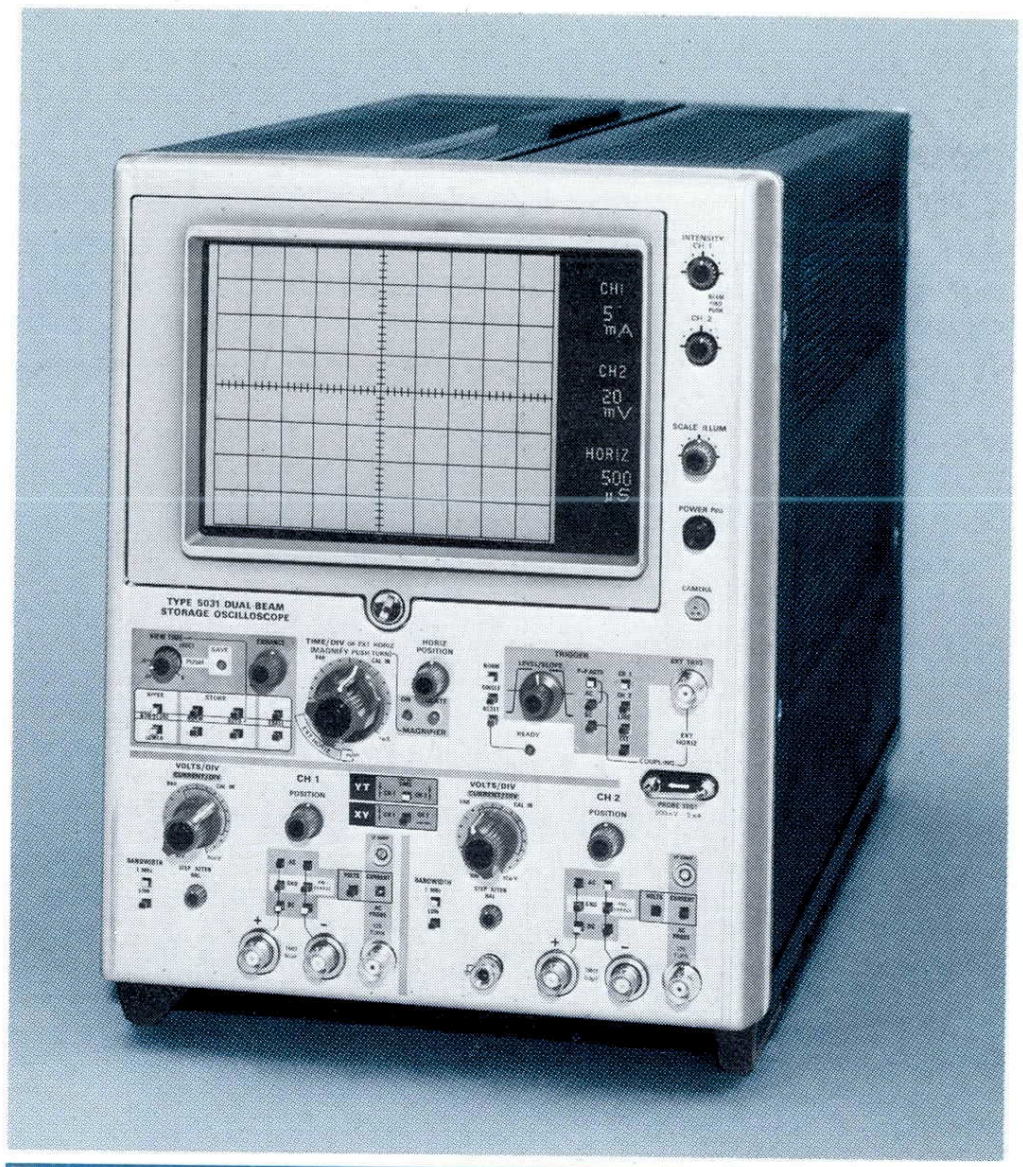
NEW

5031 Dual-Beam Storage Oscilloscope R5031

- SPLIT-SCREEN, BISTABLE STORAGE
- REMOTE ERASE
- 10 μV, DIFFERENTIAL, DC COUPLED
- SCALE-FACTOR READOUT
- CALIBRATED CURRENT INPUTS



The Type 5031 is the first dual-beam, split-screen, bistable, storage oscilloscope to offer calibrated current-probe inputs, high-gain differential-voltage inputs, auto scale-factor readout, and 1-MHz bandwidth.

Design of the Type 5031 stresses usability: simplified switching, color-coded functional controls, scale-factor readout, plus a large viewing area. Each beam has a full scan of 8 x 10 divisions (1.22 cm/div). The split-screen, bistable, storage CRT provides high-contrast displays and new convenience thru a variable viewing time system. Through front-panel controls this system can be directed to automatically erase either or both halves of the display area after a predetermined viewing time. Viewing time can be varied up to 5 s in the auto-store mode. Used in conjunction with single sweep, the auto-store mode automatically resets the single-sweep circuit at the end of the viewing time interval.

Two identical, solid-state input channels provide single-beam X-Y, or dual-beam Y-T displays either directly coupled or thru a current or voltage probe. Vertical channel bandwidth can be selected as 1 MHz or Low (5 kHz). Any unique bandwidth can be provided in the Low position by changing internal components.

A direct reading (via fiber-optics) magnifier of up to 50X is provided. A sweep-magnifier locate feature intensifies the sweep to show the time position of the magnified sweep. A new automatic-trigger mode provides a stable, triggered display regardless of other control settings for most repetitive waveforms, yet maintains trigger level and slope selection. Convenience features added to this instrument are beamfinders on the intensity controls and illuminated push buttons that indicate operating modes. Mode switching from a dual-beam Y vs T display to a X vs Y display is as simple as pressing a button.

The Type 5031 provides vertical sensitivity of 10 μV/div, calibrated current-probe inputs, as well as differential-voltage inputs and a constant bandwidth at all deflection factors. These measurement capabilities, plus the many convenience features, make this instrument useful in a wide variety of applications. The Type 5031 is available in three models: a conventional upright benchmount, a low-profile benchmount, or a 5-1/4 inch rackmount. Both the rackmount and cabinet models are designed for use in a laboratory environment.

CHARACTERISTIC SUMMARY

VERTICAL

Bandwidth—Selectable: DC to 1 MHz or DC to 5 kHz.
Deflection Factor—10 μV/div to 10 V/div or 1 mA/div to 200 mA/div.
Input RC—1 megohm paralleled by approximately 50 pF.
Common-Mode-Rejection Ratio—at least 100,000:1 (DC to 100 kHz).

HORIZONTAL

Time Base—1 μs/div to 5 s/div.
Magnifier—up to 5 magnification steps (X50 mag max).
External Input—20 mV/div to 0.5 V/div.

CRT

Display Area—each beam 8 x 10 div (1.22 cm/div).
Accelerating Voltage—4 kV.
Phosphor—P1.

OTHER

Amplitude Calibrator—0.5 V and 5 mA, 1-kHz square-wave.
Power Requirements—90 to 140 V or 180 to 275 V, 48 to 440 Hz; 100 watts.

DISPLAY MODES

Y-T (Two-Beam Display)—Normally, Channel 1 and Channel 2 plotted on vertical axes versus time on horizontal axis. Dual-beam curve tracing provided by plotting Channel 1 and Channel 2 on vertical axes against an external horizontal signal on horizontal axis. Y, Y, X phase difference is 5° from DC to 100 kHz, or AC coupled from 1 kHz to 100 kHz. The two vertical deflection systems are independent of each other and share the same horizontal deflection system.

