

1.6GHz Universal Counter HM8021-4



HM8021-4

Mainframe HM8001-2
required for Operation



HZ33, HZ34
Test Cable BNC/BNC



- Measurement Range 0Hz...1.6GHz
- 10MHz Time Base with 1ppm Stability (TCXO)
- Input A: Input Impedance 1M Ω , Sensitivity 20mV_{rms}
Input C: Input Impedance 50 Ω , Sensitivity 30mV_{rms}
8-Digit Resolution for 10s Measuring Time
- Time Interval Resolution up to 10ps
- External Gate Input (with Option H0801)

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All data valid at 23 °C after 30 minutes warm-up.

Measurement functions

Frequency A/C, Period A;
Totalize A;
Pulse width: \square / \square (averaged);
Totalize A during ext. gate

Input characteristics (Input A)

Frequency range:
0...150 MHz: DC-coupled
10 Hz...150 MHz: AC-coupled

Sensitivity: (normal triggering)
DC...80 MHz: 20 mV_{rms} (sine wave)
80 mV (pulse)
80...150 MHz: 60 mV_{rms} (sine wave)
20 Hz...80 MHz (auto trig.): 50 mV_{rms} (sine wave)

Minimum pulse width: 5 ns

Input noise: 100 µV (typ.)

Coupling: AC or DC (switchable)

Input impedance: 1 MΩ || 40 pF

Attenuator: x1, x20 (switchable)

Max. input voltage:
0...440 Hz: 400 V (DC + AC_{peak})
1 MHz: decreasing to 8 V_{rms}

Input characteristics (Input C)

Frequency range: 100 MHz...1.6 GHz

Sensitivity:
to 1.3 GHz: 30 mV (typ. 20 mV)
to 1.6 GHz: 100 mV (typ. 80 mV)

Input impedance: 50 Ω nominal

Coupling: AC

Max. input voltage: 5 V (DC + AC_{peak})

Input characteristics (external gate)

Input impedance: 4.7 kΩ

Max. input voltage: ±30 V

High/low level: >2 V / <0.5 V

Min. pulse duration: 50 ns

Min. effective gate time: 150 µs

Frequency measurement (Input A)

LSD: $(2.5 \times 10^{-7} \text{ s} \times \text{freq.}) / \text{measurement time}$

Resolution: 1 LSD

Period duration measurement

Range: 66.6 ns...10,000 s

LSD: $(2.5 \times 10^{-7} \text{ s} \times \text{period}) / \text{measurement time}$

Resolution: 1 LSD

Totalize (manual/external gated)

Range: DC...20 MHz

Min. pulse duration: 25 ns

LSD: 1 count

Resolution: LSD

Ext. gate error:
in manual mode only: 100 ns

Time interval (averaged)

LSD: 10 ps...100 ns

Resolution: 1 LSD

Offset

Range: covers the entire measurement range

Gate time

(Gate time cannot be less than 1 period.)

Range: 100 ms...10 s in 3 steps

External gate time: min. 150 µs

Timebase

Frequency: 10 MHz clock
10 MHz crystal

Accuracy

(between 10 °C and 40 °C): ±5 × 10⁻⁷

Aging: ±3 ppm/15 years

Miscellaneous

Display: 8-digit 7-segment LED display with 7.65 mm digit height, sign and exponent

Power consumption: approx. 7 Watt

Operating temperature: +5...+40 °C

Storage temperature: -20...+70 °C

Rel. humidity: 5...80 % (non condensing)

Dimensions (W x H x D): 135 x 68 x 228 mm

Weight: approx. 0.6 kg

Accessories supplied: Operator's Manual

Recommended accessories:

HZ20 Adapter, BNC to 4mm banana
HZ24 Attenuators 50 Ω (3/6/10/20 dB)
HZ33 Test Cable 50 Ω (BNC-BNC) 0.5 m
HZ34 Test Cable 50 Ω (BNC-BNC) 1.0 m