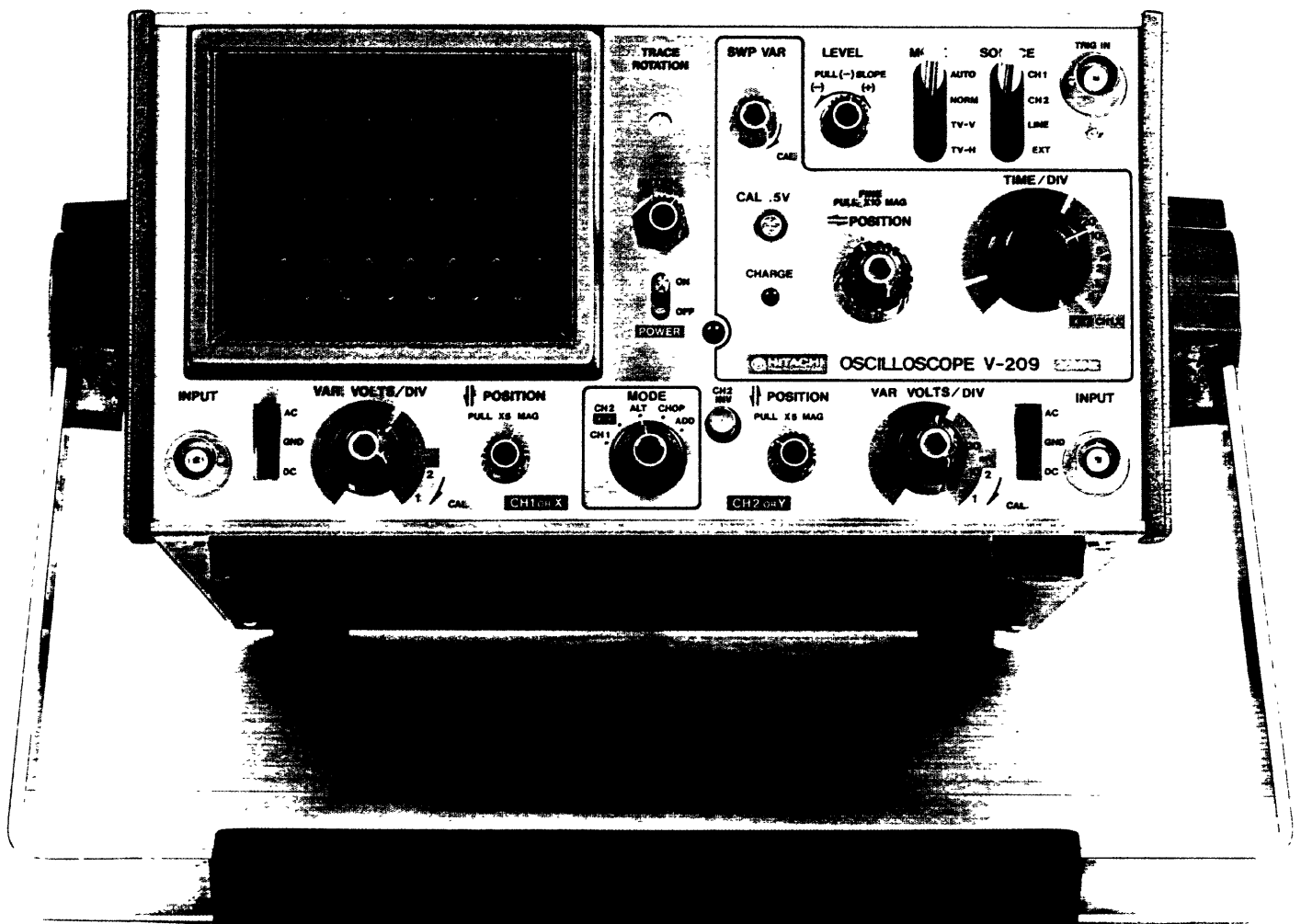


HITACHI Mini-Portable Dual-Trace Oscilloscope

V-209 DC-20MHz
Battery Operated

Designed-In Ease of Operation



Hitachi Mini-Portable Oscilloscope V-209

FEATURES

- 1 A three-way power supply takes the V-209 anywhere, anytime for speedy field measurements.
- 2 High sensitivity (1mV/div at 10MHz) and fast sweep times (50ns/div) make the V-209 a valuable tool in R&D as well as servicing in a wide variety of applications including computers and video equipment.
- 3 A built-in TV sync separation circuit with easily selectable TV-V and TV-H modes ensures stable observation of both vertical and horizontal TV signal waveforms.
- 4 An auto focus feature maintains constant trace focus without the necessity of troublesome manual focus adjustments.
- 5 The human-engineered front panel layout groups controls into function related clusters for ease-of-use.
- 6 The V-209 is just what it claims to be—a powerful field service tool in a compact, lightweight package.

