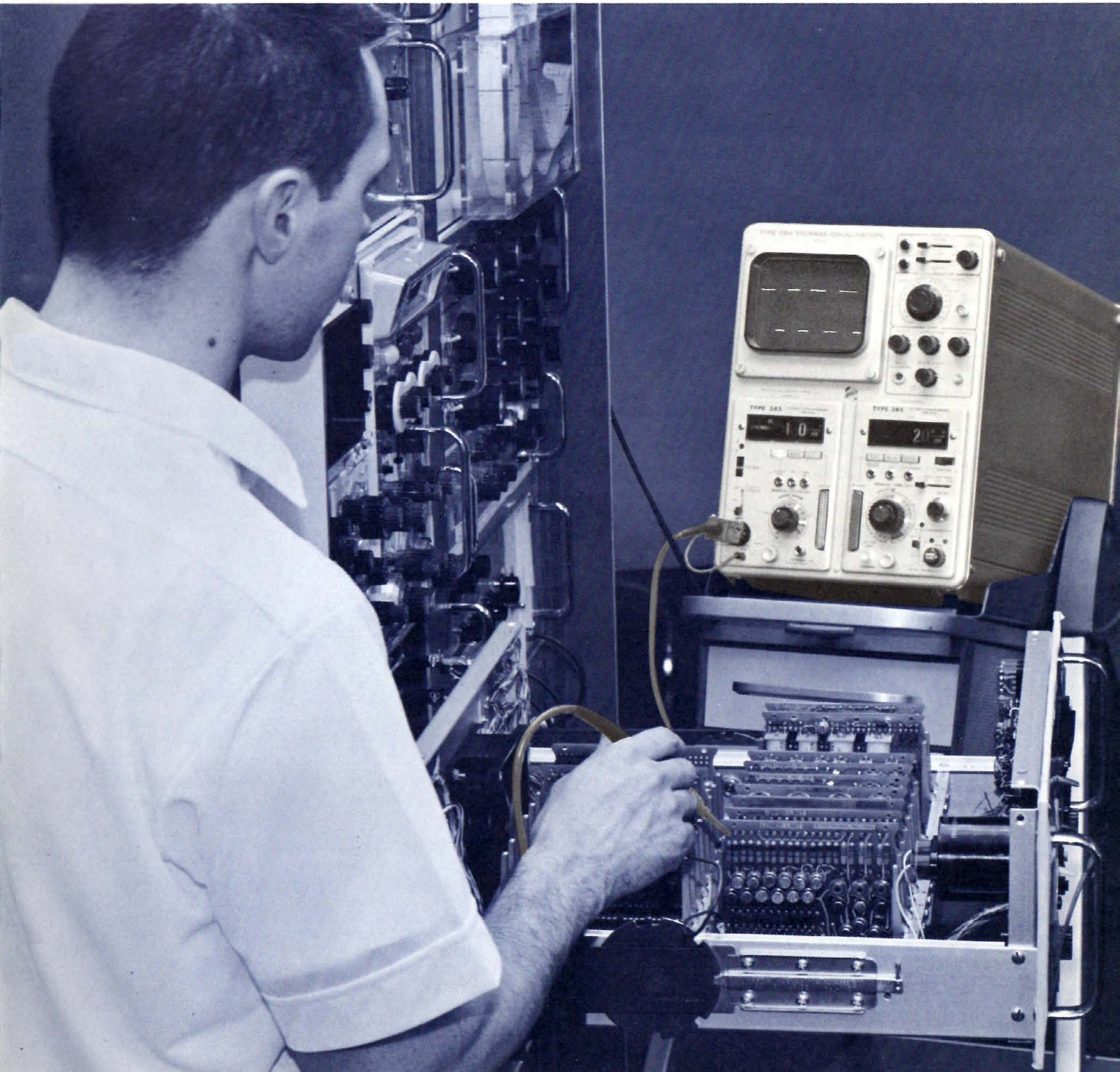


NEW FROM TEKTRONIX



AUTOMATIC "SEEKING" PLUG-IN UNITS FOR TYPE 561A, 564 OSCILLOSCOPES



Type 3A5 AUTOMATIC/PROGRAMMABLE AMPLIFIER UNIT

AUTOMATIC SENSITIVITY "SEEKING" PROGRAMMABLE FRONT-PANEL FUNCTIONS DIGITAL INDICATION OF CONTROL SETTINGS STABLE DISPLAYS

You can make measurements faster and easier with this new high-performance plug-in unit*. Press the "seek" button on the special 10X probe and the instrument automatically selects the volts/division setting for a convenient display size. This "seek" feature is ideal for applications where the instrument is located out of reach, or for production-line testing that would normally require continuous readjustment of the volts/division control.

