

Product Name :
Brushless DC Motor and Controller with Optical Encoder

Product Code :
LABUK-AP12LAB0020



Description :

Brushless DC Motor and Controller with Optical Encoder

Technical Specification :

The electrical servomechanisms for DC motors are widely used nowadays in several different applications

Versatile as concerns the position controls, e.g., they are employed mostly in machine tools, where high precision relative motions between the tool and the place to be machined are required.

The board mod. G36A/EV has been designed and carried out to be an instrument necessary to the training of technicians with a high level of knowledge on DC motor controls.

Together with the external unit mod DC permanent magnets motor general notions and mathematical modelization, Electrical and mechanical characteristics.

Detection of the characteristics of the armature

reaction of a D motor

Detection of the characteristics of an optoelectronic speed transducers.
Detection of the characteristics of a tacho generator of industrial kind

Detection of the characteristic of a potentiometric transducer of industrial kind study and calibration of the signal conditioners for:
Tachogenerator - Armature feedback

Optoelectronic transducer - Potentiometric transducer

Study of the Proportional, Integrative and Derivative controllers at different input Signal. Speed servo mechanics with DC motor DC/DC MOSFET converter for 4-quadrant operation.

Driver for the MOSFET of the DC/DC converter

PWM modulation or driving the DC/DC converter

Process response using a controller with independent

Front panel in insulating material, with silk screen

Printed diagram of the different circuit blocks of the module and electrical diagram of each circuit

Terminals for the connections and measurements

Characteristics of the speed and conditioner transducer

Speed input range: ± 4000 r.p.m. Characteristics of the position and conditioner transducer

Position input range: 0 - 360-Output voltage range: ± 8 V

EXTERNAL UNIT FOR SPEED AND POSITION

The external unit would be composed by:

DC permanent magnets motor

Potentiometric position transducer

Tachometric and optoelectronic speed

Devices for load variation

Characteristics of the DC permanent magnet motor:

Rotation speed : 4000rpm

Nominal voltage : 24V

Computer Interface

Multimedia software



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