 8.68 V	Ignition	ON	20 sec	2nd	
					Emergency mode	FALSE	Continuous		
					Transmission Input Speed	> 800rpm			
					No DTC set	P0716			
						P0717			
	P0563	High Supply	IG voltage	> 18 V	Ignition	ON	20 sec	2nd	
					Emergency mode	FALSE	Continuous		
					Transmission Input Speed	> 800rpm			
					No DTC set	P0716			
						P0717			
ternal Control Module	P0601	Check Sum Error	Detectin of differences between the result of the checksum		Ignition	OFF->ON (only at	2 times	2nd	
Iemory			calculation executed after IG ON and the correct checksum. If	1		Transmission computer	1	1	
/			there are differences from the correct checksum value stored in	1	1	initialization function)	I		
			the FLASH ROM, a second calculation is made.			micianzauon runcuon)	1		
			the LEAST KOW, a second calculation is made.				1		
ost communication with	U0100	Frame missing from ECM	No CAN status frame from ECM detected		Diagnostic Service "Disable Normal Con	munication" not detected	4 sec	2nd	
CM (Engine)							Continuous		
					Engine speed	> 400 rpm once within the			
						driving cycle			
					Ignition	ON >3 sec			
					DS Active CAN <sup>2</sup>	TRUE			
AN Bus Off Counter	U0001	CAN controller continuity check	Receiving "BUS OFF" state from CAN controller		Ignition	ON >3 sec	8 times	2nd	
verrun	00001	CALV COMMONET COMMUNITY CHECK	Receiving Bos of F state from CAIV controller		-	TRUE	o unics	Ziid	
verrun					DS Active CAN <sup>2</sup>	IKUE			
valid data from ECM	P1895	Engine Torone signal is indicated	TCM receives Engine Torque Actual Validity	"Invalid"	Diagnostic Service "Disable Normal Com	munication" not datasted	4 sec	2nd	
ivanu data nom ECM	F 1093	invalid	TCW receives Eligilie Torque Actual Validity	ilivalid	Diagnostic Service Disable Normai Con	intunication not detected	Continuous	ZIIU	
		ilivalid			L .	L	Continuous		
					Emergency mode	FALSE			
					Ignition	ON >3 sec			
					DS Active CAN <sup>2</sup>	TRUE			
					No DTC set	U0100			
olenoid S1	P0985	Circuit continuity check	Short-cut ground		DS Active <sup>3</sup>	TRUE	500 msec	2nd	
			Detected signal of the S1 monitor when S1 driver outputs the	"OFF" signal (0V)	Time after solenoid output changed	>10 ms	Continuous		
			"ON"signal (12V)		Emergency mode	FALSE			
	P0986	1	Not connected or short-cut Ubatt						
	10,00			40xm : 140xp					
			Detected signal of the S1 monitor when S1 driver outputs the	"ON" signal (12V)					
			"OFF"signal (0V)						
olenoid S2	P0973	Circuit continuity check	Short-cut ground		DS Active <sup>3</sup>	TRUE	500 msec	2nd	
			Detected signal of the S2 monitor when S2 driver outputs the	"OFF" signal (0V)	Time after solenoid output changed	>10 ms	Continuous		
			"ON"signal (12V)		Emergency mode	FALSE			
	P0974		Not connected or short-cut Ubatt				1		
			Detected signal of the S2 monitor when S2 driver outputs the	"ON" signal (12V)			1		
			"OFF"signal (0V)				1		
orque Converter Clutch	P0741	Comparison of engine speed and	Converter is slipping with active lock-up on.		DS Active <sup>3</sup>	TRUE	12 sec	2nd	
		transmission input speed	(Engine Speed - Transmission Input Speed)	> 100rpm	Fdetect inh <sup>4</sup>	FALSE	Continuous		
			, o		Shift position	RANGE D(defined)			
					*	8 sec	1		
					Time after N-D shifting contro <sup>9</sup> ends		1		
					Engine Torque	>= 0 Nm	1		
							1		
				1	Engine Speed	< 4000 rpm	I		
					Time after SLU target current (_ir) >=	3sec	1		
				1	abs( 1- SpeedABS / Transmission Output		I		
				1	Speed calculated from Transmission Inpu		I		
	1	1	1	1	opeca carculated from 11alishiission inpu	1	1	1	

