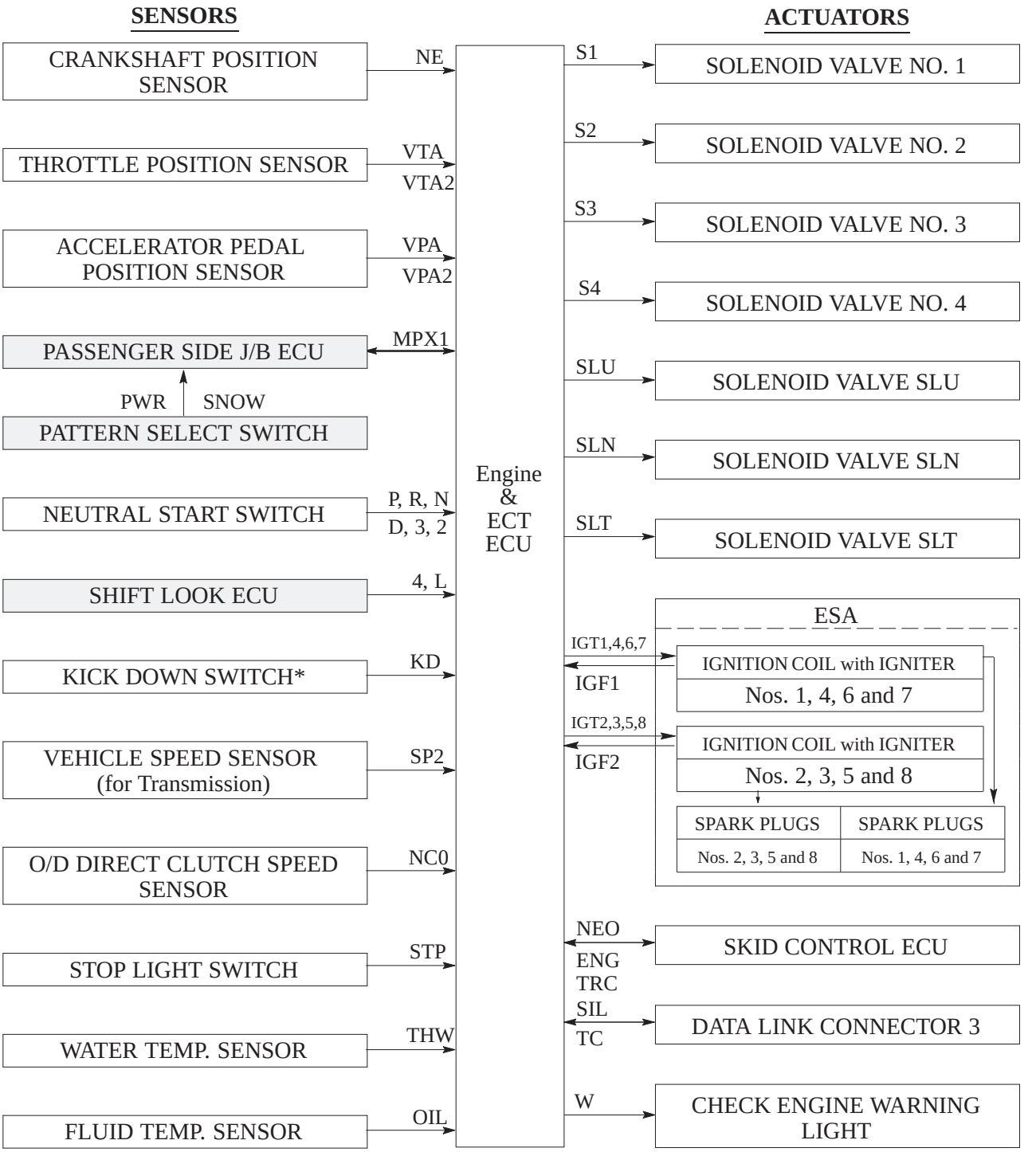
■ELECTRONIC CONTROL SYSTEM

1. Construction

The configuration of the electronic control system in the A650E automatic transmission is as shown in the following chart.
The A650E of new LS430 has been changed shaded portion ▭ from the A650E of previous LS400.



*: Only Models for Europe

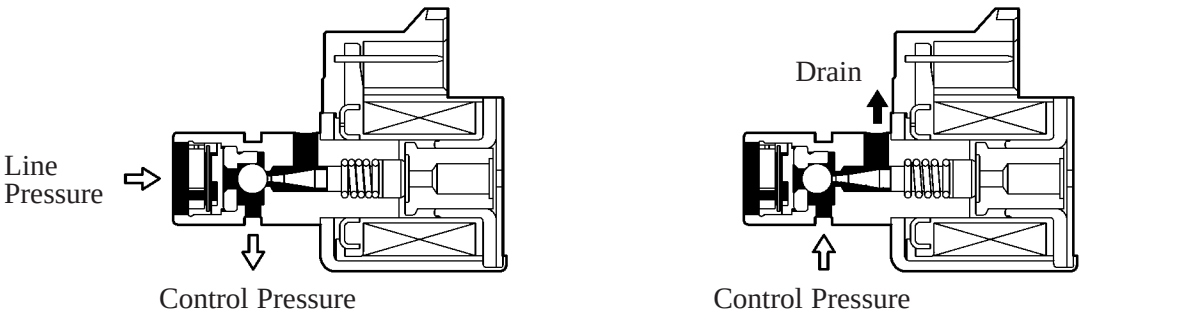
2. Solenoid Valve

Solenoid Valve No. 1, No. 2, No. 3 and No.4

In addition to the solenoid valves No. 1 and No. 2, the solenoid valve No. 3 has been added for the purpose of shifting gears. However, the solenoid valve No. 3 is also used for engine brake control.
The solenoid valve No. 4 has been added for the switching the OD direct (C_0) pressure.
The solenoid valves No. 1 and No.3 use a 3-way solenoid valve to reduce the amount of fluid consumption, which reduces the oil pump load. Furthermore, the responsiveness at low temperatures has been improved in consumption with the previous LS400.
The solenoid valves No. 2 and No. 4 (2-way solenoid valves) have had filters added to the tips, to improve their reliability in comparison with the previous LS400.

