Emulating Digital Commutation and Field-Oriented Control in BLDC Motors Using Analog Hall Sensors

Author: Ralph Poell (Poell~E Motor)

Contact: poellemotor@gmail.com

1. Introduction & Objective

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2. Background on BLDC Motors and Commutation

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3. Approach: Using Two Analog Hall Sensors

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4. Challenge: Offset and Reference Misalignment

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5. Signal Correction: Vector Rotation and Virtual Sin/Cos Basis

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6. Sector Alignment Comparison

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7. Sinusoidal Current Generation for FOC

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8. Conclusions & Insights

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9. Licensing & Publication Intent

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