



Service data

Automatic Transmission

Item	Specification	
Transmission model	A8TR1-1	
Drive type	2WD / AWD	
Engine	LAMBDA II 3.3 T-GDI (Gasoline)	
Clutch type	Torque converter	
Oil pump type	Internal gear	
Shift Lever type	*SBW / *SBC	
Component elements	Oil filter	1 unit
	Clutch	4 units
	Brake	2 units
	Planetary gear	3 units
	Solenoid valve	SBW : 11 units (Direct control *VFS : 6 units , Indirect control VFS : 2 units, ON/OFF : 3 units)
		SBC : 9 units (Direct control *VFS : 6 units , Indirect control VFS : 2 units, ON/OFF : 1 unit)
Gear ratio	1st	3.665
	2nd	2.396
	3rd	1.610
	4th	1.190
	5th	1.000
	6th	0.826
	7th	0.643
	8th	0.556
	Reverse	2.273
Final gear ratio		3.538

* VFS : Variable Force Solenoid

* SBW : Shift By Wire

* SBC : Shift By Cable

Parking Switch (SBW)

Item	Specification
Output type	PWM (S1, S2), ON/OFF (Ps, Ns)
Power supply (V)	5 (S1, S2), 12 (Ps, Ns)

Inhibitor Switch (SBC)

Item	Specification
Output type	PWM
Power supply (V)	5

Sensors

Item	Specification
Oil temperature sensor	*NTC thermistor
	Temp.[(°C)°F] / Resistance (kΩ) (-40)-40 / 139.5

		(-20)-4 / 47.4
		(0)32 / 18.6
		(20)68 / 8.1
		(40)104 / 3.8
		(60)140 / 1.98
		(80)176 / 1.08
		(100)212 / 0.63
		(120)248 / 0.38
		(140)284 / 0.25
		(150)302 / 0.16
Speed sensor (input, output)	Type	Hall effect sensor
	Operating condition (°C)°F	(-40 to 150)-40 to 302
	Output voltage (V)	High : 1.4
		Low : 0.7

*NTC: Negative Temperature Coefficient

Solenoid Valves

Item		Specification	
Direct control VFS	8LR/B_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
	6/C_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
	27/B_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
Indirect control VFS	UD/C_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
	35R/C_VFS	Control type	N/H (Normal High)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
	4&OD/C_VFS	Control type	N/H (Normal High)
		Control pressure kpa (kgf/cm ² , psi)	0 - 1,569.06 (0 - 16, 0 - 227.57)
		Current (mA)	0 - 1,100
		Coil resistance (Ω)	5.3 ± 0.3
	LINE_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 519.75 (0 - 5.3, 0 - 75.38)
		Current (mA)	0 - 850
		Coil resistance (Ω)	5.1 ± 0.3
	D/C_VFS	Control type	N/L (Normal Low)
		Control pressure kpa (kgf/cm ² , psi)	0 - 519.75 (0 - 5.3, 0 - 75.38)

ON/OFF	P position_ON/OFF (SBW)	Current (mA)	0 - 850
		Coil resistance (Ω)	5.1 \pm 0.3
		Control type	ON/OFF
		Control pressure kpa (kgf/cm ² , psi)	539.36 (5.5, 78.23)
		Current (mA)	0 - 600
		Coil resistance (Ω)	10.5 \pm 0.5
	D position_ON/OFF (SBW)	Control type	ON/OFF
		Control pressure kpa (kgf/cm ² , psi)	539.36 (5.5, 78.23)
		Current (mA)	0 - 600
		Coil resistance (Ω)	10.5 \pm 0.5
	R position_ON/OFF (SBW)	Control type	ON/OFF
		Control pressure kpa (kgf/cm ² , psi)	539.36 (5.5, 78.23)
		Current (mA)	0 - 600
		Coil resistance (Ω)	10.5 \pm 0.5
	SS-A (SBC)	Control type	ON/OFF
		Control pressure kpa (kgf/cm ² , psi)	539.36 (5.5, 78.23)
		Current (mA)	0 - 600
		Coil resistance (Ω)	10.5 \pm 0.5

8LR/B_VFS : 8LR brake control solenoid valve

6/C_VFS : 6 clutch control solenoid valve

27/B_VFS : 27 brake control solenoid valve

UD/C_VFS : Underdrive clutch control solenoid valve

35R/C_VFS : 35R clutch control solenoid valve

4&OD/C_VFS : 4&Overdrive clutch control solenoid valve

LINE_VFS : Line pressure control solenoid valve

D/C_VFS : Damper clutch control solenoid valve

Solenoid Valve Operation Table

	UD/C	4&OD/C	35R/C	27/B	8LR/B	6/C	ON/OFF	ON/OFF	ON/OFF
							(P)	(D)	(R)
P		•						•	
N		•	•		•			•	
1	•	•	•					•	
2	•	•	•	•				•	
3	•	•						•	
4	•		•					•	
5								•	
6			•			•		•	
7			•	•				•	
8			•		•			•	
REV		•			•		•	•	•

Clutch & Brake Operation Table

	UD/C	4&OD/C	35R/C	27/B	8LR/B	6/C
P						

N							
1	●					●	
2	●				●		
3	●			●			
4	●	●					
5		●		●			
6		●					●
7		●			●		
8		●				●	
REV			●			●	