

ABSTRAK

ANALISIS SISTEM *GROUNDING* MOTOR LISTRIK BERDASARKAN HASIL PENGUKURAN DI PT. PUPUK SRIWIDJAJA

(2026: xv + 52 Halaman + Daftar Gambar + Daftar Tabel + Lampiran)

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Sistem grounding pada motor listrik berperan penting dalam menjaga keselamatan peralatan dan personel dari gangguan listrik. Penelitian ini bertujuan untuk menganalisis kondisi sistem grounding motor listrik di PT Pupuk Sriwidjaja berdasarkan hasil pengukuran resistansi pentanahan serta mengevaluasi kesesuaiannya dengan standar PUIL 2011 dan IEEE Std 142-2007. Pengukuran dilakukan menggunakan metode *Clamp-On* pada 12 motor listrik yang berada di area Urea, Ammonia, dan Utilitas. Data hasil pengukuran dianalisis secara deskriptif dengan membandingkan nilai resistansi pentanahan terhadap standar yang berlaku. Hasil penelitian menunjukkan nilai resistansi pentanahan berkisar antara 0,04 Ω hingga 60,1 Ω . Berdasarkan PUIL 2011 ($\leq 5 \Omega$), sebanyak 11 motor (91,67%) memenuhi standar dan 1 motor (8,33%) tidak memenuhi standar. Berdasarkan IEEE Std 142-2007 ($\leq 1 \Omega$), sebanyak 10 motor (83,33%) memenuhi standar dan 2 motor (16,67%) tidak memenuhi standar. Faktor yang mempengaruhi tingginya nilai resistansi pentanahan antara lain kondisi tanah yang kering, korosi pada sambungan grounding, dan kurangnya pemeliharaan berkala. Oleh karena itu, diperlukan perbaikan dan pemeliharaan rutin untuk meningkatkan keandalan sistem grounding.

Kata Kunci: Sistem *Grounding*, Resistansi Pentanahan, Motor Listrik, Metode *Clamp On*.

ABSTRACT

ANALYSIS OF ELECTRIC MOTOR GROUNDING SYSTEM BASED ON MEASUREMENT RESULTS AT PT. PUPUK SRIWIDJAJA

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The grounding system in electric motors plays an important role in ensuring the safety of equipment and personnel from electrical faults. This study aims to analyze the condition of the electric motor grounding system at PT Pupuk Sriwidjaja based on grounding resistance measurement results and to evaluate its compliance with the PUIL 2011 and IEEE Std 142-2007 standards. Measurements were conducted using the Clamp-On method on 12 electric motors located in the Urea, Ammonia, and Utilities areas. The measurement data were analyzed descriptively by comparing the grounding resistance values with the applicable standards. The results showed that the grounding resistance values ranged from 0.04 Ω to 60.1 Ω . Based on PUIL 2011 ($\leq 5 \Omega$), 11 motors (91.67%) met the standard, while 1 motor (8.33%) did not meet the standard. Based on IEEE Std 142-2007 ($\leq 1 \Omega$), 10 motors (83.33%) met the standard, while 2 motors (16.67%) did not meet the standard. Factors contributing to high grounding resistance values include dry soil conditions, corrosion at grounding connections, and inadequate periodic maintenance. Therefore, corrective actions and routine maintenance are required to improve the reliability of the grounding system.

Keywords: *Grounding System, Grounding Resistance, Electric Motor, Clamp-On Method.*