HAMEG Instruments

1.6GHz Universal Counter
HM8021-4

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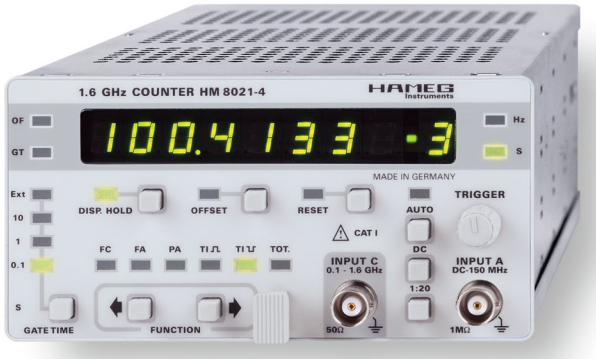

Mainframe HM8001-2
required for operation

HZ33, HZ34
Test cable BNC/BNC

- ☑ Measurement range 0Hz...1.6GHz
- ☑ 10MHz time base with 1ppm stability (TCXO)
- ☑ Input A: Input impedance 1MΩ, sensitivity 20mV$_{rms}$
  Input C: Input impedance 50Ω, sensitivity 30mV$_{rms}$
- ☑ Time interval resolution up to 10ps
- ☑ External Gate input (with Option HO801)

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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 MHz...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 II 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:	($2.5x10^{-7}$ s x freq.)/measurement time
Resolution:	±1 or 2 LSD

Period duration measurement

Range:	66.6 ns...10,000 s
LSD:	(2.5×10^{-7} s x period)/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

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):	
	$\pm 5 \times 10^{-7}$
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°C...+40°C
Storage temperature:	-20°C...+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:
HZ33/HZ34 Test Cable 50 Ω (BNC-BNC)
HZ24 Attenuators 50 Ω
HZ10S/R Silicone test lead

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