

# Aplab

## 9 in 1 TESTLAB 4049



The counter can be used to count over a wide frequency range of 10Hz to 100MHz. 1Hz resolution upto 100KHz makes it an excellent general purpose counter.

Model 4049 offers 5 different power supplies comprising of just about all the DC supplies required on a test bench. The variable supply allows the user to set the voltage and current according to his requirements.

The Function Generator serves as a clock source for digital circuits and signal source in general. Frequencies upto 100Hz can be very accurately set to within 0.1Hz.

The RF Generator can be used for testing the frequency response of amplifiers and bandwidth measurement of various types of filters. It is useful in testing communication equipment for sensitivity and modulation parameters. Typical areas include testing and repairs of AM/FM radios, transceivers, sound sections of TV / Video etc.

The 3½ Digit True RMS Multimeter with dB measurement, current measurements upto 10A and voltage upto 500V completes the requirement for any test setup.

This makes the instrument ideal for Engineering Colleges and Technical Institutions.

### Features

- 9 in 1 Instrument - Ideal for Testing and Servicing
- 100MHz High Sensitivity Frequency Counter with 5 Digit Display
- 2MHz Function Generator
- 110MHz RF Generator
- Dual 0 - 18V / 2A Variable Voltage and Current Power Supply
- Triple Output Fixed Power Supplies
- 3½ Digit True RMS Multimeter with LED Display

## Technical Specifications

### FUNCTION GENERATOR

Frequency Range	: 1Hz to 2MHz.
Functions	: Sine, Triangle, Square, +Pulse, -Pulse & Ramp.
Amplitude	: 10V p-p with termination 20V p-p without termination.
Attenuation	: 20dB & continuously variable (approx. 20dB).
Output Impedance	: 600 ohms & 50 ohms.
DC Offset	: 0 to $\pm 7.5V$ max.
Sine Wave Distortion	: <3%.
Pulse Duty Cycle	: 10% - 90% variable.
Pulse/Ramp Freq.	: Approx. 1/10 of normal frequency at the same settings.

### RF SIGNAL GENERATOR

Freq. Range (CW&AM)	: 100KHz to 110MHz in 7 bands.
AM SIGNAL	
Modulation Freq.	: 400Hz / 1KHz selectable.
Modulation Depth	:
a) Internal Modulation	: 30% at approx. 50% carrier level.
b) Ext. Modulation	: Adjustable for input freq. range of 50Hz to 10KHz, 15V p-p max.
Freq. Range (FM)	: 30MHz to 110MHz.
FM SIGNAL	
Modulation Freq.	: 400Hz / 1KHz selectable.
Freq. Deviation	:
a) Internal	: 30KHz approx.
b) External	: Adjustable for input frequency range of 50Hz to 10KHz, 15V max.
Output Amplitude	: >200mV p-p at 75 ohms.
Attenuation	: 20dB fixed & approx. 20dB with level control.

### FREQUENCY COUNTER

Display	: 5 digit display with over range indication.
Frequency Range	: 10Hz to 100MHz.
Range Selection	: Hz / KHz / MHz.
Source Selection	: 1. RF Generator 2. Function Generator 3. External Counter
Dynamic Range	: 50mV to 1V rms.
Sensitivity	: 50mV rms.
Protection	: 50V p-p max.

### TRUE RMS DIGITAL MULTIMETER

Display	: 3½ Digit.
DC/AC VOLTAGE MEASUREMENTS	
Ranges	: 200mV, 2V, 20V, 200V & 1000V (500V rms) max.

### RESISTANCE

Ranges	: 200 ohms, 2K, 20K, 200K, 2M & 20M.
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### DC / AC CURRENT

Ranges	: 200 $\mu$ A, 2mA, 20mA, 200mA & 1000mA.
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### dB MEASUREMENT

Range	: +20dB to -60dB in two ranges.
0dB Reference	: 1mW in 600 ohms i.e. 0.775V in 600 ohms.

CONTINUITY TEST	: A continuous audible tone is generated for resistance of path <20 ohms.
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DIODE TEST	: Display indicates resistance of forward biased diode.
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### DUAL POWER SUPPLY

DC Output Voltage	: 0 to 18V, regulated.
D.C. Current	: 0 to 2A.
Output Regulation	: Line <0.02% $\pm 2mV$ with $\pm 10%$ swing in line.
Load	: <0.02% $\pm 2mV$ for load change zero to full load.
Ripple & Noise	: <10mV rms max.
Protections	: Short circuit, constant current.
Display	: 3 digit display (selectable for voltage / current).

### FIXED OUTPUT POWER SUPPLIES

+12V & -12V POWER SUPPLY	
Output Voltage	: $\pm 12V$ fixed at 0.2A max.
+5V, 1 Amp POWER SUPPLY	
Output Voltage	: +5V, 1A max.

### GENERAL

Power	: 230V $\pm 10%$ AC, 48Hz to 52Hz.
Dimensions (mm)	: 430 (W) x 190 (H) x 395 (D) approx.
Weight	: 13 Kg. approx.

### STANDARD ACCESSORIES

The instrument is supplied with the following accessories.

- Operation Manual - 1 No.
- BNC(m) to BNC(m) Cable - 2 Nos.
- BNC(m) to Mini Crocodile Cable - 1 No.
- SP1 to Crocodile Cable - 2 Nos.
- SP1 to Sharp Tip - 1 No.
- SP5 to Mini Crocodile Cable - 5 Nos.
- Shorting Link - 1 No.
- Mains Cord - 1 No.

WE PURSUE A POLICY OF CONTINUOUS DEVELOPMENT AND PRODUCT IMPROVEMENT. THUS THE SPECIFICATIONS IN THIS DOCUMENT AND THE LOCATION OF CONTROLS ON THE FRONT PANEL MAY BE CHANGED WITHOUT NOTICE.

**Aplab** Test & Measurement Instruments

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