	1	Ì	1	İ	Time after shifting control ends	0.5 sec	1	1	1
					Time after shifting control ends	0.5 sec			
					Oil temperature	>= 20°C FALSE			
					Lock-up	FALSE			
					No DTC set	P2759			
					No Die sei	P0716			
						P0717			
						P0721			
						P0722			
	P0742		Abs(EngineSpeed - Transmission Input Speed)	< 30 rpm for 2.0 sec continuously	DS_Active <sup>3</sup>	TRUE	4sec	2nd	
					Fdetect_inh <sup>4</sup>	FALSE			
					Shift position	RANGE_D (defined)			
					Time after N-D shifting control end	1.0 sec			
					Time area IV D similary control end				
					Time after changing to Shift position =	8.0 sec			
					RANGE_D(defined)				
						0.5 sec			
1		1			Time after shifting control ends	>= 60Nm			l
I		1	1		EngineTorque_noACC <sup>8</sup>				l
		1			Engine Speed	>1000 rpm			l
		1				< 3000 rpm			
					abs( 1- SpeedABS / Transmission Output	<10 %			
		1			Speed calculated from Transmission Inpu Speed)				
					Oil temperature	>= 20 °C			
					Time after SLU pressure = 0 kPa	3sec			
					No DTC set	P2759			
						P0716			
						P0717			
						P0721			
						P0722			
Pressure solenoid SLU	P2764	Circuit continuity check	Short-cut ground or open		1	TRUE	500 ms	2nd	
				23 m∆	DS_Active <sup>3</sup> Emergency mode			2nd	
			Current	<23 mA	Emergency mode	FALSE	Continuous	2nd	
				<23 mA <15)	Emergency mode	FALSE		2nd	
			Current					2nd	
	P0762	,	Current (AD		Emergency mode  No DTC set	FALSE	Continuous		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Controf	FALSE P2763 for 1 sec and over	Continuous 2,75 sec	2nd	
	P2762		Current (AD		Emergency mode  No DTC set  No Shifting Control*  Emergency mode	FALSE P2763 for 1 sec and over FALSE	Continuous		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control <sup>®</sup> Emergency mode Oil temperature	FALSE P2763 for 1 sec and over FALSE > 20°C	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control' Emergency mode Oil temperature System voltage change	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0.2V	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage	FALSE P2763 for 1 sec and over  FALSE > 20°C < 0,2V 11 -16 V	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control' Emergency mode Oil temperature System voltage change	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0.2V	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control' Emergency mode Oil temperature System voltage change System voltage SLU Output current target	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 - 16 V  > 835mA and constant.	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage	FALSE P2763 for 1 sec and over  FALSE > 20°C < 0,2V 11 -16 V	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control <sup>®</sup> Emergency mode  Oil temperature System voltage change System voltage SLU Output current target  DS Active <sup>3</sup>	FALSE P2763 for 1 sec and over  FALSE > 20°C < 0.2V 11 -16 V > 835mA and constant.  TRUE	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control' Emergency mode Oil temperature System voltage change System voltage SLU Output current target	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE	Continuous 2,75 sec		
	P2762		Current (AD Terminal short	<15)	Emergency mode  No DTC set  No Shifting Control <sup>®</sup> Emergency mode  Oil temperature System voltage change System voltage SLU Output current target  DS Active <sup>3</sup>	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0.2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712	Continuous 2,75 sec		
			Current (AD  Terminal short Error current	<15)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713	Continuous  2,75 sec  Continuous	2nd	
	P2762		Current (AD  Terminal short Error current  Short-cut Ubatt (+B)	<15)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active <sup>3</sup> No DTC set  DS Active <sup>4</sup>	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE	Continuous  2,75 sec Continuous  500 ms		
			Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current	<15) > 80 mA > 1,333 mA	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713	Continuous  2,75 sec  Continuous	2nd	
			Current (AD  Terminal short Error current  Short-cut Ubatt (+B)	<15)	Emergency mode  No DTC set  No Shifting Control <sup>®</sup> Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active <sup>®</sup> No DTC set  DS Active <sup>®</sup> Emergency mode	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE	Continuous  2,75 sec Continuous	2nd	
			Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current	<15) > 80 mA > 1,333 mA	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active <sup>3</sup> No DTC set  DS Active <sup>4</sup>	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE	Continuous  2,75 sec Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD	<15) > 80 mA > 1,333 mA	Emergency mode  No DTC set  No Shifting Controll Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Activel No DTC set  DS Activel Emergency mode	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0.2°V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  P2764 for 1 sec and over	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
			Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical)	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control <sup>®</sup> Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active <sup>3</sup> No DTC set  DS Active <sup>4</sup> Emergency mode No DTC set  IG voltage	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  P2764 for 1 sec and over  > 10.5 V	Continuous  2,75 sec Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sum_ie	<15) > 80 mA > 1,333 mA	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  Ig voltage Input AD value	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  P2764 for 1 sec and over  > 10.5 V  < 1000(1333mA)	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sun_ie	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  IG voltage Input AD value Emergency mode	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  > 10.5 V  < 1000(1333mA)  FALSE	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sum_ie* "le" is added to "sum_ie" every 10 msec. "ie": 'Difference of "ir" and "fib".	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  Ig voltage Input AD value	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  P2764 for 1 sec and over  > 10.5 V  < 1000(1333mA)	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sum_ie  "ie" is added to "sum_ie" every 10 msec.  "ie"'s 'Difference of 'ii" and 'ifb'.  "ir" 'Target current	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  IG voltage Input AD value Emergency mode	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  > 10.5 V  < 1000(1333mA)  FALSE	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sum_ie "ie" is added to "sum_ie" every 10 msec. "ie": Difference of "ir" and "ifb". "ir": Target current "ifb": Feedback current	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  IG voltage Input AD value Emergency mode DS Active Os Active Emergency mode So DTC set  STORY	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0.2°V  11 - 16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  P2764 for 1 sec and over  > 10.5 V  < 1000(1333mA)  FALSE  TRUE	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	
	P2763		Current (AD  Terminal short Error current  Short-cut Ubatt (+B) Measured Current (AD  Feed Back Current Stuck(Electrical) sum_ie  "ie" is added to "sum_ie" every 10 msec.  "ie"'s 'Difference of 'ii" and 'ifb'.  "ir" 'Target current	<15) > 80 mA > 1,333 mA > 1000)	Emergency mode  No DTC set  No Shifting Control Emergency mode Oil temperature System voltage change System voltage SLU Output current target DS Active No DTC set  DS Active Emergency mode No DTC set  IG voltage Input AD value Emergency mode DS Active Os Active Emergency mode So DTC set  STORY	FALSE  P2763 for 1 sec and over  FALSE  > 20°C  < 0,2V  11 -16 V  > 835mA and constant.  TRUE  P0711  P0712  P0713  TRUE  FALSE  P2764 for 1 sec and over  > 10.5 V < 1000(1333mA)  FALSE  TRUE  P2763	Continuous  2,75 sec Continuous  500 ms Continuous	2nd	

	l	1	(1): Detection window = FALSE		1	1		1 1	
			(2): -50 mA <= ie <= 50 mA						
			(3): ie value cahnges from "ie < 0mA" ("ie >0mA") to "ie >0r	I A 11 (11); O A 10)					
Pressure solenoid SLT	D00.62	Circuit continuity check	Short-cut ground or open	mA ( ie < 0mA ).	2	TRUE	F00	2nd	
Pressure solenoid SL1	P0902	Circuit continuity check			DS_Active <sup>3</sup>		500 ms	2nd	
			Current	<23 mA	Emergency mode	FALSE	Continuous		
			(AD	<15)					
					No DTC set	P0963 for 1 sec and over			
	P0961	†	Terminal short		No Shifting Control	L	2.75 sec	2nd	
	10,01		Error current	> 80 mA		FALSE	Continuous	Ziid	
			Error current	> 60 IIIA			Continuous		
					Oil temperature	> 20°C			
					System voltage change	< 0,2V			
					System voltage	11 -16 V			
					SLT Output current target	> 835mA and constant.			
					DS_Active <sup>3</sup>	TRUE			
					DS_Active	-			
					No DTC set	P0711			
						P0712			
						P0713			
	P0963		Short-cut Ubatt (+B)		DS_Active <sup>3</sup>	TRUE	500 ms	2nd	
	l	ĺ	Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous		
			(AD	> 1,555 mA > 1000)	,				
			(AD	> 1000)	N PMG	Doors of the state			
					No DTC set	P0962 for 1 sec and over			
	P0748		Feed Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sec	2nd	
			sum_ie	>20000	Input AD value	< 1000(1333mA)			
			"ie" is added to "sum_ie" every 10 msec.		Emergency mode	FALSE			
			"ie": Difference of "ir" and "ifb".		DS Active <sup>3</sup>	TRUE			
			"ir": Target current						
			"ifb": Feedback current		No DTC set	P0962			
			"sum_ie" is cleared as follows:			P0963			
			(1) or (2) or (3)						
			(1): Detection window = FALSE						
			(2): -50 mA <= ie <= 50 mA						
			(3): ie value cahnges from "ie < 0mA" ("ie >0mA") to "ie >0i	I m Δ " ("ie < 0 m Δ ")					
Timing solenoid SLC1	P0966	Circuit continuity check	Short-cut ground or open	1	DS_Active <sup>3</sup>	TRUE	500 msec	2nd	
			Current	<23 mA	Emergency mode	FALSE	Continuous		
			(AD	<15)	Emergency mode	TALDL	Continuous		
			(AD	<15)					
					No DTC set	P0967 for 1 sec and over			
	P0965		Terminal short		No Shifting Control		2.75 sec	2nd	
	l	ĺ	Error current	> 80 mA	Emergency mode	FALSE	Continuous		
					Oil temperature	> 20°C			
	l	ĺ			System voltage change	< 0,2V			
	l	ĺ			System voltage	11 -16 V			
					SLC1 Output current target	> 835mA and constant.			
					DS_Active <sup>3</sup>	TRUE			
					No DTC set	P0711			
					No Die sei	P0712			
	DOO CT		di		2	P0713	500		
	P0967	ĺ	Short-cut Ubatt (+B)		DS_Active <sup>3</sup>	TRUE	500 msec	2nd	
	l	ĺ	Measured Current	> 1,333 mA	Emergency mode	FALSE	Continuous		
	l	ĺ	(AD	> 1000)	ĺ	1			
	l	ĺ			No DTC set	P0966 for 1 sec and over			
	l	İ			1		1	1 1	
	D0778	<del> </del>	Faad Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sac	2nd	
	10//0	ĺ		>20000			1 300	Ziiu	
	l	ĺ		220000					
	l	ĺ							
	l	İ			DS_Active <sup>3</sup>	IKUE	1		
	l	İ	"ir": Target current		1	I	1	1 1	
	P0778		Feed Back Current Stuck(Electrical) sum_je "ie" is added to "sum_je" every 10 msec. "ie": 'Difference of "ir" and "ifb". "ir": Target current	>20000	IG voltage input AD value Emergency mode DS_Active <sup>3</sup>	> 10.5 V < 1000(1333mA) FALSE TRUE	1 sec	2nd	

