International Journal of Electronics and Communication Engineering (IJECE)
ISSN(P): 2278-9901; ISSN(E): 2278-991X
Vol. 4, Issue 2, Mar 2015, 55-66

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

A LOW COST SIMPLIFIED CONTROL STRATEGY FOR PMBLDC MOTOR DRIVE FOR PERFORMANCE IMPROVEMENT

A. PURNA CHANDRA RAO[1], Y. P. OBULESU[2] & CH. SAI BABU[3]

[1]Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada, Andhra Pradesh, India

[2]Lakireddy Bali Reddy College of Engineering, Mylavaram, Andhra Pradesh, India

[3]Jawaharlal Nehru Technological University Kakinada, Kakinada, Andhra Pradesh, India

ABSTRACT

Three current sensors are required to measure motor phase currents in closed loop speed control of PMBLDC Motor drive. Usually, current sensors are expensive, and torque fluctuations may occur due to differences in current sensor sensitivities. These drawbacks can be eliminated by placing a single current sensor in a DC link of the converter. In this paper, a simplified control strategy has been proposed. The proposed control technique has only one current sensor and two input DC sources. This proposed method is a simple, low cost and enhances performance of the PMBLDC Motor drive i.e., reduced torque ripple, less voltage stress and fast dynamic performance.

KEYWORDS: Closed Loop, PMBLDC Motor, Torque Ripple