X-Y (Single-Beam Display)—Channel 1 plotted on vertical axis versus Channel 2 on horizontal axis provides curve tracing at full sensitivity of vertical deflection system (10 μV/div). X-Y phase difference with Channel 1 and Channel 2 DC coupled at the same calibrated deflection factor (unused inputs grounded) is $\leq$1° to 200 kHz, increasing to $\leq$4° at 1 MHz. In X-Y mode, time and external horizontal systems are disabled and lamps are extinguished. Trace intensity is controlled by Channel 1 intensity control.

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5031 Dual-Beam Storage Oscilloscope R5031

VERTICAL DEFLECTION

Two identical channels, each provided with differential voltage inputs and a separate current input. Voltage or current mode is selected by push button.

When current mode is enabled, lamps associated with voltage inputs are extinguished to avoid confusion. Volts switch extinguishes current lamp. Full 1-MHz bandwidth or Low (5-kHz) bandwidth for eliminating wide-band noise, selectable by push button.

Bandwidth

DC to 1 MHz within +20%, —10%, or DC to 5 kHz, within 10% at —3 dB, selectable by push button. Lower —3 dB limit: AC coupled 2 Hz or less; current mode 10 Hz or less.

Deflection Factor

Voltage Mode—10 μV/div to 10 V/div in 19 calibrated steps (1-2-5 sequence). Accurate within 3% from 50 μV/div to 10 V/div. Accurate within 4% when using split-screen storage. Accurate within 5% for 10 μV and 20 μV/div positions. Uncalibrated, continuously variable between steps to approximately 25 V/div.

Current Mode—1 mA/div to 200 mA/div in 8 calibrated steps (1-2-5 sequence) accurate within 5%. Uncalibrated, continuously variable between steps, extends deflection factor to approximately 500 mA/div.

Input RC

1 MΩ within 1% paralleled by 50 pF within 10%.

Displayed Noise

Voltage Mode: ≤15 μV.
Current Mode: ≤200 μA. (Tangentially Measured)

Input Gate Current

≤200 pA.

Maximum Safe Inputs

(Inputs are fuse protected—no damage will occur)

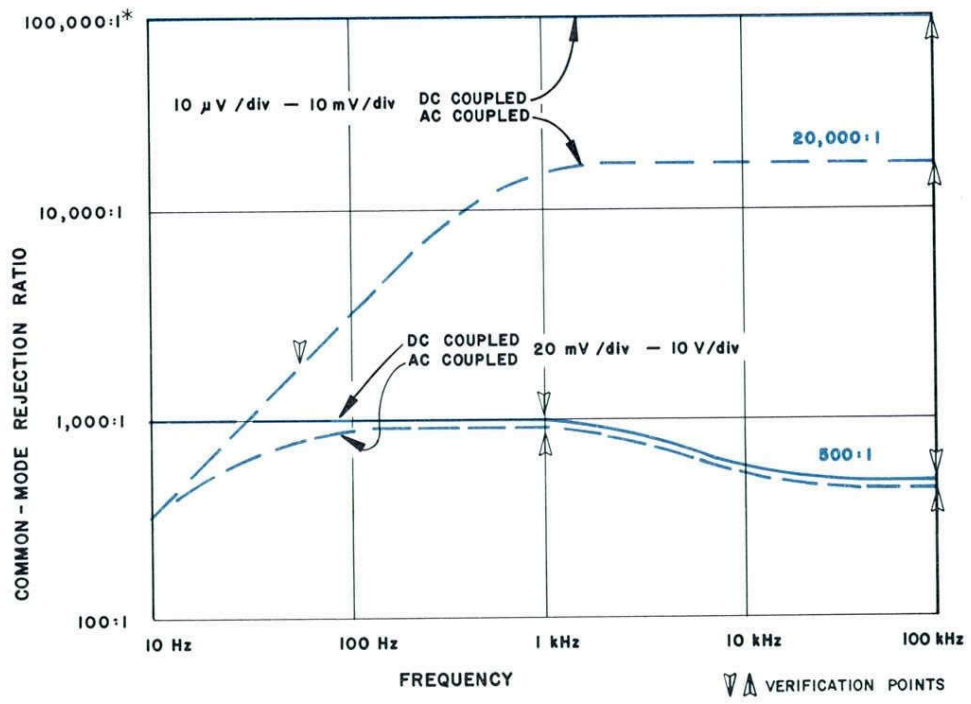
Voltage

Range	DC	AC*
10 μV to 100 mV/div	10 V (DC+Peak AC)	300 V DC, 10 V Peak AC
200 mV to 10 V/div	300 V (DC+Peak AC)	300 V (DC+Peak AC)

*Input switch must be initially set to ground when signal is applied to input to charge (or discharge) input coupling capacitor.

Current—10 A peak-to-peak.

Common-Mode-Rejection Ratio



*With up to 20-V peak-to-peak sinewave. CMRR is not specified when display is 0.1 div or less from DC to 1 kHz, or 0.2 div or less from 1 kHz to 100 kHz.

Trace Stability

With Time: Short term—5 μV or less per minute after one-hour warm up. Long term—10 μV or less or 0.1 division or whichever is greater, during any hour after 2.5-hour warm-up.
With Temperature: ≤50 μV per degree C.
With Line Voltage: ≤100 μV for 10% change in line voltage.

HORIZONTAL DEFLECTION

Full-range time base (1 μs to 5 s/div), up to 5 magnification steps (X50 maximum) and unique magnifier locate feature. Full-bandwidth (1-MHz) calibrated external-horizontal input permits dual-beam X-Y presentations. Horizontal deflection common to both beams.

Time Base Sweep Rate

1 μs to 5 s/div in 21 calibrated steps (1-2-5 sequence) accurate within 3% in the center 8 divisions. Accurate within 4% when using split-screen storage. Uncalibrated, continuously variable between steps and to approximately 12 s/div.

Sweep Magnifier

Up to 5 magnification steps (1-2-5 sequence) from the initial unmagnified time/div control setting. Maximum magnified sweep limited to 1 μs/div. Magnified time base accurate within 5% in the center 8 divisions of display. Locate push button disables magnifier and restores normal sweep display, intensifies that portion of sweep to be magnified. Horizontal position control acts as time position of that portion of sweep to be magnified.

Sweep Modes

Normal or single sweep; ready indicator lights when sweep circuit is triggerable.

External Horizontal Input

Bandwidth: DC to at least 900 kHz at —3 dB; lower —3 dB is 15 Hz or less.
Deflection Factor: 20 mV/div to 500 mV/div in 8 calibrated steps (1-2-5 sequence) accurate within 3% in the center 8 divisions. Accurate within 4% when using split-screen storage. Uncalibrated, continuously variable between steps to approximately 1.25 V/div.
Input RC: 1 MΩ within 2% paralleled by 50 pF within 10%.
Maximum Input: 100 V (DC + peak AC) decreasing to 100 V peak-to-peak at 1 MHz.
Y, Y, X Phase Difference: ≤5° from DC to 100 kHz; AC coupled from 1 kHz to 100 kHz.

TRIGGER

A simplified trigger circuit combines the trigger LEVEL and SLOPE controls and provides a peak-to-peak auto mode. When in peak-to-peak auto, the range of level adjustment is automatically established at the positive and negative peaks of the displayed waveforms. Also, the sweep is always triggered, or reverts to a free-running mode in the absence of a trigger signal or when the trigger signal is less than 15 Hz.

Coupling

Peak to Peak auto, AC or DC coupling. These push buttons select the coupling of trigger and external-horizontal input signals.

Source

Internal (Channel 1 or Channel 2), Line, or External.

