U250E AUTOMATIC TRANSAXLE

■ ELECTRONIC CONTROL SYSTEM

1. General

The electronic control system of the U250E automatic transaxle consists of the control listed below:

: New

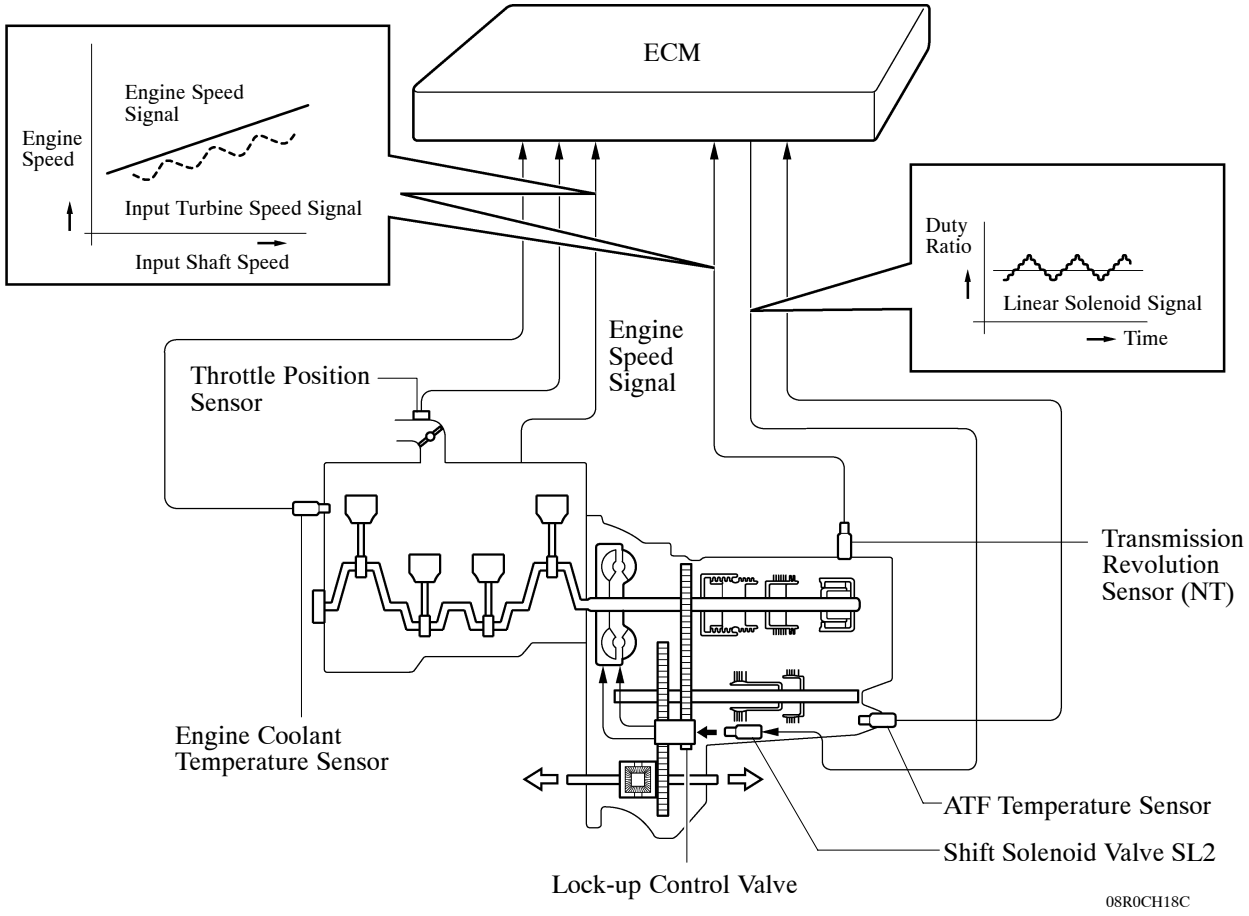
System	Function
Clutch Pressure Control	• Controls the pressure that is applied directly to the B_1 brake, C_0 and C_1 clutches by actuating 3 shift solenoid valves (SL1, SL2, and SL3) in accordance with ECM signals. • Shift solenoid valves SL1, SL2 and SL3 minutely control the clutch pressure in accordance with the engine output and driving conditions.
Line Pressure Optimal Control	Actuates shift solenoid valve SLT to control the line pressure in accordance with information from the ECM and the operating conditions of the transaxle.
Shift Control in Uphill/Downhill Traveling	Restricts the 4th or 5th upshift or provides appropriate engine braking by the ECM to determine whether the vehicle is traveling uphill or downhill.
Shift Timing Control	The ECM sends current to 3 shift solenoid valves SL1, SL2 and SL3 to shift gears based on signals the sensors.
Lock-up Timing Control	The ECM sends current to shift solenoid valves DSL and SL2 based on signals from each sensor and engages or disengages the lock-up clutch.
Flex Lock-up Clutch Control	Controls shift solenoid valves DSL and SL2 to provide an intermediate mode between the ON/OFF operation of the lock-up clutch, and to increase the operating range of the lock-up clutch to ensure fuel economy.
Engine Torque Control	Retards the engine ignition timing temporarily to improve shift feeling while upshifts or downshifts occur.
"N" to "D" Squat Control	When the shift lever is moved from N to D, the following operations are performed to reduce vehicle squat: • When the shift lever is moved from N to D for the first time after the ignition switch is turned to ON, the gear is temporarily shifted to 3rd and then to 1st. • When the shift lever is moved from N to D for the second and subsequent times, the gear is temporarily shifted to 2nd and then to 1st.
Diagnosis	When the ECM detects a malfunction, the ECM stores a DTC and records information related to the fault.
Fail-safe	Even if a malfunction is detected in a sensor or solenoid, the ECM performs fail-safe control to prevent vehicle drivability from being affected significantly.

