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**Data Sheet**

August 14, 2026

HP / AGILENT

## HP / Agilent 5316B Universal Counter

The HP 5316B is a programmable reciprocal universal counter in the 5315/5316 MRC family measuring frequency, period, time interval, ratio, and totalize to 100 MHz with standard HP-IB. Family condensed specifications shared with the 5316A list 10/25 mV sensitivity, 100 ns single-shot TI, and optional 1 GHz Channel C. ATE frequency and timing measurements to 100 MHz, time-interval averaging to 10 ps class resolution, and optional 1 GHz RF counting with Option 003. Multiple Register Counter reciprocal architecture Ratio Range Both Channels: 0.1 Hz to 100 MHz Standard Timebase Aging: less than 3e-7 per month Power: 100/120/220/240 V 48-66 Hz; 30 VA max class for 5316 Input and measurement rows from HP 5315A/B 5316A condensed specifications; 5316B is the programmable systems sibling in the same MRC family. Confirm Option 003/004 tables on the 5316B-specific sheet when installed.



MODEL

**HP / Agilent 5316B**

CALIBRATION

**Available on request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**5316B**

LISTING

<https://aumictechlabs.com/products/5316b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

### This unit

The HP/Agilent 5316B Universal Counter measures frequency, period, time interval, ratio, and totalized events across multiple input channels. Built on a Multiple Register Counter (MRC) architecture, it delivers high-resolution measurements with excellent RFI immunity for laboratory and field applications. Technical Specifications Measurement Capabilities Frequency: 0.1 Hz to 100 MHz (Channels A and B); extendable to 1 GHz with optional Channel C Period measurement of input signals Time interval: single-shot (100 ns resolution), averaging (10 ps resolution), and delay

mode Ratio measurement (A/B) Totalize and gated totalize (A gated by B) Frequency Resolution Below 10 MHz: reciprocal counting yields 7 digits in 1 second using period-to-frequency conversion Above 10 MHz: conventional counting Input Channels A and B Frequency range: DC coupled 0–100 MHz; AC coupled 30 Hz–100 MHz Sensitivity: 10 mV rms (to 10 MHz), 25 mV rms (to 100 MHz), 75 mV peak-to-peak pulse (5 ns minimum width) Adjustable sensitivity to 500 mV rms nominal Dynamic range: 60 mV–5 V peak-to-peak (to 10 MHz); 150 mV–5 V peak-to-peak (10–100 MHz) Input impedance: 500 k $\Omega$  nominal, <70 pF shunt capacitance Signal Conditioning AC/DC coupling selection Variable attenuator for sensitivity control Switchable 100 kHz low-pass filter on Channel A Trigger level:  $\pm 2.5$  Vdc adjustable, positive/negative slope selectable Gate Time Variable 60 ms to 10 seconds (or one period, whichever is longer) Short gate range: 500  $\mu$ s to 30 ms Time Base Internal 10 MHz standard Key Features Multiple Register Counter architecture for extended counting and computing capability Reciprocal counting technique for precise low-frequency measurements Three distinct time-interval modes accommodating single-shot and averaging applications Selectable coupling and trigger configuration for signal conditioning Optional 1 GHz capability via Channel C (Option 003) Typical Applications Frequency and period characterization, precision time-interval analysis, signal ratio measurement, event counting, and gated measurement scenarios in laboratory and production environments. Compatibility & Integration Channels A and B support standard 50 k $\Omega$  source impedance. Optional Channel C integration extends measurement range for microwave and RF applications.

## 5316B Characteristics / Specifications

| PARAMETER                           | VALUE                                                |
|-------------------------------------|------------------------------------------------------|
| ChannelABFrequency Range DC Coupled | 0 to 100 MHz                                         |
| ChannelABFrequency Range AC Coupled | 30 Hz to 100 MHz                                     |
| Sensitivity To 10 MHz               | 10 mV rms sine                                       |
| Sensitivity To 100 MHz              | 25 mV rms sine                                       |
| Pulse Sensitivity                   | 75 mV peak to peak at 5 ns minimum width             |
| Dynamic Range To 10 MHz             | 30 mV to 5 V peak to peak                            |
| Dynamic Range 10 To 100 MHz         | 75 mV to 5 V peak to peak                            |
| Input Impedance                     | 1 Mohm nominal shunted by less than 40 pF            |
| Attenuator                          | X1 or X20 nominal                                    |
| Trigger Level Range                 | plus or minus 2.5 Vdc                                |
| ChannelALow Pass Filter             | 100 kHz nominal 3 dB                                 |
| FrequencyARange                     | 0.1 Hz to 100 MHz                                    |
| Digits Per Second Class             | at least 7 digits per second of gate time            |
| Period Range                        | 10 ns to 1e5 s                                       |
| Time Interval Range                 | 100 ns to 1e5 s                                      |
| Time Interval Average LSD Class     | 100 ns to 10 ps depending on gate time               |
| Ratio Range Both Channels           | 0.1 Hz to 100 MHz                                    |
| Totalize Range                      | 0 to 100 MHz                                         |
| Standard Timebase Frequency         | 10 MHz                                               |
| Standard Timebase Aging             | less than 3e-7 per month                             |
| Operating Temperature               | 0 to 50 C                                            |
| Power                               | 100/120/220/240 V 48-66 Hz; 30 VA max class for 5316 |
| Net Weight Class 5316A Sheet        | 3.9 kg                                               |
| Interface                           | HP-IB programmable                                   |