NEW

5031 Dual-Beam Storage Oscilloscope R5031

Sensitivity

Coupling		Internal	External
Peak to Peak Auto	Norm	0.5 div, 15 Hz to 1 MHz	0.6 V, 15 Hz to 1 MHz
	Single	1.0 div, 15 Hz to 1 MHz	1.25 V, 15 Hz to 1 MHz
AC		0.3 div, 15 Hz to 1 MHz	0.4 V, 15 Hz to 1 MHz
DC		0.3 div, DC to 1 MHz	0.4 V, DC to 1 MHz

Maximum Input

100 V (DC + peak AC) decreasing to 100 V peak-to-peak at 1 MHz.

STORAGE CRT AND DISPLAY FEATURES

Auto Scale-Factor Readout

Reads out scale-factors associated with Channel 1, Channel 2 and Horizontal. CH 1 and CH 2 read 10 μV to 10 V in 19 steps or 1 mA to 200 mA in 8 steps (1-2-5 sequence). HORIZ reads 1 μs to 5 s in 21 steps or 20 mV to 500 mV in 8 steps (1-2-5 sequence). Scale illumination control selects intensity of readout.

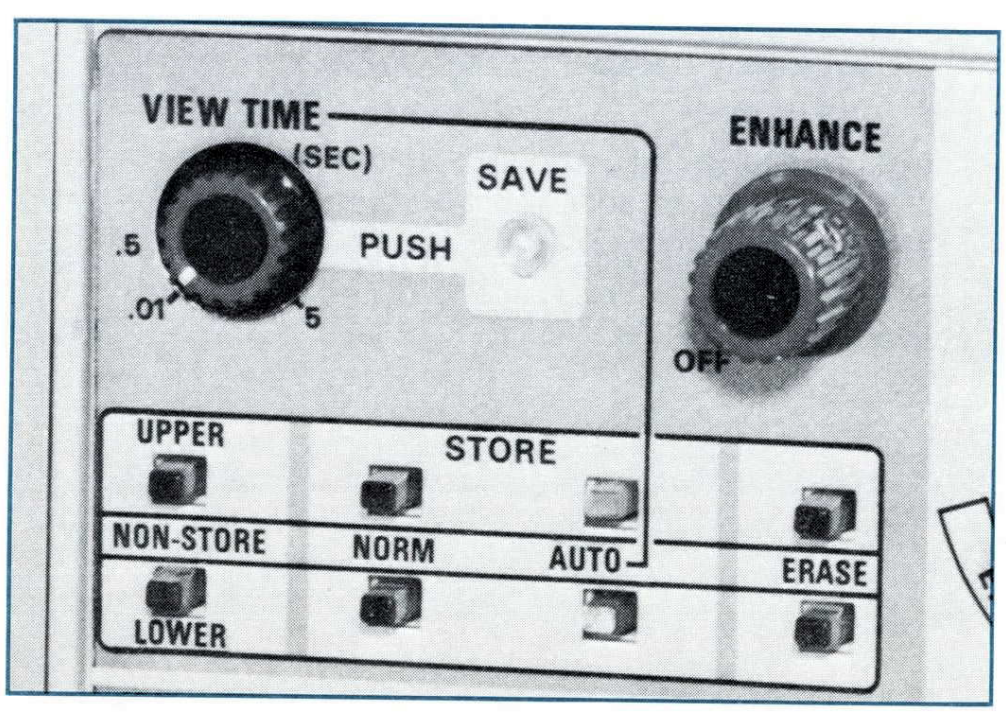
Dual-Beam Storage CRT

The CRT is a split-screen, bistable, storage device operated at 4-kV accelerating potential. Phosphor Type is P1 (no options). Each beam has a full scan of 8 x 10 divisions (1.22 cm/div). Separate vertical deflection plates; common horizontal. An internal 8 x 10 division graticule is provided. Vertical and horizontal center lines are marked in 0.2 divisions.

Split-Screen Storage

Store on either upper or lower half of screen with conventional display on other half. Store on entire screen or non-store on entire screen. Independent operation of both halves.

Writing Speed: At least 20 div/ms.
Contrast Ratio: At least 3:1.
Luminance: At least 10 foot-lamberts.
Viewing Time: Up to one hour.
Erase Time: 2 ms within 20%.
Enhance Mode: Controls single sweep writing capabilities of the storage CRT. Increases storage capabilities beyond 20 div/ms. with minimal loss of resolution and contrast.
Auto Store Mode: Viewing time continuously variable up to 5 s before the screen is erased and the sweep reset (Single Sweep Mode). A SAVE mode disables automatic erasure.



Display Controls

Combination push-button beam finder and intensity control for each beam. Dynamic focus eliminates requirement for control.

Remote Control Operation

The Type 5031 has remote-control operation capabilities using contact closure. A 9-pin connector, located on the rear panel, supplies one ground and 6 inputs (plus two spares) that allow the following functions:

1. Remote erase of upper screen and resetting of sweep for single-sweep operation.
2. Remote erase of lower screen and resetting of sweep for single-sweep operation.
3. Remote resetting of sweep for single-sweep operation.
4. Remote switching from storage operation to conventional operation of upper screen.
5. Remote switching from storage operation to conventional operation of lower screen.
6. Remote operation of the SAVE mode in order to hold a stored waveform.

Remote Control Unit
(Optional accessory, part number 012-0102-00)
Performs remote functions 1, 2, and 3.

OTHER CHARACTERISTICS

Rear Panel Inputs and Outputs

Z-Axis Inputs: Separate inputs for Channel 1 and Channel 2 DC to 1 MHz; 0 V to +12 V equal to full-intensity range, negative signal intensifies. Input RC approximately 20 kΩ paralleled by 60 pF. Maximum Input: 50 V (DC + peak AC).
Vertical Signal Outputs: Channel 1 and Channel 2 outputs provide an output of the vertical deflecting signal (DC coupled), amplitude at least 0.2 V per displayed div. Source impedance—10 kΩ within 10%. DC to $\geq$100 kHz bandwidth at —3 dB into 100 pF.
Auxiliary Functions: + Gate Output is $\geq$5 V from source impedance of 10 kΩ. Rise and fall times $\leq$5 μs into 100 pF.
Sawtooth Output: $\geq$5 V from source impedance of 10 kΩ.
Camera: Power to and sweep reset from camera to oscilloscope.

Probe Test

0.5 V into 1 MΩ and 5 mA accurate within 2%. Repetition Rate—1 kHz accurate within 15%.

Power Requirements

Quick-change, line-voltage selector permits operation from 90 V to 121 V, 105 V to 140 V, 180 V to 242 V, or 210 V to 275 V. The Type 5031 will operate over a line frequency range from 48 Hz to 440 Hz with a power consumption of 100 W at 115 V AC, 60 Hz.

Dimensions and Weights

Cabinet (Type 5031)		
Length	22-1/2 in	57.2 cm
Width	10 in	25.2 cm
Height	13 in	33.2 cm
Net weight	33 lb	15.0 kg
Domestic shipping weight	49 lb	22.2 kg
Export-packed weight	69 lb	31.4 kg

Upright Cabinet
Type 5031 is equipped with tilt bail. Includes two instruction manuals (070-1004-00).

