Survey of Fault-Tolerance Techniques for Three-Phase Voltage Source Inverters


Abstract— Inverters play key roles in motor-drives, flexible power transmissions, and recently grid-tied renewable energy generation units. Therefore, availability and reliability of inverters has become increasingly important. Following early-stage fault detections in inverters, remedial actions can extend normal operation of inverters and, in some cases, derate the system to prevent unexpected shutdowns. A remedial action typically contains a combination of hardware and software reconfigurations. The main purpose of this paper is to provide an instructive survey of existing fault-tolerance (remedial) techniques for three-phase two-level and multilevel inverters.