

SD360-1

G4KJ : THETA II 2.4L GDI (W/O Smart Key)

The diagram illustrates the electrical system for the G4KJ : THETA II 2.4L GDI (W/O Smart Key) vehicle. Key components and their connections include:

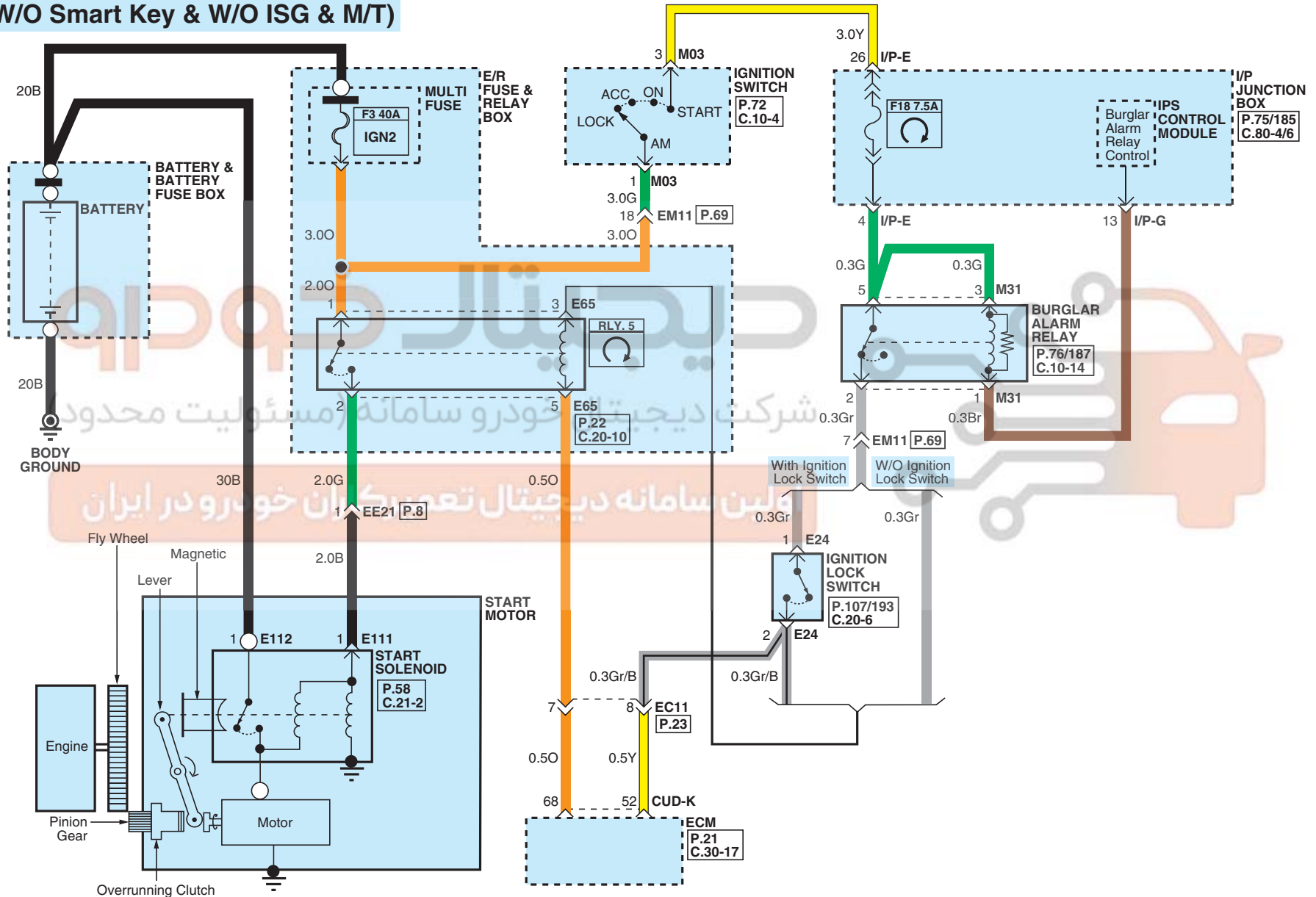
- BATTERY & BATTERY FUSE BOX:** Connected to the main battery and body ground.
- E/R FUSE & RELAY BOX:** Contains fuses for IGN2 (F3 40A), ACC, ON, START, LOCK, and AM. It also includes a multi-fuse and a relay (RLY. 5).
- IGNITION SWITCH:** Controls the ignition system, with connections for ACC, ON, START, LOCK, and AM.
- START MOTOR:** Includes the start solenoid (E81, E84) and the start motor (E82, E85).
- IPS CONTROL MODULE:** Controls the burglar alarm relay and the IPS control module.
- BURGLAR ALARM RELAY:** Controls the burglar alarm system.
- TRANSEXLE RANGE SWITCH:** Controls the transmission range.
- PCM (Powertrain Control Module):** Controls the engine and transmission.