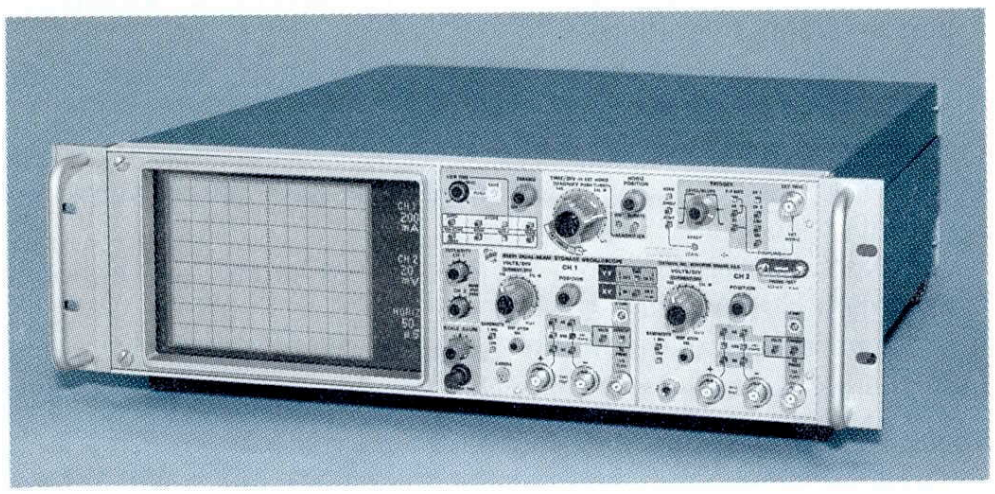
Order Type 5031 ..... **$2500**

NEW

5031 Dual-Beam Storage Oscilloscope R5031

Rackmount (Type R5031)

Length	22-1/2 in	57.2 cm
Width	19 in	48.3 cm
Height	5-1/4 in	13.4 cm
Net weight	33 lb	15.0 kg
Domestic shipping weight	49 lb	22.2 kg
Export-packed weight	69 lb	31.4 kg



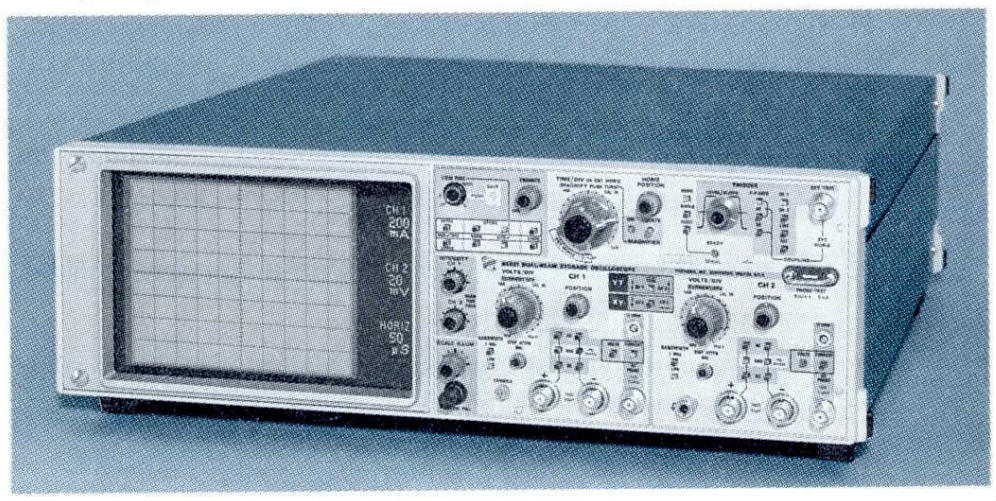
Rackmount

Type R5031 is equipped with a set of tracks and slides for rackmounting. Includes two instruction manuals (070-1005-00).

Order Type R5031 ..... $2500

Low-Profile Cabinet (Type R5031 Option 4)

Length	22-1/2 in	57.2 cm
Width	17-5/8 in	44.8 cm
Height	6 in	15.2 cm
Net weight	32 lb	14.6 kg
Domestic shipping weight	48 lb	21.8 kg
Export-packed weight	69 lb	31.4 kg



Low-Profile Cabinet

Type R5031 Option 4 is equipped with feet, tilt bail and handle for bench top use. Includes two instruction manuals (070-1005-00).

Order Type R5031 Option 4 ..... $2500

OPTIONAL ACCESSORIES

Optional accessories increase measurement capabilities and provide added convenience. Cameras, Probes, Scope-Mobile® Carts and other major accessories are completely described in the catalog accessory pages.

Probes

P6052 10X, 1X selectable attenuation probe, order 010-0241-00 ..... $ 55

P6021 AC current probe, order 010-0237-02 ..... $ 94

Scope-Mobile® Cart

Model 205-1, storage drawer, and 9-position tilt-lock oscilloscope tray, suitable for R5031, order 205-1 ..... $

Model 204-2 includes storage drawer and scope hold-down, suitable for 5031, order 204-2 ..... $155

Cameras

C-70 provides an f/1.9—1:0.575 lens for complete coverage of CRT and readout areas. Polaroid* Land Pack-Film back, order C-70-P (includes mounting bezel) $785

Standard C-12 provides no-parallax viewing, f/1.9—1:0.85 lens, Polaroid Land Pack-Film back, order C-12 .. $490

Standard C-27 has a rotating back and removable viewing hood, f/1.9—1:0.85 lens. Polaroid Land Pack-Film back, order C-27 ..... $460

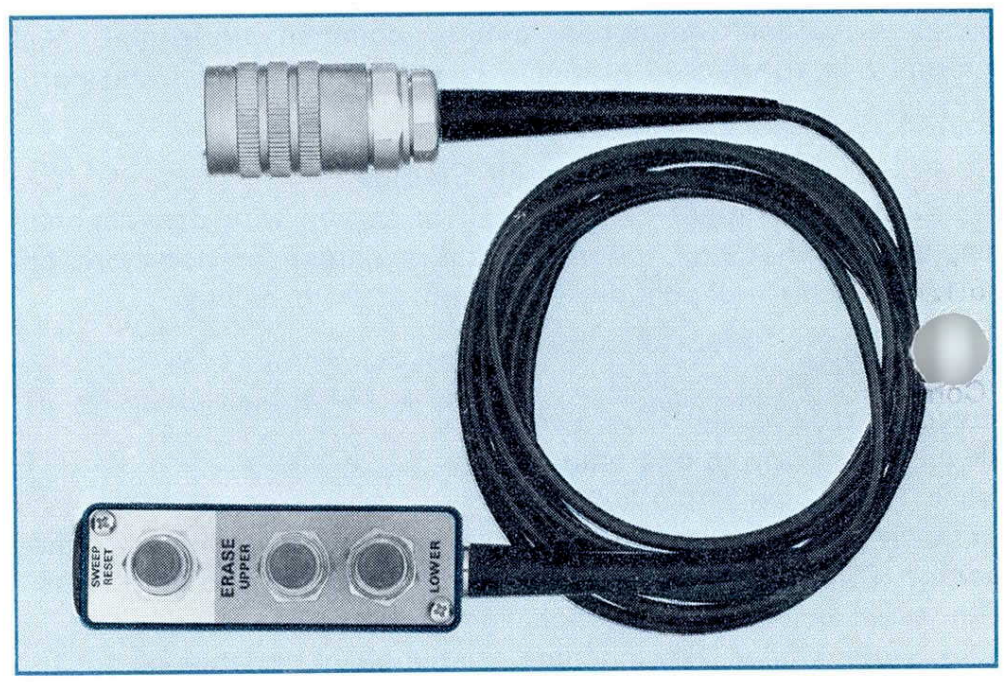
Camera Adapters

The C-70 mounts directly to the Type 5031. If a C-12 or C-27 is to be used, the adapter-frame/corrector lens and adapter is required.

Either the C-12 or C-27 camera can be used with the Type 5031 thru use of an adapter-frame/lens combination. The adapter frame accepts camera mounting adapter normally used for Tektronix 5-inch round CRTs. Order 016-0264-00, adapter-frame/corrector lens ..... $ 35

C-12 to 5-inch round CRT adapter, order 016-0226-01 .. $ 16

C-27 to 5-inch round CRT adapter, order 016-0225-02 .. $ 16



Remote-Control Unit

Separate controls for erase of upper screen, erase of lower screen, and single-sweep reset. Mates to oscilloscope rear-panel connector, 9-foot cable.