Upon receipt of the "seek" command, the deflection factor is automatically readjusted so that neither peak of the displayed waveform extends more than 3 divisions from the graticule center, thus establishing the display within the CRT viewing area. Large, lighted indicators in the front-panel window tell you at a glance the volts/division setting, input coupling, and when the manual variable volts/division control is in the uncalibrated position.

The Type 3A5 can be operated manually for applications that do not require the automatic features. In addition, the automatic functions are overridden whenever the manual V/div setting is changed. The plug-in can also be operated remotely using the Type 263 External Programmer. Both the "seek" feature and manual operation of the control settings are overridden when the instrument is programmed externally.

Other features of the Type 3A5 include a special "AC Trace Stabilized" circuit that minimizes trace drift. This feature is particularly useful when the instrument is operated at high sensitivity or when long term trace-stability is required. An internal signal delay line insures the display of the leading edge of the waveform.

OPERATING MODES

SEEK, MANUAL AND EXTERNAL

Seek operation selected by front-panel push button or push button on the P6030 Probe. Manual or external operation selected by front-panel push buttons.

SEEKING CHARACTERISTICS

DEFLECTION FACTOR

10 mV/div to 50 V/div without probe; 0.1 V/div to 500 V/div with probe.

SEEKING TIME

≤200 ms. (Time required to complete one "seek" operation.)

CYCLING TIME

2 to 4 s (interval between seek operations with "seek" command button held down continuously).

LOGIC CIRCUIT RESPONSE

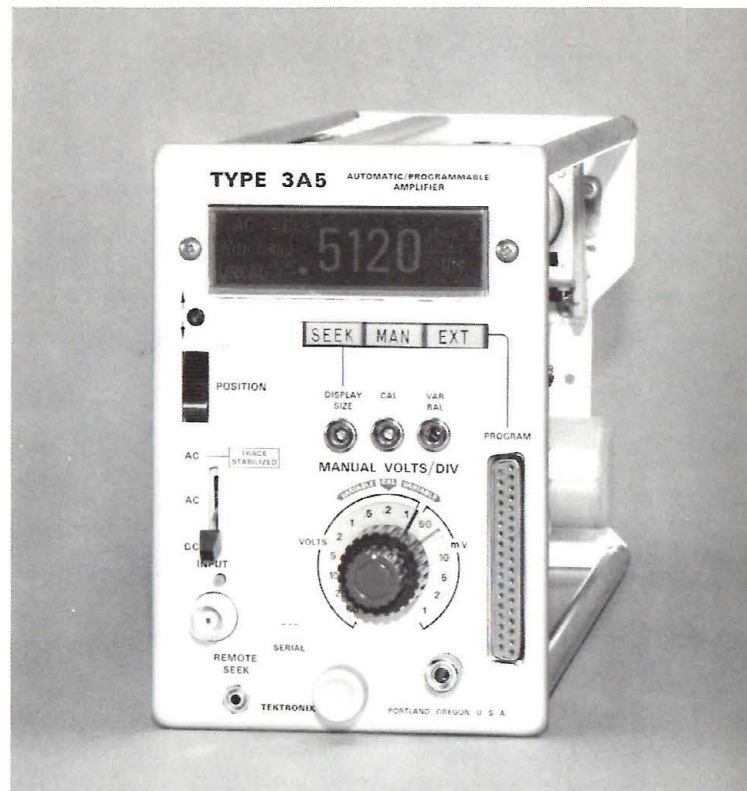
Seeking circuitry functions for signal rep-rates up to 20 MHz.

