

Aplab

UNIVERSAL SCALER TIMER 9606U



Model 9606U is low cost but high performance instrument ideal for time as well as frequency measurements. Its ease of operation makes it a useful tool for educational institutions. It has 3 inputs viz Start, Stop & Impulse. Start & Stop inputs have pulse, switch closure, light gate & microphone arrangements. The instrument is useful for making collision, acceleration, frequency, time & impulse measurements. The instrument also has a facility to store readings in memory (upto 1000 locations max) as well as recall the stored readings. An internal crystal oscillator ensures highly accurate readings.

The instrument is useful in the following ways

- The collision mode is useful for showing the conservation of momentum principle. When two bodies collide against each other, their velocities before and after collision are shown by the instrument (This is done indirectly, the instrument only displays the times. Knowing the length of the objects, velocities can be easily computed).
- The acceleration mode is useful for finding the acceleration of a body in motion. The instrument provides the velocities at two different times viz A & B the difference between the two times i.e. t_{AB} . (The velocities are provided indirectly. The instrument provides only the times t_A & t_B . Knowing the length of the object velocity computation can be done easily).
- The Start/Stop mode is used for finding the time required for an event. The event gets started by application of input A or Start/Stop switch. The completion of event is marked by application of input B or Start/Stop switch.
- Frequency mode is useful for finding the frequency of a tuning fork. It can also be used to obtain the frequency of oscillations of a pendulum. Besides these, frequency of impulse signal can be monitored.
- The impulse counter has various gate times like 0.1s, 1s, 6s, 10s & 60s, infinity. With this, external impulses can be counted to the desired precision by choosing the required gate time.

Features

- Low Cost High Performance Universal Scaler Timer
- 0.8" 8 Digit Display Readout
- Accurate Time and Frequency Counting
- RS232 (Optional) Facility
- Selection of Rising & Falling Edge Triggering
- 1000 Memory Location for Storing Test Results
- Collision and Acceleration Tests Mode Facility
- RPM Measurement
- F/2 Frequency Mode for Simple Pendulum Experiment
- Facility to Connect Photocell & Microphone

Technical Specifications

Parameters	Input A	Input B	Pulse Input
Range	1msec - 99.999999 sec	1msec - 99.999999 sec	1Hz to 2MHz
Sensitivity	Typically +2V peak	Typically +2V peak	100mV rms
Impedance	100K	100K	1M ohms // 100pf
Input Coupling	DC	DC	AC
Trigger Slope	+ve/-ve selectable	+ve/-ve selectable	-ve
Voltage Range	+2Vp to +100Vp	+2Vp to +100Vp	100mV - 250V rms

FUNCTIONS

A) Collision

Range : 1msec - 99999.999 msec.
 Resolution : 1µsec.
 Results Stored : Max. 4 measurements.
 Results Read-out : 4 successive readout (tA1, tA2, tB1, tB2, etc.).
 Time Unit : msec LED indication.
 Time between the measurements on
 Same Input : Min. 1 msec.
 Both Input : Simultaneous on both input.
 Overflow Indication : 'Or' display.

B) Acceleration

Range : 1msec - 99999.999 msec.
 Resolution : 1µsec.
 Result Store : Max. 3 measurements.
 Results Read-out : 3 successive readouts (tA, tB, tAB).
 Time Unit : msec LED indication.
 Overflow Indication : 'Or' display.

C) Time Measurement (Start/Stop)

Range : 10µsec - 2000sec.
 Resolution : 1µsec.
 Readout : Sec. or decimal fraction of sec.
 Time Unit : 'Sec' LED indication.

D) Frequency

Counting Technique : Reciprocal counting.
 Range : 1Hz to 2MHz.
 Resolution : 0.001 to 1Hz.

Gate Time : 1sec. (with F1 & F2 mode).
 Start of Measurement : Continuously / automatic.

E) Impulse Counter

Range : 1 to 2 x 10⁶ impulse per sec.
 Gate Control
 Manual Start : Infinity, 0.1, 1, 6, 10, 60 sec.
 Automatic : 10 sec counting + 5 sec off interval.
 10 sec + 10 sec counting (split display).
 Resolution : 1 impulse.
 Readout : Continuous sum value for related time.

GENERAL

Display : 8 digit 7 segment 0.8" LED display for measurement and 3 digit 7 segment 0.3" LED display for memory location.
 Temp. : 0 to 40°C.
 Time base : x'tal controlled.
 Memory : Capacity 1000 measurements, 1 Acceleration & 1 Collision test.
 RS232 Interface : Optional.
 Power : 230V AC ±10%, 47-53Hz
 Optional 115V AC ±10%, 57-63Hz.
 Weight : 3.5 Kg.
 Dimensions : 340 (W) x 105 (H) x 265 (D) mm approx.
 Standard Accessories : Instruction Manual - 1 No.
 SP1 to Alligator Clip - 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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