			"ifb": Feedback current "sum_ie" is cleared as follows: (1) or (2) or (3) (1): Detection window = FALSE (2): -50 mA <= ie <= 50 mA (3): ie value calnages from "ie < 0mA" ("ie >0mA") to "ie >0mA"	wh''("inc (mA")	No DTC set	P0966 P0967			
Timing solenoid SLC2	P0970	Circuit continuity check	(a), revaine canages from revolute (resource) to se son Short-cut ground or open Current (AD	<23 mA <15)	DS_Active <sup>3</sup> Emergency mode No DTC set	TRUE FALSE P0971 for 1 sec and over	500 msec Continuous	2nd	
	P0969		Terminal short Error current	> 80 mA	No Shifting Control <sup>®</sup> Emergency mode Oil temperature System voltage change System voltage SLC2 Output current target DS_Active <sup>®</sup>	> 20°C < 0,2V 11 - 16 V > 835mA and constant. TRUE	2.75 sec Continuous	2nd	
	P0971		Short-cut Ubatt (+B) Measured Current (AD	> 1,333 mA > 1000)	No DTC set  DS_Active <sup>3</sup> Emergency mode	P0711 P0712 P0713 TRUE FALSE	500 msec Continuous	2nd	
	P0798		Feed Back Current Stuck(Electrical)		No DTC set  IG voltage	P0970 for 1 sec and over > 10.5 V	1 sec	2nd	
			sum_ie "ie" is added to "sum_ie" every 10 msec. "ie"; bifference of "ii" and "ifb". "ii": Target current "ifb": Feedback current "sum_ie" is cleared as follows: (1) or (2) or (3) (1) Detection window = FALSE (2): -50 mA <= ie <= 50 mA (3): ie value calmges from "ie < 0mA" ("ie >0mA") to "ie >0f	>20000  mA" ('ie < 0mA'').	Input AD value Emergency mode DS_Active <sup>2</sup> No DTC set	< 1000(1333mA) FALSE TRUE P0970 P0971			
Timing solenoid SLC3	P2720	Circuit continuity check	Short-cut ground or open Current (AD	<23 mA <15)	DS_Active <sup>3</sup> Emergency mode No DTC set	TRUE FALSE P2721 for 1 sec and over	500 msec Continuous	2nd	
	P2719		Terminal short Error current	> 80 mA	No Shifting Control <sup>®</sup> Emergency mode Oil temperature System voltage change System voltage SLC3 Output current target DS_Active <sup>®</sup> No DTC set	FALSE > 20°C < 0.2V 11 -16 V > 835mA and constant. TRUE P0711 P0712 P0713	2.75 sec Continuous	2nd	
	P2721		Short-cut Ubatt (+B) Measured Current (AD	> 1,333 mA > 1000)	DS_Active <sup>3</sup> Emergency mode No DTC set	TRUE FALSE P2720 for 1 sec and over	500 msec Continuous	2nd	
	P2716		Feed Back Current Stuck(Electrical)		IG voltage	> 10.5 V	1 sec	2nd	

			sum_ie  "ie" is added to "sum_ie" every 10 msec.  "ie" : Difference of "ir" and "ifb".  "ir" : Target current  "ifb": Feedback current  "sum_ie" is cleared as follows:  (1) or (2) or (3)  (1): Detection window = FALSE  (2): -50 mA <= 60 mA  (3): ie value cahnges from "ie < 0mA" ("ie >0mA") to "ie >0mA".	>20000 nA" ('še < 0mA").	DS Active <sup>3</sup> No DTC set	< 1000(1333mA) FALSE TRUE P2720 P2721			
Timing solenoid SLB1	P2729	Circuit continuity check	Short-cut ground or open Current (AD	<23 mA <15)	DS_Active <sup>3</sup> Emergency mode No DTC set	TRUE FALSE P2730 for 1 sec and over	500 msec Continuous	2nd	
	P2728		Terminal short Error current	> 80 mA	No Shifting Control <sup>®</sup> Emergency mode Oil temperature System voltage change System voltage SLB1 Output current target DS_Active <sup>®</sup> No DTC set	FALSE > 20°C < 0.2V	2.75 sec Continuous	2nd	
	P2730		Short-cut Ubatt (+B) Measured Current (AD	> 1,333 mA > 1000)	DS_Active <sup>3</sup> Emergency mode No DTC set	TRUE FALSE P2729 for 1 sec and over	500 msec Continuous	2nd	
	P2725		Feed Back Current Stuck(Electrical) sum_je  "le" is added to "sum_je" every 10 msec.  "ie": Difference of "ir" and "ifb".  "ir": Target current  "ifb": Feedback current  "sum_je" is cleared as follows:  (1) or (2) or (3)  (1): Detection window = FALSE  (2): -50 mA <= ie <= 50 mA  (3): ie value canhages from "ie < 0mA" ("ie >0mA") to "ie >0m".	>20000 nA" ("ë < 0mA").	IG voltage Input AD value Emergency mode DS_Active <sup>3</sup> No DTC set	> 10.5 V < 1000(1333mA) FALSE TRUE P2729 P2730	l sec	2nd	
Gear error, hydraulic fault	P0729	Rationality	Calculation of actual gear ratio for 6th gear is not correct. (Condition A or Condition B)  Condition A abs(1-GRCurrent/GRExpected) Condition B abs(1-Gear Ratio Current/4th Gear Ratio) or abs(1-Gear Ratio Current/5th Gear Ratio)	> 20% <4% <4%	No Shifting Control <sup>®</sup> Not in neutral control <sup>®</sup> Not in neutral control <sup>®</sup> Not garage shifting control <sup>®</sup> (N-D or N-R) Throttle (A only) Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>®</sup> (B only) DS Active <sup>®</sup> Fedetect Inh <sup>®</sup> Shift position Time after changing to Shift position = Time after changing to Shift position = Time after garage shift control <sup>®</sup> end Time after outrol <sup>®</sup> end Oil temperature Brake Brake usb(1-SpeedABS/Trans. Output Speed) QS AirSuction <sup>®</sup>	>= 10% >= 500rpm >= 250rpm 6 6 >= 80Nm TRUE FALSE RANGE D(defined) 8.0 sec 1.0 sec 1.0 sec 0.5 sec >= 20°C OFF <- 10% FALSE	12 sec Continuous	2nd	