GENERAL CHARACTERISTICS

READOUT FACILITY

Bulb-and-film digits 1/2" high. Readout information includes 1 mV/div to 50 V/div (10 mV/div to 0.5 kV/div when P6030 10X probe activates the 10X circuit); "AC" or "DC" input coupling, "with probe" indication, and "uncal" indication of the variable manual V/div control.

*Recommended for use with the Type 561A Oscilloscope or Type 564 Storage Oscilloscope.



DEFLECTION FACTOR

12 calibrated steps from 10 mV/div to 50 V/div, 1, 2, 5 sequence. Accuracy is ±3% with gain set to match indicator. Additional steps of 1, 2 and 5 mV/div in manual operation only; accurate to ±5%. A manual control provides variable V/div settings between all steps in all modes of operation (uncalibrated).

BANDWIDTH (3-dB down)

DC to ≥15 MHz, from 10 mV/div to 50 V/div (all modes). 5 MHz at 1, 2 or 5 mV/div (manual mode only).

RISETIME

≤23 ns at a deflection factor of 10 mV to 50 V/div.

INPUT RC

1 megohm paralleled by approx 24 pF.

PROGRAMMABLE FUNCTIONS

V/div setting, 10X probe attenuation factor, AC or DC input coupling, AC Trace Stabilization, by contact closure to ground. Vertical positioning by analog current.

P6030 PROBE

10X probe with "seek" command button and 6' cable. Supplied with the instrument.

NET WEIGHT

5 1/4 lbs. Shipping weight, approx 8 lbs.

TYPE 3A5 AUTOMATIC/PROGRAMMABLE AMPLIFIER UNIT

Each instrument includes: 1—P6030 Probe (010-0195-00); 1—connector, 37 pin (131-0422-00); 1—cover, connector (200-0660-02); 2—instruction manual (070-0500-00).

U.S. Sales Price f.o.b. Beaverton, Oregon

AUTOMATIC/PROGRAMMABLE Type 3B5 TIME-BASE UNIT

AUTOMATIC TIME-BASE "SEEKING" PROGRAMMABLE FRONT-PANEL FUNCTIONS DIGITAL INDICATION OF CONTROL SETTINGS DELAYED-SWEEP MAGNIFIER

Used in association with the Type 3A5 Amplifier and P6030 Probe, the Type 3B5 automatically establishes a triggered time-base display upon receipt of the "seek" command from the probe. The time/division setting is automatically selected to provide a convenient display of 2 to 6 cycles. Lighted indicators in the front-panel window show the selected time/division setting. They also indicate when the time base is not triggered and when the manual variable time/division control is in the uncalibrated position.

The Type 3B5 features a delayed-sweep magnifier for expanding the display by X10 or X100. A calibrated delay control permits any portion of the magnified display to be viewed. When the sweep magnifier is in operation, the time/division readout is automatically corrected to indicate the magnified setting, and a "magnified sweep" indication lights up in the readout window.

The automatic "seek" feature of the Type 3B5 is overridden when the manual time/division control is used. Both the "seek" feature and manual operation of the control setting are overridden when the instrument is programmed remotely using the Type 263 External Programmer.

OPERATING MODES

SEEK, MANUAL AND EXTERNAL

Manual or external operation selected by front-panel push buttons. Seek operation selected by front-panel push button or push button on the P6030 Probe supplied with the Type 3A5 Amplifier.

SEEKING CHARACTERISTICS

SWEEP RANGE

5 s/div to 0.1 μ s/div.

SEEKING TIME

≤ 500 ms (time required to complete one "seek" operation).

CYCLING TIME

2 to 4 s ("seek" command button held down continuously).

LOGIC CIRCUIT RESPONSE

Seeking circuitry functions for signal rep-rates from 30 Hz to 20 MHz.

