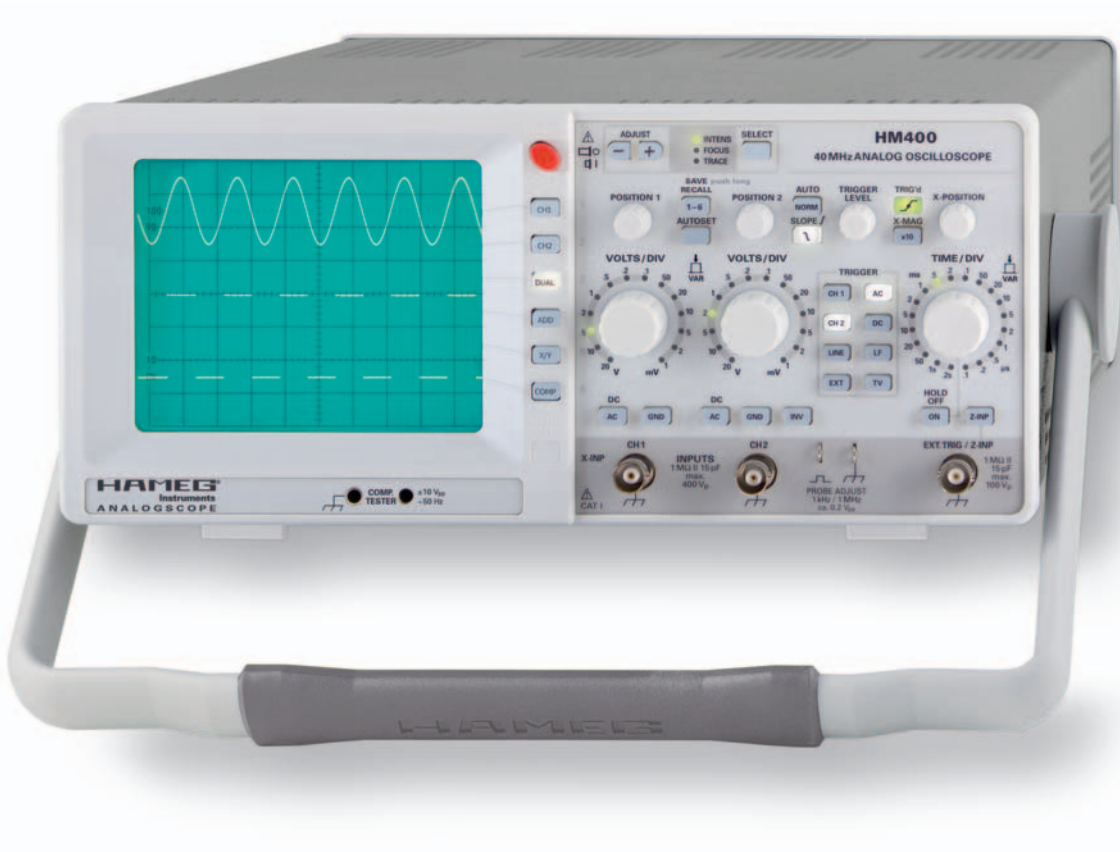
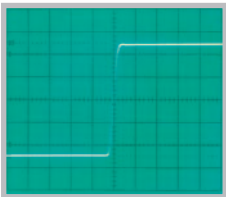


## 40 MHz Analog Oscilloscope HM400

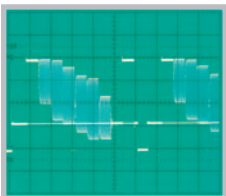
HM400



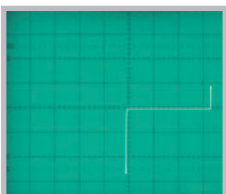
No signal distortion  
resulting from overshoot



Line triggered composite  
video signal



Characteristic of a Z-Diode  
with component test mode



### Reference-Class in sensitivity and input voltage range

2 Channels with deflection coefficients of 1 mV/DIV – 20 V/DIV,  
variable to 50 V/DIV

Time Base: 0.2 s/DIV – 100 ns/DIV,  
with X magnification to 10 ns/DIV

Low noise measuring amplifiers with high pulse fidelity  
and minimum overshoot

Peak to peak trigger for stable triggering from 0 to 50 MHz  
at 0.5 DIV signal level (to 80 MHz at 1 DIV)

Autoset, Save/Recall Memories for 6 instrument settings

Yt- and XY-Mode with Z-Input for intensity modulation

Component characterisation with component tester  
(two terminal network measurement) within service etc.

