

雑誌名	IEEEJ Journal of Industry Applications	巻	Volume 10, Issue 3	発行年	2021
		ページ	317-323		
論文表題	Verification of the Usefulness of Eccentric Structure in the Magnetic Encoders Using a Multipole Magnet				
著者名	Kazuki Otomo, Yusuke Deguchi, Keita Sado, Yuki Nagatsu, Hideki Hashimoto				

Verification of the Usefulness of Eccentric Structure in the Magnetic Encoders Using a Multipole Magnet

Kazuki Otomo, Yusuke Deguchi, Keita Sado, Yuki Nagatsu, Hideki Hashimoto

Abstract

It is more difficult for magnetic encoders to achieve a higher resolution than optical encoders. The resolution can be improved by multipolarizing the magnet, however the absolute angle cannot be calculated. Using the eccentric rotation of a 4-pole magnet, the authors simultaneously achieved high resolution and absolute angle calculation for a magnetic encoder. In this paper, we propose a high-resolution magnetic absolute encoder using an 8-pole magnet. The higher the eccentricity of the magnet, the easier it is to calculate the offset required to calculate the absolute angle. However, as the eccentricity increases, the angle error increases. The relationship between eccentricity and angle error is clarified, and an appropriate eccentricity is examined.

■理工学研究所との関連

研究代表者	橋本 秀紀	研究グループ	電気	年度	2018-2020
		研究種目	共同研究第Ⅱ類		
研究課題	Intelligent Servo Actuators に関する研究				