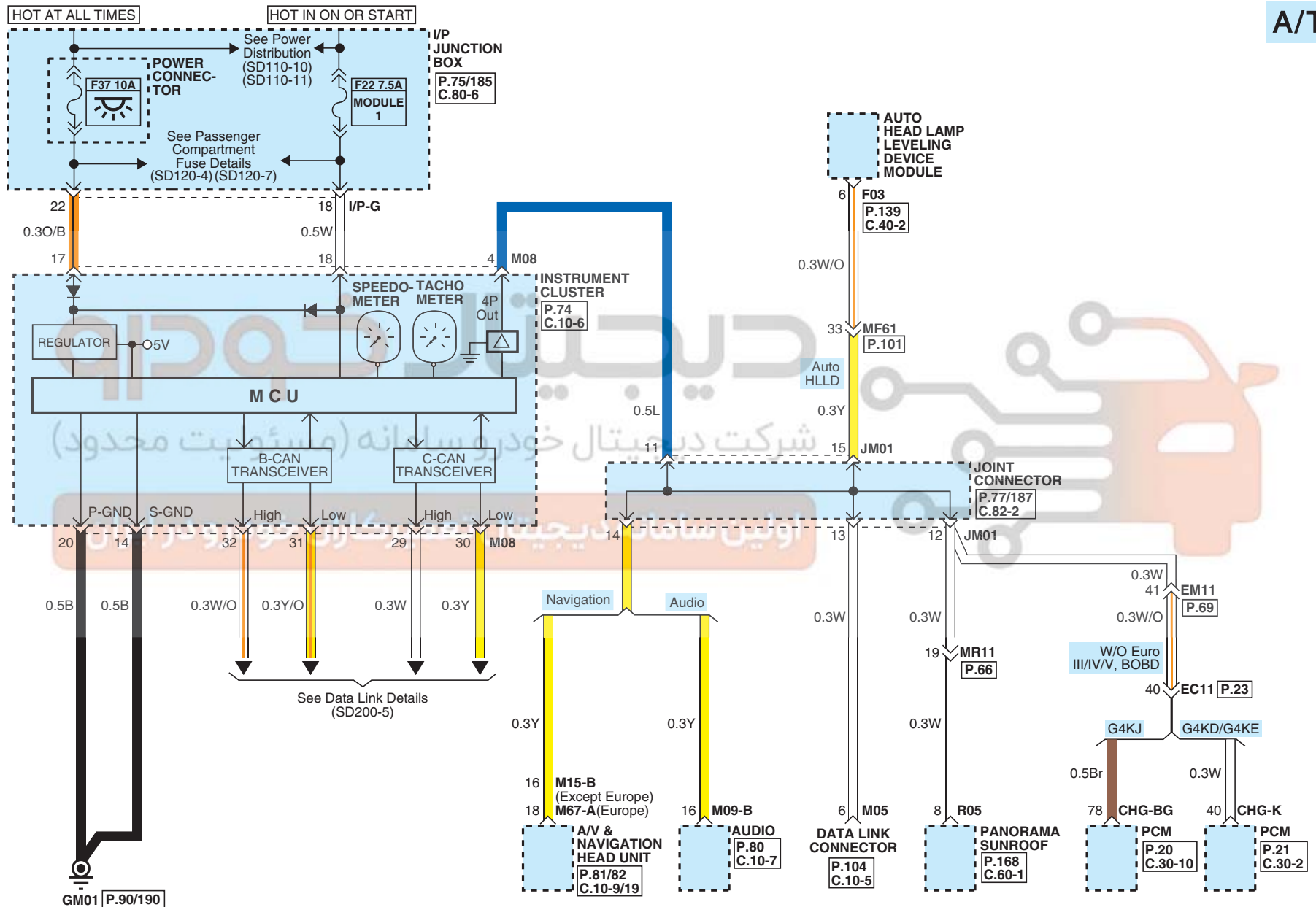
