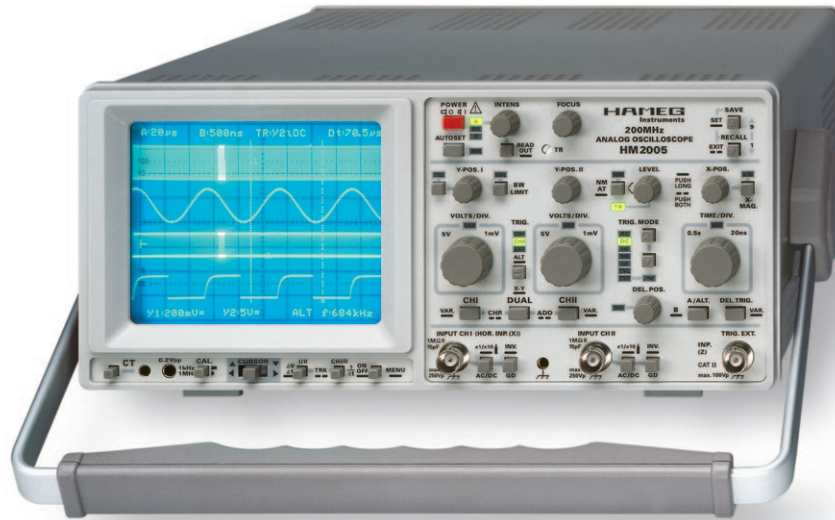
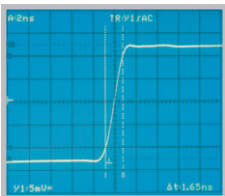


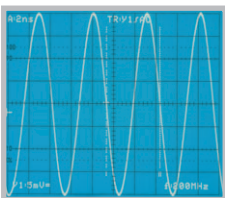
## 200 MHz Analog Oscilloscope HM2005



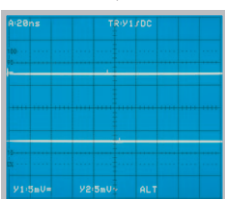
Even fast rising edges do not cause overshoot



Full screen display of 200 MHz signal



Low noise amplifiers



Two Channels with deflection coefficients of 1 mV – 5 V/cm, Low Noise Amplifiers

Two Time Bases (0.5 s – 20 ns/cm and 20 ms – 20 ns/cm, X x 10 to 2 ns/cm), allow for complete signal and signal portion display with a maximum of 1,000-fold X Magnification

Triggering (time bases A and B) from 0 – 300 MHz from 5 mm signal level

14 kV CRT features high writing speed and allowing the display of slowly repeating fast signals

Autoset, Cursor Measurement Functions, Readout

Maximum of 2.5 million Signal Displays per sec.

RS-232 interface (for parameter queries and control only)



## 200 MHz Analog Oscilloscope HM2005

Valid at 23 °C after a 30 minute warm-up period

### Vertical Deflection

<b>Operating Modes:</b>	Channel I or II only Channels I and II (alternate or chopped) Sum or Difference of CH I and CH II
<b>Invert:</b>	CH I and CH II
<b>XY Mode:</b>	via CH I (X) and CH II (Y)
<b>Bandwidth:</b>	2 x 0-200 MHz (-3 dB)
<b>with Bandwidth Limiter:</b>	2 x 0- approx. 50 MHz (-3 dB)
<b>Rise Time:</b>	< 1.75 ns
<b>Overshoot:</b>	max. 1 %
<b>Deflection Coefficients:</b>	1-2-5 Sequence
1 mV/div. - 2 mV/div.:	± 5 % (0 - 10 MHz (-3 dB))
5 mV/div. - 5 V/div.:	± 3 % (0 - 200 MHz (-3 dB))
Variable (uncalibrated):	> 2.5 : 1 to > 12.5 V/div.
<b>Input Impedance:</b>	1 MΩ    15 pF
<b>Coupling:</b>	DC, AC, GND
<b>Max. Input Voltage:</b>	250 V (DC + peak AC)
<b>Delay Line:</b>	approx. 70 ns

