
Detection of Stator Winding Short Circuit Faults Through Magnetic Fields In Induction Motors

Deteksi Gangguan Hubung Singkat Belitan Stator Melalui Medan Magnet Di Motor Induksi

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In applications in the industrial world, the use of induction motors has been widely used in operation because induction motors have many advantages, although they have many disadvantages, induction motors themselves also have disadvantages, namely having high starting currents. In many cases the damage to the induction motor, the damage to the stator due to a short circuit, is a frequent failure, this damage can cause considerable losses because the motor can stop operation So this research will discuss about the detection of short circuit faults in the stator winding through leaky flux using a flux sensor that is placed outside the motor and placed radially and using the Fast Fourier Transform (FFT) method. Damage to the short circuit is done by reconstructing the stator winding of the induction motor. There are two variations of short circuit damage, namely short circuit winding 1 to winding 3 and short circuit winding 2 to winding 10 on an induction motor. The short circuit data is then processed using the Fast Fourier Transform method which produces data in the form of voltage to frequency. The results of the percentage of success of short circuit fault detection seen from the loaders have an average percentage of 50%, at no load conditions can detect short circuit faults by 100%. In conditions of short circuit interruption 1-3 has a success percentage of 30% and short circuit fault 2-10 by 70%. The existence of this system is expected to be able to anticipate any damage that can cause considerable and fatal losses.

References

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