	i .	I	i .	No DTC set	P0703	i	i	ı
				No DTC set	P0716			
					P0717			
					P0721			
					P0722			
20731	Rationality	Calculation of actual gear ratio for 1st gear is not correct.		Not garage shifting contro <sup>11</sup> (N-D or N-R		12 sec	2nd	
	1			Not in neutral control <sup>10</sup>		Continuous		
				No Shifting Control				
		abs( 1 - GRCurrent/ 2nd GearRatio)	< 4%	Current Gear	GEAR_1ST or			
		or		Transmission Output Speed	1350 rpm >= outRpm >=			
					250 rpm			
		abs(1 - GRCurrent/ 3rd GearRatio)	< 4%	EngineTorque_noACC8	>=100Nm (GEAR_1ST)			
		or		EngineTorque_noACC <sup>8</sup>	>= 80 Nm			
					(GEAR_ISTEB)			
		abs(1 - GRCurrent/ 4th GearRatio)	< 4%	DS Active <sup>3</sup>	TRUE			
				Fdetect Inh <sup>4</sup>	FALSE			
				Shift position	RANGE_D(defined)			
				Time after changing to Shift position = RANGE_D(defined)	8.0 sec			
				Time after garage shift control 1 end	1.0 sec			
				Time after neutral controf <sup>0</sup> end	1.0 sec			
				Time after shifting contro <sup>9</sup> end	0.5 sec			
				Oil temperature	>= 20°C			l
				Brake	OFF			
				abs(1-SpeedABS/Trans.Output Speed)	< 10%			
				QS AirSuction <sup>5</sup>	FALSE			
				No DTC set	P0703			
				No DTC set	P0716			
					P0717			
					P0721			
					P0722			
0732	Rationality	Calculation of actual gear ratio for 2nd gear is not correct.		No Shifting Control	J	12 sec	2nd	
	1	(Condition A or Condition B)		Not in neutral control <sup>10</sup>		Continuous		
		Condition A		Not garage shifting contro11(N-D or N-R	)			
		abs(1-GRCurrent/GRExpected)	>20%	Throttle (A only)	>= 10%			
		abs(1-GRCurrent/GRExpected) Condition B		Transmission Output Speed (A)	>= 10% >= 500rpm			
		abs(1-GRCurrent/GRExpected)	>20% <4%	Transmission Output Speed (A) Transmission Output Speed (B)				
		abs(1-GRCurrent/GRExpected) Condition B abs(1-Gear Ratio Current/ 1st Gear Ratio) or	<4%	Transmission Output Speed (A)	>= 500rpm >=250rpm 2			
		abs(1-GRCurrent/GRExpected)  Condition B  abs(1-Gear Ratio Current/ 1st Gear Ratio)		Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only)	>= 500rpm >=250rpm 2 >=80Nm			
		abs(1-GRCurrent/GRExpected) Condition B abs(1-Gear Ratio Current/ 1st Gear Ratio) or abs(1-Gear Ratio Current/ 3rd Gear Ratio) or	<4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>3</sup>	>= 500rpm >=250rpm 2 >=80Nm TRUE			
		abs(1-GRCurrent/GRExpected) Condition B abs(1-Gear Ratio Current/ 1st Gear Ratio) or	<4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>2</sup> Fdetect Inh <sup>4</sup>	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>4</sup> Feletect Inh <sup>4</sup> Shift position	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE_D(defined)			
		abs(1-GRCurrent/GRExpected) Condition B abs(1-Gear Ratio Current/ 1st Gear Ratio) or abs(1-Gear Ratio Current/ 3rd Gear Ratio) or	<4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>2</sup> Fdetect Inh <sup>4</sup>	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active Fedetect Inf* Shift position Time after changing to Shift position =	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE_D(defined)			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active Fedetect Infs Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control¹ end	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active* Teletect Inh* Shift position Time after changing to Shift position = RANGE_D(defined)	>= 500tpm >=250tpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 1.0 sec 0.5 sec			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>3</sup> Fidetect Int <sup>6</sup> Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control <sup>1</sup> end Time after notural control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE D(defined) 8.0 sec 1.0 sec 1.0 sec 0.5 sec			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fédetect Inh® Fishit position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral contro® end Time after retrained contro® end Time after shifting contro® end Time after shifting contro® end Oil temperature Brake	>= 500pm >=250pm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>8</sup> (B only) DS Active <sup>3</sup> Fidetect Int <sup>6</sup> Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control <sup>1</sup> end Time after notural control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time after shifting control <sup>4</sup> Time	>= 500rpm >=250rpm 2 >=80Nm TRUE FALSE RANGE D(defined) 8.0 sec 1.0 sec 1.0 sec 0.5 sec			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fédetect Inh® Fishit position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral contro® end Time after retrained contro® end Time after shifting contro® end Time after shifting contro® end Oil temperature Brake	>= 500pm >=250pm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active <sup>3</sup> Fetetect Inf Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control <sup>1</sup> end Time after notral control <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction <sup>5</sup>	= 500tpm  = 250tpm  >= 280Nm  TRUE  FALSE  RANGE_D(defined)  8.0 sec  1.0 sec  1.0 sec  0.5 sec  = 20°C  OFF  < 10%  FALSE			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Teletect Inf Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end Time after shifting contro® end	>= 500tpm >=250tpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF < 10% FALSE P0703			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active <sup>3</sup> Fetetect Inf Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control <sup>1</sup> end Time after notral control <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction <sup>5</sup>	= 500tpm  = 250tpm  >= 280Nm  TRUE  FALSE  RANGE_D(defined)  8.0 sec  1.0 sec  1.0 sec  0.5 sec  = 20°C  OFF  < 10%  FALSE			
		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active <sup>3</sup> Fetetect Inf Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control <sup>1</sup> end Time after notral control <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Time after shifting cortrol <sup>4</sup> end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction <sup>5</sup>	>= 500tpm >=250tpm 2 >=80Mm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF < 10% FALSE P0703 P0716 P0721			
923		abs/1-GRCurrent/GRExpected) Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/(1-Gear Ratio Current/ 4th Gear Ratio) or abs/(1-Gear Ratio Current/ 6th Gear Ratio)	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fetetect Int® Shift position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral control® end Time after shifting contro® end Time after shifting contro® end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction® No DTC set	>= 500pm >=250pm 2 >=80Nm TRUE FALSE FALSE 1.0 sec 1.0 sec 0.5 sec >= 20°C OFF < 10% FALSE P0703 P0716 P0717			
7733	Rationality	abs/1-GRCurrent/GRExpected)  Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or abs/1-Gear Ratio Current/ 6th Gear Ratio)  Calculation of actual gear ratio for 3rd gear is not correct.	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fédetect Inta® Fishit position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral contro® end Time after shifting contro® end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction® No DTC set	>= 500tpm >=250tpm 2 >=80Mm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF < 10% FALSE P0703 P0716 P0721	12 sec	2nd	
9733	Rationality	abst.1-GRCurrent/GRExpected) Condition B abst.1-Gear Ratio Current/ 1st Gear Ratio) or abst.1-Gear Ratio Current/ 3rd Gear Ratio) or abst.1-Gear Ratio Current/ 4th Gear Ratio) or abst.1-Gear Ratio Current/ 6th Gear Ratio)  Calculation of actual gear ratio for 3rd gear is not correct. (Condition A or Condition B)	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fedetect Inta® Shift position Time after changing to Shift position = RANGE_D(defined) Time after changing to control® end Time after relating shift control® end Time after shifting contro® end Oil temperature Brake absy(L-SpeedABS/Trans. Output Speed) QS AirSuction® No DTC set  No Shifting Contro® No Shifting Contro® No in neutral contro® No in neutral contro®	>= 500tpm >= 250tpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF <10% FALSE P0703 P0716 P0717 P0721 P0722	12 sec Continuous	2md	
07733	Rationality	abs/1-GRCurrent/GRExpected)  Condition B abs/1-Gear Ratio Current/ 1st Gear Ratio) or abs/1-Gear Ratio Current/ 3rd Gear Ratio) or abs/1-Gear Ratio Current/ 4th Gear Ratio) or abs/1-Gear Ratio Current/ 6th Gear Ratio)  Calculation of actual gear ratio for 3rd gear is not correct.	<4% <4% <4%	Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active® Fédetect Inta® Fishit position Time after changing to Shift position = RANGE_D(defined) Time after garage shift control® end Time after neutral contro® end Time after shifting contro® end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction® No DTC set	>= 500tpm >= 250tpm 2 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF <10% FALSE P0703 P0716 P0717 P0721 P0722		2nd	

