



Powertronics

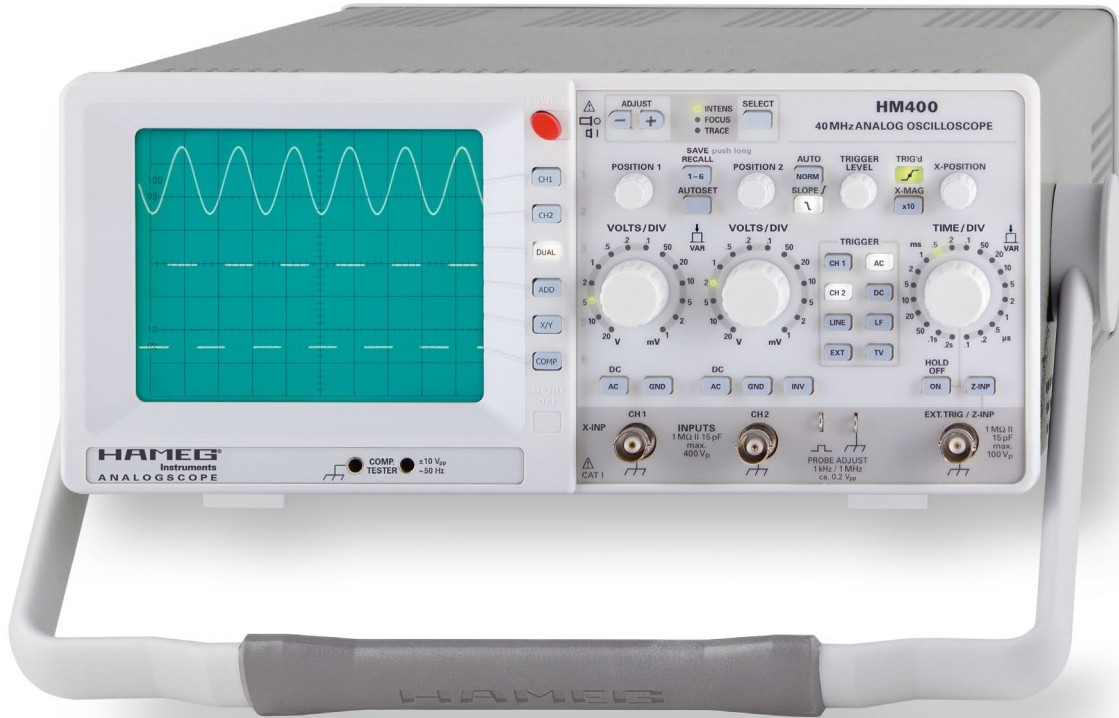
Venda, locação e manutenção.

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HAMEG® Instruments

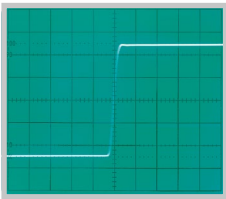
A Rohde & Schwarz Company

40MHz Analog Oscilloscope HM400

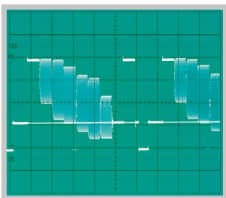


HM400

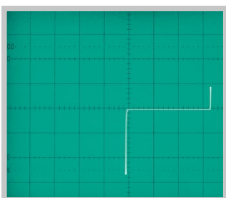
No Signal Distortion
resulting from Overshoot



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 1mV/div....20V/div., variable up to 50V/div.
- Time Base 100ns/div....0.2s/div., with X Magnification to 10ns/div.
- Low Noise Measuring Amplifiers with high Pulse Fidelity and minimum Overshoot
- Peak to Peak Trigger for stable Triggering 0...50MHz at 0.5div. Signal Level (up to 80MHz at 1div.)
- 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) for use within Service etc.
- Low Power Consumption, no Fan

40 MHz Analog Oscilloscope HM400

All data valid at 23 °C after 30 minutes warm-up.

