

KEYSIGHT TECHNOLOGIES (AGILENT HP)

5316B

The Keysight (formerly Agilent and HP) 5316B is a high-performance 100 MHz universal counter/timer featuring standard HP-IB compatibility, exceptional resolution at low and high frequencies, and versatile signal conditioning.

SPECIFICATIONS

General

Interfaces	HP-IB (IEEE-488) standard
Display	8-digit LED with exponent and status indicators

Physical

Power Supply	100/120/220/240 V AC (+10%, -13%), 48 to 66 Hz
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	213 mm × 88 mm × 345 mm mm
Weight	3.2 kg kg
Enclosure Type	HP System II half-rack

Input Channels A & B

Frequency Range (AC Coupled)	30 Hz to 100 MHz
Frequency Range (DC Coupled)	0.1 Hz to 100 MHz
Input Impedance	1 MΩ nominal shunted by < 40 pF
Input Coupling	AC or DC (selectable)
Input Attenuation	Sensitivity control (variable attenuator) and switchable X20 attenuator
Low-Pass Filter	Switchable, 100 kHz nominal cutoff (Channel A only)
Trigger Level Range	-2.5 V to +2.5 V (in X1 mode)
Input Sensitivity (Sine Wave, <10 MHz)	15 mV rms
Input Sensitivity (Sine Wave, 10 MHz - 100 MHz)	15 mV rms

Optional Channel C

Frequency Range (Channel C)	50 MHz to 1.0 GHz (with Option 003)
Input Impedance (Channel C)	50 Ω nominal (with Option 003)
Input Coupling (Channel C)	AC (with Option 003)
Input Sensitivity (50 MHz - 650 MHz)	15 mV rms (with Option 003)
Input Sensitivity (650 MHz - 1.0 GHz)	75 mV rms (with Option 003)
Connector Type (Channel C)	BNC female

Measurement Capabilities & Modes

Frequency Measurement Range	0.1 Hz to 100 MHz (Ch A & B), 50 MHz to 1.0 GHz (Ch C)
Period Measurement Range	10 ns to 10 s
Time Interval Range	100 ns to 10^5 s
Time Interval Delay Range	Continuously adjustable from 500 μ s to 20 ms nominal
Frequency Ratio Range	0.1 Hz to 100 MHz (Ch A) over 0.1 Hz to 10 MHz (Ch B)
Totalize Range	0 to 99,999,999 (manual start/stop or gated by Ch B)

Resolution & Accuracy

Frequency Resolution (Below 10 MHz)	7 digits per second
Single-Shot Time Interval Resolution	100 ns

Timebase & Reference

Standard Reference Frequency	10 MHz
External Reference Input	10 MHz, rear panel BNC input
Reference Output	10 MHz, rear panel BNC output

Gating & Triggering

Gate Time Range	60 ms to 10 s (continuously variable)
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General & Physical

Form Factor	HP System II half-rack width cabinet
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Time Base

Standard Time Base Aging Rate	$< 3 \times 10^{-7}$ per month
Standard Time Base Temperature Stability	$< 5 \times 10^{-6}$ (0 to 50 °C)
Standard Time Base Line Voltage Stability	$< 1 \times 10^{-7}$ for 10% line variation

Time Base Option 001

TCXO Time Base (Option 001) Aging Rate	$< 1 \times 10^{-7}$ per month
TCXO Time Base (Option 001) Temperature Stability	$< 1 \times 10^{-6}$ (0 to 50 °C)

Time Base Option 004

Oven Time Base (Option 004) Aging Rate	$< 5 \times 10^{-10}$ per day (after 24 hours warm-up)
Oven Time Base (Option 004) Temperature Stability	$< 7 \times 10^{-9}$ (0 to 50 °C)

Triggering

Auto Trigger Frequency Range	100 Hz to 100 MHz
Auto Trigger Minimum Amplitude	100 mV rms (above 100 Hz)

Signal Inputs

Input Impedance in COM A Mode	500 k Ω nominal
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Channel C Option 003

Option 003 Input Protection	Fuse protected, 2 V rms
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Connectivity

HP-IB Interface Capabilities	SH1, AH1, T5, TE0, L4, LE0, SR1, RL1, PP0, DC1, DT1, C0, E1
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Signal Input

Trigger Slope	Independent selection of + or - slope on Channel A and B
Input Capacitance (Channel A and B)	< 40 pF (1 MΩ input)

Measurements

Totalize Maximum Count Rate	100 MHz
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Timebase

External Reference Input Frequency	1, 5, or 10 MHz
External Reference Input Impedance	500 Ω nominal
Internal Reference Output Level	> 1.0 V p-p into 50 Ω

Environmental

Storage Temperature	-40 °C to +75 °C
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Interfaces

HP-IB Address Selection	Rear panel DIP switch
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TECHNOLOGY

Universal Counter

APPLICATIONS

Frequency, period, time interval, and ratio measurements

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.