ENGINE

■ 1KD-FTV ENGINE

Engine Control System

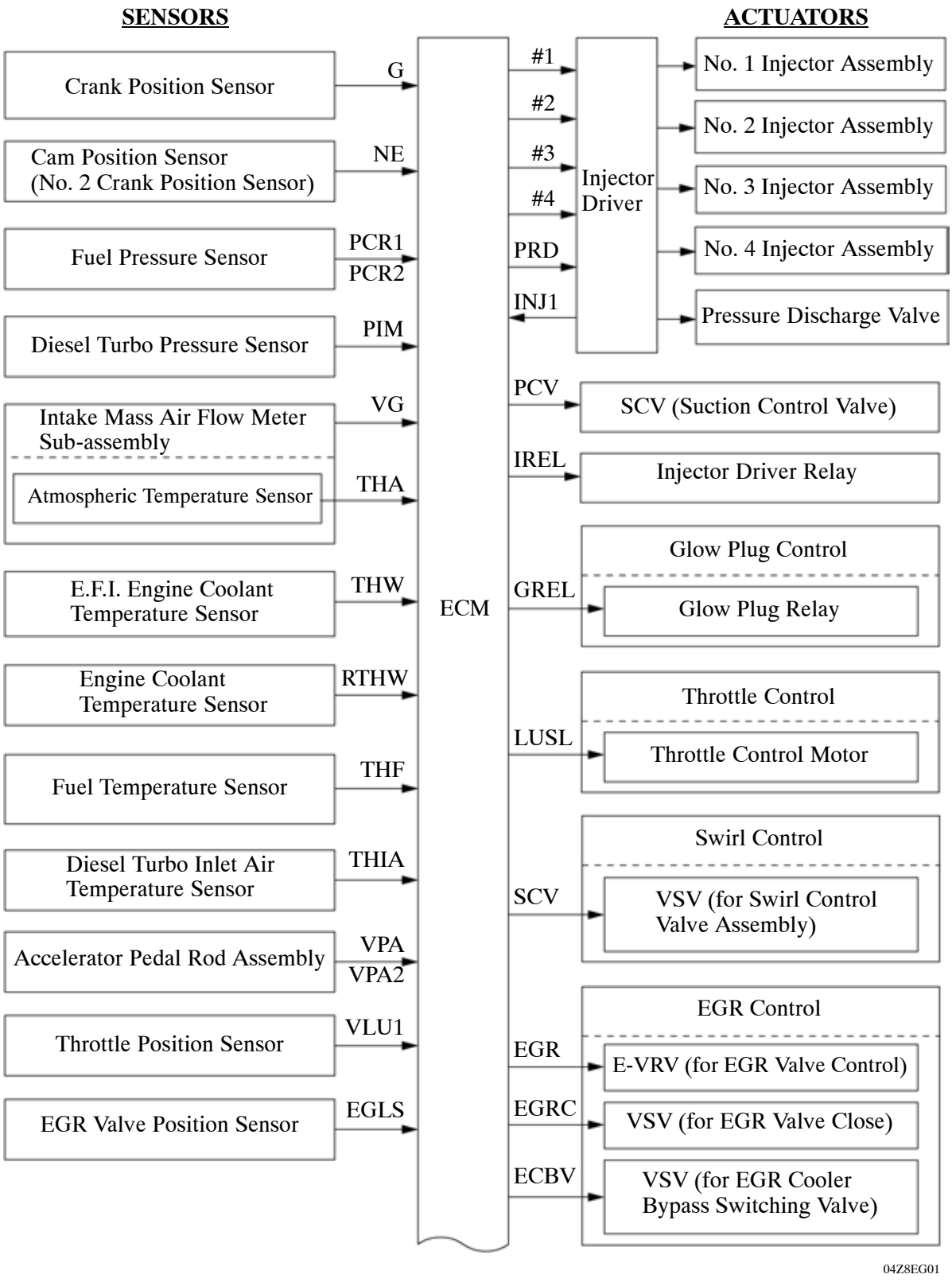
1) General

- Along with the provision of the entry and start system, a cranking hold control has been adopted.
- The control method of the brake override system has been changed.

