

Monitoring Electrically Commutated Motors

UNDERSTANDING FALSE "ON" STATUS ALARMS

ECM stands for an Electronically Commutated Motor, which is a D.C. brushless motor with integrated variable speed drive electronics. They are gaining in popularity due to their energy savings at reduced speeds. It's important to consider the quiescent or stand-by current draw consumed by the drive electronics, however, when monitoring status.

Key Points

- ECM electronics may draw enough stand-by current to cause a sensitive current sensor to remain "ON" even when the motor is not actually running.
- This results in an undesirable false "RUN" status or "ON" condition
- ECM stand-by current draw varies dramatically by manufacturer from 250 mA to 1A.
- To prevent false "ON" status alarms, the turn-on of the current switch must be higher than the ECM stand-by current.

Senva go/no current sensors are typically 250 to 500 mA turn-on. In many cases this is adequate, but when ECM stand-by current exceed this value, the costs add up in troubleshooting or replacing sensors after the fact.

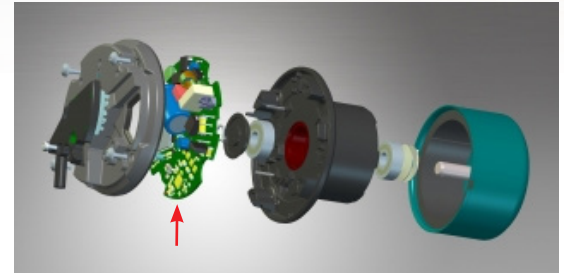
SOLUTION

Using a current sensor with an ultra-low adjustable turn-on set-point allows the installer to adjust the turn-on of the current switch to be higher than the ECM stand-by current, but not so high as to not detect the ECM motor. This sensor provides Go/No RUN indication.

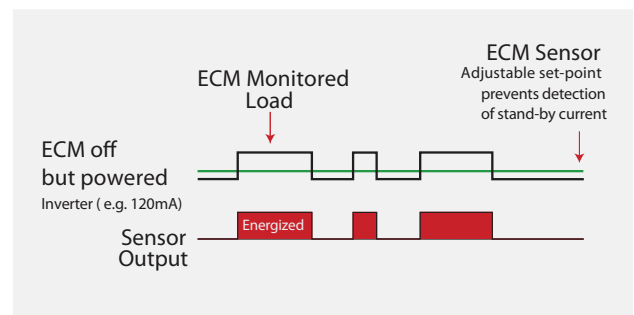
The scaled dial lends itself to pre-calibration once a standard is set for a particular motor type in an installation.

Benefits

- No call-backs due to false "ON" status alarms
- Ability to install multiple sensors to scaled set-point without live calibration, saving time and improving safety practices



ECM drive electronics draw current even when the motor is not running, potentially leading to false "ON" or "run" indications to the control system when monitored by standard current sensors



ECM Series current sensor turn-on set-point adjusted above ECM motor stanby current to prevent sensing of inverter electronics.



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