A/C CUT-OFF CONTROL [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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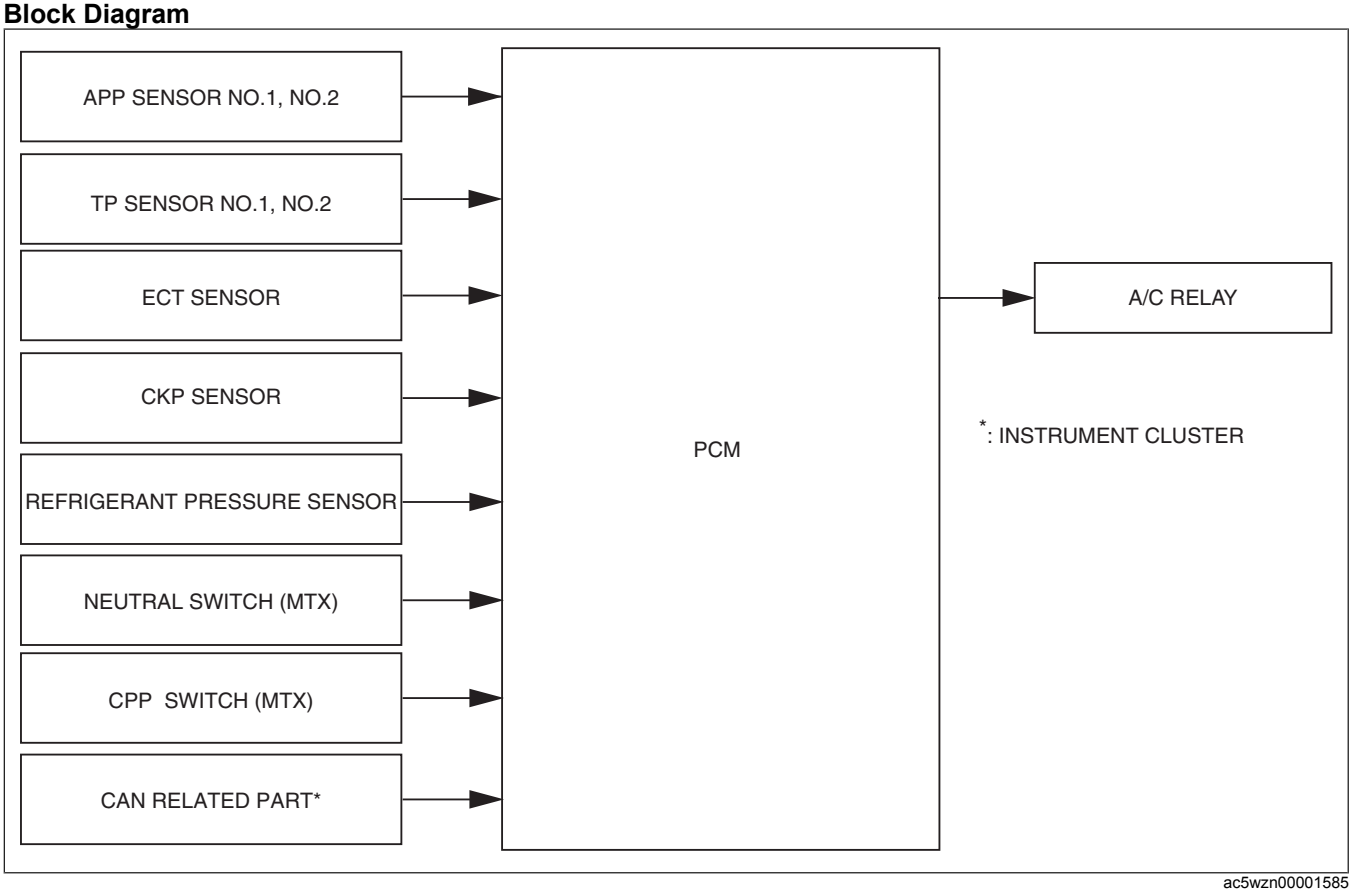
Caution