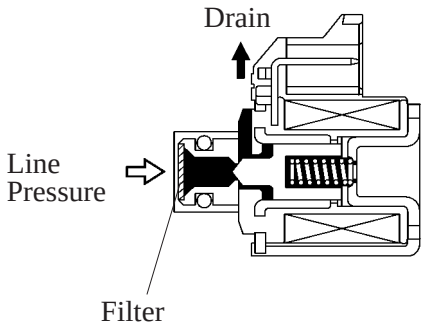
Solenoid Valve	Type	Function
No. 1	3-way	Switches the 2-3 shift valve.
No. 2	2-way	• Switches the 1-2 shift valve. • Switches the 3-4 shift valve. • Switches the reverse control valve.
No. 3	3-way	• Switches the 4-5 shift valve. • Applies the engine brake of the 1st and 3rd gears.
No. 4	2-way	• Switches the OD direct clutch (C_0) pressure through the C_0 exhaust valve. • Switches the B4 relay valve.

▶ Solenoid Valve No. 1 and No. 3 ◀



Solenoid Valve ON **Solenoid Valve OFF**

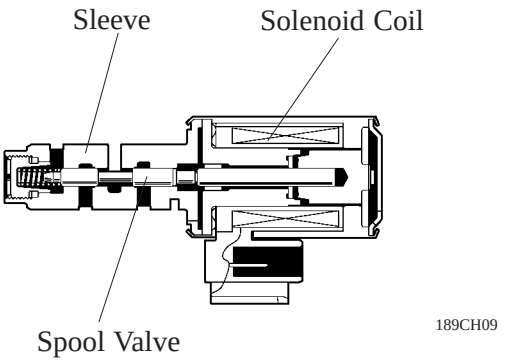
▶ Solenoid Valve No. 2 and No. 4 ◀



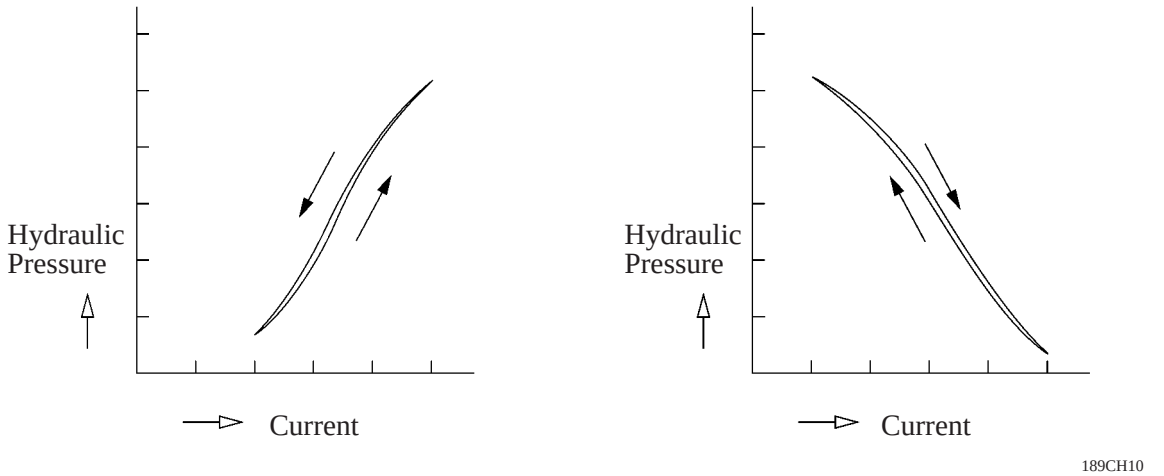
Solenoid Valve SLU, SLN and SLT

In order to provide a hydraulic pressure that is proportion to current that flows to the solenoid coil, the solenoid valve SLU, SLN and SLT linearly controls the line pressure, clutch and brake engagement pressure and accumulator pressure based on the signals it recieves from the engine & ECT ECU.

Solenoid Valve	Action	Function
SLU	For clutch and brake engagement pressure control	• 2nd brake (B3) pressure control • Forward clutch (C1) pressure control • Lock-up clutch pressure control
SLN	For accumulator pressure control	Accumulator back pressure control
SLT	For accumulator pressure control	Accumulator back pressure control
	For line pressure control	• Line pressure control • Secondary pressure control



Solenoid Valve SLU



Solenoid Valve SLU and SLN **Solenoid Valve SLT**

3. Fluid Temperature Sensor

The fluid temperature sensor has been located at the exhaust opening of the valve body oil pump. Accordingly, a more precise fluid temperature detection has been made possible, enabling a more precise 2nd brake (B_3) pressure control that adapts to oil temperature changes. As a result, shift shocks have been reduced in a wide fluid temperature range, including the extremely low temperature range.