System	Function
Starter Control (Cranking Hold Function)	With the start signals sent from the engine switch (push start switch), the certification ECU (smart key ECU assembly) continues to conduct electricity to the starter assembly through the starter relay assembly until the engine starts.
Brake Override System	The driving torque is restricted when both the accelerator and brake pedals are depressed. (For the Activation Conditions and Inspection Method, refer to the repair manual)

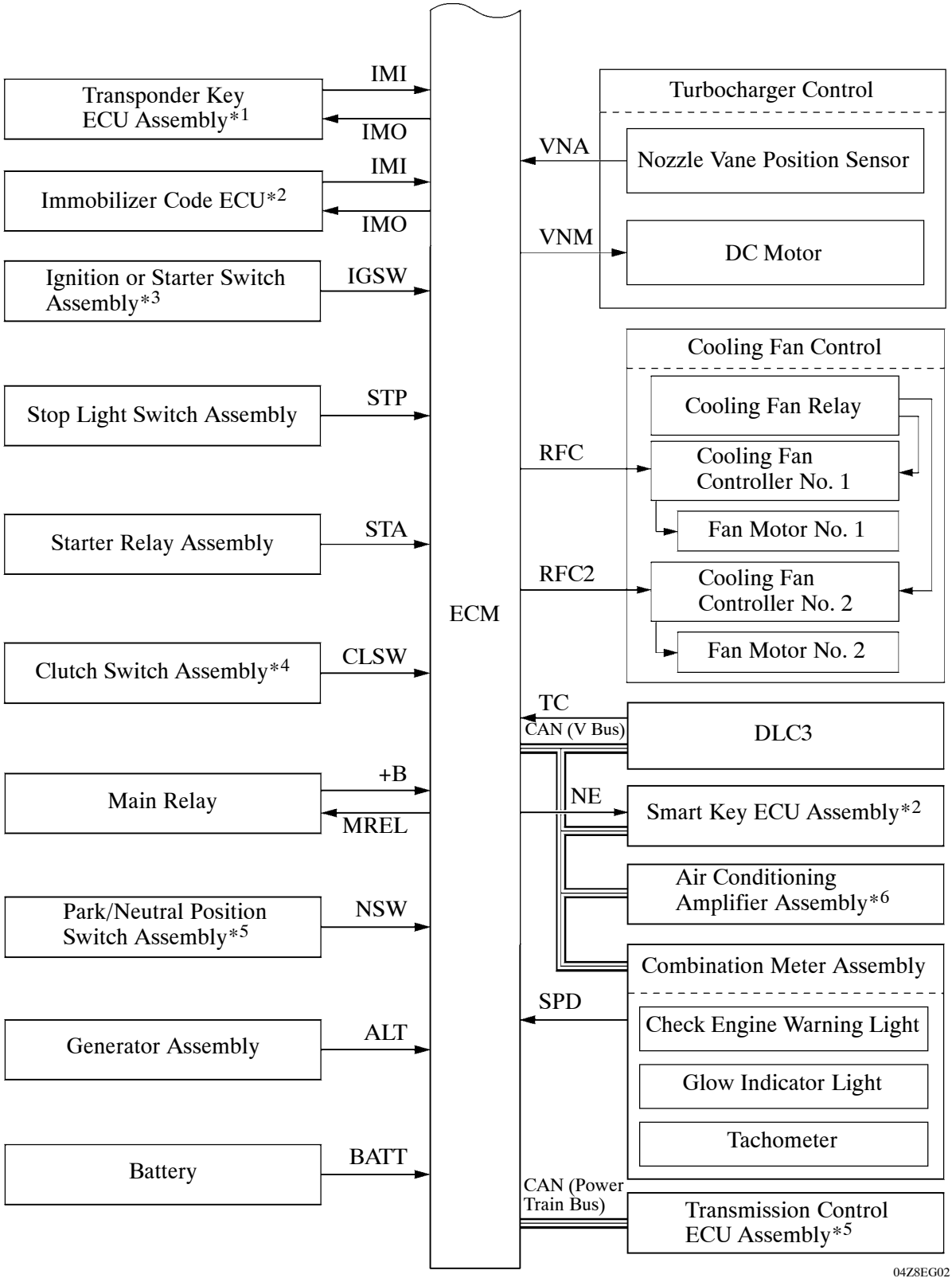
2) Construction

The configuration of the engine control system is as shown in the following chart.