- **Vehicle specifications differ depending on the vehicle identification number (VIN).**
  - **— Type A VIN:**
    JM0 KE**** 100001−**
    JM6 KE**** 100001−**
    JM7 KE**** 100001−**
    JM8 KE**** 100001−**
    JMZ KE**** 100001−**
    KE10 100001−**
  - **— Type B VIN:**
    JM0 KE**** 200001−**
    JM6 KE**** 200001−**
    JM8 KE**** 200001−**
    JMZ KE**** 200001−**
    KE10 200001−**

Outline

- Controls the A/C operation by switching the A/C relay ON/OFF at the optimal timing according to engine operation conditions. Acceleration performance and A/C compressor reliability have been improved by controlling the A/C operation.

Block Diagram



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Operation (Type A VIN)

- The PCM stops current to the A/C relay when any of the following conditions are met:

A/C cut-off control operation conditions

Operation condition	While A/C relay not energized	Purpose
At engine start	Approx. 4 s	Improved startability
When engine is restarted by i-stop control	Approx. 3 s	Improved startability
When engine speed is 6,700 rpm or more	Approx. 5 s elapsed since engine speed was 6,200 rpm or less	A/C compressor reliability assurance

Operation condition	While A/C relay not energized	Purpose
Accelerated	3 to 5 s	Acceleration from standstill/ acceleration performance improvement
Time under i-stop control, vehicle speed of 1km/h {0.6 mph} or less	—	i-stop function reliability improvement
Refrigerant pressure 3.14 MPa {32.0 kgf/ cm^2, 455 psi} or more	Refrigerant pressure decreases to 2.55 MPa {26.0 kgf/cm^2, 370 psi} or less	A/C compressor reliability assurance
Refrigerant pressure of 0.196 MPa {2.00 kgf/ cm^2, 28.4 psi} or less continues for 5 s or more	Refrigerant pressure of 0.226 MPa {2.30 kgf/ cm^2, 32.8 psi} or more continues to 5 s or more	A/C compressor reliability assurance
Drive-by-wire control malfunction	—	Reverse driving performance assurance
Panic braking determined	—	Load performance assurance
Misfire determination	—	Catalytic converter protection
ECT sensor malfunction	—	Engine protection
Engine coolant temperature 113 °C {235 °F} or more	Turns on/off repeatedly every 10 s until engine coolant temperature is less than approx. 107 °C {225 °F}	Engine protection
Engine coolant temperature 117 °C {243 °F} or more	Until engine coolant temperature is less than 110 °C {230 °F}	Engine protection

Operation (Type B VIN)

- The PCM stops current to the A/C relay when any of the following conditions are met:

A/C cut-off control operation conditions

Operation condition	While A/C relay not energized	Purpose
At engine start	Approx. 4 s	Improved startability
When engine is restarted by i-stop control	Approx. 3 s	Improved startability
When high engine speed (approx. 6,700 rpm or more)	Approx. 5 s elapsed since engine speed was 6,200 rpm or less	A/C compressor reliability assurance
Accelerated	Approx. 5 s	Acceleration from standstill/ acceleration performance improvement
Time under i-stop control, vehicle speed of 1km/h {0.6 mph} or less	—	i-stop function reliability improvement
Refrigerant pressure 3.14 MPa {32.0 kgf/ cm^2, 455 psi} or more	Refrigerant pressure decreases to 2.55 MPa {26.0 kgf/cm^2, 370 psi} or less	A/C compressor reliability assurance
Refrigerant pressure of 0.196 MPa {2.00 kgf/ cm^2, 28.4 psi} or less continues for 5 s or more	Refrigerant pressure of 0.226 MPa {2.30 kgf/ cm^2, 32.8 psi} or more continues to 5 s or more	A/C compressor reliability assurance
Drive-by-wire control malfunction	—	Reverse driving performance assurance
Panic braking determined	—	Load performance assurance
ECT sensor malfunction	—	Engine protection
When high engine coolant temperature (approx. 113 °C {235 °F} or more)	High engine coolant temperature: Continuously cuts off the A/C, and if the engine coolant temperature decreases, it continues to cut-off the A/C.	Engine protection
Travel on ascending road	—	Ascent performance improvement