	abs(1-Gear Ratio Current/ 1st Gear Ratio)  or abs(1-Gear Ratio Current/ 4th Gear Ratio)  or abs(1-Gear Ratio Current/ 5th Gear Ratio)	<4% <4%	Transmission Output Speed (B) Current gear Engine Torque noACC* (B only) DS Active* Fedetect_Inf* Shift position Time after changing to Shift position = Time after garage shift contro* end Time after neutral contro* end Time after shifting contro* end Oil temperature Brake OS AirSuction* No DTC set	>=250rpm 3 >=80Nm TRUE FALSE RANGE_D(defined) 8.0 sec 1.0 sec 0.5 sec >= 20°C OFF <10% FALSE P0703 P0716 P0717			
P0734	Calculation of actual gear ratio for 4th gear is not correct. (Condition A or Condition B) Condition A abs(1-Grurent/GRExpected) Condition B abs(1-Gear Ratio Current/ 1st Gear Ratio) or abs(1-Gear Ratio Current/ 5th Gear Ratio) or abs(1-Gear Ratio Current/ 6th Gear Ratio)	>20% <4% <4% <4%	No Shifting Control <sup>®</sup> Not in neutral control <sup>®</sup> Not garage shifting control <sup>®</sup> (N-D or N-R) Throttle (A only) Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC <sup>®</sup> (B only) DS Active <sup>®</sup> Feleret Inl <sup>®</sup> Shift position Time after changing to Shift position = Time after changing to Shift position = Time after garage shift control <sup>®</sup> end Time after transit control <sup>®</sup> end Oil temperature Brake abs(1-SpeedABS/Trans. Output Speed) QS AirSuction <sup>®</sup> No DTC set	p0722  ≥ 10%  >= 500pm  >=250pm  4 >=80Nm TRUE FALSE 1.0 sec 1.0 sec 0.5 sec >= 20°C OFF <10%  FALSE  P0703  P0717  P0721  P0721	12 sec Continuous	2nd	
P0735	Calculation of actual gear ratio for 4th gear is not correct. (Condition A or Condition B)  Condition A abs(1-GRCurrent/GRExpected)  Condition B abs(1-Gear Ratio Current/ 4th Gear Ratio)  or abs(1-Gear Ratio Current/ 6th Gear Ratio)	>20% <4% <4%	No Shifting Control Not in neutral control Not in neutral control Not garage shifting control Throttle (A only) Transmission Output Speed (A) Transmission Output Speed (B) Current gear Engine Torque noACC® (B only) DS Active Federet Inh Shift position Time after changing to Shift position = Time after garage shift control Time after garage shift control Time after neutral control Time after shifting control od (I emperature Brake Brake Oli (I emperature Brake Oli (I emperature Brake Oli (I emperature Brake No DTC set	Description   Description	12 sec Continuous	2nd	

						P0717 P0721 P0722			
ingine speed signal	P0725	Signal from ECM stated as unreliable	Engine Speed Validity	"Invalid"	Diagnostic Service "Disable Normal Cor		4 sec	2nd	
					Ignition DS_Active_CAN <sup>2</sup> Emergency mode	ON >3 sec TRUE FALSE	Continuous		
					No DTC set	U0100			
ransmission Range ensor Circuit	P0707	Voltage low	POS1 Voltage or POS2 Voltage	< 0.127 (AD value=26) V	Battery voltage	6.0 V < Battery Voltage < 15.5 V	200ms	2nd	
	P0708	Voltage high	Input POS1 Voltage or Input POS2 Voltage	> 4.87 (AD value=997)V	Diagnosis Service mode Diagnosis Service mode	FALSE FALSE	200 ms	2nd	
					Battery voltage	6.0 V < Battery Voltage < 15.5 V	Continuous		
	P0706	Signal out of range	Input POS1 Voltage + Input POS2 Voltage	<= 5V -0.29V or >= 5V +0.29V	Diagnosis Service mode	FALSE	200 ms	2nd	
					Battery voltage	6.0 V < Battery Voltage < 15.5 V	Continuous		
utput speed sensor circu	i P0722		No pulse		Not in neutral controf <sup>10</sup> No Shifting Controf <sup>0</sup>	1337	Dependent of Speed	2nd	
			Number of pulses from Transmission Output Speed Sensor Number of pulses from Transmission Input Speed Sensor	0 16	Not garage shifting contro <sup>11</sup> (N-D) DS Active Emergency mode Shift position Time since change from P.R or N range others if vehicle speed >= 66km/h and oi temperature >20°C				
					Time since change from P,R or N range others if vehicle speed < 66km/h and oil temperature <= 20°C				
					SpeedABS	10sec > 300 rpm			
					No DTC set	P0501 P0706 P0707 P0708 P0716 P0717			
						P0718 P0778 P0798 P0961 P0962			
						P0963 P0965 P0966 P0967 P0969			
						P0970 P0971 P0973 P0974			
						P0985 P0986 P1895 P2159 P2716			
						P2719 P2720 P2721 P2725			

