

Condensed Specifications

Input Characteristics (channel A and B)

Range

DC coupled, 0 to 100 MHz.

AC 1 M Ω , 30 Hz to 100 MHz.

AC 50 Ω , 200 kHz to 100 MHz.

NOTE: Channel A range 200 MHz when in Frequency A and Ratio modes.

Sensitivity (00.001)

25 mV rms sinewave.

75 mV peak-to-peak pulse at minimum pulse width of 5 ns.

Dynamic Range (00.001)

75 mV to 5 V peak-to-peak, to 100 MHz.

75 mV to 2.5 V peak-to-peak, >100 MHz.

Signal Operating Range (00.001, DC)

-5 V dc to +5 V dc.

Trigger Level Range (00.001)

Auto Trigger OFF

Preset: set to 0 V dc NOMINAL.

Adjustable: -5 V dc to +5 V dc.

Auto Trigger ON

Preset: set to nominal 50% point of input signal.

Adjustable: nominally between + and - peaks of input signal.

Auto Trigger (00.001)

Range (50% duty cycle)

DC coupled, 30 Hz to 200 MHz.

AC 1 M Ω , 30 Hz to 200 MHz.

AC 50 Ω , 200 kHz to 200 MHz.

Minimum signal: 100 mV rms.

Duty cycle range: 10% to 90%.

Response time: 3 seconds, typical.

NOTE: Auto Trigger requires a repetitive signal.

Coupling: ac or dc, switchable.

Impedance: 1 M Ω , nominal, shunted by <35 pF or 50 Ω nominal, switchable. In COMMON A, 1 M Ω is shunted by <50 pF.

Attenuator: 00.001 or 00.0010 nominal, switchable.

Slope: independent selection of + or - slope.

Channel input: SEPARATE or COMMON A, switchable.

Frequency A

Range: 0 to 200 MHz, prescaled by 2.

LSD Displayed

$\frac{1 \text{ ns}}{\text{Gate Time}} \times \text{FREQ.}$ (e.g. 9 digits in a second).

Resolution

$\pm (2 \times \text{LSD}) \pm 1.4 \frac{\text{Trigger Error}}{\text{Gate Time}} 00.00 \text{ FREQ.}$

Accuracy: $\pm (\text{Resolution}) \pm (\text{Time Base Error}) \times \text{FREQ.}$

Period A

Range: 10 ns to 10^7 s.

LSD Displayed

$\frac{1 \text{ ns}}{\text{Gate Time}} \times \text{PER.}$ (e.g. 9 digits in a second).

Period average: user selects MEAN function, and n = 100, or n = 1,000.

Time Interval A \rightarrow B

Range: 0 ns to 10^7 s.

LSD displayed: 1 ns (100 ps using MEAN).

Resolution: $\pm (2 \times \text{LSD}) \pm (\text{START Trigger Error}) \pm (\text{STOP Trigger Error})$.

Accuracy: $\pm (\text{Resolution}) \pm (\text{Time Base Error}) \times \text{TI} \pm (\text{Trigger Level Timing Error}) \pm (2 \text{ ns})$.

Gate mode: MIN only.

Time interval average: user selects MEAN function, and n = 100, or n = 1,000.

Time Interval Delay (holdoff)

Front panel Gate Adjust control inserts a variable delay between START and enabling of STOP. Electrical inputs during delay are ignored. Delay ranges are same as gate time ranges (100 μ s, to 4 s NOMINAL) for gate modes of Fast, Norm, and Manual.

Inverse Time Interval A \rightarrow B

Range: 10^{-7} to 10^9 units/second.

LSD Displayed, Resolution, and Accuracy are inverse of Time Interval A \rightarrow B specifications.

Rise and Fall Time A

Range: 20 ns to 10 ms transition with 50 Hz to 25 MHz repetition rates (50% duty cycle).

Minimum pulse height: 500 mV peak-to-peak.

Minimum pulse width: 20 ns.

Duty cycle range: 20% to 80%.

LSD Displayed and Resolution are same as Time Interval A \rightarrow B Specifications.

Pulse Width A

Range: 5 ns to 10^7 s.

Trigger point range: 40% to 60% of pulse height.

LSD Displayed and Resolution are same as Time Interval A \rightarrow B specifications.

Duty Cycle A

Range: 1% to 99%, 0 to 100 MHz.

Trigger point range: 40% to 60% of pulse height.

LSD displayed: $\frac{1 \text{ ns}}{\text{PER}} \times 100\%$

NOTE: Constant duty cycle required during measurement.

Slew Rate A

Range: 50 V/s to 10^8 V/s slew rate with 50 Hz to 25 MHz repetition rates (50% duty cycle). Minimum Pulse Height, Width, and Duty Cycle Range are same as Rise and Fall Time A.

Input mode: automatically set to COMMON A with 10% and 90% trigger levels.

Ratio A/B

Range: Channel A, 0 to 200 MHz (prescaled by 2).
Channel B, 0 to 100 MHz.

LSD displayed: $\frac{\text{RATIO}}{\text{FREQ} \times \text{Gate Time}}$ where FREQ is higher frequency after prescaling.

Totalize A

Range: 0 to 100 MHz.

LSD displayed: 1 count of input.

HP-IB output: at end of gate.

Manual

Count reset: via RESET key.

HP-IB output: totalize data on-the-fly sent if Cycle mode set to Single. Input frequency range in this mode is 0 to 50 Hz nominal.

Gated

Count reset: automatic after measurement.

Phase A Rel B

Range: -180 $^\circ$ to 360 $^\circ$, Range Hold off, or 0 $^\circ$ to 360 $^\circ$, Range Hold on, with signal repetition rates of 30 Hz to 1 MHz.

Minimum signal: 100 mV rms.

LSD displayed: 0.1 $^\circ$.

Gate Time

Range: 100 ns to 10^7 s.

LSD displayed: up to three digits with Ext. Arm Enable OFF, 100 ns when ON. MIN Gate Mode display zero.