

EUR21_21 – ELECTRIC MOTOR FAULT DIAGNOSIS BASED ON ADVANCED ANALYSIS OF THE STRAY FLUX

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Abstract - This paper presents the most novel research concerning the application of modern technologies for condition monitoring of electric motors based on the advanced analysis of the stray flux. The analysis of the magnetic field in the vicinity of the motor has proven to provide very useful information for the diagnosis of several failures. This technique has drawn recent attention due to the advance in the technology of the necessary sensors, simplicity, non-invasive nature and low cost. The paper presents the different variants within this technology, including the classical method based on the stationary analysis of the flux as well as recent techniques relying on the advanced analysis of transient flux signals. The paper includes experimental results in motors with different failures and proves the potential of this technology for becoming a reliable source of information for the determination of the motor health.