

Specifications

(Reference Temperature: 23°C ±1°C)

Measurement Functions:

Frequency A/C; Period A; Totalize A;
Pulse width \square / ∇ (averaged);
Totalize A during Ext. Gate.

Input Characteristics: (Input A)

Frequency range: 0 to 150MHz (DC coupled),
10Hz to 150MHz (AC coupled)

Sensitivity: (normal triggering)
20mV_{rms} (sinewave) DC to 80MHz, 80mV (pulse)
60mV_{rms} (sinewave) 80MHz to 150MHz
50mV_{rms} (sinewave) 20Hz to 80MHz, (autotrigger)

Min. pulse duration: 5ns
Input noise: <100µV, typical
Coupling: AC or DC (switch selectable)
Input impedance: 1MΩ||40pF
Attenuator: x1, x20 (switch selectable)

Max. input voltage:
250V (DC+AC_{peak}) from 0 to 440Hz
derated to 8V_{rms} at 1MHz

Input Characteristics: (Input C)

Frequency range: 100MHz to 1.6GHz
Sensitivity: 30mV to 1.3GHz (typ. 20mV)
100mV to 1.6GHz (typ. 80mV)
Input impedance: 50Ω nominal; **Coupling:** AC
Max. input voltage: 5V (DC+AC_{peak})

Input Characteristics: (External Gate)

Input impedance: 4,7kΩ
Max. input voltage: ±30V
High-/Low-Level: >2V/<0,5V
Min. pulse duration: 50ns
Min. eff. gate time: 150µs

Frequency A:

LSD: (2,5x10⁻⁷s x Freq.) / measuring time
Resolution: ±1 or 2 LSD

Period A:

Range: 10000sec to 66,6ns
LSD: (2,5x10⁻⁷s x period / measuring time)
Resolution: ±1 or 2 LSD

Totalize A:

(manually / gated by external signal)
Range: DC to 20MHz
Min. pulse duration: 25ns
LSD: ±1 Count
Resolution: LSD
Ext. Gate error: (in manual mode only) 100ns

Time Interval:

LSD: 100ns to 10ps (averaged); **Resolution:** 1 or 2 LSD

Offset:

Range: same specification as normal measurement

Gate Time:

Range: 100ms to 10s in 3 steps
(cannot be shorter than 1 period)
External gate time: min. 150µs

Timebase:

Frequency: 10MHz clock rate; 10MHz crystal (TCXO)
Accuracy: ±5x10⁻⁷ between 10°C and 40°C
Aging: <2.5ppm / year

General Information:

Display: 8 digit 7 segment LED
7,65mm height. Sign and Exponent.
Power requirements: 7VA, nominal
Ambient temperature: 0°C to +40°C (operation)
Humidity: 10%-90%, no condensation, 5%-95% RH
Dimensions: 135x68x228mm (WxHxD)
Weight: approx. 650g

Values without tolerances are meant to be guidelines and represent characteristics of the average instrument.
Subject to change without notice

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Universal Counter HM8021-3

- Frequency Range: DC to 1.6GHz
- Sensitivity: 20mV
- 7 Measuring Functions
- 3 Selectable Gate Times; External Gate
- 8 Digit LED-Display + Sign + Exponent
- Temperature-Compensated Time Base (TCXO) 5x10⁻⁷
- Selectable Autotrigger

With over 15,000 units sold in Europe, the **HM8021-3** brought new dimensions to the price/performance ratio available in universal counters. With this new model, **HAMEG** continues to lead the market in high performance, low price counters. This **micro-processor-based** instrument has built-in self-test as well as two high sensitivity inputs, with an extended frequency range to **1.6GHz** for one of them.

The reciprocal frequency measurement technique provides high resolution of low frequency signals with at least **seven significant digits** for a **1s** measurement duration. The **HM8021-3** is equipped with an extremely stable temperature compensated **crystal oscillator** (TCXO) with a stability of 0.5 ppm over the entire operating temperature range. Readings of frequency, period, time interval and totalized count, up to 99,999,999, combined with the **Display Hold** function and a full range offset makes this instrument ideally suited for a broad range of applications.

The **Auto Trigger** function allows for accurate measurements to be made, even on noisy waveforms and those with extremely short duty cycles. The **HM8021-3** provides variable trigger control, offers selectable **20dB** attenuation and AC or DC coupling to simplify measurements on complex signals.

When comparing the **HM8021-3** to other instruments of it's price range you can easily see what makes the **HM8021-3** such an outstanding value.

Accessories supplied
Operators Manual

Optional accessories
BNC test cable HZ33
Probe 1:1/10:1 HZ36
BNC 50Ω attenuators HZ24
Adaptor BNC-Banana HZ20