Low power consumption, no fan

## 40 MHz Analog Oscilloscope HM400

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

### Vertical Deflection

<b>Operating Modes:</b>	Channel 1 or 2 only Channels 1 and 2 (alternate or chopped) Sum or Difference of CH 1 and CH 2
<b>Invert:</b>	CH 2
<b>XY Mode:</b>	CH 1 (X) and CH 2 (Y)
<b>Bandwidth (-3 dB):</b>	
DC, 5mV/div. – 20V/div.:	0 to 40MHz
AC, 5mV/div. – 20V/div.:	2Hz to 40MHz
DC, 1mV/div. – 2mV/div.:	0 to 10MHz
AC, 1mV/div. – 2mV/div.:	2Hz to 10MHz
<b>Rise Time (calculated):</b>	<35 ns (1 mV/div. – 2 mV/div.) <8,75 ns (5 mV/div. – 20 V/div.)
<b>Deflection Coefficient:</b>	1-2-5 Sequence ± 5% (1 mV/div. – 2 mV/div.) ± 3% (5 mV/div. – 20 V/div.) Variable (uncalibrated): >2.5:1 to >50V/div.
<b>Input Impedance:</b>	1 MΩ    15 pF
<b>Input Coupling:</b>	DC, AC, GND (ground)
<b>Max. Input Voltage:</b>	400 V (DC + peak AC)

### Triggering

<b>Automatic (Peak to Peak):</b>	5 Hz – 50 MHz (≥ 0.5 div.), 50 MHz – 80 MHz (≥ 1 div.)
<b>Normal with Level Control:</b>	0 – 50 MHz (≥ 0.5 div.), 50 MHz – 80 MHz (≥ 1 div.)
<b>Slope:</b>	positive or negative
<b>Sources:</b>	Channel 1 or 2, Line and External
<b>Coupling:</b>	AC (5 Hz – 80 MHz), DC (0 – 80 MHz), LF (0 – 1.5 kHz)
<b>Trigger Indicator:</b>	LED
<b>External Trigger:</b>	
<b>Input Impedance:</b>	1 MΩ    15 pF
<b>External Trigger Signal:</b>	0,3 V <sub>pp</sub> ≤ 5 V, DC (0 – 50 MHz), AC (20 Hz – 50 MHz)
<b>Max. input voltage:</b>	100 V (DC + Peak AC)
<b>Active TV sync. separator:</b>	Field and Line, +/-

### Horizontal Deflection

<b>Time Base:</b>	0.2 s/div. – 100 ns/div. (1-2-5 Sequence)
<b>Accuracy:</b>	± 3%
<b>Variable (uncalibrated):</b>	> 2.5:1 to > 1.25 s/div.
<b>X Magnification x 10:</b>	up to 10 ns/div. (± 5%)
<b>Accuracy:</b>	± 5%
<b>Hold-Off Time:</b>	variable to approx. 10 : 1
<b>XY</b>	
<b>Bandwidth X amplifier:</b>	0 – 2.5 MHz (-3 dB)
<b>XY Phase shift &lt; 3°:</b>	< 120 kHz

### Operation / Readout / Control

<b>Manual:</b>	via controls and buttons
<b>Autoset:</b>	automatic signal related parameter settings
<b>Save and Recall:</b>	6 instrument parameter settings

### Component Tester

<b>Test Voltage:</b>	approx. 7 V <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>	D14-363GY, 8 x 10 cm with internal graticule
<b>Acceleration Voltage:</b>	approx. 2 kV
<b>Trace Rotation:</b>	adjustable on front panel
<b>Z-Input (Intens. modulation):</b>	max. + 5 V (TTL), 10 kHz
<b>Probe ADJ Output:</b>	1 kHz / 1 MHz Square Wave Signal ca. 0.2 V <sub>pp</sub> (tr < 5 ns) for probe adjustment
<b>Power Supply (Mains):</b>	105 – 253 V, 50/60 Hz ± 10 %, CAT II
<b>Power Consumption:</b>	approx. 30 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. 4.8 kg
<b>Dimensions (W x H x D):</b>	285 x 125 x 380 mm

**Accessories supplied:** Line Cord, Operators Manual, 2 Probes 1:1/10:1 (HZ154) with LF/HF adjustment

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