# 5316B Specifications

| PARAMETER                                         | VALUE                                                |
|---------------------------------------------------|------------------------------------------------------|
| HP Agilent 5316B Universal Counter                | Overview                                             |
| Multiple Register Counter reciprocal architecture | Standard HP-IB programmability on 5316B              |
| Optional TCXO and oven time bases                 | Optional Channel C to 1 GHz                          |
| Technical Specifications                          | Channel A B Frequency Range DC Coupled: 0 to 100 MHz |

# General Specifications & Supplementary Characteristics

| PARAMETER                    | VALUE                                                                                                                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature        | 0 to 50 C                                                                                                                                                                                                                                       |
| Operating Temperature        | 0 to 50 C                                                                                                                                                                                                                                       |
| Power                        | 100/120/220/240 V 48-66 Hz; 30 VA max class for 5316                                                                                                                                                                                            |
| Net Weight Class 5316A Sheet | 3.9 kg                                                                                                                                                                                                                                          |
| Interface                    | HP-IB programmable Notes Input and measurement rows from HP 5315A/B 5316A condensed specifications; 5316B is the programmable systems sibling in the same MRC family. Confirm Option 003/004 tables on the 5316B-specific sheet when installed. |

# 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 shared with the 5316A list 10/25 mV sensitivity, 100 ns single-shot TI, and optional 1 GHz Channel C.

Applications

ATE frequency and timing measurements to 100 MHz, time-interval averaging to 10 ps class resolution, and optional 1 GHz RF counting with Option 003.

Key Features

Multiple Register Counter reciprocal architecture

Standard HP-IB programmability on 5316B

Continuously variable gate time

Optional TCXO and oven time bases

Optional ChannelCto 1 GHz

Technical Specifications

### Technical Specifications

| PARAMETER                           | VALUE                                     |
|-------------------------------------|-------------------------------------------|
| ChannelABFrequency Range DC Coupled | 0 to 100 MHz                              |
| ChannelABFrequency Range AC Coupled | 30 Hz to 100 MHz                          |
| Sensitivity To 10 MHz               | 10 mV rms sine                            |
| Sensitivity To 100 MHz              | 25 mV rms sine                            |
| Pulse Sensitivity                   | 75 mV peak to peak at 5 ns minimum width  |
| Dynamic Range To 10 MHz             | 30 mV to 5 V peak to peak                 |
| Dynamic Range 10 To 100 MHz         | 75 mV to 5 V peak to peak                 |
| Input Impedance                     | 1 Mohm nominal shunted by less than 40 pF |
| Attenuator                          | X1 or X20 nominal                         |
| Trigger Level Range                 | plus or minus 2.5 Vdc                     |
| ChannelALow Pass Filter             | 100 kHz nominal 3 dB                      |
| FrequencyARange                     | 0.1 Hz to 100 MHz                         |
| Digits Per Second Class             | at least 7 digits per second of gate time |
| Period Range                        | 10 ns to 1e5 s                            |
| Time Interval Range                 | 100 ns to 1e5 s                           |
| Time Interval Average LSD Class     | 100 ns to 10 ps depending on gate time    |
| Ratio Range Both Channels           | 0.1 Hz to 100 MHz                         |
| Totalize Range                      | 0 to 100 MHz                              |
| Standard Timebase Frequency         | 10 MHz                                    |
| Standard Timebase Aging             | less than 3e-7 per month                  |

| PARAMETER                    | VALUE                                                |
|------------------------------|------------------------------------------------------|
| Operating Temperature        | 0 to 50 C                                            |
| Power                        | 100/120/220/240 V 48-66 Hz; 30 VA max class for 5316 |
| Net Weight Class 5316A Sheet | 3.9 kg                                               |
| Interface                    | HP-IB programmable                                   |

Notes

Input and measurement rows from HP 5315A/B 5316A condensed specifications; 5316B is the programmable systems sibling in the same MRC family. Confirm Option 003/004 tables on the 5316B-specific sheet when installed.

### Available from Aumictech

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

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

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
30-day returns  
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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.