

1.6 GHz 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}
- Time interval resolution up to 10ps
- External Gate input (with Option H0801)

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

Measurement functions

Frequency A/C, Period A;
Totalize A;
Pulse width  /  (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:	x 1, x 20 (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 or 2 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 or 2 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 or 2 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
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 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

Optional accessories:

HZ20	Adapter, BNC to 4mm banana
HZ24	Attenuators 50 Ω (3/6/10/20dB)
HZ33	Test Cable 50 Ω (BNC-BNC) 0,5m
HZ34	Test Cable 50 Ω (BNC-BNC) 1,0m

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