SPECIFICATIONS

C.R.T

Type Hitachi 95MB31 rectangular tube with 1.5kV acceleration potential.
Screen type P31 (GH) phosphor standard
Useful screen area 8 x 10 div (1 div = 6.35mm)
Graticule Internal graticule
Z-axis input DC-coupled positive-going signal decreases intensity: 5Vp-p signal causes noticeable modulation at normal intensity: DC to 1MHz.

VERTICAL DEFLECTION (2 Identical Channels)

Bandwidth and Rise time DC to at least 20MHz and rise time 17.5ns or less. DC to at least 5MHz and rise time 70ns or less at magnifier extends. Lower -3dB point, AC coupling 10Hz or less. 10x probe: 1Hz or less.
Deflection Factor 5mV/div to 5V/div in 10 calibrated steps, 1-2-5 sequence. Uncalibrated continuous control between steps 1: <2.5. x5 magnifier extends min. deflection rate to 1mV/div.
Accuracy ±3% (+10 to +35°C)
Additional error for magnifier ±2%
Display modes CH1, CH2 (normal or invert) Alternate, chopped (250kHz rate), Added.
Input Impedance 1M ohm ±2% in parallel with 30pF approx.
Maximum Input Voltage 250V (DC + peak AC).

HORIZONTAL DEFLECTION

Time Base 0.5µs/div to 0.2s/div in 18 calibrated steps, 1-2-5 sequence. Uncalibrated continuous control between steps 1: <2.5
x10 magnifier extends fastest sweep rate to 50ns/div.
Accuracy ±3% (+10 to +35°C)
Additional error for magnifier ±2%.

TRIGGERING

Trigger Modes Automatic, Normal, TV-V, TV-H.
Trigger Source Internal (Ch1, Ch2), Line, External.
Trigger Slope + or -
Trigger Sensitivity

	DC to 5MHz	5 to 20 MHz
Internal	0.5div	1.5div
External	150mV	500mV

Trigger Coupling

AC: 30Hz to full bandwidth

External Trigger

Input Impedance 1M ohm ±20% in parallel with 30pF approx.

Maximum Input Voltage

250V (DC + peak AC)

X-Y OPERATION (CH1; Horiz, CH2; Vert)

Deflection Factor

Same as vertical deflection

Accuracy

Y: ±3% (+10 to +35°C)
X: ±5% (+10 to +35°C)
Additional error for CH.1 and CH.2 magnifier ±2%
Bandwidth Phase Error DC to at least 200kHz
3° or less from DC to 100kHz

CALIBRATOR

0.5V ±1% Frequency 1kHz ±30% square wave

POWER

Line Voltage 100V (90~130V)
200V (180~260V), 50/60/400Hz
External DC: 11~14V, 0.8A
Battery operation: Approx. 2 hours continuous use with the AD-209

POWER CONSUMPTION

18W Approx. at normal line voltage

DIMENSION AND WEIGHT

215(W) x 110(H) x 350(D)mm
(8.5 x 4.3 x 13.8 in)
5.3 kg (11.7 lb)

AMBIENT TEMPERATURES

Rated range of use: +10 to +35°C
Limits of operation: 0 to +50°C
Storage and transport: -20 to +70°C

M.T.B.F.

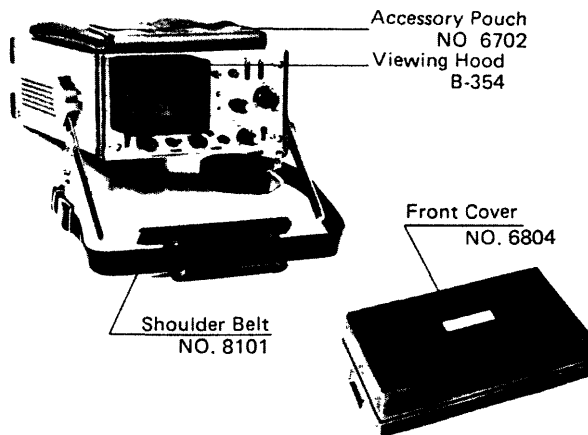
20,000 hours for target value

ACCESSORIES SUPPLIED

Two AT-10AK 1.5 Probes (10:1, 1:1 switchable), Fuse, Power cable, DC power cable, Operation manual, AD-209 Battery Pack.

OPTIONS

B-354 Viewing Hood, No. 8101 Shoulder Belt, No. 6702 Accessory Pouch, No. 6804 Front Cover.



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Specifications are subject to change without notice.