

ABSTRAK

STUDI IDENTIFIKASI KENAIKAN TEMPERATUR PADA PISAU PMS PENGHANTAR 70 KV BORANG#2 MENGGUNAKAN METODE THERMOVISI GARDU INDUK SEDUDUK PUTIH

(2026 : xvi + 57 Halaman + 32 Gambar + 10 Tabel + Lampiran)

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Pisau PMS (Pemisah) berfungsi memisahkan rangkaian listrik dari sumber tegangan saat tidak berbeban, sekaligus memberi isolasi visual selama pemeliharaan. Karena tetap dialiri arus saat tertutup, kontakannya rentan memanas akibat oksidasi, kontaminasi, atau degradasi mekanis. Deteksi dini dilakukan melalui thermovisi inframerah sebagai bagian *Condition Based Maintenance* (CBM) level-2. Identifikasi pada pisau PMS Bus II Penghantar 70 kV Borang#2, GI Seduduk Putih, dilakukan tiga kali pada Maret 2026: awal bulan, saat teridentifikasi hotspot, dan setelah perbaikan. Fasa T konsisten terpanas, naik dari 40,5°C ke 54,5°C meski arus turun dari 143 A ke 90 A. ΔT terkoreksi melonjak ke 25,18°C, melampaui ambang kategori mayor (standar PLN 0520-2.K/DIR/2014). Setelah pembersihan kontak dan penyetelan pegas, temperatur turun ke 37,3°C dan ΔT ke 6,01°C, membuktikan perbaikan efektif mengatasi tahanan kontak berlebih.

Kata kunci : Thermovisi, PMS, Temperatur (ΔT), Penghantar, Gardu Induk.

ABSTRACT

STUDY OF TEMPERATURE RISE IDENTIFICATION ON THE 70 KV BORANG #2 DISCONNECTING SWITCH BLADE USING THE THERMOVISION METHOD AT SEDUDUK PUTIH SUBSTATION

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The PMS (disconnecter) switch functions to isolate electrical circuits from the voltage source when unloaded, while also providing visual isolation during maintenance activities. Since it remains energized when closed, its contacts are prone to overheating due to oxidation, contamination, or mechanical degradation. Early detection is carried out using infrared thermovision as part of Condition Based Maintenance (CBM) level-2. Identification on the PMS switch of Bus II, 70 kV Borang#2 Feeder, at Seduduk Putih Substation was conducted three times in March 2026: early month, when a hotspot was identified, and after repair. Phase T was consistently the hottest, rising from 40.5°C to 54.5°C despite load current dropping from 143 A to 90 A. The corrected ΔT surged to 25.18°C, exceeding the major-anomaly threshold (PLN Standard 0520-2.K/DIR/2014). After contact cleaning and spring pressure readjustment, the temperature dropped to 37.3°C and ΔT to 6.01°C, proving the repair effectively resolved the excessive contact resistance.

Keywords : Thermovisi, PMS, Temperatur (ΔT), Penghantar, Gardu Induk.