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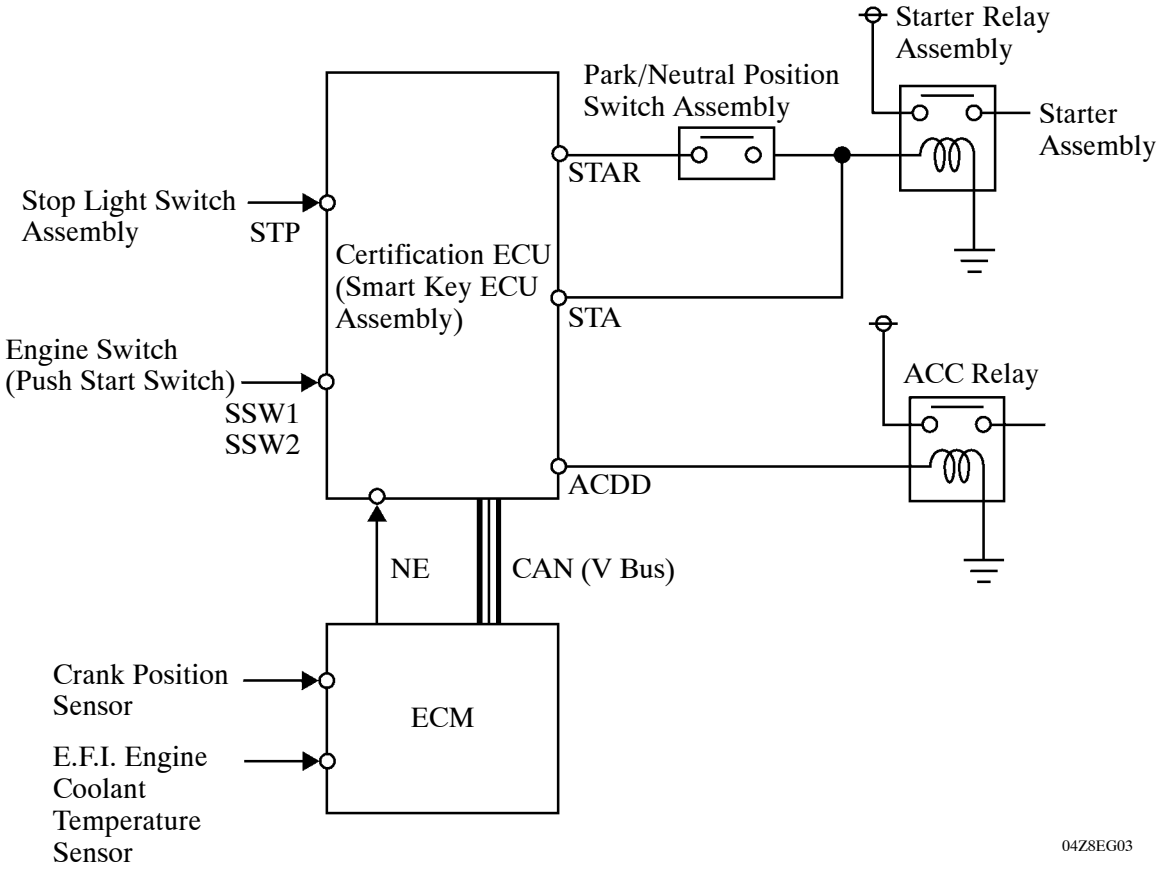