					P2729 P2730 U0001			
	P0721	Range/Performance, wrong pulse   1-SpeedABS/Transmission Output Speed	>15 %	Time after changing to Position Shift position Engine speed Speed ABS Spinning* DS_Active* Emergency mode No DTC set	U0121	10 sec	2nd	
Transmission input speed sensor	P0717	No pulse  No of pulses from Transmission Input Speed Sensor  No of pulses from Transmission Output Speed Sensor	0 24	Emergency mode Trans. Output Speed * CurrentGearRatio Shift position	TRUE FALSE	Dependent of Speed	2nd	

Manage   Palas   Manage   Ma	1 1		į i	İ	İ	Time since change from P,R or N range to	l	ı	1 1	
Note   Note						others if vehicle speed >= 66km/h and oil				
Procedure   Process   Pr						temperature >20°C				
## Annual status upon of setum had on support of setum							2.5sec			
Segrecation C - DC   Segreca						Time since change from P,R or N range to				
NOTE - 1 Special Stream (logor special						others if vehicle speed < 66km/h and oil				
No. DTC and possed policy property of the pol										
MOTO   Wang Print										
Post   Post										
Part   Part										
POTAL   POTA										
1002   1003   1004							P0721			
100   100							P0722			
Property   Property										
Profession										
Profice   Prof										
Procedure   Proc							P0961			
Process										
Property   Property										
POPST   POPS										
Proprint   Proprint										
Pop   Pop										1
Port   Port							P0970			1
P0756   P0768   P076										1
PONSE   P1996   P189										
Prose   Pris										
P1895   P2150   P2716   P2716   P2716   P2716   P2716   P2716   P2717   P271										
P3159   P216   P2710   P2720   P2723										
P7716   P779   P771										
P2720   P2720   P2721   P2725   P272										
P2715   P2725   P2728   P2728   P2729   P2730   P2730     P2730							P2719			
P0716   Wrong Pulse										
P0716   Wrong Pulse   1-speedABS/Transmission Input Speed     1-speedABS/Transmission Input Speed     1-speedABS/Transmission Input Speed     1-speedABS/Trans Output Speed										
P0716   Wrong Pulse										
P0716   Wrong Pulse   1-speedABS/Transmission Input Speed   > 15 %   No Shifting Control (N.D.)   10 sec   2nd							P2725			
No. Shifting Control   10021							P2725 P2728			
Wrong Palse   1-speedABS/Transmission Input Speed     > 15 %     Not garage shifting control (N.D.)   1-speedABS/Transmission Input Speed     > 5 %   1-speedABS/Transmission Input Speed     1-speedABS/Tra							P2725 P2728 P2729			
P0716   Wrong Palse							P2725 P2728 P2729 P2730			
ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output Speed   ISpeedABS/Tans. Output SpeedABS/Tans. Ou							P2725 P2728 P2729 P2730 U0001			
I-SpeedABS/Engine Speed   < 5 %   Time after shifting control   Time after changing to Position switch =   RANGE_D		P0716		Wrong Pulse		No Shifting Control	P2725 P2728 P2729 P2730 U0001	10 sec	2nd	
Time after shifting control Time after changing to Position switch = 8 sec RANGE_D Gear		P0716		Wrong Pulse  1-speedABS/Transmission Input Speed	>15%	No Shifting Control Not garage shifting control (N-D)	P2725 P2728 P2729 P2730 U0001 U0121	10 sec	2nd	
Time after changing to Position switch		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed	> 15 %	No Shifting Control (N-D)	P2725 P2728 P2728 P2730 U0001 U0121	10 sec	2nd	
RANGE_D   Gear		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)   I-SpeedABS/Tams. Output Speed   I-SpeedABS/Tagine Speed	P2725 P2728 P2729 P2730 U0001 U0121	10 sec	2nd	
Gear   >= 2ND   other than P and N and R		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>1</sup> Not garage shifting control <sup>1</sup> (N-D)  1-SpeedABS/Trans. Output Speed    1-SpeedABS/Engine Speed   Time after shifting control	P2725 P2728 P2729 P2730 U0001 U0121 < 5 % < 5 % 8 sec	10 sec	2nd	
Range   Segret   Se		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control (N-D)  Not garage shifting control (N-D)   -SpeedAB7.Trans. Output Speed     -SpeedABS/Engine Speed    Time after shifting control    Time after changing to Position switch =	P2725 P2728 P2729 P2730 U0001 U0121 < 5 % < 5 % 8 sec	10 sec	2nd	
Engine speed   > 400pm	,	P0716		Wrong Pulse   1 - speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> (N-D)    I-SpeedABS/Trans. Output Speed      I-SpeedABS/Trains output Speed      I-SpeedABS/Trains output Speed      I'me after shifting control    Time after changing to Position switch =    RANGE_D	P2725 P2728 P2729 P2730 U00001 U01012 <5 % <5 % 8 sec 8 sec >= 2ND	10 sec	2nd	
Spinning   FALSE   DS_Active   TRUE		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control  Not garage shifting control    I-SpeedABS/Trans. Output Speed      I-SpeedABS/Trans (Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear	P2725 P2728 P2729 P2730 U00001 U01012 <5 % <5 % 8 sec 8 sec >= 2ND	10 sec	2nd	
DS_Active   TRUE		P0716		Wrong Pulse   1-speed/ABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    I. SpeedABS/Trans. Output Speed      I. SpeedABS/Engine Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear  Range	P2725 P2728 P2739 P2730 U00001 U0121  < 5 %	10 sec	2nd	
LockUpActive		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)   I-SpeedABS/Trans. Output Speed   I-SpeedABS/Trans Coupt Speed   Time after shifting control Time after changing to Position switch = RANGE_D Gear Range Engine speed	P2725 P2728 P2729 P2730 U0001 U0121  < 5 % < 5 % 8 sec >= 2ND other than P and N and R > 400rpm	10 sec	2nd	
Emergency mode FALSE Speed ABS > 30 km/h  No DTC set U0001 P0501 P0706 P0707 P0708 P0711 P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1 - speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   I-SpeedABS/Trans. Output Speed     I-SpeedABS/Engine Speed     Time after shifting control   Time after changing to Position switch =   RANGE_D   Gear   Range     Engine speed     Spinning <sup>†</sup>	P2725 P2728 P2729 P2730 U00001 U0121  < 5 % < 5 % 8 sec 8 sec > ≥ 2ND other than P and N and R > 400cpm FALISE	10 sec	2nd	
Speed ABS   > 30 km/h		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    I-SpeedABS/Trans. Output Speed      I-SpeedABS/Engine Speed    II-SpeedABS/Engine Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear  Range Engine speed Spinning Speed Spinning Speed Spix Spix Speed Spix Speed Spix Speed Spix Spix Speed Spix Spix Speed Spix Spix Spix Spix Spix Spix Spix Spix	p2725 p2728 p2730 u0001 u0121  < 5 % < 5 % 8 sec 8 sec >= 2ND other than P and N and R > 400rpm FALSE TRUE	10 sec	2nd	