GENERAL CHARACTERISTICS

READOUT FACILITY

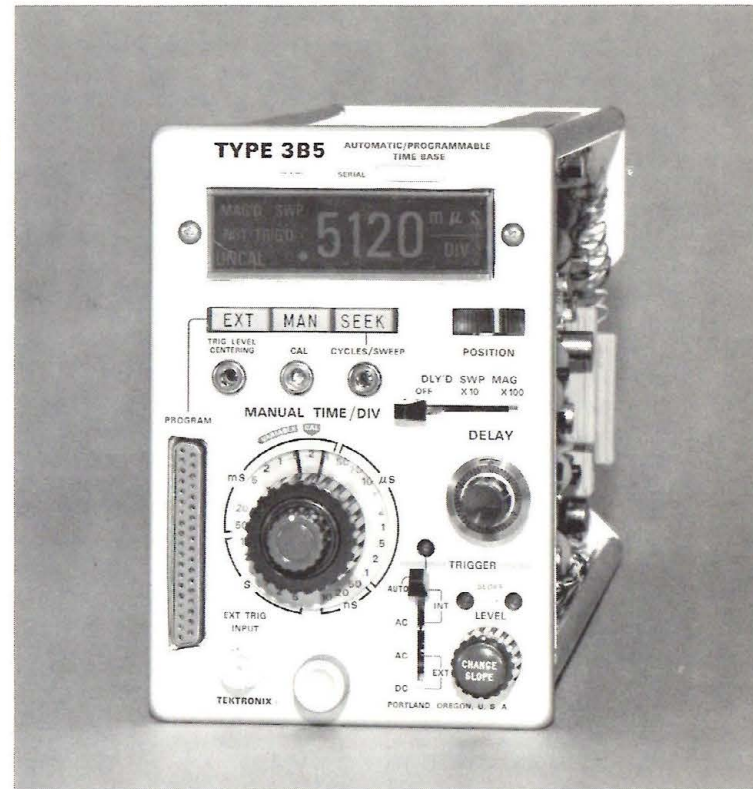
Bulb-and-film digits $\frac{1}{2}$ " high. Readout information includes 5 s/div to 10 ns/div sweep times, plus "Magnified Sweep," "Not Triggered," and "Uncalibrated" indications.

SWEEP RANGE

27 calibrated steps from 5 s/div to 10 ns/div, 1-2-5 sequence. Accuracy is $\pm 3\%$ from 0.5 s/div to 0.1 μ s/div. $\pm 5\%$ at 1, 2 or 5 s/div, and at 50, 20, 10 ns/div. A manual control provides variable time/div settings between all steps in all modes of operation (uncalibrated).

DELAYED SWEEP MAGNIFIER

Expands the display by a factor of X10 or X100. X10 range magnifies time/division settings from 5 s/div to 1 μ s/div. X100 range magnifies time/division settings from 5 s/div to 10 μ s/div. Accuracy is $\pm 3\%$ for all magnified sweep times except the 5, 2, or 1 s/div ($\pm 5\%$). VARIABLE DELAY: 10-turn control determines portion of sweep to be magnified.



TRIGGER MODES

Internal: AC-coupled or Auto. External: AC-coupled or DC-coupled.

TRIGGER REQUIREMENTS

Internal AC: 0.2 div of signal displayed, 50 Hz to 20 MHz.
Internal Auto: 0.5 div of signal displayed, 50 Hz to 20 MHz.
External AC: 0.5 V to 40 V peak to peak, 50 Hz to 20 MHz.
External DC: 1 V to 40 V peak to peak, DC to 20 MHz.

PROGRAMMABLE FUNCTIONS

Time/div, magnifier range, trigger-mode, slope, and coupling, by contact closure to ground. Horizontal positioning, trigger level, and magnifier delay by analog current.

TYPE 3B5 AUTOMATIC/PROGRAMMABLE TIME BASE UNIT

..... \$890
Each instrument includes: 1—connector, 37 pin (131-0422-00); 1—cover, connector (200-0660-01); 2—instruction manual (070-0538-00).

U.S. Sales Price f.o.b. Beaverton, Oregon

AUTOMATIC SEEKING OSCILLOSCOPE SYSTEM

The Type 3A5 and 3B5 Plug-In Units, combined with a Type 561A Oscilloscope or Type 564 Storage Oscilloscope, offer a new automatic system for making amplitude and time measurements. By simply pressing the "seek" button on the special probe, the control functions of both plug-in units are automatically established. This new "seek" feature speeds up laboratory or production measurements by eliminating frequent readjustment of the front-panel controls.