The diagram uses color-coded wires and includes wire colors and gauges for each connection. Key components are labeled with their part numbers and specifications.

Starting System (2)

SD360-2

D4FD : U II 1.7L
(W/O Smart Key & W/O ISG & M/T)



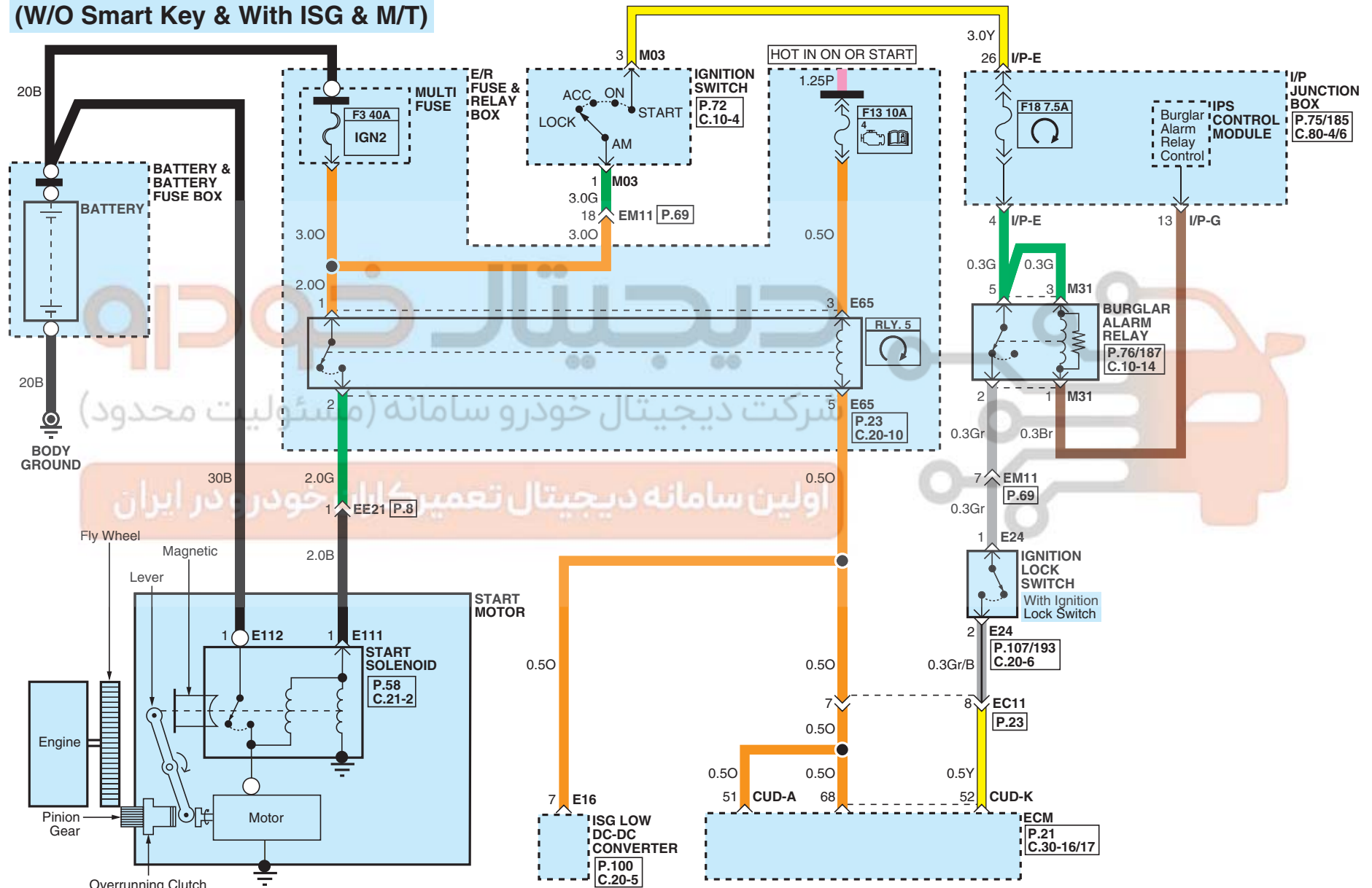
SD360-3

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Starting System (4)