No DTC set U0001 P0501 P0706 P0707 P0708 P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   1-SpeedABS/Trans. Output Speed     1-SpeedABS/Trans (Speed     Time after shifting control   Time after changing to Position switch =   RANGE_D     Gear   Range     Engine speed     Spinning     DS_Active     LockUpActive	P2725 P2728 P2729 P2730 U00001 U0121  < 5 % < 5 % 8 sec >= 2ND other than P and N and R > 400rpm FALSE TRUE TRUE	10 sec	2nd	
P0501 P0706 P0707 P0708 P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    I-SpeedABS/Trans. Output Speed      I-SpeedABS/Trans Output Speed      I-speedABS/Engine Speed      Time after shifting control    Time after shifting to Position switch =    RANGE_D   Gear    Range     Engine speed     Spinning     DS_Active     LockUpActive     LockUpActive     Emergency mode	P2725 P2728 P2739 P2730 U00001 U0121  < 5 % < 5 % 8 sec 8 sec ≥ 2ND other than P and N and R > 400rpm FALSE TRUE TRUE TRUE TRUE TRUE TRUE TRUE	10 sec	2nd	
P0706   P0707   P0708   P0711   P0712   P0713   P0721   P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   I-SpeedABS/Trans. Output Speed     I-SpeedABS/Trans (Output Speed     Time after shifting control   Time after shifting control   Time after changing to Position switch =   RANGE_D   Gear   Range   Engine speed   Spinning <sup>†</sup>   DS_Active <sup>†</sup>   LockUpActive   Emergency mode   Speed ABS	P2725 P2728 P2739 P2730 U00001 U0121  < 5 % < 5 % 8 sec 8 sec > ≥ 2ND other than P and N and R > 400cpm FALSE TRUE FALSE > 30 km/h	10 sec	2nd	
P0707 P0708 P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    1-SpeedABS/Tans. Output Speed      1-SpeedABS/Tanjune Speed      1-SpeedABS/Engine Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear  Range Engine speed Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning DS_Active Spinning Sp	p2725 p2728 p2730 p2730 p2730 p2730 p2730 p2730 p2730 p2730 p2730 p275 p2750 p	10 sec	2nd	
P0708 P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1 -speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   1-SpeedABS/Trans. Output Speed     1-SpeedABS/Trans (Dupt Speed     Time after shifting control   Time after changing to Position switch =   RANGE_D   Gear   Range     Engine speed     Spinning     DS_Active     LockUpActive     Emergency mode     Speed ABS     No DTC set	P2725 P2728 P2739 P2730 U00001 U0121  < 5 % < 5 % 8 sec >= 2ND other than P and N and R > 400rpm FALSE TRUE FALSE > 30 km/h U0001 P0001	10 sec	2nd	
P0711 P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    I - SpeedABS/Trans. Output Speed      I - SpeedABS/Engine Speed    Time after shifting control  Time after shifting to Position switch =  RANGE_D  Gear  Range Engine speed Spinning DS_Active LockUpActive Emergency mode  Speed ABS  No DTC set	p2725 p2725 p2730 U00001 U0121  < 5 %	10 sec	2nd	
P0712 P0713 P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control  Not garage shifting control (N.D)  Il-SpeedABS/Trans. Output Speed    Il-SpeedABS/Trans (Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear  Range  Engine speed  Spinning  DS_Active  LockUpActive  Emergency mode  Speed ABS  No DTC set	P2725 P2728 P2730 U00001 U0121  < 5 % < 5 % 8 sec > = 2ND other than P and N and R > 400pm FALSE TRUE FALSE TR	10 sec	2nd	
P0721 P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control  Not garage shifting control  II-SpeedABS/Trans. Output Speed    II-SpeedABS/Trans Couptup Speed    II-SpeedABS/Trans Couptup Speed    Time after shifting control  Time after changing to Position switch =  RANGE_D  Gear  Range  Engine speed  Spinning  DS_Active  LockUpActive  LockUpActive  Emergency mode  Speed ABS  No DTC set	P2725 P2728 P2729 P2730 U0001 U0021  < 5 % < 5 % 8 sec >= 2ND other than P and N and R > 400rpm FALSE TRUE FALSE TRUE FALSE TRUE FALSE TRUE FALSE TRUE FOOTO P0700 P0707 P0708 P0707	10 sec	2nd	
P0722		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   1-SpeedABS/Trans. Output Speed     1-SpeedABS/Trans (Speed     Time after shifting control   Time after changing to Position switch =   RANGE_D   Gear   Range     Engine speed     Spinning     DS_Active     LockUpActive     Emergency mode     Speed ABS     No DTC set	P2725 P2728 P2739 P2730 U00001 U0121  < 5 % < 5 % 8 sec >= 2ND other than P and N and R > 400rpm FALSE TRUE FALSE > 30 km/h U0001 P0706 P0707 P0708 P0711	10 sec	2nd	
P0722 P0725		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control Not garage shifting control (N-D)    I-SpeedABS/Trans. Output Speed      I-SpeedABS/Trans Output Speed      I-speedABS/Engine Speed      Time after shifting control    Time after shifting to Position switch =    RANGE_D   Gear    Range     Engine speed     Spinning     DS_Active     LockUpActive     Emergency mode     Speed ABS   No DTC set	p2725 p2725 p2730 U00001 U0121  < 5 % < 5 % 8 sec 8 sec >> 2ND other than P and N and R  > 400rpm FALSE TRUE TRUE TRUE FALSE > 30 km/h U0001 P0706 P0707 P0707 P0711 P0712	10 sec	2nd	
I I I I I I I I I I I I I I I I I I I		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   1-SpeedABS/Trans. Output Speed     1-SpeedABS/Trans (Speed     Time after shifting control   Time after changing to Position switch =   RANGE_D   Gear   Range   Engine speed   Spinning     DS_Active     LockUpActive     Emergency mode   Speed ABS   No DTC set	P2725 P2728 P2739 P2730 U00001 U0021  < 5 % < 5 % 8 sec > 2 ND other than P and N and R > 400rpm FALSE TRUE FALSE TRUE FALSE > 30 km/h U00001 P05001 P0706 P0707 P0708 P07011 P07112 P0712 P0713	10 sec	2nd	
		P0716		Wrong Pulse   1-speedABS/Transmission Input Speed		No Shifting Control <sup>†</sup> Not garage shifting control <sup>†</sup> (N-D)   1-SpeedABS/Trans. Output Speed     1-SpeedABS/Engine Speed     Time after shifting control   Time after shifting control   Time after shifting to Position switch = RANGE_D   Gear   Range   Engine speed     Spinning     DS_Active     LockUpActive     Emergency mode     Speed ABS     No DTC set	p2725 p2725 p2729 p2730 U00001 U0121  < 5 % < 5 % 8 sec 8 sec > ≥ 2ND other than P and N and R > 400rpm FALSE TRUE FALSE > 30 km/h U0001 p0501 p0706 p0707 p0711 p0712 p0713 p0721	10 sec	2nd	