Type 3A5 AUTOMATIC/PROGRAMMABLE AMPLIFIER UNIT

AUTOMATIC SENSITIVITY "SEEKING" PROGRAMMABLE FRONT-PANEL FUNCTIONS DIGITAL INDICATION OF CONTROL SETTINGS STABLE DISPLAYS

You can make measurements faster and easier with this new high-performance plug-in unit*. Press the "seek" button on the special 10X probe and the instrument automatically selects the volts/division setting for a convenient display size. This "seek" feature is ideal for applications where the instrument is located out of reach, or for production-line testing that would normally require continuous readjustment of the volts/division control.

Upon receipt of the "seek" command, the deflection factor is automatically readjusted so that neither peak of the displayed waveform extends more than 3 divisions from the graticule center, thus establishing the display within the CRT viewing area. Large, lighted indicators in the front-panel window tell you at a glance the volts/division setting, input coupling, and when the manual variable volts/division control is in the uncalibrated position.

The Type 3A5 can be operated manually for applications that do not require the automatic features. In addition, the automatic functions are overridden whenever the manual V/div setting is changed. The plug-in can also be operated remotely using the Type 263 External Programmer. Both the "seek" feature and manual operation of the control settings are overridden when the instrument is programmed externally.

Other features of the Type 3A5 include a special "AC Trace Stabilized" circuit that minimizes trace drift. This feature is particularly useful when the instrument is operated at high sensitivity or when long term trace-stability is required. An internal signal delay line insures the display of the leading edge of the waveform.

OPERATING MODES

SEEK, MANUAL AND EXTERNAL

Seek operation selected by front-panel push button or push button on the P6030 Probe. Manual or external operation selected by front-panel push buttons.

SEEKING CHARACTERISTICS

DEFLECTION FACTOR

10 mV/div to 50 V/div without probe; 0.1 V/div to 500 V/div with probe.

SEEKING TIME

≤ 200 ms. (Time required to complete one "seek" operation.)

CYCLING TIME

2 to 4 s (interval between seek operations with "seek" command button held down continuously).

LOGIC CIRCUIT RESPONSE

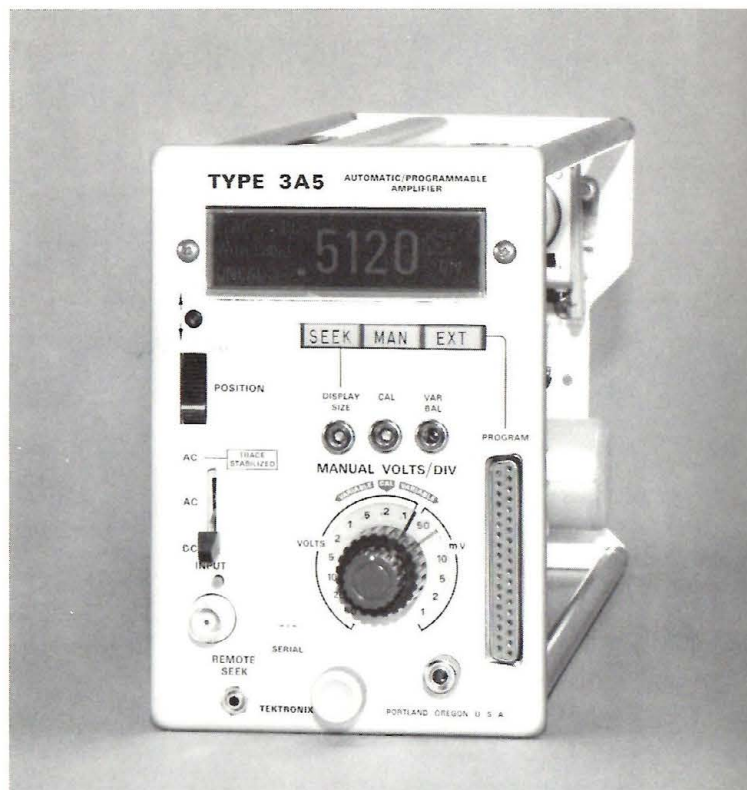
Seeking circuitry functions for signal rep-rates up to 20 MHz.