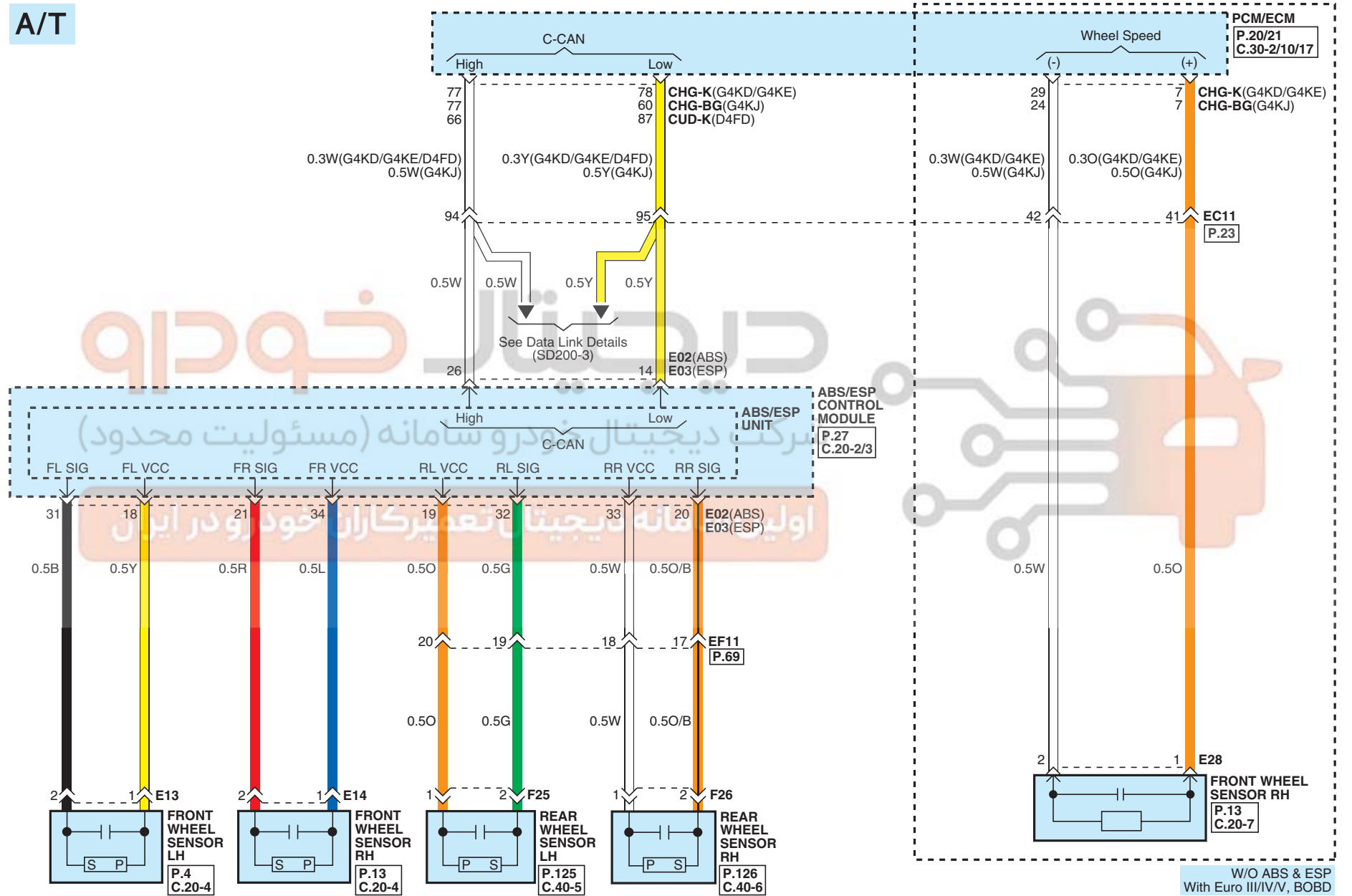


