

ABSTRAK

ANALISA EFISIENSI MOTOR INDUKSI 3 PHASA 3203 JA SEBAGAI TRANSFER WATER DEMIN PLANT P-III DI PT PUSRI PALEMBANG

(2026: xiii + 54 Halaman + Daftar Gambar + Daftar Tabel Daftar Lampiran)

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Motor induksi merupakan mesin listrik yang bekerja berdasarkan prinsip induksi elektromagnetik dengan mengubah energi listrik menjadi energi mekanik. Pengoperasian secara terus-menerus menyebabkan penurunan kinerja sehingga diperlukan perawatan dan perbaikan. Penelitian ini bertujuan mengevaluasi kinerja motor induksi 3203 JA dengan membandingkan efisiensi sebelum dan sesudah perbaikan. Sebelum perbaikan, pada 2 Maret, motor memiliki daya input 65.217,0 Watt, daya output 62.981,1 Watt, dan efisiensi 96,57%. Setelah perbaikan, pengujian pada 30 April, 1 Mei, serta 6–8 Mei menunjukkan peningkatan kinerja. Efisiensi tertinggi sebesar 97,16% diperoleh pada 30 April dan 7 Mei, sedangkan pada 8 Mei efisiensi menurun menjadi 96,14%, yang diduga dipengaruhi oleh perubahan beban operasi dan kondisi lingkungan. Hasil penelitian menunjukkan bahwa perbaikan mampu meningkatkan kinerja motor induksi 3203 JA, sehingga proses konversi energi listrik menjadi energi mekanik berlangsung lebih efektif dan efisien dibandingkan sebelum perbaikan.

Kata Kunci : Motor, Efisiensi, Induksi, 3 phasa, beban

ABSTRACT

EFFICIENCY ANALYSIS OF 3 PHASE INDUCTION MOTOR 3203 JA AS TRANSFER WATER DEMIN PLANT P-III AT PT PUSRI PALEMBANG

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An induction motor is an electrical machine that operates based on the principle of electromagnetic induction by converting electrical energy into mechanical energy. Continuous operation may reduce its performance, making maintenance and repair necessary. This study aims to evaluate the performance of the 3203 JA induction motor by comparing its efficiency before and after repair. Before the repair, on March 2, the motor had an input power of 65,217.0 W, an output power of 62,981.1 W, and an efficiency of 96.57%. After the repair, tests conducted on April 30, May 1, and May 6–8 showed an improvement in performance. The highest efficiency of 97.16% was achieved on April 30 and May 7, while on May 8 the efficiency decreased slightly to 96.14%, which was likely influenced by changes in operating load and environmental conditions. The results indicate that the repair successfully improved the performance of the 3203 JA induction motor, enabling a more effective and efficient conversion of electrical energy into mechanical energy compared to its condition before the repair..

Keyword : Motor, Efficiency, Induction, 3 phase, load