GENERAL CHARACTERISTICS

READOUT FACILITY

Bulb-and-film digits $\frac{1}{2}$ " high. Readout information includes 1 mV/div to 50 V/div (10 mV/div to 0.5 kV/div when P6030 10X probe activates the 10X circuit); "AC" or "DC" input coupling, "with probe" indication, and "uncal" indication of the variable manual V/div control.

*Recommended for use with the Type 561A Oscilloscope or Type 564 Storage Oscilloscope.



DEFLECTION FACTOR

12 calibrated steps from 10 mV/div to 50 V/div, 1, 2, 5 sequence. Accuracy is $\pm 3\%$ with gain set to match indicator. Additional steps of 1, 2 and 5 mV/div in manual operation only; accurate to $\pm 5\%$. A manual control provides variable V/div settings between all steps in all modes of operation (uncalibrated).

BANDWIDTH (3-dB down)

DC to ≥ 15 MHz, from 10 mV/div to 50 V/div (all modes). 5 MHz at 1, 2 or 5 mV/div (manual mode only).

RISETIME

≤ 23 ns at a deflection factor of 10 mV to 50 V/div.

INPUT RC

1 megohm paralleled by approx 24 pF.

PROGRAMMABLE FUNCTIONS

V/div setting, 10X probe attenuation factor, AC or DC input coupling, AC Trace Stabilization, by contact closure to ground. Vertical positioning by analog current.

P6030 PROBE

10X probe with "seek" command button and 6' cable. Supplied with the instrument.

NET WEIGHT

$5\frac{1}{4}$ lbs. Shipping weight, approx 8 lbs.

TYPE 3A5 AUTOMATIC/PROGRAMMABLE AMPLIFIER UNIT \$760

Each instrument includes: 1—P6030 Probe (010-0195-00); 1—connector, 37 pin (131-0422-00); 1—cover, connector (200-0660-02); 2—instruction manual (070-0500-00).

U.S. Sales Price f.o.b. Beaverton, Oregon

AUTOMATIC/PROGRAMMABLE Type 3B5 TIME-BASE UNIT

AUTOMATIC TIME-BASE "SEEKING" PROGRAMMABLE FRONT-PANEL FUNCTIONS DIGITAL INDICATION OF CONTROL SETTINGS DELAYED-SWEEP MAGNIFIER

Used in association with the Type 3A5 Amplifier and P6030 Probe, the Type 3B5 automatically establishes a triggered time-base display upon receipt of the "seek" command from the probe. The time/division setting is automatically selected to provide a convenient display of 2 to 6 cycles. Lighted indicators in the front-panel window show the selected time/division setting. They also indicate when the time base is not triggered and when the manual variable time/division control is in the uncalibrated position.

The Type 3B5 features a delayed-sweep magnifier for expanding the display by X10 or X100. A calibrated delay control permits any portion of the magnified display to be viewed. When the sweep magnifier is in operation, the time/division readout is automatically corrected to indicate the magnified setting, and a "magnified sweep" indication lights up in the readout window.

The automatic "seek" feature of the Type 3B5 is overridden when the manual time/division control is used. Both the "seek" feature and manual operation of the control setting are overridden when the instrument is programmed remotely using the Type 263 External Programmer.

OPERATING MODES

SEEK, MANUAL AND EXTERNAL

Manual or external operation selected by front-panel push buttons. Seek operation selected by front-panel push button or push button on the P6030 Probe supplied with the Type 3A5 Amplifier.

SEEKING CHARACTERISTICS

SWEEP RANGE

5 s/div to 0.1 μ s/div.

SEEKING TIME

≤ 500 ms (time required to complete one "seek" operation).

CYCLING TIME

2 to 4 s ("seek" command button held down continuously).

LOGIC CIRCUIT RESPONSE

Seeking circuitry functions for signal rep-rates from 30 Hz to 20 MHz.

