

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);
Totalling 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 (selectable)	
Input impedance:	1 MΩ 40 pF	
Attenuator:	x1, x20 (selectable)	
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

Totalling (manually/externally gated)

Range:	DC...20 MHz
Min. pulse duration:	25 ns
LSD:	1 count
Resolution:	LSD
Ext. gate error:	100 ns
in manual mode only	

Time interval (averaged)

LSD:	10 ps...100 ns
Resolution:	1 LSD

Offset

Range:	covers the entire measurement range
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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
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Accuracy

(between 10 °C and 40 °C):	±5 x 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 W
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: Operating manual, CD

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