Order 012-0102-00 ..... $ 33

Remote-Control Connector

9-pin cable connector for selection of storage, non-storage, erase and reset functions.

Mates to oscilloscope rear-panel connector. Cable and control unit not included, order 134-0049-00 ..... $4.70

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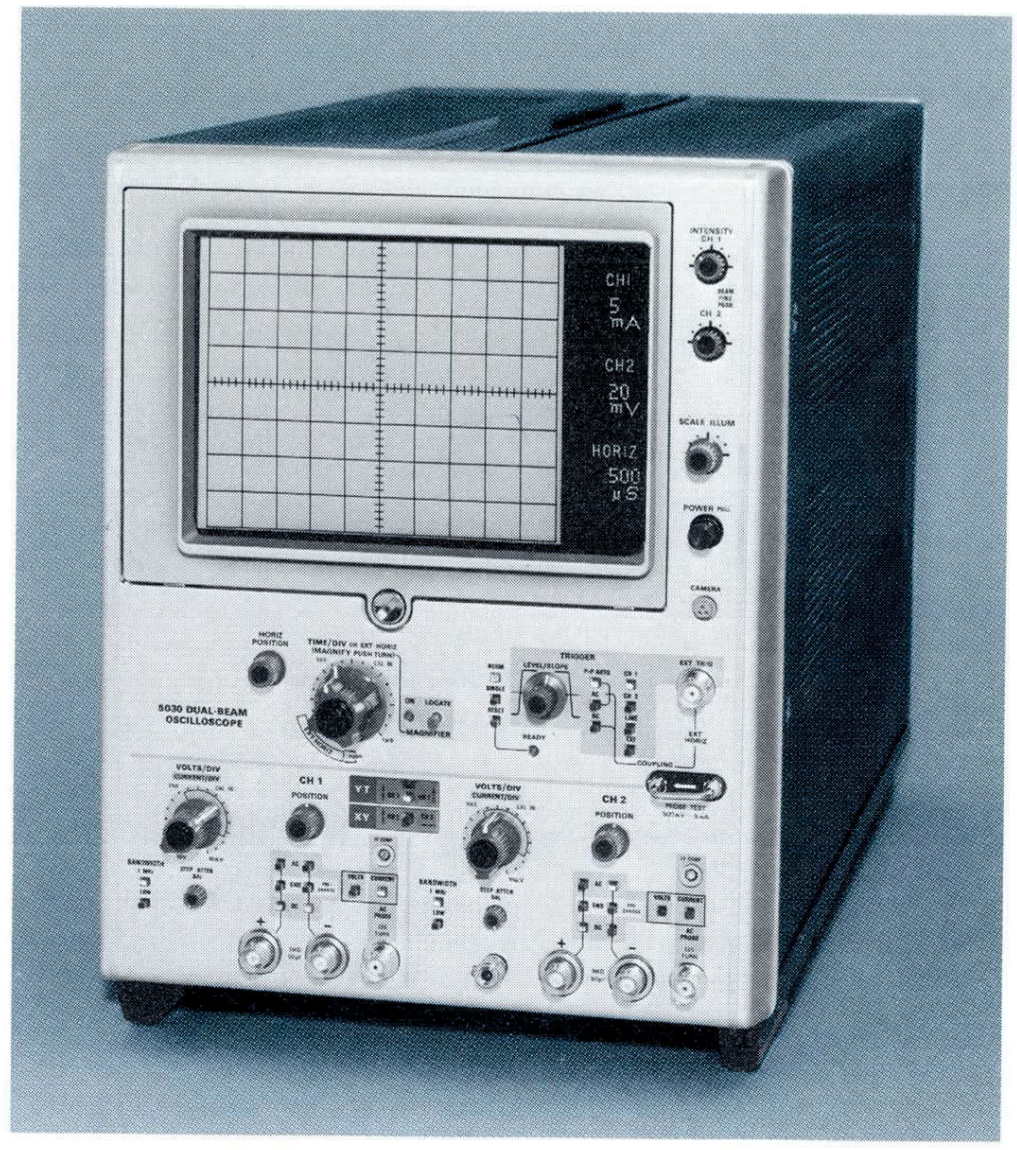
5030

Dual-Beam Oscilloscope

NEW

R5030



- 10 μV, DIFFERENTIAL, DC COUPLED
- SCALE-FACTOR READOUT
- CALIBRATED CURRENT INPUTS

The Type 5030 is the first dual-beam oscilloscope to offer calibrated current-probe inputs, high-gain differential inputs, auto scale-factor readout, and 1-MHz bandwidth. Three cabinet styles are available: a conventional, upright benchmount, a 5 1/4 inch rackmount, and a low-profile benchmount.

e adding more capability, the design stresses usability. Controls are color coded to outline functions, switching is simplified, scale-factors are read out via fiber-optics, and the viewing area of the CRT is increased by 50%. Each beam has a full scan of 8 x 10 divisions (1.27 cm/div). Readouts indicate current or voltage amplitude plus the time as set by the deflection controls.

A LOCATE function is associated with the time-base magnifier. When activated, the locate feature intensifies the sweep to show the time position of the magnified sweep.

The trigger circuit is greatly simplified by a peak to peak auto circuit. This automatic trigger mode provides a stable, triggered display regardless of other control settings for most repetitive waveforms, yet maintains triggering level and slope selection. In single-sweep mode the automatic trigger mode provides a triggered display without requiring triggering level adjustment.

Operator conveniences found on these instruments are beam finders and illuminated push-button switches. Additional capabilities which make the Type 5030 even more versatile: 1. The vertical sensitivity is 10 μV with a low-noise figure, as well as excellent differential common-mode-rejection ratio. 2. The vertical channels have current-probe inputs which allow simultaneous measurements of current and voltage. 3. The bandwidth is 1 MHz at all deflection factors (however, bandwidth may be limited to 5 kHz, allowing the operator to eliminate wide-band noise in his measurement). These measurement capabilities, plus the many convenience features, make these instruments useful in a wide variety of applications.

CHARACTERISTIC SUMMARY

VERTICAL

Bandwidth—Selectable: DC to 1 MHz or DC to 5 kHz.

Deflection Factor—10 μV/div to 10 V/div or 1 mA/div to 200 mA/div.

Input RC—1 megohm paralleled by approximately 50 pF.

Common-Mode-Rejection Ratio—at least 100,000:1 (DC to 100 kHz).

HORIZONTAL

Time Base—1 μs/div to 5 s/div.

Magnifier—up to 5 magnification steps (×50 mag max).

External Input—20 mV/div to .5 V/div.

CRT

Display Area—each beam 8 x 10 div (1.27 cm/div).

Accelerating Voltage—4 kV.

Phosphor—P31.

