Pengendalian kecepatan motor induksi AC tiga phasa menggunakan algoritma space vector dan kendali proportional integral (PI) dengan metode V/F konstan berbasis mikrokontroller atmega 16

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Abstrak

This research described about speed control of three phase AC induction motor using the space - vector algorithm and proportional integral controller with constant v/f (volt/Hz) methods based on microcontroller typ e atmega 16. To determine parameters in proportional integral controller used constant v/f method as speed controller of three phase AC introduction motor. On experiment, applied speed censor from 12 volts d.c. motor functioned as generator connected by op-amp circuit. Output voltage Op-Amp interfced to ADC microcontroller as signal feedback from actual speed of of triphase AC induction motor. Then in empiric is searched transfer function of the motor. After that, determined specification of control system performance proportional integral at triphase AC motor to determine magnitude Kp (proportional gain). Ki (Integral gain) , 0(dead time) dan t(time constants), and then is applicated to the system. Testing system is don for setpoint manevver from 480 rpm to 1080 rpm, and then from 1200 rpm to 480 rpm . Based on the motor can be controller system proportional integral for speed of triphae AC motor can be controlled to reach stable condition, In maneuver set point under specification of nominal speed performance of three phasa AC induction motor.