GENERAL CHARACTERISTICS

READOUT FACILITY

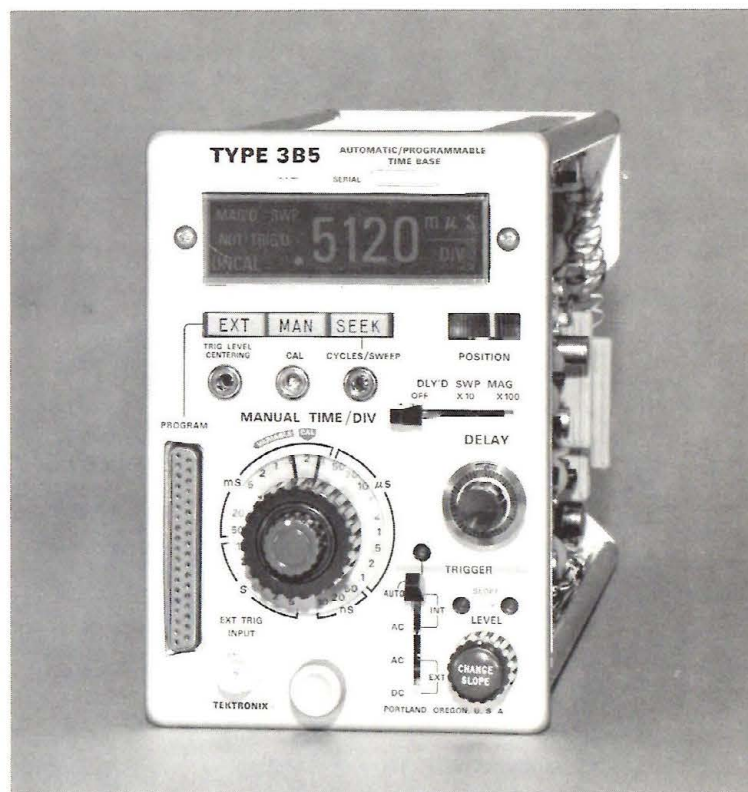
Bulb-and-film digits $\frac{1}{2}$ " high. Readout information includes 5 s/div to 10 ns/div sweep times, plus "Magnified Sweep," "Not Triggered," and "Uncalibrated" indications.

SWEEP RANGE

27 calibrated steps from 5 s/div to 10 ns/div, 1-2-5 sequence. Accuracy is $\pm 3\%$ from 0.5 s/div to 0.1 μ s/div. $\pm 5\%$ at 1, 2 or 5 s/div, and at 50, 20, 10 ns/div. A manual control provides variable time/div settings between all steps in all modes of operation (uncalibrated).

DELAYED SWEEP MAGNIFIER

Expands the display by a factor of X10 or X100. X10 range magnifies time/division settings from 5 s/div to 1 μ s/div. X100 range magnifies time/division settings from 5 s/div to 10 μ s/div. Accuracy is $\pm 3\%$ for all magnified sweep times except the 5, 2, or 1 s/div ($\pm 5\%$). VARIABLE DELAY: 10-turn control determines portion of sweep to be magnified.



TRIGGER MODES

Internal: AC-coupled or Auto. External: AC-coupled or DC-coupled.

TRIGGER REQUIREMENTS

Internal AC: 0.2 div of signal displayed, 50 Hz to 20 MHz.
Internal Auto: 0.5 div of signal displayed, 50 Hz to 20 MHz.
External AC: 0.5 V to 40 V peak to peak, 50 Hz to 20 MHz.
External DC: 1 V to 40 V peak to peak, DC to 20 MHz.

PROGRAMMABLE FUNCTIONS

Time/div, magnifier range, trigger-mode, slope, and coupling, by contact closure to ground. Horizontal positioning, trigger level, and magnifier delay by analog current.

TYPE 3B5 AUTOMATIC/PROGRAMMABLE TIME BASE UNIT

..... \$890

Each instrument includes: 1—connector, 37 pin (131-0422-00); 1—cover, connector (200-0660-01); 2—instruction manual (070-0538-00).