Vertical Deflection

Operating Modes:	Channel 1 or 2 only Channels 1 and 2 (alternate or chopped) Sum or Difference of CH 1 and CH 2
Invert:	CH 2
XY Mode:	CH 1 (X) and CH 2 (Y)
Bandwidth (-3 dB):	
DC, 5 mV/div...20V/div.:	0...40 MHz
AC, 5 mV/div...20V/div.:	2Hz...40 MHz
DC, 1...2 mV/div.:	0...10 MHz
AC, 1...2 mV/div.:	2Hz...10 MHz
Rise Time (calculated):	<35 ns (1...2 mV/div.) <8.75 ns (5 mV/div...20V/div.)
Deflection Coefficient:	1-2-5 Sequence ±5% (1...2 mV/div.) ±3% (5 mV/div...20V/div.)
Variable (uncalibrated):	>2.5:1 to >50V/div.
Input Impedance:	1 MΩ 15 pF
Input Coupling:	DC, AC, GND (ground)
Max. Input Voltage:	400V (DC + peak AC)

Triggering

Automatic:	Linking of peakdetection and triggerlevel
Min. signal height	0.5 div.
Frequency range	5 Hz...50 MHz
Level control range	From peak- to peak+
Normal (without peak):	
Min. signal height	0.5 div.
Frequency range	0...50 MHz
Level control range	-10...+10 div.
Slope:	Rising or falling
Sources:	Channel 1 or 2, Line and External
Coupling:	AC (5 Hz...80 MHz), DC (0...80 MHz), LF (0...1.5 kHz)
Trigger Indicator:	LED
External Trigger:	
Input Impedance:	1 MΩ 15 pF
External Trigger Signal:	0.3V _{pp} ≤5V, DC (0...50 MHz), AC (20 Hz...50 MHz)
Max. input voltage:	100V (DC + peak AC)
Active TV sync. separator:	Field and Line, +/-

Horizontal Deflection

Time Base:	100 ns/div...0.2 s/div (1-2-5 Sequence)
Accuracy:	±3%
Variable (uncalibrated):	>2.5:1 to >1.25 s/div.
X Magnification x10:	up to 10 ns/div.
Accuracy:	±5%
Hold-Off Time:	variable to approx. 10:1
XY	
Bandwidth X amplifier:	0...2.5 MHz (-3 dB)
XY Phase shift <3°:	<120 kHz

Operation/Readout/Control

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

Component Tester

Test Voltage:	approx. 7V _{rms} (open circuit)
Test Current:	max. 7 mA _{rms} (short-circuit)
Test Frequency:	approx. 50 Hz
Test Connection:	2 banana jacks 4 mm Ø One test circuit lead is grounded via protective earth (PE)

Miscellaneous

CRT:	D14-363GY, 8 x 10 div. with internal graticule
Acceleration Voltage:	approx. 2 kV
Trace Rotation:	adjustable on front panel
Z-Input (Intens. modulation):	max. +5V (TTL), 10 kHz
Probe ADJ Output:	1 kHz/1 MHz Square Wave Signal approx. 0.2V _{pp} (tr <5ns) for probe adjustment
Power Supply (Mains):	105...253V, 50/60 Hz ±10%, CAT II
Power Consumption:	approx. 30 Watt at 230V/50 Hz
Safety class:	Safety class I (EN61010-1)
Operating temperature:	+5...+40 °C
Storage temperature:	-20...+70 °C
Rel. humidity:	5...80% (non condensing)
Dimensions (W x H x D):	285 x 125 x 380 mm
Weight:	approx. 4.8 kg

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

Recommended accessories:

HZ20	Adapter, BNC to 4 mm banana
HZ33	Test cable 50Ω, BNC/BNC, 0.5 m
HZ34	Test cable 50Ω, BNC/BNC, 1 m
HZ45	19"-Rackmount Kit 4RU
HZ51	Probe 10:1 (150 MHz)
HZ52	Probe 10:1 RF (250 MHz)
HZ53	Probe 100:1 (100 MHz)
HZ100	Differential probe 20:1/200:1
HZ109	Differential probe 1:1/10:1
HZ115	Differential probe 100:1/1000:1
HZ200	Probe 10:1 with auto attenuation ID (250 MHz)
HZ350	Probe 10:1 with automatically identification (350 MHz)
HZ355	Slimline probe 10:1 with automatically identification (500 MHz)
HZO20	High voltage probe 1000:1 (400 MHz, 1000V _{rms})
HZO30	Active probe 1 GHz (0.9 pF, 1 MΩ, including many accessories)
HZO50	AC/DC Current probe 20A, DC...100 kHz
HZO51	AC/DC Current probe 1000A, DC...20 kHz