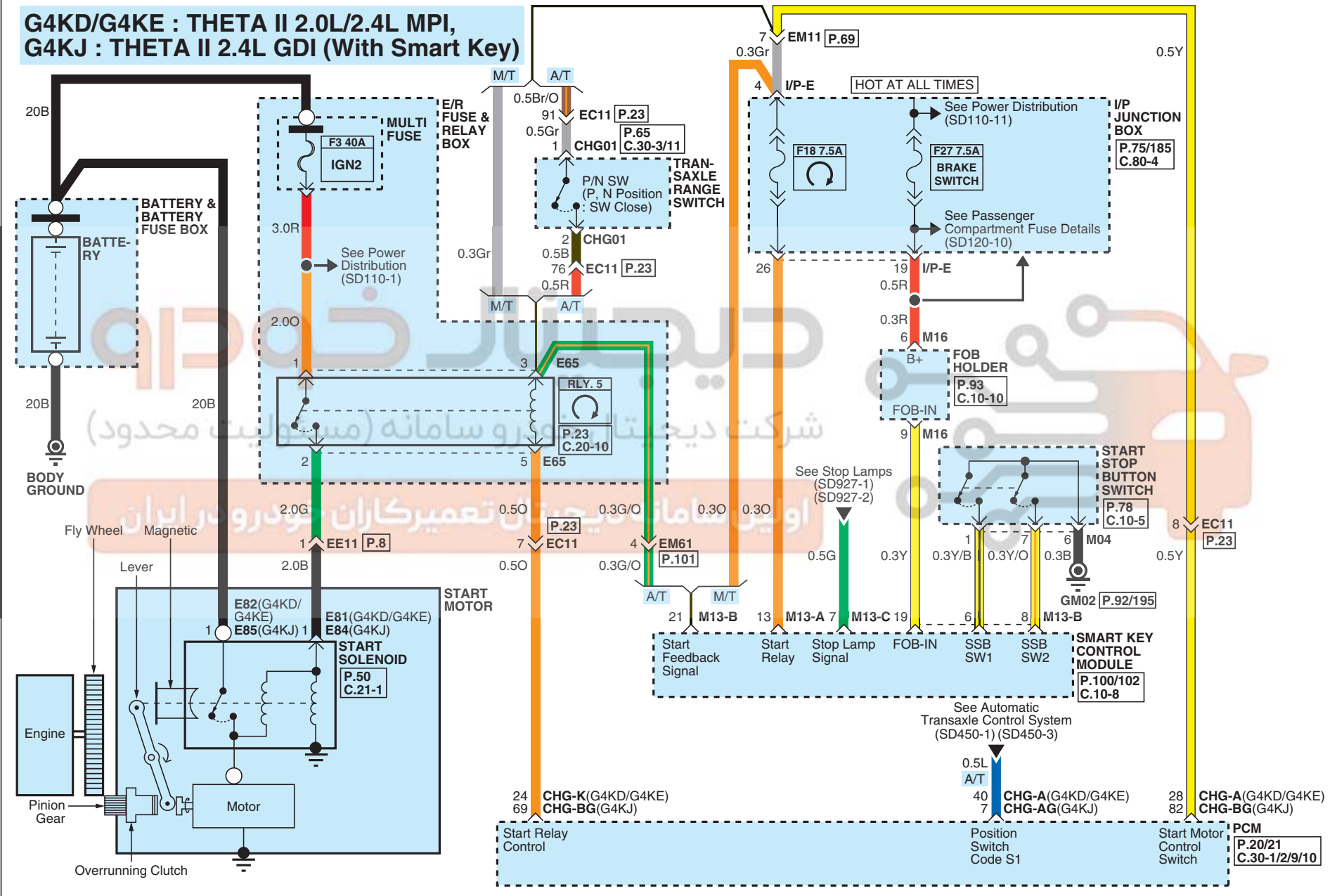
SD360-4

D4FD : U II 1.7L
(W/O Smart Key & With ISG & M/T)



Starting System (5)

