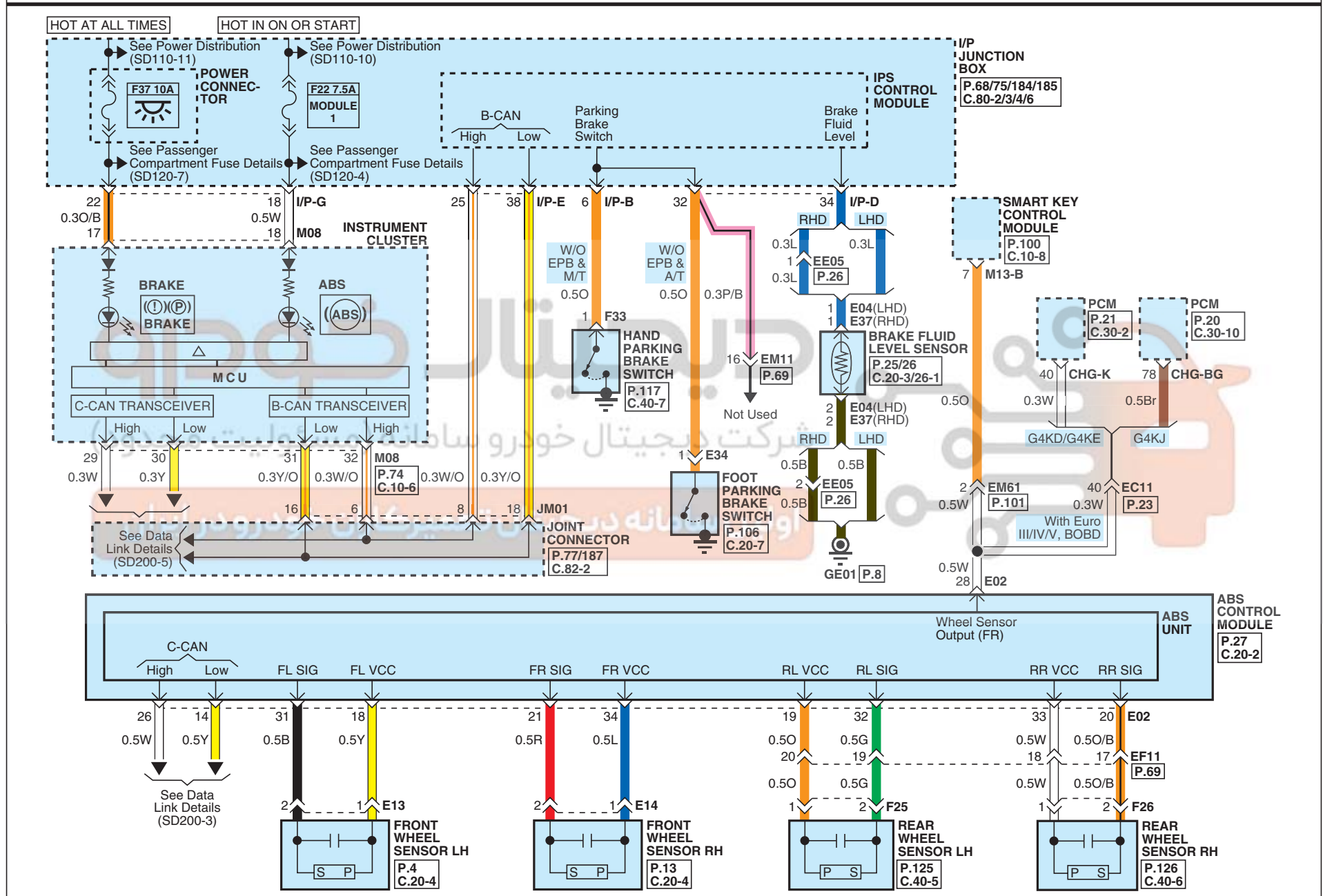


Anti-Lock Brake System (ABS) (1)