						P0741			
						P0742			
						P0748			
						P0778			
						P0798			
						P0961			
						P0962			
						P0963			
						P0965			
						P0966			
						P0967			
						P0969			
						P0970			
						P0971			
						P0973			
						P0974			
						P0985			
						P0986			
						P1820			
						P1895			
						P2159			
						P2716			
						P2719			
						P2720			
						P2721			
						P2725			
						P2728			
						P2729			
						P2730			
						P2759			
						P2762			
						P2763			
						P2764			
						U0121			
Transmission oil	P0711	Rationality	Oil temperature change less than	Oil Temperature at initialization = the highest oil temperature			10 min	2nd	
temperature sensor		,			Engine coolant temp at initialization	< 70°C			l
					rangine coolain temp at initialization	C 70 C			
					AD value of oil temperature	< 1000			
1					AD value of oil temperature	> 10			
1						D,R(defined)			
1					Range	D,K(ucinicu)			

Invalid signal from ECM	P0712 P0713 P1820	Circuit continuity check  Circuit continuity check  Accelerator pedal position signal invalid	Short-cut ground AD value of Oil Temp Short-cut Ubat or open circuit AD value of Oil temperature  Accelerator Position Validity	"Invalid"	No DTC set  DS_Active <sup>2</sup> DS_Active <sup>2</sup> DS_Active <sup>2</sup> DriveTime  Engine Coolan(Temperature  No DTC set  Diagnostic Service "Disable Normal Com  Ignition  DS_Active CAN <sup>2</sup> Emergency mode	P0706 P0707 P0708 TRUE  TRUE > 15 min > 50°C P0116 U0001 ununication" not detected ON > 3sec TRUE FALSE	300sec 12 sec 4 sec	2nd 2nd 2nd	
Neutral condition	P1701		Step 1: abs(Engine Speed - Transmission Input Speed) Transmission Input Speed (at D range) Transmission Input Speed (at R range)	<150rpm  > Transmission Output Speed x (1st gear ratio at RANGE_D +400rpm > Transmission Output Speed x (reverse gear ratio at	No DTC set  Not garage shifting contro <sup>11</sup> (N-D or N-R) Not in neutral controf <sup>0</sup> No Shifting Controf <sup>1</sup>	U0100	Step1: at D range: 3.3 sec if (0 <= X <= 1500)	2nd	
			Step 2: Transmission Input Speed Engine Speed	RANGE_R) +1000rpm	Oil temperature Shift position  Time after changing to shift position = RANGE_D or R(defined)  Time after garage shifting end Time after quartal control end Time after shifting control end Transmission Output Speed SpeedABS  Lockup  Current gear  OS AirSuction <sup>5</sup> No DTC set	PALSE (except P0900)  >0°C  RANGE_D or RANGE_R (defined)  1.0sec  1.0sec  0.5sec  -500pm  -500pm  FALSE  1 or 2 or 3 or 4  FALSE  P0716  P0717  P0721  P0722	1.3 sec if (1501 c X <= 3000) 0.8 sec if (3001 c X) at R range: Y <= 1500) 1.3 sec if (1501 c Y <= 3000) 0.8 sec if (3001 c Y <= 3000) 0.8 sec if (3001 c Y <= 3000) 0.8 sec if (3001 c Y <= 3000) 0.8 sec if (3001 c Y ) X = inRpm-outRpm X (1st gear ratio at RANGE_D) Y = inRpm-outRpm X (reverse gear ratio at RANGE_R)		
Neutral control	P1704		C1 apply control Transmission Input Speed C1 pressure	>= (Transmission Input Speed at apply start + 400rpm + Transmission Output Speed x gear ratio) >=3.0kg/cm <sup>2</sup>	DS_Active <sup>†</sup> Shift position Fedetct_Inh <sup>‡</sup> Oil temperature QS_AirSuction <sup>†</sup> No DTC set	TRUE RANGE_D(defined) FALSE >=10°C FALSE P0716	Step 2: 0.1sec 0.3sec	2nd	
						P0717 P0721 P0722			

```
1) O NORMAL
    O NORMAL menas that no failure is detected
2) DS_Active_CAN
   DS_Active_CAN = TRUE when the start condition for CAN failure detection is fulfilled for 2.0 sec continously.
    DS_Active_CAN = FALSE when the permission condition for CAN failure detection is not fulfilled.
      Start Condition for CAN failure detection:
        Ignition ON and
        10.2V < Battery Voltage < 15.5V and
       Not in service mode and
        Reading EEPROM finish
      Permission condition for CAN failure detection:
       Ignition ON and
       9.0V < Battery Voltage < 16.5V and
       Not in service mode
3) DS Active
    DS_Active = TRUE when the start condition for failure detection is fulfilled for 2.0 sec continously.
    DS_Active = FALSE when the permission condition for failure detection is not fulfilled.
      Start Condition for failure detection:
       Ignition ON and
        10.2V < Battery Voltage < 15.5V and
        Not in service mode and
        Reading EEPROM finish and
       Egrpm > 400rpm and Egrpm = Q_NORMAL<sup>1</sup>
      Permission condition for failure detection:
       Ignition ON and
       9.0V < Battery Voltage < 16.5V and
       Not in service mode and
       Egrpm > 400rpm and Egrpm = Q_NORMAL<sup>1</sup>
4) Fdetech_Inh = TRUE if:
    In Emergency modeor
    spinning^6 = TRUE \ \mathbf{or}
    within 10.0 sec after spinning detection endor
    DTC set: P0973, P0974, P0985, P0986, P0966, P0967, P0970, P0971, P2720, P2721, 2729, 2730, P0962, P0963, P2763, P0716, P0717, P0721, P0722,
    P0706, P0707, P0708, P0562, P0563, U0001, U0100, P1820, P1895, P0725, P0601, P0711, P0712, P0713, P0501, P2159, U0121
<sup>5)</sup>QS_AirSuction: Quick stop detection flag for the prevention of failure misdetection for Air suction, is set if the vehicle brakes hard.
    Spinning = 1 if Transversal acceleration > 0.7G (input from ABS signal)
    Spinning = 0 if Transversal acceleration parameter < 0.7G for 2sec. Continuously. (input from ABS signal)
```

## 7) Wheel spin condition

- (1) 300 rpm < outRpm < 3000rpm
  (2) Egtorque\_noACC > 0Nm
  (3) ABS (vehicle front wheels average speed vehicle rear wheels average speed) > 5.0 km/h
- (4) Throttle > 70 %
- (5) outRpmSpeed < -20 rpm/sec
- (1)and(2)and(3)art (1)and(4)and(5); continuously detected for 300 msec After that, Wheel spin condition = TRUE continuously 10000 msec

# $^{8)}\,EngineTorque\_noACC$

Engine output torque, acceleration inertia torque not included.

## 9) Shifting Control

"Shifting Control" is activated when the transmission is in between two gears (undefined gear ratio), until applied pressure has reached to full

Neutral Control is activated if the vehicle is at stand still and in range D with the brake pressed for 2 seconds until the brake is released.

11) "Garage Shifting"

"Garage Shifting Control" is activated when the range selector changes from N to D or R until appropriate Gear Ratio is detected.