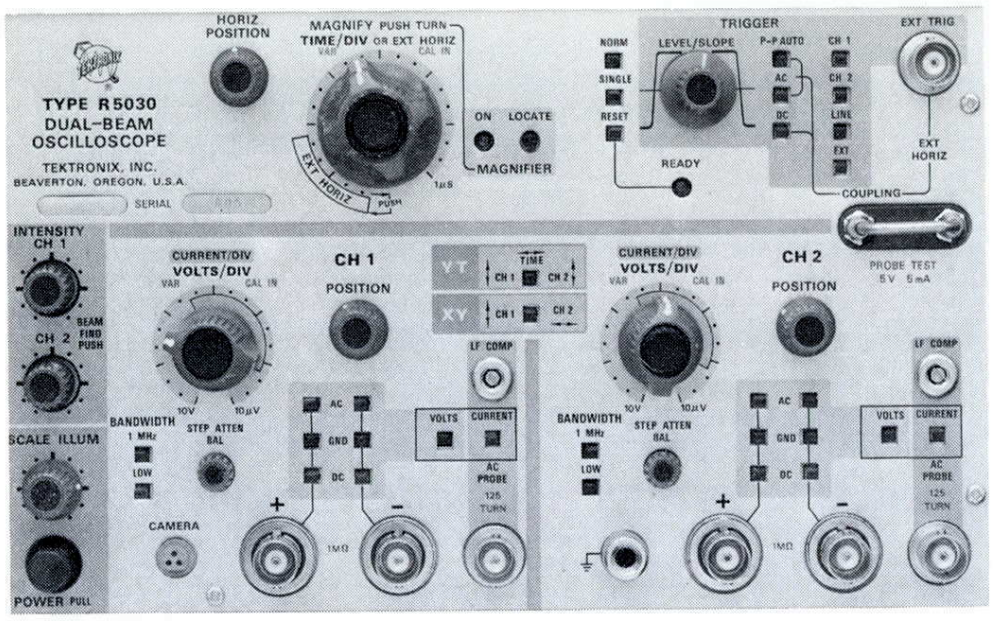
OTHER

Amplitude Calibrator—0.5 V and 5 mA, 1-kHz square wave.

Power Requirements—90 to 140 V or 180 to 275 V, 48 to 440 Hz; 100 watts.

NEW

5030 Dual-Beam Oscilloscope R5030



DISPLAY MODES

Y-T (Two-Beam Display)—Normally, Channel 1 and Channel 2 plotted on vertical axes versus time on horizontal axis. Dual-beam curve tracing provided by plotting Channel 1 and Channel 2 on vertical axes against an external horizontal signal on horizontal axis. Y, Y, X phase difference is 5° from DC to 100 kHz, or AC coupled from 1 kHz to 100 kHz. The two vertical deflection systems are independent of each other and share the same horizontal deflection system.

X-Y (Single-Beam Display)—Channel 1 plotted on vertical axis versus Channel 2 on horizontal axis provides curve tracing at full sensitivity of vertical deflection system (10 μV/div). X-Y phase difference with Channel 1 and Channel 2 DC coupled at the same calibrated deflection factor (unused inputs grounded) is $\leq$1° to 200 kHz, increasing to $\leq$4° at 1 MHz. In X-Y mode, time and external horizontal systems are disabled and lamps are extinguished. Trace intensity is controlled by Channel 1 intensity control.

VERTICAL DEFLECTION

Two identical channels, each provided with differential voltage inputs and a separate current input. Voltage or current mode is selected by push button.

When current mode is enabled, lamps associated with voltage inputs are extinguished to avoid confusion. Volts switch extinguishes current lamp. Full 1-MHz bandwidth or low (5-kHz) bandwidth for eliminating wideband noise, selectable by push button.

Bandwidth

DC to 1 MHz within +20%, —10%, or DC to 5 kHz, within 10% at —3 dB, selectable by push button. Lower —3 dB limit: AC coupled 2 Hz or less; current mode 10 Hz or less.

Deflection Factor

Voltage Mode—10 μV/div to 10 V/div in 19 calibrated steps (1-2-5 sequence). Accurate within 3% from 50 μV/div to 10 V/div. Accurate within 5% at 10 μV/div and 20 μV/div. Uncalibrated, continuously variable between steps to approximately 25 V/div.

Current Mode—1 mA/div to 200 mA/div in 8 calibrated steps (1-2-5 sequence) accurate within 5%. Uncalibrated, continuously variable between steps, extends deflection factor to approximately 500 mA/div.

Input RC

1 MΩ within 1% paralleled by 50 pF within 10%.

Displayed Noise

Voltage Mode: $\leq$15 μV.
Current Mode: $\leq$200 μA. (Tangentially Measured)

Input Gate Current

$\leq$200 pA.

Maximum Safe Inputs

(Inputs are fuse protected—no damage will occur)

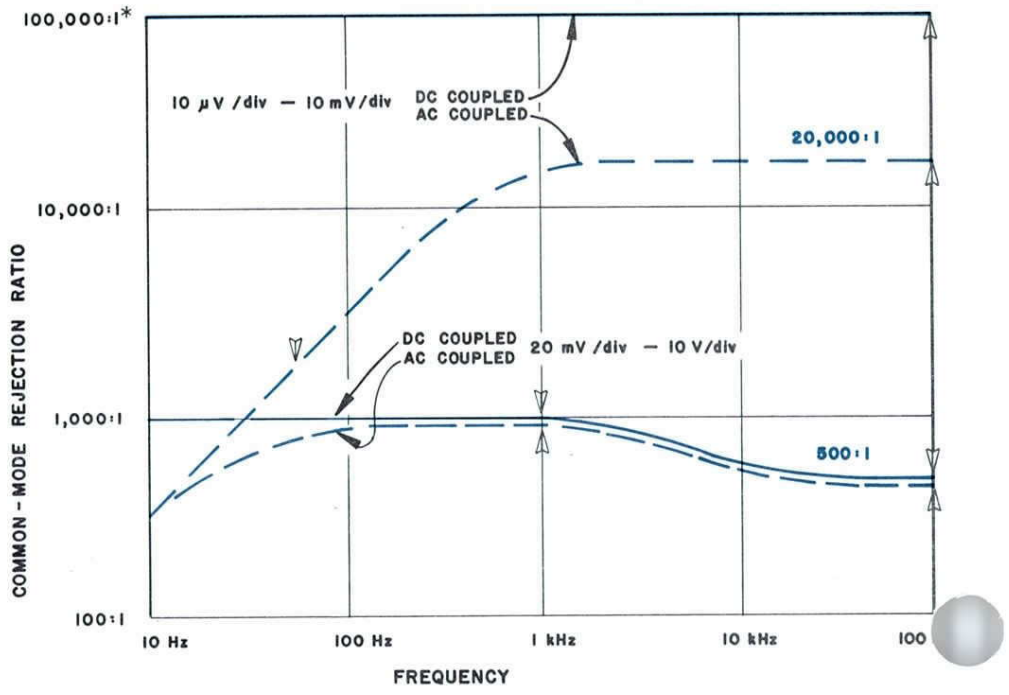
Voltage

RANGE	DC	AC*
10 μV to 100 mV/div	10 V (DC + Peak AC)	300 V DC, 10 V Peak AC
200 mV to 10 V/div	300 V (DC + Peak AC)	300 V (DC + Peak AC)

*Input switch must be initially set to ground when signal is applied to input to charge (or discharge) input coupling capacitor.

Current—10 A peak to peak.

Common-Mode-Rejection Ratio



*With up to 20-V peak-to-peak sinewave. CMRR is not specified when display is 0.1 div or less from DC to 1 kHz, or 0.2 div or less from 1 kHz to 100 kHz.

Stability

With Time: Short term—5 μV or less per minute after one-hour warm up. Long term—10 μV or less or 0.1 division or less, whichever is greater, during any hour after 2.5-hour warm up.

With Temperature: $\leq$50 μV per degree C.

With Line Voltage: $\leq$100 μV for 10% change in line voltage.

HORIZONTAL DEFLECTION

Full-range time base (1 μs to 5 s/div), up to 5 magnification steps (X5 maximum) and unique magnifier locate feature. Full-bandwidth (1-MHz) calibrated external-horizontal input permits dual-beam X-Y presentations. Horizontal deflection common to both beams.

Time Base Sweep Rate

1 μs to 5 s/div in 21 calibrated steps (1-2-5 sequence) accurate within 3% in the center 8 divisions. Uncalibrated, continuously variable between steps and to approximately 12 s/div.