SD587-1

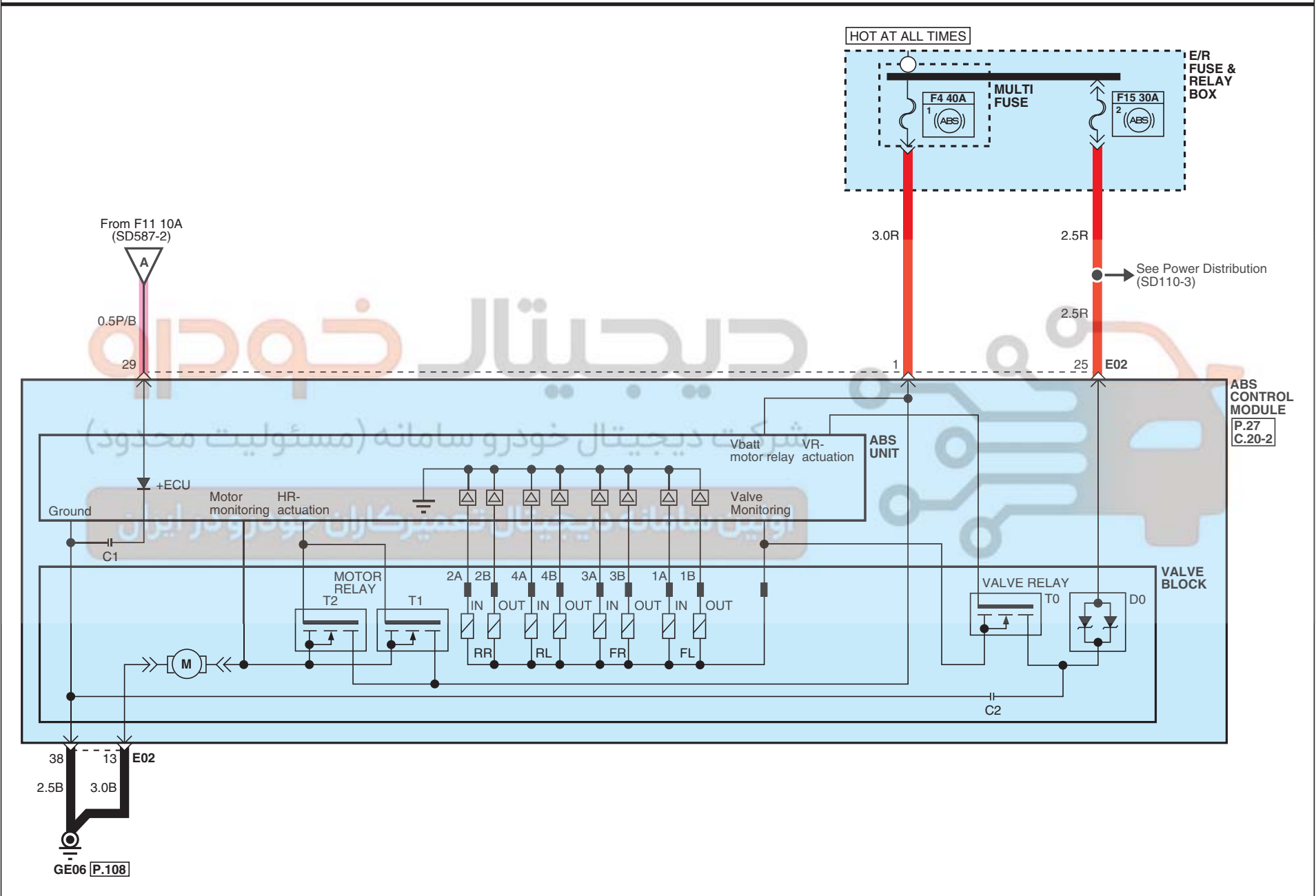


SD587-2



Anti-Lock Brake System (ABS) (3)

SD587-3



Anti-Lock Brake System (ABS)

Service Tips (1)

Circuit Description

ABS is a device that prevents wheels from locking when braking. When wheel locking occurring during sudden braking or under poor road surface conditions, the vehicle may become uncontrollable and the braking distance will be increased. ABS is a safety device that prevents wheel locking in advance to maintain the optimum slip and reduce the risk of accident.

ABS has the effect of reducing the braking distance by 10~15% on typical streets and 25~40% on wet streets. Wheels have a higher braking capability when the ABS has 10~15% slip than when it is locked. Currently, a 4-sensor, 4-channel system which inputs and processes 4-wheel speed sensor signals is applied.

• Wheel Sensor

The ABS control module receives the wheel speed signals from 4 wheel sensors. It receives the current from the wheel sensors and converts it to voltage. Furthermore, the ABS control module checks wiring and shortage of the sensors and surrounding circuits. It stops operation when there is a problem with one or more wheel sensors.

• Stop Lamp Switch

This stop lamp switch sends signals to the ABS control module. This switch is a dual type switch (stop lamp switch signal A and B). These two signals send opposite values depending on the brake operation. If the brake stepped on, the stop lamp switch A sends the power voltage value while the stop lamp switch B sends a 0V value. On the other hand, if the brake is not stepped on, the opposite values are output.

• Stop Lamp Relay

It is used to increasing long-term reliability for stop lamp switch.

• ESS (Emergency Stop Signal) Relay

In sudden braking situation, ABS control module receives signal and control the ESS relay (ON & OFF) to inform the risk for rear vehicle driver by blinking the stop lamps.

• Solenoid Valve

The Solenoid Valve is operated when one edge of the solenoid valve coil is connected to the (+) voltage supplied by the valve relay and another edge to the grounding of the semiconductor circuit. Under normal operating conditions, the valve test always checks the electrical function of the valve through a pulse.

• ABS IND.

This light illuminates if the ignition switch is turned ON and goes off in approximately 3 seconds if the system is operating normally. If the ABS warning light remains on, comes on while driving, or does not come on when the ignition switch is turned to the ON position, this indicates that there may be a malfunction with the ABS. When fault occurs, brakes is operated same way as vehicle without ABS.

• Parking Brake IND.

This warning light is illuminated when the parking brake is applied and the brake fluid level in the reservoir is low. This warning light is illuminated for about 3 seconds and turned off if the ignition switch is turned ON or START with the parking brake released. If the warning light is not turned off with the parking brake released after starting the engine, inspect the brake fluid and supplement it if needed.