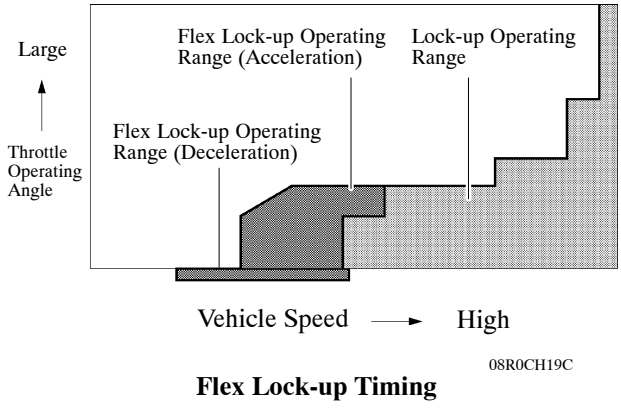
2. Flex Lock-up Clutch Control

In the low-to-mid-speed range, flex lock-up clutch control regulates shift solenoid valve SL2 to provide an intermediate mode between the ON and OFF states of the lock-up clutch in order to improve the energy transmission efficiency in this range.

Flex lock-up clutch control operates in 4th and 5th gears with the shift lever in D range selected, and 4th gear in 4 range selected.

- Even when the vehicle is decelerating (the accelerator pedal is released), flex lock-up clutch control operates. Therefore the engine can stay in fuel-cut for a longer time during deceleration and fuel-economy is improved.





Flex Lock-up Timing

▶ Flex Lock-up Operation Gear in Each Range ◀

Position	Gear	Acceleration Flex Lock-up	Deceleration Flex Lock-up
D	1st	×	×
	2nd	×	×
	3rd	×	×
	4th	○	○
	5th	○	○
4	1st	×	×
	2nd	×	×
	3rd	×	×
	4th	×	○

○ : Operates × : Does not operate