

DC/AC Potentiometric Error Detector

Sciencetech 2306

The potentiometric error detector associated with angular/linear position control system. Which is to provide an output angular position signal which precisely follows the input angular position signal. DC/AC POTENTIOMETRIC ERROR DETECTOR Sciencetech 2306 provides in-depth study of closed loop & open loop position control system. All the feedback control systems operate from the error signal which is generated by a comparison of the reference and the output. Error detectors perform the crucial task of comparing the reference and output signals. If the inputs and outputs are already in the form of electrical voltages then the error detector is a simple comparator. But in position control system the inputs and outputs are in the form of angular/linear displacement hence these displacement are converted into the analogous electrical voltage by means of potentiometer (3600 SHAFT ROTATION SERVO POT).



Features

- ▶ DC/AC both operations
- ▶ High quality 360° shaft rotation servo potentiometer
- ▶ AC excitation at 800Hz approx (inbuilt Wien bridge oscillator)
- ▶ Built in balanced demodulator circuit
- ▶ 3.5 digits DVM for carrying measurements
- ▶ Separate test-points to observe waveforms after each block
- ▶ Phase reversal of error in AC operation
- ▶ Closed loop position control system
- ▶ Self contained and easy to operate

Scope of Learning

- ▶ Study of DC potentiometric error detector
- ▶ Study of angle to voltage converter by potentiometer
- ▶ Study of AC potentiometer as error detector
- ▶ Study of phase reversal of error signal
- ▶ Study of DC position control system

Technical Specifications

No. of Potentiometer	: 2 nos.
Type of Potentiometer	: 3600 Shaft rotation 10k Servo Potentiometer.
No. of DC geared motor	: 1 no.
Motor Specification	: DC 12 volt operated, 30 RPM
No. of gear set for shaft coupling	: 1 no.
Gear ratio	: 1:1
Inbuilt Carrier Frequency	: 800 (approx).
Potentiometer Excitation	: +12 volts
Digital panel meter (DVM)	: +20 & -20 volts display range
Power Supply	: 110-220 V, $\pm 10\%$, 50/60 Hz
Dimensions (mm)	: W 302 \times D232 \times H 525
Weight	: 1.8 Kg (approximately)

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