Radiator Cooling Fan Motor: Description and Operation

FAN CONTROL

FIVE HUNDRED/FREESTYLE/MONTEGO, CROWN VICTORIA/GRAND MARQUIS, TOWN CAR: FCV DUTY CYCLE OUTPUT FROM PCM (negative duty cycle)

FCV Duty Cycle Command (NEGATIVE (-) duty cycle)	Cooling Fan Response/Speed
Greater than 0 but less than 5%	Fan off, controller inactive
Greater than 5% but less than 10%	Fan off, controller is in active/ready state
Crown Victoria/Grand Marquis, Town Car: 10% - 90%	Crown Victoria/Grand Marquis, Town Car: Linear speed increase from 20% to 100%
Five Hundred/Freestyle/Montego: 30% - 90%	Five Hundred/Freestyle/Montego: Linear speed increase from 50% to 100%
Greater than 90% but less than 95%	100%
Greater than 95% but less than 100%	Fan off

Five Hundred/Freestyle/Montego, Crown Victoria/Grand Marquis, Town Car: FCV Duty Cycle Output From PCM (negative Duty Cycle)

LS, THUNDERBIRD: FCV DUTY CYCLE OUTPUT FROM PCM

FCV Duty Cycle Command (positive (+) duty cycle)	Cooling Fan Response/Speed
Greater than 0 but less than 4%	100% (default maximum)
Greater than 4% but less than 6%	100% if duty cycle is increasing 0% (off) if duty cycle is decreasing
Greater than 6% but less than 12%	0% (off)
Greater than 12% but less than 16%	20% if duty cycle is increasing 0% if duty cycle is decreasing
16% - 90%	Linear speed increase from 20% to 100%
Greater than 90% but less than 100%	100% (default maximum)

LS, Thunderbird: FCV Duty Cycle Output From PCM

The PCM monitors certain parameters (such as engine coolant temperature, vehicle speed, A/C on/off status, A/C pressure) to determine engine cooling fan needs.

For variable speed electric fan(s):

The PCM controls the fan speed and operation using a duty cycle output on the fan control - variable (FCV) circuit. The fan controller (located at or integral to the engine cooling fan assembly) receives the FCV command and operates the cooling fan at the speed requested (by varying the power applied to the fan motor).

For relay controlled fans:

The PCM controls the fan operation through the fan control (FC) (single speed fan applications), low fan control (LFC), medium fan control (MFC), and/or high fan control (HFC) outputs. Some applications will have the xFC circuit wired to 2 separate relays.

2.0L FOCUS (with A/C) and TAURUS/SABLE: PCM FC OUTPUT STATE FOR COOLING FAN SPEEDS

PCM OUTPUT	LOW SPEED	MEDIUM SPEED	HIGH SPEED	FAN OFF
LFC (FC1)	ON	ON	ON	OFF
MFC (FC2)	ON	OFF	ON	OFF
HFC (FC3)	ON	OFF	OFF	OFF

2.0L Focus (with A/C) And Taurus/Sable: PCM FC Output State For Cooling Fan Speeds Chart

2.3L ESCAPE: PCM FC OUTPUT STATE FOR COOLING FAN SPEEDS

PCM OUTPUT	LOW SPEED	MEDIUM SPEED	HIGH SPEED	FAN OFF
LFC (FC1)	ON	ON	ON	OFF
MFC (FC2)	OFF	ON	OFF (or ON)	OFF
HFC (FC3)	OFF	OFF	ON	OFF

2.0L Escape: PCM FC Output State For Cooling Fan Speeds Chart

FREESTAR, MONTEREY: PCM FC OUTPUT STATE FOR COOLING FAN SPEEDS

PCM OUTPUT	LOW SPEED	MEDIUM SPEED	HIGH SPEED	FAN OFF
LFC (FC1)	OFF	ON	ON	OFF
MFC (FC2)	ON	OFF	ON	OFF
HFC (FC3)	ON	ON	ON	OFF

Freestar, Monterey: PCM FC Output State For Cooling Fan Speeds Chart

For 3-speed fans, although the PCM output circuits are called low, medium, and high tan control (FC), cooling fan speed is controlled by a combination of these outputs. Refer to the table.