A/T

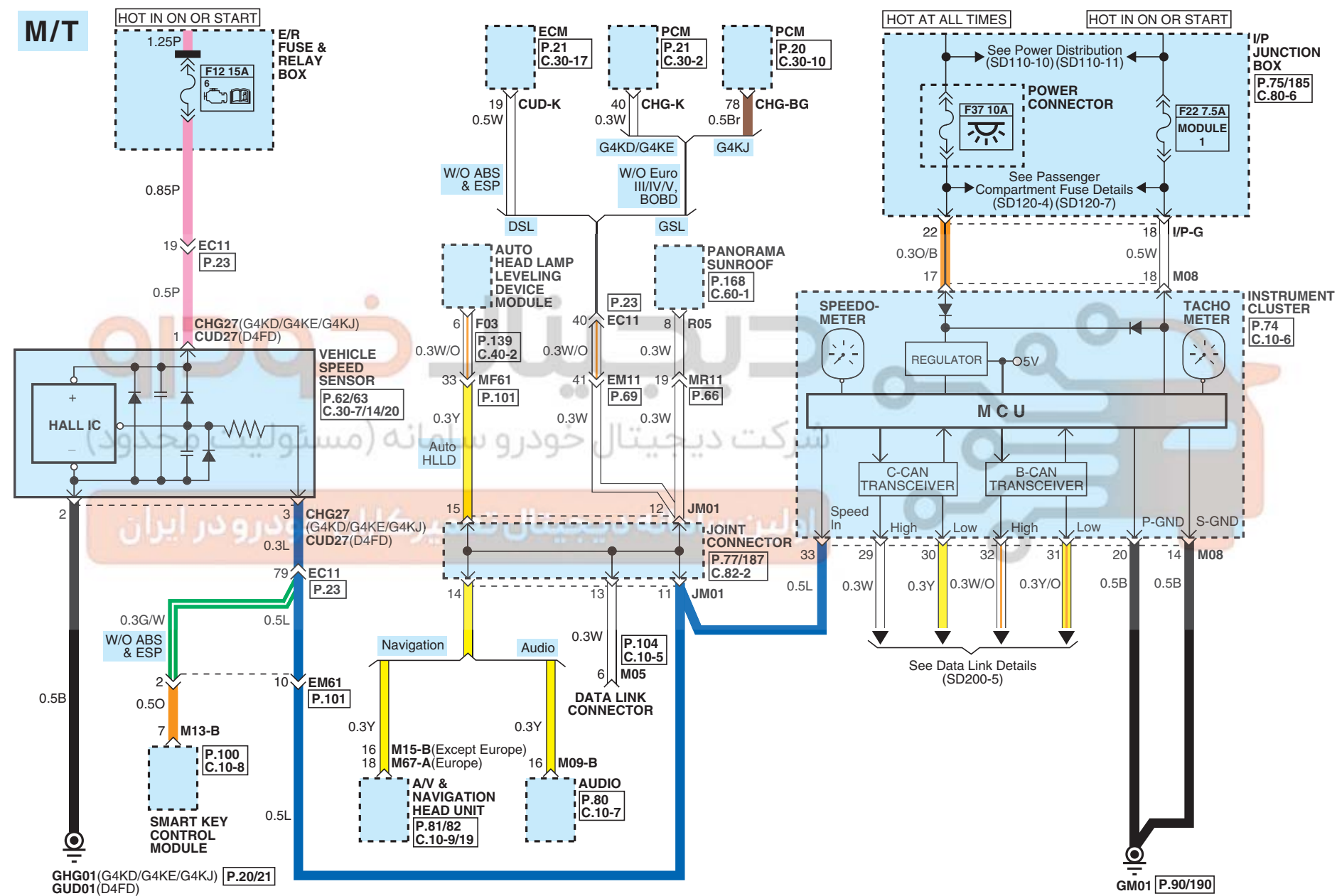


A/T



Vehicle Speed System (3)

SD436-3



Circuit Description

1. In an A/T automobile equipped with ABS/ESP, the ABS/ESP control module receives the vehicle speed signal from the four wheel sensor and sends it to the ECM(PCM) and MCU of the instrument cluster through CAN communication. In an A/T automobile without ABS/ESP, the ECM(PCM) control module receives the vehicle speed signal from front wheel sensor RH and sends it to the MCU of the instrument cluster through CAN communication.
2. The MCU in the instrument cluster uses the received vehicle speed data to indicate the current speed by controlling the speedometer. It also converts the speed data into a pulse wave and sends it to A/V & navigation head unit, audio, auto head lamp leveling device module, ECM(PCM), panorama sunroof, data link connector.
3. In an M/T automobile, a vehicle speed sensor detects the vehicle speed. The hall-type vehicle speed sensor detects the vehicle's speed by sensing the rational speed of the transmission internal differential gear. The vehicle speed sensor converts the speed data into a pulse wave and sends it to A/V & navigation head unit, audio, instrument cluster, ECM(PCM), auto head lamp leveling device module, panorama sunroof, data link connector.

• Vehicle Speed Signal Functions

1. ECM(PCM) : It compares the vehicle speed from an ABS/ESP with engine revolutions (RPM) and determines the optimum fuel injection, ignition timing and driving transmission gear shift.
2. Instrument Cluster :
 - 1) An A/T automobile sends the vehicle speed data received from the ABS/ESP to the components ②(A/V & navigation head unit, audio, auto head lamp leveling device module, ECM(PCM), panorama sunroof, data link connector) through the instrument cluster (M08: No. 4) wiring. An M/T automobile displays the current speed by controlling the speedometer using the pulse wave converted by the vehicle speed sensor.

- 2) Also the vehicle speed data received from the ABS/ESP is send to the components ③(smart key control module, driver IMS module, IPS control module, BCM) through the B-CAN(M08: No. 31 / 32).

② components (wiring connect)

- ① A/V & navigation head unit/audio : DMB control.
- ② Auto head lamp leveling device module : for driver visibility in driving condition. (acceleration, deceleration, high speed)
- ③ Panorama sunroof : Vehicle speed signal is used for compensate sunroof motor operation when closing out slide sunroof during high speed driving condition.
- ④ Data link connector : Scanner detects vehicle speed through Data Link Connector.

③ components (B-CAN)

- ① BCM : auto door lock and key remind control.
- ② Smart key control module : Starting control (prevent engine OFF when the OFF button is pressed during the driving).
- ③ IPS control module : control and diagnosis the head lamp Low/High, tail lamp, fog lamp. After received CAN signal from BCM, control the Lamp output. State of control and diagnosis outcome is send to BCM through the CAN communication.
- ④ Driver IMS module : prevent malfunction of seat during the driving.

• Inspection

1. Since the vehicle speed data are transferred through the CAN communication protocol, check the operation of the communication line.
2. In an A/T automobile, the pulse signal converted by the MCU of the instrument cluster can be checked by the data link connector (M05: No. 6) or instrument cluster (M08: No. 4).
3. In an M/T automobile, the pulse wave converted by the vehicle speed sensor can be checked by the data link connector (M05: No. 6) or speed vehicle sensor (No. 3).