Print Exit

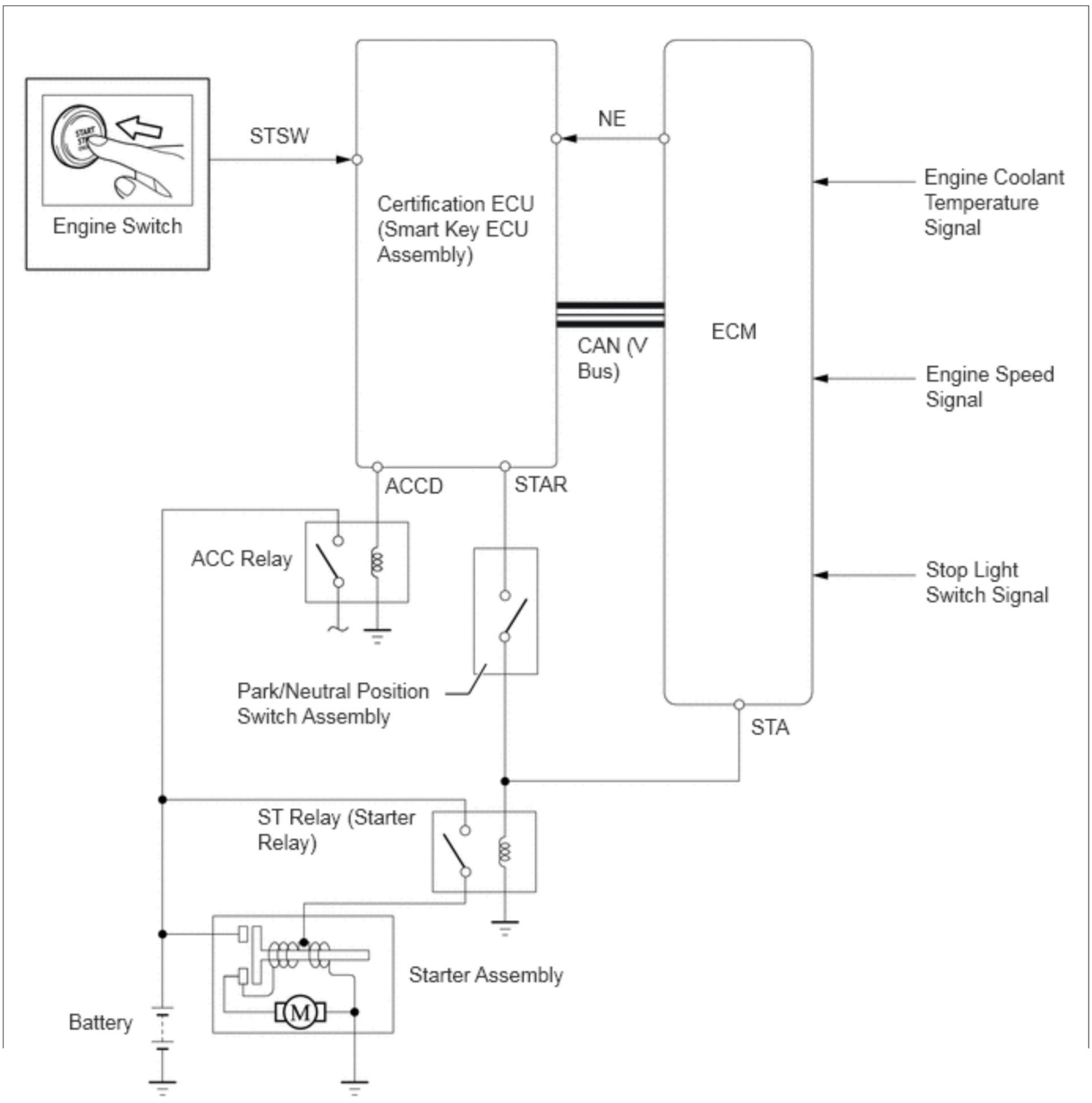
6AR-FSE ENGINE CONTROL SFI SYSTEM DETAILS STARTER CONTROL (CRANKING HOLD FUNCTION)