### Triggering

<b>Time Base A</b>	
<b>Automatic (Peak to Peak):</b>	20 Hz-300 MHz (≥ 5 mm)
<b>Normal with Level Control:</b>	0 - 300 MHz (≥ 5 mm)
<b>Slope:</b>	positive or negative
<b>Triggering Indicator:</b>	LED
<b>Sources:</b>	Channel I or II, CH I / CH II alternate (≥ 8 mm), Line and External
<b>Coupling:</b>	AC (10 Hz- 300 MHz), DC (0 -300 MHz), HF (50 kHz - 300 MHz), LF (0 -1.5 kHz), NR (noise reject) 0- 50 MHz (≥ 8 mm)
<b>Time Base B:</b>	with Level Control and Slope selection
<b>Coupling:</b>	DC (0 - 300 MHz)
<b>Active TV sync. separator:</b>	Field and Line, +/-
<b>External Trigger Signal:</b>	≥ 0,3 V <sub>pp</sub> (0 - 200 MHz)

### Horizontal Deflection

<b>Time Base Modes:</b>	A, B, A and B alternate
<b>Time Base A:</b>	0.5 s/div.- 20 ns/div. (1-2-5 Sequence)
<b>Accuracy:</b>	± 3 %
Variable (uncalibrated):	> 2.5 : 1 to > 1.25 s/div.
<b>Time Base B:</b>	20 ms/div. - 20 ns/div. (1-2-5 Sequence)
<b>Accuracy:</b>	± 3 %
Variable (uncalibrated):	> 2.5 : 1 to > 50 ms/div.
<b>X Magnification x 10:</b>	up to 2 ns/div.

<b>Accuracy:</b>	± 5 %
<b>Hold-Off Time:</b>	variable to approx. 10 : 1
<b>XY Mode</b>	
<b>Bandwidth X Amplifier:</b>	0 - 5MHz (-3dB)
<b>XY Phase shift &lt; 3°:</b>	< 220 kHz

### Operation / Readout / Control

<b>Manual:</b>	via controls
<b>Autoset:</b>	automatic signal related parameter settings
<b>Save and Recall:</b>	9 user defined parameter settings
<b>Readout:</b>	display of parameters and cursors
<b>Cursor Measurement Functions:</b>	of ΔV, Δt or 1/Δt (freq.)
<b>Interface (standard fitting):</b>	RS-232 (for control)

### Component Tester

<b>Test Voltage:</b>	approx. 7V <sub>rms</sub> (open circuit)
<b>Test Current:</b>	max. 7 mA <sub>rms</sub> (short-circuit)
<b>Test Frequency:</b>	approx. 50 Hz
<b>Test Connection:</b>	2 banana jacks 4 mm Ø

One test circuit lead is grounded via protective earth (PE)

### Miscellaneous

<b>CRT:</b>	D14-3756H, 8x10 cm with internal graticule
<b>Acceleration Voltage:</b>	approx. 14 kV
<b>Trace Rotation:</b>	adjustable on front panel
<b>Calibrator Signal (Square Wave):</b>	0.2V ± 1 %, ≈ 1 kHz/1 MHz (tr < 4 ns)
<b>Z-input (Intens. modulation):</b>	max. +5V TTL
<b>Power Supply (Mains):</b>	105-253V, 50/60 Hz ± 10 %, CAT II
<b>Power Consumption:</b>	approx. 43 Watt at 230 V/50 Hz
<b>Ambient temperature:</b>	0° C...+40° C
<b>Safety class:</b>	Safety class I (EN61010-1)
<b>Weight:</b>	approx. 5.9 kg
<b>Dimensions (W x H x D):</b>	285 x 125 x 380 mm

**Accessories supplied with HM1004-3:** Line Cord, Operators Manual and Software for Windows on CD-ROM, 2 Probes 10:1

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