

ELECTRICAL FAN CONTROL OUTLINE [13B-MSP]

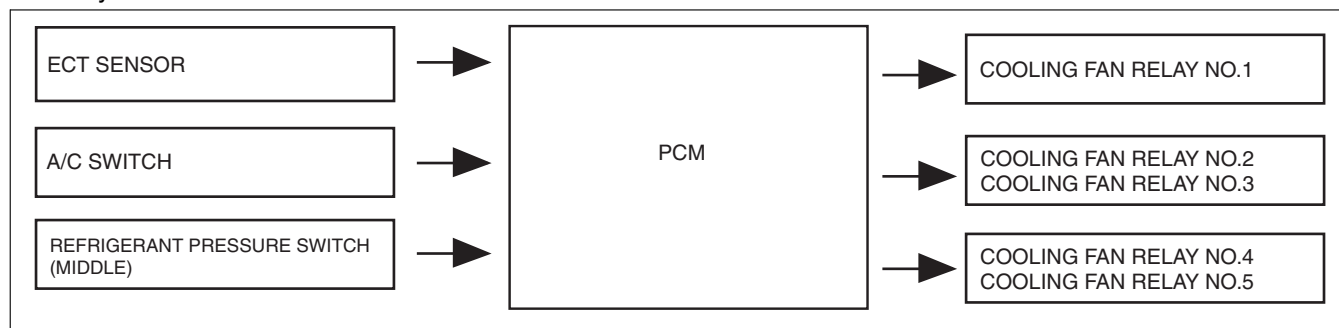
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- Cooling fan relays No.1, No.2/ No.3, No.4/ No.5 turn on and off to control operation timing and rotation speed of the cooling fan motor according to the engine conditions. Due to this, the radiator and condenser are cooled efficiently, preventing overheating and overcooling.
- The electrical fan control includes the regular-driving cooling function and the after-cooling function.
- The regular-driving cooling function operates according to the engine conditions during the engine operation.
- The after-cooling function operates when the vehicle has stopped at high engine temperature (ignition switch off).
- After the ignition switch is turned off, a main relay on request is sent to operate the after-cooling function.

ELECTRICAL FAN CONTROL BLOCK DIAGRAM [13B-MSP]

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- The PCM determines the engine conditions based on input signals and sends an on/off signal to cooling fan relay No.1 or No.2/No.3 or No.4/No.5.



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ELECTRICAL FAN CONTROL OPERATION [13B-MSP]

