

Back EMF

Back EMF generally refers to the voltage that will appear across an inductor if the current is stopped suddenly and in particular to the voltage generated by the rotation of a motor. In the latter case the voltage acts to reduce the current driving the motor so that the power consumed gets less as the speed rises to that speed at which the BEMF is equal to the applied voltage. If the BEMF exceeds the applied voltage the current will be reversed and the motor will be acting as a generator. This effect can be used to provide braking and at the same time recover energy. Some controllers use the BEMF to provide a measure of the speed of the motor. There must, of course, be nulls, periods when no voltage is applied, so that the BEMF can be measured while there is no current flowing; this is not synonymous with PWM. This comparative speed measurement can then be used to provide feedback to the controller in order to ensure a constant speed.

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