



Health monitoring software for DC capacitors

Improving the reliability of MV7 drive by monitoring DC capacitor health/lifespan

DC Capacitor health monitoring

DC Capacitors used in GE drives are of PP (Polypropylene) type. These capacitors are self healing and don't short circuit in case of failure. With ageing the behavior is a progressive reduction of capacitance, resulting in voltage ripple that may cause trips. It is recommended to monitor its health regularly to avoid unexpected breakdowns.



PP type DC Capacitors

GE has designed a solution to monitor capacitor's health by calculating the discharging time variations. The function consists of measuring the time of the voltage decrease by half DC bus after each discharge.

The discharge time measurement (T_{mes}) is done between two voltage thresholds, and it's compared after with an initial value (T_{ini}). The initial value (T_{ini}) is measured by the function and stored on the first discharge of the DC bus after loading the software.

MV7 DC Monitoring software Alarm

If the capacitor bank is damaged, then it will be detected by the function "capacitor monitoring alarm". It gives a warning that is not blocking alarm. Hence drive continues to operate.

Key to note

- The capacitors should be in good condition (measure the capacitance) before implementing the function in order to have the correct initial value.
- For software upgrades with this function already implemented, the initial values should be recorded before upgrading to new software in order to not to lose the previously saved values from the controller.

Field service engineering support

End to end support by GE experts in the form of:

- General testing to ensure conformant drive operation.
- Identifying any DC Capacitors safety critical issues and proposing solutions
- Suggesting critical spares for safe DC Capacitors operation.

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