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Feasibility Study of Wireless Communication for the Control and Monitoring of Rotating Electrical Machine

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Abstract : Electrical machine monitoring is important to protect motor from unexpected problems. Today, using wireless communication for electrical machines is interesting for both real time monitoring and diagnostic purposes. In this paper, we propose a system based on wireless communication IEEE 802.11 to control electrical machine. IEEE 802.11 standard is recommended for this type of applications because it provides a faster connection, better range from the base station, and better security. Therefore, our contribution is to study a new technique to control and monitor the rotating electrical machines (motors, generators) using wireless communication. The reliability of radio channel inside rotating electrical machine is also discussed. Then, the communication protocol, software and hardware design used for the proposed system are presented in detail and the experimental results of our system are illustrated.

Keywords : control, DFIM machine, electromagnetic field, EMC, IEEE 802.11, monitoring, rotating electrical machines, wireless communication
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