SD360-5



SD360-6



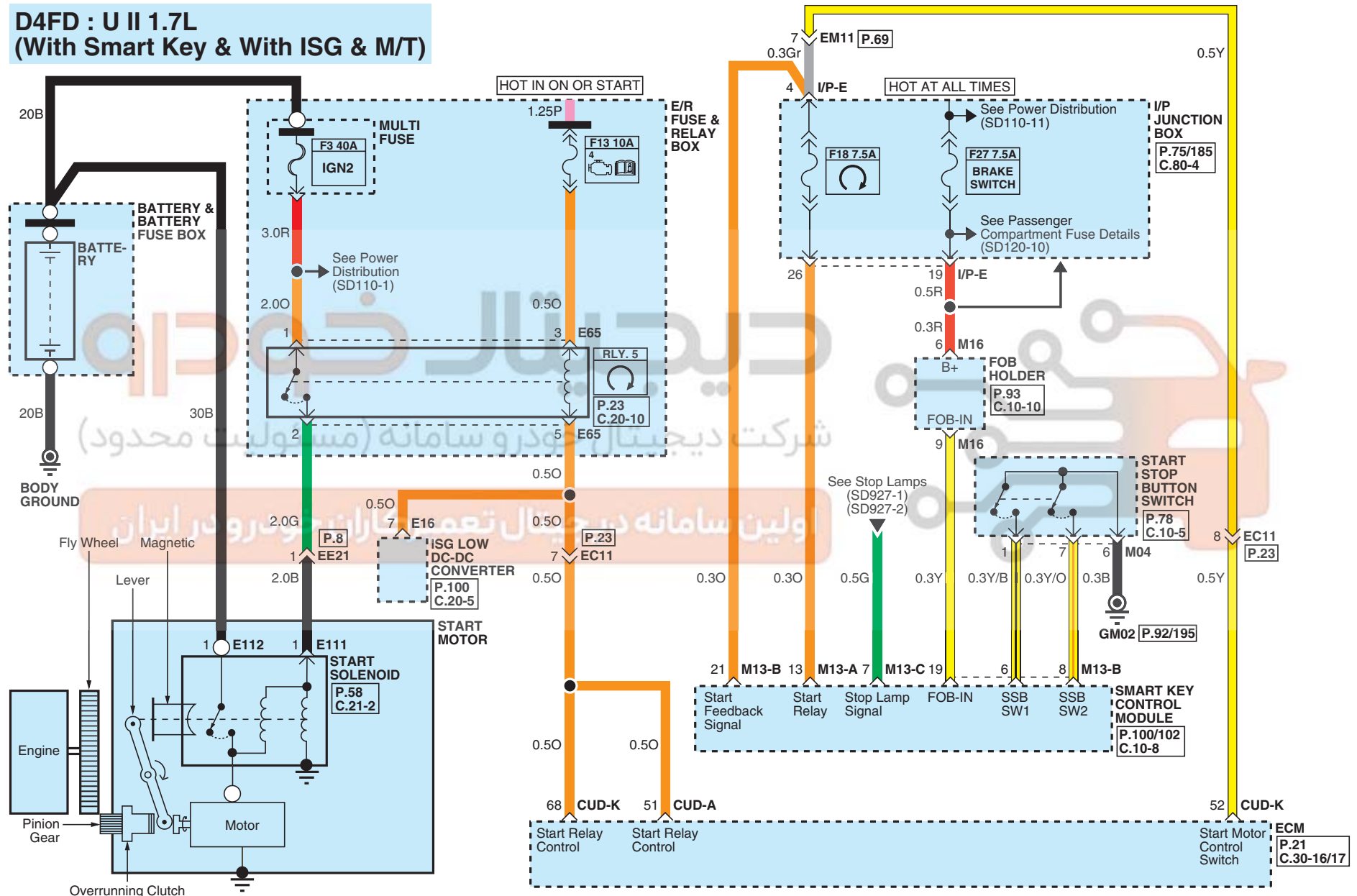
SD360-7



Starting System (8)

SD360-8

D4FD : U II 1.7L (With Smart Key & With ISG & M/T)



Starting System

Service Tips (1)

Circuit Description (Without Smart Key)

The battery voltage is always supplied from a battery B+ terminal to the start solenoid, RLY. 5 of E/R Fuse & Relay Box and ignition switch.

Turn the ignition switch to START with the shift lever into the P or N position and the brake pedal depressed for the A/T vehicle, and with the clutch pedal depressed for the M/T vehicle.

In the THETA II vehicle without Smart Key, start power passes through the RLY. 5 coil and it is grounded to GE01. In the U II Engine and vehicle equipped with Smart Key, ECM(PCM) receives start power signal. Based on this signal, RLY. 5 coil (-) terminal is grounded by ECM(PCM).

As the RLY. 5 coil (-) is grounded, the RLY. 5 is operated, and the current applied to the start motor ST terminal by the RLY. 5 switch terminal magnetizes the solenoid so that when the magnetic switch and lever are pulled, the pinion gear and the fly wheel are geared and the magnetic switch contact is closed so that the B+ high current rotates the motor to drive the engine. When the ignition switch is released after the engine starts operating, the pinion gear clutch is over-run to prevent damage from excessive revolutions of armature.

- **Burglar Alarm Relay (Without Smart Key)**

If someone try to start engine of the vehicle equipped with the Burglar Alarm Relay by force, Burglar Alarm Relay is activated by IPS control module which cut off the start power to prevent start engine for security.

Circuit Description (With Smart Key)

