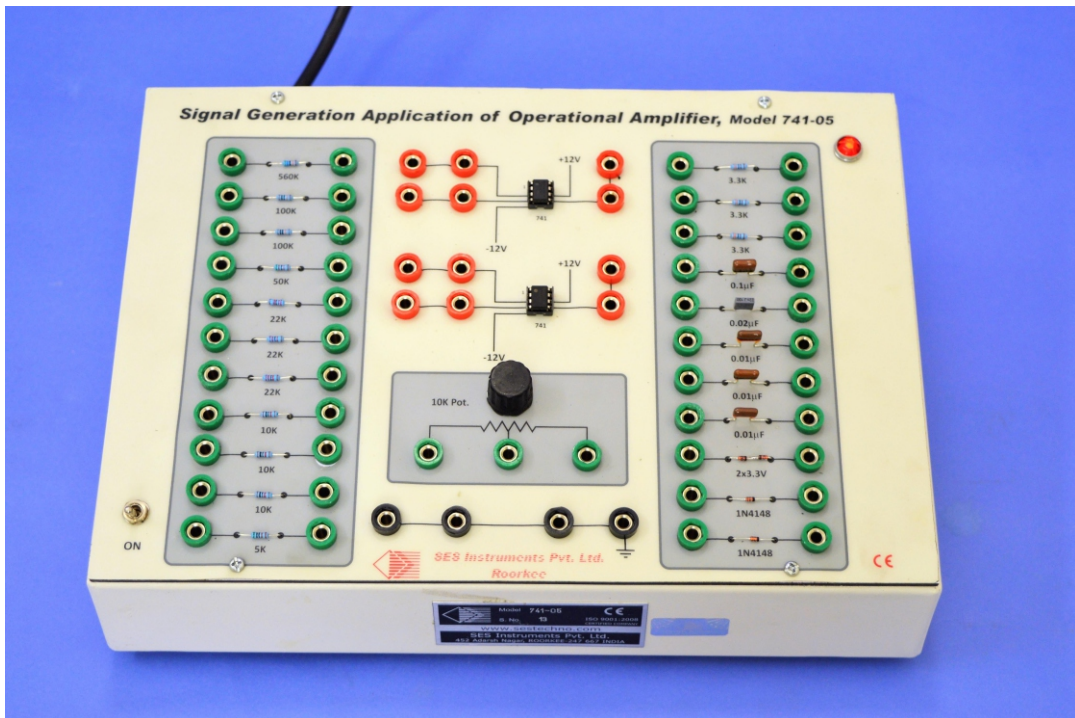


741-05

Signal Generation Applications of Operational Amplifiers



Features

- Study of different LC oscillator circuits using operational amplifiers type-741
 - Wien-Bridge Oscillator
 - Phase Shift Oscillator
 - Twin-T Oscillator
 - Quadrature Oscillator
 - Square and Triangular Wave Oscillator
 - Sawtooth and Pulse Generator
- All necessary components are available on the panel
- Built-in power supply
- Patch cords and user manual included
- Accessory require – a dual trace oscilloscope

Introduction

Continuous signals of various kinds form an essential block in the testing of electronic circuits. Signal generation is therefore an important task that needs to be introduced to a student of electronics at an early stage. Particularly important are the medium to low frequency signals that are used so commonly. The present unit is designed to explore the operational amplifier based resistance-capacitor type signal generation circuits of various kinds in the lower kHz region. Besides sinusoidal signals, the study covers square wave, triangular wave, sawtooth and sharp pulse generation. The

description begins with the basic theory of oscillations, viz., the Barkhausen criterion, and discusses various oscillator circuits and their mode of working. Apart from the configurations suggested, additional circuits too may be attempted by the user.

The experimental board comprises of two operational amplifiers and some 24 passive components carefully arranged on it. While the amplifiers are pre-wired with internal power supply, the other components need to be suitably connected using the patch cords provided. Only a dual trace oscilloscope would be required as an accessory. The user manual supplied with the unit covers all technical details for conducting the experiments. References are cited for additional information.

