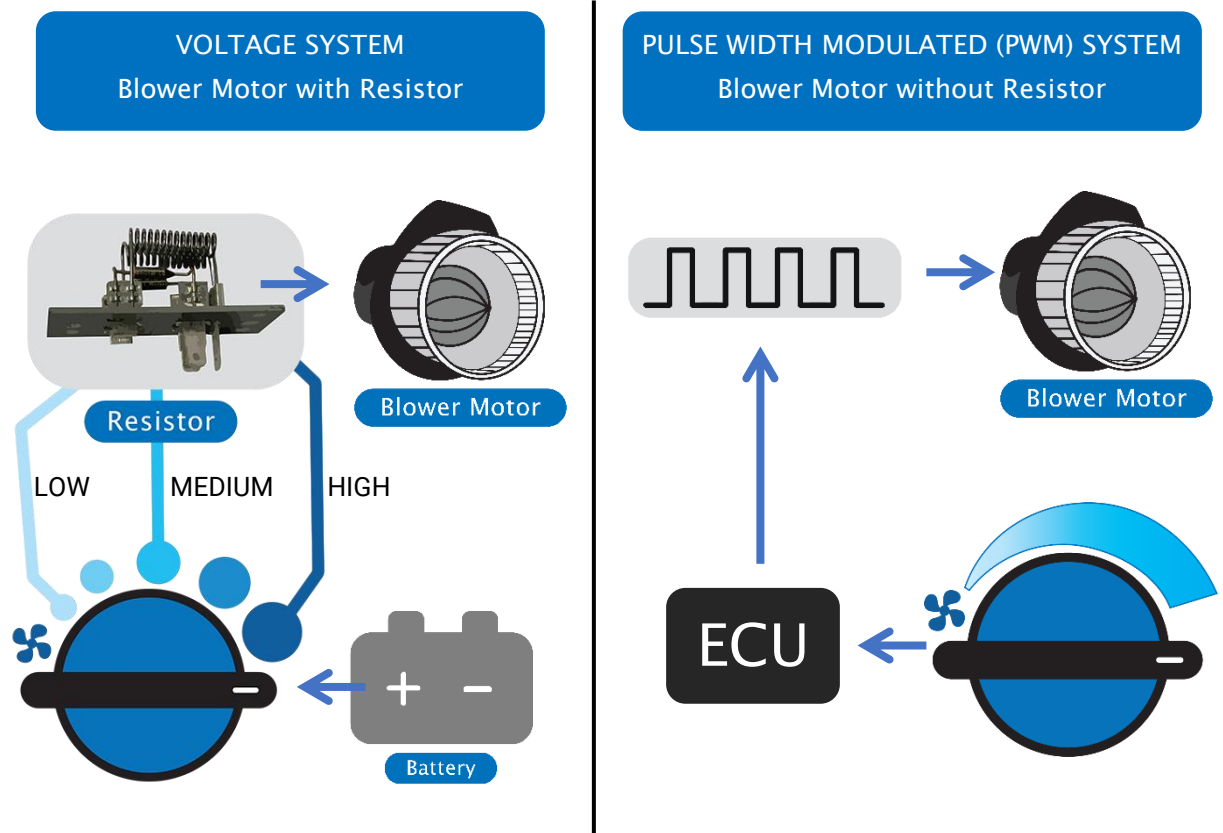


# Keeping Up With New Technology: Pulse Width Modulated (PWM) Blower Motors

As described in gpd Tech Tip #168, most blower motors require a resistor/module that varies electrical output to the blower motor based on selected fan speed. Today, a growing number of late model systems feature a blower motor that operates on Pulse Width Modulation (PWM) rather than a voltage and does not require a resistor/module. PWM blower motor designs enable a wider range of fan speed settings to enhance passenger comfort. Systems with a resistor generally have a select number of settings (e.g., 1, 2, 3, 4 or low, medium, high).



## Pulse Width Modulation (PWM)

PWM technology is common in other areas of the automotive engine/motor. To achieve the desired fan speed in the vehicle cabin, the ECU sends a series of on/off voltage pulses at intermittent times to reach an average “duty cycle” that meets the passenger’s selected climate settings. Typically, PWM blower motors are found in vehicles with automatic, digital climate control panels (e.g., infotainment interface). This type of blower motor can be identified by a three-prong terminal connection on the back side of the blower motor. Two vehicles with the same year, make, engine model may not feature the same blower motor design. Refer to gpd Tech Tip #193 for an example.

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