It is possible to start engine without inserting the key, when carrying a smart key or place smart key in the car.

The battery voltage is always supplied from a battery B+ terminal to the start solenoid, RLY. 5 of E/R Fuse & Relay Box.

Push the Start Stop Button Switch to START with the shift lever into the P or N position (P/N Switch ON) and the brake pedal depressed for the A/T vehicle, and with the clutch pedal depressed for the M/T vehicle.

Smart Key Control Module receives Start Stop Button Switch signal and input the start signal to ECM(PCM) through the F18 7.5A fuse in I/P junction box. Based on this signal, RLY.5 coil (-) terminal is grounded by ECM(PCM).

As the RLY. 5 coil (-) is grounded by ECM(PCM), the RLY. 5 is operated, and the current applied to the start motor ST terminal by the RLY. 5 switch terminal magnetizes the solenoid so that when the magnetic switch and lever are pulled, the pinion gear and the fly wheel are geared and the magnetic switch contact is closed so that the (B+) high current rotates the motor to drive the engine. When the ignition switch is released after the engine starts operating, the pinion gear clutch is over-run to prevent damage from excessive revolutions of armature.

※ If brake pedal for the A/T vehicle or clutch pedal for the M/T vehicle is not depressed while push the start/stop button, OFF → ACC → ON → OFF state is continued but cannot start engine.

- **Fob Holder (With Smart Key)**

In case of smart key malfunction (battery run out or fault of communication), start engine with Fob holder. If the smart key malfunction, insert smart key to Fob Holder and push the start/stop button to start engine.

Starting System

Service Tips (2)

MEMO

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

