AIR CONDITIONER i-stop CONTROL [FULL-AUTO AIR CONDITIONER]

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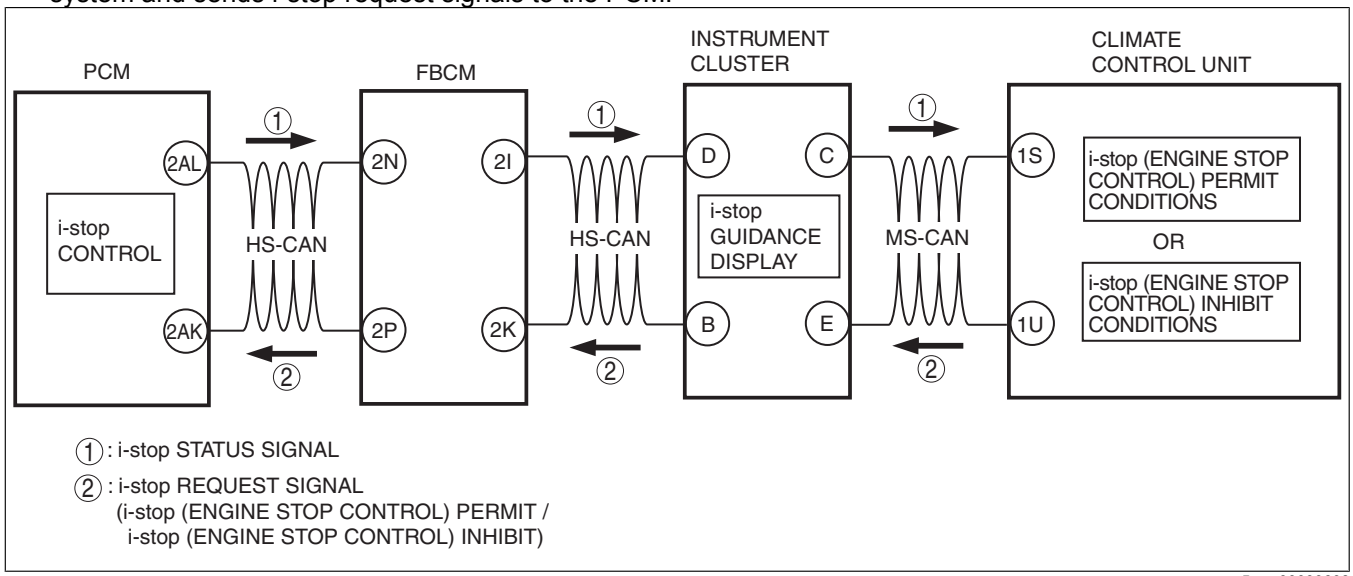
Purpose

- The heater control unit controls i-stop to permit/inhibit its operation (engine stop control) according to the air conditioner system operation conditions.

Function

- The climate control unit determines i-stop control according to the operation condition of the air conditioner system and sends i-stop request signals to the PCM.



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Operation

i-stop request control (i-stop (engine stop control) permit/ i-stop (engine stop control) inhibit)

- The climate control unit sends i-stop (engine stop control) permit or i-stop (engine stop control) inhibit request signals to the PCM according to the operation condition of the air conditioner system.

i-stop (engine stop control) inhibit request

- The climate control unit sends an i-stop (engine stop control) inhibit request signal to the PCM when it detects any of the following conditions:

i-stop (engine stop control) inhibit conditions

No.	Item	Vehicle condition
1	Climate control unit malfunction determined	A DTC is detected in relation to the following parts: • Solar radiation sensor • Ambient temperature sensor • Cabin temperature sensor • Evaporator temperature sensor • Heater core temperature sensor • Engine coolant temperature sensor • Airflow mode actuator • Air mix actuator
2	CAN line error determined	Signal reception error occurs on climate control unit side in relation to the following signals: • Ambient temperature signal • Engine coolant temperature signal • Engine operation status signal (i-stop status signal)
3	Ambient temperature	Ambient temperature is **-10 °C {14 °F} or below**, or **50 °C {122 °F} or more**
4	Airflow mode control status	During manual defroster control
5	Set temperature, compressor control mode	MAX HOT or MAX COLD (A/C or ECO mode)
6	Auto air conditioner target temperature attainment status	If any of the following signals do not meet the i-stop (engine stop control) permit conditions (Comfortable cabin temperature control not performed): • Cabin temperature (cabin target temperature and cabin temperature relation) • Evaporator temperature • Heater core temperature

i-stop (engine stop control) permit request

- The climate control unit sends an i-stop (engine stop control) permit request signal to the PCM when it detects any of the following conditions:

i-stop (engine stop control) permit conditions

No.	Item	Vehicle condition
1	Blower motor control status	• Blower motor is off • However, i-stop (engine stop control) inhibit conditions No. 1 to 3 must not be in effect.
2	Set temperature, compressor control mode	• MAX COLD • Compressor control: Off • Blower motor is ON • However, i-stop (engine stop control) inhibit conditions No. 1 to 4 must not be in effect.
3	Auto air conditioner target temperature attainment status	• Blower motor is ON • Compressor control: ON • The relation between the cabin target temperature and cabin temperature meets the i-stop (engine stop control) permit conditions (comfortable cabin temperature control is performed) • However, i-stop (engine stop control) inhibit conditions No. 1 to 6 must not be in effect.

A/C control start during i-stop (engine stop control)

- When the A/C operation is stopped by the i-stop control, and while i-stop (engine stop control) permit condition No. 3 is met, the climate control unit starts A/C control corresponding to the engine-stop condition if it detects an engine-stop condition based on the i-stop condition signal sent from the PCM.
- If the engine is stopped during A/C control, the A/C compressor magnetic clutch turns off and the A/C indicator light remains in an illuminated condition. When the engine is restarted, the A/C compressor magnetic clutch turns on again.

Recovery to normal A/C control

- When recovery condition a or b is met while the engine is stopped by the i-stop control, the climate control unit sends an engine restart request signal to the PCM.
- It returns to the normal A/C control when the engine is restarted.

Recovery condition a:

- i-stop cancel determination condition is met

i-stop (engine stop control) cancel determination conditions

Compressor control mode	Airflow mode		
	VENT	BI-LEVEL	HEAT, DEF/HEAT, DEFROSTER
A/C, ECO, OFF	If the following conditions are met: • Evaporator temperature is at i-stop control specification or more	If any one of the following conditions are met: • Evaporator temperature is at i-stop control specification or more • Heater core temperature is at i-stop control specification or less	If the following conditions are met: • Heater core temperature is at i-stop control specification or less

Recovery condition b:

- Any one of the following i-stop (engine stop control) inhibit conditions is met
  - — No.1 climate control unit malfunction determination
  - — No.2 CAN transmission error determination
  - — No.4 mode control status
  - — No.5 set temperature, compressor control mode