



OMEGA TYPE ICT-914 D.C. MOTOR STUDY

A D.C. motor is commonly used as an actuator in many industrial control applications because of its features - large torque and ease of speed variation. The dynamic characteristics of such a system therefore depends on the motor parameters viz., moment of inertia, coefficient of friction, time constant and also the resistance and inductance of the control winding. It is therefore important to experimentally determine the mechanical and electrical parameters of the D.C. motor and also to evaluate its transfer function. The present unit is designed to study a small permanent magnet D.C. motor. A still smaller generator directly coupled to the motor is used for the dual purposes of speed signal pick up and providing electrical loading. The shaft speed in rpm is displayed automatically on a 4-digit panel meter. When the motor is suddenly switched ON a novel circuit computes and displays the time constant in milliseconds on a 3 digit panel meter. This avoids the need for an expensive storage CRO. The motor unit is housed in a cabinet with transparent panels, providing a good view of the mechanical system.

OBJECT

- 01 Back e.m.f. constant generator constant
- 02 Motor gain constant
- 03 Transient response
- 04 Transfer function evaluation

TECHNICAL SPECIFICATION

- 01 D.C. MOTOR 12V
- 02 Small generator (2W) for speed pick up and loading
- 03 4-digit Micro Controller Based speed display (RPM meter)
- 04 4-digit time constant display with set time potentiometer
- 05 3½ digit voltmeter 0-20V for D.C. measurement
- 06 3½ digit Ammeter 0-2Amp. for D.C. measurement
- 07 IC regulated power supply
- 08 Supporting literature with experiment details
- 09 Power Supply : 230V+5%, 50Hz
- 10 Interconnections : 4mm banana sockets
- 11 Power Consumption : 32 VA (approximately)
- 12 Operating Conditions : 0-40 °C, 85% RH
- 13 Dimension : W340xH125x D210
- 14 Weight : 3.5Kg (approximately)

LIST OF ACCESSORIES

- 01 Patch Cord 50cm 4mm Red & Black: 4nos.
- 02 9 Pin D Type Lead Male to Female : 1 Nos
- 03 Motor Assembly unit : 1 Nos

We are committed to the continuous development of our products, and therefore reserve the right to amend specifications without prior notice.

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