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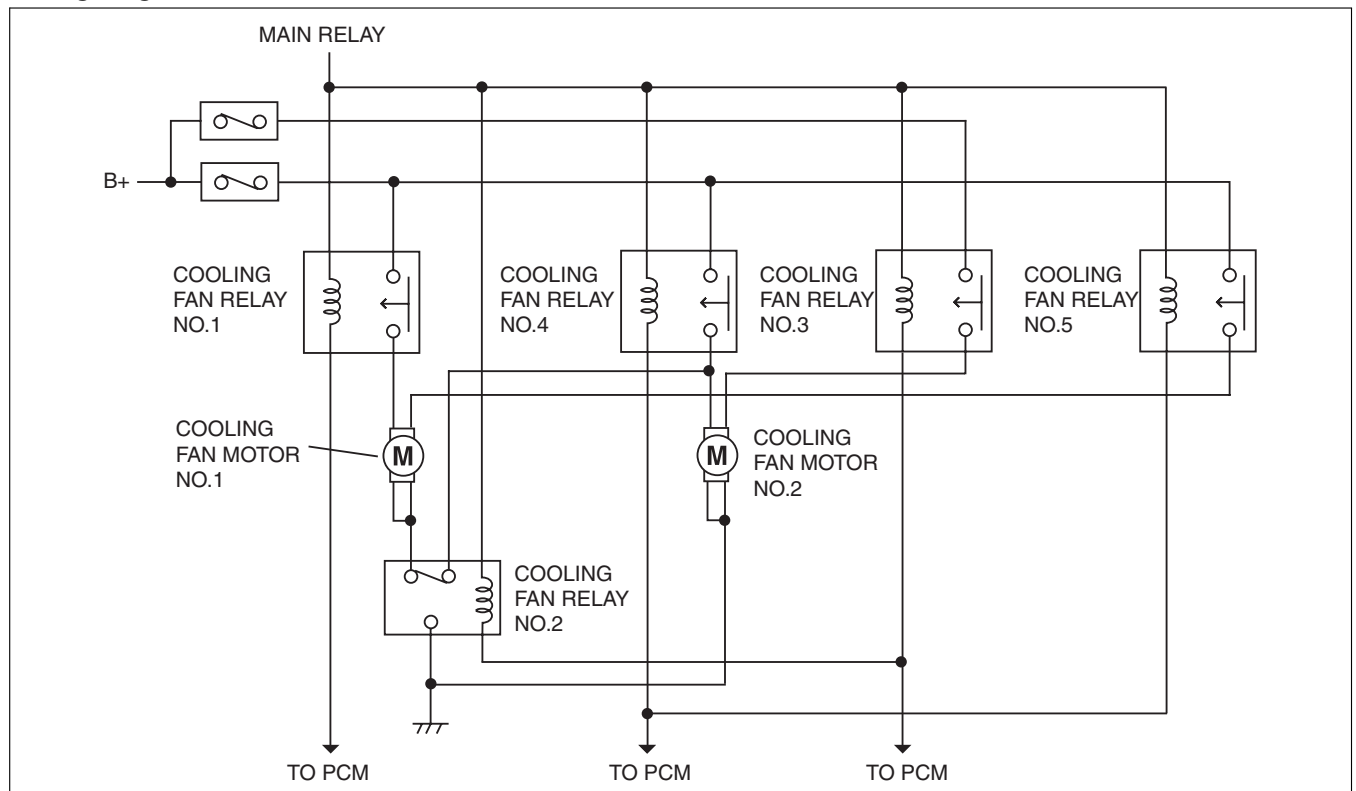
- When the operation conditions are met for each function, the PCM sends an operation signal to cooling fan relay No.1 or No.2/No.3 or No.4/No.5 to operate the cooling fan motors.
- The rotation speed of the cooling fan motor is switched between three levels according to a combination of the cooling fan relays.
- The cooling fan rotates at low speed when only cooling fan relay No.1 is on, at middle speed when cooling fans, in addition to No.1, No.2 and No.3 are on, and at high speed when cooling fans No.4 and No.5 turn on.

CONTROL SYSTEM [13B-MSP]

Operation condition

Function	Cooling fan motor		Cooling fan relay			Operation condition
	No.1	No.2	No.1	No.2/No.3	No.4/No.5	
Regular driving cooling	Stop	Stop	OFF	OFF	OFF	<ul style="list-style-type: none"> ECT less than 97 °C {207 °F} and A/C switch OFF
	Low speed rotation	Low speed rotation	ON	OFF	OFF	<ul style="list-style-type: none"> ECT less than 97 °C {207 °F} and A/C switch ON (Refrigerant pressure switch OFF) ECT is 97—101 °C {207—213 °F} and Refrigerant pressure switch OFF
	Middle speed rotation	Middle speed rotation	ON	ON	OFF	<ul style="list-style-type: none"> ECT is 101—108 °C {214—226 °F} ECT less than 101 °C {214 °F} and Refrigerant pressure switch ON ECT or above 108 °C {226 °F} and A/C switch OFF (Refrigerant pressure switch OFF)
	High speed rotation	High speed rotation	ON	ON	ON	<ul style="list-style-type: none"> ECT or above 108 °C {226 °F} and A/C switch OFF ECT or above 108 °C {226 °F} and Refrigerant pressure switch ON
After cooling	Middle speed rotation	Middle speed rotation	ON	ON	OFF	<ul style="list-style-type: none"> When all the following conditions are met: <ul style="list-style-type: none"> — Ignition switch: OFF — Drive-by-wire relay: OFF — Metering oil pump: Other than during ignition switch off mode — Engine compartment temperature high or ECT 110 °C {230 °F} or more.
Forced drive	High speed rotation	High speed rotation	ON	ON	ON	<ul style="list-style-type: none"> During test mode (during test mode with M-MDS) when the AP is depressed.
Fail safe	High speed rotation	High speed rotation	ON	ON	ON	<ul style="list-style-type: none"> When a failure occurs in the ECT sensor.

Wiring diagram



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