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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 5370A UNIVERSAL COUNTER

HP Agilent 5370A Universal Time Interval Counter The HP 5370A universal time-interval counter provides 20 ps single-shot time-interval resolution using a triggered phase-locked oscillator and dual-vernier interpolation. OEM HP Journal and product documentation describe time intervals from -10 s to +10 s, frequency/period to 100 MHz with 11-digit resolution in 1 s, and flexible arming for extracting intervals from event streams. Used for single-shot timing of pulse trains, oscillator turn-on drift, best/worst-case logic delays, glitch detection, and high-resolution period/frequency measurements where averaging is impractical. The HP 5370A universal time-interval counter provides 20 ps single-shot time-interval resolution using a triggered phase-locked oscillator and dual-vernier interpolation. OEM HP Journal and product documentation describe time intervals from -10 s to +10 s, frequency/period to 100 MHz with 11-digit resolution in 1 s, and flexible arming for extracting intervals from event streams. Used for single-shot timing of pulse trains, oscillator turn-on drift, best/worst-case logic delays, glitch detection, and high-resolution period/frequency measurements where averaging is impractical.



MODEL

HP / Agilent 5370A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

5370A

LISTING

<https://aumictechlabs.com/products/5370a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 5370A Universal Time Interval Counter delivers picosecond-level time measurement precision with 16-digit display resolution. This instrument performs frequency,

period, and time interval measurements across a 0.1 Hz to 100 MHz range, making it essential for metrology, telecommunications, and precision frequency standards work. Technical Specifications Measurement Performance Time interval resolution: ± 20 ps single-shot Frequency range: 0.1 Hz to 100 MHz Frequency and period measurements with high resolution 16-digit display with suppressed leading zeros Input Characteristics Input sensitivity: 100 mV p-p, 35 mV rms sine wave (x attenuator setting) Input impedance: Selectable 1 M Ω // 30 pF or 50 Ω nominal AC or DC coupling via front-panel switch Trigger level: -1.3 V to 0.5 V, 10 mV displayed resolution Trigger slope: Independent positive or negative slope selection Attenuators: X1 and X10 nominal Dynamic Range At 50 Ω : X1 (100 mV to 1 V p-p), X10 (1 V to 7 V p-p) At 1 M Ω : X1 (100 mV to 1 V p-p), X10 (1 V to 10 V p-p) Data Output & Throughput HP-IB: 10–20 readings per second (330 μ s dead time) Fast Binary: 6 kHz (165 μ s dead time) Statistical Analysis Mean, standard deviation, maximum, and minimum calculations Key Features Flexible arming modes: internal, external, and external with hold-off gating Hold-off function prevents measurement restart until external gate signal removal Selectable input impedance for 50 Ω or high-impedance applications Programmable control via HP-IB for automated test integration Accommodates external time base standards for enhanced stability Electrical & Physical Power: 100, 120, 220, or 240 V AC $\pm 5\%$ –10%, 48–66 Hz, <250 VA Dimensions: 133 mm H $\times$ 426 mm W $\times$ 521 mm D Weight: 32 lbs; supplied with front handles Compatibility & Integration The 5370A accepts external time base standards. The HP 10811-60111 OCXO option provides enhanced frequency stability. Users seeking integrated OCXO functionality should evaluate the 5370B model, which incorporates the 10811 oscillator and improved firmware.

5370A Characteristics / Specifications

PARAMETER	VALUE
Time interval single shot LSD	20 ps
Typical internal rms jitter	about 5 ps class per HP Journal
Time interval range	–10 s to +10 s including zero
Positive TI minimum	10 ns class to 10 s (5370 family)
Frequency range	0.1 Hz to 100 MHz
Frequency resolution	11 digits in 1 s measurement time
Period range	10 ns to 10 s
Sample size front panel selections	1, 10, 1k, 10k, 100k class
Statistics computed	mean, standard deviation, minimum, maximum
Arming modes	+TI or $\pm$ TI with internal or external arming
External hold off	supported
Remote interface	HPIB
Architecture	triggered PLL plus digital dual vernier
Primary resolution technology	eliminates ± 1 count uncertainty
Maximum frequency channel	100 MHz
Measurement functions	time interval, period, frequency
Dual vernier interpolation	yes
Triggered phase locked oscillator	yes
HP Journal single shot resolution	20 ps
Accuracy class with careful calibration	± 100 ps family
Frequency digits in 1 s	11
Negative time support	yes including zero

5370A Specifications

PARAMETER	VALUE
HP Agilent 5370A Universal Time Interval Counter	Overview
Key Features	20 ps single-shot time-interval LSD with dual vernier interpolation
Technical Specifications	Time interval single shot LSD: 20 ps

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Notes	
Core resolution and range figures are from HP Journal August 1978 coverage of the 5370A and aligned 5370-family datasheets. Where later 5370B tables refine statistics sample limits and binary throughput, those values are noted as family characteristics; prefer the instrument's own manual for calibration uncertainties.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.