Fault detection using ann for four switch three phase inverter fed induction motor drive

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Abstract: This paper is to present the technique for fault detection for Four-Switch Three-Phase Inverter fed induction motor drive. The proposed method requires only motor currents and DC-link current to be measured for detecting and identifying the power switch in which the open circuit fault or short circuit fault has occurred. Furthermore, a diagnosis controller using ANN for real-time fault detection of power switches is suggested. A computer simulation program is developed using Matlab/Simulink together with the Neural Network Toolbox for training the ANN-controller. This method has been validated experimentally using kit ACE 1104 (DSpace). ©2008 IEEE.

Index Keywords: Backpropagation; Computer networks; Computer simulation; Electric drives; Energy conservation; Induction motors; Motors; Neural networks; Switches; Time switches; D spaces; DC links; Four-switch three-phase inverters; MATLAB /simulink; Motor currents; Neural network toolboxes; Open circuit faults; Power switches; Real-time fault detections; Short-circuit faults; Fault detection

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