



52032 D.C. SPEED CONTROL SYSTEM Closed loop speed control of DC motor is a common experiment for studying various features of automatic control systems like control, regulation and disturbance rejection. This unit is designed to demonstrate the working of PWM and SCR based controllers and show the resulting waveforms of the voltage applied to the motor. Measurement of the timings on the waveforms under various conditions has been suggested to get a good insight into the operation of the system. The experiment is complete with all the sub-systems and a detailed operating literature is included which introduces the basic theory, suggested experiments and an interpretation of the results. An external CRO is all that is needed to view the waveforms and measure the timings.

Object

1. Open loop speed control for PWM Controller, with and without load.
2. Closed loop speed control for PWM Controller with and without load.
3. Open loop speed control for SCR Controller, with and without load
4. Closed loop speed control for SCR Controller with and without load.
5. Observation and measurements on the voltage waveforms.

Features

1. PWM Power Control
2. SCR Power Control
3. CRO Display of Waveforms
4. 4-Digit Speed Display in rpm
5. Contact less Eddy Current Braking

Technical Specification

- Speed control of a 12V: Permanent magnet D.C. motor
- Speed range : 0 to 2000 RPM (typical)
- Opto - interrupter based speed sensing
- 4-digit Micro Controller Based speed display in RPM meter
- Electronic tachogenerator for feedback
- Smooth, non-contact eddy current brake for loading
- Built-in 3½ digit DC DPM for signal measurements
- IC regulated power supply
- Power Supply Input : 230V+5%, 50Hz
- Interconnections : 4mm banana sockets
- Power Consumption : 17 VA (approximately)
- Dimension : W340 x D210 x H125
- Weight : 3Kg (approximately)
- Operating Conditions: 0-40oC, 85% RH

List of Accessories:

1. Patch Cord 4mm length 50cm : 4Nos.
2. 9 Pin D Type Lead Male to Female : 1Nos.
3. Motor unit with small generator : 1Nos.
(Separate unit for motor in a see through cabinet)

Other Apparatus Required:

1. Dual Trace Cathode Ray Oscilloscope 20mhz (unearthed)

Note: Specifications are subject to change.