Sweep Magnifier

Up to 5 magnification steps (1-2-5 sequence) from the initial unmagnified time/div control setting. Maximum magnified sweep limited to 1 μs/div. Magnified time base accurate within 5% in the center 8 divisions of display. Locate push button disables magnifier and restores normal sweep display, intensifies that portion of sweep to be magnified. Horizontal position control acts as time position of that portion of sweep to be magnified.

NEW

Sweep Modes

Normal or single sweep; ready indicator lights when sweep circuit is triggerable.

External Horizontal Input

Bandwidth: DC to at least 900 kHz at —3 dB; lower —3 dB limit is 15 Hz or less.

Deflection Factor: 20 mV/div to 500 mV/div in 8 calibrated steps (1-2-5 sequence) accurate within 3% in the center 8 divisions. Uncalibrated, continuously variable between steps to approximately 1.25 V/div.

Input RC: 1 MΩ within 2% paralleled by 50 pF within 10%.

Maximum Input: 100 V (DC + peak AC) decreasing to 100 V peak-to-peak at 1 MHz.

Y, Y, X Phase Difference: ≤5° from DC to 100 kHz; AC coupled from 1 kHz to 100 kHz.

TRIGGER

A simplified trigger circuit combines the trigger LEVEL and SLOPE controls and provides a peak-to-peak auto mode. When in peak-to-peak auto, the range of level adjustment is automatically established at the positive and negative peaks of the displayed waveforms. Also, the sweep is always triggered, or reverts to a free-running mode in the absence of a trigger signal or when the trigger signal is less than 15 Hz.

Coupling

Peak to Peak auto, AC or DC coupling. These push buttons select the coupling of trigger and external-horizontal input signals.

Source

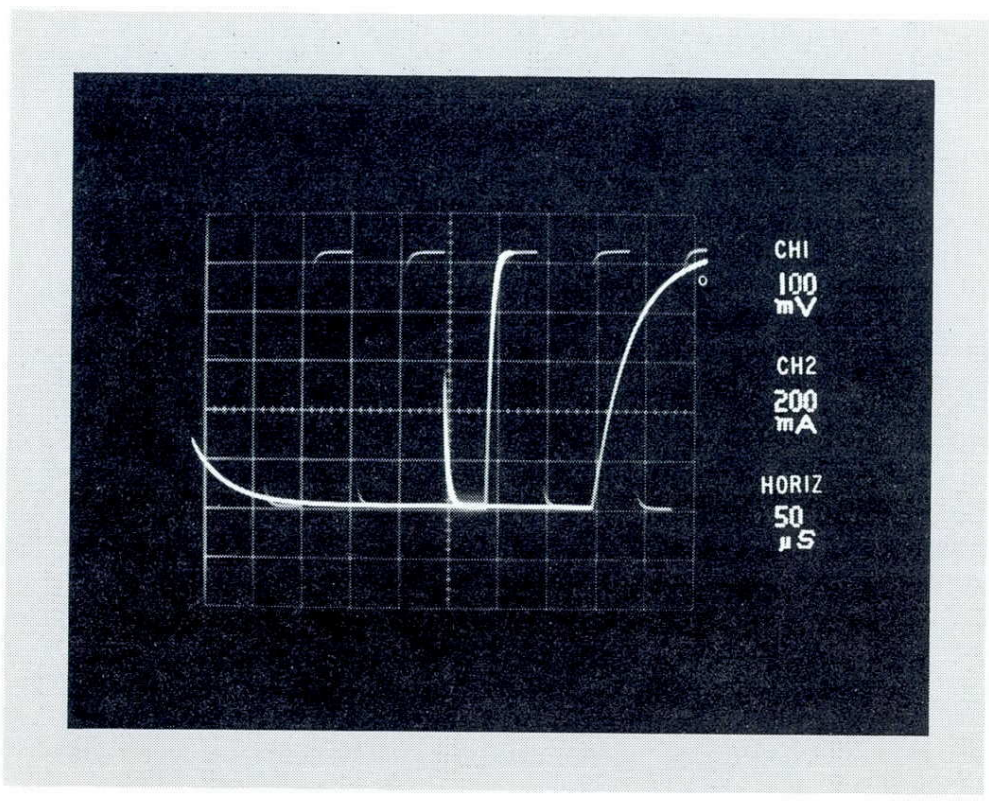
Internal (Channel 1 or Channel 2), Line, or External.

Sensitivity

Coupling		Internal	External
Peak to Peak Auto	Norm	0.5 div, 15 Hz to 1 MHz	0.6 V, 15 Hz to 1 MHz
	Single	1.0 div, 15 Hz to 1 MHz	1.25 V, 15 Hz to 1 MHz
AC		0.3 div, 15 Hz to 1 MHz	0.4 V, 15 Hz to 1 MHz
DC		0.3 div, DC to 1 MHz	0.4 V, DC to 1 MHz

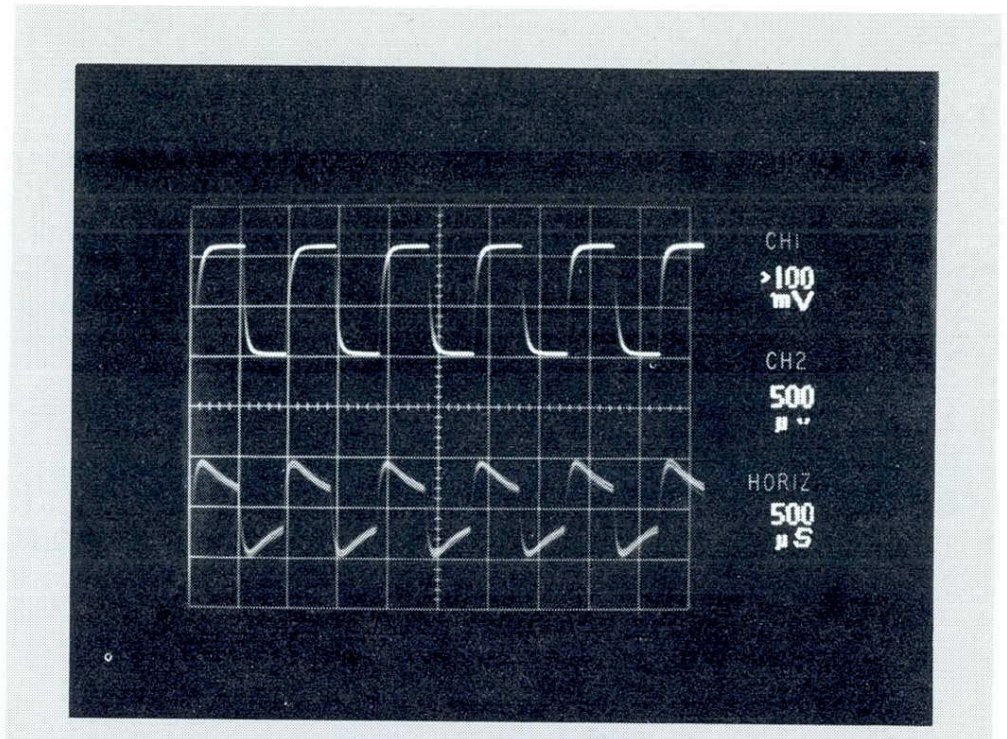
Maximum Input

100 V (DC + peak AC), decreasing to 100 V P-P at 1 MHz.



MAGNIFIER LOCATE (Double Exposure)

Magnifier Locate control depressed returns sweep to X1, intensifies portion of sweep to be magnified. When control is released, magnified sweep is displayed.



SCALE-FACTOR READOUT

Photo shows CH 1 variable volts control in uncalibrated condition, CH 2 mA/div out of range.

