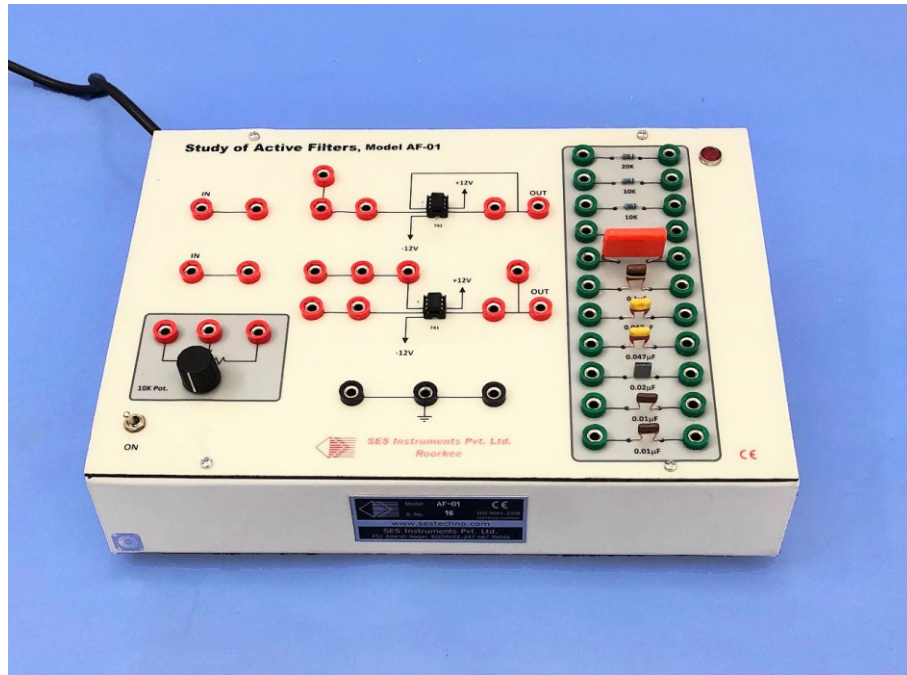


AF-01

Study of Active Filters



Features

- Frequency response studies of various active filter circuits using operational amplifiers type-741
 - Lead/Lag compensator
 - Low/High pass filter
 - Band Pass/Band Reject filters
 - All pass filter
 - Twin-T (Notch) filter
 - Adjustable Q Notch filter
- All necessary components are available on the panel
- Built-in power supply
- Patch cords and detailed user manual included
- Accessory required– (i) Function Generator (ii) Dual trace oscilloscope

Introduction

Filters are circuits which have a varied response to different frequencies and are primarily used in applications where one intends to boost or suppress some frequencies. There is naturally a very large number of filter circuits that are in use. The aim here is to suggest a few basic filters that may be constructed using the components available on the experimental board and then determine their frequency response (Bode diagram). The experimental board comprises of two operational amplifiers and some 17 passive components carefully arranged on it to be suitably connected with patchcords. A function generator and a dual trace

oscilloscope would be required as an accessory for determination of the magnitude and the phase responses. The user manual supplied with the unit covers all technical details for conducting the experiments however it is recommended that the reader goes through a theoretical analysis of the circuits from available literature and note the significant performance characteristics of each filter that may then be verified.



Although any sine wave source may be used for the experiment, we recommend a DDS dual channel function generator Type JDS 6600 which greatly simplifies the measurements.