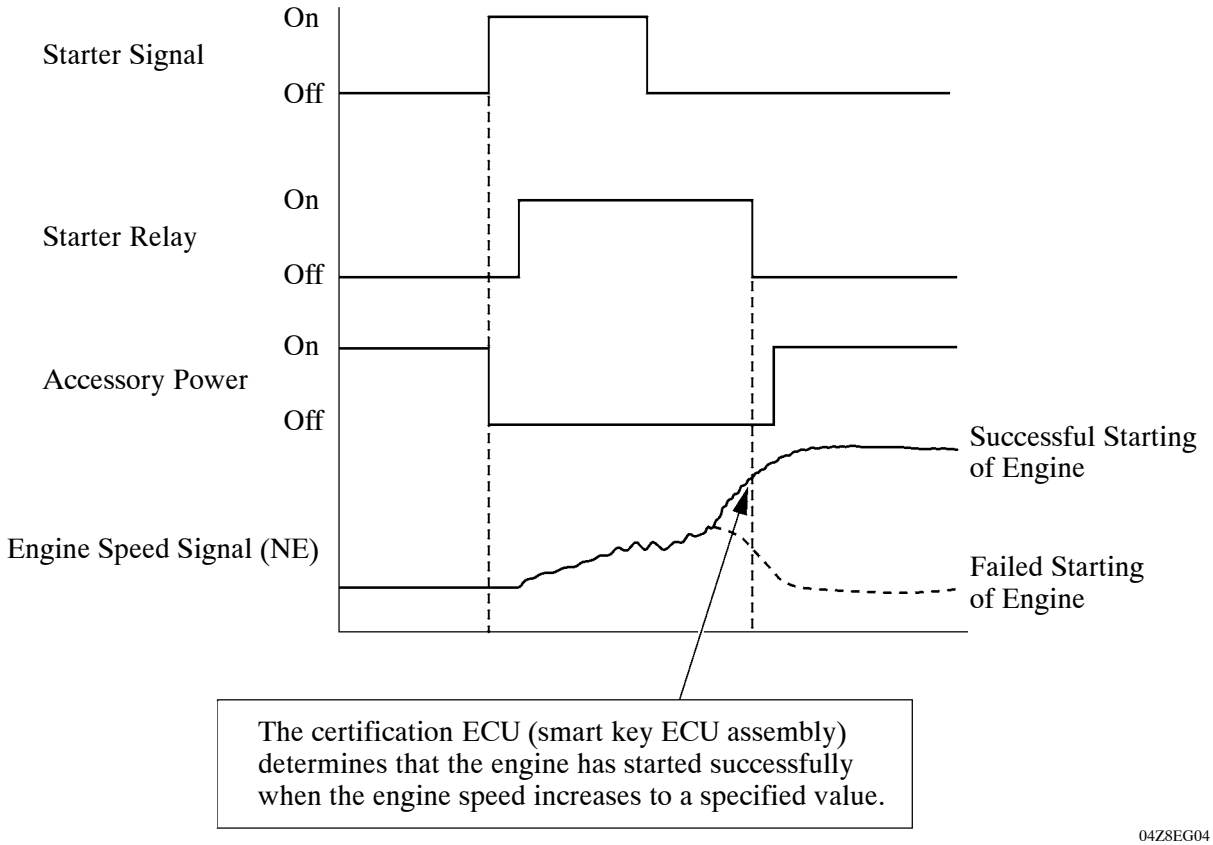
*1: Vehicles Equipped with an Immobilizer System without a Entry and Start System
*2: Models with Entry and Start System
*3: Models without Entry and Start System
*4: Models with Manual Transmission
*5: Models with Automatic Transmission
*6: Models with Air Conditioning System

3) Starter Control (Cranking Hold Function)

General

- If a start signal is input from the engine switch (push start switch), the certification ECU (smart key ECU assembly) sends an operation signal (STAR) to the starter relay assembly through the park/neutral position switch assembly (determination of either the P position or the N position) to activate the starter assembly. At this time, the certification ECU (smart key ECU assembly) turns the ACC relay operation signal (ACCD) off to prevent the meter, clock, and audio from being flickered.
- When the engine is cranked, the certification ECU (smart key ECU assembly) continues sending the operation signals to the starter relay assembly until it detects a complete start of the engine. The complete start of the engine is determined by the 2 computers, the certification ECU (smart key ECU assembly) and ECM. If the complete start of the engine is acknowledged, the certification ECU (smart key ECU assembly) stops the signal being output to the starter relay assembly.
- The cranking hold time and the number of judgments of a complete start of the engine will be determined by the certification ECU (smart key ECU assembly) in accordance with the engine cooling water temperature.




Starter Signal
On
Off
Starter Relay
On
Off
Accessory Power
On
Off
Engine Speed Signal (NE)
Successful Starting of Engine
Failed Starting of Engine
The certification ECU (smart key ECU assembly) determines that the engine has started successfully when the engine speed increases to a specified value.
04Z8EG04