Operational Amplifier Lab

Nvis 6578

TECHBOOK

Nvis TechBook 6578 Operational Amplifier Lab is a unique product covering the important concepts, theory, and applications of Operational Amplifier circuits. An Operational Amplifier is a direct-coupled high gain amplifier usually consisting of one or more differential amplifiers followed by a level translator, and an output stage. Operational Amplifier can be used to amplify DC as well as AC input signals. It was originally designed for computing mathematical functions such as Addition, Subtraction, Multiplication and Integration. Using Nvis 6578 students can perform experiments of OP-AMP circuits like Inverting Amplifier, Non Inverting Amplifier, Adder, Subtractor, Differentiator, Integrator, Comparator, etc. Nvis 6578 has on-board Resistors, Capacitors, and Potentiometers of different values. Breadboard allows construction of circuits using external components and on-board resources.

Features

- **Comprehensive portable platform to perform over 15 experiments**
- **In-built Power Supply**
- **Breadboard for expanded study**
- **In-built Function Generator**
- **Compact design**
- **Rich Online Product Tutorial**

Scope of Learning

Study of Operational Amplifier as:

- Inverting Amplifier
- Non - inverting Amplifier
- Buffer
- Comparator
- Adder
- Subtractor
- Square Wave Generator
- Differentiator and its working as High Pass Filter
- Integrator and its working as Low Pass Filter
- Logarithmic Amplifier
- Voltage Controlled Current Source
- Current Controlled Voltage Source

RoHS Compliant

ISO 9001:2008 Certified

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Technical Specifications

Mains Power Supply : 90 - 270V ±10%, 50Hz (SMPS)

Fixed DC Power Supply : +12V, Regulated
-12V, Regulated
+5V, Regulated
-5V, Regulated

Variable DC Power Supply : +1.5V to +10V Regulated
: -1.5V to -10V Regulated

Function Generator

Sine Wave

- Frequency : 1KHz to 100KHz
- Frequency Control : 100KV, 10 turn Potentiometer
- Amplitude : 0V to 5Vpp
- Amplitude Control : 100KV, Single turn Potentiometer

Triangular Wave

- Frequency : 1KHz to 100KHz
- Frequency Control : 100KV, 10 turn Potentiometer
- Amplitude : 0V to 5Vpp
- Amplitude Control : 100KV, Single turn Potentiometer

Square Wave

- Frequency : 1KHz to 100KHz
- Frequency Control : 100KV, 10 turn Potentiometer
- Amplitude : 5Vpp, fixed

Bread Board

- Dimension(mm) : 175 x 61 x 10
- Distribution strips : 2
- Distribution holes : 200
- Terminal holes : 640

Op-Amp : IC uA741 (2 nos.)
: All pins terminated on 2 mm Banana Sockets

- Supply Voltage : ±22V max.
- Differential Input Voltage : ±30V max.
- Input Voltage : ±15V max.
- Slew Rate : 0.5 V/µs (VCC = ±15V)

Resistor Bank

- SMD Resistance 1KV 1% 1/4W (5 nos.)
- SMD Resistance 10KV 1% 1/4W (5 nos.)
- SMD Resistance 100KV 1% 1/4W (5 nos.)

Diode : Diode 1N 4007

Capacitor Bank : Electrolyte 1mf/63V
Disc 1nf/63V
Disc 10nf/63V
Disc 100nf/63V

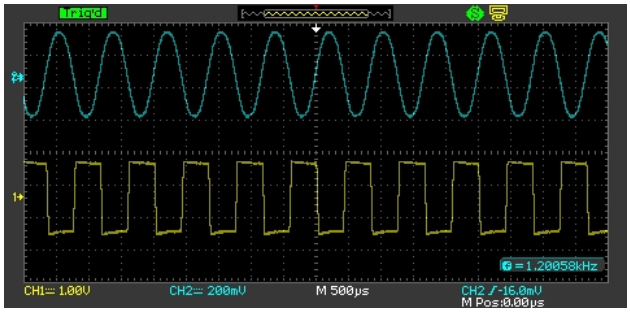
Variable Resistance Bank

- 1KV Single turn Potentiometer (2 nos.)
- 10KV Single turn Potentiometer (2 nos.)
- 100KV Single turn Potentiometer (2 nos.)
- 1MV Single turn Potentiometer (2 nos.)

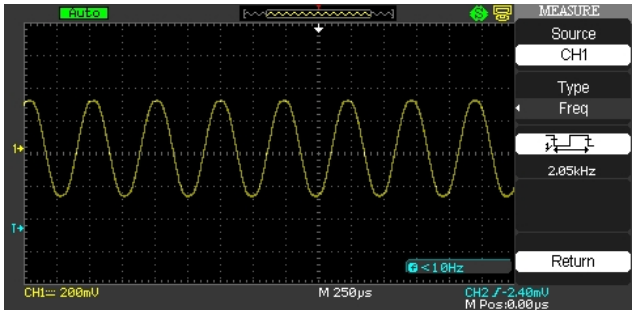
Fuse : 500mA, slow blow

Dimensions (mm) : W 350 x D 280 x H 55

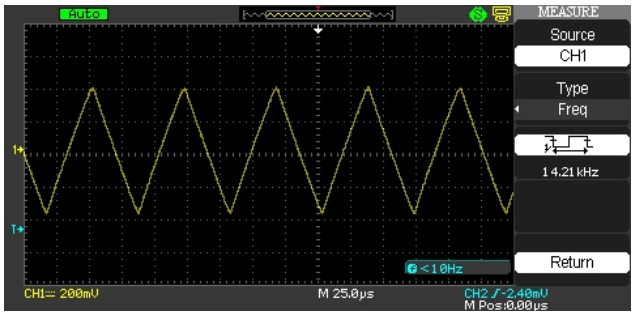
Product Tutorial : Online



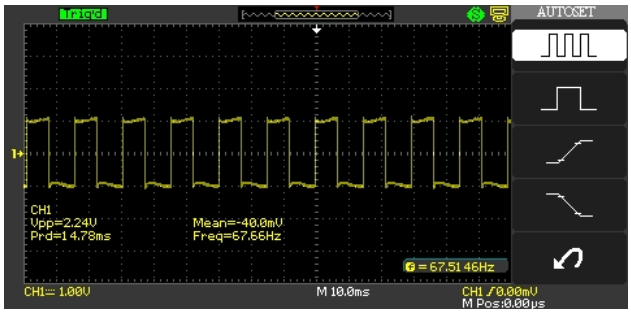
Comparator output



Sine Wave



Triangular Wave



Square Wave

Subject to change - Version 2.0

Designed and Manufactured in India by -

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