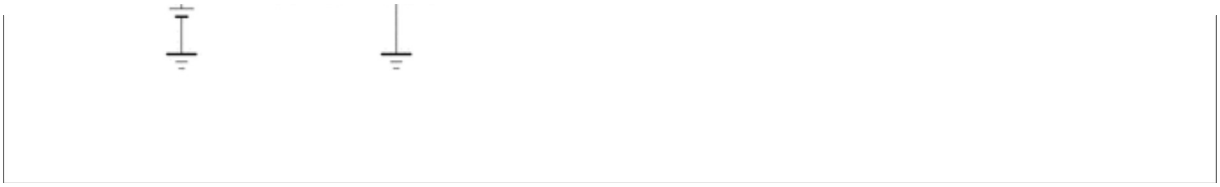
OPERATION

a. A cranking hold function is included. When the engine switch is pressed, the certification ECU (smart key ECU assembly) receives a start signal.

b. When the certification ECU (smart key ECU assembly) detects a start signal (STSW), the certification ECU (smart key ECU assembly) outputs an ST relay drive signal (STAR). The signal goes through the park/neutral position switch assembly to the ST relay. The ST relay activates the starter assembly when it receives this signal. At this time, the certification ECU (smart key ECU assembly) turns off the ACC relay by turning off the power sent from the ACCD terminal. the ACC relay is turned off to prevent flickering of the meters, clock and audio system.

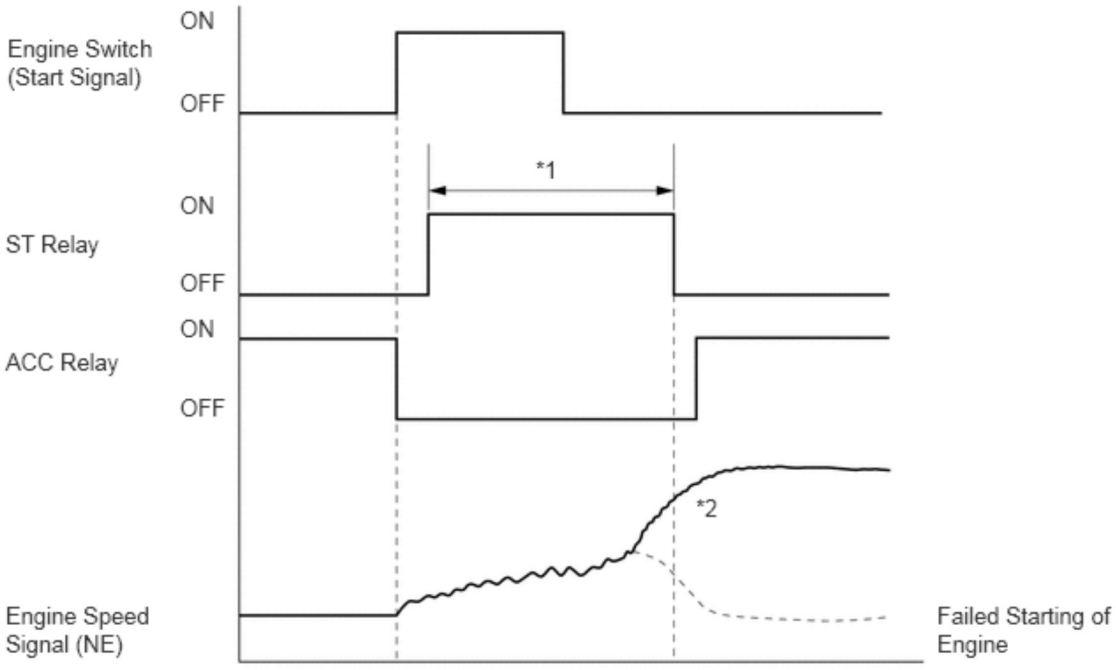
c. When communication between the certification ECU (smart key ECU assembly) and ECM stops, the certification ECU (smart key ECU assembly) uses the engine speed (NE) signal received from the ECM via a direct line to determine when to turn off the starter assembly.





d. While cranking, the certification ECU (smart key ECU assembly) continues energizing the ST relay until it is determined that the engine has started. When the certification ECU (smart key ECU assembly) has judged that the engine has started, the certification ECU (smart key ECU assembly) stops energizing the ST relay.

e. If the engine does not start even though the starter assembly has cranked for approximately 30 seconds, the ST relay is turned off to protect the starter motor.



*1: Cranking Limit: Approximately 30 seconds

*2: The certification ECU (smart key ECU assembly) determines that the engine has started successfully when the engine speed is approximately 500 rpm.

f. This system has the following safety features:

- While the engine is running, the starter assembly cannot operate.
- The starter assembly will stop operating once the engine has started, even if the engine switch remains pushed.
- Starter operation is limited to a maximum of approximately 30 seconds to protect the starter motor.