CRT AND DISPLAY FEATURES

Auto Scale-Factor Readout

Reads out scale-factors associated with Channel 1, Channel 2 and Horizontal. CH 1 and CH 2 read 10 µV to 10 V in 19 steps or 1 mA to 200 mA in 8 steps (1-2-5 sequence). HORIZ reads 1 µs to 5 s in 21 steps or 20 mV to 500 mV in 8 steps (1-2-5 sequence). Scale illumination control selects intensity of readout.

Tektronix Dual-Beam CRT

8 x 10 div per beam (1.27 cm/div). Separate vertical deflection plates; common horizontal. 4-kV accelerating potential provides a bright display. P31 phosphor normally supplied; P7 optional without extra charge. Consult your Field Engineer, Representative or Distributor for application information and availability.

Graticule

Internal, variable illumination. 8 x 10-div display area. Vertical and horizontal center lines marked in 0.2 divisions.

Display Controls

Combination push-button beam finder and intensity control for each beam. Dynamic focus eliminates requirement for control.

ENVIRONMENTAL CAPABILITIES

Ambient Temperature

Operating: 0°C to +50°C (—15°C to +55°C with no functional failure)

Non-operating: —55°C to +75°C

Altitude

Operating: 15,000 feet

Non-operating: 50,000 feet

Vibration

Operating: 15 minutes along each axis at 0.015 inch peak-to-peak displacement (1.9 g's at 55 c/s). 10 to 50 to 10 c/s in 1-minute cycles.

Shock

Operating: 30 g's, 1/2 sine, 11-ms duration, 2 shocks in each direction along 3 major axes, total of 12 shocks.

NEW

5030 Dual-Beam Oscilloscope R5030

OTHER CHARACTERISTICS

Rear Panel Inputs and Outputs

Z-Axis Inputs: Separate inputs for Channel 1 and Channel 2 DC to 1 MHz; 0 V to +12 V equal to full-intensity range, negative signal intensifies. Input RC approximately 20 kΩ paralleled by 60 pF. Maximum Input: 50 V (DC + peak AC).

Vertical Signal Outputs: Channel 1 and Channel 2 outputs provide an output of the vertical deflecting signal (DC coupled), amplitude at least 0.2 V per displayed div. Source impedance—10 kΩ within 10%. DC to ≥100 kHz bandwidth at —3 dB into 100 pF.

Auxiliary Functions: + Gate Output is ≥5 V from source impedance of 10 kΩ. Rise and fall times ≤5 μs into 100 pF.

Sawtooth Output: ≥5 V from source impedance of 10 kΩ.

Camera: Power to and sweep reset from camera to oscilloscope.

Probe Test

0.5 V into 1 MΩ and 5 mA accurate within 2%. Repetition Rate—1 kHz accurate within 15%.

Power Requirements

Quick-change line-voltage selector permits operation from 90 V to 121 V, 105 V to 140 V, 180 V to 242 V, or 210 V to 275 V. The Type R5030 will operate over a line frequency range from 48 Hz to 440 Hz with a power consumption of 100 W at 115 V AC, 60 Hz.

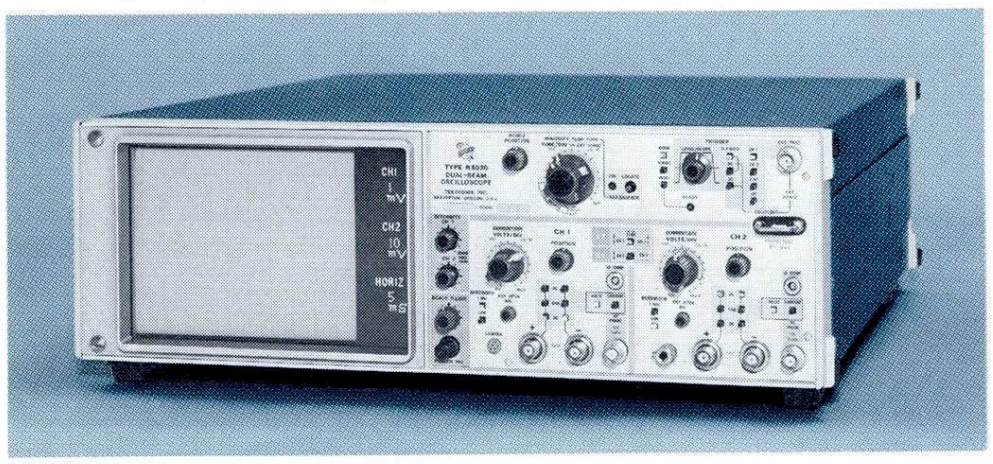
Dimensions and Weights

CABINET (Type 5030)

Length	22-1/2 in	57.2 cm
Width	10 in	25.2 cm
Height	13 in	33.2 cm
Net weight	33 lb	15.0 kg
Domestic shipping weight	49 lb	22.2 kg
Export-packed weight	69 lb	31.4 kg

Rackmount (Type R5030)

Length	22-1/2 in	57.2 cm
Width	19 in	48.3 cm
Height	5-1/4 in	13.4 cm
Net weight	33 lb	15.0 kg
Domestic shipping weight	49 lb	22.2 kg
Export-packed weight	69 lb	31.4 kg



Low Profile Cabinet (Type R5030 Option 4)

Length	22-1/2 in	57.2 cm
Width	17-5/8 in	44.8 cm
Height	6 in	15.2 cm
Net weight	32 lb	14.6 kg
Domestic shipping weight	48 lb	21.8 kg
Export-packed weight	69 lb	31.4 kg

UPRIGHT CABINET

Type 5030 is equipped with tilt bail. Includes two instruction manuals (070-0999-00).

Order Type 5030 ..... **$1850**

RACKMOUNT

Type R5030 is equipped with a set of tracks and slides for rackmounting. Includes two instruction manuals (070-1000-00).

Order Type R5030 ..... **$1850**

LOW-PROFILE CABINET

Type R5030 Option 4 is equipped with feet, tilt bail and handle for bench top use. Includes two instruction manuals (070-1000-00).

Order Type R5030 Option 4 ..... **$1850**

OPTIONAL ACCESSORIES

Optional accessories increase measurement capabilities and provide added convenience. Cameras, Probes, Scope-Mobile® Carts and other major accessories are completely described in the catalog accessory pages.

Probes

P6052 10X, 1X selectable attenuation probe, order 010-0241-00 ..... $55

P6021 AC current probe, order 010-0237-02 ..... $94

Scope-Mobile® Cart

Model 205-1, storage drawer, and 9-position tilt-lock oscilloscope tray, suitable for R5030, order 205-1 .... $150

Model 204-2 includes storage drawer and scope hold-down, suitable for 5030, order 204-2 ..... $155

Cameras

C-70 provides an f/1.9—1:0.575 lens for complete coverage of CRT and readout areas. Polaroid* Land Pack-Film back, order C-70-P (includes mounting bezel) $78

Standard C-12 provides no-parallax viewing, f/1.9—1:0.85 lens, Polaroid Land Pack-Film back, order C-12 ..... $490

Standard C-27 has a rotating back and removable viewing hood, f/1.9—1:0.85 lens. Polaroid Land Pack-Film back, order C-27 ..... $460

Camera Adapters

The C-70 mounts directly to the Type 5030. If a C-12 or C-27 is to be used, the adapter-frame/corrector lens and an adapter is required.

Either the C-12 or C-27 camera can be used with the Type 5030 thru use of an adapter-frame/lens combination. The adapter frame accepts camera mounting adapter normally used for Tektronix 5-inch round CRTs.

order 016-0264-00, adapter-frame/corrector lens $35

C-12 to 5-inch round CRT adapter, order 016-0226-01 ..... $16

C-27 to 5-inch round CRT adapter, order 016-0225-02 ..... $16

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