U.S. Sales Price f.o.b. Beaverton, Oregon

AUTOMATIC SEEKING OSCILLOSCOPE SYSTEM

The Type 3A5 and 3B5 Plug-In Units, combined with a Type 561A Oscilloscope or Type 564 Storage Oscilloscope, offer a new automatic system for making amplitude and time measurements. By simply pressing the "seek" button on the special probe, the control functions of both plug-in units are automatically established. This new "seek" feature speeds up laboratory or production measurements by eliminating frequent readjustment of the front-panel controls.



EXTERNAL PROGRAMMER Type 263

The Type 263 Programmer provides the facility for controlling the Type 3A5 and 3B5 Automatic/Programmable Plug-In Units remotely. Push buttons on the front panel of the Programmer select any one of six internal program cards. Each card, after initial set up, establishes the plug-in functions required for a particular test or measurement. More than one programmer can be cascaded for applications requiring more than the six initial measurement set-ups.

The plug-in type program cards are identical, allowing them to be interchanged or arranged in any sequence. New programs are easily established by relocating small jumpers and changing the potentiometer settings on the cards.

PROGRAM CAPABILITIES

Vertical V/div Setting (10 mV/div—50 V/div), Input Coupling (AC, AC Stabilized, DC), X10 Probe; Horizontal Time/Div Settings (5 s to 10 ns), Trigger Mode selection and Coupling (Ext DC, Ext AC, Int AC, AUTO), Trigger Slope; X1, X10, X100 Magnifier for Delayed Sweep, auxiliary SP6T switch function. All established by jumper connection. Vertical and Horizontal Positioning, Trigger Level, and variation of Sweep Delay, by potentiometer setting.

PROGRAM CARDS

Interchangeable, plug-in type.

OUTPUT CABLES

Two 3' cables with multipin connectors.

CONSTRUCTION

Cast aluminum side plates with wrap-around steel cabinet.

DIMENSIONS

5½" high x 8⅝" wide x 9" deep overall.

NET WEIGHT

Approx 5 lbs. Shipping weight, approx 8 lbs.



TYPE 263 PROGRAMMER \$325

Each instrument includes: 6—program cards (670-0226-00); 11—leads, electrical (175-0674-00); 2—instruction manual (070-0535-00).

EXTRA PROGRAM CARDS (Order Part Number 670-0226-00)
each \$30

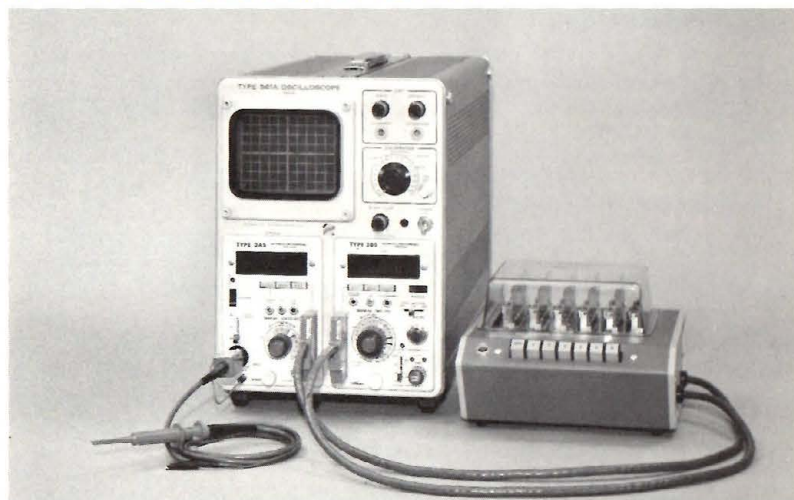
U.S. Sales Prices f.o.b. Beaverton, Oregon

PROGRAMMABLE SYSTEM FOR FAST PRODUCTION-LINE TESTING

The Type 561A Oscilloscope* combined with the Type 3A5, 3B5 Plug-In Units and the Type 263 Programmer, offer the ideal system for making production-line measurements quickly and conveniently . . . and with less chance for operator error.

The system allows measurements to be made at the push of a button without changing the manual controls of either plug-in unit. The oscilloscope settings are programmed for a particular measurement and read out in large, lighted indicators on the face of the plug-in units. After the initial program is established, this new system can be operated by personnel with little or no technical training.

*Also Type 564 for storage applications.



Tektronix, Inc.

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