

## Specifications

(Reference Temperature: 23°C ±1°C)

### Measurement Functions:

Frequency A/C; Period A; Totalize A;  
Pulse width  $\square$  /  $\square$  (averaged);  
Totalize A during Ext. Gate, (option HO801)

### Input A Characteristics:

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

**Sensitivity**(normal triggering):  
20mV<sub>rms</sub> (sine wave) DC to 80MHz, 80mV (pulse)  
60mV<sub>rms</sub> (sine wave) 80MHz to 150MHz  
50mV<sub>rms</sub> (sine wave) 20Hz to 80MHz, (auto trigger)

**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<sub>peak</sub>) from 0 to 440Hz  
down to 8V<sub>rms</sub> at 1MHz

### Input C Characteristics

**Frequency Range:** 100MHz to 1.6GHz

**Sensitivity:** 30mV to 1.3GHz (typically 20mV)  
100mV to 1.6GHz (typically 80mV)

**Input Impedance:** 50Ω nominal;

**Coupling:** AC

**Max. Input Voltage:** 5V (DC+AC<sub>peak</sub>)

### External Gate Input Characteristics (option HO801)

**Input Impedance:** 4,7kΩ

**Max. Input Voltage:** ±30V

**High-/Low-Level:** >2V/<0,5V

**Min. Pulse Duration:** 50ns

**Min. Gate Time:** 150µs

### Frequency A

**LSD:** (2.5x10<sup>-7</sup>s x Freq.) / measuring time

**Resolution:** ±1 or 2 LSD

### Period A

**Range:** 10000sec to 66,6ns

**LSD:** (2,5x10<sup>-7</sup>s 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 (averaged):

**LSD:** 100ns to 10ps (averaged);

**Resolution:** 1 or 2 LSD

### Offset

**Range:** all measurement functions

### Gate Time

**Range:** 100ms to 10s in 3 steps (cannot be shorter than 1 period)

**External Gate Time:** min. 150µs

### Time base

**Frequency:** 10MHz clock rate; 10MHz crystal (TCXO)

**Accuracy:** ±5x10<sup>-7</sup> 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:** 7W, nominal

**Ambient Temperature:** +10°C to +40°C (operation)

**Humidity:** 10%-90%, no condensation, 5%-95% RH

**Dimensions:** **W** 135 x **H** 68 x **D** 228 mm

**Weight:** approx. 650g

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



## Universal Counter HM8021-3

- **Frequency Range: DC to 1.6GHz**
- **Sensitivity: 20mV<sub>RMS</sub>**
- **7 Measuring Functions**
- **3 Selectable Gate Times; External Gate (HO801)**
- **8 Digit LED Display**
- **Crystal Time Base (TCXO) 5x10<sup>-7</sup>**
- **Selectable Auto Trigger**

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 in Europe.

This **microprocessor 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 **7 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 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 its price range you can easily see what makes this **Universal Counter** such outstanding value.

### Accessories supplied

Operators Manual

### Optional accessories

BNC test cable HZ33

Probe 1:1/10:1 HZ154

BNC 50Ω attenuators HZ24

Adaptor BNC-Banana HZ20

OCXO HO85