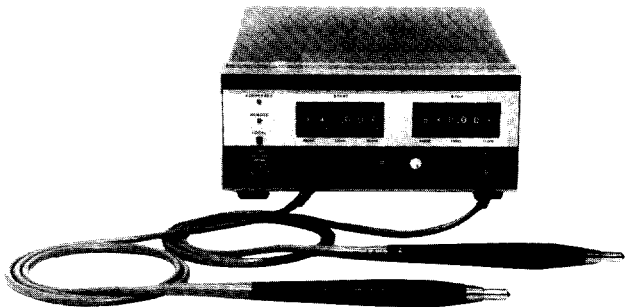
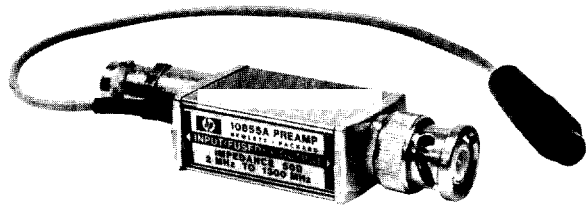


- Precise trigger level setting
- Wide input dynamic range



HP 5363B



HP 10855A

### HP 5363B Time Interval Probes

#### Enhanced Counter Measurements

The HP 5363B provides the necessary input signal conditioning to allow a universal counter to make highly accurate and repeatable time interval measurements. Counters such as the HP 5345A, 5370B, 5335A, 5334A, 5334B, and 5328B when teamed up with the HP 5363B can now make more accurate rise time, fall time, slew rate, propagation delay, and other complex measurements.

#### Wide Dynamic Range, Fine Trigger Level Settability

Greatly improved dynamic range allows the trigger point to be selected in 10 mV increments from -9.99 V to +9.99 V.

#### Minimized Circuit Loading

High impedance, low capacitance active probes minimize circuit loading and pulse distortion. Each probe contains two measurement channels, start and stop, so timing measurements on one waveform are possible. As example, the input/output rise (propagation delay) of a device can be measured between the probes.

#### Eliminate Systematic Timing Errors

Delays through probes, cables and inherent differential delays between a counter's input channels limit the absolute accuracy of time interval measurements.

A calibration procedure using the HP 5363B can equalize such systematic delays to set the counter to read 0.0 ns. This is possible with counters that can measure down to 0 ns like the HP 5370B, 5334A, 5334B, and 5335A. For counters with a minimum time interval specification (HP 5345A and 5328B have 10 ns minimum capability), the HP 5363B can add a fixed offset of 10 ns to permit measurements of zero time interval.

#### Condensed Specifications

**Operating range:**  $\pm 10$  V.  
**Minimum input voltage:**  $\pm 100$  mV about trigger point.  
**Damage level:**  $\pm 30$  V.  
**Voltage resolution:** 10 mV.  
**Impedance:** 1 M  $\Omega$  shunted by <20 pF.  
**Effective bandwidth:** 350 MHz (1 ns rise time).  
**Minimum pulse width:** 5 ns at  $\pm 100$  mV about trigger point.  
**Output to counter:** separate start/stop outputs; -0.5 V to +0.5 V into 50  $\Omega$ , slew rate through zero volts exceeds 0.25 V/ns.  
**Delay compensation range:** 2 ns adjustable about 0 ns or 10 ns.  
**Power:** 100, 120, 220, 240 Vac (+5-10%), 48-440 Hz; 40 VA max.  
**Weight:** net 3.0 kg (6.5 lb). Shipping 5.5 kg (12 lb).

**Dimensions:** 88.1 H x 212 W x 295 mm D (3.5 in. x 8.4 in. x 11.6 in.).

#### Absolute Accuracy

$$\pm 1 \text{ ns} \pm \frac{\text{START TLA} + \text{START NTE}}{\text{START slew rate}} \pm \frac{\text{STOP TLA} + \text{STOP NTE}}{\text{STOP slew rate}}$$

where TLA denotes trigger accuracy and NTE denotes noise trigger error.

**Noise trigger error:**  $\sqrt{(125 \mu\text{V})^2 + e_n^2}$  volts where 125  $\mu\text{V}$  is the typical input noise on the HP 5363B and  $e_n$  is the input signal noise for a 350 MHz bandwidth.

#### Accessories Available

**HP 10821A** Probe Accessory Kit including 2 of each of the following: HP 10229A Hook Tip; HP 10218A BNC to Probe Adapter; HP 10100C 50 ohm Feedthrough termination; HP 1250-0655 BNC Tee to Probe Adapter; and HP 8710-0661 HP Probe tips (extra).

#### HP 10855A 2-1300 MHz Preamp

The HP 10855A Preamp provides a minimum of 22 dB gain from 2 MHz to 1300 MHz to enhance measurements of very low-level signals. The  $\pm 1.5$  dB flat response reduces distortion in non-sinusoidal waveforms. The HP 10855A operates conveniently with a variety of HP measuring instruments having probe power outlets, or will work with the HP 1122A Probe Power Supply. The HP 5334A/5335A Option 030 and HP 5328B Option 031 counters all measure frequency to 1300 MHz and are compatible for use with the HP 10855A.

#### HP 10855A Specifications

**Frequency range:** 2 MHz-1300 MHz.  
**Gain (minimum):** 22 dB; 24 dB typical.  
**Gain flatness across full frequency range:**  $\pm 1.5$  dB.  
**Noise figure:** <8.5 dB typical.  
**Output power for 1 dB gain compression:** 0 dBm.  
**Harmonic distortion:** -30 dB for -15 dBm output, typical.  
**Output for <-66 dB harmonic distortion:** -25 dBm, typical.  
**VSWR:** <2.9, typical.  
**Impedance:** 50  $\Omega$  nominal.  
**Reverse isolation:** >45 dB.  
**Maximum input:** 3.5 V rms (+24 dBm), fuse protected.

#### Ordering Information

**HP 5363B** Time Interval Probes  
**HP 10855A** 2-1300 MHz Preamp  
**HP 10821A** Probe Accessory Kit  
 ☛ Fast-Ship product — see page 766.

**Price**  
**HP 5363B** \$5400  
**HP 10855A** \$700 ☛  
**HP 10821A** \$360